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Commentary

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Bill Dewald said he invited me to comment at this conference because of my practical expertise in formulating and implementing monetary policy. So it is from that perspective that I will address several questions raised by the Anderson and Rasche paper.

The first and perhaps most important question is Why does the base get so little attention from central banks in shaping their monetary policies? Although the Swiss National Bank has a long-term, multi-year, monetary base target, it has allowed the base to deviate appreciably from its target path for extended periods. The Bank of England has a guideline for growth in the base that is considered likely to be consistent with achieving its inflation objective, but it does not appear to place very much weight on this particular indicator.

In the United States we paid quite a bit of attention to nonborrowed reserves from 1979 to 1982 but very little thereafter to aggregate measures of reserves or the base. The Federal Open Market Committee (FOMC) has considered using the base as an intermediate indicator from time to time. President Melzer brought a proposal to the Committee in 1988 to establish a band for monetary base growth, with the idea that the Open Market Committee would react very strongly if the base got on either side of the band. But the Committee rejected that proposal, largely because, for a variety of reasons I'll go into later, it had little confidence in the indicator properties of this aggregate. About four years ago there was another push within the Federal Reserve to see if we could come up with a quantitative target for open market operations or an intermediate indicator. That effort also came to naught, and the base has not been

the subject of discussion in the FOMC for several years. In sum, aside perhaps from Switzerland, central banks haven't used the base in formulating monetary policy, and the question is why. The second question I want to discuss is whether the proposals of Anderson and Rasche will help make the base more useful for monetary policy.

WHY SO LITTLE ATTENTION TO THE BASE?

Some academic critics of the Federal Reserve have argued that the lack of emphasis on the base in the United States has resulted mostly from the central bank's inability to see obvious correlations between the base and income, and partly from bureaucratic unwillingness to give up the powers of discretionary policymaking. From my perspective, there have been a number of valid reasons for ignoring the base, at least in the United States. For one, with regard to money/income relationships, the base has, over time, been dominated by other definitions of money. In the 1960s and 1970s, for example, M1 seemed to be a better money supply-type indicator of the thrust of monetary policy. In the 1980s, M2 was a better leading indicator of nominal income. Most of the empirical tests I am aware of would tend to support the conclusion that there has been a tighter relationship between those aggregates and income than there was between the base and income. In these circumstances, if you are looking for a quantitative intermediate guide to policy, why focus on the base, which is an ingredient producing money? Why not use some measure of money itself?

Over the 1980s, reasons for questioning the usefulness of the base as an intermediate policy indicator in the United States increased. Foreign currency flows began to play a greater role in our base growth. In addition, the reserve portion of the base became more interest-sensitive,

once deregulation allowed NOW accounts nationwide. In fact, the whole relationship of base to income seemed to change about the time of this deregulation. A paper by Bob Rasche, given at a Federal Reserve conference in 1987, demonstrated a shift in the velocity relationship of narrow aggregates in 1981. Subsequent work of his has tended to reach other conclusions, but these disparate findings do demonstrate the uncertainty about this point. To the Federal Reserve, it appeared as we went through the 1980s that something had happened to the base-income relationship. Base velocity became more variable, the trend changed, and with uncertainty about future relationships policymakers were not enthusiastic about using the base as an intermediate indicator. Those concerns were not overcome by the adaptive base targeting rules of McCallum and Meltzer. To be sure, these rules would allow the Federal Reserve to adjust for shifts in base velocity, but the adjustments would be fairly slow, potentially producing considerable variation in income and interest rates while base growth targets caught up to changes in velocity.

One of the reasons people give for targeting the base is that it is the measure the Federal Reserve affects directly; decisions we make every day about open market operations produce the base. This type of argument hasn't carried much weight because the base has been endogenous to Federal Reserve operating procedures. That is, the FOMC has set a borrowed reserve or interest rate target, and the base is entirely determined by demand at the resulting interest rates and income. Control of the base has been subordinated to the control of interest rates. Given questions about the relationship of the base to income, there has been very little appetite for making the base exogenous. Targeting reserves or the base directly would put considerable variation in interest rates, with very little assurance that nominal income would be any smoother or closer to a desired path.

Over the 1980s and 1990s, the use of any quantitative indicators in monetary policy has eroded considerably. Innovation,

deregulation, and advances in technology seem to have changed the character of conventionally measured money supplies. Lower transaction costs have blurred the lines between one kind of asset and another; for example, households now shift easily and cheaply between stock and bond mutual funds, which aren't in any of the Ms, and deposits. Partly as a consequence, M2 velocity increased unexpectedly in the early 1990s, and policymakers, particularly after that episode, became very skeptical about whether stable and useful relationships would be reestablished between broad monetary aggregates and income.

The base hasn't emerged as a viable alternative to the broad money aggregates because, in the 1990s, questions about its velocity were multiplying even beyond those confronted in the 1980s. Foreign demand for U.S. currency has become much stronger and more variable in the 1990s, distorting the behavior of base velocity. This change is attributable in part to flows to Latin America, where some countries have begun to use dollars and domestic currency interchangeably. It also has arisen from the use of dollars in many countries in the former Soviet Union. The Federal Reserve staff estimates the amount of U.S. currency in foreign hands, but the absence of direct evidence means that such estimates are not particularly reliable.

At the same time, sweep accounts, in which balances in NOW accounts are swept periodically and automatically into savings accounts, have been reducing required reserves, further affecting the velocity of the base. Through May 1996, nearly \$100 billion of M1 had been lost to sweeps. These estimates are based on the initial amounts swept by each bank; we do not have the data to track the volume of deposits swept each week by institutions that initiated such a process some time ago. Sweeping has resulted in a decline in the base of approximately \$9 billion to \$10 billion. This decline has had no implications whatsoever for the volume of transactions undertaken with NOW accounts or demand deposits and hence no relationship

with spending; it is simply a shift in base velocity.

As Dick Anderson noted, sweeps will spread further, so that, eventually, essentially no institutions, or very few, will be effectively bound by reserve requirements. There are already some very large commercial banks that are not economically bound—banks whose deposits are not effectively constrained by the amount of required reserves they hold. Instead, the last dollar of deposits held at the Federal Reserve by such an institution is for clearing purposes—to avoid overdrafts in the institution's Federal Reserve account or to meet a prearranged clearing balance requirement. As the conventional time for the close of business draws near, when the Federal Reserve measures deposits and reserves, the size of the balance such a depository wants to hold at the Federal Reserve depends more on its expectations for unanticipated end-of-day shocks to its account than on the level of deposits. The depository can track what is in its account through the day, and, absent a required clearing balance, it would seek a closing balance above zero only to avoid Federal Reserve overdraft penalties in the event that adverse clearings result in an overdraft late in the day. Banks also incur economic penalties for holding excess reserves, in that they lose the interest those funds would otherwise earn.

The shift to holding reserves for clearing purposes has potentially important implications for open market operations and the reserve markets. In the new situation, the demand for reserves throughout the day will depend more on daily clearings—or what banks think daily clearings will be and what kind of shocks might hit their accounts at the end of the day. It is a day-by-day demand for reserves. In contrast, when reserve requirements are binding, the demand is determined by an average need over a two-week reserve maintenance period, or even longer, allowing for limited carry-forward of reserve excesses and deficiencies. When reserve demands are driven by daily clearing needs, banks will be unwilling to arbitrage across individual days. That is, they will not

act to stabilize the funds rate by holding extra reserves when rates are low, and fewer reserves when rates are higher. Without averaging, reserve demands are difficult to gauge, and without arbitrage, surprises in reserve demands and in the Federal Reserve's balance sheet tend to show through to the federal funds market. As a consequence, federal funds rates could become very volatile. Increased use of required clearing balances would restore, to a degree, the incentives and ability to average or arbitrage, but to date such increases have been modest, and we do not know whether they will provide an adequate cushion.

We have not experienced high volatility from the recent drop in required reserves, though a little more variation in funds rates is evident from time to time, and banks' adaptation to the new environment may be affecting aggregate reserve demands within a maintenance period. In early 1991, however, after a reduction in reserve requirements, the level of required reserves fell to below comfortable clearing levels, and volatility in federal funds rates increased substantially, not only on a day-to-day basis, but intra-day as well. Increased volatility would not be important if, say, three-month rates and policy transmission were largely unaffected. But we don't know what will happen as sweeps spread. At one level, the erosion of the effective constraint of reserve requirements could affect the way open market operations need to be conducted to keep funds rate volatility from disrupting markets. Already, since the 1991 episode, the Desk has been monitoring projected deposits at the Federal Reserve relative to required operating balances—the total of reserve requirements and required clearing balances and also relative to some notion of what banks desire to hold for clearing purposes on a daily basis.

SHOULD THE BASE INCLUDE CLEARING BALANCES?

The spread of sweeps, as Anderson and Rasche say, has important implications for how the reserve base interacts with total deposits. They propose including clearing balances in the St. Louis measure of the

monetary base, and in this regard their focus coincides closely with that of the Federal Reserve open market managers. Such an inclusion cannot deal with distortions in the base/deposit multiplier as sweeps are instituted. Only 16 percent or 17 percent of the decline in required reserves has been offset by an increase in required clearing balances. Hence the expanded base has been declining for given levels of deposits and transactions. It's highly unlikely that any adjustment could adequately deal with the transition period.

Moreover, considerable skepticism seems in order as to whether the new monetary base will have a reasonably stable relationship with money and income once the adjustment to sweeps is completed. The relationship between clearing balances and the volume of transactions, deposits, or income is very complex, because the demands for operating balances depend primarily on what the banks expect to happen at the very end of the day, not the volume of transactions during the day or the level of deposits at close of business.

A number of factors that do not bear on deposits or nominal spending might affect desired end-of-day balances. For example, the relationship of the growth of the base to the expansion of nominal GDP might depend on the relative proportion of real growth and inflation. The amount of balances a bank might want to hold at the end of the day should be closely related to the price level. Inflation will presumably affect the size of unexpected end-of-day transactions and demand for the base. What is less clear is how the amount of balances and the size of those transactions are related to growth in real income. An increase in real income might not have a proportionate effect on the size of individual transactions or their end-of-day volume.

A second factor interfering with the base/deposit relationship could be the proportion of clearing done through commercial banks versus that done directly through the Federal Reserve. If a bank chose to take its clearing business away from the Fed and put it in a correspondent bank, presumably it would

reduce or eliminate its clearing balances at the Federal Reserve. Whether the correspondent would have to raise its clearing balances at the Federal Reserve by an amount equal to the drop of the first bank is an open question. It would not if there are, in effect, economies of scale in holding clearing balances. In this case, the choice by commercial banks as to where to do their clearing—the Federal Reserve or the private sector—would have an important effect on the level of balances desired at the end of the day relative to deposits and spending.

Similarly, a third influence might be the structure of the banking system. As the number of depositories drops substantially and branching becomes more prevalent, consolidation of reserves management and clearing accounts will internalize a lot of transactions that now pass through the Federal Reserve. This should reduce the amount of clearing balances needed at the end of the day. Another potential factor is banks' willingness to use the discount window. In avoiding overdrafts, willingness to borrow at the discount window substitutes for end-of-day balances. Hence, the relationship of these balances to deposits and to transactions will depend on attitudes toward using the discount window. Finally, one factor that Anderson and Rasche addressed is the level of interest rates. Required balances, as Anderson noted, have been sensitive to the level of interest rates. It's true that, as they derive in their paper, this sensitivity does not subvert the use of the base as an indicator, but it does create problems in interpreting such an indicator. For example, when M1 became very interest-sensitive, it became a much less useful guide to monetary policy because its velocity became more variable over the business cycle. The interest elasticities of money demand do enter into considerations of whether to emphasize money or interest rates as intermediate policy targets.

I don't want to be too negative on this paper. It is a first-rate contribution. Anderson and Rasche are working along

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many of the lines that are becoming increasingly important in daily open market operations. They have a number of very interesting hypotheses about how bank balances at the Federal Reserve would interact with the payments system, the amount of deposits, total transactions, and income as reserve balances change character. They are, in effect, building a data base to help test those hypotheses. Although I may be skeptical about the outcome of those tests, it is important that they be done.