TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS

January – March 2020

During the first quarter of 2020, the U.S. dollar, as measured by the Federal Reserve Board's broad trade-weighted dollar index, appreciated 7.1 percent, the largest quarterly appreciation since the fourth quarter of 1997. The dollar's significant appreciation was primarily driven by "safe-haven" related flows stemming from the sharp reduction in the global growth outlook amid the worldwide spread of the novel coronavirus. The U.S. dollar appreciated notably against emerging market and most developed market currencies, though it depreciated modestly against perceived safe-haven currencies, such as the Japanese yen and Swiss franc. Exchange rates were exceptionally volatile during this period, influenced by heightened uncertainty over the path and duration of the virus and poor liquidity conditions. On a bilateral basis, the U.S. dollar appreciated 25.1 percent against the Mexican peso, 8.3 percent against the Canadian dollar, 6.8 percent against the British pound, and 1.6 percent against the euro. In contrast, it depreciated 1 percent against the Japanese yen and 0.6 percent against the Swiss franc. The Federal Reserve and U.S. Treasury did not intervene in foreign exchange markets during the quarter.

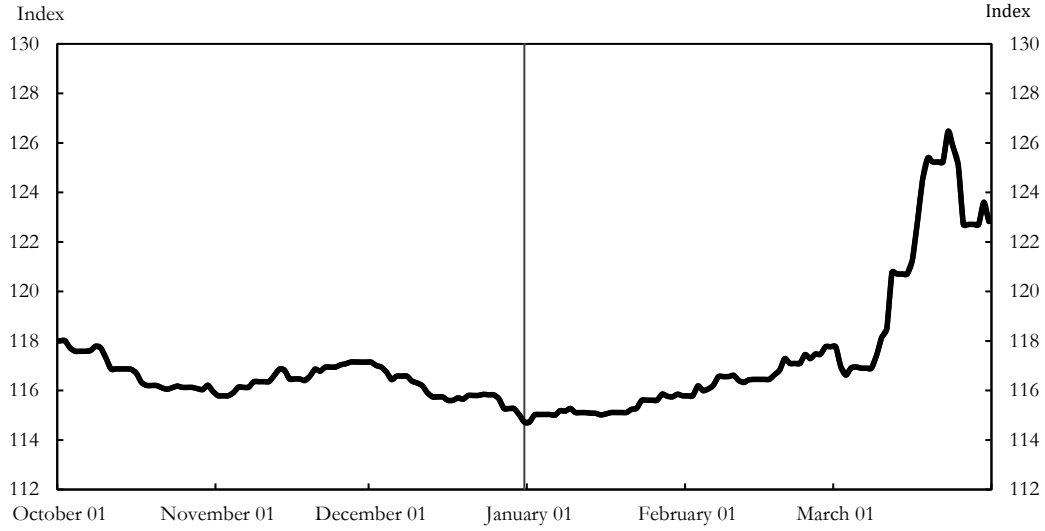
Amid heightened demand for dollar funding, foreign exchange swap basis spreads of key U.S. dollar currency pairs widened significantly and temporarily reached levels last observed during the global financial crisis. To help ease strains in global U.S. dollar funding markets, the Federal Reserve and other standing swap line central banks undertook coordinated action to enhance the provision of U.S. dollar liquidity via their swap lines. The Federal Reserve also announced the establishment of temporary swap lines with nine other central banks and introduced a temporary repurchase agreement facility for foreign and international monetary authorities (FIMA) account holders to allow them to temporarily exchange their U.S. Treasury securities held at the Federal Reserve Bank of New York for U.S. dollar deposits.[1]

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 January through March 2020. Pedro Quintanilla-Dieck was primarily responsible for preparation of the report.

[1] The press release for the swap lines announcement can be found here and the press release for the FIMA repo facility can be found here.

Chart 1

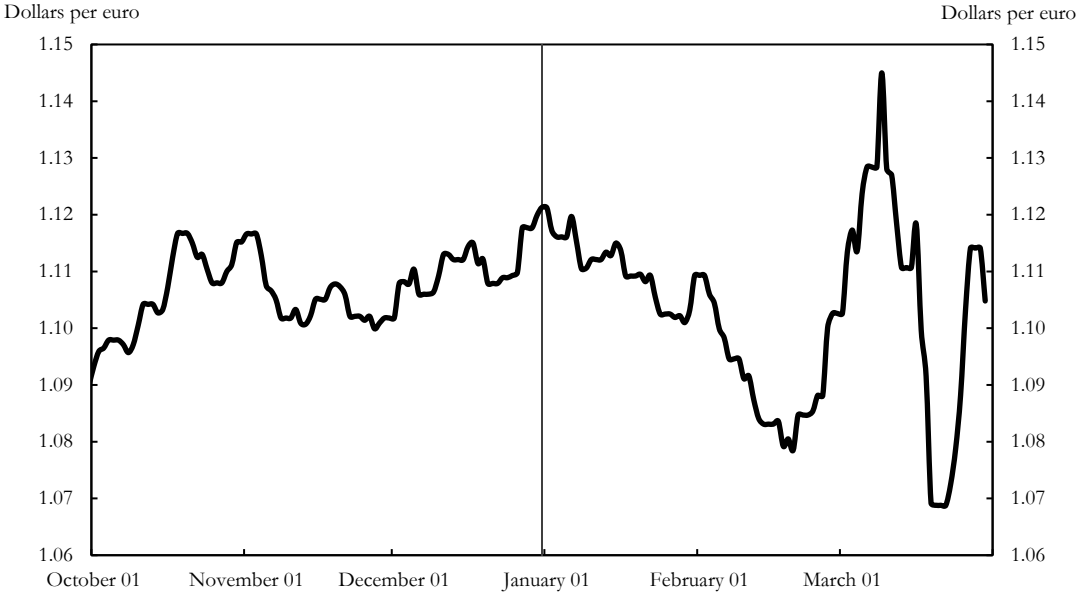
BROAD TRADE-WEIGHTED U.S. DOLLAR INDEX



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

Chart 2

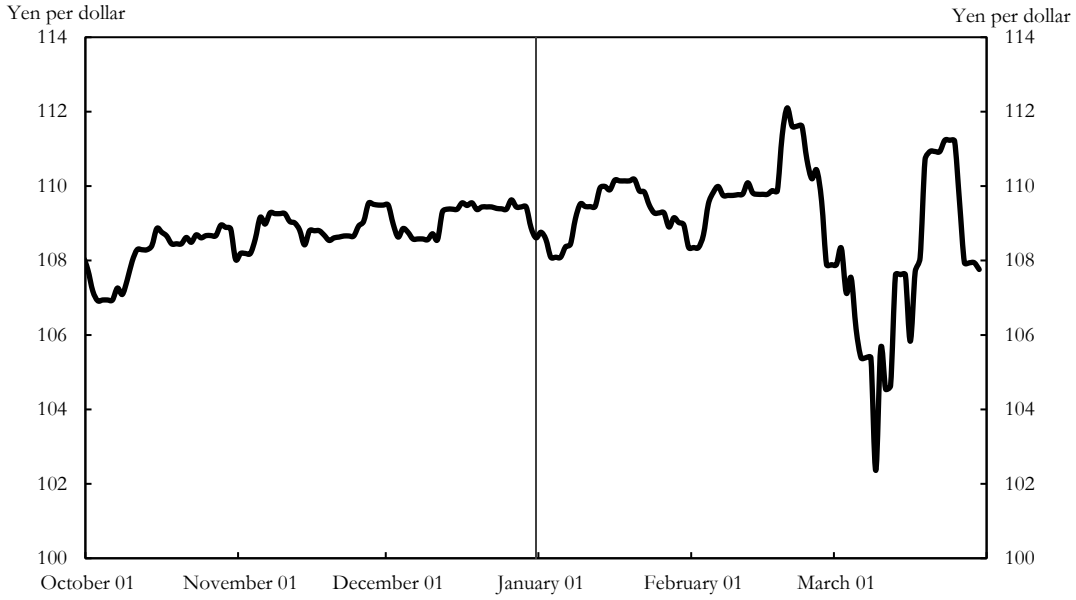
EURO–U.S. DOLLAR EXCHANGE RATE



Source: Bloomberg L.P.

Chart 3

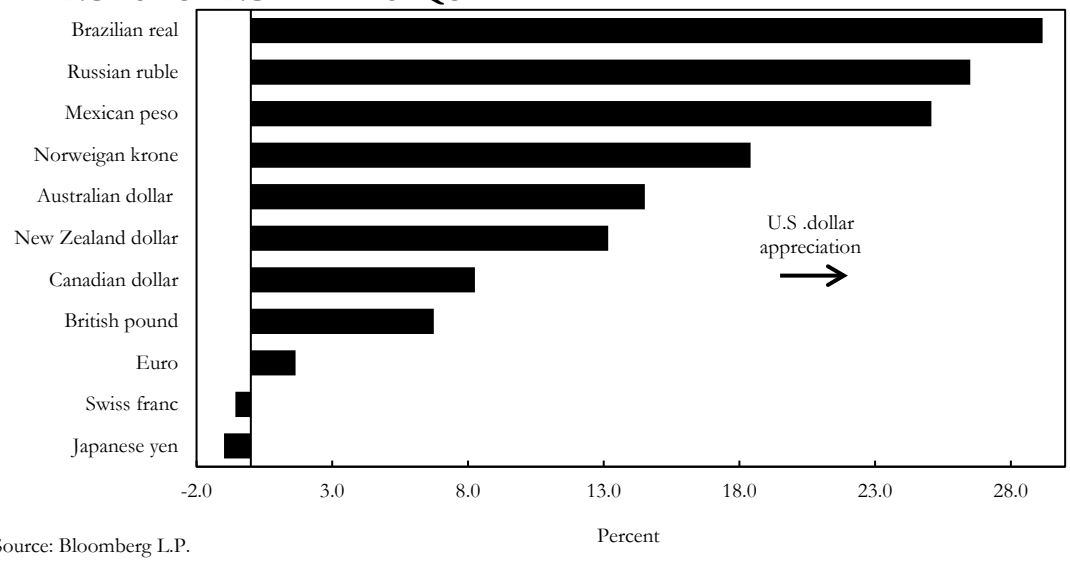
U.S. DOLLAR–YEN EXCHANGE RATE



Source: Bloomberg L.P.

Chart 4

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



Source: Bloomberg L.P.

U.S. DOLLAR APPRECIATES AMID DRAMATIC DETERIORATION IN GLOBAL RISK SENTIMENT AS CORONAVIRUS SPREADS GLOBALLY

During the first quarter of 2020, the U.S. dollar, as measured by the Federal Reserve Board's broad trade-weighted dollar index, appreciated 7.1 percent, its largest quarterly appreciation since the fourth quarter of 1997.[2] The U.S. dollar appreciated notably against emerging market currencies, particularly commodity-sensitive currencies, and most advanced economy currencies, but depreciated slightly against safe-haven currencies, such as the Japanese yen and Swiss franc.

The dollar's large appreciation was primarily driven by safe-haven flows stemming from sharp reductions in both the global growth outlook and overall risk sentiment amid the uncertainty of the path and duration of the novel coronavirus (COVID-19) outbreak. The appreciation accelerated in early March as concerns over the rapid spread of the virus globally coincided with the breakdown in OPEC+ talks on March 6 that sparked a substantial decline in oil prices, as oil producers were unable to agree on cuts to global oil production.[3] The lack of agreement resulted in Saudi Arabia announcing a drastic increase in its crude oil production, a move that was followed by a further substantial drop in oil prices.

The lack of agreement on cuts to global oil production came against the backdrop of rising global growth concerns and declining global demand in the wake of the COVID-19 outbreak, and as such triggered a dramatic increase in risk aversion and cross-asset volatility. Over the next two weeks, crude oil prices fell 40 percent, the S&P 500 declined almost 25 percent, and shorter-dated U.S. Treasury yields fell a further 20 basis points—with yields having already fallen by as many as 100 basis points across the curve earlier in the quarter—and the broad-trade weighted U.S. dollar index rose more than 8 percent, to an all-time record high. The dollar still appreciated over the quarter despite U.S. interest rate differentials narrowing notably relative to other advanced economies, as the safe-haven status of the dollar dominated interest rate differential considerations.

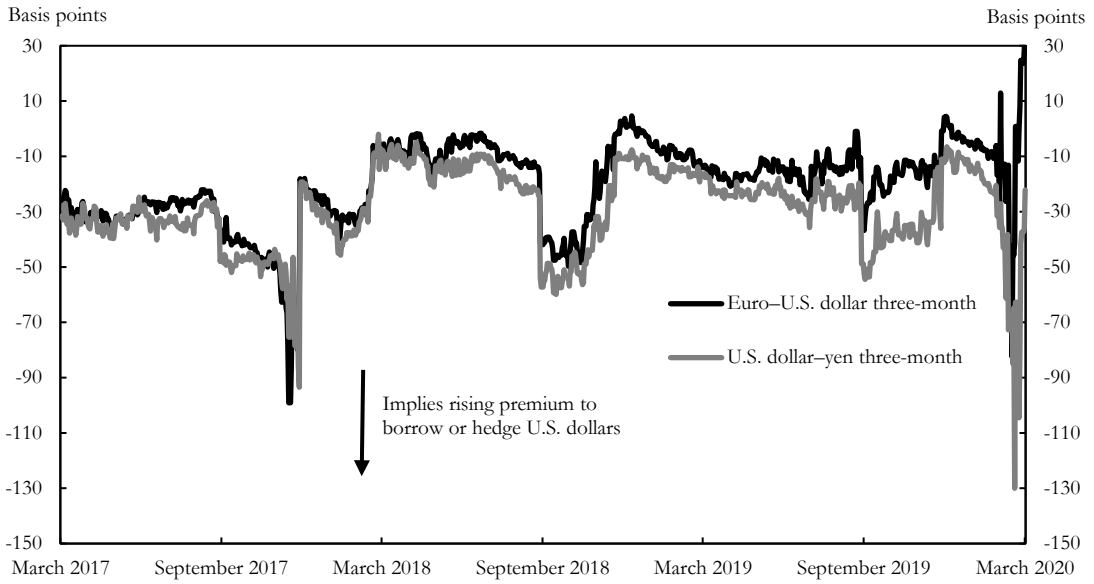
Another key component to the dollar's appreciation over the quarter related to strains in global U.S. dollar funding markets, characterized by an increase in the premium to borrow U.S. dollars or hedge U.S. dollar assets. As the foreign exchange swap-implied cost to fund and hedge dollar-denominated investments became more expensive, foreign investors reportedly bought dollars outright in the foreign exchange spot market, which intensified dollar appreciation pressures. Beginning in late March, foreign exchange swap basis spreads of key U.S. dollar currency pairs widened significantly, with three-month tenors reaching levels last observed during the global financial crisis (GFC). This widening was

[2] The Federal Reserve's broad trade-weighted dollar index is based on twenty-six currencies, including major developed market currencies and currencies of other important trading partners of the United States, including emerging markets.
[3] OPEC+ includes the Organization of the Petroleum Exporting Countries, plus Russia and nine other oil-producing countries.

commensurate with the severe strains in domestic funding markets, where LIBOR–OIS, FRA–OIS, and other measures of strains in domestic unsecured markets, such as issuance rates in commercial paper and certificates of deposit, widened notably and reached levels last seen during the GFC. Market participants viewed developments in the foreign exchange swap market as primarily driven by reduced inclination to offer dollars given increased risk aversion and concerns over operational disruptions, coupled with some corporate clients drawing on committed credit lines. Such considerations reportedly prompted a desire to hold extra dollar liquidity buffers.

Chart 5

FOREIGN EXCHANGE SWAP-IMPLIED BASIS SPREADS



Source: Bloomberg L.P.

To help ease strains in global U.S. funding markets, the Federal Reserve and other standing swap line central banks took coordinated actions in March to enhance the provision of U.S. dollar liquidity via central bank swap lines. The Federal Reserve and the central banks of Canada, the United Kingdom, Japan, Switzerland, and the euro area agreed (i) to lower by 25 basis points the pricing on their standing swap lines and associated dollar operations to U.S. dollar OIS plus 25 basis points, (ii) to add eighty-four-day dollar operations to existing seven-day operations, and (iii) to increase the frequency of the seven-day operations from weekly to daily. The Federal Reserve announced the establishment of temporary swap lines, limited in size, with nine other central banks around the world. The Federal Reserve also announced a temporary repurchase agreement facility for FIMA account holders, enabling

account holders to temporarily exchange their U.S. Treasury securities held with the Federal Reserve Bank of New York for U.S. dollar deposits (FIMA Repo Facility).

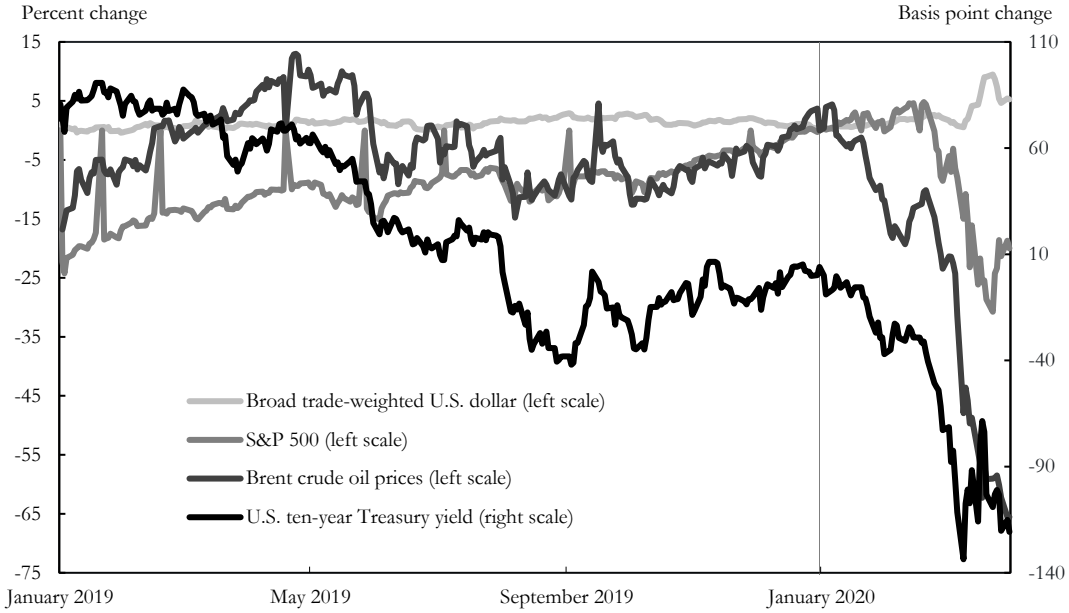
These actions came in addition to other programs launched by the Federal Reserve to help stabilize domestic funding markets. The Federal Reserve significantly increased daily offerings of overnight repurchase agreements (repos) and began offerings of one-month and three-month term repos. A Primary Dealer Credit Facility was announced that enabled the New York Fed's primary dealers to obtain funding against a wide range of collateral at the same rate as the discount rate.

Finally, the Federal Reserve announced a Commercial Paper Funding Facility to purchase three-month commercial paper from highly rated issuers through primary dealers, and a Money Market Mutual Fund Liquidity Facility to lend against assets that banks acquire from money market funds.

In addition to the aforementioned wide array of measures rolled out by the Federal Reserve throughout March—measures that also included lowering the federal funds target range by 150 basis points to between 0 and 0.25 percent and implementing open-ended purchases of Treasury securities and mortgage-backed securities—the $2.2 trillion Coronavirus Aid, Relief, and Economic Security (CARES) Act was passed in late March. The multiple monetary and fiscal stimulus measures undertaken in the United States and other countries to mitigate the economic fallout of the virus contributed to a stabilization in global risk sentiment toward the end of the quarter, prompting a slight retracement of the U.S. dollar. Nonetheless, the dollar stabilized at an elevated level as risk sentiment remained fragile given the lack of visibility on an inflection point in the rising number of coronavirus cases in key jurisdictions and uncertainty about the ultimate economic fallout, with steep downgrades to global growth accelerating through March.

Chart 6

CROSS-ASSET PERFORMANCE DURING THE FIRST QUARTER



Source: Bloomberg L.P.
Notes: Values indexed to December 31, 2019. U.S. ten-year Treasury securities measured in basis points.

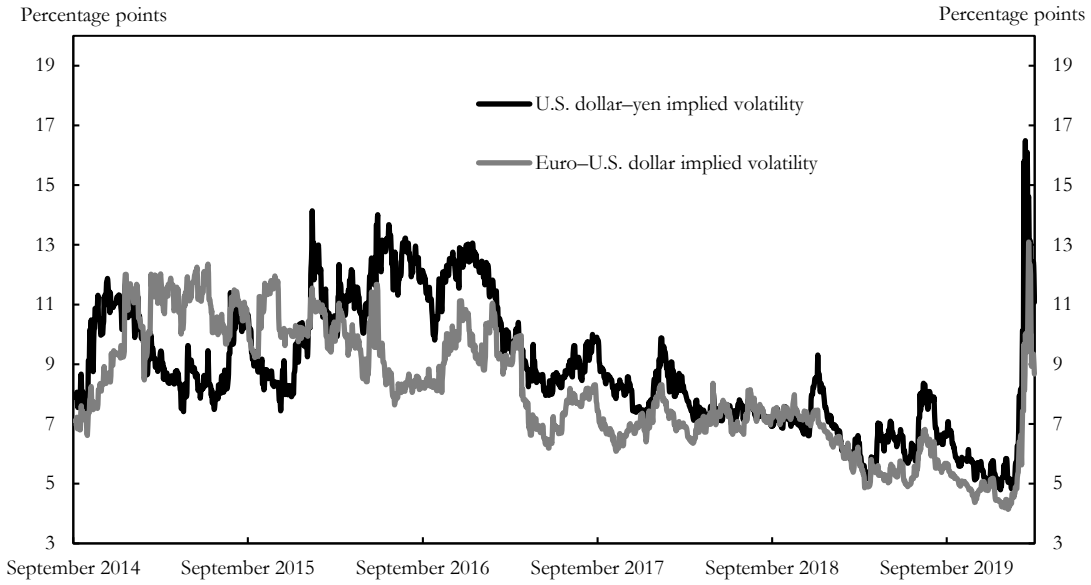
FOREIGN EXCHANGE LIQUIDITY DETERIORATES AMID HEIGHTENED VOLATILITY

Exchange rates were exceptionally volatile during this period, influenced by heightened uncertainty and poor liquidity conditions. Indeed, the implied volatility of several currency pairs, including the euro–dollar, dollar–yen, and dollar–Mexican peso, rose to levels last seen during the GFC. However, foreign exchange market volatility rose less than the volatility in other asset classes, given that dollar positioning was not stretched in either direction before the outbreak of COVID-19.

Commensurate with higher foreign exchange volatility and disruptions in working arrangements for many foreign exchange traders, liquidity conditions deteriorated notably. Around the peak of market volatility, average bid-ask spreads for developed and emerging market currencies were for the most part several times wider than historical norms. While contacts characterized overall spot foreign exchange market functioning as orderly, some noted dislocations at times in some oil-sensitive currencies, such as the Norwegian krone, Mexican peso, and Brazilian real. Liquidity conditions improved toward the end of the quarter, in line with the improvement in market risk sentiment, but remained strained relative to the pre-COVID-19 environment given continued uncertainty.

Chart 7

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



Source: Bloomberg L.P.

EMERGING MARKET AND OTHER OIL-SENSITIVE CURRENCIES DEPRECIATE SHARPLY AMID GLOBAL GROWTH DOWNGRADES AND OIL PRICE DECLINES

The U.S. dollar appreciated 9.8 percent against emerging market currencies in the first quarter, as measured by the Federal Reserve's trade-weighted Emerging Market Economies Dollar Index, accounting for about three-fourths of the rise in the broad dollar index.[4] The depreciation in emerging market currencies was attributed to the global deterioration in risk sentiment and downgrades to the emerging market growth outlook, with the moves most pronounced in the currencies of oil exporters, given the nearly 65 percent decline in crude oil prices during the quarter. Meanwhile, other commodity prices also declined, albeit by a smaller magnitude. The U.S. dollar appreciated 29 percent against the Brazilian real and 25 percent against the Mexican peso. The moves in the Mexican peso were reportedly exacerbated by an abrupt reversal of sizable long speculative positioning in the Mexican peso, built up since 2019. Increase in sovereign risk was also an important factor for the peso, given concerns about the potential impact of oil price declines on state-owned oil company PEMEX's credit rating and,

[4] 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.

ultimately, the Mexican government's finances. In addition to strengthening against emerging market currencies, the U.S. dollar appreciated dramatically against G10 currencies sensitive to commodity prices and the global growth outlook, appreciating between 8 and 16 percent against the Norwegian krone, Canadian dollar, Australian dollar, and New Zealand dollar.

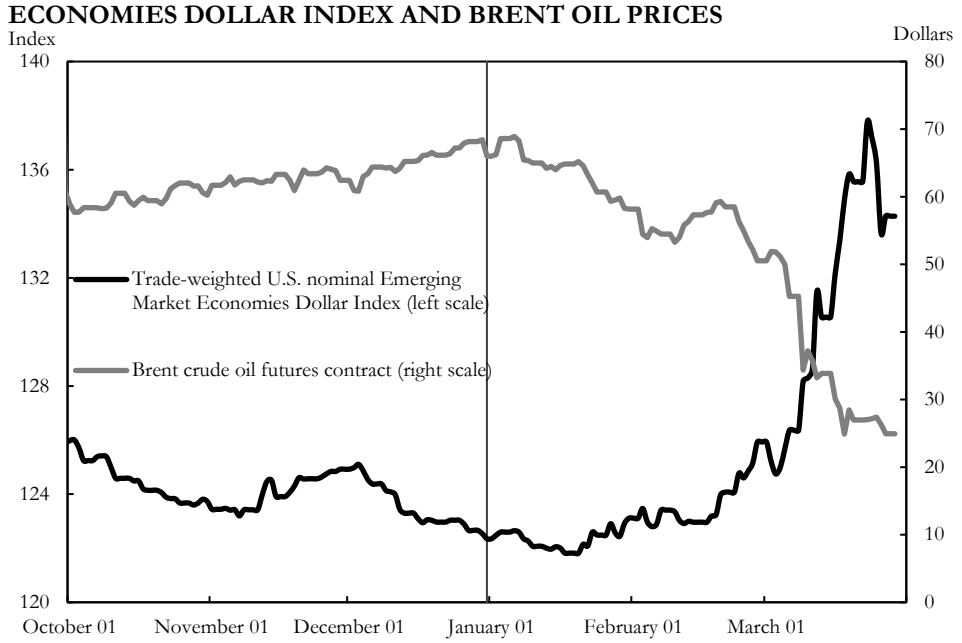
In an effort to support local economies, emerging market central banks broadly lowered their policy interest rates, exerting further depreciation pressure, although contacts noted that this was partially offset by the significant easing measures by the Federal Reserve. Toward the end of the quarter, advanced economy fiscal stimulus efforts were also seen as easing some depreciation pressure on emerging market currencies.

In order to mitigate depreciation pressures stemming from the COVID-19-induced shock, several large emerging market central banks reportedly sold foreign exchange reserves to support their domestic currencies. Mexican authorities did not intervene in spot markets, but did sell $2 billion of nondeliverable forwards through an auction facility aimed at supporting the functioning of the local exchange market and the hedging needs of market participants.[5] Later in the quarter, however, some reserve mangers who may have sold dollars to support their domestic currencies needed to rebalance the composition of their reserve assets. This rebalancing resulted in purchases of dollars against the sale of other reserve currencies, supporting the dollar.

[5] This operation involves Banco de Mexico (Banxico) selling nondeliverable forwards (NDFs) on the U.S. dollar that settle in Mexican pesos. Banxico sells contracts that guarantee delivery of an amount of pesos linked to the U.S. dollar–Mexican peso spot rate at the settlement date. At maturity, Banxico and the counterparties settle the currency differentials in Mexican pesos, thereby not affecting Banxico's foreign exchange reserves.

Chart 8

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



Source: Bloomberg L.P.

EURO DEPRECIATES MODESTLY ON NET AMID SIGNIFICANT VOLATILTY

The U.S. dollar appreciated 1.6 percent, on net, against the euro in the first quarter, although the aggregate move masks significant intraquarter volatility. The euro appreciated more than 6 percent against the U.S. dollar between late February and mid-March, as the global wave of risk aversion triggered an abrupt unwind of euro-funded carry trades that had been used to fund long speculative positions in risk assets.[6] In addition, a minority of contacts noted that the narrowing of U.S.–euro interest rate differentials may have supported the euro, amid a sharp decline in U.S. rates and limited perceived room for further cuts by the European Central Bank (ECB). Indeed, the ECB kept rates on hold at -0.5 percent in the first quarter, and its announcement of a new Pandemic Emergency Purchase Program of up to 750 billion euros to support the euro-area economy was considered less expansionary relative to the Federal Reserve's open-ended commitment to purchase assets.[7]

[6] A euro-funded carry trade involves borrowing in euros to invest in risk assets, including higher-yielding currencies. As risk sentiment deteriorated, investors sold other currencies and bought back euros to unwind their trades.

[7] The Pandemic Emergency Purchase Program is a new program, separate from the ECB's Asset Purchase Program, which it has implemented since 2014.

However, the euro's appreciation retraced as the aforementioned deterioration in risk sentiment intensified global safe-haven demand for U.S. dollar assets, with some market participants noting that the surge in coronavirus cases in some euro-area countries weighed on the euro, while also noting that the expected fiscal response from euro-area finance ministers may have limited the depreciation to some extent. Similar to what occurred during the GFC, the sharp decline in U.S. risk assets reportedly led foreign investors to rebalance hedge ratios by purchasing U.S. dollars through March, leading to further euro depreciation against the U.S. dollar.[8]

Separately, the Swiss franc appreciated 0.6 percent against the U.S. dollar and 2.2 percent against the euro, with some market participants noting that the sharp increase in Swiss National Bank (SNB) sight deposits suggests that the SNB may have intervened by purchasing euros to limit appreciation pressures amid safe-haven flows.

JAPANESE YEN APPRECIATES MODESTLY AMID MULTIPLE CROSS-CURRENTS

The U.S. dollar depreciated 1.0 percent against the Japanese yen, on net, though the currency pair saw exceptionally high volatility and traded in a range of almost 9 percent during the quarter. Notably, the U.S. dollar depreciated sharply against the Japanese yen in late February as the aforementioned wave of risk aversion reverberated across global markets. The yen appreciated against all major developed market currencies, consistent with its perceived safe-haven characteristics, as Japanese investors repatriated capital.

However, the Japanese yen subsequently depreciated against the U.S. dollar in early to mid-March, movement that market participants attributed to two factors. First, contacts noted heightened demand from Japanese investors to fund or hedge their dollar positions amid strains in broader global U.S. dollar funding markets. Second, investors highlighted that Japan's Government Pension Investment Fund (GPIF) was likely front-loading purchases of foreign bonds ahead of its expected announcement that it would increase its foreign fixed income allocation, which occurred on March 31.[9]

[8] A non-U.S. investor that invests in U.S. assets will initially hedge a portion of its investment by *selling* U.S. dollars. Subsequently, if the notional value of its U.S. investment declines, the non-U.S. investor is overhedged—the notional value of the hedge exceeds the underlying exposure to U.S. assets. In order to recalibrate back to the desired hedge ratio and reduce the hedge, the non-U.S. investor will trade in the opposite direction and *buy* U.S. dollars.

[9] The GPIF announced on March 31 that, effective April 1, it would move 10 percentage points of its target allocation from domestic to foreign bonds, increasing the target allocation to foreign bonds from 15 percent to 25 percent.

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 March 31, the value of the U.S. Treasury's Exchange Stabilization Fund (ESF) foreign-currency-denominated assets totaled $20.6 billion, comprised of euro and yen holdings. The Federal Reserve System Open Market Account (SOMA) holdings of foreign-currency-denominated assets also totaled $20.6 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 March 31, the euro reserves held by both the SOMA and the ESF totaled $23.9 billion, a decrease from $24.3 billion on December 31, owing to foreign exchange translation effects as the dollar appreciated against the euro. Cash held in euro-denominated deposits at official institutions decreased to $13.6 billion from the prior quarter balance of $13.8 billion, while direct holdings of euro-denominated government securities decreased to $10.2 billion from $10.6 billion. The amount of yen-denominated deposits and government securities held by the SOMA and the ESF increased to $17.4 billion from the prior quarter's balance $17.2 billion.

Liquidity Swap Arrangements with Foreign Central Banks

With respect to standing dollar liquidity swap arrangements, the Federal Reserve had a total of $349.4 billion of swaps outstanding with other central banks at the end of the quarter. As of March 31, the Bank of Japan had $174.7 billion of swaps outstanding, the ECB had $137.0 billion of swaps outstanding, the Bank of England had $31.6 billion of swaps outstanding, and the SNB had $6.1 billion

of swaps outstanding. The Bank of Canada did not have any dollar swaps outstanding at the end of the quarter.

To enhance the provision of U.S. dollars abroad, on March 19 the Federal Reserve announced the establishment of temporary swap lines with nine additional central banks. The Federal Open Market Committee authorized swap lines in amounts up to $60 billion dollars each for the central banks in Australia, Brazil, Korea, Mexico, Singapore, and Sweden; and $30 billion dollars each for central banks in Denmark, Norway, and New Zealand.

With respect to these temporary dollar liquidity swap arrangements, the Federal Reserve had a total of $8.2 billion of swaps outstanding at the end of the quarter. As of March 31, the Monetary Authority of Singapore had $4.3 billion of swaps outstanding, the Danmarks Nationalbank had $2.9 billion of swaps outstanding, the Norges Bank had $1.1 billion of swaps outstanding, and the Reserve Bank of Australia had $50 million of swaps outstanding.

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 first quarter, the Desk entered into a small-value Swiss franc currency swap with the Swiss National Bank.

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, 2019[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, 2020[a]
Federal Reserve System Open Market Account (SOMA)						
Euro	12,175	0	(10)	0	(229)	11,937
Japanese yen	8,602	0	0	0	91	8,693
Total	20,777	0	(10)	0	(138)	20,630

		Changes in Balances by Source				
	Carrying Value, December 31, 2019[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, 2020[a]
U.S. Treasury Exchange Stabilization Fund (ESF)						
Euro	12,157	0	(10)	0	(228)	11,919
Japanese yen	8,602	0	0	0	91	8,693
Total	20,758	0	(9)	0	(137)	20,612

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, 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 March 31, 2020

	U.S. Treasury Exchange Stabilization Fund (ESF)[a]	Federal Reserve System Open Market Account (SOMA)[a]
Euro-denominated assets	**11,918.5**	**11,936.9**
Cash held on deposit at official institutions	6,803.4	6,821.8
Marketable securities held under repurchase agreements[b]	0.0	0.0
Marketable securities held outright	5,115.1	5,115.1
German government securities	1,079.0	1,079.0
French government securities	2,609.5	2,609.5
Dutch government securities	1,426.7	1,426.7
Japanese yen-denominated assets	**8,693.1**	**8,693.1**
Cash held on deposit at official institutions	7,945.9	7,945.9
Marketable securities held outright	747.2	747.2
U. S. dollar liquidity arrangements		
Banco Central do Brasil[c]		0.0
Banco de México[c]		0.0
Bank of Canada[c]		0.0
Bank of England[c]		31,600.0
Bank of Japan[c]		174,707.0
Bank of Korea[c]		0.0
Danmarks Nationalbank[c]		2,850.0
European Central Bank[c]		137,032.0
Monetary Authority of Singapore[c]		4,270.0
Norges Bank[c]		1,075.0
Reserve Bank of Australia[c]		50.0
Reserve Bank of New Zealand[c]		0
Sveriges Riksbank[c]		0
Swiss National Bank[c]		6,090.0

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

[a] As of March 31, the SOMA and the ESF euro portfolios had Macaulay durations (weighted by market value) of 18.59 and 18.62 months, respectively; both the SOMA and ESF yen portfolios had Macaulay durations of 0.57 months.

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

[c] Market value of outstanding U.S. dollar liquidity arrangements.

Table 3

RECIPROCAL CURRENCY ARRANGEMENTS

Millions of U.S. Dollars

Institution	Amount of Facility	Outstanding as of March 31, 2020
	Federal Reserve System Open Market Account (SOMA)	
Reciprocal currency arrangements		
Bank of Canada	2,000	0
Banco de México	3,000	0
		0
Standing dollar liquidity swap arrangements		
European Central Bank	Unlimited	137,032
Swiss National Bank	Unlimited	6,090
Bank of Japan	Unlimited	174,707
Bank of Canada	30,000	0
Bank of England	Unlimited	31,600
		349,429
Temporary dollar liquidity swap arrangements		
Banco Central do Brasil	60,000	0
Banco de México	60,000	0
Bank of Korea	60,000	0
Danmarks Nationalbank	30,000	2,850
Monetary Authority of Singapore	60,000	4,270
Norges Bank	30,000	1,075
Reserve Bank of Australia	60,000	50
Reserve Bank of New Zealand	30,000	0
Sveriges Riksbank	60,000	0
		8,245
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
		0