TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS

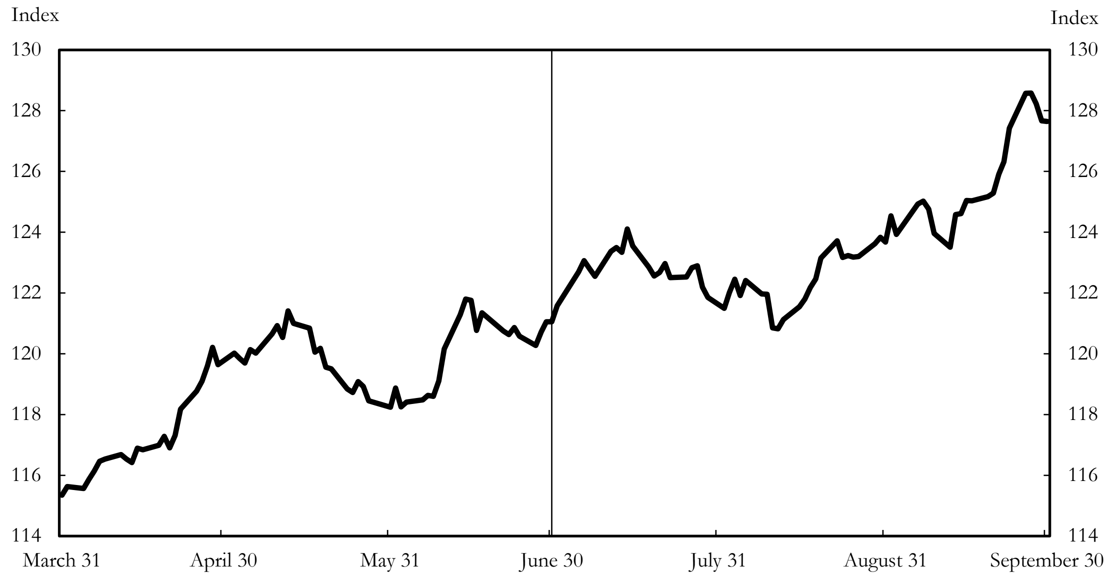
July – September 2022

During the third quarter of 2022, the U.S. dollar, as measured by the Federal Reserve Board's broad trade-weighted dollar index, appreciated 5.4 percent. The move was attributed to ongoing dollar demand amid a further deterioration in risk sentiment fueled by global growth concerns, as well as a steepening in the expected path of the Federal Reserve's policy rate, reflected in rising U.S. Treasury yields relative to the bond yields of other major economies. On a bilateral basis, the dollar appreciated against all G10 and major emerging market currencies, including 9.0 percent against the British pound, 7.0 percent against the euro, 6.6 percent against the Japanese yen, and 6.2 percent against the Chinese renminbi. The Federal Reserve and U.S. Treasury did not intervene in foreign exchange markets during the quarter.

This report, presented by Patricia Zobel, Senior Vice President, Federal Reserve Bank of New York, System Open Market Account Manager pro tem, 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 2022. Colleen Keegan was primarily responsible for preparation of the report.

Chart 1

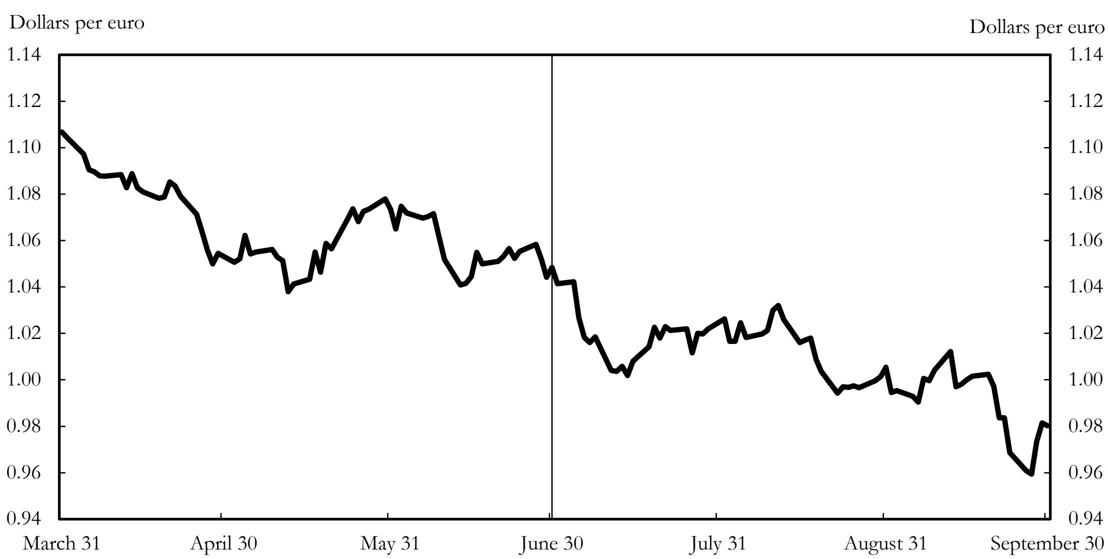
BROAD TRADE-WEIGHTED U.S. DOLLAR INDEX



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

Chart 2

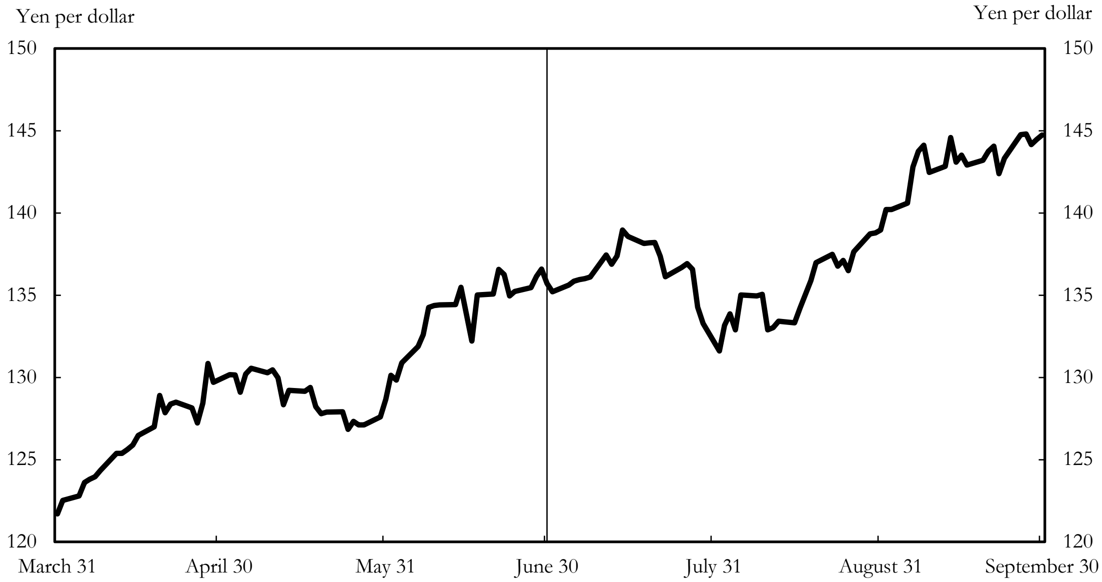
EURO−U.S. DOLLAR EXCHANGE RATE



Source: Bloomberg L.P.

Chart 3

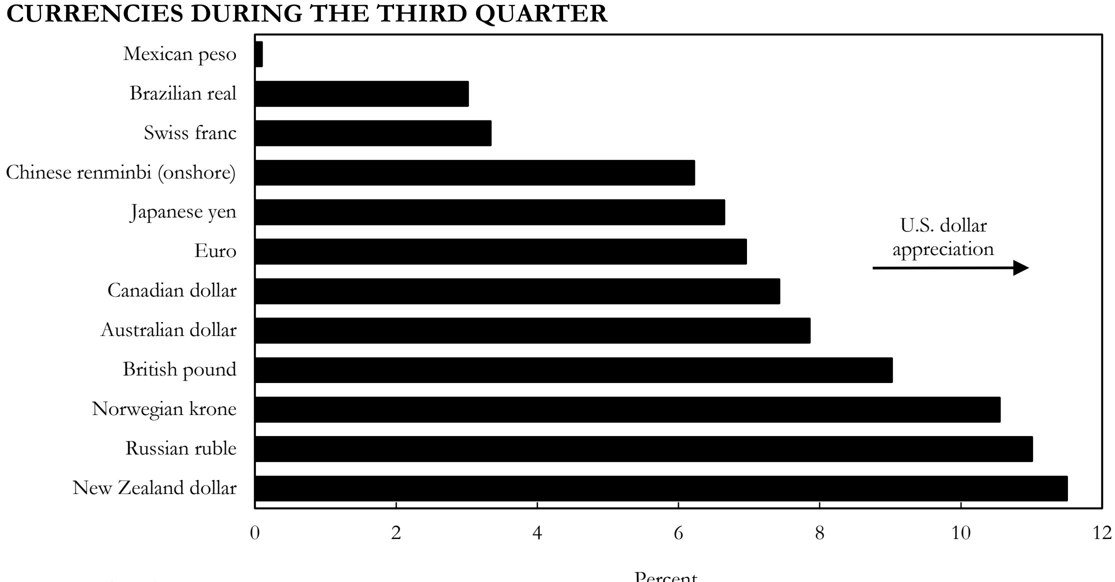
U.S. DOLLAR–YEN EXCHANGE RATE



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 BROADLY ON FURTHER DETERIORATION IN RISK SENTIMENT AND EXPECTATIONS FOR STEEPER PATH OF POLICY

During the third quarter of 2022, the U.S. dollar, as measured by the Federal Reserve Board's broad trade-weighted dollar index, appreciated 5.4 percent. On a bilateral basis, the dollar appreciated against all major G10 and emerging market currencies.[1] The dollar's appreciation was largely attributed to ongoing dollar demand due to a further deterioration in financial market risk sentiment fueled by global recession concerns, and growing expectations for a steeper path of Federal Reserve policy, reflected in higher U.S. yields relative to most other major sovereign bonds. Several other factors were also cited as incremental drivers of the dollar's appreciation, including higher European natural gas prices driven by supply disruptions, which have weighed on the trade balances of some other major economies, and a less negative economic outlook for the U.S. relative to other major economies, which was seen by market participants as allowing for a more rapid pace of U.S. interest rate increases.

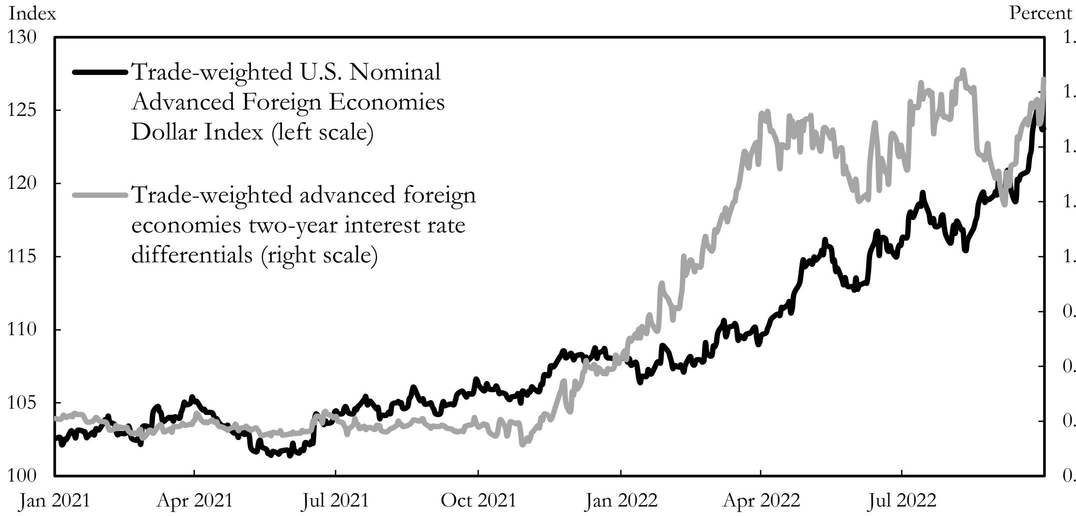
The deterioration in risk sentiment in the third quarter reflected further downgrades to the global growth outlook as well as heightened market uncertainty related to the ongoing war in Ukraine, energy supply disruptions in Europe, slowing Chinese growth amid continued economic lockdowns to contain COVID-19, and fiscal developments in the United Kingdom. Specifically, gas supply disruptions in Europe following the indefinite closure of the Nord Stream 1 natural gas pipeline drove a sharp increase in natural gas prices over the quarter and greater concern about the euro area's trade balance and growth outlook. In addition to their direct impact on Chinese growth, China's lockdowns were seen as contributing both to more persistent supply chain bottlenecks and to lower global demand, as well as amplifying global inflationary pressures. The U.K.'s mini-budget announced in late September also contributed to risk aversion given its larger-than-expected proposed tax cut measures, which raised financial market concerns around the nation's fiscal and external balances. These developments contributed to notable declines in global risk assets and an increase in foreign exchange implied volatility in late September, with many measures of implied volatility rising to their highest levels since early 2020.

The dollar's appreciation was broadly consistent with a steepening in the expected path of Federal Reserve policy, reflected in relatively higher U.S. Treasury yields versus those of other major economies. Federal Reserve communications and the rapid pace of policy rate increases in response to still-elevated inflation and continued labor market strength were seen as key factors contributing to the rise in U.S. yields, which included a 133 basis point rise in two-year Treasury yields. Against a backdrop of higher-than-anticipated inflation prints—including headline June CPI of 9.1 percent (year-over-year)—the Federal Open Market Committee (FOMC) increased its policy rate by 75 basis points at both its July and September meetings. In addition, the FOMC's Summary of Economic Projections released at the September meeting indicated a steeper-than-expected path of policy going forward, with the federal funds target rate projected to reach 4.6 percent by year-end 2023.

[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.

Chart 5

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



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

EURO DEPRECIATES ON DOWNSIDE GROWTH RISKS AMID GAS SUPPLY DISRUPTIONS AND EXPECTATIONS FOR A RELATIVELY SLOWER PACE OF POLICY TIGHTENING

The dollar appreciated 7.0 percent against the euro over the quarter, reflecting downside risks to euro area growth stemming from energy supply disruptions amid the ongoing conflict in Ukraine, as well as expectations for the European Central Bank (ECB) to increase policy rates at a slower pace than the Federal Reserve.

Concerns about the weakening growth outlook for the euro area primarily reflected the ongoing conflict in Ukraine and related disruptions in gas supplies that led to further spikes in natural gas prices. European front-month natural gas futures rose by as much as 135 percent between the end of the second quarter and the peak of price pressures in late August as concerns mounted over the potential cutoff of Russian gas exports to Europe. Investors also highlighted risks to the growth outlook given the potential for gas shortages and the subsequent impact on production and consumption amid possible energy rationing in the industrial sector and the erosion of households' real income from higher energy prices. While European front-month gas futures retraced some of their increases late in the quarter, prices remained elevated at more than double their level at the start of the year. Persistently elevated gas prices also represented a significant negative terms-of-trade shock for the euro area, a large net energy importer, weighing on its current account balance, which showed a deficit of €19.85 billion in July compared with a surplus in June.

Despite sizable rate hikes at the July and September meetings, expectations for future ECB policy rate increases remained well below those of the Federal Reserve, which was seen as an important driver for the euro–U.S. dollar exchange rate. At its July meeting, the ECB raised its policy rates by a larger-than-expected 50 basis points and introduced the Transmission Protection Instrument, a tool whose objective is to ensure effective monetary policy transmission throughout the euro area. At its September meeting, the ECB raised its policy rates by 75 basis points as was widely expected, and revised its economic projections, with inflation expectations revised upward while the growth outlook for 2023 was revised lower. The euro was roughly unchanged following both actions, as investors continued to emphasize expectations for a relatively faster pace of policy tightening by the Federal Reserve, given limitations on the extent of monetary policy tightening posed by the euro area's weakening growth outlook.

JAPANESE YEN DEPRECIATES NOTABLY AMID A FURTHER WIDENING OF INTEREST RATE DIFFERENTIALS AND TERMS-OF-TRADE SHOCK

The dollar appreciated 6.6 percent against the Japanese yen in the third quarter, with the exchange rate reaching 145.9 yen per U.S. dollar, the yen's weakest level against the dollar since 1998. Yen depreciation largely reflected widening U.S.–Japanese interest rate differentials amid the Bank of Japan's (BOJ) continued accommodative policy stance and commitment to yield curve control, in contrast to more rapid policy rate increases by the Federal Reserve, as well as the negative terms-of-trade shock from elevated global commodity prices.

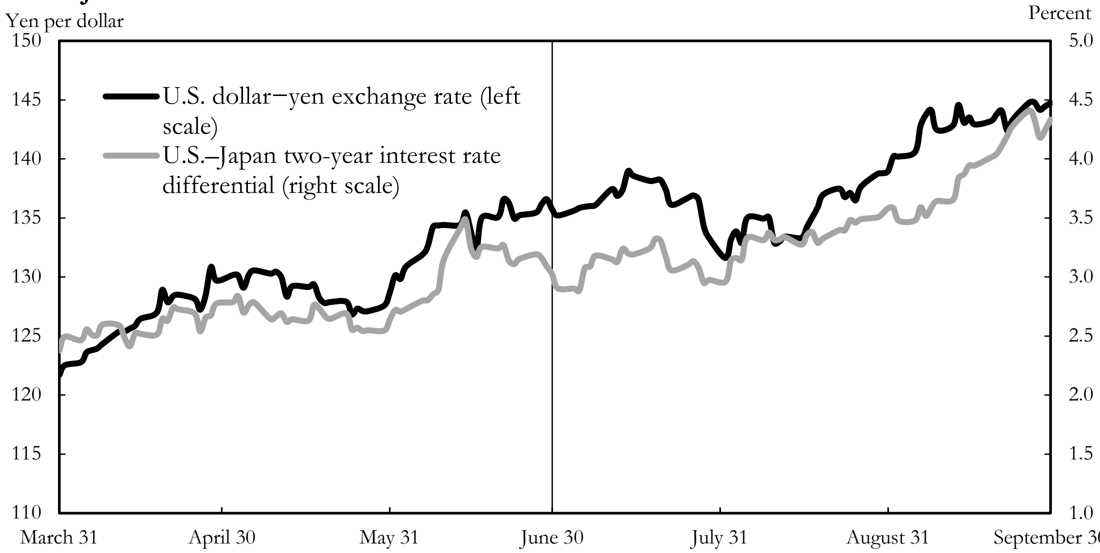
The relative monetary policy stances of the U.S. and Japan led to a further widening in U.S.–Japanese interest rate differentials and subsequent downward pressure on the yen. At both its July and September meetings, the BOJ maintained its yield curve control framework and forward guidance in addition to continuing to implement fixed-rate purchase operations to contain increases in ten-year Japanese government bond yields.

The yen was also seen as facing depreciation pressure from elevated global energy prices, even as energy import prices moderated somewhat over the quarter. Elevated global energy prices represented a significant negative terms-of-trade shock for Japan—a large net energy importer—and weighed on the trade balance, which has been in deficit for more than a year.

During the third quarter, Japan's Ministry of Finance published details announcing that it had intervened to support the currency in the amount of 2.8 trillion yen, marking the first such intervention to support the yen since 1998.

Chart 6

U.S. DOLLAR–YEN EXCHANGE RATE AND U.S.–JAPAN TWO-YEAR INTEREST RATE DIFFERENTIAL



Source: Bloomberg L.P.

BRITISH POUND DEPRECIATES AMID EXPECTATIONS FOR HIGHER INFLATION AND LOWER GROWTH IN ADDITION TO EXTERNAL AND FISCAL BALANCE CONCERNS

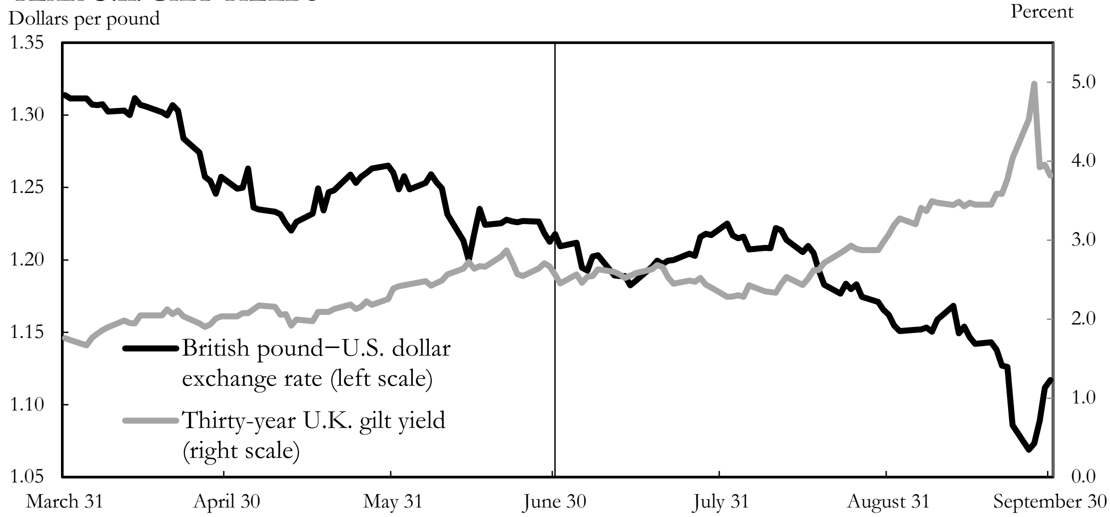
The dollar appreciated 9.0 percent against the British pound, reaching its strongest level on record during the third quarter. Appreciation was driven by weaker U.K. economic growth data and the announcement of fiscal measures that raised important concerns about the trajectory of the U.K.'s fiscal and external balances.

Moreover, inflation in the U.K. continued to rise, leading to expectations for a tighter stance of monetary policy that exacerbated concerns about the growth outlook. In response to high and persistent inflation, the Bank of England (BoE) raised its policy rate by 50 basis points at both its August and September meetings. These were the largest increases since 1995. The July CPI printed at 10.1 percent year-over-year, pushing real returns on U.K. sovereign bonds (gilts) deeper into negative territory and adding to pound depreciation.

In late September, the announcement of a fiscal plan that was more expansive than expected contributed to significant volatility in U.K. financial markets. The fiscal plan included an energy price support package and tax cut measures, which together amplified concerns about the outlook for the U.K.'s fiscal and current account balances. Prior to the announcement of the fiscal plan, the U.K.'s current account deficit was already expected to widen to 5.7 percent of GDP in 2022, up from 3.4 percent in 2021, largely reflecting elevated global energy prices. In the days following the announcement of the fiscal measures, the pound depreciated by as much as 8 percent and long-dated gilt yields rose sharply. The BoE announced a temporary program to purchase longer-dated gilts to restore orderly markets and, later in the period, financial markets recovered when Prime Minister Truss announced her resignation and fiscal measures were scaled back.

Chart 7

BRITISH POUND–U.S. DOLLAR EXCHANGE RATE AND THIRTY-YEAR U.K. GILT YIELDS



Source: Bloomberg L.P.

EMERGING MARKET CURRENCIES DEPRECIATE AMID BROAD DOLLAR STRENGTH, RISING U.S. YIELDS, AND DETERIORATING GLOBAL GROWTH EXPECTATIONS

The dollar appreciated 4.1 percent against emerging market currencies during the third quarter, as measured by the Federal Reserve's trade-weighted Emerging Market Economies Dollar Index.[2] Emerging market currency depreciation was viewed as primarily driven by broad dollar strength in conjunction with continued U.S. monetary policy tightening and a deterioration in global growth expectations. Nevertheless, given the large increases in U.S. yields, emerging market currency depreciation was viewed as relatively modest by market participants, who widely attributed this to preemptive policy rate increases by many emerging market central banks over the past year and elevated commodity prices that supported the currencies of many commodity-exporting countries. Amid a reduced pace of global demand that led to deteriorating external balances, a number of export-oriented

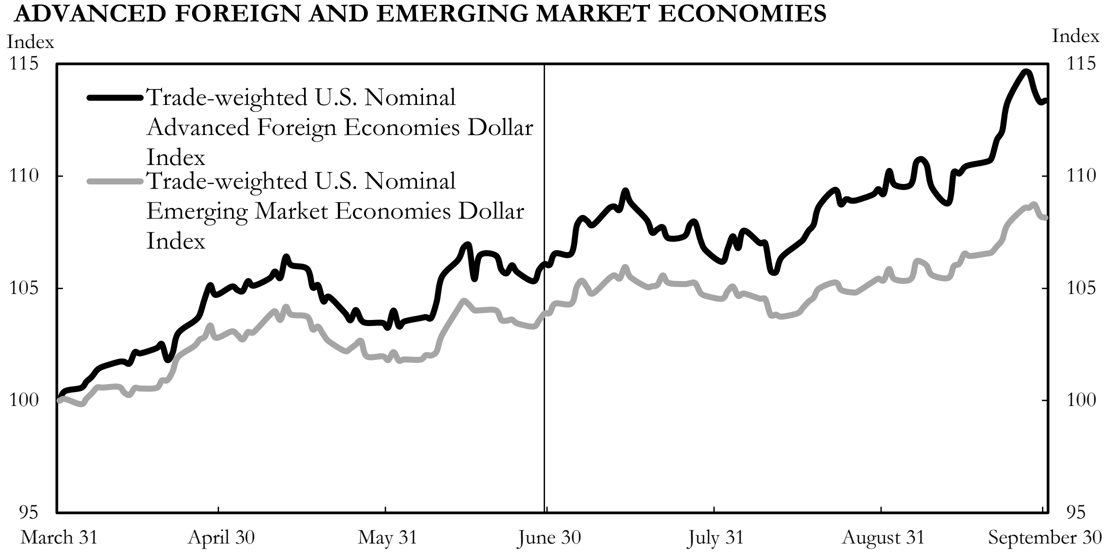
[2] The Federal Reserve's Emerging Market Economies Dollar Index, formerly known as the Other Important Trading Partners (OITP) index, is a weighted average of the foreign exchange value of the U.S. dollar against a subset of emerging market currencies. For more information on the index, see Revisions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

Asian economies also experienced notable currency depreciation. This included the Korean won, against which the dollar appreciated 10.2 percent during the quarter. In addition to slowing export growth, the Korean won also faced depreciation pressure from a large net energy trade deficit and expectations for yield differentials with the U.S. to widen further in coming months given the expectation that a weakening domestic economy will limit the extent of future rate increases.

The dollar appreciated 6.2 percent against the Chinese renminbi—its largest quarterly appreciation since Beijing abandoned the currency's peg to the dollar in 2005. Market participants cited a number of factors driving the exchange rate, aside from the general trend of broad dollar strength. These included widening interest rate differentials between the United States and China, given the People's Bank of China's (PBOC) more accommodative policy stance in contrast with expectations for a steeper path of Federal Reserve policy. In particular, the PBOC in August announced an unexpected 10 basis point reduction in the rates on its medium-term lending facility and liquidity-providing reverse repo operations, followed by no change in September. In addition, China's growth outlook was revised notably lower by market participants amid new government lockdown measures across several major cities to contain the spread of COVID-19.

Chart 8

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



Source: Bloomberg L.P.

Note: Values indexed to March 31, 2022.

FOREIGN EXCHANGE SWAP MARKETS REMAIN STABLE AMID ABUNDANT U.S. DOLLAR LIQUIDITY

Foreign exchange swap market conditions were generally stable, including over the September quarter-end period. Contacts were attentive to central bank policy decisions and communications regarding interest rates and balance sheet policy, noting that elevated interest rate volatility may have led some market participants to act more cautiously when lending or borrowing dollars over longer tenors. However, contacts also noted that continued abundant liquidity in dollar funding markets is likely to help maintain lower dollar borrowing premia in the near term, and highlighted that elevated volatility in broader financial markets in the third quarter had not materially affected conditions in foreign exchange swap markets. Foreign exchange swap basis spreads widened in the U.S. dollar–Swiss franc currency pair and liquidity conditions were briefly strained in the British pound–U.S. dollar pair near the end of the third quarter, but these moves were due to idiosyncratic local market dynamics rather than a reflection of broader U.S. dollar funding pressures, and market contacts did not note any concerns around market functioning in these currency pairs.

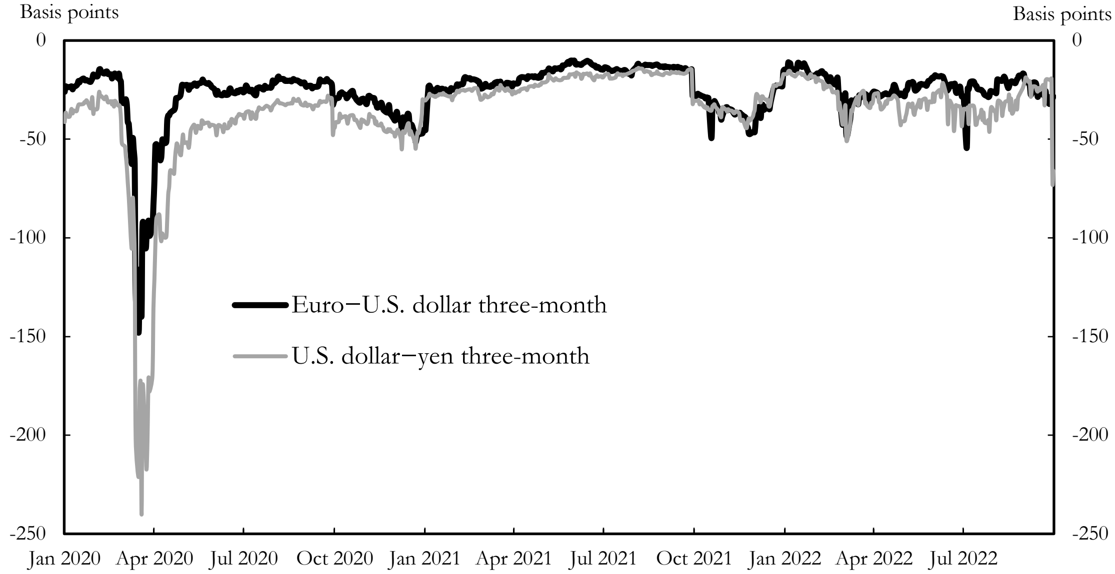
Contacts have also cited a range of factors that may be driving higher premiums to borrow U.S. dollars via foreign exchange swap markets over the 2022 year-end turn. These factors include regulatory-related bank balance sheet management strategies and elevated market volatility associated with uncertainty regarding the rates environment, both of which may hinder banks' intermediation capacity and shrink available U.S. dollar supply over year-end.

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 generally steady at a modest $0.3 billion from the end of the second quarter of 2022 to the end of the third quarter of 2022. Most outstanding central bank liquidity swaps at the end of September were with the ECB, while the BoE and Swiss National Bank had minimal U.S. dollar swaps outstanding and the BOJ and Bank of Canada had no U.S. dollar swaps outstanding.

Chart 9

FOREIGN EXCHANGE SWAP-IMPLIED BASIS SPREADS



Source: Bloomberg L.P.

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, the value of the Federal Reserve System Open Market Account (SOMA) foreign-currency-denominated assets totaled $17.0 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 $17.0 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.[3]

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 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, the U.S. dollar value of euro-denominated deposits and government securities held by the SOMA and the ESF decreased to $21.0 billion from $22.5 billion on June 30, 2022, and the U.S. dollar value of yen-denominated deposits and government securities decreased to $12.9 billion from $13.8 billion on June 30, 2022. These changes were largely driven by foreign exchange translation effects.

[3] 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, June 30, 2022[a]	Net Purchases and Sales[b]	Investment Earnings[c]	Realized Gains / Losses on Sales[d]	Gains/Losses on Foreign Currency Revaluation[e]	Carrying Value, September 30, 2022[a]
Federal Reserve System Open Market Account (SOMA)						
Euro	11,257	0	(3)	0	(738)	10,517
Japanese yen	6,888	0	0	0	(429)	6,459
Total	18,145	0	(3)	0	(1,167)	16,976

		Changes in Balances by Source				
	Carrying Value, June 30, 2022[a]	Net Purchases and Sales[b]	Investment Earnings[c]	Realized Gains / Losses on Sales[d]	Gains/Losses on Foreign Currency Revaluation[e]	Carrying Value, September 30, 2022[a]
U.S. Treasury Exchange Stabilization Fund (ESF)						
Euro	11,240	0	(3)	0	(736)	10,501
Japanese yen	6,888	0	(0)	0	(429)	6,459
Total	18,128	0	(3)	0	(1,166)	16,960

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, 2022

	U.S. Treasury Exchange Stabilization Fund (ESF)[a]	Federal Reserve System Open Market Account (SOMA)[a]
Euro-denominated assets	**10,500.8**	**10,516.8**
Cash held on deposits at official institutions	6,359.6	6,375.7
Marketable securities held under repurchase agreeme	0.0	0.0
Marketable securities held outright	4,141.2	4,141.2
German government securities	643.8	643.8
French government securities	2,481.2	2,481.2
Dutch government securities	1,016.2	1,016.2
Yen-denominated assets	**6,458.8**	**6,458.8**
Cash held on deposit at official institutions	6,456.4	6,456.4
Marketable securities held outright	2.4	2.4

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 17.99 and 18.02 months, respectively; both the SOMA and ESF yen portfolios had Macaulay durations of 0.01 months.

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

Table 3

RECIPROCAL CURRENCY ARRANGEMENTS

Millions of U.S. Dollars

Institution	Amount of Facility	Outstanding as of September 30, 2022
	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	275
Swiss National Bank	Unlimited	20
Bank of Japan	Unlimited	0
Bank of Canada	Unlimited	0
Bank of England	Unlimited	5
		300
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