Understanding inflation-linked bonds and indices

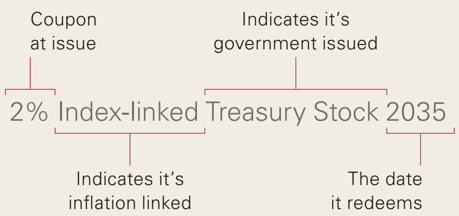
We believe in giving you the fundamental building blocks you need to construct diversified, risk-adjusted, goal-oriented portfolios for your clients.

Inflation-linked bonds can provide just such a building block, providing diversification to nominal bonds and adding an element of inflation hedging.

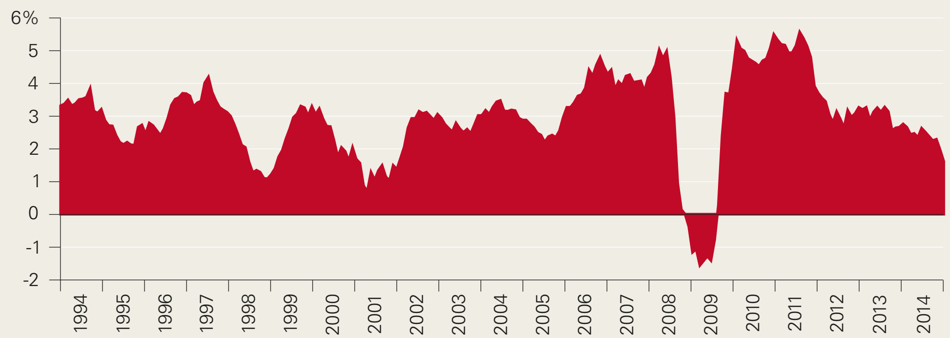
What are they?

Sometimes called 'index linked bonds' or just 'linkers', these are 'gilts' issued by the UK government. They have their principal and coupon payments adjusted according to the official government Retail Price Index (RPI). Inflation-linked bonds currently make up about 25% of the total value of the market in UK gilts.

How an individual inflation-linked bond is listed in the financial papers.



UK RPI (Monthly % changer over 12 months)



Source: ONS

The problem with inflation. Retail prices went up every year but one over the last twenty-one years.

The problem with inflation
Over time, inflation can undermine the purchasing power of your clients' wealth. What looks like a good savings put in today's money, might not buy as much in the future.

This has many advisers and their clients looking for a way of putting some sort of inflation protection into portfolios.

The need for diversification
Advisers looking to diversify the fixed-income portions of clients' portfolios require assets that behave differently in similar market conditions.

Government-issued inflation-linked bonds only respond to inflation, rather than changes to nominal interest rates as with many other types of bonds, which means their price behaves differently over time.

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How do inflation-linked bonds work?

First the bad news. If average inflation falls over the life of an individual inflation-linked bond, its holder would get back less than the face value of the gilt.

On the other hand, if inflation increases over the life of the gilt, the coupon payments will increase. In this way, holders of inflation-linked gilts have their returns maintained in 'real' (inflation adjusted) terms, as reflected in the Retail Price Index.

This is one of the few assets that provides a solid hedge against possible inflation.

How are they priced in the market?

Like other gilts, they have a face value at issue. Once they are in the market, they are traded like any other asset, with the price determined by the market's expectations of future inflation.

The best way to see this is to look at 'breakeven' inflation, or the 'spread' between inflation-linked gilts and ordinary gilts of similar maturity. The higher the number, the higher the market thinks future inflation will be.

How is breakeven inflation calculated?

  Comparable Fixed-Rate
– Inflation-Linked Real Yield

= Break-Even Inflation

Example:

  3.00% 10-year nominal gilt
– 1.05% Inflation-linked real yield

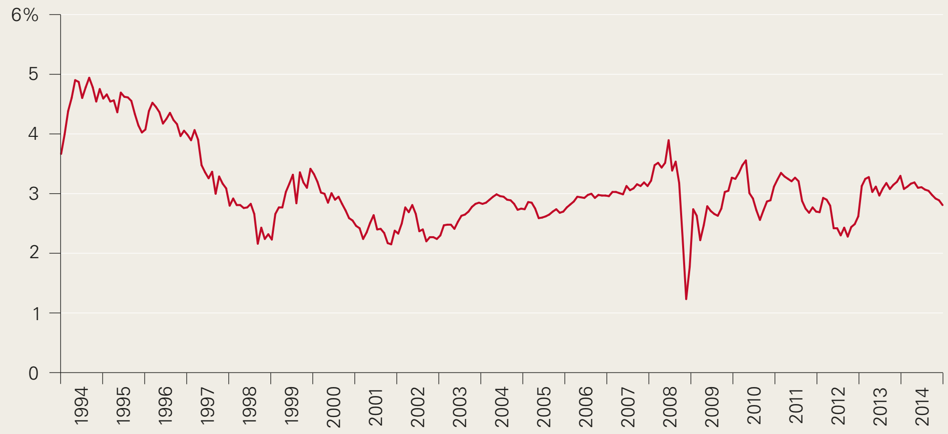
= 1.95% Breakeven inflation

How are inflation-linked coupons determined?

The coupon of an inflation-linked bond is calculated by adding RPI to the real yield.

In the example, if the average rate of inflation is more than 1.95%, the inflation-linked investment will outperform the fixed-rate investment. If average inflation were to drop below 1.95%, the fixed-rate bond would outperform the inflation-linked investment.

UK breakeven inflation (10YR)



Source: Bank of England

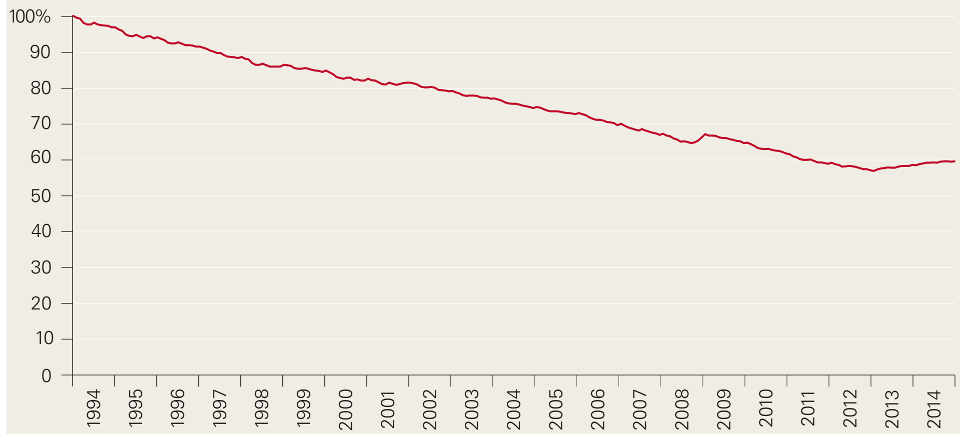
UK breakeven inflation shows the difference between the real yield on an inflation-linked bond and a comparable fixed-rate bond. The difference shows the market's expectation of future inflation.

The role in client portfolios – help manage inflation risk

Inflation-linked bonds can complement other bonds by helping investors manage inflation risk. This may mean that there is a place for inflation-linked gilts in your clients' portfolios.

- Nominal bond prices react to *expected* future inflation and so yields are high when inflation expectations are high. Inflation-linked bonds on the other hand provide protection against *unexpected* inflation as their coupon and principal value adjust based on changes in the Retail Price Index.
- High-quality liquid asset class.
- The prices of inflation-linked gilts respond to changes in real interest rates, rather than nominal interest rates.

UK purchasing power on basis of 1994



Baseline 100 in 1994
Decline based on monthly UK RPI
Source: ONS

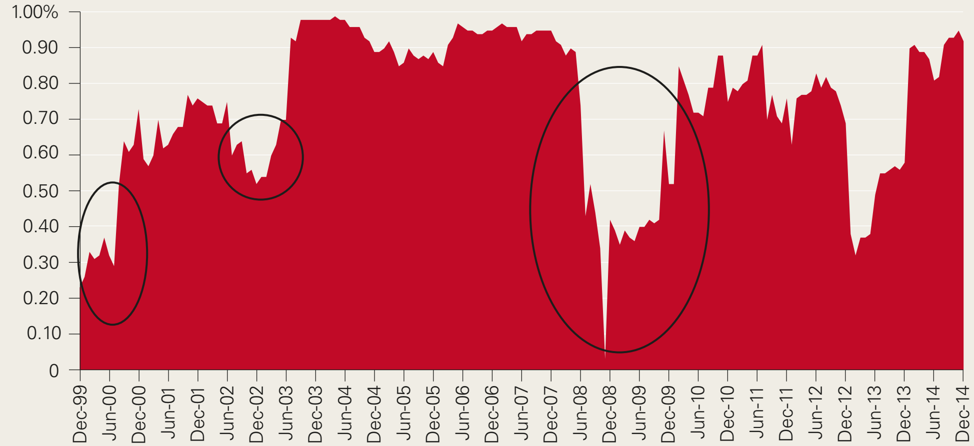
Inflation erodes the purchasing power of money. Using the Retail Price Index as a guide, the graph shows how the grinding effects of inflation have destroyed over 40% of the purchasing power of the sterling over the last 21 years.

The role in client portfolios – provide diversification

The correlation of inflation-linked bonds compared to nominal bonds can provide a useful diversifier for your clients' portfolios.

- The correlation of monthly returns between inflation-linked gilts and nominal bonds is positive, but ranges from 0.99-0.03* over the past 15 years.
- Importantly, the periods of lowest correlation have often coincided with times of economic uncertainty and market stress, when diversification is of most use in a portfolio.

Correlation of total returns
index-linked gilts v. nominal gilts



Graph displays correlation of rolling 12 month total returns from December 1999 – December 2014*

The periods of lowest correlation between nominal and index-linked gilts have occurred during periods of economic uncertainty and market stress, such as during the market corrections in 2002-3, 2006-7 and the recent global financial crisis which began in 2008.

*Source: Vanguard calculations using data from the Barclays Capital Global Inflation-Linked: UK Index, Barclays Capital Sterling Gilts Index

Inflation-linked bond indices

Funds of inflation-linked UK gilts are measured against different benchmarks. A number of index providers offer potentially suitable inflation-linked bond indices.

Available indices
Indices available to use as benchmarks include:
- Barclays Capital UK Government Inflation-Linked Float Adjusted Bond Index
- Markit iBoxx UK Gilt Inflation-Linked
- FTSE A (Index Linked) British Govt Over 5 Years
- Barclays Capital U.K. Govt Inflation Linked Bond

All of these successfully capture the returns of the market segment they're trying to represent.

Benchmark to a market, not peers
At least one provider benchmarks its fund to the IMA UK Index Linked Gilts sector. However, Vanguard believes funds should be benchmarked to market indices, not other funds, to get a true picture of fund performance

A float adjusted index
Non-float adjusted indices can include securities that may be owned by private corporations or governments which have no intention of ever selling them. Although the securities are listed in the benchmark, they represent a part of the market that is generally not available to those looking to invest.

Barclays Capital now offers a float-adjusted inflation-linked bond index. Float-adjusted indices may represent a better deal for investors, in part, for the following reasons:
- **Indexing best practices –** Provide a more accurate representation of an investor's opportunity set in a particular market.
- **Improved liquidity –** Better represent actual liquidity in the marketplace and should help insulate index funds from tracking error that would result from tracking an index that includes securities that are not available for sale.
- **More accurate pricing –** Insulate the funds from purchasing securities whose prices may be distorted by significant demand from government buybacks.

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