Supplementary analysis of consultation responses using a Condorcet ranking approach

At the close of the consultation, UCU JNC representatives requested that the USS Board produce an additional analysis of question 5 of the consultation, using a *Condorcet* method to rank the preferences given by members. This appendix to the consultation document provides that additional analysis.

What is the Condorcet method and why is it used?

The Condorcet method selects a winner of a ballot where voters have been asked to rank 3 or more options. In its standard form, it uses the rankings provided by each voter to compare all options in a series of 1 v 1 contests.

The *Condorcet winner* is the option that beats all of the alternatives in these 1 v 1 contests. In most cases there will be a single Condorcet winner, and a clear ranking of the other options.

Simplified Example

People are voting on where to build a new parliament, and the choices are London, Birmingham or Manchester. Assuming all voters in each region rank the options in the same way, the ranked votes could look something like this:

Table 1: Condorcet Example

Options/Region	South voters (22)	Midlands voters (12)	North voters (16)
London	1	2	3
Birmingham	2	3	2
Manchester	3	1	1

London has received the most first preferences – 22 - and would win a first-past-the-post election.

However, the Condorcet method would compare London to Birmingham, London to Manchester, and Birmingham to Manchester and conclude

London (22) loses to **Birmingham** (28)
London (22) loses to **Manchester** (28)
Birmingham (34) beats Manchester (16).

As Birmingham wins all its contests, it would be the Condorcet winner. London would be ranked last, losing both its contests.

Application to USS consultation

Question 5 of the consultation asked members to rank their preferences for four potential changes:

- **(A)** Reduction in the salary threshold used to calculate defined benefits (from £59,883.65)
- **(B)** Reduction in the future accrual rate used to calculate defined benefits (from 1/75ths)
- **(C)** Introduction of a 2.5% cap on increases to pensions built up from 1 April 2022
- **(D)** Contribution increases (from a total of 31.2% of salary; 9.8% of salary paid by members and 21.4% of salary paid by employers)

It also gave them the opportunity to suggest their own benefit adjustment (Option E). For Condorcet analysis we also have to exclude all these member generated options under Option E, as other members don't have the opportunity to rank them.

Whilst the question was not designed as a vote it is possible to produce a Condorcet ranking from member responses.

Step by step we have:

1) Excluded entirely those responses where no options were ranked, or only option E was ranked.

2) Transposed text into rankings including providing a 'negative' ranking where members have expressed negative preferences instead of positive.
3) Where there are multiple unranked options, each is ranked equal last (or first if negative)
4) For each individual contest, where rankings are equal last or equal first the data is ignored. There are therefore different numbers of contests between each option.

Based on a maximum of 3,270 responses where at least one contest was possible, the results show that, of the four options presented, *increasing contributions* (option D) is the Condorcet winner. It defeated all the other options, with Option A winning against B and C, and Option B winning against Option C only. Option C loses all its contests. The table shows the net number of members preferring a given option to each alternative.

Table 2: Condorcet Analysis of USS consultation Q5.

	A	**B**	**C**	**D**
Reducing threshold A vs	n/a	+1322	+1378	-1175
Reducing accrual B vs	-1322	n/a	+824	-1575
Limiting Indexation C vs	-1378	-824	n/a	-1518
Increasing contributions D vs	+1175	+1575	+1518	n/a

This ranking shows some similarities to the results from the other analyses presented on page 21 of the consultation report. Option D has the highest number of first preferences (52%) and the Condorcet ranking of options matches that when looking at the 'net rating' of most versus least preferred. However, focussing on the least preferred option alone, Option A is the least unpopular (11%) followed by Option B (15%) and then Option D (17%).

Issues to Consider

Generally, the Condorcet method is useful to see whether member preferences are more complex than might be suggested by simply looking at the most and least favoured options overall. Most of the caveats to this analysis apply equally to all attempts to measure member responses to the consultation as a vote, in a purely quantitative, determinative way.

(i) The options provided are not mutually exclusive. The consultation asks what combination of options members might prefer, but it limits the appropriateness of identifying a single winner.

(ii) Further to this, the options presented to the member are not equivalent in resolving the valuation – to the extent that a member is being asked choose between them they would need to quantify the impacts in terms of contribution and benefit changes – eg pay x% more and keep the same benefits, versus reducing the salary threshold to £Y and pay z% more etc.

(iii) Option D is uniquely different, as (if split in line with the cost-sharing rules) it doesn't purely affect members, but employers too. Methods like Condorcet are usually applied to robust votes and wouldn't include an obviously biased option which could have wider ramifications on the sector not covered in the consultation document itself.

The data has significant limitations. The amount of data is small - around 2/3rds of consultation responses (3270) can be used for the Condorcet analysis members preferences for any options other than the 4 (19% suggested alternatives) can only be ignored. More broadly than this, these responses represent just over 1.5% of scheme members. Previous member research and other feedback received through the consultation has indicated members may struggle with previously planned increases to 11%, even before the further subsequent rises set out in the consultation document.