

## Discussion

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Benjamin Friedman believes that the traditional emphasis on money as against credit in economic analysis and in monetary policy is unwarranted. In this paper he offers a case for treating money and credit measures equally in formulating monetary policy by having dual money and credit intermediate targets.

I suppose most economists would agree in principle that the credit market is as "important" as the money market. Presumably, however the emphasis on money has reflected a belief that the behavior of money in a modern economy results primarily from the decision of policymakers. Thus, there is probably a general presumption that money is "exogenous" while credit is not. On the other hand, most people would also agree that the credit market is capable of generating its own independent disturbances to the economy as a result of such things as financial innovation and regulatory changes affecting credit flows. And the notion that policy has been more directed to money than to credit is to some extent simply a generalization from recent U.S. experience. Obviously, attempts to control credit through policy measures have at times been important even in the United States and certainly they have been abroad.

In any case, the ability of the central bank to control money versus its ability to control credit is acknowledged by Friedman to be one of the criteria for choosing an intermediate target. I would like to take up this issue in a moment, but let me first comment briefly on the other criteria he suggests and the evidence he adduces for a credit target in relation to these criteria.

**The views expressed are those of the author and do not necessarily reflect the views of the Federal Reserve Bank of New York.**

To begin with a relatively simple issue, an important objection to the use of any broad credit *measure* as an intermediate target has always been that the data are available only quarterly and with some lag. While there may well be such a thing as too-frequently-available-information, data availability only on the current schedule of the flow-of-funds figures is clearly a problem. Given the welter of incoming weekly and monthly figures on financial and nonfinancial developments and the ease with which policy instrument settings can be readjusted, a target measure available only quarterly would almost certainly be pushed into the background as policymakers feel the need to respond to more timely information.

Because of this consideration, Friedman's finding that virtually all of the components of his net credit measure can be made available monthly with only little extra effort is important. Of course, we don't know *how soon* such data would become available or how reliable preliminary (or final) estimates would be. It does seem likely to me that the credit figures would always remain both less quickly available and less reliable than the money numbers.

Friedman's other two criteria for judging intermediate targets are (1) the closeness and stability of its relationship to nonfinancial variables of ultimate significance and (2) its ability to provide information on current and, especially, future values of these variables. Friedman offers a variety of statistical tests relevant to these criteria but he seeks to show only that *money cannot be shown superior* to his credit measure. He does not try to establish the stronger point that the credit measure might actually be superior to money.

Of the various tests he has presented, the more elementary ones (displaying velocity variability and performance in St. Louis-type "reduced form" equations) actually do seem to favor his credit measure. The markedly smaller variance of credit velocity growth rates relative to M1 velocity is readily visible to the naked eye in charts of both one-quarter and four-quarter velocity growth rates. The major source of the difference seems to be that credit velocity has fluctuated rather steadily around its roughly zero average for many years while M1 velocity slowed in the late 1960s and early 1970s and then reaccelerated. Business cycle and subcyclical patterns in the two velocity measures are quite similar, however.

Another interesting point that turns up from simple inspection of a chart of growth rates in Friedman's credit measure and M1 is that the

credit growth rate is much less erratic than **M1** growth. One interesting example of this is the famous second quarter of 1980 when the absolute drop in the **M1** growth rate was nearly 10 percentage points. The corresponding slowdown of Friedman's credit measure was less than half as great—this despite the presumed importance of the credit controls in that quarter. Overall, the charge that the Federal Reserve's short-run performance has been erratic since October 1979 in terms of money growth rates would be far harder to sustain if it were also judged in terms of credit behavior. Credit growth has in fact moved within a quite narrow range in recent quarters.

I will not comment on some of the more sophisticated statistical tests that Friedman has employed to compare the impact of "innovations" in the money and credit measures. Overall, they seem hard to interpret and Friedman has been careful to stick to his purely negative point that they can't be used to show that money is superior to credit. Some of these tests<sup>1</sup> have in fact produced some rather peculiar results — seemingly implying that neither money nor credit have much significance in explaining movements on prices and real output. Overall, I doubt that policymakers would be much influenced by tests that are so hard to make sense out of intuitively and that seem to lead to such ambiguous and counter-intuitive results.

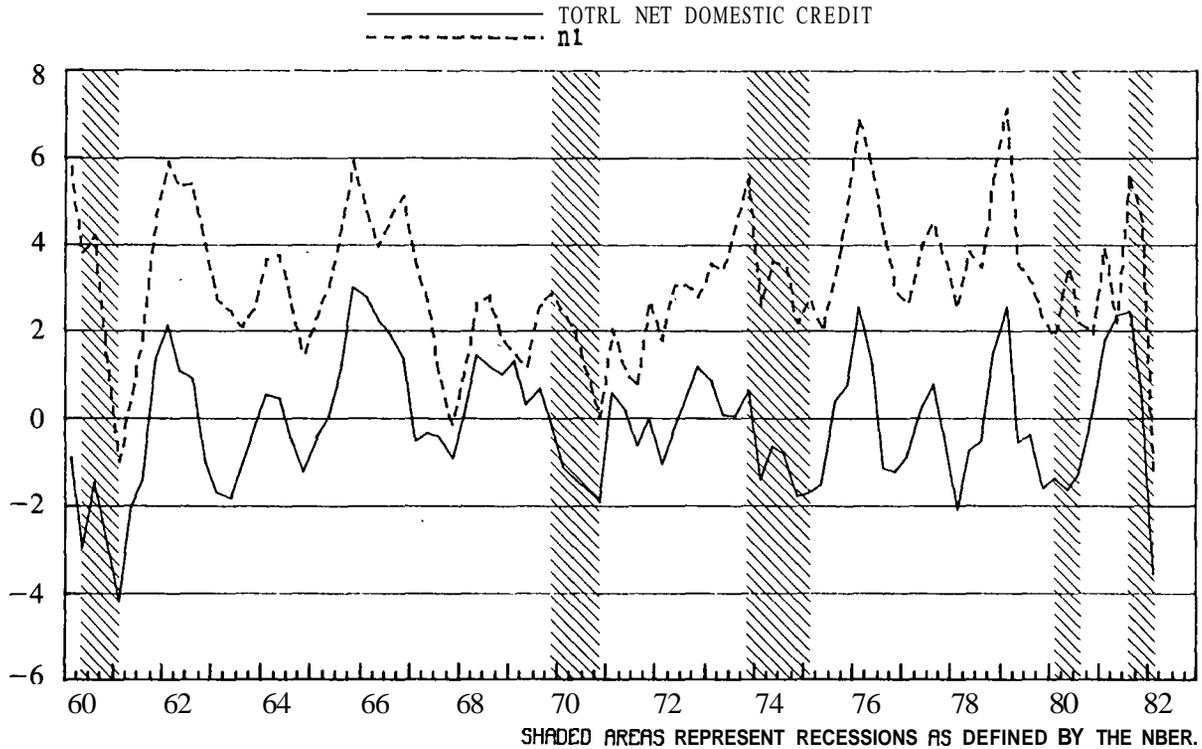
With respect to the issue of **controlability** in terms of instruments available to the central bank, I have major reservations about Friedman's credit measure — as indeed I increasingly do about some of the money measures themselves. Clearly, total nonfinancial credit is not subject to reserve requirements and there seems to be no reason to expect it to exhibit a stable or predictable reserve multiplier. I don't see how a "reserve path" could be drawn up for a targeted credit growth rate in the way that is currently done for **M1**.

With respect to the pre-October 1979 instrument, the funds rate, I also fail to see any meaningful way in which instrument settings could be set to achieve total credit growth targets. In the case of **M1** there was a perfectly intellectually respectable means of arriving at such interest rate settings via use of the money demand function. In the absence of evidence of a stable "demand function" for total credit in terms of short term rates, a parallel rationale for using a funds rate target to hit a credit measure seems doubtful.

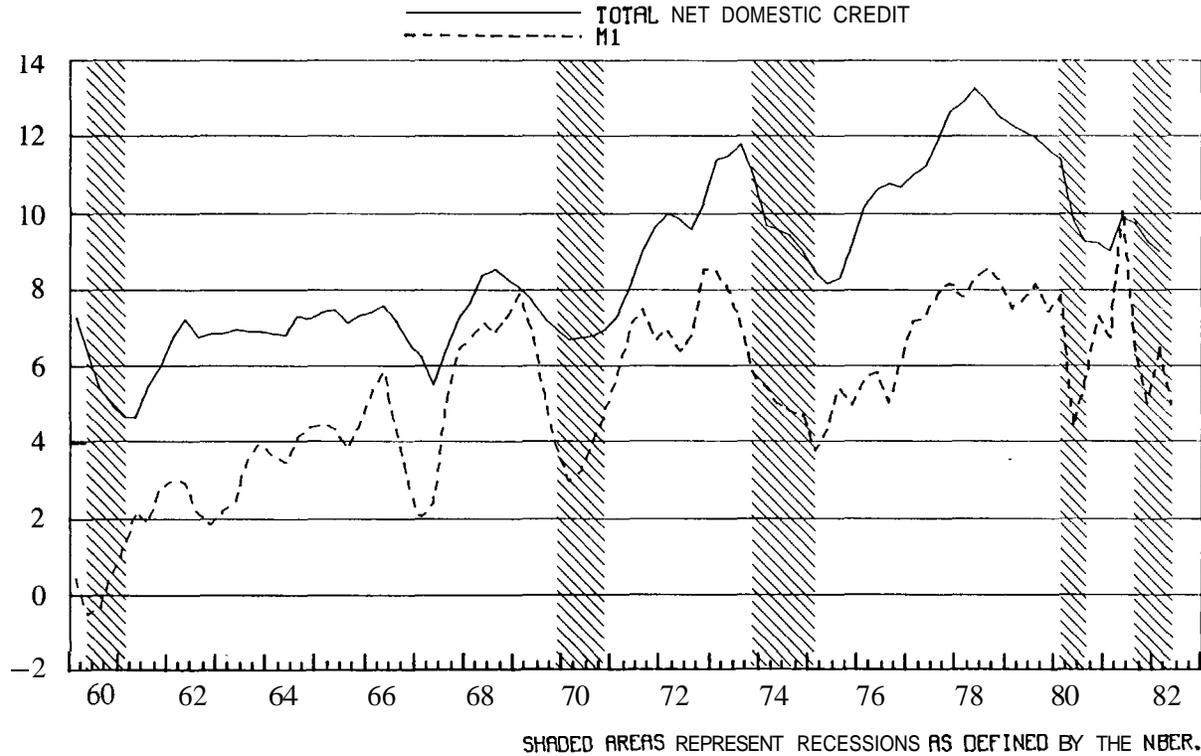
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1. For example, those in the bottom panel of Table 2 in the paper presented to this conference.

GROWTH IN VELOCITY OF TOTAL NET DOMESTIC CREDIT  
AND M1, FROM FOUR QUARTERS EARLIER, IN PERCENT



# GROWTH OF TOTAL NET DOMESTIC CREDIT AND M1 FROM FOUR QUARTERS EARLIER, IN PERCENT



Friedman makes his case for the controllability of his credit measure in terms of equations relating changes in credit or, alternatively, a measure of money, to lagged changes in GNP and current and lagged changes in nonborrowed reserves or, alternatively, current and lagged levels of the funds rate. He finds that standard errors are uniformly and substantially lower for the credit measure than for any of the money measures. He thus concludes that credit is at least as controllable as money whether the Fed uses a reserves or interest-rate instrument.

I have several problems with these equations in drawing such a conclusion. First, it appears to me that the relative controllabilities of the various aggregates should be judged on the basis of  $R^2$  results rather than standard errors. On this basis the results are not so clear cut. Indeed in monthly equations presented in an earlier paper, the credit measure comes off substantially worse than either M2 or M3.<sup>2</sup> Second, from my own hasty experiments with such equations using Friedman's credit measure, I doubt the apparent superiority of credit over money in the quarterly equations says anything about comparative responsiveness to current movements in policy instruments. But more fundamentally, I just don't see the rationale for these equations as applied to total credit. The original version of these equations, as developed by Schadrack and myself, was designed to estimate the controllability of money measures on a monthly basis. They were derived from widely accepted underlying "structural equations for the demand for money and for reserves (and taking GNP as given over one-month periods). I don't see a corresponding rationale for the use of such equations to determine the controllability of credit and have, as a result, not confidence in the equations **Friedman** estimates — which indeed appear to have some misspecifications in terms of our original rationale.<sup>3</sup>

Despite these reservations, I am in fact attracted by Friedman's proposal to target net credit, presumably in place of one or more of the broad money measures currently targeted **and/or** the bank credit target. Obviously, when you have multiple targets, as we already do, the practical import is to modify responses to undershoots or overshoots on

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2. "Monetary Policy with a Credit Aggregate Target," Table 7 (to be published in the *Journal of Monetary Economics*).

3. Friedman uses the *level* of the funds rate whereas it appears that changes in money growth rates should be influenced by *changes* in the funds rate. The same level/changes problem exists with respect to the discount rate. Indeed, this variable should not even be included in the funds rate equations since, according to the underlying logic of the original equations, when the funds rate is used as the policy instrument, only determinants of the demand for money enter into the reduced form.

the part of one of the targets in light of the performance of the others — e.g., if M1 is below range, you may respond less vigorously if M2 is over its range. Since target measures rarely move in tandem, the minute you adopt multiple targets, you find yourself having to make judgments about how to weigh the implications of divergent movements of the targeted measures. This is presumably what most monetarists dislike about multiple targets in general—although we tend to get conflicting advice as to just what single target to use.

If you **are** willing to use multiple targets on the grounds that aberrations potentially affecting any single target are just too dangerous to risk, the inclusion of a credit measure along with a money measure seems appealing. This is especially true if the not-very-directly-controllable credit measure were to replace an *also* not-very-directly-controllable broad money measure. Practically speaking, I am attracted to Friedman's credit measure because its growth rate is substantially less volatile than that of, at least, M1.

It may be instructive to look at how Friedman's credit measure has actually behaved since October 1979 and thus to see how its use as a target might have influenced the Federal Reserve's instrument settings. Measured on a fourth quarter to fourth quarter basis (the way the targets are defined), credit growth slowed modestly from 12.5 percent in 1978 to 11.7 percent in 1979, roughly paralleling the equally modest slowing in M1. So this does not suggest that instrument settings cued on M1 would have been much affected by a credit target in 1979.

In 1980, credit growth slowed more markedly from the 11.7 percent 1979 figure to 9.2 percent while M1 growth was about unchanged over the year relative to its 1979 growth rate. As I noted earlier, the drop in credit growth in the second quarter of 1980 was much less acute than the drop in M1 growth. Similarly, while credit re-accelerated later in the year along with M1, the acceleration was much milder and in no quarter did credit growth equal or exceed its 1979 average. On balance, I think the significantly greater slowdown in credit for 1980 as a whole and its much less volatile quarter-to-quarter performance relative to M1 would have made for much less anxiety about monetary policy if there had been more focus on credit than there actually was at the time.

In 1981, credit, like M2 and M3, continued to grow at about its 1980 pace. Thus the notion that monetary policy tightened sharply further in 1981, derived from concentrating on M1 and especially on M1 adjusted for NOWs, is not born out by the credit measure. Finally, there

was only a very modest acceleration of credit growth in the first quarter of 1982 in contrast to the sharp acceleration of M1 that attracted so much attention.

In sum, the performance of policy has been substantially steadier judged in terms of credit than in terms of money. The advantage of such an appearance is not entirely **self-serving**. Market perceptions about the steadiness of policy obviously can have effects on interest rate volatility and, through the risk premium, perhaps even on the average level of rates. So a measure that has less tendency to alarm the markets with large short-term gyrations may well have substantive advantages.

The strongest argument for introducing a credit target at this time, however, may be the current and prospective impact of financial innovation and deregulation on the money measures we target. I know the case has been made that suitable averaging of M1 velocity over long enough time periods suggests that financial innovation has, not created significant problems to date. **But** I find that evidence unconvincing. For one thing, we have already had one redefinition of the Ms, including the transactions M1 definition, and nobody doubts that this was necessary. Second, most agree that something did go seriously wrong with the money demand equations in 1974 and that the problem persisted for some time. Third, I think it is clear that, at the least, the introduction of nationwide NOWs last year created major new problems for the interpretation of M1. Meanwhile, other aspects of financial innovation and deregulation produced quite abnormal behavior, given prevailing interest rate conditions, for M2 and M3 in 1981.

But perhaps most **importantly**, the prospects are (as Friedman notes) that further innovation and deregulation will have major effects on all the Ms over the coming years. It seems to me, for example, that the "sweep account" phenomenon has the potential for drastically **reducing** the demand for conventional transactions instruments, though its importance is probably **only** marginal to date. The money funds could have similar effects if they began price transactions services directly and ended current limitations on use of the check writing privilege. On the other hand, interest rate deregulation for NOW accounts by 1986 could greatly increase the demand for M1 **as** currently defined, but what the net effect of all these things taken together would be we cannot be sure.

These various current and prospective developments are specific to the markets for the instruments we include in our definitions of *money*.

I know of no particular reason to expect them to have similar effects on total net credit. Consequently, credit may become relatively more reliable as a financial indicator in the future.

Admittedly our inability to get a good direct handle on the credit measure is a weighty objection. However, as more and more of M2 and M3 come to consist of nonreservable instruments paying market-related rates, our ability to get a direct handle on them, whether through nonborrowed reserves or the funds rate, is also weakening. Indeed similar problems could come to infect the transactions measure of money to the extent that sweep accounts and money fund shares become increasingly important in making payments.

In the meanwhile, my conclusion is that on balance, replacement of one of more of the higher numbered Ms with Friedman's credit measure may have merit. Even if not directly controllable, monitoring total credit behavior could prevent destabilizing responses to movements in potentially misleading money measures.