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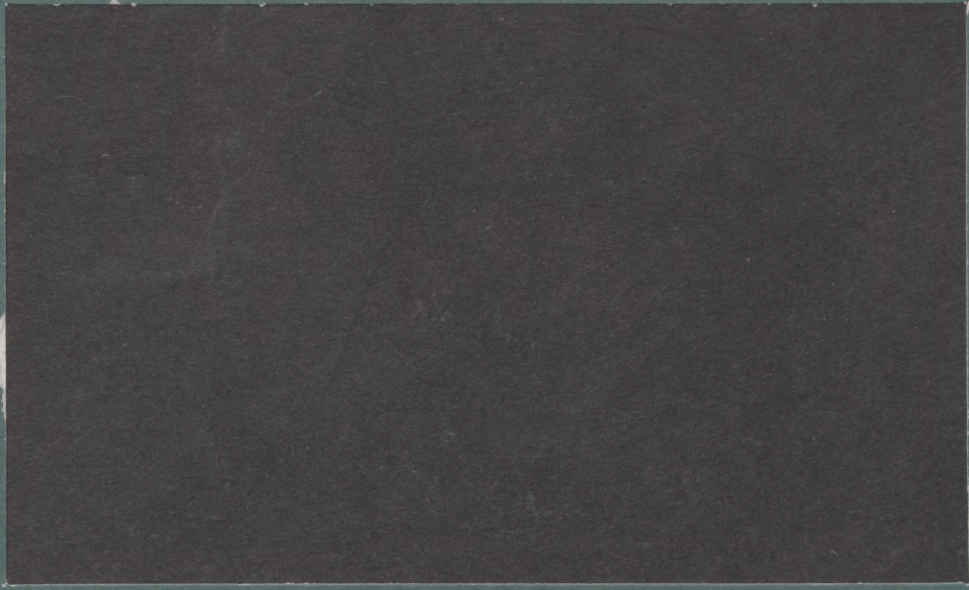
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# Claremont Working Papers

**Economics, Business and Public Policy**



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U.S. MONETARY POLICY AND WORLD LIQUIDITY

Thomas D. Willett

Claremont Graduate School

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U.S. MONETARY POLICY AND WORLD LIQUIDITY

Thomas D. Willett

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For presentation at the session on "International Dimensions of  
Monetary Management", American Economic Association Meetings,  
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Over the past decade or so a new paradigm of international macro-economics has emerged. Sometimes called global monetarism (see Marina v. N. Whitman), this approach differs from traditional monetarism by emphasizing open economy relationships in what is assumed to be a highly integrated world economy. In small open economies under fixed exchange rates, monetary expansion and contraction will lead primarily to balance of payments surpluses or deficits and ultimately to changes in national spending and prices. In such a world, quantity theory relationships break down at the national level while remaining valid at the global level. This paper focuses on the empirical importance of this paradigm. Section I briefly reviews recent developments in global monetarist analysis. Section II considers the impact of U.S. monetary developments on the world economy, while Section III considers the proposition that international developments dominate U.S. monetary conditions.

#### I. Global Monetarism and International Monetary Interdependence

While there are numerous precursors, the popularity of the global monetarist view is strongly associated with the re-emergence of the emphasis on the monetary approach to the balance of payments and exchange rates determination led by Chicago economists such as Harry Johnson, Robert Mundell, and Arthur Laffer. The historical association between the huge U.S. balance of payments deficits and international liquidity explosion of the early 1970s and the accompanying substantial increase in the aggregate rate of monetary expansion in the major industrial countries was quite consistent with models of the reserve center's domination of world money supply determination under a Bretton Woods type of international monetary system. The international liquidity explosion of 1970-72 has been widely held to be the major cause of the subsequent world wide inflation.

With the breakdown of the Bretton Woods system, these initial global monetarist propositions lost their force. However, in simple monetarist models, flexible exchange rates insulate national economies from monetary disturbances abroad and convert monetary policy and inflation from international to national phenomena. Thus the strong monetary linkage between the U.S. and the rest of the world, typical of a fixed rate world, would be broken. While numerous studies written prior to the adoption of wide pread floating in the 1970s had pointed to limitations on the extent to which flexible exchange rates could insulate national economies from one another, such limitations began to become much more widely appreciated after floating was widely adopted. Monetary policy changes often have real effects in the short-run, and countries often care about the effects of exchange rate movements. Thus even under flexible exchange rates, significant monetary interdependence may remain. For example, even with complete control over the national money supply, both international capital flows and exchange rate movements can influence velocity through financial market and trade balance effects, and exchange rate movements can also affect short run inflation-unemployment tradeoffs. Furthermore, the recent work on international currency substitution has stressed that flexible rates may not even allow countries to retain complete control over their national monetary aggregates.

Thus it comes as no surprise that Europe remains concerned about U.S. monetary and fiscal policy developments even under flexible exchange rates. The recent substantial appreciation of the dollar, caused in considerable part by U.S. monetary and fiscal policies, forced a dilemma on other countries. They must either tighten their own monetary policies or face a substantial depreciation of their currencies. Such a

dilemma could not be avoided if a more stable economic environment were to be re-established in the U.S., although a different U.S. policy mix might have reduced the magnitude of this problem. There is a great deal of controversy about the quantitative strength of these short run international linkages under flexible exchange rates. Recent econometric work has tended to yield a rather wide range of estimates, although most suggest lower levels of interdependence than are implied by popular political discussions. Still there can be little question that U.S. monetary policy has continued to have non-trivial short run effects on the rest of the world even after the switch from fixed to flexible exchange rates.

A common feature of most analysis of international monetary relationships has been the assumption that impacts run almost exclusively from the United States to the rest of the world. In recent years this assumption has been increasingly challenged. While it is now widely recognized that international considerations cannot safely be ignored entirely in U.S. macroeconomic policy making, several economists such as Laffer, Mundell, Ronald McKinnon, and Marc Miles have put forth the much stronger proposition that the U.S. should itself be viewed as a small economy which is dominated by international developments. Several of the recent arguments to this effect will be critically analyzed in section III.

## II. The United States as the Determinant of Global Monetary Conditions

While initial global monetarist writings focused on the international liquidity explosion of 1970-72 as strong evidence for their hypothesis, more recent analysis has also focused on the heavy buildup of foreign official dollar holdings during the weakness of the dollar in 1977-78 as

another example (e.g. McKinnon (1982)). Again at the aggregate level the story fits. For many countries a substantial increase in official reserves was accompanied by a considerable increase in monetary expansion and subsequent acceleration of inflation. However, more detailed analysis weakens the strength of the argument. There is considerable truth to the posited linkage between international reserves and money supply changes as a long run proposition required by the need to avoid persistent balance of payments disequilibrium over the long run. As a short run proposition, however, this linkage rests on the inability or unwillingness of the national authorities to sterilize international reserve flows in order to keep them from influencing the domestic money supply.

In support of the global monetarist hypothesis McKinnon cites estimates that sterilization is often less than complete. This is sufficient to support the proposition that the growth of international liquidity explosion will have a detectable influence on monetary expansion, but leaves open the crucial question of the magnitudes of these effects. Most of the recent estimates of sterilization coefficients for industrial countries suggest that they are typically well above .5 even for those countries that do not appear to have completely sterilized. Applying such estimates to the 1970-72 episode suggests that at most about one third of the monetary expansion in the major industrial countries over this period could be attributed to the international liquidity explosion, with around 15 to 20 percent being a best guess. (See Laney and Willett). Direct estimates by Laney and myself suggest likewise that while the international liquidity effects were certainly not trivial in many countries, domestic influences were typically a good bit more important (see Willett). Judgmental assessments



in OECD and BIS reports also indicate the importance of domestic influences over this period.

While I have not yet completed analyzing the 1977-78 episode in detail, I strongly suspect that a similar interpretation will hold. There were strong domestic reasons for accelerated monetary expansion in many of the European countries and preliminary econometric work by Laney, Arthur Warga, and myself finds that sterilization coefficients have tended to rise further as countries have moved from pegged rates to managed flexibility.

### III. The United States as Dominated by World Monetary Conditions

One of the most common types of arguments that international influences have a dominant effect on U.S. monetary conditions focuses on the Eurodollar market. Periodically one sees popular articles which point out that the estimated size of the Eurodollar market is several times the size of M1 in the U.S. and draw the conclusion that the Federal Reserve consequently can exert little control over U.S. monetary conditions. Such arguments overlook that the liquidity structure of the Eurocurrency market makes most of it credit rather than money narrowly defined. Furthermore, the major conduit of international interbank lending does not substantially influence domestic monetary conditions until the funds are lent to domestic nonbanks. At this point they will show up in the domestic monetary statistics. Eurocurrency credit can of course also influence the velocity of the narrower aggregates, but strong evidence for the importance of such effects has not been presented (on these issues see Willett).

Eurocurrency transactions by nonbanks can give rise to domestic monetary influences, and some of these holdings are now included in the recent revisions of the definitions of U.S. monetary aggregates. While none of these transactions are judged to be comparable to the components of M1, overnight Eurodollar holdings are included with overnight repurchase agreements in M2. In 1980, however, these amounted to only about \$3 billion out of an M2 total of over \$1,600 billion. The role of Eurocurrency holdings in the broad U.S. monetary aggregates has grown quite rapidly, however, from less than \$10 billion in 1975 to almost \$66 billion in 1982. These are included only in the broadest aggregate, L, which totaled over \$2,600 billion in 1981, although a case could be made on conceptual grounds for including them in M3, which totaled a little under \$2,200 billion. Eurocurrency transactions can influence the money multiplier, but Balbach and Resler have estimated that this has "...only minor effects on the U.S. money stock" (p. 11). (The revision of U.S. monetary statistics in the work of the Bach Commission report included not only the addition of Eurodollar figures, but also deleted several categories of foreign holdings of demand deposits in U.S. banks on the grounds that these holdings typically did not seem closely related to economic and financial conditions in the U.S. (see Farr, Girton, Terrell, and Turner).

International transactions can also directly influence U.S. monetary conditions through effects on interest rates, currency substitution, and velocity. It has long been known that interest rates on comparable financial instruments in New York and the Eurocurrency markets move together, and that arbitrage opportunities are quickly eliminated. While it has generally been assumed that causation ran almost entirely from New York to Europe, in recent years this view has been challenged. It is certainly

plausible to believe that with the growing relative size of the Eurodollar market (and of foreign holdings of U.S. government securities), international considerations can now have a non-trivial influence on U.S. interest rates. Relatively little work has been done so far, however, to estimate the magnitude of this influence. One application of Granger-Sims causality testing found greater causation running from Europe to New York than vice versa, but the applicability of the Granger-Sims methodology to this type of issue is open to considerable question. Furthermore, if the prevalent judgment of market participants is correct that genuine arbitrage opportunities are eliminated within minutes at most, then the lead-lag patterns revealed in Granger-Sims testing would apply basically to a statistical artifact due to the less than perfect compatibility of the data series.

In a similar vein, McKinnon (1981, 1982), has argued that exchange rate expectations have a dominant influence on U.S. interest rates. He illustrates his argument with the association of the substantial decline of the dollar in 1977-78 and the rise in U.S. interest rates over the same period. McKinnon makes no effort, however, to show that the U.S. interest rate increase over this period cannot be adequately explained on domestic grounds and it is clear that at least some of the increase can be explained by the domestically generated rise in inflationary expectations over this period. (Of course the fall of the dollar may have contributed further to the rise in inflationary expectations). What is needed are attempts to investigate the role of international influences in domestic interest rate equations. I view this as an important area for research.

It has also been argued that international currency substitution has had a dominant impact on the dollar and U.S. monetary conditions, indeed to the point that even the U.S. is too small to be an independent currency area and hence should abandon flexible exchange rates (see Miles). Laney, Radcliffe, and Willett have argued that Miles' analysis rests on a failure to clearly distinguish between economic and statistical significance. We had no quarrel with Miles' finding of quite statistically significant currency substitution vis-a-vis the dollar, but noted that fluctuations in the data series he investigated were on the order of \$1 billion, a tiny fraction of U.S. M1. When his estimated elasticities of substitution are translated into the form of a standard demand for money function, the implied elasticities are quite small, on the order of .003.

Miles' study, however, investigated only one of the many possible channels for currency substitution and such substitution is certainly a possible explanation for the instability in U.S. demand for money functions which developed in the 1970s. The timing does not seem to match well, however, as McKinnon focuses on 1970-72 and 1977-78 and the associated weakness of the dollar as the major periods of currency substitution against the dollar, while most researchers have found that the domestic demand for money functions became unstable around 1974-75.

Bruce Brittain finds evidence of a significant negative correlation between movements of velocity around trend in the United States and Europe which would be consistent with major international shifts in currency demands. Again, however, the whole story does not fit. The drop in U.S. velocity in 1977-78 and the rise in Europe is consistent with the posited currency substitution away from the dollar, but in the early 1970s, U.S. velocity for M1 was well below trend. This would be consistent

with currency substitution in favor of, rather than against, the dollar. McKinnon (1982) further argues that because of currency substitution, "In general, growth in the world money supply is a better predictor of American price inflation than is U.S. monetary growth." (p. 324) His supporting evidence is not convincing. He presents tables of annual U.S. and world money supply growth rates and inflation for inspection, but performs no formal statistical analysis. He appears to put considerable weight on the 1979-80 episode in which U.S. inflation was a good bit higher than would be expected on the basis of U.S. monetary expansion while the world money supply had been growing more rapidly.

Apart from the danger of extrapolating from one observation, it should be noted that one at least as equally convincing explanation of the high U.S. inflation rate was the substantial increase in oil prices over this period, McKinnon used wholesale price indices where oil prices are particularly heavily weighted. Furthermore, tests for currency substitution should focus on effects on the demand for money, velocity or nominal spending rather than just on prices since the latter can be confounded by shifts in inflation-output relationships. What is really needed for this type of investigation is the statistical comparison of various measures of U.S. and world money supplies in explaining nominal GNP or fluctuations in velocity in the U.S. In our preliminary investigations C. Radcliffe and I have not found strong evidence to support McKinnon's hypothesis. In general, McKinnon's world money supply series does not explain either the U.S. wholesale price index or nominal GNP better than U.S. M1, although it does do comparatively better for the WPI than GNP. For example, using current and two lagged values of percentage changes in U.S. M1 or McKinnon's world money supply to explain the percentage change in the U.S. WPI or

nominal GNP and Hildreth-Liu corrections for serial correlation, we find that on the basis of  $R^2$ , U.S. M1 "out-explains" the world money supply by .44 to .35 for the WPI and by .73 to .60 for nominal GNP. The corresponding standard errors of estimate are .028 to .030 for the WPI and .013 to .016 for GNP. (Consistently we find the greatest explanatory power from money lagged one year). Such regression results should certainly not be taken as definitive, but they should shed considerable doubt on the U.S. as a small country hypothesis.

#### IV. Conclusion

My conclusion is that the global monetarists have played a useful role of highlighting the potential importance of various aspects of international monetary interdependence. However, the currently available evidence does not support the strong propositions they have advanced about the dominance of U.S. monetary developments on the rest of the world or, conversely about the domination of U.S. monetary conditions by international developments. The actual strengths of these various types of monetary interdependencies should be important topics for further research.

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