Treasury and Federal Reserve Foreign Exchange Operations

This quarterly report describes Treasury and System foreign exchange operations for the period from January through March 1997. It was presented by Peter R. Fisher, Executive Vice President, Federal Reserve Bank of New York, and Manager for Foreign Operations, System Open Market Account. Grace Sone was primarily responsible for preparation of the report.[1]

During the first quarter of 1997, the dollar appreciated 8.8 percent against the mark and 6.9 percent against the yen, at one point reaching thirty-six-month and fifty-month highs of DM 1.7209 and ¥124.82 respectively. On a trade-weighted basis against other Group of Ten currencies, the dollar strengthened 7.5 percent.[2] The dollar achieved most of its gains in January, rising 6.4 percent and 4.9 percent against the mark and the yen, respectively, on growing market expectations for tighter monetary policy in the United States and continued steady monetary policies in Germany and Japan. U.S. economic data that were released early in the period showed signs of stronger growth, contrary to earlier expectations of moderating activity. Conversely, Ger-

1. The charts for the report are available on request from Publications Services, Mail Stop 127, Board of Governors of the Federal Reserve System, Washington, DC 20551.

2. The dollar's movements on a trade-weighted basis against ten major currencies are measured using an index developed by members of the staff of the Board of Governors of the Federal Reserve System.

1. Foreign exchange holdings of U.S. monetary authorities based on current exchange rates, 1997:Q1

Millions of dollars

Item	Balance, Dec. 31, 1996	Quarterly changes in balances by source				Balance, Mar. 31, 1997
		Net purchases and sales[1]	Impact of sales[2]	Investment income	Currency valuation adjustments[3]	
FEDERAL RESERVE						
Deutsche marks	13,030.1	.0	.0	93.3	–1,009.6	12,113.8
Japanese yen	6,152.7	.0	.0	4.8	–396.0	5,761.5
Interest receivables[4]	81.7	. . .	. . .	. . .	. . .	76.4
Other cash flow from investments[5]	–1.0	. . .	. . .	. . .	. . .	–1.6
Total	**19,263.5**	. . .	. . .	. . .	. . .	**17,950.1**
U.S. TREASURY EXCHANGE STABILIZATION FUND						
Deutsche marks	6,594.6	.0	.0	47.6	–510.9	6,131.3
Japanese yen	9,023.6	.0	.0	7.1	–585.3	8,445.4
Mexican pesos[6]	3,500.0	–3,511.9	.0	11.9	.0[7]	.0
Interest receivables[4]	49.6	. . .	. . .	. . .	. . .	40.0
Other cash flow from investments[5]	–6.2	. . .	. . .	. . .	. . .	–3.8
Total	**19,161.7**	. . .	. . .	. . .	. . .	**14,612.9**

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

1. Purchases and sales include foreign currency sales and purchases related to official activity, swap drawings and repayments, and warehousing.

2. Calculated using marked-to-market exchange rates; represents the difference between the sale exchange rate and the most recent revaluation exchange rate. 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 are shown in table 2.

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

4. Interest receivables for the ESF are revalued at month-end exchange rates. Interest receivables for the Federal Reserve System are carried at average cost of acquisition and are not marked to market until interest is paid.

5. Cash flow differences from payment and collection of funds between quarters.

6. See table 4 for a breakdown of Mexican swap activities. Note that the investment income on Mexican swaps is sold back to the Bank of Mexico.

7. Valuation adjustments on peso balances do not affect profit and loss because the effect is offset by the unwinding of the forward contract at the repayment date. Although the ESF does not mark to market its peso holdings, Mexico is obligated to maintain in dollar terms the value of ESF peso holdings resulting from Mexican drawings under the Medium-Term Stabilization Agreement.

man data showed rising unemployment, and market participants remained focused on weakness in Japan's financial sector.

During February and March the dollar's appreciation slowed, with U.S. currency gaining 2.2 percent against the mark and 1.9 percent against the yen. Comments by U.S. Treasury Secretary Rubin and the statement by the Group of Seven (G-7) countries, after their meeting in Berlin were interpreted by market participants as a shift to a more neutral stance in exchange markets, given the correction in exchange rates that had occurred since the April 1995 G-7 statement.[3] Moreover, demand for marks was encouraged by somewhat stronger-than-expected German economic data releases and heightened prospects of a delayed start date for the European Monetary Union (EMU). Meanwhile, the dollar–yen exchange rate was constrained at times by market expectations of Japanese capital repatriation before the end of Japan's fiscal year on March 31, by concerns over the U.S. trade deficit and Japanese trade surplus, and by market caution about the possibility of intervention by the Japanese monetary authorities. The U.S. monetary authorities did not undertake any intervention operations in the foreign exchange market during the quarter. The U.S. Treasury's Exchange Stabilization Fund (ESF) received final repayment from Mexico of the remaining $3.5 billion balance outstanding under the medium-term swap arrangement.

Dollar Intraday Volatility Relatively Subdued

Although the dollar made significant gains during the first quarter, market volatility remained relatively muted, with the average daily trading range for the dollar widening only slightly. On average, the dollar traded in a daily range of 0.9 percent against both the mark and the yen, compared with daily ranges of 0.7 percent experienced in both the previous quarter and the first quarter of 1996. Implied volatility on one-month options in dollar–mark and dollar–yen increased early in the period as the dollar moved higher. However, implied volatility tapered off later in the quarter as the dollar lost its upward momentum and, on net, implied volatility ended the period little changed. The probability distribution of future exchange rates implied by currency options prices was little changed over the quarter for dollar–mark but was slightly wider for dollar–yen.

Response of the Dollar to Expectations of Divergent Growth

In January, the dollar's upward movement reflected market perceptions of stronger U.S. economic fundamentals relative to Germany and Japan. This disparity in growth expectations was reflected in dollar-favorable yield differentials on ten-year bonds, which widened to levels not seen since 1989. Upward revisions to fourth-quarter GDP in the United States, coupled with continued reports of tightening labor markets and strong retail sales, prompted market analysts to revise up growth forecasts for the first quarter and bring forward expectations for higher U.S. interest rates.

Chairman Greenspan's Humphrey–Hawkins testimony on February 26, in which he spoke of possible preemptive tightening by the Federal Reserve, heightened anticipation for a near-term interest rate hike. Implied yields on three-month forward rate agree-

2. Net profits or losses (–) on U.S. Treasury and Federal Reserve foreign exchange operations based on historical cost-of-acquisition exchange rates, 1997:Q1

Millions of dollars

Period and item	Federal Reserve	U.S. Treasury Exchange Stabilization Fund
Valuation profits and losses on outstanding assets and liabilities, Dec. 31, 1996		
Deutsche marks	1,965.9	586.1
Japanese yen	984.5	1,450.8
Total	**2,950.4**	**2,036.9**
Realized profits and losses from foreign currency sales, Dec. 31, 1996–Mar. 31, 1997		
Deutsche marks	.0	.0
Japanese yen	.0	.0
Total	**.0**	**.0**
Valuation profits and losses on outstanding assets and liabilities, Mar. 31, 1997[1]		
Deutsche marks	956.3	75.2
Japanese yen	589.6	871.7
Total	**1,545.9**	**946.9**

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

1. Valuation profits or losses are not affected by peso holdings, which are canceled by forward contracts.

3. On February 7, Secretary Rubin stated, "As we have said many times, a strong dollar is in the United States' interest. We have had a strong dollar for some time now." Following the G-7 meeting on February 8, the G-7 press guidance stated, "We believe that major misalignments in exchange markets noted in our April 1995 communiqué have been corrected. We reaffirmed our views that exchange rates should reflect economic fundamentals and that excess volatility is undesirable."

ments rose 15 basis points immediately after Chairman Greenspan's testimony. On March 25, the Federal Open Market Committee (FOMC) announced a 25-basis-point hike in the federal funds target interest rate, to 5.50 percent. In contrast to the U.S. performance, fourth-quarter GDP growth for Germany was softer than expected, and the level of unemployment reached a postwar high of 4.7 million in February. These data releases underpinned market expectations that German monetary policy would remain steady and even elicited some discussion of a possible interest rate cut. Also, comments made by various European officials were interpreted by market participants as implying that currency depreciation would contribute to Europe's economic recovery. Meanwhile, market participants grew cautious about financial sector risks in Japan, most notably after Moody's moved the outlook of four major Japanese banks to negative from stable. Japanese equity markets weakened, with the Nikkei -225 stock index falling 7.0 percent and the Tokyo Price Index (Topix) ending the quarter down 6.6 percent. The decline in the Topix was led by banking and brokerage shares that were down 17 percent and 19 percent respectively. Weakness in Japan's financial sector and expectations of fiscal contraction following the April 1 consumption tax

3. Currency arrangements, March 31, 1997

Millions of dollars

Institution	Amount of facility	Outstanding, Mar. 31, 1997
	Federal Reserve Reciprocal Currency Arrangements	
Austrian National Bank	250	0
National Bank of Belgium	1,000	
Bank of Canada	2,000	
National Bank of Denmark	250	
Bank of England	3,000	
Bank of France	2,000	
Deutsche Bundesbank	6,000	
Bank of Italy	3,000	
Bank of Japan	5,000	
Bank of Mexico	3,000	
Netherlands Bank	500	
Bank of Norway	250	
Bank of Sweden	300	
Swiss National Bank	4,000	
Bank for International Settlements		
Dollars against Swiss francs	600	
Dollars against other authorized European currencies	1,250	
Total	**32,400**	**0**
	U.S. Treasury Exchange Stabilization Fund Currency Arrangements	
Deutsche Bundesbank	1,000	0
Bank of Mexico	3,000	0
United Mexican States	. . .	0
Total	. . .	**0**

4. Drawings/rollovers and repayments (–) by Mexican monetary authorities, 1997:Q1

Millions of dollars

Currency arrangements with the U.S. Treasury Exchange Stabilization Fund	Outstanding, Dec. 31, 1996	Jan.	Feb.	Mar.	Outstanding, Mar. 31, 1997
Bank of Mexico					
Regular	0	0	0	0	0
Medium-term	3,500	–3,500	0	0	0

NOTE. Data are on a value-date basis.

hike reinforced market expectations that Japan would maintain an accommodative monetary policy, and Japanese government bonds rallied. The benchmark ten-year bond yield fell to an intraperiod low of 2.20 percent.

Firming of the Mark Later in Period

In February, reports of slightly stronger-than-expected economic data in Germany—including surveys of business sentiment, M3 money supply growth, and wholesale prices—encouraged demand for marks. Renewed doubt about a timely start for EMU also supported mark buying. Any lingering expectations for lower German interest rates dissipated, and interest rates implied by three-month forward rate agreements rose in the second half of the quarter. Meanwhile, prices of one-month risk reversals for dollar–mark continued to favor dollar call options, reflecting a higher cost for insurance against a significant dollar appreciation against the mark.[4]

Influence of Japanese Capital Repatriation and Concerns over the U.S. Trade Imbalance on Dollar–Yen

In mid-February, expectations of Japanese capital repatriation ahead of Japan's fiscal year ending on March 31 led to purchases of yen against a broad range of currencies. The dollar moved lower against

4. A risk reversal is an option position consisting of a written put and a purchased 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 sharply. 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 sharply.

the yen, testing ¥120, and prices of one-month dollar–yen risk reversals shifted to favor dollar put options, indicating an increase in the cost for insurance against a significant dollar depreciation. Subsequently, however, the dollar moved off its lows, and one-month risk reversal prices moved closer to neutral as market concerns over Japanese capital repatriation moderated.

Toward the end of the quarter, the re-emergence of a potential for U.S.–Japan trade tensions made market participants reluctant to extend long dollar positions. U.S. and Japanese trade data released after mid-March showed a widening of the U.S. trade deficit and a slowing in the rate of decline in the Japanese trade surplus. In addition, the performance of the Japanese export sector and comments from Japanese officials raised some expectations for a strong Tankan survey to be released in early April.

Mexican Swap Activity

On January 16, Mexico made a final repayment of $3.5 billion on its drawings on medium-term swap arrangements with the ESF. With this repayment, the medium-term swap arrangement terminated.

Treasury and Federal Reserve Foreign Exchange Reserves

The U.S. monetary authorities did not undertake any intervention operations this quarter. At the end of the quarter, the current values of the German and Japanese yen reserve holdings of the Federal Reserve System and the ESF were $17.9 billion and $14.6 billion respectively. The U.S. monetary authorities invest all their foreign currency balances in a variety of instruments that yield market-related rates of return and have a high degree of liquidity and credit quality. A significant portion of these balances is invested in German and Japanese government securities held either directly or under repurchase agreement. As of March 31, outright holdings of government securities by U.S. monetary authorities totaled $7.0 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. Government securities held under repurchase agreements by the U.S. monetary authorities totaled $11.1 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. □