The Structure of Monetarism (I)

By Thomas Mayer*, Davis/Cal.

In recent years the term "monetarism" has come into vogue[1]. Defined in a very narrow sense it is the view that changes in the money stock are the predominate factor explaining changes in money income, and hence is merely a new term for "quantity theory". But used in a broader sense the term "monetarism" encompasses a number of other propositions apart from the quantity theory of money. Unfortunately, this whole set of views is commonly judged as a single unit. This contributes to an unfortunate division of economists into monetarists and Keynesian schools with a resulting polarization. It is my impression that the Keynesians have a predisposition to reject all monetarist propositions on the basis of their "guilt by association" with other monetarist propositions, while monetarists have the opposite tendency. I will therefore try to do two things in this paper. One is to show the interrelations between the various monetarist propositions, and to illustrate that they do indeed form a coherent whole. The other is to show that despite this, the connection between various monetarist propositions is loose enough so that one can judge each one on its own merits rather than having to accept or reject monetarist doctrine as a whole. However, I will not try to judge the validity of monetarism.

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[1] The term "monetarism" was originated by Karl *Brunner* ("The Role of Money and Monetary Policy", Federal Reserve Bank of St. Louis, Review, Vol. 50, July 1968, pp. 8 - 24), and was popularized by David *Fand;* see for instance his "Monetarism and Fiscalism", Banca Nazionale del Lavoro, Quarterly Review, Number 94, September 1970, pp. 3 - 34 and „Ein monetaristisches Modell des Geldwirkungsprozesses", Kredit und Kapital, Vol. 3 (1970), pp. 361 - 385.

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To do this it is necessary as a first step to define the set of propositions which characterize monetarists and distinguish them from Keynesians. Unfortunately there is no single place where one can find a listing of all monetarist propositions, and I have therefore had to construct my own list[2]. In doing so I have tried to err on the side of inclusiveness rather than exclusiveness, and I am dealing therefore with monetarism in the broad sense of a "Weltanschauung". Any such listing is, of course, quite arbitrary and the reader may want to add or to delete items from the following list[3].

1. The quantity theory of money, in the sense of the predominance of the impact of monetary factors on nominal income.
2. The monetarist model of the transmission process.
3. Belief in the inherent stability of the private sector.
4. Irrelevance of allocative detail for the explanation of short-run changes in money income, and belief in a fluid capital market.
5. Focus on the price level as a whole rather than on individual prices.
6. Reliance on small rather than large econometric models.
7. Use of the reserve base or similar measure as the indicator of monetary policy.
8. Use of the money stock as the proper target of monetary policy.
9. Acceptance of a monetary growth rule.
10. Rejection of an unemployment-inflation trade-off in favor of a real *Phillips*-curve.
11. A relatively greater concern about inflation than about unemployment compared to other economists.
12. Dislike of government intervention.

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[2] Similarly, there is no authoritative listing of Keynesian propositions. I have interpreted Keynesian theory as a theory represented by the views of such economists as James *Duesenberry*, Franco *Modigliani*, Paul *Samuelson*, and James *Tobin* rather than by the more extreme views which can be found in the writings of economists such as Alvin *Hansen*. Hence, what I am calling "Keynesian theory" is to some extent a synthetic theory which has probably been influenced by monetarism.

[3] Throughout my discussion deals only with monetarist school as it exists in the United States.

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The first four of these items are ones listed by Karl *Brunner* in his description of monetarism[4], while items 2 and 7 - 9 can be found in David *Fand's* survey of monetarism[5]. On the other side of the debate James *Tobin* has characterized it by items 1, 7, 8, 9, and 10 in the above list[6]. Item 5, the focus on the price level as a whole, while usually not explicit, is implicit in typical monetarist discussion of inflation, particulary in their rejection of cost-push inflation. Item 6, the preference for small models, while certainly not a basic part of monetarist doctrine, is something which most monetarists seem to have in common. Item 10, the real *Phillips*-curve, is listed by Leonall *Andersen*[7]. Item 11, concern about inflation, is admittedly a rather questionable item, based only on my general impression of monetarist writings and verbal tradition[8]. The final item, dislike of government regulation, is a view that seems to be generally shared by monetarists, at least in the United States.

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[4] *Brunner*, "The 'Monetarist Revolution' in Monetary Theory", Weltwirtschaftliches Archiv, Vol. 105, Number 1, 1970, pp. 1 - 30.

[5] *Fand* also mentions another item, the monetarist's belief in long and variable lags. But at present many Keynesians also believe that monetary policy has long lags. David *Fand*, "Monetarism and Fiscalism", loc. cit.

[6] James *Tobin*, The New Economics One Decade Older (Princeton, N. J., pp. 58 - 59). Actually, as far as item 7 is concerned *Tobin* refers to the money stock rather than total reserves, but this is a minor difference. Also, item 8 is implicit, rather than explicit in *Tobins's* list. Paul *Samuelson* ("Reflections on the Merits and Demerits of Monetarism" in James *Diamond*, editor, Issues in Fiscal and Monetary Policy, Chicago, Illinois, 1971, pp. 7 - 21) lists the quantity theory and the monetary growth rate rule as the two basic propositions of monetarism. To these he adds the belief in wage and price flexibility, and in the response of the interest rate to inflation (two propositions which can be treated as part of the quantity theory) and a belief in the real nature of the *Philipps*-curve with the associated belief in a natural rate of unemployment. He then stated (p. 20) that "there is no reason why monetarists should believe this except that all of these notions happen o be believed by one man, Professor *Friedman*". (For a similar statement see James *Tobin*, op. cit., p. 62.) This not only ignores the work of *Brunner* and *Meltzer*, but also ignores the various linkages discussed below.

[7] "The State of the Monetarist Debate", Federal Reserve Bank of St. Louis, Review, vol. 56, September 1973, pp. 5 - 6. Although *Andersen* states that it is also accepted by "many other economists" it is frequently rejected by Keynesians.

[8] For a typical example see James *Tobin's* criticisms of the policy recommendations made by the, mainly monetarist, "Shadow Open Market Committee" (James *Tobin*, "Monetary Policy in 1974 and Beyond", Brookings Papers on Economic Activity, 1974: 1, pp. 219 -2 32.

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These twelve items are, of course, not all equally significant. The first four are the basic ones and can be used to define monetarism. A mon etarists need not accept any of the other eight[9]. But monetarists do tend to accept these other eight propositions too. And my purpose here is to describe a set of beliefs which are shared by economists who call themselves monetarists (and to a much lesser extent by other economists) rather than to set out a set of beliefs which are the sufficient and necessary conditions for an economist to be called a monetarist[10].

The way I will now proceed is to start with the quantity theory, and then take up each of the other components in the order listed, and see to what extent they are dependent or independent of the previously dis-

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[9] Thus Allan *Meltzer* wrote (private communication) "I do not accept any but points 1 to 4 as part of monetarism. The other points are, for me, propositions that I accept to varying degrees. Many are unrelated to monetarism. For example, your point 5 is a Hicksian proposition about composite goods. It should be accepted by all economists." It is certainly true that item 5 can be considered as a theorem about composite goods, but there is still a decision to be made as a matter of research strategy, rather than as a matter of formal theory, whether one analyzes the general price level as a single unit or by looking at individual prices.

[10] However, I have omitted the international aspect of monetarism, the proposition that with fixed exchange rates a country's money stock and price level depend not on its own monetary policy, but on the whole world's monetary policy. At least in the United States, this proposition has not played much of a role in monetarist discussions. But adding it to my list would not change my conclusions because, as Harry *Johnson* has pointed out, "a properly understood Keynesian approach to the system as a whole would produce the same conclusion". (H. G. *Johnson* and A. R. *Nobay* (editors), Issues in Monetary Economics, London, Oxford University Press, 1974, p. 50.) Besides, it is essentially part of the first proposition, the quantity theory. I have also omitted an item mentioned by *Brunner* ("The Role of Money and Monetary Policy", op. cit., p. 9), the belief that the monetary authorities can control the stock of money. This is now accepted by many Keynesians as well, though admittedly, Keynesian tend to qualify it more than monetarists do.

The various hypotheses I describe as monetarist do, of course, predate the development of the term "monetarism". The quantity theory, together with its transmission process, has an ancient history, as do, though perhaps to a lesser extent, the next three items. Items 6, 7 and 10 are newer because the problems they present are newer. A hundred years ago nobody was worried about the proper size of an econometric model, or about the correct monetary indicator. Debate about items 8 and 9 can, to some extent, be traced back to the banking school-currency school debate. The final two items again, do have a long history. What is new about monetarism is therefore primarily its combination of hypotheses into a single doctrine.

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cussed components. In Part I of the paper I will deal with the first six propositions. In the second part of this paper, to be published in the subsequent issue of this journal, I will deal with propositions 7 - 12 and will summarize the results obtained in both parts.

I. The Quantity Theory

The quantity theory is the most basic component of monetarism. By the quantity theory I mean the proposition that changes in the money stock are the dominant determinant of changes in money income[11]. This is a very general version which does not commit one to a specific theory of the transmission process, a process treated separately in the next section. A very important aspect of the quantity theory-Keynesian dispute involves the speed of adaption of the economy[12]. Keynesians would not — or at least should not — deny that in the long run changes in nominal income are dominated by changes in the money stock.

The above definition of the quantity theory clearly fits both the Friedmanian and the *Brunner-Meltzer* versions. It is not at all clear, however, that it also fits the *Patinkin* version. This is due to two characteristics of *Patinkin's* model. First, while changes in the stock of money ultimately bring about equivalent changes in the price level we are not told how long this process takes. Hence someone may completely accept the *Patinkin* model, and yet, in forecasting next year's money income might not pay very much attention to recent changes in the money stock because these changes will have their effects only in some far-off equilibrium[13]. Second, while *Patinkin's* model tells us that changes in the money supply have proportional effects on money income, this does not necessarily deny that changes in other variables also affect money

[11] The modern Keynesian theory differs from the quantity theory in denying that changes in the money stock dominate changes in income, but it does not claim that changes in the money stock are unimportant. According to J. R. *Hicks* (The Crisis in Keynesian Economics, Oxford, 1974, pp. 31 - 32) *Keynes* himself "must surely in some sense, perhaps a very weak sense, have been a monetarist. He has nevertheless been read to imply that there is nothing to be done with money."

[12] Thus the growing literature on search costs is relevant to the monetarist-Keynesian debate and monetarists attach more importance to search costs than do Keynesians.

[13] To be sure, if there are long lags in the effects of money on income then one might predict next years's income by changes in the money stock in previous years, but if the lags are highly variable, even this would not work.

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income. And if changes in these other variables have important effects on income, then the essential monetarist proposition that variations in money income are explained mainly by changes in the money stock need no longer hold. Thus a Patinkian might well use a Keynesian model for ordinary forecasting purposes instead of a quantity theory model.

This is not to deny that *Patinkin's* model is a quantity theory model, but it is a quantity theory model in a different sense from the way I am defining the quantity theory here. His model has, to a large extent, a quantity theorist's "engine of analysis"[14], but the conclusions he reaches are not necessarily those of the quantity theory in the short run as distinct from the long run[15]. Since monetarism is a policy-oriented doctrine, concerned very much with the short run, *Patinkin's* version of the quantity theory can be excluded from it.

II. The Transmission Process

The monetarist's version of the transmission process by which changes in the money stock affect income follows naturally from his research strategy which is to focus on the supply and demand for real money

[14] *Patinkin's* model uses the quantity theory's analytic procedures insofar as it focuses on the gap between desired and actual real balances. However, it is Keynesian in its use of capital theory since, as *Patinkin* has argued, the Cambridge school did not use capital theory in its monetary analysis to any significant extent. (See Don *Patinkin*, "Keynesian Monetary Theory and the Cambridge School", in H. G. *Johnson* and A. R. *Nobay*, op. cit., pp. 3 - 30.)

[15] This difference between looking at the quantity theory as an engine of analysis and looking at it as the conclusion that money matters a great deal is at the heart of a dispute between *Friedman* and *Patinkin*. *Patinkin*, focusing on the fact that *Friedman* — like *Keynes*, but unlike pre-Keynesian quantity theorists — uses capital theory in his monetary analysis, has argued that *Friedman's* theory is more a Keynesian than a quantity theory. (Don *Patinkin*, "The Chicago Tradition, the Quantity Theory and *Friedman*", Journal of Money, Credit and Banking, Vol. I, Feb. 1969, pp. 46 - 70, and "*Friedman* on the Quantity Theory and Keynesian Economics", Journal of Political Economy, vol. 80, September/October 1972, pp. 883 - 905.) *Friedman's* reply was to object to *Patinkin's* "propensity to take the 'quantity theory' to mean one thing, and one thing only, namely the long-run proposition that money is neutral, even though he fully recognizes, indeed insists, that quantity theorists (myself included) were concerned mostly with short-run fluctuations". ("Comments on the Critics", Journal of Political Economy, vol. 80, September/October 1972, p. 932.) Perhaps the point should be stated differently by saying that *Friedman* classifies theories on the basis of the conclusions they reach, while *Patinkin* classifies them on the basis of the analytic method used.

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balances[16]. If the public finds itself with excess balances it will reduce them by increasing expenditures, presumably on both goods and bonds. By contrast, the Keynesian focuses on relative yields, and therefore phrases the story differently. If the public has excess money balances this must mean that the yield on its money balances is less than the yield it can obtain on other assets, and hence it buys other assets. Such a portfolio realignment to bring yields (adjusted for risk, etc.) into equality is likely to involve primarily assets which are similar to money, that is securities rather than goods. Hence, monetarists and Keynesians typically have a different range of assets in mind when they think of the transmission process. This difference is illustrated by the Keynesian calling the price of money the interest rate since he thinks of money as a fund which can be either held as money or lent, while the monetarist thinks of the price of money as the inverse of the price level, since money is used to buy goods[17].

Unfortunately, this genuine dispute, as well as disputes relating to the measurement problem discussed below, are often obscured by a spurious dispute about whether money affects income "directly" or only "indirectly". This difference is terminological; one can reformulate the

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[16] I will not describe the monetarist transmission processes here in any detail. *Friedman's* variant stresses substitution effects, and the influence of changes in the money stock on the nominal interest rate while the *Brunner-Meltzer* variant stresses relative price and stock effects. Both variants attach much importance to the distinction between nominal and real rates of interest, and more generally, pay greater attention to price changes than Keynesians typically do.

I am discussing only the transmission process for changes in the quantity of money, and not for fiscal policy etc. The monetarist argument that fiscal policy changes result in counteracting changes, such as "crowding out", which offset them after some time, is really part of the previously discussed monetarist proposition, that changes in money income are explained largely by changes in the money stock.

[17] Thus in commenting on a draft of this paper Milton *Friedman* wrote (private communication) "I believe an important distinction between Keynesian and monetarist views is one that I have not myself stressed sufficiently but that comes out in the course of some of your comments. This is the distinction between money and credit and most particularly in what one regards as the price of money. The Keynesian approach invariably regards the interest rate as the price of money whereas the quantity theory approach regards the interest rate as the price of credit and the inverse of the price level as the price of money. This is exremely important in connection with the way in which the demand curve for money is used."

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monetarist story in terms of the interest rate and the Keynesian story in a way that omits the interest rate. An increase in the real stock of money lowers the imputed real interest rate on money balances. Hence, a monetarist, instead of saying that the public has more money than it wants to hold, and thus increases expenditures, can say that the public's imputed interest rate on money holdings has fallen while the yield on other assets is constant. Thus, directly to equalize marginal yields, and indirectly because of the increase in the money stock, the public increases expenditures. Conversely, the Keynesian can use his liquidity preference diagram to show that an increase in the public's money stock means that the public is now holding more than its optimal stock of money, and hence, to equalize rates of return on the margin, buys securities. Essentially the point here is the following: Given a demand curve, whether for a commodity such as apples, or for the holding of money, we can described any change either in terms of price (the interest rate) or in terms of quantities (the stock of money). As long as we have a given demand curve it does not matter; we must get the same answer regardless of which axis of the diagram we look at. Hence, on a level of formal theory where one can ignore measurement problems, it is unimportant whether one formulates the analysis in terms of the money stock or in terms of the interest rate[18]. This dispute is spurious. It is therefore not surprising that Y. C. *Park* in his careful survey of the transmission process concluded that "at the level of general description there appear to be no significant differences in the transmission process of monetary influences among a variety of monetary economists"[19].

A genuine aspect of the dispute, however, relates to the stability of the demand for money which is part of the previously discussed hypothesis that nominal income changes are dominated by changes in the money stock. If the demand for money is unstable (in a numerical sense), perhaps because of shifts in the marginal efficiency of investment, then knowledge that the supply of money has increased no longer allows us to predict with any degree of confidence that expenditures will actually increase. This is so regardless of whether one phrases the process in Keynesian or monetarist terms. The real difference between

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[18] Cf. Milton *Friedman*, "A Theoretical Framework for Monetary Analysis", National Bureau of Economic Research, Occasional Paper, number 112 (New York, 1971), p. 28.

[19] Y. C. *Park*, "Some Current Issues on the Transmission Process of Monetary Policy", International Monetary Fund, Staff Papers, March 1972, p. 38.

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the two schools is that the Keynesian tends to take the possibility of an unstable demand for money much more seriously than does the monetarist, in part because he has a different theory of the interest rate[20]. Hence, in predicting expenditures the Keynesian prefers to look at what is happening to the rate of interest, thus taking account of changes in both the demand for, and the supply of, money. The monetarist, on the other hand, though he would agree in principle that changes in the money supply may give a misleading answer because of changes in money demand, does not treat this danger as seriously as does the Keynesian.

However, one must beware of exaggerating this difference. Although in "The General Theory" *Keynes* did give the impression that the demand for money is highly unstable, modern Keynesians no longer seem to believe this, and instead treat the demand for money as fairly stable. On the other hand, *Friedman* has stated that the quantity theorist looks upon the demand for money as being a stable function of other variables, rather than as necessarily being stable in a numerical sense[21].

Since changes in the interest rate register demand as well as supply shifts they clearly have more information content than changes in the money supply. One might, therefore, ask why anyone would look at the money supply rather than at the rate of interest. This question brings us to the second substantive issue, the measurement problem. The above discussion has assumed implicity that both "the" interest rate and "the" money stock can be measured without error, or that they are measured with equivalent errors. But this is questionable. Monetarists prefer to use the money stock rather than the rate of interest because they believe that the money stock can be measured much better. The term "the rate

[20] Many monetarists believe that if the quantity of money is increased the nominal interest rate declines only very temporarily. It soon rises back to its previous level, and, due to the *Fisher* effect, even exceeds it. The monetarist therefore looks upon the expected real interest rate as fairly stable. Hence, one of the factors which can cause fluctuations in the quantity of money demanded, changes in the expected real interest rate, seems much less important to the monetarist than to the Keynesian. Another important reason why monetarists take the demand for money as stable is that, as discussed below, the monetarist treats expenditure incentives as much more stable than the Keynesian does, and hence considers the expected real rate of interest, and therefore the demand for money, to be stabler than Keynesians do.

[21] "The Quantity Theory of Money: A Restatement", reprinted in Milton *Friedman,* The Optimum Quantity of Money, op. cit., ch. 2.

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of interest" as used in formal theory is a theoretical term, and for any empirical work with it it is necessary to find an accurately measureable counterpart. The monetarist typically believes that this creates insuperable difficulties. One difficulty is that "the" rate of interest is an amalgam of a vast number of specific long term and short term rates, and that there is no clear way in which these rates can all be combined into a single measure. Term structure theory is not a completely reliable guide. The second difficulty is that by no means all the rates which should be combined into "the" interest rate can be observed in the market. Imputed rates used internally by households and firms should be included, and due allowance should also be made for borrowing costs other than the measured interest rate, for example the cost of deteriorating balance sheet ratios. Third, what is relevant for economic decisions is the expected real rate of interest, which cannot be observed in the market, and cannot be approximated reliably by econometric techniques. Since changes in the inflation rate are frequently large relative to changes in the real interest rate, changes in the nominal rate may be a very poor guide to changes in the expected real rate. Hence, monetarists argue, in practice the money stock is a much better measuring rod than is the interest rate.

It is, of course, open for Keynesians to reply that the money stock is also measured badly. Again the problem is that the theoretical term, "money", as used in the quantity theory does not have a clear-cut empirical counterpart. Should it be approximated by M_1 or M_2? This is an issue on which monetarists disagree among themselves[22]. Presumably, the proper counterpart is some weighted mean, but there exists no reliable way of estimating it[23]. Furthermore, as in the case of the interest rate one should make some adjustment for the anticipated inflation rate. Surely, it does affect how the public feels about the adequacy of its cash balances. Hence, it is open to the Keynesian to argue that despite the

[22] In the United States in recent years the growth rates of M_1 and M_2 have diverged widely, presumably in large part due to restrictions on interest payments on deposits. For example, between December 1972 and December 1973 M_1 grew at a 6.1 percent rate while M_2 (excluding large certificates of deposit) grew at an 8.9 percent rate, that is at a 69 percent greater rate.

[23] Some attempts have been made to settle this issue by seeing whether M_1 or M_2 have a closer correlation with income. But these attempts founder on the fact that the "reverse causation" bias may be greater for one measure than for the other.

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difficulties of measuring "the" rate of interest, it can be measured more accurately than "the" money stock.

Problems of measuring the money stock are likely to seem more serious to a Keynesian than to a quantity theorist because someone who believes that the money stock cannot be measured accurately is likely to be skeptical of the empirical evidence claiming to show that changes in the money stock explain changes in money income. But it does not necessarily follow from this that a Keynesian need be more worried about the difficulty of measuring the money supply than about measuring the interest rate. He may well take the position that, while neither variable can be measured accurately, the interest rate is measured with a greater error than is the money stock. There is certainly nothing in Keynesian theory to deny this. The exposition of the argument in terms of the interest rate rather than the money stock, both in the "General Theory" and the subsequent Keynesian literature, can often be explained by the argument being on a high level of abstraction where measurement problems can be ignored. Thus, while it is hard to see why a quantity theorist would prefer to use the interest rate in his description of the transmission process, it is not hard to see why a Keynesian may agree with a quantity theorist in looking at the money stock rather than the rate of interest.

A third substantive difference between the Keynesian and monetarist transmission processes relates to the range of assets considered. The monetarist looks at an increase in the money supply as having raised the public's money holdings relative to its holdings of securities and all types of real assets. Hence, to bring marginal yields into equilibrium the public now spends these excess balances to acquire securities, capital goods and consumer goods. The Keynesian, however, typically treats the increase in the money stock as affecting only investment, and not consumption[24]. There are two reasons for this. First, by looking at the interest rate the Keynesian adopts a borrowing-cost interpretation; an increase in the money stock lowers interest rates, and this lower cost of borrowing stimulates demand for goods which are bought with credit; that is, it stimulates business investment, residential construction, and

[24] To be sure, in the mainly Keynesian Federal Reserve-M.I.T.-Penn model the interest rate has a strong effect on consumption. But this is not true for the more typically Keynesian models.

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perhaps investment in consumer durables[25]. Demand for nondurables is not directly affected because they are usually not bought on credit. A second reason is that the Keynesian often makes the simplifying assumption that the propensity to consume is not directly affected by the interest rate, so that an increase in the money stock affects only investment[26].

How does this difference in the range of assets relate to the magnitude of the impact of changes in the money stock, and hence to the question whether changes in money income are dominated by changes in the money stock? On a level of rather causal empiricism there is a direct relationship. If monetary changes affect consumption as well as investment then money probably has a much great effect on income than is the case if it can affect only "investment" including perhaps consumer durables[27]. But this reasoning while suggestive is hardly conclusive. Someone might accept the Keynesian transmission process, believing that changes in the money stock operate only via investment, and yet he might think that, due to a high interest elasticity of investment, this effect is very powerful. On the other hand, someone might believe that changes in the stock of money affect both consumption and investment, but that this total effect is quite weak.

Another substantive difference is newer. Recently Karl *Brunner* and Allan *Meltzer* have developed a new version of the monetarist transmis-

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[25] According to Karl *Brunner* ("The Monetarist Revolution in Monetary Theory", op. cit., p. 3) the borrowing-cost interpretation is post-Keynesian rather than part of *Keynes'* own thought.

[26] *Keynes'* evidence for the interest inelasticity of consumption is extremely casual (The General Theory, London, 1936, pp. 93 - 94), but this rather arbitrary judgement allowed him to make a great simplification. This is to dichotomize his model into decisions made about the disposition of income (to save it or consume it) and decisions made about asset composition (to hold money or bonds). He did not have to consider the feedback effect of asset decisions on consumption through changes in the propensity to consume as the interest rate changes.

[27] Although this is no more than a surmise I suspect that the debate about the channels of monetary influence received some of its impetus from the fact that at one time empirical studies of business investment behavior showed the interest rate as playing, at best, a very small role. Hence, monetarists had a strong reason to argue that changes in the money stock do not operate just through business investment, while Keynesians had an incentive to treat business investment as the only link between changes in the money stock and income.

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sion process[28]. They argue that the Friedmanian version, which is really what was discussed above, is essentially Keynesian in its underlying theory, and they have set out a theoretical critique of this Keynesian transmission process. It focuses on a relative price process and stock effects which tend to bring the system towards a classical rather than a Keynesian equilibrium[29].

Thus there are four links between the hypothesis of the primacy of changes in the quantity of money and the monetarist — as opposed to the Keynesian — version of the transmission process. One is the stability of the demand for money, the second is the relative measurability of money and interest rates, the third is the range of assets considered, and the fourth concerns the relative price effects and stock effects discussed by *Brunner* and *Meltzer*.

Are these links compelling in the sense that someone who accepts the monetarist story on one must also accept it on the other? The answer is, no. Clearly, one can accept the Keynesian version of the transmission process and yet believe that monetary factors dominate money income. All one has to do is to believe that the interest elasticity is high for investment and low for the liquidity preference function. Conversely, one can accept the monetarist transmission process, and yet reject the quantity theory as an explanation of most observed changes in income. Thus, while the demand for money may be relatively stable (compared to the seriousness of the errors introduced by the measurement problem), the stock of money may be even more stable. And while someone who believes in the primacy of the monetary impulse is likely to believe that money can be measured fairly well, he could also believe that the interest rate can be measured just as well or better. Moreover, changes in the quantity of money could exert all their (strong) effects on income through investment. Finally, someone may consider the *Brunner-Meltzer*

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[28] Karl *Brunner* and Allan *Meltzer*, "Money, Debt and Economic Activity", Journal of Political Economy, vol. 80, September/October 1972, pp. 951 - 977; Karl *Brunner*, "A Survey of Selected Issues in Monetary Theory", Schweizerische Zeitschrift für Volkswirtschaft und Statistik, Vol. 107, 1971, pp. 1 - 146.

[29] Y. C. *Park* (op. cit., p. 31) has argued that "*Brunner* and *Meltzer* — contrary to their claim — accept the Keynesian view of the nature of the transmission process; what they seem to reject is the heuristic simplification of reality with regard to the range of assets considered in the Keynesian income/expenditure theory." This statement is very much open to question if one treats as "Keynesian" not every single factor mentioned in the "General Theory" and post-Keynesian writings, but only those which are stressed.

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analysis of the relative price and stock effects to be valid, but might believe that in the short run and intermediate run these effects are relatively minor. In other words, one cannot logically infer how money affects income from the strength of the monetary impulse and vica versa.

III. Stability of the Private Sector

Monetarists generally believe that the private sector is inherently stable if left to its own devices and not disturbed by an erratic monetary growth rate. Many, probably most, Keynesians deny this. The nature of this dispute is complex. Keynesian typically do not deny that the private sector is stable in the sense that it is damped rather than explosive. As Lawrence *Klein* has pointed out, some leading Keynesian econometric models show the economy to be stable in its response to stochastic shocks[30]. However, Keynesian look upon the private sector as being unstable in another sense. This is that it is inherently subject to erratic shocks, primarily due to changes in the marginal efficiency of investment. To a Keynesian many factors can, and do, cause substantial changes in aggregate demand, changes which may then lead to damped oscillations.

By contrast, the monetarist treats aggregate demand as the resultant of a stable demand for money and an unstable supply of money. He looks upon the private sector as stable because its demand for money is stable, and attributes most, though certainly not all, the actually observed instability to fluctuations in the money supply induced by the monetary authorities[31]. Thus, this dispute about the stability of the private sector is tied directly into the basic dispute about the quantity theory, the extent to which changes in aggregate demand are explained

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[30] "The State of the Monetarist Debate: Comment", Federal Reserve Bank of St. Louis, Monthly Review, Vol. 55, September 1973, p. 11.

[31] An approach which looks at expenditure incentives is likely to come up with different results than one which focuses on the demand for money. The latter — on an intuitive level at least — seems stable, while — again on an intuitive level — expenditure incentives seem highly variable. Obviously, these two intuitions are in conflict due to *Walras'* Law. Perhaps the resolution of this conflict is that while the incentives for particular expenditures looked at one at a time seem unstable, much of this instability averages out in the sense that one sector may be depressed while another is in a boom.

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primarily by changes in the money supply rather than by changes in the marginal efficiency of investment, etc.[32].

But even so, the tie between the quantity theory and the stability of the private sector is not complete; someone can reject the quantity theory, and yet believe in the inherent stability of the private sector. For example,a Keynesian who believes that fiscal policy is so badly timed that it is destabilizing, and that monetary policy has also not been a net stabilizer, would have to believe that the private sector is stabler than is indicated by the actually observed fluctuations in GNP. Yet there is nothing about such a view which is contrary to Keynesian theory, or which requires the quantity theory as its foundation. Thus one can be a Keynesian in one's basic theory, and, at the same time, accept the monetarist proposition that the private sector is inherently stable or at least stabler than the private and government sectors combined. Admittedly, it is much harder to see how a quantity theorist could believe in the instability of the private sector.

IV. Irrelevance of Allocative Detail and Belief in the Fluidity of Capital Markets

One of the points of distinction between the monetarists and the Keynesians is that in trying to determine short-run changes in income the Keynesian, unlike the monetarist. typically focuses on what happens in particular sectors of the economy. With unstable private sectors (in the sense defined above) fluctuations can start in various sectors, or be conditioned by the particular characteristics of a sector. For example, a rise in the interest rate may have different effects on residential construction, and hence on total output, at a time when mortgage lending institutions are already short of liquidity than at a time when they have a large liquidity buffer. More fundamentally, the Keynesian predicts, or explains, income by looking at expenditure motives in each sector. Hence, he has to analyze each sector.

The monetarist, by contrast, looks upon expenditures as determined by the excess supply of, or demand for, real balances. He therefore has

[32] Leonall *Andersen* ("The State of the Monetarist Debate", Federal Reserve Bank of St. Louis, Monthly Review, Vol. 55, September 1973, pp. 2 - 8) has pointed to another factor as the difference between Keynesian and monetarist views on the stability of the private sector, the length of time it takes to return to the neighborhood of equilibrium when the economy is subjected to a shock.

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to look at the behavior of only a single market, the market for real balances[33].

The Keynesian's concern with allocative detail, that is the behavior of different sectors, is reinforced by a frequent tendency among Keynesians to treat the capital market as imperfect so that capital rationing can occur. Hence, in estimating aggregate demand the Keynesian is not satisfied with knowing the total amount of liquidity in the economy. He also wants to know the liquidity of specific sectors, such as financial institutions serving the mortgage market[34]. This emphasis on imperfect capital markets and credit rationing is also connected with the common Keynesian emphasis on borrowing conditions as the only channel through which monetary policy operates[35]. Hence, he wants to know a great deal about various interest rates and financial markets in assessing the influence of monetary factors on money income. And his belief that capital markets are imperfect explains why Keynesians seem much more interested in flow of funds analysis than are most monetarists, despite the fact that the flow of funds deals with the monetarist's item of central concern, money.

Another reason for the Keynesian emphasis on sectorial detail is probably the tendency of many Keynesians to favor government intervention. Efficient government intervention obviously requires detailed knowledge of many sectors since the intervention is likely to focus on specific "troubles" in particular sectors. Finally, as will be discussed in the next section, many Keynesians look upon inflation as sometimes being due, at least in part, to developments in particular sectors rather than as due to the monetarist's single pervasive factor.

By contrast, in explaining short-run changes in income, the monetarist usually expresses little interest in allocative detail[36]. He makes a sharp

[33] This does not mean that the monetarist can ignore all institutional detail. He has to consider numerous institutional factors (which differ among countries) in his analysis of the money supply process. But this is different from concern with allocative detail.

[34] Thus in the, mainly Keynesian, Federal Reserve-M.I.T.-Penn model, one of the major channels by which monetary changes affect income is credit rationing.

[35] Obviously, a large sophisticated model, like the above mentioned one, can have several channels, and is not confined to borrowing costs. But for most Keynesian expositions borrowing costs are the channel.

[36] This does not mean that the monetarist is uninterested in allocative detail per se. He is often strongly interested in it because he looks upon government

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distinction between relative prices which are affected by the fortunes of various sectors, and the general price level which is affected by the quantity of money. He does not build up his estimate of national income by adding up incomes in various sectors as Keynesians do, but rather, he works "from the top down". Using changes in the money stock he estimates total expenditures, and then, if he happens to be interested in it, he might investigate the allocation of this fixed expenditure total among various sectors. His assumption of a fluid capital market fortifies the monetarist in his belief that a given increase in the money stock will have more or less the same effect on aggregate incomes, though not of course, on the relative incomes of various sectors, regardless of where it is injected[37]. And his belief in the stability of the private sector and in the absence of a need for government intervention gives the monetarist little incentive to focus his attention on developments in various sectors[38]. This is reinforced by the fact that the monetarist, unlike the Keynesian, does not typically try to specify the channels through which monetary factors operate, and hence does not try to gauge the impact of monetary factors by looking at their impact on different sectors.

Hence, the monetarist's disregard of allocative detail in explaining short-run income changes is a natural outgrowth of his basic position. It results from his belief in the quantity theory, i. e. in the primacy of money supply changes in explaining income. It is also connected with his view of the transmission process, in which expenditure motives and the peculiarities of individual sectors are unimportant and the borrowing cost approach to gauging the influence of monetary factors is

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interference with financial markets as creating very serious problems. Thus he opposes the suppression of financial deepening. In the United States monetarists are much more critical of Regulation Q (the limitation of interest payments on bank deposits) than are Keynesians. It is only with respect to the use of allocative detail as a predictor of short-run changes in income that monetarists have shown less interest in it than Keynesians.

[37] But to the extent that the velocity of money differs in various sectors the monetarist has an incentive to analyze the distribution of money between various sectors. For a notable example see Richard *Selden,* "The Postwar Rise in the Velocity of Money", Journal of Finance, vol. 16, December 1961, pp. 483 - 545.

[38] This statement is subject to one qualification. The monetarist is likely to pay a great deal of attention to the efficiency of one sector, the financial sector, and to point out the distortions created in this sector by government regulations.

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rejected. But this does not mean that a monetarist must necessarily deemphasize allocative detail in his prediction of income fluctuations. Someone might accept all the other basic and characteristic monetarist positions, and yet believe that the capital market is highly imperfect, that capital rationing is important, and that the flow of funds between various sectors therefore plays some role in determining income[39]. Similarly, a monetarist might favor government intervention either because he is skeptical of the stability of the private sector, or because he favors government intervention for some other reason; in principle one could certainly be a monetarist and also a socialist.

At the same time, a Keynesian need not believe in the imperfection of the capital market and the importance of capital rationing. Neither of these ideas plays a role in the "General Theory". More significantly, one can accept the general framework of Keynesian analysis without believing in the instability of the private sector, and in the advisability of government intervention, and hence not be concerned with allocative problems on these grounds. It is only the Keynesian focus on expenditure motives that provided a basic reason for the Keynesian's interest in allocative detail.

V. The Price Level versus Individual Prices

One major distinction between monetarists and most Keynesians is the way of looking at the price level[40]. This is a subtile distinction that is seldom, if ever, made explicit. Basically there are two ways of approaching the price level. One is to treat it as an aggregate phenomenon, determined by the interaction of only two factors, aggregate demand and aggregate output. This view draws a sharp distinction between the price level as a whole and relative prices. Specific events in particular industries, such as an increase in the degree of monopoly, union pressure, or bad harvests obviously affect relative prices. But they affect the price level only to the extent that they also affect either aggregate demand or output. Thus if prices rise in industry A without raising

[39] Admittedly, capital rationing tends to make the demand for money less stable.

[40] One way of determining whether someone is a Keynesian or a monetarist is to ask him for a quick and intuitive answer to the following question: "Suppose the price of petroleum rises. What will this do to the average of other prices?"

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aggregate demand, this rise in the price of A has to be matched either by a reduction of output, or by a decline in the average of all other prices.

The alternative way of treating the price level is to approach it as the weighted sum of individual prices. These prices are then explained by the interaction of supply and demand in individual industries with the pricing policies of various industries. Changes in aggregate demand are certainly not ignored in this framework since they affect the demand curve faced by each industry, but there is considerable emphasis on the particular behavior of individual industries.

Both of these ways of looking at the price level are formally correct. While, they must therefore yield the same answers to someone who possesses all the required information, they do lead to different research strategies, and are therefore likely in practice to provide different answers.

Monetarists clearly use the aggregative approach to the price level. They look at changes in the quantity of money to determine changes in aggregate demand, and then allocate changes in aggregate demand between changes in prices and changes in output[41]. In this approach, at least in its simple version, the pricing decisions made by any particular industry have no effect on the overall price level, but affect only relative prices[42]. Hence, the monetarist typically rejects cost-push explanations of inflation.

It might be worth noting in passing that this rejection of all cost-push phenomena may well be unwarrented even within the monetarist framework. If industry A (with an inelastic demand) raises its prices, and thus reduces the aggregate demand that is available for other industries, these industries may respond, at least in part, not by cutting prices, but by cutting output. Insofar as this occurs, the general price level is raised by the behavior of industry A, and not just the relative price of commodity A. The extent to which this happens is an empirical question, and is likely to depend upon the degree of inflation in the economy. If prices in general are rising then, as industry A raises its

[41] See, for example, Keith *Carson,* "A Monetarist Model for Economic Stabilization", Federal Reserve Bank of St. Louis, Review, Vol. 52, April 1970, pp. 7 - 25.

[42] This is subject to the caveat that the central bank might raise the money stock to maintain output when some prominent industries raise their wages and prices, or when unemployment develops.

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prices other industries can adjust their prices for this merely by not raising them by as much as they otherwise would. On the other hand, at a time when prices are generally stable they would have to lower their prices absolutely in order to offset the rise in the price of commodity A, and there is considerable evidence that prices are sticky downward.

The monetarist's macroeconomic, rather than microeconomic, approach to the price level fits in well with two of the previously discussed characteristics of monetarism. First, insofar as the rise in the price of one particular industry results in a price decline in other industries the economic system is inherently stable, at least as far as cost-push inflation is concerned. Second, if the price behavior of individual industries has no effect on the general price level, then this is one more reason for ignoring allocative detail. However, it should be noted, that while the monetarist's approach to the price level therefore goes along well with his belief in the stability of the private sector and the irrelevance of allocative detail, in neither case is the relationship one of logical entailment. One can accept the monetarist's hypotheses about the irrelevance of allocative detail, and the stability of the private sector, and yet, at the same time, accept the Keynesian approach to the price level[43].

The typical Keynesian's view of the price level is quite different from the monetarist view. To be sure, in the Keynesian model the price level is also determined by aggregate demand and supply, but to the Keynesian this formulation is not useful because he cannot take aggregate demand as given[44]. The monetarist, by contrast, can do this; if industry A raises its price, this does not change aggregate demand which depends upon the money stock[45]. But to the Keynesian the money stock is only

[43] The private sector may be stable even in the sense of being immune to cost-push inflation even if individual price increases do not result in corresponding price decreases in other sectors. This is so if, and only if, the forces making for cost-push are weak. Similarly, erratic shifts in expenditure motives could destabilize the private sector even if the monetarist's approach to the price level is correct. And allocative detail would then be important.

[44] Cf. Sidney *Weintraub,* Keynes and the Monetarists (New Brunswick, N. J., 1973) Ch. 7.

[45] Admittedly, this reasoning is only a first approximation, for it ignores the fact that an increase in the price level, by raising the interest rate, raises velocity. However, a monetarist may feel justified in ignoring this effect as minor because he may believe that the interest elasticity of the demand for money is low.

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one of several factors determining aggregate demand. Thus while the rise in the price of commodity A lowers the real money stock, it may also raise the marginal efficiency of investment, particularly in industry A. In other words, while to the monetarist aggregate demand, as determined by the quantity of money, functions as a budget constraint, in the Keynesian system it is a variable. Hence, to the Keynesian it is at least possible that a rise in the price of commodity A raises aggregate demand enough so that other prices (and outputs) will not have to fall, and might even rise.

Since the aggregate demand effects of a rise in the price of commodity A are uncertain, the Keynesian is tempted to ignore them. And this temptation is frequently not resisted. A typical example is a study by Otto *Eckstein* and Gary *Fromm* in which they investigated the effect on the wholesale price index of the rise in the price of steel. They considered both the direct effect as well as the indirect effect of the steel price increase being passed forward by steel users, and concluded that "if steel prices had behaved like other industrial prices, the total wholesale price index would have risen by 40 percent less over the last decade ..."[46]. To a monetarist such a statement gives us only an arithmetic relationship which has no economic meaning because it ignores aggregate demand, and hence other prices[47]. And, indeed, it is hard to see how a Keynesian can really justify ignoring the indirect repercussions.

But the roots of this oversimplification can already be found in the "General Theory" since *Keynes* looked upon prices as determined by the wage rate and the marginal physical product of labor. Indeed *Keynes* specifically tried to bring the theory of the price level into contact with microeconomic factors such as marginal cost, and to eliminate the dichotomy between the determination of individual prices by marginal cost etc., and of the price level by macroeconomic factors such as the quantity of money and its velocity. Thus he wrote in Chapter 21 of the "General Theory": "One of the objects of the foregoing chapters has been to escape from this double life and bring the

[46] Otto *Eckstein* and Gary *Fromm*, "Steel and the Postwar Inflation", Study Paper Number 2, U.S. Congress, Joint Economic Committee, 86th Congress, 1st Session, Washington, D. C., 1959, p. 34.

[47] See Denis *Karnosky*, "A Primer on the Consumer Price Index", Federal Reserve Bank of St. Louis, Review, Vol. 56, July 1974, p. 7.

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theory of price as a whole back to close contact with the theory of value[48]."

This Keynesian tendency to look at the price level as determined by costs in various industries has been furthered in recent years by an extensive empirical literature which estimates prices more on the basis of shifts in costs than on the basis of shifts in demand[49]. (However, this evidence is not always easy to interpret because changes in costs may be the result of changes in demand[50].) In addition, it has probably gained in acceptability from the use, as a first approximation or as an elementary teaching tool, of the Keynesian supply curve dichotomized at full employment. If changes in aggregate demand affect only output and not prices until full employment is reached, then if one is trying to explain the price level under conditions of less than full employment, the fact that a price rise in industry A changes the demand experienced in other industries can be ignored.

But while many — perhaps most — Keynesians treat the price level in the way just described, this way of looking at the price level is far from being a necessary implication of the Keynesian model. A Keynesian could focus on the overall price level rather than on its individual component prices to the same extent as a monetarist does without abandoning any basic part of Keynesian theory. As pointed out above, the only way a Keynesian can ignore the effects of the rise in the price of commodity A on the demand left over for other commodities is to assume that this rise in the price of commodity A generates an exactly offsetting increase in demand. But there is nothing in Keynesian theory that requires this to occour. The increase in the price of commodity A reduces real balances thus lowering demand. To be sure, this may be offset by

[48] "The General Theory", op. cit., p. 293.

[49] See William *Nordhaus,* "Recent Developments in Price Dynamics", in Board of Governors, Federal Reserve System, The Econometrics of Price Determination, Conference (Washington, D. C. 1972). See also W. *Godley* and W. *Nordhaus,* "Pricing in the Trade Cycle", Economic Journal, Vol. 82,, September 1972, pp. 853 - 882. Perhaps this tendency of Keynesians to treat prices as cost determined represents a partial fusion of the Keynesian and institutionalist schools.

[50] A leading monetarist, Phillip *Cagan,* has recently suggested that the dependence of price changes on changes in costs can be explained as a short run phenomenon resulting from the difficulties which firms have in coordinating their price changes. (Phillip *Cagan,* "Inflation: the Hydra-Headed Monster", Washington, D. C., 1974, pp. 21 - 24.)

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an increase in the marginal efficiency of capital, but this need not happen. The effect of the increase in the price of commodity A on the marginal efficiency of investment may even be negative, or if it is positive, it need not be great enough to offset all the effect of the decline in real balances. Keynesian theory is silent on this. Strange as it may seem, there appears to be virtually no Keynesian literature on the effect of a rise in a particular price on income[51]. It is, of course, true that a change in demand for other commodities could affect the output of other commodities rather than their prices, but whether this happens or not depends upon where we are along the aggregate supply curve[52].

Thus, this dispute about the determinants of the price level is not so much a dispute between monetarism and Keynesianism as it is a dispute between monetarism and a particular specification of Keynesianism. And while this specification is a popular one, and is perhaps accepted by most Keynesians, it represents only one line of development of the basic Keynesian model.

Moreover, a monetarist too need not accept the typically monetarist position discussed above. He may argue that while a rise in the price of commodity A will eventually lower the prices of other commodities, in the short run it will lower their outputs rather than their prices. Hence, a Keynesian can accept the typically monetarist view on this issue, and a monetarist can adopt the typically Keynesian view, without either one abandoning his fundamental Keynesian or monetarist position[53].

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[51] The only serious Keynesian discussion of this issue I know of is Abraham *Bergson's* "Price Flexibility and the Level of Income", Review of Economics and Statistics, Vol. XXV, February 1943, pp. 2 - 5.

[52] It is not clear whether a Keynesian is more likely than a monetarist to believe that the change will be in output rather than in prices. On the one hand, a Keynesian is more likely to stress price inflexibility and situations of underemployment. On the other hand, many monetarists stress expectational effects, and anticipatory pricing in inflation. Insofar as prices are set in anticipation of inflation, a decline in demands is likely to affect output rather than prices even during an inflation when downward price flexibility is not a problem.

[53] And while monetarists frequently consider prices to be fairly flexible, one can be a monetarist without this belief.

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VI. Large versus Small Models

While Keynesians usually prefer large-scale structural models, monetarists prefer small reduced-form models[54]. This dispute on model size involves many issues which are extraneous to the monetarist debate. To a large extent it is an issue in theoretical econometrics concerned with the validity of the single equation approach, rather than an issue in monetary economics. Moreover, as *Friedman* has pointed out, it involves also the question of whether we know enough to be able to represent complex reality by the greatly simplified systems used even by large models[55]. Hence, *Friedman* considers the debate about large versus small models to be "almost entirely independent of the monetarist versus Keynesian point of view"[56].

But even so, there are several ways in which the use of a reduced-form model goes along well with monetarist hypotheses. One way relates to the transmission process. If changes in the money stock affect income through a limited number of channels then it is tempting to cover each of these channels, and thus to use a structural model. But if monetary changes affect the economy in a very large number of ways, as the monetarist claims, then even a large structural model is not likely

[54] However, a number of fairly small Keynesian models do exist. It may be worth noting that if one is trying to evaluate the Keynesian-monetarist debate by comparing the predictive powers of monetarist and Keynesian models one should compare the monetarist model (i. e. the *Andersen-Jordan* model), not with large Keynesian models such as the *Wharton* model, as is sometimes done, but with small Keynesian models. Thus, the finding that the *Andersen-Jordan* model does well compared to the *Wharton* and O. B. E. models (Cf. Yoel *Haitovsky* and George *Treyz*, "Forecasts with Quarterly Macroeconomic Models, Equation Adjustment and Benchmark Predictions: The U.S. Experience", Review of Economics and Statistics, Vol. LIV, August 1972, pp. 317 - 325) is not as important for the Keynesian-monetarist dispute as is the finding that the *Andersen-Jordan* model's performance is not outstanding when compared to that of small Keynesian models. (See S. K. *McKnees*, "A Comparison of the GNP Forecasting Accuracy of the Fair and St. Louis Econometric Models", in Federal Reserve Bank of Boston, New England Economic Review, September/October 1973, pp. 29 - 34, and J. W. *Elliot*, "A Direct Comparison of Short-Run GNP Forecasting Models", Journal of Business, Vol. 46, January 1973, pp. 33 - 60). The trouble with the *Wharton* or O. B. E. model may be its structural, rather than its Keynesian, characteristics.

[55] See Milton *Friedman*, "Comment" in Universities-National Bureau Committee for Economic Research, Conference on Business Cycles (New York, 1951), pp. 112 - 114.

[56] Private communication.

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to pick up all of them. Hence a reduced-form approach is likely to be more reliable.

Second, one of the great advantages of large structural models is that they provide detailed information on various economic sectors. This makes large structural models attractive to Keynesians, who are interested in allocative detail, but does little to recommend them to monetarists who are not interested in allocative detail. Furthermore, by focusing on expenditure motives, and looking upon people as being consumers, investors in inventories etc., the Keynesian is naturally concerned with many sectors. The monetarist, on the other hand, is concerned with people only as money holders, and hence is interested in only one sector, the supply of and demand for money. Third, someone who is concerned about the instability of the private sector in the sense that erratic shifts in expenditure incentives cause serious fluctuations, is likely to believe that to predict income one needs a large model which allows for the impact of these erratic factors on various sectors.

The relationship between the quantity theory per se and the choice of structural models versus reduced-form models is much less clear. "Ex ante", there is little, if any, reason why someone who believes in the strength of the monetary impulse, should necessarily believe in the desirability of reduced-form models. But there is an "ex post" relationship due to the fact that the most famous of all reduced form models, the *Andersen-Jordan* model, yields monetarist conclusions while structural models generally yield Keynesian conclusions. But the relationship between model size and the results obtained from the model are far from firm. Edward *Gramlich* has shown that *Andersen-Jordan* type models can generate not only monetarist results. but also Keynesian, or in-between, results depending on the monetary variables used[57].

Thus there are many links between various monetarist propositions and a preference for reduced form models. But as indicated above this linkage is not strong. A monetarist might well reject the use of reduced form models, while a Keynesian might prefer such models since the dispute is largely a matter of choice of estimation technique.

This concludes the discussion of the six monetarist propositions which relate to theory and techniques of analysis. In Part II of this paper I will discuss the remaining six policy-oriented propositions.

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[57] "The Usefulness of Monetary and Fiscal Policy as Discretionary Stabilization Tools", Journal of Money, Credit and Banking, Vol. III, May 1971, Part 2, pp. 506 - 532.

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Zusammenfassung

Die Struktur des Monetarismus (I)

Der Aufsatz verfolgt zwei Absichten. Die eine besteht darin, den Begriff des Monetarismus in der Weise zu erläutern, daß seine einzelnen Thesen herausgearbeitet und die Beziehungen zwischen ihnen aufgezeigt werden. Es erweist sich dann, daß Monetarismus nicht etwa eine Ansammlung mehr oder weniger zufällig zusammengefügter Meinungen ist, sondern ein System von Lehrsätzen, die untereinander verbunden sind. Der größte Teil des Aufsatzes beschäftigt sich mit dem Aufspüren solcher Beziehungen. Die zweite Absicht geht dahin darzulegen, daß trotz des systematischen Zusammenhangs der monetaristischen Thesen die Verbindung andererseits locker genug ist, um jeweils die einen anzuerkennen und andere abzulehnen. Deshalb ist die Polarisierung unter den Ökonomen in Monetaristen und Keynesianer unnötig; es gibt eine hinreichende Rechtfertigung für verbindende Standpunkte.

Es werden sechs monetaristische Lehrsätze erörtert: (1) Die Quantitätstheorie in dem Sinne, daß zur Erklärung von Geldeinkommen in erster Linie monetäre Impulse in Betracht kommen. (2) Die monetaristische Auffassung des Transmissionsvorganges, also wie im einzelnen monetäre Impulse das Einkommen beeinflussen. (3) Eine Meinung, daß der private Sektor der Wirtschaft naturgegeben stabil sei. (4) Ein Desinteresse an allokativen Einzelheiten, wie der Verfügbarkeit von Hypothekendarlehen oder der Nachfrage nach Automobilen. (5) Ein Untersuchungskonzept, daß das Preisniveau als eine einzige Größe behandelt und nicht als Resultate von Einzelpreisen. (6) Eine Neigung zu reduzierten ökonometrischen Modellen. In dem folgenden zweiten Teil dieses Aufsatzes sollen dann sechs andere monetaristische Thesen erörtert werden, die wirtschaftspolitischen Bezug haben.

Um es an einem Beispiel zu veranschaulichen wird gezeigt, daß die Quantitätstheorie mit dem monetaristischen Transmissionsprozeß durch folgende Bindeglieder verbunden ist: (1) Das Geldvolumen kann besser abgemessen werden als der Zinssatz. (2) Geldimpulse beeinflussen sowohl den Verbrauch als auch die Investition. (3) Die Geldnachfrage ist stabil. (4) Es gibt signifikante Wirkungen bei der Geldmenge und bei den relativen Preisen.

Summary

The Structure of Monetarism (I)

This paper has two purposes. One is to clarify the concept of monetarism by isolating its component propositions, and showing the connections between them. It argues that monetarism is not just an aggregation of more or less accidentally combined beliefs, but that it comprises a set of propositions that

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are connected with each other. The greater part of the paper consists of tracing these connections. The second purpose is to show that, although the monetarist propositions are connected, the connection is loose enough so that someone can accept some of them while rejecting others. Hence, the polarization of economists into monetarists and Keynesians is unnecessary; there is adequate justification for eclectic positions.

Six monetarist propositons are discussed here. They are: (1) the quantity theory, in the sense of the primacy of the monetary impulse in explaining money income, (2) the monetarist view of the transmission process, i. e. *how* money affects income, (3) a belief that the private sector is inherently stable, (4) a disinterest in allocative details, such as the availability of mortgage funds, or the demand for automobilies, (5) a research strategy that treats the price level as a unit, rather than as the resultant of individual prices, and (6) a preference for reduced-form econometric models. In the forthcoming second part of this paper, six other monetarists propositions bearing on policy are discussed.

To illustrate by an example, the quantity theory is shown to be connected to the monetarist transmission process by the following links: (1) the money stock can be measured better than can the rate of interest, (2) money affects consumption as well as investment, (3) the demand for money is stable, and (4) the existence of significant relative price and stock effects.

Résumé

La structure du monetarisme (I)

L'étude poursit deux objectifs. Le premier consiste à expliciter la notion du monétarisme de manière à en dégager les différentes thèses et de montrer les rapports existant entre elles. Il en résulte que le monétarisme ne constitue pas une collection d'opinions plus ou moins intégrées, mais forme un système de thèses reliées entre elles. La plus grande partie de l'étude est consacrée à la recherche de ces relations. Le deuxième objectif consiste à établir que malgré l'interdépendance systématique des thèses monétaristes, les liens sont suffisamment lâches pour en accepter une et en rejeter d'autres. C'est pourquoi la polarisation des économistes entre monétaristes et keynesiens est inutile; il existe une justification suffisante de points de vue intercommunicables.

L'auteur analyse six thèses monétaristes: (1) La théorie quantitative en ce sens que les impulsions monétaires interviennent en premier lieu pour expliquer les revenus monétaires. (2) La conception monétariste du processus de transmission, c. à. d. la manière dont chaque impulsion influence le revenu. (3) Une thèse sur la stabilité naturelle du secteur privé de l'économie. (4) Une

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absence d'intérêt pour les particularités allocatives, telles la disponibilité de prêts hypothécaires ou la demande d'automobiles. (5) Un concept de recherche qui traite le niveau des prix comme une grandeur unique et non comme la résultante des prix de détail. (6) Une tendance à la réduction des modèles économétriques. Dans la section II de l'étude, l'on examinera six autres thèses monétaristes, qui ont rapport à la politique économique.

Afin d'éclairer la démonstration d'un exemple, l'auteur établit que la thèorie quantitative se rattache au processus de transmission monétariste par les liens suivants: (1) Le volume monétaireest plus aisément mesurable que le taux d'intérêt. (2) Les impulsions monétaires agissent à la fois sur la consommation et sur l'investissement. (3) La demande monétaire est stable. (4) L'on constate des effets significatifs sur le volume monétaire et sur les prix relatifs.

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