Financial Mathematics

Fisher's Equation

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Fisher's Equation

- The market rate of return on the 4.25% UK government bond maturing on 8 March 2050 is 3.81% per year.
- Let's assume that this can be broken down into a real rate of exactly 2% and an inflation premium of 1.775%
  (no premium for risk, as government bond is considered to be "risk-free"):

$$1.02 \times 1.01775 = (1+0.02) \times (1+0.01775) = 1.0381$$

Fisher's Equation

This article implies that you can ignore the least significant term in the expansion ($0.02 \ \ 0.01775 = 0.00035$ or 0.035%) and just call the nominal rate of return 3.775%, on the grounds that that is almost the same as 3.81%.

Fisher's Equation

- At a nominal rate of return of 3.81% pa, the value of the bond is 107.84 per 100 nominal.
- At a rate of return of 3.775% pa, the value is 108.50 per 100 nominal, or 66p more.

Fisher's Equation

- The average size of actual transactions in this bond in the market in the final quarter of 2005 was 10 million.
- So a difference in price of 66p per 100 translates into a difference of 66,000 per deal.