Universities Superannuation Scheme

Monitoring and Action Framework

2018 valuation

The Trustee's proposed framework for monitoring and responding to post-valuation experience

31 October 2019

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1. Introduction

The Pensions Regulator (tPR) wrote to the Chair of the Trustee on 6 August and again on 11 September concerning the outcome of the 2018 valuation. In both of these letters, which have been shared with UUK, tPR has emphasised the need for the Trustee to develop and agree with stakeholders a monitoring and action framework for post-valuation experience. Following both the 2014 and 2017 valuations the Trustee established monitoring frameworks, the results of which have been shared with UUK on a regular basis.

This paper provides UUK with information on the Trustee's initial conclusions on the matter, for UUK's consideration. It is not intended to form a communication of 'Technical Actuarial Work' and UUK may wish to take its own actuarial advice before providing any comments to the Trustee.

The Trustee has considered the metrics to be monitored and potential mitigating actions should the metrics breach certain limits. An indication of the circumstances in which the thresholds might be breached, based on approximate calculations carried out by the Trustee, are provided in this paper. These are indicative of the order of magnitude of the changes which could cause breaches – the actual impact will depend on market conditions at the time, and these indications are not intended to cover all possible circumstances.

The metrics put in place to monitor the post-valuation experience of the 2018 valuation will be reviewed following the 2020 valuation.

2. Monitoring and Actions

The metrics which the Trustee proposes to monitor are:

- *Short term trigger metric:* ***Self-sufficiency (SS) deficit affordability ratio***
- *Long term trigger metric:* ***Future service cost (FSC) coverage ratio***
- *Long term trigger metric:* ***Deficit recovery contribution (DRC) adequacy***
- *Covenant trigger metric:* ***Covenant rating***

A full definition of each of the metrics is provided in **Appendix A**.

Should the metric breach a predetermined level then the Trustee would investigate whether any mitigating action is required. The potential mitigating actions available to the Trustee are:

- Revision of the 2018 Schedule of Contributions
- Acceleration of the 31 March 2020 valuation
- Undertake an earlier valuation at 31 December 2019
- Change in the investment strategy

TPR's expectation is that once a metric breaches a predetermined threshold an action will be triggered. However, the Trustee recognises that mitigation measures will generally come at a cost in terms of time, bandwidth, resources, money and/or opportunity. The Trustee also recognises that:

- No single metric or trigger measurement gives the whole picture. The Trustee will need to consider a range of different metrics and their trigger thresholds. This consideration will involve addressing questions such as how far each metric is from its expected track and how much prudence remains in the valuation.
- How the results of the suite of metrics are converted into a response cannot be prescribed. A range of amber outcomes for a number of metrics that don't quite trigger may lead to the Trustee considering a more urgent response than a red outcome for a single metric that has triggered.
- To avoid overreacting to normal market volatility, the triggered status should be established as persistent before a response by the Trustee is considered.

Any decision by the Trustee to implement mitigating actions involves assessing and balancing a number of different factors and all the monitoring metrics in aggregate. As a result, the most appropriate response cannot be automated or prescribed.

Further, as a general principle the Trustee will not fetter its discretion under legislation and trust law through a pre-commitment to take a particular course of action on the occurrence of a particular event (i.e., being automatically driven by one of the metrics exceeding its threshold). It is, however, appropriate for the Trustee to pre-consider the types of analysis and stress-testing that would be required, and the possible range of options for responding to different possible scenarios, and then formulate an appropriate response only after considering all the relevant facts, data and circumstances on a trigger threshold being breached.

Given the above the Trustee would propose that the automatic action that should follow a trigger metric (or indeed a combination of trigger metrics) exceeding its threshold is that the Trustee Board will be convened within five business days to consider the appropriate response. That consideration would be informed by analysis and stress-testing that is specifically customised to the particular circumstances and designed to facilitate a Board decision at that point of time.

3. Self-sufficiency (SS) deficit affordability ratio

The ***SS deficit affordability ratio*** is a short-term metric that considers the SS deficit relative to the present value of contributions potentially available from the participating employers to make good the deficit. Note that the lower the value of the ratio, the better the affordability.

In assessing the amount that is potentially available from employers a view needs to be taken on a number of elements, but most importantly:

- The percentage of salary that will be payable;
- The growth of the employers' aggregate payroll; and
- The period for which contributions can be paid.

Figure 1, below, shows the historical development of the SS deficit since 31 March 2017 and compares it against the present value of available future contributions which are calculated on two bases:

- 10% of salary over 30 years; and
- 7% of salary over 20 years (this being the maximum level of *long-term reliance* agreed with the employers).

A contribution rate of 10% is suggested on the basis that *in extremis* this level of contribution could be provided to finance the accrued benefits whilst allowing employers to provide their employees with a reasonable contribution towards the accrual of new retirement benefits within an overall cost envelope that is affordable.

In terms of period, 30 years is indicated as this is consistent with advice the Trustee has received from PwC as the period over which the employers can, with sufficient confidence, be expected to be able provide support to the scheme.

It would of course be possible to use other values for the level of contributions payable and the period over which they are paid, and sensitivities to these parameters are provided in *Table 1* below.

Figure 1 indicates that since 31 March 2017, the SS deficit has fluctuated within the band defined by the above two bases of future contributions (7% of salary over 20 years and 10% of salary over 30 years).

This can be seen from another perspective in *Figure 2*, which shows the history of the SS deficit affordability ratio at each month end since 31 March 2017.

At the end of August 2019, the SS deficit affordability ratio was 80% – the same level as it reached at the end of April 2017, which is highest level it has reached since the 2017 valuation.

Figure 1: Self-sufficiency compared to the present value of future contributions

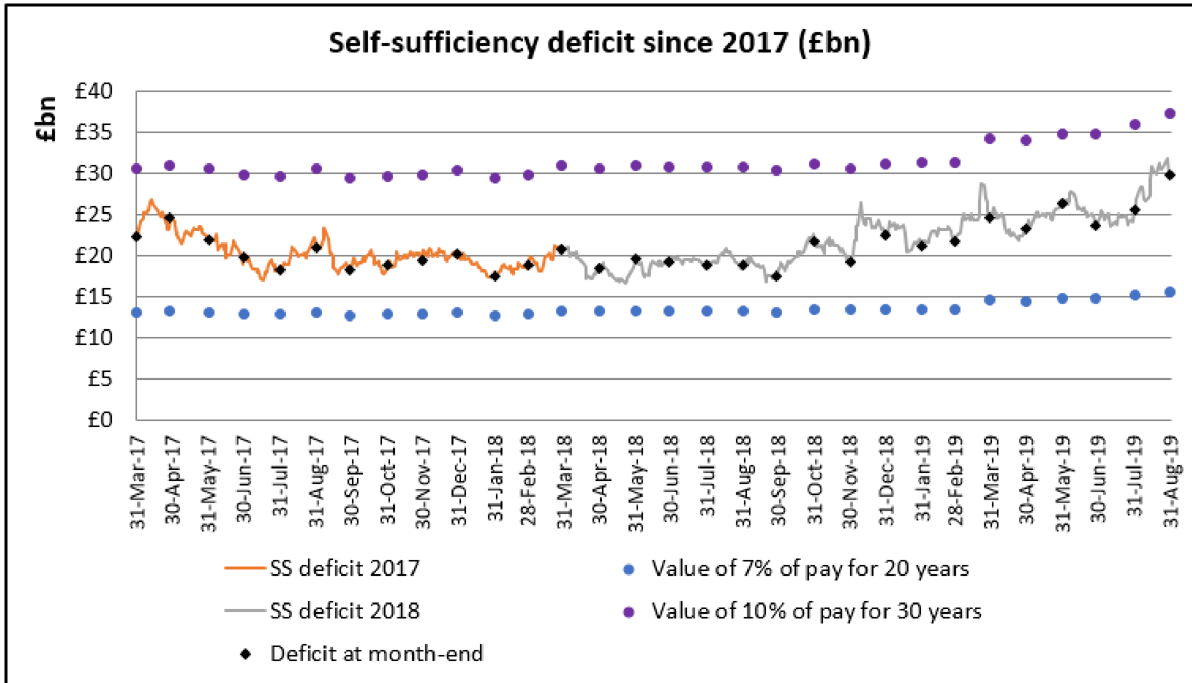


Figure 2: SS deficit affordability ratio (which is defined by the SS deficit divided by the present value of future contributions of 10% of payroll over 30 years).

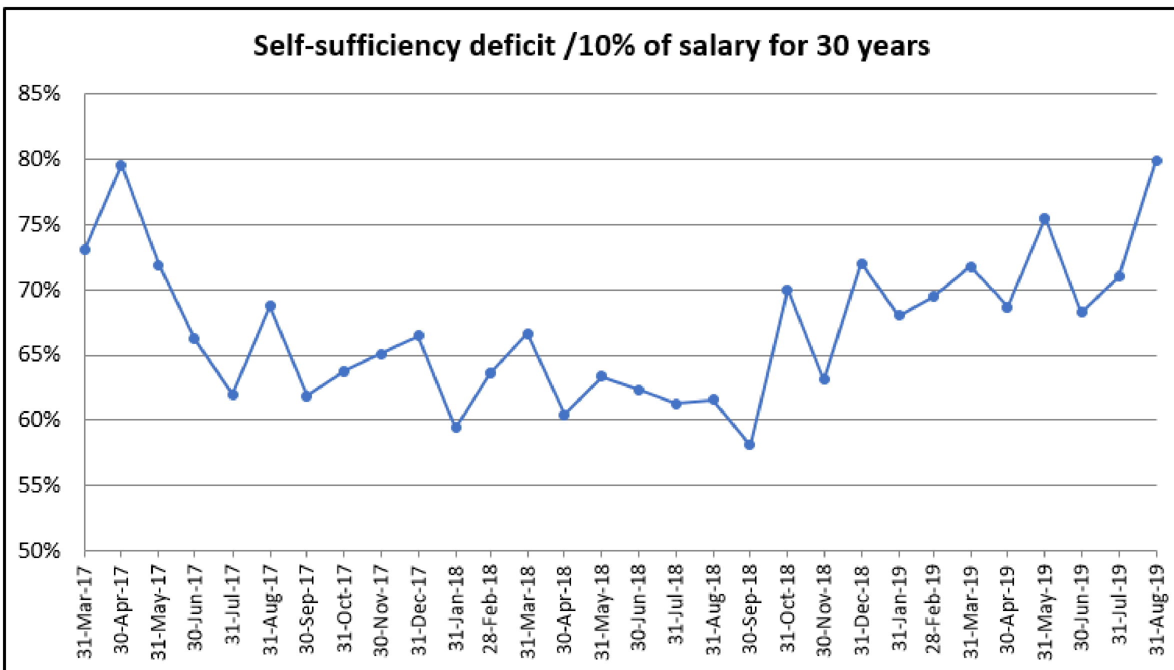


Table 1: Sensitivity of the SS affordability ratio to changes in parameters. The changes are relative to the levels prevailing on 31 August 2019, at which time the SS affordability ratio was 80%.

Parameter	Change	Impact on the SS affordability ratio
Contribution rate (% payroll)	Reduce from 10% to 7%	Increases by 35% (➔115%)
Period over which contributions are paid	Reduce from 30 years to 25 years	Increases by 21% (➔101%)
Salary growth	Reduce from CPI+2% to CPI+1%	Increases by 13% (➔93%)
Real interest rate	50bps fall (taking account of the impact on index-linked gilt asset values, but assuming other asset values remain unchanged)	Increases by 18% (➔98%)
Asset value	10% fall in total asset value (assuming no change in real interest rates)	Increases by 20% (➔100%)

Trustee's initial conclusion

The SS affordability ratio should be calculated using:

- Contributions of 10% of salary; and
- A payment period of 30 years.

The level at which consideration is given to mitigation would be if the SS affordability ratio is greater than 85% (i.e., the SS deficit is more than 85% of the value of contributions).

Circumstances in which metric could breach the threshold

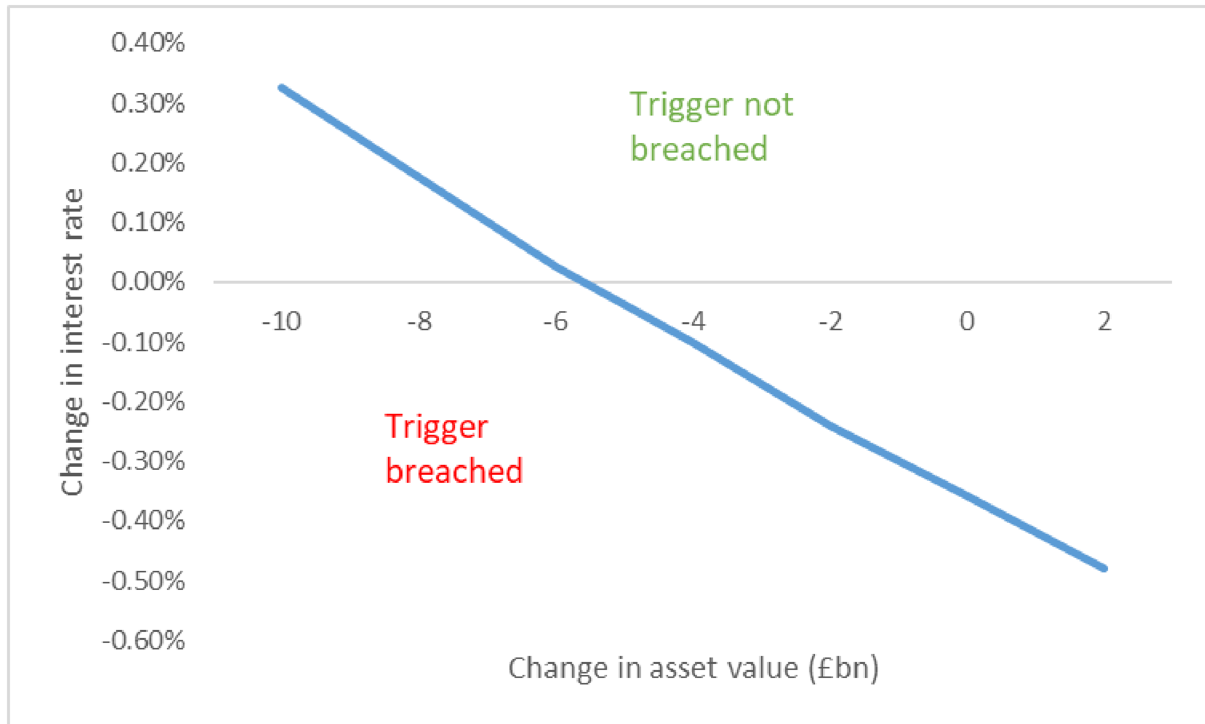
Circumstances in which the SS affordability ratio could exceed 85% include:

- If interest rates fall by 0.4% from those at the valuation date with no change in the value of the assets.
- If assets fell by £6bn with no change in interest rates relative to the valuation date.

In reality, a change in interest rates is likely to be accompanied by a change in the value of the assets and vice versa, and since the valuation date interest rates have fallen and asset values have risen.

Figure 3 below provides an indication of the broad combination of the change in interest rates and a fall in asset values that could cause the threshold to be exceeded, relative to the valuation date.

Figure 3: Indication of the combination of change in interest rate and asset value that could lead to SS affordability ratio exceeding 85%



4. Future service cost (FSC) coverage ratio

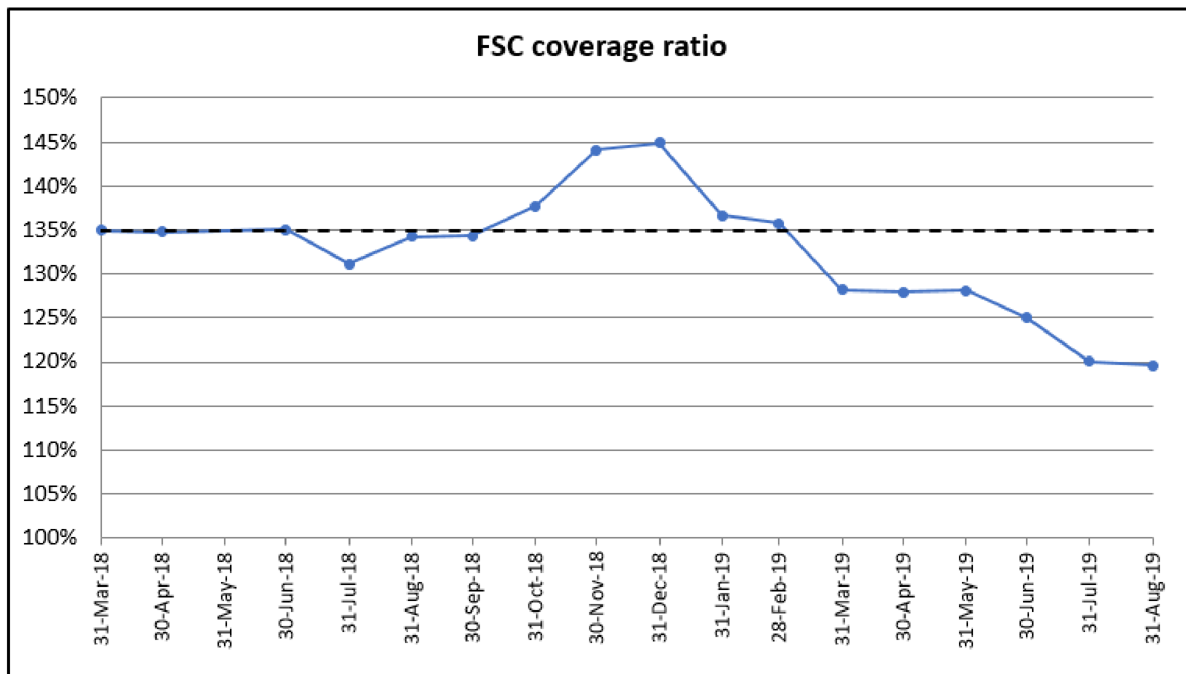
The ***FSC coverage ratio*** is a long-term metric that measures how well the existing future service contribution covers the current cost of providing new benefits (i.e., the FSC).

Specifically, it measures the future service contribution being paid (from 1 October 2019) relative to the current best estimate of the FSC, calculated from the latest Fundamental Building Block[1] analysis of expected investment returns.

As such, it is defined as the ratio of future service contribution being paid divided by the best estimate FSC.

At the valuation date, the FSC coverage ratio was 135%. *Figure 4* indicates the development of the ratio since 31 March 2018. By the time the valuation was signed off, this had fallen to 120%.

Figure 4: Development of FSC coverage ratio



[1] https://www.uss.co.uk/~/media/document-libraries/uss/how-uss-is-run/valuation/fbb-expected-returns-description-march-2018-final.pdf

Table 2 indicates the level of prudence associated with the FSC coverage ratio. The lower the ratio the less the prudence that is being allowed for in the current level of future service contribution.

Table 2: FSC coverage ratio and the corresponding level of prudence.

FSC coverage ratio	Level of prudence	Gilts+ equivalent future service discount rate	Proportionate reduction in prudence relative to the 2018 valuation date
135%	67th percentile *(Technical provisions)*	Gilts+1.55%	0%
130%	65th percentile	Gilts+1.68%	14%
120%	60th percentile	Gilts+1.97%	43%
110%	55th percentile	Gilts+2.29%	71%
100%	50th percentile *(Best estimate)*	Gilts+2.65%	100%

Note: Level of prudence and 2018 valuation proportion removed have been calculated by interpolation. The gilts+ equivalent rates are calculated as at 31 March 2018.

Trustee's initial conclusion

The trigger level to consider mitigation would be if the FSC coverage ratio is smaller than 115% (i.e., the actual future service contribution is less than 115% of current best estimate FSC).

Circumstances in which metric could breach the threshold

The FSC coverage ratio will fall if the future expected returns on the assets to be held by the scheme decline. A fall in the real discount rate of around 0.7% relative to the valuation date would result in the FSC coverage ratio being smaller than 115%.

In constructing our discount rates using the Fundamental Building Block approach, each asset class' expected returns are built up by considering the fundamental drivers for that asset.

However, the resulting discount rate can be considered as the return on gilts plus a risk premium for holding assets which are expected to provide a higher but less certain return.

As such the FSC coverage ratio falling below 115% can occur as the result of:

- Gilt yields falling with no change in the risk premium available on other assets;
- A fall in the risk premium available on other assets (which can result from increases in asset value); and
- A combination of the above two points.

5. Deficit recovery contribution (DRC) adequacy

DRC adequacy is a long-term trigger metric that measures how well the existing deficit recovery contribution (DRC) covers the Technical Provisions (TP) deficit over the remaining life of the recovery period.

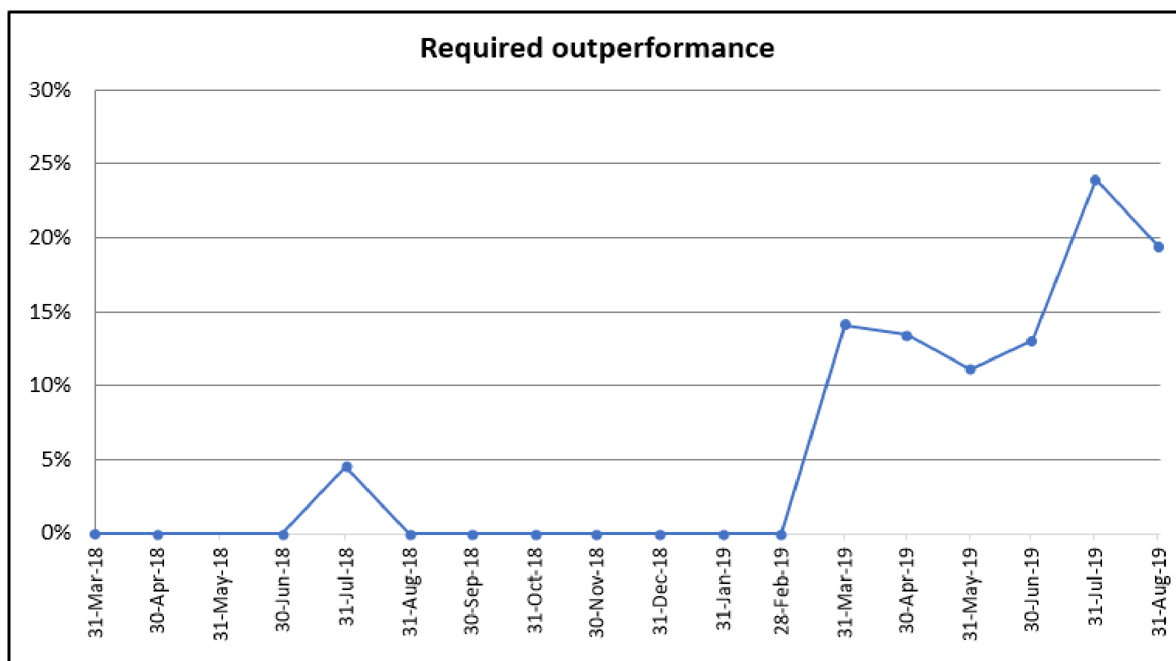
More specifically, it measures the adequacy of the existing DRC to meet the TP deficit (on the monitoring basis) over the remaining life of the recovery period by evaluating the *required amount of investment out-performance* above the technical provision discount rate to achieve deficit repair by the end of the recovery period (March 2028). The required level of investment outperformance is defined as a percentage of the difference between the (best estimate) expected investment return and the TP discount rate.

Figure 5 illustrates the history of the required level of investment outperformance relative to the difference between the (best estimate) expected investment return and the TP discount rate at each month-end since 31 March 2018.

In the 2014 valuation the Trustee approved 50% investment outperformance in the recovery plan, whereas in the 2017 valuation it incorporated 10% investment outperformance. The 2018 valuation recovery plan allows for no (0%) outperformance. The ability of the outperformance to make good any increase in deficit declines as the term of the remaining recovery period decreases. This metric will therefore become more sensitive over time to the size of the deficit.

The difference between the TP discount rate and best estimate return over the recovery period is of the order of 1.5% a year. Given the recovery period ends in 2028, the maximum additional deficit over and above that at the end of August 2019 (of slightly less than £6bn) which could be met from the additional return over the TP discount rate in excess of that effectively already allowed for at that date (c19%) is around £7bn. This maximum additional deficit will decline over time.

Figure 5: Required investment outperformance to achieve the original recovery plan by 2028.
(Investment outperformance is defined as the percentage of the difference between the technical provision discount rate and the best estimate expected investment return.)



Trustee's initial conclusion

The trigger level to consider mitigation would be if the existing DRC required a level of investment outperformance above the TP discount rate higher than 50% of the difference between the best estimate expected investment return and the TP discount rate.

Circumstances in which metric could breach the threshold

Circumstances in which the DRC adequacy threshold is breached include (relative to the position at end-August):

- Increase in the deficit of more than £3bn without an increase in the expected return on assets (i.e., driven by a fall in asset value).
- A decease in expected returns of 0.2% with no change in the assets (leading to increased liabilities).
- A combination of a change in the deficit and the expected return on assets.

Over time this metric will become more sensitive to changes in conditions, however the ongoing appropriateness of the metric will be reassessed as part of the 2020 valuation.

6. Covenant

The covenant metric for monitoring the 2018 valuation is the strength rating of the covenant, as assessed by the Board on the advice of our covenant advisor, PwC.

Trustee's initial conclusion

The trigger level to consider mitigation would be if the covenant strength rating is downgraded to "tending to strong" or lower. The current rating is "Strong", but on "negative watch".

Circumstances in which metric could breach the threshold

- Strong employers leaving the scheme
  - Failure to implement a permanent rule change in respect of the ability of employers to leave the scheme and another strong employer which provides material support to the covenant elects to leave the scheme.
- Increases in debt in the sector
  - Failure to implement the proposed framework for employers to provide *pari passu* security to the scheme and to monitor debt levels in institutions.
  - There is a material increase in debt in the sector (for example, the total external borrowing for the sector exceeds two of the three thresholds proposed by PwC: 50% of income, 50% of net assets, 5x EBITDA[2]).
- Covenant review indicates a downgrade is appropriate
  - Following a covenant assessment PwC recommends a downgrade in covenant. For example, as a result of factors including:
    - Student fees being significantly cut without an increase in central funding
    - A material decline in the number of overseas students attending UK universities
    - Total revenue for USS employers shows a consistent decline (irrespective of the cause)

[2] Earnings before interest, tax, depreciation and amortization

7. Period for metric to breach the threshold

When the Trustee considered contingent contributions during the 2018 valuation, it was recognised that there needed to be a balance between missing true triggers and acting on false triggers.

This led to the Trustee adopting an averaging of the metric over a period and requiring the metric to remain above the threshold for a minimal period of time before the contingent contribution would become payable.

A similar approach could be applied to the metrics discussed in this paper. Having said that, it needs to be recognised that whilst the metric for contingent contributions was available on a daily basis, of those metrics discussed in this paper only the SS affordability ratio is available daily. The others are available only at month-end.

Further, the Trustee does not believe that the metrics in this paper should lead to an automatic or prescribed response beyond the Trustee meeting to consider appropriate actions given the full set of facts, data and circumstances.

In light of this, the issue of averaging over a period of time before triggering a response is less important. The Trustee has initially concluded the following:

- **Self-sufficiency (SS) deficit affordability ratio:** Triggered if the threshold is exceeded for more than five consecutive days.
- **Future service cost (FSC) coverage ratio:** Triggered if the threshold is exceeded at the end of the month, on the date of measurement.
- **Deficit recovery contribution (DRC) adequacy:** Triggered if the threshold is exceeded at the end of the month, on the date of measurement.
- **Covenant:** Triggered if covenant is downgraded.

These metrics will be monitored and reported regularly to the Board and stakeholders as part of the FMP monitoring report.

Appendix A: Metrics to be monitored

Definitions of the metrics to be monitored are as follows.

a) Short term trigger metric: Self-sufficiency (SS) deficit affordability ratio

- The ratio of the *SS deficit* to the present value of *affordable additional contributions* over a period of time.
- Where:
  - The SS liability is calculated using a discount rate of gilts+75bps.
  - Assets are taken at market value.
  - The value of future contributions is also discounted using gilts+75bps
  - A contribution rate of 10% is suggested on the basis that *in extremis* this level of contribution could be provided to finance the accrued benefits whilst allowing employers to provide their employees with a reasonable contribution towards the accrual of new retirement benefits within an overall cost envelope that is affordable.
  - Total pensionable salary payroll is assumed to increase in line with CPI + 2% pa
  - The period of time currently being 30 years.
- The proposed trigger level to consider mitigation would be if the ratio is greater than the threshold.

b) Long term trigger metric: Future service cost (FSC) coverage ratio

- The ratio of the *future* service *contributions* being paid relative to *best estimate* FSC.
- Where:
  - The best estimate FSC is calculated based on the latest available FBB expected returns.
- The proposed trigger level to consider mitigation would be if the ratio is smaller than the threshold.

c) Long term trigger metric: Deficit recovery contribution (DRC) adequacy

- Adequacy of DRC to meet the TP deficit on the monitoring basis over the remaining life of the recovery period.
- Where:
  - The deficit contributions are those in the current SOC.
  - The deficit on the technical provisions monitoring basis is calculated using:
    - The latest FBB expected returns adjusted for prudence in line with the valuation.
    - Assets at market value.
  - The remaining recovery period is that set out in the SOC
- The proposed trigger level to consider mitigation would be if the existing DRC required a higher level of investment outperformance above the TP discount rate greater than the threshold.

d) Covenant trigger metric: Covenant rating.

- The rating of the covenant provided by the Trustee’s covenant advisor.
- The proposed trigger level to consider mitigation would be if the rating is below “Strong”.