Surrey Pension Fund

Cashflow projections

Steven Scott

Steven Scott FFA

02 December 2022
For and on behalf of Hymans Robertson LLP

Use the menu bar above to navigate to each section.

Contents and version history

In this report:

Version	Date issued	Revisions
1	21 October 2022	
2	7 November 2022	Cashflows calibrated to allow for recent benefits payments Include a scenario based on current inflation expectations from the ESS Include a scenario allowing for prepayments
3	2 December 2022	To include alternate inflation scenarios (recession and stagflation)

Executive summary

This paper is addressed to Surrey County Council as the Administering Authority to the Surrey Pension Fund ("the Fund"). The paper considers different future projections of the Fund's cashflows under our central projection for CPI. The analysis and projections will help the Fund better understand its current and potential future cashflow position and is part of its management of risk in this area.

From the analysis and projections set out in this paper, the following conclusions can be drawn:

- In the absence of investment income, and ignoring the effect of transfers, the Fund is likely to be cashflow negative by 2029. This allows for an expected pension increase of 10.1% in April 2023 and inflation thereafter is in line with the median ESS CPI assumption

Further analysis may be required to identify the effect of the following on the net cashflow position:

- Reductions to active membership, or increased take up of the 50:50 option.
- Changes in employer contribution rates following the 2022 valuation

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Background and inputs

What is cashflow negativity and does it matter?

Every month, the Fund receives income via contributions and pays out benefits to members. Historically, the benefits have been paid out of the contribution income with any excess being invested. This is how the Fund's asset value has built up over time (along with investment returns).

Over time a pension fund will mature and the level of benefit payments will start to exceed contribution income. At this point, a pension fund is considered "cashflow negative".

Being cashflow negative itself is not unexpected for a pension fund; the assets that have been accrued are for the purpose of paying benefits. However, if the transition to being cashflow negative is not monitored and managed effectively, it can pose a liquidity risk and the Fund may become a forced seller of assets.

At the 2022 valuation, the focus on cashflow is greater given the likely significant increase in benefits at April 2023 due to rising inflation.

Knowing when the Fund is likely to become cash flow negative is helpful as it can have implications for both the funding and investment strategy:

- Having cash available to meet the Fund's primary objective of paying member benefits
- The ability to maintain stable contributions over time and withstand volatility from investment markets
- Understanding the level of cash balance that needs to be retained while avoiding a drag on investment returns
- Avoiding the risk of being a forced seller of assets at inopportune times
- Making the most efficient use of income generated by Fund assets
- Implementing optimum rebalancing and cash management policies

This paper explores the Fund's cashflow position to inform the approach to cashflow management

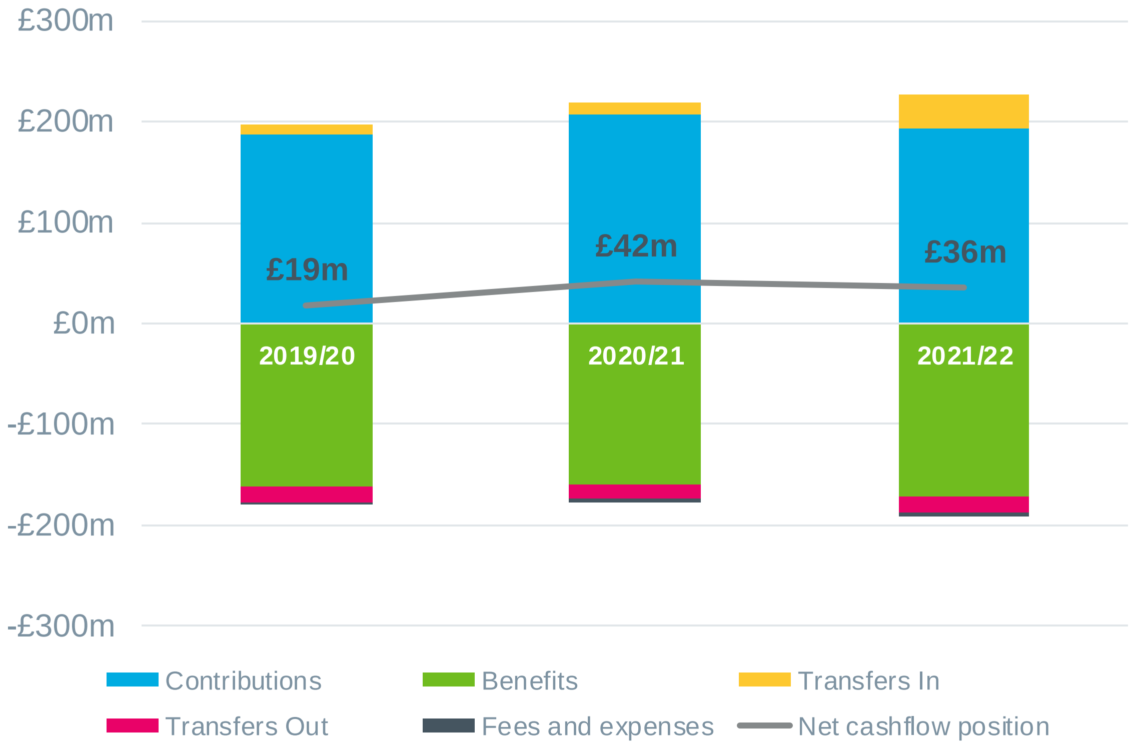
Recent cashflow position

Using the annual report and accounts for 2019/20, 2020/21 and 2021/22, we have analysed the recent cashflow position for the Fund.

The chart shows the absolute value of contribution income and benefit outgo (bars) and the net cashflow position (line and figures provided).

During this period, the Fund remained cashflow positive, ie income exceed outgo. The following observations can be made from this analysis:

- Transfers in and out of the fund can significantly affect the cashflow position. In 2021/22, there were c. £33m of transfers into the Fund which helped increase the net cashflow position.
- Prepayments can distort the net cashflow position over short periods. Contribution income (blue bar) spiked in 2020/21 due to prepayments made by employers. Contributions in 21/22 (and 22/23) will be lower as a result.
- Benefit payments (green bars) are expected to rise each year due to new pensions coming into payment and benefit increases. This can be distorted by the payment of retirement lump sums (e.g. retirement lump sums were highest in 2019/20 which lead to only a small increase in benefit outgo the next year (2020/21).



The cashflow position has remained positive in recent years.

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What are the cashflows of the Fund

In this paper we consider the main cashflows in and out of the Fund over the next 20 years.

The Fund's primary sources of income are:

- Contributions from employers in the Fund
- Contributions from employee members in the Fund
- Income streams generated from the Fund's investments (NB these are not included in the cashflow projections we have provided)

Contributions paid are estimated based on:

- The 2022 valuation payroll
- The 2022/23 contribution rates currently in payment (which average 6.7% for employees and 22.1% of pay for employers)
- The aggregate of all proposed employer contribution rates payable from 1 April 2023 to 31 March 2026. Thereafter the contribution rate has been assumed to remain stable up to year 20.

The Fund's outflows are the benefits payable to the members and their dependants. These include:

- Retirement lump sums paid to active and deferred members on retirement
- Retirement pensions paid to pensioners and their dependents
- Death in service benefits and ill health benefits.

Transfers in and out of the Fund by individual members are difficult to estimate accurately and are expected to balance out over time.

The projected cashflows are sensitive to a number of assumptions. The most significant are:

- Level of future benefit increases (all LGPS benefits are index-linked and increase in line with Consumer Price Index (CPI) inflation)
- Level of current and future payroll (determines the amount of contributions received)

Data, assumptions and methodology

Membership data

We have used the membership data provided for the 2022 valuation of the Fund.

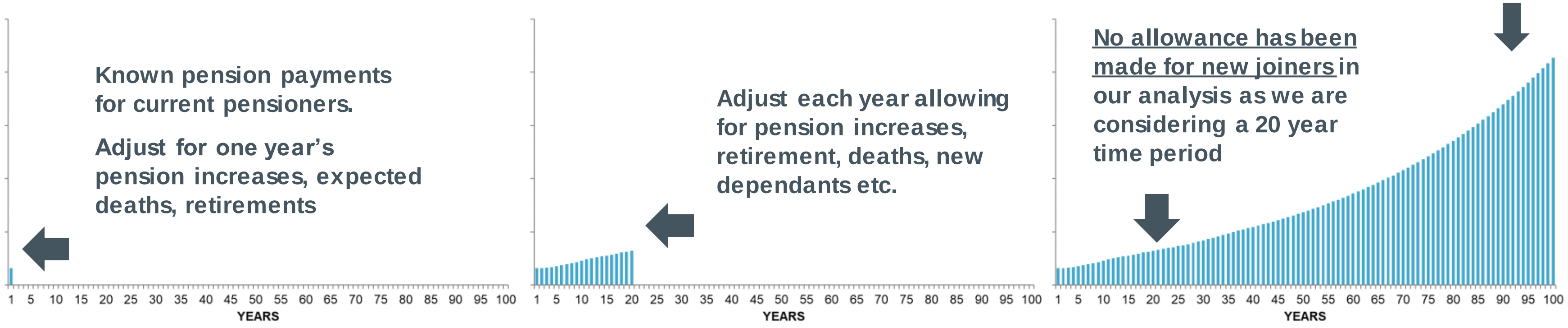
Assumptions

The demographic and financial assumptions are in line with those adopted for the 2022 valuation of the Fund unless stated otherwise.

Further information on the membership data and assumptions is detailed in the 2022 valuation initial results report dated 14 October 2022.

Allowance for benefit outgo in respect of benefits yet to be accrued by current active members is included in the projection, however, given the relative short timeframe considered, no allowance has been made for benefit outgo in respect of accrual by members yet to join the scheme.

Methodology: how we project benefit payments



Methodology: projecting contribution income

- Payroll is assumed to stay constant in real terms, ie it increases in line with the valuation assumption of 3.7% pa
- Employer contributions are assumed to be in line with the pattern set out on page 7
- Employee contributions are based on the weighted average for the Fund at the 2022 valuation (c. 6.7% of pay).

Projected future CPI - Baseline

Page 253

Future CPI inflation

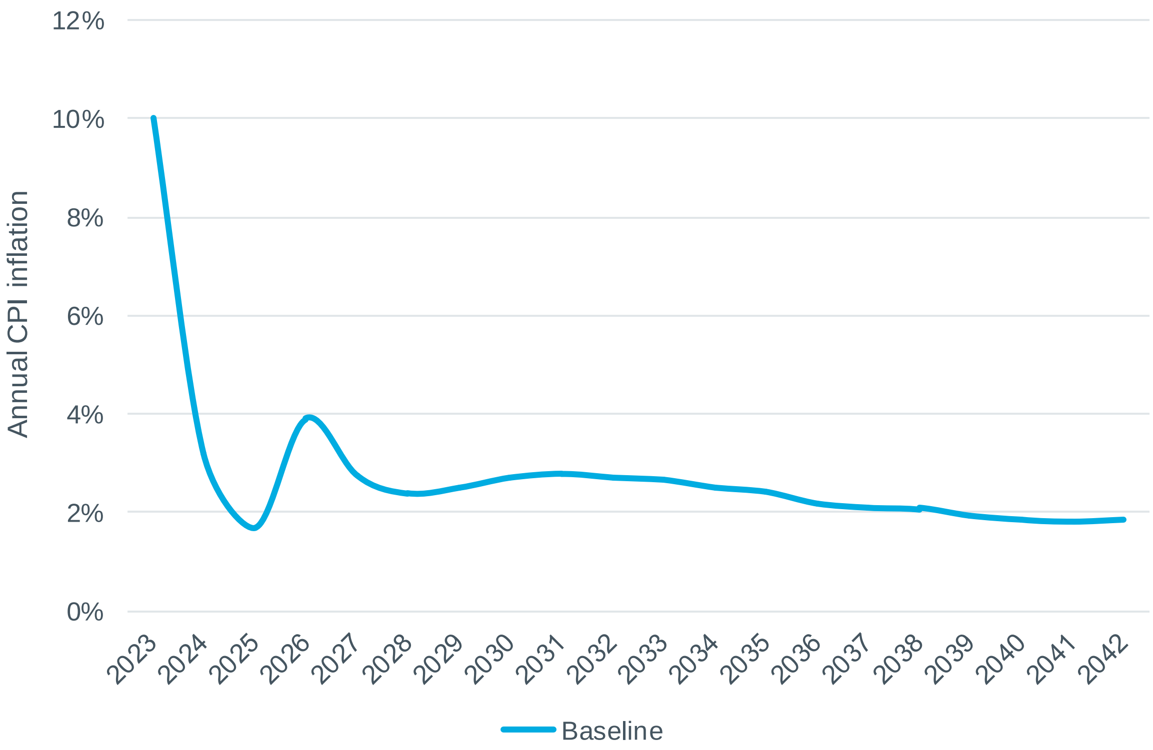
The 2022 valuation CPI assumption, set for the purpose of measuring the funding level as at 31 March 2022 is 2.7% per annum.

This is set as an average of median future inflation expectations from the Hymans Robertson economic scenario service (ESS). The ESS model projection of median CPI expectations recognises the market's view of CPI inflation in the short term and, specifically, the expectation of a short term spike in CPI.

For the purpose of the cashflow projection, we have projected benefit outflows allowing for the median projection of CPI from the ESS model as at 31 March 2022. In addition to this, the 2023 pension increase order is expected to be 10.1% (CPI over the 12 months to September 2022), which is higher than the ESS year one CPI projection as at 31 March 2022. The CPI projection has been updated to allow for a year one CPI of 10.1%.

This CPI projection is illustrated in the chart shown.

The effect of projecting the cashflows using this adjusted CPI assumption (relative to the cashflows projection shown in the initial valuation report) is shown in the next page.



Effect of applying the time dependent CPI assumption

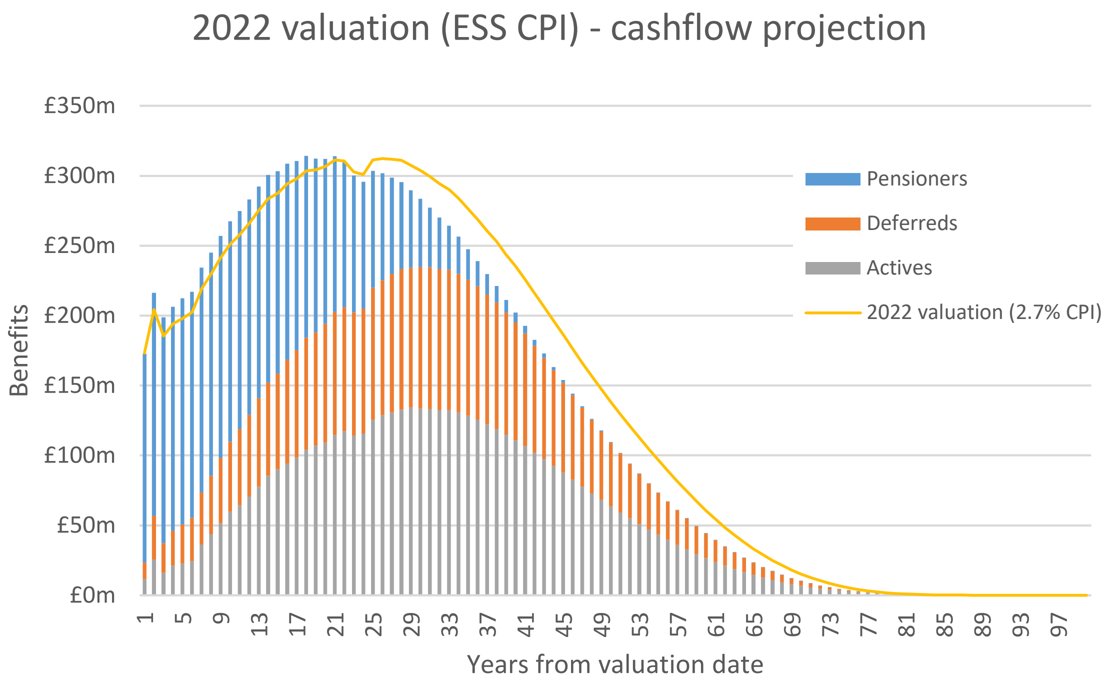
Page 13 of the 2022 valuation initial results report shows the projection of past service benefit outflows from 31 March 2022 valuation (based on a CPI assumption of 2.7% pa).

The adjustments made to CPI (as described in the previous page) are designed to generate a benefit projection that better reflects the expectation of higher CPI in the short term. This approach is used when we calculate contribution rates at the valuation (a flat assumption is appropriate for deriving the reported funding position).

The chart on the right hand side shows the revised benefit projection based on the adjusted projection of CPI. The yellow line shows the projection of total past service benefit outgo based on the 2022 valuation assumptions (from the initial results report). The effect of applying the adjusted CPI assumption is that:

- Benefit outflow over the next 20 years is higher than the valuation projection, however,
- In the longer term, benefits projected using the median CPI projection from the ESS model are lower than those projected based on the 2022 valuation CPI assumption (2.7% per annum). This is because 2.7% is an average of future median ESS CPI (and higher CPI in the short term means lower CPI in the long term)

It should be noted that the present value of future benefits (i.e. the liabilities) under the median projection of CPI are broadly equal to the value of the liabilities at the 2022 valuation (i.e. based on a flat CPI assumption of 2.7% pa).



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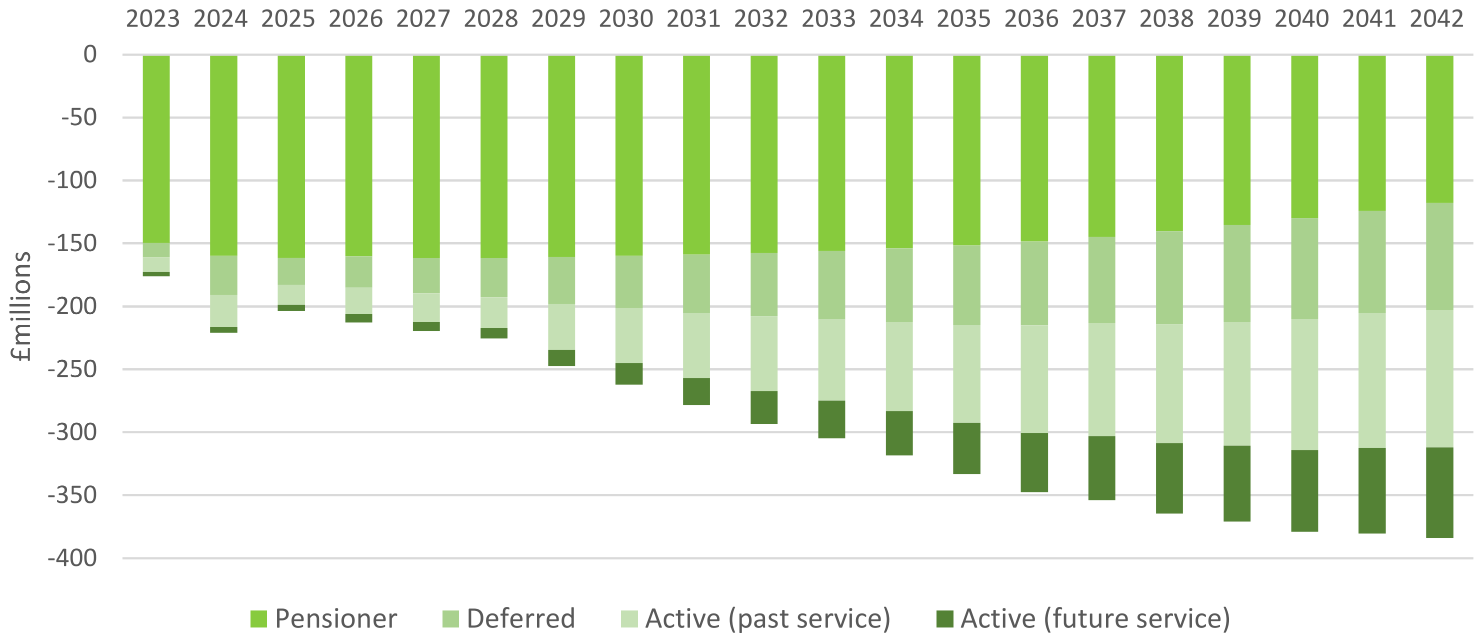
Projections - baseline

Projected benefit outflows



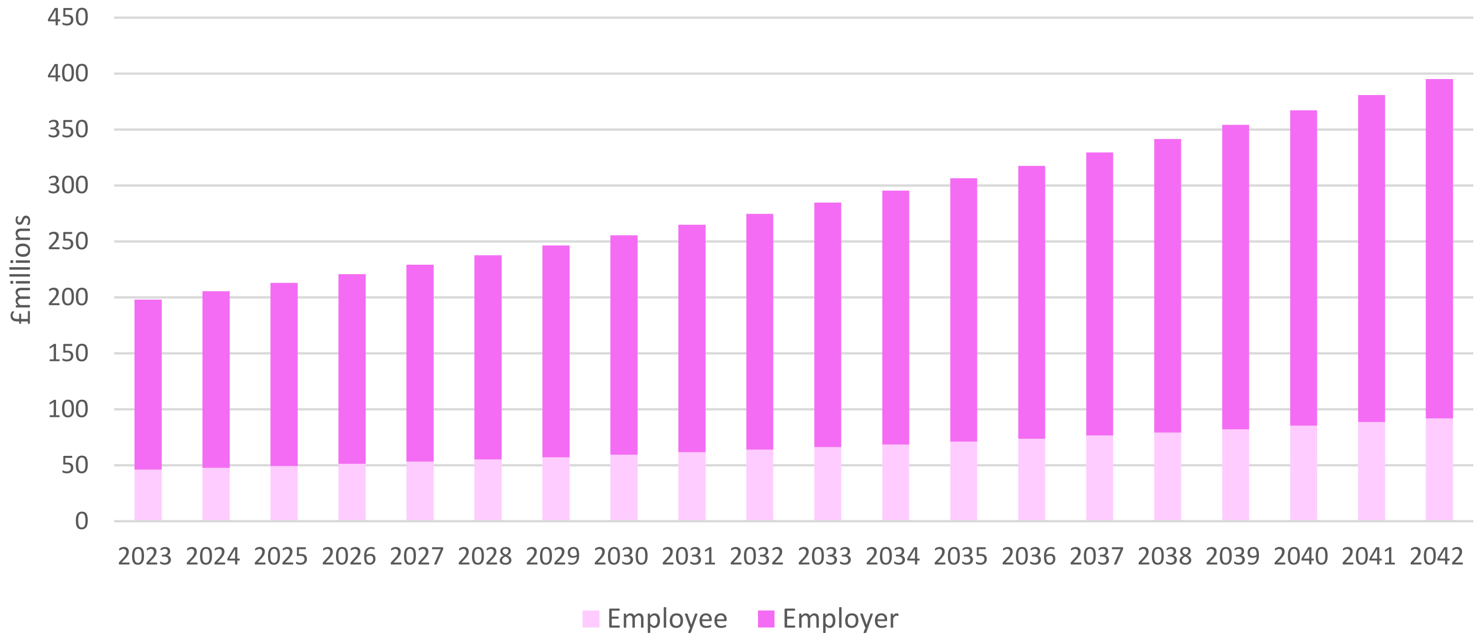
Notes

The stepped increase in benefit outflow in 2024 (year 2) is as a consequence of the model assumption that all active members already past their assumed retirement age will retire +1 year after the valuation date. In reality these outflows would be spread across a longer period.

The years along the x-axis refer to the year-end i.e. 2023 means the 2022/23 financial year (from 1 April 2022 to 31 March 2023).

The Fund currently pays around £165m in benefit payments. This is expected to double by 2035.

Projected contribution income



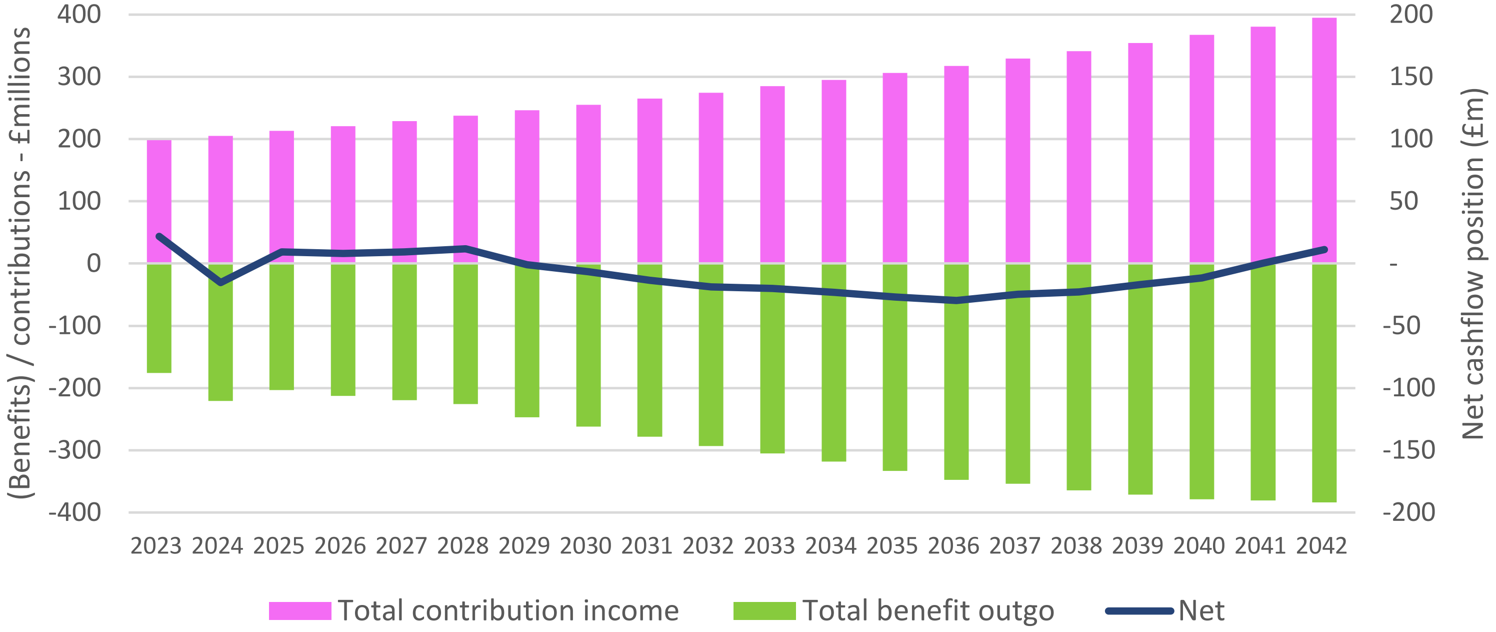
Notes
New entrants are implicitly allowed for in the income cashflow by assuming the payroll grows with inflation.

The years along the x-axis refer to the year-end i.e. 2023 means the 2022/23 financial year (from 1 April 2022 to 31 March 2023).

No allowance has been made in the contribution projection for any prepayment of employer contributions (in the 2022/23 year and in the projection from 1 April 2023).

Payroll is assumed to increase at 3.4% pa (in line with the formal valuation)

Projected net cashflow



Notes

Contributions are projected to exceed benefit outgo until around 2028/29.

The projection shows that benefit outgo may exceed contribution income in 2023/24 if all active members at the 2022 valuation who are over pension age choose to retire in that year. This is an assumption underlying the modelling (see page 12). In reality these retirements are likely to be spread over the next 2-3 years which would reduce the spike and the Fund is unlikely to be cashflow negative in 2023/24.

Benefit outgo is projected to rise significantly in the 2023/34 year (due to an expectation of a pension increase order of 10.1%).

The net position in projected to become positive again around 2041, however, note that the longer the projection period, the less reliable the cashflow projection becomes.

In the absence of investment income, and ignoring of transfers, benefit outflow is estimated to exceed contribution income by 2029.

Assets are assumed to increase at 4.3% pa

Projections provided - baseline

An excel spreadsheet containing the **baseline** cashflows projection over the next 20 years has been provided alongside this report.

A projection period of 20 years have been set as the projection of benefits and outflows beyond this time period can be unreliable.

The projected contribution income has been split between each of the major employers (i.e. those employers with stabilised contribution rates) and all ‘other’ employers. This will allow adjustments to be made to allow for prepayments and possible changes to the contributions payable by these major employers following the 2022 valuation. For the avoidance of doubt, the projection of contributions is based on the major employers continuing to pay the current effective total rate, as defined in our report “2022 valuation strategy review for long term secure employers” dated 23 August 2022. Following initial discussions with the major employers, I understand that contribution rates may fall from 1 April 2023. If so, this would necessitate a revision to the cashflow projections provided.

Included in the excel file are three tabs:

- **Surrey_WF_Outflows** – a projection of expected benefit outgo over the next 20 years based on the method and assumptions set out in this report and split between actives (past and future services), deferreds and pensioners (status as at 31 March 2022).
- **Surrey_WF_Inflows** – a projection of expected contribution income over the next 20 years based on the method and assumptions set out in this report and split between employer (major employers, and others), and employee contributions
- **Surrey_Net position** – the projection of total income and outgo over the next 20 years and the net position.

Year 1 in the projections is the 2022/23 year (i.e. from 1 April 2022 to 31 March 2023).

Neither myself, nor Hymns Robertson, accept any responsibility for any adjustments applied to the cashflow projections we have provided. I would expect the Fund to request a revised cashflow projection from me if any adjustments are required.

Projections - adjustments

Adjustments

Following initial discussions with the Fund based on version 1 of this report, adjustments to the projections were requested.

- **Calibrate to allow for recent benefits payments.** The Fund advised that benefit outgo in 2022/23 has been slightly higher than that estimated over 2022/23 in version 1 of the analysis. This is likely to be due to our assumption that all members over retirement age at the 2022 valuation date are assumed to retire exactly one year after the valuation date (which explains the spike in benefit outgo in year 2).

  The benefit projection will be adjusted to spread excess outgo in year 2 across the first two years (split 70% of the excess in year 1 and 30% of the excess in year 2).

- **CPI expectations.** Current short term CPI expectations are slightly higher than that expected as at 31 March 2022.

  The benefit projection will be updated to allow for current CPI expectations

- **Prepayments.** Some employers may wish to prepay monetary contributions due over the 2023/26 period.

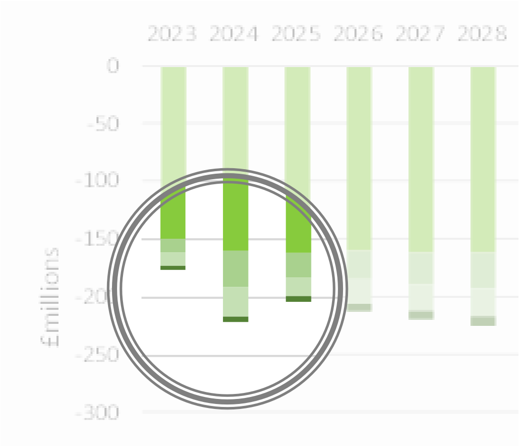
  Show the effect of prepayments at a similar level to those made following the 2019 valuation.

Page 262

Adjusting short term cashflows

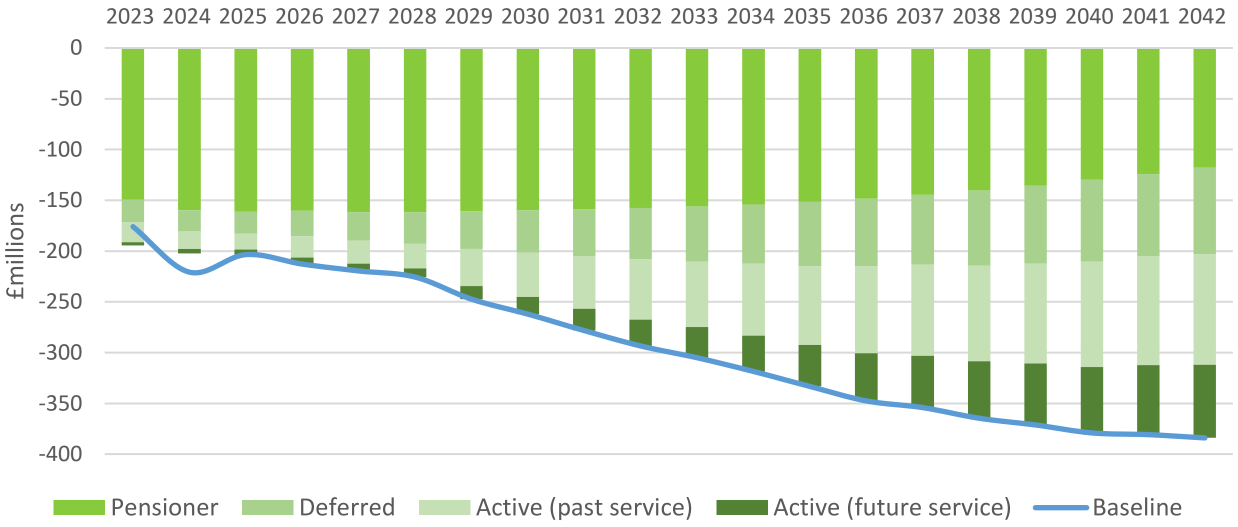
Stepped increase in year 2

The stepped increase in benefit outflow in 2024 (year 2) is as a consequence of the model assumption that all active members already past their assumed retirement age will retire +1 year after the valuation date. In reality these outflows may be spread.



Smooth experience

The excess benefit outflow in year 2 has been estimated and then spread over years 1 and 2. 70% of the excess has been added to year 1 benefit outgo and 30% of the excess has been added to the adjusted (removal of the estimated excess) year 2 benefit outgo. The resulting benefit projection is shown below (with the blue line reflecting the baseline projection shown on page 12).



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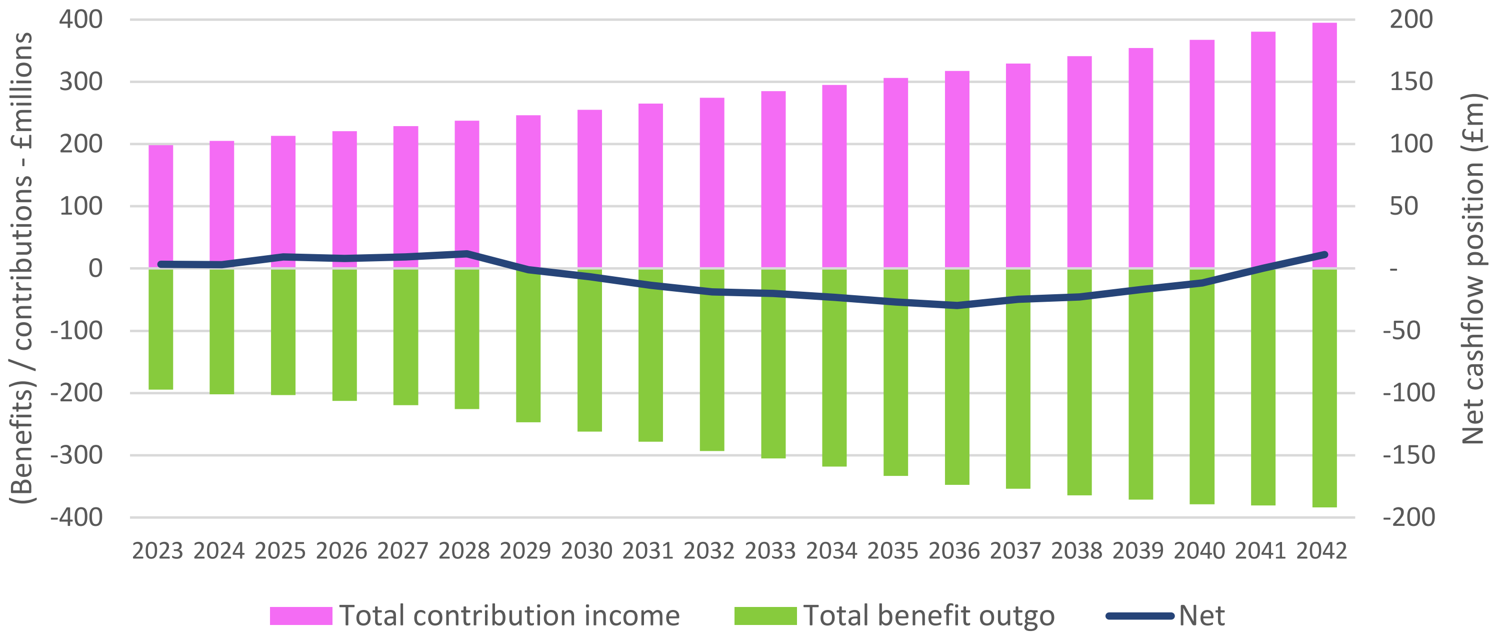
Projected net cashflow (short term benefit smoothing)



Notes

The effect of smoothing the short term benefit outflows in respect of members yet to retire, is shown in the chart.

Contributions are projected to exceed benefit outgo until around 2028/29 (as per the baseline on page 14).

The effect of benefit smoothing is that outgo is no longer projected to exceed contribution income in 2023/24, however the Fund is expected to be broadly cashflow neutral over the next two years.

Benefit outgo is projected to rise significantly in the 2023/34 year (due to an expectation of a pension increase order of 10.1%) – this is less evident in this projection due to the assumption that 70% of those over retirement age (as at the 2022 valuation) retire in 2022/23.

Contribution income is estimated to slightly higher than benefit outgo until 2028/29

September CPI expectation as at 30 September 2022

Future CPI inflation

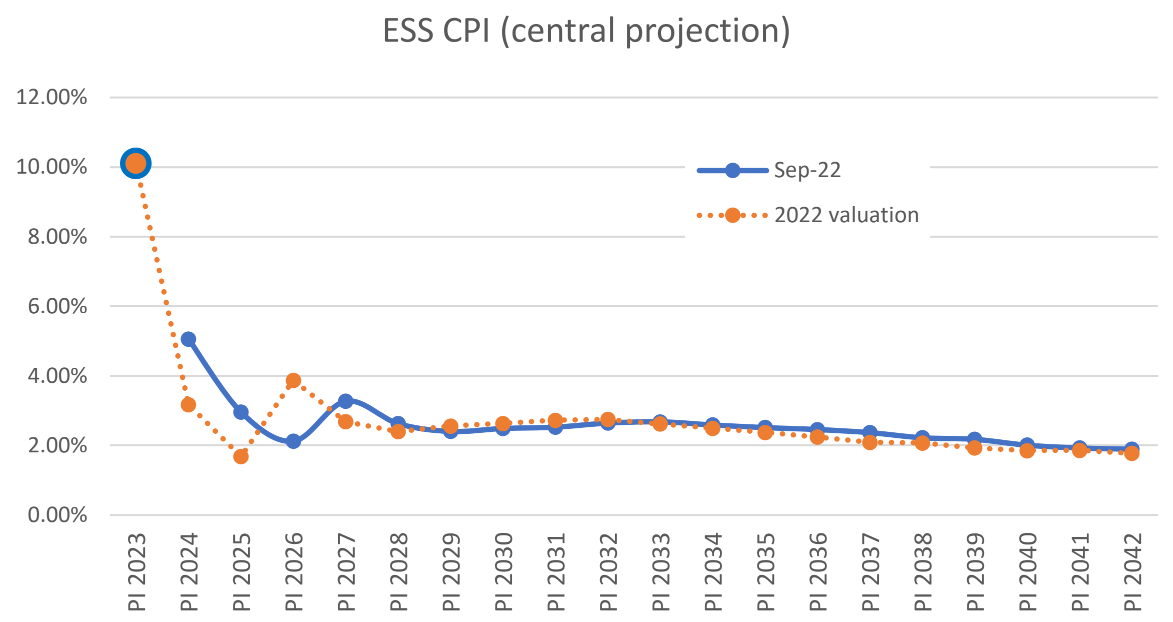
Since 31 March 2022, the change in CPI over the 12 months to September 2022 has been confirmed as 10.1% (and the baseline projection allows for this).

In addition, the market's expectation of short term CPI has increased slightly since the 2022 valuation date. This is shown in the chart (with the orange dotted line reflecting the 2022 valuation assumptions and the blue line reflecting the projection of CPI from the ESS as at 30 September 2022.

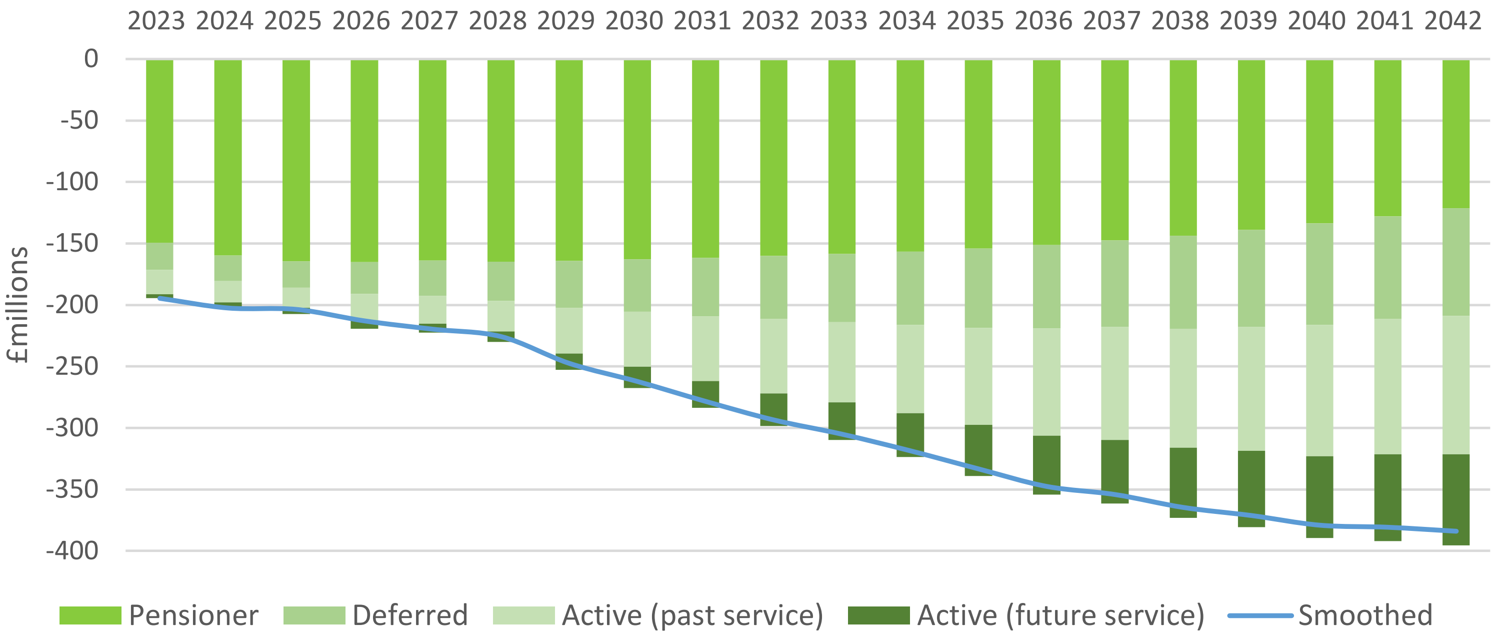
The year 1 CPI assumption as at 30 September 2022 from the ESS model, is equal to the expected change in CPI over the year to September 2023, ie this is our estimate of the 2024 Pension Increase order. As can be seen on the chart this is expected to be c. 5% (as opposed to c. 3% as at the 2022 valuation).

The current expectation of CPI is for this to be between 1% - 2% higher (on a cumulative basis) over the next 10 years.

Users of the report should be aware of the ongoing market volatility in September 2022 when considering this scenario. This volatility may have affected short-term inflation expectations as at 30 September 2022. Subsequent changes in UK Government and Bank of England policy may also affect future short-term inflation expectations.



Projected benefit outflows (smoothed and updated CPI)



Notes

The effect of recognising up to date CPI expectation in the benefit outflows is to increase the future benefit payments (from 2024/25) by around 1% – 2%.

For example, in the 2027/18 year, the CPI adjusted benefit outgo is 1.4% higher than the smoothed baseline projection.

The blue line reflects the smoothed benefit projection (ie baseline adjusted for short term retirements as described in page 17).

The years along the x-axis refer to the year-end i.e. 2023 means the 2022/23 financial year (from 1 April 2022 to 31 March 2023).

Benefit outgo is expected to be c. 1% - 2% higher each year from 2024/25 based on current CPI expectations

Prepayments

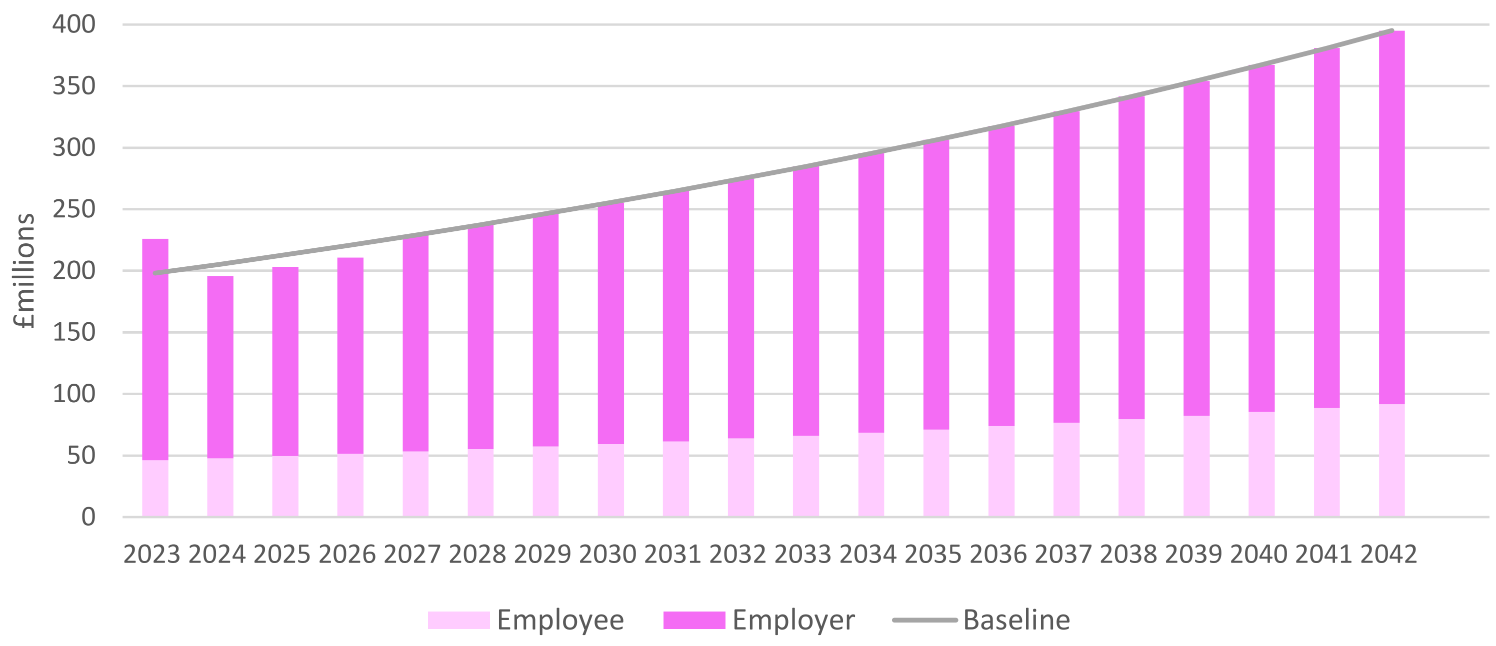
Following completion of the 2022 valuation calculations for the major employers, we have now set the draft contribution rates for all major employers from 1 April 2023 (assuming the total rate will remain fixed for all employers).

Some employers may choose to prepay some element of contributions due over the 2023-26 period.

Following the 2019 valuation some employers did choose to prepay (or partially prepay) monetary contributions certified for the 2020-2023 period. Uncertainty exists in terms of the level of contributions that will be prepaid by employers following the 2022 valuation, but for the purpose of illustrating the effect of this on the emerging net cashflow position, we have **assumed that those employers who have prepaid any element of contribution since the 2019 valuation will choose to prepay all monetary contributions by way of a single (discounted) payment in March 2023. Specifically;**

Employer	Prepayment (2022/23)	Reduction in contributions in 2023/24	Reduction in contributions in 2024/25	Reduction in contributions in 2025/26
Elmbridge BC	£5,839,679	£2,002,000	£2,076,000	£2,154,000
Guildford BC	£7,211,504	£2,472,000	£2,564,000	£2,660,000
Reigate and Banstead BC	£6,232,270	£2,136,000	£2,216,000	£2,299,000
Spelthorne BC	£4,505,293	£1,544,000	£1,602,000	£1,662,000
Tandridge DC	£4,005,848	£1,373,000	£1,424,000	£1,478,000
Total	**£27,794,593**	**£9,527,000**	**£9,882,000**	**£10,253,000**

Projected contribution income (prepayments)



Notes

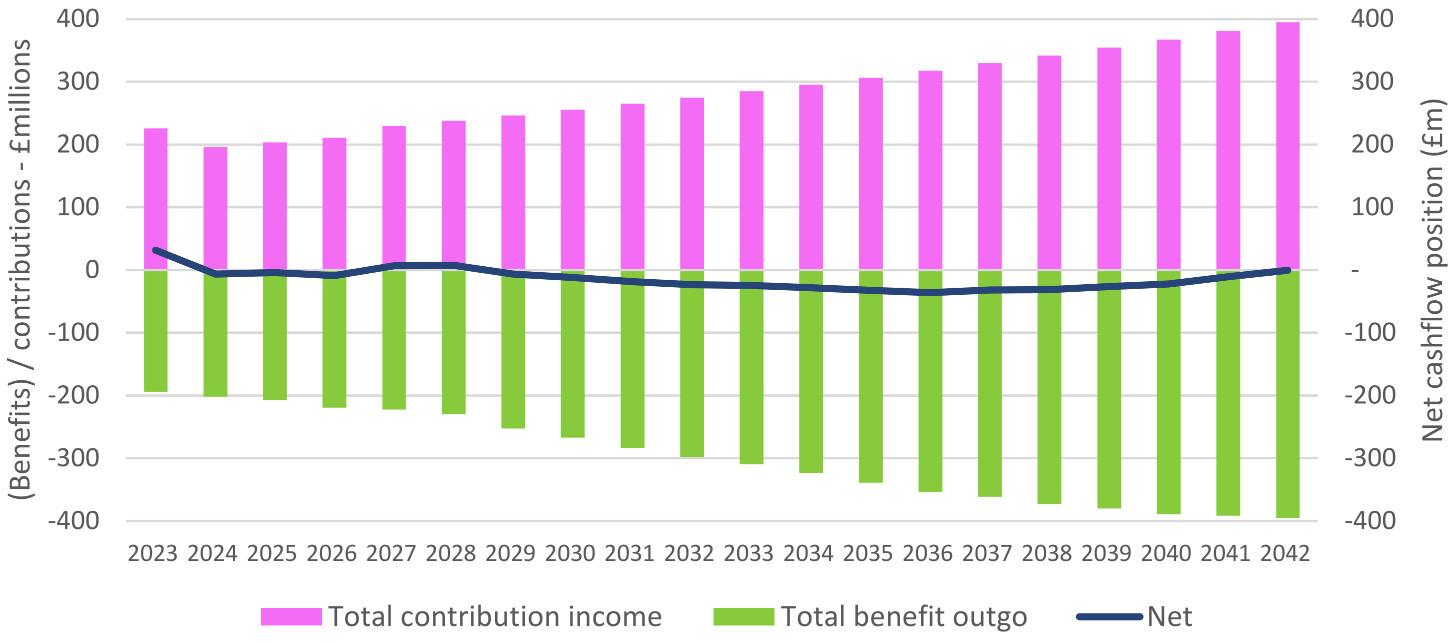
New entrants are implicitly allowed for in the income cashflow by assuming the payroll grows with inflation.

The years along the x-axis refer to the year-end i.e. 2023 means the 2022/23 financial year (from 1 April 2022 to 31 March 2023).

The effect of the assumed prepayments is to advance contributions that were due between 1 April 2023 and 31 March 2026 to be payable in the 2022/.23 year

Payroll is assumed to increase at 3.4% pa (in line with the formal valuation)

Projected net cashflow (all adjustments)



Page 268

Notes

The combined effect of the updated CPI assumptions, smoothing of short-term benefit outgo and the assumed level of prepayments mean that the Fund is expected to be cashflow negative over the 2023 to 2026 period.

Any prepayments made following the 2025 valuation (in 2025/26) would increase contribution income and may be sufficient to ensure the Fund is cashflow positive in this year.

The net cashflow position over the 2026 to 2028 period is expected to be positive, but this assumes no prepayment of contributions in the 2025/26 year,

From the 2028/29 year, the Fund is projected to be cashflow negative.

In this scenario, the Fund may want to review its short-term cash management strategy to ensure sufficient liquidity between 2023 to 2026.

Allowing for prepayments and short term inflation, benefits outflow is estimated to exceed contribution income over 2023-26

Assets are assumed to increase at 4.3% pa

Projections provided – **adjusted** based on additional scenarios

An excel spreadsheet containing the **adjusted** cashflows projection over the next 20 years has been provided alongside this report.

A projection period of 20 years have been set as the projection of benefits and outflows beyond this time period can be unreliable.

Included in the excel file are three tabs:

- **Surrey_WF_Outflows_ADJ** – a projection of expected benefit outgo over the next 20 years based on the method and assumptions set out in this report, adjusted to allow for a smoothing of short term outflows (as per page 18), updated CPI expectations (as per page 21), and split between actives (past and future services), deferreds and pensioners (status as at 31 March 2022).
- **Surrey_WF_Inflows_ADJ** – a projection of expected contribution income over the next 20 years based on the method and assumptions set out in this report, adjusted to allow for assumed prepayments (as per page 23), and split between employer (major employers, and others), and employee contributions
- **Surrey_Net position_ADJ** – the projection of total adjusted income and outgo over the next 20 years and the adjusted net position.

Year 1 in the projections is the 2022/23 year (i.e. from 1 April 2022 to 31 March 2023).

Neither myself, nor Hymns Robertson, accept any responsibility for any adjustments applied to the cashflow projections we have provided. I would expect the Fund to request a revised cashflow projection from me if any adjustments are required.

Projections – Inflation Scenarios

Inflation scenarios

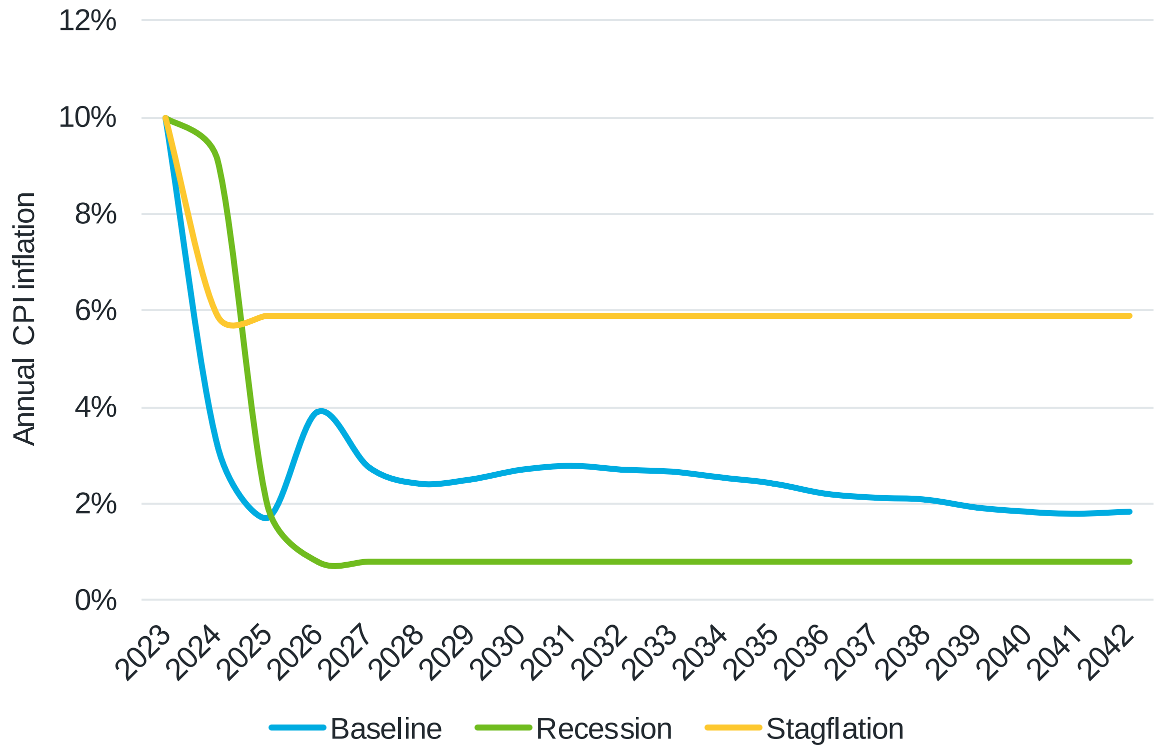
Page 271

Future CPI inflation

Given the sensitivity of future benefit payments to inflation, we have considered an additional 2 scenarios for future inflation. All scenarios assume a 10.1% increase in benefits in April 2023:

- Scenario 1 (the blue line): this **baseline** scenario as described in page 9.
- Scenario 2 (the green line): this represents a **recession** scenario, occurring largely due to excess supply over demand as a result of higher energy and food prices. This results in higher inflation in the next 2-3 years but then lower long-term inflation.
- Scenario 3 (the yellow line): this represents a **stagflation** scenario where inflation remains high due to higher energy and food prices.

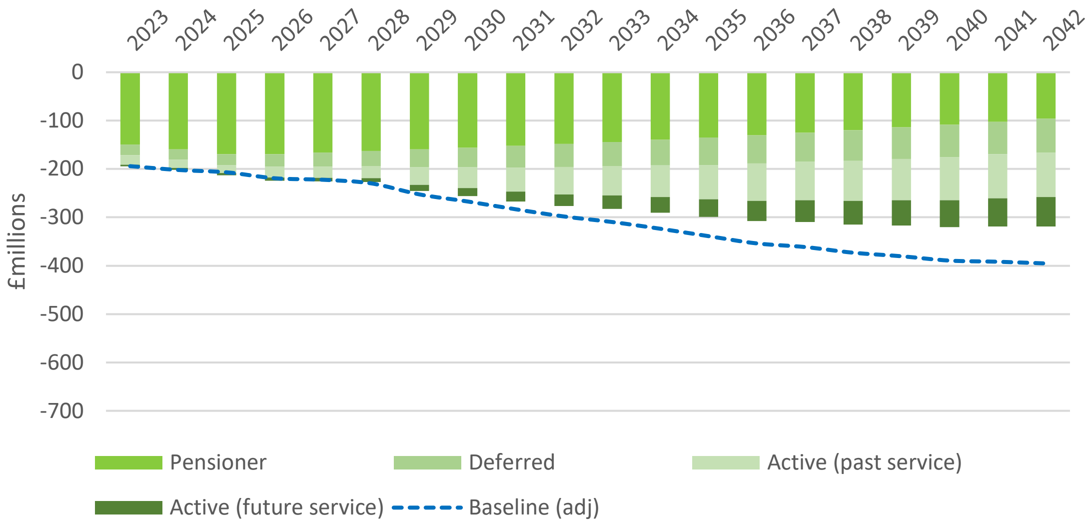
In all scenarios we have kept the payroll assumption constant at 3.7% pa.



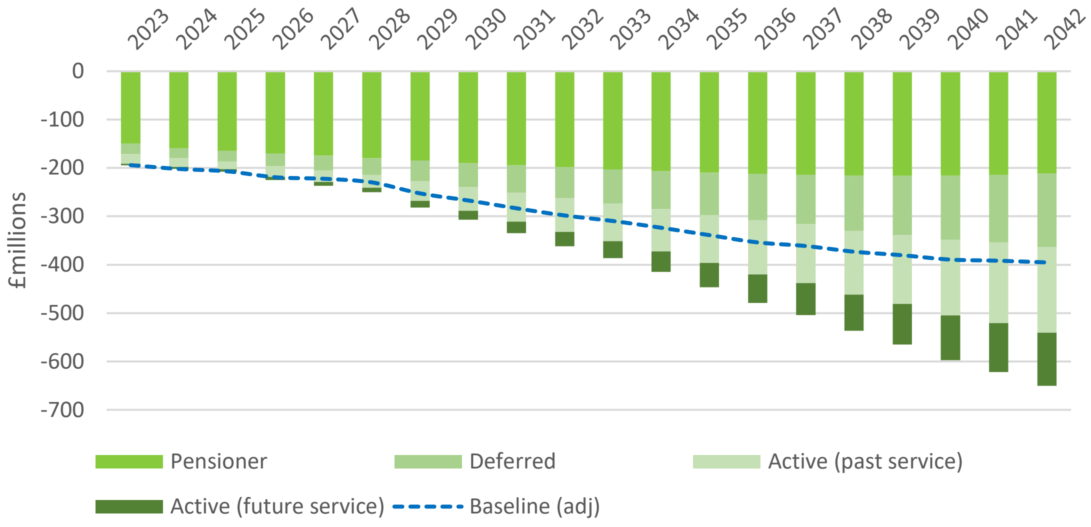
Projected benefit outflows (inflation scenarios)

Page 272

Recession



Stagflation



Scenario analysis helps understand the impact on future benefit payments – difference of £330m by 2042

The baseline scenario shown allows for smoothing and current CPI expectations (as described in the previous section and shown in page 21)

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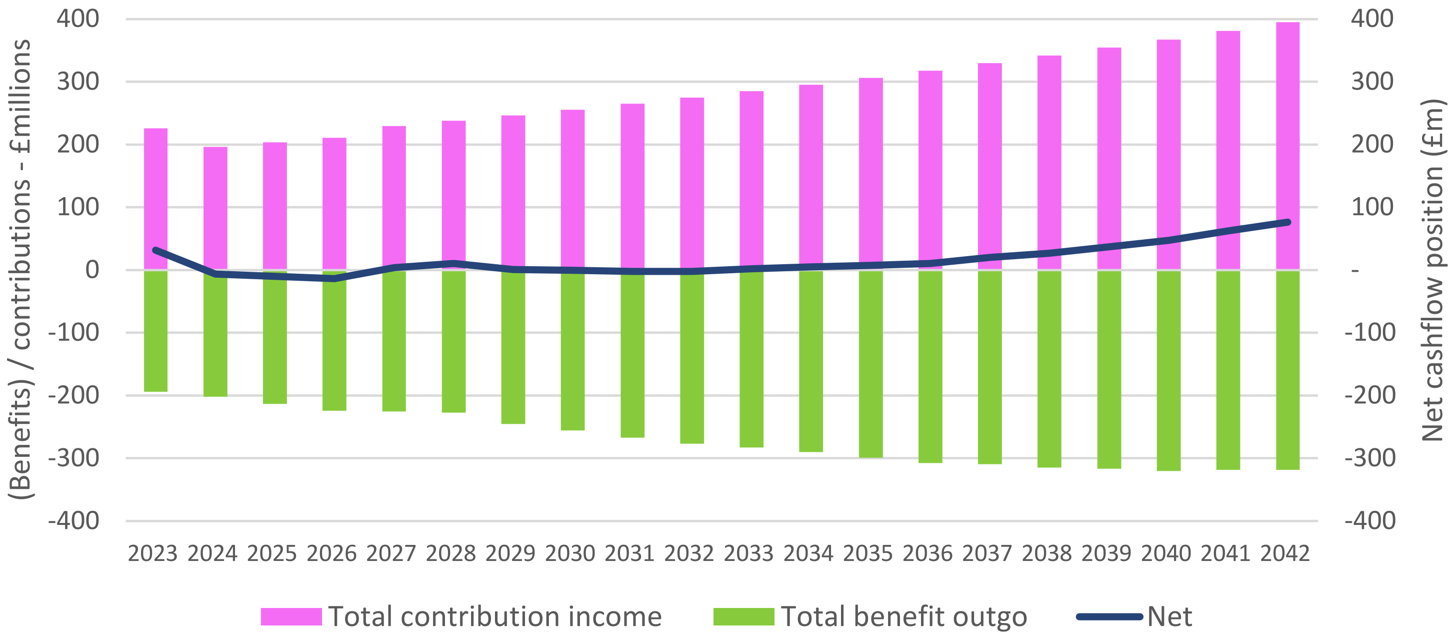
Projected net cashflow (recession)



Notes

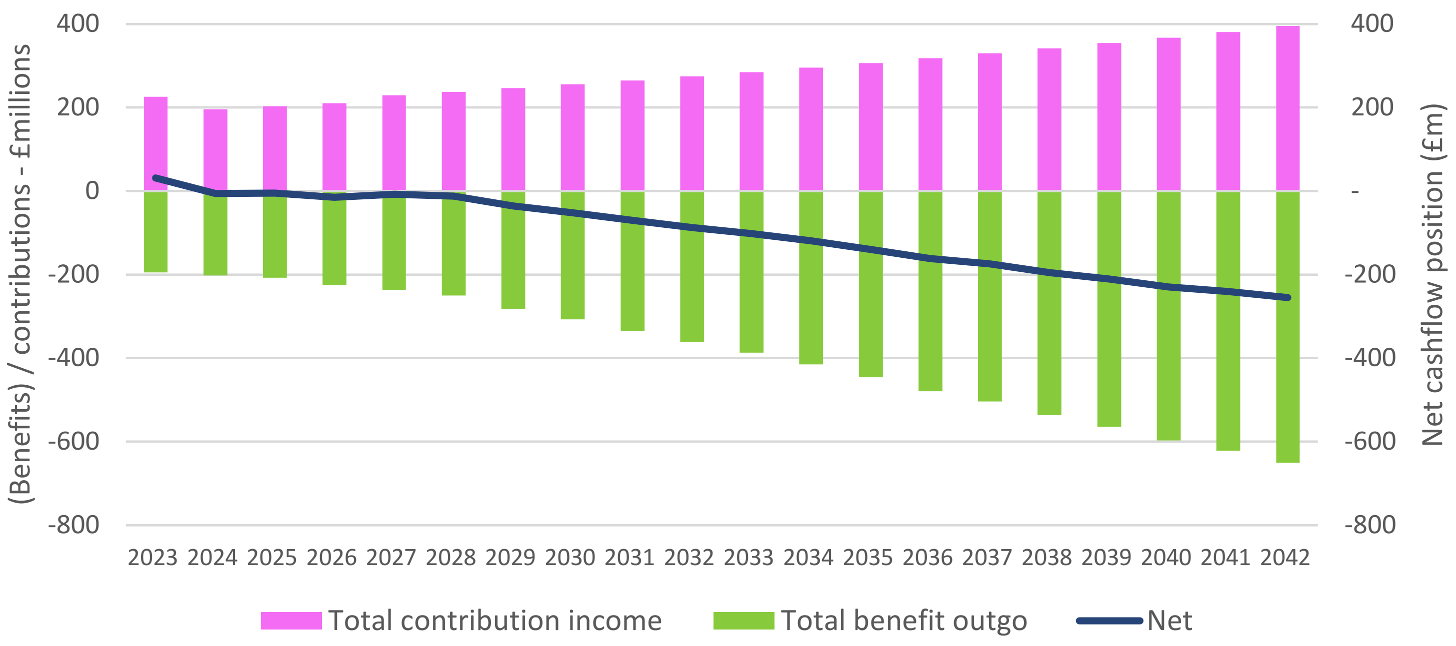
This scenario has higher inflation persisting in the short-term.

If this occurs, then the Fund may experience a slightly higher level of cashflow negativity in the short term, however, the magnitude would be relatively small and may be managed by income from the Fund's assets.

In the longer term, the lower inflation results in lower benefit payments and an improvement in the cashflow position.

A recession scenario increases cashflow challenges in the short term, however the net position may improve in the longer term

Projected net cashflow (stagflation)



Notes

A stagflation scenario would result in a substantial gap opening up (assuming pay increases remain at 3.7% pa) in the longer term.

This would need to be managed by a higher income from the Fund's assets.

A stagflation scenario should lead to the emergence of a significant shortfall between contribution income and benefit outgo

Page 274

Next steps

Next steps

1. Monitor membership changes and their impact on the cashflow position
2. Consider any factors (e.g. inflation, prepayments) that may affect the cashflow position
3. Consider the investment strategy in light of any future possible negative cashflow position
4. Consider evolving or developing new cashflow management and/or rebalancing policies with your investment advisor

Reliances and limitations

APPENDIX 1

Reliances and limitations

This paper is addressed to Surrey County Council as Administering Authority to the Surrey Pension Fund. It has been prepared in our capacity as actuaries to the Fund and is solely for the purpose of projecting the expected cashflows of the Fund over a 20 year time horizon. It has not been prepared for any other purpose and should not be used for any other purpose.

The cashflow projections are based on a specific set of deterministic assumptions, which are highly unlikely to be borne out exactly. We therefore do not claim that the future will exactly match the figures in this paper. The results should be used to give an indicative idea of the Fund's medium term cashflow requirements only.

Any party must accept full responsibility for establishing that the cashflows are appropriate for the purpose to which they want to put them and any decisions that are taken based on their analysis. We cannot be held responsible for any losses sustained as a result of third parties relying on the cashflows provided, or if the cashflows are used for any inappropriate purpose

The extent of the deviations from the assumptions underpinning the cashflow projections depends on uncertain economic events as well as other factors that are not known in advance such as members' decisions, variations in mortality rates, retirement rates and withdrawal rates, fluctuations and rates of salary increase, and the numbers and ages of future new entrants which cannot be accurately predicted. In addition, there could be changes in the regulatory environment and possible changes in retirement benefits. These other uncertainties are often not related to any particular investment and economic eventualities.

Three of the important uncertainties are the:
(a) Rate of pension increases, the vast majority of which increase at the annual increase in CPI inflation
(b) Extent to which members elect to exchange pension for cash at retirement
(c) Level of future payroll and contribution rates which will determine the amount of contributions paid into the Fund

The Administering Authority is the only user of this advice. Neither we nor Hymans Robertson LLP accept any liability to any party other than the Administering Authority unless we have expressly accepted such liability in writing.

This report may be shared with the Fund's investment advisor for information purposes only but may not be passed onto any other third party except as required by law or regulatory obligation, without prior written consent of Hymans Robertson LLP.

In circumstances where disclosure is permitted, the advice may only be released or otherwise disclosed in its entirety fully disclosing the basis upon which it has been produced (including any and all limitations, caveats or qualifications).

The following Technical Actuarial Standards are applicable in relation to this advice, and have been complied with where material and to a proportionate degree:
- TAS100
- TAS300.