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Dear Dr Nugent

REVIEW OF FINANCIAL SUSTAINABILITY REPORT

This letter reports on my review of the sixth annual Financial Sustainability Report (FSR) prepared by the scheme actuary, dated September 2019.

Introduction

Subsection 180B(1) of the *National Disability Insurance Scheme (NDIS) Act 2013* provides that the scheme actuary will prepare an annual FSR.

Part 3 of the *NDIS Rules for the Scheme Actuary* (attached) sets out certain requirements in respect of the contents of the FSR.

Under subsection 180E(2) of the NDIS Act, the reviewing actuary is required to review and report on each annual FSR.

FSR in context

This sixth FSR provides projections of scheme cost using assumptions which have been significantly informed by the actual experience of the scheme during trial and transition.

I am satisfied that the FSR meets the requirements set out in the Rules.

The FSR is one of a suite of reports prepared by the scheme actuary during the course of any given year.

Quarterly monitoring reports provide contemporary actuarial analysis of recent scheme experience. These quarterly reports, therefore, have a short-term focus, and are intended to support dynamic and responsive scheme management.

On the other hand, the annual FSR is intended to support longer term strategic planning.

This review

In this review, I have concentrated on the baseline cost projection presented in the FSR. I have:

- compared the baseline cost projection presented in this FSR with that presented in last year's FSR;
- discussed some aspects of the recent scheme experience; and
- briefly highlighted some areas of risk identified in the FSR.

Comparison of cost projections: last year's FSR, this FSR

The table below compares the cost projections in selected future years presented in this sixth FSR with those presented in last year's FSR.

	This year's FSR	Last year's FSR	Difference
2019-20	**$17.8bn**	$17.1bn	+4%
2022-23	**$28.4bn**	$28.4bn	0%
2023-24	**$30.6bn**	$31.3bn	-2%
2024-25	**$32.8bn**	$33.6bn	-2%
2029-30	**$46.5bn**	$47.1bn	-1%

Although changes have been made to the assumptions for this year's FSR in response to the experience that has emerged during 2018-19, these have had largely offsetting impacts on the costs projected over the period to 2029-30.

As a result, the cost estimates in this year's FSR are similar to those in last year's FSR.

Comment

I discuss below some points that should be borne in mind when considering the cost projections.

Projection model

The NDIS projection model is complex:

- Participant numbers are projected for each future year for each combination of age/gender/disability/level of function/SIL status/duration
- To estimate costs, broader age band and gender groupings are created by adding together the projected participant numbers in adjoining combinations. But even at this grouped level there are more than 1,000 projection categories in each future years
- Average participant numbers in each projection category are then multiplied by assumed average payments for the category [assumed average payments are based on observed payment experience for the six months to 30 June 2019 for mature participants. A discount is applied to assumed average payments for first year participants.
- Assumed superimposed inflation is added at the support category level, rather than at a global level.

A little more detail is given in the appendix.

In due course, I anticipate that the projection model will move towards an individual projection model rather than a cohort projection model – where each participant is projected forward individually, commencing with their own individual payment history.

Below I have looked at notable impacts on projected costs of each of the main elements of the projection model – that is, participant numbers, average costs and superimposed inflation.

Participant numbers

Total projected participant numbers in this year's FSR are very similar to last year's FSR, from June 2023 (around 500,000) until the end of the projection period at June 2030 (around 637,000).

However, there are some key differences which have an impact on projected costs.

SIL

More than 3,000 fewer SIL participants are projected at June 2023 in this year's FSR than in last year's FSR. Had the projected SIL population been in line with last year's FSR, projected costs would have been around $700m higher in 2022-23, all else equal. Further below, I discuss changes in assumed average costs, which have also resulted in reduced projected costs.

The projection of SIL participant numbers assumes that around 1 per cent of so-called Commonwealth/New participants joining the scheme over the next 4 years will be SIL participants. If the rate turns out to be, say, 2 per cent, then there would be an additional

1,000 – 1,500 SIL participants at June 2023, all else equal, and additional costs of $300-500 million in 2022-23.

As the FSR notes, there is considerable uncertainty around the projected number of SIL participants.

Total scheme costs remain heavily geared on the number of SIL participants, underlining the importance of a robust SIL strategy.

Autism

This year's FSR projects a larger autism cohort than last year's FSR. By June 2030 this year's FSR projects around 20 per cent more participants (around 36,000 more) with autism than last year's FSR. This is mainly in response to continued observed lower than previously assumed exit rates among participants with autism.

If future experience continues to unfold in line with the assumptions adopted this year, the cohort of participants with autism will grow as a proportion of the total scheme for many years. And the proportion of scheme costs attributable to autism will also grow.

For example, in this year's FSR scheme costs for autism participants are projected to be around $1.5bn higher in 2029-30 than in last year's FSR.

On the other hand, the projected number of other participants at June 2030 is around 8 per cent fewer than last year. This is mainly due to assumed continuation of higher observed mortality rates and non-mortality exit rates among older participants. Costs for non-autism participants[1] are projected to be around $2.1bn less in 2029-30 in this year's FSR.

Age profile

Projected participant costs are around $600m less in 2029-30 in this year's FSR, compared with last year's FSR.

Total projected participant numbers are virtually identical in 2029-30 in both projections. The projected number of SIL participants is very similar in 2029-30 in both projections.

However, this year's FSR projects around 20,000 more participants (in 2029-30) aged less than 15 and 20,000 fewer aged 15 and over, compared with last year's FSR. Average costs for younger participants are much lower than for older participants and, as a result aggregate projected costs are lower.

Notably, around 20,000 of the additional autism participants discussed above are projected to be under 15 years old in 2029-30. In other words, the projected number of non-autism

[1] Non-autism participants have a higher projected average cost in 2029-30 ($80,000) than autism participants ($49,000)

participants aged less than 15 in 2029-30 is very similar in this year's FSR to last year's FSR. And the number of non-autism participants aged 15 and over in 2029-30 is around 38,000 (10 per cent) fewer in this year's FSR than last year's FSR. This is consistent with the changes in assumed mortality rates and non-mortality exit rates impacting mainly the projected numbers of older participants.

Conclusion on participant numbers

In this year's FSR, changes were made to assumed exit rates to more fully reflect the observed exit experience. In particular, this year's assumed exit rates for participants with autism are lower. On the other hand, assumed mortality rates are higher this year as are assumed non-mortality exit rates, particularly for older participants, in line with the observed experience.

Under the projection methodology used, consequent changes to assumed new incidence rates were also made.

Finally, changes were made to the assumed pattern of entry to the scheme for SIL participants.

As noted, at a high level, the impacts of these assumption changes were largely offsetting. Total projected participant numbers are very similar in 2029-30 in this year's FSR to last year's FSR.

However, the participant profile is different – more participants with autism and fewer others (particularly psychosocial disability) and, related to this, more participants aged less than 15 and fewer aged 15 and above. The net impact on projected costs is a reduction at the end of the projection period (2029-30).

Average costs

Aggregate costs during 2018-19 were 7.6 per cent higher than expected, despite there being fewer participants than expected. One reason provided is that first plan participants had higher costs than expected.

As a result of this, the discount for first plans in this year's assumption set was reduced from 38 per cent to 25 per cent (15 per cent for first year SIL participants.)

The FSR also notes that payments made to participants assessed with a low level of function were higher than expected.

I compared projected payments in 2022-23 in this year's FSR with those that would have been obtained, had last year's average cost assumptions been retained and adjusted only

for a year of normal inflation (4 per cent) and the superimposed inflation for 2018-19 assumed in last year's FSR (4.5 per cent).

That analysis showed that projected SIL costs in this year's FSR are similar (within 1.5 per cent) to those that would have been obtained on the alternative average cost assumptions.

This indicates that the observed average SIL payment experience in the six months to June 2019 was close to expected, noting the expectation of total inflation between 2017-18 and 2018-19 of 8.5 per cent.

The analysis also showed that projected non-SIL costs in this year's FSR are around 5 per cent less than those that would have been obtained on the alternative average cost assumptions.

This indicates that the observed average non-SIL payment experience in the six months to June 2019 was around 5 per cent less than expected, again noting the expectation of total inflation between 2017-18 and 2018-19 of 8.5 per cent.

Conclusion on average costs

The average cost assumptions used in this year's FSR are again experience-based.

For SIL participants, payment experience was close to expectations while for non-SIL participants it was around 5 per cent below expectations.

Overall, the change in average cost assumptions has resulted in a reduction in projected cost in 2022-23 of around $1bn.

Superimposed inflation

Under the adopted projection methodology, superimposed inflation refers to inflation in payments which is not explained by "normal" inflation of 4 per cent per annum or by increases in participant numbers. Superimposed inflation can be caused by:

- utilisation rates increasing
- average category plan sizes increasing faster than would be expected through normal inflation and ageing
- additional supports being included in plans – this can happen for a number of reasons: policy change, cost shifting from mainstream systems, AAT decisions etc
- a change in the profile of participants across categories – for example, participants being reclassified to a lower level of function, or a higher proportion of SIL participants than expected

In last year's review, I noted that, in my opinion, there was a risk that the superimposed inflation assumption would turn out to be too low.

Last year's FSR assumed that superimposed inflation would be 4.5 per cent in 2018-19. Average SIL payments exhibited this pattern. The observed superimposed inflation in average non-SIL payments did not. However, this simple analysis does not consider other sources of superimposed inflation – for example, reclassification of participants to a lower level of function.

Last year's FSR assumed that superimposed inflation would be 3.5 per cent in total from 2019-20 onwards. In this year's FSR, that assumption has been revised upwards to 6.6 per cent.

Despite this, it should not be assumed that superimposed inflation will be no more than 6.6 per cent in total over the next decade. A rate higher than this is easily conceivable.

Other comments

Independent functional assessment

Proper functional assessment is intended to minimise the risk of a mismatch between a participant's plan and their support needs.

In last year's FSR a significant change was made to the assumed distribution of level of function – specifically, a substantial increase was made to the assumed proportion of participants who would be assessed with low level of function.

A pilot independent functional assessment program conducted during 2018-19 revealed a significantly different distribution of level of function from what had been observed under the "non-independent" system in place.

This year's FSR has assumed further bias in the level of function distribution.

Relevantly, last year's FSR reported 46,939 participants with a low level of function (out of 171,511 participants). This year, of the 168,624 participants who remain in the scheme, 50,901 are now assessed with a low level of function. This data suggests that more than 3,000 participants (3.3 per cent) have had their level of function re-assessed as low during the year.

Furthermore, additional data provided for this review suggests that average costs for participants with a low level of function were 14 per cent higher than expected during 2018-19 (average costs for other participants were broadly in line with expectations).

This experience provides an indication that proper functional assessment is necessary both from an equity perspective and from a financial sustainability perspective.

Plan sizes - SIL

As noted last year, SIL presents a sustainability risk. 7 per cent of participants are projected to be SIL participants, accounting for 40 per cent of participant costs.

It was therefore appropriate that a key component of the management response to last year's FSR was in relation to SIL.

Analysis of the trend in SIL plan sizes indicates that continued attention to SIL is needed.

The table below summarises the increase in the arithmetic average of SIL plan sizes over 2017-18 and 2018-19 across different SIL cohorts [age band/disability/level of function].

The threshold indicates the minimum number of participants required in the cohort.

For example, there were 27 SIL cohorts with at least 50 participants at 30 June 2017. The simple arithmetic average of the increase in average plan sizes for these cohorts between 30 June 2017 and 30 June 2018 was 11%.

There were 40 SIL cohorts with at least 50 participants at 30 June 2018. The simple arithmetic average of the increase in average plan sizes for these cohorts between 30 June 2018 and 30 June 2019 was 12%.

	2017-18		**2018-19**	
Threshold	**Number of cohorts**	**Increase**	**Number of cohorts**	**Increase**
25	42	**11%**	64	**13%**
50	27	**11%**	40	**12%**
100	16	**12%**	27	**11%**
300	5	**15%**	10	**11%**

The table provides evidence of 2 years of SIL plan size inflation substantially higher than would have been expected, even after allowing for known price increases.

The use of a simple arithmetic average ensures that the results are not dominated by any particularly large SIL cohort. Rather, it indicates that significant rates of growth in SIL plan sizes are consistently evident across the SIL population broadly and in each of these two years.

As noted, this analysis highlights the importance of a continued focus on managing SIL costs.

Conclusion

I am satisfied that the baseline projection in this year's FSR is realistic.

I note that the demographic assumptions have been established by having regard to unfolding scheme experience. Similarly, average cost assumptions have been set based on observed experience.

It is very difficult to set a reliable superimposed inflation assumption. Sustained superimposed inflation would present a significant sustainability risk. It should not be assumed that superimposed inflation will be kept to 6.6 per cent as assumed in the FSR.

Finally, I draw attention to the importance of a range of other initiatives which form part of an insurance-based approach to managing scheme costs and which are stressed in the FSR. These include maintaining a focus on management of SIL costs, recommencing eligibility reassessment processes and working towards independent functional assessments.

S180E(3)

Finally, in accordance with subsection 180E(3) of the NDIS Act, I note that the Agency has taken the steps necessary for me to undertake this review.

Yours sincerely

Peter Martin
Reviewing Actuary

Appendix – projection methodology

Aggregate costs are estimated by first projecting forward the number of participants in each future year in each "projection category". Participants within a category are expected, on average, to follow the same assumed cost trajectory. There is a separate category for each combination of age/disability/level of function/SIL status/gender/duration. At the lowest level, there are, effectively, more than 40,000 categories in the model:

- Disability x level of function x SIL status x age x gender x duration
- 57 disability/level of function groupings x 2 SIL statuses x (approx.) 100 ages x 2 genders x 2 durations

When individual ages and genders are grouped together to give some broader age band groupings, there are, effectively, 2,052 broad categories available in particular to analyse the average payment experience:

- 57 disability/level of function groupings x 2 SIL statuses x 9 age bands x 2 durations

Cost during time t is projected as:

$$\text{Cost}(t) = \sum_i (N_i^t \, P_i^t)$$

where

N_i^t is the average number of participants in category i during time t. After steady intake is reached, N_i^t is found by applying the new incidence and exit rates that are applicable to each category. The new incidence and exit rates are assumed stable over time. In general, the model does not allow for the possibility of switching from category to category other than by ageing. Specifically, there is no allowance for deteriorating level of function in the model. However, there is an assumption that some participants will shift into SIL arrangements over the next decade.

P_i^t is the average payment for category i during time t. P_i^t is projected as

$P_i^0 \, (1+f)^t \prod_y (1+S_i^y)$ where f is normal inflation, P_i^0 is average initial payments for category i. [In this year's model, P_i^0 is found by summing the observed payment experience during the six months to June 2019 across a range of payment types, with some smoothing], and S_i^y is superimposed inflation for support category i assumed during year y.

[N_i^t and P_i^t are projected separately for participants in their first year and participants who have had more than one year in the scheme]

Part 3 Content of annual financial sustainability report

8. GENERAL ASSESSMENT AND RECOMMENDATIONS

The scheme actuary must include the following matters in an annual financial sustainability report:

(a) an overall assessment of the financial sustainability of the NDIS that identifies the key risks and issues impacting on the financial sustainability of the NDIS;

(b) a discussion of the key risks and issues identified and, where these have an adverse impact on financial sustainability, recommendations designed to manage the risks or address the issues.

9. RECENT EXPERIENCE

The scheme actuary must include the following matters in an annual financial sustainability report:

(c) a summary of the participant data at the effective date of the annual financial sustainability report;

(d) a section that identifies and comments on significant features or trends in the recent experience of the NDIS, including any impacts due to external factors, and covers the following:

(i) changes in the number and characteristics of participants (including in relation to access criteria and assessed support needs);

(ii) changes in the distribution of support package costs;

(iii) participant outcomes;

(iv) the Agency's operating expense experience;

(v) the total cost of the NDIS;

(vi) deviations in actual experience from expected experience, and the reasons for the deviations;

(vii) any other relevant experience, including the use of innovative approaches;

(e) comments on any steps taken or proposed by the Board and senior management of the Agency to address areas of deviation and adverse experience;

(f) any recommendations of the scheme actuary in relation to areas of deviation and adverse experience.

10. PROJECTIONS

The scheme actuary must include the following matters in an annual financial sustainability report:

(g) projections of future experience in the form of the best estimates of the following matters, with discussions of the projections:

(i) future expenditure on care and support—presented as a set of cashflow projections over the long run, both in future dollar terms and as a percentage of GDP;

(ii) lifetime cost of care and support to standardised new entrant cohorts—presented in the form of net present values, both in discounted dollar terms and as a percentage of GDP;

(iii) future expenditure on care and support to current participants on the assumption of no change in the scheme design—presented in the form of a projection of net present values, both in discounted dollar terms and as a percentage of GDP;

(h) a discussion of any changes in the projections since the previous annual financial sustainability report or other more recent set of projections provided by the scheme actuary to the Board, including the reasons for the change and any implications for the financial sustainability of the NDIS;

(i) any recommendations of the scheme actuary in relation to any adverse changes in the projections;

(j) a justification of the methodology and key assumptions used to prepare the projections;

(k) comments on the extent to which the valuation assumptions are based on the historical experience of the NDIS and, if the assumptions have changed since the previous annual financial sustainability report, the reasons for that change and the consequences of the change;

(l) a practical discussion of the level of uncertainty that surrounds the projection, including sensitivity or scenario analysis, a discussion of the main drivers of uncertainty, and any recommendations of the scheme actuary for managing uncertainty.

11. ADMINISTRATIVE INFRASTRUCTURE, PROCESSES AND RISK MANAGEMENT

The scheme actuary must include the following matters in an annual financial sustainability report:

(m) a discussion of the Agency's administrative infrastructure, its administrative processes and risk management arrangements (***risk management arrangements*** are defined in section 3);

(n) comments on the adequacy of the Agency's processes, including on the suitability and adequacy of:

(i) any decision support tools; and

(ii) its data and information systems; and

(iii) its processes for monitoring emerging experience and responding to adverse movements in emerging experience;

(o) any recommendations of the scheme actuary in relation to any inadequacies.

12. OTHER MATERIAL MATTERS

The scheme actuary must include the following matters in an annual financial sustainability report:

(p) a section identifying and discussing any other matters that the scheme actuary believes are material to the financial sustainability of the NDIS;

(q) comments on the extent to which any previous recommendations have been acted on by the Agency.