TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS

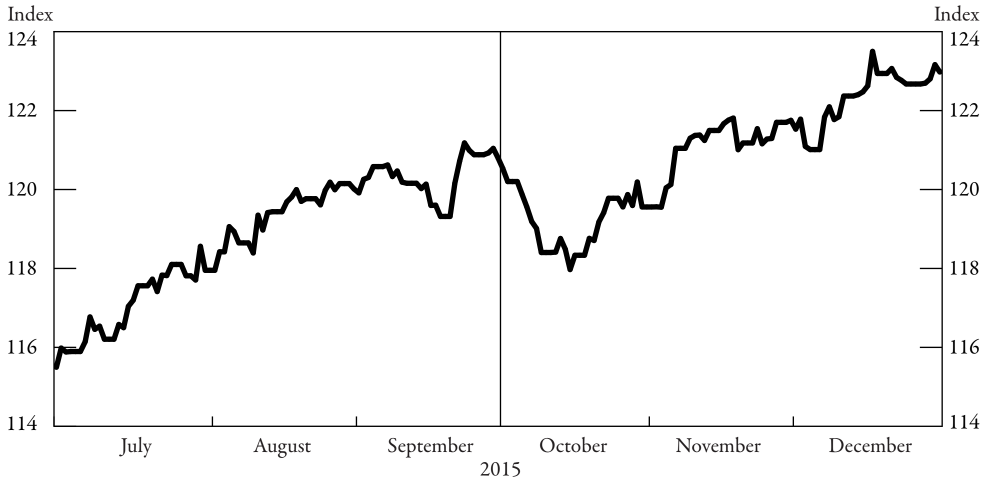
October–December 2015

In the fourth quarter of 2015, the U.S. dollar continued to appreciate, with the broad trade-weighted U.S. dollar index rising roughly 2.0 percent, bringing the increase for all of 2015 to more than 10 percent. The dollar was supported by a number of factors, including increased market expectations for the Federal Open Market Committee (FOMC) to raise the target range for the federal funds rate by the end of the year and further in 2016, continued declines in oil prices, and accommodative monetary policy actions by some foreign central banks. Notably, increased expectations for the European Central Bank (ECB) to announce additional easing measures, which were realized in December, were a major factor in the U.S. dollar's 2.9 percent appreciation against the euro during the period. The U.S. dollar also appreciated against the Chinese renminbi amid numerous policy actions by Chinese authorities. In contrast to the broad appreciation of the dollar against other currencies, the U.S. dollar was little changed against the 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 October through December 2015. Doug Scrivani was primarily responsible for preparation of the report.

Chart 1

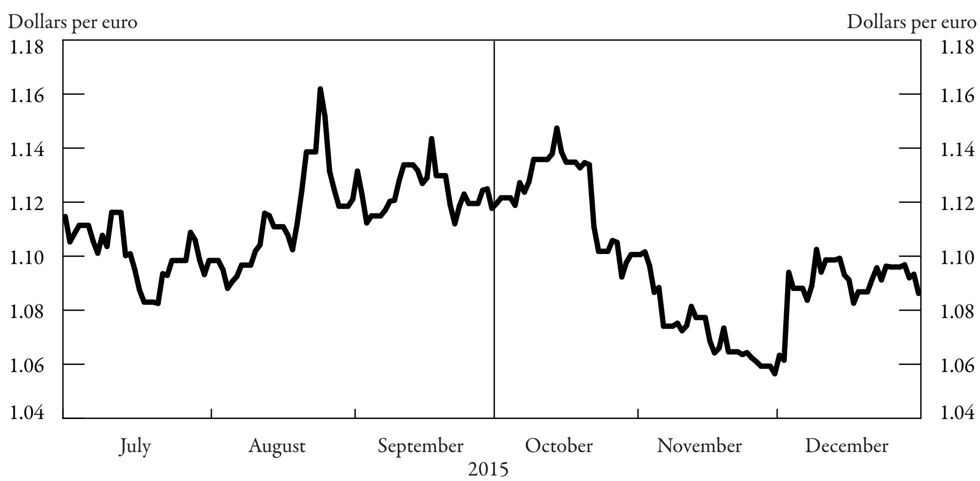
BROAD TRADE-WEIGHTED U.S. DOLLAR INDEX



Sources: Board of Governors of the Federal Reserve System; Bloomberg L.P.

Chart 2

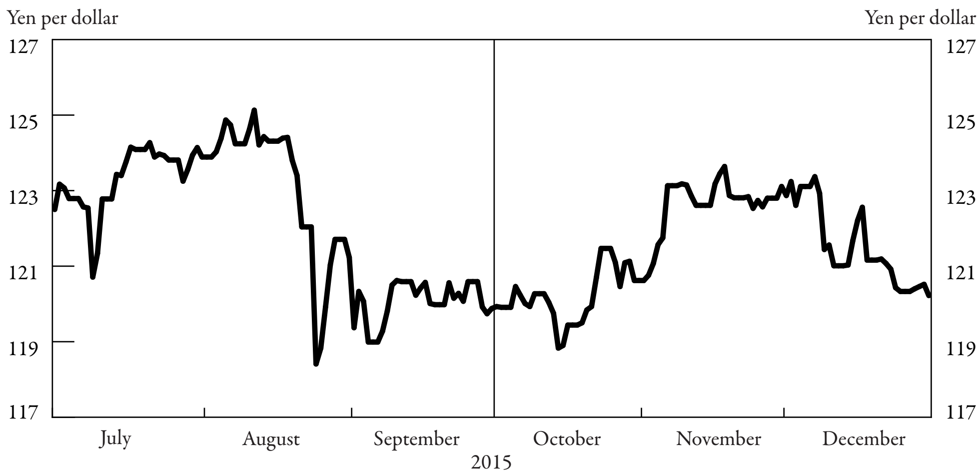
EURO–U.S. DOLLAR EXCHANGE RATE



Source: Bloomberg L.P.

Chart 3

U.S. DOLLAR–YEN EXCHANGE RATE



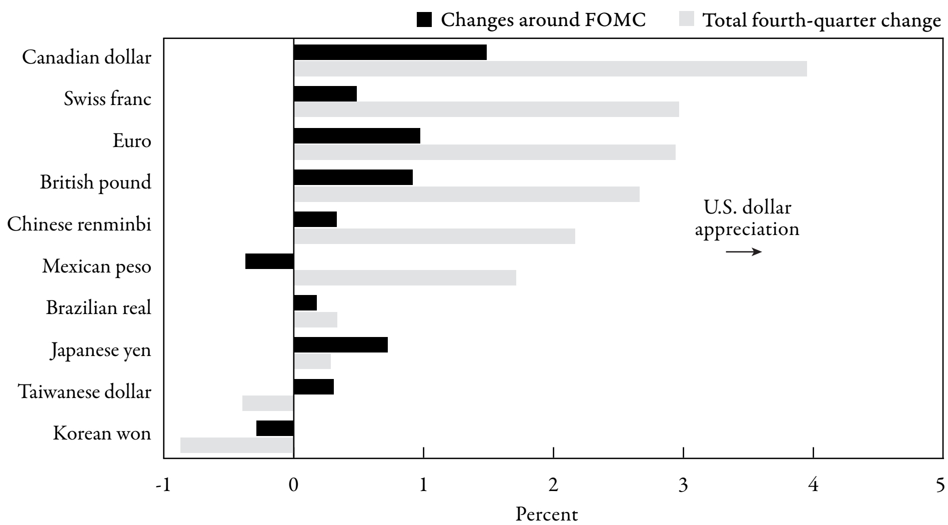
Source: Bloomberg L.P.

STRONG LABOR MARKET DATA AND ANTICIPATION OF FOMC TARGET RATE INCREASE SUPPORT DOLLAR'S STRENGTH

During the fourth quarter of 2015, the U.S. dollar continued to appreciate against most developed and emerging market currencies. The Federal Reserve Board's trade-weighted broad dollar index rose roughly 2.0 percent, marking a 10.5 percent rise in 2015. Among the factors supporting dollar appreciation were improving domestic labor market data and, to a lesser extent, communications from the FOMC, which raised expectations that the target range for the federal funds rate would be increased in December. Indeed, ahead of the December 16 FOMC meeting, the implied rate on the January federal funds futures contract rose from 24 basis points at the start of the quarter to 32 basis points.

The October and November Employment Situation reports both showed a larger-than-expected increase in nonfarm payrolls, while the unemployment rate remained unchanged at 5.0 percent and wage data was mixed. The nonfarm payrolls data helped solidify expectations for an increase in the federal funds range. Prior to the data releases, market participants had interpreted changes to language on forward guidance in the October FOMC statement as reflecting that the Committee was closer to hiking rates than was previously thought, which also increased expectations for action at the December FOMC meeting. Taken together, these factors contributed to a 1.4 percent appreciation in the trade-weighted U.S. dollar index from the beginning of the quarter to the start of the meeting.

Chart 4
FOREIGN EXCHANGE PRICE MOVEMENTS DURING FOURTH QUARTER AND AROUND THE DECEMBER FOMC MEETING



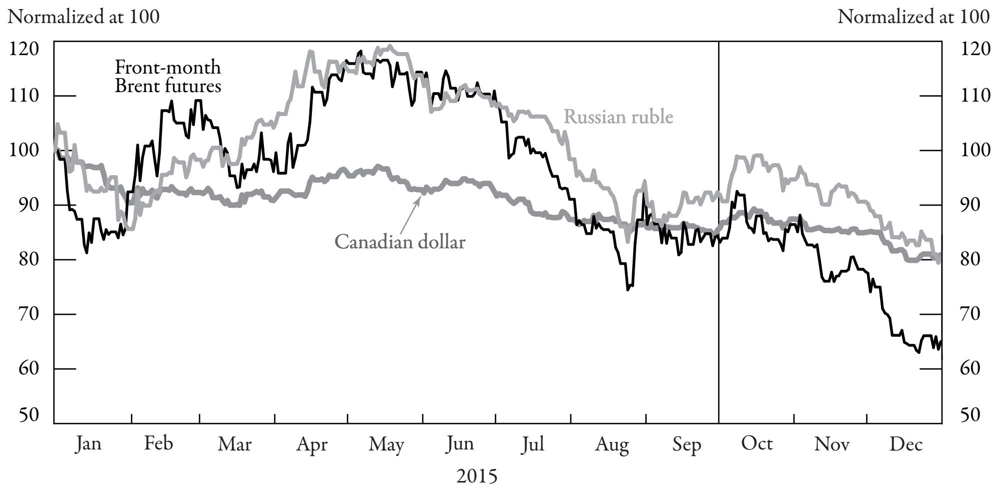
Sources: Board of Governors of the Federal Reserve System; Bloomberg L.P.
Notes: The five emerging and developed market currencies shown in the chart were selected based on their trade weights in the broad trade-weighted dollar index. The change following the Federal Open Market Committee (FOMC) meeting reflects price action from December 15, 2015, to December 17, 2015.

At its December meeting, the FOMC raised the target range for the federal funds rate from 0 to 25 basis points to 25 to 50 basis points while also indicating that the stance of monetary policy remains accommodative and supportive of further improvement in labor market conditions and a return to 2 percent inflation. Consistent with the decision being largely expected by market participants, the price response across financial assets was rather muted immediately following the December FOMC communications, and there was minimal market volatility.

In the few days after the decision by the FOMC, the U.S. dollar appreciated against most developed market currencies but was little changed against emerging market currencies, suggesting that the latter had become less sensitive to the timing of liftoff compared with prior periods. This reduced sensitivity may have been the result of a number of factors, including reduced investor positioning, lower asset price valuation, stronger fundamentals in select emerging market economies, and the expected nature of the action by the FOMC.

In reaction to the decision by the FOMC, emerging market countries that peg their currencies to the U.S. dollar, such as Hong Kong, Saudi Arabia, and Kuwait, also raised their policy rates following the decision. In addition, the Bank of Mexico raised its target rate 25 basis points, noting that without an increase to the policy rate, there may have been additional pressure on the exchange rate that could have had an effect on inflation and inflation expectations.

Chart 5
CRUDE PRICES AND OIL EXPORTERS



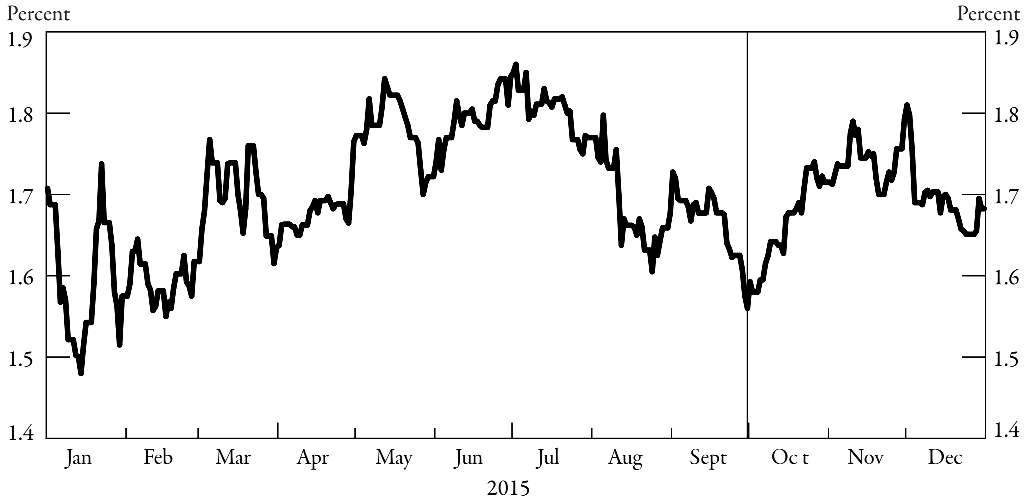
Source: Bloomberg L.P.

INTERNATIONAL FACTORS INCLUDING DECLINES IN OIL PRICES AND POLICY ACTION BY THE ECB SUPPORT A STRONGER DOLLAR

During the quarter, there were a number of international developments that supported the U.S. dollar against developed and some emerging market currencies. In particular, the decline in oil prices contributed to sharp appreciation of the dollar against the currencies of major oil exporters. The U.S. dollar appreciated against the Russian ruble and Colombian peso by 11.0 and 2.8 percent, respectively, while in developed markets the U.S. dollar appreciated against the Canadian dollar by 4.0 percent and the Norwegian krone by 3.9 percent. Front-month Brent crude futures fell 22.9 percent during the quarter, a decline that market participants attributed mostly to supply-related issues. At its December meeting, OPEC (Organization of the Petroleum Exporting Countries) excluded a specific production quota, a move that market participants interpreted as increasing the likelihood of higher OPEC production in 2016.

The U.S. dollar was largely unchanged against the Japanese yen during the quarter. The Bank of Japan (BoJ) left its policy stance unchanged, though it did make technical adjustments to its Qualitative and Quantitative Easing (QQE) program at its December policy meeting. Market participants were primarily focused on the announced extension of the average maturity of the central bank's government bond purchases. The change was interpreted by many as an operational adjustment to address concerns that the BoJ may face technical constraints in its bond purchases beyond 2016.

Chart 6
FIVE-YEAR/FIVE-YEAR-FORWARD EURO-AREA INFLATION SWAP RATE

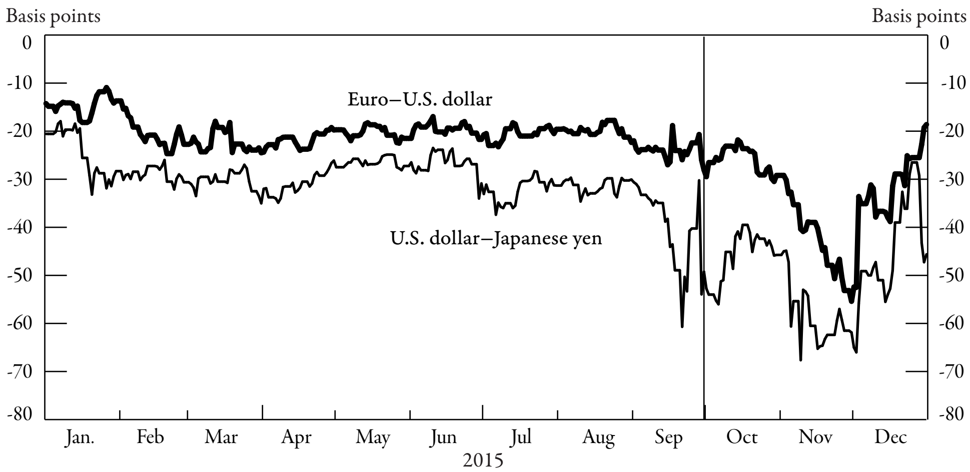


Source: Bloomberg L.P.

In contrast to the actions of the Federal Reserve and the BoJ, the ECB announced further accommodative measures during the quarter. Owing to continued downside risks to the ECB's inflation and growth outlooks, ECB President Draghi noted at the press conference for the October ECB policy meeting that the Governing Council would reevaluate the stance of policy at its December meeting. In anticipation of further easing measures being announced at the December ECB meeting, the U.S. dollar appreciated sharply against the euro, and the five-year euro-area inflation swap rate, five years forward, rose from its September lows. At its December meeting, the ECB announced a 10 basis point deposit rate cut, to -30 basis points, and at least a six-month extension to the asset purchase program. These measures were viewed by some market participants as less accommodative than expected, causing an abrupt and sharp weakening of the dollar against the euro and double-digit increases in short- and longer-dated German government notes. Nevertheless, the dollar appreciated 2.9 percent against the euro during the quarter, and the spread between U.S. and German two- and ten-year government securities widened by 51 and 19 basis points, respectively.

Diverging monetary policy dynamics also generally contributed to the widening in the foreign exchange swap basis of U.S. dollar currency pairs over the quarter, before retracing into the end of the year. The swap basis represents the premium to borrow dollars in the foreign exchange swap market relative to LIBOR. Cross-border flows and non-U.S. financial firms seeking higher-yielding U.S. assets likely caused the foreign exchange swap basis to widen given the increased demand for U.S. dollars in the foreign exchange swap market. The widening did not reflect stress in offshore funding markets.

Chart 7
THREE-MONTH CROSS CURRENCY SWAP BASIS



Source: Bloomberg L.P.

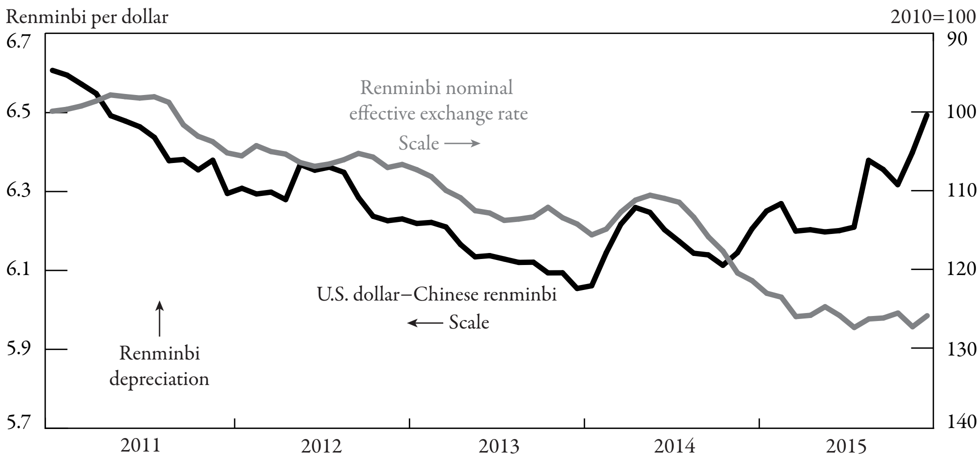
DOLLAR APPRECIATES AGAINST CHINESE RENMINBI

During the quarter, the U.S. dollar appreciated against the on- and offshore Chinese renminbi (RMB) by 2.2 and 3.2 percent, respectively, ending 2015 at its strongest level against the renminbi since 2011. Citing numerous factors, including growth headwinds, high real interest rates, and the maintenance of liquidity in the banking system, the People's Bank of China (PBoC) announced a host of additional policy measures during the fourth quarter. At its October meeting, the PBoC cut its benchmark lending and deposit interest rates by 25 basis points, cut the required reserve ratio (RRR) by 50 basis points for all financial institutions, made additional targeted RRR cuts, and removed the deposit rate ceiling for commercial banks and other institutions.

Also in relation to the PBoC's policy framework, on December 11 the China Foreign Exchange Trading System (CFETS) announced that it would begin publishing a trade-weighted renminbi index based on a basket of thirteen currencies. The CFETS stated that the new index should help maintain the stability of the RMB and offer a "more comprehensive and accurate way to assess market conditions." Market participants viewed the decision as part of Chinese authorities' attempts to increase market focus on the renminbi on a trade-weighted basis.

Chart 8

U.S. DOLLAR–CHINESE RENMINBI EXCHANGE RATE AND RENMINBI TRADE-WEIGHTED EXCHANGE RATE



Sources: Bloomberg L.P.; Bank for International Settlements.

Outside of price action in the exchange rate pair, on November 30 the Executive Board of the International Monetary Fund (IMF) announced that the Chinese RMB will be included as the fifth currency in the IMF's Special Drawing Rights (SDR) currency basket. The inclusion of the RMB is expected to take place in October 2016. The RMB was assigned a weight of 10.9 percent under the new currency basket. The SDR interest rate will continue to be determined as a weighted-average rate of short-term financial instruments in the markets of the currencies in the basket.

TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE HOLDINGS

The U.S. monetary authorities did not undertake any intervention operations during the quarter. As of December 31, the value of the U.S. Treasury's Exchange Stabilization Fund foreign-currency-denominated assets totaled \$19.61 billion, comprised of euro and yen holdings. The Federal Reserve System Open Market Account holdings of foreign-currency-denominated assets totaled \$19.63 billion, also comprised of euro and yen holdings.

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.

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 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 December 31, the euro reserves held by both the SOMA and ESF totaled $23.71 billion. Cash held in euro-denominated deposits at official institutions decreased to $12.41 billion from $12.77 billion, while direct holdings of euro-denominated government securities decreased to $11.30 billion from $11.60 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 $15.53 billion at quarter-end.

Liquidity Swap Arrangements with Foreign Central Banks

As of December 31, the BoJ had $72 million and the ECB had $925 million of swaps in seven-day transactions outstanding. The Bank of Canada, Bank of England, and Swiss National Bank did not have any dollar swaps outstanding at the end of the quarter.

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, September 30, 2015[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, 2015
Federal Reserve System Open Market Account (SOMA)						
Euro	12,194	0	3	0	(331)	11,866
Japanese yen	7,793	0	1	0	(30)	7,764
Total	19,986	0	5	0	(361)	19,630

		Changes in Balances by Source				
	Carrying Value, September 30, 2015[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, 2015
U.S. Treasury Exchange Stabilization Fund (ESF)						
Euro	12,175	0	3	0	(330)	11,848
Japanese yen	7,793	0	1	0	(30)	7,764
Total	19,967	0	5	0	(360)	19,612

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 December 31, 2015

	U.S. Treasury Exchange Stabilization Fund (ESF)[a]	Federal Reserve System Open Market Account (SOMA)[a]
Euro-denominated assets	**11,847.5**	**11,866.1**
Cash held on deposit at official institutions	6,198.0	6,216.6
Marketable securities held under repurchase agreements[b]	0.0	0.0
Marketable securities held outright	5,649.5	5,649.5
German government securities	2,288.3	2,288.3
French government securities	3,361.2	3,361.2
Japanese-yen-denominated assets	**7,764.4**	**7,764.4**
Cash held on deposit at official institutions	2,568.1	2,568.0
Marketable securities held outright	5,196.3	5,196.3
Reciprocal currency arrangements		
European Central Bank[c]		925
Bank of Japan[c]		72
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 December 31, the euro SOMA and ESF portfolios both had Macaulay durations of 12.4 months; the yen SOMA and ESF portfolios both had Macaulay durations of 13.3 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 December 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	925
Swiss National Bank	No preset limit	0
Bank of Japan	No preset limit	72
Bank of Canada	No preset limit	0
Bank of England	No preset limit	0
	No preset limit	997
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