

FRBSF ECONOMIC LETTER

Number 2003-36, December 12, 2003

Japanese Foreign Exchange Intervention

In 2003, the Bank of Japan (BOJ) intervened vigorously on behalf of the Ministry of Finance (MOF) in foreign exchange markets in efforts to reduce the value of the yen. This action was motivated by the perception that an excessively rapid rise in the value of the yen would hinder the fledgling economic recovery by reducing the competitiveness of Japanese exports. Total foreign exchange intervention over the first ten months of 2003 amounted to over 17 trillion yen in assets, almost double the previous record for that length of time.

Several media reports claimed that these intervention efforts by the MOF were initially successful. Some private analysts estimated that in the absence of intervention activity, the yen could have risen about 10% higher over the second quarter than it did.

This success, even over a period as short as a quarter, appears to pose a puzzle, because it runs counter to most economists' expectations. The evidence in the literature suggests that foreign exchange intervention is unlikely to have any lasting impact on exchange rates in economies with free capital mobility, such as Japan. This would be particularly true for Japan, where the prevailing close-to-zero nominal short-term interest rates create ambiguity about the impact of foreign exchange intervention on the money supply.

In this *Economic Letter*, I examine the conditions under which economic theory would predict that foreign exchange interventions under near-zero short-term interest rates are likely to be successful. I then discuss the difficulties in assessing the success or failure of a foreign exchange intervention. Finally, I focus on Japan's recent experience. I argue that while there are always difficulties in assessing the success or failure of a foreign exchange intervention, the Japanese case does appear to provide evidence that foreign exchange interventions in the neighborhood of zero interest rates can have persistent, albeit temporary, impacts on the exchange rate.

Was Japan's foreign exchange intervention sterilized, and does it matter?

In theory, sterilized foreign exchange interventions tend to be less effective at moving exchange rates than unsterilized interventions. Sterilized intervention requires the central bank to follow the intervention, such as buying dollar assets with yen-denominated currency, with a countervailing sale of yen assets to mop up the extra yen that that would otherwise be injected into the economy. Thus, the intervention would have no impact on the domestic money supply and would only alter the public's relative supplies of available yen and dollar assets. In the past, Japanese foreign exchange intervention was almost universally sterilized (Ito 2002). Currently, the intervention would also be formally considered sterilized as the dollar purchases are financed by the sale of yen assets issued by the MOF.

Nevertheless, the media have characterized the recent interventions as "unsterilized" because the Japanese money supply has steadily increased along with the intensive intervention activity. The *Nikkei Financial Daily* recently noted that the total value of interventions from the beginning of the year until the end of August matched almost exactly the increase in the BOJ's current account balance over that period, suggesting that the BOJ left the funds associated with its intervention activity in the market.

However, there appears to be little correlation between these variables at higher frequencies, such as day-to-day data. This sheds doubt on a one-to-one correspondence between intervention activity and movements in the BOJ current account balance. Instead, it appears that the BOJ incorporates the foreign exchange intervention it conducts on behalf of the MOF into its overall portfolio of daily money market transactions. The pursuit of foreign exchange intervention on behalf of the MOF therefore does not preclude the BOJ from achieving its domestic money supply targets, as the BOJ can maintain these targets by adjusting its other transactions accordingly.

More importantly, it is unclear that sterilization under near-zero nominal rates matters. Traditionally, unsterilized intervention is considered likely to be more effective because it also expands the domestic money supply. However, in Japan today, short-term securities appear to be nearly perfect substitutes for currency, so the expansion of the money supply need not have any additional impact on the economy. In short, under near-zero short-term interest rates, an unsterilized intervention may be little different from a sterilized intervention (see, for example, Okina and Shiratsuka 2000).

Real effects of sterilized intervention

Since the expansion of the money supply in unsterilized interventions is unlikely to have direct real effects under near-zero nominal short-term rates, one must turn to the literature on the effects of sterilized intervention to understand how the intervention may have resulted in a lower value of the yen. In their recent survey, Sarno and Taylor (2001) discuss two channels for sterilized foreign exchange intervention to have real effects: (a) a portfolio balance channel and (b) an expectations channel. The portfolio balance channel assumes the public considers foreign assets to be imperfect substitutes for domestic assets; in Japan's case, the public would consider assets denominated in yen and assets denominated in dollars to be imperfect substitutes. Following an intervention against the yen, the public would find itself holding a larger share of yen assets than before. At prevailing exchange rates, this would induce people to attempt to sell these extra yen assets to rebalance their portfolios. As a result, the exchange rate value of the yen would fall below what its value would have been without the intervention.

Under the expectations channel, foreign exchange intervention conveys a signal that changes the public's expectations about the future exchange rate path. In the case of a successful intervention against the yen under the expectations channel, the change in public expectations may reflect either a change in expectations concerning future Japanese monetary policy or a change in Japanese economic fundamentals. The expectations channel also may provide an opportunity for sterilization to matter under zero nominal rates. Sterilization can have real effects if public expectations about future monetary policy depend on whether interventions were sterilized. For example, if leaving the interventions unsterilized left the public more convinced about the BOJ's determination to stimulate the economy, then sterilization, or the lack thereof, may indeed matter.

However, the potential effectiveness of either of these channels is unclear. Since both the United States and Japan maintain unrestricted capital markets, their short-term securities are likely to be highly substitutable. The expectations channel seems more promising, as the intervention activity may have reinforced expectations of a more expansionary monetary policy stance by the BOJ under its new Governor, Mr. Fukui.

Measuring foreign exchange intervention success

It can be very difficult to assess the success or failure of foreign exchange intervention for several reasons. First, the MOF claims that they intervene only when exchange rate levels deviate from true underlying "fundamentals." This implies that when the MOF intervenes against the yen, fundamental forces may be at play that would tend to move the value of the yen on their own. Thus, it is difficult to distinguish whether yen movements reflect interventions or changes in fundamentals that led to them.

Second, it is very difficult to assess the timing of the market's response to a foreign exchange intervention, because it is difficult to determine the extent to which the market anticipated it. If the foreign exchange intervention were anticipated, then speculators would be likely to respond to its anticipated impact before it actually occurred. Alternatively, if the market were initially somewhat uncertain about the magnitude of an intervention, its response might be delayed until the true magnitude was revealed.

Finally, it is often difficult to tell whether exchange rates move because of an intervention or because the fundamentals changed. For example, the strengthening of the yen in August 2003 may be due to the cessation of intervention activity that month; or, it may be due to the relatively good economic news that emerged from Japan that month.

Despite these complications, the very large activity in the second quarter of 2003 still offers a promising opportunity to find evidence of successful foreign exchange intervention. The channels above that suggest how intervention can have real effects would tend to be stronger the larger is the magnitude of the intervention.

Perhaps more importantly, the performance of the yen relative to the euro over this period gives us a good benchmark for measuring the success or failure of the Japanese intervention. Over the second quarter, the news about real economic activity

coming out of Europe was negative, while for Japan, the news about economic prospects was relatively positive. For example, the *Economist* poll increased its forecast for 2003 real GDP growth for Japan from 0.2% to 0.9% between its March 1 and June 7 issues. Over the same period, its forecast for 2003 growth in the euro area decreased from 1.3% to 0.8%.

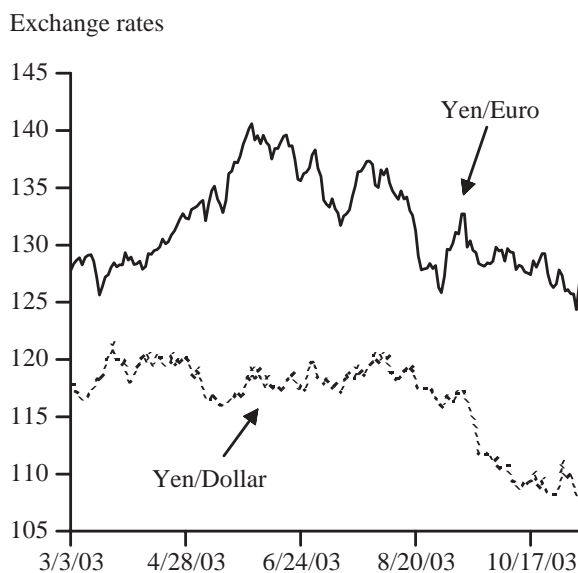
Holding all else equal, this combination of news would likely lead to an appreciation of the yen relative to the dollar. However, this did not happen in the first half of 2003 (see Figure 1). Over the course of the second quarter the yen actually depreciated 8.9% against the euro, while the yen was kept within a narrow trading band relative to the U.S. dollar. For the first half of the year, then, the data suggest that the intervention activity had some success in keeping down the value of the yen.

However, this “success” of the intervention does not necessarily imply that it increased Japanese welfare. Over the four months ending in October 2003, the yen appreciated 7.8% against the dollar and 7.6% against the euro, reversing much of the yen-euro depreciation that had been achieved in the second quarter—despite even greater intervention activity than in the second quarter. Moreover, the intervention activity this year has clearly resulted in significant capital losses for the central bank in light of the yen’s ultimate appreciation, although these losses have been mitigated by the favorable movements in yen interest rates.

Conclusion

Exchange rate movements over the second quarter of 2003 do suggest that the extensive foreign exchange intervention has had at least temporary effects. For the first eight months of the year, there has been unprecedented stability in the yen-dollar: its rate remained between 115 and 122 yen to the dollar. This is the narrowest trading band these currencies have exhibited since the breakdown in the Bretton Woods system, indicating that the rates moved in the direction intended by the intervention activity. Moreover, the yen-euro rate moved in exactly the opposite direction that would be expected given the news emerging from those areas during this period. The empirical evidence, therefore, appears to support the contention that foreign exchange intervention achieved some success in the early portion of the year, despite the near-zero nominal interest rates.

Figure 1
Yen exchange rates (3/3/03–11/12/03)



Even in this case, however, the effects appear to be temporary. The depreciation of the yen relative to the euro that was achieved through the extensive foreign exchange intervention efforts in the early half of the year was completely offset by the end of August. Moreover, the yen appreciated dramatically against the dollar after the cessation of intervention activity around the time of the September G-7 meeting in Dubai; however, the resumption of intervention appears to have slowed this appreciation.

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