TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS

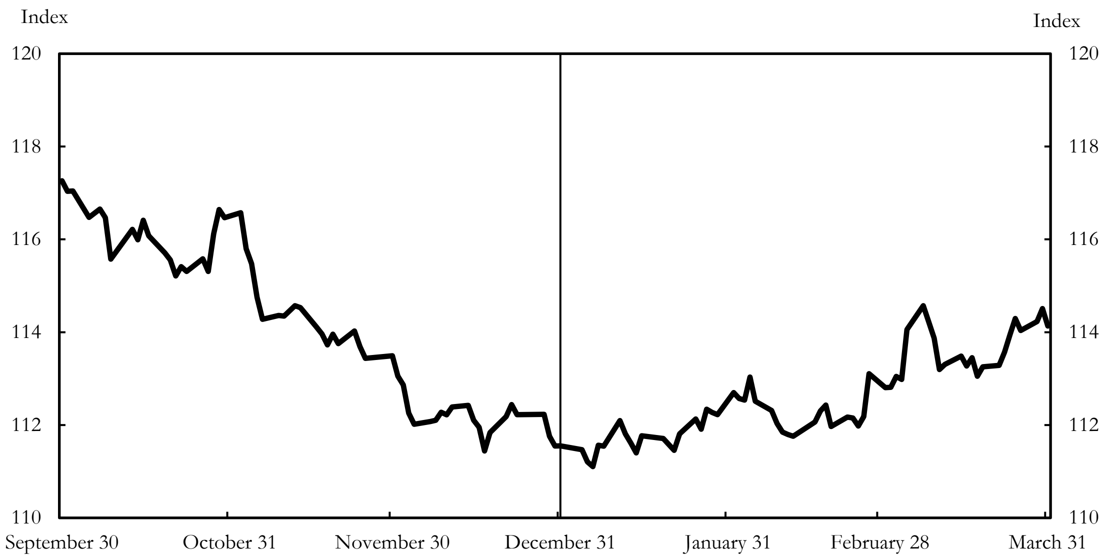
January – March 2021

During the first quarter of 2021, the U.S. dollar, as measured by the Federal Reserve Board's broad trade-weighted dollar index, appreciated 2.3 percent. The dollar's appreciation was driven primarily by upward revisions to the U.S. growth outlook due to market expectations for renewed large U.S. fiscal stimulus, coupled with progress on the COVID-19 vaccine rollout, which resulted in a widening in interest rate differentials as U.S. Treasury yields increased. Dollar appreciation was broad-based against both emerging and advanced economy currencies. On a bilateral basis, the U.S. dollar appreciated 7.2 percent against the Japanese yen, 4.1 percent against the euro, and 2.6 percent against the Mexican peso, but depreciated 1.3 percent against the Canadian dollar and 0.9 percent against the British pound. 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 January through March 2021. Andrew Coflan was primarily responsible for preparation of the report.

Chart 1

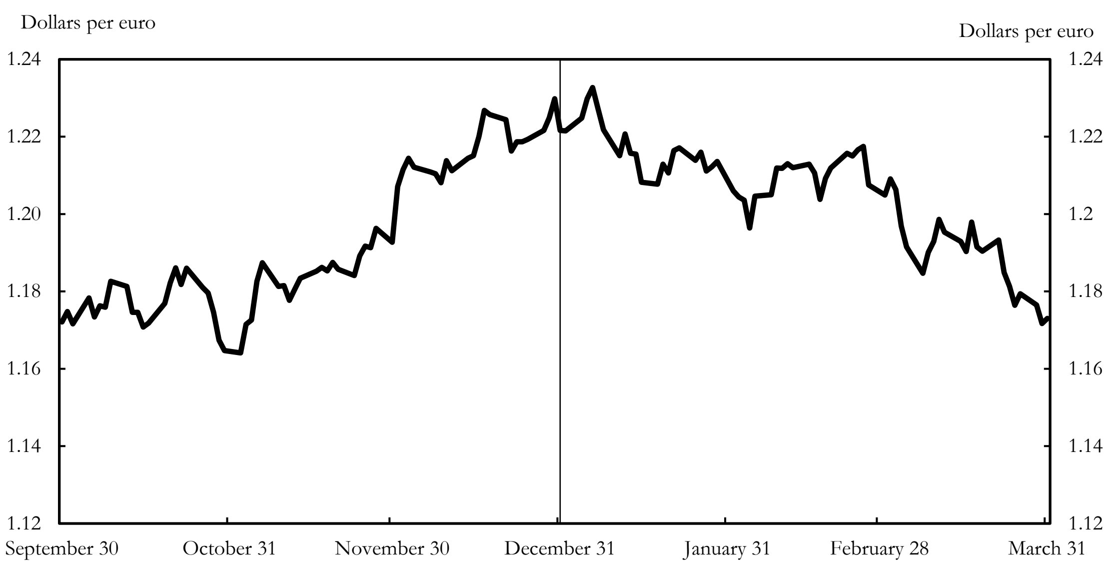
BROAD TRADE-WEIGHTED U.S. DOLLAR INDEX



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

Chart 2

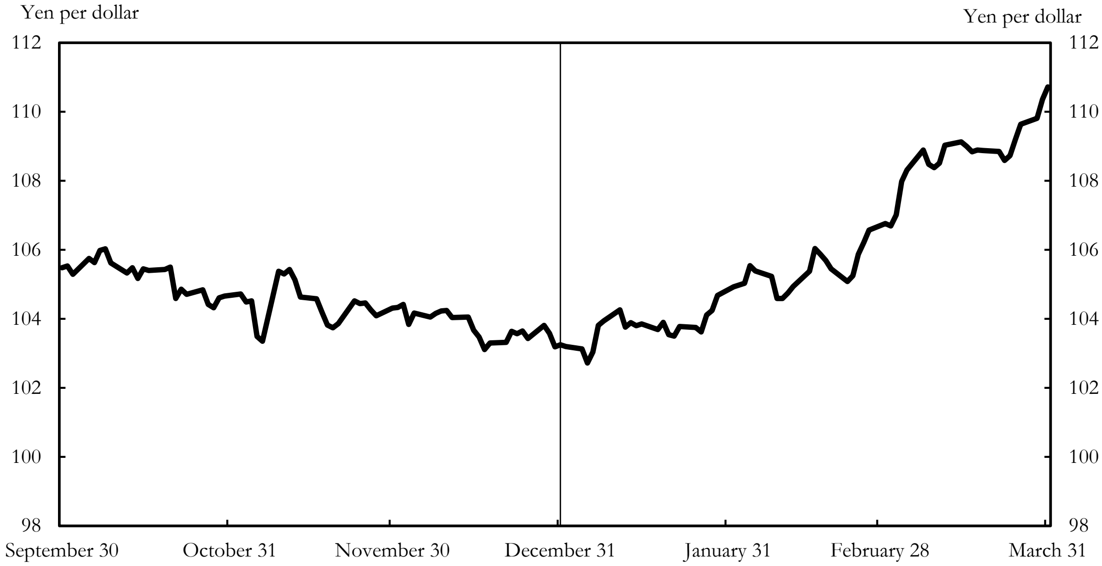
EURO−U.S. DOLLAR EXCHANGE RATE



Source: Bloomberg L.P.

Chart 3

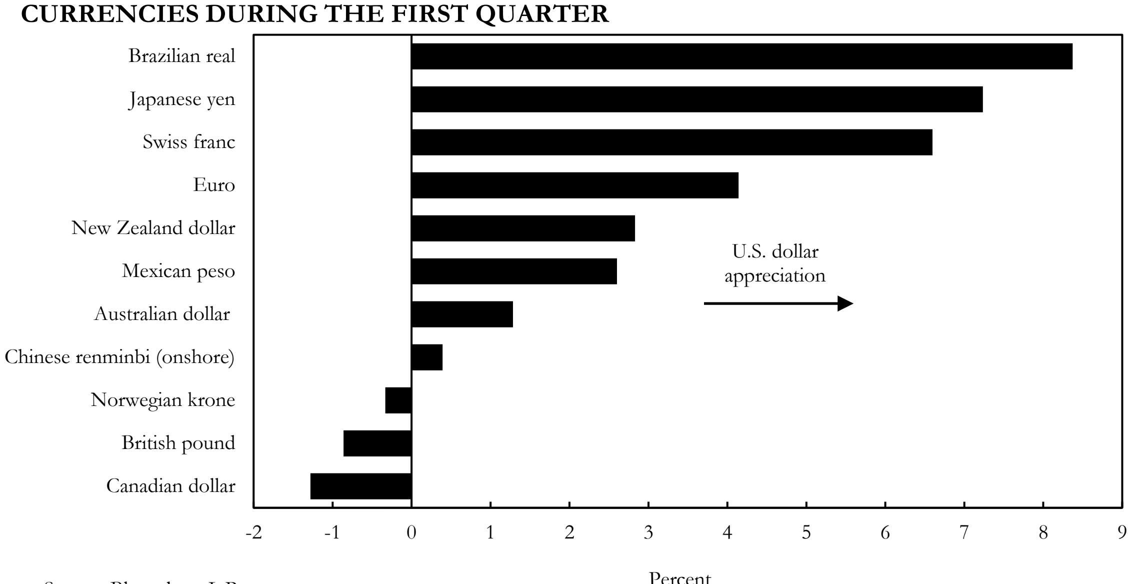
U.S. DOLLAR−YEN EXCHANGE RATE



Source: Bloomberg L.P.

Chart 4

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



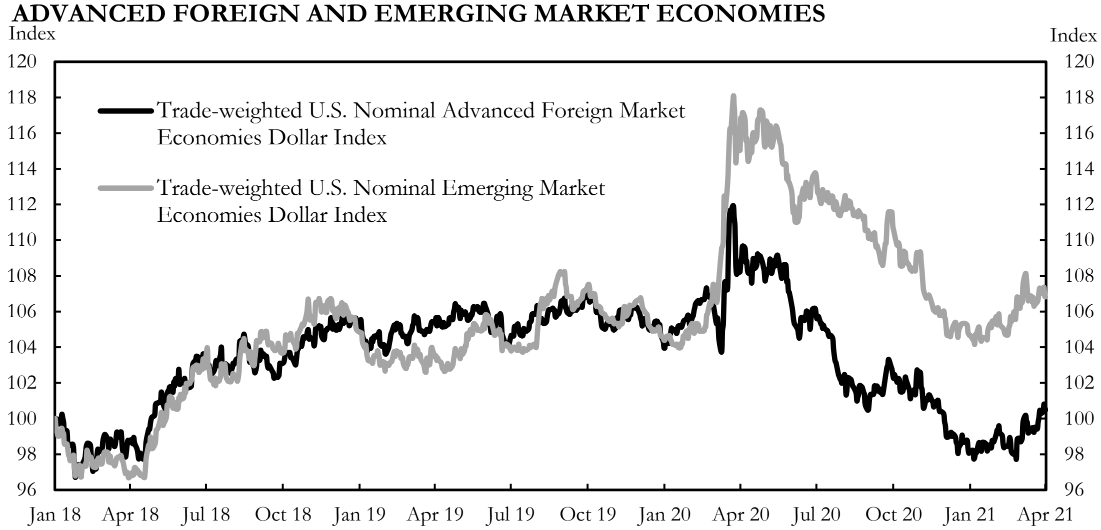
Source: Bloomberg L.P.

U.S. DOLLAR APPRECIATES ON RISING EXPECTATIONS OF U.S. GROWTH OUTPERFORMANCE AND RESULTANT WIDENING IN RATE DIFFERENTIALS

During the first quarter of 2021, the U.S. dollar, as measured by the Federal Reserve Board's broad trade-weighted dollar index, appreciated 2.3 percent on net amid upward revisions to U.S. growth expectations—which stemmed from expectations of increased U.S. fiscal stimulus and progress on the rollout of the COVID-19 vaccine—and a resultant widening in interest rate differentials as U.S. Treasury yields rose sharply.[1] While notable, the dollar's appreciation in the first quarter followed an 11.8 percent depreciation of the index from its pandemic peak in late March 2020 through the end of the year. Appreciation in the dollar during the first quarter was broad-based, with advanced and emerging market currencies contributing roughly equally to the broad dollar move.

Chart 5

U.S TRADE-WEIGHTED DOLLAR PERFORMANCE VERSUS ADVANCED FOREIGN AND EMERGING MARKET ECONOMIES



Source: Bloomberg L.P.

Note: Values indexed to January 1, 2018.

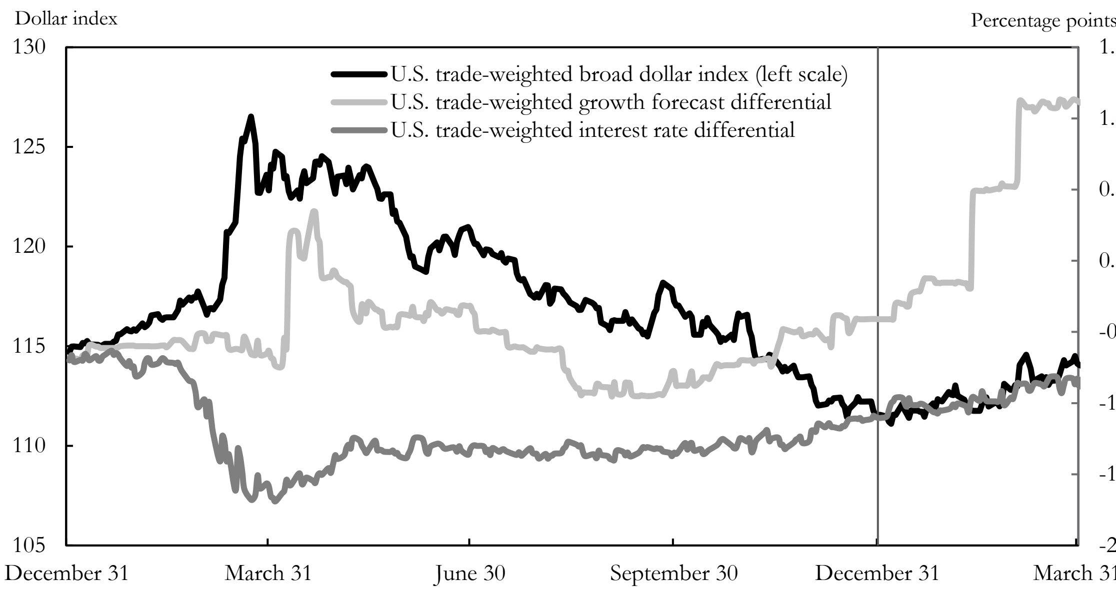
January's U.S. Senate run-off election in Georgia, which resulted in the incoming administration's control of Congress, led market participants to upwardly revise expectations for near-term fiscal stimulus and the U.S. growth outlook. At the same time, expectations of growth in other major economies remained largely unchanged. According to market participants, the resultant differential in

[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.

growth expectations and shift in interest rate differentials in favor of the U.S. dollar drove much of the dollar's appreciation in the first quarter.

Chart 6

U.S. GROWTH AND INTEREST RATE DIFFERENTIALS AND BROAD DOLLAR INDEX



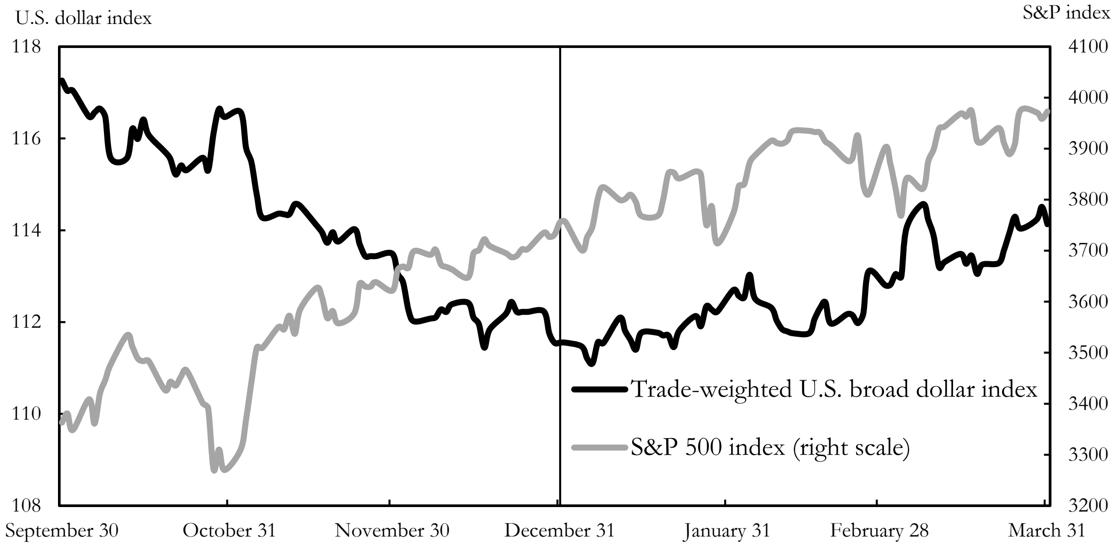
Source: Bloomberg L.P.

Interest rate differentials with advanced economies widened as U.S. Treasury yields rose, with the increases primarily concentrated in intermediate- and long-dated yields. Additionally, the market-implied lift-off moved earlier, and the post lift-off path steepened notably. The ten-year Treasury yield rose 83 basis points over the quarter, from 0.91 percent to 1.74 percent, including a 20 basis point rise during the January 5 to January 8 period, as market participants interpreted the results of the January 5 elections in Georgia as increasing the probability of further fiscal stimulus. The dollar reached its weakest level of the pandemic on January 6 before starting an appreciating trend as U.S. yields rose and interest rate differentials widened. The widening in yield differentials accelerated through the end of the quarter against a backdrop of increased fiscal stimulus, faster-than-expected vaccine progress, and an improving U.S. growth outlook.

Market participants were also attuned to Federal Open Market Committee (FOMC) minutes and official statements amid sharply rising rates over the quarter. However, little price action was attributed to these statements, which did not imply any change in policy in response to the rise in long-end Treasury yields. Some market participants interpreted official communications from the Federal Reserve as suggesting it would not act against ongoing yield increases.

Chart 7

U.S TRADE-WEIGHTED NOMINAL BROAD DOLLAR INDEX AND S&P 500 INDEX PERFORMANCE

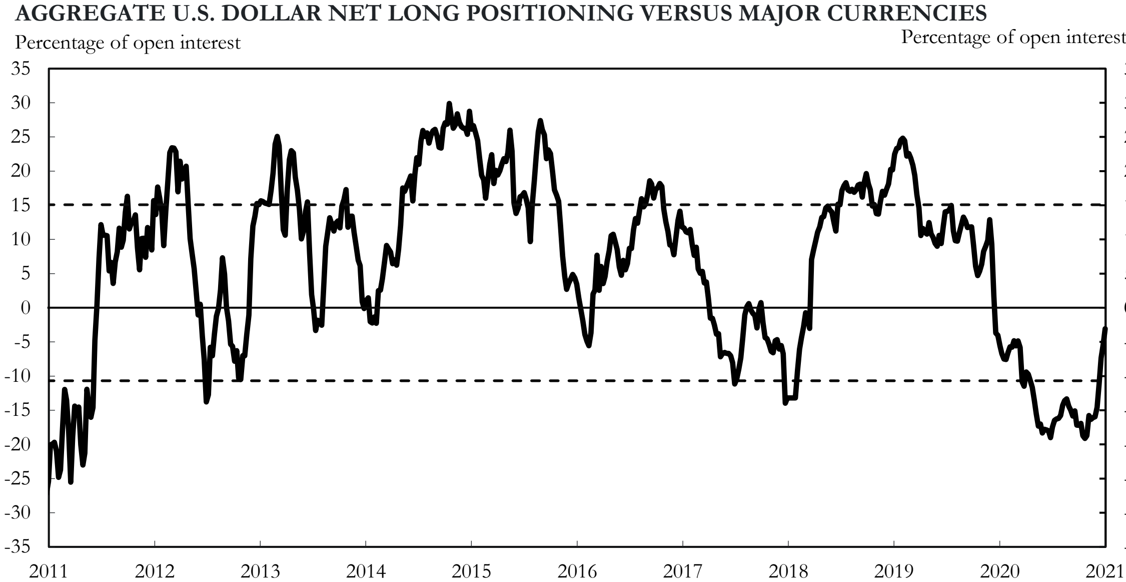


Source: Bloomberg L.P.

The U.S. dollar's appreciation in the first quarter alongside rising risk asset valuations marked a break of the strong negative correlation that held through much of 2020. Market participants attributed this shift to the improved expectations for U.S. economic growth relative to other advanced and emerging market economies. Rising yields and a stronger dollar were viewed in the context of strong economic growth and expectations for prolonged accommodation by the Federal Reserve. Reflecting the appreciation of the dollar, speculative dollar positioning moved from its largest net short position in nearly a decade to almost neutral by the end of the quarter.

Chart 8

AGGREGATE U.S. DOLLAR NET LONG POSITIONING VERSUS MAJOR CURRENCIES



Sources: Commodity Futures Trading Commission; Bloomberg L.P.

Notes: Aggregate includes U.S. dollar positioning relative to the euro, the Japanese yen, the British pound, the Swiss franc, the Canadian dollar, the Australian dollar, and the New Zealand dollar. Net long positioning is calculated as the difference between noncommercial long and short positioning, divided by total open interest. Dotted lines represent the 25th and 75th percentiles for historic dollar positioning.

U.S. economic data over the quarter was characterized as mixed, though investors largely looked through the data in anticipation of a stronger growth trajectory later in the year; the dollar's response to major data releases was quite limited in the first quarter.

Market participants continued to note U.S. progress in COVID-19 vaccinations as supporting the narrative of increased expectations for U.S. growth outperformance, particularly relative to jurisdictions that faced vaccine rollout delays. Some noted, however, that the impact may moderate as gaps in vaccination progress would likely narrow later in the year as other economies overcame initial challenges in production and distribution.

EURO DEPRECIATES IN RESPONSE TO UPGRADES TO U.S. GROWTH FORECASTS, WIDENED INTEREST RATE DIFFERENTIALS IN FAVOR OF U.S. DOLLAR

The U.S. dollar appreciated 4.1 percent against the euro, providing the largest contribution to the increase in the trade-weighted broad dollar index during the first quarter. U.S. dollar appreciation against the euro largely reflected upward revisions to the U.S. growth outlook relative to the euro area and widening interest rate differentials in favor of the dollar as U.S. Treasury yields rose. Relative differences in vaccination progress and more prolonged European lockdowns were seen by some investors as weighing on investor sentiment toward the euro and supporting the narrative around divergent growth expectations.

Market participants noted that some forward-looking considerations may have limited the extent of euro depreciation against the U.S. dollar over the quarter. Some noted that the impact of delayed vaccine programs in the euro area may be transitory as supply and distribution issues were expected to be addressed, and these expected improvements were seen as likely limiting the need for future lockdowns. Against this backdrop, the widening gap between U.S. and euro area growth forecasts was driven primarily by increases to U.S. expectations rather than downgrades to euro area growth expectations.

The European Central Bank (ECB) left its policy rates unchanged over the period. It announced on March 11 that it would accelerate its pandemic emergency purchase programme (PEPP), while leaving the total envelope for purchases unchanged in response to pressure from rising yields.

JAPANESE YEN DEPRECIATES SHARPLY AS INTEREST RATE DIFFERENTIALS WIDEN IN FAVOR OF U.S. DOLLAR

The U.S. dollar appreciated 7.2 percent against the Japanese yen in the first quarter. The relatively large move was primarily attributed to widening interest rate differentials in favor of the U.S. dollar, as the Bank of Japan's (BoJ) yield curve control framework limits moves in Japanese yields. During the quarter, the spread between the ten-year U.S. Treasury yield and the equivalent Japanese government bond yield widened by 75 basis points, to its widest level since February 2020. Additionally, market participants noted that improved risk sentiment supported the reversal of safe haven flows, as the dollar−yen exchange rate moved toward pre-pandemic levels.

The BoJ undertook limited policy action during the first quarter. The central bank left its policy rate unchanged, but at the March policy meeting, Governor Kuroda clarified that the BoJ's yield band would be widened to plus/minus 25 basis points, which was wider than the plus/minus 20 basis point spread previously understood by market participants. Nevertheless, there was no significant impact on the dollar−yen exchange rate from the announcement.

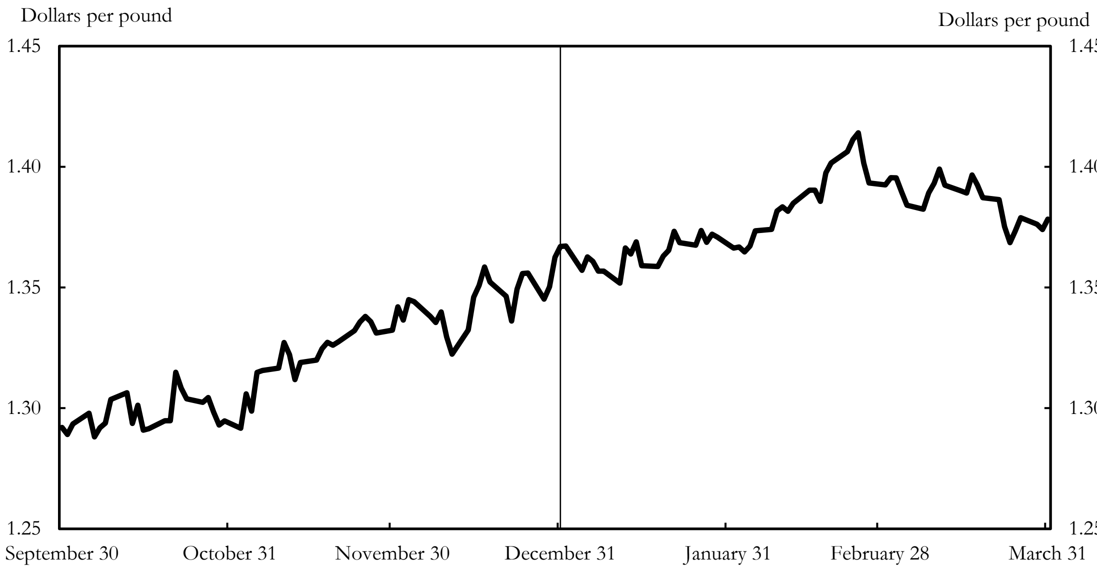
BRITISH POUND APPRECIATES ON VACCINATION PROGRESS

The U.S. dollar depreciated 0.9 percent on net against the British pound in the first quarter, with most of the move concentrated in the first two months of the quarter. The pound was widely viewed as supported by progress on vaccinations in the U.K. and thus prospects for forthcoming economic reopening. Additionally, monetary policy over the quarter was generally viewed as supportive of the pound against the positive macroeconomic backdrop, as market contacts largely priced out negative interest rate policy due to statements from the Bank of England (BoE).

Market participants noted that the appreciation of the pound against the U.S. dollar was limited by widening rate differentials in favor of the U.S. dollar toward the end of the quarter. Additionally, some market participants noted that the acceleration in U.S. vaccination progress later in the quarter narrowed the gap with the U.K.'s vaccination program, further limiting pound appreciation toward the end of the quarter.

Chart 9

BRITISH POUND−U.S. DOLLAR EXCHANGE RATE



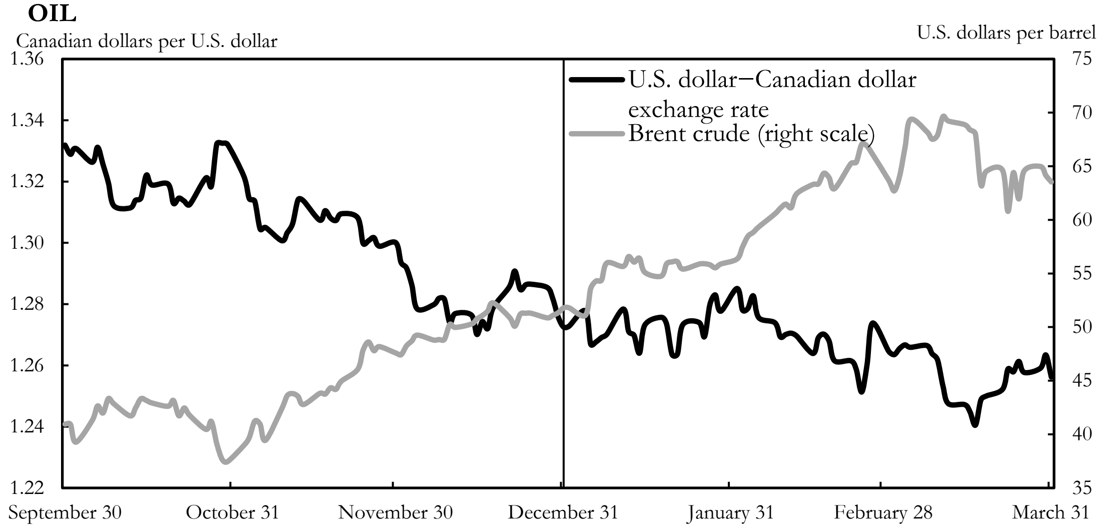
Source: Bloomberg L.P.

CANADIAN DOLLAR APPRECIATES AGAINST U.S. DOLLAR, SUPPORTED BY RISE IN CRUDE OIL PRICES

The Canadian dollar outperformed all other G10 currencies against the U.S. dollar in the first quarter, appreciating 1.3 percent amid a 23 percent increase in crude oil prices. The surge in crude oil prices reflected a combination of increased demand due to cold weather and supply disruptions outside of Canada. In addition to rising crude oil prices, moderately strong economic data toward the end of the quarter were supportive of the Canadian dollar. The Bank of Canada (BoC) maintained its policy rate and its quantitative easing programs over the quarter, although market contacts expected that the BoC would announce a reduction in its asset purchase program in the near future.

Chart 10

U.S. DOLLAR–CANADIAN DOLLAR EXCHANGE RATE AND CRUDE OIL



Source: Bloomberg L.P.

U.S. YIELD INCREASES AND VACCINE PROGRESS SUPPORT U.S. DOLLAR AGAINST MEXICAN PESO AND OTHER EMERGING MARKET CURRENCIES

The U.S. dollar appreciated 2.1 percent against emerging market currencies in the first quarter, as measured by the Federal Reserve's trade-weighted Emerging Market Economies Dollar Index.[2] The notable appreciation of the dollar against emerging market currencies was broadly attributed to rising U.S. Treasury yields and progress in vaccinations. Among emerging market currencies, performance was varied. Rising oil prices were cited as limiting depreciation against the dollar in the currencies of some oil-producing countries, such as the Chilean peso and Russian ruble. More pronounced depreciations in the Brazilian real, Colombian peso, and Turkish lira were attributed to local political and economic developments, in addition to the stress of rising U.S. Treasury yields on countries with large external funding needs and other macroeconomic vulnerabilities.

Market participants remained attuned to potential risks among emerging market currencies as U.S. Treasury yields rose and the dollar strengthened throughout the quarter, citing the potential impact for high debt burdens and challenging fiscal trajectories. Overall, however, the benign global growth

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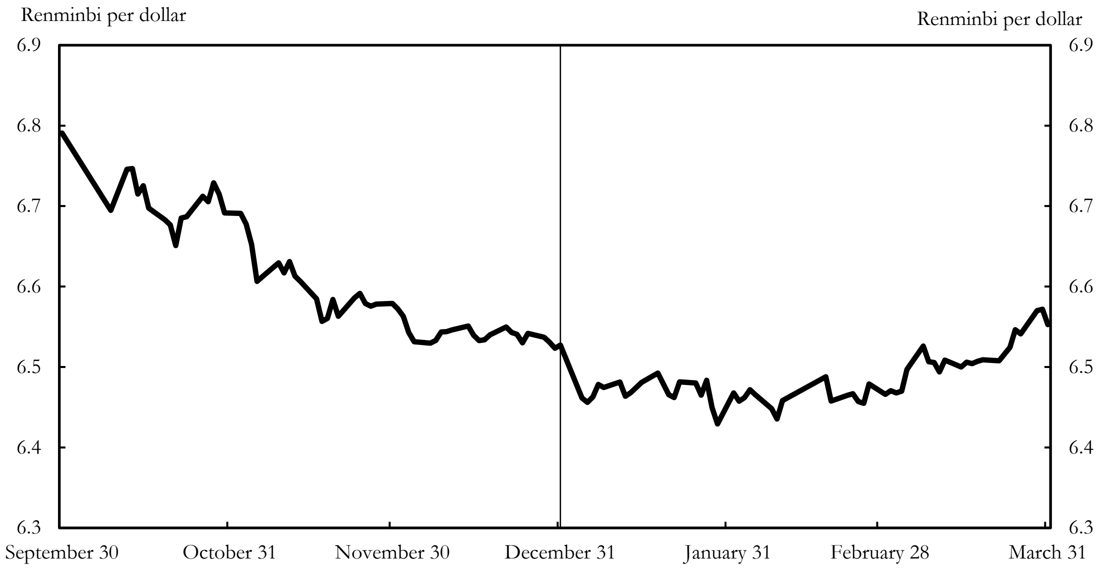
[2] The Federal Reserve's Emerging Market Economies Dollar Index, formerly known as the other important trading partners (OITP) index, is a weighted average of the foreign exchange value of the U.S. dollar against a subset of emerging market currencies. For more information on the index, see Revisions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

outlook, rise in commodity prices, and positive current account balances across many countries were cited as limiting downside risks to emerging markets more generally.

The U.S. dollar appreciated 2.6 percent against the Mexican peso, representing the third-largest contributor to U.S. dollar strength in the trade-weighted index in the first quarter. In addition to the impact of rising U.S. Treasury yields and relative growth expectations, local factors related to an electricity reform law, supply chain disruptions, and Banco de México's 25 basis point policy rate cut in February were seen as weighing on the peso's performance over the quarter.

Chart 11

U.S. DOLLAR−ONSHORE RENMINBI EXCHANGE RATE



Source: Bloomberg L.P.

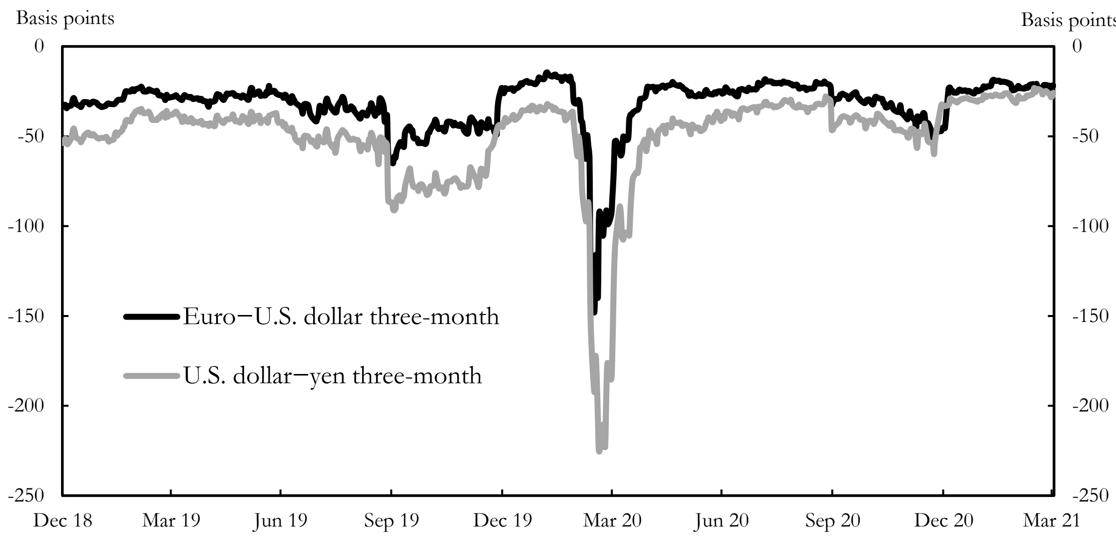
The U.S. dollar appreciated 0.4 percent against the onshore Chinese renminbi in the first quarter. Against the backdrop of increased expectations of U.S. growth outperformance and broad dollar strength, renminbi depreciation was relatively modest and was characterized by some market participants as a pause in the renminbi's consistent appreciation trend over the past year. The rise in U.S. Treasury yields led to a narrowing of China's yield advantage that had supported the renminbi over the pandemic period. Additionally, market participants were attentive to the divergence between prospective fiscal policy paths in the two economies, as economic officials in China signaled a desire to move away from pandemic-related stimulus measures even as prospects for multiple rounds of U.S. fiscal stimulus continued to grow. The differing policy paths were seen as narrowing the difference in growth expectations between the two countries that had emerged following China's success in controlling the coronavirus outbreak in early 2020.

FOREIGN EXCHANGE SWAP MARKETS REMAIN STABLE

Foreign exchange swap market pricing and trading conditions remained generally stable in the first quarter. Three-month foreign exchange swap basis spreads of key U.S. dollar currency pairs began the new year trading at narrower levels compared to the end of 2020. Market participants attributed the comparably smooth market conditions around the new year to ample dollar liquidity amid increasing levels of bank reserves and limited bank balance sheet constraints, as well as the continued availability of the Federal Reserve's backstop U.S. dollar liquidity swap facilities.

Chart 12

FOREIGN EXCHANGE SWAP-IMPLIED BASIS SPREADS



Source: Bloomberg L.P.

U.S. DOLLAR LIQUIDITY SWAP ARRANGEMENTS WITH FOREIGN CENTRAL BANKS

Aggregate swaps outstanding of the standing and temporary dollar liquidity swap arrangements with foreign central banks declined to roughly $2.5 billion by the end of the first quarter of 2021, compared to $18 billion at the end of 2020 and a peak of nearly $450 billion in late May 2020.[3] Market participants

[3] Consistent with the current Authorization for Foreign Currency Operations, the Desk conducts small-value exercises for the standing liquidity swap arrangements as a matter of prudent advance planning. No inference about policy should be drawn from these exercises.

noted that the further decline in swaps outstanding reflected continued stabilization of trading conditions in offshore dollar funding markets with balanced dollar supply and demand dynamics.

With respect to the standing dollar liquidity swap arrangements, the Federal Reserve had a total of $2.1 billion of swaps outstanding with these central banks at the end of the quarter. As of March 31, the Swiss National Bank had $1.6 billion of swaps outstanding and the ECB had $0.5 billion of swaps outstanding. The BoJ, BoC, and BoE did not have any dollar swaps outstanding at the end of the quarter.

With respect to the temporary swap lines[4] with nine additional central banks, the Federal Reserve had a total of $0.4 billion of swaps outstanding with these central banks at the end of the quarter. As of March 31, Banco de México had $0.4 billion of swaps outstanding. The Monetary Authority of Singapore, Danmarks Nationalbank, Bank of Korea, Norges Bank, Sveriges Riksbank, Reserve Bank of Australia, Reserve Bank of New Zealand, and Banco Central do Brasil did not have any dollar swaps outstanding at the end of quarter.

The Federal Reserve's temporary U.S. dollar liquidity swap lines and the temporary FIMA (foreign and international monetary authorities) repo facility are currently set to expire on September 30, 2021, as announced on December 16, 2020.

[4] 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.

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 $21.1 billion, comprised of euro and yen holdings. The Federal Reserve System Open Market Account (SOMA) holdings of foreign-currency-denominated assets also totaled $21.1 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.[5]

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 U.S. dollar value of euro-denominated deposits and government securities held by the SOMA and the ESF decreased to $25.3 billion from $26.4 billion on December 31. The U.S. dollar value of yen-denominated deposits and government securities decreased to $16.9 billion from the prior quarter's balance of $18.1 billion. These changes are largely driven by foreign exchange translation effects.

[5] 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.

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, 2020[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, 2021[a]
Federal Reserve System Open Market Account (SOMA)						
Euro	13,220	0	(11)	0	(526)	12,683
Japanese yen	9,059	0	(0)	0	(608)	8,451
Total	22,279	0	(11)	0	(1,134)	21,134

		Changes in Balances by Source				
	Carrying Value, December 31, 2020[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, 2021[a]
U.S. Treasury Exchange Stabilization Fund (ESF)						
Euro	13,199	0	(11)	0	(525)	12,663
Japanese yen	9,059	0	(0)	0	(608)	8,451
Total	22,258	0	(11)	0	(1,133)	21,114

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, 2021

	U.S. Treasury Exchange Stabilization Fund (ESF)[a]	Federal Reserve System Open Market Account (SOMA)[a]
Euro-denominated assets	**12,663.3**	**12,682.8**
Cash held on deposit at official institutions	6,329.7	6,349.2
Marketable securities held under repurchase agreements[b]	0.0	0.0
Marketable securities held outright	6,333.6	6,333.6
German government securities	1,025.4	1,025.4
French government securities	2,668.2	2,668.2
Dutch government securities	2,640.0	2,640.0
Yen-denominated assets	**8,451.0**	**8,450.9**
Cash held on deposit at official institutions	7,870.4	7,870.4
Marketable securities held outright	580.6	580.6

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 of 24.26 and 24.30 months, respectively; both the SOMA and ESF yen portfolios had Macaulay durations of 0.19 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 March 31, 2021
	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	Unlimited	510
Swiss National Bank	Unlimited	1,600
Bank of Japan	Unlimited	0
Bank of Canada	Unlimited	0
Bank of England	Unlimited	0
		2,110
Temporary dollar liquidity swap arrangements		
Banco Central do Brasil	60,000	0
Banco de México	60,000	400
Bank of Korea	60,000	0
Danmarks Nationalbank	30,000	0
Monetary Authority of Singapore	60,000	0
Norges Bank	30,000	0
Reserve Bank of Australia	60,000	0
Reserve Bank of New Zealand	30,000	0
Sveriges Riksbank	60,000	0
		400
Standing foreign currency liquidity swap arrangements		
European Central Bank	Unlimited	0
Swiss National Bank	Unlimited	0
Bank of Japan	Unlimited	0
Bank of Canada	Unlimited	0
Bank of England	Unlimited	0
		0
	U.S. Treasury Exchange Stabilization Fund (ESF)	
Banco de México	9,000	0
	9,000	0