

## A Keynesian View of the Fisher Separation Theorem

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The Fisher separation theorem of finance theory is an application of pure microeconomics and has appeared in standard general finance textbooks for years [Brealy, Myers, Sick, and Whaley, 1986]. The idea of the theorem is as follows: Given perfect and complete financial capital markets, the production decision (investment) is seen as governed solely by an objective market criterion (maximizing wealth), with no regard to the individual's subjective preferences that enter into the consumption decision. In other words, given a household with income, the consumption and investment decisions regarding the use of the funds depend upon different criteria, so the two decisions can be separated.

The geometry used to explain the theorem uses a two-dimensional diagram with one axis measuring consumption in the current period and the other measuring consumption in the second period. A household's initial endowment of income is shown by a point that allocates its money between consumption in the two periods. Reduced current consumption, or saving, permits spending on productive real investment. This increases future consumption. It is assumed that investment projects are subject to diminishing marginal productivity, so there is a limit to the amount of consumption possible in the second period. Given a market interest rate and assuming the borrowing rate is the same as the lending rate, every utility- and wealth-maximizing individual will equate the marginal rate of substitution between present and future consumption with the interest rate, which equals the marginal rate of transformation for productive investment [Copeland and Weston, 1983]. Symbolically:

$$MRS = -(1 + r) = MRT .$$

In examining the sketch, the following items appear explicitly: income, consumption, saving, and investment [Fabozzi and Modigliani, 1992]. However, these are all Keynesian terms, and Keynes might not agree with the end result of the theorem.

From the simple Keynesian two-sector macro model, it is clear that if saving exceeds investment, next period's income will fall. The reverse is also true. If investment exceeds saving, income will rise. While the Fisher separation theorem uses standard macroeconomic terminology quite comfortably, it fails to consider the implications of these terms. The microeconomic model of finance hangs on the assumption that income (and consumption) in the present and the future depends upon the actions of the individual in isolation. However, clearly, this may not be true in the macro sense. For example, if most of the individuals save more than they invest, the end result will be that income in the second period will be less than they had originally expected. Also, if overall investment is greater than saving, income will grow more than that shown in the separation theorem. Ignoring the macro implications of a micro model is not always acceptable. (JEL D00) *Atlantic Econ. J.*, 29(4): p. 470, Dec. 01. ©All Rights Reserved