

Research Department
Federal Reserve
Bank of
San Francisco

February 24, 1978

Exchange Rates

During 1977, the value of the dollar declined by 20 percent against the Japanese yen and the Swiss franc, and by 12 percent against the German mark and the British pound — with most of the decline concentrated in the fourth quarter of the year. The decline took place in the face of a massive intervention — perhaps \$30 billion in all — by the central banks of Germany, Switzerland, Japan and Britain, as they bought dollars in order to curb the rise in values of their own currencies. The dollar stabilized early last month, following the Federal Reserve-Treasury announcement activating the Treasury's \$4½-billion Exchange Stabilization Fund and the Federal Reserve's \$20-billion central-bank swap network in order to "check speculation and re-establish order in the foreign-exchange market." At present, it's uncertain whether this represents a temporary lull or a new equilibrium level for exchange markets.

Throughout the period of dollar decline, many foreign-trade experts attributed the phenomenon to a sharp increase in the nation's merchandise-trade deficit, from \$9 billion in 1976 to \$31 billion in 1977. However, the trade balance had been deteriorating steadily since early 1975 — yet the dollar actually appreciated (or remained stable) until the latter part of 1977 (see chart). If the deteriorating trade account has been the primary depressive factor affecting the dollar, why didn't the consequences appear at an earlier time?

The trade deficit of course has had a part in exchange-market developments, but many monetary analysts point to another contributing factor — the relatively rapid pace of U.S. money expansion and the inflationary expectations it has engendered. The expansion began to show up in the closely-watched M1 measure last spring, somewhat later than it did in other monetary aggregates, and this fact may have influenced the timing of the exchange-rate decline.

Inflation and the dollar

Inflation and its related uncertainty affect dollar exchange rates in two distinct ways. When prices are rising faster in the U.S. than elsewhere, dollar exchange rates must depreciate at a rate about equal to the difference in inflation rates. With higher inflation, U.S. goods lose competitiveness, the trade accounts deteriorate, and eventually the dollar declines in the foreign-exchange market to reestablish competitiveness. In sum, ongoing inflation differences impart roughly equal — and opposite — ongoing exchange-rate changes. This phenomenon affects all currencies in much the same way.

The second effect is more specific to the dollar as a major reserve asset. The dollar is used as a reserve asset because of its imputed stability and negotiability. Higher U.S. inflation and/or inflation uncertainty directly affect this stability, causing large shifts in asset preferences against the dollar. These "stock-demand adjustments" affect

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exchange rates dramatically, and can cause short-run dollar depreciation much larger than what inflation differentials alone would suggest. To summarize, when the growth rate of a reserve currency increases significantly, creating higher anticipated inflation, it can have immediate "stock-adjustment" effects on exchange rates as well as the ongoing "flow" effects of differences in long-run inflation rates.

Excess dollars

To monetarist-minded observers, the delayed perception of greater U.S. inflation probably reflects the delayed acceleration of the closely watched M₁ measure, in comparison with the earlier acceleration of the broader M₂ and M₃ measures. Up until about last April, technological and regulatory changes in the U.S. banking industry had caused shifts of funds from demand deposits (checking accounts) into time deposits (savings accounts). Because both are included in M₂ and M₃, their expansion rates were generally unaffected by these various changes. But because M₁ includes only currency and demand deposits, and excludes time deposits, the regulatory changes served to lower its growth rate below that of the other aggregates. These changes had roughly worked their way through the economy by early 1977, whence M₁ started to show the faster growth reflected much earlier by M₂ and M₃.

Over the last few years, financial markets have paid more attention to M₁ than the other aggregates. Because the mixed signal given by moderate M₁ growth and higher M₂ growth in 1976 changed to a clear signal of high growth in both aggregates in mid-1977, this shift may have been responsible for a shift in inflation expectations, impacting on exchange markets in mid- and late-1977.

How substantial is this relatively faster rate of U.S. monetary expansion? The annual growth rate of M₃ — defined as the narrow money supply (M₁) plus near-monies — accelerated in the U.S. from 10.1 percent in the 1972-75 period to 12.5 percent in the period between December 1975 and September 1977. In Germany, the growth rate decelerated from 9.2 percent to 7.6 percent between those two periods. In Japan and the U.K., money growth rates were much higher than the U.S. growth rate over the 1972-75 period, but then they decelerated to at least slightly below the U.S. rate over the 1976-77 period — specifically, from 16.8 percent to 12.4 percent for Japan, and from 19.0 percent to 8.8 percent for the U.K.

The short-run consequence has been a more vigorous economic expansion in this country than in other industrial countries during the past several years. Over the longer run, however,

another consequence could be a higher level of inflation in this country than elsewhere — or at least a greater expectation of long-run inflation. This situation then affects exchange rates in the ways already discussed.

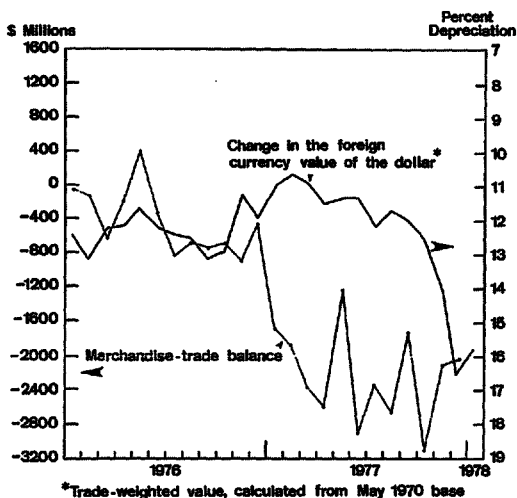
Implications

According to the line of analysis sketched out here, a nation that desires to achieve higher short-term growth through monetary expansion may also have to accept the consequence of a depreciating dollar. In contrast, if a stable dollar is an overriding policy objective, a nation may also have to accept the implied constraints on short-run domestic economic objectives.

Critics who follow this line also question the long-run value of intervention

in the foreign exchange market. In the present instance, they argue that if the Federal Reserve's Foreign Desk uses intervention to decrease the supply of dollars held overseas to support its value, these actions might run counter to the expansive money-supply operations of the domestic Open-Market Desk. If the intervention involves swaps which only temporarily change the supply of domestic and foreign currencies, then the impact on exchange rates might be only temporary. And if foreign governments continue to intervene, thus selling their own currencies and buying dollars, they inevitably would choose higher rates of monetary expansion, further from their own targets, and closer to those of the U.S.

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BANKING DATA—TWELFTH FEDERAL RESERVE DISTRICT
(Dollar amounts in millions)

Selected Assets and Liabilities Large Commercial Banks	Amount Outstanding 2/8/78	Change from 2/1/78	Change from year ago	
			Dollar	Percent
Loans (gross, adjusted) and investments*	106,144	+ 418	+ 13,819	+ 14.97
Loans (gross, adjusted)—total	83,786	+ 47	+ 13,519	+ 19.24
Security loans	2,065	- 193	+ 721	+ 53.65
Commercial and industrial	25,469	+ 48	+ 2,540	+ 11.08
Real estate	27,953	+ 121	+ 6,106	+ 27.95
Consumer instalment	14,866	- 27	+ 2,559	+ 20.79
U.S. Treasury securities	7,699	- 7	- 1,144	- 12.94
Other securities	14,659	+ 378	+ 1,444	+ 10.93
Deposits (less cash items)—total*	103,479	+ 1,041	+ 11,380	+ 12.36
Demand deposits (adjusted)	29,489	+ 898	+ 3,072	+ 11.63
U.S. Government deposits	232	- 213	- 19	- 7.57
Time deposits—total*	71,858	+ 161	+ 7,649	+ 11.91
States and political subdivisions	6,549	- 63	+ 696	+ 11.89
Savings deposits	31,434	+ 44	+ 460	+ 1.49
Other time deposits ‡	31,430	+ 227	+ 6,030	+ 23.74
Large negotiable CD's	13,214	+ 29	+ 4,174	+ 46.17
Weekly Averages of Daily Figures	Week ended 2/8/78	Week ended 2/1/78	Comparable year-ago period	
Member Bank Reserve Position				
Excess Reserves(+)/Deficiency (-)	+ 106	- 46	+ 57	
Borrowings	161	26	2	
Net free(+)/Net borrowed (-)	- 55	- 72	+ 55	
Federal Funds—Seven Large Banks				
Interbank Federal fund transactions				
Net purchases (+)/Net sales(-)	+ 1,852	+ 1,536	+ 921	
Transactions with U.S. security dealers				
Net loans (+)/Net borrowings (-)	+ 291	+ 374	+ 146	

*Includes items not shown separately. ‡Individuals, partnerships and corporations.

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