April 2019

# CP3 – Communications

# Sample Answer

# Correction to the 2019 Valuation

## 1   Introduction

This paper has been prepared by Chris Actuary and is addressed to the Trustees of the Dunforth Pension Scheme ('the Scheme'). It is intended to give the background to an error that has been found in the valuation of the Scheme as at 31 October 2018. Below is a description of the error, together with a summary of the revised valuation results.

It should be noted that the correction has increased the deficit in the Scheme, which in turn has increased the contributions that are required from the sponsoring employer to eliminate this deficit. Further details are in section three below.

This issue will be discussed further at the next Trustee meeting, where the Scheme's actuary, Ruth Postlethwaite, will be happy to answer any questions and address any concerns.

## 2   Description of the error

When completing our final checks on the valuation of the Scheme, we identified an error in the way the data on marital status had been used in the calculations. This error underestimated the proportion of members who are likely to have a spouse, and overestimated the number of single members. When a member dies leaving a spouse a proportion of their pension will continue to be paid to that spouse until their death. This means that the Scheme pays more pension payments in respect of married members then single members on average. If the number of married members is understated, and the number of single members is overstated, then the scheme's liabilities will be understated, because the number of expected pension payments will have been underestimated.

In 2015 a survey was issued to pensioners asking for their marital status. A significant number responded, and this data was recorded to increase the accuracy of future valuations. Where we have data for a particular pensioner, our standard approach is to use it in the valuation. However, we do not have information on the marital status of all pensioners or for any deferred members. Where we do not know the marital status we make an assumption about the proportion of these members that are married. We calculate this assumption from the data that we collected from the survey. If 70% of the survey respondents were married then we will assume that 70% of those for whom we do not know the marital status are married.

Unfortunately an error in the valuation software meant that some pensioners who did not respond to the survey were classified as single. This has two key implications:

1. For the members who were wrongly classified as single, the calculated value of their benefits was too low. This is because some of these members will be

married and the liability associated with married members is higher than the corresponding liability for single members due to the additional spouse's benefit payable.

2. For members with an unknown marital status we made an assumption, based on the survey results, of the proportion of those members who are married. This assumption – and therefore the liability in respect of these members – was too low. This is because there were too many people classified as single in our calculation for the assumption, and so the ratio of married to single members, was too low.

This error was also present in the 2015 Valuation, however, in this paper we have concentrated on the 2018 impact only. This error has now been corrected, and the results of the valuation have been recalculated.

## 3    Updated valuation results

Before the correction of the error the proportion of members without a known marital status who were assumed to leave a spouse on their death was 67%. Following the correction, this assumption is now 80%. The table below shows the corrected valuation results.

| $'million | 31 October 2018 Corrected | 31 October 2018 As shown in valuation report | 31 October 2015 |
|---|---|---|---|
| Deferred pensioners | 570 | 549 | 503 |
| Pensioners in payment | 626 | 603 | 516 |
| Total liability | 1,196 | 1,152 | 1,019 |
| | | | |
| Assets | 916 | 916 | 831 |
| | | | |
| Surplus / (Deficit) | (280) | (236) | (188) |
| Funding level | 77% | 80% | 82% |

The correction has increased the deficit by $44 million and reduced the funding level by 3%. As a result of the increase in deficit, higher contributions will be required by the sponsoring employer to ensure the deficit is paid off within ten years. We calculate that the new contributions will need to be $34 million per annum. This is an increase in annual contributions of $5 million compared to the figures quoted previously.

## 4    Accuracy of the Valuation

We would like to apologise that this error went unspotted for so long, and to reassure the Trustees of the accuracy of the valuation results that have now been presented. Following the discovery of the error we have checked the calculations thoroughly, and calculated the results again by an independent method. We have also reviewed

our checking procedures to ensure that mistakes of this nature will be addressed before the results are issued. If you have any further questions we would be happy to discuss them in the trustee meeting.

## 5   Summary

An error has been discovered in the valuation of the Dunforth Pension Scheme. The proportion of members who are expected to have a surviving spouse entitled to spouses' benefits was understated, and therefore the liabilities were understated. The deficit as at 31 March 2018 was recalculated at $280 million. To eliminate the deficit over a period of ten years, the annual contributions have now risen to $34 million.

Signed
Chris Actuary

Question 2

a) I took the following steps to ensure that the paper struck the correct tone:

- The most important thing was to be very transparent that there was an error in the results and that this has now been corrected.

- A clear description of the error was included to show that we were not trying to hide anything from the trustees

- I made it clear from the title of the paper that there was a correction needed to the valuation results to be as upfront as possible about the issue.

- I did not make excuses for the error, but presented it in dispassionate language

- I stated up front that the correction of the error has led to an increase in the liabilities because this is a key message and it is very important that the trustees understand the impact. I also clearly stated that the contributions needed to remove the deficit will need to increase.

- I outlined the differences to the original figures presented and the updated ones clearly so that the magnitude of the error was clear.

- I included a section on the accuracy of the valuation to try to start to build trust in the updated figures. The trustees are likely to worry that there are other errors in the figures presented, and so I described briefly the checks that have been performed to ensure that the figures are accurate.

- I apologised for the error that has occurred. However, I did not do this in the opening paragraph because I wanted the paper to concentrate on making the issue transparent, and not seem like we were just writing it to cover ourselves.

- I stated that we would be happy to address any concerns that the trustees had at the next meeting.

b) Algorithm – while this is a fairly commonly used term, any trustees who are not very computer literate may be thrown by the use of this word. It may conjure images of complicated computer programming and make the trustees feel that we are not being transparent about the source of the error.

Mapping – this is a term very familiar with actuarial students for assigning a code to a particular data value, but may not be clear to a trustee. While it is useful shorthand for the actuarial student who outlined the error to Ruth, it was much clearer to explain the impact of the error to the trustees and avoid using language like this altogether.

c) I did not use any charts in the paper because this would overcomplicate the presentation of the results, and a chart of the valuation results would not give accurate figures at first glance. Instead I presented the updated valuation results in a table which is of the same format as used in the initial presentation of the valuation results. This helps to make the figures comparable to the trustees. If a chart had been used to present the results then this may not have seemed comparable to the information that the trustees already had, and so it may have seemed that we were trying to disguise the magnitude of the error.