

## THE ROLE OF MONEY IN KEYNESIAN ECONOMICS

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It is unquestionable that macroeconomics has been suffering a major 'identity crisis' for some time now. Apart from reasons of simplicity there seems to be no reason why one should reason from a macro rather than a micro perspective - why should macrovariables matter more than their component parts? There is also a strong overlap between macroeconomics and monetary economics, which suggests that the implicit assumption of much macro reasoning is that it is money that makes the difference between a full General Equilibrium (GE) model and a standard IS/LM macro model. In this essay I will argue that there has been a consistent failure since the time of Keynes to explain precisely why money should matter. My conclusion will be that the GE framework provides both some neat answers to certain monetary controversies, but equally that it suggests whole range of unanswered questions of its own.

Keynes was in no doubt that the revolutionary nature of his theory sprung from its monetary nature:

"Money enters into the economic scheme in an essential and peculiar manner" (1936, p. xxii).

Money mattered because of its influence on the interest rate ( $r$ ) which was perhaps the key variable in his system. Keynes proposed what he thought was a revolutionary theory of interest rate determination, namely the 'liquidity preference' (LP) theory in opposition to the 'classical' orthodoxy of 'loanable funds' (LF). A major problem with the General Theory (GT) is that any precise statement Keynes makes when explored further does not sit well with the general thrust of his book, and so it is with his LP theory. One of the few discernable propositions in the book is that saving and investment determine the aggregate volume of employment, and not the rate of interest, which is determined by the money supply and money demand. Keynes is unambiguously clear on this point and attached great importance to it. This proposition was immediately attacked when the book was published, and in my opinion rightly so. There are two senses in which Keynes was wrong. Firstly, he saw the LP vs LF as representing the crux of his departure from Classical economics. Secondly, he saw it as legitimate to separate saving and investment decisions from money demand decisions, a procedure which undermines both his own theory, and later 'reinterpretations' of it.

On the first point, LP vs LF is not a useful way of seeing the Keynes vs Classics controversy. Suppose we are analysing the effects of an increased propensity to save. A stylized classical economist who believes that saving affects  $r$  (LF) would say that this would cause a fall in  $r$ . A Keynesian economist, who believes that saving influences the level of income, would say that it will cause a fall in the level of economic activity. Keynes was quite emphatic that these were distinct theories. In 1937 he wrote in a letter to Ohlin

"If there is no change in the liquidity position, the public can save ex-ante and ex-post and ex anything else until they are blue in the face without alleviating the problem ( $r$  too high) in the least - unless, indeed, the result of

their efforts is to lower the scale of activity". Thus saving only affects  $r$  indirectly by causing a fall in the transactions demand for money after income has fallen. But income only falls in the first place because wages are less than perfectly flexible. And if the classical economist follows his analysis through then he should observe that the fall in  $r$  will cause a fall in the velocity of money (increased hoarding) which unless wages are perfectly flexible will cause a fall in income. So the real issue is not what determines what, but rather how prices and quantities adjust. Once one takes a GE perspective and carries out an analysis through to its logical conclusion, the Keynes versus the Classics controversy becomes purely a matter of procedure. This is essentially the answer to the LP  $V^S$  LF controversy which followed the publication of GT, and is related to Keynes separation of factors determining the interest rate from those determining employment.

There are a number of ways of seeing Keynes' dichotomy. It can be seen from the 'neo Walrasian' view point of Hicks, who even as Keynes was writing GT was developing his own GE framework in 'Value and Capital' (1939). From this view point it is nonsense to pursue an argument about whether  $r$  is determined by saving and investment or by money supply and money demand because in GE everything affects everything else, and no one price is determined in any one market - this is seen as a legacy of Marshallian partial equilibrium theorizing. Hicks and Hansen formalized this observation by pointing out that the quantity of money and liquidity preference determine not  $r$ , but an LM curve. In this respect, it is interesting to note that the framework Hicks developed to illustrate the differences between "Mr. Keynes and the Classics" ended up showing their essential similarity. It was claimed that this was because Hicks had been unfair to Keynes, however it would seem that the 'classical economist' who makes an appearance in IS/LM is not a fair representative of the opponents of Keynes at the time.

The most forthright of these critics was D.H. Robertson. He tackled another aspect of Keynes' monetary theory - that there existed a 'dual decision hypothesis' in decisions involving wealth: firstly how much income to hold in the form of wealth and secondly in what form. Keynes believed that  $r$  was only influenced by the second of these decisions: "[the interest rate] was usually regarded as the reward of not spending, whereas in fact it was the reward of not hoarding" (1936, p.174) i.e. that  $r$  is influenced by decision to hold cash rather than by decisions to save. There then ensued a controversy about which of these views was correct; Robertson however showed that this debate was easily reconciled. There are three ways an agent can dispose of his income - he can spend it, lend it or hoard it. These three categories are mutually exclusive. The caricatured classical claim was that  $r$  is the reward for not-spending i.e. for lending and hoarding, whereas Keynes' claim that  $r$  is the reward for not hoarding i.e. for spending and lending. The common factor in both arguments is lending, thus the debate is easily resolved by stating what  $r$  is rather than what it is not. It is as if someone put an apple on the table and A claims it is not an orange and B claims it is not a banana, and then A and B start arguing about whether the apple is more 'not an orange' than it is 'not a banana'. Keynes refused to see this however, and used his forceful personality to ensure that no-one else did either, and this confusion has persisted right up to this day.

Robertson was not just a critic of Keynes however, he had a monetary theory of his own which is a far better representation of the direction in which classical theory was moving in the 1930s than anything Keynes said. He had  $r$  determined by a whole range of factors ranging from the genuinely classical productivity and thrift to the Keynesian motives of liquidity preference etc. While Keynes seems to have been well versed in some of the technical characteristics of money (cf Chap. 17) he seems to have overlooked some rather simpler ones - namely that in a monetary economy whether you spend or save or invest or hoard, you need cash. A decision to save or invest involves a demand for money to execute the transaction, and thus will affect  $r$  directly and not through income or any of the battery of 'effects' that have sprung up

since 1936. Keynes was certainly right to point out the inconsistency of 'classical theory' (by which he can only mean writers such as Thornton and Ricardo) which claimed that  $r$  was determined purely by productivity and thrift while allowing it to be affected by an increase in money supply without explaining how a change in the quantity of money affects investment or saving propensities. It is quite acceptable for him to start his theory at the money demand function stage, but it is a false dichotomy to assume that saving and investment decisions can be somehow exercised without cash, and will only affect  $r$  after they have caused a fall in income, an effect which seems to occur in a 'goods sector' which is entirely independent of the money market until income has already fallen. Pursuing the logic further, if a decision to save can have an effect without having to be executed with cash, then since consumption is the counterpart of saving, in Keynes' system a decision to consume must be able to be effective even without a monetary transaction taking place. This makes nonsense of the notional/effective demand distinction which some see as crucial to understanding GT. If there is such a distinction then it is certainly not money that gives rise to it. This in turn casts doubt on the dual decision hypothesis as an interpretation of the General Theory since it extracts from the book something that in logic couldn't be in there. Clower was clearly reading off the page into someone else's book; however I am reluctant to carry one of his assertions to its logical conclusion.

"Keynes either had a dual decision hypothesis at the back of his mind, or most of the General Theory is theoretical nonsense". (Clower, 1965, p.120).

Robertson was also aware that 'the general theory of interest' didn't in fact determine the rate of interest at all, but was a 'bootstrap' theory, determining movements around some elusive rate. His criticisms centred around the speculative demand for money. The speculator in Keynes's system doesn't seem to speculate on anything except other speculators - again the forces of productivity and thrift are denied a role in interest rate determination. However, one gets the clear impression from GT that Keynes is talking about movements around some interest rate, which he is reluctant to give a name to and/or define. In his 'pursuit of sharp distinctions' Keynes disposed of a concept, the natural rate of interest, that would have been of great use to him. Leijonhufvud argues that such a concept could be used in an attack on the 'natural rate hypothesis' by showing that an economy won't achieve its natural rate of unemployment unless it achieves its natural rate of interest. Perhaps one reason why Keynes avoided such a concept was because he feared it would have involved him in a largely inconclusive debate about Capital Theory that was in progress in the 1930s. The main reason for the

futility of this debate was that capital theory then was in a 'pre paradigm state' - the participants couldn't even agree what the issues were. GT had the beneficial effect of short-circuiting these controversies by switching attention from stocks such as 'capital' to flows such as Investment, Consumption and Saving. In the hydraulic Keynesian model, all problems about volume and value are forgotten. The debate about the nature of capital resurfaced in the 1950s and 1960s as the 'Cambridge Controversy', which reached two major conclusions:

(1) There are serious problems with defining and measuring aggregate capital - consequently beware of aggregate production functions

(2) Full GE is immune from these criticisms. However it is arguable that the internal consistency of GE theory results from its high level of abstraction. It seems hard to say anything about anything in these models. The interest rate is of no special significance - it is just another price. It is irrelevant to claim that the interest rate is determined in the money market or that the real wage is determined in the labour market, since each price is affected by every market. However this confuses GE as a framework with GE as a theory. While the theory has had little to say so far about the co-ordination problems in actual economies where there are missing markets etc. it can be developed in this direction within the GE framework of constrained choice by individual actors. However one of my central points is that the Keynesian view that money is at the root of the trouble has led to a number of false trails all concerned with the role of money in GE models. This began with Patinkin's work (1956) which as far as some economists were concerned settled for all time the role of money in a modern capitalist economy. It is believed for instance that his book conclusively proved the neutrality of money. What it did prove was that excess demand functions were homogenous of degree in all prices meaning that only relative prices matter. It in no way follows from this that if you double the money supply, you double the price level - such an analysis must assume stability results that have never been proved. Today we have the 'microfoundations of money' literature which applies complex mathematical analysis to the question of what conditions must we impose on an idealised economy to bring an asset such as money into being. Hahn has noted the incongruity of asking such a question in a framework purely concerned with Walrasian equilibrium which ignores "the powerful influence exerted by the future and past on the present .....[and the problems] if the requisite future markets are missing" (Arrow and Hahn, 1971, p369).

Another attempt to recussitate the role of money was that of Clower (1965) which has already been mentioned. The central aspect of this was the so called 'Clower constraint', that "money buys goods and goods buy money but that goods do not buy goods". The problem is that an involuntarily unemployed worker can't communicate to a prospective employer that he would buy his goods if he was employed by him because such a demand would not be 'effective' since he has no money. We have already questioned the claim that this is how GT should be interpreted, but how valid is it in its own right? In my view the problem is not the existence of money; rather if the worker was employed he would consume at best a very small proportion of what his employer produces - the problem could equally arise in a multi good barter economy. This in turn assumes that the worker could actually dispose of whatever 'own-product' he happens to be paid in. Hahn poses the example of someone who works for a company manufacturing

sulphuric acid in such an economy. This worker may have considerable difficulty in disposing of the acid to obtain precisely that bundle of goods that he wants - there could still be a problem of deficient demand; it has merely been transferred from employer to worker. Yet fans of Clower tend to the view that no co-ordination problems can cause in a barter economy because there, the Clower constraint doesn't apply - goods buy goods which buy goods, so no problems of deficient demand can arise. This is not true however - goods are only liquid in equilibrium - in disequilibrium a barter economy would face chronic liquidity failures. It doesn't make sense, given all the alleged advantages of money over barter that money should be less efficient than barter in certain sense. The real problem is not the role of money, but rather that of establishing an equilibrium, maintaining it and traversing from one equilibrium growth path to another when required. Incidentally, the notional/effective demand distinction was also made crucial to Clower's interpretation of Keynes' attack on Say's Law. Again money is not essential to this. If an increase in saving manifests itself as a move into Renaissance paintings the same employment problems arise. Any nonreproducible asset will suffice to invalidate Say's Law.

There seems to be no shortage of views about where we should go next. Clower and Hahn and others seem to agree that an extension must involve some exploration of price setting behaviour. Clower has suggested a research program involving the exploration of conditions that will facilitate the emergence of middle men, and factors that will govern their price (and quantity) setting behaviour. Hahn says:

"We look casually around, and General Motors doesn't look very small and trade unions don't look very small..... and when there are large agents around, then the Walrasian model isn't so helpful" (Hahn, 1980, p.164).

He suggests a game theoretic approach, when individually rational actions may lead to equilibria that can be improved by government policy - 'bootstrap equilibria' as he calls them. Such problems could arise in any economy, monetary or otherwise. What does matter however, is liquidity and Keynes was correct in pointing out that when there is uncertainty, liquidity becomes very important. There will be a desire for liquidity based on a desire to keep one's options open, and except in the certainty based Walrasian world, such a desire is bound to have some role in the functioning of the economic system. However, alternative equilibrium notions are required to discuss these questions and one bias that must be overcome is the view that anything that is not a Walrasian equilibrium is a disequilibrium.

My conclusion therefore is that we need to clear the ground of models that always work (GE) and models that never work (Keynes inspired models). If economies work quite well a lot of the time and collapse very occasionally but in a truly catastrophic fashion then so should our models.

"But as yet no one has the recipe for modelling systems that function very well most of the time, but sometimes work very badly to co-ordinate economic activities" (Leijonhufvud, 1976, p.103).

## REFERENCES

Arrow and Hahn (1971), General Competitive Equilibrium, Holden Day.

Clower (1965), "The Keynesian Counter-Revolution: a Theoretical Appraisal" in Hahn and Brechling (Eds.), *The Theory of Interest Rates*, MacMillan.

Clower (1984), "Reflections on the Keynesian Perplex" in Walker (Ed.), *Money and Markets*, Cambridge University Press.

Coddington (1979), Hicks' Contribution to Keynesian Economics, *Journal of Economic Literature*, Sept., Vol. 17(3).

Hahn (1980), Conference discussion in Kareken and Wallace (Eds.), *Models of Monetary Economies*, Federal Reserve Bank of Minneapolis.

Hahn (1984), *Equilibrium and macroeconomics*, Blackwell.

Leijonhufvud (1966), *On Keynesian Economics and the Economics of Keynes*, Oxford University Press.

Leijonhufvud (1981), *Information and Co-ordination*, Oxford University Press.

Keynes (1936), *The General Theory of Employment, Interest and Money*, Cambridge.

Tsiang, (1980), Keynes Finance motive and the Demand for Liquidity, *Economic Journal*, May Vol. 94(3).

The microfoundations of Keynesian models