TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS

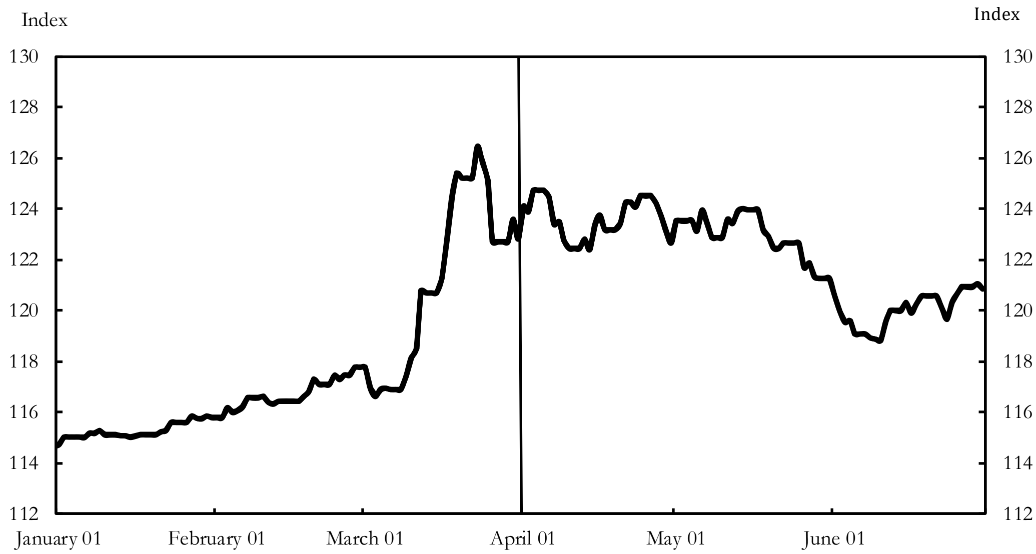
April – June 2020

During the second quarter of 2020, the U.S. dollar, as measured by the Federal Reserve Board's broad trade-weighted dollar index, depreciated 2 percent, reversing some of the currency's sharp appreciation during the first quarter. The dollar's depreciation was primarily driven by a reversal in "safe-haven" flows stemming from the improvement in global risk sentiment amid significant monetary and fiscal stimulus globally and the easing of coronavirus-related lockdowns. The dollar depreciated against most emerging market and advanced market currencies, though it appreciated slightly against the Japanese yen. Exchange rates were less volatile during the second quarter compared to the prior quarter as broader financial markets stabilized and liquidity conditions recovered. On a bilateral basis, the U.S. dollar depreciated 3 percent against the Mexican peso, 3.6 percent against the Canadian dollar, and 1.8 percent against the euro. In contrast, it appreciated 0.4 percent against the Japanese yen. The Federal Reserve and U.S. Treasury did not intervene in foreign exchange markets during the quarter.

This report, presented by Lorie Logan, Executive Vice President, Federal Reserve Bank of New York, System Open Market Account Manager, describes the foreign exchange operations of the U.S. Department of the Treasury and the Federal Reserve System for the period from April through June 2020. Ingrid Tang was primarily responsible for preparation of the report.

Chart 1

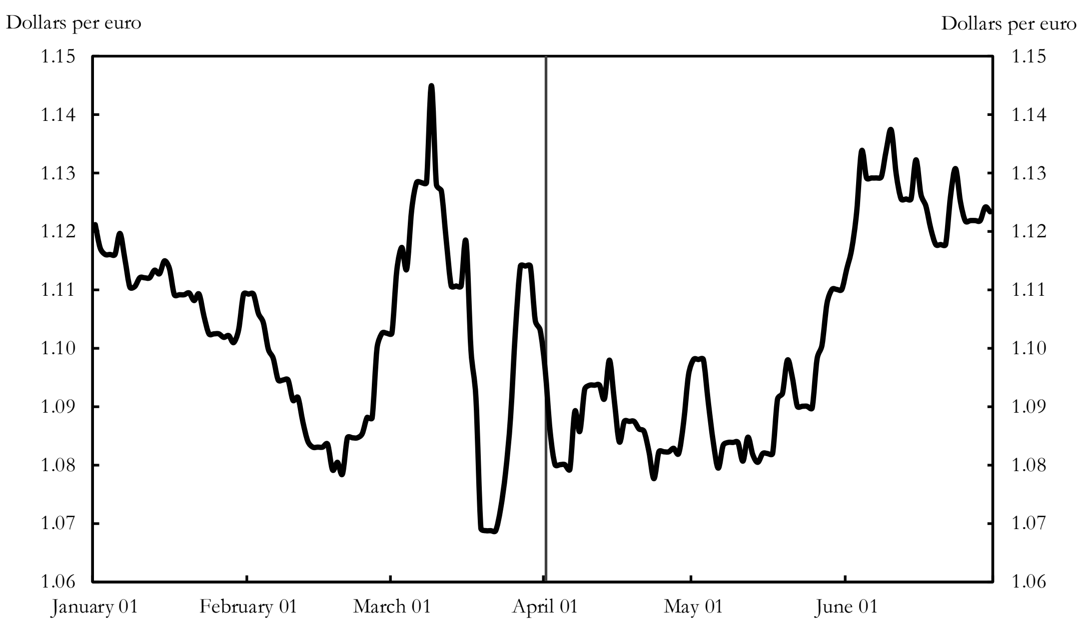
BROAD TRADE-WEIGHTED U.S. DOLLAR INDEX



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

Chart 2

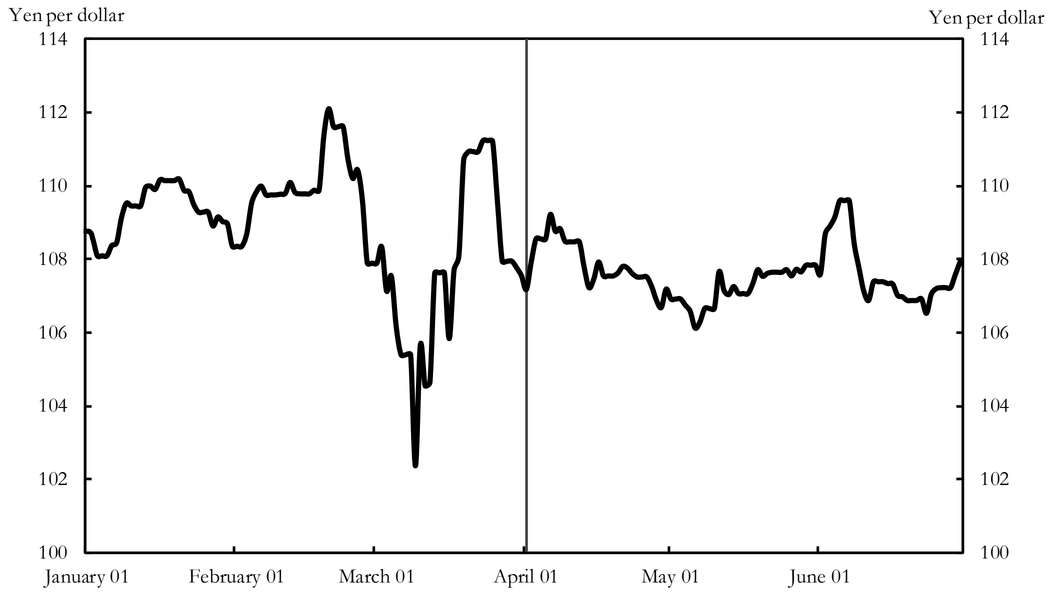
EURO–U.S. DOLLAR EXCHANGE RATE



Source: Bloomberg L.P.

Chart 3

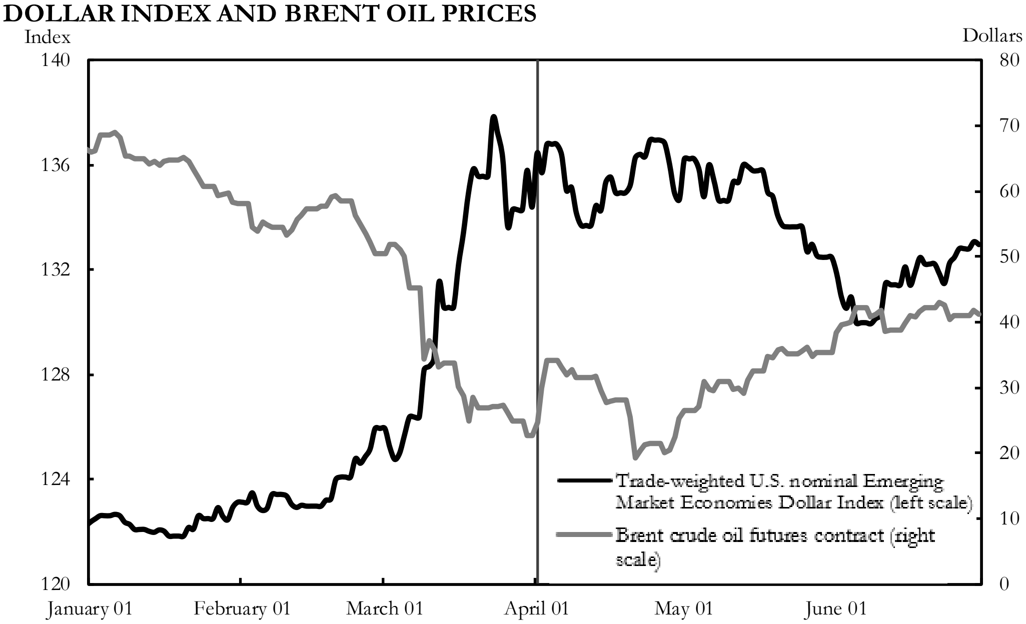
U.S. DOLLAR–YEN EXCHANGE RATE



Source: Bloomberg L.P.

Chart 4

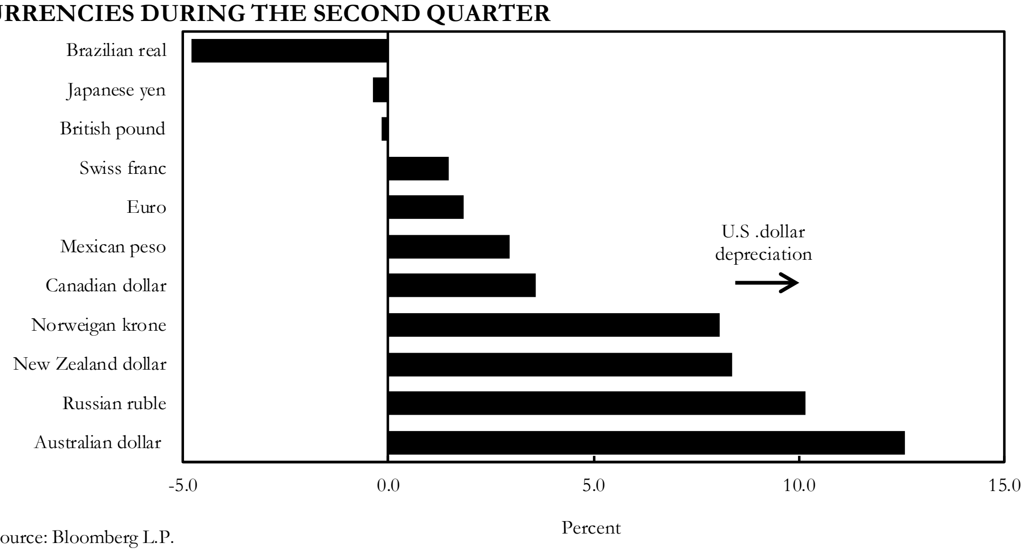
U.S. TRADE-WEIGHTED NOMINAL EMERGING MARKET ECONOMIES DOLLAR INDEX AND BRENT OIL PRICES



Source: Bloomberg L.P.

Chart 5

U.S. DOLLAR PERFORMANCE AGAINST DEVELOPED AND EMERGING MARKET CURRENCIES DURING THE SECOND QUARTER



Source: Bloomberg L.P.

U.S. DOLLAR DEPRECIATES AMID IMPROVING GLOBAL RISK SENTIMENT AND SOME REVERSAL IN SAFE-HAVEN DEMAND

During the second quarter of 2020, the U.S. dollar, as measured by the Federal Reserve Board's broad trade-weighted dollar index, depreciated 2 percent, reversing some of the sharp appreciation seen during the first quarter.[1] The dollar depreciated notably against most advanced and emerging market currencies, particularly commodity-sensitive currencies. Despite this broad depreciation during the quarter, the dollar remained near historical highs following its significant appreciation in the prior quarter. For context, the first quarter's 7.1 percent appreciation in the dollar was the largest quarterly appreciation since the fourth quarter of 1997.

For the first half of the quarter, a number of crosscurrents resulted in the dollar trading in a relatively narrow range. On the one hand, the dollar faced depreciation pressures as broader financial markets stabilized on the back of significant fiscal and monetary policy stimulus in the United States and abroad, as well as some early indications that COVID-19 cases globally were stabilizing. On the other hand, the sharp deterioration in global economic data and signs of an escalation in U.S.–China geopolitical and trade tensions helped support the dollar during this time.

[1] The Federal Reserve's broad trade-weighted dollar index is based on twenty-six currencies, including major advanced market currencies and currencies of other important trading partners of the United States, including emerging markets.

Starting in mid-May, however, the dollar's depreciation accelerated as risk sentiment improved amid announcements of easing lockdown measures in various economies and some better-than-expected U.S. economic data, as well as additional supportive policy announcements from the Federal Reserve.

The trade-weighted dollar index declined to its lowest level since the early stages of the COVID-19 crisis after the Federal Open Market Committee (FOMC) announced several new and enhanced measures following its June policy meeting. Markets perceived the FOMC announcements as signaling that monetary policy will remain accommodative for an extended period, illustrated by the median projection for the federal funds rate implying no interest rate changes over the next two years. The FOMC also said the Federal Reserve will expand its purchase program by increasing its holdings of Treasury securities and mortgage-backed securities by at least $120 billion per month. Later in June, the Federal Reserve's Main Street Lending Program was launched after being announced in late March. On June 15, the Federal Reserve's corporate bond purchase program began purchasing eligible individual corporate bonds to create a corporate bond portfolio that tracks a broad market index, rather than just eligible corporate-bond exchange-traded funds. And on June 29, the Federal Reserve announced it would buy bonds in the primary market.

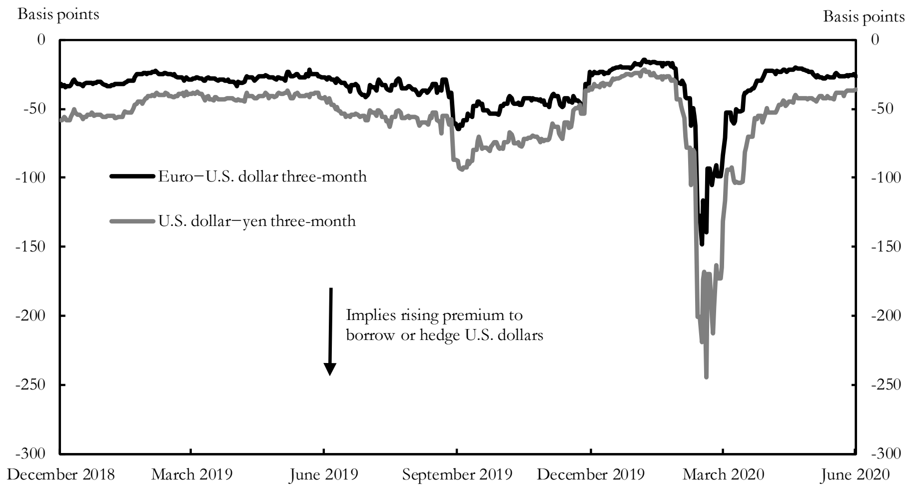
Also around this time, some better-than-anticipated U.S. economic data served to support broader market risk appetite, further prompting a partial reversal of the dollar's appreciation earlier in the year. Most notably, the May Employment Situation Report exceeded expectations, as nonfarm payrolls increased by 2.5 million[2] jobs compared to the median Bloomberg estimate of a decrease of 7.5 million jobs. The unemployment rate decreased to 13.3 percent, compared to expectations for an increase to 19 percent. The better-than-expected data and the momentum that followed were seen as further supporting the global recovery from the COVID-19 shock.

Finally, the easing of dollar appreciation pressures coincided with improving dollar funding conditions abroad, characterized by a decrease in the premium to borrow dollars in the foreign exchange swap market. Foreign exchange swap basis spreads of key currency pairs significantly narrowed from their late March levels, and trading conditions appeared to have returned to pre-COVID-19 norms. Aggregate outstanding balances at the U.S. dollar swap lines also began to roll off in early June, as many of the eighty-four-day tenors were not fully rolled over, reportedly because of reduced need for precautionary funding and improved access to private dollar funding markets. Amid improving foreign exchange swap market conditions, on June 19 standing swap line central banks that offer dollar operations announced that the frequency of the seven-day operations would be reduced from daily to three times per week.[3]

[2] Nonfarm payrolls were subsequently revised upward to an increase of 2.7 million.
[3] Standing swap line central banks include the Bank of Japan, European Central Bank, Bank of England, Swiss National Bank, and Bank of Canada. The Bank of Canada currently does not conduct operations but is part of the network.

Chart 6

FOREIGN EXCHANGE SWAP-IMPLIED BASIS SPREADS

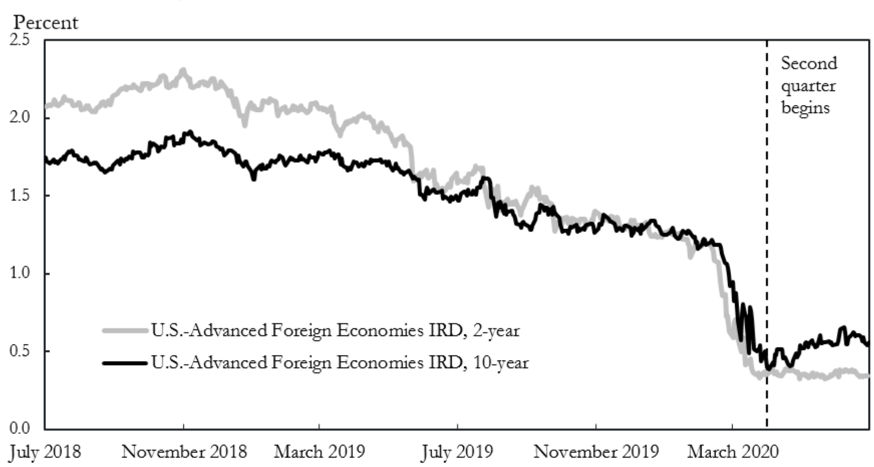


Source: Bloomberg L.P.

The improvement in dollar funding conditions and decline in money market rates weighed on the dollar owing to the narrowing of short-term interest rate differentials. This served to notably reduce the cost of hedging U.S. Treasury purchases for foreign investors, thereby increasing investor hedging with increased short dollar positions. During the quarter, the hedged return on U.S. Treasury purchases for euro area- and Japan-based investors turned positive for the first time in more than a year.

Chart 7

TRADE-WEIGHTED INTEREST RATE DIFFERENTIALS (IRDs) – U.S. VERSUS MAJOR ECONOMIES

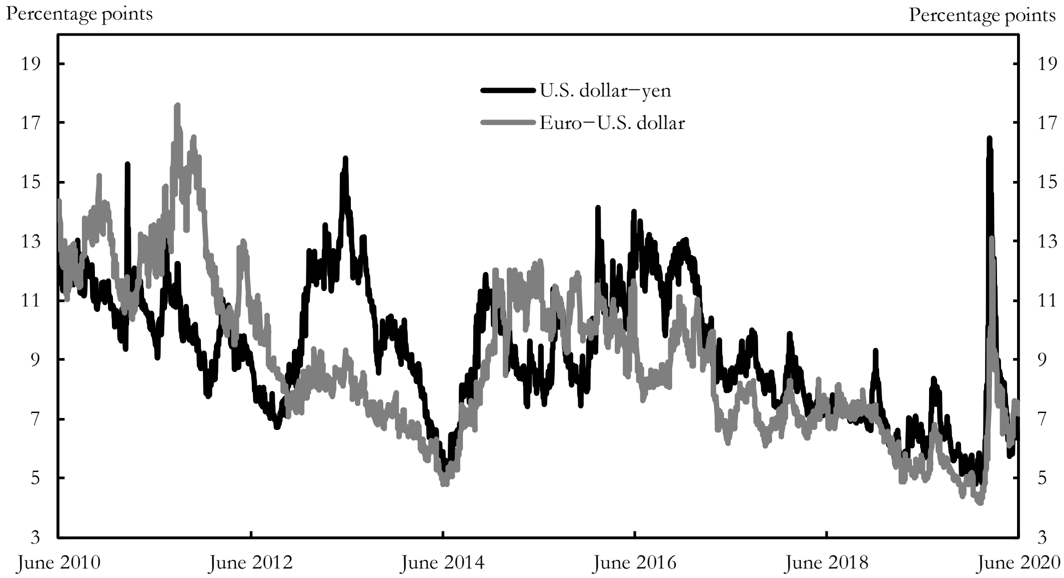


Sources: Board of Governors of the Federal Reserve System; Bloomberg L.P.

Foreign exchange liquidity conditions, including measures such as bid-offer spreads and market depth, mostly returned to pre-COVID-19 levels during this period. Furthermore, measures of implied volatility in the euro–dollar and dollar–yen currency pairs fell back to pre-COVID-19 levels after reaching their highest levels in ten years during the prior quarter.

Chart 8

THREE-MONTH IMPLIED VOLATILITY ACROSS DOLLAR–YEN AND EURO–DOLLAR PAIRS



Source: Bloomberg L.P.

EURO APPRECIATES FOLLOWING EU AND ECB STIMULUS; POUND ON NET LITTLE CHANGED

The U.S. dollar depreciated 1.8 percent against the euro in the second quarter amid intraquarter volatility. The euro appreciation was attributed to euro area fiscal and monetary policy response measures and associated increases in growth expectations, as well as narrowing interest rate differentials between the United States and Germany, given the Federal Reserve's actions to lower policy rates in March. In addition, declining COVID-19 cases and the reopening of euro area economies were cited by market participants as supportive of economic activity and regional asset prices.

After trading within a range earlier in the quarter, the euro appreciated more than 5 percent against the dollar from late April to mid-June, as fiscal and monetary policy measures supported the euro. On

April 23, the European Council agreed on a comprehensive 540 billion euro support package to help offset the economic impact of the COVID-19 crisis. This agreement was followed in May by a proposal by France and Germany for a European Union (EU) Recovery Fund, which the European Commission later confirmed would amount to 750 billion euro. The Commission noted that the proposed package would be funded through EU debt issuance and that repayment would be shared by member states. In addition, two-thirds of the proposed fund would be distributed as grants, rather than loans, a key factor differentiating the package from the 540 billion euro program passed in April. Market participants generally viewed the proposal as a significant step toward greater fiscal integration in the region.

Following these measures, the European Central Bank (ECB) announced on June 4 the addition of 600 billion euro to its Pandemic Emergency Purchase Program, bringing the total program size to 1.35 trillion euro. This additional amount was slightly above market expectations, and the ECB also extended the program until at least mid-2021 while signaling its readiness to ease further if needed.[4] The policy response was seen as supporting euro area growth prospects and reducing both credit risk and concerns regarding euro area fragmentation among euro sovereign issuers. During the quarter, spreads on peripheral bonds were reactive to these fiscal and monetary policy announcements, with ten-year Italian sovereign spreads over German equivalents narrowing by about 25 basis points following the Franco-German Recovery Fund proposal and by 17 basis points following the June ECB meeting.

In addition, several leading economic indicators printed better than markets expected during the second quarter, providing additional support for the euro. Germany's June IFO[5] business expectations index recovered nearly to pre-COVID-19 levels, and the euro area June Composite PMI increased to its highest level since February. Furthermore, the euro area June ZEW[6] expectations of economic growth survey rose to nearly a five-year high.

Meanwhile, the U.S. dollar was little changed against the British pound on net as the latter currency was influenced by opposing pressures. On the one hand, concerns that a Brexit deal would not be reached in time and speculation that the Bank of England may eventually implement negative policy rates weighed on the pound. On the other hand, positive risk sentiment amid the easing in global lockdowns and broad dollar depreciation helped support the pound.

[4] The Pandemic Emergency Purchase Program is a new and separate program from the ECB's Asset Purchase Program, which it has operated since 2014.
[5] IFO Institute (Institut fuer Wirtschaftsforschung).
[6] Zentrum fuer Europaeische Wirtschaftsforschung.

JAPANESE YEN LITTLE CHANGED DESPITE BROAD DOLLAR WEAKNESS

The U.S. dollar appreciated 0.4 percent against the Japanese yen amid relatively limited volatility, with the currency pair trading in a range of 106 to 110 yen per dollar. Throughout the quarter, the yen was caught between opposing risk forces of heightened expectations for the resumption of global economic activity and fears of another wave of global COVID-19 infections, as well as concerns about renewed U.S.–China tensions. The yen depreciated against all major advanced economy currencies, consistent with reduced safe-haven demand as global market sentiment improved.

EMERGING MARKET CURRENCIES APPRECIATE AMID IMPROVED GLOBAL RISK SENTIMENT AND OIL PRICE INCREASES

The U.S. dollar depreciated 1.1 percent against emerging market currencies in the second quarter, as measured by the Federal Reserve's trade-weighted Emerging Market Economies Dollar Index, accounting for about half of the decline in the broad dollar index.[7] The appreciation of emerging market currencies was attributed to the aforementioned improvement in global risk sentiment, but reflected only a partial retracement of the large-scale appreciation of the U.S. dollar against emerging market currencies seen in the first quarter of 2020. Moves were most pronounced in the currencies of oil exporters, given the more than 80 percent rise in generic Brent crude oil futures during the quarter. (Other commodity prices increased by a smaller magnitude.) Indeed, the dollar depreciated 10.2 percent against the Russian ruble and 3 percent against the Mexican peso. One exception was the Brazilian real, which depreciated 5 percent against the dollar over the quarter, mostly driven by Brazil's COVID-19 response and ongoing political stability concerns. The dollar also depreciated against advanced economy currencies sensitive to commodity prices and the global growth outlook, depreciating between 3 and 12 percent against the Norwegian krone, Canadian dollar, Australian dollar, and New Zealand dollar.

The appreciation across oil-sensitive currencies stemmed from the rise in crude oil prices amid an OPEC+ (Organization of the Petroleum Exporting Countries, plus Russia and nine other producers) agreement reached on April 9 to significantly reduce oil supply and a quicker-than-expected recovery in oil demand as some economies began to ease lockdown restrictions.

Separately, the U.S. dollar depreciated 0.3 percent against the Chinese renminbi over the quarter as the renminbi was supported by improving growth prospects amid the resumption of economic activities following lockdown measures, though this appreciation pressure was mitigated by ongoing geopolitical and trade tensions between the United States and China.

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[7] The Federal Reserve's Emerging Market Economies Dollar Index, formerly known as the other important trading partners (OITP) index, is a weighted average of the foreign exchange value of the U.S. dollar against a subset of emerging market currencies. For more information on the index, see Revisions to the Federal Reserve Dollar Indexes.

TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE HOLDINGS

The Federal Reserve and U.S. Treasury did not undertake any intervention operations during the quarter. As of June 30, the value of the U.S. Treasury's Exchange Stabilization Fund (ESF) foreign-currency-denominated assets totaled $20.8 billion, comprised of euro and yen holdings. The Federal Reserve System Open Market Account (SOMA) holdings of foreign-currency-denominated assets also totaled $20.8 billion, comprised of euro and yen holdings.

Foreign Exchange Reserve Holdings

The Federal Reserve and U.S. Treasury invest their foreign currency reserves, which are held in the SOMA and the 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. The Open Market Trading Desk of the Federal Reserve Bank of New York (the Desk) utilizes an investment framework for the management of the foreign currency assets. The framework involves a routine affirmation of objectives and constraints from policymakers. The Desk then utilizes an investment approach designed to meet those objectives to maximize return subject to maintaining sufficient liquidity and a high degree of safety.

In terms of the composition of foreign currency reserves, the Federal Reserve and U.S. Treasury's foreign exchange reserves can be invested in German, French, Dutch, and Japanese government obligations and in instruments at official institutions, such as the Bank for International Settlements and foreign central banks. To the greatest extent practicable, the investments are split evenly between the SOMA and the ESF.

As of June 30, the euro reserves held by both the SOMA and the ESF totaled $24.3 billion, an increase from $23.9 billion on March 31, owing to foreign exchange translation effects as the dollar depreciated against the euro. Cash held in euro-denominated deposits at official institutions increased to $14.3 billion from the prior quarter balance of $13.6 billion, while direct holdings of euro-denominated government securities decreased to $10 billion from $10.2 billion. The amount of yen-denominated deposits and government securities held by the SOMA and the ESF decreased to $17.3 billion from the prior quarter's balance of $17.4 billion.

Liquidity Swap Arrangements with Foreign Central Banks

With respect to standing dollar liquidity swap arrangements, the Federal Reserve had a total of $197.3 billion of swaps outstanding with these central banks at the end of the quarter. As of June 30, the Bank of Japan had $156.2 billion of swaps outstanding, the ECB had $30.3 billion of swaps outstanding, the Swiss National Bank had $10.1 billion of swaps outstanding, and the Bank of England had \$0.7 billion of swaps outstanding. The Bank of Canada did not have any dollar swaps outstanding at the end of the quarter.

With respect to the temporary swap lines[8] with nine additional central banks, the Federal Reserve had a total of \$29.6 billion of swaps outstanding with these central banks at the end of the quarter. As of June 30, the Bank of Korea had \$10.9 billion of swaps outstanding, the Monetary Authority of Singapore had \$7.5 billion of swaps outstanding, Banco de México had \$5.1 billion of swaps outstanding, Norges Bank had \$3.8 billion of swaps outstanding, Danmarks Nationalbank had \$1.8 billion of swaps outstanding, and the Reserve Bank of Australia had \$0.5 billion of swaps outstanding. The Riksbank, Reserve Bank of New Zealand, and Banco Central do Brasil did not have any dollar swaps outstanding at the end of quarter.

Amid improving foreign exchange swap market conditions, standing swap line central banks announced on June 19 the reduction in the frequency of the seven-day operations from daily to three times per week, while operations with eighty-four-day maturity continue to be offered weekly. The new frequency took effect July 1 and will remain in place for as long as appropriate to support smooth functioning of U.S. dollar funding markets.

Consistent with the current Authorization for Foreign Currency Operations, the Desk conducts small-value exercises for the foreign currency reserves as a matter of prudent advance planning. No inference about policy should be drawn from these exercises. In the second quarter, the Desk entered into a small-value Swiss franc currency swap with the Swiss National Bank.

[8] Temporary swap line central banks include Banco Central do Brasil, Banco de México, Bank of Korea, Danmarks Nationalbank, Monetary Authority of Singapore, Norges Bank, Reserve Bank of Australia, Reserve Bank of New Zealand, and the Sveriges Riksbank.

Table 1

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

Millions of U.S. Dollars

	Carrying Value, March 31, 2020[a]	Changes in Balances by Source: Net Purchases and Sales[b]	Investment Earnings[c]	Realized Gains/Losses on Sales[d]	Unrealized Gains/Losses on Foreign Currency Revaluation[e]	Carrying Value, June 30, 2020[a]
Federal Reserve System Open Market Account (SOMA)						
Euro	11,937	0	(10)	0	239	12,166
Japanese yen	8,693	0	0	0	(19)	8,674
Total	20,630	0	(10)	0	220	20,840

	Carrying Value, March 31, 2020[a]	Changes in Balances by Source: Net Purchases and Sales[b]	Investment Earnings[c]	Realized Gains/Losses on Sales[d]	Unrealized Gains/Losses on Foreign Currency Revaluation[e]	Carrying Value, June 30, 2020[a]
U.S. Treasury Exchange Stabilization Fund (ESF)						
Euro	11,919	0	(10)	0	239	12,148
Japanese yen	8,693	0	0	0	(19)	8,674
Total	20,612	0	(10)	0	220	20,822

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, as well as 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 June 30, 2020

	U.S. Treasury Exchange Stabilization Fund (ESF)[a]	Federal Reserve System Open Market Account (SOMA)[a]
Euro-denominated assets	**12,147.7**	**12,166.4**
Cash held on deposit at official institutions	7,151.0	7,169.7
Marketable securities held under repurchase agreements[b]	0.0	0.0
Marketable securities held outright	4,996.7	4,996.7
German government securities	1,052.6	1,052.6
French government securities	2,490.1	2,490.1
Dutch government securities	1,454.0	1,454.0
Yen-denominated assets	**8,673.9**	**8,673.9**
Cash held on deposit at official institutions	8,115.9	8,115.9
Marketable securities held outright	557.9	557.9

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

[a] As of June 30, the SOMA and the ESF euro portfolios had Macaulay durations of 17.55 and 17.57 months, respectively; both the SOMA and ESF yen portfolios had Macaulay durations of 0.32 months.

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

Table 3

RECIPROCAL CURRENCY ARRANGEMENTS

Millions of U.S. Dollars

Institution	Amount of Facility	Outstanding as of June 30, 2020
	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	30,272
Swiss National Bank	No preset limit	10,112
Bank of Japan	No preset limit	156,239
Bank of Canada	30,000	0
Bank of England	No preset limit	695
		197,318
Temporary dollar liquidity swap arrangements		
Banco Central do Brasil	60,000	0
Banco de Mexico	60,000	5,110
Bank of Korea	60,000	10,867
Danmarks Nationalbank	30,000	1,765
Monetary Authority of Singapore	60,000	7,479
Norges Bank	30,000	3,825
Reserve Bank of Australia	60,000	520
Reserve Bank of New Zealand	30,000	0
Sveriges Riksbank	60,000	0
		29,566
Standing foreign currency liquidity swap arrangements		
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
		0
	U.S. Treasury Exchange Stabilization Fund (ESF)	
Banco de México	9,000	0
	9,000	0