

# Treasury and Federal Reserve Foreign Exchange Operations

*This quarterly report describes U.S. Treasury and System foreign exchange operations for the period from October through December 1998. It was presented by Peter R. Fisher, Executive Vice President, Federal Reserve Bank of New York, and Manager, System Open Market Account. Jason J. Bonança was primarily responsible for preparation of the report.*

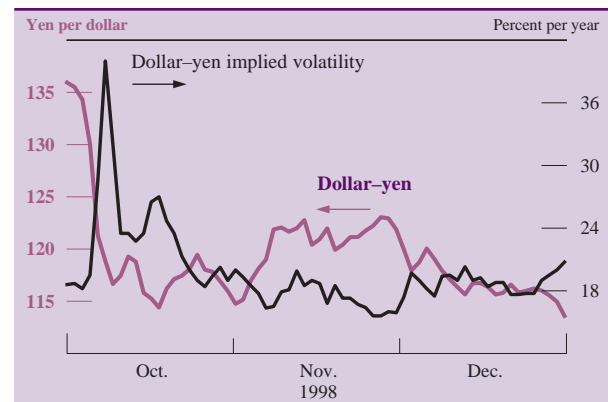
During the fourth quarter of 1998, the dollar depreciated 17.4 percent against the Japanese yen and was virtually unchanged against the German mark. Against the yen, the dollar fell sharply, as long dollar positions in speculative accounts were unwound in an effort to deleverage balance sheets and cover trading losses incurred in other markets. Later in the period, rising long-term interest rates in Japan relative to those in the United States helped to reverse a temporary dollar rebound. Against the mark, the dollar rose from early lows after relative interest rate expectations shifted in favor of the dollar, but the dollar partially retraced its gains after U.S. equity prices retreated from record highs in November. The U.S. monetary authorities did not intervene in the foreign exchange markets during the quarter.

## A SHARP DECLINE OF THE DOLLAR AGAINST THE YEN

At the outset of the quarter, market unease regarding global financial market instability was on the rise. Although the dollar began the period at ¥136.50, it soon depreciated suddenly and sharply as hedge funds and other speculative accounts liquidated long dollar positions in an effort to reduce risk, deleverage balance sheets, and cover losses incurred in other markets. On October 7, the dollar-yen exchange rate fell 6.7 percent, from ¥133.90 to ¥120.55—the largest percentage change in one day since 1974. Volatility in the exchange rate intensified during the following morning's New York trading session, with the dollar falling to a low of ¥111.58 but then suddenly rebounding to a high of ¥123.40. Many market participants ascribed the dollar's burst of strength to rumors of central bank intervention or market inquir-

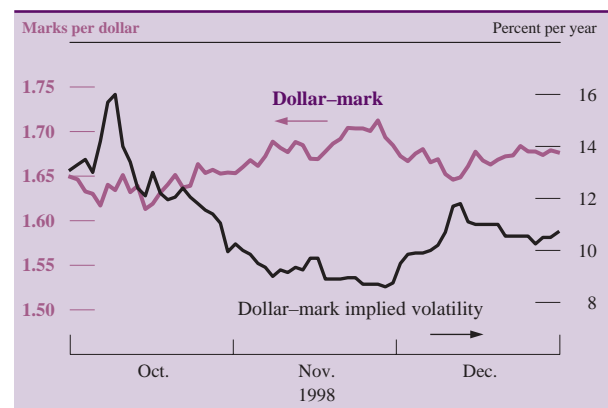
ies by monetary officials. Others noted that the exchange rate's rebound occurred only after the market achieved a reasonable degree of confidence that no official intervention had taken place. Still, many market participants noted persistent interest in selling dollars in the range around ¥120, largely because of concerns that levels above this range would spark a

1. Spot exchange rate of the dollar against the Japanese yen and volatility implied by one-month option prices, 1998:Q4



NOTE. Data in this chart and those that follow are daily.  
SOURCES. J.P. Morgan, Bloomberg L.P.

2. Spot exchange rate of the dollar against the German mark and volatility implied by one-month option prices, 1998:Q4



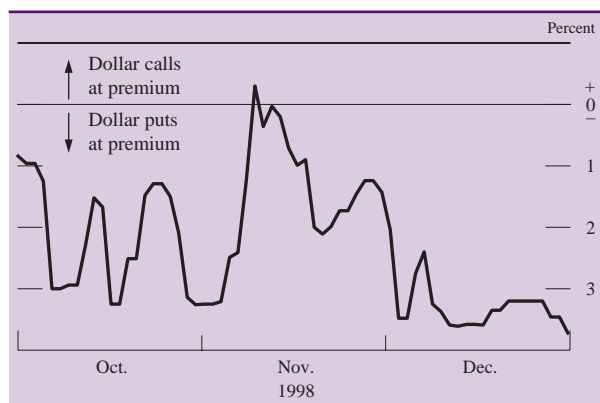
SOURCES. J.P. Morgan, Bloomberg L.P.

fresh round of position unwinding. The rapidity and magnitude of the price movements contributed to a decrease in direct interbank dealing, and bid-ask spreads quoted by some banks were several times wider than typical levels.

In contrast, an increase in electronic trading activity served to concentrate available liquidity in a transparent pricing environment. This shift in market volume to the electronically brokered medium may have influenced the price action during the dollar's depreciation. The transparency afforded by electronic brokering allowed dealers to observe prices at which actual trades were being executed. Thus, as the market digested new information, traders were not obligated to deal in order to discover current prices, reducing the need to shed undesired positions that might have been accumulated as a consequence of such dealing. As a result, price movements may have been steeper but less erratic, given that individual market participants were more able to refrain from transacting until rates reached levels they considered attractive.

Through early November, the dollar traded in a less volatile manner, largely between ¥115 and ¥120. Despite the dollar's stabilization after the sudden decline, many market participants continued to believe that leveraged investors were holding long dollar positions that they wished to unwind and that a significant possibility of a new round of heavy dollar selling remained. Option prices throughout the quarter reflected this anxiety regarding investor positioning. One-month implied volatility, while having subsided from an all-time high of 40 percent on

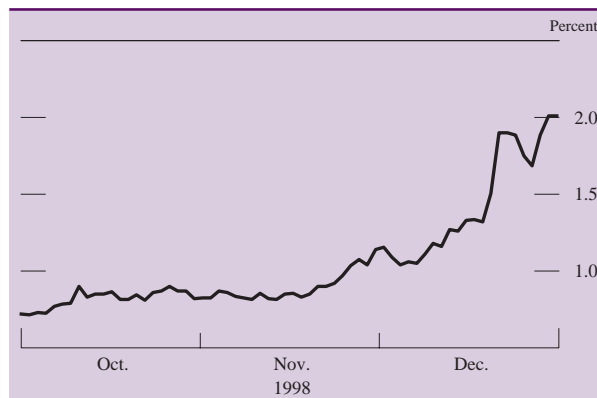
### 3. One-month dollar-yen risk reversals, 1998:Q4



NOTE. A risk reversal is an option position consisting of a written dollar put and a purchased dollar 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. 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.

SOURCE. J.P. Morgan

### 4. Japanese government benchmark bond yield, 1998:Q4



SOURCE. Bloomberg L.P.

October 8, continued to trade between 15 percent and 23 percent. Meanwhile, risk reversals partly reflected a desire to protect against further downward moves in the dollar, with the premium for dollar puts in the one-month maturity reaching an all-time high of 3.6 percent on December 14.

Late in the period, movements of the dollar against the yen were increasingly influenced by events in Japan, as volatility in the Japanese government bond (JGB) market increased markedly. On December 22, the Trust Fund Bureau of the Japanese Ministry of Finance announced that it would significantly reduce its purchases of Japanese government securities. This event, juxtaposed with pre-existing market anxieties regarding increased bond supply, helped the benchmark JGB yield to rise from 0.77 percent to 2.01 percent over the period. Over the quarter, the interest rate differential between ten-year JGBs and U.S. Treasuries declined 102 basis points, to end at 263 basis points. Increasing concern over the growing U.S. current account deficit placed some further pressure on the dollar. Finally, market participants noted that the yen derived some further support from expectations that the slump in Japanese economic growth might have reached its nadir. The dollar finished the quarter toward the bottom of its period range, at ¥112.80.

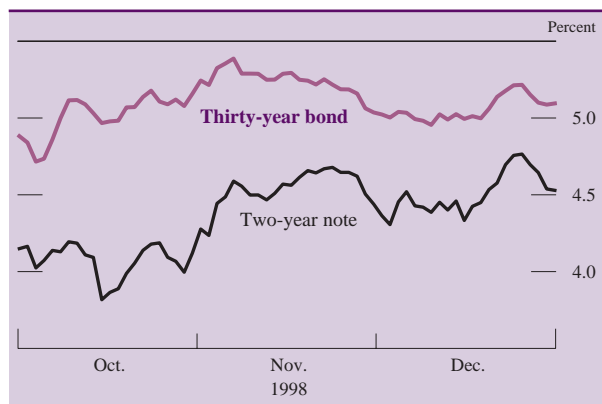
### SWINGS IN ASSET PRICES BEFORE FEDERAL RESERVE EASING

At the outset of the period, global financial market conditions were tumultuous, with investors concerned that turmoil in emerging markets was beginning to exercise increasing influence on the developed markets. Many market participants were disappointed with the magnitude of the September 29 easing by

the Federal Reserve and believed that the Federal Reserve would not continue to ease aggressively in the face of heightened market volatility. The concerns of market participants persisted after the meeting of the Group of Seven (G-7) finance ministers and central bank governors on October 3–4, with many observing that concrete policy measures to confront the global financial turmoil had not yet materialized.

With this deterioration in sentiment, asset prices reflected a mounting aversion to risk. European share prices fell sharply, with the DAX slipping to a 1998 low on October 8. Moreover, throughout the first two weeks of the quarter, market participants became particularly concerned with the health of the financial sector, especially with respect to institutions believed to have sizable exposures to hedge funds or to have incurred significant losses as a result of the volatility in financial assets. On October 7, the S&P Investment Bank and Brokerage Index dropped to a twenty-one-month low. Shortly thereafter, a trend of steepening government yield curves emerged in both the United States and Europe, as investors herded cash into short-term government debt and as expectations for monetary easing as a response to the situation began to emerge. Therefore, while flight-to-quality flows had helped to push the thirty-year Treasury bond yield to an all-time low of 4.72 percent on October 5, two-year Treasury notes outperformed the thirty-year bond during the second week of October. By October 13, the yield spread between thirty-year and two-year Treasuries had increased from its period open of 73 basis points to 98 basis points. Over the first weeks of the period, spreads between some on-the-run and off-the-run Treasuries increased to several times typical levels, suggesting a heightened investor demand for liquidity.

#### 5. U.S. Treasury yields, 1998:Q4



SOURCE: Bloomberg L.P.

On October 15, the Federal Reserve announced a reduction of 25 basis points in the targeted federal funds rate, from 5.25 to 5.00 percent, noting “growing caution by lenders and unsettled conditions in financial markets more generally.” The change in the target, which was the second easing by the Federal Reserve in about as many weeks, came sooner than many market participants had expected. Over the following weeks, many financial asset prices recovered from their lows. Sentiment was also boosted by speculation that international financial institutions and monetary authorities would provide more financial support to Brazil than had previously been expected. Other policy developments around this time also encouraged market recovery. On October 21, the U.S. Congress passed legislation funding the increase in the U.S. quota in the International Monetary Fund and the New Arrangements to Borrow. Further, on October 30, G-7 leaders, finance ministers, and central bank governors issued statements laying out an immediate action plan to strengthen the international financial system and a broader agenda going forward. Nevertheless, the trend of market recovery was uneven throughout the rest of the quarter. Concern over the Brazilian government’s commitment to fiscal reform surfaced intermittently and led to bouts of weakness in relatively risky financial assets. Declining oil prices weighed on petroleum-related stocks and on currencies viewed as commodity sensitive. In addition, sentiment toward emerging markets was adversely affected by renewed declines in commodity prices more broadly. By late November, the Commodities Research Bureau commodity price index had reached a new historic low and continued to trend weaker throughout the rest of the period.

On November 17, the Federal Open Market Committee (FOMC) announced a reduction of 25 basis points in the targeted federal funds rate, to 4.75 percent. In the statement issued with its decision, the Committee said that “although conditions in financial markets have settled down materially since mid-October, unusual strains remain.” In the aftermath of this ease, many asset prices consolidated the trend of recovery begun earlier. In addition, the International Monetary Fund announced a \$41.5 billion assistance package for Brazil on November 13. As part of this international financial support program, the U.S. Treasury announced that, through the Exchange Stabilization Fund, it would participate in a substitution agreement to guarantee up to \$5.0 billion of the \$13.28 billion Bank for International Settlements Credit Facility for Brazil. Shortly thereafter, the average Brady bond’s stripped yield spread to Treasuries, as measured by the J. P. Morgan Emerging Markets

Bond Index, fell to a period low of 944 basis points. Toward the end of the quarter, trading in most instruments grew increasingly thin, with many investors reluctant to establish new risk positions before the year's end.

**RELATIVELY SUBDUED DOLLAR TRADING AGAINST THE MARK**

Early in the quarter, the dollar traded in a relatively volatile fashion at the bottom of its 1998 range, between DM 1.61 and DM 1.66. During this period, the dollar was pressured by the increase in risk aversion in global financial markets and increasing expectations that the Federal Reserve was more likely to reduce interest rates than the Bundesbank. However, this trend began to reverse after the reduction in interest rates announced by the Federal Reserve on October 15. Following the announcement, many market participants began to anticipate that European interest rates were also likely to fall. These expectations were supported by weak business sentiment data from Germany as well as downward revisions to market forecasts for European growth. As a result, expectations for future interest rate differentials between the United States and Europe moved in the dollar's favor after the Federal Reserve's action, and the implied yield spread between the March Eurodollar and Euromark contracts rose. The dollar reached its quarter high of DM 1.7145 on November 27.

Late in November, the dollar retraced some of these gains after U.S. equity prices retreated from

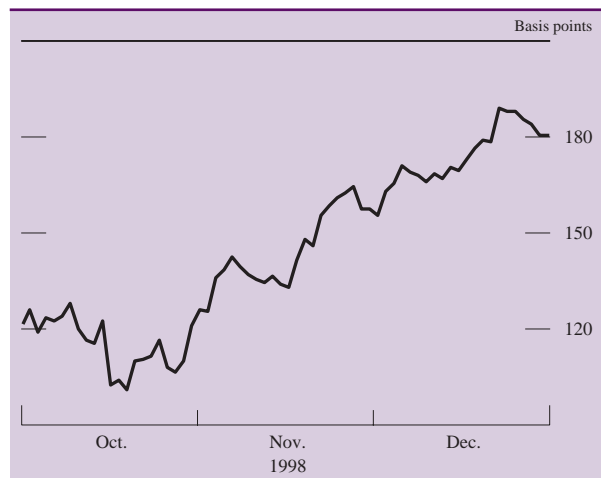
**7. Dow Jones industrial average, 1998:Q4**



SOURCE: Bloomberg L.P.

newly established historic highs; profit warnings from major U.S. corporations and year-end profit taking contributed to this move in share prices. In addition, commentary from European monetary officials led to doubts regarding the likelihood of reductions in continental interest rates, lending more support to the mark. The dollar's weakening trend ended shortly after the December 3 announcement that the monetary authorities of the eleven countries participating in the European Economic and Monetary Union had reduced interest rates in a coordinated move. Toward the end of the year, expectations for future interest rate spreads continued to move against the mark and helped to lift the dollar to levels near DM 1.68, where it finished the period.

**6. Implied yield spread between March 1999 Eurodollar and Euromark futures, 1998:Q4**



NOTE: Data are the Eurodollar implied yield minus the Euromark implied yield.

SOURCE: Bloomberg L.P.

**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 the German mark and Japanese yen reserve holdings totaled \$19.8 billion for the Federal Reserve System and \$16.4 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 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 December 31, outright holdings of government securities by the U.S. monetary authorities totaled \$7.6 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 agreement by the U.S. monetary authorities totaled \$9.4 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.

### RECIPROCAL CURRENCY ARRANGEMENTS

On November 17 the FOMC voted unanimously to reauthorize Federal Reserve participation in the North American Framework Agreement (NAFA), established in 1994, and the associated bilateral reciprocal currency ("swap") arrangements with the Bank of Canada and the Bank of Mexico. Likewise, the Secretary of the Treasury authorized, on December 7, the renewal of the Treasury's participation in the NAFA and of the associated Exchange Stabilization Agreement with Mexico.

Because of the formation of the European Central Bank and in light of fifteen years of disuse, the bilateral swap arrangements of the Federal Reserve with the Austrian National Bank, the National Bank of Belgium, the Bank of France, the German Bundesbank, the Bank of Italy, and the Netherlands Bank were jointly deemed no longer necessary in view of the well-established, present-day arrangements for international monetary cooperation. Accordingly, the respective parties to the arrangements mutually agreed to allow them to lapse. The swap arrangement between the Exchange Stabilization Fund and the German Bundesbank was also allowed to lapse. Similarly, it was jointly agreed to allow the bilateral swap arrangements between the Federal Reserve and the National Bank of Denmark, the Bank of England, the Bank of Japan, the Bank of Norway, the Bank of Sweden, the Swiss National Bank, and the Bank for International Settlements to lapse in light of their disuse and present-day arrangements for international monetary cooperation. □

#### 1. Foreign currency holdings of U.S. monetary authorities based on current exchange rates, 1998:Q4

Millions of dollars

Item	Balance, Sept. 30, 1998	Quarterly changes in balances by source					Balance, Dec. 31, 1998
		Net purchases and sales <sup>1</sup>	Impact of sales <sup>2</sup>	Investment income	Currency valuation adjustments <sup>3</sup>	Interest accrual (net) and other	
<b>FEDERAL RESERVE</b>							
Deutsche marks .....	12,688.6	0	0	111.3	24.1	0	12,824.0
Japanese yen .....	5,663.8	0	0	5.0	1,178.1	0	6,846.9
Total .....	18,352.4	0	0	116.3	1,202.2	0	19,670.9
Interest receivables <sup>4</sup> .....	95.1	...	...	...	...	-12.3	82.8
Other cash flow from investments <sup>5</sup> .....	...	...	...	...	...	14.8	14.8
<b>Total .....</b>	<b>18,447.5</b>	...	...	<b>116.3</b>	<b>1,202.2</b>	<b>2.5</b>	<b>19,768.5</b>
<b>U.S. TREASURY</b>							
<b>EXCHANGE STABILIZATION FUND</b>							
Deutsche marks .....	6,423.4	0	0	58.7	12.3	0	6,494.4
Japanese yen .....	8,106.0	0	0	7.4	1,686.0	0	9,799.4
Total .....	14,529.4	0	0	66.1	1,698.3	0	16,293.8
Interest receivables <sup>4</sup> .....	48.6	...	...	...	...	-4.3	44.3
Other cash flow from investments <sup>5</sup> .....	...	...	...	...	...	21.4	21.4
<b>Total .....</b>	<b>14,578.0</b>	...	...	<b>66.1</b>	<b>1,698.3</b>	<b>17.1</b>	<b>16,359.5</b>

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. Interest receivables for the Federal Reserve system is net of unearned interest collected.

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

2. Net profits or losses (–) on U.S. Treasury and Federal Reserve foreign exchange operations, based on historical cost-of-acquisition exchange rates, 1998:Q4

Millions of dollars

Period and item	Federal Reserve	U.S. Treasury Exchange Stabilization Fund
<i>Valuation profits and losses on outstanding assets and liabilities, Sept. 30, 1998</i>		
Deutsche marks .....	974.3	84.3
Japanese yen .....	51.7	80.0
<b>Total .....</b>	<b>1,026.0</b>	<b>164.3</b>
<i>Realized profits and losses from foreign currency sales, Sept. 30, 1998–Dec. 31, 1998</i>		
Deutsche marks .....	0	0
Japanese yen .....	0	0
<b>Total .....</b>	<b>0</b>	<b>0</b>
<i>Valuation profits and losses on outstanding assets and liabilities, Dec. 31, 1998</i>		
Deutsche marks .....	998.5	96.6
Japanese yen .....	1,229.8	1,766.0
<b>Total .....</b>	<b>2,228.2</b>	<b>1,862.7</b>

3. Currency arrangements, December 31, 1998

Millions of dollars

Institution	Amount of facility	Outstanding, Dec. 31, 1998
Federal Reserve reciprocal currency arrangements		
Bank of Canada .....	2,000	0
Bank of Mexico .....	3,000	0
<b>Total .....</b>	<b>5,000</b>	<b>0</b>
U.S. Treasury Exchange Stabilization Fund currency arrangements		
Bank of Mexico .....	3,000	0
<b>Total .....</b>	<b>3,000</b>	<b>0</b>