Government Actuary's Department

Analysis of pension costs for NATS (En Route) plc – supplementary note

The Civil Aviation Authority ('CAA') is the economic regulator of NATS (En Route) plc ('NERL'). The CAA commissioned the Government Actuary's Department (GAD) to review certain aspects of NERL's pension arrangements and to provide a view on the reasonable and efficient pension costs in NR23 (covering the period from 1 January 2023 to 31 December 2027). The CAA published their Initial Proposals[1] for NR23 in October 2022 alongside GAD's review[2] dated June 2022.

This note sets out supplementary analysis and factors to assist CAA in considering NERL's pension costs and covers the defined benefit (DB) costs arising from the NATS Section of the Civil Aviation Authority Pension Scheme (referred to as the 'NATS Section' in this note). NERL's pension costs also include contributions towards the defined contribution (DC) scheme and a Pensions Cash Alternative for employees close to pension tax thresholds.

The purpose of this note is to provide supplementary information and analysis in support of the areas of concern raised in response to the published Initial Proposals, principally set out in NERL's response dated 13 December 2022 and the CAAPS Trustee Limited's response dated 12 December 2022. Where necessary, we have updated the analysis from GAD's June 2022 report to reflect the most recent industry data. The scope of this note is thus limited to these specific concerns and the relevant updates required to address them.

Funding valuation assumptions

Discount rate methodology

The discount rate used to convert future pension cash-flow for benefits already earned into a present value that can be compared with existing assets, and to determine the cost of benefits to be earned in the future, is the most financially material assumption in the valuation of pension schemes. The approach used to determine the discount rate and in particular any margins for prudence can have a significant impact on the outcome of the valuation.

The NATS Section's discount rate methodology underwent a significant change in the 2020 valuation, replacing the pre- and post-retirement assumptions used in the 2017 valuation with an explicitly term-dependent discount rate structure. This new structure starts at 1.8% pa above gilts

[1] Economic regulation of NATS (En Route) plc: Initial Proposals - CAA October 2022
[2] Analysis of pension costs for NATS (En Route) plc - GAD June 2022

until 31 December 2030, and then decreases linearly to 0.5% pa above gilts over the period to 31 December 2026, remaining at gilts plus 0.5% pa thereafter.

In addition to changes in the discount rate structure, the additional allowance for outperformance above the discount rate in the recovery plan was also removed at the 2020 valuation, which was previously assumed to be 0.3% pa at the 2017 valuation. The 2020 valuation therefore assumed returns in line with the discount rate for the purpose of the recovery plan.

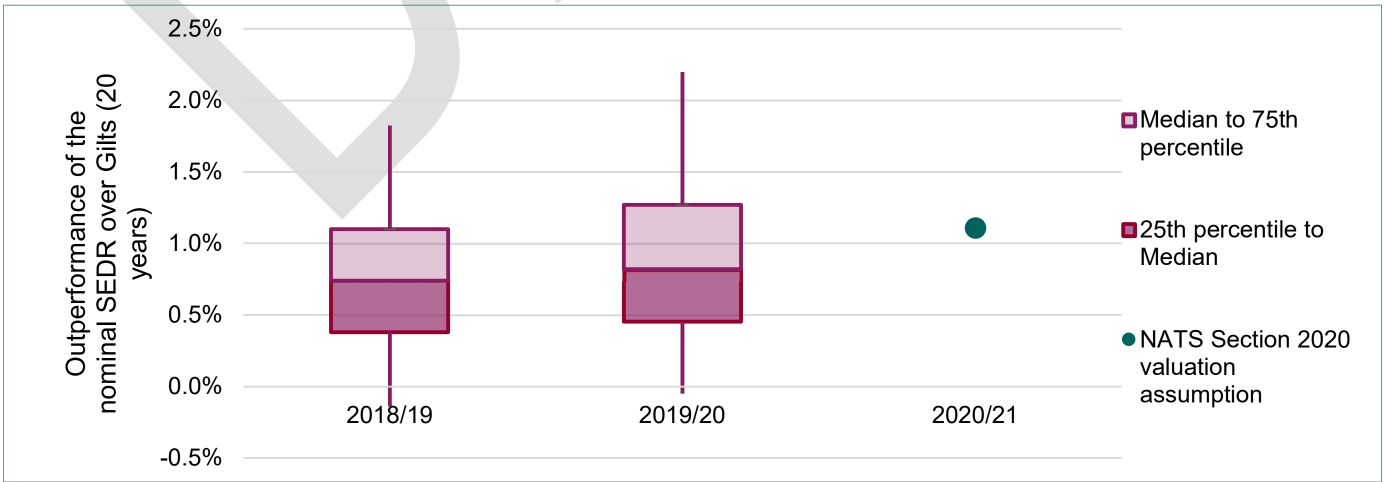
According to GAD's June 2022 report, the retention of an allowance for additional outperformance above gilts during the recovery plan period may have resulted in a saving for the sponsor across the price control period. Subsequent discussions with NERL revealed that the discount rate structure changes and removal of any allowance for additional outperformance in the recovery plan were agreed upon as a package with the Trustees and should be considered together. GAD acknowledges that the negotiations surrounding the new discount rate structure have resulted in a reduction of approximately £280m in liabilities, thereby improving the funding position of past service liabilities. However, it is important to note that this reduction was achieved alongside the removal of the outperformance allowance within the recovery plan, which was valued at approximately £15m per year.

2022 Scheme Funding Annex

GAD conducted a review in June 2022 using the latest industry-wide data published by the Pensions Regulator. The most up-to-date scheme funding analysis available at that time was for schemes with valuation dates between 22 September 2018 and 21 September 2019. Since then, the Pensions Regulator has released analysis of schemes with effective valuation dates between 22 September 2019 and 21 September 2020[3]. We have updated our benchmarking of the assumptions from the NATS Section's 2020 valuation against the latest available tranche. The NATS Section's actuarial valuation at 31 December 2020 falls into TPR's 2020/21 analysis, due to be published in Summer 2023.

Chart 1 shows the distribution of discount rate outperformance in TPR's analysis in 2018/19 and 2019/20 between the 5th and the 95th percentiles, as well as the discount rate outperformance adopted at the NATS Section's 2020 actuarial valuation.

Chart 1: Distribution of discount rates in TPR’s analysis (DB scheme only)



[3] Scheme Funding Analysis – Annex 2022

Chart 1 illustrates that median outperformance assumptions for funding valuations would be around 0.8% per annum in the 2019/20 analysis (0.7% per annum in the 2018/19 analysis). There has been some movement in the distribution compared to TPR's 2018/19 analysis, particularly in the upper quartile and 95th percentiles, implying the use of higher discount rates in the universe of DB schemes and, therefore, lower margins for prudence and lower costs all else being equal. Due to the closed nature of many DB pension schemes, lower discount rates would be expected because of long-term trends. Therefore, it could be concluded that TPR's analysis contains a degree of year-to-year volatility caused by the mix of DB schemes in each year's analysis. However, comparing the outperformance above the gilt yield helps to remove market conditions volatility from the analysis as far as possible. Table 1 below shows that the average median outperformance above the gilt yield across the 2017/18, 2018/19 and 2019/20 analysis tranches was 0.8% per annum.

GAD have estimated the NATS Section’s single equivalent discount rate to be 1.1% per annum above gilts for the 2020 actuarial valuation. This would therefore sit at the 70th percentile of DB schemes when compared to the schemes in 2019/20 tranche, or the 75th percentile of 2018/19 tranche. This suggests that around three-quarters of schemes may have a more prudent approach to deriving their discount rate compared to the NATS Section. In Section 9 of the June 2022 report, GAD set out the approach for determining a reasonable range for the expected discount rate for a scheme with similar immaturity and strength of covenant as the NATS Section, and that this would correspond broadly to the top-quartile of schemes; GAD suggested somewhere in the range of 70th to 95th percentile of schemes to mitigate the impact of outliers. This is also discussed further in the next section.

GAD’s June 2022 report also contained benchmarking analysis of the NATS Section’s assumptions at the 2020 valuation against median schemes with similar characteristics, for example, those with a strong covenant and similar maturity in terms of the proportion of pensioner liabilities. This can be found in Table 6.1 of our previous report. In their formal response to CAA’s Initial Proposals, NERL and their advisors Mercer suggested a more appropriate approach to benchmarking analysis would be comparisons of the NATS Section against a sub-set of DB schemes, where the sub-set considers schemes of a comparable size, by number of members and assets in monetary amounts.

GAD considers the size of the scheme relative to the size of the supporting sponsor an important consideration in scheme funding because the relative size of the obligation to the company impacts the sponsor's ability to make sufficient contributions and eliminate any shortfalls. Therefore, the principal reason why scheme size impacts scheme funding considerations is the strength of the covenant, which the Trustee's advisors assessed as strong at the 2020 valuation.

The Pensions Regulator may be more inclined to exercise its regulatory influence on larger schemes performing its role as a risk-based regulator, and therefore, large schemes exhibit more prudent approaches to funding. GAD's concerns with placing undue weight on a comparison against the subset of the DB universe that only contains large schemes, is that this subset may be distorted by a few schemes with idiosyncratic factors or by schemes where the mismatch between sponsor size and company size is more of a material funding consideration, for example, where there is no ability for a company operating with a monopoly to pass on their costs to a financially secure customer base. Therefore, GAD's view remains that the overriding risk factors are the strength of the covenant and maturity impacting on current and future investment strategy which is then the main driver of scheme funding approach.

GAD understands that CAA may wish to consider the evidence used by NERL and its advisors as part of their policy decisions on this matter, and so our previous analysis has been updated to reflect the latest scheme funding information and the evidence provided by NERL and its advisors. Table 1 below sets out the outperformance above the gilt yield in the discount rate of the average scheme in subsets of the DB universe with similar characteristics. While this now includes factors suggested by NERL, GAD do not consider these to be the defining characteristics for determining assumptions, for reasons set out above.

Table 1: Outperformance above gilt yield in the discount rate (DB scheme only)

	Tranche of TPR's data – effective date of valuation			
	2018/19 (relative to average)	2019/20 (relative to average)	Average of previous three tranches (relative to average)	2020/21
Average (mean – all schemes)	0.72%	0.88%	0.79%	
Maturity (proportion pensioners: 25% to less than 50%)	0.83% (0.11%)	0.93% (0.05%)	0.86% (0.07%)	
Covenant group 1 (strong)	0.75% (0.03%)	0.89% (0.01%)	0.82% (0.03%)	
5,000 members or more	0.52% (-0.20%)	0.76% (-0.12%)	0.62% (-0.17%)	
Assets £300m or greater	0.53% (-0.19%)	0.74% (-0.14%)	0.60% (-0.19%)	
NATS Section 2020 valuation assumption				1.11%

Note:
Plum shaded rows reflect GAD's analysis.
Grey shaded rows reflect NERL's suggested characteristics for benchmarking.

Table 1 illustrates that the discount rate structure adopted at the NATS Section 2020 actuarial valuation is slightly higher than that used by a typical scheme with similar maturity, and of similar sponsor covenant strength. It also illustrates that NATS discount rate structure is even higher than that used by schemes of a similar size, in terms of number of members and size of assets. Schemes with these characteristics typically adopt an outperformance assumption below the average Scheme. However, the statistics do not show the correlation between factors, for example, the average discount rate for schemes with 25%-50% pensioner liabilities includes schemes with covenant grades 1 to 4; similarly, covenant group 1 schemes include schemes across the range of maturities.

Relative to TPR's most recent analysis, a singe equivalent discount rate of around 1.1% pa above gilt yields falls below the upper quartile of all schemes as shown in Chart 1.

Reasonable and efficient range

GAD provided an estimated range of pension costs that might be considered reasonable and efficient in comparison with similar DB scheme in our June 2022 report. The principles underlying the reasonable range were set out within Section 6 of our previous paper. Considering the NATS Section’s investment strategy, strong employer covenant and relative immaturity we suggested a reasonable range for a funding strategy would be between the 70th and 95th percentile of Defined Benefit pension schemes. In this assessment we have taken a “top-down” approach that reflects the universe of schemes and sets broad expectations given the two main risk factors we consider to be relevant in DB scheme funding and investment.

At the time of writing our previous report, the current scheme funding analysis produced by the Pensions Regulator was schemes with valuations falling between 22 September 2018 to 21 September 2019. Since publishing our previous report the Pensions Regulator have released analysis of schemes with effective valuation dates falling between 22 September 2019 to 21 September 2020.

Table 2 below sets out the lower, mid and upper bounds (see below for an explanation of terms) of the GAD reasonable and efficient range, reflecting the most recent Scheme Funding data available from the Pensions Regulator. This is comparable to Table B.1 of GAD’s June 2022 report.

Table 2: projected pension costs and GAD estimated range (DB scheme only)

Calendar years 2020 prices £m	2023	2024	2025	2026	2027
Defined Benefit (future service costs)	67	66	64	63	61
- Lower / Mid / Upper bound future service costs	*5 / 53 / 67*	*5 / 53 / 66*	*4 / 51 / 64*	*4 / 50 / 63*	*4 / 49 / 61*
Defined Benefit (deficit repair)	20	20	20	20	21
- Lower / Mid / Upper bound deficit repair costs	*0 / 0 / 20*	*0 / 0 / 20*	*0 / 0 / 20*	*0 / 0 / 20*	*0 / 0 / 21*
Total Defined Benefit: Lower / Mid / Upper bound	**5 / 53 / 87**	**5 / 53 / 86**	**4 / 51 / 84**	**4 / 50 / 83**	**4 / 49 / 82**

Note:
Dark plum shaded rows reflect pension costs requested by NERL within their Business Plan dated 7 February 2022.
Light plum shaded rows have been approximated by GAD.

Having set broad expectations based on the universe of DB pension schemes we provide some assessment of the feasibility of implementing the range of funding approaches within the context of the scheme. This is simply an illustrative exercise at this stage to demonstrate how the range of funding approaches might be achieved in the context of the scheme.

The methodology for determining the GAD lower, mid and upper bound pension costs remains unchanged from our June 2022 report, Section 9, as we believe this represents a sufficiently wide range. The range represents 25% of the universe of defined benefit pension schemes which were submitted to the Pensions Regulator being based on the 70th percentile to 95th percentile of scheme discount rates[4]. It is designed to assist the CAA in assessing NERL’s pension costs, by illustrating a range of results that we might expect to see in practice.

[4] We chose to look at a top quartile range to reflect the relative strength of covenant and immaturity of the NATS Section. However, we set the range relative to a 95th percentile outcome, i.e., 70th to 95th percentile, to minimise the distorting impact of extreme outliers, and because if anything it errs on the side of prudence in setting the upper, mid and lower bounds which relative to a true top quartile would be 75th, 87.5th and 100th percentile.

The latest Scheme Funding analysis suggests the range of distribution of outperformance in the discount rate over gilts has increased slightly, as can be seen in Chart 1. As a result of the shift in the distribution from Tranche 2018/19 to Tranche 2019/20 our cost estimates of the upper and lower bounds have decreased slightly, reflecting the changing shape of the outperformance distribution. Our estimate of the mid-range costs remain broadly unchanged. Our estimates have been derived using the following assumptions:

Lower bound (95th percentile)

A lower bound for pension costs may be around the level of the 95th percentile of all Defined Benefit pension schemes. For example: the current investment strategy supports a prudent investment return of 2.2 percentage points above the gilt yield in the short term, if the funding framework did not reflect long-term de-risking intentions; alternatively, the current funding framework might be retained, however higher returns would be targeted in the short-term and long-term.

GAD estimate that the results of the 2020 valuation would have shown a surplus of around £1.2bn; the finalised 2020 valuation acknowledged a deficit of £172m.

- Discount rate of 2.2 percentage points above government bond yields, all other assumptions are consistent with the other assumptions used by the Trustee at the 2020 valuation. This might be justified, for example, with no intention to de-risk in the future and to continue with the existing investment strategy indefinitely.
- Approximately 50% of the estimated total surplus is used to modify the employer contribution rate for 15 years (five valuation cycles, and roughly equivalent to the average future working lifetime); 50% is intended to represent a reasonable negotiation outcome between NERL and the Trustee over the use of the surplus, with the other 50% used to achieve other Trustee aims.
- No deficit repair contributions would be required as the estimated funded position would show a surplus.

Mid (85th percentile)

Mid-way between the lower and upper bounds for reasonable and efficient pension costs may be around the level of the 85th percentile of all Defined Benefit pension schemes. For example: within the current funding framework, a delay to the integrated transition to low dependency by around 10 years.

GAD estimate that the results of the 2020 valuation would have shown a surplus of around £200m.

- Discount rate of 1.4 percentage points above government bond yields, all other assumptions are consistent with the other assumptions used by the Trustee at the 2020 valuation.
- Approximately 50% of the estimated total surplus is used to modify the employer contribution rate for 15 years (five valuation cycles, and roughly equivalent to the average future working lifetime); 50% is intended to represent a reasonable negotiation outcome between NERL and the Trustee over the use of the surplus, with the other 50% used to achieve other Trustee aims.
- No deficit repair contributions would be required as the estimated funded position would show a surplus.

Upper bound (70th percentile)

The upper bound for reasonable and efficient pension costs may be around the 70th percentile of all Defined Benefit pension schemes.

If this were to be adopted for the 2020 valuation, GAD estimate that this would be a discount rate of 1.1 percentage point above government bond yields. This is broadly in line with GAD's estimate of the single equivalent discount rate used by NATS Section for the 2020 valuation.

This information will enable CAA to assess what might be reasonable in the context of the scheme in comparison with the universe of DB schemes but also with some assessment of the changes that would be required withing the funding and investment strategy.

Benchmarking approach

Having provided CAA with illustrations of what the benchmarking approach might mean in terms of the funding and investment strategy assumed for the actuarial valuation, CAA asked GAD for its view on whether the approach taken to benchmarking was reasonable in the context of the scheme. From the benchmarking illustrations provided by GAD, the mid-way approach might imply extending the de-risking corridor to around 2040-2045. GAD's view was that it is broadly consistent with a date by which the remaining duration of the scheme's liabilities meets the thresholds being suggested by TPR for maturing schemes to have largely de-risked their investment and funding strategy. We discuss this view in more detail in the following section on the expectations of the Pensions Regulator's new code of practice.

Developments since the 2022 report

In their responses to Initial Proposals, NERL have commented on the "direction of travel" in relation to DB scheme funding and legislation. The Pension Schemes Act 2021 introduced new powers for the Pensions Regulator, who are expected to set out a new, more prescriptive code of practice for the funding of defined benefit pension schemes in Spring 2024. It is still unclear how this will operate especially for schemes open to future accrual but closed to new members. However, in determining the period over which the funding and investment strategy might be expected to de-risk for schemes that are maturing, we continue to expect this to be around the time a scheme has reached a peak in its benefit cashflow and the time when most, if not all, current non-pensioners will have retired. From information provided and our independent analysis, we anticipate this to fall in the period from 2040 to 2045 for the NATS Section.

NERL have also subsequently provided an updated annual valuation report for the NATS Section as at December 2022. Since the valuation date, the yield available on gilts has risen by 3.5 percentage points at a typical duration of a relatively immature pension scheme. In isolation, increasing yields on government bonds would increase the rate used to discount future benefit payments, and reduce the present value cost of funding these benefits. Although we might expect this to be reflected in a less modest improvement in the past service funding position because of the high levels of interest rate hedging through levered Liability Driven Investment products, lower than expected returns on the growth assets has increased the deficit as of 31 December 2022 by c. £40m, to around £210m. However, it will have had a significant impact on the costs of future accrual, and NERL anticipate that the cost may have fallen from 66.2% to around 26% of pensionable salaries. This would be equivalent to a reduction of around £35m per annum in DB future service costs.

We understand that NERL have considered asking the Trustees to bring-forward the next valuation, but that this is unlikely to be practical and may set precedents which in future lead to adverse customer outcomes.

If current market conditions were to remain, then costs consistent with the mid-way range are likely to result in surplus emerging over the period until the results of the next valuation are implemented, expected in early 2024. The CAA may wish to consider the extent to which this represents inequity between different cohorts and generations of customers, or whether this is an acceptable outcome given the frequency of triennial actuarial valuation, five-yearly price controls and against the backdrop of large shifts in market conditions.

Concluding remarks

In conclusion, this supplementary note provides further analysis and factors to assist the CAA in their consideration of NERL's pension costs. It focuses on the defined benefit costs arising from the NATS Section of the Civil Aviation Authority Pension Scheme and considers the concerns raised in response to the Initial Proposals. The analysis in this note has been updated to reflect the most recent industry data, and it is designed to provide additional information to support the CAA's decision-making process. By considering the information and analysis presented in this note, the CAA can make a well-informed decision on the reasonable and efficient pension costs for NR23, covering the period from 1 January 2023 to 31 December 2027.

Government Actuary's Department
13 June 2023

Appendix

This note is addressed to the CAA. We are aware that the CAA may make this note available to other parties, including NERL and the Trustee of the NATS Section and their advisers. We are aware that the CAA intend to publish this report in its entirety, or to quote this report in part, subject to confidentiality requirements. GAD reserves the right to review and comment on any documents in which the CAA quotes or refers to this report in part.

This note should be read in conjunction with GAD's report dated 17 June 2022. All comments on methodology, compliance and limitations apply.

Advice provided by GAD to the CAA is intended solely for the use of CAA. GAD does not accept any responsibility to third parties who may read this report or extracts from it.

Limitations

This review considers NERL's pension arrangements only. It is recognised that pension arrangements are only part of overall remuneration packages.

This report compares the NATS Section with publicly available information on other UK private sector defined benefit pension schemes. Such comparisons do not consider factors which affect specific industries, sponsoring employers or pension schemes in isolation, and are provided as a guide only.

Defined benefit pension schemes' benefits, investment strategies and funding approaches should reflect each scheme's particular circumstances. It is beyond the scope of this report to consider all such factors. It is recognised that a "one-size fits all" approach is not appropriate. This review must not be interpreted as advising that a particular approach is necessarily inappropriate.

The purpose of this report is to assist the CAA in considering its price controls for the period 1 January 2023 to 31 December 2027. This report does not represent advice on the appropriate funding of the NATS Section, or other pension schemes.

Compliance

This work has been carried out in accordance with the applicable Technical Actuarial Standard: TAS 100 issued by the Financial Reporting Council (FRC). The FRC sets technical standards for actuarial work in the UK.