TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS

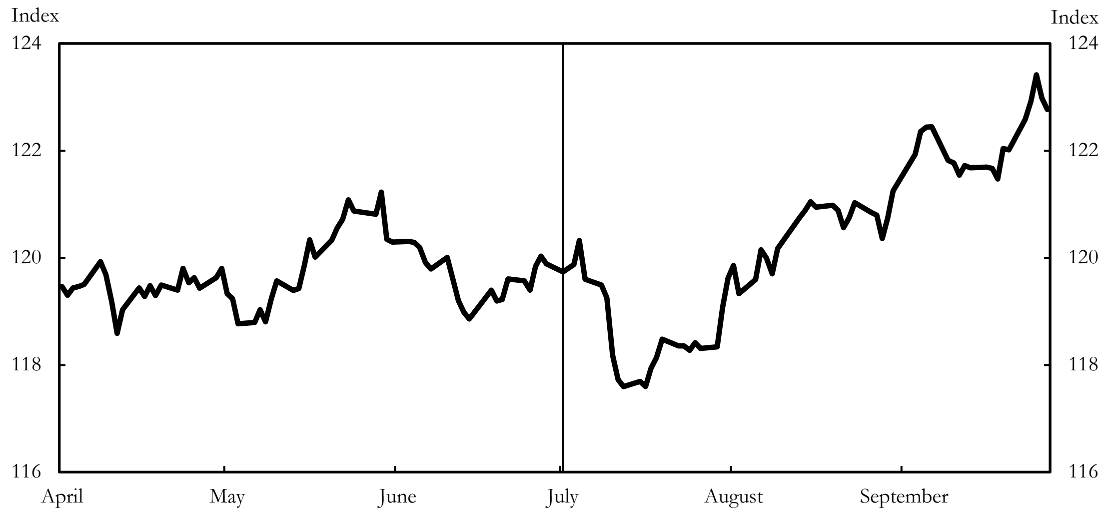
July – September 2023

During the third quarter of 2023, the U.S. dollar, as measured by the Federal Reserve Board's broad trade-weighted dollar index, appreciated 2.4 percent on net. The dollar appreciated broadly against both advanced and emerging market currencies, supported by upward revisions to the Federal Reserve's expected policy path relative to those of other major economies and a related widening of interest rate differentials amid rising U.S. Treasury yields, particularly in longer-dated tenors. These expectations were underpinned by U.S. data reflecting continued economic resilience and elevated measures of core inflation. Rising U.S. Treasury yields and a deteriorating growth outlook outside the U.S. contributed to risk aversion late in the quarter which also increased dollar demand. Notably, the dollar appreciated 3.2 percent against the euro and 4.1 percent against the British pound, amid a deterioration in euro area and U.K. growth outlooks relative to the U.S. Elsewhere, the decline of the relative yield advantage of some emerging market currencies contributed to dollar appreciation, as most emerging market central banks began to reduce policy rates or left policy rates unchanged amid decelerating inflationary pressures. The Federal Reserve and U.S. Treasury did not intervene in foreign exchange markets during the quarter.

This report, presented by Roberto Perli, 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 July through September 2023. Martin Prusinowski was primarily responsible for preparation of the report.

Chart 1

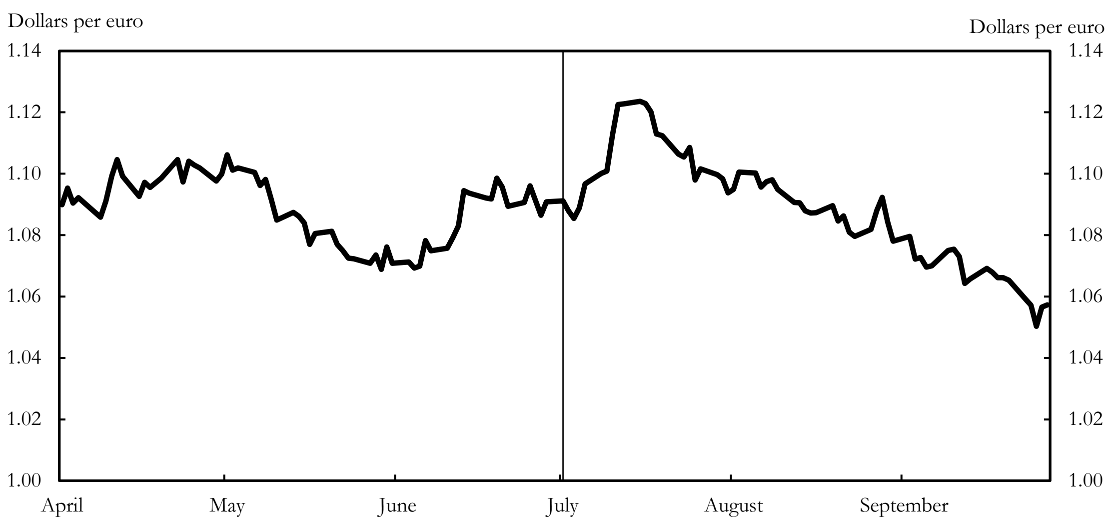
BROAD TRADE-WEIGHTED U.S. DOLLAR INDEX



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

Chart 2

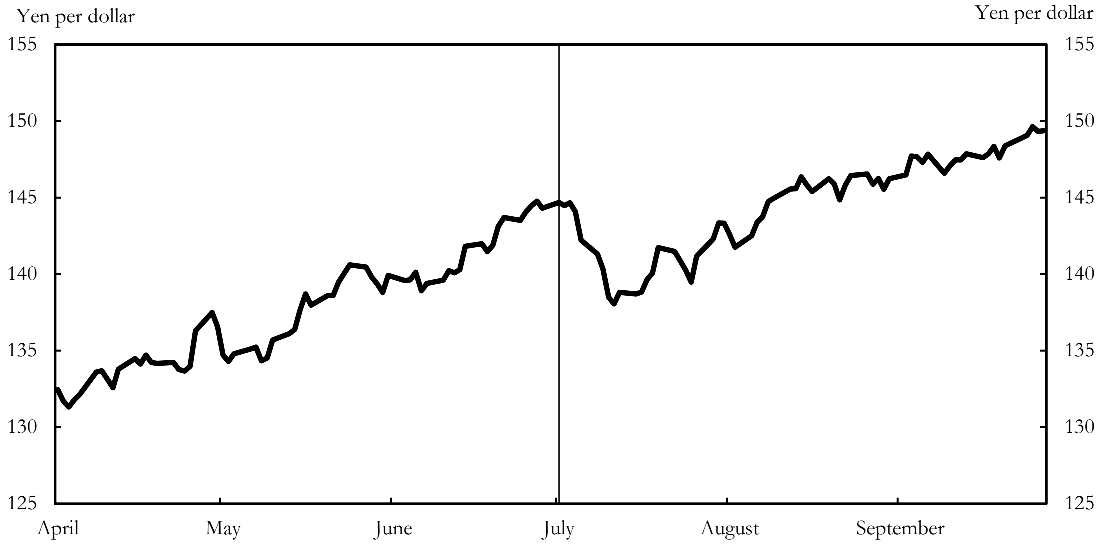
EURO−U.S. DOLLAR EXCHANGE RATE



Source: Bloomberg L.P.

Chart 3

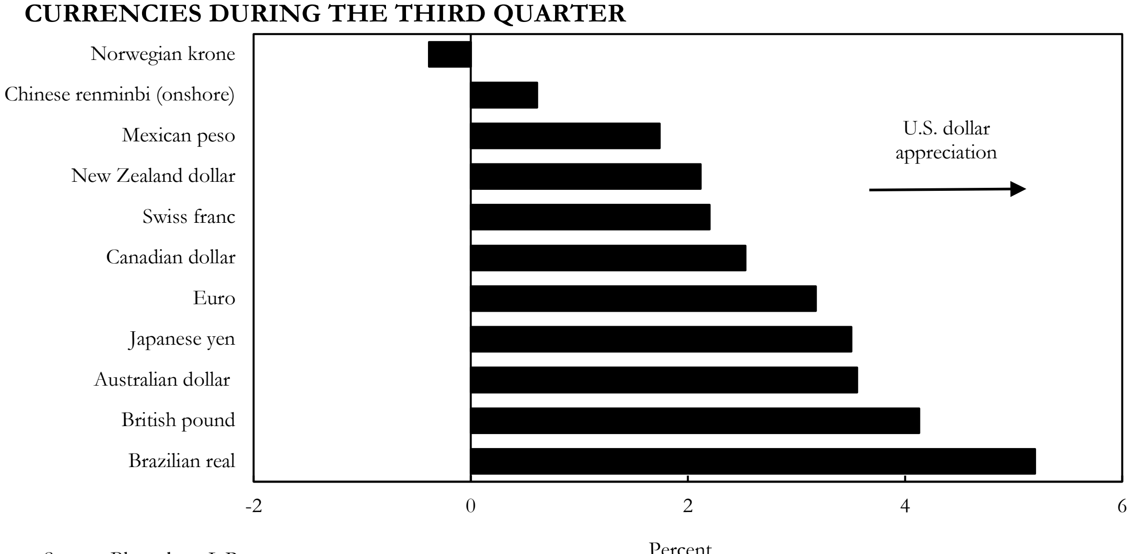
U.S. DOLLAR–YEN EXCHANGE RATE



Source: Bloomberg L.P.

Chart 4

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



Source: Bloomberg L.P.

U.S. DOLLAR APPRECIATES ON REPRICING OF LONGER-TERM CENTRAL BANK POLICY PATH EXPECTATIONS AND CONTINUED U.S. ECONOMIC RESILIENCE

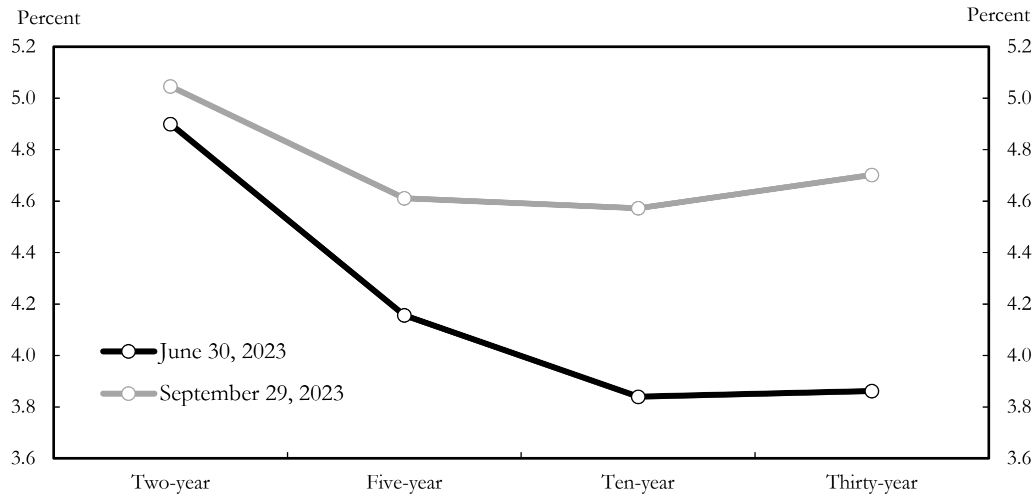
During the third quarter of 2023, the U.S. dollar, as measured by the Federal Reserve Board's broad trade-weighted dollar index, appreciated 2.4 percent on net. The dollar appreciated broadly against both advanced and emerging market currencies, supported by upward revisions to the Federal Reserve's expected policy path relative to several other major economies and a related widening of interest rate differentials amid rising U.S. Treasury yields, particularly in longer-dated tenors. These expectations were reinforced by U.S. data reflecting economic resilience and elevated measures of core inflation. Rising U.S. Treasury yields and a deteriorating growth outlook outside the U.S. contributed to risk aversion late in the quarter which also increased dollar demand.

Data releases during the quarter supported a growing perception of U.S. economic outperformance that drove dollar appreciation. In early July, U.S. nonfarm payrolls and inflation data came in below market expectations, leading to brief dollar depreciation amid expectations that the Federal Reserve had reached the end of its tightening cycle. However, this trend reversed as signs of U.S. economic resilience in subsequent incoming data led some market participants to upgrade their growth outlooks for 2024 and beyond. Second-quarter real GDP data showed an annualized 2.4 percent expansion, higher than consensus expectations of 1.8 percent, which contributed to growing optimism related to U.S. economic momentum. Retail sales data broadly exceeded consensus expectations throughout the quarter and nonfarm payrolls data released in September were cited as evidence that U.S. labor markets remained strong. Measures of core inflation also remained elevated throughout the rest of the quarter. Combined, these data releases contributed to expectations for a slower market-implied path of Federal Reserve rate cuts in 2024 and beyond. Meanwhile, data releases throughout the quarter in Europe and China that printed below market expectations led to a deterioration in global market risk sentiment that also contributed to the appreciation of the dollar.

Amid a relatively resilient U.S. growth outlook, Federal Reserve communications, particularly in the second half of the quarter, were interpreted as focusing on upside risks to U.S. inflation, which contributed to rising U.S. Treasury yields that supported dollar appreciation. The Federal Open Market Committee (FOMC) increased its policy rate by 25 basis points at its July meeting, though it later kept the policy rate unchanged at its September meeting. However, the FOMC median policy rate projections in the September Statement of Economic Projections were higher than market participants' expectations, and the median projections for U.S. real GDP growth also increased notably. The updated FOMC projections contributed to growing expectations for the Federal Reserve's policy rate to remain elevated for a longer period. Market participants connected the broadly better-than-expected U.S. data releases and FOMC communications to reduced market-implied expectations for policy rate cuts in 2024 and 2025 and a widening of interest rate differentials in favor of the U.S., which supported dollar appreciation. On net over the quarter, Secured Overnight Financing Rate (SOFR) futures contracts implied 48 and 38 basis points less in cumulative policy rate cuts by year-end 2024 and 2025, respectively, while ten-year Treasury yields rose by 73 basis points.

Chart 5

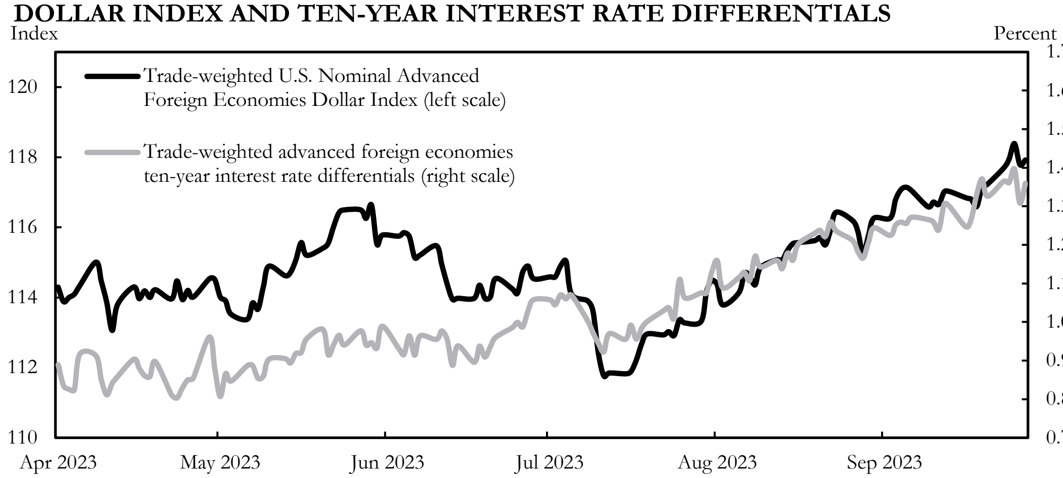
STEEPENING OF U.S. TREASURY CURVE (Q2 2023 VERSUS Q3 2023)



Source: Bloomberg L.P.

Chart 6

U.S TRADE-WEIGHTED ADVANCED FOREIGN ECONOMIES DOLLAR INDEX AND TEN-YEAR INTEREST RATE DIFFERENTIALS



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

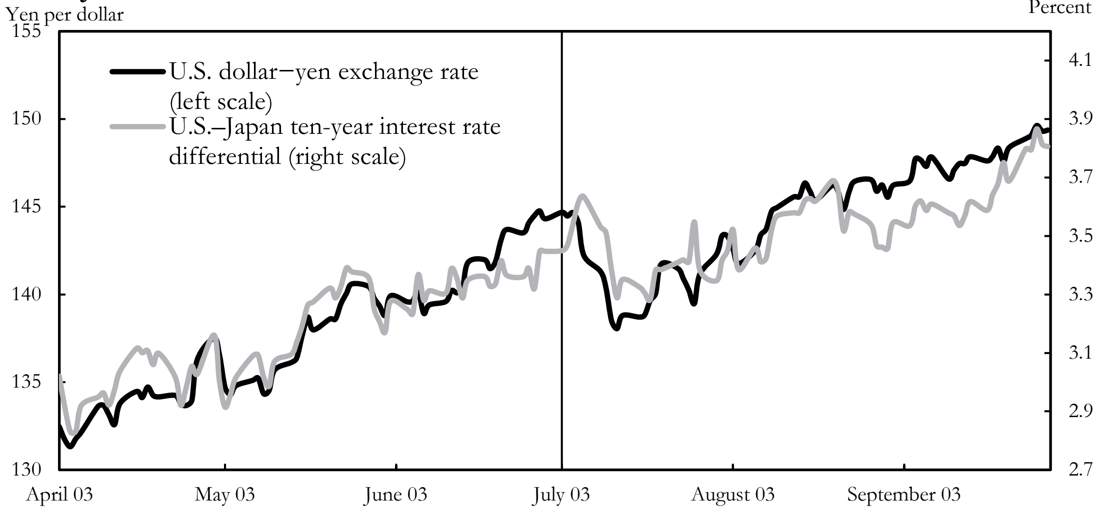
U.S. DOLLAR APPRECIATES AGAINST JAPANESE YEN AMID FURTHER WIDENING OF INTEREST RATE DIFFERENTIALS

The dollar appreciated 3.5 percent against the Japanese yen as ten-year interest rate differentials widened in favor of the U.S. amid a rapid steepening of the U.S. Treasury curve. At its July meeting, the Bank of Japan (BOJ) recharacterized its 50-basis-point yield curve control tolerance band as a "reference" and imposed a new "strict cap" of 1 percent on ten-year Japanese government bond yields. Market participants mostly viewed the decision as a technical adjustment to the yield curve control framework rather than a significant step toward broader normalization of monetary policy. Indeed, the BOJ was seen as maintaining a broadly accommodative stance over the quarter, which contrasted with further policy rate increases and a widely perceived restrictive policy stance by the Federal Reserve, contributing to yen depreciation over the quarter.

Later in the quarter, Governor Ueda remarked that the BOJ could have sufficient information by the end of the year to judge whether wages and prices are rising sustainably; these comments were seen as pulling expectations forward on when the BOJ might exit from its negative interest rate policy (NIRP). Market pricing of short-term policy rate expectations implied an exit from NIRP in the first quarter of 2024, and ten-year Japanese government bond yields rose 36 basis points on net by the end of the quarter. Despite these developments, U.S.–Japanese interest rate differentials continued to widen, particularly amid a rapid steepening of the U.S. Treasury curve in September, which drove yen depreciation. Some market participants also noted that Japanese investors' foreign-exchange-unhedged investment flows into foreign fixed income securities also contributed to yen depreciation on the margins, as these investors remained net purchasers of foreign securities amid rising global interest rates. Over the third quarter, market participants also remained attentive to statements by Japanese officials that suggested discomfort with the pace of yen depreciation.

Chart 7

U.S. DOLLAR−YEN EXCHANGE RATE AND U.S.−JAPAN TEN-YEAR INTEREST RATE DIFFERENTIAL



Source: Bloomberg L.P.

EURO DEPRECIATES ON BELOW CONSENSUS ECONOMIC DATA AND A RELATIVE REPRICING OF POLICY PATHS

The dollar appreciated 3.2 percent against the euro over the third quarter amid euro area economic data that came in below consensus expectations and related repricing of relative policy paths. While peak rate expectations for both the Federal Reserve and the European Central Bank (ECB) were on net little changed over the quarter, market pricing of the policy path for late 2024 and beyond increased more in the U.S. than in the euro area. Contacts attributed this disparity to the relative growth and inflation outlooks and, as a result, the euro depreciated against the dollar.

The ECB raised policy rates by 25 basis points at each of its July and September policy meetings, though market participants were attentive to the September ECB Governing Council statement noting that rates have reached levels that, if "maintained for a sufficiently long duration," will contribute to a timely return of inflation to the target. Market participants interpreted the statement as signaling the end of the ECB tightening cycle. Economic data releases were broadly weaker than consensus expectations, including those for manufacturing activity and the euro area composite purchasing managers index (PMI) that declined into contractionary territory, driving euro depreciation. Core measures of inflation that decelerated more rapidly than consensus expectations toward the end of the quarter—with August core inflation falling from 5.3 percent to 4.5 percent—also reduced expectations for further ECB policy rate increases and weighed on the euro.

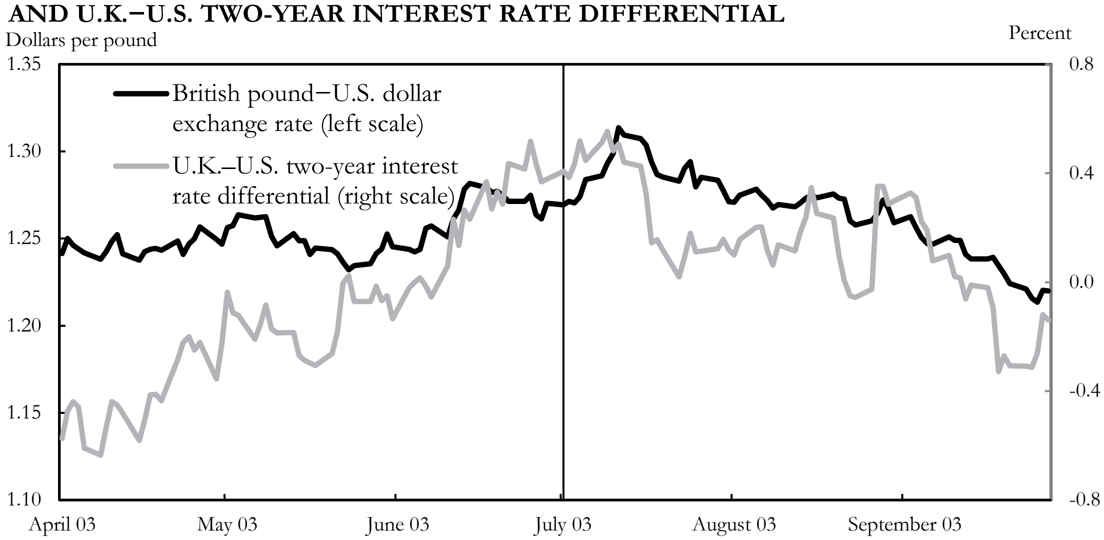
BRITISH POUND DEPRECIATES AMID DECELERATING INFLATION AND DOWNWARD REVISIONS TO THE U.K. GROWTH OUTLOOK

The U.S. dollar appreciated 4.1 percent against the British pound during the third quarter amid signs of deceleration in U.K. core inflation and modest downward revisions to the U.K. growth outlook, which contributed to a narrowing of U.K.–U.S. interest rate differentials that weighed on the pound. These two factors were seen as outweighing an increase in U.K. policy rates in terms of their impact on shorter-dated U.K. sovereign yields, which on net declined by 37 basis points.

The Bank of England (BoE) raised its policy rate by 25 basis points in August and subsequently voted to leave policy rates unchanged at its September meeting following the release of August monthly core inflation data, which showed inflation decelerating to 6.2 percent from 6.9 percent. Despite measures of employee compensation reaching their highest levels in two decades, rising unemployment later in the quarter and the further decline of composite PMI into contractionary territory contributed to further pessimism about the U.K. growth outlook and drove a decline in short-term yields. Market participants lowered their expectations for further BoE policy rate increases through 2024, and the lower policy path drove a narrowing of U.K.–U.S. interest rate differentials amid rising U.S. rates.

Chart 8

BRITISH POUND−U.S. DOLLAR EXCHANGE RATE AND U.K.−U.S. TWO-YEAR INTEREST RATE DIFFERENTIAL



Source: Bloomberg L.P.

EMERGING MARKET CURRENCIES DEPRECIATE ON AN UNWINDING OF CARRY TRADES AS U.S. RATES RISE

The dollar appreciated 1.9 percent against emerging market currencies during the third quarter, as measured by the Federal Reserve's trade-weighted Emerging Market Economies Dollar Index. Dollar appreciation was supported by the decline of the relative yield advantage of some emerging market currencies, as most emerging market central banks began to reduce policy rates or left policy rates unchanged amid decelerating inflationary pressures while U.S. interest rates rose.

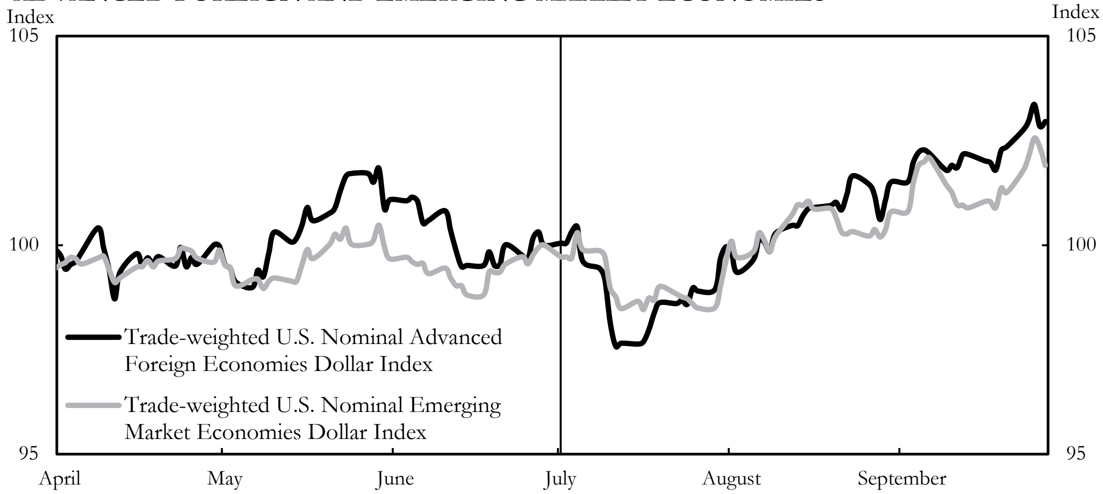
Notably, the U.S. dollar appreciated 5.2 percent and 1.7 percent against the Brazilian real and Mexican peso, respectively, as investors reportedly unwound carry trades involving long positions in several emerging market currencies amid a deterioration in their relative yield advantage versus the U.S. dollar.[1] The Banco Central do Brasil reduced its policy rate by 50 basis points at both its August and September meetings, lowering its main policy rate from 13.75 percent to 12.75 percent. The Banco de México kept policy rates unchanged during the third quarter, though the peso's relative yield advantage over the dollar declined as U.S. rates rose. Nevertheless, peso depreciation was mitigated by investors' perception that Mexico's close links to a resilient U.S. economy, such as via continued foreign direct investment and remittance flows, would help support its domestic economy. Other emerging market currencies widely utilized for carry trade–based strategies, such as the Chilean peso, also depreciated notably against the dollar amid rising U.S. interest rates.

The Chinese renminbi was little changed against the dollar, as measures taken by the People's Bank of China were broadly viewed as limiting further renminbi depreciation despite continued focus on the Chinese growth outlook and widening U.S.–China interest rate differentials in favor of the U.S. These measures included setting the daily dollar–renminbi fixing at levels that deviated notably from market expectations and tightening liquidity in the offshore Chinese renminbi market. Communications from Chinese officials about further policy action in the event of speculative or one-sided moves in foreign-exchange markets were also seen as limiting renminbi depreciation.

[1] A carry trade involves borrowing in lower-yielding currencies to invest in risk assets, including higher-yielding currencies. In the third quarter, as the yield advantage of higher-yielding currencies narrowed and these trades were unwound, investors sold emerging market currencies and bought back the currencies used to fund the trades.

Chart 9

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



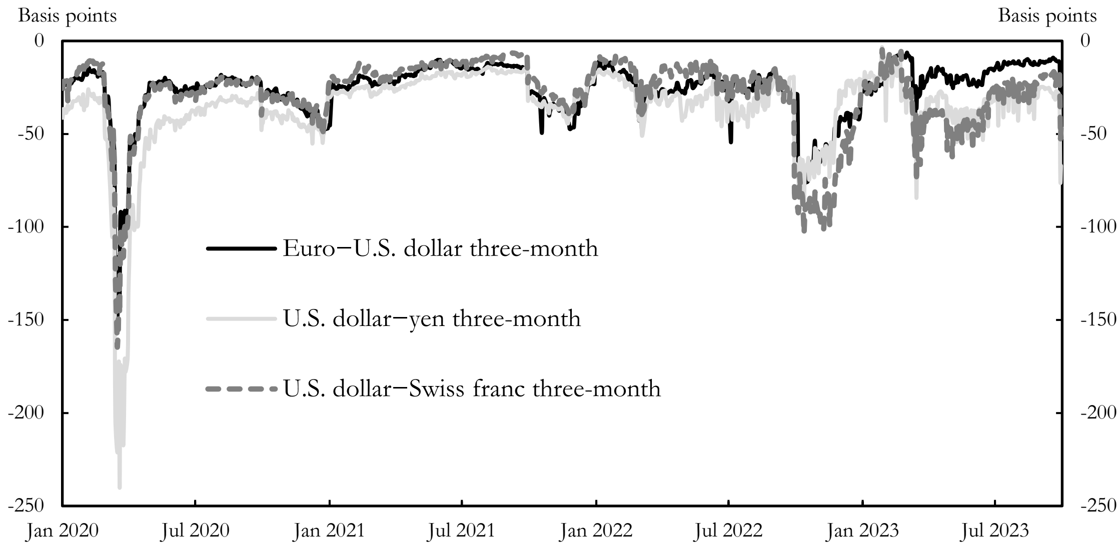
Source: Bloomberg L.P.

Note: Values indexed to June 30, 2023.

OFFSHORE U.S. DOLLAR FUNDING CONDITIONS REMAIN STABLE

Global offshore U.S. dollar funding conditions were broadly stable over the third quarter amid abundant liquidity in U.S. dollar funding markets. Contacts were attentive to abundant dollar liquidity in the financial system amid relatively stable levels of reserve balances as a primary factor supporting liquidity in dollar funding markets. Short-term foreign exchange swap basis spreads across most major currency pairs remained stable, while foreign exchange swap basis spreads widened moderately in the U.S. dollar–Japanese yen currency pair due to idiosyncratic local market dynamics. Three-month foreign exchange swap basis spreads widened at the end of the quarter due to year-end effects; however, the widening was of lesser magnitude than was observed over the same period in the prior year.

Chart 10
FOREIGN EXCHANGE THREE-MONTH SWAP-IMPLIED BASIS SPREADS



Source: Bloomberg L.P.

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

Aggregate swaps outstanding of the U.S. dollar liquidity swap arrangements with foreign central banks remained relatively unchanged, at $0.2 billion at the end of the third quarter. Most outstanding central bank liquidity swaps at the end of September were with the ECB, while the BoE, Swiss National Bank (SNB), and BOJ had minimal use of the U.S. dollar swaps during the quarter. The Bank of Canada had no U.S. dollar swaps outstanding.

TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE HOLDINGS

The Federal Reserve and U.S. Treasury did not undertake any foreign exchange intervention operations during the quarter. As of September 30, 2023, the value of the Federal Reserve System Open Market Account (SOMA) foreign-currency-denominated assets totaled $17.8 billion, comprised of euro- and yen-denominated holdings. The value of the U.S. Treasury's Exchange Stabilization Fund (ESF) foreign-currency-denominated assets totaled $17.8 billion, comprised of euro- and yen-denominated 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.[2]

In terms of investment eligibility, the Federal Reserve and U.S. Treasury's foreign exchange reserves can be invested in German, French, Dutch, and Japanese government obligations; purchases of obligations of European sovereign issuers eligible to be held outright under agreements for repurchase of such securities; 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 September 30, 2023, the U.S. dollar value of euro-denominated deposits and government securities held by the SOMA and the ESF decreased to $23.1 billion from $23.7 billion on June 30, 2023, and the U.S. dollar value of yen-denominated deposits and government securities decreased to $12.5 billion from $12.9 billion on June 30, 2023. These changes were largely driven by foreign exchange translation effects.

[2] 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

	Carrying Value, June 30, 2023[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, September 30, 2023[a]
Federal Reserve System Open Market Account (SOMA)						
Euro	11,862	0	66	0	(366)	11,561
Japanese yen	6,469	0	(0)	0	(215)	6,254
Total	18,330	0	66	0	(581)	17,815

	Carrying Value, June 30, 2023[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, September 30, 2023[a]
U.S. Treasury Exchange Stabilization Fund (ESF)						
Euro	11,843	0	66	0	(366)	11,543
Japanese yen	6,469	0	(0)	0	(215)	6,254
Total	18,312	0	66	0	(581)	17,797

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 "day of" accrual method.

[b]Net purchases and sales include foreign currency purchases related to official activity, repayments, and warehousing.

[c]Investment earnings include accrued interest and amortization on outright holdings.

[d]Gains and losses on sales are calculated using average cost.

[e]Reserve asset balances are revalued daily at the noon buying rates.

Table 2

BREAKDOWN OF FOREIGN RESERVE ASSETS HELD

Carrying Value in Millions of U.S. Dollars, as of September 30, 2023

	U.S. Treasury Exchange Stabilization Fund (ESF)[a]	Federal Reserve System Open Market Account (SOMA)[a]
Euro-denominated assets	**11,543.1**	**11,560.9**
Cash held on deposits at official institutions	7,430.7	7,448.5
Marketable securities held under repurchase agreement:	0.0	0.0
Marketable securities held outright	4,112.4	4,112.4
German government securities	630.8	630.8
French government securities	2,462.7	2,462.7
Dutch government securities	1,018.9	1,018.9
Yen-denominated assets	**6,254.1**	**6,254.1**
Cash held on deposit at official institutions	6,251.7	6,251.7
Marketable securities held outright	2.3	2.3

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

[a]As of September 30th, the SOMA and the ESF euro portfolios had Macaulay durations of 13.41 and 13.43 months, respectively; both the SOMA and ESF yen portfolios had Macaulay durations of 0.01 months.

[b]Debt obligations of the European sovereign issuers eligible to be held outright in the foreign currency reserves are eligible collateral for reverse repo transactions.

Table 3

CURRENCY ARRANGEMENTS

Millions of U.S. Dollars

Institution	Amount of Facility	Outstanding as of September 30, 2023
	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	219
Swiss National Bank	Unlimited	10
Bank of Japan	Unlimited	0
Bank of Canada	Unlimited	0
Bank of England	Unlimited	0
		229
Standing foreign currency liquidity swap arrangement		
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