TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE OPERATIONS

January–March 2008

During the first quarter of 2008, the dollar's trade-weighted exchange value decreased more than 4 percent, as measured by the Federal Reserve Board's major currencies index. The dollar depreciated 8.2 percent against the euro, reaching its weakest level since the euro's inception, and fell 10.8 percent against the yen.

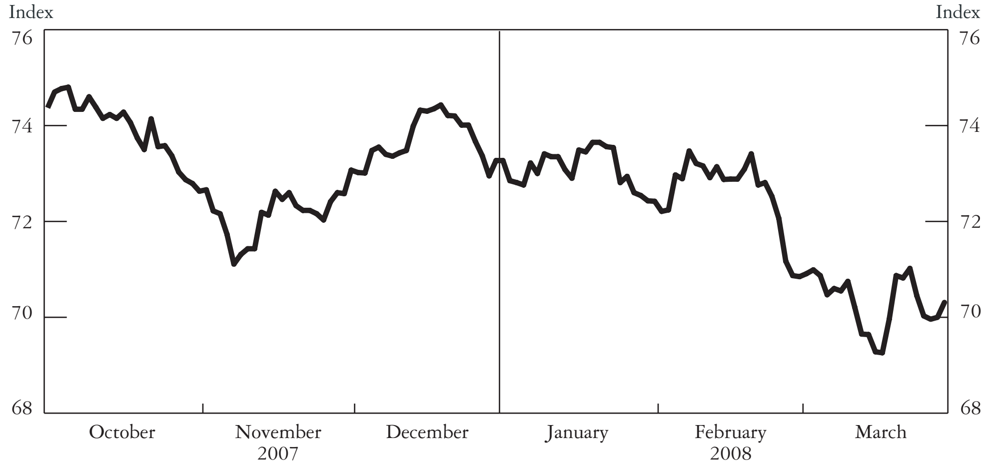
During January and February, the trade-weighted exchange value of the dollar remained largely range-bound, amid elevated uncertainty about the relative growth prospects of the Group of Three (G-3) economies. From late February to mid-March, the dollar fell sharply in value against both the euro and yen, as credit market conditions worsened and the belief that U.S. economic growth would slow relative to that of most other major countries became more widespread. However, late in the quarter, the U.S. dollar steadied, as negative sentiment toward the U.S. financial sector moderated. In mid-March, the Federal Reserve announced various measures aimed at improving both the liquidity and stability of financial markets. The U.S. monetary authorities did not intervene in the foreign exchange markets during the quarter.

In response to heightened demand for dollar funding, the Federal Reserve Bank of New York increased the size of the temporary currency swap facilities that had been established in December 2007 with the European Central Bank (ECB) and the Swiss National Bank (SNB). The ECB and the SNB reinstituted their auctions of dollar funding to locally eligible institutions, conducted in tandem with the Federal Reserve Banks' term auction facility (TAF), and drew on their swap facilities to fund the auction awards.

This report, presented by William Dudley, Executive Vice President, Federal Reserve Bank of New York, and Manager of the System Open Market Account, 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 2008. James Clark was primarily responsible for preparation of the report.

Chart 1

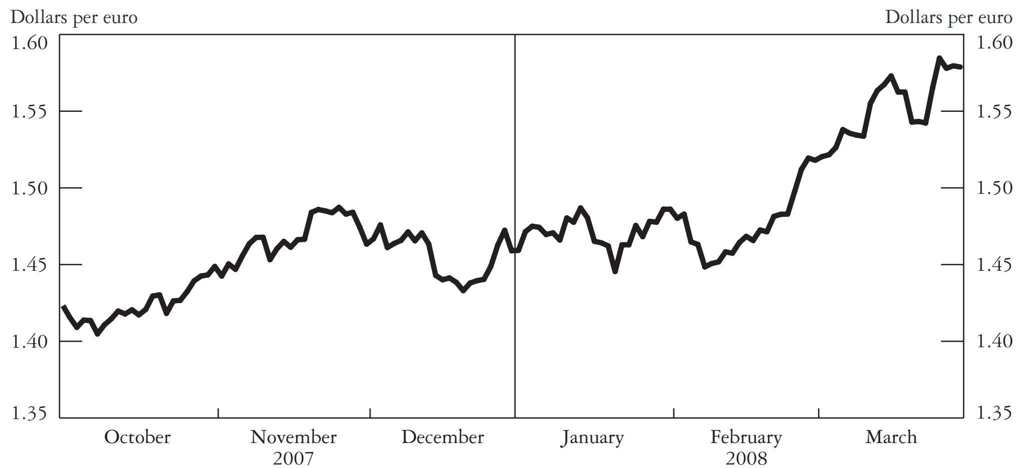
TRADE-WEIGHTED U.S. DOLLAR



Source: Bloomberg L.P.

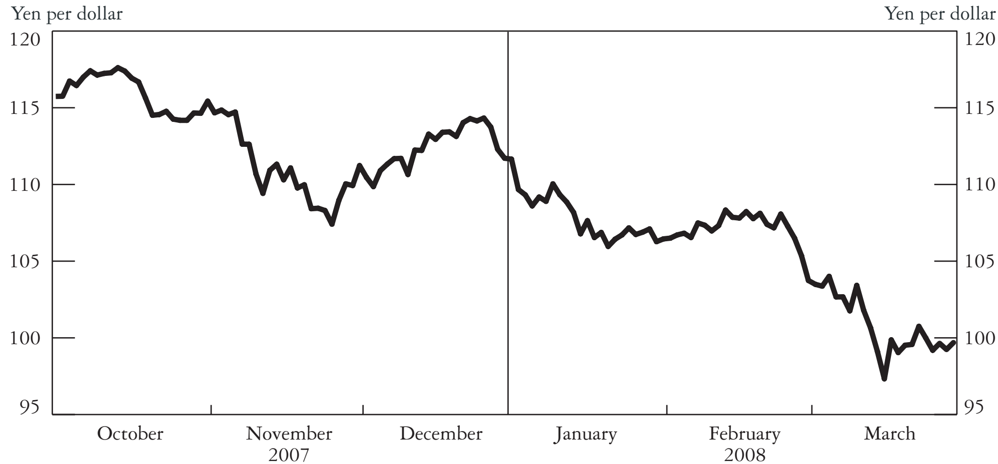
Chart 2

EURO–U.S. DOLLAR EXCHANGE RATE



Source: Bloomberg L.P.

Chart 3
U.S. DOLLAR–YEN EXCHANGE RATE



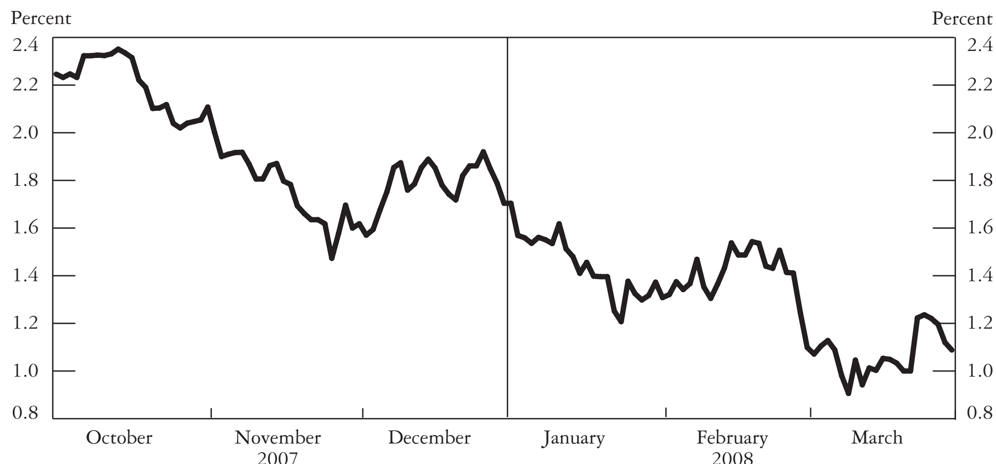
Source: Bloomberg L.P.

DOLLAR REMAINS RANGE-BOUND UNTIL THE FINAL WEEK OF FEBRUARY AS INVESTORS EXPRESS UNCERTAINTY OVER U.S. AND GLOBAL GROWTH PROSPECTS

From January to the final week of February, the trade-weighted exchange value of the U.S. dollar was relatively steady. During this period, the dollar depreciated 0.6 percent, as measured by the Federal Reserve Board's major currencies index. Market participants attributed the relatively limited price action to heightened uncertainty about the prospects for U.S. economic growth relative to that of the rest of the world and the degree to which growth abroad would "decouple" from the United States. Specifically, many participants increasingly questioned the resilience of global growth, citing the continued tightening of global financing markets as well as increased concerns over the possibility of a deeper and more prolonged U.S. economic slowdown.

During the period, economic data showing diminishing U.S. cyclical economic momentum emerged, as evidenced by lower consumer and business confidence. Labor market conditions worsened, with analysts highlighting an unexpected increase in the unemployment rate to 5 percent. Concerns regarding the U.S. housing sector continued to intensify, as data showed further declines in home prices as well as pending and existing home sales. At the same time, unease about the financial sector outlook increased as major financial institutions reported larger-than-expected fourth quarter losses as well as significant asset write-downs and increased loan loss provisions. Apprehension about the viability of financial guarantors also increased, and signs of worsening consumer credit conditions emerged. As a result, participants became more worried that

Chart 4
TEN-YEAR U.S. REAL RATE



Source: Barclays Capital.

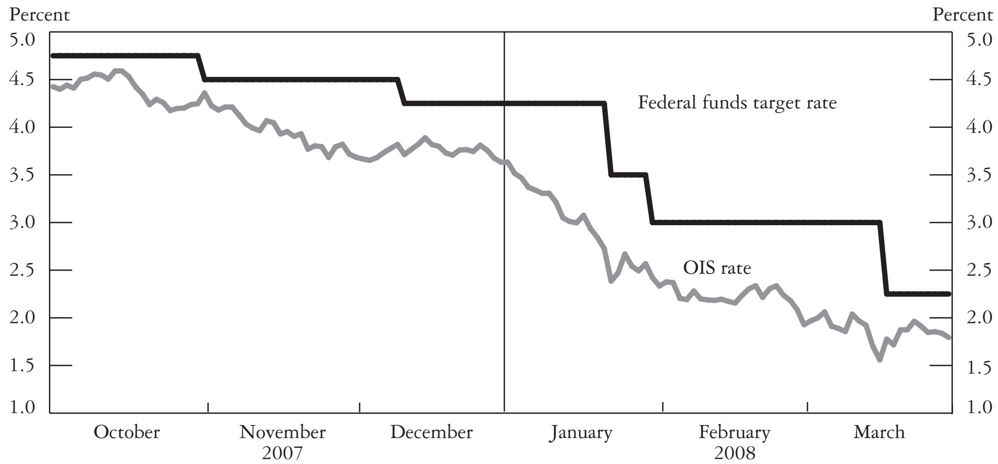
constrained financial sector activity and tighter credit conditions could restrict U.S. economic activity to a greater extent and for a more prolonged period than previously anticipated.

Given these concerns about U.S. economic growth prospects and the financial sector, expectations for monetary policy easing increased significantly during this period. Indeed, the Federal Open Market Committee (FOMC, or Committee) announced a cut in the target federal funds rate of 75 basis points on January 22. This action marked the first time since September 2001 that the FOMC lowered the target federal funds rate between scheduled meetings, and it was the largest one-time reduction in this rate since 1984. At the scheduled FOMC meeting on January 30, the Committee announced its decision to lower the federal funds target rate an additional 50 basis points "in view of a weakening of the economic outlook and increasing downside risks to growth."

Expectations for policy rate reductions in other major economies also rose during the period, as confidence in the global growth outlook waned. The magnitude of expected monetary policy easing, however, was less than what was expected from the Federal Reserve. Market participants increasingly anticipated that the ECB would cut its policy rate during the second half of the year, as business sentiment surveys across the euro area showed signs of moderation, and comments from ECB officials were interpreted as indicating increased concern about the downside risks to growth. Expectations that the Bank of Japan (BoJ) would lower policy rates also increased, consistent with official commentary indicating worry about the impact of a slowdown in U.S. economic activity on the Japanese economy.

Chart 5

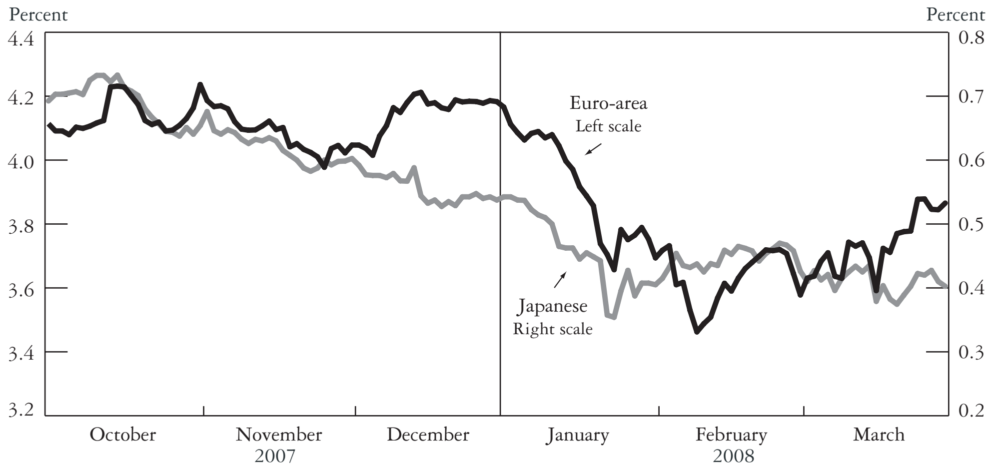
U.S. FEDERAL FUNDS TARGET RATE AND ONE-YEAR OVERNIGHT INDEX SWAP (OIS) RATE



Source: Bloomberg L.P.

Chart 6

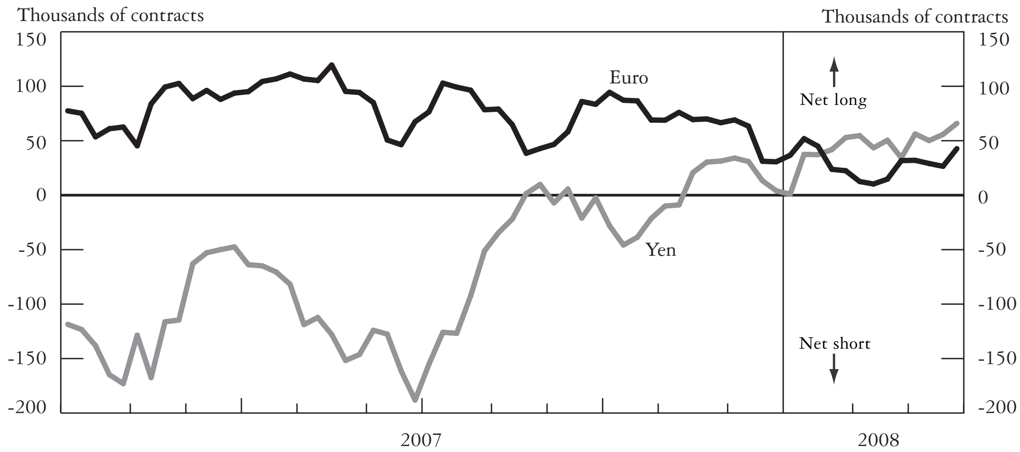
ONE-YEAR EURO-AREA AND JAPANESE OVERNIGHT INDEX SWAP (OIS) RATES



Source: Bloomberg L.P.

Chart 7

NET EURO AND YEN POSITIONS HELD BY NONCOMMERCIAL ACCOUNTS ON THE INTERNATIONAL MONEY MARKET



Source: Bloomberg L.P.

Despite a downward revision to U.S. growth expectations and associated movements in interest rate differentials, the trade-weighted dollar remained relatively steady until the final week of February. Market participants attributed this development primarily to significant uncertainty about the resilience of global growth caused by signs of a sharper-than-expected slowdown in U.S. activity. Over this period, many investors expressed a lack of confidence in their ability to forecast the relative performance of major economies, a factor that led to reduced willingness to hold speculative positions in currency markets. Reflecting this uncertainty, speculative positioning against the dollar reportedly declined. This assertion is supported by the decrease in net noncommercial speculative positions reported by the International Money Market.

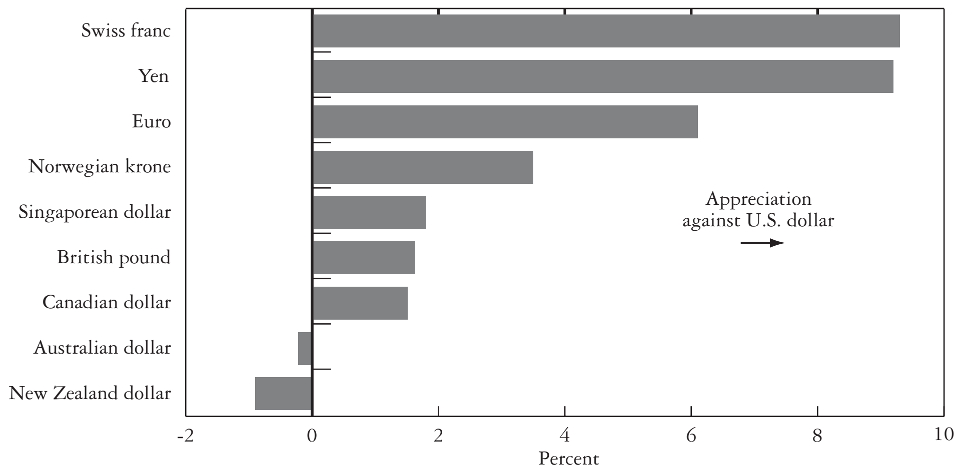
TRADE-WEIGHTED DOLLAR DECLINES SHARPLY AS DATA INDICATE RESILIENCE IN OVERSEAS ECONOMIC ACTIVITY

From the final week of February until mid-March, the U.S. trade-weighted dollar, as measured by the Federal Reserve Board's major currencies index, depreciated nearly 5 percent. The U.S. dollar depreciated about 6 percent against the euro, reaching a record level of 1.5912 dollars per euro. It also depreciated roughly 9 percent against the Japanese yen, reaching its lowest level since 1995. Implied volatility rose sharply over this three-week period. Market participants attributed the U.S. dollar's sharp declines primarily to a further deterioration in U.S. credit market conditions, concurrent with increased confidence that economic activity in other major economies would remain relatively resilient despite the slowdown in U.S. economic growth.

The deterioration in U.S. credit markets increased in scope and intensity toward the end of February, resulting in larger financing haircuts; a subsequent liquidation and broad repricing of AAA-rated, nonagency mortgage-backed securities and other structured finance securities; and the forced sale among investors of liquid, high-quality assets to meet margin calls. This negative feedback cycle, in which asset liquidations and write-downs led to tighter margin requirements and provoked further asset liquidations, resulted in severe illiquidity and volatility across markets. Moreover, despite a variety of measures implemented by the Federal Reserve to ease funding-

Chart 8

U.S. DOLLAR AGAINST SELECTED CURRENCIES FROM FEBRUARY 22, 2008, TO MARCH 17, 2008



Source: Bloomberg L.P.

Note: Values are calculated as the percentage change in the base currency, in accordance with the interbank trading convention for each currency pair.

market conditions—such as an expansion in the size of the TAF, a series of term repo operations, and the implementation of the term securities lending facility (TSLF)—concerns about systemic risks rose, and market participants reported that speculation over the solvency of several large financial institutions appeared to intensify.[1]

Amid the deterioration in credit markets, U.S. economic data continued to register below-consensus expectations, indicating a broad-based weakening in U.S. growth prospects. Analysts expressed concern about the strength of the U.S. manufacturing sector, following the release of a significantly weaker-than-expected Philadelphia Fed Business Outlook Survey, Chicago Purchasing Managers Index (PMI) release, and durable goods report. Many increasingly questioned the resilience of U.S. consumer spending following lower-than-expected consumer confidence, retail sales, and nonfarm payrolls data. These economic indicators led some observers to suggest that the U.S. economy might contract during the first half of the year.

In contrast, euro-area data showed signs of robust economic activity. In particular, German, French, and Italian PMI manufacturing data were better than expected, while euro-area January retail sales and German factory orders were interpreted as indicating a strong pace of economic activity. Official commentary from ECB officials also underscored the upside risks to inflation and the resilience of economic activity. These developments underpinned expectations that the magnitude of any euro-area policy easing would be significantly less than what was likely to occur in the United States. Over the same period, Japanese data showed only a modest softening of economic conditions.

As a result of these developments, concerns about the potential impact of an economic slowdown in the United States on the outlook for global growth diminished. Monetary policy expectations and interest rate differentials between the United States and the euro area and Japan continued to diverge. Expectations for additional policy rate cuts by the FOMC rose significantly, whereas expectations surrounding the likely path of ECB and BoJ monetary policy rates were little changed. One-year overnight index swaps measuring the effective federal funds rate declined roughly 75 basis points over this period, while equivalent-maturity overnight interest rate swaps linked to euro-area and Japanese policy rates were little changed.

[1]For information on the term repo operations and expansion of the TAF, see the Board of Governors press release of March 7 (http://www.federalreserve.gov/newsevents/press/monetary/20080307a.htm).

For information on the TSLF, see the Federal Reserve Bank of New York press releases of March 11 and 20 (http://newyorkfed.org/newsevents/news/markets/2008/rp080311.html and http://newyorkfed.org/newsevents/news/markets/2008/rp080320.html).

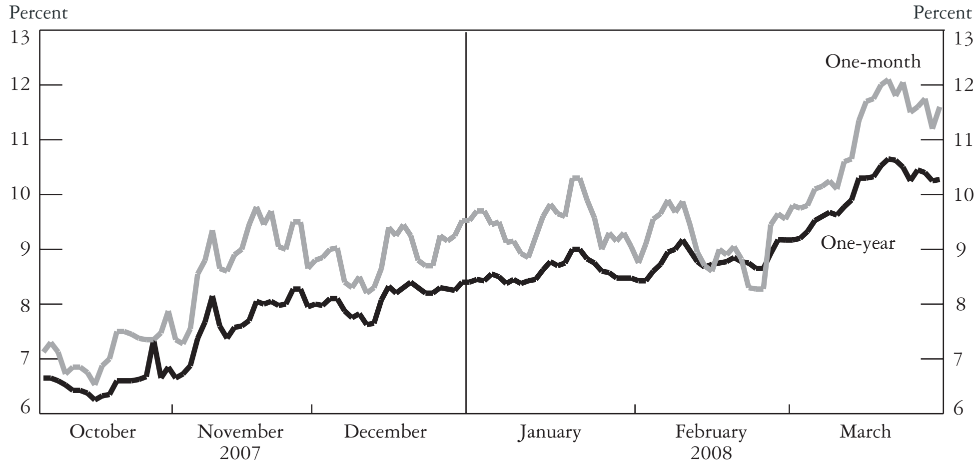
Increased focus on issues associated with global imbalances also heightened negative sentiment toward the dollar. Market participants questioned the sustainability of exchange rate policies in some economies that have currencies pegged to the dollar, particularly in China and the Middle East. In particular, they highlighted the divergence between rising domestic inflation in these economies and weaker economic activity and monetary policy easing in the United States. Indeed, commentary from both Gulf Cooperation Council (GCC) and euro-area policymakers over this period led to increased speculation among market participants about the possibility of currency reform in some GCC countries, a factor some cited as contributing to the dollar's depreciation.

Market participants underscored several additional factors that supported the yen's appreciation over this period. The yen was influenced by growing expectations that China and other Asian countries would need to adjust their monetary and exchange rate regimes materially to counter persistent domestic inflation pressures. Additionally, analysts noted that heightened investor risk aversion associated with the turbulence in the U.S. and global financial markets supported the yen. In particular, the yen was boosted by the repatriation of capital by Japanese exporters, pension funds, and institutional investors ahead of the Japanese fiscal year-end in March. Finally, investor sentiment toward the yen improved following news reports that sovereign wealth funds in Russia, China, and Singapore were interested in investing in Japanese equities.

Reflecting the sharp depreciation of the dollar over this period, implied volatilities for both the euro–dollar and dollar–yen currency pairs rose sharply. From the last week of February to mid-March, one-month euro–dollar implied volatility rose 3.4 percentage points to a high of about 12 percent, while one-month dollar–yen implied volatility rose 8.8 percentage points to a high of nearly 20 percent. Market participants indicated that concerns about the U.S. economic outlook and financial sector contributed to an increase in negative sentiment toward the dollar and supported the rise in actual and implied volatility. Around this time, some also discussed the possibility of coordinated foreign exchange intervention by the G-3 central banks, particularly given increased commentary by euro-area policymakers expressing discomfort with the pace of the euro's appreciation. However, most market participants did not anticipate actual foreign exchange intervention, as the price action was largely interpreted as consistent with relative economic growth prospects and the divergent monetary policy stances of the Federal Reserve and other central banks.

Chart 9

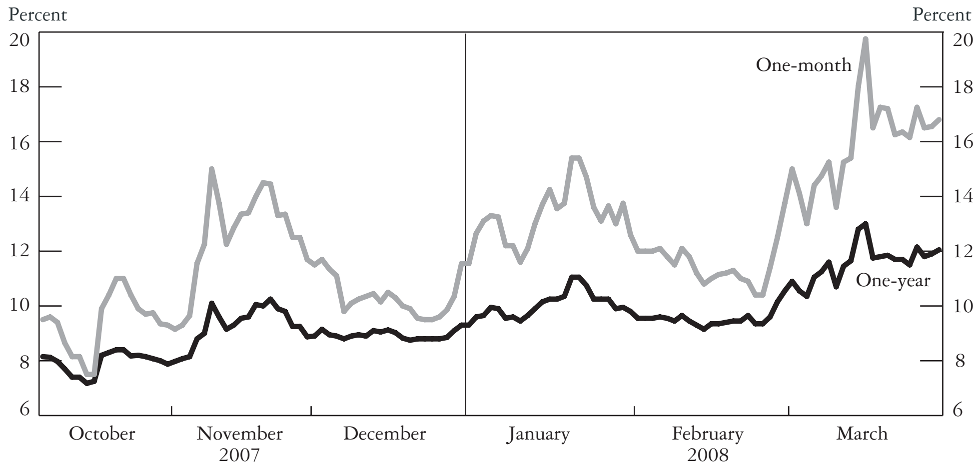
ONE-MONTH AND ONE-YEAR EURO–U.S. DOLLAR IMPLIED VOLATILITY



Source: UBS Investment Bank.

Chart 10

ONE-MONTH AND ONE-YEAR U.S. DOLLAR–YEN IMPLIED VOLATILITY



Source: UBS Investment Bank.

U.S. DOLLAR APPRECIATES DURING THE FINAL TWO WEEKS OF MARCH

The trade-weighted U.S. dollar, as measured by the Federal Reserve Board's major currencies index, appreciated 1.5 percent over the final two weeks of March. The dollar was little changed against the euro and appreciated by more than 2 percent against the yen. Market participants attributed the price action to a moderation in concern over risks to the financial system following the various policy measures taken by the Federal Reserve in mid-March to promote the orderly functioning of the financial system. These included providing financing for a portfolio of assets of the Bear Stearns Companies Inc., which facilitated the pending purchase of the company by JPMorgan Chase & Co., as well as the introduction of the primary dealer credit facility (PDCF), which provides a source of overnight funding for primary dealers.[2] Many also highlighted better-than-expected U.S. investment bank earnings as further alleviating negative sentiment toward the U.S. financial sector and the dollar. Finally, traders noted that continued speculation about the possibility of a coordinated intervention by the G-3 central banks lent support to the dollar over this period.

TEMPORARY RECIPROCAL CURRENCY ARRANGEMENTS EXPANDED WITH OTHER CENTRAL BANKS

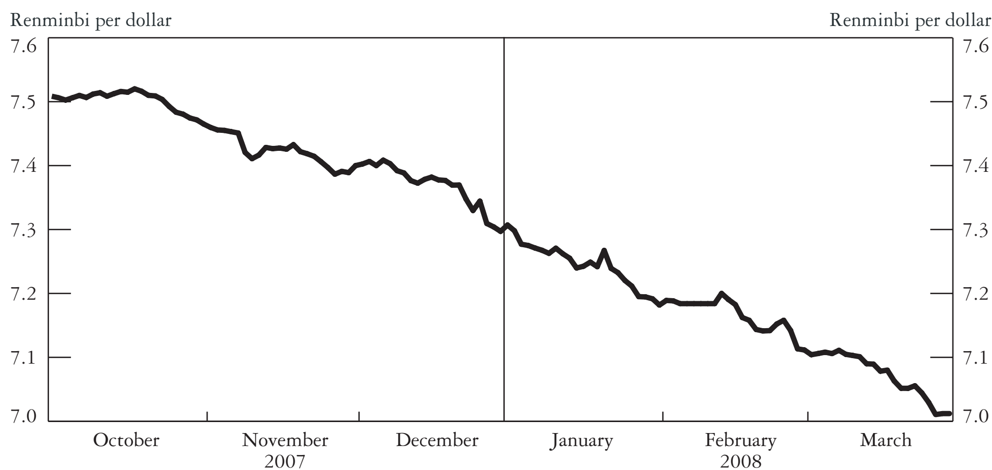
To address liquidity pressures in funding markets, the FOMC authorized on March 11 increases in the existing temporary reciprocal currency arrangements (swap lines) with the ECB and the SNB, extending their terms through September 30. Under the new terms of the facilities, the ECB and SNB would be able to draw up to $30 billion and $6 billion, respectively, in exchange for local currency. In conjunction, the ECB and SNB increased the sizes of their auctions of dollar funding to locally eligible institutions when these auctions were reinstituted by the ECB and SNB in March. These auctions had been suspended in February because of an abatement in term funding pressures, which proved to be temporary.[3]

[2]For information on the PDCF, see the Board of Governors press release of March 16 (http://www.federalreserve.gov/newsevents/press/monetary/20080316a.htm).

For more on the facilitation of the merger between Bear Stearns and J.P. Morgan, see the Federal Reserve Bank of New York press release of March 24 (http://newyorkfed.org/newsevents/news/markets/2008/rp080324.html).

[3]On January 14, January 28, and March 25, the ECB held auctions for $10 billion, $10 billion, and $15 billion, respectively, at a fixed rate equal to the marginal rate of the Federal Reserve Banks' TAF auction conducted on the same days. On January 14 and March 25, the SNB held variable-rate U.S. dollar tender auctions for $4 billion and $6 billion, respectively. As of March 31, the SNB had fully drawn down its temporary swap facility, and the ECB had drawn down $15 billion of its temporary swap facility.

Chart 11
U.S. DOLLAR–CHINESE RENMINBI EXCHANGE RATE



Source: Bloomberg L.P.

CHINESE RENMINBI APPRECIATION INCREASES AGAINST THE U.S. DOLLAR

The daily pace of Chinese renminbi appreciation against the dollar accelerated notably during the first quarter of 2008. The renminbi appreciated 3.9 percent against the dollar, up from a 2.8 percent pace during the fourth quarter. Market participants continued to view the more rapid pace of renminbi appreciation as consistent with measures taken by the People's Bank of China to address inflationary pressures. At the end of the first quarter, nondeliverable forward contracts indicated that market participants expected the Chinese currency to appreciate approximately 9.8 percent against the U.S. dollar over the next twelve months.

TREASURY AND FEDERAL RESERVE FOREIGN EXCHANGE RESERVES

The U.S. monetary authorities did not undertake any intervention operations during the quarter. At the end of the quarter, the current value of the Federal Reserve's System Open Market Account holdings was $46.6 billion—consisting of $25.6 billion of foreign exchange reserve portfolio investments and $21 billion of outstanding swaps with the ECB and SNB—and the current value of the U.S. Treasury's Exchange Stabilization Fund was $25.3 billion, comprised of euro and yen holdings. The U.S. monetary authorities invest their foreign currency balances in a variety of instruments that yield market-related rates of return and have a high degree of liquidity and credit quality. To the greatest extent practicable, the investments are split evenly between the System Open Market Account and the Exchange Stabilization Fund.

As noted previously, to facilitate the functioning of financial markets and provide liquidity in U.S. dollars abroad, on December 12, 2007, the FOMC authorized temporary reciprocal currency arrangements with the ECB and the SNB. Holdings related to these arrangements are included in the System Open Market Account for the first quarter. On March 11, these drawdown limits were increased to $30 billion for the ECB and $6 billion for the SNB, and the swap lines were extended an additional six months. As of March 31, the ECB had drawn down $15 billion, while the SNB had drawn down $6 billion.

A significant portion of the U.S. monetary authorities' foreign exchange reserves is invested in European and Japanese government securities. On an outright basis, the U.S. monetary authorities hold German, French, and Japanese government securities. Under euro-denominated repurchase agreements, the U.S. monetary authorities accept sovereign debt backed by the full faith and credit of the following governments: Belgium, France, Germany, Italy, the Netherlands, and Spain. Foreign currency reserves are also invested at the Bank for International Settlements and in facilities at other official institutions. As of March 31, direct holdings of foreign government securities totaled $22.4 billion, split evenly between the System Open Market Account and the Exchange Stabilization Fund. Foreign government securities held under repurchase agreements totaled $5.6 billion at the end of the quarter and were also split evenly between the two authorities.

Table 1

FOREIGN CURRENCY HOLDINGS OF U.S. MONETARY AUTHORITIES BASED ON CURRENT EXCHANGE RATES

Millions of Dollars

	Carrying Value December 31, 2007[a]	Change in Balance by Source				Carrying Value March 31, 2008[a]
		Net Purchases and Sales[b]	Investment Earnings[c]	Realized Gains/Losses on Sale[d]	Unrealized Gains/ Losses on Foreign Currency Revaluation[e]	
Federal Reserve System Open Market Account (SOMA)						
Euro	34,702.0	(5,000)	265.9	0	977.5[f]	30,945.4
Swiss franc	4,073.8	2,000	22.9	0	10.7[f]	6,107.4
Yen	8,519.4	0	15.6	0	1,012.5	9,547.5
Total	47,295.2	(3,000)	304.4	0	2,000.7	46,600.3
U.S. Treasury Exchange Stabilization Fund (ESF)						
Euro	14,370.6	0	145.6	0	1,187.9	15,704.0
Yen	8,519.4	0	15.6	0	1,012.5	9,547.5
Total	22,890.0	0	161.2	0	2,200.4	25,251.5

[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, swap drawings and repayments, and warehousing.

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

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

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

[f] Valuation adjustments on swap-related euro and Swiss franc holdings do not affect profit and loss because the impact is offset by the unwinding of the forward contract on the repayment date.

Table 2

BREAKDOWN OF FOREIGN RESERVE ASSETS HELD

Carrying Value in Millions of Dollars, as of March 31, 2008

	U.S. Treasury Exchange Stabilization Fund (ESF)[a]	Federal Reserve System Open Market Account (SOMA)[a]
Euro-denominated assets:	**15,704.0**	**30,945.4**
Cash held on deposit at official institutions	7,823.0	7,849.2
Other assets[b]	—	15,215.2
Marketable securities held under repurchase agreements[c]	2,786.4	2,786.4
Marketable securities held outright	5,094.6	5,094.6
German government securities	2,250.6	2,250.6
French government securities	2,844.1	2,844.1
Swiss franc–denominated assets:	—	**6,107.4**
Other assets[b]	—	6,107.4
Yen-denominated assets:	**9,547.5**	**9,547.5**
Cash held on deposit at official institutions	3,436.0	3,436.0
Marketable securities held outright	6,111.5	6,111.5

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

[a]As of March 31, euro and yen portfolios had Macaulay durations of 9.4 months and 10.7 months, respectively, for the ESF portfolio and 9.3 months and 10.7 months, respectively, for the SOMA portfolio.

[b]Category represents carrying value of outstanding reciprocal currency swaps with the European Central Bank and Swiss National Bank.

[c]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 Dollars

Institution	Amount of Facility	Outstanding as of March 31, 2008
	Federal Reserve System Open Market Account (SOMA)	
Bank of Canada	2,000	0
Bank of Mexico	3,000	0
European Central Bank[a]	30,000	15,000
Swiss National Bank[a]	6,000	6,000
Total	41,000	21,000
	U.S. Treasury Exchange Stabilization Fund (ESF)	
Bank of Mexico	3,000	0
Total	3,000	0

[a] Temporary swap arrangement set to expire September 2008.

Table 4

DAILY SWAP FACILITY ACTIVITY

Billions of Dollars

Date	Drawings	Repayments	Amount Outstanding
	European Central Bank (ECB)		
January 17	10.0	10.0	20.0
January 31	10.0	10.0	20.0
February 14	—	10.0	10.0
February 28	—	10.0	—
March 27	15.0[a]	—	15.0
	Swiss National Bank (SNB)		
January 17	4.0	4.0	4.0
February 14	—	4.0	—
March 27	6.0[a]	—	6.0

[a] Maturity date of April 24, 2008.