

USS Contingent Contributions and Short Term Monitoring: an alternative approach

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Contingent contributions (CCs) are an attempt to deal with short term risks not allowed for in pension valuations. They involve setting a technical provisions (TP) deficit target threshold which if breached would automatically require a specific additional contribution within the boundary of the increases that the covenant allows. If the breach continued CCs would increase to a maximum overtime.

The next section of this paper looks briefly at the debate about the mechanism for the quantification of CCs. This gives a standard for comparison with other methods of dealing with short term risk. Section 3 then uses a management control lens to consider the USS's approach to short term risk management³. Management control is used extensively in industry and commerce and has been for many years especially for short term control. Budgetary control and Balanced Score Cards provide well-known examples. A management control perspective involves using deviations from plans to measure the performance of both managers and of organizations and their divisions. Management control theory is used in the penultimate section to suggest an alternative method of dealing with short term risk and management control. Section 5 provides brief conclusions.

CCs did not figure in the 2014 valuation. Here the concern was that the covenant allowed USS to call upon the difference between employers' contributions expressed as a percentage of total annual salaries required by the valuation and the maximum allowed by the covenant in extremis. Short

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² Abbreviations: CCs= Contingent Contributions, DB=Defined Benefits, JEP=Joint Expert Panel, JNC= Joint Negotiation Committee, TP =Technical Provisions, TPR= The Pension Regulator and SS=Self-Sufficiency.

³ See Merchant and Van-der-Stede 2017.

term risk was considered in the 2017 consultation it was said “However, it may be necessary to consider the need for more rapid pre-agreed short term reliance responses” (USS 2017, p.10)⁴. Industry comments suggest that this proposal was not well received by the employers.

The possibility of CCs figured strongly in the 2018 consultation (USS 2019a). USS asked UUK to suggest the detailed mechanics or architecture for setting CCs and their quantification following principles required by USS but USS rejected most of their suggestions and produced generally quite different numbers (see next section). The USS and UUK had a number of meetings but agreement did not seem possible.

This is reflected in the three offers made by USS to close the 2018 valuation (USS 2019b). Only Option 2 directly involves CCs. Option 1 increases contributions to protect USS from not having access to CCs and the third option added averaged maximum CCs to the required standard contributions.

Thus CCs have not gone away but rather

ratio and the covenant's strength⁵. As with CCs each of these measures will have trigger thresholds but breaches will not invoke a predetermined mitigating action even though this is the regulator's expectation. USS's sees its actions as being based on a holistic view of all the signals available to it. A breach of one or more thresholds will require a USS board meeting within five working days.

The SS deficit affordability ratio their short risk measure is given by dividing the SS deficit by the present value over 30 years of the additional contributions believed to be available over the period. These contributions are assumed to be 10% of salaries per year in extremis rather than seven percent, the previously entertained margin of the covenant. Increases in the ratio indicate lower coverage of the SS deficit. The trigger is set high at 85% and would be triggered if the breach persisted for more than five days which suggests high expected volatility.

From a management control perspective it is difficult to see this ratio as a short term (Aon, 2019b). Short term signals are those generated over a period or a few periods ex post which can be used for performance control and in aiding future planning. The short run signals relative to plans inputted into the SS deficit measure include changes in the discount rate, changes in payroll, alterations in the mix of member types and member mortality, changes in the mix of assets and their values and changes in the covenant. Most of these help planning but seeking in valuations to simply extrapolate them in summary form over 30 years is hard to justify especially as low discount rates dominate such valuations. Rather the approach should be to use them in disaggregate form in management control and forecasting. A clear short term measure would be whether accrued benefits at a valuation are covered by the assets.

The trigger for the covenant is a downgrade of the covenant. This seems a

bound or bookend with maximum CCs (Option2) and their third option which incorporates the average maximum CCs in the contributions.

Triggers are used widely in a wide range of disciplines. They are utilised in medicine in many studies where for example information about a set of symptoms which at a critical level trigger an investigation into a specific illness. In law information can trigger the invalidation of contracts and breaches of covenants. In environmental management they can trigger concerns about the degree of pollution or of species' reductions. In management control a given degree of variance between actuals and budgets can lead to management action. Similarly a given level of managerial performance can trigger the award of incentives to managers. As may be expected the meaning of triggers, the conditions required for triggers and indeed the feedback mechanisms themselves may differ substantially across disciplines.

USS's response to UUK basically rejected most of the UUK's (Aon's) suggestions on CCs, set out the details of the contingent contributions the USS required and a provided a third option (USS 2019c).

The contribution rates for Option 1 are high to protect USS from not having the protection from explicit CCs. Option 2 does feature CCs and incorporates two of the JEP'S suggestions deemed risky by USS. The contribution rates for Option 3 incorporate stepped maximum CCs averaged over two periods of two years each reigning at least until the next valuation but does not include the JEP's risky suggestions. CCs have not gone away rather they are incorporated in the required regular contributions by Option1, in a slightly modified form in Option 3 and they figure explicitly in Option 2⁶.

Despite Aon generally accepting the USS framework, principles and the numbers in the consultation and themselves being actuaries, there is little commonality between the rival CC proposals. This is not so much about different long run assumptions but rather to do with differing assumptions about the major short run problems that may occur and their believed

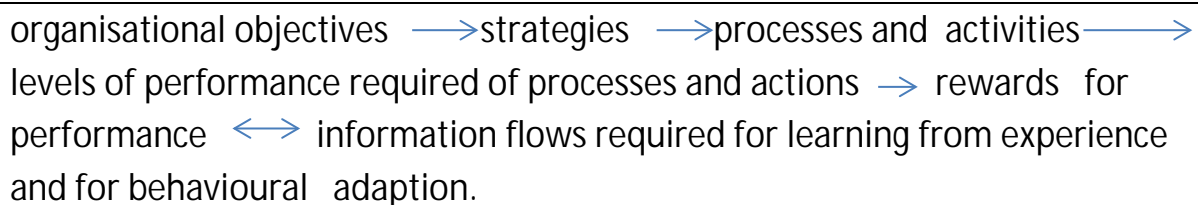
amounts and likelihoods. It is also about the perceived necessary sensitivity of the trigger.

This illustrates a fundamental problem when seeking to value DB pensions. These require estimates of the future including the distant future. This means that assumptions have to be made and can be expected to differ between individuals. Thus favouring one valuation model over another is a choice between assumptions or beliefs not facts. Necessary empirical evidence is generally unavailable as indeed are long term market prices. Markets for long term liabilities are generally thin and imperfect. Only empirical experience can say eventually who if anyone was correct.

Some Concerns about Short Term Performance Control from a Management Control Perspective

The general model of management control is shown below.

Chart 1 The Management Control Process



Here the lens of management control is used to examine firstly some of the problems of using both the USS's various monitoring approaches and their CCs mechanism to monitor and respond to increased short term risk. Secondly to suggest in the next section an alternative approach grounded in the management control literature. This at least provides an additional method widely used in industry and commerce for monitoring short term performance and short term risk.

Control is perhaps easier to deal with in the short run. Here the actual performances of processes and activities over a period are compared with their target performances and the variances used to cause change in future performances. Budgetary control compares actual amounts of individual revenues and costs with their budgeted amounts and generates variances. This

Aon's chart (Chart 2) would suggest to management control practitioners and researchers that similar variability in the levels of actual TP deficits would be

generated provide signals about managerial performances and alterations in the environment relative to plans.

With performance variances information causes actions to either remedy poor performance or to build on superior performance. Planning variances are of especial importance to USS as many variances are beyond their direct control and may indicate the need to change plans. Planning variances are often leading indicators where they are forecast to continue but they also facilitate learning and cause changes to future plans either to incorporate environmental changes or to mitigate their effects in the future (interactive management control). The extent of the revision to plans depends upon how long the alterations in the environment are forecast to reign, their probabilities, the possibilities for mitigation and their importance to the organisation. This process continues with the information in later periods, the length of these may need to be kept very short where outcomes are significantly variable and environments dynamic. Short term control can thus aid planning for the future.

In the pension industry the use of deficits as signals is heavily ingrained in practice but deficits are inherently long term. For example one metric used by the USS to publically monitor short term performance between valuations reports only on changes in gilts with these changes extrapolated over the long term via the changed discount rate. It says nothing about other changes. Deficit based signals are not focused either on short term performance or the ability of signals to serve as leading indicators of problems and the need to change plans in the short term, that is deficits in themselves are not control variables. Currently the calculation of deficits is dominated by low discount rates and by the long term which tend to distort the short term value of signals.

Deficit signals do not detail the changes in the inputs into valuations. Stakeholders are therefore faced with only two main options to deal with deficits (increasing contributions or reducing benefits) and perforce are ignorant of the pension provider's reactions to detailed signals. These weaknesses require further analysis. An alternative or complimentary approach is suggested below.

possible short term risks can be listed but actual occurrences cannot be discerned until these begin to be apparent. Management control focuses on discovering such occurrences and charting actual progress towards objectives and aiding planning. USS's metric seems unnecessarily complex for a short term measure. Its perspective is long term and it thus says nothing explicit about why things have changed in the short term.

No details of the possible results of using a SS basis for calculating contingent contributions have been published but Chart 2 gives an example which shows that although the two deficit measures move to a substantial degree in common the SS deficits are much larger (some 3 or 4 times) and more volatile.

USS makes it clear that reliance is not a decision variable. Rather it is seen as risk measure or metric measuring long term risk. Although the USS uses a TP mechanism, the shadow of reliance permeates most their documents especially later ones. Reliance is also seen as allowing a measure of whether long term risk is within both the employers' and USS's risk appetites⁸. In the past USS said that reliance would only bite when the scheme was in extremis and that it was intended that reliance should be held constant over time. These sentiments have disappeared in recent publications.

It is difficult to believe that such a powerful metric does not influence behaviour. Indeed it already does. In the long term, it is the force that requires de-risking in achieving the reliance target and the setting of CCs. Additionally, USS often says that some suggestions are beyond its risk appetite implying they involve too great a reliance. Some of the Aon's/UUK suggestions for the setting of CCs were rejected due to both their imposed increased reliance and their effects on the SS deficit. The JEP said something similar about the weight give to reliance and to Test 1 but postponed further consideration to their second phase. There are myriad ways of planning progress towards pension objectives. Why USS privileges such a risk averse path is not clear but it suggests that it weighs a pound of deficit much more heavily than a pound of surplus.

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Individual universities are unlikely to withdraw except in extremis as they would be responsible for their share of the buyout valuation of the scheme and of any deficit (USS Employer Debt, undated).

The assumption that the scheme cannot continue to rely on income from the usual TP asset portfolio at the time of moving into SS takes a rather unlikely view of future. Such an occurrence would suggest the presence of a

returns from the investment portfolio. Short term measures of the type discussed may provide indications of such investment problems. Similarly the occurrence of a wider set of elements in the actuary's sensitivity analysis in the 2018 consultation may be best reflected in changes in short term measures free of any noise generated by calculations of deficits.

In the context of management control it is unusual to have programmed and automatic reactions to variances above a trigger point as is the situation with CCs as originally defined. Generally trigger points are not used and

presentation are those used in the USS financial statements. The first column lists at a high level revenue and cost categories. Each element can be presented in detail. The type of risk represented by each element is also shown in the first column where applicable. The second column presents the actual amount of each element for a given period. The third column shows planned or budgeted amounts taken from the data supporting the relevant TP valuation with their probabilities. Additional columns could be added showing the year to date and the forecast for the rest of the period. The fourth column shows the variances between actuals and planned amounts. The final column indicates changes in financial and non-financial leading indicators. Below it is used rather to give comments on characteristics of items in the table including whether elements are fixed over time, are controllable by USS or subject to mitigating actions and possible leading indicators. The report would also provide a narrative with for comments on the periodic results and on changes in leading indicators which could form an extra column.

Table 2 Pro Forma Performance Report

Revenues and costs	Actuals for period	Budget for period	Variances	Characteristics and changes in leading indicators
Contributions, Related risks: covenant and mortality				

				leading indicators are substantial changes in market values and returns and in forecasts of these
Changes in market value of net assets Related risks: market risk		Adjusted for normal market changes		Mainly not controllable but de-risking and available defensive assets; function of market movements, monetary policy and investment policy, forecasts may be leading indicators

Less Investment expenses
Related risk salary increases

next valuation. The three year gap between valuations allows more informed pictures of variances to be formed.

In the absence of detailed published data about plans or budgeted information an illustration of the magnitudes involved can be given by comparing the USS's financial results for March 2019 and March 2018. Dealing with members yields a small deficit in 2019 relative to 2018 (£217m-£251m=£34m) with a small increase in contributions payable in 2018 of £85m less pay outs of £119m.

Comparing the market value of DB assets with what was expected yields a positive or favourable variance of £7.3Bn at the end of March 2019 and a favourable variance of £4.0Bn in March 2018-a better performance in 2019¹⁰. These figures include outperformance over the expected returns (shown in a chart on p c 0 Tw (-)11 14.04 5091 14.326.3 422 14.

The results shown by the performance report are not meant to be reconcilable with valuation deficits as they are geared to showing results in between valuations without projecting them into the long term future. They report steps on the journey and influence the future of that journey. This pro forma report is suggested to USS as an alternative way of reporting short term performance. It yields a much richer picture of the situation faced by USS than both USS's monitoring valuation which only allows for past gilts changes and its CCs mechanism with an overall trigger. If published, such a performance report or more likely a summary would give stakeholders a much clearer view the scheme's situation. Variances and leading indicators would aid in anticipating the results of the next valuation perhaps reducing the shock seemingly produced by every new valuation and encourage early planning. Provided this type of statement to stakeholders should increase trust. It is an attempt to overcome the silo mentality with regard to information and is consistent with the move to 'open book' accounting where purchasers and their suppliers share all relevant information

Brief Conclusions

This article focuses on USS's requirement throughout the 2018 negotiations that it has contingent protection from short term risk not included in valuations.

The amount of CCs required depends upon a large number of variables. Although UUK and USS both used the same mechanism for setting their preferred CCs they made different assumptions giving quite dissimilar quantifications. The USS does not justify its numbers. The lack of empirical evidence pertaining to the long term such as market prices means that this debate is often a battle of assumptions or beliefs.

number of papers but they often miss the point in terms of allowing decisions by other parties such as in dealing with risk. Statements of the need for more

TPR (2019a), email entitled: Universities Superannuation Scheme Actuarial Valuation as 31 March 2018 (the 2018 Valuation) from Mike Birch (TPR) to Sir David Eastwood (USS), The Pensions Regulator, 6 August.

USS-JEP (2018), First Report of the Joint Expert Panel, Universities Superannuation Scheme/Joint Experts Panel, 13 September.

UUK (2019), Consultation on the Proposed 2018 Technical Provisions Actuarial Valuation: Universities UK Response, Universities UK, 19 March.

Appendix

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