



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*

1972

Money
C

UNIVERSITY OF CALIFORNIA
DAVIS
JUN 22 1972
Agricultural Economics Library

DEPARTMENT OF ECONOMICS
UNIVERSITY OF CALIFORNIA, DAVIS



WORKING PAPER SERIES

THE MONEY ILLUSION IN THE SPECULATIVE
DEMAND FOR MONEY

by

Thomas Mayer

Working Paper Series
No. 17

Note: The Working Papers of the Department of Economics, University of California, Davis, are preliminary materials circulated to invite discussion and critical comment. These papers may be freely circulated but to protect their tentative character they are not to be quoted without the permission of the author.

June 1972

Department of Economics
University of California
Davis, California

The Money Illusion in the Speculative Demand for Money

Thomas Mayer

Don Patinkin has pointed out that there is an implicit money illusion in Keynes' speculative demand for money [7, pp. 278-9] and raised the question whether Keynes introduced this money illusion intentionally or inadvertently.¹ This issue is important because if there actually is a money illusion in L_2 then the real balance effect does not suffice to reestablish the full classical results. Prices then do not change in proportion to changes in the stock of money, and the rate of interest does depend on the nominal stock of money. (Underemployment equilibrium, however, is still impossible.) Was Keynes aware of this money illusion, and did he indeed introduce it to save his theory from the real balance effect argument, or was it merely a careless -- though fortunate -- slip? Patinkin's answer was that this money illusion in L_2 was not intentional, but was just a "simple oversight." Patinkin justified this conjecture as follows:

But since Keynes never explicitly pointed out that his speculative demand was independent of the price level -- and a fortiori never attempted to rationalize the money illusion implicit in such an assumption -- it is difficult to believe that what has turned out here to be a crucial assumption of liquidity-preference theory has its origin in anything more than a simple -- but vital -- oversight. [7, pp. 374-5]

And, one might add, it is hard to interpret the money illusion in L_2 as a defense against the real balances argument because, had Keynes taken account of

-
1. He was criticized for this by Leijonhufvud [1, pp. 383-5] who argued that the Keynesian model differs from the Patinkin model, that Patinkin overlooked windfall effects, and does not pay adequate attention to the effect of interest rate changes on the two commodities in the Keynesian system. Moreover, he argues, the concept of "money illusion" in the sense of an irrationality is not applicable to the case of a change in equilibrium prices under conditions of imperfect information. Some of these criticisms raise issues which are much broader than the more specific aspects of the problem which I am taking up here.

the real balance effect, he would have had to drop the underemployment equilibrium notion -- something he certainly did not do.

But to build a firm case for the proposition that Keynes' money illusion in L_2 was not intentional it is useful to show how it arose. In this note I will try to show that this money illusion was neither just an accidental oversight, nor an anticipation of the difficulties created for Keynesian theory by the real balance effect, but, on the contrary, was the natural result of Keynes' omission of the real balance effect. There is, of course, no way of verifying whether the factors I cite were actually on Keynes' mind when he wrote the General Theory. All I can do is to show how the money illusion fits into the general structure of Keynes' model.

I

The immediate cause of the money illusion in L_2 is that Keynes did not introduce a scale variable, i.e. a budget constraint, into the L_2 function. Instead he wrote the total demand for money as $M = M_1 + M_2 = L_1(Y) + L_2(r)$ [3, p. 199]. Hence, if the interest rate is constant, there is just no way in which changes in the price level can affect L_2 ; the money illusion follows naturally from the absence of a (real) scale variable.¹

Can such an L_2 function without a scale variable be justified? There is one model in which it is. This is a model without capital rationing, in which individuals are completely indifferent to risk (or else hold their interest rate forecast with absolute certainty). In such a model an individual's

1. To be sure, the assumption of a constant interest rate is not warranted since a change in the price level changes interest rates. But this indirect effect is not an adequate substitute for a scale variable effect.

demand for money depends entirely on his comparison of the current with the expected rate of interest [10, p. 67]. If an individual expects the future interest rate to be above the current rate, he will, on the above assumptions, have an infinite demand for speculative balances: that is, he will be willing to borrow, at the current interest rate, an infinite amount of money, and hold it while waiting for interest rates to rise.¹ Conversely, if he expects interest rates to decline he will hold zero speculative balances. In such a simple model, there are only two possible values for M_2 balances, infinity and zero. In neither of these two cases does the failure to divide M_2 by the price level involve a money illusion. There is no budget constraint to be divided by the price level.

One way of explaining Keynes' exclusion of a scale variable from L_2 is therefore to assume that he operated with a simple model which did not include capital rationing or risk aversion.² But such a defense of Keynes is not convincing since Keynes included capital rationing quite explicitly in the General Theory:

But where a system of borrowing and lending exists, by which I mean the granting of loans with a margin of real or personal security, a second type of risk is relevant which we may call the lender's risk. This may be due either to moral hazard...or to the possible insufficiency of the margin of security... If a venture is a risky one, the lender...[will] require a wider margin between what he charges and the pure rate of interest in order to induce him to lend. [3, pp. 144-5]

-
1. An infinite demand is, of course, most implausible, but this merely reflects the implausibility of the assumptions of this model. In any case, all one would observe in the market is not an infinite demand for money, but a quick adaption of the actual to the expected interest rate.
 2. Certainty about the interest rate is clearly not part of the model.

Admittedly, one might argue that while Keynes referred to credit rationing in the above passage, he did so only as a realistic obiter dictum which is not incorporated into his main model. But I know of no evidence to support such a strained interpretation.

Once credit rationing and risk aversion (or risk preference) are allowed into the model it is clear that a scale variable is needed in the L_2 function. If the interest rate charged by the lender depends upon the borrower's debt-equity ratio, and hence his wealth, then the amount the speculator borrows to hold real M_2 balances depends on his real wealth. Further, consider the amount which the speculator himself is willing to stake on his prediction of future interest rates. This depends upon how much additional risk he is willing to take per dollar of expected real income. This, in turn, is, in part, a function of his real wealth or real income.

II

How then could Keynes fail to include such a scale variable? Before coming to what I believe is the main explanation -- the assumed constancy of wealth -- there are two circumstances which should be discussed. One is a factor which facilitated Keynes' omission of the scale variable, and the other provided him with an incentive not to use income as a scale variable. The first of these is that Keynes' discussion of the motives for holding money is very informal, so that he did not have to specify the arguments in his functions precisely. He was mainly concerned with introducing the speculative motive and developing its implications, rather than with analyzing it in detail. Despite the fact that the L_2 function represents one of the really major innovations of the General Theory, Keynes devoted only about two pages to explaining it. And this explanation is rather imprecise. Thus, we are told

[3, p. 199] that L_2 depends "mainly" on the contrast between current and expected interest rates, but we are not told what the other variables excluded by the word "mainly" are. It is therefore not surprising that Keynes did not seem to feel it necessary to take up the question of a scale variable.

Moreover, Keynes derived a definite advantage from not introducing one of the two plausible scale variables, income: though there is, of course, no way of being certain that this consideration was actually on his mind. Since L_2 represents one of the main breakthroughs of the General Theory, Keynes had a strong motive for distinguishing it from L_1 . Providing completely different determinants for L_1 and L_2 was an obvious way of doing so. This consideration may also explain why Keynes made L_1 a function only of income, and not of the rate of interest, despite the fact that we are told [3, pp. 172 and 196] that the rate of interest does affect the quantity of transactions and precautionary balances demanded.¹ To be sure, we are informed in connection with the precautionary motive -- though not in connection with the transactions motive -- that "it may be, however, that...[the interest rate] is likely to be a minor factor except when large changes in the cost of holding cash are in question" [3, p. 196, italics added]. It would therefore have been appropriate for Keynes to have used both income and the interest rate as arguments in the L_1 function. Furthermore, had it not been for the obvious advantage of maintaining the sharp distinction between L_1 and L_2 ,

1. Elsewhere [4, p. 422] Keynes called the assumption that L_1 is independent of the interest rate "only a first approximation." Post-Keynesian theory has followed Keynes by asserting (or implying), at least on the textbook level, that most of the interest elasticity of the total demand for money originates in L_2 . This need not be the case. Even if L_2 is much more interest elastic than L_1 , most of the interest elasticity of the total demand for money may originate in L_1 , if, as seems plausible, M_1 is very much greater than M_2 .

there would have been a good case for combining the precautionary and speculative motive into a single function dependent on both income and the interest rate, for, as D. H. Robertson has pointed out, Marshallian economics had already introduced the interest rate into the precautionary demand for money.¹ Such a procedure would have tied the new Keynesian economics closer to its predecessor, thus making it easier to accept, but at the cost of deemphasizing the distinction between L_1 and L_2 . If this interpretation is correct, and Keynes did keep the interest rate out of the L_1 function to stress its distinction from L_2 , he presumably also wanted to keep income out of the L_2 function.

III

If Keynes did not want to use income in his L_2 function, why didn't he use wealth? Wealth is, in any case, a more plausible scale variable than income since we are dealing here with portfolio adjustments. Moreover, as far as capital rationing is concerned, the amount a speculator can borrow probably depends more on his wealth than on his income.

But there is a reasonable explanation of why Keynes did not use wealth as a scale variable. This is that he took wealth to be constant. If wealth is constant, then no purpose is served by including it in the L_2 function.

1. "In this respect, the older Cambridge theory is kinder to 'liquidity preference' than is Mr. Keynes himself. For it explicitly links up the rate of interest with...[precautionary balances]. Thus neo-Marshallian theory elevates the relation between the desire to hold money and the rate of interest to the dignity of a long-period phenomenon, not dependent on the temporary expectation of change in a particular direction..." [9, p. 448]

What is the evidence that Keynes did, in fact, treat wealth as constant? First, it is the only way one can rationalize Keynes' omission of a scale variable from L_2 ; in the absence of this assumption Keynes' treatment does not make sense. Second, Keynes made it quite clear that he took as constant that most strategic component of (nonhuman) wealth, "the existing quantity and quality of available equipment" [3, p. 245]. Third, when he rationalized his decision to treat consumption as a function of income rather than of employment, Keynes wrote:

This suffers from the objection that Y_w [income in terms of wage units] is not a unique function of N [employment]... For the relationship between Y_w and N may depend (though probably in a very minor degree) on the precise nature of the employment. That is to say, two different distributions of a given aggregate employment N between different employments might...lead to different values of Y . [3, p. 90]

Surely, if Keynes had allowed the stock of wealth to vary he would have had to mention also the fact that a given volume of employment may be associated with different levels of income due to changes in the capital stock and hence in property income.¹

Keynes' treatment of the consumption function is also consistent with the supposition that he treated wealth as constant, though it does not necessarily require this supposition. In his discussion of the consumption function, Keynes had an obvious opportunity to include changes in the stock of wealth among the objective determinants of consumption, but instead he introduced only unexpected capital gains, as follows:

Windfall changes in capital values not allowed for in calculating net income--These are of much more importance in modifying the propensity to consume since they will bear no stable or regular relationship to the amount of income. The consumption of the

1. Property income may, of course, vary not only because the stock of wealth varies, but also due to changes in its yield. But Keynes treated the yield of wealth as also given for each level of employment.

wealth-owning class may be extremely susceptible to unforeseen changes in the money value of its wealth. This should be classified among the major factors capable of causing short-period changes in the propensity to consume... Changes in the rate of time discounting... Perhaps the most important influence, operating through changes in the rate of interest, on the readiness to spend out of a given income, depends on the effect of these changes on the appreciation or depreciation in the price of securities and other assets. [4, pp. 92-4]

While Pesek and Saving [8, pp. 16-8] argued that these passages show Keynes as having a wealth effect, Patinkin [6, pp. 1157-8] has rightly pointed out that they refer to the effect of a once-and-for-all capital gain, and not to the continuous effect of the level of wealth.¹

Patinkin's interpretation is supported by the fact that Keynes wrote that "as wealth increases dC/dY diminishes, but also C/Y diminishes" [3, p. 126]. Keynes in this passage probably used the word "wealth" in a colloquial sense as a synonym for income. But even if this is the case, it suggests that Keynes did not have a wealth effect (as distinguished from a capital gains effect) for if he thought that wealth had an independent effect on consumption he is not likely to have used the term "wealth" in such a loose way.

It is not clear why Keynes omitted the wealth effect on consumption. One possible explanation consistent with my argument is that he took wealth as essentially constant. To be sure, if interest rates decline the value of assets rise, but if interest rates decline only temporarily this rise in wealth is temporary too, and can, in a rather loose way, be assimilated by the temporary capital gains effect which Keynes did discuss. Admittedly, another alternative is that Keynes did not take wealth as constant, but simply did not realize that consumption is a function of the stock of wealth. Although this idea seems

1. Pesek and Saving also argue that Keynes had a price induced wealth effect, but this too has been criticized by Patinkin [5, pp. 1158-9].

obvious and elementary to us now, the fact that it was generally ignored in the post-Keynesian literature until the mid-1950s suggests that it may not have been so obvious in 1936. This possibility derives plausibility from the fact that Keynes treated saving partly as a residual, and partly as institutionally determined, and did not, in the General Theory, derive the propensity to save explicitly from a demand for wealth model. Still a third possibility is that Keynes knew about the wealth effect on consumption, but treated it as too trivial to mention. But there is no evidence that this was the case. Since there are therefore three possible explanations of why Keynes did not include a wealth effect on consumption, his treatment of the consumption function does not provide any evidence that he took wealth as constant. But it is certainly consistent with this hypothesis, and therefore does not contradict the previously cited evidence in its favor.

IV

If Keynes did take the stock of wealth as constant, one must ask further why he did so. Part of the explanation is that it was analytically convenient for Keynes to treat the stock of capital equipment as constant in the short run. Similarly, Keynes treated the productivity of capital as also given (for each level of employment) since he took the production function as fixed.¹

If one grants these usual assumptions of the static macro model then wealth can vary in only two ways. One is through a change in the market value of assets as the interest rate changes, and the other is through a change

1. Since the yield on capital varies with the level of employment, the rate of return on capital, and hence, the present value of the capital stock is not, strictly speaking, constant. But insofar as the expected yield over the life of the capital stock is fairly stable, the assumption that the value of the capital stock is constant may be an acceptable approximation. Moreover, insofar as interest rates vary in proportion to the prospective yield of capital, its present value is constant.

in the components of wealth other than the capital stock, that is, changes in the real value of the stock of money and government securities.¹

Now, as just pointed out, in his consumption function analysis, Keynes included a capital gains effect due to changes in interest rates, but he did not allow the rise in asset prices induced by a fall in interest rates to have a continuous wealth effect. It is therefore not surprising that Keynes ignored the interest-induced change in wealth also in his analysis of L_2 where there is, in any case, no capital gains effect like the capital gains effect on consumption. Admittedly, since L_2 is concerned with portfolio adjustments, ignoring the interest induced change in wealth is perhaps a more serious omission than it is in the case of the consumption function, but if he thought of it at all, Keynes may have considered this effect to be empirically unimportant.² And since this interest induced wealth effect operates in the same direction as the direct interest rate effect on M_2 , not very much is actually lost by omitting it, particularly since, as pointed out above, Keynes' discussion of L_2 was informal rather than rigorous.

This leaves only one way in which wealth can vary: a change in the real value of money (or currency) and government securities. Presumably, Keynes treated the nominal stocks of money and securities as given, which is a legitimate procedure in a static model. And since Keynes operated with a price-fix framework it was easy for him to ignore the fact that the real value of these items changes with the price level,³ in other words, to

-
1. I am assuming that Keynes held constant not only the business capital stock, but also the consumer's capital stock.
 2. As far as I know, the change in wealth resulting from a change in interest rates was first introduced into the demand function for money only in 1951 by Metzler [5]. The fact that it took so many years to discover it makes it not surprising that Keynes did not mention it.
 3. A similar oversight occurs in Chapter 17 where, as Lerner has pointed out [2], Keynes forgot that the public can raise its real stock of money by letting the price level fall.

ignore the real balance effect. Hence, one can confirm Patinkin's conjecture that Keynes did not have the real balance effect in mind when he built a money illusion into L_2 . In fact, it is Keynes' omission of the real balance effect which explains why Keynes could build a money illusion into L_2 . It allowed him to treat the value of wealth as constant, and hence to omit it from the L_2 function. And with neither wealth nor income in the L_2 function, a money "illusion" is consistent with rational behavior.

References

1. Leijonhufvud, Axel, On Keynesian Economics and the Economics of Keynes (New York, Oxford University Press, 1968).
2. Lerner, Abba, "The Essential Properties of Interest and Money," Quarterly Journal of Economics, Vol. LXXVI, May 1952, pp. 172-93.
3. Keynes, John M., The General Theory of Employment, Interest and Money (New York, Harcourt Brace, 1936).
4. -----, "The Theory of the Rate of Interest," reprinted in American Economic Association, Readings in the Theory of Income Distribution (Homewood, Ill., Richard D. Irwin, 1946), pp. 418-24.
5. Meltzer, Lloyd, "Wealth, Saving and the Rate of Interest," Journal of Political Economy, Vol. LIX, April 1959, pp. 93-116.
6. Patinkin, Don, "Money and Wealth," Journal of Economic Literature, Vol. VII, December 1969, pp. 1149-60.
7. -----, Money, Interest and Prices (New York, Harner and Row, 1965), second edition.
8. Pesek, Boris and Thomas Saving, Money, Wealth and Economic Theory (New York, Macmillan, 1967).
9. Robertson, Dennis, "Mr. Keynes and the Rate of Interest," reprinted in American Economic Association, Readings in the Theory of Income Distribution (Homewood, Ill., Richard D. Irwin, 1946).
10. Tobin, James, "Liquidity Preference as Behavior towards Risk," Review of Economic Studies, Vol. XXV, February 1958, pp. 65-86.

WORKING PAPER SERIES

Department of Economics
University of California, Davis

1. "Some Tests of the Permanent Income Theory," by Thomas Mayer, February 1970.
2. "Externalities and Generalizations of the Negishi-Kemp Proposition," by Henry Wan, Jr., April 1970.
3. "Technology Diffusion, Substitution and X-efficiency," by T. Y. Shen, April 1970.
4. "The Aggressive Firm, Market Structure, and Economic Welfare," by Victor P. Goldberg, August 1970.
5. "Land Use Conflict and Public Policy," by Victor Goldberg, October 1970.
6. "The Minmax Representation of the Small Country Economy," by Leon L. Wegge, November 1970.
7. "A Note on Long Run Market Power and Substitute Competition," by Victor P. Goldberg, December 1970.
8. "Mechanization, Industrialization, and Technical Change in Rural West Pakistan," Hiromitsu Kaneda, January 1971.
9. "A Study of the Cost Behavior of Credit Unions," by Thomas F. Cargill and C. Daniel Vencill, March 1971.
10. "Options for Recreation and Transportation," by Kenneth D. Goldin, September 1971.
11. "Small-Scale, Agriculturally Related Industry in the Punjab," by Hiromitsu Kaneda and Frank C. Child, September 1971.
12. "Potential Entrants Discourage Entry: Comment," by Victor Goldberg and Sharon Moirao, October 1971.
13. "Investment Constraints and New York City Mutual Savings Bank Financing of Ante-Bellum Development," by Alan Olmstead, February 1972.
14. "The Emergency Employment Act of 1971. Experience in the State of California (excepting Los Angeles & San Diego). Second Interim Report, May 1972," by Martin P. Oettinger and C. Daniel Vencill, May 1972.
15. "The Permanent Income Theory and the Burden of General Consumption Taxes," by Thomas Mayer, May 1972.
16. "The Role of Central Bank Policy in the Industrial Growth of Germany, 1870 - 1914," by Martin P. Oettinger, May 1972.

