

Monetary effects of Federal Reserve swaps

More visible and active intervention in the foreign exchange market by the Federal Reserve Bank of New York on behalf of the Federal Reserve System and the United States Treasury focused new attention at the start of 1978 on the impact of those policy actions. One question frequently asked about Federal Reserve swap operations is what effect they have on the United States money supply.¹ For example, if the Federal Reserve draws on the swap line with the German Bundesbank to finance a market sale of German marks, do member bank reserves, M_1 , or any of the other monetary aggregates change? The answer is no, given current operating procedures. The reason is this: Although dollars are taken out of the banking system, and United States bank reserves are depleted, when the Federal Reserve sells marks for dollars, the same amount of dollars is automatically created as part of the swap transaction. These dollars almost immediately find their way back into the banking system, and into bank reserves, by routine procedures of the United States authorities. Thus, swap drawings to finance Federal Reserve exchange intervention do not affect the money supply.

What happens in a swap drawing?

Suppose the Federal Reserve decides that intervention is appropriate to counter disorderly conditions in the exchange markets on a particular day. For instance, the dollar may be falling sharply against the German mark, the currency in which the bulk of System foreign exchange operations have been conducted in

recent years. Officers of the Foreign Department of the Federal Reserve Bank of New York, which operates for the System and the United States Treasury in the exchange market, telephone their counterparts at the Bundesbank in Frankfurt to discuss market conditions. They identify factors leading to a disorderly decline in the dollar against the mark, review the Bundesbank's operations in Frankfurt, and discuss possible System operations in New York. In such telephone calls the New York Fed's officers arrange for drawings on the System's swap line with the Bundesbank if they are needed to finance Federal Reserve sales of German marks in New York. System foreign exchange operations are mostly financed through swap drawings, although the Federal Reserve maintains some working balances of foreign currencies to finance relatively small operations.

Consider a simple example in which this Bank's foreign exchange Trading Desk sells \$10 million equivalent of marks in spot transactions. Two business days later—the normal settlement date for spot transactions—the Federal Reserve must pay \$10 million equivalent of marks to one or more commercial banks which bought the marks for dollars. The marks will be credited to accounts at commercial banks in Germany designated by the banks buying the marks. For their part, the commercial banks buying the marks are committed to pay a total of \$10 million to the Federal Reserve on that same value date. They normally pay the dollars by instructing the New York Fed to debit their reserve accounts or, if they are not members of the Federal Reserve System, to debit the reserve accounts of their New York member bank correspondents.

At the end of the day on which it intervenes, this Bank sends a cable to the Bundesbank formally requesting a drawing on the swap line on behalf of the Federal Reserve System. In this example, the request is to draw the equivalent of \$10 million in marks at

¹ The Federal Reserve swap network consists of reciprocal short-term credit arrangements with fourteen central banks and the Bank for International Settlements (BIS). It enables the System to acquire currencies needed for market operations to counter disorderly trading conditions. It enables the swap partners to acquire dollars they need in their own operations. The swap lines amount to \$20.2 billion.

the same exchange rate at which the Federal Reserve sold the marks in the New York market. The Bundesbank is instructed to (1) credit the Federal Reserve's account with that amount of marks on the value date two business days later, (2) debit that account, and (3) pay the marks to the purchasers' accounts at German commercial banks. In turn, this Bank will credit the Bundesbank's account with \$10 million. In crediting the Federal Reserve's account, the Bundesbank creates marks. In crediting the Bundesbank's account at this Bank, the Federal Reserve creates dollars. The two central banks agree to reverse the swap transaction three months later at the same exchange rate. Unless the swap is extended by mutual agreement, the Federal Reserve will repay the same amount of marks originally drawn on or before the maturity date and the Bundesbank will repay \$10 million, the dollar counter-value of the original drawing.

These are the mechanics of a swap drawing. In this example, the Federal Reserve buys marks in a spot foreign exchange transaction with the Bundesbank and simultaneously sells them back to the Bundesbank at the same exchange rate for a maturity date three months later. The latter is called a forward foreign exchange transaction. From the Bundesbank's point of view, it buys dollars from the Federal Reserve in the spot transaction and sells the dollars back in the forward transaction. The Federal Reserve needs the marks to meet commitments stemming from its intervention. The Bundesbank does not immediately need the dollars and so it invests them. Specifically, by prior agreement and by debit to its account, the Bundesbank's \$10 million is invested in a special non-marketable security of the United States Treasury. In the process, the Treasury's account at this Bank rises by the \$10 million.

Swap drawings and bank reserves

The initial monetary effects of these various debits and credits of bank accounts here and in Germany all take place on the value date, two business days after the System's exchange market intervention.

In *Germany*, as soon as the Bundesbank debits the Federal Reserve's account and makes payments in marks for credit to the purchasers' accounts at German banks, it increases German bank reserves. By the same token, when the Bundesbank intervenes in Frankfurt to buy dollars, German bank reserves increase. Such increases can lead to an expansion in German monetary aggregates as well, unless special offsetting action is taken by the Bundesbank.

In the *United States*, the swap transaction produces two separate effects on member bank reserves and therefore on the money supply. One effect drains mem-

ber bank reserves. The other effect leads to an equal and offsetting increase in member bank reserves. Hence, the monetary effect is routinely neutralized. The net effect is zero.

This happens in the following way. The commercial banks buying marks from the Federal Reserve pay for them with dollars. More precisely, each pays by instructing this Bank to debit its reserve account or the reserve account of one of its New York correspondents. Looking just at this side, there is a definite drain of member bank reserves. They decline by the dollar equivalent of the marks the System sold.

But there is a second effect on member bank reserves that will neutralize this contractionary effect. Recall that in the swap transaction, the Bundesbank's account at this Bank is first credited by \$10 million and then immediately debited by the same amount as the Bundesbank acquires a non-marketable United States Treasury security. The dollars are credited to the Treasury's account at this Bank. The Treasury may either disburse the money or hold on to it temporarily. If the money is spent, the dollars flow back into the banking system and member bank reserves immediately go back up by \$10 million, fully offsetting the initial drain. That is what happens in most cases.

On occasion, however, the Treasury may not immediately disburse the money. Then, its balance at this bank will temporarily be \$10 million higher than before. That increase is essentially the counterpart of the drain on bank reserves from the System's exchange intervention. An increase in the Treasury's balance is one of the factors that the management of the domestic Trading Desk takes into consideration in determining day-to-day open market operations. Other things equal, the domestic Trading Desk will react to an increase in the Treasury's balance as a signal to provide reserves to the banking system to achieve the objectives specified under the directive of the Federal Open Market Committee (FOMC).

To be sure, System swap operations represent only one of many variables which lead to daily fluctuations in the Treasury's account. And a change in the Treasury's account is but one of the factors that affect reserves. The impact of even relatively large swap drawings is normally swamped by other sources of variation in bank reserves. The Desk folds in a swap drawing's effect on the Treasury's balance with these other factors in deciding if action to influence reserves is needed. In practice, there will be no net effect on member bank reserves, and the monetary aggregates will not change as a result of System intervention in the exchange markets financed by a swap drawing.

When a swap drawing is reversed, the Federal

Reserve repays the marks it has drawn and the Bundesbank repays dollars. The Federal Reserve acquires marks needed to make repayments either by purchasing them in the market or through various nonmarket transactions. In recent years, acquisitions of marks to repay swap commitments have commonly been made in the market. In that case, the System purchases the marks with newly created dollars. By itself, this has an expansionary effect on member bank reserves. But that effect is offset through a process that is the mirror image of the one just described.

The Bundesbank repays its dollar commitment under the swap drawing from the proceeds of the maturing special nonmarketable United States Treasury security. Those funds are paid to the Bundesbank out of the Treasury's account at this Bank. If the Treasury's account is replenished, through borrowing in the market or receipts from other sources, member bank reserves decline. That directly offsets the expansionary effect on reserves of the System's mark purchases. If the Treasury's account is not replenished, the decline in its balance would be considered a factor increasing member bank reserves by the management of the domestic Trading Desk. The Desk would typically respond to appreciable declines in the Treasury's balance, or to other factors leading to increased reserve supplies, by absorbing member bank reserves. Such a response would neutralize the expansionary effect of the System's purchases of marks to repay swap commitments to the Bundesbank. Thus, swap repayments do not affect reserves or the monetary aggregates.

Swap drawings on the Federal Reserve by foreign central banks

From time to time, foreign central banks have drawn on their swap lines with the Federal Reserve either to finance intervention sales of dollars or to augment official reserves. For instance, the Bank of England, Bank of Italy, and Bank of Mexico all made swap drawings as recently as 1976. In an example in which a drawing was made to finance intervention, there would be an initial expansionary effect on member

bank reserves. It would occur as the foreign central bank's dollar account is credited with the proceeds of the swap drawing and then debited to make payments to one or more commercial banks in the United States. As a result, member bank reserves would rise, but that increase would also be neutralized, given the way the Desk operates. Another of the group of factors influencing reserves would have changed. In this case, the Federal Reserve's holdings of foreign currencies would have gone up, as the System is credited with the countervalue of the foreign central bank's drawing of dollars under the swap line. That factor represents an increase in member bank reserves. Other things equal, the domestic Trading Desk would respond by absorbing reserves. In this way, the initial expansionary effect on reserves of the foreign central bank's swap drawing would be offset and the monetary impact neutralized.

Do dollar purchases by foreign central banks affect the United States money supply?

When a foreign central bank buys dollars in its exchange market, banking reserves normally rise in its country. For example, when the Bundesbank buys dollars in Frankfurt, it creates marks and German bank reserves go up. The Bundesbank may or may not take special action to counteract the rise, depending upon its own domestic monetary objectives at the time. But, do the Bundesbank's purchases of dollars (or any other foreign central bank's, for that matter) influence the United States monetary aggregates? The answer is no. When the Bundesbank buys dollars, it receives them at its account with this Bank and member bank reserves decline. But the balances are immediately invested at the Bundesbank's instructions, generally in marketable United States Government securities such as Treasury bills or notes. As this Bank purchases such securities for the Bundesbank, dollars are put back into the United States banking system. In the end, member bank reserves and the money supply do not change when the Bundesbank purchases dollars in the exchange market.

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