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THE LIMITS OF MONETARY CONTROL

Remarks by

Henry C. Wallich

Member, Board of Governors of the Federal Reserve System

to the

Midwest Economics and Finance Associations

Louisville, Kentucky

Friday, April 3, 1981

SUMMARY

1. A Federal Reserve staff study shows that:
 - a. The relationships between money and economic activity have become substantially looser during the 1970's.
 - b. The money-supply series contain a high degree of random variation, with the standard deviation of this noise factor in weekly changes in M-1B amounting to \$3.3 billion.
 - c. Efforts to reduce the short-run variability of the money supply encounter rapidly diminishing returns while also leading to increasingly higher volatility of interest rates.
 - d. Temporary deviations of the aggregates from their target have little effect on GNP.

2. The tax deductibility of interest creates a two-tier structure of borrowers, because borrowers without income against which to deduct interest are more severely affected by the level of interest rates.

3. The public as well as the experts are not agreed as to what constitutes easing and tightening of monetary policy. Those viewing monetary policy in terms of interest rates probably greatly exceed the number of those viewing it in terms of money supply. That makes it difficult to form unambiguous expectations concerning the effects of monetary policy.

4. A variety of changes in monetary control techniques is conceivable which, if adopted, could help to tighten up control over the aggregates. But the real issue is not how tight this control can be made but whether, given the probable high cost in terms of greater volatility of interest rates, it would be desirable to push the precision of monetary control further.

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Monetary policy has been in a rapid state of evolution over the last few years. This can be said both of the economic principles that have applied, and the techniques that have been used. That evolution surely is not yet at an end. A milestone appears to have been reached, however, in one regard. We now seem to have a clearer understanding of how far it is desirable to push control of the money supply as the leading principle of monetary policy in times of inflation.

On the basis of what we know today, it appears that available techniques for controlling the money supply are adequate, and probably more than adequate, to achieve the desirable degree of control. It is certainly possible to develop techniques that could fine-tune the money supply even more precisely than those presently in use. Quite likely some of these techniques will be developed. Nevertheless, there are rapidly diminishing returns and rapidly rising costs to a tighter control of the aggregates. It may thus become advisable to use the instruments that exist or that could be developed with less than their full power. The degree to which their use should be

pushed is a very difficult question. It is by no means a foregone conclusion that more control over the money supply invariably is better than less.

The Federal Reserve's Review of the New Monetary Control Procedure

These conclusions follow in important part from the results of a review of the Federal Reserve's new operating techniques conducted by the staff of the Federal Reserve Board and the Federal Reserve Banks. My interpretation of these extensive and very technical studies, which are available on request from the Federal Reserve Board, is the following.

(1) The relationship between money and the real sector has become substantially looser in the 1970's, in the sense that widely used money-demand equations that previously were quite reliable, have severely over-predicted money given GNP and interest rates. A new equation has been developed by Fed staff that seems to take into account the main cause of this downward shift in money demand by incorporating the impact of very high expected interest rates upon cash-management practices. But, the somewhat ad hoc character of a new equation of this sort prevents one from placing full reliance upon it. A similar change in the relationship between money supply and nominal GNP -- though in the other direction -- seems to have occurred also in the United Kingdom, mainly with respect to sterling M-3. Such shifts do not imply that a money-supply target is not useful. So long as there is severe inflation, the basic meaning of a money-supply target always is that less money growth is better than more. In the long run, that will help bring down inflation. But, the notion that GNP can be directly steered by controlling the money supply is severely questioned by this experience.

(2) The Federal Reserve's review shows that there is a high degree of randomness in any money-supply series, often referred to as "noise," consisting of transitory variations and uncertainty of seasonal adjustment. The estimated standard deviation of the noise factor for monthly changes in M-1A and M-1B is about \$1.5 billion (4-1/2 percent at an annual rate), and about \$3.3 billion for weekly changes, based on data for the 1973-79 period. Such random moves can be expected to be corrected over time as the basic determinants of the money supply assert themselves. A money-control policy seeking to prevent such deviations instead of accommodating them would actually cause them to have an effect on financial markets and perhaps even the real sector. It would in effect shift the irreducible degree of randomness from money growth into interest rates.

(3) Because of the random character of some money-supply variations, an effort to control variability encounters diminishing returns in terms of the degree of stability that is achievable. For instance, when the targeted aggregate has moved off its growth path, an attempt to return to that path within a period of less than three months will not add a great deal to the degree of path adherence actually achieved. Any improvement in path adherence, on the other hand, will lead to increasingly higher volatility of interest rates.

(4) Short-term deviations of the money supply from path lasting three to six months have only minor real sector consequences. This generalization, to be sure, needs to be qualified by taking into account the source of the deviation and the degree to which interest rates move as a result of the money-supply deviation from target. It also depends on how large the deviation is, and on whether it is fully made up by a compensating deviation on the opposite side of the track, or is merely returned to track.

In any event, there is no basis for the view now sometimes expressed that a deviation of money supply immediately causes a corresponding deviation of GNP. That view seems to be based on experience during 1980, when indeed over- and undershoots of the monetary targets coincided closely with movements in the economy. However, there is no reason to believe in a lagless relationship in which an exogenous money supply affects the economy. Much more plausible is an endogenous money supply dominated by economic activity, which indeed can be expected to follow fluctuations of the real sector contemporaneously rather than leading them.

Tighter control of the money supply by the Federal Reserve would indeed be possible within the limits set by the random influences already mentioned. It would in turn lead to wider fluctuations in interest rates with adverse repercussions on the financial and even real sectors.

I have already observed the costs of wide interest-rate fluctuations although these fluctuations in 1980 cannot by any means be attributed solely to the Federal Reserve's attempts to control money through reserve targets per se. Such costs include the near-demise of fixed-rate long-term mortgages in many parts of the country, the high risk premia built into long-term interest rates, the diminishing impact of movements in interest rates on credit availability due to the relaxation of Regulation Q ceilings and the trend toward floating loan rates, the shift of interest-rate risks from lenders and especially intermediaries to borrowers, the growing volatility of foreign exchange rates, damage to the housing and automobile industries from wide swings in volume, and the development of a two-tier structure of borrowers with respect to their sensitivity to high nominal interest rates.

(5) This two-tier structure of borrowers deserves an additional comment. A significant number of firms, households, and national economies are not cushioned against the full impact of high interest rates by the tax deductibility of interest because for them there is no such deductibility. This is the case of business firms that have no profits, and which at best get a loss carryforward from their interest payments. It is true of very small businesses paying a substantial part of their tax at the 20 percent corporate tax rate for profits between \$25,000 and \$50,000, which allows them only a minimal deduction. It applies to households taking the standard deduction, although most households with sizable interest-rate payments may be expected to itemize their deductions. Finally, it applies to governmental units, especially developing countries for most of which real interest rates rise dramatically with major upswings in rates.

As a result of this tiering with respect to tax deductibility of interest payments, the "deductible" tier is only moderately affected by high nominal interest rates. For many borrowers in this tier, the real after-tax interest rate may still be negative even with "high" nominal rates. For them, in fact, debt amortization has in part been made tax deductible, if we regard the inflation premium in the interest rate as the economic equivalent of debt amortization. The cash flow problem imposed by high interest rates likewise is eased by the reduction in tax payments. For the lower tier, real interest rates may be very high. And the cash flow problem is not mitigated by any tax benefits.

In consequence, a monetary policy that exerts adequate restraint on "tier-I" borrowers may impose very severe restraint upon "tier-II" borrowers some of which must be assumed to be in a weakened position already. It may also impose great strains on some financial intermediaries holding part of their portfolios in long-term fixed-rate assets. On the other hand, a monetary policy aiming to take the problems of the tier-II borrowers into account and seeking to spare them high real interest rates would create excessively easy conditions for the tier-I borrowers and would very likely be inflationary. Moreover, negative real interest rates, even though only in after-tax terms, tend to misallocate resources by stimulating less productive investment. The disproportionate expansion of the housing sector in the United States is only one such example. And in many circumstances, negative real interest rates are likely to kindle inflationary expectations.

Implications for Monetary Policy

What I have said so far makes clear that further debate over possible improvements in the control of the money supply is not a primary issue. Very probably, such improvements are possible. The real question is how far precision of money-supply control should be pushed in the face of mounting costs of such fine tuning. In my personal view, there is a good case for incurring some significant costs, in the form of more volatile interest rates, in order to avoid prolonged overshoots of the monetary aggregates. This is so because overshoots become increasingly harder to correct the longer they are allowed to run. If there are forces at work in the economy pulling the aggregates up, the effort to bring them back on track

obviously will have to be greater than the effort that would have been required to keep them from overshooting in the first place. Furthermore, historically, our main mistakes have been associated with overshoots rather than undershoots. That is a wind against which one should lean early.

With respect to the prevention or correction of undershoots, I would take a somewhat asymmetrical attitude. I would allow judgment in such cases to be guided in good part by an assessment of interest rates. To prevent or correct an undershoot by generating interest rates that are severely negative in real terms after tax is to invite trouble.

Some weight in assessing the degree of tolerance for over and undershoots must also be given to their impact on the credibility of monetary policy. Prolonged departures from target adversely affect the expectations which guide rational (and irrational) transactors. Unfortunately, there seems to exist a two-tier structure also with respect to expectation formation in response to monetary policy. From the press, from Congressional utterances, and from the unsolicited mail that the Federal Reserve receives, there can be little doubt that most transactors evaluate monetary policy and form expectations on the basis of interest rates and not of the money supply.

The year 1980, which produced a bumper crop of such comments, provides telling examples of public responses to money-supply and interest-rate developments. Interest rates rose sharply during the first quarter of 1980 as a strong economy created demands for money and credit. The aggregates were overshooting their targets. At that time, the very predominant interpretation by the public seemed to be that the Fed was tightening rather than easing. On the basis of a money-supply criterion, the overshooting of the aggregates would have had to be interpreted as an easing of Fed policy.

During the second quarter, both interest rates and money supply declined as the economy itself went into a sharp downturn. This time, the predominant interpretation seemed to be that the Fed was easing. Indeed, the credibility of the Fed's anti-inflationary stance was challenged by the seemingly widespread belief that the Fed had switched from fighting inflation to fighting recession. In terms of a strict money-supply approach, this period of undershooting of the monetary targets would have had to be interpreted as one of tightening.

During the third quarter, money supply and interest rates once more moved up sharply and the economy also turned up. Once more, the majority view seemed to be that the Fed was "tightening" and "aborting the recovery." In terms of a money-supply criterion, the Fed's actions contributed to easing.

The seeming prevalence of an interest-rate rather than a money-supply based evaluation of monetary policy does not mean that there were not voices on the other side. But when interest rates and money supply are moving in the same direction, because demand in the economy is pulling them that way, it is difficult to make the case that rising interest rates mean easing and falling interest rates mean tightening. Nevertheless, those who focus on the money supply rather than on interest rates may well form their inflation expectations accordingly. By their standards, expectations of inflation would have mounted during the first quarter and the third quarter and diminished during the second quarter. Moreover, market participants holding this view may well command financial resources that are large relative to their number.

Substantively, it would appear that events bore out the validity of the interest-rate criterion rather than the money-supply criterion. At each turn, movements in interest rates were followed, with a lag of three to four months, by a movement of the economy in the opposite direction. The rise in interest rates during the first quarter was followed by the sharp decline in the economy during the second quarter. The decline in interest rates during the second quarter was followed by an upturn of the economy in the third. To make the case that the money supply, rather than the interest rates, move the economy, one would have to assert that the money supply affected the economy with a zero lag. The overshoots of the first and third quarters would have had to make their impact on the economy instantaneously, and so would the undershoot of the second quarter. Given Friedman's time-honored dictum that the money supply affects the real sector with a long variable lag, this seems hardly plausible. The instantaneous relationship between money and the economy is much more easily explained by postulating that the causation runs from the real sector to money rather than vice versa, and that indeed, in that case, the economy's effects on the demand for money operate quickly. Furthermore, in 1980, a third factor may have affected both the real sector and money simultaneously. A full picture would have to include the impact of the imposition and subsequent removal of the credit restraint program on economic activity and the monetary aggregates.

I do not wish to make my interpretation of these alternative causal relationships the principal issue here. Anybody is entitled to believe what he wants, and no doubt will. My point simply is that there are different opinions on the subject.

A majority in the country views interest rates as the principal measure of monetary ease and tightness; a minority, the monetary aggregates. It is probably true that the group stressing the aggregates has a significant following in the money and capital markets who are capable of setting in motion large amounts of money. They also have a substantial representation among the press. Nevertheless, as I read the press and particularly the never-ending flood of bank, investment-house, and other letters, the interest-rate school by far predominates. For the Federal Reserve, seeking to live up to the standards of one group would only exacerbate the contrary expectations of the other. In the language of the rational expectationalists, there is no agreed structure of the economy. The distribution of rational expectations therefore is extremely wide. I end up by concluding that people are likely to act as they are shown. Announcements about money-supply targets and intended reduction of inflation are all very well. But, what people will believe is what they see, i.e., results rather than expectations.

Implications for Improvement of Techniques

In this context, efforts to improve the technique of monetary control certainly should go forward, but with the recognition that they are not an absolutely necessary condition of a successful monetary policy. The existing capability for controlling the aggregates is adequate. The decisive question is how far it should be pushed in the direction of diminishing returns in terms of precision of control and at the cost of increasing instability of interest rates. As I have said, I believe that some costs of this sort are well worth paying in order to maintain discipline and strengthen credibility.

I, therefore, believe that it is worthwhile to continue to develop improved techniques of control. Even though this may mean creating a capability for monetary overkill, they may improve the trade-off between money-supply variability and interest-rate variability that is one of the principal findings of the Federal Reserve review. I, therefore, turn to a quick examination of some of the available techniques.

Contemporaneous versus lagged reserve accounting. A return to contemporaneous reserve accounting (CRA) has been urged ever since the Fed abandoned it in favor of lagged reserve accounting (LRA). Under lagged reserve accounting, the banks hold reserves this week against reservable liabilities two weeks ago. Not even the Almighty -- although statisticians, of course -- can change the reservable liabilities of two weeks ago. Conceptually, the banking system could expand enormously this week without feeling any reserve restraint if it believed that it could easily get the reserves needed two weeks later.

Banks like this system because it enables them to know their required reserve while adjusting their money position. The Desk likes it because it offers one more known value in assessing constantly shifting reserve factors. Many economists, including those inside the Federal Reserve, do not like it because it deprives the banking system of the possibility of adjusting by changing its liabilities in addition to changing its reserve holdings. More concretely, under CRA, if reserves were short this week, banks would begin to scramble for them and thereby reduce reservable liabilities during the current week. Under LRA, the scramble for reserves ordinarily would begin two weeks later. Practically, since the Fed knows future reserve liabilities soon after

the end of the week in which they are established, the Desk can begin to take them into account at an early moment, in effect reducing the lag by perhaps one week.

The net result of CRA would be to give the banking system two degrees of freedom in adjusting its reserve position instead of only one: given the supply of nonborrowed reserves, it could change its reservable liabilities as well as acquiring or reducing reserves through the discount window. The potential for the first type of adjustment is not large, since every dollar of reserve deficiency or excess would call for a large multiple in terms of a change in reservable liabilities. But the earlier initiation of the process of adjustment represents a modest advantage.

Discount window reforms. Various modifications of discount window procedure are available. Their relative attraction depends on the reserve regime. The discount window essentially is an escape valve through which the banks can obtain relief from a shortage in the reserves that the Fed provides through open-market operations. Under a regime of lagged reserve accounting, such a shortage can be absolute -- discounting is the sole degree of freedom. Under contemporaneous reserve accounting, as already noted, there are two degrees of freedom because selling of securities and calling of loans leaves open a possible, although narrow and painful, avenue of escape from reserve deficiency.

There are various ways of narrowing banks' access to the discount window, most of which imply in some degree a prior move to contemporaneous reserve accounting. The ultimate restraint would be total closing of the window. This would be equivalent to targeting on total reserves, a procedure

under which the Federal Reserve open-market desk would reduce the supply of nonborrowed reserves by the amount of any increase in borrowed reserves, thus holding total reserves constant. Intermediate stages would be a surcharge on the regular discount rates such as prevails at present, a graduated system of several surcharges, a rate tied to a market rate, and, closest to total closing, a penalty rate designed to remain a penalty rate no matter how high market rates went.

The variability of short-term interest rates would increase in proportion to the degree of restriction of access to the window. Closing the window, and placing sole dependence on contemporaneous reserve accounting and adjustment of reservable liabilities to available reserves would surely generate wide swings in interest rates -- provided the Federal Reserve did not moderate these by changing the supply of nonborrowed reserves. Easy access to the discount window, on the other hand, unrestrained by administrative limitations, would make the discount rate the ceiling rate in the short-term market. The issue is made more complex by consideration of bank earnings. A discount rate below the market rate is widely regarded as a subsidy. Lender-of-last-resort operations might be frustrated if a significant penalty rate had to be charged to a weakened borrower. My personal inclination would be in the direction of moderate tightening up of access to the window.

The monetary base. An old standby for Federal Reserve improvements is the monetary base. Sometimes, it is not made clear by proponents whether the base is to be used as a substitute for an operating target, i.e., a reserve aggregate such as nonborrowed reserves or total reserves, or as a substitute

for an intermediate target, i.e., a monetary aggregate such as M-1 or M-2. As for the base's possible usefulness as an operating target, the Federal Reserve view shows that in the present institutional environment both the base and total reserves would provide less close control of the money supply than would nonborrowed reserves, the present operating target of the Desk. The principal reason is instability in multiplier relationships involving currency and the deposit mix which injects shocks into the money supply process.

This seems plausible given the fact that very little is known about currency holdings and the behavior of holders. The volume of currency outstanding amounts to about \$500 per capita of the population. Not many holders are likely to reach this "average," and business holdings can hardly be large enough to account for the rest. Various unknown uses, such as possibly the "underground economy," drug traffic, domestic hoarding, the dollar's use and hoarding abroad, and perhaps just plain attrition from loss and destruction, could be hypothesized as possible explanations for the high numbers. Whichever explanation may carry weight, none engenders much confidence in a money-supply control system that assigns a dominant role to currency.

As for the use of the monetary base as an intermediate target, analogous to the monetary aggregates, its principal attractiveness derives from two sources. One is the fact that the Federal Reserve "can" control the base with a high degree of precision. The base represents the great bulk of the Fed's liabilities and can, therefore, be closely although not instantaneously controlled by adjustment in the Fed's portfolio. Virtually the entire impact of such control, however, would have to fall on the reserve

component of the base. Such control would, therefore, impact initially through sharp fluctuations in bank deposits, with only gradual impact on currency circulation.

The consequence for interest rates, liquidity of financial institutions, and all that hangs on it could, therefore, be quite drastic if the Fed were to make unrestrained use of its "ability" to control the base.

A second apparent attraction of the base is its close correlation with income, albeit, as already noted, somewhat weakened of late. In all probability, however, this is a case where the causal relationship runs overwhelmingly from income to the base, rather than from the base to income. I doubt very much that it is possible to control GNP by controlling the volume of currency in circulation. The amount of currency outstanding is determined by the public's demand which, in turn, is more than anything a function of retail sales. People put currency into their wallets because they intend to go shopping. They do not go shopping because they find currency in their wallets. Currency, therefore, could be controlled only by controlling income. In that sense, using the base as an intermediate target would be a proxy for using nominal GNP as an intermediate target. Money supply as an intermediate target would be eliminated in this framework.

Conclusion

For me, the outcome of this discussion is that it is indeed possible to bring down inflation through money supply control over time. But, that will not be painless. It will involve what traditional economic theory has always pointed out -- the painful process of allowing enough

slack in the economy to exert a continuing downward pressure on wages and prices. There is no free lunch out there to be had by keeping the monetary aggregates precisely on track "week by week and month by month," even if that were practically possible. The Federal Reserve has an important role to play in this process, but it is not omnipotent and not omniresponsible. The budget, regulatory reforms, productivity, and elimination of price-raising government actions all need to contribute.

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