# TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS 

July-September 2003

During the third quarter of 2003, the dollar's trade-weighted exchange value declined 2.3 percent on balance, as measured by the Federal Reserve Board's major currencies index. The dollar depreciated 6.9 percent against the yen, 1.2 percent against the euro, and 0.4 percent against the Canadian dollar. For much of the quarter, the dollar was supported against a range of currencies amid an improved outlook for the U.S. economy and rising U.S. sovereign debt yields. Later in the period, however, the dollar more than fully retraced these earlier gains amid a more cautious assessment of the U.S. economy and a renewed focus on the U.S. current account deficit. The U.S. monetary authorities did not intervene in the foreign exchange market during the quarter.

## DOLLAR APPRECIATES STEADILY FROM JULY TO LATE AUGUST

On a trade-weighted basis, the dollar appreciated 2.2 percent during July and August amid an improved outlook for the U.S. economy. Treasury yields rose sharply, with two- and ten-year yields rising 67 basis points and 95 basis points, respectively, from the end of June to the end of August. U.S. data releases supported expectations for a robust recovery, with manufacturing, consumer confidence, and retail sales data surpassing expectations. While Treasury yields had already risen following the June 25 Federal Open Market Committee (FOMC) meeting, Chairman Greenspan's Congressional testimony on July 15 reportedly contributed further to the rise in yields. His testimony was perceived as presenting a fairly optimistic outlook for the economy and minimizing

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Chart 1
TRADE-WEIGHTED G-3 CURRENCIES


Sources: Board of Governors of the Federal Reserve System; Bank of England.
the probability that alternative policy measures would be needed to stimulate the economy. During this period, upward revisions to fiscal deficit projections were also a factor supporting the upward trend in yields. While market participants suggested that the rise in U.S. Treasury yields supported the dollar, these dollar gains were moderated by concerns that the volatility in Treasury bond prices could induce foreign investors to reduce positions in U.S. fixed income markets.

Optimism about U.S. growth and the potential for a global recovery led market participants to focus on expected relative growth differentials as a driver of exchange rate movements. During the first two months of the quarter, the euro depreciated against other major currencies amid the perception that European growth was likely to lag that of other regions. The differential between longer-term U.S. and European interest rates narrowed, with the yield on the benchmark German ten-year bund falling below the yield on the ten-year U.S. Treasury note for the first time since February of this year. The Canadian dollar, which had been outperforming other currencies for much of the year, depreciated 2.9 percent against the U.S. dollar during July and August. Canadian data releases indicated that the recovery of the Canadian economy had slowed in the second quarter and two 25 basis-point reductions to the Bank of Canada's policy rate weighed on the currency.

Chart 2

## U.S. TREASURY AND GERMAN GOVERNMENT DEBT YIELDS



Source: Bloomberg L.P.

Amid an increased focus on relative growth prospects, the yen was supported by expectations that Japan would be among the economies to benefit most from a global recovery, given its technology and export-driven economy. The yen appreciated 2.5 percent against the dollar during July and August and gained even more against several other major currencies. Japanese data releases, including second-quarter GDP and July industrial production, contributed to expectations for a faster-than-expected recovery in Japan. Japanese equity indexes outperformed other global indexes, with the Nikkei and Topix rising 13.9 percent and 10.9 percent, respectively, during July and August. Foreign purchases of Japanese equities supported the yen, with Japanese portfolio flow data showing twelve consecutive weeks of equity purchases by foreigners during the quarter. However, yen gains against the dollar were reportedly limited by the Japanese monetary authorities' efforts to prevent yen appreciation. Japan's Ministry of Finance publicly confirmed $¥ 2.0272$ trillion in yen sales between June 27 and July 29 and no intervention between July 30 and August 28.

Chart 3
GLOBAL BENCHMARK EQUITY INDEXES


Source: Bloomberg L.P.

A sharp rise in Japanese government bond (JGB) yields from historically low levels accompanied the yen's gains, with ten- and twenty-year JGB yields each rising 62 basis points during the first two months of the quarter. Trading conditions were frequently volatile as long positions that had been established for much of the year were quickly unwound. Implied yields on euroyen futures contracts and yields on shorter-maturity JGBs also rose, as markets priced in the potential for an end to the Bank of Japan's near zero interest rate policy. The implied rate on the December 2004 three-month euroyen contract rose to 40 basis points at the end of August from 26 basis points at the end of June. Japanese investors reportedly reduced some of their foreign bond holdings, especially during the month of July, amid the increased volatility in both foreign and Japanese sovereign debt markets. Some of these foreign bond holdings had reportedly been held with unhedged currency exposure, and their unwinding added to the yen's appreciation.


Source: Bloomberg L.P.

Despite the 2.2 percent gain in the trade-weighted dollar during July and August, most analysts continued to expect longer-term dollar depreciation in light of the substantial U.S. current account deficit. In addition, some analysts highlighted the ongoing need for declines in the dollar against the currencies of major U.S. trading partners to facilitate a structural adjustment.

## DOLLAR DEPRECIATES TOWARD THE END OF THE QUARTER

The dollar turned weaker at the end of August and in early September as U.S. data releases were regarded as suggesting a slightly more cautious outlook for the U.S. recovery. Specifically, market participants pointed to the weekly jobless claims data and the August employment report as heightening concerns over the lack of job creation in the current economic recovery. Other data released in September, such as the September Chicago Purchasing Managers' Index and August retail sales, were also lower than expected. Against this backdrop, Treasury yields partially retraced earlier gains with two- and ten-year yields declining 51 basis points and 53 basis points, respectively, from their highs in August to the end of September. Although policy was not altered
at the September 16 FOMC meeting, market participants noted the mention of a weakening labor market in the accompanying statement. Also contributing to the decline in yields were comments from Federal Reserve officials, which emphasized that monetary policy was likely to remain on hold for a considerable period. Some dampening of earlier optimism was also evident in the 1.2 percent decline in the Standard \& Poor's 500 index in September, following a 3.4 percent rise during the first two months of the quarter. In September, net short dollar positions held by noncommercial accounts on the International Money Market of the Chicago Mercantile Exchange increased significantly.

Chart 5
NET U.S. DOLLAR POSITIONS HELD BY NONCOMMERCIAL ACCOUNTS ON THE CHICAGO MERCANTILE EXCHANGE


Source: Commodity Futures Trading Commission.

A more cautious outlook for the U.S. economy contributed to a renewed focus on the ongoing need to finance the U.S. current account deficit, firming expectations that additional dollar declines were likely. There continued to be a perception in the market that the dollar's declines so far this year had been uneven, with a marked dollar depreciation against the European currencies, the Canadian dollar, and other higher-yielding currencies, but a much more limited dollar depreciation against Asian currencies. Comments from European and Canadian officials, expressing concern over this asymmetric depreciation, and comments from U.S. officials emphasizing the need for flexible exchange rates contributed to a perception that there would be mounting pressure on Asian authorities to curb intervention practices.

The yen extended its appreciation in early September amid the dollar's broad declines. Significant demand for yen was thought to be coming from long-term investors, but speculative investors were also adding to their net long yen positions. According to the Chicago Mercantile Futures Exchange, net long yen positions held by noncommercial accounts reached their highest level in almost four years in September. Market participants perceived significantly increased intervention activity by the Bank of Japan (BoJ) on behalf of the Ministry of Finance, with the latter subsequently announcing that it had sold $¥ 4.4573$ trillion between August 28 and September 26, representing a record monthly intervention. The yen's strength continued despite a decline in shorter-dated interest rates following comments from BoJ Governor Fukui that the BoJ would not change current policy until there was sustained evidence of an end to deflation. After rising as high as 55 basis points in early September, the implied rate on the December 2004 euroyen futures contract ended the quarter at 35 basis points.

Market participants were increasingly expecting that the composition of the dollar's declines and Asian currencies could be discussed at the Group of Seven (G-7) meeting the weekend of September 20. Specifically, Japanese officials suggested that China's currency regime would be discussed at the meeting. At the Ecofin meeting the weekend before, European Central Bank President Duisenberg commented on the need for China and Japan to let their currencies appreciate. A perceived lack of intervention by the Japanese authorities ahead of the G-7 meeting sparked a significant further appreciation of the yen.

The release of the G-7 communiqué on Saturday, September 20, resulted in a marked depreciation of the dollar on Monday, September 22, particularly against Asian currencies. Market participants noted that it was the first time in three years that a G-7 communiqué made more than a general reference to foreign exchange rates. They also noted the statement's emphasis that "more flexibility in exchange rates is desirable for major countries or economic areas to promote smooth and widespread adjustments in the international financial system, based on market mechanisms." Although the communiqué did not single out specific nations, some market participants believed that the statement was meant to address Asian currencies. The continued perceived absence of Japanese intervention in the days following the meeting was viewed by some market participants as evidence of a possible shift in the Ministry of Finance's strategy to lessen intervention as a result of the G-7 meeting. During the week following the meeting, the dollar depreciated 0.8 percent and 2.0 percent against the euro and the yen, respectively, with the yen appreciating to its strongest level since the year 2000.

## CURRENCY MARKET VOLATILITY RISES FOLLOWING G-7 MEETING

For most of the quarter, option-implied volatility in the currency market remained relatively low. During July and August one-month option-implied volatility in the euro-dollar and dollar-yen currency pairs remained near 9.5 percent and 8.0 percent, respectively. Following the G-7 meeting, however, one-month implied volatility in the euro-dollar currency pair rose to 11.6 percent and one-month implied volatility in the dollar-yen currency pair rose to 13.1 percent before retracing to 12.3 percent at the end of the quarter. Despite these increases, implied volatility remained within the ranges seen over the past couple of years. One-month risk reversals in the dollar-yen currency pair revealed a sharp rise in the premium for dollar puts over dollar calls against the yen, rising from approximately 1.2 percent before the G-7 meeting to 3.5 percent.

## Chart 6

ONE-MONTH CURRENCY OPTION-IMPLIED VOLATILITY


Source: Bloomberg L.P.

ONE-MONTH DOLLAR-YEN AND EURO-DOLLAR RISK REVERSALS


Source: UBS Warburg.

## TREASURY AND FEDERAL 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 yen reserve holdings totaled $\$ 18.6$ billion for the Federal Reserve's System Open Market Account and $\$ 18.6$ billion for the Treasury's Exchange Stabilization Fund. The U.S. monetary authorities invest 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. To the greatest extent practicable, the investments are split evenly between the System Open Market Account and the Exchange Stabilization Fund.

A significant portion of the U.S. monetary authorities' foreign exchange reserves is invested in European and Japanese government securities. On an outright basis, the U.S. monetary authorities hold German, French, and Japanese government securities. Under euro-denominated repurchase agreements, the U.S. monetary authorities accept sovereign debt backed by the full faith and credit of the following governments: Belgium, France, Germany, Italy, the Netherlands, and Spain. Foreign currency reserves are also invested at the Bank for International Settlements and in facilities at other official institutions. As of September 30, direct holdings of foreign government securities totaled $\$ 18$ billion, split evenly between the Federal Reserve and the Treasury. Foreign government securities held under repurchase agreements totaled $\$ 3.8$ billion at the end of the quarter and also were split evenly between the two authorities.

Table 1
FOREIGN CURRENCY HOLDINGS OF U.S. MONETARY AUTHORITIES
BASED ON CURRENT EXCHANGE RATES
Millions of Dollars

|  |  | Changes in Balances by Source |  |  |  | Carrying Value September 30, 2003 ${ }^{\text {a }}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Carrying Value June 30, $2003^{a}$ | Net Purchases and Sales ${ }^{\text {b }}$ | Investment Earnings ${ }^{c}$ | Realized Profit/Loss on Sale ${ }^{\text {d }}$ | Unrealized Profit/ Loss on Foreign Currency Revaluation ${ }^{\text {e }}$ |  |
| Federal Reserve System |  |  |  |  |  |  |
| Open Market Account (SOMA) |  |  |  |  |  |  |
| Euro | 9,970.6 | 0 | 59.7 | 0 | 130.2 | 10,160.5 |
| Yen | 7,878.6 | 0 | 0.2 | 0 | 596.7 | 8,475.5 |
| Total | 17,849.2 | 0 | 59.9 | 0 | 726.9 | 18,636.0 |
| U.S. Treasury Exchange |  |  |  |  |  |  |
| Stabilization Fund (ESF) |  |  |  |  |  |  |
| Euro | 9,958.3 | 0 | 59.3 | 0 | 130.0 | 10,147.6 |
| Yen | 7,878.6 | 0 | 0.2 | 0 | 596.7 | 8,475.5 |
| Total | 17,836.9 | 0 | 59.5 | 0 | 726.7 | 18,623.1 |

${ }^{\text {a }}$ Carrying value of the reserve asset position includes interest accrued on foreign currency, which is based on "day of" accrual method.
${ }^{\mathrm{b}}$ Net purchases and sales include daily foreign currency purchases from cash collected on maturities and coupons. In case of intervention or other official activity, amounts would be reflected and details footnoted.
${ }^{\mathrm{c}}$ Investment earnings include accrued interest and amortization.
${ }^{\mathrm{d}}$ Gains and losses on sales are calculated using average cost.
${ }^{e}$ Reserve asset balances are revalued daily at the noon buying rates.

Table 2
BREAKDOWN OF FOREIGN RESERVE ASSETS HELD
AS OF SEPTEMBER 30, 2003 (CARRYING VALUE)
Millions of Dollars

|  | U.S. Treasury Exchange Stabilization Fund (ESF) | Federal Reserve System Open Market Account (SOMA) |
| :---: | :---: | :---: |
| Euro-denominated assets: | 10,147.6 | 10,160.5 |
| Cash held on deposits at official institutions | 6,324.7 | 6,341.8 |
| Marketable securities held under repurchase agreements ${ }^{\text {a }}$ | 1,879.5 | 1,879.5 |
| Marketable securities held outright ${ }^{\text {b }}$ | 1,943.4 | 1,939.2 |
| German government securities | 1,437.7 | 1,433.5 |
| French government securities | 505.7 | 505.7 |
| Yen-denominated assets: | 8,475.5 | 8,475.5 |
| Cash held on deposit at official institutions | 1,417.6 | 1,417.6 |
| Marketable securities held outright ${ }^{\text {b }}$ | 7,057.9 | 7,057.9 |

${ }^{\text {a }}$ Sovereign debt obligations of Belgium, France, Germany, Italy, Netherlands, and Spain are presently eligible collateral for reverse repo transactions.
${ }^{\mathrm{b}}$ As of September 30, euro and yen securities holdings had Macaulay durations of 28.1 and 3.3 months, respectively.

Table 3
FEDERAL RESERVE SYSTEM OPEN MARKET ACCOUNT
RECIPROCAL CURRENCY ARRANGEMENTS
Millions of Dollars

| Institution | Amount of Facility | Outstanding as of <br> September 30, 2003 |
| :--- | :---: | :---: |
|  | 2,000 | 0 |
| Bank of Mexico | $\underline{3,000}$ | $\underline{0}$ |
| Total | $\underline{5,000}$ |  |

U.S. TREASURY EXCHANGE STABILIZATION FUND RECIPROCAL CURRENCY ARRANGEMENT
Millions of Dollars

| Institution | Amount of Facility | Outstanding as of September 30, 2003 |
| :---: | :---: | :---: |
| Bank of Mexico | 3,000 | 0 |
| Total | 3,000 | 0 |

