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Understanding Inflation Breakevens

by Neil Schofield

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Introduction

The Fisher equation is a way of decomposing a nominal yield into three components:

- Real yields

- Inflation expectations

- Inflation risk premium

It is expressed as:

(1 + nominal rate) = (1 + real rate) (1+ inflation expectations) (1+ inflation risk premium)

It is common for practitioners to combine the last two elements into one component and refer to it as the "inflation breakeven". This is often casually (and incorrectly) interpreted as expectations of future inflation.

It is also quite common for the market to use a shorthand version of the equation which is expressed as:

Nominal yield = real yield + inflation breakevens.

However, it is useful to distinguish between the "Fisher breakeven" which is the value derived when using the "1+" format and the 'breakeven spread' when using the shorthand version.

Example

If nominal yields are 5% and real yields 3%, ignoring the inflation risk premium this returns values of:

Fisher breakeven: (1.05) = (1.03) (1 + inflation breakeven) => Inflation breakeven is 1.94%

Breakeven spread: 5% = 3% + inflation breakeven => 2.00%

Trading Application

So why have two values? One popular strategy is to trade inflation-linked bonds against a nominal Treasury. One way to look at this strategy is that you are trading a yield spread: real yields on the linkers against nominal yields on the Treasury. It is analogous to trading credit

spreads using corporate bonds and Treasuries. In this instance it is easier to think in terms of the breakeven spread.

Investment Application

The Fisher breakeven can be to decide whether to invest in a Treasury or a linker. The following example may help. Suppose we have a 1-year nominal bond trading at par, so its coupon and yield are 5%. Coupons are paid annually. So, at maturity, the bond will pay a cash flow of 105.

Suppose there is a one-year linker, also trading at par with a real coupon and real yield of 3%. This bond will pay out a cash flow equal to the real yield uplifted by the change in inflation since some base dates. In this example, since the bond has a maturity of one year, the payout will be based on the change in an inflation index over the previous 12 months.

If we say that the initial inflation index level is 100 and 101.94 at maturity, the linker will also pay a cash flow of 105. This consists of two components:

Coupon: 3 x 101.94 / 100 = 3.06

Principal: 100 x 101.94 / 100 = 101.94.

Notice that the final inflation index value of 101.94 implies a realized inflation value of 1.94%, which was equal to the initial Fisher breakeven.

As an aside, this also shows that the inflation protection comes mostly from the uplifted principal amount at maturity.

Since an investor would pick the instrument that generates the highest at maturity payoff, the Fisher breakeven provides us with a way of assessing a linker against a nominal bond. If you think that realized inflation will be greater than the breakeven, then buy the linker. If you think that realized inflation will be less than the breakeven then buy the nominal bond.

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About the Author: Neil Schofield, MBA, FCIB, DipFS

Neil Schofield has over 30 years' experience spanning both financial markets and significant training expertise in the U.K. and globally. Currently, Neil is the principal of a UK-based financial learning firm that specializes in the areas of Commodities, Treasury, Derivatives, Capital Markets and Risk Management – presenting learning events to financial institutions, central banks and corporations worldwide. A published author of several books, Neil's in-depth knowledge and ability to relate new knowledge to the learner, results in a lively, rewarding classroom experience.

Neil holds a BSc: Economics from Loughborough University and an MBA from Manchester Business School.

Neil has authored several pieces, including:

- *Commodity Derivatives: Markets and Applications*, (2nd Editions) published by Wiley in May2021.
- *A Relative Value Guide to Financial Markets*, published by Wiley in 2011
- *Trading the Fixed Income, Inflation and Credit Markets*, by Wiley, in October 2011
- *Equity Derivatives: Markets and Applications*, published by Palgrave in 2017

He is currently writing *Trading Inflation: Markets, Instruments and Strategies*.