The Monetarist's Nemesis

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Augmentation [in the quantity of money] has no other effect than to heighten the price of labour and commodities..In my opinion, it is only in [the] interval of intermediate situation, between the acquisition of money and rise of prices, that the increasing quantity of gold and silver is favourable to industry (Hume, 1752).

"Monetarist" propositions concerning the significance of money clearly hold a distinguished place in the history of monetary thought. Yet these propositions have too often been couched in the equilibrium vernacular of classical formulations. Hence market mechanisms are perceived to exist and function independently of the behaviour of the supply and demand for money. Furthermore, the possibility of quantity adjustments is denied.

It will be argued in this paper that such a framework is culpable on the grounds that Marshallian and Walrasian micro-foundations have been embraced without sufficient qualification. Section one examines the development of monetarism[1]. It first describes what may usefully be called vintage monetarism, setting out the Marshallian framework adopted by Friedman. The discussion is then extended to take account of new classical specifications, focussing in particular on their Walrasian frame of reference. The emphasis here will be on the fundamental equilibrium roots of monetarism, rather than on specific monetarist propositions.

Section two delineates a critique of this monetarist doctrine. The fallacy of neglecting the means-of-exchange role of money is highlighted, as is the misleading nature of concentration on equilibrating price adjustments. It is concluded that a worthwhile alternative avenue of research must be set in a non-Walrasian, dis-equilibrium context.

One *obiter dictum* is necessary at the outset. The issue of whether new classicals can be labelled monetarists is moot. Tobin (1981), on the basis of the similarity in both schools *policy prescriptions,* calls new classicals "monetarists mark II." Hahn (1980), concurs, except that he emphasizes the parallels in the schools' *theoretical* bases. Laidler (1981), in contrast, compares the new classicals more to the Austrian school, citing *theoretical differences* as the key distinguishing feature. In this paper, Hahn's classification is adopted, while it is noted that the critique remains relevant irrespective of the categorization chosen.

The Monetarist's Genesis

Marshallian foundations

It is now almost a quarter of a century since Friedman's celebrated Presidential address to the American Economics Association, in which he presented a

1 The term "monetarism" was first coined by Karl Brunner in 1968. However, the original etymology of the word is more interesting. There was a temple on the Capitoline hill in Rome dedicated to Juno Moneta. She was the goddess of the month of June, and the protectress of marriage. Near to the temple was the building where denarius coins were struck, and hence they came to be called moneta. From this the words "money" and "monetarist" derive (O'Donnell,1990).

consistent framework for reconciling the empirically observed negative correlation between inflation and unemployment with the absence of money illusion (Walsh,1989). This transformed the central debate in macroeconomics and served to introduce the role of expectations and the equilibrium approach.

In his work, Friedman took particular cognizance of the Cournot problem, and it is this that perhaps distinguishes his writings most from contemporary analyses (Hoover,1984). Cournot was concerned with the following question: given economic interdependence, how can economic analyses be handled using practical methods? In an effort to circumvent this problem, Friedman employed Marshallian as opposed to Walrasian constructs. He ratified such an approach in his 1949 essay, "The Marshallian Demand Curve," in which he argued that Marshallian analyses represented a strand of general equilibrium that can be used as "...an engine for the discovery of truth" (1949:490). He judged Walrasian frameworks to be quixotic, contending that their merit was seen to depend more on their degree of abstraction, generality and mathematical elegance than anything else. Consequently, he generally employed single equation methods in his empirical work on money and consumption. He also made effective use of portmanteau variables. Problems were thus partitioned into more manageable sections.

Despite the fact that Friedman eschewed the full equilibrium schema, it is clear that he retained the fundamental equilibrium ideas of market-clearing and price, as opposed to quantity, adjustments. Thus were the characteristic monetarists propositions arrived at[2]. Indeed, Friedman himself writes: "The natural rate of unemployment...is the level that would be ground out by the Walrasian system of general equilibrium equations, provided there is embedded in them the actual structural characteristics of the labour and commodity markets" (1968:8).

It is argued below that, while such an approach is pragmatic, it is open to indictment on a number of charges. Before embarking on this critique, however, the contemporary monetarism of the new classicals is first examined.

Walrasian innovations

Hahn (1980) argues that if the world is in continuous Walrasian equilibrium, then the monetarist case is strong. To illustrate this, he delineates the features of a simple Walrasian economy, and shows how these are sufficient for the validity of monetarist propositions.

The point of departure is the assumption that agents treat prices parametrically, and formulate their present plans based on these and expected future prices. The latter are contingent on the state of nature. Under (homogeneous) rational expectations, the prices expected to rule in the future, given any state s, are in fact the prices that will clear the markets if state s occurs. If noise impinges, the probability distribution of prices which agents assign is assumed to be equivalent to the distribution that will be generated by the economy. The implication is that price expectations are conditioned not only on the state of nature, but also on any exogenous variables that help determine prices in that state. One such variable is the money supply.

If agents know the constellation of assets, including money, at any date and state, they will also know market-clearing prices. Under these circumstances, in a Walrasian world where agents are not

2 The most important of these are: (i) inflation is associated most closely with changes in the supply of money; (ii) unemployment is a response to the real-wage. Others can be included, but as Mayer (1978) notes, "...monetarism is not a clear-cut doctrine set forth in one particular place."

systematically disappointed, and transactions are not thwarted, a long-run rational expectations equilibrium will obtain[3]. Given the absence of internal debt denominated in money, and a neutral real tax system, such an equilibrium will be homogeneous of degree zero in money stock and in current and future prices.

As long as the constellation of assets can be accurately predicted, all markets will clear in all periods, and the economy will not diverge significantly from rational expectations equilibrium. In particular, there will be no involuntary unemployment. The step from the homogeneity postulate to the statement that "a k-fold increase in the money stock will produce a k-fold increase in prices" becomes, in these circumstances, relatively small. It is only in the case that the constellation of assets cannot be accurately predicted (due, perhaps, to the presence of a random monetary component), that the economy diverges from its unique equilibrium. Hence Lucas's (1975) conclusion that money can only have real effects if relative price movements owing to the state of the economy cannot be disentangled from absolute prices.

The policy conclusion of this analysis is stark. Given rational expectations, there is no exploitable Philip's trade-off, even in the short-run. Indeed, Walrasian analysis, obviating as it does the need for partitioning of problems into tractable units, does not admit of a short-run. But, perhaps to a degree more than vintage monetarism, the new classical framework is reprehensible. It ignores the means of exchange role of money, and denies quantity corrections. As Hahn writes: "there must be few firms...who sell as much at the going price as they would want to" (1980:8). These and other issues are taken up in the next section.

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The Role of Money

Laidler argues that:

> "...to treat the expectations augmented Phillips curve as the aggregate supply curve of a competitive Walrasian economy characterized by certain information imperfections [is] to treat a monetary economy as one in which money [has] no means of exchange role to play" (1990:xi).

Subsequent to the publication of the General Theory (1936), in which specific emphasis was placed on the demand for money as a means of exchange, an effort was made to integrate monetary theory with Walrasian value theory in the guise of IS-LM analysis. However, in pursuing this approach, monetary economists were adopting a model which could not generate a transactions motive internally. Traditional accounts of the necessity of a monetary economy centre on the information and coordination problems of barter. Yet within the Walrasian economy, information and incentives to co-ordinate the activities of otherwise isolated and self-interested agents are provided by the structure of relative prices. Hence barter-economy analyses must either treat money as an "asset pure and simple, or...introduce monetary exchange in an apparently arbitrary fashion by appealing to a cash-in-advance constraint" (Laidler,1990:7).

The Walrasian auctioneer coordinates the economy by performing three distinct tasks: setting market-clearing prices, informing agents about them, and bringing suppliers and demanders together to trade. In reality, however, this device of

3 A rational expectations equilibrium is a set of future and present prices such that markets clear at all dates and such that no agent can improve his or her forecast of the probability distribution of prices, given the information available.

tatonnement represents no more than an artificial but convenient simplification. It is precisely for this reason that money matters. In the absence of the auctioneer, money offers an alternative institution for coordinating information and economic activity (Goodhart, 1975).

However, it is not quite as good an institution as the auctioneer. Some degree of market uncertainty, and associated search and transactions costs, must impinge. If consumers find it worthwhile to shop around for favourable prices, then the timing of transactions becomes stochastic, and agents will find it convenient and indeed optimal to hold inventories of goods and complementary inventories of cash balances. "In short, if we dispense with the auctioneer entirely and have prices set endogenously, we create a world in which the precautionary demand for money becomes of the essence" (Laidler, 1990:9).

Although the existence of unsold goods and money is difficult to account for within the Walrasian model, they are important ingredients of the real world (Morgan,1978). Monetarism must be criticized for its failure to take sufficient cognizance of this. However, this criticism only derives its potency when the concomitant implication of price-stickiness is considered.

Price Stickiness

Price stickiness can arise from inertia in expectations, the existence of nominal contracts of fixed duration, or from the existence of non-trivial menu-costs. The Walrasian monetarist paradigm rules out the occurrence of such inflexibility. However, if the proposition made above that monetary exchange involves an inevitable degree of uncertainty holds, then price rigidities must obtain. Such rigidity can arise even without relaxing the assumption of rationality. It follows trivially if costs of information are imputed. In this case, agents will gather information only up until the point that the marginal cost of doing so equals the marginal benefit that its possession confers. However, Hahn (1980) endeavours to integrate rational behaviour with a non-Walrasian world in a more formal way.

The point of departure for Hahn's analysis is that prices do not clear all markets. He then poses the following question: "...do there exist price and quantity constraints on the trading of agents such that all constrained trades balance and no agent can improve himself by a change in price?" (1980:5). If such prices and quantities do exist, then they characterize a rational conjectural-rational expectation equilibrium. Although proof of the existence of such an equilibrium requires stability results that have not yet been established, Hahn argues that the cadre does not appear vacuous.

If such an equilibrium does exist, then the conclusions reached earlier must be radically altered. Both prices and quantities now become signals, and multiple equilibria in which markets clear in the constrained excess demand functions can be established. They may all still possess the homogeneity property, but since quantities vary endogenously, the step from homogeneity to "a k-fold increase in the money stock will produce a k-fold increase in prices" is now tentative. This "endemic non-uniqueness" allows discussion of movement from one equilibrium, to another characterized by a lower level of involuntary unemployment. Money, in this context, is clearly non-neutral.

The discussion above highlights the fact that, when Jaffe's "abandonment of reality" (the Walrasian framework) is dismissed, conclusions that differ sharply from monetarist propositions result. Yet so far, the assumption of rationality has been maintained. This assumption is now challenged.

Irrationality

Keynes was unequivocal in his denial of expectational rationality: "...a large proportion of our positive activities depend on spontaneous rather than on mathematical expectation" (1936: 161). Akerlof and Yellen (1987) argue that economists have accorded the assumption of rational, maximizing behaviour unwarranted ritual purity. They argue that it is necessary to relax the assumptions of the perfectly competitive Walrasian model, and impose instead a theory which conforms more to reality based on the assumption that agents are not fully rational.

Individuals do indeed suffer from money-illusion, follow rules of thumb and give weight to considerations of fairness and equity. The burgeoning weight of psychological research (see for example Bazerman,1986) suggests that cognitive biases produce such unscientific behaviour. Blinder concludes, "...the von Neumann-Morgenstern axioms are routinely violated" (1987:135). In this light, it appears short-sighted to pursue the development of models founded on simple homogeneous rational expectations. People do not always optimize at the margin, and monetarist formulations remain culpable in this regard.

Conclusion

This paper has argued that the monetarist doctrine is deficient in a number of critical respects. Foremost among these is its appeal to the equilibrium world of Marshall and Walras, an appeal which cannot be justified in the light of observed phenomena. In reality, quantity changes play a significant part in the process of economic adjustment. Markets in current and future periods are neither perfect nor complete. "High unemployment rates, excess capacity, and surplus stocks demonstrate the existence of the ubiquitous "quantity constraint" on any market" (O'Neill,1990).

In addition, the rationality postulate of monetarists must be exposed to serious questioning. "The commonly regarded *sine qua non* of good economic theory - a microeconomic foundation based on perfectly rational, maximising behaviour" must be dropped in favour of the pastiche of sociological/psychological behaviour that Keynes originally envisaged (Akerlof and Yellen,1987).

Keynesian inspired non-Walrasian models of price rigidity that have relaxed the assumption of rational atomistic agents, have so far had a high average product (Mankiw,1986). Monetarists must endeavour to explore similar avenues. To quote Keynes:

> "I shall hope to convince you some day that Walras' theory and all the others along those lines are little better than nonsense" (letter to Hicks,1934; quoted in Morgan, 1978).

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