TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS

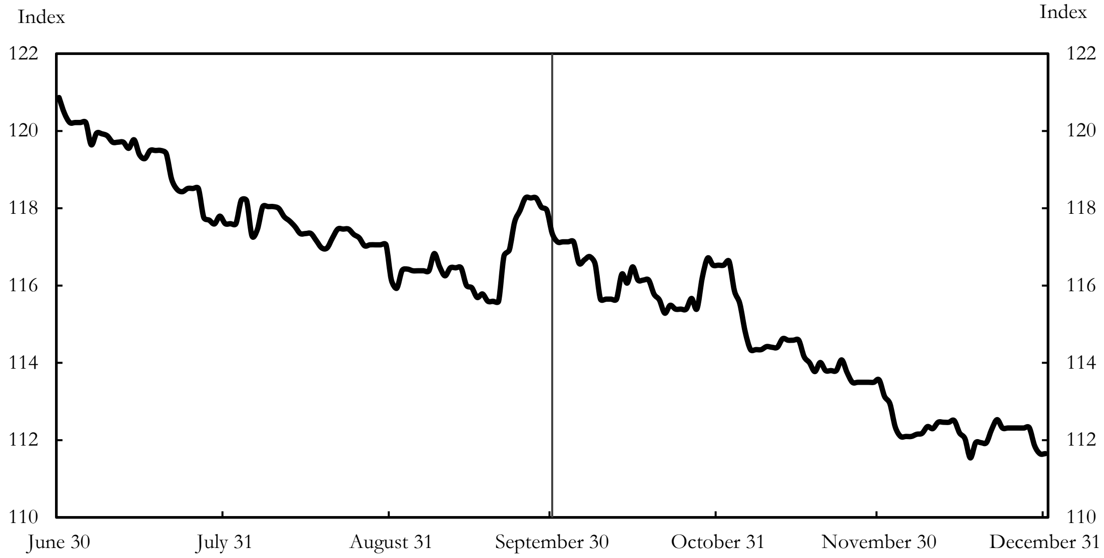
October – December 2020

During the fourth quarter of 2020, the U.S. dollar, as measured by the Federal Reserve Board's broad trade-weighted dollar index, depreciated 4.9 percent, the largest quarterly depreciation since the second quarter of 2009. The dollar's depreciation was driven primarily by improved global risk sentiment amid the advent of multiple effective COVID-19 vaccines—which increased global growth expectations and supported foreign currencies—as well as reduced policy uncertainty following the U.S. election and continued expectations for U.S. monetary policy to remain accommodative. In line with the improved risk sentiment, dollar depreciation was broad-based, but was led by an outperformance in emerging market currencies relative to G10 currencies, with appreciation in the Mexican peso accounting for the largest contribution to the trade-weighted dollar's decline. On a bilateral basis, the U.S. dollar depreciated by 9.9 percent against the Mexican peso, 5.5 percent against the British pound, 4.1 percent against the euro, 3.9 percent against the Chinese renminbi, and 2.1 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 October through December 2020. Ian Armstrong was primarily responsible for preparation of the report.

Chart 1

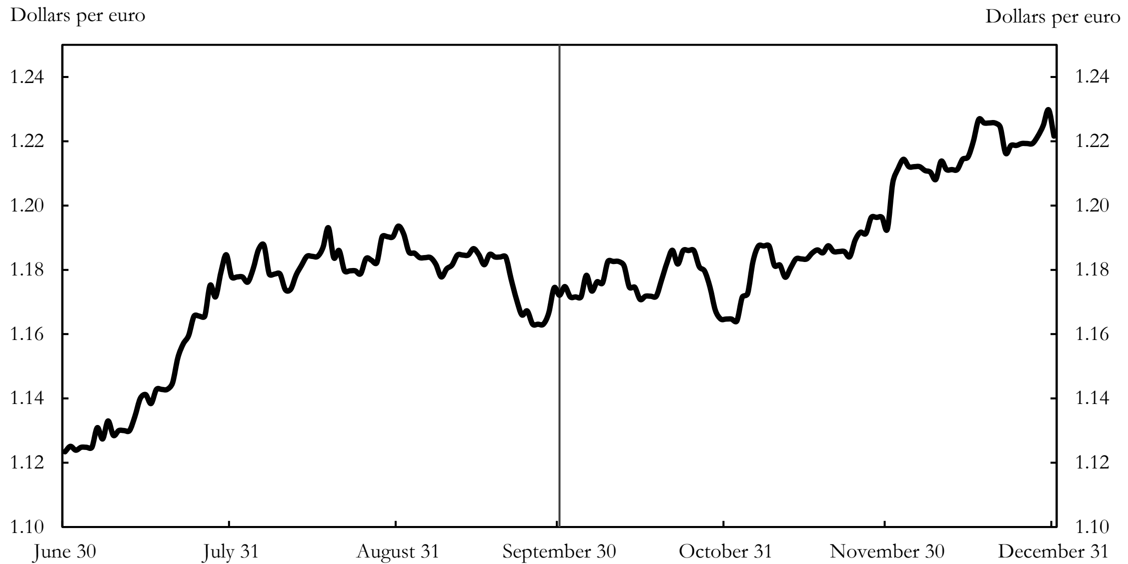
BROAD TRADE-WEIGHTED U.S. DOLLAR INDEX



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

Chart 2

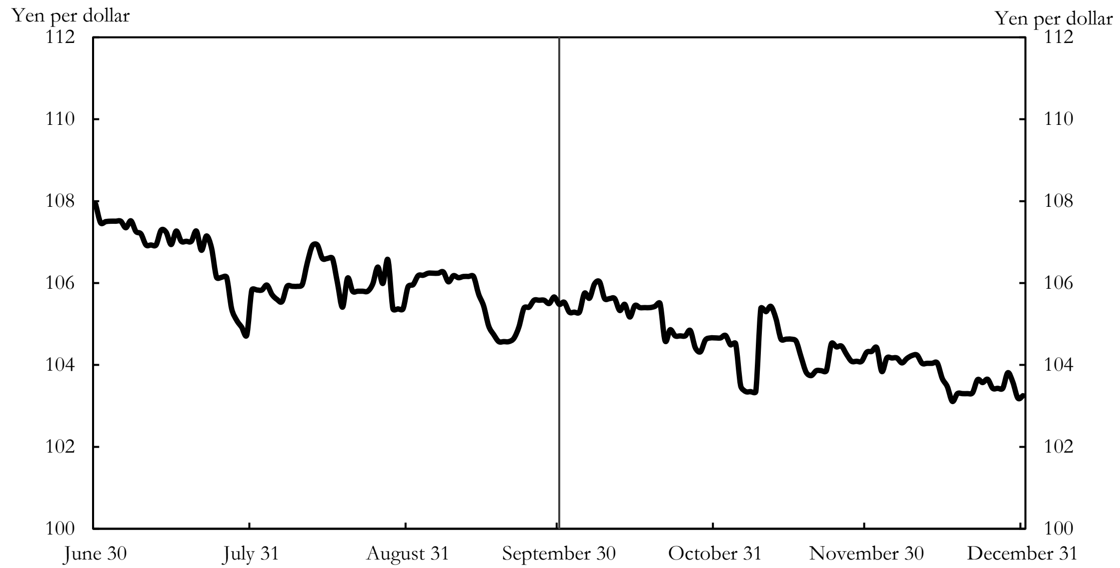
EURO−U.S. DOLLAR EXCHANGE RATE



Source: Bloomberg L.P.

Chart 3

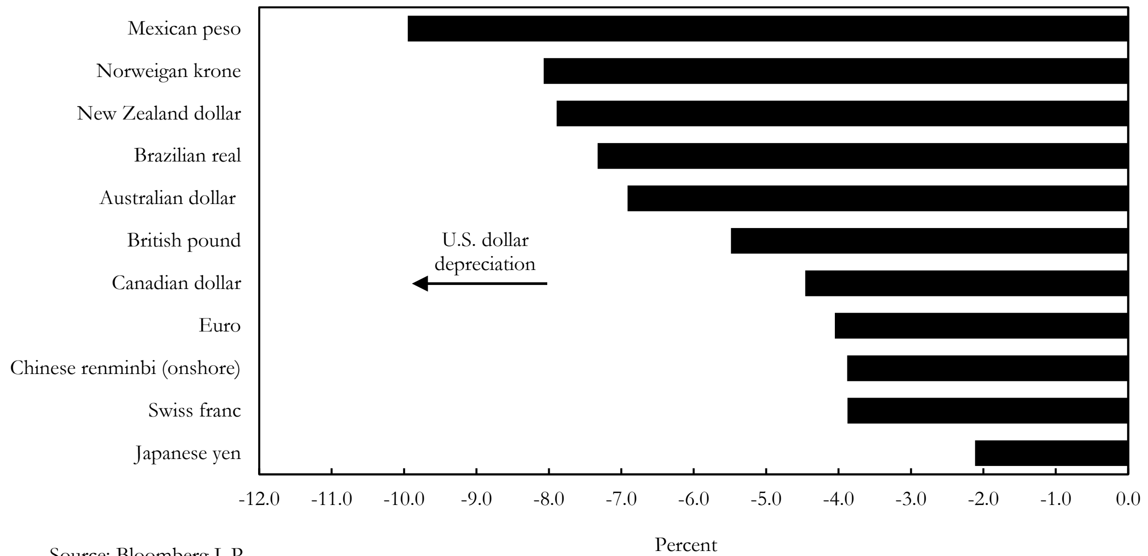
U.S. DOLLAR−YEN EXCHANGE RATE



Source: Bloomberg L.P.

Chart 4

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



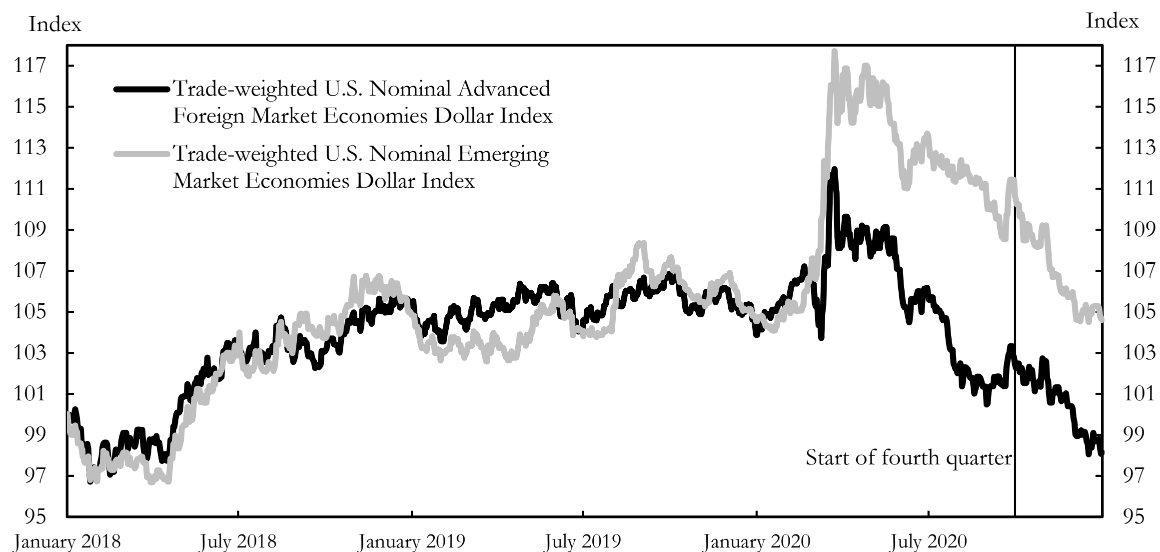
Source: Bloomberg L.P.

U.S. DOLLAR CONTINUES TO DEPRECIATE AMID IMPROVED GLOBAL RISK SENTIMENT, POST-ELECTION REDUCTION IN U.S. POLICY UNCERTAINTY

During the fourth quarter of 2020, the U.S. dollar, as measured by the Federal Reserve Board's broad trade-weighted dollar index, depreciated 4.9 percent on net, the largest quarterly decline since the second quarter of 2009.[1] The move represented a continuation of the depreciation trend seen in the prior two quarters, taking the index below its level at the onset of the COVID-19 pandemic in the spring of 2020 and to the weakest point since mid-2018. Depreciation in the dollar was broad-based against all G10 and most emerging market currencies, with the latter accounting for roughly 60 percent of the overall decline.

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.

Depreciation in the dollar—which as a "safe haven" asset tends to depreciate when the value of global risk assets increases—was most notably driven by continued improvement in global risk sentiment throughout the fourth quarter, particularly following the advent of multiple effective COVID-19 vaccines. Financial market sentiment was initially buoyed in the first half of November

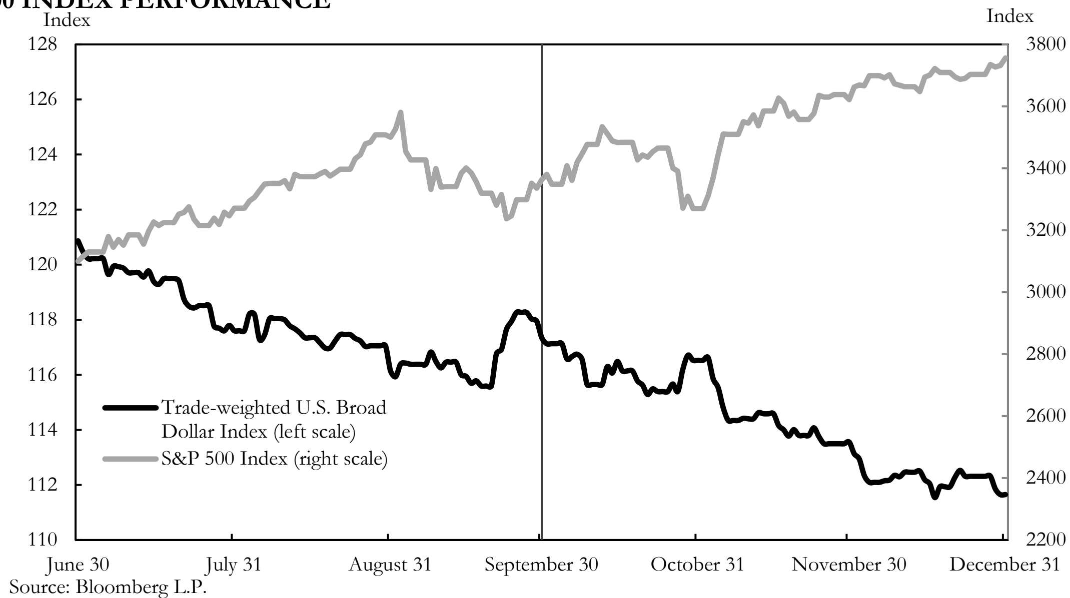
[1] The Federal Reserve's broad trade-weighted dollar index is based on twenty-six currencies, including major advanced market currencies and currencies of other important trading partners of the United States, including emerging markets.

amid reports that two vaccine candidates had completed trials and achieved higher-than-expected protection rates against the virus. Risk-positive price action and dollar depreciation pressures were subsequently sustained throughout the remainder of the quarter as initial vaccine doses were distributed across several major economies and administered to groups with higher rates of COVID-19 exposure.

Market participants widely perceived these advances as bolstering expectations for a stronger global economic recovery than previously forecast, in turn supporting flows into global equities and foreign currencies while weakening the dollar. In particular, the beginning of a global vaccination effort was reflected in global growth outlooks for the second half of 2021,[2] when broad immunity effects were expected to materialize and support the normalization of economic activity. While vaccine developments occurred alongside a global acceleration in COVID-19 cases, market participants noted that the timing of the rollout allowed market participants to generally look past the short-term economic impacts of the continuing spread of the virus—which may have otherwise resulted in dollar demand—and instead focus on the medium-term prospects of a stronger global recovery. On net, the broad dollar decline in the fourth quarter was consistent with quarterly gains across major global equity indexes, with the dollar maintaining its particularly strong negative correlation to U.S. equity performance.

Chart 6

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



Source: Bloomberg L.P.

[2] According to Bloomberg consensus forecasts compiled over the quarter, the median GDP growth outlook for G20 countries in the fourth quarter of 2021 increased by 0.7 percent on an annual year-over-year basis.

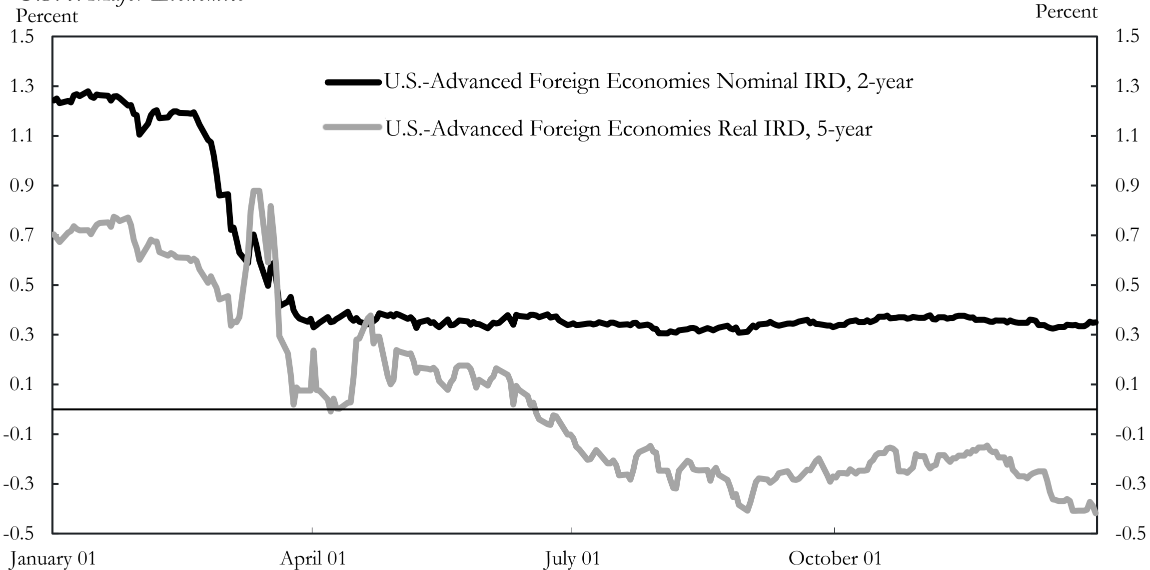
At the same time, market participants were attentive to the outcome of the U.S. election in early November, which coincided with the initial vaccine announcements and was viewed as adding to dollar depreciation pressures through two primary channels. First, the conclusion of the U.S. election represented the passage of an important risk event, removing some of the risk premium that was previously embedded in markets amid concerns of a potentially delayed outcome and weakening the dollar through additional improvements to market sentiment. Second, the presidential election yielded an incoming administration that was widely viewed by market participants as unlikely to increase geopolitical tensions with China and Europe, with the possibility of heightened tensions having previously offered an intermittent source of dollar appreciation pressure relative to the Chinese renminbi and the euro.

Expectations for an extended period of accommodative U.S. monetary policy were also cited as weighing on the dollar, including sustained asset purchases and the newly implemented guidance on flexible average inflation targeting. These expectations were reaffirmed by Federal Open Market Committee (FOMC) meetings throughout the quarter, as the FOMC maintained rates at the zero lower bound, provided guidance on continued asset purchases, and was perceived as signaling that monetary policy would remain accommodative despite a more positive outlook for economic growth as a result of the vaccine rollout. Indeed, federal funds futures at the end of December implied a flat path of policy into 2024.

Chart 7

TRADE-WEIGHTED INTEREST RATE DIFFERENTIALS (IRDs)

U.S. v. Major Economies



Sources: Board of Governors of the Federal Reserve System; Bloomberg L.P.; New York Fed staff calculations.

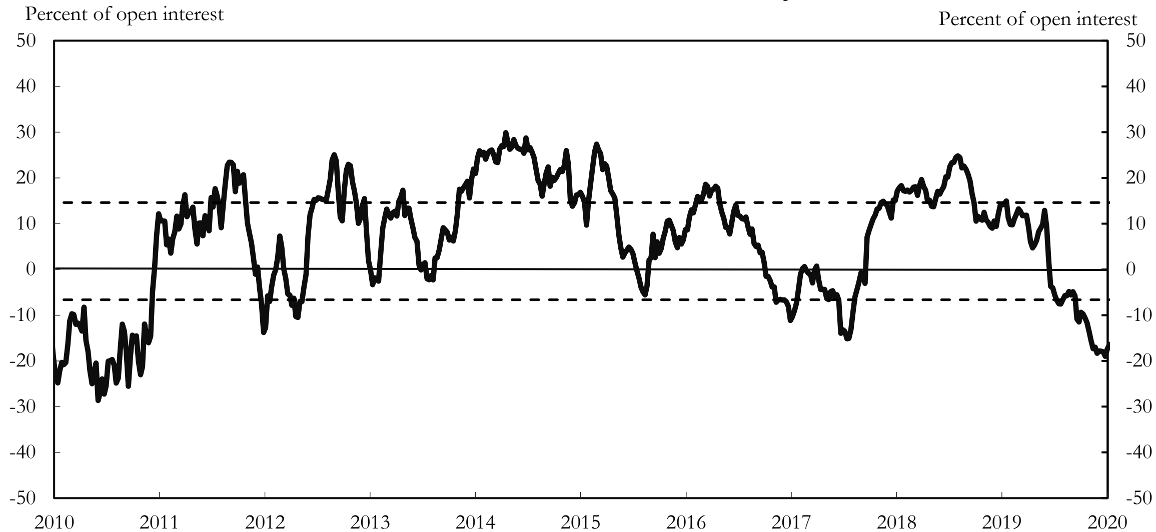
The reduced U.S. nominal yield advantage relative to other advanced economies since earlier in the year continued to be cited by market participants as a lasting source of depreciation pressure on the dollar. On the margins, some investors also noted quarterly declines in U.S. real rates as adding to these depreciation pressures, with five-year U.S. real rates decreasing modestly when compared to other advanced economy yields on a trade-weighted basis.

Market participants were also attentive to the prospect of additional U.S. fiscal stimulus. While expectations for the timing and magnitude of a prospective fiscal package remained in flux for much of October and November, a significant resurgence in U.S. COVID-19 cases and relatively weak late-quarter employment data[3] contributed to a growing conviction that near-term stimulus would be enacted in some form. These expectations—which were later realized with the passage of an additional $900 billion stimulus bill in late December—were viewed by some as contributing to a weaker dollar on net, as the risk-supportive impacts and implications for the U.S. budget deficit were seen as outweighing any potential dollar-positive impacts. Separately, the increase in the U.S. fiscal deficit was noted by some market participants as occurring amid a widening U.S. current account deficit[4] (often referred to as "twin deficits"), which together are seen by market participants as potential drivers of dollar weakness.

Lastly, the significant dollar depreciation pressures that were in place throughout the fourth quarter were also reflected in data from currency futures markets, with net aggregate dollar positioning for asset managers reaching historically short levels toward the end of December.

[3] In particular, the U.S. November Employment Situation Report printed below expectations in early December and was viewed as potentially contributing to increased urgency for near-term fiscal stimulus.
[4] According to the latest U.S. International Transactions Report, published by the U.S. Department of Commerce on December 18, 2020, the U.S. trade deficit widened to $178.5 billion in the third quarter of 2020—the widest level since the second quarter of 2008.

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, Japanese yen, British pound, Swiss franc, Canadian dollar, Australian dollar, and 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.

EURO APPRECIATES ON IMPROVED RISK SENTIMENT, RELATIVELY POSITIVE ECONOMIC DATA

The U.S. dollar depreciated 4.1 percent against the euro in the fourth quarter amid broad dollar weakness relative to G10 currencies, with the euro's appreciation owing to improved global risk sentiment, relatively positive economic data prints in the euro area, and reports of emerging market central bank portfolio rebalancing away from the dollar into euros. Appreciation in the euro represented the second largest contribution to the decline in the trade-weighted broad dollar index.

Early in the quarter, a number of crosscurrents resulted in the euro–dollar currency pair trading within a relatively narrow range, with the euro appreciation pressures from broad dollar weakness and early reports of vaccine progress being tempered by rising COVID-19 cases in Europe and the aforementioned U.S. election uncertainty. However, from early November onward, the euro sustained appreciation relative to the dollar as the improvements in risk sentiment that followed reports of an effective vaccine and the passage of the U.S. elections began to outweigh any competing euro depreciation pressures, in line with the broad dollar weakness seen across G10 currency pairs.

In this context, the euro was also bolstered by relatively resilient fourth-quarter data prints, which—despite rising concerns over the impact of the latest regional virus outbreak—were viewed in aggregate as potentially reflecting greater euro area economic resilience to rising COVID-19 containment

measures than during the earlier lockdowns in spring 2020. Market participants were particularly attentive to industrial sector outperformance and above-expectations purchasing managers' index (PMI) prints, which remained in expansionary territory for France, Germany, and the euro area more broadly, allowing many to look through the lockdown impacts that were concurrently seen in weaker consumption and service-sector data.

Additionally, following a steady accumulation of dollar reserves throughout the quarter as central banks implemented their foreign exchange policies, some market participants also cited emerging market central bank portfolio rebalancing out of the dollar and into the euro as a factor in the euro's appreciation.

The European Central Bank (ECB) left interest rates unchanged over the quarter and extended the easing measures first set in place at the onset of the COVID-19 pandemic, but these actions were not viewed as having a material impact on the currency. The broad easing package offered additional euro area policy accommodation, including a €500 billion increase and nine-month extension to its pandemic emergency purchase program as well as the provision of three new longer-term refinancing operations. The impact of these actions on the euro was limited because market participants interpreted them as maintaining financial conditions rather than expanding the ECB's accommodative policy stance.

JAPANESE YEN APPRECIATES MODESTLY AMID BROAD DOLLAR WEAKNESS, NARROWER U.S. INTEREST RATE DIFFERENTIALS

The U.S. dollar depreciated 2.1 percent against the Japanese yen, with the currency pair trading within a relatively narrow range throughout the quarter. As was the case in the third quarter, appreciation in the yen was viewed mainly in the context of broad dollar weakness against advanced market currencies, with Japan-specific factors contributing marginally to the move. Market participants continued to highlight the yen as benefiting from the Federal Reserve's maintenance of low interest rates throughout the fourth quarter, which narrowed U.S.–Japan interest rate differentials and removed a previous source of support for the dollar relative to the yen. Additionally, the yen was supported by expectations for a stronger economic rebound in Japan and subsequent foreign inflows to Japanese assets. Preliminary third-quarter Japanese GDP growth printed above expectations on a quarter-over-quarter basis in November and was later revised upward for the final print in December.[5]

[5] The November 15 release of Japan's preliminary third-quarter GDP printed at 5.0 percent on a seasonally adjusted quarter-over-quarter basis, relative to expectations for 4.4 percent. The final print, released on December 7, was revised upward to 5.3 percent.

Policy actions taken by the Bank of Japan (BoJ) and the Japanese government were not viewed as having a material impact on the dollar–yen exchange rate in the fourth quarter. In regard to monetary policy, the BoJ left its policy rate unchanged while extending its COVID-19-related support facilities by an additional six months. Separately, the BoJ also unexpectedly introduced a new deposit facility for regional banks aimed at addressing ongoing concerns over Japanese regional bank performance, concerns driven in part by low interest rates as well as structural and demographic factors. Lastly, market participants were attentive to the Japanese government's December announcement of a third round of fiscal stimulus in response to the ongoing pandemic, which was seen as broadly in line with estimates.

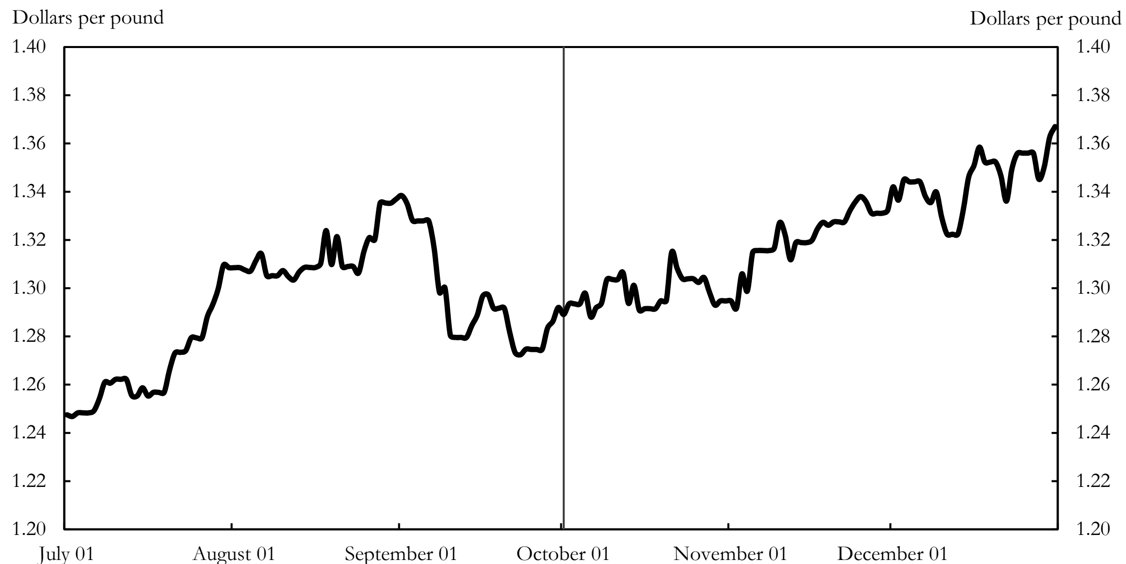
BRITISH POUND APPRECIATES ON EXPECTED BREXIT DEAL, IMPROVED GLOBAL RISK SENTIMENT

The U.S. dollar depreciated 5.5 percent on net against the British pound in the fourth quarter amid expectations for a trade agreement on Brexit and concurrent support from broad improvements in global risk sentiment.

The British pound's notable quarterly appreciation occurred in the context of the currency's sharp 3.5 percent depreciation against the dollar in the final month of the prior quarter, following a perceived increase in the risk of a no-deal Brexit. While price action was at times volatile throughout the quarter, the pound appreciated on the resumption of Brexit talks in October—a development that was viewed as removing some of the no-deal tail risk that emerged following increased tensions between the U.K. and European Union in September. The pound was further supported throughout the quarter as consensus began to reflect greater conviction that a deal would be reached, with a limited, goods-focused trade agreement eventually being secured in late December, in line with expectations. At the same time, appreciation in the pound was further supported by the broader improvements in global risk sentiment, with relative dollar depreciation occurring at an accelerated rate from November onward.

Chart 9

BRITISH POUND–U.S. DOLLAR EXCHANGE RATE



Source: Bloomberg L.P.

IMPROVED RISK SENTIMENT AND RISING COMMODITY PRICES SUPPORT MEXICAN PESO, OTHER EMERGING MARKET CURRENCIES

The U.S. dollar depreciated 5.5 percent against emerging market currencies in the fourth quarter, as measured by the Federal Reserve's trade-weighted Emerging Market Economies Dollar Index. This represented a roughly two standard deviation move over a ten-year time horizon that accounted for approximately 60 percent of the decline in the broad dollar index over the quarter.[6] The notable appreciation of emerging market currencies was broadly attributed to the aforementioned improvements in global risk sentiment, with further support being provided to commodity-sensitive emerging market currencies, such as the Colombian peso and Brazilian real, amid a 26.5 percent quarterly rise in generic Brent crude oil futures.[7]

Roughly one-fourth of the dollar's broad depreciation over the quarter was due to a 9.9 percent decline against the Mexican peso. Favorable global risk sentiment and higher commodity prices were

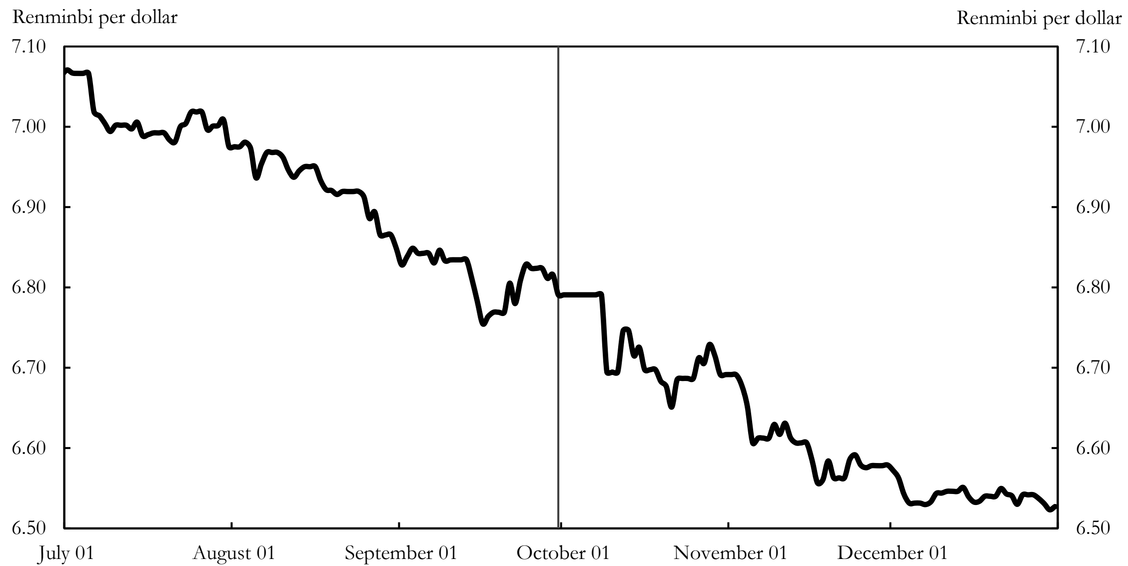
[6] The Federal Reserve's Emerging Market Economies Dollar Index, formerly known as the other important trading partners (OITP) index, is a weighted average of the foreign exchange value of the U.S. dollar against a subset of emerging market currencies. For more information on the index, see Revisions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

[7] Rising oil prices were also attributed to the price movements of commodity-sensitive advanced market currencies, including depreciation in the U.S. dollar relative to the Norwegian krone and Australian dollar by 8.1 and 6.9 percent respectively.

key drivers of peso appreciation, but the currency also benefitted from less fiscal and monetary policy easing relative to its emerging market peers. Banco de México left its policy rate unchanged at 4.25 percent throughout the quarter despite market expectations for a 25 basis point decrease.

Chart 10

U.S. DOLLAR−ONSHORE CHINESE RENMINBI EXCHANGE RATE



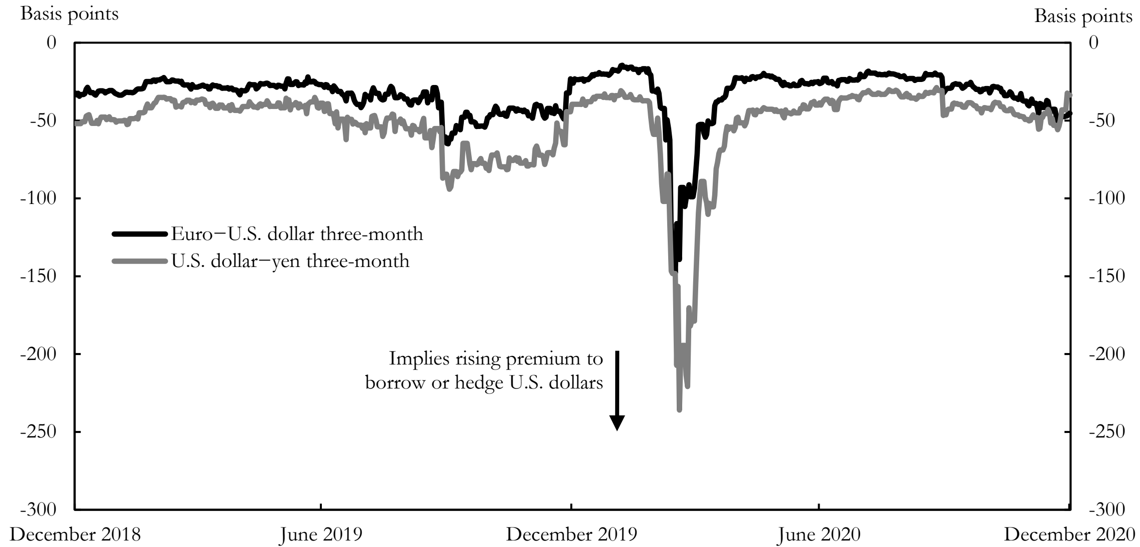
Source: Bloomberg L.P.

Elsewhere, the U.S. dollar depreciated 3.9 percent against the onshore Chinese renminbi in the fourth quarter—accounting for roughly 0.6 percentage points of the decline in the broad dollar index. Against the backdrop of improved global risk sentiment and broad dollar weakness, renminbi appreciation was further supported by China's economic recovery and the expectation for a more robust rebound in growth relative to the United States. Indeed, several major Chinese data releases printed substantially above market consensus, including manufacturing and services PMIs that printed at or near all-time highs and export data indicating significantly greater growth than expected.[8] Additionally, the renminbi was seen as being further supported against the dollar due to favorable China–U.S. interest rate differentials and the perception that the incoming U.S. administration would not increase bilateral trade tensions.

[8] The November Caixin PMI printed at 54.9 for manufacturing and 57.8 for services, relative to expectations for 53.5 and 56.4, respectively. In export data, November Chinese exports printed at 21.1 percent year-over-year compared to the market consensus for 12 percent growth.

Chart 11

FOREIGN EXCHANGE SWAP-IMPLIED BASIS SPREADS



Sources: Bloomberg L.P.; New York Fed staff calculations.

FOREIGN EXCHANGE SWAP MARKETS REMAIN STABLE

Foreign exchange swap market pricing and trading conditions remained generally stable in the fourth quarter. Three-month foreign exchange swap basis spreads of key U.S. dollar currency pairs entered the fourth quarter trading at slightly wider levels compared to the prior quarter, with pricing capturing higher funding costs over the turn of the year. Over the remainder of the fourth quarter, market participants reported that the premium to fund dollars via foreign exchange swaps over year-end was generally lower than in prior years and characterized year-end trading dynamics as relatively smooth. Market participants attributed the comparably benign conditions around year-end 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.

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

Aggregate swaps outstanding of the standing and temporary dollar liquidity swap arrangements[9] declined to roughly $18 billion by the end of the fourth quarter, compared to $24 billion at the end of the third quarter and a peak of nearly $450 billion in late May. Market participants noted that the further decline in swaps outstanding likely reflected continued stabilization of trading conditions and a well-functioning market with balanced dollar supply and demand dynamics, including during the year-end period.

With respect to the standing dollar liquidity swap arrangements, the Federal Reserve had a total of $14.2 billion of swaps outstanding with these central banks at the end of the quarter. As of December 31, the Swiss National Bank (SNB) had $10.0 billion of swaps outstanding and the ECB had $4.2 billion of swaps outstanding. The BoJ, Bank of Canada (BoC), and Bank of England (BoE) did not have any dollar swaps outstanding at the end of the quarter.

With respect to the temporary swap lines[10] with nine additional central banks, the Federal Reserve had a total of $3.7 billion of swaps outstanding with these central banks at the end of the quarter. As of December 31, the Monetary Authority of Singapore had $2.2 billion of swaps outstanding, Banco de México had $1.1 billion of swaps outstanding, and Danmarks Nationalbank had $0.4 billion of swaps outstanding. 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.

On December 16, the Federal Reserve announced the extension of its temporary U.S. dollar liquidity swap lines and the temporary FIMA (foreign and international monetary authorities) repo facility through September 30, 2021. While market participants viewed the announcement as supportive of ongoing market stability, minimal price action was attributed to the release due in part to market expectation of an extension and the recent minimal utilization of the swap lines.

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

[10] 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 December 31, the value of the U.S. Treasury's Exchange Stabilization Fund (ESF) foreign-currency-denominated assets totaled $22.3 billion, comprised of euro and yen holdings. The Federal Reserve System Open Market Account (SOMA) holdings of foreign-currency-denominated assets also totaled $22.3 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.[11]

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 December 31, the U.S. dollar value of euro-denominated deposits and government securities held by the SOMA and the ESF increased to $26.4 billion from $25.3 billion on September 30. The U.S. dollar value of yen-denominated deposits and government securities increased to $18.1 billion from the prior quarter's balance of $17.7 billion. These changes are largely driven by foreign exchange translation effects.

[11] 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, September 30, 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, December 31, 2020[a]
Federal Reserve System Open Market Account (SOMA)						
Euro	12,682	0	(10)	0	548	13,220
Japanese yen	8,854	0	0	0	205	9,059
Total	21,536	0	(11)	0	753	22,279

		Changes in Balances by Source				
	Carrying Value, September 30, 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, December 31, 2020[a]
U.S. Treasury Exchange Stabilization Fund (ESF)						
Euro	12,663	0	(10)	0	547	13,199
Japanese yen	8,854	0	0	0	205	9,059
Total	21,516	0	(11)	0	752	22,258

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 December 31, 2020

	U.S. Treasury Exchange Stabilization Fund (ESF)[a]	Federal Reserve System Open Market Account (SOMA)[a]
Euro-denominated assets	**13,199.5**	**13,219.7**
Cash held on deposit at official institutions	6,575.7	6,595.9
Marketable securities held under repurchase agreements[b]	0.0	0.0
Marketable securities held outright	6,623.8	6,623.8
German government securities	1,088.8	1,088.8
French government securities	2,776.6	2,776.6
Dutch government securities	2,758.4	2,758.4
Yen-denominated assets	**9,058.8**	**9,058.8**
Cash held on deposit at official institutions	8,436.3	8,436.3
Marketable securities held outright	622.5	622.5

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

[a] As of December 31, the SOMA and the ESF euro portfolios had Macaulay durations of 26.96 and 27.00 months, respectively; both the SOMA and ESF yen portfolios had Macaulay durations of 0.20 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 December 31, 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	Unlimited	4,190
Swiss National Bank	Unlimited	10,038
Bank of Japan	Unlimited	0
Bank of Canada	Unlimited	0
Bank of England	Unlimited	0
		14,228
Temporary dollar liquidity swap arrangements		
Banco Central do Brasil	60,000	0
Banco de México	60,000	1,130
Bank of Korea	60,000	0
Danmarks Nationalbank	30,000	350
Monetary Authority of Singapore	60,000	2,175
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
		3,655
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