Transnet Second Defined Benefit Fund

Actuarial valuation as at 31 March 2020

Prepared by Alexander Forbes Financial Services

September 2020

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EXECUTIVE SUMMARY

Present value of pensioner liabilities

1. The present value of the liabilities in respect of pensioners as at 31 March 2020 was as follows:

	31 March 2019 (R million)	31 March 2020 (R million)
Pensioners	4 127	4 730
Widow(er)s	5 403	6 694
Children	22	28
Total liability	**9 552**	**11 452**

Summary of results

2. Comparing the value of the assets with the past service liabilities produced the following results:

	31 March 2019 (R million)	31 March 2020 (R million)
Total net assets	13 346	11 499
Total liabilities	9 552	11 330
Surplus / (Deficit) before solvency reserve	**3 794**	**169**
Funding level before solvency reserve	**139.7%**	**101.5%**
Solvency reserve	305	374
Surplus / (Deficit) after solvency reserve	**3 489**	**(205)**
Funding level after solvency reserve	**135.4%**	**98.2%**

Conclusion

3. I confirm that, based on the information available, the fund was in a sound financial condition as at the valuation date, i.e. the assets of the Transnet Second Defined Benefit Fund exceeded the fund's liabilities as at the valuation date. The assets did not cover the full recommended solvency reserve. However, as part of the settlement agreement mentioned in section 3.3, a transfer of assets will be made from the Transnet Sub-fund in the Transport Pension Fund to more than cover the recommended solvency reserve.

4. The investment strategy should be changed from one focussing on traditional bonds to target fixed pension increases to a greater exposure to assets suitable for targeting inflation-related pension increases.

1. INTRODUCTION

I am pleased to present to the trustees of the Transnet Second Defined Benefit Fund ("*the fund*") this actuarial valuation as at 31 March 2020 (*"the valuation date"*). This report sets out the results of the actuarial valuation of the fund as at 31 March 2020 and includes an analysis of the financial progress of the fund since 31 March 2019 *("the previous valuation date")*. The period between the previous valuation date and the current valuation date is referred to hereinafter as the valuation period.

Registration and operation

1.1 The fund now known as the Transnet Second Defined Benefit Fund was established on 1 November 2000 and all pensioners of the Transnet Pension Fund transferred to the fund on 1 November 2000. The fund was in a financially sound condition at its inception.

Objectives

1.2 This actuarial valuation has been carried out as at 31 March 2020 with the following objectives:

- to assess the **financial soundness** of the fund, by comparing the value of liabilities accrued to the valuation date with the value of the assets held as at that date;
- to investigate and report on **actual experience of the fund** since the previous valuation;
- to review the **assumptions used** in light of actual experience;
- to assess the necessity for, and quantum of, any **contingency reserves**;
- to assess the **suitability of the assets** in relation to the liabilities of the fund; and
- to meet **statutory requirements**.

Valuation data

1.3 In compiling this report, I have relied upon the accuracy and completeness of information made available to me by the administrators, Momentum Retirement Administrators, and external parties. Except where expressly stated in the report, I have not independently verified the accuracy of the facts or the basis of the information supplied to me.

1.4 The results of the valuation depend on the accuracy of:

- the membership data;
- the information on the assets, as supplied by the relevant sources; and
- the audited financial statements for the valuation period.

1.5 Reasonability checks have been performed on the above and I am satisfied with the general accuracy and completeness of the data provided and with its suitability for purposes of this actuarial valuation. Further information regarding the reasonability checks performed is set out in appendix 2.

Capacity, brief and professional guidance

1.6 This report has been prepared by Alexander Forbes Financial Services (Pty) Ltd *("Alexander Forbes")* solely for the benefit of trustees of the Transnet Second Defined Benefit Fund and the Minister of Public Enterprises and the Minister of Finance, and is prepared in accordance with the instructions given by the trustees of the fund. The trustees are charged by the Transnet Pension Fund Act 62 of 1990 ('the Act") to investigate the financial condition of the fund and report thereon to the Minister of Public Enterprises and the Minister of Finance.

1.7 In terms of rule 18(2)(b) of the fund, the fund shall be valued by the Actuary at intervals not exceeding three years, to determine whether the fund is in a position to pay the benefits provided for in the rules. The current practice is to perform annual actuarial valuations of the fund. The trustees appointed Alexander Forbes to perform this valuation.

1.8 Throughout this report any values that have been determined are, except where otherwise stated, in accordance with our view of the most probable future experience. Our specific assumptions and other reliances and limitations are documented in the following sections and supporting appendices. These sections and appendices are an integral part of this report.

1.9 This report complies with the relevant Guidance Notes of the UK Actuarial Profession and the Professional Guidance Notes of the Actuarial Society of South Africa.

1.10 Alexander Forbes does not accept any liability to any persons, other than the trustees, in connection with this report or its related enquiries. I accept no liability in respect of any matter outside the scope and limitations of this report and purpose for which it is prepared.

1.11 This report may not be disclosed and / or relied upon in whole or in part to / by any person other than the trustees or quoted in any other context without prior written consent. Any person, other than the trustees to whom this report is addressed, who receives a draft or copy of this report (or any part of it) or discusses it (or any part of it) or any related matter with me or any third party, does so on the basis that they acknowledge the source of this report and accept that they may not rely on it for any purpose whatsoever and that I owe a duty of care only to the trustees. Any portion of this report, if reproduced or transmitted, must include a reference to the full report and to this clause.

1.12 This report has been prepared as at 31 March 2020 and covers the valuation period given above. Unless specifically stated to the contrary, it does not take into account any events subsequent to the valuation date.

2. HISTORY OF THE FUND

2.1 A summary of the history of the fund's funding level is shown in the following table:

	Assets (R million)	Liabilities (R million)	Funding Level %
1 November 2000*	19 911	17 878	111.4%
31 March 2001*	16 502	20 140	81.9%
31 March 2002*	16 048	18 992	84.5%
31 March 2003*	13 243	18 370	72.1%
31 March 2004*	15 095	18 537	81.4%
31 March 2005	16 369	21 898	74.8%
31 March 2006	19 204	22 197	86.5%
31 March 2007**	21 570	20 414	105.7%
31 March 2008**	19 850	17 873	111.1%
31 March 2009**	19 614	17 919	109.5%
31 March 2010**	19 662	16 827	116.8%
31 March 2011**	18 852	16 119	117.0%
31 March 2012**	18 339	15 993	114.7%
31 March 2013**	18 313	16 146	113.4%
31 March 2014**	17 218	14 235	121.0%
31 March 2015**	16 757	13 612	123.1%
31 March 2016**	15 630	11 823	132.2%
31 March 2017**	15 241	11 307	134.8%
31 March 2018**	14 669	11 122	131.9%
31 March 2019**	13 346	9 857	135.4%
31 March 2020**	11 499	**11 704**	**98.2%**

* These figures are drawn from the actuarial valuation reports prepared by NBC Consultants and Actuaries.
** Liabilities include any contingency reserves recommended.

3. DEVELOPMENTS SINCE THE PREVIOUS VALUATION DATE

Pension increases

3.1 Pensions in course of payment are increased by 2% per annum in terms of the rules of the fund.

3.2 With effect from 3 July 2020 the rules of the fund were amended to allow the trustees to, from time to time, grant additional pension increases (in addition to the 2% mentioned above). Such additional increases are to be determined in line with the Fund's Pension Increase and Bonus Policy and are subject to affordability, as determined by the board and as confirmed in writing by the valuator and with the approval of the Board of Directors of Transnet. The new Policy is to target increases of 70% of inflation, inclusive of the minimum 2% increase, subject to affordability.

3.3 Following the settlement agreement reached between the fund, the employer and the class action, and the approval of such agreement by the High Court, effective 3 July 2020, the fund will be granting additional special once-off pension increases of 11% in August 2020, 7% in August 2021 and 4% in August 2022. These increases have been taken into account in determining the fund's liabilities at the valuation date.

Bonus payments

3.4 With effect from 31 March 2007 the rules of the fund were amended to allow the trustees to grant ad hoc bonus payments to pensioners if the value of the fund's assets is in excess of its liabilities. Such bonuses may only be granted with the approval of the Board of Directors of Transnet.

3.5 As a result of the settlement agreement mentioned in 3.3, pensioners each received an ad hoc bonus of R10 000 in December 2019. Further payments of R10 000 per pensioner are to be paid in December 2020 and December 2021. These additional lump sums have been taken into account in determining the fund's liabilities at the valuation date.

3.6 Future bonuses will depend on affordability after the targeted pension increases have been considered.

Administration and actuarial services

3.7 The fund was administered by Momentum Retirement Administrators during the valuation period.

3.8 Alexander Forbes are the appointed actuaries to the fund.

Settlement with Regiments

3.8 As a result of the settlement of a dispute with Regiments, a former asset manager of the fund, the fund received Capitec shares in November 2019 whose market value exceeded the price paid by the fund by some R639 million.

4. MEMBER DATA

The valuation of the fund at 31 March 2020 was based on the membership detailed below. Further statistics, including a reconciliation of the current membership with that present at the previous valuation, are provided in appendix 2.

Pensioners

4.1 Details of the pensioners and annual pension statistics at the valuation date are provided in the table below:

		31 March 2020	
	Number	**Total annual pensions (R'000)**	**Average annual pensions (R)**
Pensioners			
- Male	11 925	567 368	47 577
- Female	572	22 841	39 931
Widow(er)s			
- Male	76	2 387	31 412
- Female	31 176	839 751	26 936
Children	115	2 299	19 989
Total	**43 864**	**1 434 636**	**32 706**

4.2 At the previous valuation date the number of pensioners was slightly lower than that shown in the financial statements, which showed a higher number of new beneficiaries than were present in the valuation data. The movements over the valuation period are in line with those reflected in the financial statements. However, as a result of the lower opening balance, the membership at the valuation date was again lower than that shown in the financial statements.

4.3 The corresponding statistics at the previous valuation date have been provided for comparison:

		31 March 2019	
	Number	**Total annual pensions (R'000)**	**Average annual pensions (R)**
Pensioners			
- Male	13 375	615 993	46 056
- Female	623	23 346	37 472
Widow(er)s			
- Male	71	2 293	32 297
- Female	32 760	867 892	26 492
Children	126	2 310	18 336
Total	**46 955**	**1 511 834**	**32 198**

5. ASSETS

5.1 This section sets out the value placed upon the fund's assets. It first deals with the matched cash flow portfolio and then with the fund's assets in aggregate.

Matched cash flow portfolio

5.2 The liabilities of the fund were entirely nominal and the trustees have targeted a strategy that will match the cash flows of approximately 85% of these liabilities. The matched assets have reduced to 63.7% of the revised liabilities due to the increase in the fund's liabilities as a result of the settlement agreement mentioned in 3.3 above. This is a decrease from 87.6% at the previous valuation.

Unmatched portfolio

5.3 The fund, together with its asset consultants, devised an investment policy in respect of the remainder of the fund's assets. This policy follows a more aggressive investment strategy than that of the matched portfolio. In my opinion this is appropriate as the unmatched portion is primarily intended to cover the balance of the unmatched liabilities and the "reserves" which would be used to fund future pension bonuses, as affordable. Given that the balance of unmatched liabilities are long-term liabilities, and that the pension bonus reserve would look to maximise the assets in this reserve in order to maximise future bonuses, I am satisfied with the approach followed in setting this investment policy based on the historic bonus policy. Going forward the trustees should consider the advice in paragraph 5.8 below.

Fund assets

5.4 The composition of the fund's assets at market value, as reported in the audited annual financial statements, is set out in the following table:

	Market value (R million)	**Allocation %**
Cash and deposits	2 241	19.6
Commodities	103	0.9
Debt instruments	5 031	44.0
Equities	2 957	25.9
Collective investment schemes	10	0.1
Hedge funds	(12)	(0.1)
Private equity funds	322	2.8
Property	97	0.8
Investing in participating employer	682	6.0
Total investments	**11 431**	**100.0**
Plus: Current assets	122	
Less: Current liabilities*	(54)	
Total assets for valuation purposes	**11 499**	

** Includes unclaimed benefits*

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Valuation of assets

5.5 For purposes of this actuarial valuation, the assets have been taken into account at 100% of fair (or market) value and no investment margin has been set aside. Therefore the assets of the fund have been taken into account at R 11 499 million as at the valuation date. This is consistent with asset valuation methodology applied to the valuation of the fund's liabilities.

Fund returns

5.6 The assets of the fund earned approximately 0.58% per annum during the valuation period, based on the audited financial statements and assuming that cash flows for each year occurred in the middle of that year. This investment return is net of investment management fees.

5.7 This return should be considered in the context of the 8.35% per annum assumed in the previous actuarial valuation report.

Appropriateness of assets

5.8 The investment strategy should be changed from one focussing on traditional bonds to target fixed pension increases to a greater exposure to assets suitable for targeting inflation-related pension increases based on asset-Liability modelling.

6. VALUATION METHOD AND BASIS

The valuation has been conducted on the basis of the benefits and other provisions of the rules as at 31 March 2020. Assets are reflected at market value.

Valuation approach

6.1 The liabilities are calculated as the present value of projected future pension payments at the date of valuation. The future pension payments and pension increases are discounted to the valuation date using the valuation discount rate.

6.2 The in-force future pension payments were calculated by applying a best-estimate probability basis to future pension payments, allowing for future pension increases in terms of the rules of the fund. This method is appropriate for a fund with a membership of only pensioners.

Principal actuarial assumptions

6.3 In setting the assumptions to be used for estimating the liabilities of the fund current actuarial principles and the Alexander Forbes best practice "house view" have been followed.

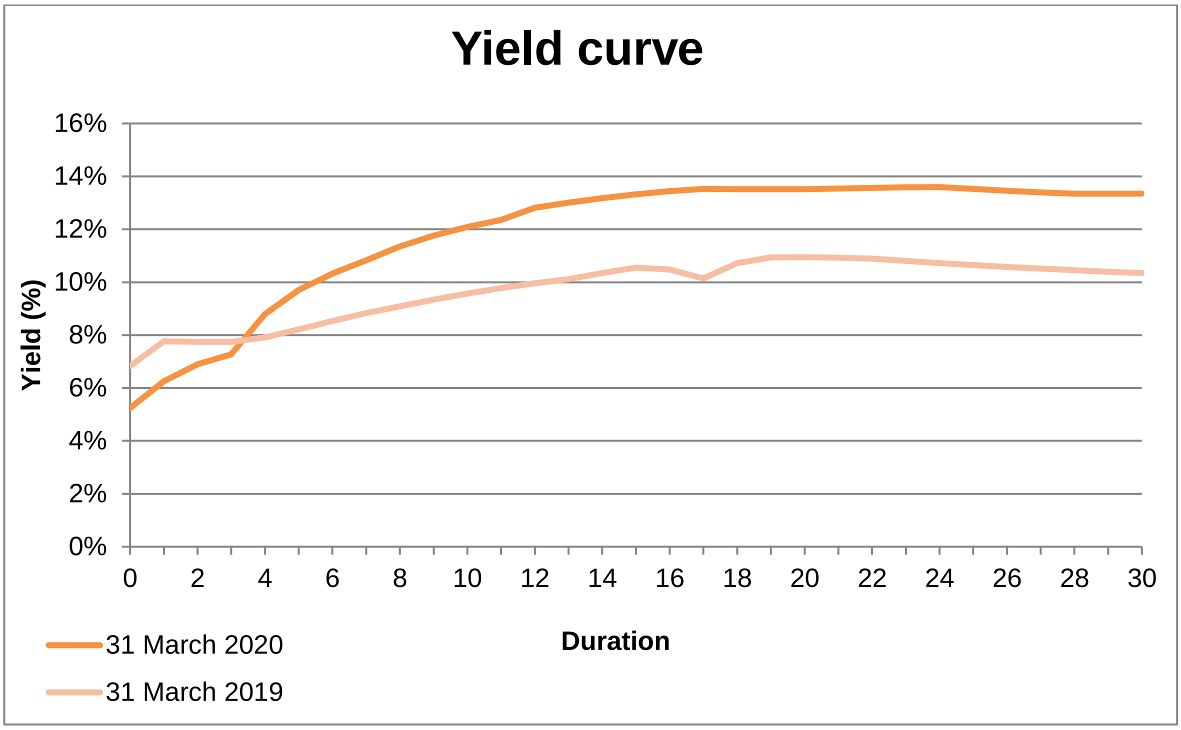
6.4 Current practice is for these assumptions to be "best-estimate" assumptions. Therefore, no deliberate margins of conservatism would be included in the assumptions and the assumptions would generally be motivated by reference to the experience of the fund, statistical evidence and yields on government or corporate bonds.

6.5 In addition, the assumptions should be reasonable both independently and combined. The assumptions used to value the liabilities must be consistent with those used to value the assets.

6.6 The actuarial assumptions used in the valuation of the liabilities are detailed below:

Yield curve

6.7 The gross discount rates are determined with regard to the all bond yield curve on 31 March 2020. I believe an appropriate matched investment strategy for the fund would reflect an asset profile of primarily bond investments. I have therefore used the yield curve as the discount rate, as implied by the efficient market hypothesis. The graph below compares the yields as at 31 March 2020 and 31 March 2019:



6.8 As in the previous valuation, the expected future cash flows at each duration have been discounted using the yield implied by the yield curve at each specific duration.

6.9 The average discount rate which produces equivalent results is 9.36% p.a. compared to 8.35% in the previous valuation.

6.10 The fund's liabilities have duration of approximately 4.6 years, compared to approximately 5.4 years in the previous valuation.

6.11 No provision for asset management fees has been made, since the out-performance over the benchmark produced by active asset management should exceed the asset management fee.

Inflation

6.12 A future inflation assumption can be derived at each duration on the yield curve by subtracting the yield on inflation-linked government bonds from a similar duration fixed-coupon bond yield. The fund's liabilities have duration of approximately 4.6 years, corresponding to an inflation estimate of 5.12%, compared to 4.97% at the last valuation.

6.13 In order to value the targeted future pension increases of 70% of inflation, we have therefore used a net discount rate which averages 5.58% (1.0936 / 1.0358 – 1). The targeted increases, if granted, will be implemented in August each year.

Mortality assumptions

6.14 The mortality assumptions have, at this stage, remained unchanged from the previous valuation.

6.15 The fund-specific Transnet Pensioner Mortality Tables have been retained to represent the expected mortality of all pensioners.

	Average pension weighted age	
Category	**31 March 2019**	**31 March 2020**
Male pensioners	79.4 years	79.9 years
Female pensioners	78.3 years	79.0 years
Male spouses (Widowers)	65.7 years	66.6 years
Female spouses (Widows)	76.7 years	77.2 years

6.16 The fund-specific Transnet Pensioner Mortality Table can be summarised as follows:

	Average annual death rate in the stated age band	
Age	**Female (%)**	**Male (%)**
20 to 24	0.26	0.79
25 to 29	0.34	1.03
30 to 34	0.42	1.27
35 to 39	0.52	1.51
40 to 44	0.63	1.75
45 to 49	0.74	1.99
50 to 54	0.87	2.24
55 to 59	1.06	2.48
60 to 64	1.40	2.72
65 to 69	2.02	3.35
70 to 74	3.14	4.95
75 to 79	5.17	7.80
80 to 84	8.88	11.89
85 to 89	14.66	17.36
90 to 94	22.40	24.80
95 and older	30.88	33.14

Remarriage liability

6.17 The rules of the fund were previously amended so that only a spouse who was married to a pensioner on or before 31 March 2007 would be eligible to claim a benefit on the death of the pensioner. This was allowed for in the valuation by assuming that 80% of pensioners are currently married and that all male pensioners are 5 years older than their spouses.

6.18 The actual marital statuses of pensioners and their spouses' details are not reliable in the data received. The administrators continue to update this information where possible.

Solvency reserve basis

6.19 I have determined the level of the solvency reserve using the discontinuance matched approach. The solvency reserve is made up of three components, namely: solvency reserve on matched liabilities, solvency reserve on unmatched liabilities and a mortality improvement reserve.

6.20 The assumptions that differ from the best-estimate valuation assumptions are:

- Discount rates: This is the yield curve, as discussed in section 6.7, but adjusted for the reasonable cost of maintaining an investment strategy of matching such assets to the liabilities of the fund (0.5% for unmatched), but taking into account the current matching and associated reduced risks (0.25% for matched).
- Post-retirement mortality: The Transnet Mortality tables were again rated down by a ½ year to allow for possible future mortality improvements.

7. VALUATION RESULTS

7.1 In order to determine the level of solvency of the fund, it is necessary to compare the total assets of the fund with the total liabilities. The fund is solvent when the value of the assets exceeds the value of the liabilities, i.e. a funding level of 100% or greater. The funding level is the ratio of the value of the assets to the value of the liabilities of the fund at the valuation date.

Value of liabilities

7.2 The present value of the liabilities in respect of pensioners, as at 31 March 2020, is given in the table below. The values as at 31 March 2019 are given for comparative purposes:

	31 March 2019 (R million)	31 March 2020 (R million)
Pensioners	4 127	4 679
Widow(er)s	5 403	6 623
Children	22	28
Total liabilities	**9 552**	**11 330**

Value of assets

7.3 For valuation purposes, the value of the assets is R 11 499 million.

Value of solvency reserve

7.4 The trustees accepted and implemented a solvency reserve to afford protection against investment and mortality risk. This reserve is calculated on the difference between the fund's liabilities on the valuation basis and the liabilities on the solvency basis.

7.5 As per the previous section, this reserve has three components:

- The Transnet Pensioner Mortality tables were rated down by a ½ year to allow for possible future mortality improvements. An amount of R 195 million will need to be set aside to allow for this.
- A reserve of R 92 million is required in respect of the unmatched portion of the liabilities. This was calculated by reducing the best-estimate bond yield by 0.5% to allow for the reasonable cost of maintaining the investment strategy of the fund.
- On the basis that a margin arose on the implementation of the cash flow matching strategy, there is expected to be an additional level of assets that provide a margin of protection and which would release over time. On this basis the solvency reserve in respect of the matched liabilities portion was calculated by reducing the best-estimate bond yield by only 0.25%. The reserve required for the matched portion of the liabilities amounts to R 87 million.

7.6 The total recommended solvency reserve as at 31 March 2020 amounts to R 374 million compared to R 305 million as at 31 March 2019.

Funding level

7.7 Comparing the value of the assets with that of the past service liabilities produces the following results:

	31 March 2019 (R million)	**31 March 2020 (R million)**
Total net assets	13 346	11 499
Total liabilities	9 552	11 330
Surplus / (Deficit) before solvency reserve	**3 794**	**169**
Funding level before solvency reserve	**139.7%**	**101.5%**
Solvency reserve	305	374
Surplus / (Deficit) after solvency reserve	**3 489**	**(205)**
Funding level after solvency reserve	**135.4%**	**98.2%**

7.8 The assets of the fund exceeded its liabilities as at the valuation date. The assets did not cover the full recommended solvency reserve. However, as part of the settlement agreement mentioned in section 3.3, a transfer of assets will be made from the Transnet Sub-fund in the Transport Pension Fund to more than cover the recommended solvency reserve.

Comment in terms of APN 205

7.9 Whilst the value of the liabilities is based on best estimate assumptions, where relevant, and the solvency and other contingency reserves established by the trustees on my advice allow for some fluctuations in asset values and / or unexpected changes in liabilities, there is no guarantee that these reserves will prove sufficient in practice. Conversely, it is possible that the reserves may prove to be more than sufficient.

7.10 If the reserves prove to be insufficient, management action will be required to rectify the position. The uncertainty of the adequacy or otherwise of the reserves held is unavoidable and the actual outcome can only be determined when the fund ceases to have any further liabilities.

8. SUMMARY AND RECOMMENDATIONS

8.1 The fund does not receive regular contribution income and all the benefits are payable from a combination of investment income and the sale of assets. This will result in the fund's assets reaching a point where they start to reduce over time. The market value of the fund's assets is very important and has a direct impact on the financial position of the fund.

8.2 The actuarial valuation of the Transnet Second Defined Benefit Fund revealed a surplus of R 169 million before allowing for the recommended solvency reserve. The recommended solvency reserve was R 374 million.

8.3 Although the improvements in pensioner longevity are not yet significant, I have also shown in appendix 4 the impact of allowing for mortality improvements of 0.5% per year going forward.

8.4 I confirm that, based on the information available, the fund was in a sound financial condition as at the valuation date, i.e. the assets of the Transnet Second Defined Benefit Fund exceeded the fund's liabilities as at the valuation date. The assets did not cover the full recommended solvency reserve. However, as part of the settlement agreement mentioned in section 3.3, a transfer of assets will be made from the Transnet Sub-fund in the Transport Pension Fund to more than cover the recommended solvency reserve.

8.5 The investment strategy should be changed from one focussing on traditional bonds to target fixed pension increases to a greater exposure to assets suitable for targeting inflation-related pension increases based on asset-liability modelling.

A R Pienaar

Fellow of the Actuarial Society of South Africa
and Fellow of the Institute of Actuaries
in my capacity as the valuator of the fund
and as an employee of
Alexander Forbes Financial Services (Pty) Ltd

For the purposes of professional regulation the primary professional regulator of the signatories to this report is the Actuarial Society of South Africa.

September 2020

APPENDIX 1: SUMMARY OF BENEFITS AND CONTRIBUTIONS

A summary of the main benefits is given below. Full details are contained in the registered rules of the fund. Where there are special cases or benefits for particular members, these have been taken into account in the valuation.

Spouse's pension on death

In terms of the rules of the fund a pension equal to 70% of the member's pension immediately prior to his death. If the pensioner dies before the normal retirement age, the pension is increased by the ratio of pensionable service plus service from date of death to normal retirement age over pensionable service.

If the spouse is the result of a marriage after retirement, and is more than five years younger than the deceased pensioner, the benefit is reduced.

Only spouses who were married to principal pensioners at 31 March 2007 are entitled to this benefit.

Dependent children's pensions on death

In terms of the rules of the fund on the death of a pensioner a dependent child receives a pension at the discretion of the fund and on a basis determined by the fund, but not more than 80% of the spouse's pension.

If dependants are children, the pension is normally payable to age 18. This may be extended up to age 26 by the trustees in cases where children remain dependent after age 18.

Pension increases

The rules provide for a pension increase of 2% per annum on the anniversary of the retirement date. With effect from 3 July 2020 the rules of the fund were amended to allow the trustees to, from time to time, grant additional pension increases.

APPENDIX 2: SUMMARY OF DATA

Membership reconciliation

	Pensioners	Spouses	Children & other dependants	Total
Membership 31 March 2019	13 998	32 831	126	46 955
Adjustment	1	7	-	8
Revised	**13 999**	**32 838**	**126**	**46 963**
New pensioners	-	625	4	629
Exits (deaths and terminations)	(1 502)	(2 211)	(15)	(3 728)
Membership 31 March 2020	**12 497**	**31 252**	**115**	**43 864**

At the previous valuation date the number of pensioners was slightly lower than that shown in the financial statements, which showed a higher number of new beneficiaries than were present in the valuation data. The movements over the valuation period are in line with those reflected in the financial statements. However, as a result of the lower opening balance, the membership at the valuation date was again lower than that shown in the financial statements.

The adjustments shown above are generally the result of changes in member numbers on the administration system.

Member statistics

Pensioners Age	Number	Male annual pension (R'000)	Average pension (R)	Number	Female annual pension (R'000)	Average pension (R)
45 - 49	1	17	17 488	-	-	-
50 - 54	29	517	17 813	3	43	14 380
55 - 59	180	4 332	24 066	27	566	20 978
60 - 64	577	15 449	26 774	57	1 249	21 913
65 - 69	877	27 532	31 393	100	3 063	30 627
70 - 74	1 586	77 074	48 596	70	3 201	45 727
75 - 79	2 628	148 153	56 375	89	3 685	41 400
80 - 84	3 244	160 565	49 496	102	3 733	36 595
85 - 89	1 847	94 053	50 922	79	4 654	58 916
90 - 94	717	31 742	44 270	30	1 402	46 729
95 - 99	198	7 255	36 642	15	1 245	83 000
100 - 104	33	599	18 161	-	-	-
105 - 109	6	55	9 198	-	-	-
110 - 114	1	7	7 272	-	-	-
115 - 119	1	8	7 896			
Total	**11 925**	**567 358**	**47 577**	**572**	**22 841**	**39 931**

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Widow(er)s		Male			Female	
Age	Number	annual pension (R'000)	Average pension (R)	Number	annual pension (R'000)	Average pension (R)
35 - 39	-	-	-	3	64	21 336
40 - 44	1	7	6 960	32	705	22 046
45 - 49	2	64	32 184	175	3 944	22 537
50 - 54	7	204	29 100	625	14 124	22 598
55 - 59	10	413	41 327	1 609	36 826	22 887
60 - 64	14	510	36 438	2 694	60 643	22 510
65 - 69	10	329	32 858	3 835	85 414	22 272
70 - 74	15	393	26 217	5 124	119 128	23 249
75 - 79	7	166	23 645	5 894	154 304	26 180
80 - 84	6	176	29 368	5 315	159 019	29 919
85 - 89	1	27	26 928	3 589	123 350	34 369
90 - 94	2	56	27 960	1 762	65 255	37 035
95 - 99	1	42	42 492	445	15 476	34 777
100 - 104	-	-	-	64	1 399	21 858
105 - 109	-	-	-	10	100	9 967
Total	**76**	**2 293**	**31 412**	**31 176**	**839 751**	**26 936**

Children & other dependants	Male			Female		
Age	Number	annual pension (R'000)	Average pension (R)	Number	annual pension (R'000)	Average pension (R)
10 – 14	1	2	2 136	1	5	4 536
15 – 19	-	-	-	3	15	4 944
20 – 24	-	-	-	2	18	8 826
25 – 29	1	7	6 576	-	-	-
30 – 34	5	59	11 750	4	56	13 977
35 – 39	-	-	-	2	14	7 086
40 – 44	5	106	21 269	9	137	15 160
45 – 49	10	193	19 349	9	223	24 779
50 – 54	6	122	20 264	3	155	51 704
55 – 59	16	294	18 368	8	177	22 149
60 – 64	6	178	29 638	5	188	37 543
65 - 69	2	50	25 104	7	125	17 817
70 - 74	-	-	-	7	128	18 257
75 - 79	-	-	-	2	40	19 882
80 - 84	-	-	-	-	-	-
85 - 89	-	-	-	1	9	8 664
Total	**52**	**1 011**	**19 442**	**63**	**1 288**	**20 440**

Reasonability checks performed

A large number of tests on the reasonability and consistency of the data were carried out, including the following:

- reconciling the number of pensioners at the valuation date and the previous valuation date, with the movements in membership reported
- reasonability tests on the pension amounts, and the various dates (dates of birth, dates of pension commencement and dates of exit)
- identifying any missing or invalid data fields
- identifying changes in membership details
- reviewing the fund's annual financial statements
- calculation of the fund's investment returns

I am satisfied with the general accuracy and completeness of the data provided and with its suitability for purposes of this valuation.

APPENDIX 3: ANALYSIS OF CHANGE IN FINANCIAL POSITION

The valuation at 31 March 2020 disclosed a shortfall in assets of some R 205 million after taking into account the recommended solvency reserve. The previous valuation at 31 March 2019 showed a surplus of some R 3 489 million on the market value of assets. The factors that led to a change of approximately R 3 817 million have been analysed according to source and the results of this analysis are given in the following table.

Item	R million
Valuation surplus as at 31 March 2019	**3 489**
Interest on valuation surplus	291
Investment return	(998)
Change of best estimate assumptions	601
Change in future pension increase assumptions	(520)
Bonus payments	(1 220)
Additional pension increases	(1 750)
Change in solvency reserve	(52)
Mortality profit/(loss)	(40)
Miscellaneous	(6)
Valuation surplus as at 31 March 2020	**(205)**

Interest on valuation surplus
Interest at the assumed valuation rate on the previous surplus produced a gain of R 291 million over the valuation period.

Investment return
The investment return achieved on the assets (approximately 0.58%) was lower than that anticipated on the previous valuation basis of 8.35%. This resulted in an investment loss of R 998 million over the valuation period.

Change of best estimate assumptions
Since the previous valuation, changes in bond yields have resulted in a decrease of R 601 million in the assessed value of the liabilities, from R 8 909 million to R 8 308 million.

Change in future pension increase assumptions
The change in pension increase assumptions from 2% to a maximum of 2% and 70% of CPI have resulted in a strain of R 520 million in the assessed value of the liabilities, from R 8 301 million to R 8 821 million.

Bonus payments
The fund granted pensioners an ad hoc bonus payment of R10 000 per pensioner in December 2019 at a cost of R455 million (including interest to the valuation date). This was funded out of the fund's surplus. The cost of paying additional bonuses of R10 000 per pensioner in December 2020 and December 2021 is estimated at R765 million. In total this causes a strain of approximately R 1 220 million.

Additional pension increases

The pension increases of 11% in August 2020, 7% in August 2021 and 4% in August 2022 result in a strain of approximately R 1 750 million.

Change in solvency reserve

A change in the solvency reserve has resulted in a strain of R 52 million.

Mortality profit/(loss)

The actual mortality experience was slightly lighter than expected, which produced a strain of R 40 million.

Miscellaneous

There was a miscellaneous loss of R 6 million arising from various individually insignificant sources.

APPENDIX 4: FUNDING LEVEL COMPARISON

This section is for the trustees' information purposes only, to assist in understanding the relative strength of the fund and its change in financial position over the previous financial period, relative to inflation. I have also illustrated the impact of possible future mortality improvements.

Annual improvements in future mortality

The following table illustrates the funding position should the fund experience mortality improvements of 0.5% p.a. into the future. This has no bearing on the actual reported financial position of the fund and should be used for management information purposes only.

	Current mortality (R million)	0.5% p.a. mortality improvements (R million)
Total net assets	11 499	11 499
Total liabilities	11 330	11 435
Surplus / (Deficit) before solvency reserve	**169**	**64**
Funding level before solvency reserve	**101.5%**	**100.6%**
Solvency reserve	374	380
Surplus / (Deficit) after solvency reserve	**(205)**	**(316)**
Funding level after solvency reserve	**98.2%**	**97.3%**

Please note that the above results are based on the assumption that an appropriate inflation-linked cash flow matching strategy is implemented for future pension payments. If this is not done, the level of solvency reserve desired will be higher than that shown above. No allowance has been made for the potential cost of the restructuring of the fund's existing assets to such a possible arrangement.