Schroders Liability Driven Investment

Pre-retirement strategies for DC

27 February 2014

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Schroders

Pre-retirement

An outcome based strategy

Preserving pre-retirement income is the desired outcome

1. Focus on ***member outcomes***

2. Corporate bonds are not the default pre-retirement asset

3. ***Gilt*** based solutions with an ***annuity benchmark*** could achieve the required outcomes

4. Purchasers of a level annuity are sensitive to ***inflation before retirement***

The investment outcomes

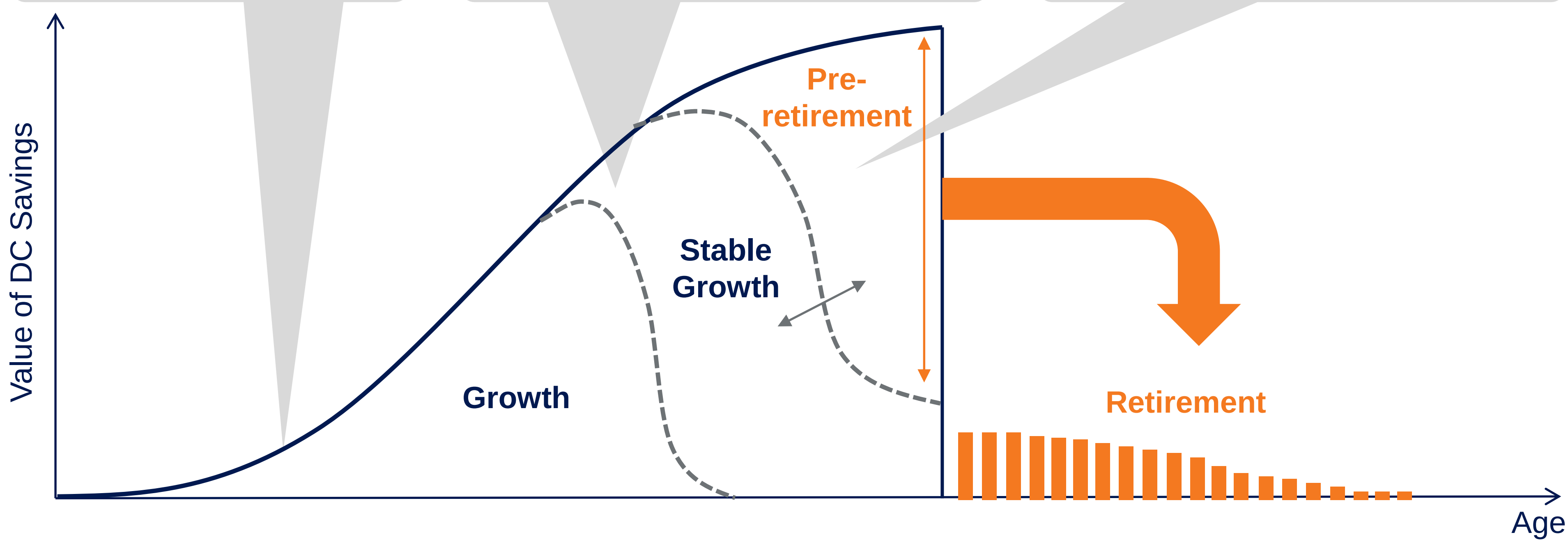
Pre-retirement

Member outcomes
Use of credit
Annuity benchmark
Inflation before retirement

- Equity-like
- All weather performance

- Focus on potential downside protection
- Transition phase

- Bond-like
- Aim to protect future retirement income



Pre-retirement strategies aim to reduce risk by preserving annuity purchasing power

Source: Schroders.

Measuring success

Building an outcome based benchmark

Example

Month 1			Month 2			
Rate	Capital required to generate £10 p.a.	Index equivalent at outset	Rate	Capital required to generate £10 p.a.	Index equivalent at month 2	Index return month 1 to month 2
7.5%	£133	100	8%	£125	94	-6%

The index shows the returns required to maintain post-retirement income

Returns are required to match the effect of annuity rate changes

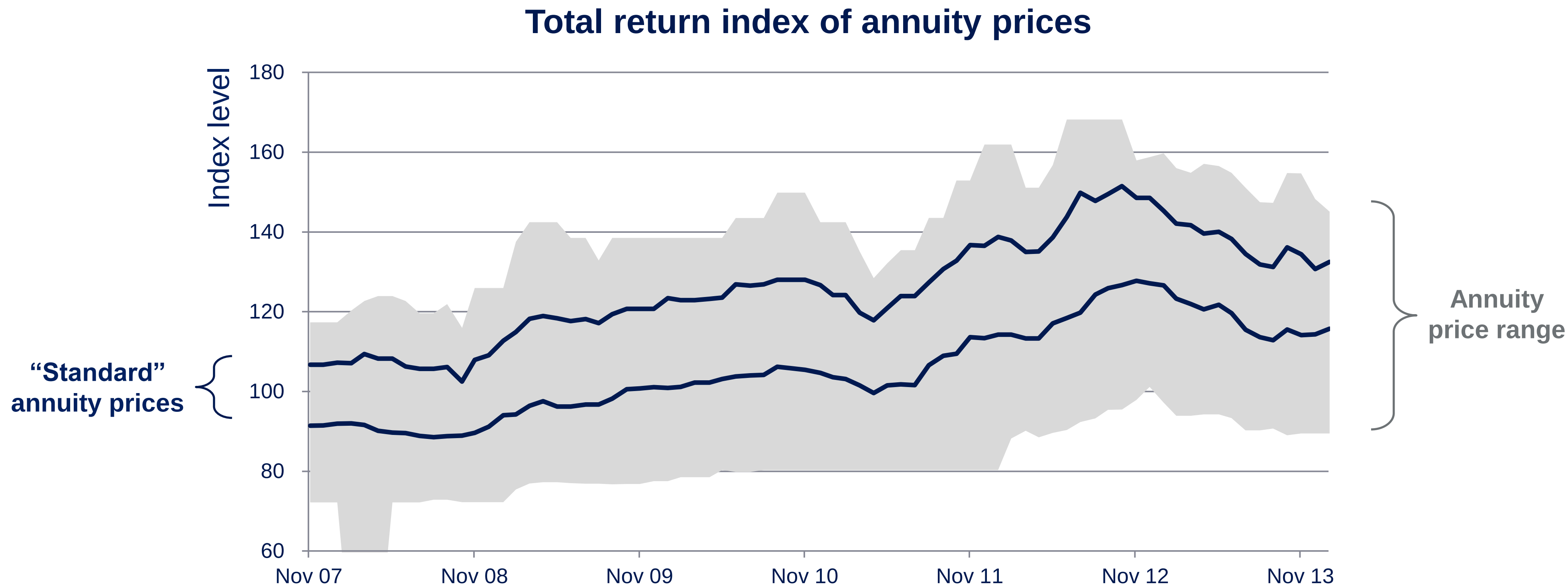
Returns are not required to generate the return implied by the annuity yield

Source: Schroders, for illustration only

Measuring success

An outcome based benchmark

Member outcomes
Use of credit
Annuity benchmark
Inflation before retirement



The total return index provides the benchmark for assessing investment outcomes

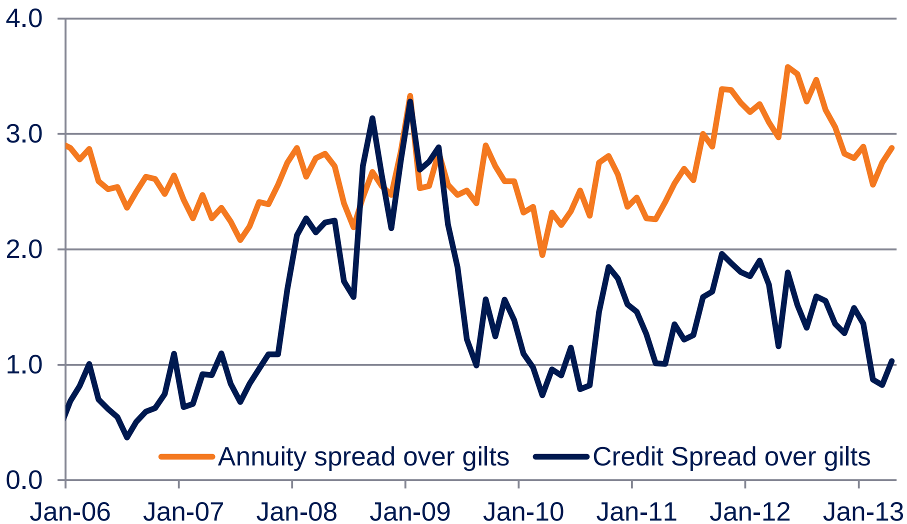
Source: Schroders, Moneyfacts Market Intelligence. Monthly fixed annuity data December 2007 – February 2014. The "Standard" price range approximates the interquartile range of annuity rates expressed as a total return index. The annuity price range is based on fixed annuity prices for both men and women expressed as a total return index. All variables are the result of Schroders' internal calculations. As at 25 February 2014. For illustration only.

Corporate bonds as a pre-retirement asset

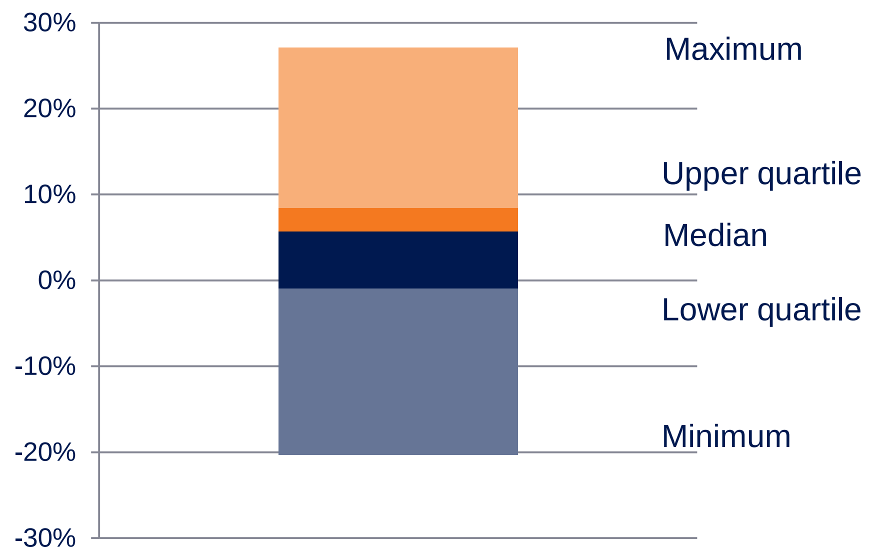
Annuity spreads and credit spreads over gilts

Member outcomes
Use of credit
Annuity benchmark
Inflation before retirement

The annuity spread and credit spread over gilts



One year outcomes expressed as an increase/ decrease in annuity purchasing power



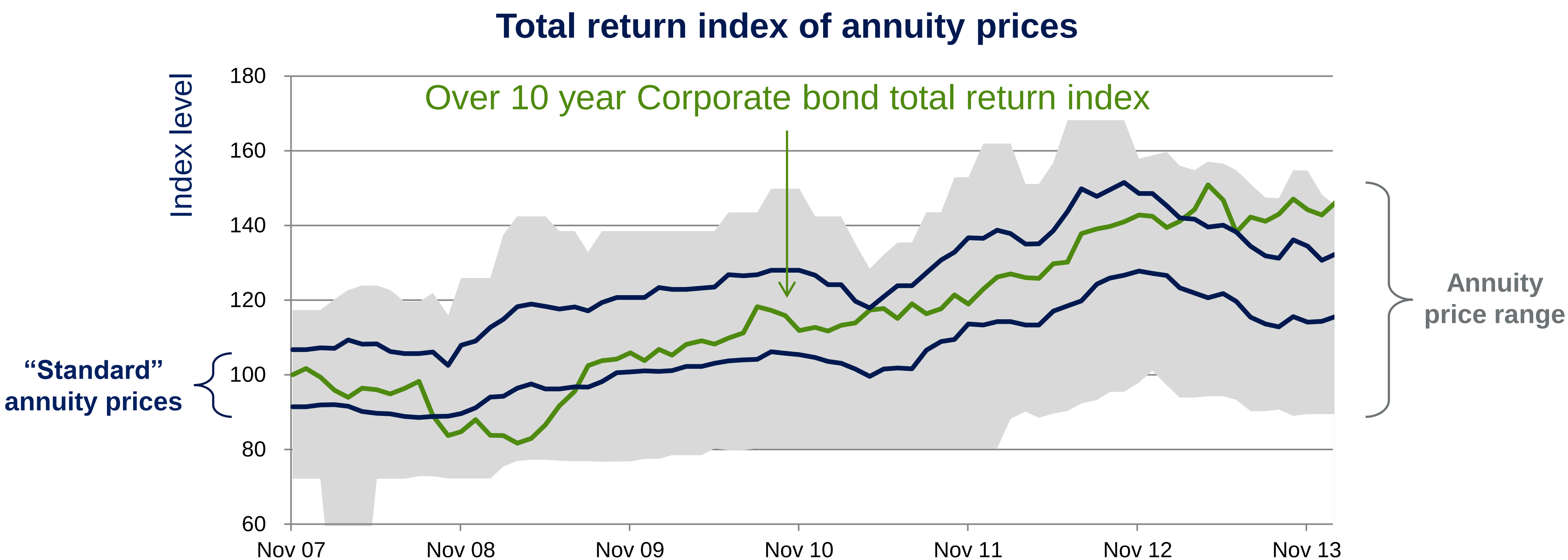
The unstable relationship between credit spreads and annuity rates expose members to a high risk of material loss of annuity purchasing power

Source: Schroders, Bloomberg, williamburrows.com. Gilt yield is the over 15 year gilt yield. Credit spread calculated with reference to the iBoxx All Stock index. Fixed annuity data is monthly: Single life January 2006 – March 2013. Corporate bond return is the Merrill Lynch Corporates Total Return Index over 10 years. As at 25 February 2014. For illustration only.

Measuring success

Corporate bonds as a pre-retirement asset

Member outcomes
Use of credit
Annuity benchmark
Inflation before retirement



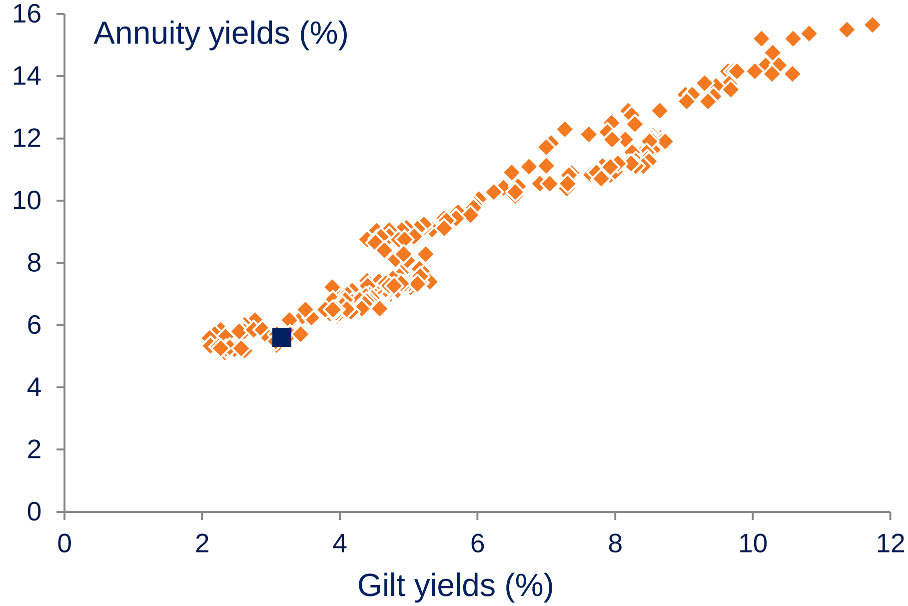
Investors converting to an annuity in 2008/9 could experience annuity purchasing power reduced by up to 20%

Source: Schroders, Moneyfacts Market Intelligence. Monthly fixed annuity data December 2007 – February 2014. The "Standard" price range approximates the interquartile range of annuity rates expressed as a total return index. The annuity price range is based on fixed annuity prices for both men and women expressed as a total return index. Corporate bond return is the Merrill Lynch Corporates Total Return Index over 10 years. All variables are the result of Schroders' internal calculations. As at 25 February 2014. For illustration only.

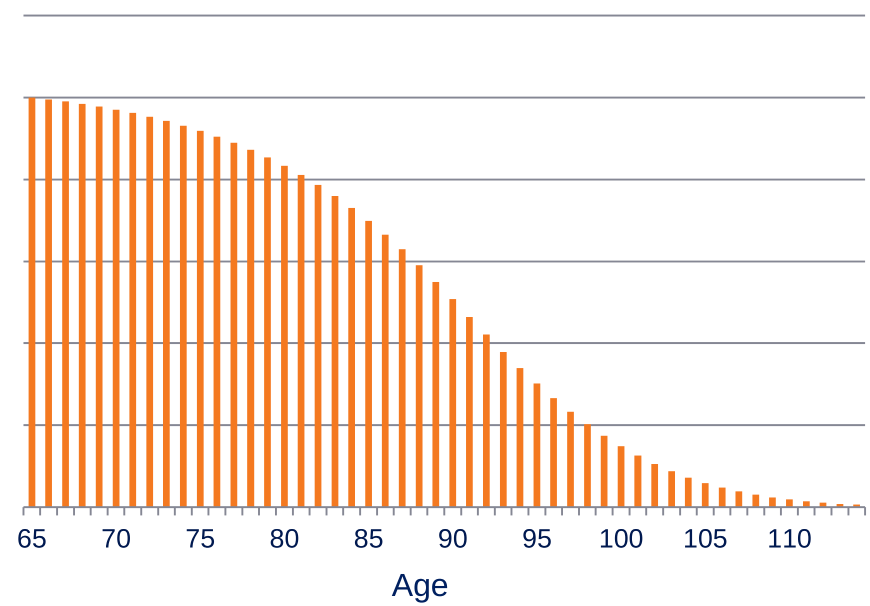
Establishing a benchmark

Theoretical annuity cashflow profile

The relationship between gilt yields and annuity rates



Theoretical Cashflow profile



The benchmark should account for the uncertainty of member age at annuity conversion

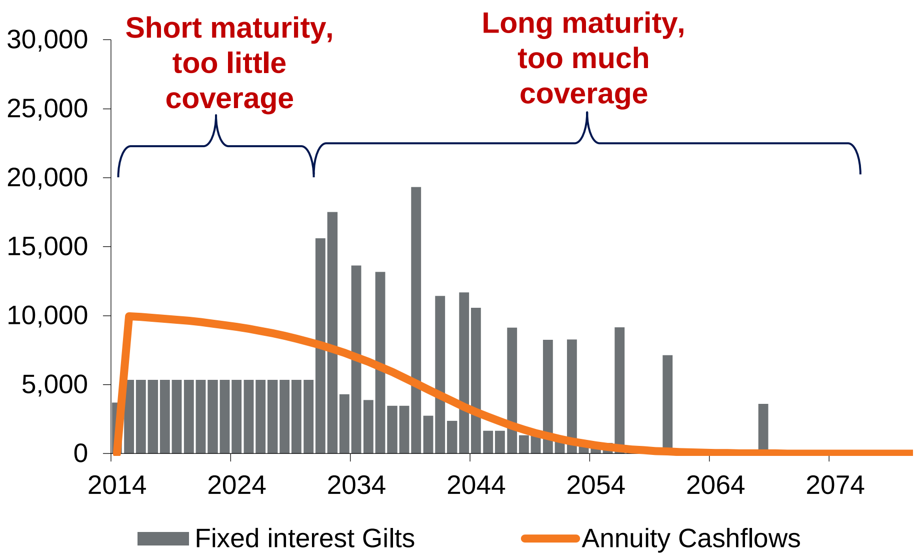
Source: Schroders, williamburrows.com. For illustration only. Fixed annuity data is monthly: Single life October 1990 – February 2014. For illustration only. Cashflows are based on a 65 year retirement age, 50% male 50% female single life non-increasing annuity with no guarantee period, mortality rates in-line with PM/FA92 medium cohort. The above cashflows are the result of internal calculations.

Matching the benchmark

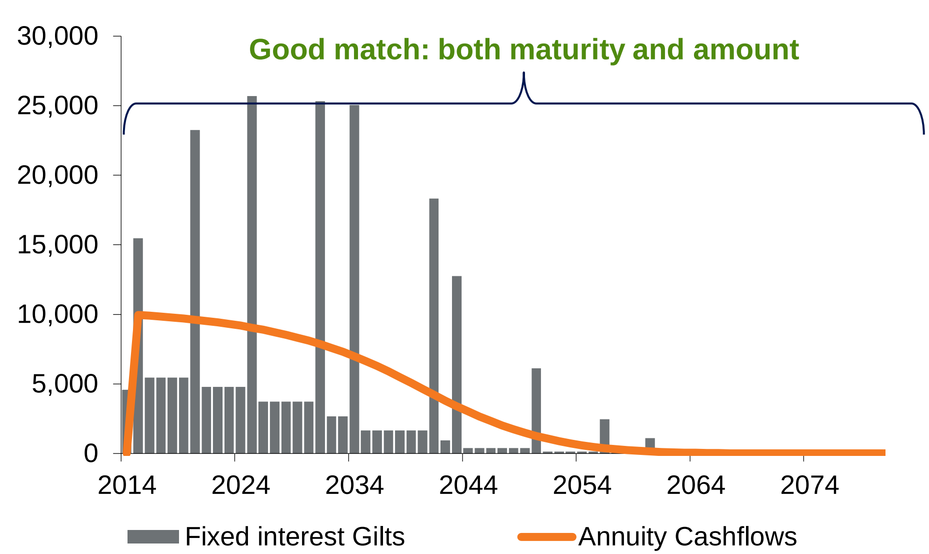
Standard gilt indices do not match the annuity cashflows

Theoretical benchmark and cashflows from an over 15 year Gilt index (LHS) and a Gilt based cashflow matched solution (RHS)

Holdings will fluctuate depending upon gilt issuance



Holdings match the annuity cashflows



Cashflows from pre-retirement assets should aim to match the annuity cashflow profile

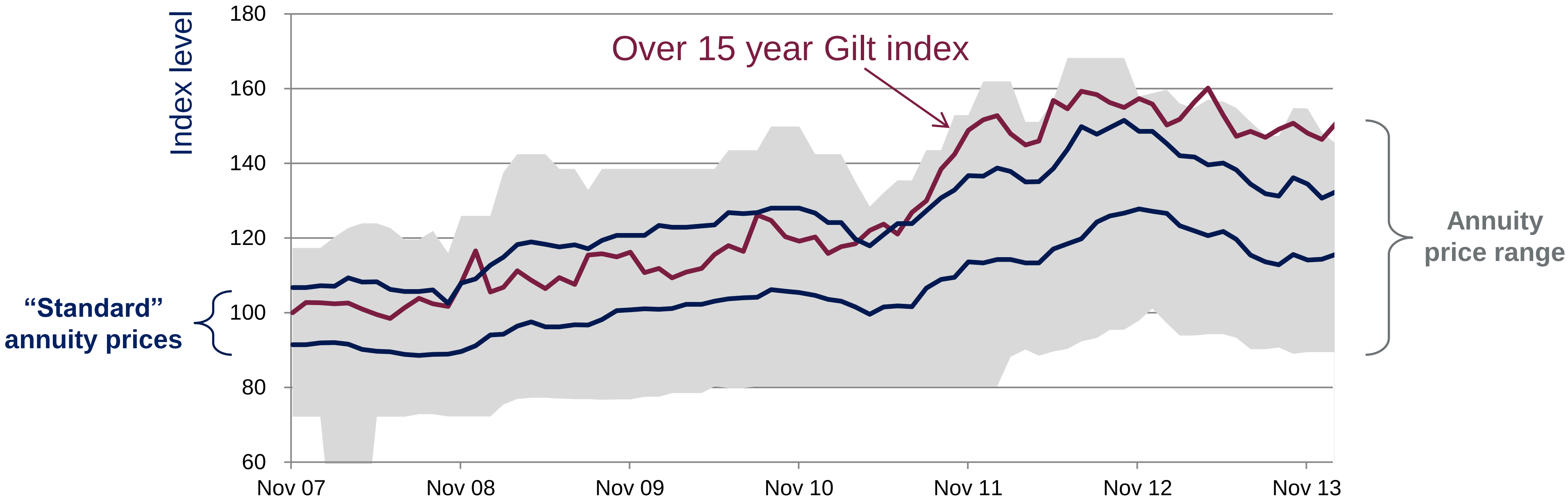
Source: Schroders. For illustration only. Cashflows are based on a 65 year retirement age, 50% male 50% female single life non-increasing annuity with no guarantee period, mortality rates in-line with PM/FA92 medium cohort. The above cashflows are the result of internal calculations. As at 20 January 2014.

Measuring success

Standard gilt indices as a pre-retirement asset

Member outcomes
Use of credit
Annuity benchmark
Inflation before retirement

Total return index of annuity prices



A standard gilt index may does not aim to track changes in annuity prices
The benchmark chosen is crucial to matching prices

Source: Schroders, Moneyfacts Market Intelligence. Monthly fixed annuity data December 2007 – February 2014. The "Standard" price range approximates the interquartile range of annuity rates expressed as a total return index. The annuity price range is based on fixed annuity prices for both men and women expressed as a total return index. Over 15 year gilt index is the FTSE Actuaries Government Securities UK Gilts Total Return over 15 year gilt index. All variables are the result of Schroders' internal calculations. As at 25 February 2014. For illustration only.

Measuring success

Cashflow matching gilts as a pre-retirement asset

Member outcomes
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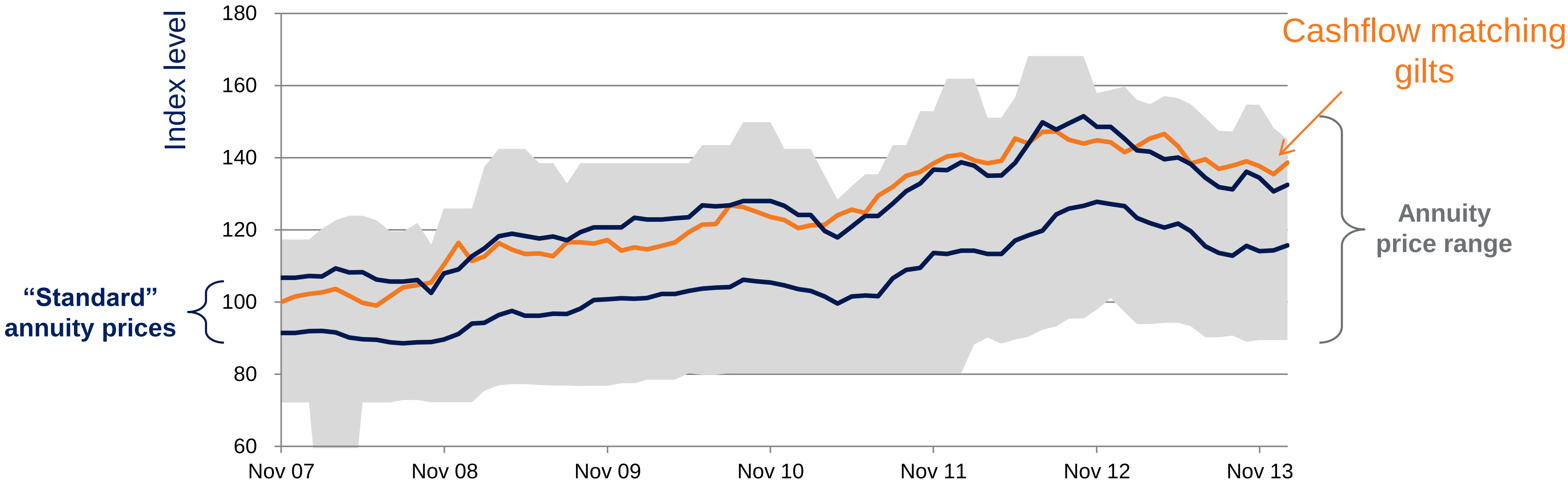
Inflation before retirement

Total return index of annuity prices



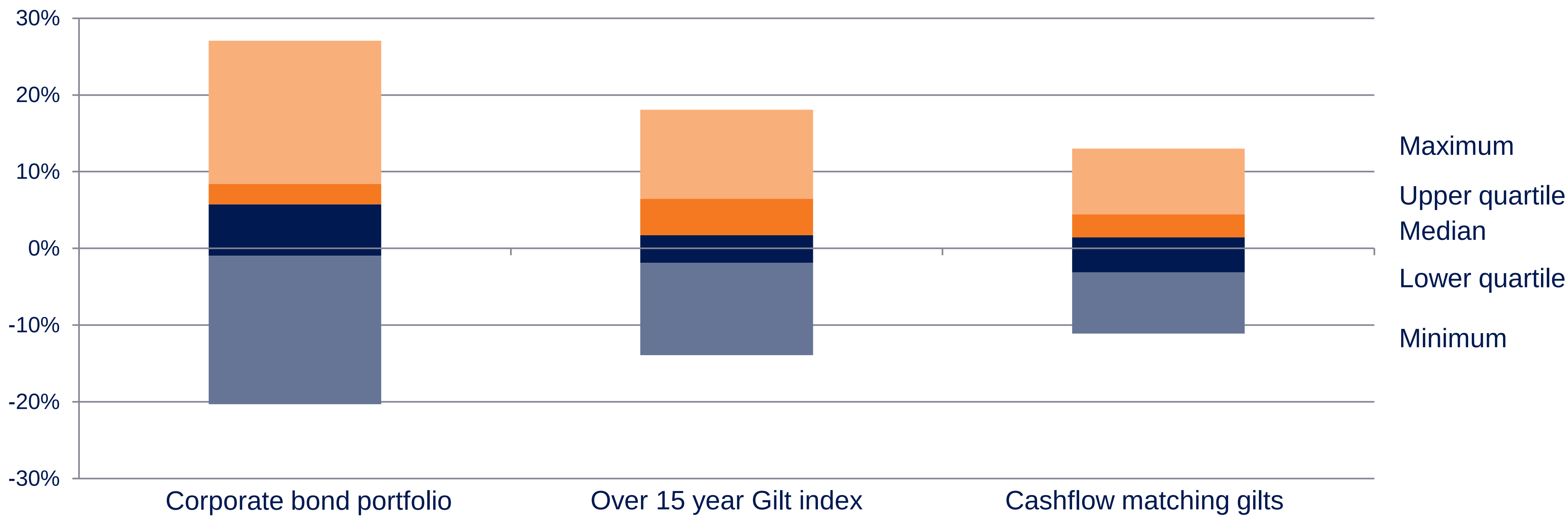
Investing in gilts to match post retirement cashflows delivers a portfolio that aims to maintain investor annuity purchasing power

Source: Schroders, Moneyfacts Market Intelligence. Monthly fixed annuity data December 2007 – February 2014. The "Standard" price range approximates the interquartile range of annuity rates expressed as a total return index. The annuity price range is based on fixed annuity prices for both men and women expressed as a total return index. The Annuity cashflow benchmark return is the result of modelling based on the annuity cash flows purchased at retirement. All variables are the result of Schroders' internal calculations. As at 25 February 2014. For illustration only.

Assessing outcomes

Maintaining annuity purchasing power

One year outcomes expressed as an increase/ decrease in annuity purchasing power



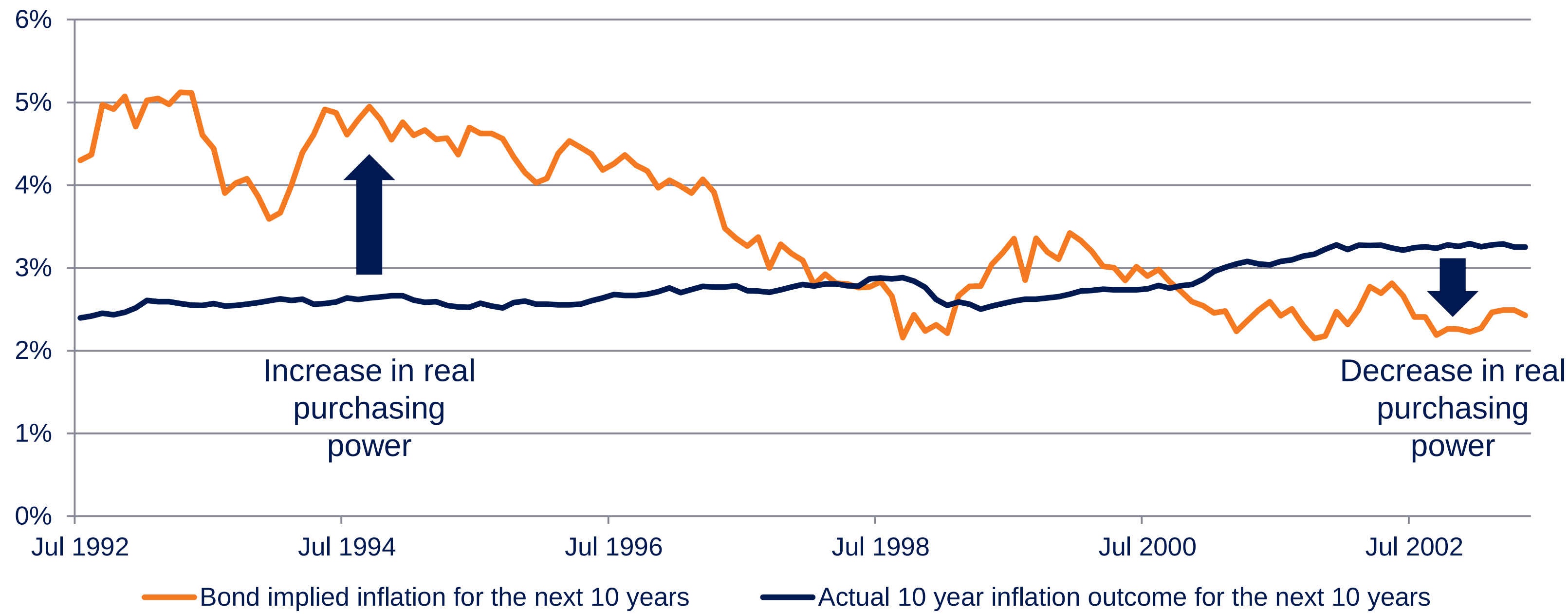
A pre-retirement strategy should aim to reduce risk of poor member outcomes

Source: Schroders, Moneyfacts Market Intelligence. Monthly fixed annuity data December 2007 – February 2014. Outcomes assessed against the median annuity total return of the annuity price range. Corporate bond return is the Merrill Lynch Corporates Total Return Index over 10 years. The Annuity cashflow benchmark return is the result of modelling based on the annuity cash flows purchased at retirement. Over 15 year gilt index is the FTSE Actuaries Government Securities UK Gilts Total Return over 15 year gilt index. All variables are the result of Schroders' internal calculations. As at 25 February 2014. For illustration only.

Inflation in the period to retirement

What if inflation is not as expected?

Difference between start of period break-even inflation and realised inflation over 10 year periods



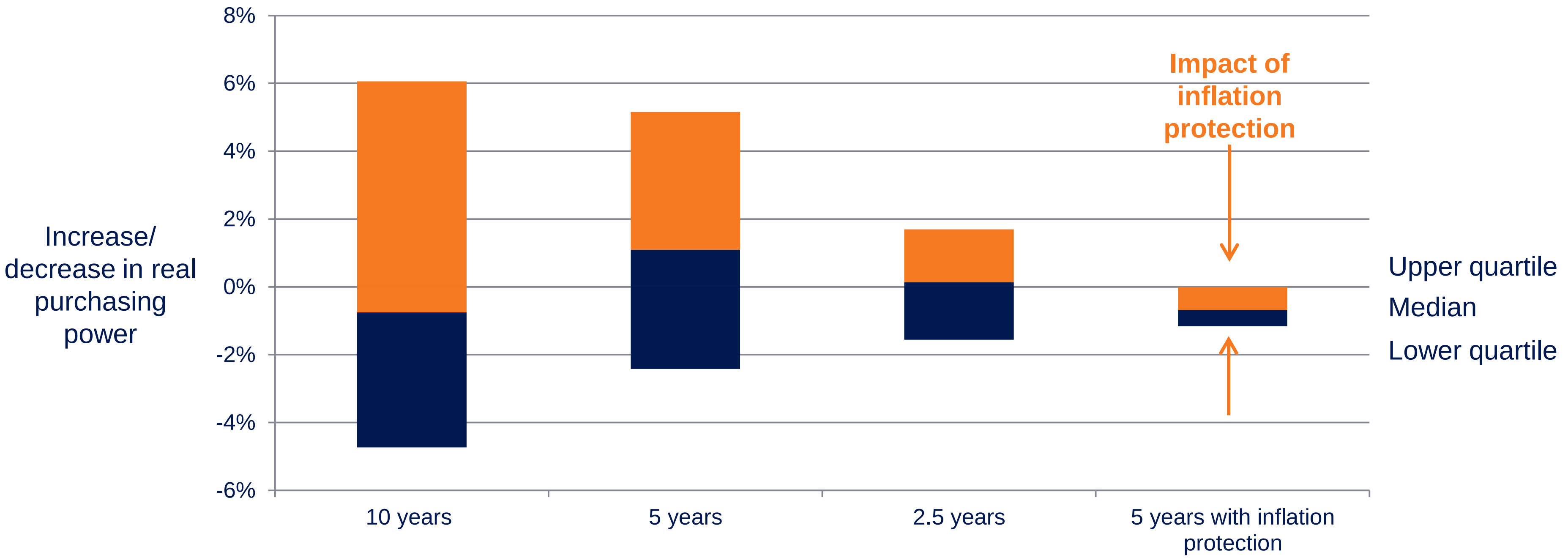
The realised difference in break-even inflation and actual inflation expose investors to risk of reduced real purchasing power at annuity conversion

Source: Schroders, Bloomberg, Bank of England as at 30 April 2013

Inflation in the period to retirement

The effect of unexpected inflation on real outcomes

Impact of experienced inflation on real fund value (net annuity price changes)



The risk of inflation reducing the real purchasing power be managed

Source: Schroders, Bloomberg, Bank of England, Barclays Capital. The chart shows the upper quartile, median and lower quartile range. The 2.5, 5 and 10 year analysis compares the impact of break-even inflation versus actual inflation over 2.5, 5 and 10 year periods, at monthly intervals, with start dates from July 1992 up to November 2010, April 2008 and April 2003 respectively. The 5 year with inflation protection compares the impact of break-even inflation and an inflation swap versus actual inflation over 5 year periods, at monthly intervals. This is not directly comparable with the 5 year outcomes.

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