The Economics of
Living Fisher
Revealing the Scientific Work of a Great Economist
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not such a great discovery. Everyone who has taught a course in international finance draws a four-corner diagram in which the two corners of one side (usually the top) represent Keynes's (covered) interest rate parity theorem and Fisher's real-nominal interest rate relation And that is what we have just done here. This is the standard proposition from interest rate parity.

Of course, the actual process of adjustment can come in any of the variables. For example, if the interest rate on income and the discount or premium are fixed, then all of the adjustment must come in the money rate of interest. On the other hand, if only the return on income is fixed, say by time preferences, then the money rate will have to adjust to any changes in the forward discount or premium on money. The proposition that 

\[ (1 + p)(1 + r) = 1 + \theta \]

\[ \theta = \text{the rate of inflation} \]

\[ r = \text{the rate of change in real income} \]

\[ i = \text{the rate of interest on money} \]

\[ F/S = \text{the spot rate of exchange of money for wheat} \]

\[ F/S = (1 + i)/(1 + r) \]

\[ F/S = (1 + i)/(1 + r) \]

\[ S = \text{the price of wheat in money terms that eliminates arbitrage profit} \]

But not only is there a formal similarity, Keynes also accepted the general validity of the empirical data in support of Fisher's proposition in the form of what has come to be known as the Gibson Paradox—higher rates of inflation tend to produce higher rates of interest. However, despite this similarity in approach, and agreement on the empirical basis, Keynes takes issue with Fisher on the relation between the rate of interest and the rate of inflation. Thus, there is more than a Gibson Paradox, there is the paradox of how two economists who adopted virtually similar basic analytical systems could reach radically opposed solutions.

Part of the solution to the paradox is to be found in Fisher's discussion of the relation between the rates of interest measured in terms of the various possible commodity standards. He notes the difficulty in transferring the idea of a rate of interest on an individual commodity to income as a whole. In principle 'a rate of interest in terms of fundamental income itself would seem to come as near as we can practically come to any basic standard in which to express a real rate of interest' (1930, pp. 42-3), however, in the absence of such a measure, the practice is to fall back on the use of 'a practical objective standard' represented by 'a cost of living index' which Fisher spent most of his career trying to perfect.

By means of such an index number we may translate the nominal, or money rate of interest, into a goods rate or real rate of interest, just as we translate money wages into real wages. The cost of living plays the same role in both cases although the process of translating is somewhat different and more complicated in the case of interest from what it is in the case of wages, for the reason that interest involves two points of time, instead of only one; so that we must translate from money into goods not only in the present, when the money is borrowed, but also in the future, when it is repaid (1930, p. 42).

Fisher was concerned by this point because in his theory the rate of interest to which rate of return over cost should be equated was determined by present relative to future income-time preference. Keynes did not have this problem because liquidity preference referred to present relative to future delivery of money.

This difference is important because the definition of a rate of return in terms of 'the fundamental income' (or of an amount of nominal income which can be deflated by a price index) eliminates any possibility of a market-based process of arbitrage which ensures the equilibrium relation. Since there are no markets for 'fundamental income', it is impossible to argue that individuals will buy and sell fundamental income spot against forward or to arbitrage it against a money relative given by a price index. A theory which is based on a real financial market process of arbitrage when applied to individual commodities, has no direct counterpart when looked upon in the aggregate. But, it is precisely such an arbitrage process that Fisher invokes to establish the inflation adjustment of nominal interest rates.

Fisher's solution of 'the fundamental income' and aggregate price indices is subject to the criticism of von Mises and Hayek concerning the inadequacies of index numbers, as well as Sraffa's criticism of Hayek's use of a 'neutral' rate of interest. Attempts to deal with these difficulties have moved economists in two directions. Both seem to converge on the same point.

The first is to find a suitable measure of 'the fundamental income'. The concept of fundamental income is related to Ricardo's invariable standard of value, and links up with Sraffa's standard commodity and Hicks's definition of income and its 'average period' in his Value and Capital (Chapter XIV and note). At this point, we may note that it is a bit more complicated than finding the appropriate price index by which to deflate nominal income.

The second is to analyze the importance of the assumption of perfect foresight for the arbitrage process which establishes the equality of real and nominal rates. This is where Keynes had difficulties with Fisher's version of interest parity (cf. Treatise on Money, Volume II, pp. 202-203 and General Theory, pp. 142-143). Keynes argues that Fisher's argument that the money rate of interest should automatically reflect a perfectly foreseen rise in the rate of inflation overlooked the impact on long-term bond prices of a rise in interest rates. While it would be true that a perfectly foreseen rise in inflation for the coming year of 2% producing a 2% rise in interest rates on one-year Treasury bills would keep real returns constant, the same would not be true of a holder of a longer-term instrument if it were sold after one year (or even if it
REFERENCES

BOOKS

ARTICLES

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