TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS

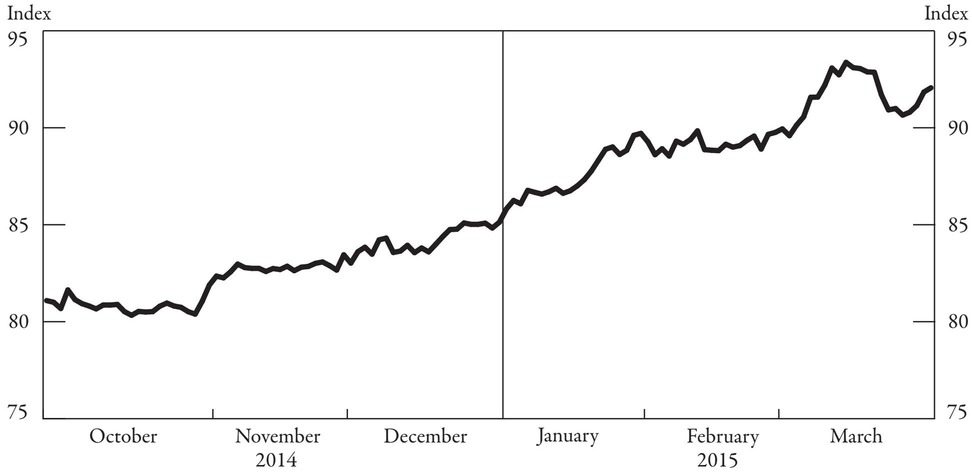
January–March 2015

During the first quarter, the U.S. dollar's nominal trade-weighted exchange value appreciated 8.1 percent as measured by the Federal Reserve Board's major currencies index. The U.S. dollar continued to appreciate notably against many major and emerging market currencies, reflecting market expectations for divergent economic growth prospects and monetary policy expectations between the United States and other economies. The dollar appreciated 12.7 percent against the euro, marking the largest quarterly gain for the dollar against the euro since the euro's inception in 1999, though it was little changed against the Japanese yen. The U.S. monetary authorities did not intervene in the foreign exchange markets during the quarter.

This report, presented by Simon Potter, Executive Vice President, Federal Reserve Bank of New York, and Manager of the System Open Market Account, describes the foreign exchange operations of the U.S. Department of the Treasury and the Federal Reserve System for the period from January through March 2015. Maximilian Dunn was primarily responsible for preparation of the report.

Chart 1

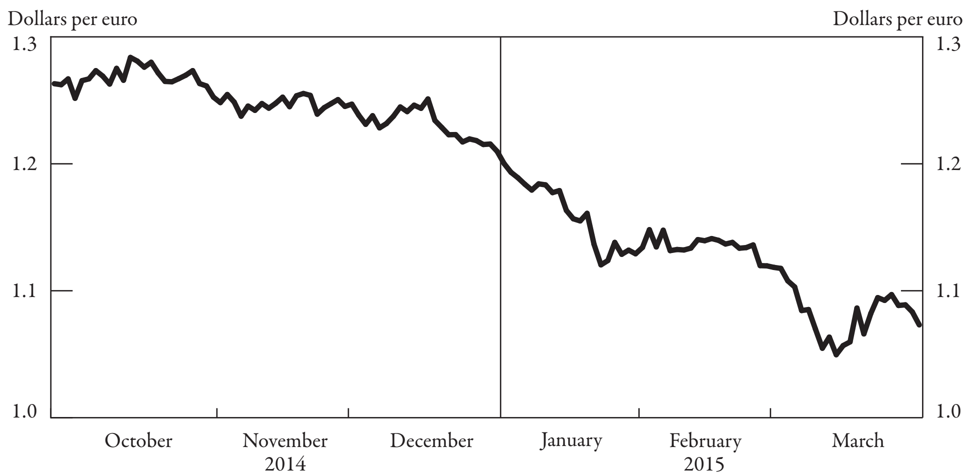
TRADE-WEIGHTED U.S. DOLLAR



Source: Board of Governors of the Federal Reserve System.

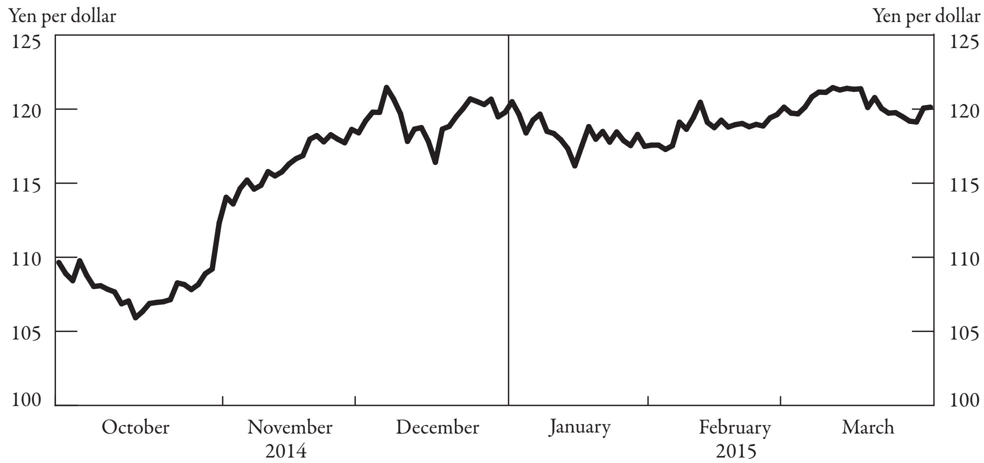
Chart 2

EURO–U.S. DOLLAR EXCHANGE RATE



Source: Bloomberg L.P.

Chart 3
U.S. DOLLAR–YEN EXCHANGE RATE



Source: Bloomberg L.P.

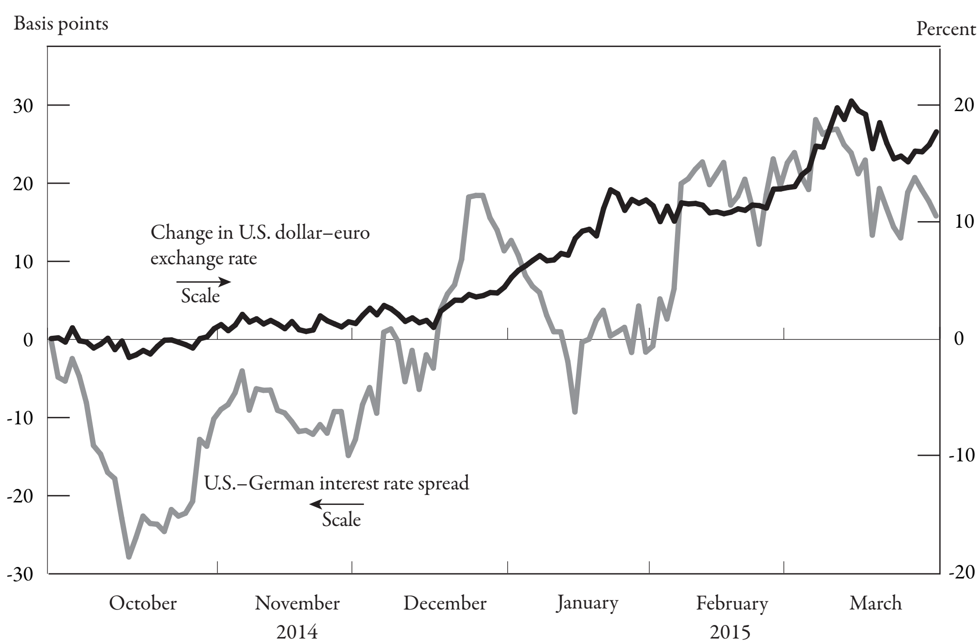
U.S. DOLLAR CONTINUES TO APPRECIATE AMID DIVERGENT MONETARY POLICY EXPECTATIONS

During the first quarter, the trade-weighted U.S. dollar appreciated 8.1 percent in response to improving U.S. labor market data and divergence in monetary policy expectations between the Federal Reserve and most other major central banks. Despite an overall mixed interpretation of the broader U.S. economic data releases, investors reportedly focused mainly on the labor market data as reflective of the broader economic recovery. In particular, the unemployment rate declined from 5.6 percent to 5.5 percent during the quarter, while the December, January, and February headline readings for the change in nonfarm payrolls exceeded market expectations by a wide margin. Although other economic indicators such as manufacturing and retail sales data painted a more mixed picture, market participants generally maintained their view that the improvement in labor market conditions was supportive of expectations for a normalization of monetary policy in the second half of 2015. This prevailing view supported the broad appreciation of the U.S. dollar, continuing the trend that has been in place since mid-2014. Official Federal Reserve communication was interpreted as somewhat mixed but consistent with market expectations that the Federal Reserve will be among the first major central banks to raise its policy rate. For example, the January Federal Open Market Committee (FOMC) meeting statement was interpreted as indicating no material change to the policy stance and was viewed as affirming market expectations of policy normalization sometime in the middle of 2015. Conversely, the March FOMC meeting statement and the accompanying Summary of Economic Projections (SEP) materials were viewed by market participants as more accommodative than expected and resulted in a partial retracement of the dollar's earlier appreciation in the final weeks of the quarter, though the broader dollar-appreciation trend remained in place.

Positive sentiment toward the dollar was also reflected in the positioning data among the shorter-term investor community. The U.S. Commodity Futures Trading Commission's (CFTC) net long dollar positioning for noncommercial accounts rose to a record high during the quarter. While the most sizable long dollar positions were against the euro and yen, the data also showed that investors extended net long dollar positions against the Canadian dollar and British pound and maintained short positions against many of the remaining currencies tracked by the CFTC, including the Australian dollar and Mexican peso.

Chart 4

CUMULATIVE CHANGE IN TWO-YEAR U.S.–GERMAN INTEREST RATE SPREAD AND U.S. DOLLAR APPRECIATION



Source: Bloomberg L.P.

The U.S. dollar appreciated 12.7 percent against the euro during the quarter, underscoring the differing growth outlooks of, and monetary policy divergence between, the U.S. and euro-area economies. Most notably, sentiment toward the euro was weighed on by the lead-up to, and announcement in January of, the European Central Bank's (ECB) expanded asset purchase program, which continued to drive an increasing stock of euro-area sovereign yields negative. Lingering concerns over Greece also served as a headwind for the euro, on the margin.

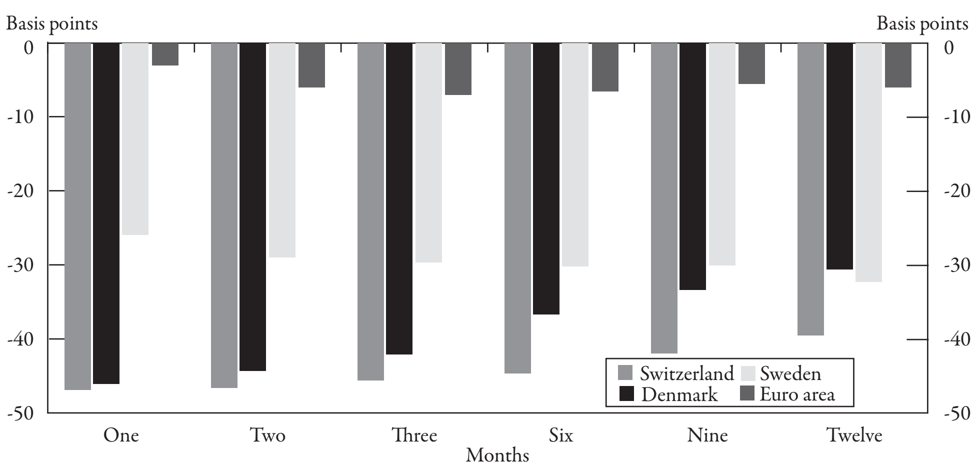
Regarding the ECB's asset purchase program, total purchases, including purchases of covered bonds and asset-backed securities, are expected to total €60 billion per month until at least September 2016 and until the ECB's Governing Council sees a sustained adjustment in the path of inflation. Indeed, euro-area headline inflation entered negative territory in December 2014 and remained below zero for the first three months of 2015. The five-year/five-year-forward euro-area inflation swap rate, a metric previously referenced by ECB President Mario Draghi, declined by 9 basis points during the period and exhibited considerable volatility. Although there was a slight improvement in certain euro-area economic activity indicators, the effect of these improvements on the euro–U.S. dollar exchange rate appeared minimal and was viewed as being outweighed by the expansion of the ECB's purchase program. Furthermore, the fact that many European government yields moved further into negative territory supported the appreciation of the U.S. dollar against the euro. For example, the interest rate on the five-year German bund declined to below zero for the first time in January and finished the quarter at -10 basis points. Lastly, continued concerns about protracted program negotiations between Greece and the ECB, International Monetary Fund, and European Commission supported some of the dollar's appreciation against the euro. However, reduced investor exposures to Greece and a stronger institutional framework in the euro area served to notably moderate Greece's impact on the euro.

The euro's depreciation also had implications for other European currencies. On January 15, the Swiss National Bank (SNB) unexpectedly removed the currency floor of 1.20 Swiss francs per euro that had been in place since September 2011, during which time it had occasionally intervened in currency markets by purchasing euros against the Swiss franc. The decision to remove the currency floor resulted in significant volatility in the Swiss franc, as the euro–Swiss franc currency pair immediately depreciated nearly 30 percent before partially recovering over subsequent days. The SNB cited external developments such as the expansion of the asset purchase program by the ECB as necessitating the removal of the currency floor. Furthermore, the SNB stated that the pressure on the minimum exchange rate intensified significantly in early 2015 and rendered the policy "unsustainable." On net, the euro–Swiss franc currency pair depreciated 13.2 percent over the quarter, to the level of 1.04377 Swiss francs per euro.

In the aftermath of the SNB decision, the Danish krone—which is pegged to the euro within Exchange Rate Mechanism II (ERM II)—faced capital inflows and appreciation pressure as market participants turned their attention to similar exchange rate arrangements and questioned the central bank's commitment to accumulating euro-denominated foreign exchange reserves to defend the krone peg. The Danish National Bank responded with an array of tools, including four deposit rate cuts from -5 basis points to -75 basis points and record levels of currency intervention through krone sales in late January and early February. The krone later stabilized, and it has since depreciated toward the weaker end of the euro–Danish krone exchange rate currency band.

Chart 5

QUARTERLY CHANGE IN SELECT OVERNIGHT INDEX SWAP RATES



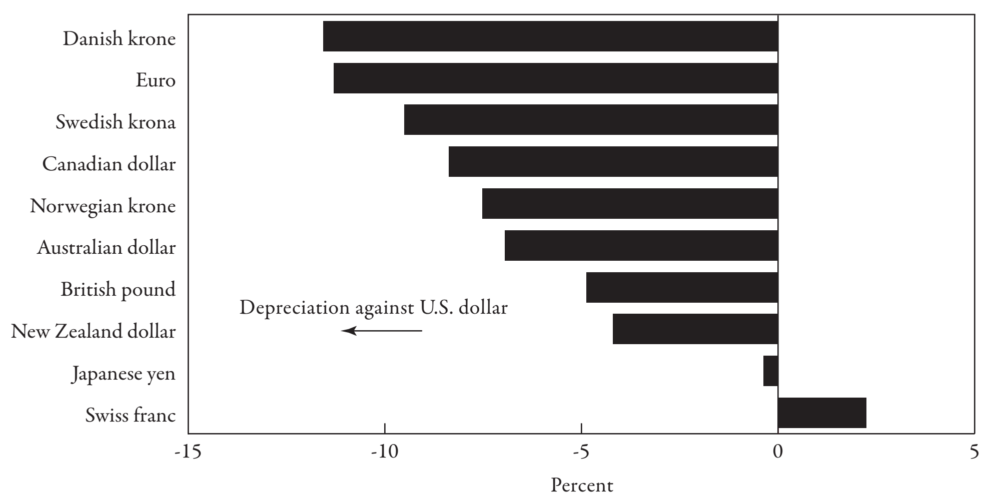
Source: Bloomberg L.P.

Elsewhere in Europe, Sweden's Riksbank implemented a negative policy rate following the announcement of the ECB's purchase program. The Riksbank lowered its repurchase rate twice from zero to -25 basis points and launched a small, open-ended sovereign asset purchase program, citing risks to the inflation outlook. On net, the Swedish krone appreciated 2 percent against the euro and depreciated 9.6 percent against the U.S. dollar during the quarter.

The U.S. dollar was little changed against the Japanese yen during the quarter, with the currency pair trading mostly within the range of 117 to 121 yen per dollar. Most market participants characterized the relatively steady U.S. dollar–yen exchange rate as reflecting diminished near-term expectations for additional easing by the Bank of Japan (BoJ) after the central bank's unexpected expansion of the Quantitative and Qualitative Monetary Easing program in late October 2014. Indeed, the subdued price action in the currency pair followed notable dollar–yen appreciations of 8.2 and 9.2 percent in the third and fourth quarters of 2014, respectively.

Chart 6

U.S. DOLLAR PERFORMANCE AGAINST DEVELOPED MARKET CURRENCIES DURING FIRST QUARTER



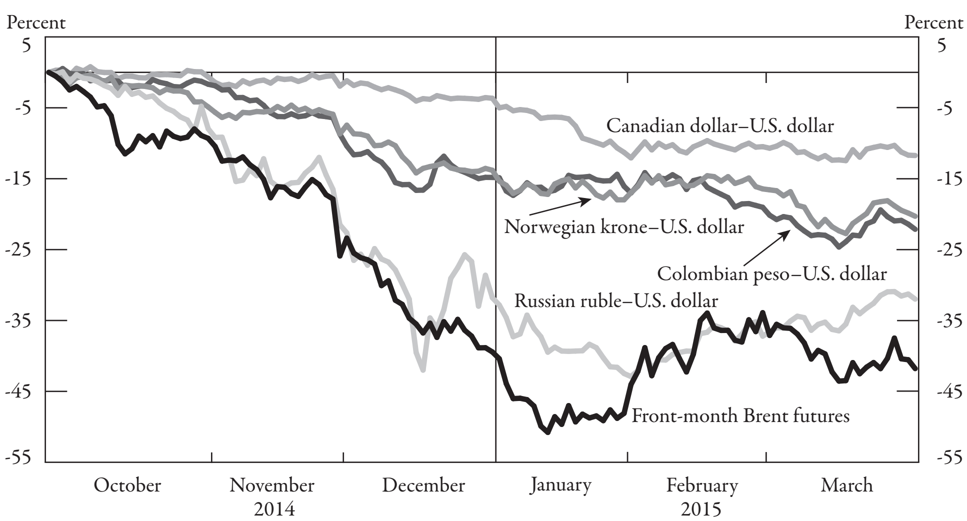
Source: Bloomberg L.P.

PACE OF EMERGING MARKET AND COMMODITY CURRENCY DEPRECIATION SLOWS AMID A STABILIZATION IN COMMODITY PRICES

The currencies of oil-exporting countries stabilized somewhat during the latter half of the quarter after experiencing notable depreciation during the fourth quarter of 2014 through January 2015. During that time, currencies such as the Canadian dollar, Norwegian krone, and Mexican peso depreciated between 11 and 13 percent, consistent with the roughly 44 and 47 percent decline in front-month Brent and West Texas Intermediate crude oil futures, respectively. Analysts attributed the decline in oil prices through January to greater-than-expected supply, especially following the OPEC (Organization of the Petroleum Exporting Countries) meeting in November, at which the group decided not to cut production, and, to a lesser extent, lower demand from the euro area and Japan. By early February, the price of oil had stabilized somewhat as incoming data showed declines to both U.S. oil rig count and planned capital expenditure, which was interpreted as lowering future oversupply, and as investors consolidated positions after the large price declines seen in previous quarters. Following the January trough in oil prices, the pace of depreciation of emerging market and commodity-related currencies slowed notably. During February and March, these currencies were fairly range-bound but still depreciated slightly against the U.S. dollar. The stability in oil prices had the most notable impact on the Russian ruble, which appreciated 4.4 percent against the U.S. dollar over the quarter as the apparent stabilization in oil prices diminished the significant economic headwinds that were present for much of the past year.

Chart 7

CRUDE OIL PRICES AND CURRENCIES OF NET OIL EXPORTERS



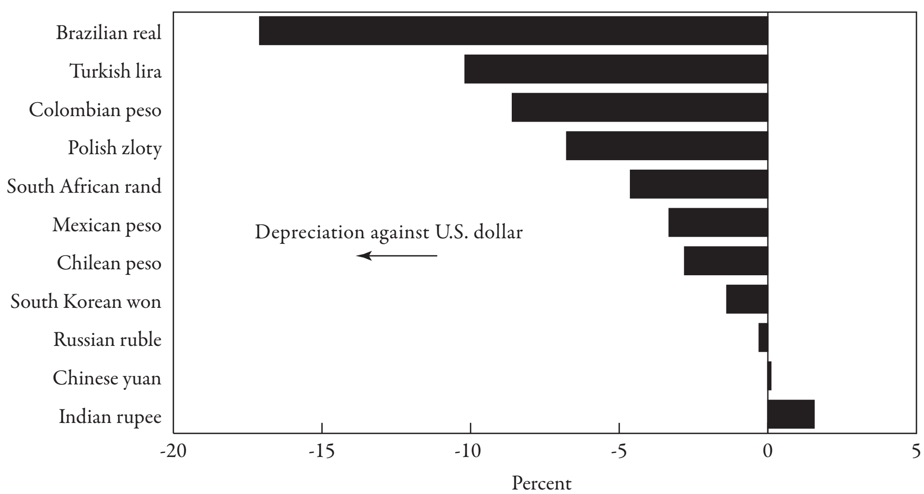
Source: Bloomberg L.P.

Other emerging market currencies, such as the South African rand, Indonesian rupiah, and Malaysian ringgit, also depreciated against the U.S. dollar, although by less than those of oil-exporting countries. The broader depreciation of emerging market currencies was mainly centered around expectations for U.S. monetary policy normalization by the FOMC. Idiosyncratic factors, however, also differentiated the performance of some currencies. For example, in Brazil, a tepid 2015 growth outlook, declining terms of trade brought about by lower commodity prices, and a focus on the fiscal outlook contributed to the Brazilian real's 16.9 percent depreciation against the U.S. dollar. In contrast, the Indian rupee appreciated 0.9 percent against the U.S. dollar, as a steady improvement in India's current account deficit, a stable inflation outlook, and fiscal consolidation supported the country's growth outlook.

Separately, the Chinese renminbi was little changed against the U.S. dollar, and the central parity rate set by the People's Bank of China (PBoC) depreciated 0.4 percent. Earlier in the quarter, the

Chart 8

U.S. DOLLAR PERFORMANCE AGAINST EMERGING MARKET CURRENCIES DURING FIRST QUARTER



Source: Bloomberg L.P.

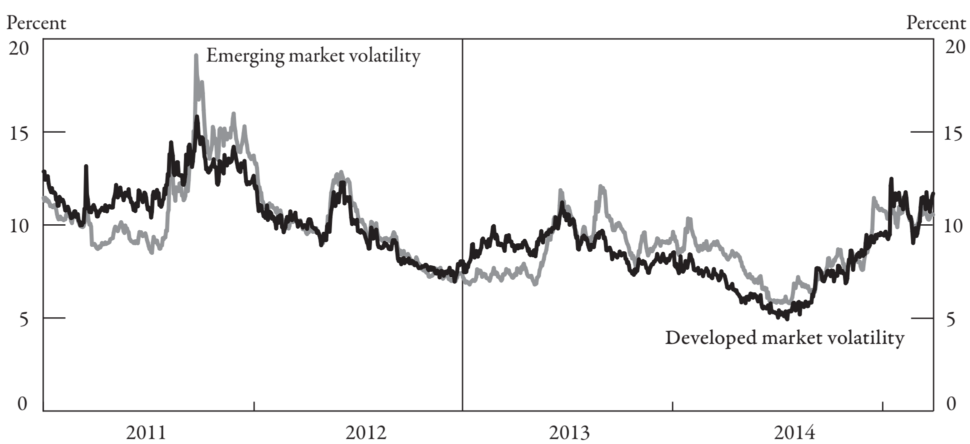
renminbi had depreciated against the dollar amid weaker-than-expected economic activity data and additional broad-based monetary easing measures by the PBoC, including further cuts to benchmark interest rates and the required reserve ratio. However, the renminbi appreciated in the latter half of the quarter.

FOREIGN EXCHANGE VOLATILITY CONTINUES TO INCREASE

During the period, both option-implied and realized currency volatility continued to increase from their respective multiyear lows in the middle of 2014. The theme of divergent growth and monetary policy outlooks was a primary driver of the sustained increase in implied currency volatility over the past three quarters. For example, implied volatility for the euro–U.S. dollar currency pair reached its highest level since 2012 for the one-month option tenor around the time of the ECB's announcement to expand the pace of policy accommodation. Similarly, the SNB's unexpected decision to remove the 1.20-per-euro floor resulted in a significant volatility shock across foreign exchange markets. This was most notable among Swiss franc currency pairs. For example, one-month implied volatility on the euro–Swiss franc currency pair immediately increased by a factor of nine on the announcement, before steadily subsiding in the following weeks. Other factors, such as continued concerns about the Greek outlook and the May 7 election in the United Kingdom, contributed to the relatively higher levels of option-implied foreign exchange volatility for the euro and the British pound. For example, the British pound–U.S. dollar volatility term structure became inverted as options markets began pricing in a higher degree of near-term risk surrounding the U.K. election.

Chart 9

OPTION-IMPLIED DEVELOPED AND EMERGING MARKET CURRENCY VOLATILITY



Sources: Deutsche Bank; JPMorgan Chase.

TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE HOLDINGS

The U.S. monetary authorities did not undertake any intervention operations during the quarter. As of March 31, the value of the U.S. Treasury's Exchange Stabilization Fund foreign-currency-denominated assets totaled $19.48 billion, comprised of euro and yen holdings. The Federal Reserve System Open Market Account holdings of foreign-currency-denominated assets totaled $19.50 billion, also comprised of euro and yen holdings.

Liquidity Swap Arrangements with Foreign Central Banks

As of March 31, the BoJ had $810 million of outstanding swaps, all in a seven-day transaction over the quarter-end. The Bank of Canada, Bank of England, ECB, and SNB did not have any outstanding swaps at the end of the quarter. On February 25, the Federal Reserve Bank of New York performed the second non-U.S. dollar liquidity swap small value exercise, in which the Federal Reserve drew euros from the euro liquidity swap line with the ECB. As in October 2014, the purpose of this small-value operation was to test the operational readiness of the swap arrangements. [1]

Foreign Exchange Reserve Holdings

The U.S. monetary authorities invest their foreign currency reserves, which are held in the System Open Market Account (SOMA) and the Exchange Stabilization Fund (ESF), in a variety of instruments that yield market rates of return in their respective currencies and have a high degree of liquidity and credit quality. The Authorization for Foreign Currency Operations defines the permitted investments for the SOMA foreign currency portfolio. Of note, at the January FOMC meeting, a change was made to the Authorization for Foreign Currency Operations to increase the duration limit of the foreign currency portfolio to twenty-four months from eighteen months. This change was made to provide greater flexibility in the management of the foreign currency portfolio, in an environment in which interest rates are low in many major economies. A similar change was made for the ESF portfolio.

A significant portion of the U.S. monetary authorities' foreign exchange reserves is typically invested on an outright basis in German, French, and Japanese government securities. A smaller portion of the reserves is typically invested in euro-denominated repurchase agreements. The securities accepted in repurchase agreements are typically consistent with the investments made on an outright basis. Foreign currency reserves may also be invested at the Bank for International Settlements and in

[1] Federal Reserve Bank of New York's press statement: http://www.newyorkfed.org/markets/opolicy/operating_policy_141021.html

facilities at other official institutions such as the Deutsche Bundesbank, the Banque de France, and the BoJ. To the greatest extent practicable, the investments are split evenly between the SOMA and the ESF.

As of March 31, the euro reserves held by both the SOMA and ESF totaled $23.4 billion. Cash held in euro-denominated deposits at official institutions declined to $12.3 billion from $13.8 billion, while direct holdings of euro-denominated government securities declined to $11.1 billion from $12.6 billion. Foreign government securities held under repurchase agreements remained at zero. The portfolio allocation at quarter-end continues to reflect extremely low or negative rates across money market instruments in the euro area. The amount of yen-denominated deposits and government securities has remained fairly steady over recent quarters, totaling $15.6 billion at year-end. In addition, on January 29, the Federal Reserve Bank of New York entered into a small-value repurchase agreement in which the SOMA and ESF borrowed cash against sovereign securities held outright in the portfolio. The small-value transaction was undertaken for the purpose of testing operational readiness.

Table 1

FOREIGN CURRENCY HOLDINGS OF U.S. MONETARY AUTHORITIES BASED ON CURRENT EXCHANGE RATES

Millions of U.S. Dollars

		Changes in Balances by Source				
	Carrying Value, December 31, 2014[a]	Net Purchases and Sales[b]	Investment Earnings[c]	Realized Gains/Losses on Sales[d]	Unrealized Gains/Losses on Foreign Currency Revaluation[e]	Carrying Value, March 31, 2014[a]
Federal Reserve System Open Market Account (SOMA)						
Euro	13,197	0	9	0	(1,483)	11,723
Japanese yen	7,785	0	2	0	(7)	7,780
Total	20,982	0	11	0	(1,491)	19,502

		Changes in Balances by Source				
	Carrying Value, December 31, 2014[a]	Net Purchases and Sales[b]	Investment Earnings[c]	Realized Gains/Losses on Sales[d]	Unrealized Gains/Losses on Foreign Currency Revaluation[e]	Carrying Value, December 31, 2014[a]
U.S. Treasury Exchange Stabilization Fund (ESF)						
Euro	13,176	0	9	0	(1,481)	11,704
Japanese yen	7,785	0	2	0	(7)	7,780
Total	20,961	0	11	0	(1,488)	19,484

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

[a] Carrying value of the reserve asset position includes interest accrued on foreign currency, which is based on the "day of" accrual method.

[b] Net purchases and sales include foreign currency purchases related to official activity, repayments, and warehousing.

[c] Investment earnings include accrued interest and amortization on outright holdings.

[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

Carrying Value in Millions of U.S. Dollars, as of March31, 2015

	U.S. Treasury Exchange Stabilization Fund (ESF)[a]	Federal Reserve System Open Market Account (SOMA)[a]
Euro-denominated assets	**11,704.3**	**11,722.7**
Cash held on deposit at official institutions	6,138.5	6,156.9
Marketable securities held under repurchase agreements[b]	0.0	0.0
Marketable securities held outright	5,565.8	5,565.8
German government securities	2,254.8	2,254.8
French government securities	3,311.0	3,311.0
Japanese-yen–denominated assets	**7,779.8**	**7,779.7**
Cash held on deposit at official institutions	2,571.6	2,571.6
Marketable securities held outright	5,208.2	5,208.2
Reciprocal currency arrangements		
European Central Bank[c]		0
Bank of Japan[c]		810
Swiss National Bank[c]		0
Bank of Canada[c]		0
Bank of England[c]		0
Banco de México[c]		0

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

[a] As of March 31, the euro SOMA and ESF portfolios both had Macaulay durations of 12.6 months; the yen SOMA and ESF portfolios both had Macaulay durations of 11.8 months.

[b] Sovereign debt obligations of Belgium, France, Germany, Italy, the Netherlands, and Spain are currently eligible collateral for reverse repo transactions.

[c] Carrying value of outstanding reciprocal currency swaps with the European Central Bank, the Swiss National Bank, the Bank of Japan, the Bank of Canada, the Bank of England, and Banco de México.

Table 3

RECIPROCAL CURRENCY ARRANGEMENTS

Millions of U.S. Dollars

Institution	Amount of Facility	Outstanding as of March 31, 2015
	Federal Reserve System Open Market Account (SOMA)	
Reciprocal Currency Arrangement		
Bank of Canada	2,000	0
Banco de México	3,000	0
Standing Dollar Liquidity Swap Arrangement		
European Central Bank	No preset limit	0
Swiss National Bank	No preset limit	0
Bank of Japan	No preset limit	810
Bank of Canada	No preset limit	0
Bank of England	No preset limit	0
	No preset limit	810
Standing Foreign Currency Liquidity Swap Arrangement		
European Central Bank	No preset limit	0
Swiss National Bank	No preset limit	0
Bank of Japan	No preset limit	0
Bank of Canada	No preset limit	0
Bank of England	No preset limit	0
	No preset limit	0
	U.S. Treasury Exchange Stabilization Fund (ESF)	
Banco de México	3,000	0
	3,000	0