



International  
Labour  
Organization

ILO/TF/Bahamas/R.X

# **Eleventh actuarial valuation of The National Insurance Board of The Bahamas as of 31 December 2018**

## **Report to the Government**

International Labour Office

ILO Decent Work Team and Office for the Caribbean, Port of Spain

Actuarial Services Unit, Social Protection Department, Geneva

Global Employment Injury Program, Enterprises Department, Geneva

January 2022

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Port of Spain, Trinidad and Tobago

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## ► Abstract

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This report presents the results of the 11th actuarial valuation of The National Insurance Board of The Bahamas as of 31 December 2018. It includes projections until 2078, conclusions and recommendations. The legal compliance of social security provisions with the ILO Social Security (Minimum Standards) Convention, 1952 (No. 102) is also included in the report.

## ► Acknowledgements

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This report has been prepared in the framework of the project between the National Insurance Board of The Bahamas (NIB) and the International Labour Organization, represented by the International Labour Office (ILO). The main objective of the project is to complete the Eleventh Actuarial Valuation of The National Insurance Board as at the 31 December 2018 and to support the institution with the drafting of a comprehensive funding policy.

The project was coordinated by the ILO Decent Work Team and Office for the Caribbean in Port of Spain (DWT/CO-Port-of-Spain) and carried out under the supervision of Mr Ariel Pino, Specialist in Social Protection and Occupational Safety and Health of the DWT/CO-Port-of-Spain. The ILO commissioned Mr Jean-Claude Ménard, FSA, FCIA, Senior Social Security Actuary and former Chief Actuary of the Government of Canada (1999-2019) and former Chief Actuary of the Quebec Pension Plan (1995-1999) and Mr Alexandre Landry, FSA, Social Security Actuary and Modelling Specialist, to undertake this assignment. Mr André Picard, Head of the Actuarial Services Unit (ASU) of the Social Protection Department (SOCPRO) and Mr Hiroshi Yamabana, Actuary of the Global Employment Injury Program of the Enterprises Department, both of the ILO, Geneva, assumed responsibility for the actuarial technical supervision of the project.

Ms Suzanne Joseph, Senior Information Technology Assistant of the ILO DWT/CO-Port-of-Spain was responsible of the editing and layout of the Report.

The ILO worked in collaboration with Mrs Tami Francis, Assistant Director, Analytics, Research and Actuarial Services, and Ms Amanda Darville, ASA, Actuarial Analyst at the NIB.

The ILO extends its sincere gratitude to Dr Nicola Virgill-Rolle, Director/CEO of the NIB until 1 December 2020, and to Mr James Moss, Director/CEO of the NIB since 28 February 2021, for their collaboration and assistance throughout the project.

## ► Executive summary

As of 2018 the NIB covers about 163,000 workers representing about 82 per cent of the employed population aged 15 to 64. It offers comprehensive protection for old age, disability, death, employment injury, unemployment insurance, maternity and sickness benefits, and a prescription drugs plan for the covered population with chronic diseases.

The social security system in The Bahamas is quite comprehensive and is universal in the sense that those who are not able to qualify for a pension can receive assistance payments. This system should be preserved. The expenditures of the Short-term Benefits Branch have been exceptionally high because of higher unemployment benefits paid in 2020 due to the severe contraction of the GDP and job losses caused by the COVID-19 pandemic. The main recommendation of this report is the need to adequately finance the Long-term (Pension) Branch in order to make the Scheme sustainable over the short term. Once the short-term sustainability of the NIB is fixed, other recommendations could be applied to make the scheme more comprehensive and sustainable over the long-term. Those recommendations are discussed in detail in this report.

Since the NIB has been in operation for less than 50 years, the Pension Branch has not yet reached a state of maturity and the cost of pensions expressed as a percentage of insurable earnings is still increasing. Moreover, the contribution rate allocated to the Pension Branch is the remaining contribution rate once the Short-Term Benefits Branch and the Industrial Benefits Branch are properly financed. The amount of unemployment benefits paid in 2020 is historically high at BSD108 million when compared to the average annual unemployment benefits paid at BSD12 million over the period 2014 to 2019<sup>1</sup>. Since more contributions are needed to finance the Short-term Benefits Branch, this means less contributions to finance the Pension Branch.

This 11th Actuarial Valuation of The Bahamas National Insurance Board was carried out as at 31 December 2018. The methodology used for the Pension Branch is based on a model developed by the ILO for reviewing the long-term actuarial and financial status of national pension schemes.

In this actuarial valuation, each Branch has been separately analysed and an explicit contribution rate has been calculated for each. It is recommended to divulgate a contribution rate for each branch and that the contributions be levied and allocated to each branch according to these contribution rates. In our opinion, this way of proceeding is more transparent and increases people's awareness and understanding of the scheme. The following Table presents the recommended contribution rate.

► **Table ES1. Recommended contribution rates by branch (2019-2023) (percentages)**

| Branch   | Contribution rate                         |
|--|---|
| Short-term benefits (excluding unemployment insurance) | 1.25                                      |
| Unemployment insurance                                 | 1.20                                      |
| Medical  | 0.15                                      |
| Industrial benefits                                    | 1.15                                      |
| Pension benefits                                       | Immediate increase on 1 July 2022 to 8.05 |

This actuarial valuation clearly demonstrates that an increase in contributions is necessary to make the Scheme sustainable over the short term, and that it should start now. In fact, according to this actuarial valuation:

<sup>1</sup> Unemployment benefits paid for 2019 were higher than usual due to Hurricane Dorian.

1. Total annual expenditures have been higher than annual income (contributions plus investment earnings) for the NIB since 2016, meaning that the reserve is used to pay benefits and administrative expenses.
2. As time passes, the investment policy is less and less aligned with the real financial situation of the scheme. The Pensions Benefits Branch is now in a severe disinvesting mode. The cumulative deficit (total income minus total expenditures) over the period 2019 to 2021 is expected to be BSD276 million, exacerbating the continuous decrease of the reserve.
3. Under the current parameters, the reserve for the Pensions Branch will be exhausted in 2028, one year earlier than in the previous actuarial review. Immediate actions are needed to restore not only the long-term financial sustainability of the scheme, but most importantly, the short-term.
4. Starting in 2029, the required annual contribution rate to pay for all expenditures becomes the pay-as-you-go (PAYG) rate. As an illustration, the contribution rate will have to increase from 9.8 per cent to 16.9 per cent in 2029 and will reach 32.3 per cent in 2078.
5. The required contribution rate to pay all expenditures of all branches during the next 60 years is 22.55 per cent. Higher unemployment benefits paid in 2020 due to the severe contraction of the GDP because of the COVID-19 pandemic increases the required contribution rate to 23.05 per cent from 2019 to 2023.<sup>2</sup>

It is recommended that over the short term, the contribution rate for the Pension Branch be increased to a level that is at least equal to the PAYG rate, which is estimated to average 11.0 per cent in the period 2019-2023. Considering the implications of an increase of the contribution rate, the schedule of increase should take into account the socioeconomic situation of the country and the Government's priorities and be underpinned by agreements with social partners.

An increase of the contribution rate by 2.0 per cent (over the existing 9.8 per cent) every two years starting on 1 July 2022 and ending on 1 July 2036, could restore the short- and medium-term financial sustainability of the scheme. Because the contribution rate from 1 July 2036 is likely to not be sufficient in the future, it is strongly recommended that future contribution increases, and their frequency be discussed by the stakeholders and become part of a funding policy.

Other options could also be considered to reduce the financial pressure on the NIB, including modification to the pension accrual rate, the retirement age, or the funding of the assistance benefits. Nonetheless, the analysis and tests conducted in Sections 5 and 6 show that the reform options considered cannot prevent an immediate increase of the contribution rate to avert the exhaustion of the reserve by 2028.

This review includes a rapid assessment of the compatibility of the current provisions of The Bahamas' social security legislation concerning Sickness, Unemployment, Old Age, Maternity, Invalidity, and Survivors benefits with the benchmarks and principles set out in the ILO Social Security (Minimum Standards) Convention, 1952 (No. 102). Ratification of Convention No. 102, requires acceptance of at least three of the nine branches set out in Parts II-X, including at least one among the following: Unemployment Benefits (Part IV), Old-Age Benefits (Part V), Employment Injury Benefits (Part VI), Invalidity Benefits (Part IX) or Survivor's Benefits (Part X). From the analysis detailed in Appendix 6, it can be concluded that The Bahamas would be in a position to ratify Part III (Sickness), Part IV (Unemployment); Parts V (Old Age) and Part VIII (Maternity) as it appears that the national legal framework meets or exceeds the minimum parameters established by Convention No. 102. It is therefore recommended that the Government of The Bahamas starts the procedure of ratification of Convention No. 102.

<sup>2</sup> The required contribution rate from 2019 to 2023 is 23.05 per cent; and 22.55 per cent from 2024 and thereafter.

## ► Acronyms and abbreviations

---

|         |  |
|---------|--|
| BSD     | Bahamian dollar                          |
| CARICOM | Caribbean Community                      |
| CPI     | Consumer Price Index                     |
| GAP     | general average premium                  |
| GDP     | gross domestic product                   |
| ILO     | International Labour Office/Organization |
| IMF     | International Monetary Fund              |
| NIB     | National Insurance Board                 |
| NPDP    | National Prescription Drug Plan          |
| PAYG    | pay-as-you-go                            |
| RER     | reserve-to-expenditures ratio            |
| TFR     | total fertility rate                     |
| UNICEF  | United Nations Children's Fund           |
| UN      | United Nations                           |
| WHO     | World Health Organization                |

## ► Introduction

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The NIB began its operations in October 1974. It offers comprehensive protection for old age, disability, death, employment injury, unemployment insurance, maternity and sickness benefits, and a drug plan for the covered population with chronic diseases.

Section 48 of the National Insurance Act (the Act) requires that an actuarial review of the Fund be conducted at least every five years. This is the Eleventh Actuarial Valuation of The National Insurance Fund; it was performed as at 31 December 2018, five years after the previous review.

This valuation was carried out under the terms of an agreement between the National Insurance Board and the International Labour Office (ILO).

There are seven Chapters in the report. The first presents the scheme experience and new developments since the last actuarial valuation, together with investment performance and funding issues. The second concentrates on the projection of the general population and of the economy in The Bahamas. Chapter 3 concerns demographic and financial projections of all branches on a best-estimate basis and according to the legal provisions of the scheme. Chapter 4 deals with the reconciliation of results between the 10th and 11th valuations. Chapter 5 presents the sensitivity analysis, while Chapter 6 proposes certain pension reforms such as an increase in the retirement age as well as discusses other issues. Chapter 7 concludes the valuation and makes recommendations.

## ► 1. Review of NIB's performance and developments since the 10<sup>th</sup> actuarial valuation of 2013

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### 1.1 Changes since the 10th actuarial valuation

The main changes to the Scheme's provisions since the last actuarial valuation of the NIB are:

- The ceiling on insurable earnings is adjusted automatically every two years since July 2014.<sup>3</sup> The ceiling on insurable earnings has increased from BSD600 to 670 per week between 31 December 2013 and 31 December 2018. Since July 2020, the ceiling on insurable earnings is at BSD710 per week.
- The minimum amounts of pensions and grants have been indexed since the last actuarial valuation. Pensions are indexed automatically every two years. The first adjustment occurred July 2012<sup>4</sup>. Those amounts are presented in Appendix 1.
- With effect from 1 January 2015, The Bahamas Government has agreed to reimburse all expenses related to the National Prescription Drug Plan. The medical benefits branch has incurred no cost relative to the National Prescription Drug Plan.
- The above-mentioned changes have been reflected into the current actuarial valuation of the Scheme.

### 1.2 Review of the legal framework in light of international social security standards and principles

This section contains a rapid assessment of the compatibility of the current provisions of Bahamas' social security legislation concerning Sickness, Unemployment, Old Age, Maternity, Invalidity, and Survivors benefits with the benchmarks and principles set out in the ILO Social Security (Minimum Standards) Convention, 1952 (No. 102). It also contains an assessment of the implementation of these provisions, to the extent that available statistical information and prevailing practice were available. Finally, this review takes into consideration best international practice where appropriate.

The following legislative instruments have been reviewed:

- National Insurance Act as amended by Law No. 2 of 2009;
- National Insurance (General Benefit) Regulations as amended by the National Insurance (Benefit and Assistance) (Amendment) 2010 (S.I. No. 101 of 2010), the National Insurance (Benefit and Assistance) (Amendment) 2012 (S.I. No. 7 of 2012), the National Insurance (Benefit and Assistance) (Amendment) 2012 (S.I. No. 35 of 2012) and the National Insurance (Benefit and Assistance) (Amendment) 2012 (S.I. No. 91 of 2012);
- Official Gazette Prescription Drug Fund Act 2009.

Convention No. 102 is ILO's landmark instrument that adopts a holistic vision of social security and sets minimum qualitative and quantitative benchmarks with respect to the nine social security contingencies, including sickness, maternity and employment injury benefits as well as old age, invalidity and death of the breadwinner as well as administrative and financial rules for the good governance of social security systems. Over the years, it has become a world reference for the development of adequate and sustainable social security schemes, from policy design to implementation of parameters. In addition to the minimum levels

<sup>3</sup> Every two years, the ceiling is increased based on the change in the Retail Price Index of The Bahamas over the immediately preceding two calendar years plus 2 per cent.

<sup>4</sup> Every two years, pensions are increased based on the change in the Retail Price Index of the Bahamas over the immediately preceding two calendar years.

established by Convention No. 102, the ILO has also adopted a set of higher standards for the various branches of social security, aiming at universal coverage and higher benefit levels.

The review undertaken in this section will provide the Government of Bahamas with a picture where its social security legislation as described in Annex 1, stands in comparison to the requirements of Convention No. 102 and in particular as regards Parts III (Sickness Benefits), Part IV (Unemployment Benefits); V (Old-age Benefits), VIII (Maternity Benefits), IX (Invalidity Benefits) and X (Survivors Benefits) of Convention No. 102. It will further serve to identify potential gaps in protection and explore possible areas for improvement based on principles enshrined in international legal frameworks and available best practices. Together with the conclusions and recommendations of the actuarial study, the ILO normative framework constitutes a useful reference for future action. Observing at least the minimum parameters established by Convention No. 102 would contribute to maintaining a sustainable social security system aimed at securing the right of everyone to social security assumed under Article 9 of the International Covenant on Economic, Social and Cultural Rights, 1966, to which Bahamas acceded in 2008.

It can be noted that Bahamas is party to the following ILO Social Security Conventions:

- ▶ Workmen's Compensation (Agriculture) Convention, 1921 (No. 12), ratified on 25 May 1976
- ▶ Workmen's Compensation (Accidents) Convention, 1925 (No. 17), ratified on 25 May 1976
- ▶ Equality of Treatment (Accident Compensation) Convention (No. 19), ratified on 25 May 1976
- ▶ Workmen's Compensation (Occupational Diseases) Convention (Revised), 1934 (No. 42), ratified on 25 May 1976
- ▶ Maternity Protection Convention (Revised), 1952 (No. 103), ratified on 14 June 2001

It is also worth mentioning that the Governing Body of the ILO adopted the conclusions and recommendations formulated by the Standards Review Mechanism Tripartite Working Group (SRM TWG) encouraging States party in particular to outdated conventions to consider ratification of the most up-to-date instruments in this subject area, notably the Social Security (Minimum Standards) Convention, 1952 (No. 102), the Employment Injury Benefits Convention, No. 121 and Equality of Treatment (Social Security) Convention, 1962 (No. 118).

The ILO stands ready to provide a more in depth assessment as regards the compliance of the national social security law and practice against the Convention No.102, including as regards other parts and notably Parts II (Medical care), VII (Family Benefit), and XII (Common Provisions), should the Government so request.

## 1.2.1 Compliance with Convention No. 102

Ratification of Convention No. 102, requires acceptance of at least three of the nine branches set out in Parts II-X, including at least one among the following: Unemployment Benefits (Part IV), Old-Age Benefits (Part V), Employment Injury Benefits (Part VI), Invalidity Benefits (Part IX) or Survivor's Benefits (Part X).

From the analysis detailed in Appendix 6, it can be concluded that Bahamas would be in a position to ratify **Part III (Sickness), Part IV (Unemployment); Parts V (Old Age) and Part VIII (Maternity)** as it appears that the national legal framework meets or exceeds the minimum parameters established by Convention No. 102 as regards in particular:

- ▶ the definition of the contingency;
- ▶ the personal scope of coverage;
- ▶ the qualifying conditions.
- ▶ the level of the benefit; and
- ▶ the minimum duration over which the benefit should be provided.

The Government may wish to confirm the scope and range of medical maternity benefits provided to female employees and to the dependents wives of employees, in particular under the universal public health scheme, and the extent to which patients may be required to participate in the cost of such care.

With respect to other contingencies covered by Bahamas social security legislative framework, the following points should be addressed in order to comply with the above-mentioned minimum standards of Convention No. 102:

### Part IX (Invalidity):

Current benefit rate (16% of average weekly earnings for the first 150 weekly contributions + 2% for each additional 50 contributions up to 500 + 1% for each additional 50 contributions over 500) is lower than the minimum benefit under Part IX (40% of former earnings of the insured worker after 15 years of contributions). Confirmation that the invalidity pension does not cease at a specific age unless an age-pension is payable.

### Part X (Survivors):

The survivor pension is lower than the minimum pension benefit under Part X (40% of former earnings of the insured worker after 15 years of contributions).

The ILO stands ready to support the Government in undertaking reforms to bring their national legislation in line with the international minimum social security standards set by, Convention No. 102, and in further assessing the compliance between the national legal framework and other branches of Convention No. 102 should the Government consider ratifying this Convention.

## 1.3 Financial developments since the last actuarial valuation

Internal accounting procedures at the NIB separates finances into four branches: Short-term Benefits Branch, Medical (prescription drugs) Benefits Branch, Industrial Benefits Branch, and Long-term (Pension) Benefits Branch. It is a very good monitoring approach, since these four branches have different characteristics (frequency, severity, duration of payment) and financing mechanisms. Contributions for each branch are allocated according to a stated proportion while the allocation of investment income and administrative expenses is made according to internal accounting procedures.

Table 1.1 shows the consolidated statement of account for the period 2013 to 2018 inclusively. While income exceeded expenditures in 2013, 2014 and 2015, expenditures exceeded income in each of the financial years starting from 2016.

► **Table 1.1 Consolidated statement of account, 2013–18 (BSD '000s)**

|                                       | 2013             | 2014             | 2015             | 2016             | 2017             | 2018             |
|---------------------------------------|------------------|------------------|------------------|------------------|------------------|------------------|
| <b>Total income</b>                   | <b>316 113</b>   | <b>311 738</b>   | <b>366 638</b>   | <b>314 927</b>   | <b>332 497</b>   | <b>352 877</b>   |
| Contributions income                  | 229 369          | 244 535          | 260 460          | 261 191          | 277 485          | 283 939          |
| Investment Income                     | 86 280           | 66 636           | 105 552          | 52 427           | 53 292           | 66 615           |
| Other income                          | 464              | 567              | 626              | 1 309            | 1 720            | 2 323            |
| <b>Total expenditures</b>             | <b>282 461</b>   | <b>300 255</b>   | <b>303 414</b>   | <b>327 301</b>   | <b>336 588</b>   | <b>351 005</b>   |
| Benefits paid                         | 232 072          | 255 717          | 258 747          | 274 889          | 286 339          | 291 668          |
| General and administrative costs      | 50 674           | 44 438           | 44 667           | 52 412           | 50 249           | 58 177           |
| Other expenses                        | (285)            | 100              | -                | -                | -                | 1 160            |
| <b>Surplus</b>                        | <b>33 652</b>    | <b>11 483</b>    | <b>63 224</b>    | <b>(12 374)</b>  | <b>(4 091)</b>   | <b>1 872</b>     |
| <b>Changes in accounting policies</b> |                  |                  |                  |                  |                  | <b>(9 216)</b>   |
| <b>Net assets at year end</b>         | <b>1 686 620</b> | <b>1 698 103</b> | <b>1 761 327</b> | <b>1 748 953</b> | <b>1 735 646</b> | <b>1 737 518</b> |

Note: Benefit expenditure of the NPDP has been transferred from administrative expenditure to benefits paid. Unclaimed benefits have been reflected in the benefits paid. General and administrative costs include remeasurements in the defined benefit obligation. Transfer from a branch to another is not explicitly reflected in this consolidated statement. Changes in accounting policies refers to a remeasurement due to a change from IAS 39 to IFRS 9 occurred on 1 January 2018.

Source: NIB annual reports 2013 to 2018.

Overall, between financial years 2013 and 2018, total income increased by 8.7 per cent while total expenditure increased by 24.3 per cent. More specifically:

- ▶ contribution income to the NIB has increased by 23.8 per cent between financial years 2013 and 2018 (or about 4.4 per cent per year on average);
- ▶ investment income in 2018 is 33 per cent lower than in 2013;
- ▶ nominal investment return has, on average, been 4.0 per cent per year over the period between 31 December 2013 and 31 December 2018;
- ▶ benefit expenditure has increased by 25.7 per cent (or about 4.7 per cent per year on average); and
- ▶ expenses other than benefits (general and administrative expenses and other expenses) remained relatively stable in the past few years, averaging at 18.9 per cent of contribution income during financial years 2014 to 2018.

Figure 1.1 presents the effective contribution rates and the PAYG cost rates experienced during financial years 2013 to 2018, for all benefits Branches of the NIB combined. The PAYG rate is the rate that is necessary to pay all expenditures (benefits expenses and expenses other than benefits) in any given year. The figure also illustrates the PAYG cost rates related to the benefits expenses, and the general and administrative expenses and other expenses experienced by the Scheme.

▶ **Figure 1.1. Effective contribution rates and PAYG cost rates, financial years 2013–18**

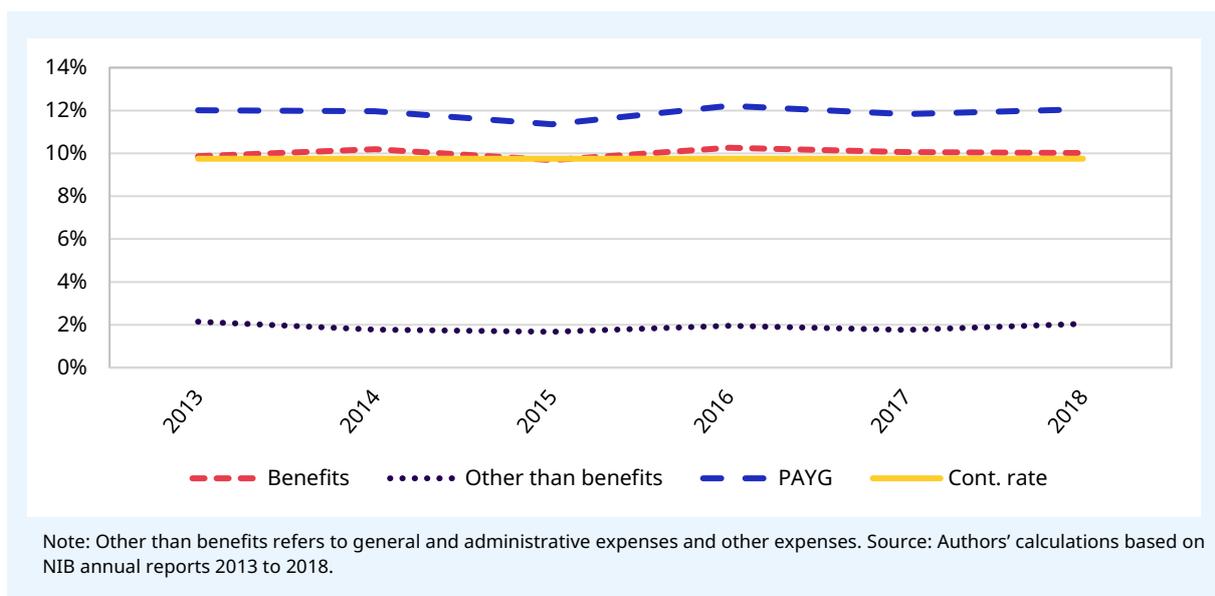
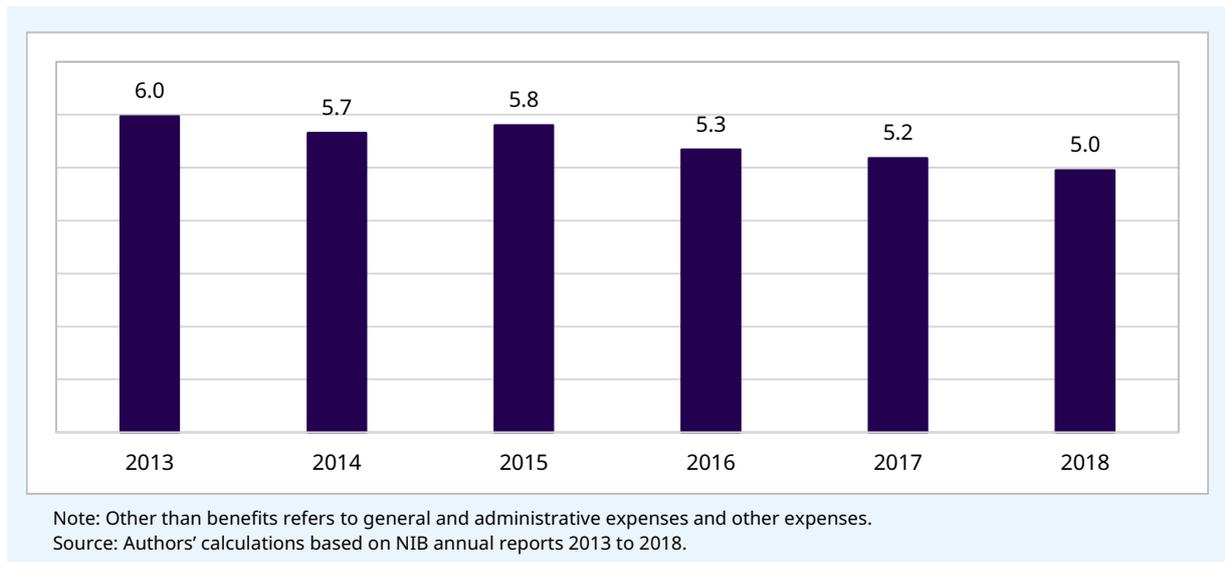


Figure 1.1 highlights the overall cost of the Scheme in relation to members' insurable earnings. In the period 2013 to 2018, the PAYG cost rates of the scheme averaged 11.9 per cent of insurable earnings, about 2.2 per cent higher than the Scheme's effective contribution rates over the same period. The Scheme's benefits expenses represented, on average, 10.0 per cent of members' insurable earnings over the period 2013 to 2018, while the Scheme's general and administrative expenses and other expenses averaged 1.9 per cent of members' insurable earnings.

Since the PAYG cost rates of the Scheme exceeded the Scheme's effective contribution rate in each year since 2013, the NIB used its investment income for 2013-2018, and a portion of its accumulated reserve for 2016, 2017 and 2018 to pay the Scheme's expenditure.

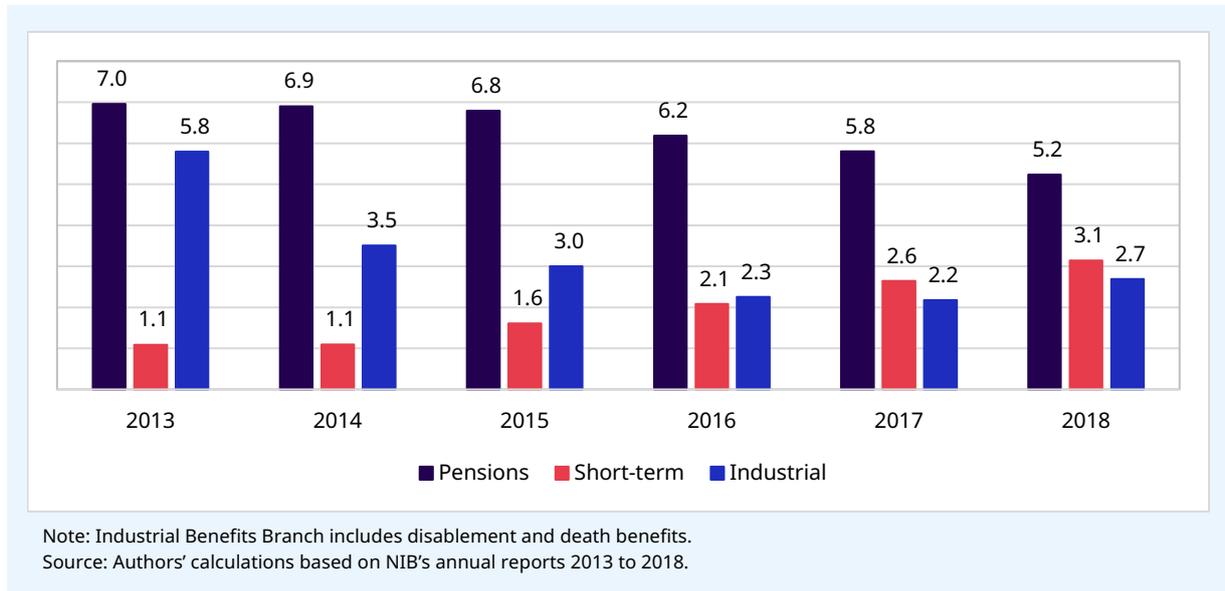
Figure 1.2 illustrates the reserve-to-expenditure ratio (RER) of the Scheme for the financial years 2013 to 2018. The overall annual RER of the Scheme decreased gradually since 2013, from 6.0 in 2013 to 5.0 in 2018.

► **Figure 1.2. Reserve-to-expenditures ratio (2013-18)**



The RER evolved differently among the different benefits branches of the NIB. Figure 1.3 illustrates the RERs for each Branch of benefits between financial years 2013 to 2018.

► **Figure 1.3. Reserve-to-expenditures ratios by benefits branch, financial years 2013-18**



Over the years 2013 to 2018, the Scheme experienced the following:

- The RER of the Pensions Branch has decreased from 7.0 on 31 December 2013 to 5.2 on 31 December 2018.
- The RER of the Short-term Branch has increased from 1.1 on 31 December 2013 to 3.1 on 31 December 2018.
- The RER of the Industrial Branch has decreased from 5.8 on 31 December 2013 to 2.2 on 31 December 2017. It then reached 2.7 at the end of the financial year 2018.

The following Sections (1.3.1 to 1.3.4) present more details on the trends observed on contribution income, investment income, benefits expenses, and expenses other than benefits for the period 2013-2018.

### 1.3.1. Contribution income

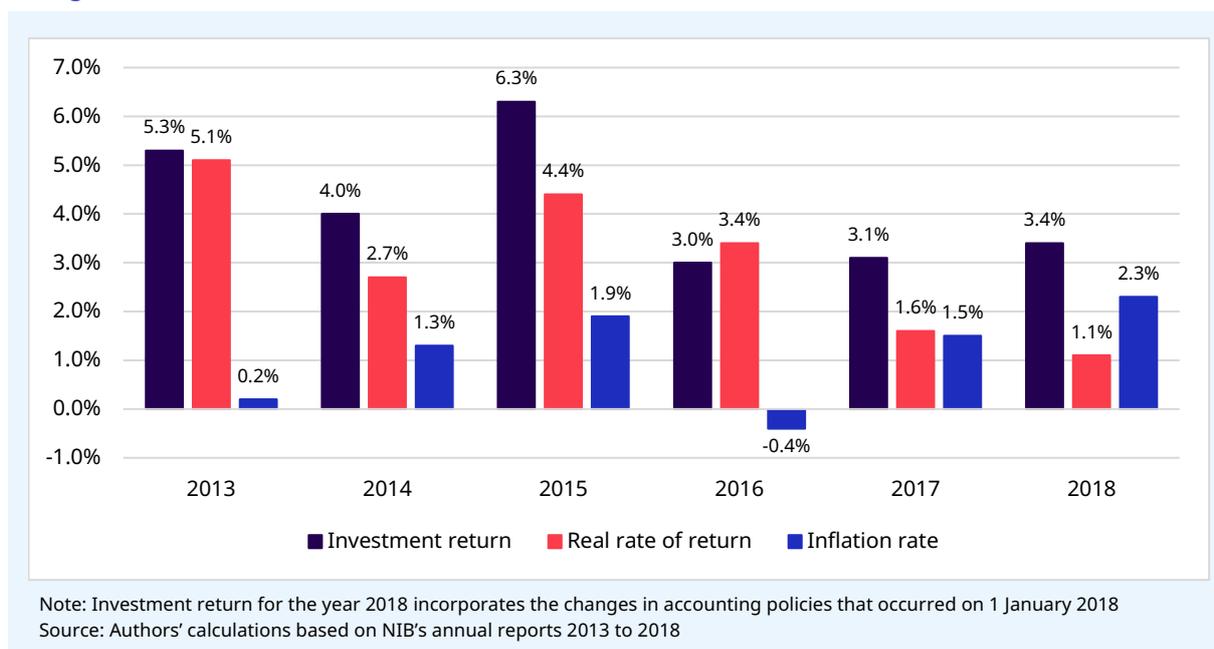
In a scheme such as the NIB, a strong relationship remains between the number of active members, the density of contribution, the monthly insurable earnings, and the contribution income. As presented above, on an annual basis, the contribution income to the Scheme increased by approximately 4.4 per cent between the financial years 2013 and 2018. This increase is explained by the combination of:

- ▶ an increase in the number of members actively contributing to the Scheme by approximately 9.7 per cent (about 1.9 per cent per year on average); and
- ▶ an increase in members' average insurable earnings<sup>5</sup> by approximately 12.9 per cent (about 2.4 per cent per year on average).

### 1.3.2. Investment income

The annual nominal investment rates of return averaged at 4.0 per cent between 31 December 2013 and 31 December 2018, 2.7 per cent higher than the annual inflation experienced over the same period. Figure 1.4 presents the annual investment rates of return experienced by the Scheme, as well as the inflation rates for the period 2013-18.

▶ **Figure 1.4. Nominal and real rates of return on investment and inflation rate, annual basis, 2013-18**



### 1.3.3. Benefits expenses

The NIB provides a large variety of benefits under its three benefits Branches:

- ▶ Short-term Branch: sickness benefits and assistance, unemployment benefits, maternity benefits and grants, funeral benefits;

<sup>5</sup> Combined with density (i.e. reported insurable earnings) contrary to full-time insurable earnings. Reported insurable earnings = full-time insurable earnings x density of contribution.

- ▶ Pensions Branch: retirement and old-age benefits, survivors' benefits and assistance, invalidity benefits and assistance; and
- ▶ Industrial Branch: medical care, injury benefits, disablement benefits and grants and death benefits.

Table 1.2 presents the benefits paid by the Scheme from financial years 2013 to 2018.

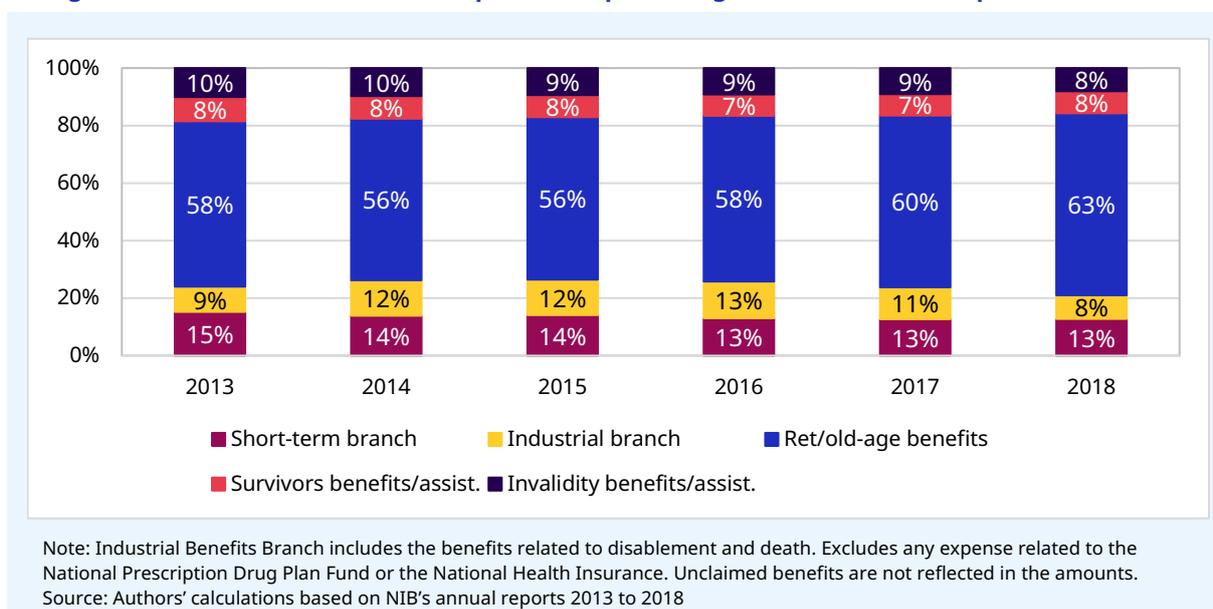
▶ **Table 1.2. Consolidated benefits expenses, financial years 2013–18 (BSD '000s)**

|                                    | 2013           | 2014           | 2015           | 2016           | 2017           | 2018           |
|------------------------------------|----------------|----------------|----------------|----------------|----------------|----------------|
| <b>Short-term Branch</b>           | <b>33 898</b>  | <b>33 866</b>  | <b>36 516</b>  | <b>35 739</b>  | <b>36 435</b>  | <b>37 308</b>  |
| Sickness benefits and assistance   | 12 722         | 13 221         | 11 738         | 11 025         | 12 975         | 13 183         |
| Unemployment benefits              | 10 432         | 9 347          | 13 222         | 13 201         | 10 992         | 11 707         |
| Maternity benefits and grants      | 8 131          | 8 498          | 8 605          | 8 568          | 9 280          | 8 987          |
| Funeral benefits                   | 2 613          | 2 800          | 2 951          | 2 945          | 3 188          | 3 431          |
| <b>Pensions Branch</b>             | <b>169 350</b> | <b>180 130</b> | <b>190 378</b> | <b>204 096</b> | <b>218 349</b> | <b>230 512</b> |
| Retirement and old-age benefits    | 128 183        | 137 241        | 146 237        | 158 457        | 171 207        | 184 540        |
| Survivors' benefits and assistance | 18 693         | 19 235         | 19 899         | 20 483         | 21 344         | 22 380         |
| Invalidity benefits and assistance | 22 474         | 23 654         | 24 242         | 25 156         | 25 798         | 23 592         |
| <b>Industrial Branch</b>           | <b>19 441</b>  | <b>30 080</b>  | <b>31 950</b>  | <b>35 320</b>  | <b>31 705</b>  | <b>23 933</b>  |
| Medical care                       | 12 070         | 20 355         | 20 912         | 23 712         | 18 703         | 11 845         |
| Injury benefits                    | 2 911          | 3 757          | 4 169          | 4 087          | 4 273          | 3 975          |
| Death benefits                     | 414            | 383            | 492            | 360            | 309            | 282            |
| Disablement benefits and grants    | 4 046          | 5 585          | 6 377          | 7 161          | 8 420          | 7 831          |
| <b>Total</b>                       | <b>222 689</b> | <b>244 076</b> | <b>258 844</b> | <b>275 155</b> | <b>286 489</b> | <b>291 753</b> |

Note: Industrial Benefits Branch includes the benefits related to disablement and death. Excludes any expense related to the National Prescription Drug Plan Fund or the National Health Insurance. Unclaimed benefits are not reflected in the amounts.  
Source: NIB annual reports 2013 to 2018.

While the benefits paid in the Short-term and Industrial Branches remained relatively contained during the financial years 2013 to 2018, the benefits paid under the Pensions Branch increased by an average of 6.4 per cent each year over the same period. Figure 1.5 illustrates the share of each benefit paid by the Scheme between the financial years 2013 to 2018.

▶ **Figure 1.5. Consolidated benefits expenses, as percentage of total benefits expenses, 2013–18**



Since the last actuarial valuations as of 31 December 2013:

- ▶ The share of short-term benefits expenses to the Scheme's total benefits expenses decreased from 15 per cent in 2013 to 13 per cent in 2018.
- ▶ Although the share of industrial benefits expenses to the Scheme's total benefits expenses has increased from 9 to 13 per cent between 2013 and 2016, it then gradually decreased to 8 per cent in 2018.
- ▶ The share of long-term benefits expenses (Pensions Branch) to the Scheme's total benefits expenses increased from 58 per cent in 2013 to 63 per cent in 2018. This increase in the share of pensions benefits to the Scheme's total benefits expenses is explained by the continuous growth of the benefits expenses related to the retirement benefits during the 2013-2018 period.

To show the importance of each benefit provided by the Scheme, the PAYG cost rate has been calculated for each type of benefit.

▶ **Table 1.3. PAYG cost rate by type of benefit paid, financial years 2013–18 (percentages)**

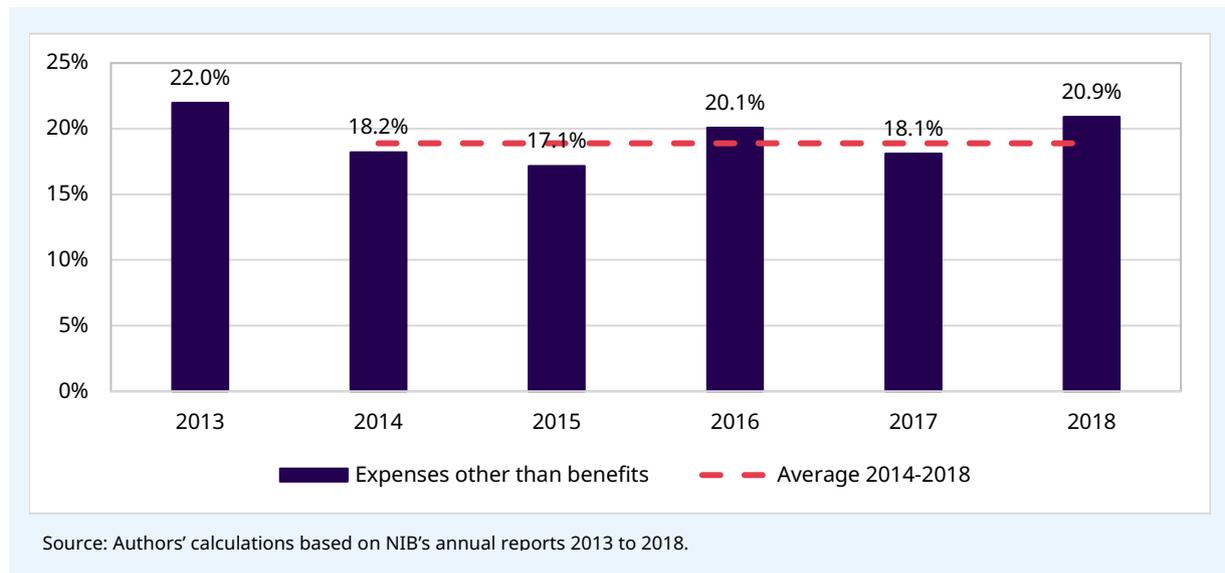
|                                    | 2013       | 2014       | 2015       | 2016        | 2017        | 2018 <sup>1</sup> |
|------------------------------------|------------|------------|------------|-------------|-------------|-------------------|
| <b>Short-term Branch</b>           | <b>1.4</b> | <b>1.4</b> | <b>1.4</b> | <b>1.3</b>  | <b>1.3</b>  | <b>1.3</b>        |
| Sickness benefits and assistance   | 0.5        | 0.5        | 0.4        | 0.4         | 0.5         | 0.5               |
| Unemployment benefits              | 0.4        | 0.4        | 0.5        | 0.5         | 0.4         | 0.4               |
| Maternity benefits and grants      | 0.3        | 0.3        | 0.3        | 0.3         | 0.3         | 0.3               |
| Funeral benefits                   | 0.1        | 0.1        | 0.1        | 0.1         | 0.1         | 0.1               |
| <b>Pensions Branch</b>             | <b>7.2</b> | <b>7.2</b> | <b>7.1</b> | <b>7.6</b>  | <b>7.7</b>  | <b>7.9</b>        |
| Retirement and old-age benefits    | 5.4        | 5.5        | 5.5        | 5.9         | 6.0         | 6.3               |
| Survivors' benefits and assistance | 0.8        | 0.8        | 0.7        | 0.8         | 0.7         | 0.8               |
| Invalidity benefits and assistance | 1.0        | 0.9        | 0.9        | 0.9         | 0.9         | 0.8               |
| <b>Industrial Branch</b>           | <b>0.8</b> | <b>1.2</b> | <b>1.2</b> | <b>1.3</b>  | <b>1.1</b>  | <b>0.8</b>        |
| Medical care                       | 0.5        | 0.8        | 0.8        | 0.9         | 0.7         | 0.4               |
| Injury benefits                    | 0.1        | 0.1        | 0.2        | 0.2         | 0.2         | 0.1               |
| Death benefits                     | 0.0        | 0.0        | 0.0        | 0.0         | 0.0         | 0.0               |
| Disablement benefits and grants    | 0.2        | 0.2        | 0.2        | 0.3         | 0.3         | 0.3               |
| <b>Total</b>                       | <b>9.5</b> | <b>9.7</b> | <b>9.7</b> | <b>10.3</b> | <b>10.1</b> | <b>10.0</b>       |

Note: Industrial Benefits Branch includes the benefits related to disablement and death. Excludes any expense related to the National Prescription Drug Plan Fund or the National Health Insurance. Unclaimed benefits are not reflected in the amounts.  
Source: NIB's annual reports 2013 to 2018.

#### 1.3.4. Expenses other than benefits

As previously mentioned, expenses other than benefits (general and administrative expenses and other expenses) remained relatively stable since the last actuarial valuation of the Scheme, varying annually between 17.1 and 20.9 per cent of the contribution income. During financial years 2014 to 2018, expenses other than benefits have represented, on average, 18.9 per cent of the Scheme's contribution income. Figure 1.6 presents the general and administrative expenses and other expenses in relation to the Scheme's contribution income over the financial years 2013 to 2018.

► **Figure 1.6. General and administrative expenses and other expenses in relation to contribution income, financial years 2013-18**



In a mature scheme, administrative costs usually represent a rather low proportion of the overall insurable earnings. In a scheme just starting, there are obviously several costs that are linked to the initiation of the scheme, such as staff training, building the information technology (IT) structure, and implementing a mechanism to collect contributions and pay benefits. It should not be surprising that there is no ready mechanism available to assess the appropriateness of administrative costs at the inception of a scheme.

However, several useful tools can be used to benchmark the size of these expenditures. For example, ratios are used in many countries to fix limits. These ratios are as follows:

- **Administrative costs/contribution income:** this ratio is much affected by the contribution rate. As this will probably evolve during the scheme's lifetime, the ratio has to be used carefully. The ratio is also affected by the size of the covered population, as well as limits to insurable earnings.
- **Administrative costs/insurable earnings:** this ratio is more robust than the previous ratio. However, as insurable earnings usually increase faster than inflation, relatively high administrative costs in relative and absolute value may develop over the long term. The ratio is also affected by the inclusion/exclusion of new groups of those to be covered. It can also be influenced by an eventual limit on insurable earnings.
- **Administrative costs/benefit expenditures:** for a scheme that is not mature, this ratio is not recommended, since benefit payments are very low at the inception of the scheme, unless sizeable temporary measures are put in place. This ratio will naturally decrease steeply as benefits grow, but that by no means signifies that a more efficient administration exists. This ratio is also affected by adjustments to benefits following, for example, a reform in the pension system.
- **Annual increase limited to inflation:** this option may be interesting several years after the inception of the scheme. Before this benchmark is considered, any costs related to the inception of the scheme should be reduced to their minimum, and a careful analysis of relevant expenditures should be made.

## 1.4. Comparison of the projection of the last actuarial valuation and the experience between 2013-2018

To understand the direction the Scheme could take in the future, it is important to understand past experience. To do this, a comparison is made between the actual experience of the Scheme since the last actuarial valuation, and what was expected since the latest actuarial valuation of the scheme.

With such a comparison, it is not important to emphasize absolute numbers. It is rather the relation between different components of the Scheme – for example, the relation between income and expenditures – that is meaningful to the analysis.

Table 1.4 presents the difference between the financial projection from the last actuarial valuation of the Scheme and the actual experience observed between 31 December 2013 and 31 December 2018.

► **Table 1.4. Change in assets between 31 December 2013 and 31 December 2018, all benefits branches combined (BSD '000s)**

|   | Experience       | Projection from the last actuarial valuations | Difference       | Deviation (%) |
|---|------------------|---|------------------|---------------|
|   | (A)              | (B)   | (C) = (A) – (B)  | (C) / (B)     |
| <b>Assets at 31 December 2013</b>   | <b>1 686 620</b> | <b>1 686 620</b>                              | -                | <b>0.0</b>    |
| <b>Total income</b>   | <b>1 669 461</b> | <b>1 870 868</b>                              | <b>(201 407)</b> | <b>-10.8</b>  |
| Contribution income   | 1 327 610        | 1 447 708                                     | (120 098)        | -8.3          |
| Investment income   | 335 306          | 398 537                                       | (63 231)         | -15.9         |
| Other income  | 6 545            | 24 623  | (18 078)         | -73.4         |
| <b>Total expenditure</b>  | <b>1 618 563</b> | <b>1 817 394</b>                              | <b>(198 831)</b> | <b>-10.9</b>  |
| Benefits expenses   | 1 367 360        | 1 542 182                                     | (174 822)        | -11.3         |
| Expenses other than <i>benefits</i>   | 251 203          | 275 212                                       | (24 009)         | -8.7          |
| <b>Assets at 31 December 2018</b>   | <b>1 737 518</b> | <b>1 740 094</b>                              | <b>(2 576)</b>   | <b>-0.1</b>   |
| Note: Investment income incorporates the changes in accounting policies that occurred on 1 January 2018 |                  |   |                  |               |
| Source: Annual reports 2014-18 and projections from last actuarial valuation, calculation from Authors. |                  |   |                  |               |

Between 31 December 2013 and 31 December 2018, the Scheme's total income was 10.8 per cent lower than projected and the total expenditure was 10.9 per cent lower than projected. All in all, assets as at 31 December 2018 were about BSD2.6 million lower than projected, a deviation of only 0.1 per cent. The major sources of deviation between the projection and the experience are discussed in the following sections.

### 1.4.1. Income

The contribution income in the period 2014-18 explains almost 60 per cent of the deviation observed between the Scheme's actual and projected total income between 31 December 2013 and 31 December 2018 (see Table 1.4). While the contribution income was projected to reach BSD1,447.7 million in the five-year period from 31 December 2013 to 31 December 2018, it has reached BSD1,327.6 million (a deviation of 8.3 per cent). The contribution income relies mostly on the number of active members contributing to the Scheme and their insurable earnings. Table 1.5 presents the experienced and the projected contribution incomes, active members and insurable earnings since the last actuarial valuation of the scheme as at 31 December 2013.

► **Table 1.5. Average annual increases in contribution income, active members and insurable earnings, projection from the last actuarial valuation and actual experience, 2014-18 (percentages)**

|   | Experience | Projection from the last actuarial valuation | Difference      |
|---|------------|--|-----------------|
|   | (A)        | (B)  | (C) = (A) – (B) |
| Contribution income   | 4.4        | 7.2  | -2.8            |
| Active members  | 1.9        | 1.9  | 0.0             |
| Insurable earnings – nominal  | 2.4        | 5.2  | -2.8            |
| Insurable earnings – real   | 1.1        | 2.6  | -1.5            |
| Inflation   | 1.3        | 2.5  | -1.2            |
| Source: Annual reports 2014-18 and projections from last actuarial valuation, calculation from Authors. |            |  |                 |

According to the NIB's annual reports, the Scheme's contribution income increased by an average of 4.4 per cent per year between financial years 2013 and 2018, or 2.8 per cent lower than projected annually over the period. This deviation is fully explained by the members' insurable earnings. Since the last actuarial valuation of the Scheme as at 31 December 2013, members' insurable earnings increased at an average rate of 2.4 per cent per year, 2.8 per cent lower than anticipated annually. In real terms, members' insurable earnings increased by 1.1 per cent annually, 1.5 per cent lower than projected in the last actuarial valuation of the Scheme.

The investment income explains approximately 31 per cent of the deviation observed between the scheme's actual and projected total income between 31 December 2013 and 31 December 2018 (see Table 1.4). Table 1.6 shows the deviation of projected and experienced nominal and real rates of return on assets between 31 December 2013 and 31 December 2018.

► **Table 1.6. Average annual rate of return on assets, projection from the last actuarial valuation and actual experience, 2014-18 (percentages)**

|                             | Experience | Projection from the last actuarial valuation | Difference      |
|-----------------------------|------------|--|-----------------|
|                             | (A)        | (B)  | (C) = (A) - (B) |
| Investment return – nominal | 4.0        | 4.6  | -0.6            |
| Investment return – real    | 2.7        | 2.1  | 0.6             |
| Inflation                   | 1.3        | 2.5  | -1.2            |

Note: Investment return incorporates the changes in accounting policies that occurred on 1 January 201  
Source: Annual reports 2014-18 and projections from last actuarial valuation, calculation from Authors.

The annual nominal rate of return on assets of the NIB has averaged to 4.0 per cent since between 31 December 2013 and 31 December 2018, 0.6 per cent lower than projected in the last actuarial valuation. If the effect of inflation is excluded, the real return on assets averaged at 2.7 per cent over the period 2014-2018, 0.6 per cent higher than projected in the last actuarial valuation. The deviation observed between the Scheme's actual and projected investment return during the period 2014-2018 is therefore largely explained by the inflation rate. While the investment performance has been higher in real terms than the assumptions used in the last three actuarial valuations, it does not mean that this past performance is going to continue in the future. The low interest rate context that currently prevails and the need for liquidity because of the expected decreasing surplus are going to continue to put downward pressure on the return.

The other income explains the remaining 9 per cent of the deviation observed between the Scheme's actual and projected total income between 31 December 2013 and 31 December 2018 (see Table 1.4).

## 1.4.2. Expenses

Benefits expenses represents 88 per cent of the deviation observed between the Scheme's actual and projected total expenses between 31 December 2013 and 31 December 2018 (see Table 1.4). While the benefits expenses were projected at BSD1,542.2 million in the period 2014-18, it has represented BSD1,367.4 million (a deviation of 11.3 per cent). On the other hand, expenses other than benefits represents 12 per cent of the deviation observed between the scheme's actual and projected total expenses between 31 December 2013 and 31 December 2018. While the expenses other than benefits were projected at BSD275.2 million in the period 2014-18, it has represented BSD251.2 million (a deviation of 8.7 per cent).

Table 1.7 compares the projections of expenses from the last actuarial valuation with the Scheme's actual experience for the period 2014-18.

► **Table 1.7. Expectations in the last actuarial valuation compared with actual experience (2014-18) (percentages)**

|  | 2014 | 2015 | 2016 | 2017 | 2018 | Average |
|--|------|------|------|------|------|---------|
| <b>Ratio of total expenses to total insurable earnings</b>   |      |      |      |      |      |         |
| Last actuarial valuation   | 12.5 | 12.7 | 13.1 | 13.2 | 13.5 | 13.0    |
| Experience   | 12.0 | 11.4 | 12.2 | 11.8 | 12.1 | 11.9    |
| <b>Ratio of benefit expenses to total insurable earnings</b>   |      |      |      |      |      |         |
| Last actuarial valuation   | 10.5 | 10.7 | 11.1 | 11.2 | 11.5 | 11.0    |
| Experience   | 10.2 | 9.7  | 10.3 | 10.1 | 10.0 | 10.0    |
| <b>Ratio of expenses other than benefits to total insurable earnings</b>   |      |      |      |      |      |         |
| Last actuarial valuation   | 2.0  | 2.0  | 2.0  | 2.0  | 2.0  | 2.0     |
| Experience   | 1.8  | 1.7  | 2.0  | 1.8  | 2.0  | 1.9     |
| <b>Reserve ratio</b>   |      |      |      |      |      |         |
| Last actuarial valuation   | 5.5  | 5.2  | 4.8  | 4.5  | 4.2  | 4.8     |
| Experience   | 5.7  | 5.8  | 5.3  | 5.2  | 5.0  | 5.4     |
| Source: Annual reports 2014-18 and projections from last actuarial valuation, calculation from Authors. Differences may exist due to rounding. |      |      |      |      |      |         |

On average, over the financial years 2014-18, the PAYG cost rate of the Scheme (ratio of total expenses, including benefit and expenses other than benefits, to total insurable earnings) has been 11.9 per cent, 1.1 per cent lower than projected in the last actuarial valuation. Specifically, over the period 2014-18:

- the ratio of benefit expenses to total insurable earnings has averaged to 10.0 per cent, 1.0 per cent lower than projected in the last actuarial valuation; and
- the ratio of expenses other than benefits (administrative expenses and other expenses) to total insurable earnings has averaged to 1.9 per cent, 0.1 per cent lower than projected in the last actuarial valuation.

The RER of the Scheme reached 5.0 at the end of the financial year 2018 while the last actuarial valuation was projecting this ratio at 4.2 by the end of the 2014-18 period.

A segmentation of expenditure by the benefits branch allows for a better evaluation of the cost of each benefits branch and to highlight discrepancies between projection and experience. Table 1.8 compares the average benefits expenses to the Scheme's insurable earnings of the projected expenses from the last actuarial valuation and the Scheme's actual experience for the period 2014-18.

► **Table 1.8. Average benefits expenses by benefits branch to total insurable earnings, last actuarial valuation and actual experience (2014-18)**

|  | Actual experience | Last actuarial valuation | Difference      |
|--|-------------------|--------------------------|-----------------|
|  | (A)               | (B)                      | (C) = (A) - (B) |
| Short-term Branch  | 1.3               | 1.6                      | -0.3            |
| Pensions Branch  | 7.5               | 7.6                      | -0.1            |
| Industrial Branch  | 1.1               | 1.3                      | -0.2            |
| Medical Branch   | 0.1               | 0.5                      | -0.4            |
| <b>Total</b>   | <b>10.0</b>       | <b>11.0</b>              | <b>-1.0</b>     |
| Note: Industrial Benefits Branch includes the benefits related the disablement and death. Excludes any expense related to the National Prescription Drug Plan Fund or the National Health Insurance. Unclaimed benefits are reflected in the amounts.<br>Source: Annual reports 2014-18 and projections from last actuarial valuation, calculation from Authors. |                   |                          |                 |

As already mentioned, the ratio of benefit expenses to total insurable earnings has been, on average, 1.0 per cent lower than projected in the last actuarial valuation. This deviation of 1.0 per cent is explained by the following:

- ▶ The benefits expenditure related to the Short-term Branch averaged to about 1.3 per cent during the period 2014–18, 0.3 per cent lower than projected in the last actuarial valuation.
- ▶ The benefits expenditure related to the Industrial Branch averaged to about 1.1 per cent during the period 2014–18, 0.2 per cent lower than projected in the last actuarial valuation.
- ▶ The benefits expenditure related to the Pensions Branch averaged to about 7.5 per cent during the period 2014–18, 0.1 per cent lower than projected in the last actuarial valuation.
- ▶ With effect from 1 January 2015, The Bahamas Government has agreed to reimburse all benefits expenses related to the National Prescription Drug Plan. Therefore, this Branch has incurred no benefit expenditure since 1 January 2015. From 1 January 2015, the NIB pays the administrative expenses related to this benefits Branch exclusively. This explains in large part the deviation of 0.4 per cent between the medical benefits projected in the last actuarial valuation and the actual benefits paid under this Branch from 2014-18.

## 1.5. Investment portfolio and policy

### 1.5.1. Composition of the investment portfolio

As of 31 December 2018, the total assets of the NIB represent an amount of BSD1,835.5 million, excluding any allowance for expected credit losses. The total assets of the NIB represent an amount of BSD1,823.5 million, net of allowance for expected credit losses. The assets can be divided in two main components:

1. Financial investments, which represent 79.3 per cent of total assets, are composed principally of Government bonds, notes and bills (29.3 per cent), Government corporations bonds (12.5 per cent), certificates of deposit (7.7 per cent), loans and leases to Government (9.3 per cent), equities (7.0 per cent), bonds and notes from corporations (7.1 per cent), overseas bonds and notes (4.6 per cent) and loans to Government corporations (1.4 per cent).
2. Other assets, which represent 20.7 per cent of the total, are composed of accounts receivable and prepaid expenses (8.1 per cent), property, plant, equipment and computer software (6.1 per cent), construction in progress (3.8 per cent) and cash and bank balances (2.7 per cent).

As at 31 December 2018, there is a total liability of BSD86.0 million, meaning that the total available assets are BSD1,737.5 million.

► Table 1.9. Asset values, 31 December 2013 and 2018

|   | December 2013  |              | December 2018  |              |
|---|----------------|--------------|----------------|--------------|
|   | BSD million    | %            | BSD million    | %            |
| <b>A. Financial investments</b>   | <b>1 580.2</b> | <b>89.2</b>  | <b>1 443.6</b> | <b>79.3</b>  |
| Bahamian Equities   | 104.5          | 5.9          | 82.2           | 4.5          |
| US Equities   | 12.1           | 0.7          | 45.7           | 2.5          |
| Overseas bonds and notes  | 68.9           | 3.9          | 83.5           | 4.6          |
| Government bonds, notes and bills   | 647.5          | 36.6         | 532.6          | 29.3         |
| Certificates of deposit   | 193.6          | 10.9         | 140.9          | 7.7          |
| Bonds from Government Corporations  | 246.3          | 13.9         | 227.3          | 12.5         |
| Bonds and notes from Non-Government Corporations  | 104.0          | 5.9          | 129.4          | 7.1          |
| Loans to Government Corporations  | 10.2           | 0.6          | 25.5           | 1.4          |
| Net Investment in finances leases (Government)  | 127.7          | 7.7          | 170.3          | 9.3          |
| Property  | 5.1            | 0.3          | 3.1            | 0.2          |
| Investment in associates  | 60.2           | 3.4          | 3.2            | 0.2          |
| <b>B. Cash and bank balances</b>  | <b>15.2</b>    | <b>0.9</b>   | <b>50.0</b>    | <b>2.7</b>   |
| <b>C. Account receivable and prepaid expenses</b>   | <b>21.8</b>    | <b>1.2</b>   | <b>148.4</b>   | <b>8.1</b>   |
| <b>D. Property, plant, equipment and computer software</b>                                | <b>100.2</b>   | <b>5.7</b>   | <b>111.7</b>   | <b>6.1</b>   |
| <b>E. Construction in progress – finance leases</b>                                       | <b>53.6</b>    | <b>3.0</b>   | <b>69.8</b>    | <b>3.8</b>   |
| <b>F. Total assets (A + B + C + D + E)</b>  | <b>1 771.0</b> | <b>100.0</b> | <b>1 823.5</b> | <b>100.0</b> |
| <b>G. Liabilities</b>   | <b>84.4</b>    |              | <b>86.0</b>    |              |
| <b>H. Net assets available (F-G)</b>  | <b>1 686.6</b> |              | <b>1 737.5</b> |              |
| Note: Assets include allowance for expected credit losses.<br>Source: NIB, Annual Report. |                |              |                |              |

Sections 1.5.2 and 1.5.3 deal with further elements concerning the structure of the investment policy.

## 1.5.2. Description of the investment policy

The investment policy of the NIB was revised in December 2018. The strategic objectives of the revised investment policy focus on:

1. *Safety.* Investments shall be made with care, skill, prudence and diligence. Investments shall be diversified so as to minimize the risk and maximize the rate of return. All security transactions shall be executed by registered and reputable broker/dealers at best price.
2. *Yield.* The objective is to minimize the risk while attaining growth of the principal in excess of inflation. A targeted real rate of return of 3 per cent per annum on the overall portfolio is considered.
3. *Liquidity.* Investments should have the aim of ensuring liquidity to meet expected and unexpected cash flow needs. To the extent possible, the Board should invest in instruments with active secondary and resale markets, or otherwise with specific maturity dates.
4. *Risks.* The Board should seek to minimize risk by proper diversification across broad asset classes to minimize correlation within investment grade assets. Liquidity risk, credit risk, interest rate risk and political risk are also considered.

The investment policy statement describes the structure, responsibilities and duties of the investment committee, the responsibilities of the Board, the role of the Director and of the Officer for executive management with responsibility for investments, as well as the external investment managers. The

investment policy should be reviewed and approved at least every three years. The investment policy statement also includes guidelines on investments and limits on single investments:

- ▶ The Board shall not invest outside of The Bahamas without the general or specific direction of the Minister of Finance.
- ▶ Investment in one company is subject to a maximum of 5 per cent of the total investment of the Fund.
- ▶ The Board's deposits with commercial banks shall not exceed 12.5 per cent of the bank's total customer deposits excluding NIB deposits.
- ▶ The Board's holdings of common shares shall not exceed 10 per cent of the outstanding common shares of the company or 20 per cent of the public float of the company (shares publicly traded).
- ▶ The Board shall not make investments in any company that has not recorded profits in each of the last five years immediately preceding the proposed investment.
- ▶ Investments made in real estate through financed lease arrangements shall not exceed 15 years and at a rate of at least The Bahamas prime rate.
- ▶ The Board can invest in any securities which are investments authorized by the Trustee Act. The Board has the power to invest in securities other than trustee securities under defined conditions.

The current asset mix, targets and acceptable ranges are presented in Table 1.10. The investment policy also specifies the benchmark returns to compare the performance of the Fund.

▶ **Table 1.10. Asset mix, target and acceptable range (percentages)**

| Investment category   | Targeted allocation | Acceptable range |
|---|---------------------|------------------|
| <b>Cash and cash equivalent</b>   | 10.0                | 10-15            |
| <b>Fixed income securities</b>  |                     |                  |
| Domestic – Government   | 50.0                | 40-60            |
| Domestic – Non-Government   | 5.5                 | 4-10             |
| International   | 10.0                | 5-12             |
| <b>Loan</b>   |                     |                  |
| Domestic – Government   | 2.0                 | 2-7              |
| <b>Equities</b>   |                     |                  |
| Domestic  | 10.0                | 10-20            |
| International   | 5.0                 | 3-7              |
| <b>Alternative investments</b>  | 0.5                 | 0.5-1.5          |
| <b>Bahamian real estate</b>   | 7.0                 | 5-10             |
| Source: Statement of Investment Policy and Guidelines (Revised December 2018) |                     |                  |

### 1.5.3. Comments on the investment policy

Pension plans have long-term liabilities, so that a long-term investment policy should be in place. In the Pensions Branch, which is the key driver of the cost of the Scheme, there is a long period of time between the payment of contributions on behalf of an individual and the time that a benefit will become payable. Assets are normally accumulated for the payment of future benefits. The accumulation of assets has a secondary role of equalizing contributions paid by various generations of contributors. A pension plan should therefore adopt an investment policy with a long-term perspective in order to maximize the expected returns on the Fund. Variable income investments (for example, stocks, real estate, infrastructure and private equities) have, by nature, a long-term horizon. It has been observed that they produce a higher return than bonds over the long term.

As at December 2013, about 8 per cent of total assets were invested in deposit certificates, an investment of a short-term nature. Investing in short-term vehicles is a reasonable strategy for short-term benefits. For long-term pension benefits, this could create a mismatch between the time horizon of assets and liabilities. It has been observed that the investment policy document does not refer to the different benefit branches of the NIB. Usually, a different investment strategy should be adopted for each type of benefit. In our opinion, the investment policy should take into account the benefit offered by the Scheme and address investment issues for each type of benefit. For the Pensions Branch, it is important to note that there should be a proper balance between the objective of efficiency and higher investment returns on the one hand, and the long-term stability and security of the assets on the other.

It has been observed that the investment policy does not refer to the results of the actuarial valuation in any circumstances. The investment strategy is of course affected by the future outlook of the social security scheme. In the current situation, the total PAYG rate is higher than the legal contribution rate. This means that investment income should be used for the payment of benefits or administrative expenditures. With the expected downward trend in the reserve ratio, it is normal to direct investment toward a strategy that will be based on liquidity in the future. What is questionable in the current system is that there are no clear financing objectives related to the financial sustainability of the Scheme. It is known that a scheme such as the NIB, offering such comprehensive long-term pension benefits and short-term benefits, cannot stay forever at a contribution rate of 9.8 per cent. This situation is even more striking in a context where the legal contribution rate is below the contribution rate needed to pay all expenses. In our opinion, for a system to be effective an efficient and optimal investment policy should be linked to a clear road map related to the financing strategy: the funding policy. Section 1.6 gives more details about such a funding policy.

Diversification is a way of reducing the overall risk of the portfolio and can be carried out in both the local and foreign portions of the portfolio. The current assets portfolio has about 60 per cent in Government securities or related investments<sup>6</sup>. This is a high concentration in one type of risk exposure, and the investment policy should address this issue. Recently, in July 2014, about BSD130 million of finance leases have been renegotiated downward with the Government. Debt restructuring can considerably affect a social security scheme where a large proportion of the portfolio is invested in Government securities. A more detailed risk analysis should be included in the investment policy.

Considering the relative size of The Bahamas investment market, the allocation of investment outside the country could be increased to improve diversification. As at December 2018, around 7 per cent of investments were in outside bonds, notes and equities. This low figure shows that there is room to invest overseas in private equities, real estate, infrastructure investments and emerging markets.

Where investments are made in foreign currency, the fund may be subject to currency risk. If the NIB decides to invest more heavily in foreign currency (or to maintain the present proportion of its assets in foreign currency) it may be appropriate to adopt strategies to manage the currency risk.

## 1.6. Funding system and funding policy

There are three basic ways to fund a social security scheme – from purely PAYG, to partial funding, to full funding. The funding method chosen will depend on the given objectives of the Scheme. Funding objectives may include stabilizing and/or minimizing the contribution rate, and stabilizing the funding level, usually expressed in a social security pension scheme as the ratio of the reserve at the end of a given year to total expenditure in that year.

Although the contribution rate is subject to change, a stable rate is generally considered desirable for many reasons. Firstly, a stable contribution rate reinforces the link between contributions and benefits. Secondly, a stable contribution rate strengthens the fiscal discipline via the early recognition of the long-term financial implication of amendments to the Scheme. Thirdly, a stable rate also distributes costs more equally across

<sup>6</sup> This refers to Government bonds, notes and bills, bonds from Government Corporations, loans to Government Corporations, Net Investment in finance leases (Government) and property, plant, equipment and computer software.

generations. Finally, maintaining a stable contribution rate promotes greater confidence in the Scheme on the part of the public.

Currently the NIB operates without a funding policy, which would clearly state the funding objectives of the Scheme. The purpose of a funding policy is to establish a framework for funding a pension Scheme, thereby taking into account factors that are relevant to the Scheme and the various stakeholders. These factors include: benefit security, stability and/or affordability of contributions, the demographic characteristics of the Scheme's members (active, inactive and pensioners) (any person with an entitlement under the scheme), the financial situation of the Scheme, the legal provisions of the Scheme and any substantive commitment such as indexation.

This actuarial valuation is based on a recommended funding policy for the NIB which has the following main objectives:

1. Partially funded Scheme.
2. Stable contribution rate.
3. Ratio of reserve to expenditure which remains above 3 over the whole projection period.

A separate document (*Broad guidelines for Funding Policy for the National Insurance Board*) was also produced in the scope of this actuarial valuation.

## ► 2. Projected demographic and macroeconomic environment of The Bahamas

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A social security pension scheme does not function independently of the demographic and economic context in which it evolves. The analysis of the various demographic and macroeconomic indicators is thus an important part of the actuarial valuation process of a social security system.

This chapter discusses the development of the main demographic and economic indicators of The Bahamas. It presents the general demographic and economic experience in the country along with demographic and economic projections up to the year 2078. In fact, for this review, a 60-year projection period has been considered. The shorter projection period compared to the one considered in the last actuarial valuation is supported by the recent decline in fertility rates experienced in The Bahamas in the past few years. This is explained later in section 2.1.1. A period of 60 years takes into account the moment where the long-term cost becomes more stable. Such period of projection not only allows conclusions on the long-term sustainability of the scheme to be drawn, but also contributes towards providing a clear picture of the Scheme's sensitivity to assumptions or reforms.

This section also addresses some of the potential impacts of the COVID-19 crisis on the projections. It is important to keep in mind that, due to the long-term nature of the projections, short-term variations, like the COVID-19 crisis, will not affect the long-term outlook of the NIB considerably. It is also important to bear in mind that the future will always be shaped by short-term variations - the COVID-19 crisis is not the first one and will not be the last one. That said, the importance of the crisis must not be misrepresented, and that is why sensitivity analysis are conducted in this report.

### 2.1. Population projection

This section presents the recent demographic development observed in The Bahamas as well as the demographic projections assumed in this valuation.

The determinants of future population changes are fertility, mortality and net migration. Fertility rates determine the number of births, while mortality rates determine how many, and at what ages persons are expected to die. Net migration represents the difference between the number of persons who permanently enter and leave the country.

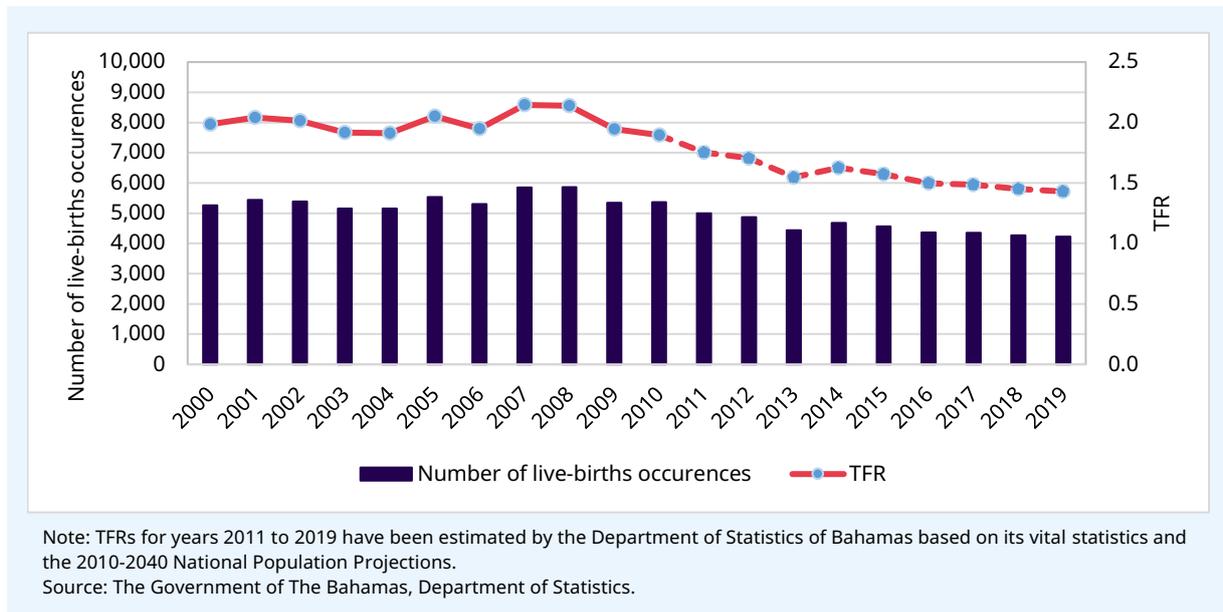
The last two population censuses produced in The Bahamas dates from 2000 and 2010. Estimates for the period 2011-2020 have been assessed based on the statistics made available by the Department of Statistics of The Bahamas, national projections and other sources of information such as the United Nations (UN) World Population Prospects or UNICEF.

#### 2.1.1. Fertility

The total fertility rate (TFR) represents the average number of children each woman would have between the ages of 15 and 49. If there is no migration, a TFR of 2.1 is required for each generation to replace itself.

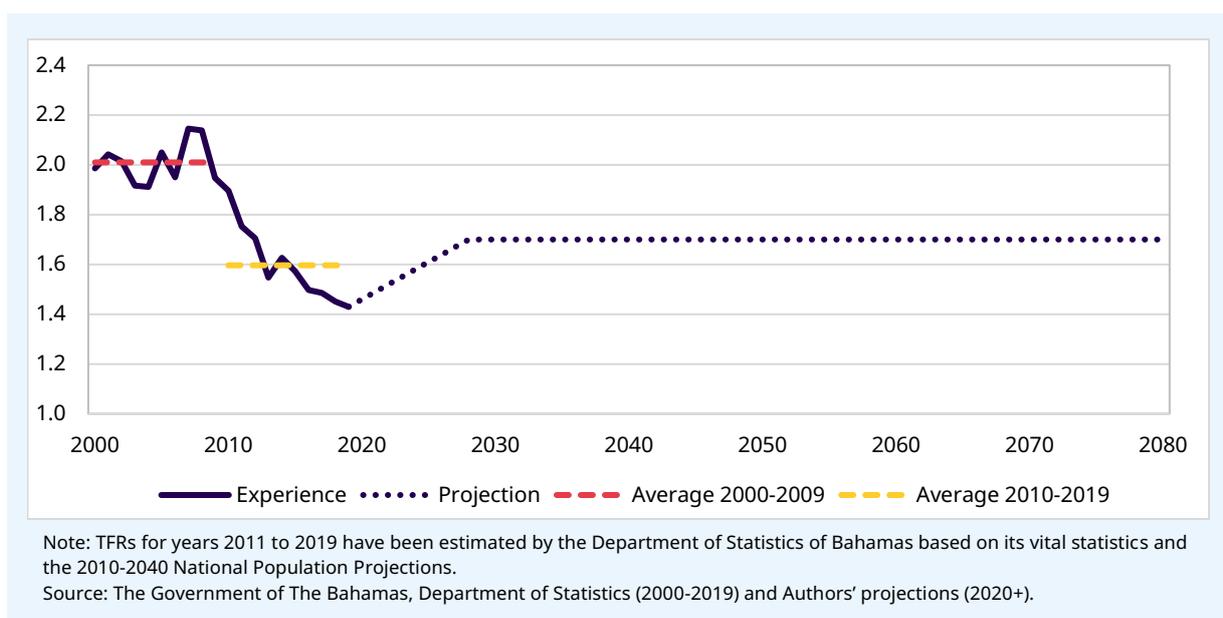
According to the two last population censuses produced in The Bahamas, the TFR declined from 1.99 children per woman in 2000 to 1.90 children per woman in 2010. Between 2000 and 2010 inclusively, the TFR observed in the country remained relatively stable, averaging at 2.0 children per woman over the period. Since 2010, however, the country experienced a gradual decrease in its number of births each year. In fact, vital statistics suggest that the TFR has reduced from 1.90 children per woman in 2010 to 1.43 children per woman in 2019. Figure 2.1 presents the evolution of the number of live-births occurrences and the TFRs from years 2000 to 2019 inclusively.

► **Figure 2.1. Number of live-births occurrences and total fertility rates, 2000-2019**



In this valuation, the TFR in The Bahamas is assumed to increase gradually from its level of 1.43 children per woman observed in 2019 to 1.70 children per woman in 2028. From 2028 onwards, the TFR is projected to remain constant at 1.70 children per woman. This assumption reflects the recent declining fertility trend in the country, but also some expectations that the fertility rates will gradually increase in the next few years to levels that fall between those observed in the period 2000-2009 and those observed in the period 2010-2019. Figure 2.2 presents the trend observed in terms of TFR in the period 2000-2019 as well as the projected TFR from 2020 in this actuarial study.

► **Figure 2.2. Total fertility rates, 2000-2078**



The shorter projection period (60 years) compared to the one considered in the last actuarial valuation (75 years) is mainly supported by the recent decline in fertility rates experienced in The Bahamas in the past few years and the resulting reduction in the long term TFR from 1.8 to 1.7. This creates more uncertainty around the long-term projection of the Bahamian population, and therefore it has been decided to limit the projection to the legislative requirement of 60 years.

The age-specific fertility rates projected in this valuation have been assumed consistent with that observed in 2019. In fact, the experience observed in the recent years could suggest that the age-specific fertility pattern has already reached some degree of maturity. In addition, the sex ratio of newborns has been estimated to 1.05 male per female throughout the projection period. This is consistent with the structure of the population, by age and sex.

The age-specific fertility rates and TFRs for years 2018, 2020, 2024 and 2028 appear in Table 2.1.

► **Table 2.1. Age-specific fertility rates and TFRs, 2018, 2020, 2024 and 2028+**

| Age of mother               | Fertility rates   |             |             |             |
|-----------------------------|-------------------|-------------|-------------|-------------|
|                             | 2018 <sup>1</sup> | 2020        | 2024        | 2028+       |
| 15-19                       | 0.0175            | 0.0176      | 0.0191      | 0.0205      |
| 20-24                       | 0.0622            | 0.0587      | 0.0636      | 0.0684      |
| 25-29                       | 0.0784            | 0.0770      | 0.0833      | 0.0896      |
| 30-34                       | 0.0721            | 0.0743      | 0.0804      | 0.0865      |
| 35-39                       | 0.0450            | 0.0478      | 0.0518      | 0.0557      |
| 40-44                       | 0.0138            | 0.0159      | 0.0172      | 0.0185      |
| 45-49                       | 0.0010            | 0.0007      | 0.0007      | 0.0008      |
| <b>Total fertility rate</b> | <b>1.45</b>       | <b>1.46</b> | <b>1.58</b> | <b>1.70</b> |

Source: The Government of The Bahamas, Department of Statistics (2018) and Authors' projections (2020, 2024 and 2028+)

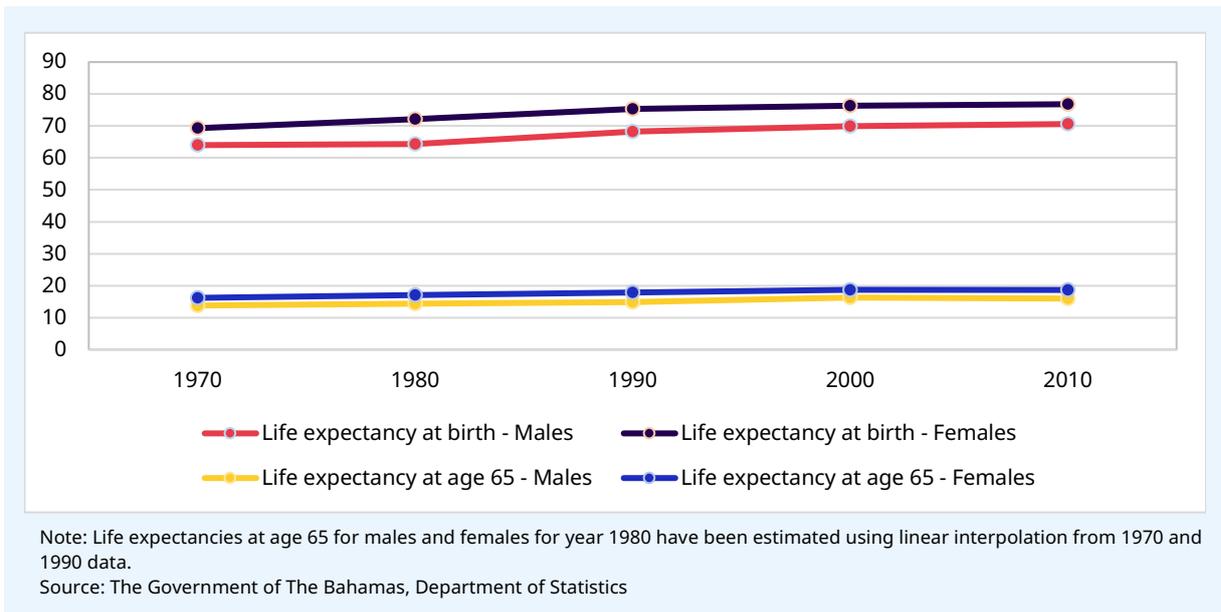
## 2.1.2. Mortality

According to the Department of Statistics of the Government of The Bahamas, the country is continuing to make progress in extending life expectancy and reducing mortality. Life expectancy at birth increased from 64.0 years to 70.6 years for males between 1970 and 2010. Similarly, life expectancy at birth increased from 69.3 years to 76.8 years for females during the same period.

Life expectancy at age 65 is a useful summary of the mortality experienced by older Bahamians. In the period 1970-2010, the life expectancy at age 65 increased from 13.8 years to 16.0 years for males and from 16.2 years to 18.7 years for females. It is, however, worth noting that the mortality rate between ages 0 and 64 has been the main driver of the increase in the life expectancy in The Bahamas between 2000 and 2010. Indeed, that the life expectancy at age 65 has remained almost unchanged from 2000 to 2010 for both males and females (around 16 years for males and 19 years for females).

Figure 2.3 presents the evolution of the life expectancies at birth and at age 65 for males and females since 1970.

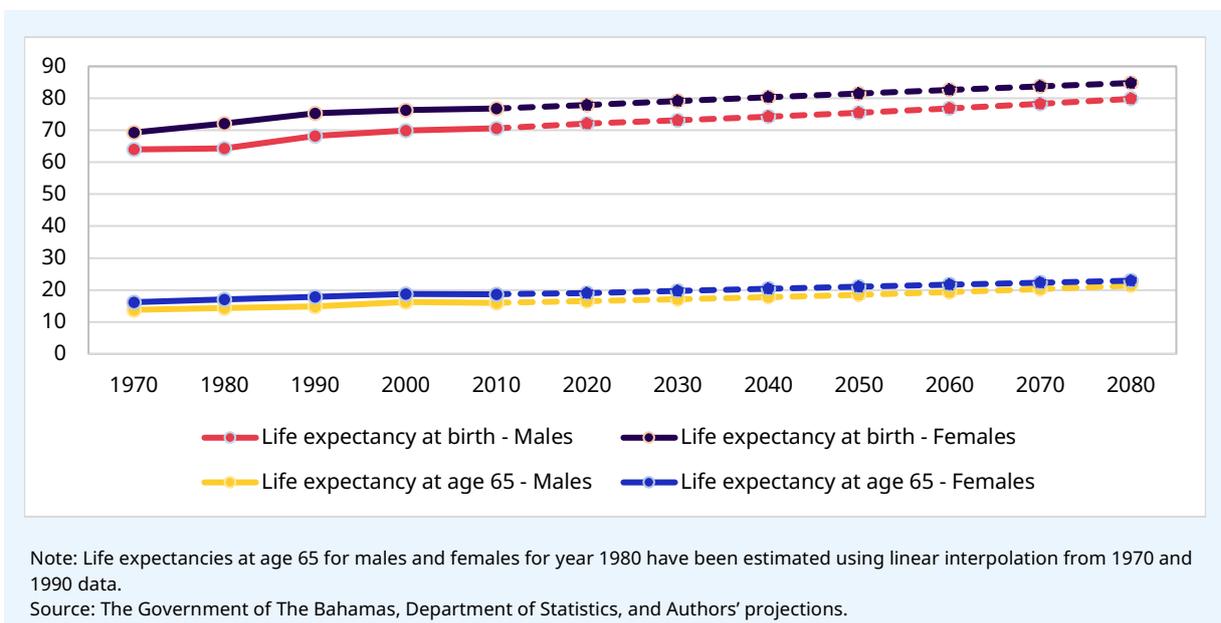
► **Figure 2.3. Life expectancy at birth and at age 65, by sex, 1970, 1980, 1990, 2000, 2010 (in years)**



The mortality table used for this valuation has been assumed in line with the 2009-2011 life table produced by the Department of Statistics of the Government of The Bahamas. Calibration of the mortality table has been made to ensure consistency with the vital statistics obtained for the period 2010-2015. Improvements in mortality were assumed to occur similarly with the medium estimates for The Bahamas of the United Nations (UN) World Population Prospects, the 2019 Revision (WPP). With these underlying assumptions, life expectancy at birth is projected to increase from 71.3 years to 79.4 years for males between 2018 (the valuation year) and 2078 (the end of the projection period of 60 years). Similarly, life expectancy at birth is projected to increase from 77.4 years to 84.2 years for females during the same period. A more important figure for the NIB is life expectancy at the retirement age. Life expectancy at age 65 is projected to increase over the projection period from 16.2 to 20.5 years and from 18.8 to 22.7 years for males and females, respectively.

Figure 2.4 illustrates the past evolution of the life expectancies at birth and at age 65 for both males and females, along with its projections.

► **Figure 2.4. Life expectancy at birth and at age 65, by sex, 1970 to 2078 (in years)**



The life expectancy at birth, at age 25 and at age 65 and sample mortality rates for sample years are provided in Tables 2.2 and 2.3 respectively.

► **Table 2.2. Life expectancy at different periods of time, by age and sex (2018–2078)**

| Year | Male |       |       | Female |       |       |
|------|------|-------|-------|--------|-------|-------|
|      | At 0 | At 25 | At 65 | At 0   | At 25 | At 65 |
| 2018 | 71.3 | 48.2  | 16.2  | 77.4   | 53.8  | 18.8  |
| 2020 | 71.5 | 48.5  | 16.3  | 77.7   | 54.1  | 18.9  |
| 2030 | 72.8 | 49.7  | 17.0  | 79.0   | 55.3  | 19.5  |
| 2040 | 74.1 | 50.9  | 17.7  | 80.2   | 56.5  | 20.1  |
| 2050 | 75.4 | 52.1  | 18.3  | 81.3   | 57.6  | 20.7  |
| 2060 | 76.9 | 53.5  | 19.1  | 82.4   | 58.7  | 21.4  |
| 2070 | 78.3 | 54.8  | 19.9  | 83.4   | 59.7  | 22.1  |
| 2078 | 79.4 | 55.8  | 20.5  | 84.2   | 60.5  | 22.7  |

Source: Authors' assumptions

► **Table 2.3. Sample mortality rates (2018, 2048 and 2078) (per 1,000 persons)**

| Selected ages | Male  |       |       | Female |       |       |
|---------------|-------|-------|-------|--------|-------|-------|
|               | 2018  | 2048  | 2078  | 2018   | 2048  | 2078  |
| 0             | 6.3   | 5.0   | 4.0   | 6.5    | 5.2   | 4.2   |
| 5             | 0.6   | 0.6   | 0.6   | 0.5    | 0.5   | 0.5   |
| 10            | 0.7   | 0.6   | 0.6   | 0.5    | 0.5   | 0.5   |
| 15            | 1.1   | 0.9   | 0.7   | 0.5    | 0.5   | 0.5   |
| 20            | 1.8   | 1.3   | 0.8   | 0.7    | 0.6   | 0.5   |
| 25            | 3.0   | 2.1   | 1.3   | 1.1    | 0.7   | 0.6   |
| 30            | 3.4   | 2.5   | 1.6   | 1.4    | 0.8   | 0.7   |
| 35            | 3.8   | 2.8   | 1.8   | 1.6    | 0.9   | 0.7   |
| 40            | 4.7   | 3.4   | 2.2   | 2.2    | 1.0   | 0.7   |
| 45            | 5.8   | 4.3   | 2.8   | 3.2    | 1.5   | 0.8   |
| 50            | 7.5   | 5.5   | 3.7   | 4.4    | 2.3   | 1.3   |
| 55            | 10.3  | 7.7   | 5.1   | 6.6    | 3.7   | 2.2   |
| 60            | 14.7  | 10.9  | 7.3   | 10.0   | 6.4   | 4.1   |
| 65            | 21.1  | 15.7  | 10.4  | 13.1   | 9.5   | 6.7   |
| 70            | 31.4  | 23.5  | 16.0  | 18.5   | 13.7  | 9.7   |
| 75            | 49.6  | 37.7  | 26.7  | 34.2   | 26.1  | 18.5  |
| 80            | 68.1  | 53.1  | 40.1  | 57.9   | 46.7  | 34.8  |
| 85            | 103.7 | 84.3  | 68.1  | 91.6   | 78.0  | 61.2  |
| 90            | 175.6 | 147.5 | 125.1 | 132.7  | 116.9 | 96.1  |
| 95            | 290.9 | 253.6 | 225.9 | 199.7  | 180.7 | 155.0 |
| 100           | 645.2 | 581.5 | 538.5 | 421.6  | 389.6 | 346.5 |

Source: Authors' assumptions

### 2.1.3. Migration

Migration is an important demographic process as it shapes the age structure and distribution of a country's population. Migration can also be seen as the most difficult component of growth to forecast accurately as migration rates are subject to much greater volatility than either fertility or mortality rates. Compared to other components of change (fertility and mortality), net migration is more significantly impacted by national and international economic and political changes.

The last censuses produced from the Department of Statistics of The Bahamas has shown high levels of net migration in the country during the period 2000-2010. In fact, according to the 2010 Census Migration Report, 29,157 persons migrated from The Bahamas between years 2000 and 2010. Few data are available on the evolution of the net migration in The Bahamas since 2010. Nonetheless, sources such as the WPP and UNICEF suggest that the net migration rate has significantly decreased in the country since 2010.

This valuation assumes that the migration flow will remain relatively high over the projection period, but less than what was observed in the 2000-2010 period. For this valuation, the net number of migrants is projected to gradually decrease from its estimated level of 2,000 in 2010 to approximately 1,100 in 2015 (or 0.3 per cent of the country's total population). The ratio of net migrants over the total population is then projected to remain constant at 0.3 per cent from year 2015 onwards.

### 2.1.4. Population projection

The total population of The Bahamas, estimated at about 351,500 in 2010, is assumed to have reached approximately 382,300 in 2018, the base year of this actuarial valuation. The total population of the country is then projected to increase gradually over the projection period and reach about 483,100 in 2078 (the end of the projection period of 60 years).

Table 2.4 presents the detailed population projection by age group. For comparison purposes, the estimates from the 2000 and 2010 censuses are also presented.

► **Table 2.4. Population of The Bahamas, 2000–2078 (in thousand)**

| Year              | Age group |       |              |  | Total | Working age<br>(15–64)/65+ ratio |
|-------------------|-----------|-------|--------------|--|-------|----------------------------------|
|                   | 0–14      | 15–64 | 65+          |  |       |                                  |
| 2000              | 89.2      | 198.5 | <b>15.9</b>  |  | 303.6 | 12.5                             |
| 2010 <sup>1</sup> | 94.1      | 235.8 | <b>21.6</b>  |  | 351.5 | 10.9                             |
| 2018 <sup>2</sup> | 82.0      | 271.1 | <b>29.1</b>  |  | 382.3 | 9.3                              |
| 2020              | 78.6      | 277.8 | <b>32.1</b>  |  | 388.4 | 8.7                              |
| 2030              | 76.4      | 293.8 | <b>53.1</b>  |  | 423.3 | 5.5                              |
| 2040              | 83.4      | 294.6 | <b>74.9</b>  |  | 452.8 | 3.9                              |
| 2050              | 76.2      | 303.5 | <b>88.5</b>  |  | 468.3 | 3.4                              |
| 2060              | 73.9      | 300.2 | <b>103.0</b> |  | 477.1 | 2.9                              |
| 2070              | 75.3      | 288.3 | <b>119.1</b> |  | 482.7 | 2.4                              |
| 2078 <sup>3</sup> | 73.2      | 283.9 | <b>125.9</b> |  | 483.1 | 2.3                              |

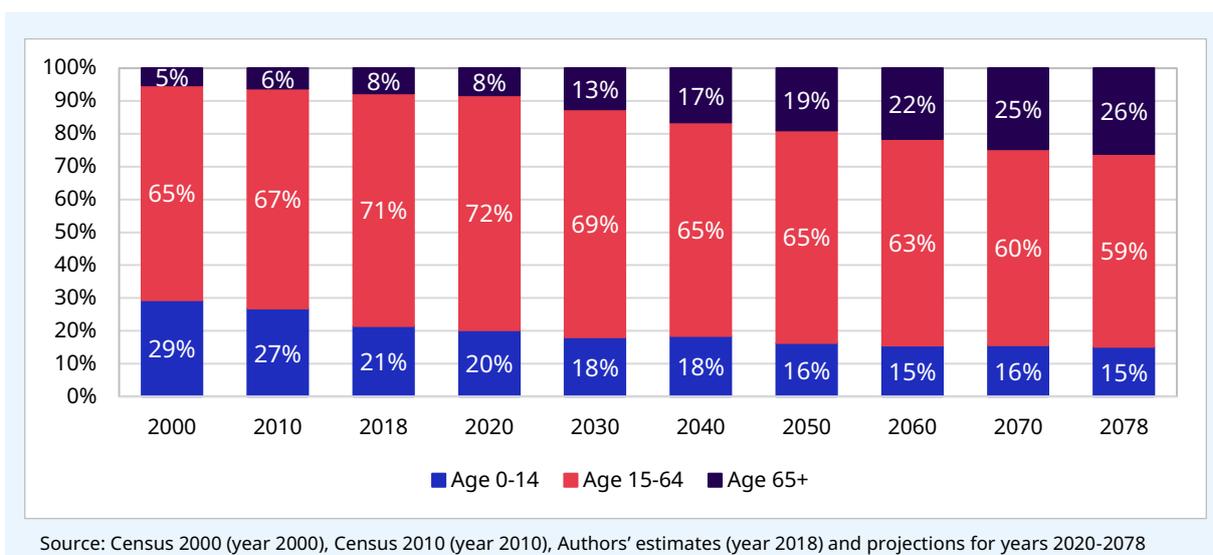
Note: <sup>1</sup> Population distribution for year 2010 is slightly different than that presented in the 2010 Census as those whose ages were "Not Stated" in the 2010 Census have been distributed across the other age groups proportionately. <sup>2</sup> 2018 corresponds to the base year for this actuarial valuation. <sup>3</sup> 2078 corresponds to the end of the projection period of 60 years assumed in this actuarial valuation.  
Source: Census 2000 (year 2000), Census 2010 (year 2010), authors' estimates (year 2018) and projections for years 2020-2078

The number of persons aged 65 and over will grow from an estimated number of 29,100 in 2018 to 125,900 in 2078, the fastest growth among the three groups. At the same time, the working-age population (aged between 15 and 64), who will potentially support the elderly, will increase from 271,100 in 2018 to 305,200 in

2054 and start decreasing thereafter to 283,900 at the end of the projection period. As a result, the number of working-age persons who support one elderly person aged 65 and over will fall from 9.3 in 2018 to 2.3 in 2078, as seen in the last column of Table 2.4.

Figure 2.5 illustrates the gradual ageing of the population of The Bahamas over the projection period. For comparison purposes, the estimates from the 2000 and 2010 censuses are also presented. The changes in the relative size of each age group (ages 0–14, 15–64, and 65+) are direct results of the stabilization of the fertility rates, the improvements in longevity and the positive net migration assumed over the projection period.

► **Figure 2.5. Evolution of the ageing of the population, 2000–2078**



Although the working-age population (ages 15-64) increased in the past few years as a percentage of the total population, and will continue to do so in the first few years of the projection period, the above-figure shows that it will gradually start to decrease in the period 2020-2030. The working-age population as a percentage of the total population is projected to gradually decrease from its estimated level of 72 per cent in 2020 to 59 per cent by the end of the projection period, in 2078. At the same time, the ratio of children (ages 0-14) to total population will gradually decrease over the projection period. This is a direct result of the low fertility rate observed in The Bahamas in the last few years (2010-2019) and the fertility rates assumed over the projection period. The ratio of children to total population is projected to stabilize at around 15 per cent at the end of the projection period. Finally, the ratio of the elderly (aged 65 and above) to the total population will continue to increase over the projection period, reflecting the projected improvements in life expectancy in the future.

Figure 2.6 presents the population pyramids for years 2018, 2038, 2058 and 2078. The average age of the population, estimated to 31 years old in 2010, is projected to reach 34 years old in 2018, 39 years old in 2038, 43 years old in 2058 and 45 years old in 2078.

► **Figure 2.6. Population pyramids, 2018, 2038, 2058 and 2078**

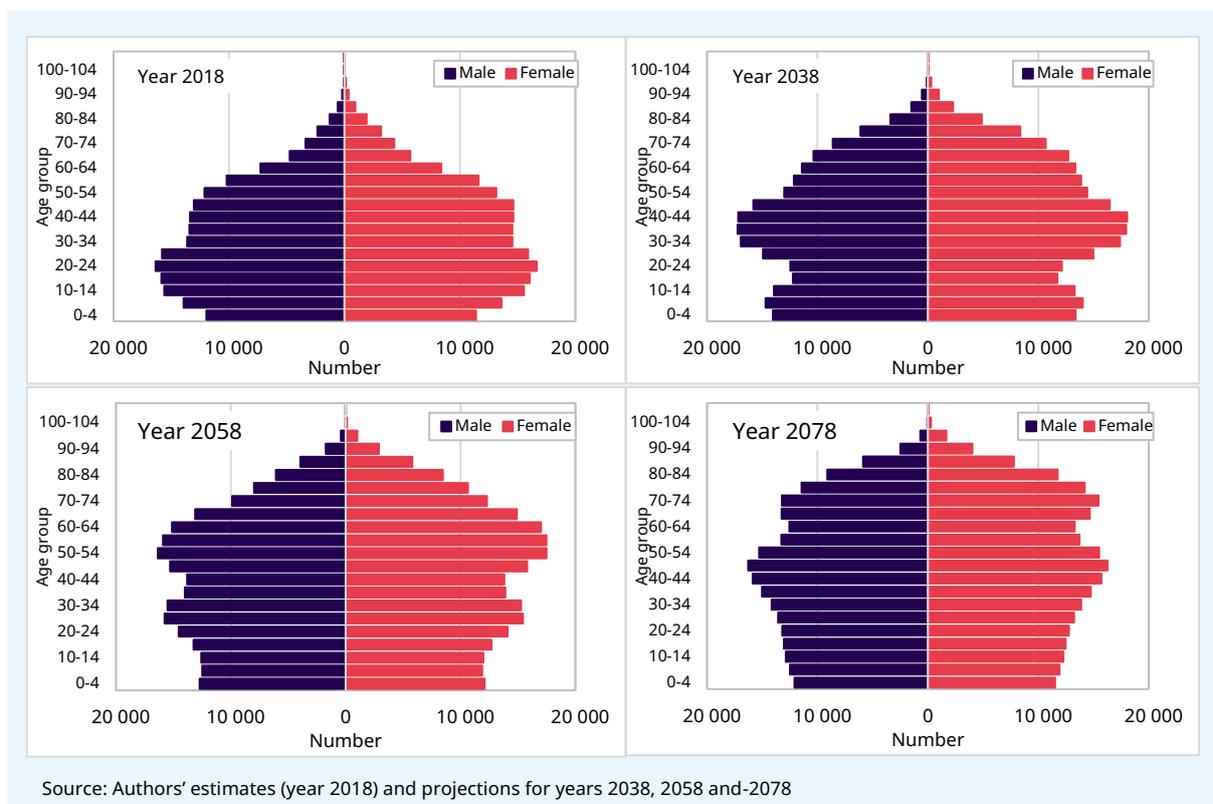
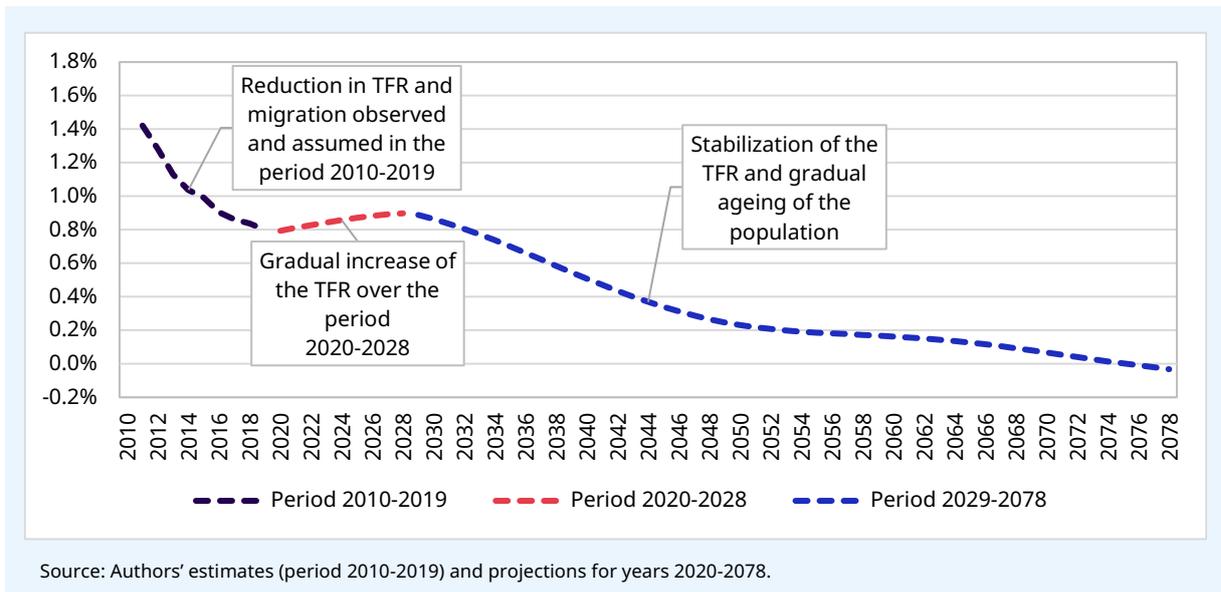


Figure 2.7 presents the projected annual growth rates of the total population of The Bahamas. For comparison purposes, the Figure also presents the estimated evolution of the total population of the country for the period from 2010 to 2018. As illustrated in the Figure, three distinct phases of population growth can be observed:

- Firstly, in the period 2010-2019, the annual growth of the total population decreases rapidly from 1.43 per cent per year in 2010-2011 to 0.80 per cent per year in 2018-2019. This is explained by the significant decrease in the fertility rates observed in the country over the period 2010-2019. To a lower extent, this is also partly explained by the assumed gradual reduction in the net migration rate in the country over the period 2010-2019.
- Secondly, in the period 2020-2028, the annual growth of the total population increases gradually from 0.80 per cent per year in 2019-2020 to 0.90 per cent per year in 2027-2028. This is explained by the gradual increase in the fertility rates assumed over that period, from 1.46 children per woman in 2020 to 1.70 children per woman in 2028.
- Finally, from 2029 onwards, the annual growth of the total population decreases continuously from 0.90 per cent per year in 2028-2029 to -0.03 per cent per year in 2077-2078. This is explained by the stabilization of the TFR and the gradual ageing of the population of The Bahamas.

Over the projection period (2018-2078), the average annual growth rate of the total population is estimated to 0.4 per cent.

► **Figure 2.7. Annual growth rates of the total population of The Bahamas, 2010-2078**



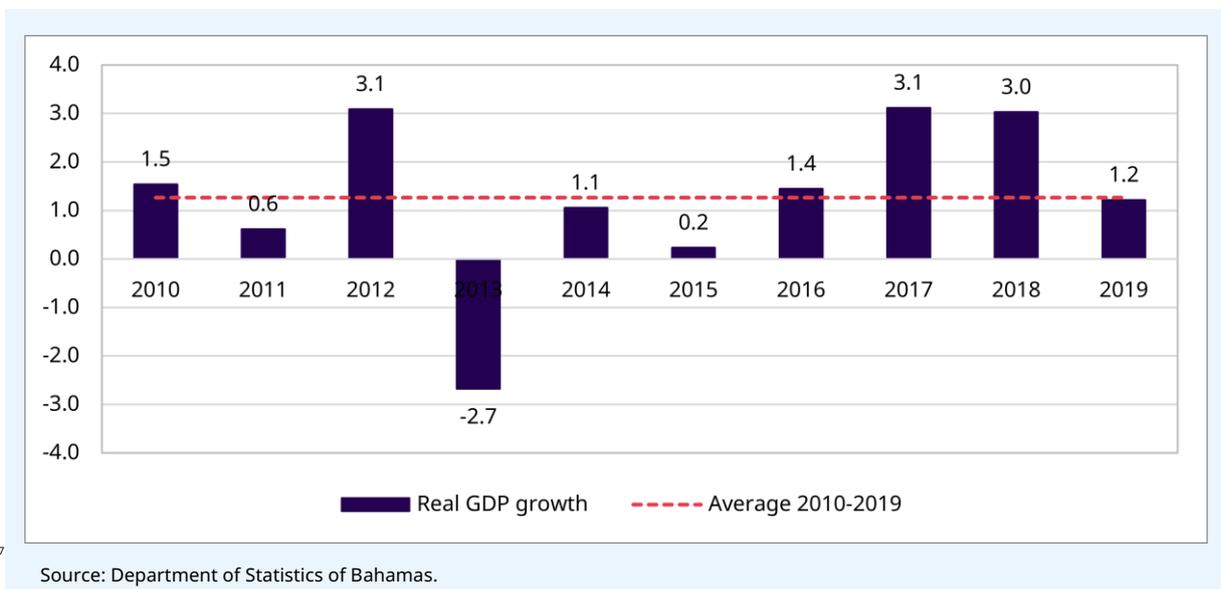
## 2.2. Macroeconomic framework

This section presents the recent macroeconomic experience in The Bahamas as well as the economic assumptions used in this valuation.

### 2.2.1. Recent experience

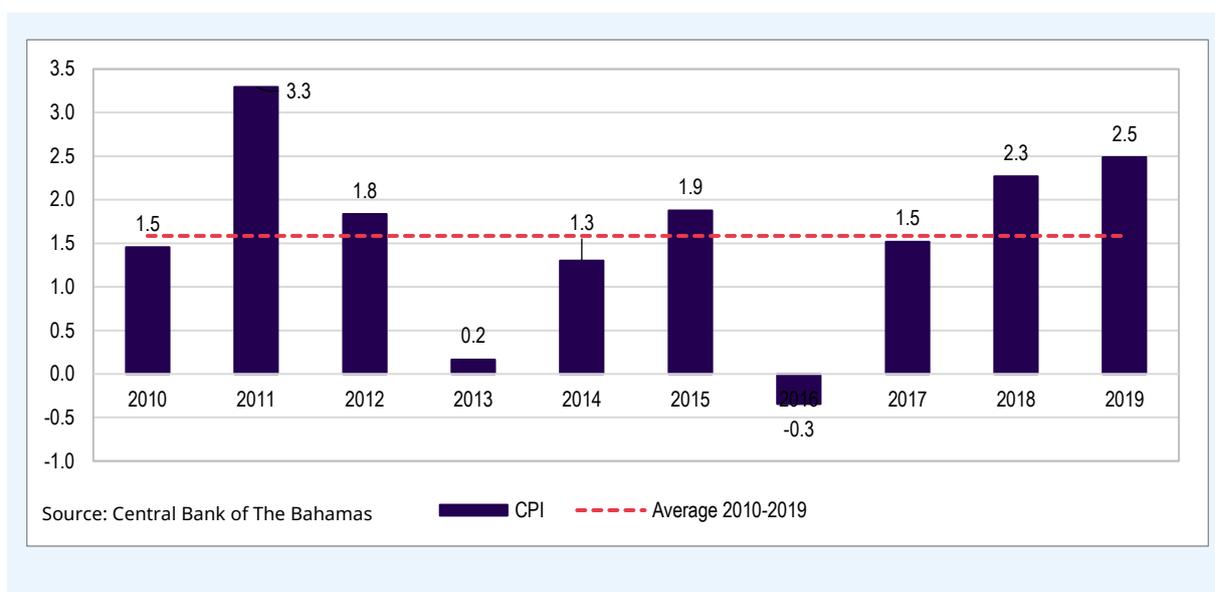
According to the Department of Statistics of The Bahamas, the annual real GDP growth rate averaged at 1.3 per cent between 2010 and 2019 inclusively while the nominal GDP growth rate increased at an average rate of 3.2 per cent per year during the same period<sup>7</sup>. The GDP deflator increased, on average, at an annual growth rate of 1.9 per cent between 2010 and 2019 inclusively. Figure 2.8 illustrates the real GDP growth rates over the period 2010-2019.

► **Figure 2.8. Real GDP growth rate and average real GDP growth rate, 2010-2019 (in percentage)**



The increase in the cost of living in The Bahamas can be measured through the Consumer Price Index (CPI). The cost of living has increased at an annual rate of 1.6 per cent over the period 2010-2019. More recently, in the period 2017-2019 exclusively, the increase in the CPI averaged 2.1 per cent per year. The annual inflation rate is presented in Figure 2.9 over the period 2010-2019.

► **Figure 2.9. Inflation rate, 2010–2019 (in percentage)**

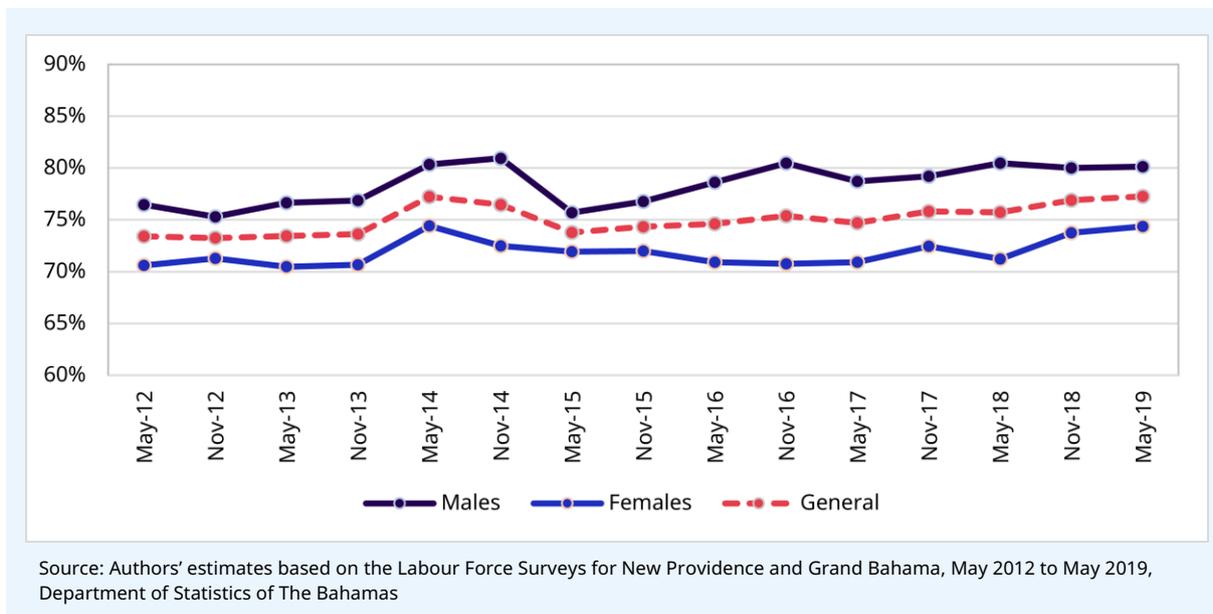


The Department of Statistics of The Bahamas undertakes a labour force survey each semester, in May and November of each year. The primary objective of the labour force surveys is to provide up-to date information on the labour force population and its characteristics on a semi-annual basis.

The last labour force survey published from the Department of Statistics of The Bahamas was conducted during May 2019 and its sample included 2,500 private households in New Providence, Grand Bahama, Abaco, Berry Island and Inagua, and all those aged 15 and over within these households who were usual residents of The Bahamas were interviewed.

Inconsistencies have been found between labour force participation rates published in labour force surveys of the Department of Statistics of The Bahamas from May 2012 to May 2019. Inconsistencies have also been found between the estimated general population in the country by age and sex as of 2019 (as detailed in section 2.1) and the age-specific figures presented in the labour force survey. In fact, applying the May 2019 figures of the Department of Statistics to the estimated population by age group and sex for 2019 would have resulted in labour force population rates exceeding 100 per cent at some ages. Therefore, the labour force participation rates from May 2012 to May 2019 have been estimated based on the general labour force participation rates experienced in New Providence and Grand Bahama combined. Additional adjustments were made to ensure the overall consistency between general labour force participation rates and sex-specific labour force participation rates. Figure 2.10 illustrates the evolution of the labour force participation rates in New Providence and Grand Bahama combined between May 2012 and May 2019 inclusively.

► **Figure 2.10. Labour force participation rates (ages 15+), May 2012 to May 2019 (in percentage)**

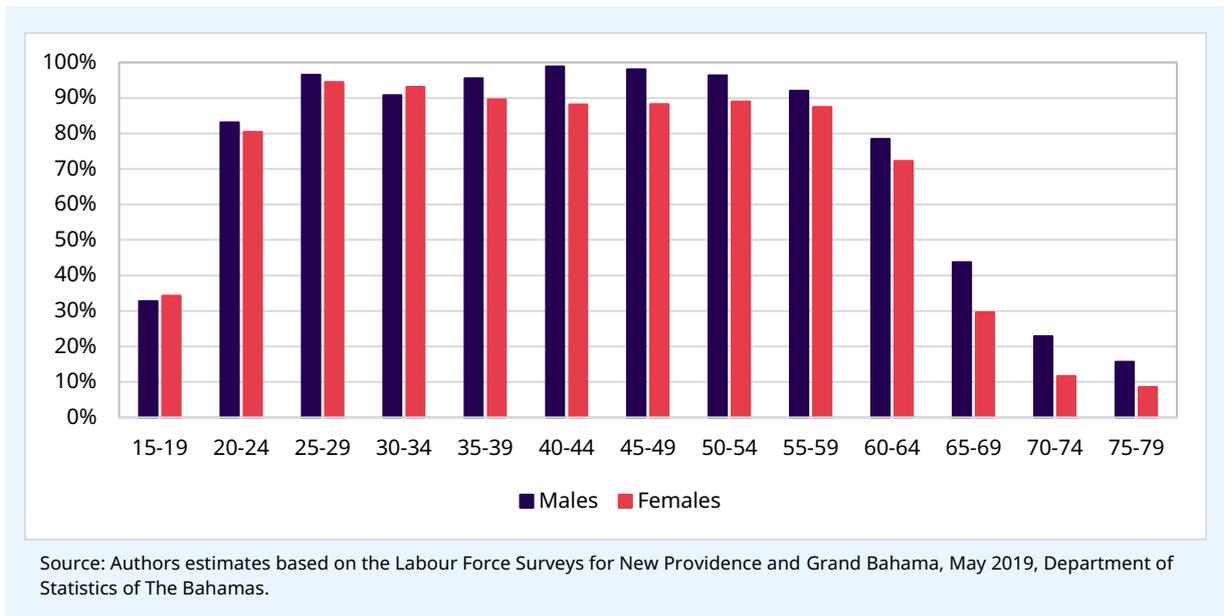


The general labour force participation rate was estimated to 73.4 per cent in May 2012 (76.5 per cent for males and 70.6 per cent for females), and increased gradually between May 2012 and May 2019, reaching up to 77.3 per cent in May 2019 (80.1 per cent for males and 74.4 per cent for females). Overall, over the period from May 2012 to May 2019, the general labour force participation rate increased by 3.9 per cent.

Although the above statistics reflect New Providence and Grand Bahama exclusively, those two regions combined represented around 83 per cent of the estimated total labour force population in the country, which was assumed sufficient to depict the overall evolution of the labour force participation rates in The Bahamas from May 2012. The labour force participation rates by age and sex published by the Department of Statistics have been adjusted to reflect the general labour force participation rates observed in New Providence and Grand Bahama, adjustments were made to ensure the overall consistency between the general labour force participation rates and sex-specific labour force participation rates and consistency checks have been made between the resulting labour force population, by age and sex, and the number of active members of the NIB as at 31 December 2018.

Figure 2.11 presents the estimated labour force participation rates by age-groups and sex as of May 2019.

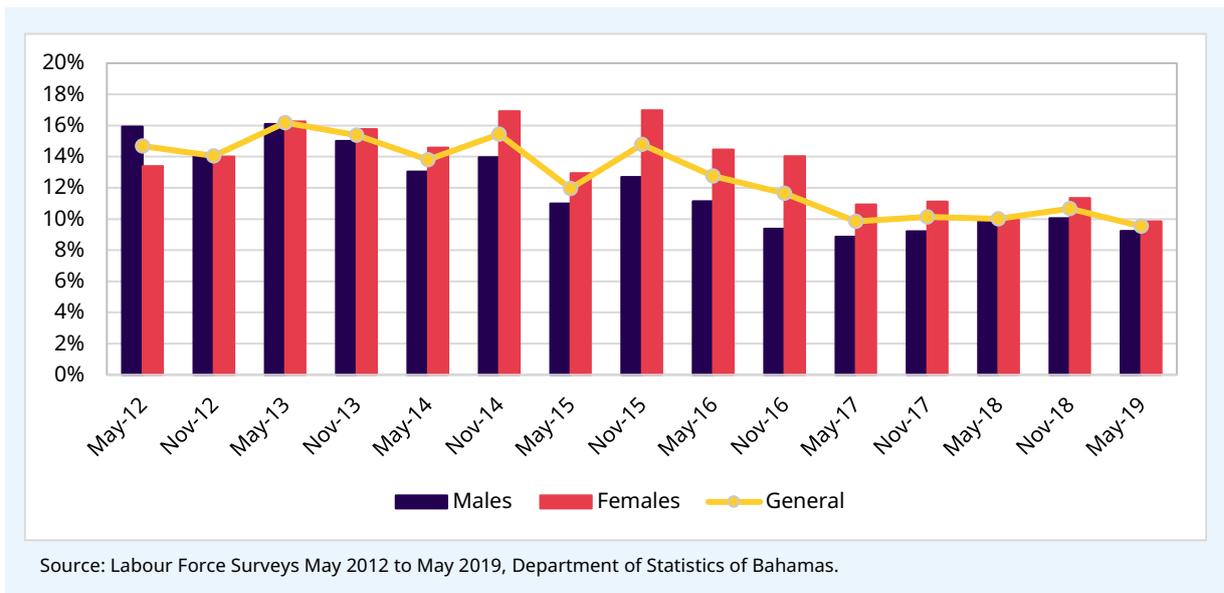
► **Figure 2.11. Labour force participation rates, May 2019, by age-groups and sex**



The constant struggle with high unemployment rate is a common issue in the Caribbean. Unemployment in The Bahamas has been high by international standards since the global economic crisis of 2008-2009, reaching up to 15.9 per cent in 2011<sup>8</sup>. The unemployment rate, nonetheless, decreased gradually since then, reaching 9.5 per cent in May 2019.

Figure 2.12 presents the evolution of the unemployment rate in The Bahamas, by sex over the period from May 2012 to May 2019.

► **Figure 2.12. Unemployment rate (ages 15+), May 2012 to May 2019**

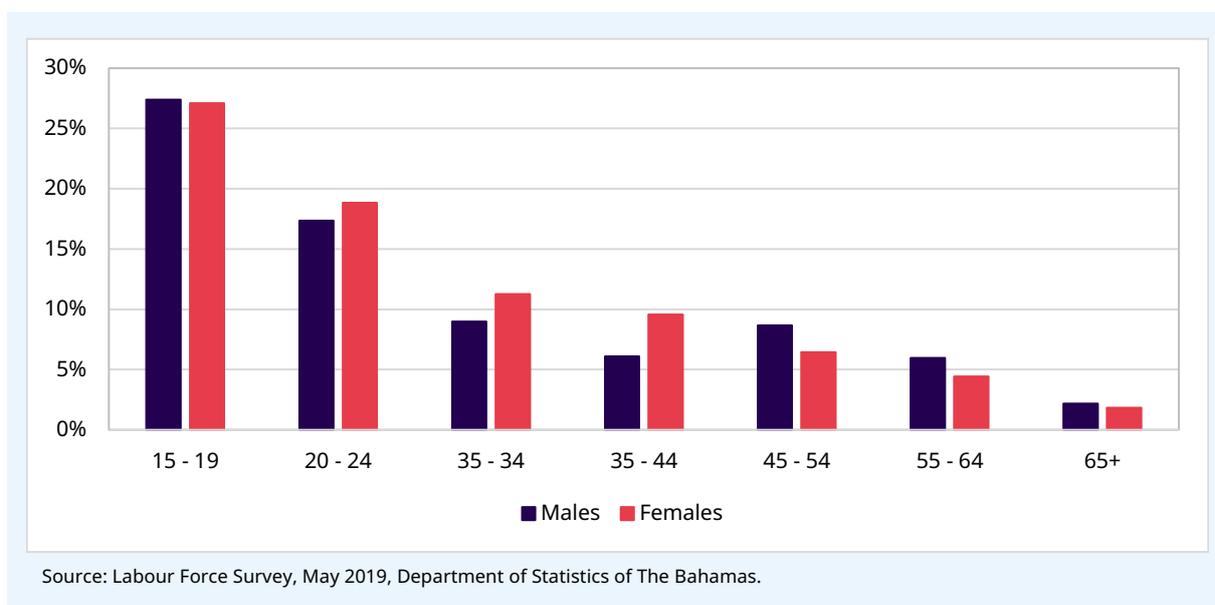


<sup>8</sup> International Monetary Fund (IMF)

The unemployment rate has remained higher among females than among males in almost all labour force surveys conducted by the Department of Statistics since May 2012. While the unemployment rate averaged to 12.0 per cent for males over the period from May 2012 to May 2019, it reached on average 13.5 per cent among females. Prior to COVID-19 being declared a pandemic by World Health Organization (WHO) in March 2020, the economic outlook for The Bahamas was encouraging with most of the key performance indicators pointing to ongoing improvements.

Figure 2.13 presents the distribution of the unemployed, by age-group and sex in May 2019.

► **Figure 2.13. Unemployment rate by age-group, May 2019**



The above Figure shows that unemployment rates are higher at younger ages. In fact, unemployment rates exceed 27 per cent for both males and females aged 15-19. The unemployment rates exceed 17 per cent for males and females aged 20-24. Although the labour force population aged 15-24 represented about 14 per cent of the labour force population in The Bahamas in May 2019, the unemployed workers aged 15-24 constituted 30 per cent of the unemployment in the country. This could be an indicator of some barriers for entry into employment or reflects the fact that younger workers in The Bahamas have generally less secure and less stable jobs than older workers.

## 2.2.2. Projected macroeconomic assumptions

The most recent labour force survey produced by the Department of Statistics dates back from 2019, therefore it pre-dates the COVID-19 pandemic. The COVID-19 pandemic has caused an unprecedented impact on Caribbean labour markets in 2020. Although the Caribbean economies have managed to flatten the COVID-19 curve, their key lifelines have collapsed. With tourism coming to a virtual standstill and key source markets in advanced economies plunging into deeper recession, the region experienced a very sharp and protracted contraction of their economic activity in 2020.

The October Update of the International Monetary Fund (IMF) World Economic Outlook estimates the economy of The Bahamas to shrink by up to 14.8 per cent in real terms in 2020. Despite the reopening of borders starting in June 2020 for some Caribbean countries (including The Bahamas), international tourist arrivals are expected to return to pre-crisis levels only gradually over the period 2021-2023.<sup>9</sup> The

<sup>9</sup> <https://blogs.imf.org/2020/06/26/outlook-for-latin-america-and-the-caribbean-an-intensifying-pandemic/>

unemployment rate in The Bahamas remains difficult to assess for the year 2020 since the latest employment indicators obtained by the Department of Statistics pre-dated the COVID-19 pandemic.

In this valuation, it is assumed that:

- ▶ The labour force participation rates, by age and sex, will remain unchanged over the projection period.
- ▶ The Bahamian economy will shrink by 14.8 per cent in 2020 before experiencing 4.6 and 5.5 per cent real growths in years 2021 and 2022 respectively. Thereafter, the real GDP growth rate is projected to decrease gradually, from 5.5 per cent in 2022 to 1.6 per cent in 2033. From 2033 onwards, the real GDP growth rate was set so that the unemployment rate remains unchanged at 9.0 per cent. While the short-term economic outlook is important, it should be borne in mind that the performance of the economy over the entire projection period remains the main driver of the financial performance of the scheme.
- ▶ The contraction of the Bahamian economy for year 2020, combined with the assumed productivity growth for the year, will result in a 25.4 per cent unemployment rate for 2020. From 2021 onwards, the unemployment rate is projected to decrease gradually, reaching 15.3 per cent in 2025 and 10.7 per cent in 2030 (the unemployment rate observed in the country prior to the COVID-19 pandemic). From 2033 onwards, the unemployment rate is assumed constant at 9.0 per cent.
- ▶ Over the projection years 2019 to 2025, the productivity growth rates will be based on the assumed real GDP growth rates and employment growth rates. From 2026 onwards, the productivity growth rate will remain constant at 1.0 per cent per year.
- ▶ The inflation rate will vary between 1.8 and 2.4 per cent per year between 2019 and 2025 inclusively. The annual inflation rate is then projected to decrease from 2.2 per cent in 2025 to 2.1 per cent in 2030. From 2030 onwards, the inflation rate will remain constant at 2.1 per cent per year.
- ▶ The annual increase in the remuneration of an insured person consists of three components: the changes in the cost of living, the general economic productivity increase, and the increase in personal productivity for work experience and seniority. In this actuarial study, it is assumed that both labour productivity and real salary growths will move in the same direction and in the same percentage. The increase in personal productivity for work experience and seniority is reflected in the salary scale distribution. This is presented in Appendix 3.
- ▶ The real rate of return will remain constant over the projection period at 2.5 per cent per year. This assumption is consistent with the actual portfolio of the NIB.

Figure 2.14 presents the annual growth rates in real GDP, employment, real salary, real investment return and inflation assumed over the projection period of 60 years (2019–2078).

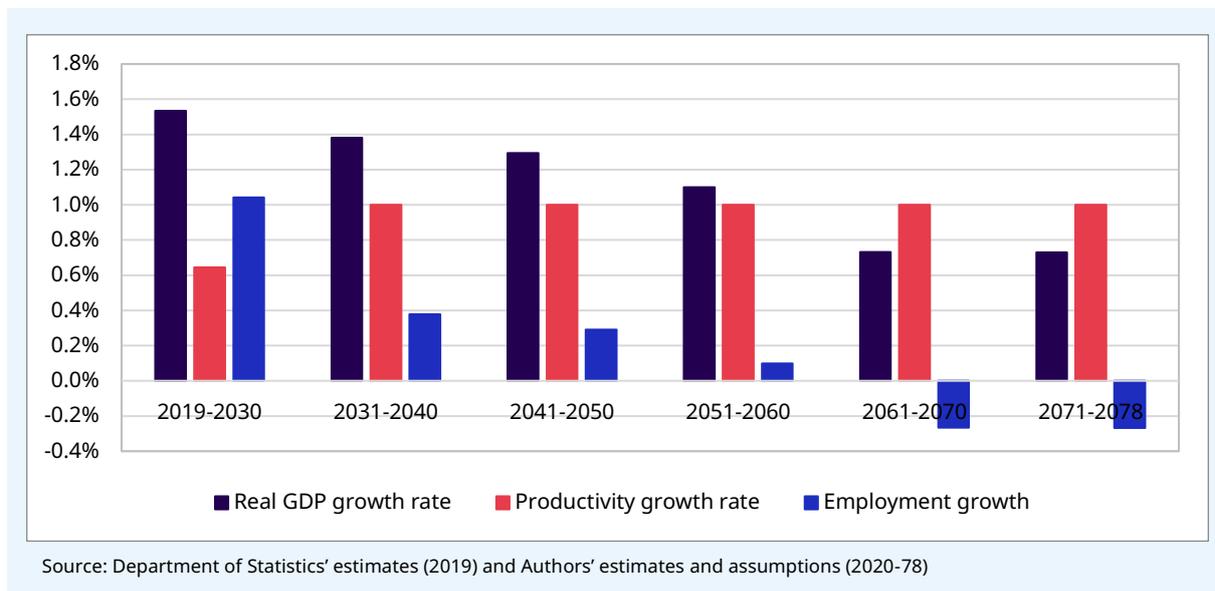
► **Figure 2.14. Growth rates in real GDP, productivity and employment (2019-78)**

Table 2.5 presents the main economic assumptions used in this valuation. Table 2.6 presents a sample of the main population and labour force indicators assumed in this valuation. The Table focusses on persons aged 15 to 64, and therefore allows for the drawing of parallels between the labour force and employed populations projections assumed in this valuation and the projected evolution of the active insured members covered under the NIB.

► **Table 2.5. Main economic assumptions, 2019-2035 (in percentage)**

| Year    | Real GDP growth rate | Employment growth rate | Productivity growth rate | Inflation rate | Unemployment rate |
|---------|----------------------|------------------------|--------------------------|----------------|-------------------|
| 2019    | 1.2                  | 2.5                    | -1.2                     | 2.5            | 10.7              |
| 2020    | -14.8                | -15.3                  | 0.7                      | 1.8            | 25.4              |
| 2021    | 4.6                  | 8.2                    | -3.3                     | 2.1            | 20.3              |
| 2022    | 5.5                  | 4.2                    | 1.2                      | 2.4            | 18.0              |
| 2023    | 4.0                  | 3.6                    | 0.4                      | 2.3            | 16.1              |
| 2024    | 3.5                  | 1.7                    | 1.8                      | 2.2            | 15.6              |
| 2025    | 3.0                  | 1.5                    | 1.5                      | 2.2            | 15.3              |
| 2026    | 2.8                  | 1.8                    | 1.0                      | 2.2            | 14.4              |
| 2027    | 2.7                  | 1.7                    | 1.0                      | 2.1            | 13.5              |
| 2028    | 2.6                  | 1.6                    | 1.0                      | 2.1            | 12.5              |
| 2029    | 2.5                  | 1.5                    | 1.0                      | 2.1            | 11.6              |
| 2030    | 2.4                  | 1.4                    | 1.0                      | 2.1            | 10.7              |
| 2031    | 2.0                  | 1.0                    | 1.0                      | 2.1            | 10.0              |
| 2032    | 1.9                  | 0.9                    | 1.0                      | 2.1            | 9.4               |
| 2033    | 1.6                  | 0.6                    | 1.0                      | 2.1            | 9.0               |
| 2034    | 1.1                  | 0.1                    | 1.0                      | 2.1            | 9.0               |
| 2035    | 1.1                  | 0.1                    | 1.0                      | 2.1            | 9.0               |
| 2036-78 | 0.7 - 1.4            | -0.3 - 0.4             | 1.0                      | 2.1            | 9.0               |

Note: Unemployment rate calculated for the age group 15 and older

Source: The Department of Statistics' estimates (2019) and Authors' estimates and assumptions (2020-78).

► **Table 2.6. Population, labour force and employment (ages 15-64), projections 2018–78, selected years**

|  | 2018           | 2038           | 2058           | 2078           |
|--|----------------|----------------|----------------|----------------|
| <b>Working-age population</b>              | <b>271 137</b> | <b>293 798</b> | <b>302 528</b> | <b>283 935</b> |
| Male                                       | 131 076        | 143 372        | 149 556        | 142 284        |
| Female                                     | 140 061        | 150 426        | 152 972        | 141 651        |
| <b>Labour force participation rate (%)</b> | <b>82.3</b>    | <b>85.3</b>    | <b>85.9</b>    | <b>86.2</b>    |
| Male                                       | 85.5           | 86.9           | 87.5           | 87.8           |
| Female                                     | 79.4           | 83.7           | 84.3           | 84.7           |
| <b>Labour force population</b>             | <b>223 200</b> | <b>250 515</b> | <b>259 785</b> | <b>244 825</b> |
| Male                                       | 112 044        | 124 608        | 130 843        | 124 858        |
| Female                                     | 111 156        | 125 907        | 128 942        | 119 968        |
| <b>Employed population</b>                 | <b>199 678</b> | <b>227 133</b> | <b>235 383</b> | <b>221 612</b> |
| Male                                       | 100 638        | 113 487        | 118 825        | 113 412        |
| Female                                     | 99 041         | 113 647        | 116 558        | 108 200        |
| <b>Unemployed population</b>               | <b>23 522</b>  | <b>23 382</b>  | <b>24 402</b>  | <b>23 213</b>  |
| Male                                       | 11 406         | 11 122         | 12 018         | 11 446         |
| Female                                     | 12 116         | 12 260         | 12 385         | 11 767         |
| <b>Unemployment rate (%)</b>               | <b>10.5</b>    | <b>9.3</b>     | <b>9.4</b>     | <b>9.5</b>     |
| Male                                       | 10.2           | 8.9            | 9.2            | 9.2            |
| Female                                     | 10.9           | 9.7            | 9.6            | 9.8            |

Source: Department of Statistics' estimates (2018) and Authors' estimates and assumptions (2038, 2058, 2078).

## ▶ 3. Demographic and financial projections

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This valuation deals with the ability of the Social Security Scheme to meet its future obligations at the time that they are due. This is done under an open-group approach. It is assumed that workers will continue to be insured with the NIB indefinitely, thus paying contributions and accruing benefit entitlements, and later, receiving benefits in accordance with the current practice of the NIB. Future contributions and benefits are calculated according to the demographic and economic assumptions presented in Chapter 2 and on the basis of the database and the scheme-specific assumptions presented in Appendix 3.

This review has been separated into four parts: valuations of the Short-term Benefits Branch, Medical (prescription drugs) Benefits Branch, Industrial Benefits Branch, and Long-term (Pension) Benefits Branch. There is no need to project short-term benefits and industrial benefits over a very long period to estimate if the contribution rates are adequate. The approach used in this actuarial valuation is to analyse short-term benefits, industrial benefits and medical benefits separately and then to calculate and to allot to them a separate contribution rate. In a next step, these contribution rates will be subtracted from the total contribution rate of 9.8 per cent to undertake the pension projection. It will then be possible to know the current contribution rate allocated to the Pension Branch. Using this approach permits more emphasis to be put on the pension projection.

Instead of separating the contribution on a predetermined proportion in the financial statement, it is recommended to levy an explicit contribution rate for each type of benefit. This approach has many advantages:

- ▶ simplicity of understanding;
- ▶ transparency;
- ▶ people's awareness of the cost and the stakes of each benefit; and
- ▶ better risk management.

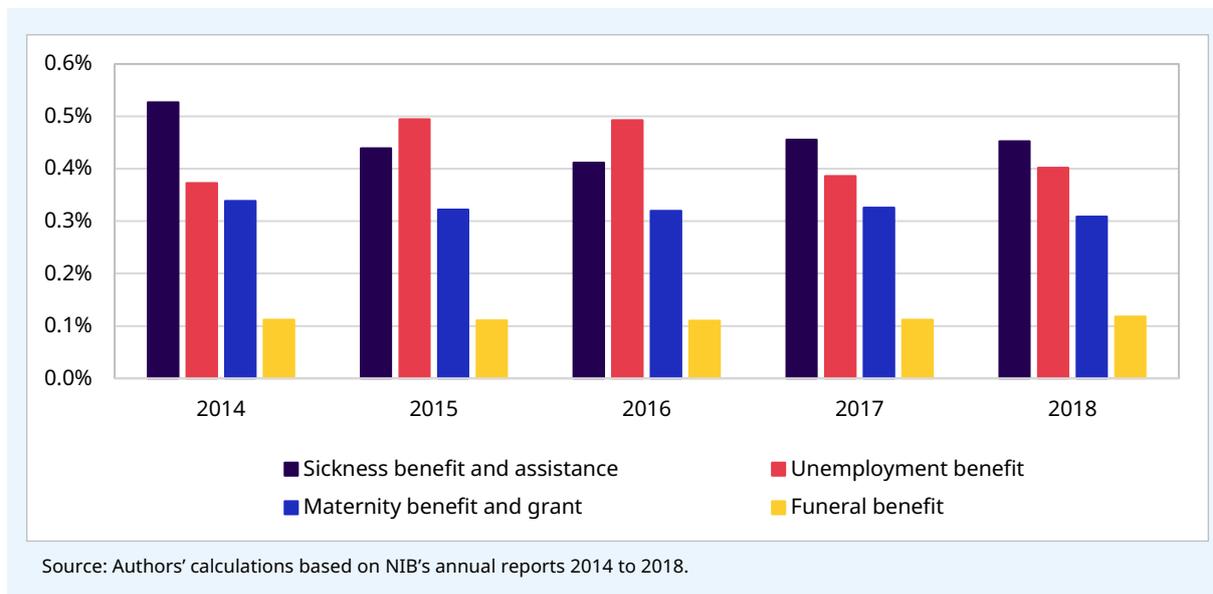
The recommended contribution rate is displayed in each subsection.

### 3.1. Valuation of the Short-term Benefits Branch

The Short-term Benefits Branch of the NIB includes sickness benefits, sickness assistance, maternity benefits, maternity grants, unemployment benefits and funeral benefits.

Over the period 2014-18, the cost related to the short-term benefits remained relatively stable in relation to the insurable earnings, oscillating between 1.28 and 1.37 per cent of the insurable earnings during the five-year period. On average, the cost of short-term benefits averaged at 1.32 per cent of the insurable earnings over the period 2014-18. Figure 3.1 illustrates the cost of each short-term benefit in relation to the insurable earnings over the period 2014-18.

► **Figure 3.1. Cost of short-term benefits to insurable earnings (2014–18) (percentage)**



Over the period 2014-18:

- The cost of sickness benefits and sickness assistance oscillated between 0.41 and 0.53 per cent of the insurable earnings. On average, the cost of sickness benefits and sickness assistance averaged at 0.46 per cent of the insurable earnings.
- The cost of unemployment benefits oscillated between 0.37 and 0.49 per cent of the insurable earnings. On average, the cost of unemployment benefits averaged at 0.43 per cent of the insurable earnings.
- The cost of maternity benefits remained quite stable, oscillating between 0.31 and 0.34 per cent of the insurable earnings. On average, the cost of maternity benefits averaged at 0.32 per cent of the insurable earnings.
- The cost of funeral benefits has also been quite stable, oscillating between 0.11 and 0.12 per cent of the insurable earnings. On average, the cost of funeral benefits averaged at 0.11 per cent of the insurable earnings.

According to the NIB's annual reports, the administrative expenditure for short-term benefits remained stable in relation to the insurable earnings for the period 2014-2018, oscillating between 0.32 and 0.37 per cent of the insurable earnings during the five-year period. On average, the administrative expenditure for short-term benefits averaged at 0.35 per cent of the insurable earnings or 25 per cent of the benefits expenditure over the period 2014-18.

Table 3.1 presents the statements of account related to the Short-term Benefits Branch over the period 2013-18.

► **Table 3.1. Statement of account, Short-term Benefits Branch, 2013–18 (BSD '000s)**

|  | 2013          | 2014            | 2015          | 2016          | 2017           | 2018           |
|--|---------------|-----------------|---------------|---------------|----------------|----------------|
| <b>Total income</b>  | <b>58 836</b> | <b>62 773</b>   | <b>72 590</b> | <b>66 932</b> | <b>71 070</b>  | <b>72 640</b>  |
| Contributions received   | 57 342        | 61 134          | 65 115        | 65 298        | 69 371         | 70 984         |
| Investment income  | 1 378         | 1 498           | 7 318         | 1 307         | 1 269          | 1 075          |
| Other income   | 116           | 141             | 157           | 327           | 430            | 581            |
| <b>Total expenditures</b>  | <b>42 940</b> | <b>42 820</b>   | <b>45 702</b> | <b>45 613</b> | <b>45 587</b>  | <b>46 669</b>  |
| Benefits paid  | 33 821        | 33 803          | 36 458        | 35 605        | 36 346         | 37 274         |
| General and administrative costs   | 9 119         | 9 017           | 9 244         | 10 008        | 9 241          | 9 395          |
| <b>Transfer to Medical Benefits Branch</b>   | -             | <b>(20 000)</b> | -             | -             | -              | -              |
| <b>Surplus</b>   | <b>15 896</b> | <b>(47)</b>     | <b>26 888</b> | <b>21 319</b> | <b>25 483</b>  | <b>25 971</b>  |
| <b>Net assets at year end</b>  | <b>46 805</b> | <b>46 758</b>   | <b>73 646</b> | <b>94 965</b> | <b>120 448</b> | <b>146 419</b> |
| Note: Unclaimed benefits have been reflected in the benefits paid.<br>Source: NIB annual reports 2013 to 2018. |               |                 |               |               |                |                |

Although an amount of BSD20.0 million was transferred from the Short-term Benefits Branch to the Medical Benefits Branch in 2014, the reserve of the Short-term Benefits Branch remains high as of 31 December 2018. Table 3.2 presents the reserve of the Short-term Benefits Branch for years 2014 to 2018, in BSD as well as in relation to the annual expenditure.

► **Table 3.2. Short-term Benefits Branch, amounts of reserve and reserve ratio (2014–18)**

|   | 2014   | 2015   | 2016   | 2017    | 2018    |
|---|--------|--------|--------|---------|---------|
| Reserve (BSD '000)  | 46 758 | 73 646 | 94 965 | 120 448 | 146 419 |
| Reserve in relation to annual expenditure (reserve ratio) | 1.1    | 1.6    | 2.1    | 2.6     | 3.1     |
| Source: Financial statements.                             |        |        |        |         |         |

There is normally no need to accumulate too high an amount of reserve for the Short-term Benefits Branch. However, a large portion of the reserve accumulated by this Branch as at 31 December 2018 is well justified by the unprecedented disbursement in unemployment benefits caused by the COVID-19 pandemic in 2020. While the last actuarial valuation recommended that the Scheme maintains a reserve for its unemployment benefits corresponding to 1.5 times the annual benefit expenditure, such a level of reserve would not be sufficient to absorb the unemployment benefits expenditure for 2020. For this assessment, exceptionally, the estimated expenses in unemployment benefits for 2020 (BSD 108.3 million) has been reflected in the recommended amount of reserve as at 31 December 2018.

Table 3.3 presents the recommended amounts of reserve that should be written in the financial statement as of 31 December 2018. Instead of BSD146.4 million (Table 3.1), a total reserve of BSD121.1 million would have been enough. The excess amount of reserve (BSD25.3 million) has been transferred to the Long-term Pension Branch for the specific purposes of this actuarial valuation.

► **Table 3.3. Short-term Benefits Branch, recommended amount of reserve in the financial statements (31 December 2018)**

|                                   | Reserve expressed as a number of years of benefits | Recommended amount of reserve 31 December 2018 (BSD '000) |
|-----------------------------------|--|---|
| Sickness benefit and assistance   | 0.5  | 6 592   |
| Maternity benefit and grant       | 0.5  | 4 494   |
| Unemployment benefit <sup>1</sup> | 9.3  | 108 303   |
| Funeral benefit                   | 0.5  | 1 716   |
| <b>Total</b>                      | <b>-</b>   | <b>121 105</b>  |

<sup>1</sup> For this assessment, exceptionally, the estimated expenses in unemployment benefits for 2020 (BSD108.3 million) has been reflected in the recommended amount of reserve as at 31 December 2018. This amount corresponds to approximately 9.3 times the unemployment benefits expenditure for 2018. This recommended level of reserve will need to be revised in the next actuarial valuation or redefined through a funding policy.

To assess the recommended contribution rate required under the Short-term Benefits Branch for the period 2019–2023, each component of this Branch has been projected for the five-year period, including the administrative expenditure. Table 3.4 presents the estimated cost and the recommended contribution rate for each of the short-term benefits during the period 2019–2023. The estimated cost is the contribution rate that would be necessary to pay all the benefits and administrative expenditure until the next actuarial valuation of the Scheme.

► **Table 3.4. Short-term Benefits Branch, estimated cost and recommended contribution rate, period 2019–2023 (percentages)**

|                                 | Estimated cost |                            |             | Recommended contribution rate |
|---------------------------------|----------------|----------------------------|-------------|-------------------------------|
|                                 | Benefits       | Administrative expenditure | Total       |                               |
| Sickness benefit and assistance | 0.45           | 0.11                       | 0.56        | 0.60                          |
| Maternity benefit and grant     | 0.34           | 0.09                       | 0.43        | 0.45                          |
| Unemployment benefit            | 1.48           | 0.37                       | 1.85        | 1.20                          |
| Funeral benefit                 | 0.13           | 0.03                       | 0.16        | 0.20                          |
| <b>Total</b>                    | <b>2.40</b>    | <b>0.60</b>                | <b>3.00</b> | <b>2.45</b>                   |

For the period 2019–2023, the administrative expenditure related to the short-term benefits has been assumed at 25 per cent of the short-term benefits expenditure, thus consistent with the NIB recent experience. The recommended contribution rate for each short-term benefit, except unemployment benefits, has been assessed by estimating and rounding their projected cost over the period 2019–2023. The recommended contribution rate for the unemployment benefits has been adjusted to account for the fact that the recommended initial reserve for this benefit already incorporates a portion of its projected expenditure (i.e. projected benefits expenditure for year 2020). For those having to finance all their short-term benefits, the recommended contribution rate for this Branch is 2.45 per cent of the insurable earnings. The contribution rate required to finance the unemployment benefits is estimated at 1.20 per cent of the insurable earnings.

It is worth noting that the contribution rate needed to finance the unemployment benefits would have been approximately 0.70 per cent without the contraction of the economy caused by the COVID-19 pandemic (instead of 1.20 per cent). It might be wise to review this contribution rate as soon as the NIB has more information on the economic recovery.

Table 3.5 presents the projected expenditure of the Short-term Benefits Branch. Table 3.6 presents the financial projections of the Short-term Benefits Branch, assuming an initial reserve of BSD121.1 million and a contribution rate of 2.45 per cent for that Branch.

► **Table 3.5. Short-term Benefits Branch, projected benefits and expenditure (2019–23) (BSD '000)**

|      | Sickness | Maternity | Funeral | Unemployment insurance | Administrative expenditure | Total   |
|------|----------|-----------|---------|------------------------|----------------------------|---------|
| 2019 | 12 504   | 9 651     | 3 701   | 16 301                 | 10 539                     | 52 696  |
| 2020 | 12 420   | 9 944     | 3 861   | 108 303 <sup>1</sup>   | 33 632                     | 168 160 |
| 2021 | 13 784   | 10 508    | 3 938   | 42 965                 | 17 799                     | 88 994  |
| 2022 | 14 842   | 11 090    | 4 121   | 25 730                 | 13 946                     | 69 728  |
| 2023 | 15 883   | 11 687    | 4 296   | 24 635                 | 14 125                     | 70 626  |

<sup>1</sup> Corresponds to the estimated expenses in unemployment benefits for financial year 2020.

► **Table 3.6. Short-term Benefits Branch, overall projections (2019–23) (BSD '000)**

|      | Income                     |                     | Expenses |                         | Surplus (deficit) | Reserve (end year) | PAYG (%) |
|------|----------------------------|---------------------|----------|-------------------------|-------------------|--------------------|----------|
|      | Contributions <sup>1</sup> | Investment earnings | Benefits | Administrative expenses |                   |                    |          |
| 2019 | 74 340                     | 3 297               | 42 157   | 10 539                  | 24 940            | 146 045            | 1.7      |
| 2020 | 64 718                     | 4 710               | 134 528  | 33 632                  | -98 732           | 47 313             | 6.3      |
| 2021 | 72 222                     | 1 914               | 71 195   | 17 799                  | -14 859           | 32 454             | 3.0      |
| 2022 | 77 893                     | 1 648               | 55 782   | 13 946                  | 9 813             | 42 268             | 2.2      |
| 2023 | 83 458                     | 2 176               | 56 501   | 14 125                  | 15 009            | 57 277             | 2.0      |

<sup>1</sup> Assumes an initial reserve of BSD121.1 million as at 31 December 2018 and a contribution rate of 2.45 per cent during the period 2019–2023.

Appendix 2 displays statistics on which the valuation of the Short-term Benefits Branch has been performed.

## 3.2. Valuation of the Medical Benefits Branch and National Prescription Drug Plan

With effect from 1 January 2015, the Bahamas Government has agreed to reimburse all benefits expenses related to the National Prescription Drug Plan. Therefore, this Branch has incurred no benefit expenditure since 1 January 2015.

Since the NIB now pays the general and administrative expenses related to this benefits Branch exclusively, its reserve is no longer necessary and can be transferred to the other benefits branches. However, since the NIB still pays for the general and administrative expenses related to the Medical Benefits Branch, this Branch still requires contributions to cover its general and administrative expenses. This section discusses the contribution rate required under this benefits Branch.

Table 3.7 presents the general and administrative expenses related to the Medical Benefits Branch for the period 2014–18.

► **Table 3.7. General and administrative expenses, Medical Benefits Branch (2014–18)**

|  | 2014  | 2015  | 2016  | 2017  | 2018  | Average 2014-18 |
|--|-------|-------|-------|-------|-------|-----------------|
| General and administrative expenses (BSD '000)                   | 2 058 | 1 802 | 2 642 | 3 587 | 3 778 | 2 773           |
| General and administrative expenses (in % of insurable earnings) | 0.08% | 0.07% | 0.10% | 0.13% | 0.13% | 0.10%           |

Source: NIB's annual reports 2014 to 2018 and Authors' calculations based on NIB's annual reports 2014 to 2018.

According to the NIB's annual reports, the general and administrative expenses related to the Medical Benefits Branch increased gradually in the period 2014–18 as a percentage of insurable earnings, from 0.08 per cent in 2014 to 0.13 per cent in 2018. For this valuation, the contribution rate required to cover the general and administrative expenses related to the Medical Benefits Branch has been assumed unchanged from the last actuarial valuation, at 0.15 per cent of the insurable earnings.

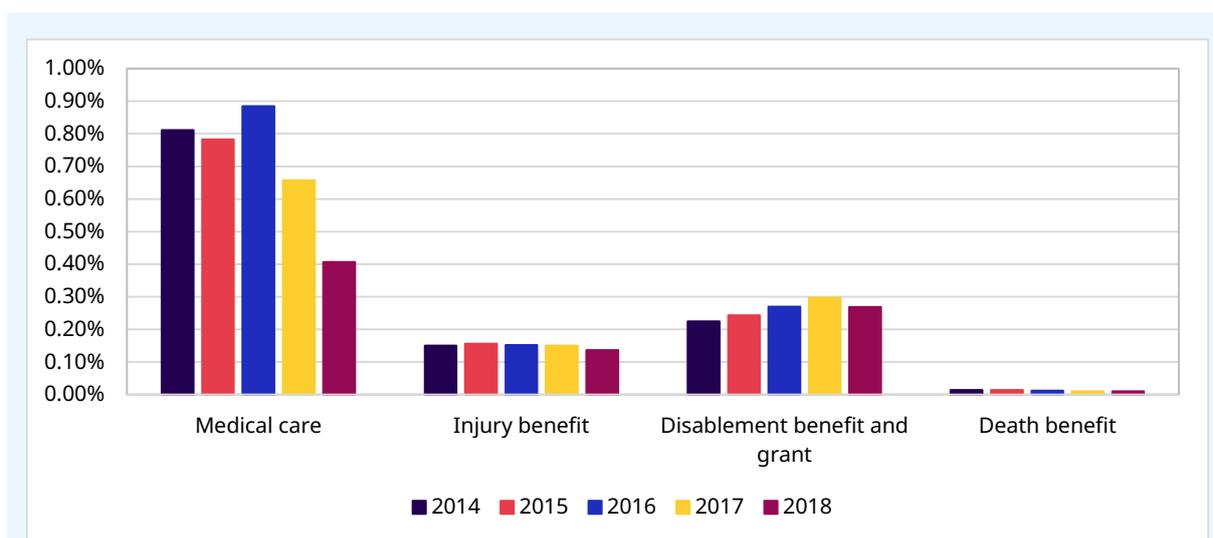
### 3.3. Valuation of the Industrial Benefits Branch

A separate actuarial valuation has been performed to evaluate the sustainability of the Industrial Benefits Branch. Data provided by the NIB were analysed and used to perform the valuation. The benefits paid are the following (more details can be found in Appendix 1):

- Temporary Employment Injury benefit;
- Disablement pension for permanent total disability;
- Pension and Funeral Benefit for death;
- Medical care.

Although the financial implication of this Scheme is much smaller than that for the general old-age, invalidity and survivors' pension Scheme, an actuarial valuation must be performed to ensure that the contribution rate of occupational insurance is on track.

Figure 3.2 illustrates the contribution rates that were necessary to finance the Branch benefits during financial years 2014 to 2018. Medical care represents the largest part of the cost. Globally, over the period 2014–18, the cost of Industrial Benefits averaged at 1.13 per cent of the insurable earnings.

► **Figure 3.2. Cost of industrial benefits to insurable earnings (2014–18) (percentage)**

Source: Authors' calculations based on NIB's annual reports 2014 to 2018.

Over the period 2014-18:

1. The cost of medical care oscillated between 0.78 and 0.89 per cent of the insurable earnings over the period 2014-2016. As a result of high utilization and growing medical expenses, guidelines were implemented in 2017 to help reduce costs. The cost of medical care in relation to the insurable earnings then decreased considerably in 2017 and 2018 compared to their 2014-16 levels. In fact, the cost of medical care decreased from 0.89 per cent in 2016 to 0.66 per cent in 2017 and 0.41 per cent in 2018. The guidelines implemented in 2017 contributed to reduce significantly the cost related to medical care, and the number of magnetic resonance imaging and surgeries specific to back-related injuries.
2. The cost of injury benefits remained stable, averaging at 0.15 per cent of the insurable earnings.
3. The cost of disablement benefits and grants in relation to the insurable earnings increased gradually from 0.22 per cent in 2014 to 0.30 per cent in 2017. In 2018, the cost of disablement benefits and grants represented 0.27 per cent of the insurable earnings.
4. The cost of death benefits remained stable, averaging at 0.01 per cent of the insurable earnings.

According to the NIB's annual reports, the administrative expenditure for industrial benefits remained stable in relation to the insurable earnings for the period 2014-2018, oscillating between 0.13 and 0.20 per cent of the insurable earnings during the five-year period. On average, the administrative expenditure for Industrial Benefits averaged at 0.17 per cent of the insurable earnings or 15 per cent of the benefits expenditure over the period 2014-18.

Table 3.8 presents the statements of account related to the Industrial Benefits Branch over the period 2013-18.

► **Table 3.8. Statement of account, Industrial Benefits Branch, 2013-18 (BSD '000s)**

|  | 2013           | 2014            | 2015            | 2016            | 2017            | 2018           |
|--|----------------|-----------------|-----------------|-----------------|-----------------|----------------|
| <b>Total income</b>  | <b>21 428</b>  | <b>22 567</b>   | <b>24 835</b>   | <b>22 722</b>   | <b>23 375</b>   | <b>23 674</b>  |
| Contributions received   | 17 203         | 18 340          | 19 535          | 19 589          | 20 811          | 21 296         |
| Investment income  | 4 109          | 4 085           | 5 144           | 2 805           | 2 134           | 1 797          |
| Other income   | 116            | 142             | 156             | 328             | 430             | 581            |
| <b>Total expenditures</b>  | <b>23 090</b>  | <b>34 670</b>   | <b>36 616</b>   | <b>40 744</b>   | <b>36 270</b>   | <b>27 854</b>  |
| Benefits paid  | 19 428         | 30 074          | 31 934          | 35 304          | 31 684          | 23 930         |
| General and administrative costs   | 3 662          | 4 596           | 4 682           | 5 440           | 4 586           | 3 924          |
| <b>Surplus</b>   | <b>(1 662)</b> | <b>(12 103)</b> | <b>(11 781)</b> | <b>(18 022)</b> | <b>(12 895)</b> | <b>(4 180)</b> |
| <b>Net assets at year end</b>  | <b>133 810</b> | <b>121 707</b>  | <b>109 926</b>  | <b>91 904</b>   | <b>79 009</b>   | <b>74 829</b>  |
| Note: Benefit expenditure related to disablement/death benefits are included. Unclaimed benefits have been reflected in the benefits paid. |                |                 |                 |                 |                 |                |
| Source: NIB's annual reports 2013 to 2018.   |                |                 |                 |                 |                 |                |

The reserve of the Industrial Benefits Branch decreased gradually over the period 2014-18, from BSD133.8 million at 31 December 2013 to BSD74.8 million at 31 December 2018. It is important to note that the contribution rate reflected in the financial statements for this Branch represented, on average, about 0.75 per cent of the insurable earnings for the period 2014-18, while a contribution rate of 1.45 per cent was recommended under the last actuarial valuation. A gradual decrease in the Branch's reserve was therefore expected. The gradual decrease in the reserve between 2014 and 2018 is, however, less pronounced than expected: medical care benefits, which was lower than expected, contributed to these results. Table 3.9 presents the reserve of the Industrial Benefits Branch for years 2014 to 2018, in BSD as well as in relation to the annual expenditure.

► **Table 3.9. Industrial Benefits Branch, amounts of reserve and reserve ratio (2014–18)**

|   | 2014    | 2015    | 2016   | 2017   | 2018   |
|---|---------|---------|--------|--------|--------|
| Reserve (BSD '000)  | 121 707 | 109 926 | 91 904 | 79 009 | 74 829 |
| Reserve in relation to annual expenditure (reserve ratio) | 4.0     | 3.4     | 2.6    | 2.5    | 3.1    |
| Source: Financial statements.                             |         |         |        |        |        |

An exercise has been carried out to estimate a level of reserve by using the present value factors for the computation of capital values described in the third schedule of the National Insurance Financial & Accounting Regulations. To assess the liability related to the death and disablement beneficiaries at valuation date, the present value factors of the schedule has been multiplied with the applicable weekly death and disablement benefits paid as at 31 December 2018. According to this exercise, an amount of BSD110.9 million is necessary to be held in reserve for disablement and death benefits.

It is worth noting that the estimated level of reserve obtained using the schedule was generally in line with the actuarial present values that would have been obtained using the mortality rates and the real rates of return assumed in this valuation. Nonetheless, it is recommended to update the present value factors for the computation of capital values described in the third schedule of the National Insurance Financial & Accounting Regulations on a regular basis and use them in establishing the required amount of reserve to be held in the financial statements, as well as for the actuarial valuation.

In addition to the amount of BSD110.9 million, a projection of the costs of the Industrial Benefits Branch has been made using the same methodology and assumptions as was used to evaluate the Short-term Benefits Branch and a 0.75 year of payment of benefits for Injury, Medical, Death and Disablement benefits has been assumed as a contingency reserve (BSD17.9 million). Therefore, the recommended reserve for the Industrial Benefits Branch as at 31 December 2018 is BSD128.8 million. A transfer of BSD54 million should be made between the Pension Branch and the Industrial Benefits Branch to cover this shortfall. Table 3.10 presents the recommended amounts of reserve that should be written in the financial statement as at 31 December 2018.

► **Table 3.10. Industrial Benefits Branch, recommended amount of reserve in the financial statements (31 December 2018)**

|  | Reserve expressed as a number of years of benefits | Recommended amount of reserve 31 December 2018 (BSD '000) |
|--|--|---|
| Liability related to disablement and death benefits in payment |  | 110,850   |
| Injury, medical, disablement and death benefits                | 0.75   | 17,948  |
| <b>Total</b>   | -  | <b>128 798</b>  |
| Source: Authors' calculations                                  |  |   |

To assess the recommended contribution rate required under the industrial benefits branch for the period 2019–2023, each component of the Industrial Benefits Branch has been projected for the five-year period, including the administrative expenditure. Table 3.11 presents the estimated cost and the recommended contribution rate for each of the benefits during the period 2019–2023. The estimated cost is the contribution rate that would be necessary to pay all the benefits and administrative expenditure until the next actuarial valuation of the Scheme.

► **Table 3.11. Industrial Benefits Branch, estimated cost and recommended contribution rate, period 2019–2023 (percentages)**

| Benefit                              | Rates       |
|--------------------------------------|-------------|
| Injury benefit                       | 0.15        |
| Medical care                         | 0.50        |
| Disablement and death benefit        | 0.30        |
| Death benefit                        | 0.02        |
| Administrative expenditure           | 0.17        |
| <b>Total</b>                         | <b>1.14</b> |
| <b>Recommended contribution rate</b> | <b>1.15</b> |

For the period 2019-2023, the administrative expenditure related to the industrial benefits has been estimated at 0.17 per cent of the insurable earnings, thus consistent with the NIB's recent experience. The recommended contribution rate for each industrial benefit has been assessed by estimating and rounding their projected cost over the period 2019–2023. The recommended contribution rate for this Branch is 1.15 per cent of the insurable earnings.

Table 3.12 presents the projected expenditure of the Industrial Benefits Branch. Table 3.13 presents the financial projections of this Branch, assuming an initial reserve of BSD128.8 million and a contribution rate of 1.15 per cent for that Branch.

► **Table 3.12. Industrial Benefits Branch, projected benefits and expenditure (2019–23) (BSD '000)**

|             | Injury benefit | Medical care | Disablement benefit | Death benefit | Administrative expenditure | Total  |
|-------------|----------------|--------------|---------------------|---------------|----------------------------|--------|
| <b>2019</b> | 4 472          | 10 694       | 7 906               | 230           | 3 879                      | 27 181 |
| <b>2020</b> | 3 999          | 9 430        | 8 032               | 297           | 4 354                      | 26 111 |
| <b>2021</b> | 4 396          | 10 447       | 8 767               | 331           | 4 859                      | 28 800 |
| <b>2022</b> | 4 707          | 11 231       | 9 487               | 357           | 5 241                      | 31 023 |
| <b>2023</b> | 5 012          | 12 005       | 10 199              | 383           | 5 615                      | 33 214 |

► **Table 3.13. Industrial Benefits Branch, overall projections (2019–23) (BSD '000)**

|             | Income                     |                     | Expenses |                         | Surplus (deficit) | Reserve (end year) | Contribution rate (%) |
|-------------|----------------------------|---------------------|----------|-------------------------|-------------------|--------------------|-----------------------|
|             | Contributions <sup>1</sup> | Investment earnings | Benefits | Administrative expenses |                   |                    |                       |
| <b>2019</b> | 35 950                     | 3 329               | 23 302   | 3 879                   | 12 099            | 140 897            | 1.15                  |
| <b>2020</b> | 31 297                     | 7 117               | 21 757   | 4 354                   | 12 302            | 153 199            | 1.15                  |
| <b>2021</b> | 34 926                     | 7 660               | 23 941   | 4 859                   | 13 785            | 166 984            | 1.15                  |
| <b>2022</b> | 37 669                     | 7 689               | 25 782   | 5 241                   | 14 335            | 181 320            | 1.15                  |
| <b>2023</b> | 40 360                     | 8 276               | 27 599   | 5 615                   | 15 422            | 196 741            | 1.15                  |

<sup>1</sup> Assumes an initial reserve of BSD128.8 million as at 31 December 2018 and a contribution rate of 1.15 per cent during the period 2019–2023.

Appendix 2 displays statistics on which the valuation of the Industrial Benefits Branch has been performed. Some stakeholders have recently expressed concern regarding the fact that some employers are not paying the Industrial Benefits contribution according to their risks. It is well known that the risk of employment injury varies widely among different economic activities. For that reason, a structure of risk classification and

ratemaking process depending on the economic activities can be seen as good practice. Inside a given group of employers (risk classification), some employers are also performing more than others relative to the management of the employment injury risk (number of cases, duration of benefits, implementation of safe work environment and return to work programme) while others are less efficient. For those who are performing well, it can be a fair practice to reward them for their good management. This can be achieved by recognizing the contribution rates on efforts carried out on prevention activities and on the management of a return to work programme. When such a system is implemented, all the activities related to good risk management of the employment injury risk could make sense economically.

Such a classification system, based on the risks and the recognition of the experience of some employers in the ratemaking process, is however highly dependent on the availability, significance and quality of information. The size of the economy of a country should, of course, be taken into account during the design process of this kind of system. The economy of The Bahamas is, of course, smaller than in some countries that have adopted an approach based on the recognition of risks.

Developing a comprehensive rating system that takes risk classification and the risk and efficiency of employers into account is beyond the scope of the present review. It is, however, suggested to being a feasibility study on how the economic activities of employers could be taken into account in the ratemaking process of the Industrial Benefits Branch of The Bahamas.

### **3.4. Valuation of the Long-term (Pension) Benefits Branch**

This review deals with expenditures and income. Long-term benefits will attain a mature state only after the youngest people of the first generation of contributors have become pensioners, have died and all survivors' pensions paid on their behalf have ceased. This requires that the situation of the Scheme be analysed over a period that is long enough. For the current valuation, the projection period is 60 years, from 2018 to 2078.

The general methodology of the valuation is described in Appendices 3 and 5. For the present actuarial valuation, a basic scenario was produced based on best-estimate assumptions. Also, additional scenarios were produced to better understand major factors that have an impact on the financial soundness of the NIB and to assess uncertainties concerning possible modifications to the Scheme that could be part of a future potential reform of pensions.

The main purpose of the valuation is to ascertain whether the financing of the NIB is on course over the long term, and not to exactly forecast numerical values. Due to the long-term nature of assumptions, absolute figures include a high degree of uncertainty. Therefore, results have to be interpreted carefully and future actuarial reviews will have to be undertaken on a regular basis to revise actuarial assumptions in light of the actual experience of the Scheme.

Section 3.4.1 presents the Scheme-specific assumptions that were used to assess the Pension Benefits Branch. Section 3.4.2 presents the demographic projection. Section 3.4.3 presents the financial projections.

#### **3.4.1. Other general assumptions**

In addition to the demographic and economic assumptions presented in Chapter 2, further assumptions have been made regarding the initial reserve and the administrative expenses.

##### **Initial reserve**

The NIB Act and its regulations do not specify the contribution rate (or reserve) pertaining to each category of benefits branches. Therefore, a method has to be considered to split the total available assets between the Pension Benefits Branch and the other Branches. In this actuarial valuation, it is assumed that the assets in excess of the recommended reserve in each of the Branches - Short-term Benefits Branch, Medical Benefits Branch and Industrial Benefits Branch will be used to constitute the initial reserve of the Pension Benefits Branch.

The initial reserve related to the Pension Benefits Branch is presented in Table 3.14.

► **Table 3.14. Initial reserve of the Pension Benefits Branch (in BSD '000)**

|   | Reserve           |
|---|-------------------|
| <b>Value of net assets as at 31 December 2018</b> | <b>1 737 518</b>  |
| <i>Minus</i>                                      |                   |
| Short-term Benefits Branch reserve                | 121 105           |
| Medical Benefits Branch reserve                   | n.a. <sup>1</sup> |
| Industrial Benefits Branch reserve                | 128 798           |
| <b>Initial Pension Benefits Branch reserve</b>    | <b>1 487 615</b>  |

Note: 1 External financing.

As at 31 December 2018, the Pensions Benefits Branch reserve is estimated to BSD 1,487.6 million. More details on the approach used to calculate the initial reserve related to the Pensions Benefits Branch are presented in sections 3.1 to 3.3.

The contribution rate allocated to the Pension Benefits Branch is presented in table 3.15.

► **Table 3.15. Total contribution rate allocated to the Pension Benefits Branch (in percentages)**

|   | Contribution rate       |               |
|---|-------------------------|---------------|
|   | Employed                | Self-employed |
| <b>Total contribution rate</b>                                    | <b>9.80</b>             | <b>8.80</b>   |
| <i>Minus</i>  |                         |               |
| Recommended contribution rate for the Short-term Benefits Branch  | 2.45 <sup>1</sup>       | 1.25          |
| Recommended contribution rate for the Medical Benefits Branch     | 0.15                    | 0.15          |
| Recommended contribution rate for the Industrial Benefits Branch  | 1.15                    | 1.15          |
| <b>Contribution rate allocated to the Pension Benefits Branch</b> | <b>6.05<sup>1</sup></b> | <b>6.25</b>   |

Note: <sup>1</sup>The contribution rate required to finance the unemployment benefits is projected at 1.20 per cent during the period 2019-2023 and 0.70 per cent thereafter. Therefore, the recommended contribution rate to cover the employed individuals under the Short-term Benefits Branch is projected at 2.45 per cent during the period 2019-2023 and 1.95 per cent thereafter. For the employed individuals, the contribution rate allocated to the Pension Benefits Branch is projected at 6.05 per cent during the period 2019-2023 and 6.55 per cent thereafter.

The contribution rate required to finance the unemployment benefits is projected at 1.20 per cent during the period 2019-2023 and 0.70 per cent thereafter. Therefore, the recommended contribution rate to cover the employed individuals under the Short-term Benefits Branch is projected at 2.45 per cent during the period 2019-2023 and 1.95 per cent thereafter. For the employed individuals, the contribution rate allocated to the Pension Benefits Branch is projected at 6.05 per cent during the period 2019-2023 and 6.55 per cent thereafter. For the self-employed individuals, the contribution rate allocated to the Pension Benefits Branch is projected at 6.25 per cent during the entire projection period.

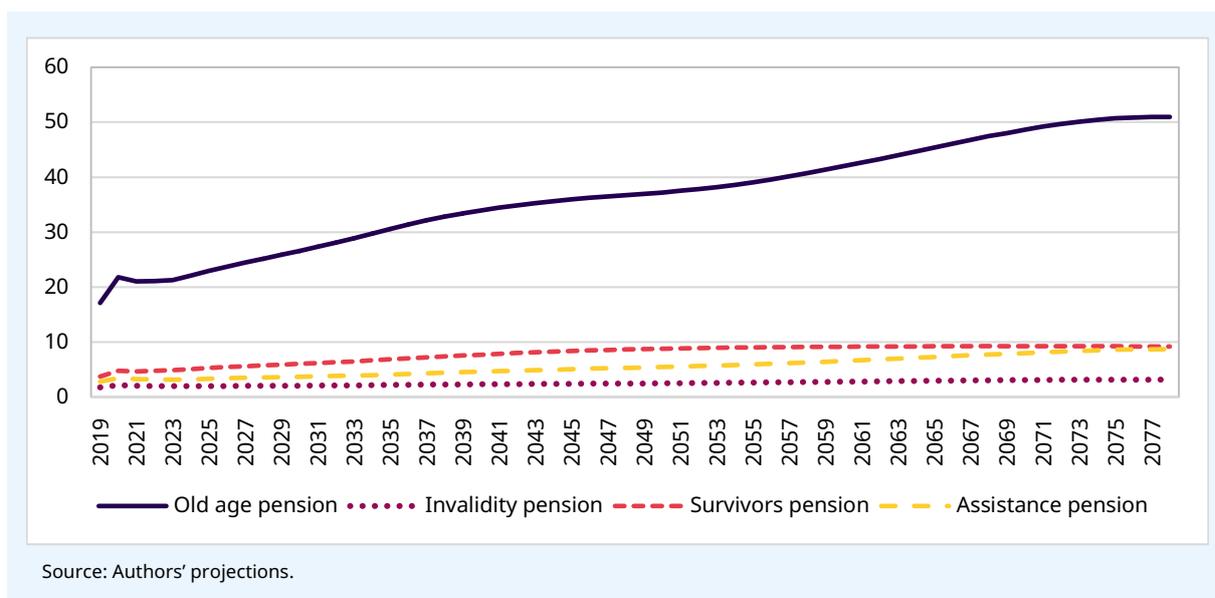
### General and administrative expenses and other expenses

The general and administrative expenses and other expenses related to the Pensions Benefits Branch represented, on average, 1.22 per cent of the insurable earnings between 31 December 2013 and 31 December 2018. In this valuation, the general and administrative expenses and other expenses related to the Pension Benefits Branch are assumed at 1.3 per cent of the insurable earnings over the projection period. This is in line with the assumption used in the previous valuation.

### 3.4.2. Demographic projections

The demographic ratio is the ratio of pensioners and beneficiaries to the number of contributors. Figure 3.3 presents the projected demographic ratios by benefit type.

► **Figure 3.3. Long-term (Pension) Benefits Branch, demographic ratios by type of benefit (percentages)**



In 2021, as a consequence of the COVID-19 pandemic, the total number of NIB active members is projected to decrease. This explains the large and sudden increase in demographic ratios observed at the beginning of the projection period. As the economy recovers, in the period 2022-25, the demographic ratios slightly decrease and stabilise. The period during which the demographic ratios are projected to remain relatively stable is however expected to be short. As the Scheme matures, the number of pensioners is projected to increase gradually while the number of contributors is projected to stabilise (the projected growth in number of contributors is derived from the general population projections and the labour force and employed population projections described in Chapter 2). As a result, the demographic ratio (pensions) will grow from about 24.8 per cent (2018) to 72.0 per cent (2078) during the projection period. The demographic ratio is normally a good indicator of the increasing cost of the Scheme. This directly affects the PAYG cost of the Scheme, as presented later in this Section.

The old-age pensioners of the NIB (including the assistance beneficiaries) represent (and are projected to represent) about 90 per cent of the population aged 65+ over the projection period. This high coverage rate is partly explained by the assistance benefits. That said, there is not a 100 per cent coverage rate because of the requirement to obtain the assistance benefits (household income plus at least 12 months of continuous employment and contributions paid to the NIB in the 15 years immediately before age 65<sup>10</sup>).

Table 3.16 presents the projection of the number of contributors and beneficiaries of the Pensions Benefits Branch as well as the demographic ratio for each type of benefits.

<sup>10</sup> This requirement applies to those who are not citizen of The Bahamas.

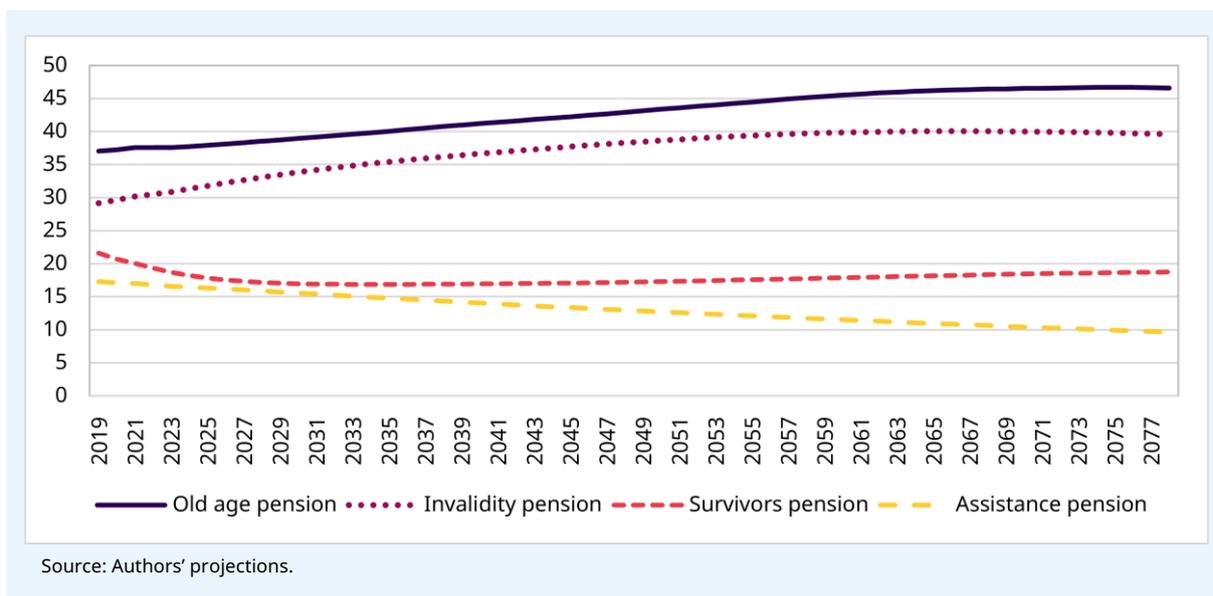
► Table 3.16. Long-term (Pension) Benefits Branch, demographic projections (2019–78)

| Years | Number of active members and beneficiaries |         |            |           |            |                                      | Demographic ratio (%) |            |           |            |       |                                      |
|-------|--|---------|------------|-----------|------------|--------------------------------------|-----------------------|------------|-----------|------------|-------|--------------------------------------|
|       | Contributors                               | Pension |            |           |            | Cash benefits<br>Old age + survivors | Pension               |            |           |            | Total | Cash benefits<br>Old age + survivors |
|       |  | Old age | Disability | Survivors | Assistance |                                      | Old age               | Disability | Survivors | Assistance |       |                                      |
| 2019  | 162 746                                    | 27 858  | 2 858      | 6 051     | 4 552      | 295                                  | 17.1                  | 1.8        | 3.7       | 2.8        | 25.4  | 0.2                                  |
| 2020  | 136 781                                    | 29 833  | 2 927      | 6 494     | 4 735      | 292                                  | 21.8                  | 2.1        | 4.7       | 3.5        | 32.2  | 0.2                                  |
| 2021  | 148 290                                    | 31 157  | 2 989      | 6 920     | 4 795      | 198                                  | 21.0                  | 2.0        | 4.7       | 3.2        | 30.9  | 0.1                                  |
| 2022  | 154 701                                    | 32 607  | 3 059      | 7 367     | 4 911      | 200                                  | 21.1                  | 2.0        | 4.8       | 3.2        | 31.0  | 0.1                                  |
| 2023  | 160 454                                    | 34 154  | 3 134      | 7 830     | 5 039      | 216                                  | 21.3                  | 2.0        | 4.9       | 3.1        | 31.3  | 0.1                                  |
| 2024  | 163 186                                    | 36 056  | 3 213      | 8 293     | 5 248      | 267                                  | 22.1                  | 2.0        | 5.1       | 3.2        | 32.4  | 0.2                                  |
| 2025  | 165 528                                    | 38 026  | 3 293      | 8 748     | 5 488      | 291                                  | 23.0                  | 2.0        | 5.3       | 3.3        | 33.6  | 0.2                                  |
| 2026  | 168 456                                    | 39 972  | 3 373      | 9 189     | 5 747      | 318                                  | 23.7                  | 2.0        | 5.5       | 3.4        | 34.6  | 0.2                                  |
| 2027  | 171 301                                    | 41 870  | 3 451      | 9 615     | 5 982      | 311                                  | 24.4                  | 2.0        | 5.6       | 3.5        | 35.6  | 0.2                                  |
| 2028  | 174 020                                    | 43 762  | 3 529      | 10 022    | 6 223      | 321                                  | 25.1                  | 2.0        | 5.8       | 3.6        | 36.5  | 0.2                                  |
| 2033  | 183 697                                    | 53 054  | 3 894      | 11 889    | 7 169      | 316                                  | 28.9                  | 2.1        | 6.5       | 3.9        | 41.4  | 0.2                                  |
| 2038  | 185 162                                    | 60 782  | 4 209      | 13 670    | 8 180      | 400                                  | 32.8                  | 2.3        | 7.4       | 4.4        | 46.9  | 0.2                                  |
| 2043  | 188 339                                    | 66 471  | 4 471      | 15 319    | 9 201      | 453                                  | 35.3                  | 2.4        | 8.1       | 4.9        | 50.7  | 0.2                                  |
| 2048  | 192 328                                    | 70 635  | 4 725      | 16 646    | 10 194     | 490                                  | 36.7                  | 2.5        | 8.7       | 5.3        | 53.1  | 0.3                                  |
| 2053  | 195 473                                    | 74 591  | 5 014      | 17 502    | 11 180     | 565                                  | 38.2                  | 2.6        | 9.0       | 5.7        | 55.4  | 0.3                                  |
| 2058  | 196 470                                    | 80 020  | 5 330      | 17 884    | 12 354     | 656                                  | 40.7                  | 2.7        | 9.1       | 6.3        | 58.8  | 0.3                                  |
| 2063  | 195 056                                    | 85 835  | 5 623      | 17 936    | 13 637     | 681                                  | 44.0                  | 2.9        | 9.2       | 7.0        | 63.1  | 0.3                                  |
| 2068  | 192 500                                    | 91 375  | 5 857      | 17 833    | 14 884     | 692                                  | 47.5                  | 3.0        | 9.3       | 7.7        | 67.5  | 0.4                                  |
| 2073  | 191 434                                    | 95 895  | 6 005      | 17 705    | 16 000     | 704                                  | 50.1                  | 3.1        | 9.2       | 8.4        | 70.8  | 0.4                                  |
| 2078  | 191 446                                    | 97 551  | 6 084      | 17 564    | 16 686     | 650                                  | 51.0                  | 3.2        | 9.2       | 8.7        | 72.0  | 0.3                                  |

### 3.4.3. Financial projections

A strong indicator of the cost of the Scheme is the replacement ratio. This is the ratio of the average pension to the average insurable earnings. It indicates the evolution of average payment compared to the average insurable earnings during the projection period (what proportion of earnings is paid to pensioners). Figure 3.4 presents the replacement ratio by type of benefit.

► Figure 3.4. Long-term (Pension) Benefits Branch, system replacement ratios by benefit type (2019–78)



The replacement rate related to the old-age pensions is projected to increase gradually over the projection period. This is explained by two factors. Firstly, those who accrued service as civil servants prior to July 2013 will receive a lower pension compared to the others. In fact, the insurable earning used for the calculation of the pensions is limited to BSD110 per week for services accrued as civil servants prior to July 2013. Over the projection period, fewer pensioners will be impacted by this provision, and thus the average old-age pension paid by the Scheme will gradually increase. Secondly, an upward trend has been observed in the members' density over time. As a result, the income replacement rate of old-age pensioners will gradually increase in the future. The replacement rate related to old-age pensions is projected to gradually stabilise in the long term as a result of the maturing process of the Scheme.

The replacement rate related to the invalidity benefits is projected to follow a similar pattern to that of old-age benefits (for the exact same reasons). The replacement rate related to the survivors' benefits will gradually stabilize over the projection period, in line with the changing structure of the active insured population of the NIB.

The replacement rate related to the assistance pension (which is mainly composed of old-age assistance pensions) is projected to be lower to that of the old-age pension, and gradually decrease over time. The gradual decrease of the replacement rate related to the assistance benefits over the projection period is explained by the fact that assistance benefits are indexed in line with inflation (and not salaries).

Tables 3.17 and 3.18 show the breakdown of benefits paid throughout the projection period. With the maturing of the Scheme, old age benefits will become increasingly important with time.

► **Table 3.17. Long-term (Pension) Benefits Branch, projected benefit amounts (2019–78) (BSD '000)**

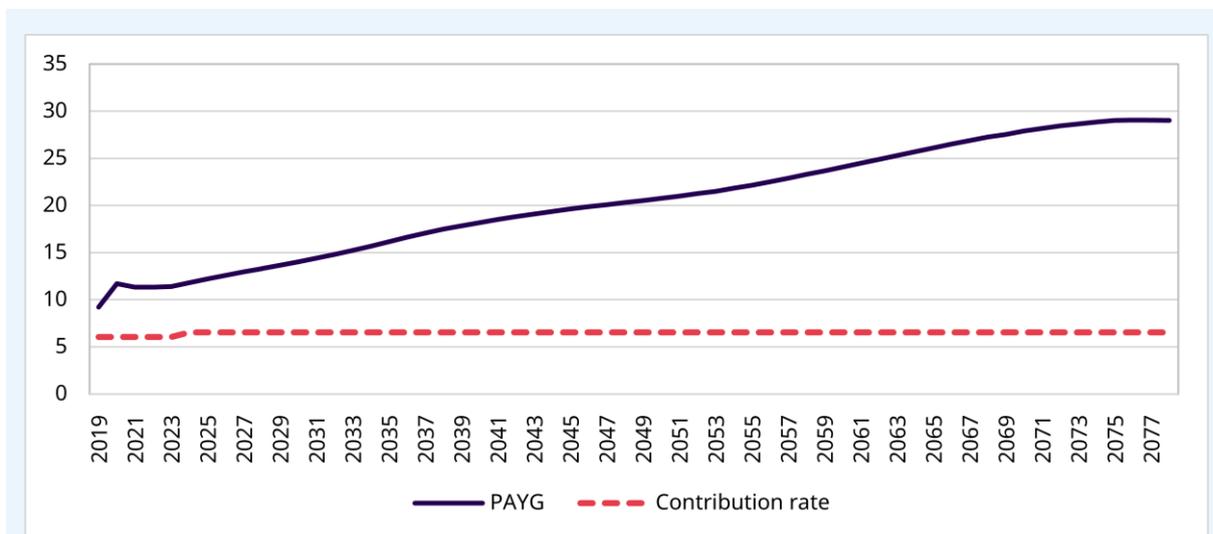
| Years | Pension   |            |               |            | Cash benefits | Total     |
|-------|-----------|------------|---------------|------------|---------------|-----------|
|       | Old age   | Disability | All survivors | Assistance | Grants        |           |
| 2019  | 193 919   | 14 513     | 21 987        | 14 370     | 1 681         | 246 470   |
| 2020  | 216 913   | 16 943     | 26 247        | 15 814     | 2 556         | 278 472   |
| 2021  | 235 442   | 18 150     | 27 893        | 16 408     | 1 838         | 299 730   |
| 2022  | 254 721   | 19 401     | 29 581        | 17 149     | 1 999         | 322 852   |
| 2023  | 275 715   | 20 755     | 31 399        | 17 947     | 2 171         | 347 988   |
| 2024  | 301 707   | 22 311     | 33 501        | 19 149     | 3 275         | 379 943   |
| 2025  | 330 069   | 23 957     | 35 735        | 20 496     | 3 595         | 413 852   |
| 2026  | 359 622   | 25 667     | 38 077        | 21 947     | 4 199         | 449 512   |
| 2027  | 390 556   | 27 456     | 40 561        | 23 344     | 4 090         | 486 006   |
| 2028  | 423 603   | 29 330     | 43 199        | 24 812     | 4 307         | 525 252   |
| 2033  | 617 219   | 39 860     | 58 941        | 31 759     | 4 572         | 752 351   |
| 2038  | 851 718   | 52 335     | 79 401        | 40 248     | 6 899         | 1 030 601 |
| 2043  | 1 114 712 | 66 857     | 104 478       | 50 237     | 8 978         | 1 345 263 |
| 2048  | 1 417 179 | 84 578     | 133 857       | 61 784     | 11 217        | 1 708 616 |
| 2053  | 1 789 799 | 106 872    | 166 498       | 75 173     | 15 336        | 2 153 679 |
| 2058  | 2 295 720 | 134 511    | 201 712       | 92 204     | 21 327        | 2 745 473 |
| 2063  | 2 923 044 | 166 630    | 239 825       | 112 920    | 26 020        | 3 468 439 |
| 2068  | 3 664 759 | 202 660    | 282 554       | 136 795    | 31 029        | 4 317 798 |
| 2073  | 4 504 813 | 241 265    | 331 258       | 163 140    | 36 952        | 5 277 427 |
| 2078  | 5 336 660 | 283 109    | 386 405       | 188 815    | 39 098        | 6 234 086 |

► **Table 3.18. Long-term (Pension) Benefits Branch, projected benefit percentages (2019–78)**  
(percentages)

| Years | Pension |            |               |            | Cash benefits | Total |
|-------|---------|------------|---------------|------------|---------------|-------|
|       | Old age | Disability | All survivors | Assistance | Grants        |       |
| 2019  | 78.7    | 5.9        | 8.9           | 5.8        | 0.7           | 100.0 |
| 2020  | 77.9    | 6.1        | 9.4           | 5.7        | 0.9           | 100.0 |
| 2021  | 78.6    | 6.1        | 9.3           | 5.5        | 0.6           | 100.0 |
| 2022  | 78.9    | 6.0        | 9.2           | 5.3        | 0.6           | 100.0 |
| 2023  | 79.2    | 6.0        | 9.0           | 5.2        | 0.6           | 100.0 |
| 2024  | 79.4    | 5.9        | 8.8           | 5.0        | 0.9           | 100.0 |
| 2025  | 79.8    | 5.8        | 8.6           | 5.0        | 0.9           | 100.0 |
| 2026  | 80.0    | 5.7        | 8.5           | 4.9        | 0.9           | 100.0 |
| 2027  | 80.4    | 5.6        | 8.3           | 4.8        | 0.8           | 100.0 |
| 2028  | 80.6    | 5.6        | 8.2           | 4.7        | 0.8           | 100.0 |
| 2033  | 82.0    | 5.3        | 7.8           | 4.2        | 0.6           | 100.0 |
| 2038  | 82.6    | 5.1        | 7.7           | 3.9        | 0.7           | 100.0 |
| 2043  | 82.9    | 5.0        | 7.8           | 3.7        | 0.7           | 100.0 |
| 2048  | 82.9    | 5.0        | 7.8           | 3.6        | 0.7           | 100.0 |
| 2053  | 83.1    | 5.0        | 7.7           | 3.5        | 0.7           | 100.0 |
| 2058  | 83.6    | 4.9        | 7.3           | 3.4        | 0.8           | 100.0 |
| 2063  | 84.3    | 4.8        | 6.9           | 3.3        | 0.8           | 100.0 |
| 2068  | 84.9    | 4.7        | 6.5           | 3.2        | 0.7           | 100.0 |
| 2073  | 85.4    | 4.6        | 6.3           | 3.1        | 0.7           | 100.0 |
| 2078  | 85.6    | 4.5        | 6.2           | 3.0        | 0.6           | 100.0 |

The PAYG cost rate represents the contribution rate that will be required to pay all the expenditures of the Scheme (benefits, administrative and other expenses), year after year, in the absence of a reserve. The PAYG cost rate related to the Pension Benefits Branch is projected to increase from 9.2 per cent in financial year 2019 to 11.7 per cent in financial year 2020 as a consequence of the COVID-19 pandemic. The PAYG cost rate is then projected to remain relatively stable in the period 2021-24 to around 11.5 per cent. From 2025, the PAYG cost rate is expected to rise gradually, reaching 29.0 per cent at the end of the projection period of 60 years. This continuous increase in the PAYG cost rate is mainly explained by the increase in the demographic ratios over the projection period, as explained in Section 3.4.2. The projected PAYG cost rate, as well as the contribution rate allocated to the Long-term Benefits Branch is illustrated in Figure 3.5.

► **Figure 3.5. Long-term (Pension) Benefits Branch, projected PAYG rates and contribution rate (in percentages) (2019–78)**



Source: Authors' projections.

The reserve-to-expenditure ratio (reserve ratio) represents the ratio of the end-of-year reserve over the annual expenditures for the year. This ratio can be interpreted as the number of years during which annual expenditures could be paid by the reserve if there were no contributions, no investment income, and no other income. The reserve ratio is projected to decrease from 5.1 to 0.0 in the first 10 years of the projection period. In other words, the reserve related to the Pensions Benefits Branch is projected to be completely exhausted in 2028.

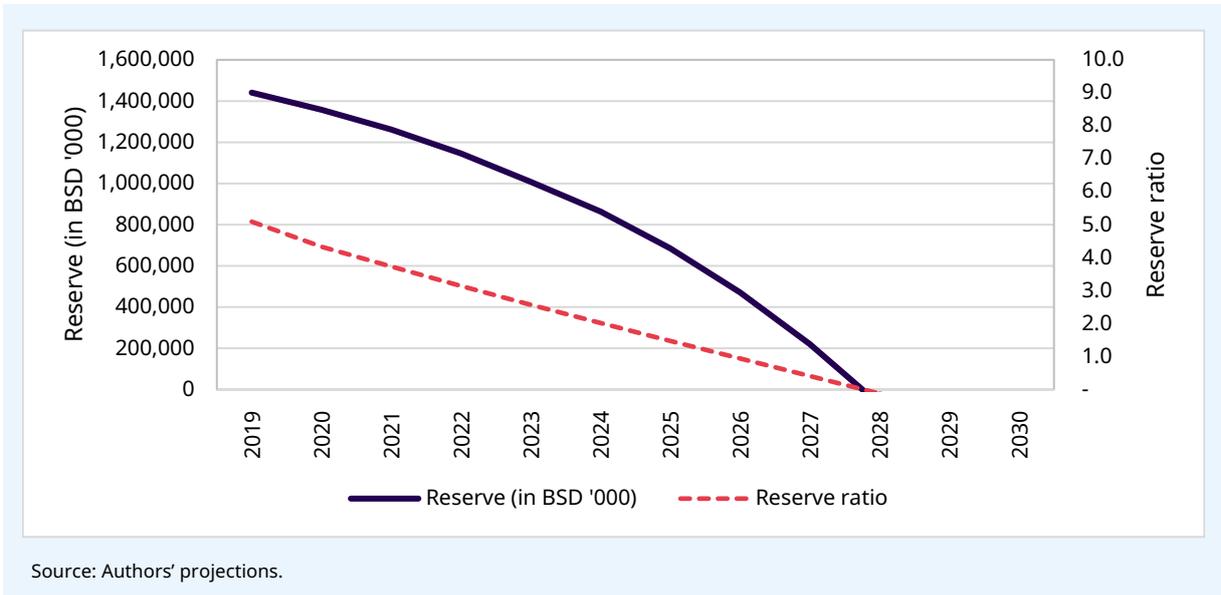
Table 3.19 shows the results of the financial projections for the Pensions Benefits Branch over 60 years, in terms of cash flow, PAYG cost rate and reserve. Figure 3.6 presents the evolution of the reserve over the period 2019-30.

► **Table 3.19. Long-term (Pension) Benefits Branch, financial projections, cash inflows, cash outflows and reserve (in BSD '000) (2019–78)**

| Years | Income                     |                     | Expenses  |                 | Surplus (Deficit) | Reserve (end of year) | PAYG (%) | Reserve ratio |
|-------|----------------------------|---------------------|-----------|-----------------|-------------------|-----------------------|----------|---------------|
|       | Contributions <sup>1</sup> | Investment earnings | Benefits  | Admin. expenses |                   |                       |          |               |
| 2019  | 172 237                    | 64 168              | 246 470   | 36 545          | - 46 610          | 1 441 005             | 9.2      | 5.1           |
| 2020  | 161 769                    | 67 774              | 278 472   | 34 734          | - 83 663          | 1 357 342             | 11.7     | 4.3           |
| 2021  | 180 525                    | 62 725              | 299 730   | 38 761          | - 95 241          | 1 262 101             | 11.4     | 3.7           |
| 2022  | 194 702                    | 53 201              | 322 852   | 41 805          | - 116 754         | 1 145 347             | 11.3     | 3.1           |
| 2023  | 208 613                    | 47 201              | 347 988   | 44 792          | - 136 967         | 1 008 380             | 11.4     | 2.6           |
| 2024  | 236 795                    | 45 405              | 379 943   | 47 047          | - 144 791         | 863 590               | 11.8     | 2.0           |
| 2025  | 247 881                    | 37 163              | 413 852   | 49 250          | - 178 059         | 685 531               | 12.2     | 1.5           |
| 2026  | 260 239                    | 27 090              | 449 512   | 51 705          | - 213 887         | 471 644               | 12.6     | 0.9           |
| 2027  | 272 998                    | 16 071              | 486 006   | 54 240          | - 251 177         | 220 467               | 12.9     | 0.4           |
| 2028  | 286 110                    | 3 504               | 525 252   | 56 845          | - 292 483         | - <sup>2</sup>        | 13.3     | -             |
| 2033  | 353 149                    | -                   | 752 351   | 70 165          | - 469 367         | -                     | 15.2     | -             |
| 2038  | 416 338                    | -                   | 1 030 601 | 82 719          | - 696 982         | -                     | 17.5     | -             |
| 2043  | 494 234                    | -                   | 1 345 263 | 98 196          | - 949 225         | -                     | 19.1     | -             |
| 2048  | 588 231                    | -                   | 1 708 616 | 116 871         | -1 237 256        | -                     | 20.3     | -             |
| 2053  | 697 069                    | -                   | 2 153 679 | 138 495         | -1 595 106        | -                     | 21.5     | -             |
| 2058  | 816 926                    | -                   | 2 745 473 | 162 309         | -2 090 856        | -                     | 23.3     | -             |
| 2063  | 945 696                    | -                   | 3 468 439 | 187 893         | -2 710 637        | -                     | 25.3     | -             |
| 2068  | 1 088 267                  | -                   | 4 317 798 | 216 220         | -3 445 751        | -                     | 27.3     | -             |
| 2073  | 1 261 720                  | -                   | 5 277 427 | 250 682         | -4 266 389        | -                     | 28.7     | -             |
| 2078  | 1 471 396                  | -                   | 6 234 086 | 292 341         | -5 055 031        | -                     | 29.0     | -             |

Note: <sup>1</sup>For the employed individuals, the contribution rate allocated to the Pension Benefits Branch is assumed at 6.05 per cent during the period 2019-2023 and 6.55 per cent thereafter. For the self-employed, the contribution rate allocated to the Pension Benefits Branch is assumed at 6.25 per cent over the entire projection period. <sup>2</sup>The reserve at the end of 2028 is projected to BSD-72 million.

► **Figure 3.6. Projection of the Long-term (Pension) Benefits Branch reserve (2019–30)**

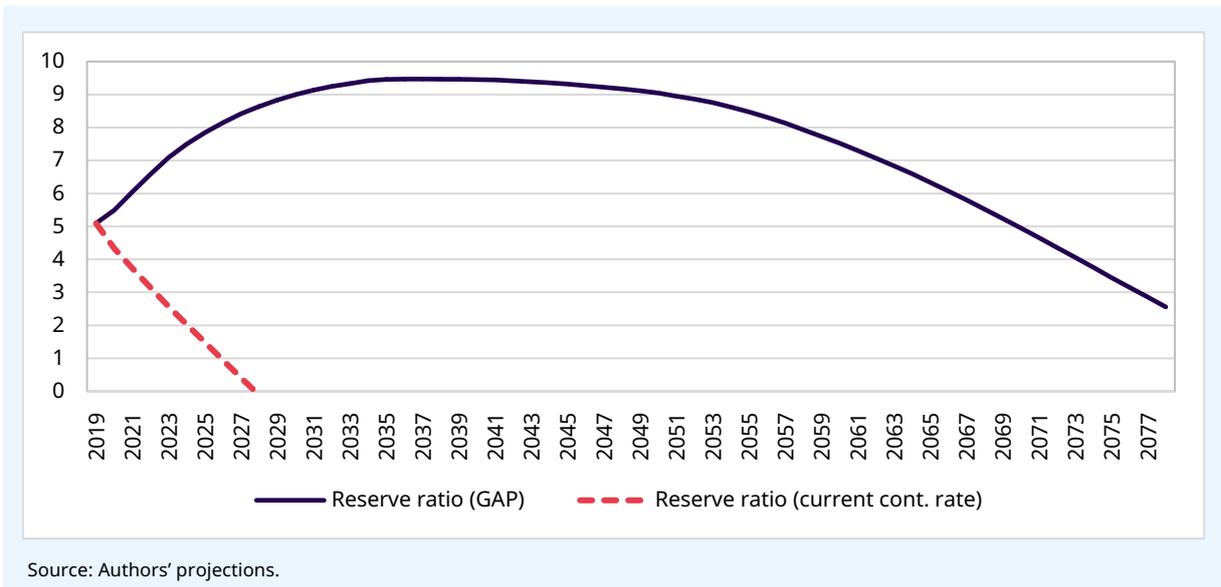


The main observations from Table 3.19 and Figure 3.6 are the following:

1. As it is currently the case, annual contributions are not sufficient to pay for all annual expenditures. Total income (contributions and investment income) are not even sufficient to pay for annual expenditures. The Scheme runs deficits and the reserve decreases from the first year of the projection period.
2. During the year 2028, the reserve drops to zero. Starting in 2028, the required annual contribution rate to pay for all expenditures becomes the PAYG rate. As an illustration, this rate is 13.3 per cent in 2028.

Another very important result of the financial projection is the general average premium (GAP). In this valuation, the GAP is expressed as the annual contribution and as a percentage of insurable earnings necessary to pay for all expenditures over the entire projection period, without considering the reserve. In the current valuation, the GAP is estimated to 19.3 per cent. Figure 3.7 shows the evolution of the reserve ratio if a contribution rate of 19.3 per cent is used throughout the projection period. For illustrative purposes, the projection of the reserve ratio assuming the current and projected contribution rate allocated to the Pensions Benefits Branch is also presented.

► **Figure 3.7. Projection of the reserve ratio: comparison of the contribution rates (2019–78)**



## ▶ 4. Reconciliation with the previous actuarial valuation

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The long-term projected cost of the NIB in this valuation is different from that projected in the last valuation. There are elements related to the methodology and the assumptions that, when taken alone, produce different results from those expected in the previous valuation. This Section explains these differences.

The reconciliation of the cost related to the Pensions Benefits Branch between this valuation and the previous one is done using the GAP. In fact, the effect of the GAP over 60 years (without considering the initial reserve) is used, rather than other indicators of cost, to capture the long-term impact and the magnitude of the changes between the two valuations. The GAP related to the Pensions Benefits Branch is 0.4 per cent higher in this valuation when compared to the one presented in the last valuation. Table 4.3 shows the reconciliation between the two valuations:

- ▶ Over the long term, expenditures increase more rapidly than insurable earnings. Therefore, in each valuation year the cost of the Scheme is expected to increase until the Scheme becomes fully mature. The assessment of the GAP over a 60-year period, instead of a 75-year period (as per the last actuarial valuation), reduced the GAP by 1.5 per cent. Furthermore, the shift in the period of projection from 2014-2073 to 2019-2078 increased the GAP by 1.4 per cent.
- ▶ Some adjustments to the calculation methodology and the calibration of the model have increased the GAP by 0.2 per cent. The methodological change includes replacing the distinction between the private and public sector (civil servants) by an explicit distinction between the categories of wages (low, medium and high) regarding the number of years of service and the density of contributions.
- ▶ Changes in the demographic assumptions (family statistics, distribution and projection of active members, inactive insured members, distributions of past credits and salaries, projected retirement, invalidity, mortality and re-entry rates) have increased the GAP by 0.5 per cent.
- ▶ Inflation and real salary growth rate assumptions contributed to increase the GAP by 0.1 per cent.
- ▶ Real investment return assumption contributed to decrease the GAP by 0.3 per cent.

► **Table 4.3. Pension benefits, reconciliation between the 10th and 11th Actuarial Valuations, 2013 and 2018 (percentages)**

|   |       |             |
|---|-------|-------------|
| <b>GAP over 75 years as at 31 December 2013</b>       |       | <b>18.9</b> |
| <i>Experience and methodology</i>                     |       |             |
| Projection period over 60 years instead of 75 years   | -1.5  |             |
| Projection from January 2019 instead of January 2014  | 1.4   |             |
| Change in methodology and calibration of the model    | 0.2   |             |
|   | <hr/> |             |
|   | 0.1   | 19.0        |
| <i>Demographic assumptions</i>                        |       |             |
| Family statistics                                     | 0.3   |             |
| Past credits  | 0.1   |             |
| Distribution and projection of active members         | 0.4   |             |
| Inactive members                                      | -0.9  |             |
| Salary scales   | -0.3  |             |
| Retirement rates                                      | 1.5   |             |
| Invalidity rates                                      | -0.3  |             |
| Mortality rates                                       | 0.3   |             |
| Re-entry rates  | -0.6  |             |
|   | <hr/> |             |
|   | 0.5   | 19.5        |
| <i>Economic and other scheme-specific assumptions</i> |       |             |
| Inflation and real salary growth rates                | 0.1   |             |
| Real investment return                                | -0.3  |             |
|   | <hr/> |             |
|   | -0.2  | 19.3        |
| <b>GAP over 60 years as of 31 December 2018</b>       |       | <b>19.3</b> |

## ► 5. Sensitivity analysis

This chapter considers exclusively the Pensions benefits branch. Under the base scenario, a contribution rate of 19.3 per cent is necessary to pay all the expenditures of the Pensions benefits branch for the next 60 years, without taking into account the initial reserve. This contribution rate refers to the GAP. This chapter discusses some other scenarios to better understand the risks related to the Pensions benefits branch of the NIB.

In addition to the GAP, impacts on the PAYG rate at the end of the projection period and on the year the reserve will be exhausted are presented for each scenario. The scenarios are described in sections 5.1 to 5.9.

### 5.1. Fertility rate

The PAYG rate is sensitive to the assumption related to the fertility rate which affects the growth of the insured population. In the base scenario, the total fertility rate increases from 1.43 in 2019 to 1.70 in 2028 and remains constant at this level thereafter. This sensitivity test presents the impact of a lower fertility rate and a higher fertility rate. In the first scenario (lower fertility rate), the total fertility rate is assumed at 1.50 from 2020 onwards. In the second scenario (higher fertility rate), the total fertility rate is assumed to increase from 1.43 in 2019 to 1.90 in 2035 and remain constant at this level thereafter.

In this scenario, it is assumed that the lower fertility rate will lead to a lower ultimate unemployment rate (6.0 per cent from 2059 instead of 9.0 per cent from 2033). On the other side, the higher fertility rate will lead to a higher ultimate unemployment rate (12.0 per cent from 2067 instead of 9.0 per cent from 2033).

Under the base scenario, the average annual growth rate over the projection period of the insured population is 0.3 per cent. Under the lower fertility rate and high fertility rate scenarios, the average annual growth rate is respectively 0.2 per cent and 0.4 per cent.

► **Table 5.1. Sensitivity analysis: total fertility rate (in percentages)**

| Scenario              | GAP (%) | PAYG 2078 (%) | Year reserve = 0 |
|-----------------------|---------|---------------|------------------|
| Base                  | 19.3    | 29.0          | 2028             |
| Lower fertility rate  | 19.4    | 30.9          | 2028             |
| Higher fertility rate | 19.2    | 28.1          | 2028             |

### 5.2. Mortality rates

In the base scenario, the life expectancy at age 65 is assumed to increase from 16.2 to 20.5 per cent for males and 18.8 to 22.7 per cent for females over the projection period of 60 years. This sensitivity test presents the impact on the projection results of mortality rates that are 10 per cent lower (lower mortality rates) or mortality rates that remain unchanged over the projection period (higher mortality rates). In the first scenario (lower mortality rates), the life expectancy at age 65 is assumed to increase from 17.0 to 21.2 per cent for males and 19.6 to 23.4 per cent for females over the projection period 2018-2078. In the second scenario (higher mortality rates), the life expectancy at age 65 is assumed constant over the projection period to 16.2 and 18.8 per cent for males and females, respectively.

In this scenario, it is assumed that the lower mortality rates will lead to a higher ultimate unemployment rate (9.4 per cent on average from 2033 instead of 9.0 per cent from 2033). On the other hand, the higher mortality rates will lead to a lower ultimate unemployment rate (6.0 per cent from 2066 instead of 9.0 per cent from 2033).

► **Table 5.2. Sensitivity analysis, mortality rates (in percentage)**

| Scenario               | GAP (%) | PAYG 2078 (%) | Year reserve = 0 |
|------------------------|---------|---------------|------------------|
| Base                   | 19.3    | 29.0          | 2028             |
| Lower mortality rates  | 19.8    | 29.9          | 2028             |
| Higher mortality rates | 18.0    | 24.5          | 2028             |

### 5.3. Migration rate

The PAYG rate is also sensitive to the assumption related to the migration which affects the growth of the insured population. In the base scenario, the ratio of net migrants over the total population is estimated to remain constant at 0.3 per cent over the projection period. This sensitivity test presents the impact of a lower migration and a higher migration. In the first scenario (lower migration), no net migration rate is assumed over the projection period. In the second scenario (higher migration), the net migration rate is assumed at 0.5 per cent (thus similar to the experience observed between 2000 and 2010) over the projection period.

In this scenario, it is assumed that the lower migration will lead to a lower ultimate unemployment rate (6.0 per cent from 2034 instead of 9.0 per cent from 2033). On the other hand, the higher migration will lead to a higher ultimate unemployment rate (12.0 per cent from 2039 instead of 9.0 per cent from 2033).

Under the base scenario, the average annual growth rate over the projection period of the insured population is 0.3 per cent. Under the lower migration and higher migration scenarios, the average annual growth rate is -0.1 per cent and 0.5 per cent respectively.

► **Table 5.3. Sensitivity analysis: migration rate**

| Scenario         | GAP (%) | PAYG 2078 (%) | Year reserve = 0 |
|------------------|---------|---------------|------------------|
| Base             | 19.3    | 29.0          | 2028             |
| Lower migration  | 20.4    | 32.9          | 2028             |
| Higher migration | 18.8    | 27.5          | 2028             |

### 5.4. Unemployment rate

In the base scenario, the unemployment rate is projected to reach 25.4 per cent in 2020 and decrease gradually thereafter to its ultimate level of 9.0 per cent from 2033 onwards. This sensitivity test presents the impact of an increase in the ultimate unemployment rate (higher unemployment rate) and a decrease in the ultimate unemployment rate (lower unemployment rate). In the first scenario (higher unemployment rate), the unemployment rate is projected to reach 25.4 per cent in 2020 and decrease gradually thereafter to an ultimate level of 12.0 per cent from 2030 onwards. In the second scenario (lower unemployment rate), the unemployment rate is projected to reach 25.4 per cent in 2020, 20.3 per cent in 2021 and 18.0 per cent in 2022. It is then projected to decrease by 2.0 per cent each year until it reaches an ultimate level of 7.0 per cent in 2027.

Under the base scenario, the average annual growth rate over the projection period of the insured population is 0.3 per cent. Under the higher unemployment rate and lower unemployment rate scenarios, the average annual growth rate is 0.2 per cent and 0.4 per cent respectively.

► **Table 5.4. Sensitivity analysis: unemployment rate (in percentage)**

| Scenario                 | GAP (%) | PAYG 2078 (%) | Year reserve = 0 |
|--------------------------|---------|---------------|------------------|
| Base                     | 19.3    | 29.0          | 2028             |
| Higher unemployment rate | 19.6    | 29.3          | 2028             |
| Lower unemployment rate  | 19.1    | 28.9          | 2028             |

## 5.5. Coverage rate

In the base scenario, the Scheme's general coverage rate for ages 15-64 is assumed to increase from 79.4 per cent in 2018 to 80.2 per cent in 2028 and 86.0 per cent in 2078. This sensitivity test presents the impact of an increase in the coverage rate from 79.4 per cent in 2018 to 90.2 per cent from 2028 (an increase of 10 per cent when compared to the level projected in 2028 under the base scenario).

When the coverage rate is increased, new money enters the Scheme at the beginning. However, over the long term, additional benefits are paid because of the additional liabilities that have emerged. Still, the GAP is reduced by 0.5 per cent to 18.8 per cent.

► **Table 5.5. Sensitivity analysis: coverage rate (in percentage)**

| Scenario             | GAP (%) | PAYG 2078 (%) | Year reserve = 0 |
|----------------------|---------|---------------|------------------|
| Base                 | 19.3    | 29.0          | 2028             |
| Higher coverage rate | 18.8    | 30.0          | 2029             |

## 5.6. Inflation rate

In the base scenario, the inflation rate is projected to vary between 1.8 and 2.4 per cent per year between 2019 and 2025, decrease from 2.2 per cent in 2025 to 2.1 per cent in 2030 and remain constant at 2.1 per cent per year thereafter. This sensitivity test presents the impact of an increase in inflation that is 0.5 per cent higher or lower than in the base scenario. Table 5.6 shows the results.

The assumption on the inflation rate affects many variables: the adjustment to pensions in payment, the salary growth and the investment return. This test assumes that the real salary growth rate and the real rate of return will remain unchanged when compared to the base scenario. Inflation is not the biggest risk, if all other variables move in parallel to the inflation, as assumed in this sensitivity test.

► **Table 5.6. Sensitivity analysis: inflation rate (in percentage)**

| Scenario | GAP (%) | PAYG 2078 (%) | Year reserve = 0 |
|----------|---------|---------------|------------------|
| Base     | 19.3    | 29.0          | 2028             |
| +0.5%    | 19.1    | 28.6          | 2028             |
| -0.5%    | 19.5    | 29.4          | 2028             |

## 5.7. Salary increase

In pension plans, pensions are very often indexed annually according to the increase in inflation, while salaries increase faster according to inflation in addition to a productivity component. Higher annual increase in salaries than in pension has the effect of reducing the PAYG cost rate over the long term (the contribution base increases at a higher pace than the pension expenditure). This relationship holds for NIB: according to the NIB's Legislation, the pensions in payment increase every two years in line with inflation.

In the base scenario, the real salary growth rate is assumed at 1.0 per cent per year over the projection period. In other words, the salary growth rate is assumed to be 1.0 per cent higher than the inflation each year over the projection period). This sensitivity test presents the impact of an increase in salaries that is 0.5 per cent higher or lower than in the base scenario. Table 5.7 shows the results.

► **Table 5.7. Sensitivity analysis, salary increase (in percentage)**

| Scenario | GAP (%) | PAYG 2078 (%) | Year reserve = 0 |
|----------|---------|---------------|------------------|
| Base     | 19.3    | 29.0          | 2028             |
| +0.5%    | 18.6    | 26.9          | 2028             |
| -0.5%    | 20.0    | 31.5          | 2028             |

## 5.8. Investment return

In the base scenario, the real rate of return is assumed constant over the projection period at 2.5 per cent per year. Table 5.8 presents the impact of a real rate of return 0.5 per cent lower and 0.5 per cent higher than in the base scenario. A change in the return on assets has no impact on the PAYG rate, because when calculating this rate, the amount of reserve is not taken into account.

► **Table 5.8. Sensitivity analysis, investment return (in percentage)**

| Scenario | GAP (%) | PAYG 2078 (%) | Year reserve = 0 |
|----------|---------|---------------|------------------|
| Base     | 19.3    | 29.0          | 2028             |
| +0.5%    | 18.9    | 29.0          | 2028             |
| -0.5%    | 19.8    | 29.0          | 2028             |

Having a higher or lower return on assets of 0.5 per cent will not affect the moment of the depletion of the reserve. This scenario shows that even if the NIB's Fund performs very well in terms of investment returns, it will not be sufficient to eliminate the upcoming financial problems of the Scheme.

## 5.9. Administrative expenditure

In the base scenario, the level of administrative expenditures in relation to insurable earnings is assumed constant at 1.3 per cent over the projection period. Two other scenarios are produced in this sensitivity test: one with a level of administrative expenditures 10 per cent higher (1.43 per cent of insurable earnings) and one with a level of administrative expenditures 10 per cent lower (about 1.18 per cent of insurable earnings). Table 5.9 shows the results.

► **Table 5.9. Sensitivity analysis, administrative expenditure (in percentage)**

| Scenario | GAP (%) | PAYG 2078 (%) | Year reserve = 0 |
|----------|---------|---------------|------------------|
| Base     | 19.3    | 29.0          | 2028             |
| +10%     | 19.4    | 29.2          | 2028             |
| -10%     | 19.2    | 28.9          | 2028             |

## ► 6. Pension reform options and other issues

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From the financial projections presented in Chapter 3, it appears that there is an urgent need to increase the contribution rate and/or to reform the benefits package of the NIB to ensure the long-term sustainability of the Scheme.

Possible reform options are analysed in this Chapter. These options can be implemented separately or combined to enable the Scheme to remain sustainable over the projection period. The reform options can also be adjusted and modified to better reflect the precise needs and constraints of the stakeholders.

### 6.1. Increasing the contribution rate

Among all the options discussed in this Chapter, the one that deserves the most immediate action is the increase of the Scheme's contribution rate. It is impossible to expect that the contribution rate for the Pension Branch can stay as low as it is at present. A contribution rate of less than 7 per cent<sup>11</sup> to obtain the possibility of receiving a pension equal to 60 per cent of the last five best salaries at age 65 is a bargain – a bargain that future generations will have to pay if the current generation of contributors do not increase the contribution rate. One way to decrease the financial pressure for future generations is to start now with such an increase. The PAYG cost rate for the Pensions Benefits Branch is estimated at 9.4 per cent in 2018 and is projected to reach an average level of nearly 11 per cent in the period 2019-25. To remain sustainable (at least over the short- to medium-terms), the contribution rate should be increased rapidly to at least this level.

Different schedules of contribution rate increases are discussed in this Section:

- A. Increase of the contribution rate by 1.0 per cent every two years starting on 1 July 2022.
- B. Increase of the contribution rate by 1.5 per cent every two years starting on 1 July 2022.
- C. Increase of the contribution rate by 2.0 per cent every two years starting on 1 July 2022.

The results of the above schedule of contribution rate increases, including alternative contribution rate targets, are presented in Table 6.1. For indicative purposes, results under a scenario combining a higher economic growth than anticipated during the period 2022-33, and an increase in the coverage rate by 10 per cent between 2018 and 2028 (in line with the sensitivity test discussed in section 5.5), are also presented. In this scenario, the unemployment rate reaches 15.0 per cent in 2022 and decreases thereafter to 9.0 per cent from 2025.

<sup>11</sup> 6.05 per cent during the period 2019-2023 and 6.55 per cent thereafter.

► **Table 6.1. Impact on the reserve, schedules of contributions rate increases**

|   | Year reserve = 0  |                                     |
|---|-------------------|-------------------------------------|
|   | Base scenario     | Higher economic growth and coverage |
| Base (no increase)  | 2028              | 2029                                |
| A.1. Increase of the contribution rate by 1.0% every two years starting on 1 July 2022 (contribution rate increase from 9.8% in 2022 to 15.8% in 2032 and 18.8% in 2038 <sup>1</sup> )  | 2033              | 2039                                |
| B.1. Increase of the contribution rate by 1.5% every two years starting on 1 July 2022 and ending on 1 July 2030 (contribution rate increase from 9.8% to 17.3% between 2022 and 2030 <sup>2</sup> )  | 2039              | 2044                                |
| B.2. Increase of the contribution rate by 1.5% every two years starting on 1 July 2022 and ending on 1 July 2036 (contribution rate increase from 9.8% to 21.8% between 2022 and 2036 <sup>3</sup> )  | 2056              | 2063                                |
| B.3. Increase of the contribution rate by 1.5% every two years starting on 1 July 2022 and ending on 1 July 2042 (contribution rate increase from 9.8% to 26.3% between 2022 and 2042 <sup>4</sup> )  | n.a. <sup>5</sup> | n.a. <sup>5</sup>                   |
| C.1. Increase of the contribution rate by 2.0% every two years starting on 1 July 2022 and ending on 1 July 2030 (contribution rate increase from 9.8% to 19.8% between 2022 and 2030 <sup>6</sup> )  | 2052              | 2058                                |
| C.2. Increase of the contribution rate by 2.0% every two years starting on 1 July 2022 and ending on 1 July 2036 (contribution rate increase from 9.8% to 25.8% between 2022 and 2036 <sup>7</sup> )  | n.a. <sup>5</sup> | n.a. <sup>5</sup>                   |
| Notes: <sup>1</sup> Refers to a contribution rate of 6.05% in 2022, 12.55% in 2032 and 15.55% in 2038 for the Pension Benefits Branch. <sup>2</sup> Refers to a contribution rate of 6.05% in 2022 and 14.05% in 2030 for the Pension Benefits Branch. <sup>3</sup> Refers to a contribution rate of 6.05% in 2022 and 18.55% in 2036 for the Pension Benefits Branch. <sup>4</sup> Refers to a contribution rate of 6.05% in 2022 and 23.05% in 2042 for the Pension Benefits Branch. <sup>5</sup> N.A. = not applicable since the scheme is projected to remain sustainable for the entire projection period of 60 years. <sup>6</sup> Refers to a contribution rate of 6.05% in 2022 and 16.55% in 2030 for the Pension Benefits Branch. <sup>7</sup> Refers to a contribution rate of 6.05% in 2022 and 22.55% in 2036 for the Pension Benefits Branch. |                   |                                     |

According to Table 6.1:

- A.** The increase of the contribution rate by 1.0 per cent every two years, starting on 1 July 2022, is not enough to allow the Scheme to remain sustainable. Even with a contribution rate projected to reach up to 15.8 per cent from 2032 onwards, the Scheme's reserve will be fully depleted in 2033 under the base scenario.
- B.** An increase of the contribution rate by 1.5 per cent every two years, starting on 1 July 2022, could be sufficient to make the Scheme sustainable over the projection period. However, the increases must be maintained at least until 1 July 2042.
- C.** An increase of the contribution rate by 2.0 per cent every two years, starting on 1 July 2022, could be sufficient to make the Scheme sustainable over the projection period. However, the increases must be maintained at least until 1 July 2036.

The above examples demonstrate the urgent need for a sustained increase in the Scheme's contribution rate, without which the reserve will become exhausted before 2030. This necessity to quickly increase the contribution rate remains real even in a more optimistic scenario (Higher economic growth and coverage). Indeed, as presented in Section 3.4, to ensure the sustainability of the Pensions Benefits Branch over the projection period of 60 years, the required contribution rate for this Branch would have to be immediately increased to 19.3 per cent.

It is worth noting that the sooner the increase in contribution rate takes place, the better it is for future generations. If the increase is accompanied by modifications in the investment policy to better reflect long-term objectives, this will also be beneficial for future generations.

## 6.2. Modification to the pension accrual rate

Under the current benefit provisions, the amount of retirement benefit equals to 30 per cent of the average insurable earnings for the first 500 weeks credited, plus 1.0 per cent for every set of 50 weeks credited over 500 weeks. The retirement benefit accrual rate therefore represents 3.0 per cent for each year of credits during the first 10 years and 1.0 per cent for each year of credit in excess of 10 years.

For the service accrued from 2022, a different pension formula could apply. This Section discusses two alternative formulas that could apply to service accrued from 2022:

- ▶ Pension formula A: The amount of retirement benefit equals to 30 per cent of the average insurable earnings for the first 750 weeks credited, plus 1.0 per cent for every set of 50 weeks credited over 750 weeks (retirement benefit accrual rate representing 2.0 per cent for each year of credits during the first 15 years and 1.0 per cent for each year of credit in excess of 15 years).
- ▶ Pension formula B: The amount of retirement benefit equals to 30 per cent of the average insurable earnings for the first 1,000 weeks credited, plus 1.0 per cent for every set of 50 weeks credited over 1,000 weeks (retirement benefit accrual rate representing 1.5 per cent for each year of credits during the first 20 years and 1.0 per cent for each year of credit in excess of 20 years).

The results of the above modification to the pension accrual rate are presented in Table 6.2.

▶ **Table 6.2. Impact on the GAP, PAYG and reserve related to the Pension Benefits Branch, modification to the retirement benefit formula for service accrued from 2022 (in percentages)**

| Scenario          | GAP (%) | PAYG 2078 (%) | Year reserve = 0 |
|-------------------|---------|---------------|------------------|
| Base              | 19.3    | 29.0          | 2028             |
| Pension formula A | 18.7    | 27.4          | 2028             |
| Pension formula B | 18.0    | 25.4          | 2028             |

## 6.3. Increase in the retirement age (from 65 to 67)

An increase of the normal retirement age can be considered as a way to decrease the financial pressure on the Pensions Benefits Branch over the long term. Such an increase should be normally planned over a long period so as not to affect the current population which is close to retirement and acquired rights.

This Section discusses two scenarios of increase of the normal retirement age (and the early retirement age):

- ▶ In the first scenario, the increase of the normal retirement age from 65 to 67 is done over a 24-year period starting in 2030. From 2054 onwards, the normal retirement age is projected to 67 years old. In this scenario, the early retirement age is assumed to increase by two years over the same period, from age 60 to 62.
- ▶ In the second scenario, the increase of the normal retirement age from 65 to 67 is done over a 12-year period starting in 2030. From 2042 onwards, the normal retirement age is projected to 67 years old. In this scenario, the early retirement age is assumed to increase by two years over the same period, from age 60 to 62.

In both scenarios, the retirement rates and the adjustment factors applicable for early and postponed retirement are assumed to shift gradually over the projection period to reflect the increase in the normal and early retirement ages.

► **Table 6.3. Impact on the GAP, PAYG and reserve related to the Pension Benefits Branch, increase of the normal and early retirement ages (in percentage)**

| Scenario   | GAP (%) | PAYG 2078 (%) | Year reserve = 0 |
|--|---------|---------------|------------------|
| Base   | 19.3    | 29.0          | 2028             |
| Increase of the retirement age from 65 to 67 between 2030 and 2054 | 18.1    | 27.6          | 2028             |
| Increase of the retirement age from 65 to 67 between 2030 and 2042 | 18.0    | 27.6          | 2028             |

## 6.4. Assistance benefits

On 1 July 2010, the Government ceased to pay for the assistance benefits. Since this date, the total cost of these benefits is borne by the contributors to the Scheme, i.e. employers and employees. Without contributing to the Scheme, a person could receive a monthly pension of BSD274, around 40 per cent of the average new retirement pension. This kind of benefit does not encourage people to contribute to the Scheme. An increase in the NIB contribution rate in the future may further discourage the members from contributing to the Scheme.

As of the valuation date, the expenditure in assistance benefits represents about 6 per cent of the total benefit expenditure of the Pensions Benefits Branch. This situation could be exacerbated if the number of contributors decreases or if the level of social assistance benefit increases. If there was an external funding to support the assistance benefits paid by the Scheme, the contribution rate required to finance the Pension Benefits Branch of the NIB over the projection period would reduce by 0.7 per cent, from 19.3 per cent (GAP over 60 years under the base scenario) to 18.6 per cent.

There is probably a need to start a discussion between stakeholders concerning the design and the funding of the assistance benefits.

## 6.5. Conditional indexation

Another possibility for the future would be to put automatic adjustment mechanisms in place where, for example, the adjustment in pensions in payment can be conditional on the financial performance of the Scheme. For example, if the financial performance is lower than expected, the increase in pension could be less than inflation. It is better to introduce such mechanisms in a global revision of the financing objectives of the Scheme. Such automatic adjustment mechanisms can be designed in the elaboration of a funding policy. Nonetheless, the adequacy of benefits should be considered and maintained.

## 6.6. Combining parametric reform options

As previously mentioned, the options discussed in Sections 6.1 to 6.5 can be implemented separately or combined to enable the Scheme to remain sustainable over the projection period. To illustrate the impact of combining different options, this Section presents the following reform combining:

- The implementation of the pension formula A, as discussed in Section 6.2;
- The increase of the normal retirement age from 65 to 67 between 2030 and 2054<sup>12</sup>, as discussed in Section 6.3; and
- An external financing for the assistance benefits starting from year 2022, as discussed in Section 6.4.

With the above-mentioned reform, the contribution rate required to finance the Pension Benefits Branch of the NIB over the projection period would be reduced by 2.3 per cent, from 19.3 per cent (GAP over 60 years

<sup>12</sup> The early retirement age is also assumed to increase by two years over the same period, from age 60 to 62.

under the base scenario) to 17.0 per cent, and the PAYG cost rate for 2078 would reduce from 29.0 to 25.4 per cent. An increase of the contribution rate by 2.0 per cent every two years starting on 1 July 2022 could be sufficient to make the Scheme sustainable over the projection period as long as the increases are maintained at least until 1 July 2032 (four years earlier than estimated based on the current design). This refers to an increase of the NIB contribution rate from 9.8 per cent to 21.8 per cent between 2022 and 2032.<sup>13</sup>

<sup>13</sup> This refers to a contribution rate of 6.05 per cent in 2022 and 18.55 per cent in 2032 for the Pension Benefits Branch.

## ▶ 7. Conclusion

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This actuarial valuation of The Bahamas National Insurance Board was carried out as at 31 December 2018. The methodology used for the Pension Branch is based on a model developed by the ILO for reviewing the long-term actuarial and financial status of national pension schemes. The model has been adjusted to fit the particular situation of the NIB. The data related to the NIB (contributors, beneficiaries, financial statements) and those related to the general population used in this actuarial valuation are complete and of good quality. The data concerning the labour force (unemployment rates and participation rates) bring some uncertainties to the projections. However, globally the data used are complete enough to obtain a good picture of the financial soundness of the NIB.

An actuarial valuation requires many assumptions. These assumptions are adequate individually and coherent as a whole. They are established on a best-estimate basis and are selected to reflect long-term trends. However recent trends, including the economic impact of the current COVID-19 pandemic, must also be taken into account without giving undue weight over the long term. It is not the objective of pension projections to forecast the exact development of the Scheme's income and expenditures, but to verify its financial viability.

The social security system in The Bahamas is quite comprehensive, and is universal in the sense that those who are not able to qualify for a pension can receive assistance payments. This system should be preserved.

The annual income (contributions and investment earnings) is insufficient to pay the annual expenditures from 2019 to 2028 in the Long Term (Pensions) Benefits Branch. There are substantial annual deficits from 2019 to 2028. Indeed, these deficits exist since 2016, well before the severe contraction of the GDP caused by the pandemic in 2020. The pandemic has exacerbated a financial problem that existed before. As a result, the reserve will be exhausted by 2028. Immediate actions are needed to restore not only the long-term financial sustainability of the scheme, but most importantly the short-term.

These are the main recommendations of this report.

### **Recommendation No. 1: Immediate increase of the contribution rate for the Pension Branch**

This actuarial valuation clearly demonstrates that an increase in contributions is necessary to make the Scheme sustainable over the short term, and that it should start now. In fact, according to this actuarial valuation:

1. Total annual expenditures are higher than annual income (contributions plus investment earnings) for the NIB since 2016, meaning that the reserve is used to pay benefits.
2. The Pensions Benefits Branch is now in a severe disinvesting mode. The cumulative deficit (total income minus total expenditures) over the period 2019 to 2021 is expected to be BSD276 million, exacerbating the continuous decrease of the reserve.
3. The reserve for the Pensions Branch will be exhausted in 2028, one year earlier than in the previous actuarial review. Immediate actions are needed to restore, not only the long-term financial sustainability of the Scheme, but most importantly, the short-term.
4. A significant increase to the contribution rate from 9.8 per cent to 16.9 per cent would be required to pay the full benefits in 2029.
5. The required contribution rate to pay all expenditures of all branches during the next 60 years (i.e. up to 2078) is 22.55 per cent. Higher unemployment benefits paid in 2020 due to the severe contraction of the GDP because of the COVID-19 pandemic increases the required contribution rate to 23.05 per cent from 2019 to 2023.

It is recommended that the contribution rate for the Pension Branch be increased immediately to a level that is at least equal to the PAYG rate. Of course, the schedule of increases should take into account the situation in the country and the Government's plans and underpinned by agreements with social partners.

An increase of the contribution rate by 2.0 per cent on 1 July 2022, followed by increases every two years until 2036 could restore the short- and the medium-term financial sustainability of the Scheme. Because the contribution rate from 1 July 2036 is likely to not be sufficient in future, it is strongly recommended that future contribution increases and their frequency be discussed by the stakeholders and become part of a funding policy.

Other options could also be considered to reduce the short-term financial pressure on the NIB, including modification to the pension accrual rate (Section 6.2), the retirement age (Section 6.3), or the funding of the assistance benefits (Section 6.4). These options could be implemented separately or combined to enable the Scheme to remain sustainable over the projection period without having to increase the contribution rate to the level mentioned above. As an example, Section 6.6 illustrates the impact of combining a specific set of options. The example shows that the contribution rate required to finance the Pension Benefits Branch of the NIB over the projection period could be reduced by 2.3 per cent, from 19.3 per cent (GAP over 60 years under the base scenario) to 17.0 per cent. In such a case, an increase of the contribution rate by 2.0 per cent every two years, starting on 1 July 2022, could be sufficient to make the Scheme sustainable over the projection period as long as the increases are maintained at least until 1 July 2032 (four years earlier than estimated based on the current design).

## Recommendation No. 2: An explicit contribution rate for each Branch

In this actuarial valuation, each Branch has been separately analysed and an explicit contribution rate has been calculated for each. It is recommended to divulgate a contribution rate for each Branch and that the contributions be levied and allocated to each Branch according to these contribution rates. In our opinion, this way of proceeding is more transparent and increases people's awareness and understanding of the Scheme. Tables 7.1 presents the recommended contribution rate for each benefits Branch.

► **Table 7.1. Contribution rate allocated to each benefits branch (in percentages)**

|   | Contribution rate        |               |
|---|--------------------------|---------------|
|   | Employed                 | Self-employed |
| <b>Total contribution rate</b>  | <b>9.80</b>              | <b>8.80</b>   |
| <i>Minus</i>  |                          |               |
| Recommended contribution rate for the Short-term Benefits Branch  | 2.45 <sup>1</sup>        | 1.25          |
| Recommended contribution rate for the Medical Benefits Branch   | 0.15                     | 0.15          |
| Recommended contribution rate for the Industrial Benefits Branch  | 1.15                     | 1.15          |
| <b>Contribution rate allocated to the Pension Benefits Branch</b>   | <b>6.05<sup>1</sup></b>  | <b>6.25</b>   |
| Note: <sup>1</sup> The contribution rate required to finance the unemployment benefits is projected at 1.20 per cent during the period 2019-2023 and 0.70 per cent thereafter. Therefore, the recommended contribution rate to cover the employed individuals under the Short-term Benefits Branch is projected at 2.45 per cent during the period 2019-2023 and 1.95 per cent thereafter. For the employed individuals, the contribution rate allocated to the Pension Benefits Branch is projected at 6.05 per cent during the period 2019-2023 and 6.55 per cent thereafter. |                          |               |
|   | Contribution rate        |               |
|   | Employed                 | Self-employed |
| Recommended contribution rate allocated to the Pension Benefits Branch (see Recommendation No. 1)   | 19.3                     | 19.3          |
| Recommended contribution rate for the Short-term Benefits Branch  | 2.45 <sup>1</sup>        | 1.25          |
| Recommended contribution rate for the Medical Benefits Branch   | 0.15                     | 0.15          |
| Recommended contribution rate for the Industrial Benefits Branch  | 1.15                     | 1.15          |
| <b>Required contribution rate</b>   | <b>23.05<sup>1</sup></b> | <b>21.85</b>  |
| Note: <sup>1</sup> The contribution rate required to finance the unemployment benefits is projected at 1.20 per cent during the period 2019-2023 and 0.70 per cent thereafter. Therefore, the recommended contribution rate to cover the employed individuals under the Short-term Benefits Branch is projected at 2.45 per cent during the period 2019-2023 and 1.95 per cent thereafter. For the employed individuals, the contribution rate allocated to the Pension Benefits Branch is projected at 6.05 per cent during the period 2019-2023 and 6.55 per cent thereafter. |                          |               |

### Recommendation No. 3: Adoption of a funding policy and a linked investment policy

*Without a substantial, immediate and recurrent increase of the current contribution rate (see Recommendation No. 1), the usefulness of the following recommendation on the adoption of a funding policy is very limited.*

This actuarial valuation shows that unless the benefits are reduced, an increase in the contribution rate is necessary. The magnitude of such an increase should therefore depend on clear financing and funding objectives. Such objectives do not currently exist at the NIB. It is therefore recommended that the NIB adopts a funding policy in order to:

- A. formalize the long-term funding objectives of the Scheme: for example, targeting an appropriate level of reserve over the long term. This objective is the major driver of the contribution rate;
- B. better understand the risks and advantages of financing options;
- C. ensure that plan assets plus future contributions are sufficient to deliver the promised benefits; and
- D. enhance corporate governance by increasing transparency.

Funding rules must address the interests of stakeholders:

- ▶ plan participants and former participants, as beneficiaries of, and often as contributors to, the financing of the system;
- ▶ employers, as one of the parties bearing responsibility for financing the pension system; and
- ▶ the general public and the Government.

The funding policy would specify:

- 1. Contribution rates;
- 2. Risks faced by the Scheme and how these risks can be managed;
- 3. Risk tolerance;
- 4. Allocation of risks among participants and employers;
- 5. Funding objectives (such as contribution stability or improving the RER);
- 6. Frequency of actuarial valuation and the method of actuarial projection; and
- 7. Funding method.
- 8. Goals related to intergenerational equity
- 9. All other funding issues

We suggest that the NIB hold discussions with stakeholders on the possibility of implementing an explicit written funding policy. The policy should be well thought out and periodically reviewed.

This funding policy should be closely linked to the investment policy. The investment policy should clearly take into account the result of the actuarial valuation and the financial risk that the Scheme is going to face. A specific investment policy should be adopted for each Branch. For the Pension Branch, the investment policy should reflect the long-term nature of the Branch and be invested in long-term assets. Diversification, by investing a higher proportion in foreign investments, should also be considered.

### Recommendation No. 4: Miscellaneous

- A. A target on the level of administrative expenditure should be shown and discussed in the financial statements.
- B. The tables of actuarial present value, as described in the third schedule of the National Insurance Financial & Accounting Regulations for the Industrial Branch, should be revised frequently and should be used in the actuarial valuation as well as in the financial statements.

**Recommendation No 5: Create a Pension Reform Commission**

The findings of this actuarial review indicate that, although parametric, a number of major reforms should be implemented in the short term. The establishment of a Pension Reform Commission could be under the aegis of the Board of Directors of the NIB or the Minister of Public Service and National Insurance. The Commission would have the mandate of elaborating a consensual reform plan of the social security of The Bahamas. The plan should not only consist of the recommendations included in this Report, but also other governance reforms of the NIB. The composition of the Commission should be tripartite and include representatives of the beneficiaries. Good practices from Spain, Chile and Uruguay could be reviewed for relevance.

## ▶ Appendix 1. Summary of contribution and benefit provisions

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The following is a general description of the coverage, contributions and benefit provisions of The Bahamas National Insurance Board as at 31 December 2018.

### A1.1. Contingencies covered

The Bahamas National Insurance Board provides for the following benefits:

- ▶ *Short-term Benefits:* Sickness Benefit, Maternity Benefit, Maternity Grant, Funeral Benefit and Unemployment Benefit.
- ▶ *Short-term Assistance:* Sickness Assistance.
- ▶ *Long-term Contributory Benefits:* Retirement, Invalidity and Survivors' Benefits and Retirement and Survivors' Grants.
- ▶ *Long-term Assistance:* Old Age Non-Contributory Pension, Invalidity and Survivors' Assistance.
- ▶ *Industrial Benefits:* Injury Benefit, Disablement Benefit, Medical Care, Industrial Death Benefit and Industrial Funeral Benefit.
- ▶ *National Prescription Drug Plan (NPDP)<sup>14</sup>:* Medication for specified chronic diseases and Healthy People Program.

### A1.2. Insured persons

The Scheme covers employed, self-employed and voluntarily insured persons from ages 16 and over as follows:

- ▶ Employed persons in the private and public sector are covered for all contingencies, up to age 65.
- ▶ Self-employed persons are covered for all contingencies except Unemployment Benefit, up to age 65.
- ▶ Voluntarily insured persons are covered for long-term contributory benefits and Funeral Benefit only.

Contributions by self-employed persons are mandatory. Employed persons who receive Retirement Benefit are covered for Industrial Benefits only.

### A1.3. Insurable earnings and contributions

Insurable earnings include the basic wage (pay in lieu of notice but excluding overtime pay, cost of living allowance, commission), tips and gratuities.

Since July 2020, earnings that are covered for the purpose of determining contributions and benefits are limited to BSD710 per week or BSD3,077 per month<sup>15</sup>. The weekly ceiling on insurable earnings is presented in Table A1.1.

<sup>14</sup> With effect from 1 January 2015, The Bahamas Government has agreed to reimburse all benefits expenses related to the National Prescription Drug Plan. Therefore, this Branch has incurred no benefit expenditure since 1 January 2015.

<sup>15</sup> Until July 2018, earnings that were covered for the purpose of determining contributions and benefits were limited to BSD670 per week or BSD2,903 per month.

► **Table A1.1. Weekly ceiling on insurable earnings**

|                        | <b>BSD</b> |
|------------------------|------------|
| 1974–84                | 110.00     |
| 1984–98                | 250.00     |
| 1999–2010              | 400.00     |
| January 2011–June 2012 | 500.00     |
| July 2012–June 2014    | 600.00     |
| July 2014–June 2016    | 620.00     |
| July 2016–June 2018    | 650.00     |
| July 2018–June 2020    | 670.00     |
| July 2020–June 2022    | 710.00     |

Every two years, the ceiling is increased based on the change in the Retail Price Index of The Bahamas over the immediately preceding two calendar years plus 2 per cent.

Contributions are computed as a percentage of insurable earnings. Tables A1.2 and A1.3 display the different contribution rates.

► **Table A1.2. Contribution rates for employed/self-employed persons, including pensionable civil servants as at 1 July 2013 (percentages)**

| <b>Category of insured person</b>  | <b>Coverage</b>                                | <b>Employed/<br/>self-employed<br/>person</b> | <b>Employer</b> | <b>Total</b> |
|--|--|---|-----------------|--------------|
| Employed persons (other than those in categories listed below)   | All contingencies                              | 3.9   | 5.9             | 9.8          |
| Employed persons 65 years or over not in receipt of Retirement benefit   | All contingencies                              | 3.9   | 5.9             | 9.8          |
| Employed persons earning less than 50% of ceiling or age 65 years and over, in receipt of Retirement benefit       | Industrial benefits only                       | -   | 2.0             | 2.0          |
| Persons employed during the summer   | Industrial benefits only                       | -   | 2.0             | 2.0          |
| Voluntarily insured persons  | Long-term benefits and funeral benefits only   | -   | -               | 5.0          |
| Self-employed persons not in receipt of Retirement benefit   | All contingencies except unemployment benefits | -   | -               | 8.8          |
| Self-employed persons earning less than 50% of ceiling or aged 65 years and over, in receipt of Retirement benefit | Industrial benefits only                       | -   | -               | 2.0          |

► **Table A1.3. Contribution rates for persons remunerated partly by tips and gratuities as at 1 July 2013 (percentages)**

| <b>Insurable wage &amp; gratuities</b> | <b>Employee</b> | <b>Employer</b> | <b>Total</b> |
|--|-----------------|-----------------|--------------|
| Basic wage                             | 3.9             | 5.9             | 9.8          |
| Gratuities                             | 9.8             | -               | 9.8          |

For years of service from January 1985 and before July 2013, special rules applied to pensionable civil servants. The coverage was separated depending on a salary that was over or below BSD110 per week. Protection for long-term pensions and short-term benefits applied to salaries below BSD110, while for salaries over that amount, only short-term benefits were offered.

Self-employed persons can choose their level of insurable earnings, subject to the same ceiling as stated above.

## A1.4. Benefit provisions

### ► Contributory long-term benefits

#### (a) Retirement benefit

**Contribution requirement:** 500 weekly contributions paid or credited.

**Age requirement:** 65. Reduced pension can be paid starting at age 60 if earnings are not more than 50 per cent of the insurable wage ceiling. If the benefit is awarded prior to age 65 the amount is reduced by 7/12 per cent for each month that the insured is less than 65. Starting in July 2012, if benefit is awarded after age 65, the amount is increased by 7/12 per cent per month for each month the insured is above age 65 up to a maximum of 35 per cent.

**Amount of benefit:** 30 per cent of average insurable earnings over the best 5 years, plus 1 per cent for every set of 50 weeks credited over 500:

- ▶ *Maximum:* 60 per cent of average insurable earnings.
- ▶ *Minimum:*
  - BSD336.79 if pension awarded at age 65 and over (since July 2020)<sup>16</sup>;
  - BSD323.31 if pension awarded at age 64 (since July 2020)<sup>17</sup>;
  - BSD311.83 if pension awarded between age 60 and 63 (since July 2020)<sup>18</sup>.

For pensionable civil servants, the insurable earning for retirement and other pensions will still be affected by the previous BSD110 per week ceiling for service prior to July 2013 and will result in a weighted average assessment.

**Initial Contribution Credits:** Persons over age 35 at at October 1974, who made at least 150 contributions in the programme's first 3 years, were awarded special credits at the rate of 25 contributions for each year that their ages exceeded 35, subject to a maximum of 600 credits.

#### (b) Retirement grant

**Contribution requirement:** 150 to 499 weekly paid or credited contributions.

**Eligibility:** The person must be ineligible for Retirement Pension.

**Age requirement:** 65 or older.

**Amount of benefit:** 6 times average weekly insurable earnings for each set of 50 weekly contributions paid or credited. This amount is paid as a lump sum.

#### (c) Invalidity benefit

**Contribution requirement:** At least 150 weekly contributions paid.

**Eligibility:** The insured is:

- i. less than 65;
- ii. incapable of work as a result of a specified disease or bodily or mental disablement which is likely to remain permanent; and
- iii. not a result of an employment injury.

**Amount of benefit:**

16 per cent of average insurable earnings over the best 3 years for the first 150 weeks of contribution; plus 2 per cent for every set of 50 weeks between 150 and 500 weeks of contribution; plus 1 per cent for every set of 50 weeks over 500 weeks of contribution

<sup>16</sup> Until July 2020, BSD321.36 per month.

<sup>17</sup> Until July 2020, BSD308.50 per month.

<sup>18</sup> Until July 2020, BSD297.53 per month.

- ▶ *Maximum:* 60 per cent of average insurable earnings.
- ▶ *Minimum:* BSD336.79 per month (effective July 2020)<sup>19</sup>.

**Duration of pension:** Payable for as long as invalidity continues.

▶ **Box 1. Article 57, paragraph 1(a)**

Article 57, paragraph 1(a), in conjunction with the Schedule to Part XI of ILO Convention No. 102 requires that an invalidity pension of at least 40 per cent of former earnings has to be guaranteed after 15 years of contributions or employment. Under the NIB, an invalidity pension will amount to a replacement rate of only 35 per cent after 15 years of contributions or employment.

(d) Survivors' benefit

**Contribution requirement:** The deceased, at time of death, had paid at least 150 weekly contributions.

**Eligibility:**

- ▶ Widows or widowers must have been married to the deceased (includes common-law spouse).
- ▶ Children up to age 16, or 21 if in full-time education, or invalid of any age.
- ▶ Parents who were dependent on the deceased. Payable for life.

To continue to receive the Survivors' pension, the widow/widower of a deceased insured person should satisfy at least two conditions – that he/she:

1. was dependent on (supported by) the deceased spouse; and
2. was either:
  - i. an invalid or is older than 40 years of age and incapable of earning more than half the insurable wage ceiling; or
  - ii. (in the case of the widow) was pregnant by her late husband at the time of his death; or
  - iii. has the care of a child of his/hers/theirs who is:
    - a. younger than age 16 years; or
    - b. older than age 16 years but younger than age 21 years, and receiving full-time education or training for which he/she is not being paid; or
    - c. an invalid.

**Amount of benefit:** Shown below is the proportion of the pension (Invalidity benefit or Retirement benefit) being received by the deceased the beneficiary would have been entitled to:

- ▶ Widow or widower: 50 per cent.
- ▶ Child: 10 per cent by child subject of a maximum of 5 children or 10 children if no spouse.
- ▶ Parent: 50 per cent.
- ▶ Minimum widow/widower benefit: BSD336.79 per month (since July 2020)<sup>20</sup>.
- ▶ Minimum child benefit: BSD137.19 per month (since July 2020)<sup>21</sup>.

<sup>19</sup> Until July 2020, BSD321.36 per month.

<sup>20</sup> Until July 2020, BSD321.36 per month.

<sup>21</sup> Until July 2020, BSD130.91 per month.

- ▶ Minimum benefit for orphan: BSD155.91 per month (since July 2020)<sup>22</sup>.
- ▶ Maximum family benefit: 100 per cent of Retirement pension. However, due to minimum pensions, the total family benefit can be more than 100 per cent.

A widow/widower who does not qualify for Survivors' benefit can now qualify for a one-time Survivors' grant.

▶ **Box 2. Article 63, paragraph 1(a),**

Article 63, paragraph 1(a), in conjunction with the Schedule to Part XI of ILO Convention No. 102 stipulates that a survivors' pension of at least *40 per cent of former earnings has to be guaranteed after 15 years of contributions or employment of the deceased insured person*. However, under the NIB, a Survivors' benefit after 15 years of contributions or employment will amount to a replacement rate of only a proportion of the Invalidity or Retirement pension, which is equal to 35 per cent after 15 years of contributions or employment.

(e) Survivors' grant

**Contribution requirement:** At least 150 weekly contributions paid or credited.

**Eligibility:** Widows or widowers must have been married to the deceased (includes common-law spouse).

**Amount of benefit:** Lump sum of one year's worth of the deceased's Retirement benefit.

(f) Maximum pension

If a person entitled to Retirement pension or Invalidity pension becomes eligible to a Survivors' pension, she/he can receive the full Retirement pension or the full Invalidity pension in addition to 50 per cent of the Survivors' pension.

▶ **Non-contributory assistance**

Prior to 2010, these benefits were financed from Government's revenue.

(a) Old age non-contributory pension

**Eligibility:**

- ▶ Age 65; *and*
- ▶ Insufficient credits to qualify for Retirement benefit; *and*
- ▶ Bahamian citizen or resident in The Bahamas as an employed or self-employed person for at least 12 months in the 15 years immediately before claiming; *and*
- ▶ Has a share of household income of less than BSD66.20 (since July 2020)<sup>23</sup>.

**Amount of benefit:** BSD286.87 per month (since July 2020)<sup>24</sup>.

Where a Retirement grant was previously awarded, assistance shall not be awarded until the effective number of months of assistance paid using the monthly rate of assistance at the time of claiming Old Age Non-contributory Pension has elapsed.

(b) Invalidity assistance

**Eligibility:**

<sup>22</sup> Until July 2020, BSD148.76 per month.

<sup>23</sup> Until July 2018, BSD63.17.

<sup>24</sup> Until July 2018, BSD273.74 per month.

- ▶ Age less than 65; *and*
- ▶ Insufficient credits to qualify for Invalidity benefit; *and*
- ▶ Be medically declared an invalid, other than as a result of an employment injury.

**Amount of benefit:** BSD286.87 per month (since July 2020)<sup>25</sup>.

(c) Survivors' assistance

**Eligibility:** Other than for the contribution requirement of the deceased, the applicant must be eligible for Survivors' pension.

**Amount of benefit:**

- ▶ Widow/Parent: BSD286.87 per month (since July 2020)<sup>26</sup>.
- ▶ Child: BSD114.70 per month (since July 2020)<sup>27</sup>.
- ▶ Orphan: BSD130.95 per month (since July 2020)<sup>28</sup>.

#### ▶ Short-term benefits

(a) Sickness benefit

**Contribution requirement:** Have been insured the day prior to the sickness with at least 40 paid weekly contributions *and* one of the following:

- ▶ at least 13 contributions in the 26 weeks preceding sickness;
- ▶ at least 26 contributions in the last 52 weeks;
- ▶ at least 26 contributions in the preceding contribution year.

**Waiting period:** 3 days.

**Amount of benefit:** 60 per cent of average weekly insurable earnings during the qualifying period above subject to a minimum of BSD77.72 per week (since July 2020)<sup>29</sup>.

**Duration of benefit:** Maximum of 26 weeks. May be extended to 40 weeks subject to approval of the Medical Officer. Any two or more periods of incapacity separated by not more than eight weeks shall be treated as a continuous period of incapacity.

(b) Sickness assistance

**Eligibility requirement:** Gainfully employed in the contribution year or the 52-week period preceding incapacity but fails to qualify for Sickness benefit and meets the means test.

**Waiting period:** 3 days.

**Amount of benefit:** BSD66.20 per week (since July 2020)<sup>30</sup>.

**Duration of benefit:** Maximum of 26 weeks. May be extended to 40 weeks subject to approval of the Medical Officer. Any two or more periods of incapacity separated by not more than eight weeks shall be treated as a continuous period of incapacity.

<sup>25</sup> Until July 2018, BSD273.74 per month.

<sup>26</sup> Until July 2018, BSD273.74 per month.

<sup>27</sup> Until July 2018, BSD109.46 per month.

<sup>28</sup> Until July 2018, BSD124.97 per month.

<sup>29</sup> Until July 2018, BSD74.16 per week.

<sup>30</sup> Until July 2018, BSD63.17 per week.

## (c) Maternity benefit

**Contribution requirement:** Have at least 50 paid weekly contributions and one of the following:

- ▶ at least 26 contributions in the last 40 weeks;
- ▶ at least 26 contributions in the preceding contribution year.

**Amount of benefit:** 66 2/3 per cent of average weekly insurable earnings during the qualifying period above subject to a minimum of BSD77.72 per week (since July 2020)<sup>31</sup>.

**Duration of benefit:** 13 weeks, starting no earlier than 6 weeks before the expected date of confinement. This may be extended by up to 2 weeks if confinement is delayed.

## (d) Maternity grant

**Contribution requirement:** Have at least 50 paid weekly contributions. If the mother fails to meet the requirements for the Maternity Grant, she can qualify if she or her insured husband has been insured for at least 50 contribution weeks.

**Amount of grant:** BSD515 (since July 2020)<sup>32</sup>.

## (e) Funeral benefit

**Eligibility:** Death of an insured person, other than as a result of an employment related accident, *or* the deceased is the spouse of an insured. The insured person must have paid at least 50 contributions.

**Amount of grant:** BSD1,900 (since July 2020)<sup>33</sup>.

## (f) Unemployment benefit

**Contribution requirement:** Have at least 52 paid weekly contributions *plus*:

- ▶ at least 7 weeks of contributions in the 13 weeks preceding unemployment; *and*
- ▶ at least 13 weeks of contributions in the 26 weeks preceding unemployment; *and*
- ▶ must be able to satisfy the Department of Labour's conditions for registration.

**Waiting period:** 3 days.

**Amount of benefit:** 50 per cent of average weekly insurable earnings during the qualifying period above subject to a minimum of BSD77.72 per week (since July 2020)<sup>34</sup>.

**Duration of benefit:** So long as unemployment continues up to 13 weeks within a 52 weeks period.

## ▶ Industrial benefits

## (a) Injury benefit

**Eligibility:** Incapable of work as a result of a work-related accident or a disease related to employment. There are no qualifying contribution requirements for any Employment Injury benefits.

**Waiting period:** 3 days.

**Amount of benefit:** 66 2/3 per cent of average insurable earnings in the last 26 weeks before the accident occurred (or less if the person was in employment for a shorter period).

**Duration of benefit:** Maximum of 40 weeks.

<sup>31</sup> Until July 2018, BSD74.16 per week.

<sup>32</sup> Until July 2018, BSD490.

<sup>33</sup> Until July 2018, BSD1,810.

<sup>34</sup> Until July 2018, BSD74.16 per week.

## (b) Disablement benefit

**Eligibility:** Partial or total loss of any physical or mental faculty as a result of a job-related accident or disease.

**Waiting period:** The period of payment of Injury benefit.

**Amount of benefit:** Percentage of average insurable earnings by reference to percentage loss of faculty suffered subject to a minimum benefit of BSD77.72 per week (since July 2020)<sup>35</sup> if the disability is temporary or a minimum of BSD66.20 per week (since July 2020)<sup>36</sup> if the disability is permanent.

If the degree of disablement is less than 25 per cent, a lump sum is paid and is calculated as follows: 100 times the percentage degree of disablement.

If the degree of disablement is 25 per cent or more, a pension is paid and is calculated as follows: the Injury benefit amount times the degree of disablement. A grant of BSD500 is also paid for disablement assessed at 25–66 per cent, and BSD1,000 for disablement assessed at greater than 66 per cent.

If degree of disablement is 100 per cent and the insured requires constant care and attendance, an allowance of 20 per cent of the disablement benefit shall also be paid.

## (c) Industrial death benefit

**Eligibility:** Dependants are defined as for Survivors' benefit.

**Amount of benefit:** Proportion of Disablement pension, the same percentage as for Survivors' pension.

## (d) Funeral benefit

**Eligibility:** Death was due to an accident arising out of and in the course of employment.

**Amount of benefit:** BSD1,900 (since July 2020)<sup>37</sup>.

## (e) Medical care

**Eligibility:** Insured suffers injury or illness arising out of and in the course of employment.

**Expenses covered:** Reasonable expenses for doctor's fees, medication, hospitalization, travelling and constant care and other specified costs incurred as a result of an employment injury or prescribed disease.

**Duration:** 40 weeks from the date of injury unless the degree of disablement is greater than 25 per cent in which case it is payable for 2 years from the date of injury. This may be extended at the discretion of the Director.

► **National Prescription Drug Plan<sup>38</sup>**

**Conditions covered under the Drug Plan** (as of 12 March 2012) **include:** arthritis, asthma, benign prostate hypertrophy, breast cancer, coronary heart disease and cardiomyopathy diabetes, epilepsy, glaucoma, high cholesterol, hypertension, ischaemic disease, prostate cancer, psychiatric illness, sickle cell anemia, thyroid disease.

In order to register for the National Prescription Drug Plan a person must:

- ▶ Have a valid National Insurance number.
- ▶ Be included among those to be covered:
  - NIB pensioners;

<sup>35</sup> Until July 2018, BSD74.16 per week.

<sup>36</sup> Until July 2018, BSD63.17 per week.

<sup>37</sup> Until July 2018, BSD1,810.

<sup>38</sup> With effect from 1 January 2015, The Bahamas Government has agreed to reimburse all benefits expenses related to the National Prescription Drug Plan. Therefore, this branch has incurred no benefit expenditure since 1 January 2015.

- NIB invalids;
- Bahamian citizens age 65 or over;
- Child under 18 years of age or a young adult under 25 years of age (if full-time student);
- Government employees;
- Indigents;
- Persons receiving NIB Retirement grant;
- Persons age 60 and over in receipt of NIB Survivors' benefit/assistance;
- Persons receiving 100 per cent NIB Disablement benefit;
- Women receiving antenatal and postnatal care or any other medical care associated with pregnancy;
- Staff of Her Majesty's Prison and the Industrial Schools;
- Members of the Royal Bahamas Police Force;
- Members of the Royal Bahamas Defence Force;
- Officers employed in the Public Service.

In future phases, the Plan will cover employed and self-employed persons, and voluntarily insured contributors.

- ▶ Complete a registration form (DP-1) and any other required form.
- ▶ Be diagnosed with one or more of the covered chronic diseases by a licensed physician.
- ▶ Bring NIB card and valid government-issued ID when registering and collecting ACE Rx Card.

▶ **CARICOM agreement on social security**

The Bahamas is a signatory to the CARICOM Agreement on Social Security. As a result, some former contributors with fewer contributions than required for Retirement, Invalidity and Survivors' pensions may qualify for these pensions under the Agreement based on the total number of contributions they have made in participating countries.

## ► Appendix 2. Statistics related to short-term and industrial benefits

► Table A2.1. Sickness benefit experience (2014–18)

|             | Number of claims awarded per 1,000 insured | Average duration of benefits (days) | Average weekly benefit (BSD) |
|-------------|--|-------------------------------------|------------------------------|
| <b>2014</b> | 115  | 16.2                                | 230                          |
| <b>2015</b> | 95   | 16.8                                | 237                          |
| <b>2016</b> | 88   | 17.0                                | 239                          |
| <b>2017</b> | 96   | 17.3                                | 246                          |
| <b>2018</b> | 93   | 17.8                                | 253                          |

Source: NIB.

► Table A2.2. Maternity benefit experience (2014–18)

|             | Number of claims awarded per 1,000 insured | Average duration of benefits (days) | Average weekly benefit (BSD) |
|-------------|--|-------------------------------------|------------------------------|
| <b>2014</b> | 17   | 63.1                                | 218                          |
| <b>2015</b> | 16   | 62.9                                | 224                          |
| <b>2016</b> | 16   | 62.9                                | 221                          |
| <b>2017</b> | 17   | 63.7                                | 229                          |
| <b>2018</b> | 16   | 62.9                                | 232                          |

Source: NIB.

► Table A2.3. Unemployment benefit experience (2014–18)

|             | Number of claims awarded per 1,000 insured | Average duration of benefits (days) | Average weekly benefit (BSD) |
|-------------|--|-------------------------------------|------------------------------|
| <b>2014</b> | 38   | 52.4                                | 162                          |
| <b>2015</b> | 47   | 55.0                                | 173                          |
| <b>2016</b> | 49   | 53.3                                | 174                          |
| <b>2017</b> | 41   | 51.1                                | 176                          |
| <b>2018</b> | 39   | 55.1                                | 180                          |

Source: NIB.

► **Table A2.4. Industrial benefit experience, claims (2014–18)**

|             | Number of injury claims awarded per 1,000 insured | Number of medical claims awarded per 1,000 insured | Number of disablement claims awarded per 1,000 insured | Number of death claims awarded |
|-------------|---|--|--|--------------------------------|
| <b>2014</b> | 14  | 21   | 7  | 1                              |
| <b>2015</b> | 14  | 21   | 7  | 1                              |
| <b>2016</b> | 13  | 21   | 8  | 1                              |
| <b>2017</b> | 13  | 20   | 9  | -                              |
| <b>2018</b> | 14  | 21   | 7  | 1                              |

► **Table A2.5. Industrial benefit experience, benefits expenditure (in BSD '000) (2014–18)**

|             | Injury benefits | Medical benefits | Disablement and death benefits |
|-------------|-----------------|------------------|--------------------------------|
| <b>2014</b> | 3 757           | 20 355           | 5 968                          |
| <b>2015</b> | 4 169           | 20 912           | 6 869                          |
| <b>2016</b> | 4 087           | 23 712           | 7 521                          |
| <b>2017</b> | 4 273           | 18 703           | 8 729                          |
| <b>2018</b> | 3 975           | 11 845           | 8 113                          |

Note: Unclaimed benefits are not reflected in the benefits expenditure since their actual source remains unknown. Source: NIB's annual reports 2013 to 2018

## ► Appendix 3. Methodology, data and assumptions

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This actuarial review makes use of a comprehensive methodology developed at the ILO for reviewing the actuarial and financial status of national social security schemes. The review was undertaken by modifying the generic version of the ILO modelling tools to fit the specific case of The Bahamas and the National Insurance Board (NIB). These modelling tools include a population model, an economic model, a labour force model, a wage model, a long-term benefits model and a short-term benefits model.

The actuarial valuation begins with a projection of the future demographic and economic environment in The Bahamas. Next, projection factors specifically related to social security are determined and used in combination with the demographic and economic framework to estimate future cash flows and the Scheme reserve. Assumption selection takes into account both recent experience and future expectations, with emphasis placed on long-term trends rather than giving undue weight to recent experience.

The Bahamas' general population has been projected with information obtained from the Department of Statistics of The Bahamas and by applying appropriate mortality, fertility and migration assumptions as detailed in Section 2.1.

The projection of the insured population requires a certain amount of information and a number of assumptions. Projections start with the number of contributors as at the date of the analysis. The growth of this population is mainly based on the growth of the employed population. Other assumptions of decrement are required, namely prevalence rate of disability and mortality rates by age and sex. Finally, the distribution of new entrants and new retired come from the evolution of the employed population.

### **A3.1. Distribution of insured members**

Data on the insured population were obtained from the NIB. Those aged below 15 or above 79 have been allocated in proportion to the distribution of insured aged 15 to 79. Smoothing has been applied on resulting distributions in order to eliminate any major statistical error. Cross-checking has been done to ensure overall consistency of the data used under the actuarial valuation.

Table A3.1 shows the number of members who contributed to the Pension Benefits Branch during the financial year ending on 31 December 2018, by age and sex. Table A3.2 shows the number of members who contributed to the Industrial Benefits Branch during the financial year ending on 31 December 2018, by age and sex. Table A3.3 shows the number of members who contributed to the Unemployment Benefits Branch during the financial year ending on 31 December 2018, by age and sex.

► **Table A3.1. Distribution of active members (contributors) of the Pensions Benefits Branch, by age and sex (2018)**

| Age          | Males         | Females       | Total          |
|--------------|---------------|---------------|----------------|
| 15-19        | 3 307         | 3 642         | 6 949          |
| 20-24        | 8 990         | 9 400         | 18 390         |
| 25-29        | 10 256        | 11 075        | 21 331         |
| 30-34        | 9 390         | 10 334        | 19 724         |
| 35-39        | 9 146         | 9 765         | 18 911         |
| 40-44        | 8 837         | 9 666         | 18 504         |
| 45-49        | 8 782         | 9 614         | 18 396         |
| 50-54        | 7 755         | 8 555         | 16 310         |
| 55-59        | 6 186         | 6 935         | 13 120         |
| 60-64        | 3 377         | 3 508         | 6 885          |
| 65-69        | 113           | 98            | 212            |
| 70-74        | 24            | 12            | 36             |
| 75-79        | 14            | 4             | 19             |
| <b>Total</b> | <b>76 178</b> | <b>82 609</b> | <b>158 787</b> |

Source: NIB's data, Authors' adjustments.

► **Table A3.2. Distribution of active members (contributors) of the Industrial Benefits Branch, by age and sex (2018)**

| Age          | Males         | Females       | Total          |
|--------------|---------------|---------------|----------------|
| 15-19        | 3 403         | 3 733         | 7 136          |
| 20-24        | 9 015         | 9 448         | 18 463         |
| 25-29        | 10 256        | 11 075        | 21 331         |
| 30-34        | 9 390         | 10 334        | 19 724         |
| 35-39        | 9 146         | 9 765         | 18 911         |
| 40-44        | 8 837         | 9 666         | 18 504         |
| 45-49        | 8 782         | 9 614         | 18 396         |
| 50-54        | 7 755         | 8 555         | 16 310         |
| 55-59        | 6 186         | 6 935         | 13 120         |
| 60-64        | 3 701         | 3 843         | 7 544          |
| 65-69        | 1 274         | 928           | 2 203          |
| 70-74        | 604           | 424           | 1 028          |
| 75-79        | 325           | 242           | 567            |
| 80+          | 155           | 86            | 241            |
| <b>Total</b> | <b>78 830</b> | <b>84 649</b> | <b>163 479</b> |

Source: NIB's data, Authors' adjustments.

► **Table A3.3. Distribution of active members (contributors) of the Unemployment Benefits Branch, by age and sex (2018)**

| Age          | Males         | Females       | Total          |
|--------------|---------------|---------------|----------------|
| 15-19        | 3 300         | 3 635         | 6 936          |
| 20-24        | 8 938         | 9 347         | 18 284         |
| 25-29        | 10 084        | 10 925        | 21 009         |
| 30-34        | 9 065         | 10 069        | 19 134         |
| 35-39        | 8 694         | 9 463         | 18 157         |
| 40-44        | 8 167         | 9 269         | 17 436         |
| 45-49        | 7 973         | 9 075         | 17 049         |
| 50-54        | 6 847         | 7 977         | 14 825         |
| 55-59        | 5 391         | 6 344         | 11 735         |
| 60-64        | 2 948         | 3 253         | 6 201          |
| 65-69        | 39            | 64            | 103            |
| <b>Total</b> | <b>71 448</b> | <b>79 420</b> | <b>150 869</b> |

Source: NIB's data, Authors' adjustments.

In this actuarial valuation the structure of the inactive insured population has been analysed over a period of 15 years (those who have not contributed during 2018 but have contributed to the Scheme in the last 15 years). The inactive insured population has been analysed and cross-checking has been done to ensure the overall consistency of the data used with the recent experience in terms of new retired insured members each year. Tables A3.4 presents the distributions of inactive members, by age and sex, as of 31 December 2018.

► **Table A3.4. Distribution of inactive members by age and sex (2018)**

| Age          | Males         | Females       | Total         |
|--------------|---------------|---------------|---------------|
| 15-19        | 21            | 21            | 42            |
| 20-24        | 172           | 160           | 332           |
| 25-29        | 444           | 324           | 768           |
| 30-34        | 898           | 605           | 1 503         |
| 35-39        | 1 651         | 997           | 2 648         |
| 40-44        | 2 713         | 1 451         | 4 164         |
| 45-49        | 4 134         | 2 014         | 6 148         |
| 50-54        | 5 325         | 2 601         | 7 926         |
| 55-59        | 3 163         | 1 598         | 4 761         |
| 60-64        | 697           | 342           | 1 039         |
| 65-69        | 374           | 145           | 519           |
| 70-74        | 168           | 53            | 221           |
| 75-79        | 63            | 22            | 85            |
| <b>Total</b> | <b>19 825</b> | <b>10 334</b> | <b>30 159</b> |

Source: NIB's data, Authors' adjustments.

For this actuarial valuation, it has been assumed that the inactive insured members will gradually join the active insured population over the projection period, thus continuing to accrue additional credits under the Scheme.

The projection of the insured population constitutes the basis for projections of the Scheme's income and expenditure. The insured population of the NIB has been projected by applying coverage rates to the employed population (see Section 2.2 for more information on the structure and projection of the employed

population). The estimated coverage rates for 2018 and the ultimate coverage rates assumed under this actuarial valuation, by age and sex, are presented in Table A3.5.

► **Table A3.5. Coverage rates by age and sex, 2018 and 2078 (percentages)**

| Age          | Males       |             | Females     |             |
|--------------|-------------|-------------|-------------|-------------|
|              | 2018        | 2078        | 2018        | 2078        |
| 15-19        | 84.2        | 92.3        | 86.5        | 94.7        |
| 20-24        | 80.0        | 87.8        | 86.9        | 95.5        |
| 25-29        | 77.2        | 85.5        | 88.7        | 97.2        |
| 30-34        | 81.3        | 88.8        | 87.6        | 96.3        |
| 35-39        | 75.8        | 83.2        | 86.1        | 94.0        |
| 40-44        | 72.2        | 79.7        | 86.2        | 94.4        |
| 45-49        | 75.4        | 82.3        | 83.4        | 91.3        |
| 50-54        | 73.2        | 81.1        | 80.2        | 88.2        |
| 55-59        | 71.1        | 78.0        | 74.1        | 81.2        |
| 60-64        | 62.5        | 68.3        | 62.2        | 68.0        |
| 65-69        | 5.7         | 6.1         | 6.3         | 6.8         |
| 70-74        | 3.1         | 3.5         | 2.6         | 2.8         |
| 75-79        | 3.9         | 4.2         | 1.6         | 1.0         |
| <b>Total</b> | <b>73.4</b> | <b>75.7</b> | <b>81.5</b> | <b>84.8</b> |

Source: Authors' estimate (2018) and assumptions.

The growth of the insured population reflects the long-term trends in the evolution of the employed population as well as the assumed coverage rates of the Scheme. Over the short- and medium-terms, the growth in the number of active insured members is projected higher since more persons are entering the labour force population, as presented in Table A3.6.

► **Table A3.6. Projected average annual growth in NIB active insured population, by sex and period, 2018–78 (percentages)**

|              | 2018-38    | 2038-58    | 2058-78     | Average    |
|--------------|------------|------------|-------------|------------|
| Males        | 0.7        | 0.4        | -0.1        | 0.3        |
| Females      | 0.8        | 0.2        | -0.2        | 0.3        |
| <b>Total</b> | <b>0.8</b> | <b>0.3</b> | <b>-0.1</b> | <b>0.3</b> |

Source: Authors' assumptions.

### A3.2. Past service of insured members

Data on credited service for the active and inactive insured members were provided by the NIB. Adjustments have been applied to distributions in order to eliminate any major statistical error (e.g. members aged 20 with 10 years of credited service). Table A3.7 shows the average past contribution years for the active insured members as of 31 December 2018. Numbers are shown by age, sex and income level.

► **Table A3.7. Average past contribution years for active insured members, by age, sex and income level, 31 December 2018**

| Age            | Males      |             |             | Females    |             |             |
|----------------|------------|-------------|-------------|------------|-------------|-------------|
|                | Low        | Medium      | High        | Low        | Medium      | High        |
| 15-19          | 0.8        | 1.0         | 1.0         | 0.8        | 1.0         | 1.0         |
| 20-24          | 2.1        | 2.9         | 3.3         | 2.0        | 2.6         | 2.8         |
| 25-29          | 4.3        | 6.0         | 6.7         | 4.0        | 5.6         | 5.9         |
| 30-34          | 6.0        | 9.0         | 10.2        | 6.3        | 9.2         | 10.1        |
| 35-39          | 7.6        | 12.0        | 13.6        | 8.4        | 12.8        | 14.5        |
| 40-44          | 9.6        | 14.9        | 17.5        | 10.8       | 16.7        | 19.0        |
| 45-49          | 11.6       | 18.1        | 21.9        | 13.4       | 20.1        | 23.4        |
| 50-54          | 13.4       | 20.8        | 24.7        | 16.1       | 23.7        | 27.4        |
| 55-59          | 16.0       | 23.8        | 26.8        | 18.2       | 26.2        | 30.1        |
| 60-64          | 14.7       | 26.4        | 30.1        | 18.6       | 29.3        | 34.1        |
| 65+            | 14.3       | 28.7        | 28.4        | 12.1       | 27.2        | 34.6        |
| <b>Average</b> | <b>8.3</b> | <b>12.8</b> | <b>14.9</b> | <b>9.4</b> | <b>14.0</b> | <b>15.9</b> |

Source: NIB's database, Authors' adjustments.

Table A3.8 shows the average past contribution years for the inactive insured members as of 31 December 2018.

► **Table A3.8. Average past contribution years of inactive insured members, by age and sex, 31 December 2018**

| Age            | Males       | Females     |
|----------------|-------------|-------------|
| 15-19          | 1.5         | 1.3         |
| 20-24          | 3.8         | 3.4         |
| 25-29          | 6.8         | 7.1         |
| 30-34          | 8.9         | 10.6        |
| 35-39          | 11.2        | 13.7        |
| 40-44          | 13.0        | 17.0        |
| 45-49          | 13.9        | 19.0        |
| 50-54          | 14.5        | 20.8        |
| 55-59          | 16.1        | 22.0        |
| 60-64          | 15.4        | 20.9        |
| 65-69          | 14.6        | 18.6        |
| 70-74          | 13.3        | 14.8        |
| 75-79          | 13.2        | 13.6        |
| <b>Average</b> | <b>11.8</b> | <b>14.2</b> |

Source: NIB's database, Authors' adjustments.

Those who were civil servants prior to July 2013 accrued benefits on different insurable earnings than others. In fact, prior to July 2013, those members were contributing (and accruing benefits) on a weekly insurable salary limited to BSD 110. The number of past contribution years accumulated as a civil servant before July 2013 has been estimated based on the ratio of past credits experienced for the NIB members between 2004 and 2013. Table A3.9 presents the estimated average past contribution years accrued as a civil servant prior to 2013, by age (as of 2013), sex and income level.

► **Table A3.9. Average past contribution years as a civil servant prior to 2013, by age, sex and income level (2013) (percentages)**

| Age            | Males      |            |            | Females    |            |            |
|----------------|------------|------------|------------|------------|------------|------------|
|                | Low        | Medium     | High       | Low        | Medium     | High       |
| 15-19          | -          | -          | -          | -          | -          | -          |
| 20-24          | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        | 0.0        |
| 25-29          | 0.1        | 0.1        | 0.2        | 0.1        | 0.1        | 0.2        |
| 30-34          | 0.1        | 0.3        | 0.6        | 0.2        | 0.4        | 1.2        |
| 35-39          | 0.2        | 0.5        | 1.2        | 0.2        | 0.9        | 2.6        |
| 40-44          | 0.3        | 1.0        | 2.3        | 0.5        | 2.1        | 4.6        |
| 45-49          | 0.4        | 2.0        | 4.2        | 0.5        | 3.6        | 6.8        |
| 50-54          | 0.5        | 3.4        | 6.7        | 0.6        | 5.9        | 8.9        |
| 55-59          | 0.8        | 4.7        | 5.7        | 0.6        | 8.2        | 11.1       |
| 60-64          | 0.8        | 5.6        | 7.9        | 1.0        | 10.5       | 15.4       |
| 65+            | 0.6        | 3.8        | 6.5        | 0.4        | 9.5        | 12.5       |
| <b>Average</b> | <b>0.3</b> | <b>1.4</b> | <b>2.5</b> | <b>0.3</b> | <b>2.6</b> | <b>4.3</b> |

Source: NIB'S database, Authors' adjustments.

### A3.3. Density of contribution

The density of contribution represents the proportion of the year during which participants pay contributions to the Scheme. A high contribution density means that participants will accumulate pension benefits quickly and that the proportion of those entitled to a pension will increase to the detriment of those entitled only to a grant benefit. In the private sector, it is normal that the density of contribution be less than the one observed in the public sector, due to less stability in employment.

The assumed densities of contribution have been estimated based on the NIB active insured members' data. Adjustment and smoothing have been applied on the distributions in order to eliminate any major statistical error, where necessary. Table A3.10 shows the average densities of contribution used at over the projection period, by age, sex and income level.

► **Table A3.10. Distribution of densities of contribution, by age, sex and income level, 2018 (in percentage)**

| Age            | Males       |             |             | Females     |             |             |
|----------------|-------------|-------------|-------------|-------------|-------------|-------------|
|                | Low         | Medium      | High        | Low         | Medium      | High        |
| 15-19          | 39.3        | 51.0        | 52.2        | 37.3        | 48.0        | 47.9        |
| 20-24          | 58.2        | 74.4        | 83.7        | 57.0        | 71.9        | 79.6        |
| 25-29          | 64.9        | 81.6        | 90.5        | 66.6        | 83.1        | 92.2        |
| 30-34          | 68.9        | 83.1        | 91.9        | 71.0        | 87.5        | 95.2        |
| 35-39          | 72.1        | 83.3        | 92.7        | 74.8        | 89.9        | 96.8        |
| 40-44          | 74.6        | 84.3        | 94.3        | 78.4        | 91.9        | 98.0        |
| 45-49          | 76.5        | 85.6        | 95.8        | 80.6        | 92.8        | 98.8        |
| 50-54          | 78.8        | 86.3        | 95.8        | 82.3        | 93.5        | 98.8        |
| 55-59          | 79.8        | 87.3        | 94.9        | 83.2        | 93.7        | 98.9        |
| 60-64          | 80.5        | 89.1        | 95.5        | 83.1        | 93.4        | 99.5        |
| 65+            | 80.6        | 90.1        | 96.4        | 83.1        | 93.6        | 99.7        |
| <b>Average</b> | <b>70.2</b> | <b>81.9</b> | <b>90.7</b> | <b>72.5</b> | <b>86.2</b> | <b>92.8</b> |

Source: NIB'S database, Authors' adjustments.

### A3.4. Salary scale

Monthly insurable earnings for the active insured members were extracted from the database transmitted by the NIB. Table A3.11 presents the distribution of monthly insurable earnings of active insured members, by age and sex, who have contributed to a Scheme at least one month in the year ending on 31 December 2018. It is noted that the monthly insurable earnings shown below reflect a full month of contribution.

The actuarial model used for this actuarial valuation distributes insurable earnings into three categories (low, medium, high), with the aim of measuring the effect of the minimum pension and the ceiling, if applicable. It is estimated that the dispersion observed in the distribution of the earnings will remain constant throughout the projection period.

Adjustments and smoothing have been applied on resulting distributions in order to eliminate any major statistical error. Further adjustments have been done to ensure that the combined active members' data (distribution of active insured members, densities of contribution and salary scales) is in line with the NIB contributions received during financial year 2018. Insurable earnings are projected using the assumptions presented in Section 2.2.1.

Table A3.11 presents the salary scale used at the beginning of the projection period.

► **Table A3.11. Distribution of average insurable weekly earnings, by age, sex and income level, 2018 (BSD)**

| Age            | Males         |               |               | Females       |               |               |
|----------------|---------------|---------------|---------------|---------------|---------------|---------------|
|                | Low           | Medium        | High          | Low           | Medium        | High          |
| 15-19          | 143.80        | 218.56        | 335.91        | 127.33        | 194.35        | 284.31        |
| 20-24          | 192.49        | 287.82        | 442.38        | 173.73        | 252.85        | 402.15        |
| 25-29          | 214.61        | 354.65        | 556.06        | 199.17        | 327.46        | 540.37        |
| 30-34          | 219.39        | 403.26        | 620.62        | 209.42        | 382.85        | 614.80        |
| 35-39          | 214.84        | 430.20        | 646.24        | 215.04        | 419.16        | 645.05        |
| 40-44          | 210.07        | 454.40        | 658.47        | 216.73        | 448.40        | 657.84        |
| 45-49          | 210.67        | 480.85        | 660.00        | 216.24        | 467.41        | 660.00        |
| 50-54          | 205.88        | 486.74        | 660.00        | 211.54        | 475.84        | 660.00        |
| 55-59          | 206.02        | 485.03        | 660.00        | 209.62        | 483.88        | 660.00        |
| 60-64          | 217.92        | 512.19        | 660.00        | 233.38        | 532.01        | 660.00        |
| 65-69          | 158.00        | 386.26        | 605.00        | 180.73        | 415.12        | 606.19        |
| 70+            | 143.71        | 302.03        | 623.55        | 98.10         | 139.53        | 420.62        |
| <b>Average</b> | <b>206.97</b> | <b>413.02</b> | <b>599.35</b> | <b>203.87</b> | <b>398.55</b> | <b>590.25</b> |

Source: NIB'S database, Authors' adjustments.

### A3.5. Mortality rates

Mortality rates of the insured population have been assumed the same of the general population, as described in Section 2.1.2.

Disabled persons generally have a higher mortality rate than active members. The mortality rates assumed for disabled persons have been assumed two times those of the insured population. This assumption is based on the general analysis of experience for the period 2014-18.

### A3.6. Retirement rates

In the model, retirement rates are derived implicitly from the evolution of the employed population and the coverage rates assumed. Adjustments were made to the projected coverage rates to ensure consistency with the recent and expected trends in terms of retirement.

### A3.7. Disability incidence rates

Disability incidence rates were derived from the experience of the scheme for the period 2014-18. Table A3.12 presents the assumed disability incidence rates for the insured persons of the scheme. The disability incidence rates have been assumed constant over the projection period.

► **Table A3.12. Disability rates per 10,000 insured**

| Age                           | Males | Females |
|-------------------------------|-------|---------|
| 20                            | 11.7  | 6.8     |
| 25                            | 4.9   | 3.2     |
| 30                            | 3.7   | 2.9     |
| 35                            | 5.4   | 4.1     |
| 40                            | 7.4   | 5.8     |
| 45                            | 9.5   | 8.2     |
| 50                            | 15.5  | 14.2    |
| 55                            | 30.8  | 26.9    |
| 60                            | 49.6  | 39.3    |
| Source: Authors' assumptions. |       |         |

### A3.8. Pensioners as of the valuation date

Tables A3.13 presents the initial distribution of male pensioners of the Pension Benefits Branch, by age. Tables A3.14 presents the initial distribution of female pensioners of the Pension Benefits Branch, by age. Tables A3.15 presents the initial distribution of pensioners of non-contributory assistance benefits, by age and sex.

► **Table A3.13. Distribution of male pensioners of the contributory Pensions Benefits Branch, by age, financial year 2018 (amounts in BSD)**

| Age group    | Retirement benefit   |                         | Invalidity benefit   |                         | Survivors benefit    |                         |
|--------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|
|              | Number of pensioners | Average monthly pension | Number of pensioners | Average monthly pension | Number of pensioners | Average monthly pension |
| 0-4          | -                    | -                       | -                    | -                       | 26                   | 199                     |
| 5-9          | -                    | -                       | -                    | -                       | 169                  | 199                     |
| 10-14        | -                    | -                       | -                    | -                       | 383                  | 199                     |
| 15-19        | -                    | -                       | -                    | -                       | 282                  | 198                     |
| 20-24        | -                    | -                       | -                    | -                       | 18                   | 194                     |
| 25-29        | -                    | -                       | 3                    | 300                     | 0                    | 180                     |
| 30-34        | -                    | -                       | 15                   | 312                     | 3                    | 398                     |
| 35-39        | -                    | -                       | 44                   | 330                     | 15                   | 461                     |
| 40-44        | -                    | -                       | 69                   | 369                     | 24                   | 487                     |
| 45-49        | -                    | -                       | 110                  | 398                     | 46                   | 490                     |
| 50-54        | -                    | -                       | 144                  | 444                     | 46                   | 541                     |
| 55-59        | -                    | -                       | 249                  | 472                     | 57                   | 522                     |
| 60-64        | 1 599                | 545                     | 245                  | 491                     | 57                   | 492                     |
| 65-69        | 3 271                | 732                     | 158                  | 517                     | 58                   | 342                     |
| 70-74        | 2 802                | 633                     | 98                   | 500                     | 79                   | 314                     |
| 75-79        | 2 136                | 571                     | 66                   | 482                     | 71                   | 309                     |
| 80-84        | 1 234                | 521                     | 29                   | 454                     | 60                   | 294                     |
| 85-89        | 542                  | 503                     | 6                    | 445                     | 41                   | 301                     |
| 90-94        | 168                  | 488                     | 0                    | 446                     | 11                   | 300                     |
| 95+          | 45                   | 517                     | -                    | -                       | 3                    | 321                     |
| <b>Total</b> | <b>11 796</b>        | <b>617</b>              | <b>1 236</b>         | <b>461</b>              | <b>1 448</b>         | <b>276</b>              |

Source: NIB's database, Authors' adjustments.

► **Table A3.14. Distribution of female pensioners of the contributory Pensions Benefits Branch, by age, financial year 2018 (amounts in BSD)**

| Age group    | Retirement benefit   |                         | Invalidity benefit   |                         | Survivors benefit    |                         |
|--------------|----------------------|-------------------------|----------------------|-------------------------|----------------------|-------------------------|
|              | Number of pensioners | Average monthly pension | Number of pensioners | Average monthly pension | Number of pensioners | Average monthly pension |
| 0-4          | -                    | -                       | -                    | -                       | 26                   | 199                     |
| 5-9          | -                    | -                       | -                    | -                       | 169                  | 199                     |
| 10-14        | -                    | -                       | -                    | -                       | 383                  | 199                     |
| 15-19        | -                    | -                       | -                    | -                       | 282                  | 198                     |
| 20-24        | -                    | -                       | 0                    | 293                     | 18                   | 197                     |
| 25-29        | -                    | -                       | 3                    | 293                     | 5                    | 480                     |
| 30-34        | -                    | -                       | 14                   | 311                     | 16                   | 475                     |
| 35-39        | -                    | -                       | 26                   | 359                     | 65                   | 502                     |
| 40-44        | -                    | -                       | 52                   | 379                     | 90                   | 574                     |
| 45-49        | -                    | -                       | 117                  | 404                     | 167                  | 531                     |
| 50-54        | -                    | -                       | 154                  | 420                     | 226                  | 549                     |
| 55-59        | -                    | -                       | 229                  | 452                     | 272                  | 530                     |
| 60-64        | 2 262                | 474                     | 282                  | 461                     | 332                  | 478                     |
| 65-69        | 4 052                | 617                     | 229                  | 447                     | 379                  | 376                     |
| 70-74        | 3 283                | 538                     | 182                  | 455                     | 501                  | 356                     |
| 75-79        | 2 523                | 474                     | 170                  | 412                     | 519                  | 364                     |
| 80-84        | 1 502                | 436                     | 63                   | 389                     | 407                  | 371                     |
| 85-89        | 759                  | 431                     | 31                   | 371                     | 229                  | 390                     |
| 90-94        | 280                  | 419                     | 7                    | 328                     | 91                   | 406                     |
| 95+          | 81                   | 421                     | -                    | -                       | 25                   | 461                     |
| <b>Total</b> | <b>14 742</b>        | <b>520</b>              | <b>1 558</b>         | <b>432</b>              | <b>4 202</b>         | <b>377</b>              |

Source: NIB's database, Authors' adjustments.

► **Table A3.15. Number of pensioners of the non-contributory assistance, by age, financial year 2018**

| Age group    | Males      |              |           | Females    |              |            |
|--------------|------------|--------------|-----------|------------|--------------|------------|
|              | Old age    | Invalidity   | Survivors | Old age    | Invalidity   | Survivors  |
| 0-4          | -          | -            | 1         | -          | -            | 1          |
| 5-9          | -          | -            | 15        | -          | -            | 15         |
| 10-14        | -          | -            | 20        | -          | -            | 20         |
| 15-19        | -          | 27           | 15        | -          | 18           | 15         |
| 20-24        | -          | 101          | 0         | -          | 57           | 0          |
| 25-29        | -          | 143          | -         | -          | 100          | -          |
| 30-34        | -          | 130          | -         | -          | 87           | -          |
| 35-39        | -          | 150          | -         | -          | 97           | 2          |
| 40-44        | -          | 154          | 2         | -          | 111          | 2          |
| 45-49        | -          | 148          | -         | -          | 118          | 2          |
| 50-54        | -          | 139          | 1         | -          | 113          | 6          |
| 55-59        | -          | 141          | 2         | -          | 114          | 10         |
| 60-64        | -          | 118          | 0         | -          | 89           | 9          |
| 65-69        | 83         | 62           | 0         | 93         | 74           | 6          |
| 70-74        | 150        | 40           | 2         | 178        | 64           | 12         |
| 75-79        | 150        | 22           | -         | 205        | 54           | 17         |
| 80-84        | 119        | 10           | -         | 176        | 51           | 18         |
| 85-89        | 52         | 6            | 2         | 149        | 23           | 13         |
| 90-94        | 24         | 0            | -         | 89         | 9            | 7          |
| 95+          | 9          | -            | -         | 65         | -            | 2          |
| <b>Total</b> | <b>587</b> | <b>1 392</b> | <b>60</b> | <b>955</b> | <b>1 179</b> | <b>156</b> |

Source: NIB's database, Authors' adjustments.

### A3.9. Family structure

Information on the family structure of the insured population is necessary for the projection of survivors' benefits. Assumptions have to be established on the probability of being married at death, the average age of spouses, the average number of orphans and their average age. Assumptions have been derived from the NIB recent experience. Examples of the assumptions appear in Table A3.16.

► **Table A3.16. Family statistics**

| Age | Probability of being married |        | Average age of spouse |        | Average number of dependent children |        | Average age of the children |        |
|-----|------------------------------|--------|-----------------------|--------|--------------------------------------|--------|-----------------------------|--------|
|     | Male                         | Female | Male                  | Female | Male                                 | Female | Male                        | Female |
| 15  | -                            | -      | -                     | -      | -                                    | -      | -                           | -      |
| 20  | 6.8                          | 5.0    | 20.0                  | 20.2   | 0.4                                  | 0.7    | 1.7                         | 2.7    |
| 25  | 9.4                          | 6.3    | 24.8                  | 25.8   | 0.5                                  | 0.7    | 2.9                         | 4.1    |
| 30  | 13.5                         | 8.2    | 29.4                  | 32.3   | 0.6                                  | 0.8    | 4.5                         | 6.0    |
| 35  | 17.6                         | 10.2   | 33.9                  | 38.1   | 0.6                                  | 0.8    | 6.1                         | 7.6    |
| 40  | 21.2                         | 12.5   | 38.0                  | 43.1   | 0.6                                  | 0.7    | 7.3                         | 8.8    |
| 45  | 24.4                         | 15.7   | 42.0                  | 47.9   | 0.5                                  | 0.6    | 8.2                         | 10.2   |
| 50  | 27.3                         | 20.0   | 46.1                  | 52.7   | 0.4                                  | 0.4    | 9.0                         | 11.6   |
| 55  | 29.8                         | 25.2   | 50.4                  | 57.7   | 0.2                                  | 0.3    | 9.6                         | 12.9   |
| 60  | 31.8                         | 29.9   | 55.0                  | 63.1   | 0.1                                  | 0.1    | 9.9                         | 14.2   |
| 65  | 33.0                         | 32.8   | 59.7                  | 67.9   | 0.1                                  | 0.0    | 10.1                        | 15.4   |
| 70  | 33.3                         | 33.5   | 64.3                  | 72.2   | 0.0                                  | -      | 10.6                        | -      |
| 75  | 31.3                         | 31.5   | 69.0                  | 76.4   | -                                    | -      | -                           | -      |
| 80  | 25.6                         | 25.5   | 73.8                  | 80.3   | -                                    | -      | -                           | -      |
| 85  | 16.4                         | 16.3   | 78.9                  | 84.3   | -                                    | -      | -                           | -      |
| 90  | 7.6                          | 7.6    | 84.7                  | 88.9   | -                                    | -      | -                           | -      |
| 95  | 2.4                          | 2.4    | 91.3                  | 94.3   | -                                    | -      | -                           | -      |
| 100 | 0.5                          | 0.5    | 97.6                  | 99.8   | -                                    | -      | -                           | -      |

### A3.10 Third schedule of the National Insurance Financial & Accounting Regulations

The Third Schedule of the National Insurance Financial & Accounting Regulations has been provided by the NIB. The Schedule was used to assess the liability related to the death and disablement beneficiaries at valuation date.

To assess the liability related to the death and disablement beneficiaries at valuation date, the factors of the Schedule have been multiplied with the applicable weekly death and disablement benefits paid as at 31 December 2018.

► **Table A3.17. Third Schedule of the National Insurance Financial & Accounting Regulations, weekly factors**

| Age | Disablement |        | Death benefit |        |
|-----|-------------|--------|---------------|--------|
|     | Male        | Female | Male          | Female |
| 15  | 1145        | 1146   | 1162          | 1167   |
| 20  | 1112        | 1112   | 1133          | 1133   |
| 25  | 1071        | 1073   | 1097          | 1097   |
| 30  | 1022        | 1027   | 1053          | 1053   |
| 35  | 963         | 974    | 1000          | 1007   |
| 40  | 893         | 912    | 936           | 951    |
| 45  | 813         | 846    | 862           | 886    |
| 50  | 727         | 776    | 779           | 819    |
| 55  | 635         | 697    | 690           | 745    |
| 60  | 540         | 608    | 597           | 662    |
| 65  | 447         | 511    | 502           | 570    |
| 70  | 358         | 416    | 410           | 472    |
| 75  | 278         | 325    | 324           | 380    |
| 80  | n.a.        | n.a.   | 249           | 290    |
| 85  | n.a.        | n.a.   | 187           | 215    |
| 90  | n.a.        | n.a.   | 140           | 158    |
| 95  | n.a.        | n.a.   | 105           | 115    |

## ► Appendix 4. General concepts on the funding of social insurance

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### A4.1. Pure assessment – pay-as-you-go (PAYG) system

Under this financial system, the contribution rate during a given period, for example, one year (annual assessment) or a few years, is determined in such a way that income from contributions during a period will just cover the expenditure of the Scheme during the same period, with a small margin to allow the constitution of a contingency reserve. This is the system usually applied to finance short-term benefits such as sickness and maternity cash benefits. Annual benefit expenditure is expected to remain at a relatively constant level once the Scheme has attained a certain maturity, unless the benefit provisions themselves have been changed. The contingency reserve enables coverage of unexpected expenditure due to temporary fluctuations of the risk factors involved. The reserve should, therefore, be maintained in a sufficiently liquid form so that it can be readily resorted to when necessary. If a pure assessment system were applied to a new pension scheme, it would involve frequent revisions of the contribution rate. The annual expenditure under a new pension scheme would begin at a comparatively low level and increase continuously over a long period of time. This is because there will be an increasing number of surviving pensioners. Another reason for escalating annual expenditure is that each new group of pensioners will be drawing higher rates of pension due to longer insurance periods compared to the previous generations of pensioners. Pure assessment is not appropriate for a new pension system. For a mature scheme, however, this financial system could be adopted.

### A4.2. General average premium system

A general average premium (GAP) system provides for a theoretically constant rate of contribution ensuring financial equilibrium ad infinitum. At any time, the present values of all probable future contributions income plus accumulated reserves should be equal to the present value of all probable future outlays, both in respect of the initial population and of future entrants. The contribution rate determined under this system would be relatively high and would lead to a formation of high reserves. Though theoretically constant, the contribution rate is likely, in practice, to be revised at periodic actuarial reviews. If this system were applied to a new pension scheme from the start, the rate of contribution would be relatively high and this could cause an undue burden on the economy and on the contributing parties.

### A4.3. Scaled premium system

It is possible to devise many intermediate systems of finance between the basically unfunded (PAYG) pure assessment system and the fully-funded GAP system. The following factors frequently lead to the adoption of an intermediate system of finance:

1. The contribution rate must not be excessive (with respect to the capacities of the members and the economy in general).
2. The initial and any subsequent contribution rates established under the system of finance applied to the Scheme should remain relatively stable for reasonable periods of time. Increases in the contribution rate should be gradual, particularly when they are not accompanied by an improvement in benefits.

An example of an intermediate level of funding is the scaled premium system of finance. Under this system, a contribution rate is established so that during a specified period, which is known as the period of equilibrium, the contribution income and the interest income on the reserves of the scheme will, in each year, be adequate to meet the expenditure on benefits and administration in that year. In order to avoid a decrease in the reserves after the end of a period of equilibrium, the contribution rate must be revised prior to this and a new higher contribution rate applied during a new period of equilibrium. Thus, the financial equilibrium would be assured for limited periods, such as 20, 15 or 10 years, within each of which the contribution rate is supposed to remain stable. Subsequently, it would be increased by stages – 20, 15 or 10 years, respectively. There would be a moderate accumulation of funds, the amount of which depends on

the length of the period of equilibrium. A short period of equilibrium would result in a low contribution rate, which would have to be increased rather frequently, and would bring about a low degree of accumulation of funds, thus approaching the system of annual assessment. However, a long period of equilibrium would result in a relatively high initial contribution rate and a larger accumulation of funds, and consequently approaches the GAP system. The scaled premium system is flexible, as it permits adaptation to changes in the conditions determining the financing of the Scheme. It should be emphasized, however, that the system requires periodic increases of the contribution rate, which are not accompanied by benefit improvements. Although the contribution rate during the initial period of equilibrium will be lower than that under the GAP system, eventually a stage will be reached when it will exceed the contribution rate required under the latter financial system.

#### **A4.4. A fully funded system**

A fully funded system is a system where liabilities are fully funded. Instead of relying on younger generations of workers to pay the benefits, each generation is required to set aside enough money to pay their own benefits. At each moment during the life of the pension plan, accumulated contributions and investment income shall be enough to pay all the promises. If not, the deficit should be filled in during a stated period. This kind of financing system is more prevalent in the private pension world because it protects workers if the pension plan ends.

## ► Appendix 5. General methodology of the actuarial valuation

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This actuarial review makes use of a comprehensive methodology developed at the Financial, Actuarial and Statistical Services of the ILO for reviewing the long-term actuarial and financial status of national pension schemes. The review was undertaken by modifying the generic version of the ILO modelling tools to fit the situation of the NIB. These modelling tools include a population model, an economic model, a labour force model, a wage model, a long-term benefits model and a short-term benefits model.

### A5.1. Modelling the demographic and economic developments

The use of the ILO actuarial projection model requires the development of demographic and economic assumptions related to the general population, the economic growth, the labour market and the increase and distribution of wages. Other economic assumptions are related to the future rate of return on investments, the indexation of benefits and the adjustment of parameters, such as the maximum insurable earnings and the future level of flat-rate benefits.

The selection of assumptions for projections took into account the recent experience of the NIB to the extent that this information was available. These assumptions were selected to reflect long-term trends rather than giving undue weight to recent experience. The detailed description of the demographic and economic assumptions is presented in Chapter 2.

### A5.2. General population

General population is projected starting with the most current data on the general population, and applying appropriate mortality, fertility and migration assumptions.

### A5.3. Economic growth and inflation

Labour productivity increases and inflation rates are exogenous inputs to the economic model. Real rates of economic growth are derived using the ILO economic projection model.

### A5.4. Active population and employed population

The projection of the labour force, i.e. the number of people available for work, is obtained by applying assumed labour force participation rates to the projected number of people in the general population. An unemployment rate is assumed for the future, and aggregate employment is calculated as the difference between labour force and unemployment. Growth in the insured population is linked to the growth in the employed population. This assumption is adequate since about 80 per cent of the employed population is covered by the NIB. In this model, the insured population is projected starting with the most current data on insured participants, and then applying appropriate mortality, disability and retirement rates.

### A5.5. Salaries

Based on an allocation of total GDP to capital income and to labour income, a starting average wage is normally calculated by dividing the wage share of GDP by the total number of employed. In the medium term, real wage development is checked against labour productivity growth. In specific labour market situations, wages might grow faster or slower than productivity. However, due to the long-term perspective of the present study, the real wage increase is assumed to gradually converge with real labour productivity. It is expected that wages will adjust to efficiency levels over time. In this model, in order to take into account the long-term perspective of the actuarial valuation, the long-term real wage increase is based upon a long-term assumption which is in line with assumptions observed in other actuarial valuations and a long-term view of the economy.

Wage distribution assumptions are also needed to simulate the possible impact of the social protection system on the distribution of income, for example, through minimum and maximum pension provisions.

Data on the wages by age and sex as well as on the dispersion of wages are used in the projection. Average earnings, which are used in the computation of benefits, are also projected.

#### **A5.6. Modelling the financial development of the social insurance scheme**

The present actuarial review addresses all income and expenditure items of the long-term (pension) benefits and the short-term benefits. Projections for pensions are made separately for each sex. Due to the importance of the long-term benefits at the NIB, more importance is given to these projections.

#### **A5.7. Purpose of pension projections**

The purpose of the pension model is twofold. Firstly, it is used to assess the financial viability of the branch. This refers to the measure of the long-term balance between income and expenditure of the Scheme. In case of an imbalance, a revision of the contribution rate or the benefit structure is recommended. Secondly, the model may be used to examine the financial impact of different reform options, thus assisting policymakers in the design of benefit and financing provisions. More specifically, the model is used to develop long-term projections of expenditure and insurable earnings under the Scheme, for the purpose of:

1. Assessing the options for building up a contingency or technical reserve.
2. Proposing schedules of contribution rates consistent with the funding objective.
3. Testing how the system reacts to changing economic and demographic conditions.
4. Analysing financial impact of possible modifications to the scheme.

#### **A5.8. Pension data and assumptions**

Pension projections require the demographic and macroeconomic framework already described and, in addition, a set of assumptions specific to the social insurance scheme.

The database, as at the valuation date, includes the insured population by active and inactive status, the distribution of insurable wages among contributors and the distribution of past credited service and pensions in payment. Data are disaggregated by age and sex.

Scheme-specific assumptions, such as disability incidence rates, are determined with reference to scheme provisions and the scheme's historical experience. The data and assumptions specific to the NIB are presented in detail in Appendix 3.

#### **A5.9. Pension projection approach**

Projections of the long-term (pension) benefits are made following a year-by-year cohort methodology. The existing population is aged and gradually replaced by successive cohorts of participants on an annual basis according to the demographic and coverage assumptions. The projections of insurable earnings and benefit expenditures are then made according to the economic assumptions and the scheme's provisions.

Pensions are long-term benefits. Hence, the financial obligations that a society accepts when adopting financing provisions and benefit provisions for them are also of a long-term nature: participation in a pension scheme extends over a whole adult life, either as contributor or beneficiary, i.e. up to 70 years for someone entering the Scheme at the age of 16 years, retiring at the age of 65 years and dying some 20 or so years later. During their working years, contributors gradually build entitlement to pensions that will be paid even after their death, to their survivors.

It is not the objective of pension projections to forecast the exact progression of a scheme's income and expenditure, but to verify its financial viability. This entails evaluating the Scheme with regard to the relative balance between future income and expenditure. This type of evaluation is essential, especially in the case of the NIB, which has not yet reached its mature stage.

## ► Appendix 6. Legal compliance with the ILO Social Security (Minimum Standards) Convention, 1952 (No. 102)

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### Legend

✓ = In compliance with the requirements of relevant ILO standards.

☑ = Appears to be in compliance with the requirements of relevant ILO standards (subject to verification).

☒ = Compliance subject to a minor parametric adjustment.

✗ = Not in compliance with the requirements of relevant ILO standards.

? = Additional information needed to assess compliance

NTD = Note to Draft

NIA = National Insurance Act as amended by Law No. 2 of 2009

NIBAR = National Insurance (Benefit and Assistance) Regulations, as amended by Statutory Instruments No. 101 of 2010, No. 7 of 2012, No. 35 of 2012 and No. 91 of 2012

S.I. = Statutory Instrument

## Sickness (Part III of Convention No. 102)

|                         | Convention No. 102<br>Minimum standards  | National legislation  | Compatibility with<br>Convention No. 102 |
|-------------------------|--|---|--|
| <b>Contingency</b>      | Incapacity to work resulting from illness that results in the suspension of income   | Being rendered temporarily incapable of work as a result of a specified disease or physical or mental disablement which is not an employment injury (NIA s. 21, NIBAR s. 31)  | ✓  |
| <b>Assessment</b>       | The national legislation and practice is in compliance with Convention No. 102 for providing sickness benefits to those rendered incapable of work as a result of specific disease or physical or mental disablement which is not an employment injury   |   |  |
| <b>Coverage</b>         | At least: <ul style="list-style-type: none"> <li>– 50% of all employees; or</li> <li>– categories of the economically active population (forming not less than 20% of all residents); or</li> <li>– all residents with means under a prescribed threshold</li> </ul>   | All insured persons (NIA s.21)<br>“insured persons” includes employed persons, self-employed persons and voluntary insured persons (NIA s. 12)<br>“employed person” means, <i>inter alia</i> , any person employed under any contract of service in the Bahamas (NIA s. 2 and First Schedule)<br><br>According to available data, there were about 163,000 workers covered under NIB representing about 82% of the employed population of 199,678 aged 15 to 64 in 2018. In addition it can be noted that the report estimates that there were 23,522 unemployed persons in 2018 for a labour force of 223,200. This information is needed to comply with the statistical conditions specified in C102. | ✓  |
| <b>Assessment</b>       | The national law and practice is in line with Convention No. 102 as the law covers all employed persons and in practice 81% of all employees (including also unemployed persons) are covered, well beyond the minimum requirements established by C102, i.e. prescribed classes of employees, constituting not less than 50 per cent. of all employees;  |   |  |
| <b>Benefit</b>          | <i>Periodic payment:</i> <ul style="list-style-type: none"> <li>– <i>Earnings-related benefit:</i> at least 45% of former earnings;</li> <li>– <i>Flat-rate benefit:</i> at least 45% of wage of unskilled worker;</li> <li>– <i>Means-tested benefit:</i> means and benefit together must amount to at least 45% of wage of unskilled worker.</li> </ul>  | Periodic payment (NIA s. 21)<br>60% of the average insurable earnings (NIBAR s. 33)<br>Average weekly insurable earnings are based on the insured's covered earnings in the contribution period used to qualify for the benefits  | ✓  |
| <b>Assessment</b>       | In providing a benefit equal to 60% of average insurable earnings, the national legislation is in compliance with Convention No. 102 which requires a sickness benefit at least equal to 45% of previous earnings be granted   |   |  |
| <b>Benefit duration</b> | As long as the person remains unable to engage in gainful employment due to illness; possible waiting period of max. three days before benefit is paid; benefit duration may be limited to 26 weeks in each case of sickness.  | Waiting period: 3 days<br><br>Benefit Duration: 26 weeks, may be extended for up to 14 weeks under certain conditions. (NIBAR s. 98)  | ✓  |
| <b>Assessment</b>       | The national legislation provides sickness benefits for a duration of 26 weeks in each case of continuous incapacity for work in compliance with Convention No. 102 which establishes, in the case of a morbid condition, sickness benefits shall be granted throughout the contingency and where their duration is limited they should be provided at least for up to 26 weeks if needed, in each case of sickness. The waiting period (i.e. 3 days) established in the national legislation is also aligned with the Convention. |   |  |

|                          | <b>Convention No. 102<br/>Minimum standards</b>  | <b>National legislation</b>  | <b>Compatibility with<br/>Convention No. 102</b> |
|--------------------------|--|--|--|
| <b>Qualifying period</b> | No longer than period considered necessary to preclude abuse. Left to national legislation to prescribe a period needed in the national context to preclude abuse. | Having 40 weeks of paid or credited contributions with at least either (i) 13 weekly contributions in the 26 weeks preceding sickness, (ii) 26 weekly contributions in the last 52 weeks, or (iii) 26 weekly contributions in the preceding contributions year (NIBAR s. 32) | ✓  |
| <b>Assessment</b>        | <b>The qualifying period is not overly restrictive and can be considered in line with the requirements of Convention No. 102</b>                                   |  |  |

### Unemployment (Part IV of Convention No. 102)

|  | Convention No. 102<br>Minimum standards  | National legislation  | Compatibility with<br>Convention No. 102 |
|--|--|---|--|
| <b>Contingency</b>   | Suspension of earnings due to inability to find suitable employment for capable and available persons  | Insured persons who are unemployed but actively looking for employment. Self-employed persons, voluntarily insured persons, summer students and part-time workers are excluded from the scheme.   | ✓  |
| <b>Assessment</b> The national legislation under review covers the loss of earning resulting from an inability to find suitable employment in accordance with the Convention.  |  |   |  |
| <b>Coverage</b>  | At least:<br>– 50% of all employees; or<br>– All residents with means under prescribed threshold.  | The unemployment scheme covers employees but excludes self-employed persons, voluntarily insured persons, summer students and part-time workers.<br><br>According to available data, there were 150 869 active employees covered under the unemployment benefits branch, and a total number of employees of 223,200 in Bahamas in 2018. | ✓  |
| <b>Assessment</b> The national law and practice is in line with Convention No. 102 as the law covers employed persons with certain exclusions and in practice roughly 68% of all employees are covered, beyond the minimum requirements established by C102, i.e. prescribed classes of employees, constituting not less than 50 per cent. of all employees. |  |   |  |
| <b>Benefit</b>   | <i>Periodic payment:</i><br>– <i>Earnings-related benefit:</i> at least 45% of former earnings;<br>– <i>Flat-rate benefit:</i> at least 45% of wage of unskilled worker;<br>– <i>Means-tested benefit:</i> means and benefit together must amount to at least 45% of wage of unskilled worker. | The unemployment compensation amount is 50% of the insured's average weekly insurable income during the qualifying period.  | ✓  |
| <b>Assessment</b> The national legislation, which provides unemployment benefits of 50% of the former earnings is in line with the requirements of Convention No. 102 which requires that an unemployment benefit at least equal to 45% of former earnings be provided.  |  |   |  |

|   | <b>Convention No. 102<br/>Minimum standards</b>  | <b>National legislation</b>   | <b>Compatibility with<br/>Convention No. 102</b> |
|---|--|---|--|
| <b>Benefit duration</b>   | <p>For schemes covering employees: at least 13 weeks of benefits within a period of 12 months</p> <p>For means tested schemes: at least 26 weeks within a period of 12 months</p> <p>Possible waiting period of a maximum seven days</p> | <p>The unemployment compensation is paid so long as unemployment continues to a maximum period of 13 weeks within a 52 weeks period.</p> <p>Waiting period of 3 days.</p>   | ✓  |
| <b>Assessment</b> The national legislation, which provides unemployment benefits after a waiting period of 3 days and for a maximum duration of 13 weeks within a 52 weeks period is in line with the requirements of Convention No. 102. |  |   |  |
| <b>Qualifying period</b>  | <p>No longer than period considered necessary to preclude abuse. Left to national legislation to prescribe a period needed - in the national context to preclude abuse.</p>  | <p>The insured must satisfy three contribution conditions:</p> <ul style="list-style-type: none"> <li>- Having paid at least 52 weekly contributions into the National Insurance Programme since it started in 1974;</li> <li>- Paid and/or been credited with at least 13 weekly contributions in the 26 weeks immediately before the week in which you were last employed: AND</li> <li>- Paid and/or been credited with at least 7 contributions in the 13 weeks immediately before the week in which you were last employed.</li> </ul> | ✓  |
| <b>Assessment</b> The qualifying period provided in the national legislation can be considered in line with Convention No. 102  |  |   |  |

## Old age (Part V of Convention No. 102)

|                    | Convention No. 102<br>Minimum standards   | National legislation  | Compatibility<br>with<br>Convention No.<br>102 |
|--------------------|---|---|--|
| <b>Contingency</b> | Survival beyond a prescribed age (65 or higher according to working ability of elderly persons in country).   | Reaching age 60 and not being substantially employed in insurable employment. A person is deemed substantially employed in insurable employment if his earnings as an employed or self-employed person exceed 50% of the ceiling on insurable wages (NIBAR s. 18, S.I. No. 35 of 2012 s.5) [NTD: NIA s. 21 still refers to age 65]  | ✓  |
| <b>Assessment</b>  | <b>As the national legislation prescribes the age to access a pension at age 60, it is in compliance with Convention No. 102 which establishes that old-age benefits should be provided to persons having reached 65 years or less.</b>   |   |  |
| <b>Coverage</b>    | At least:<br>– 50% of all employees; or<br>– categories of economically active population (forming not less than 20% of all residents); or<br>– all residents with means under prescribed threshold.  | All insured persons (NIA s.21)<br><br>“insured persons” includes employed persons, self-employed persons and voluntary insured persons (NIA s. 12)<br><br>“employed person” means, <i>inter alia</i> , any person employed under any contract of service in the Bahamas (NIA s. 2 and First Schedule)<br><br>According to available data, there were about 163,000 workers covered under NIB representing about 82% of the employed population of 199,678 aged 15 to 64 in 2018. In addition it can be noted that the report estimates that there were 23,522 unemployed persons in 2018 for a labour force of 223,200. This information is needed to comply with the statistical conditions specified in C102. | ✓  |
| <b>Assessment</b>  | <b>The national law and practice is in line with Convention No. 102 as the law covers all employed persons and in practice 81% of all employees (including also unemployed persons) are covered, well beyond the minimum requirements established by C102, i.e. prescribed classes of employees, constituting not less than 50 per cent. of all employees</b> |   |  |
| <b>Benefit</b>     | Periodic payments: at least 40% of former earnings of the insured worker after 30 years of contributions (for contributory schemes) or 20 years of residence (for non-contributory schemes)   | Periodic payment (NIA s.21)<br><br>30% of average weekly insurable wage or income for the first 500 paid contributions plus 1% for each additional 50 weeks of paid or credited contributions (NIBAR s.19, S.I. No. 35 of 2012, s.6)<br><br>The average weekly insurable wage is based on the average weekly earnings in the best 5 years of contributions in which at least 26 weekly contributions were made.<br><br>According to the formula, an old age benefit after a contributory period of 30 years would be calculated as follows: 30%(first 500 weeks) + 21,2%*(weeks 501 to 1560) =51,2%.<br>Maximum old age pension is 60% of the insured’s covered wage.   | ✓  |
| <b>Assessment</b>  | <b>The scheme which provides for a benefit of at least 50% for a person who has contributed for 30 years is in compliance with Convention No. 102 which requires that a benefit at least equal to 40% of previous earnings be granted to persons having contributed 30 years</b>  |   |  |

|  | Convention No. 102<br>Minimum standards  | National legislation   | Compatibility<br>with<br>Convention No.<br>102 |
|--|--|--|--|
| <b>Benefit duration</b>                    | From the prescribed age to the death of beneficiary  | Pension for life (NIBAR s. 18, S.I. No. 35 of 2012, s.5)   | ✓  |
| <b>Assessment</b>                          | <b>The national legislation is in line with Convention No. 102 given that old-age benefit are provided until the death of the beneficiary</b>  |  |  |
| <b>Qualifying period – reduced pension</b> | 30 years of contribution or employment (for contributory schemes) or 20 years of residence (for non-contributory schemes); or, if all EAP covered, a prescribed qualifying period and a prescribed yearly average number of contributions paid.<br>Entitlement to a reduced benefit after 15 years of contribution or employment; or, if all EAP covered, a prescribed qualifying period and meet half the yearly average number of contributions prescribed.  | <b>NTD:</b> our interpretation of NIBAR s. 19, as amended by S.I. No 35 of 2012, is that the qualifying period is 500 weekly contributions or 10 years   | ☑  |
| <b>Assessment</b>                          | <b>Subject to the confirmation of the above interpretation, as a pension equal to 30% of previous earnings is paid upon completing a qualifying period of about 10 years and a pension above 40% of previous earnings is paid to a person who has contributed for 30 years, it can be concluded that the national legislation is in compliance with Convention No. 102, which requires that a reduced pension be paid after a maximum 15 years of contribution and that a pension equal to at least 40% of previous earnings be paid after a contributory period of 30 years.</b>  |  |  |
| <b>Adjustment of pensions in payment</b>   | Adjustment following substantial changes in general level of earnings which result from substantial changes in the cost of living.   | With effect from July 2010 and every second year thereafter, payments shall be increased based on the annual percentage increase in the Bahamas Retail Price Index between Decembers of consecutive years (NIBAR s. 14A. S.I. No.101 of 2010). | ✓  |
| <b>Assessment</b>                          | <b>According to the Convention, pensions should be reviewed following substantial changes in the general level of earnings where these result from substantial changes in the cost of living. The objective is that the purchasing power of pensions should not erode over time due to substantial increases in the cost of living and that whenever wages have evolved to catch up with inflation, the consequent additional contributions provide the financial means to also adjust pensions without compromising the sustainability of the scheme. It can be concluded that the national legislation is in line with Convention No. 102.</b> |  |  |

**Maternity (Part VIII of Convention No. 102)**

|   | <b>Convention No. 102<br/>Minimum standards</b>   | <b>National legislation</b>  | <b>Compatibility with<br/>Convention No. 102</b> |
|---|---|--|--|
| <b>Contingency</b>  | Pregnancy and confinement and their consequences, and resulting suspension of earnings.   | <p>Suspension of earnings resulting from pregnancy and confinement (NIA s.21)</p> <p>We understand that pregnancy, antenatal and postnatal care are provided to the public at all community health clinics and public hospitals free of charge (Ministry of Health)</p>  | <input checked="" type="checkbox"/>              |
| <b>Assessment</b> Maternity benefits seem to be provided in accordance with Convention No. 102.   |   |  |  |
| <b>Coverage</b>   | <p>At least:</p> <ul style="list-style-type: none"> <li>– all women in prescribed classes of employees, which classes constitute not less than 50% of all employees and, for maternity medical benefit, also the wives of men in these classes or</li> <li>– all women in categories of the economically active population forming not less than 20% of all residents, including, with regard to maternity medical benefit, the wives of men in these classes); or</li> <li>– all women with means under prescribed threshold.</li> </ul> | <p>All women who are insured persons (NIBAR s. 35)</p> <p>“insured persons” includes employed persons, self-employed persons and voluntary insured persons (NIA s. 12)</p> <p>“employed person” means, <i>inter alia</i>, any person employed under any contract of service in the Bahamas (NIA s. 2 and First Schedule)</p> <p>It is understood that all women have access to medical maternity care free of charge as part of the universal public health system</p> <p>According to available data, there were about 163,000 workers covered under NIB representing about 82% of the employed population of 199,678 aged 15 to 64 in 2018. In addition it can be noted that the report estimates that there were 23,522 unemployed persons in 2018 for a labour force of 223,200. This information is needed to comply with the statistical conditions specified in C102.</p> | <input checked="" type="checkbox"/>              |
| <b>Assessment</b> Assuming that all women have access to medical maternity care free of charge as part of the universal public health system, the national law and practice is in line with Convention No. 102 as the law covers all employed persons and in practice 81% of employees are covered, well beyond the minimum requirements established by C102, i.e. prescribed classes of employees, constituting not less than 50 per cent. of all employees; |   |  |  |

|                          | Convention No. 102<br>Minimum standards  | National legislation   | Compatibility with<br>Convention No. 102 |
|--------------------------|--|--|--|
| <b>Benefit</b>           | <p><i>Medical care benefit:</i></p> <ul style="list-style-type: none"> <li>– Pre-natal, confinement and post-natal care either by medical practitioners or by qualified midwives; and</li> <li>– Hospitalisation where necessary;</li> </ul> <p>must be provided at no cost for the beneficiaries.</p> <p>With a view to maintaining, restoring or improving the health of the woman protected and her ability to work and to attend to her personal needs.</p> <p><i>Earnings-related benefit:</i></p> <ul style="list-style-type: none"> <li>– Periodic payment;</li> <li>– At least 45% of former earnings.</li> </ul> <p><i>Flat-rate benefit:</i></p> <ul style="list-style-type: none"> <li>– At least 45% of wage of unskilled worker.</li> </ul> | <p>It is understood that pregnancy, antenatal and postnatal care are provided to the public at all community health clinics and public hospitals free of charge (Ministry of Health)</p> <p>Periodic payment.<br/>66% and 2/3% of the average weekly earnings of the insured person for 13 weeks beginning no earlier than six weeks before the expected date of childbirth; may be extended for six weeks under certain conditions (NIBAR s. 38).</p> | ☑  |
| <b>Assessment</b>        | <p>With respect to income replacement, the benefit is in compliance with Convention No. 102 since a cash benefit equal to 66 and 2/3% of previous earnings is provided, which is well above the 45% required by the Convention. Subject to confirmation from the Government, it is understood that all women employees and the dependent wives of employees are entitled to medical antenatal, labour and postnatal care at all community health clinics and public hospitals free of charge. Voluntarily insured women are covered for the maternity grant only.</p>  |  |  |
| <b>Benefit duration</b>  | <p><i>Medical care:</i> Throughout the contingency.</p> <p><i>Cash benefit:</i> At least 12 weeks.</p>   | <p>It is understood that antenatal visits should begin during the 12<sup>th</sup> week of pregnancy until delivery, and that postnatal care is generally provided about 6 weeks after delivery. Medical care, including maternity medical care, is provided under the universal public health system.</p> <p>13 weeks (NIBAR s. 37)</p>  | ☑  |
| <b>Assessment</b>        | <p>With respect to income replacement, since benefits are provided for a duration of 13 weeks they are in compliance with Convention No. 102 which requires that maternity cash benefits be provided for at least 12 weeks. Subject to confirmation from the Government, it is understood that maternity medical care is provided throughout the maternity.</p>  |  |  |
| <b>Qualifying period</b> | <p>Not longer than period considered necessary to preclude abuse.</p>  | <p>Having been engaged as an employed or self-employed person and having paid (i) 50 weekly contributions, and (ii) 26 weekly contributions in the 40 weeks immediately preceding the week in which the benefit is due to commence or 26 weekly contributions in the immediately preceding contribution year (NIBAR s. 36)</p> <p>The benefit is paid to an insured woman or the wife of an insured man.</p>   | ✓  |
| <b>Assessment</b>        | <p>The qualifying period, i.e. 50 contributions with 26 of them either in the 40 weeks immediately preceding the week in which the benefit is due to commence or in the immediately preceding contribution year is not overly restrictive and can be considered in line with the requirements of Convention No. 102.</p>   |  |  |

### Invalidity (Part IX of Convention No. 102)

|                    | Convention No. 102<br>Minimum standards   | National legislation  | Compatibility<br>with<br>Convention No.<br>102 |
|--------------------|---|---|--|
| <b>Contingency</b> | Inability to engage in any gainful activity, likely to be permanent, or that persists beyond sickness benefit (total invalidity)  | Being permanently incapable of work otherwise than as a result of employment injury (NIA s. 21)   | ✓  |
| <b>Assessment</b>  | <b>This requirement of Convention No. 102 is fulfilled since the national legislation provides for invalidity pensions in case of disability (bodily or mental) which is likely to remain permanent.</b>  |   |  |
| <b>Coverage</b>    | At least:<br>– 50% of all employees; or<br>– categories of active population (forming not less than 20% of all residents); or<br>– all residents with means under prescribed threshold  | All insured persons (NIA s.21)<br>“insured persons” includes employed persons, self-employed persons and voluntary insured persons (NIA s. 12)<br>“employed person” means, <i>inter alia</i> , any person employed under any contract of service in the Bahamas (NIA s. 2 and First Schedule)<br><br>According to available data, there were about 163,000 workers covered under NIB representing about 82% of the employed population of 199,678 aged 15 to 64 in 2018. In addition it can be noted that the report estimates that there were 23,522 unemployed persons in 2018 for a labour force of 223,200. This information is needed to comply with the statistical conditions specified in C102. | ✓  |
| <b>Assessment</b>  | <b>The national law and practice is in line with Convention No. 102 as the law covers all employed persons and in practice 81% of all employees (including also unemployed persons) are covered, well beyond the minimum requirements established by C102, i.e. prescribed classes of employees, constituting not less than 50 per cent. of all employees</b>   |   |  |
| <b>Benefit</b>     | Periodic payments: at least 40% of former earnings of the insured worker after 15 years of contributions (for contributory schemes) or 10 points lower if secured at least for a person protected who has completed 5 years of contribution, employment or residence  | Periodic payment (NIA s. 21)<br>16% of average weekly insurable earnings for the first 150 weekly contributions + 2% for each additional 50 weeks of paid or credited contributions up to 500 + 1% for each additional 50 weeks of paid or credited contributions over 500 (NIBAR s. 23).<br>The maximum disability pension is 60% of the insured's covered wage.<br><br>According to the formula, an invalidity benefit after a contributory period of 15 years would be calculated as follows: 16% (first 150 weeks) + 14% (for weeks 151-500) +5% (for weeks 501-780) =35%   | ✗  |
| <b>Assessment</b>  | <b>According to national law, an insured worker would receive a benefit equal roughly to 35% after a contributory period of about 15 years or 20% after a contributory period of 5 years which is not in compliance with Convention No. 102 as it requires that a benefit equal to at least 40% of previous earnings be granted to someone who has contributed for 15 years or 30% after 5 years of contribution.</b> |   |  |

|  | <b>Convention No. 102<br/>Minimum standards</b>   | <b>National legislation</b>  | <b>Compatibility<br/>with<br/>Convention No.<br/>102</b> |
|--|---|--|--|
| <b>Benefit duration</b>                    | As long as the person remains unable to engage in gainful employment or until old-age pension is paid.  | For the duration of the invalidity up to age 65 (NIBAR s. 22, S.I. No. 35 of 2012, s.10)   | <input checked="" type="checkbox"/>                      |
| <b>Assessment</b>                          | <b>Appears to be in line with Convention No. 102 as the pension is paid for the duration of the invalidity but It is not clear whether the reference to age 65 means that an old-age pension must be paid or if the mere reaching of the age brings about the cessation of the invalidity pension</b>   |  |  |
| <b>Qualifying period – reduced pension</b> | 15 years of contributions or employment (for contributory schemes) or 10 years of residence (for non-contributory schemes); <i>or</i><br><i>if all EAP covered:</i> 3 years of contributions and meet the yearly average number of contributions prescribed;<br><br>Entitlement to a reduced benefit after 5 years of contributions or employment; <i>or</i><br><i>if all EAP covered:</i> 3 years of contributions. and meet half the yearly average number of contributions prescribed.   | 150 weekly contributions (NIBAR s. 22, S.I. No. 35 of 2012, s.10)  | ✓  |
| <b>Assessment</b>                          | <b>In compliance with Convention No. 102 as the benefit is payable after a little less than 3 years of contributions</b>  |  |  |
| <b>Adjustment of pensions in payment</b>   | Adjustment following substantial changes in general level of earnings which result from substantial changes in the cost of living.  | With effect from July 2010 and every second year thereafter, payments shall be increased based on the annual percentage increase in the Bahamas Retail Price Index between Decembers of consecutive years (NIBAR s. 14A. S.I. No.101 of 2010). | ✓  |
| <b>Assessment</b>                          | <b>According to the Convention, pensions should be reviewed following substantial changes in the general level of earnings where these result from substantial changes in the cost of living. The objective is that the purchasing power of pensions should not erode over time due to substantial increases in the cost of living and that whenever wages have evolved to catch up with inflation, the consequent additional contributions provide the financial means to also adjust pensions without compromising the sustainability of the scheme. The national legislation is in line with Convention No. 102.</b> |  |  |

## Survivors (Part X of Convention No. 102)

|                    | Convention No. 102<br>Minimum standards   | National legislation   | Compatibility<br>with<br>Convention No.<br>102 |
|--------------------|---|--|--|
| <b>Contingency</b> | Widow's or children's loss of support in the event of death of the breadwinner  | Widows or children's loss of support in the event of death of an insured person who immediately before his death was receiving retirement benefit or invalidity benefit, or in respect of an insured person who dies otherwise than as a result of employment injury (NIA s. 21)   | ✓  |
| <b>Assessment</b>  | <b>In compliance with Convention No. 102 as the legislation under examination provides for the payment of a Survivors' Benefit to dependent widows and children in the event of the death of the insured.</b>   |  |  |
| <b>Coverage</b>    | <ul style="list-style-type: none"> <li>– Wives and children of breadwinners in prescribed classes of employees representing at least 50% of all employees; or</li> <li>– wives and children of members in prescribed classes of economically active persons representing at least 20% of all residents; or</li> <li>– all resident widows and children with means under prescribed threshold</li> </ul> | <p>Wives and children of all insured persons (NIBAR s. 24)</p> <p>"insured persons" includes employed persons, self-employed persons and voluntary insured persons (NIA s. 12)</p> <p>"employed person" means, <i>inter alia</i>, any person employed under any contract of service in the Bahamas (NIA s. 2 and First Schedule)</p> <p>According to available data, there were about 163,000 workers covered under NIB representing about 82% of the employed population of 199,678 aged 15 to 64 in 2018. In addition it can be noted that the report estimates that there were 23,522 unemployed persons in 2018 for a labour force of 223,200. This information is needed to comply with the statistical conditions specified in C102.</p>   | ✓  |
| <b>Assessment</b>  | <b>The national law and practice is in line with Convention No. 102 as the law covers all employed persons and in practice 81% of all employees (including also unemployed persons) are covered, well beyond the minimum requirements established by C102, i.e. prescribed classes of employees, constituting not less than 50 per cent. of all employees</b>   |  |  |
| <b>Benefit</b>     | Periodic payments: at least 40% of former earnings of the insured worker after 15 years of contributions (for contributory schemes)   | <p>Periodic payments (NIA s.21)</p> <p>The total of survivor's pensions available in respect of deceased insured person shall not exceed 100% of either the retirement benefit or the invalidity benefit paid to the insured person or to which the insured person was entitled to at the time of his death ("maximum pension"). The widow is entitled to 50% of the total pension. Unmarried children younger than age 16 (age 21 if full-time student) are each entitled to 10% of the maximum pension, up to five orphans (if the widow(er) receives a survivor pension) or 10 orphans (if the widow(er) does not receive a survivor pension) (NIBAR s.24)</p> <p>A standard beneficiary according to C102 (a wife with two children) would therefore receive a pension equal to 70% of the total pension.</p> <p>The maximum combined survivor pension is 100% of the social insurance old-age or disability pension the deceased received or was entitled to receive.</p> | ✗  |

|   | Convention No. 102<br>Minimum standards   | National legislation  | Compatibility<br>with<br>Convention No.<br>102 |
|---|---|---|--|
| <b>Assessment</b>                               | The amount of the benefit for a standard beneficiary, according to the formula after a contributory period of 15 years would be as follows: 70% of (16% (first 150 weeks) + 14% (for weeks 151-500) +5% (for weeks 501-780)) = 70%*35= 24.5%  |   |  |
| <b>Assessment</b>                               | <b>The benefit is not in compliance with Convention No. 102 as the maximum pension would be only 24.5% after 15 years while the Convention requires a survivors pension of at least 40% after 15 years of contribution.</b>   |   |  |
| <b>Benefit duration</b>                         | Until children reach school leaving age or turn 15<br>Benefits to widows may be made conditional on her being presumed incapable of self-support and may be suspended if the widow remarries  | Widow(er): life pension if (i) is aged 40 or older and incapable of economic employment, (ii) disabled, (iii) pregnant by her late husband, or (iv) has the care of a child younger than 16 (up to 21 if full-time student, no limit if disabled) of the deceased.<br>Children: payable until age 16 or age 21 if receiving full-time education or training or for life if invalid (no limit if disabled)<br>Dependent parents who are disabled or aged 40 or older and incapable of gainful employment.<br>(NIBAR s. 25) | ✓  |
| <b>Assessment</b>                               | <b>The national law and practice is in line with Convention No. 102 since a survivors benefits is provided to widows aged 40 and over as a life pension and for those under 40 is made conditional on the widow being presumed incapable of self-support and to children until the age of 16 or 21 if receiving full time education.</b>  |   |  |
| <b>Entitlement conditions – reduced pension</b> | 15 years of contributions or employment (for contributory schemes) or 10 years of residence (for non-contributory schemes); or<br><i>if all EAP covered:</i> 3 years of contributions. and meet the yearly average number of contributions prescribed;<br><br>Entitlement to a reduced benefit after five years of contributions or employment; or<br><i>if all EAP covered:</i> 3 years of contributions. and meet half the yearly average number of contributions prescribed.<br><br>For widows, benefits may be conditional on being presumed incapable of self-support. | Invalidity : 150 weekly contributions (NIBAR 26).<br><br>Old age : someone who dies after age 65 who had more than 150 contributions but less than 500 (would have qualified for a Retirement grant only) to enable spouse to get a Survivors Benefit (2012 Amendments to the National Insurance Regulations).  | ✓  |
| <b>Assessment</b>                               | <b>The national legislation is in compliance with Convention No. 102, as survivors' benefits would be provided as long as the insured person would have contributed at least 150 weeks (i.e. about 3 years)</b>   |   |  |
| <b>Adjustment of pensions in payment</b>        | Adjustment following substantial changes in general level of earnings which result from substantial changes in the cost of living.  | With effect from July 2010 and every second year thereafter, payments shall be increased based on the annual percentage increase in the Bahamas Retail Price Index between Decembers of consecutive years (NIBAR s. 14A. S.I. No.101 of 2010).  | ✓  |

|                   | Convention No. 102<br>Minimum standards  | National legislation | Compatibility<br>with<br>Convention No.<br>102 |
|-------------------|--|----------------------|--|
| <b>Assessment</b> | According to the Convention, pensions should be reviewed following substantial changes in the general level of earnings where these result from substantial changes in the cost of living. The objective is that the purchasing power of pensions should not erode over time due to substantial increases in the cost of living and that whenever wages have evolved to catch up with inflation, the consequent additional contributions provide the financial means to also adjust pensions without compromising the sustainability of the scheme. The national legislation is in line with Convention No. 102. |                      |  |

**Contact details**

**International Labour Organization**  
Caribbean Office  
6 Stanmore Avenue, Port of Spain  
Trinidad and Tobago

T: +1 868 625-0524  
E: [ilocarib@ilo.org](mailto:ilocarib@ilo.org)