Treasury and Federal Reserve Foreign Exchange Operations

This quarterly report describes U.S. Treasury and System foreign exchange operations for the period from January through March 1999. It was presented by Peter R. Fisher, Executive Vice President, Federal Reserve Bank of New York, and Manager, System Open Market Account. Laura F. Ambroseno was primarily responsible for preparation of the report.

During the first quarter of 1999, the dollar appreciated 8.4 percent against the euro and 5.3 percent against the yen. The dollar's value was largely influenced by changes in market expectations for economic growth in the United States, Europe, and Japan. Against the euro, the dollar strengthened as the differential between U.S. and European interest rates moved increasingly in favor of the dollar. Against the yen, the dollar fell to a two-and-a-half-year low, then rebounded after the Bank of Japan reportedly intervened to counter yen appreciation and subsequently guided overnight interest rates to near zero. The U.S. monetary authorities did not intervene in the foreign exchange markets during the quarter.

Partial Recovery of Risk Appetite

At the outset of the new year, trading in the major currencies was thin. Reduced activity was attributed in part to a decline in speculative trading and a tentative return of asset managers to higher-yielding markets. Euro trading volumes remained below historical German mark trading volumes over comparable time frames; uncertainty regarding the behavior of the newly established European Central Bank (ECB) contributed to the low volume.

Although new investment supported selected emerging markets and high-yield assets, lingering concern about overall risk exposure resulted in heightened differentiation and relatively high risk premiums. The devaluation of the Brazilian *real* on January 13 evoked some apprehension, but reaction was fairly muted as a result of the position unwinding that had already occurred after the Russian currency devaluation and debt moratorium in August 1998. Reflective of market sentiment, emerging-market sovereign yield spreads over U.S. Treasuries rose sharply after the Brazilian currency devaluation but soon returned to early-January levels. Nonetheless, spreads generally remained well above pre-Russian devaluation levels, and many emerging-market mutual funds continued to experience net outflows. U.S. corporate high-yield spreads over U.S. Treasuries narrowed, reflecting the desire of investors to increase risk exposure on a selective basis.

Rise of the Dollar against the Euro

The dollar depreciated to $1.1832 against the euro on the first trading day of stage three of the Economic and Monetary Union. However, the dollar then steadily appreciated to $1.0765 by quarter-end as ''europhoria'' dissipated and market participants focused on the apparent divergence in the outlooks for growth between the U.S. and European economies. Over the quarter, the implied yield spread between September three-month Eurodollar and Euribor (European interbank offered rate for euro deposits) futures contracts widened 49 basis points, to 232 basis points, supported by market expectations of divergent monetary policy responses to growth trends by the Federal Open Market Committee (FOMC) and the ECB Governing Council. Similarly, the spread between yields of ten-year U.S. Treasuries and German bonds widened 62 basis points from the start of the quarter, to a decade high of 146 basis points on February 25.

The dollar was supported throughout most of the quarter by expectations of a shift in U.S. monetary policy toward a tightening bias. The change in expectations was prompted by stronger-than-expected economic growth, employment, consumer spending, and hourly earnings data, which raised concern that the U.S. economy might begin to show signs of inflationary pressures. Speculation of a near-term change in U.S. monetary policy mounted after the Humphrey–Hawkins testimony on February 23, during which Chairman Greenspan stated that the FOMC would evaluate ''whether the full extent of the policy easings undertaken last fall to address the seizing-up of

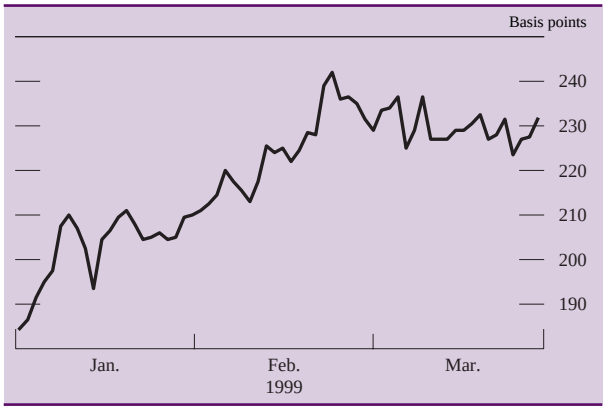
1. Exchange rate of the euro against the dollar, 1999:Q1

NOTE. The data are daily.
SOURCE. Bloomberg L.P.

financial markets remains appropriate as those disturbances abate.'' The implied yield of the federal funds futures contract for September rose 44 basis points from the start of the quarter, to a high of 5.09 percent on March 1. U.S. Treasury yields rose in response to rising short-term yields, heavy corporate bond issuance, and reported sales by Japanese financial institutions before their fiscal year-end on March 31.

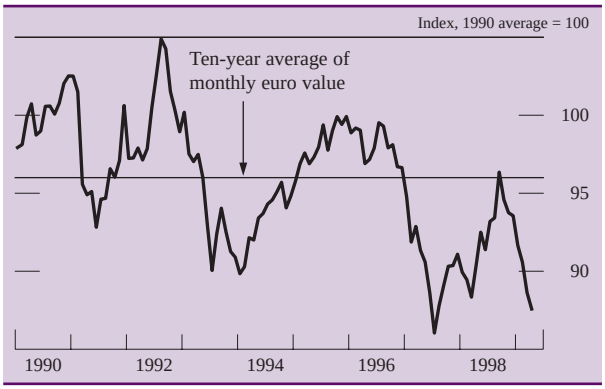
Meanwhile, the euro experienced downward pressure from increasing expectations of a euro area rate cut after several economic data releases indicated further downside risk to European growth and by official commentary that was interpreted as suggesting approval of current exchange rate levels. The resignation of German Finance Minister LaFontaine on March 11, that was perceived as having reduced political pressure on the ECB, also contributed to speculation that the ECB Governing Council would

2. Spread between implied yields of September three-month Eurodollar and Euribor futures, 1999:Q1



NOTE. The data are daily.
SOURCE. Bloomberg L.P.

3. Reconstructed trade-weighted exchange rate of the euro, 1990–April 1999



NOTE. Before year-end 1998, the calculation is based on weighted averages of euro area countries' effective exchange rates; from January 1999, the calculation is based on weighted averages of bilateral euro exchange rates. Weights are based on 1990 manufacturing goods trade and capture third-market effects.
SOURCE. European Central Bank; Bank for International Settlements.

cut rates sooner than previously expected. Implied yield of the September three-month Euribor futures contract fell 27 basis points, to 2.79 percent by quarter-end.

Both the euro–dollar exchange rate and spreads between U.S. and European yields stabilized toward the end of the quarter, as expectations for a near-term shift in U.S. monetary policy receded after the release of U.S. wage data suggesting that inflationary pressures remained quiescent. On a trade-weighted basis, the euro depreciated 5.3 percent over the quarter, approaching the lower end of its reconstructed ten-year trading range.

STRENGTHENING OF THE DOLLAR AGAINST THE YEN

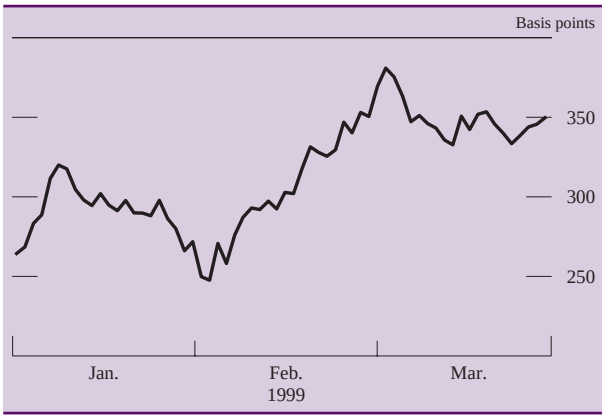
The dollar began the new year at ¥112.80, but soon depreciated to a multiyear low of ¥108.22 on January 11, as Japanese investors reallocated funds from U.S. assets to European and Japanese assets. International investors also expressed interest in Japanese assets, as evidenced by strong foreign demand for Japanese bonds auctioned on January 7. In addition, the perception that Japanese monetary conditions tightened as funding pressures abated at the calendar year-end, along with renewed investor focus on the U.S. current account deficit, appeared to weigh on the dollar–yen exchange rate early in the period.

On January 12, the dollar gained more than four yen from the day's low of ¥108.62 after the Bank of Japan reportedly intervened by selling yen in the foreign exchange market. Market participants interpreted the reported intervention as Japanese resis

4. Exchange rate of the dollar against the Japanese yen, 1999:Q1

NOTE. The data are daily.
SOURCE. Bloomberg L.P.

6. Spread between ten-year U.S. Treasury and Japanese government bond yields, 1999:Q1

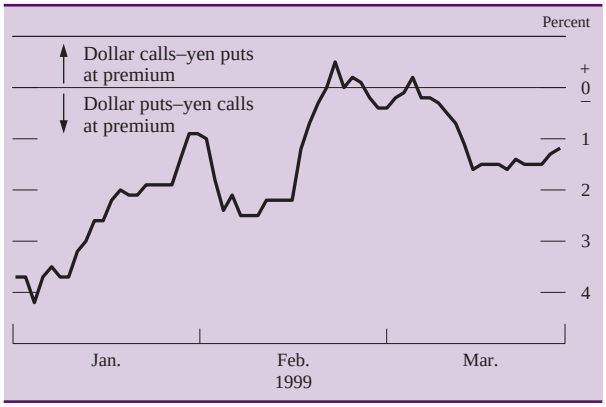


NOTE. The data are daily.
SOURCE. Bloomberg L.P.

tance to yen appreciation above ¥110. Options prices indicated that market anxiety over the possibility of a rapid rise in the yen's value receded after the reported intervention, with one-month implied volatility falling from a high of more than 22 percent on January 5 to about 17 percent by quarter-end. In addition, the premium for one-month yen call options over one-month yen put options, as measured by risk reversal prices, fell from a record high of nearly 4.5 percent on January 6 to approximately 1.2 percent by quarter-end, indicating less demand for protection against further yen appreciation.

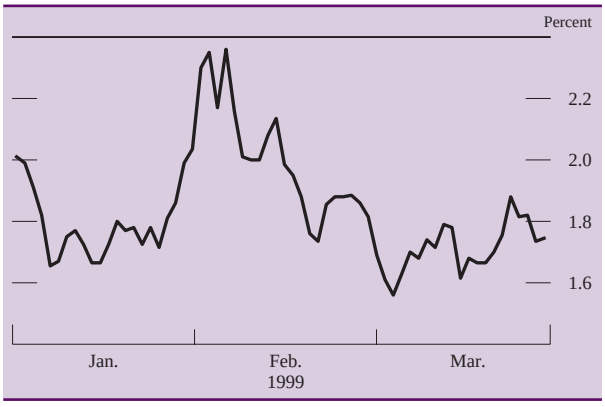
In the weeks following the reported intervention, the dollar traded in a range between ¥110 and ¥117, supported both by commentary from Japanese officials suggesting that ''excessive yen strength'' would elicit intervention and by expectations of continued disparity between U.S. and Japanese economic growth. However, several factors limited the dollar's upward momentum, including narrower long-term U.S.–Japanese interest rate differentials, concern over U.S. equity market valuation, and nervousness surrounding the Brazilian currency devaluation. The yield on the Japanese government benchmark bond (ten-year) rose 35 basis points from the start of the quarter, to a high of 2.36 percent on February 5, as Japanese investors reduced portfolio duration and realized profits before their fiscal year-end and as market participants became increasingly concerned about the Japanese government's apparent acceptance of rising yields. The spread between yields of ten-year U.S. Treasuries and Japanese government bonds narrowed to a three-year low of 248 basis points by February 3.

5. One-month dollar–yen risk reversals, 1999:Q1



NOTE. The data are daily. A dollar–yen risk reversal is an option position consisting of a purchased dollar call–yen put and a written dollar put–yen call that mature on the same date and are equally out-of-the-money. The price of a risk reversal indicates whether the dollar call or the dollar put is more valuable. If the dollar call is at a premium, the market is willing to pay more to insure against the risk that the dollar will rise against the yen. If the dollar put is at a premium, the market is willing to pay more to insure against the risk that the dollar will fall against the yen.
SOURCE. Citibank, N.A.

7. Ten-year Japanese government bond yield, 1999:Q1



NOTE. The data are daily.
SOURCE. Bloomberg L.P.

The dollar began to appreciate steadily against the yen after the Bank of Japan reduced the target for the overnight call rate from 25 to 15 basis points on February 12 and subsequently guided the rate to as low as 2 basis points. The dollar was further supported by growing expectations of a shift toward quantitative monetary targeting in Japan, official efforts to contain the rapid rise in Japanese bond yields, and signs of persistent strength in the U.S. economy. On March 4, the dollar strengthened to a period high of ¥123.75 and the spread between ten-year U.S. and Japanese bond yields peaked at 381 basis points, up 133 basis points from its February 3 low.

Throughout March, movements in the dollar–yen exchange rate fluctuated in response to shifting expectations for monetary policy objectives and Japanese fiscal year-end dynamics. The dollar initially moved lower in response to U.S. economic data releases suggesting that inflation remained subdued. Meanwhile, the yen was supported by commentary from Japanese officials implying that a shift in monetary policy toward quantitative targets was unlikely in the near term and by substantial purchases of Japanese equities by international investors who were increasing the weight of Japanese assets in their portfolios. At the end of the quarter, the dollar–yen exchange rate drifted back to ¥118.80, as purchases of Japanese equities subsided and Japanese accounts reportedly satisfied fiscal year-end foreign exchange requirements.

Treasury and Federal Reserve Foreign Exchange Reserves

The U.S. monetary authorities did not undertake any intervention operations during the quarter. At the end of the quarter, the current values of euro and Japanese yen reserve holdings totaled $15.2 billion for the Federal Reserve System and $15.2 billion for the Exchange Stabilization Fund. The U.S. monetary authorities invest all of their foreign currency balances in a variety of instruments that yield market-related rates of return and that have a high degree of liquidity and credit quality. A significant portion of these balances is invested in German and Japanese government securities held directly or under repurchase agreement. As of March 31, outright holdings of foreign government securities by U.S. monetary authorities totaled $7.3 billion.

Japanese and German government securities held under repurchase agreement are arranged either through transactions executed directly in the market or through agreements with official institutions. Foreign government securities held under repurchase agreement by the U.S. monetary authorities totaled $12.8 billion at the end of the quarter. Foreign currency reserves are also invested in deposits at the Bank for International Settlements and in facilities at other official institutions.

On February 3, 1999, the United States paid the equivalent of a $14.8 billion increase in its International Monetary Fund (IMF) quota, which had been previously approved by the Congress. The payment was not an outlay of funds, but rather an exchange of monetary assets. In exchange for the payment, the United States received an increase in its IMF reserve position, which is an interest-bearing asset. In accordance with agreed-upon IMF procedures, 25 percent of the quota increase, equal to about $3.7 billion, was transferred to the IMF in the form of foreign currency reserve assets, specifically euros held by the U.S. Treasury's Exchange Stabilization Fund (ESF). Simultaneously, the U.S. Treasury's general account reimbursed the ESF with dollars in an amount equivalent to the value of the euro reserve transfer. The remaining 75 percent of the quota increase, equal to about $11.1 billion, was paid through an increase in the U.S. letter of credit to the IMF and did not involve a flow of funds.

Separately, the U.S monetary authorities conducted an off-market currency transaction that was designed to redress imbalances in their respective foreign currency holdings. Imbalances had evolved over time both in terms of the overall level and currency composition of the foreign exchange reserves held by the Federal Reserve and the ESF. Effective March 18, the Federal Reserve exchanged approximately $4.8 billion of euros for $1.4 billion of Japanese yen and $3.4 billion of U.S. dollars from the ESF. The transaction was executed at prevailing market exchange rates. As designed, this transaction distributed the overall level of the U.S. monetary authorities' foreign reserve assets more evenly between the ESF and the Federal Reserve and left the resulting balances of euros and yen roughly equal for both accounts (see table 1). □

1. Foreign currency holdings of U.S. monetary authorities based on current exchange rates, 1999:Q1

Millions of dollars

Item	Balance, Dec. 31, 1998	Quarterly changes in balances by source					Balance, Mar. 31, 1999
		Net purchases and sales[1]	Effect of sales[2]	Investment income	Currency valuation adjustments[3]	Interest accrual (net) and other[4]	
FEDERAL RESERVE SYSTEM OPEN MARKET ACCOUNT							
EMU euro	12,824.0	−4,780.5	−18.7	118.7	−915.9	0	7,227.6
Japanese yen	6,846.9	1,418.9	0	3.0	−318.7	0	7,950.1
Total	19,670.9	−3,361.6	−18.7	121.7	−1,234.6	0	15,177.7
Interest receivables[5]	82.8	. . .	. . .	. . .	. . .	−29.1	53.7
Other cash flow from investments[6]	14.8	. . .	. . .	. . .	. . .	−.9	13.9
Total	**19,768.5**	**−3,361.6**	**−18.7**	**121.7**	**−1,234.6**	**−30.0**	**15,245.3**
U.S. TREASURY EXCHANGE STABILIZATION FUND (ESF)							
EMU euro	6,494.4	1,081.1	−10.4	45.9	−374.4	0	7,236.6
Japanese yen	9,799.4	−1,407.0	11.9	4.2	−458.4	0	7,950.1
Total	16,293.8	−325.9	1.5	50.1	−832.8	0	15,186.7
Interest receivables[5]	44.3	. . .	. . .	. . .	. . .	−12.0	32.3
Other cash flow from investments[6]	21.4	. . .	. . .	. . .	. . .	−3.0	18.4
Total	**16,359.5**	**−325.9**	**1.5**	**50.1**	**−832.8**	**−15.0**	**15,237.4**

NOTE. Figures may not sum to totals because of rounding.

1. Purchases and sales reflect changes in the foreign currency holdings as a result of the rebalancing between the SOMA and ESF portfolios and a withdrawal of funds from the ESF euro portfolio to meet an IMF quota.

2. Calculated using marked-to-market exchange rates; represents the difference between the sale exchange rate and the most recent revaluation exchange rate in addition to the gain or loss resulting from changes in the market values of the investments sold. See table 2 for realized profits and losses on sales of foreign currencies computed as the difference between the historic cost-of-acquisition exchange rate and the sale exchange rate, and the gain or loss resulting from the changes in the market values of the investments sold.

3. Foreign currency balances are marked to market monthly at month-end exchange rates.

4. Includes the ESF's payment to meet its IMF quota.

5. Interest receivables for the ESF are as of February 28, 1999, and are revalued at February 28, 1999, month-end exchange rates. Interest receivables for the SOMA are carried at cost and are not marked to market until interest is paid. SOMA interest receivables are net of unearned interest collected.

6. Cash flow differences from payment and collection of funds on Japanese Gensaki investments.

2. Net profits or losses (–) on U.S. Treasury and Federal Reserve foreign exchange operations, based on historical cost-of-acquisition exchange rates, 1999:Q1

Millions of dollars

Period and item	Federal Reserve System Open Market Account	U.S. Treasury Exchange Stabilization Fund
Valuation profits and losses on outstanding assets and liabilities, Dec. 31, 1998		
EMU euro	998.5	96.6
Japanese yen	1,229.8	1,766.0
Total	**2,228.3**	**1,862.6**
Realized profits and losses from foreign currency sales, Jan. 1, 1999–Mar. 31, 1999[1]		
EMU euro	55.7	–71.0
Japanese yen	0	208.0
Total	**55.7**	**137.0**
Valuation profits and losses on outstanding assets and liabilities, Mar. 31, 1999		
EMU euro	–10.6	–227.5
Japanese yen	911.2	1,123.3
Total	**900.6**	**895.8**

1. See table 1 for an explanation of these gains.

3. Currency arrangements, March 31, 1999

Millions of dollars

Institution	Amount of facility	Outstanding, Mar. 31, 1999
	Federal Reserve reciprocal currency arrangements	
Bank of Canada	2,000	0
Bank of Mexico	3,000	0
Total	**5,000**	**0**
	U.S. Treasury Exchange Stabilization Fund currency arrangements	
Bank of Mexico	3,000	0
Total	**3,000**	**0**