Treasury and Federal Reserve Foreign Exchange Operations

This quarterly report describes U.S. Treasury and System foreign exchange operations for the period from April through June 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.

During the second quarter of 1997, the dollar depreciated 7.3 percent against the Japanese yen but gained 4.2 percent against the German mark. On a trade-weighted basis against other Group of Ten (G-10) currencies, the dollar appreciated 1.0 percent.[1] The contrast between the dollar's performance against the yen and its performance against the mark primarily reflected broad-based yen strength and generalized mark weakness. Early in the period, the dollar had initially continued the upward trend against the yen that it had established in the previous quarter. However, in the weeks after the April 27, Group of Seven (G-7) meeting, the yen appreciated as the Japanese authorities pointed to improvement in Japan's near-term economic prospects and suggested that excessive yen depreciation might be addressed with intervention. The U.S. monetary authorities did not undertake any intervention operations in the foreign exchange market during the quarter.

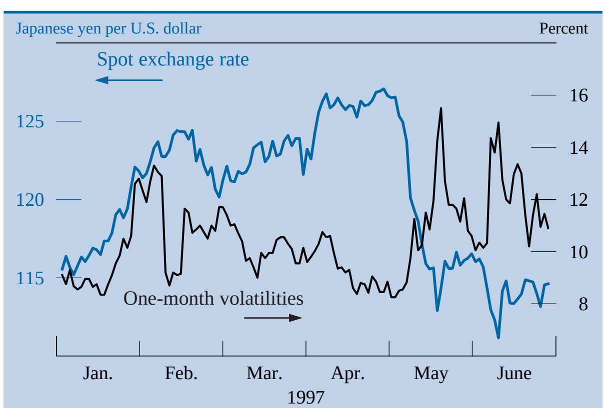
1. The dollar's movements on a trade-weighted basis against ten major currencies are measured using an index developed by members of the staff of the Board of Governors of the Federal Reserve System.

A Slight Rise in the Intraday Volatility of the Dollar

Foreign exchange market volatility was slightly higher during the quarter, with the average daily trading range for the dollar widening to 1.0 percent against both the mark and the yen, compared with average daily ranges of 0.9 percent experienced in the first quarter of 1997 and 0.7 percent in the second quarter of 1996.

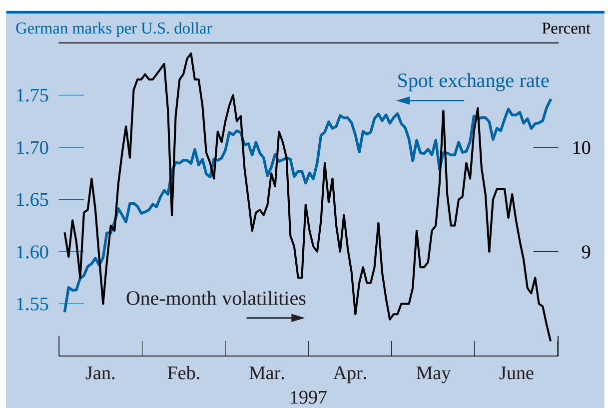
In the middle of the period, implied volatility on dollar–mark and dollar–yen options moved higher as the dollar–yen exchange rate fell 8.5 percent during May but tapered off as the dollar–yen exchange rate stabilized in June. Dollar–yen implied volatility ended the second quarter only slightly higher than its first-quarter close, while dollar–mark implied volatility ended slightly lower. The dispersion of the

1. Spot exchange rate of the dollar against the Japanese yen and volatility implied by option prices, 1997:H1



Note. Data are daily.
Source. Federal Reserve Bank of New York; Reuters.

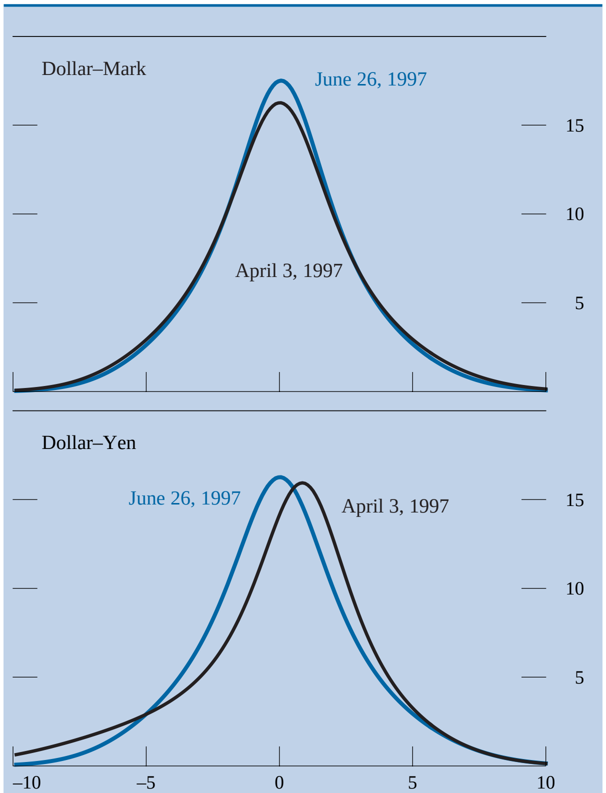
2. Spot exchange rate of the dollar against the German mark and volatility implied by option prices, 1997:H1



Note. Data are daily.
Source. Federal Reserve Bank of New York; Reuters.

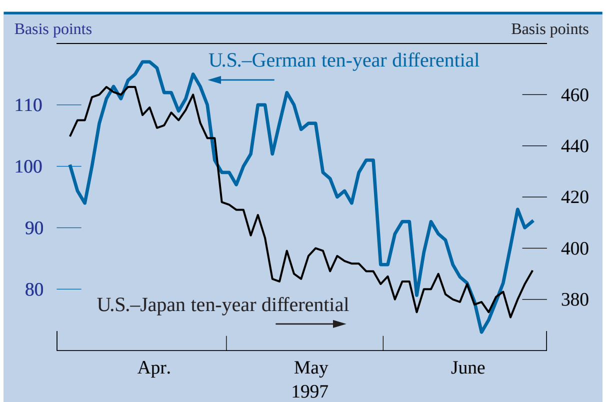
probability distribution of the future dollar–mark exchange rate one-month hence implied by currency options prices was little changed over the quarter but became skewed toward a weaker dollar against the yen, reflecting a higher cost of protection against a sharp downward move in the dollar–yen exchange rate.

3. Option-based probability distribution of exchange rates, one month hence



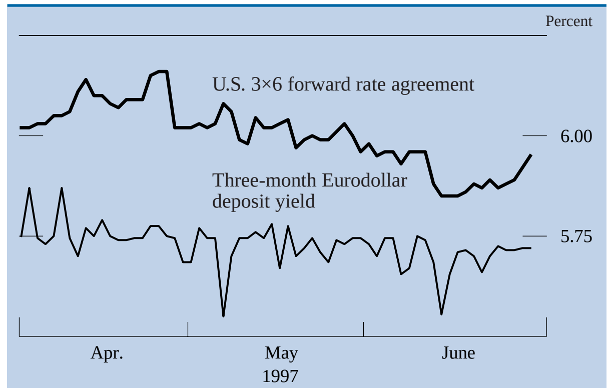
SOURCE. Federal Reserve Bank of New York.

4. Differentials in ten-year bond yields, 1997:Q2



NOTE. Data are daily.
SOURCE. Bloomberg L.P.

5. U.S. interest rates, 1997:Q2

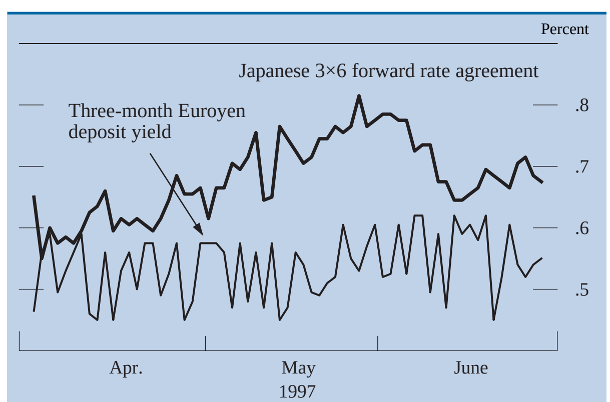


NOTE. A 3×6 forward rate agreement (FRA) refers to the yield on a three-month deposit with a value date three months hence and a maturity date six months hence. Data are daily.
SOURCE. Reuters.

STRENGTHENING OF THE YEN AGAINST OTHER MAJOR CURRENCIES

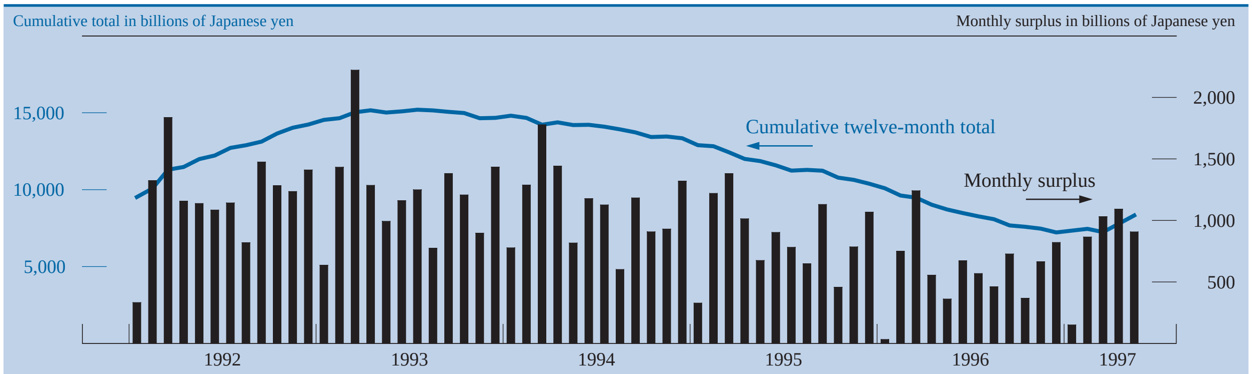
The dollar began the quarter by continuing its upward movement against the yen, supported by expectations for further monetary tightening in the United States and steady monetary policy in Japan. On April 8, the spread between ten-year U.S. and Japanese government bond yields widened to an eight-year high of 463 basis points. Market participants focused on a reference to ‘‘persisting strength in demand’’ in the press release after the March Federal Open Market Committee (FOMC) meeting, which was viewed as suggesting that the FOMC might apply more monetary restraint than had been anticipated. Meanwhile,

6. Japanese interest rates, 1997:Q2



NOTE. A 3×6 forward rate agreement (FRA) refers to the yield on a three-month deposit with a value date three months hence and a maturity date six months hence. Data are daily.
SOURCE. Reuters.

7. Japanese current account balance, 1992–May 1997



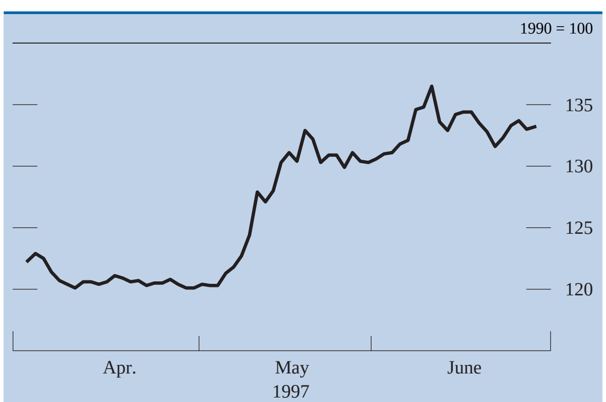
NOTE. Data are monthly.

SOURCE. Bloomberg L.P.

market analysts became concerned that Japan's economic recovery was neither broad-based nor self-sustaining and that there was a potential for negative effects from the April 1 consumption tax hike; there were also concerns about strains in the Japanese financial sector.

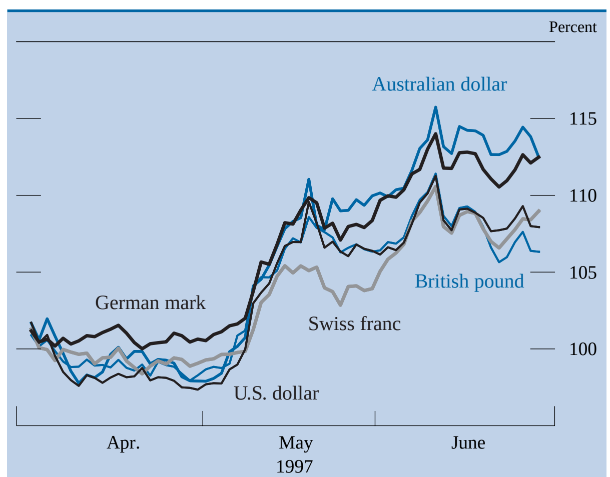
In this perceived dollar-supportive environment there was no immediate reaction to the April 27, G-7 statement, which emphasized the importance of avoiding exchange rate levels that could lead to the reemergence of large external imbalances. On May 1, the dollar rose to a fifty-six-month high of ¥127.50, as the yen depreciated against most major currencies. However, initial releases of economic data for April appeared to suggest that the Japanese economy was not as adversely affected by the consumption tax hike as had been anticipated. Concurrently, Japanese officials began hinting at the possibility of intervention to support the yen. In particular, a Ministry of Finance official noted that the yen might strengthen to ¥103 by year-end, a comment that was interpreted by market analysts as a warning against further yen depreciation. Also, U.S. officials indicated their agreement with Japan's concern about yen depreciation. In addition, Japanese officials commented that the Japanese economic recovery was stronger than perceived by market participants and that an interest rate hike could occur sooner than expected. Against this backdrop, the Nikkei began to rise, closing above the 20,000 level on May 6 for the first time in 1997; yields on the benchmark ten-year Japanese government bond increased; and the yen started to appreciate against a broad range of currencies. Contributing to the yen's broad-based strength was the apparent unwinding of yen-financed positions in emerging

8. Trade-weighted yen, 1997:Q2



NOTE. Data are daily.
SOURCE. Bloomberg L.P. (Bank of England calculation).

9. Value of the yen against selected currencies, 1997:Q2



NOTE. Foreign currency per Japanese yen, indexed to March 31 = 100. Data are daily.
SOURCE. Reuters.

market currencies, a move that was exacerbated by reports of worsening current account deficits and downwardly revised economic growth forecasts in countries such as Thailand and the Czech Republic.

Later in the period, market attention again shifted toward signs of a softer Japanese economy after releases of data implied a two-tiered economic recovery led by the export sector. However, the yen remained firm amid heightened concerns over possible intervention to stem any renewed yen weakness. These concerns were prompted by indications of a widening Japanese trade surplus and comments from U.S. officials suggesting that Japan should avoid an export-led recovery. Meanwhile, market participants started to scale back their expectations for U.S. monetary tightening after the release of data on retail sales and housing, both of which were viewed as indicating moderating consumer demand.

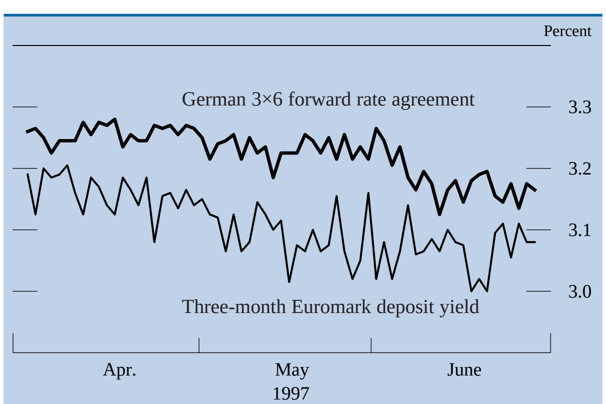
The U.S.–Japan ten-year bond-yield spread narrowed from its eight-year high of 463 basis points on April 8, to end the period at 391 basis points. On a trade-weighted basis, the yen appreciated 9.2 percent during the second quarter. Against the Australian dollar, Swiss franc, and British pound the yen appreciated 12.5 percent, 9.0 percent, and 6.3 percent respectively.

Support of the Dollar–Mark Exchange Rate by Broad German Mark Weakness

Over the reporting period, the German mark was pressured lower by growing market expectations of broad participation in the European monetary union (EMU). In addition, expectations of steady monetary policy in Germany, supported by reports that German unemployment remained at high levels, contributed to the weakness of the mark. Although the yield differential between U.S. and German ten-year bonds narrowed 20 basis points, to end the quarter at 90 basis points, the dollar continued to move higher against the German mark as market participants focused on developments in Europe.

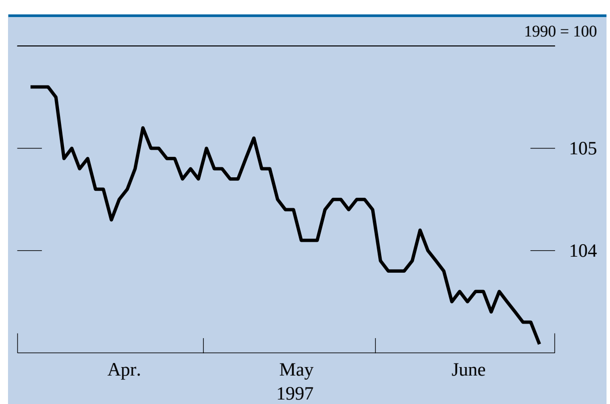
In May, the German mark firmed somewhat as doubts about the likelihood of a timely start to the EMU reemerged. This uncertainty reflected both the prospects for a Socialist victory in the French elections and the criticism raised regarding the German government's proposal to revalue the Bundesbank's gold reserves. At this time, the dollar–mark exchange rate moved from around DM 1.73 to near DM 1.68. However, by mid-June, the dollar–mark exchange rate moved back above DM 1.73, toward levels seen in April, as earlier market doubts about a timely launch to EMU dissipated. Reports that France and Germany would have difficulty strictly meeting the Maastricht reference value of 3 percent deficit-to-gross domestic product, combined with assertions from French and German officials of their commitment to start the EMU on time, made it appear increasingly likely that the EMU would start with a broader set of countries. During the second quarter, the mark depreciated more than 4.0 percent against the U.S. dollar and Japanese yen, and more than 12.0 percent against the British pound. On a trade-weighted basis, the German mark depreciated 2.4 percent during the period.

10. German interest rates, 1997:Q2



NOTE. A 3×6 forward rate agreement (FRA) refers to the yield on a three-month deposit with a value date three months hence and a maturity date six months hence. Data are daily.
SOURCE. Reuters.

11. Trade-weighted mark, 1997:Q2



NOTE. Data are daily.
SOURCE. Bloomberg L.P. (Bank of England calculation).

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 totaled $18.0 billion for the Federal Reserve System and $15.1 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 either directly or under repurchase agreement. As of June 30, outright holdings of government securities by U.S. monetary authorities totaled $7.4 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 $11.8 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.

1. Foreign exchange holdings of U.S. monetary authorities based on current exchange rates, 1997:Q2

Millions of dollars

Item	Balance, Mar. 31, 1997	Quarterly changes in balances by source				Balance, June 30, 1997
		Net purchases and sales[1]	Impact of sales[2]	Investment income	Currency valuation adjustments[3]	
FEDERAL RESERVE						
Deutsche marks	12,113.8	.0	.0	87.3	−529.5	11,671.7
Japanese yen	5,761.5	.0	.0	4.5	456.1	6,222.1
Interest receivables[4]	76.4	...	...	...	...	73.2
Other cash flow from investments[5]	−1.6	...	...	...	...	2.9
Total	**17,950.1**	...	...	...	...	**17,969.8**
U.S. TREASURY EXCHANGE STABILIZATION FUND						
Deutsche marks	6,131.3	.0	.0	45.1	−268.0	5,908.4
Japanese yen	8,445.4	.0	.0	6.8	667.2	9,119.4
Interest receivables[4]	40.0	...	...	...	...	40.4
Other cash flow from investments[5]	−3.8	...	...	...	...	10.4
Total	**14,612.9**	...	...	...	...	**15,078.6**

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.

2. Net profits or losses (–) on U.S. Treasury and Federal Reserve foreign exchange operations based on historical cost-of-acquisition exchange rates, 1997:Q2

Millions of dollars

Period and item	Federal Reserve	U.S. Treasury Exchange Stabilization Fund
Valuation profits and losses on outstanding assets and liabilities, Mar. 31, 1997		
Deutsche marks	956.3	75.2
Japanese yen	589.6	871.7
Total	**1,545.9**	**946.9**
Realized profits and losses from foreign currency sales, Mar. 31–June 30, 1997		
Deutsche marks	.0	.0
Japanese yen	.0	.0
Total	**.0**	**.0**
Valuation profits and losses on outstanding assets and liabilities, June 30, 1997		
Deutsche marks	426.9	–192.8
Japanese yen	1,047.2	1,542.7
Total	**1,474.1**	**1,349.9**

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

3. Currency arrangements, June 30, 1997

Millions of dollars

Institution	Amount of facility	Outstanding, June 30, 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
Total	. . .	**0**