Turning Currencies Around

Traders in the euro-dollar options trading pit at the Chicago Mercantile Exchange.

GOVERNMENTS in advanced economies mostly stay out of foreign exchange markets, letting the value of their currencies be determined by market forces. They do this partly for ideological reasons, believing that the market generally gets it right. But part of their reluctance to intervene stems from the decidedly mixed results of previous attempts—most notably in the mid- and late 1980s—to prop up major currencies or prevent them from rising too quickly.

Recent concerns about the sharp fluctuations in the dollar and other major currencies, as reflected in a statement by the Group of Seven (G-7) major industrial countries at the April IMF–World Bank Spring Meetings, have brought the possibility of exchange market intervention back to the fore. But if policymakers decide to start intervening again in the foreign exchange markets, will it work?

In the textbook world, influencing the exchange rate is easy. To *strengthen* the exchange rate, the central bank simply raises its policy interest rate. As investors in search of higher returns increase their demand for the currency, the exchange rate appreciates. By lowering interest rates, the central bank can *weaken* the exchange rate. The problem in the real world is that these actions come at a cost: they require the central bank to subordinate its monetary policy to achieving the exchange rate target, rather than to the more usual domestic goals of controlling inflation, supporting economic activity, or providing liquidity in times of financial sector stress.

To get around this problem, central banks have developed a technique called sterilization to separate the effects of monetary policy on the exchange rate from effects on domestic targets. The idea is to offset central bank purchases or sales of foreign exchange with domestic open market operations (sales or purchases of government bonds) that leave the money supply or the policy interest rate unchanged. For example, if the U.S. government intervened to support the dollar (using its holdings of a foreign currency to buy dollars), the operation would take dollars out of circulation and shrink the money supply, which is the equivalent of raising interest rates—hardly good news if the economy is on the brink of a recession. To "sterilize" that operation, the U.S. Federal Reserve would buy U.S. treasury securities in the open market to inject dollars, returning the money supply and the interest rate to their original levels.

But if sterilized intervention means that interest rates don't change, then why would it affect the exchange rate? In fact, in a world with perfect asset substitutability, complete information, and fully liquid markets, it wouldn't.

For foreign exchange intervention to work, central banks would need to act together

Atish Ghosh

This article examines how sterilized intervention might affect the exchange rate and reviews the empirical evidence on what works and what doesn't. The focus is on the major currencies—the dollar, the yen, and the euro—because the sheer size of the markets for these currencies means that the effectiveness of intervention in these cases is likely to be different from intervention by central banks of developing and emerging market countries.

Types of channels

Economists have identified three main channels through which sterilized intervention could affect the exchange rate: the portfolio balance, signaling, and microstructure channels.

Through the ***portfolio balance channel***, relative asset supplies affect the risk premium and, hence, the exchange rate. Suppose that a central bank is trying to depreciate its currency against the U.S. dollar. It first buys dollars against its own currency. Since this increases the money supply, it sterilizes this intervention by selling government bonds denominated in its own currency in exchange for money, thus returning the money supply to its original level. The net result is that the supply of bonds denominated in that currency has increased. If assets are not perfect substitutes, the increase in the relative supply of bonds raises their risk premium, which, in turn, leads to a depreciation of the exchange rate.

Although there is evidence that assets are not perfect substitutes, the very description of how the portfolio balance channel is supposed to work makes clear that, in practice, it is likely to be of limited relevance for major currencies. The outstanding stock of assets is so large that intervention on a massive scale would be required to have an appreciable impact on the risk premium and, hence, on the exchange rate.

Through the ***signaling channel***, the central bank communicates to the markets its policy intentions or private information it may have concerning the future supply of or demand for the currency (or, equivalently, the path of interest rates). A virtuous expectational cycle can emerge: for instance, if the central bank credibly communicates its belief that the exchange rate is too strong—and would be willing to change policy interest rates if necessary—then market expectations will lead to sales of the currency, weakening it as intended.

But why can't a central bank simply announce its intentions or information? Why should intervention be needed to make such announcements credible? One reason may be that intervention makes the central bank "put its money where its mouth is." Consider a central bank buying a foreign currency to depreciate its own currency. If its currency subsequently appreciates, it incurs an accounting loss on its foreign currency purchases. Even for major central banks, these losses can be politically embarrassing—which is what persuades the market that the central bank would follow through (if necessary, with unsterilized intervention) on policy intentions that are signaled by sterilized intervention.

Some of the latest research shows that market ***microstructure***—the minute-by-minute flow of buy and sell orders—can affect asset prices, because these flows implicitly convey information to the market. By altering the flow of orders, central bank intervention can influence the exchange rate.

Similarly, if central bank intervention succeeds in moving the exchange rate, certain market participants may "go with the flow" and amplify the effect of the intervention, triggering the breach of key technical levels or "resistance points" of the exchange rate. If there are a large number of technical traders (that is, market participants who trade on the basis of technical analyses), the original intervention can have a disproportionately large effect, especially if the exchange rate is perceived as being far from its equilibrium.

Finally, even if sterilized intervention has little, or only a temporary, effect on the level of the exchange rate, repeated intervention could have a lasting effect on the volatility of the exchange rate. Indeed, central banks often intervene when market conditions are disorderly and volatility is considered excessive.

Some intervention choices

One choice a central bank faces is ***whether to intervene openly or secretly*** (although no intervention can be completely secret because of the effects on order flows, as described above). The signaling channel will, of course, be more effective when the intervention is announced. But the central bank may want to first quietly test the waters—to gauge the depth and underlying volatility of the market—through secret intervention. This also has the advantage of keeping the central bank's credibility intact if the intervention does not succeed in moving the exchange rate in the desired direction.

In some economic circumstances, secret intervention is preferred. Suppose a central bank has some private information that, when revealed to the market, would cause an abrupt and disruptive movement of the exchange rate (for example, the central bank has advance notice of "bad" trade balance figures). In such cases, open intervention would reveal that information, resulting in an undesirably abrupt movement of the exchange rate. By intervening secretly, the central bank partially reveals its information and thus gets the exchange rate moving in the right direction—avoiding an abrupt movement when the information (for example, the trade figures) is announced.

Another decision is ***whether to undertake intervention unilaterally or in coordination with one or more central banks.*** Coordinated intervention is, of course, more likely to be effective. In the portfolio balance channel, it is the relative asset supplies that matter: if one country's outstanding stock of assets increases and another's decreases, this will obviously have a correspondingly larger impact on relative asset supplies than if only one country's stock of assets changes. Likewise, under the signaling channel, it is relative money supplies (or the interest rate differential—the difference between the interest rate in one country and the interest rate in another country) that matter. If coordinated intervention signals expected changes in two countries' interest rates in opposing directions, the impact on the expected differential and, hence, the exchange rate will be correspondingly larger. Coordinated intervention, although more effective, may be

more difficult to achieve, requiring agreement across central banks on the desired level and dynamics of the exchange rate, as well as operational and logistical coordination. But even if intervention is not coordinated, central banks' policies or pronouncements must at least not be at odds with those of other central banks if intervention is to succeed.

What the record shows

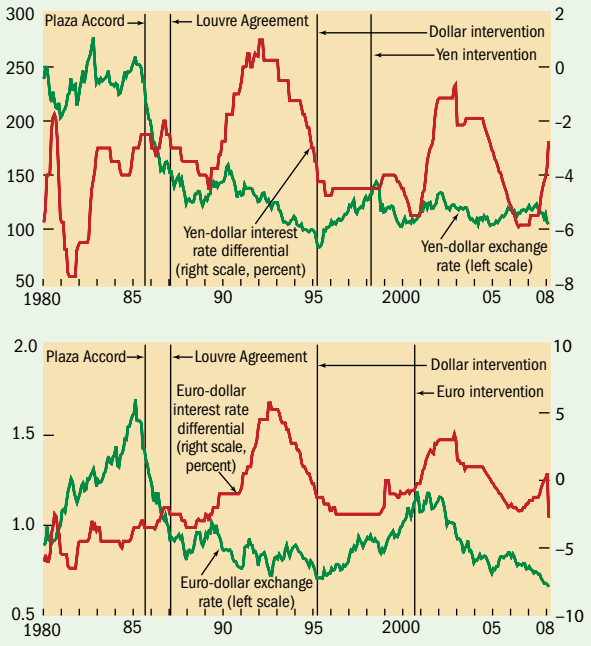
So how effective is sterilized intervention in practice? The empirical evidence is mixed. Although a number of studies in the 1980s, such as the Jurgensen report (1983), found that it had limited effectiveness, recent evidence—especially based on event studies—is more encouraging. There have been five major episodes of coordinated intervention since the mid-1980s: the 1985 Plaza Accord to strengthen the non-U.S. G-5 currencies; the 1987 Louvre Agreement to support the U.S. dollar against other G-6 currencies; the 1995 G-7 finance ministers' effort to support the U.S. dollar; the 1998 joint U.S. and Japanese intervention to support the yen; and the 2000 intervention by the European Central Bank, the U.S. Federal Reserve, and the central banks of the United Kingdom, Japan, and Canada to support the euro. Of these, four were "successful" in that they represented approximate turning points (in the desired direction) of the currency (see chart)—although it is hard to establish what would have happened if no intervention had occurred (for example, by 1985, the dollar had reached giddy heights and quite possibly would have started to depreciate anyway).

Consistent with the signaling channel of sterilized intervention, a key element in the success of these episodes was that interest rate differentials moved in supporting ways soon after the interventions—or at least did not move in opposition. This effect is also underscored by one major failure: the February 1987 Louvre Agreement's failure to support the dollar. Although the U.S.-German interest rate differential increased initially, in the summer of that year, Germany began raising its interest rates because of concerns about inflationary pressures. Compounded by negative U.S. trade figures, the result was a sharp depreciation of the dollar and the October 1987 stock market crash because markets expected the U.S. Federal Reserve to tighten monetary policy (raise interest rates) in response to the inflationary pressures from the weak dollar.

Both theory and experience thus suggest that sterilized intervention can be effective—but only if backed by credible expectations of contingent supporting policies as necessary. As such, sterilized intervention probably does not constitute a fully independent policy tool. Nevertheless, if undertaken credibly, and especially if coordinated across central banks, it may provide some additional flexibility to achieve policy objectives. And, especially in times of financial stress, as central banks struggle to meet various domestic and external objectives, they may find themselves rummaging in the policy tool box for any tool that works. ■

Turning points

Since the mid-1980s, four of the five major coordinated interventions helped move the currency in the desired direction. A key element of these successes was supportive interest rate differentials.



Source: IMF, *International Financial Statistics*.

Note: Vertical lines indicate major episodes of coordinated interventions. Euro-dollar exchange rate and interest rate differential series are spliced with the deutsche mark–dollar series for the years prior to the euro launch.

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Suggestions for further reading:

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