Evolution and Growth of the United States Foreign Exchange Market

The foreign exchange market in the United States has undergone substantial changes over the past several years. The number of institutions and individuals operating in the market whether for commercial or financial reasons has increased sharply. Trading volumes have expanded dramatically, with turnover amounting to $23 billion a day as measured by the Federal Reserve Bank of New York's March 1980 market survey, nearly a fivefold increase from the $5 billion recorded in April 1977. New York, by far the largest of United States trading centers, has been transformed from a regional market to a major link between Europe and the Far East that now rivals London as the leading center for global foreign exchange dealings.

This shift in the importance of the United States foreign exchange market is closely associated with the growing internationalization of the United States economy. The share of United States exports and imports in gross national product (GNP) has risen, foreign banks have established a presence in the United States just as this country's banks have moved overseas, and the ebb and flow of capital is much freer and more rapid among major financial centers here and abroad.

A second key factor precipitating broader and more active involvement in the United States foreign exchange market has been the dramatic sharpening of exchange rate fluctuations. While the causes of exchange rate volatility are complex and controversial, most observers can agree that far-reaching disturbances to the world economy are involved. The increase in the world price of oil, the accumulation and recycling of Organization of Petroleum Exporting Countries (OPEC) surpluses, wide swings in inflation and output, and shifts in monetary and fiscal policies among industrial countries have all contributed to the gyration in exchange rates. But, regardless of the ultimate cause, it is clear that exchange rate volatility has created the potential for large exchange gains and losses, inducing changes in financial behavior. Top bank management has focused more closely on the importance of currency exposures, a growing number of banks have positioned their trading operations as profit centers, and income from foreign exchange trading has become an important source of commercial bank earnings. For business firms, the management of money and foreign exchange has become an integral part of financial operations and planning. Efforts to reduce currency risk to assets and future cash flows and, to a lesser extent, to minimize the impact of currency fluctuations on reported incomes have led to more sophisticated corporate risk management techniques, often involving a more active presence in the exchange market. Other institutions and individuals have also become increasingly sophisticated about the role of foreign exchange in financial management, as evidenced by the growth of multicurrency-denominated portfolios and the development of a large market for trading foreign exchange futures.

A third development important to the growth of the United States foreign exchange market involves changes in trading practices and conventions. Direct dealing between United States banks, international brokering, and quoting rates in European terms are recent innovations which have improved the functioning of this country's market and helped integrate it with the broader global foreign exchange market. This article, based on discussions with market practitioners in New York and drawing on data from the March 1980 survey of the United States market by the New York Federal Reserve Bank, reviews in greater detail the developments that have contributed to the evolution and growth of the United States foreign exchange market. The first section examines changes in commercial bank behavior, the second looks at the activities of nonbank participants, and the third and final section describes innovations in foreign exchange dealing relationships.

Changes in commercial bank behavior

Interbank trading has soared in recent years beyond what is strictly attributable to hedging the increased volume of customer business Under the assumption that banks normally require between four and six transactions to cover each customer order, fully one half of the $385 billion increase in foreign exchange turnover between 1977 and 1980 is accounted for by "pure" interbank positioning. The growth of interbank business is most evident in the spot market where, according to the March 1980 survey, interbank trades exceeded customer deals by a factor of twenty, compared with a multiple of ten in the April 1977 sample. This pickup in active professional trading has occurred principally in response to three developments in the foreign exchange market during the 1970s.

- United States banks have responded to a shift in the locus of foreign exchange demand to the United States market both by expanding their foreign exchange trading operations and by changing the nature of this activity from part of customer services to an important profit center, thereby bringing banks into the market more than previously as principals trading for their own accounts.

- The entry of a large number of foreign banks to New York has sharpened competitive conditions, reinforcing the change already under way toward more active position-taking.

- Exchange rates have displayed larger and more unpredictable fluctuations than before, and this heightened uncertainty has contributed to rapid intraday trading at the expense of longer term positioning.

Profit-center foreign exchange trading

An active foreign exchange market has been slower to develop in the United States than other major industrial countries. Traditionally, the role of the foreign sector in the United States economy has been comparatively small, United States trade has been dollar denominated, and United States multinationals transacted most of their foreign exchange business abroad. Lacking a sufficient base for establishing full and active foreign exchange trading departments and concerned about the liquidity of the market, most United States banks restricted noncommercial volumes to matching off customer transactions in the interbank market by amount and by value date. Over the past several years, however, a growing number of United States banks have become willing to position heavily in foreign exchange on the basis of expected changes in exchange rates and in interest rate differentials, although such positions are increasingly held for only limited time intervals. Banks have found it desirable to take on exposures and to maintain an active presence in the market in order to offer a more competitive service to a growing customer base and to take advantage of the profit opportunities perceived in fluctuating exchange rates.

The major impetus behind this change in approach is the growing international orientation of United States economic relationships. This country's trade and inward and outward direct investment have expanded sharply. International financial management is also evolving rapidly. Corporations and individuals, seeking protection from a volatile inflationary environment and responding to the incentives in fluctuating exchange rates, now include the world's major currencies in their portfolio decisions. Banks themselves are taking a global view of their assets and liabilities Indeed, the location of economic activity no longer indicates where associated financial transactions will be executed or in what currency they will be denominated.

Furthermore, the tendency for United States corporations to centralize money and foreign exchange management at headquarters and the development of currency futures in Chicago have led more participants to turn specifically to the United States market for their foreign exchange requirements, as did also European restrictions on bank exchange transactions imposed following the 1974 failure of Bankhaus Herstatt. The United States authorities, by contrast, resisted the imposition of official controls in response to the Herstatt crisis and the difficulties experienced by Franklin National Bank.

This resistance to official controls was itself a strong inducement for many participants to transact foreign

Overview of the United States Foreign Exchange Market*

The United States foreign exchange market consists of a network of commercial banks—located principally in New York and, to a lesser extent, in other major cities—which buy and sell bank deposits ("exchange") in another currency, and of several organized exchanges, which trade foreign exchange futures contracts. Except for the currency futures market, there is no central marketplace where participants meet to trade. Instead trading is over the counter, with dealers communicating directly by telephone and telex or indirectly through foreign exchange brokers who serve as agents, bringing together buyers and sellers for a fee.

While most banking institutions are prepared to offer their customers a service in foreign exchange, there are only about 80-100 banks that actively trade foreign exchange for their own account. Of these, relatively few act as market makers by standing ready to quote fresh prices and execute business up to recognized amounts. At the same time, foreign exchange brokers in the United States number less than a dozen. Thus, the heart of the market is comparatively small.

The overwhelming bulk of all transactions occurs in the interbank market, where banks seek to hedge or manage their exchange risk and to anticipate exchange and interest rate movements. Their operations give the market liquidity and make possible the smooth transaction of customer business. The customer or retail market, which accounts directly for as little as 10 percent but indirectly for perhaps as much as 50-60 percent of all exchange deals, consists of multinational corporations, nondealing banks, other nonbank financial institutions, and individuals.

Roughly two thirds of all foreign exchange transactions are conducted spot, that is, at current exchange rates for value two business days after the dealing date. Another 30 percent of all transactions are swaps involving the simultaneous purchase and sale of a specified amount of foreign currency for two different maturities. Swaps are most commonly used to fund exchange positions, to take a view on interest rate differentials between two currencies, and in borrowing and lending operations. Only 6 percent of total exchange transactions are outright forwards involving a single purchase or sale of foreign currency for a value date more than two days in the future.

Foreign exchange trading in the United States is highly competitive. No one bank or single group of banks commands a dominant share of turnover in such major currencies as the German mark, Japanese yen, Canadian dollar, or pound sterling. However, in other currencies such as the Belgian franc and Italian lira where the strength of commercial, financial, and speculative demand does not support an active market, trading is relatively more concentrated among a few banks.

In the United States, foreign exchange trading

Table 1

Turnover Statistics

In billions of dollars

	April 1977 44 banks	March 1980 41 banks	March 1980 90 banks
Total	106 3	325 8	491 3
Spot	58 7	216 0	315 4
Interbank	54 0	206 1	300 4
of which brokers	23 1	104 3	162 5
Customer	4 7	10 1	15 1
Outright forwards	5 6	22 4	29.4
of which International Monetary Market	*	4 5	6 3
Swaps	42 1	87 2	146 5

* Not available

Federal Reserve Bank of New York: Foreign Exchange Turnover Surveys (April 1977 and March 1980).

* For a full review of the market, see Roger M Kubarych, *Foreign Exchange Markets in the United States* (Federal Reserve Bank of New York, 1978)

Overview of the United States Foreign Exchange Market* *(continued)*

is not regulated, though bank examiners review exchange transactions as a normal part of routine bank supervision. Commercial banks operate under self-imposed internal controls that cover most aspects of their involvement in the market. Issues related to foreign exchange trading, operations, and technical practices are discussed on the institutional level in the forum of the Foreign Exchange Committee, established in 1978 under the sponsorship of the New York Federal Reserve Bank. The Foreign Exchange Committee consists of representatives from east coast, regional and foreign banks, brokerage firms, and as observers members of the FOREX Association of North America. The FOREX brings together as individuals a large number of traders and brokers from 220 banking and 19 brokerage offices around the country.

Table 2

Turnover and Market Share of Active Trading Banks by Currency

March 1980

Currency	Turnover (billions of United States dollars)	Share of 4 most active banks (percent)	Share of 8 most active banks (percent)	Share of 20 most active banks (percent)
German mark	155 8	28 0	45 6	73 9
Pound sterling	111 5	24 3	43 9	74 9
Canadian dollar	60 0	30 3	50 8	82 8
Swiss franc	49 7	38 0	62 5	89 0
Japanese yen	50 0	32 4	51 8	82.2
French franc	33 6	51 8	73 8	95 0
Netherlands guilder	9 3	48 4	72 9	97 4
Belgian franc	5 1	50 0	77.4	98 6
Italian lira	4 2	69 2	85 5	97 7
Other	10 7	60 4	78 4	96 0
Total	490 1	24 9	39 0	67 3

Data based on the Federal Reserve Bank of New York's Foreign Exchange Turnover Survey (March 1980).

exchange business in the United States, for it underscored a strong philosophical commitment to free and open financial markets. Rather than regulate foreign exchange trading banks, supervisory authorities defined general guidelines for prudent business practice in foreign exchange and placed responsibility for compliance on individual banks.[1] Accordingly, top bank executives established explicit policies to control exchange risk, mismatch risk, credit risk, and other risks inherent in foreign exchange operations. These internal controls put United States banks in a far better position to manage their foreign currency exposures, provided the basis for holding exchange trading departments explicitly accountable for their contribution toward earnings, and gave management the confidence to expand the volume of trading activity

Table 3
Foreign Currency Trading by Foreign Banks in the United States
In percent

Country of origin	Number of banks	Market share of domestic currency
Germany	8	24 2
United Kingdom	4	16 5
Canada	5	14 4
Japan	8	27 1
Switzerland	3	20 1
France	6	46 0

Data from Federal Reserve Bank of New York, *Foreign Exchange Turnover Survey* (March 1980)

Foreign bank competition
Increasingly, the world's major banks have moved to establish branches or affiliates in New York and other financially prominent American cities. In 1979 there were 234 foreign-owned banking offices from 48 countries in New York, compared with 139 in 1976 Foreign banks have found numerous attractions in the United States in addition to servicing the business interests of their customers: direct access to the United States loan market and a huge dollar funding pool, cost and informational advantages in operating locally rather than through correspondents, locational benefits in servicing Latin American and Canadian clients, among others. While foreign exchange has not been a major motivation for establishing offices in the United States, most foreign banks have consciously used their trading departments to help cover business costs and as a marketing tool in developing relations with United States multinational corporations Table 3 illustrates that foreign banks enjoy a sizable share of market turnover in their home currencies, ranging from 14 percent of trading in the Canadian dollar through 27 percent in the Japanese yen and up to 46 percent of trading in the French franc

Foreign banks have had certain natural advantages in handling foreign exchange business Foreign exchange trading reached an earlier and fuller development in Europe, owing to the relatively large role of foreign trade in European economies The use of foreign exchange to carry out open market operations by central banks in countries lacking broad and deep domestic money markets also spurred foreign exchange trading Over time, Continental banks evolved a comparatively aggressive style of trading, based on the continuous purchase and sale of currencies to earn a middleman's spread and to capitalize on very short-term fluctuations in rates This type of transactions dealing—which developed during the Bretton Woods regime of exchange rates as a complement to longer term positioning—encouraged traders to sharpen their skills in assessing the impact of new information, in evaluating how other traders would react, and in giving customers the best quotes. Foreign banks have thus added to the competitiveness of the United States foreign exchange market This challenge occurred in a period when American banks were finding that, with greater corporate sophistication about the workings of foreign exchange, they could no longer enjoy comfortable spreads on their customer business but had instead to pursue additional earnings by correctly positioning themselves in the market.

Exchange rate volatility
With the unusual variation in exchange rates since 1973, market practitioners report and a number of formal studies indicate that predicting exchange rate changes has become extremely difficult Forecasts of future spot rates based on forward rates are quite imprecise, leaving investors vulnerable to substantial losses Similarly, analytic models, while providing basic insights into the determinants of exchange rate changes, are typically poor predictors of actual exchange rate movements Moreover, comparisons of exchange rate forecasts with actual exchange rate movements show that the prediction error characteristically becomes larger with a lengthening in the

[1] See "Uniform Guidelines on Internal Controls for Foreign Exchange Activities in Commercial Banks", reprinted in *The Foreign Exchange Committee Annual Report 1980*, for an outline of minimum internal controls for foreign exchange activities in commercial banks recommended by Federal bank regulatory agencies and released by the Federal Financial Institutions Examinations Council

forecast horizon. Not surprisingly, banks establishing profit goals within what for them constitute acceptable levels of risk have generally found it prudent to pursue profits over rather short time horizons.

To isolate the risk characteristics of exchange rate fluctuations, Table 4 presents the average standard deviation of daily, weekly, and monthly percentage changes in the dollar spot rate *vis-à-vis* several major currencies. The standard deviation is taken as a good measure of risk on the grounds that unpredictability is associated with, if not implied by, variability. The numbers clearly indicate that higher levels of risk are associated with longer term exchange rate changes. They also confirm that position-taking in the interbank exchange market has become even riskier in recent years particularly following the October 1979 change in monetary policy by the Federal Reserve, which placed greater emphasis on the supply of bank reserves and less emphasis on the Federal funds rate in moderating the growth of money and credit in the United States economy. Indeed, all currencies except the Swiss franc show a significant increase in daily, weekly, and monthly variability after October 1979, compared either with the entire preceding period of generalized floating or with the period immediately following the November 1, 1978 dollar defense package when the United States authorities undertook to intervene more forcefully to maintain orderly markets for the dollar.[2]

This higher risk environment has prompted market professionals to shrink back even further from operations based on longer run exchange rate expectations.

2 For an extensive discussion of the link between the Federal Reserve's monetary control procedures and spot and forward exchange rate volatility, see "The New Federal Reserve Operating Procedure: An External Perspective", *New Monetary Control Procedures* (Federal Reserve Staff study, Vol II, Board of Governors of the Federal Reserve System, February 1981)

Table 4

Spot Exchange Rate Variability

Standard deviation of percentage changes*

Currency	March 1973 through October 1979	November 1978 through October 1979	October 1979 through August 1981
Daily changes.			
German mark	0.573	0.427	0.706
Swiss franc	0.738	0.596	0.790
Japanese yen	0.488	0.590	0.736
Canadian dollar	0.195	0.211	0.250
Sterling	0.462	0.512	0.647
Weekly changes:			
German mark	1.290	0.977	1.556
Swiss franc	1.630	1.471	1.777
Japanese yen	1.128	1.316	1.640
Canadian dollar	0.469	0.511	0.578
Sterling	1.069	1.263	1.465
Monthly changes:			
German mark	3.046	2.197	3.514
Swiss franc	3.430	2.886	3.791
Japanese yen	2.609	2.150	3.789
Canadian dollar	1.158	1.309	1.231
Sterling	2.450	2.830	3.388

* The standard deviations of weekly and monthly changes represent means of standard deviations of five series of five-day percentage changes and twenty-one series of twenty-one-day percentage changes Thus, for example, weekly percentage changes were measured Monday to Monday, Tuesday to Tuesday, and so on to obtain five nonoverlapping series Similarly twenty-one nonoverlapping series of monthly intervals were constructed, approximating percentage changes from the first day of a given month to the first day of the next month, successively for all subsequent business days

Source Data from Board of Governors of the Federal Reserve System

The time between the taking on and the unwinding of positions has become very short, amounting to minutes and hours rather than days and weeks as traders have sought to catch and profit from intraday turns in the rate. The reluctance to carry exposures for even so short a period as overnight is underscored by data collected by the United States Treasury showing a decline since 1977-78 in end-of-day positions for the most active trading banks.

The emphasis on rapid "in and out" transactions has also led to an explosive rise in spot turnover at the expense of swap trading. As documented by the March 1980 survey, the share of total turnover accounted for by swaps declined to 30 percent from 40 percent in April 1977. With more positioning done intraday and thereby squared off rapidly, banks have cut back on the financing requirements that would otherwise be satisfied through swap transactions. Also, expanded activity in the spot market has stretched thin the pool of talent available to conduct technically sophisticated trading to profit from expected changes in differentials between dollar and foreign currency interest rates.

While rapid intraday spot trading minimizes exchange risks relative to longer term positioning, this approach to trading is not without major drawbacks. Insofar as each transaction entails the obligation to make payment, the explosive rise in daily settlements associated with heavy intraday trading has heightened the possibility of payment errors and of outright losses due to the failure of counterparties to deliver. This adds to normal business and credit risks. Soaring transactions volumes have also entailed such heavy operating costs that many banks have witnessed a declining rate of profitability. Furthermore, the very unwillingness of banks to hold positions for any length of time (which may be thought of as a reduction of their inventories) can itself accentuate erratic or one-way rate movements Excesses of supply or demand rather than being cushioned through interbank inventory adjustments are more quickly reflected in rate movements. Under such circumstances, the growing number of participants who operate on the basis of technical models have at times exerted a noticeable influence on exchange rate changes.

These problems have led major banks to begin reviewing their operations with a view toward improving returns on a risk- and cost-adjusted basis. One possibility under consideration is the assumption of longer term positions to improve profit potential. Depending on the attitudes of management and the perceived adequacy of capital, some banks may decide that the improvement in prospective returns and the reduction of operating costs are adequate compensation for the higher level of risk associated with somewhat longer term exposures. Another option under review is to shift greater resources into swap positioning in order to profit from anticipated changes in interest differentials. Banks engaging in swap operations need not expand their balance sheets since swap transactions involve forward assets and liabilities held on a contingent basis. While swap operations entail potential losses arising from gaps between the timing of payments and receipts, they do not give rise to open exchange risk since the same amount of currencies are simultaneously bought and sold.

Accordingly, foreign exchange trading banks may find incentives to relax the strategy of positioning very heavily intraday on the basis of exchange rate expectations in favor of more swap market operations based on interest rate considerations. Expanded swap activity may also arise with the establishment of International Bank Facilities (IBF) later this year. Through such facilities, banks operating in the United States will be able for the first time to take deposits or extend credit in foreign currencies when transacting business with foreign residents. This may encourage the use of swaps as an alternative to the domestic money markets in generating dollar or foreign currency funding, particularly by United States banks first entering the Euromarkets through the IBF or by others shifting some of their Eurocurrency business to the United States from markets abroad.

Expanding nonbank participation in the United States foreign exchange market

With institutions and individuals turning more frequently and in greater numbers to the United States foreign exchange market, nonbank purchases and sales of foreign exchange quadrupled from an estimated $10 billion a month in early 1977 to $42 billion in the March 1980 survey. Customer demands grew much faster than would otherwise be indicated by the expansion in United States trade at 75 percent and the pickup in United States firms' overseas assets and liabilities at 60 percent over the same three-year period. Indeed, a large portion of the surge in foreign exchange activity reflects new and sophisticated adaptations to a volatile financial environment, as evidenced in more active corporate hedging practices, the development of multicurrency-denominated portfolios, and the growth of foreign currency futures trading.

Corporate hedging

In recent years, United States corporations have placed greater emphasis on the economic effects of exchange rate fluctuations, have increasingly centralized their treasury functions, and have deepened their under-standing of foreign exchange market operations. While these developments originated in the volatile exchange rate environment of the early 1970s, they accelerated rapidly in response to the Financial Accounting Standards Board Rule No. 8 (FASB-8). By requiring that exchange gains and losses be recognized immediately as part of quarterly income, rather than being smoothed out or deferred through the use of reserve accounts, FASB-8 made reported quarterly earnings vulnerable to the impact of large exchange rate swings.

An early corporate reaction to FASB-8 was to hedge balance-sheet exposures in order to minimize the effect of foreign exchange translation on earnings per share. Over time, however, financial analysts and shareholders have learned to discount the impact of accounting-induced gains and losses on corporate income. And corporate treasurers themselves have found that decisions taken to hedge balance-sheet exposures sometimes prove uneconomic, compromising longer term goals of protecting the value of the firm. Consequently, companies have tended to move away from translation exposure as the most relevant measure of what should be hedged toward a broad economic definition of exposure, taking into account current and anticipated cash flows.

As exchange rate considerations have gained in importance, United States firms have lodged greater foreign exchange expertise and decision making at headquarters. The centralization of foreign exchange management, most often at the level of the parent, has been accompanied by a shift in the actual implementation of transactions to New York and to other major cities from foreign entities overseas. But the adoption of a centralized approach has also fostered the growth of the United States foreign exchange market in less direct ways. Because large corporations frequently deal in a number of alternative markets simultaneously, their willingness to transact business in New York has provided United States banks with incentives to offer highly competitive rates on currencies. Moreover, corporate demands for market analysis and counsel have encouraged the growth of bank foreign exchange advisory services and trained personnel, enhancing the stature of New York as a financial center.

These changes in corporate structure and behavior have also led to the adoption of more sophisticated exposure management strategies. In practice, fewer corporations than in the past operate at the extremes of never or of always hedging their exchange risks.[3]

[3] Hedging is used here in the broadest sense to include all techniques that change, neutralize, or offset a company's exchange risk, rather than in the narrow sense of the purchase or sale of foreign exchange to protect balance-sheet positions from currency fluctuations

Because major differences among currency risks and returns are not canceled out over the relevant corporate time horizon of several months, a strategy of ignoring currency exposures can be disastrous. On the other hand, the costs of being fully covered can also be unnecessarily high, easily outweighing the expected losses of not covering and frequently exacting a price in terms of basic economic objectives. Also, avoiding all exchange losses by definition precludes the opportunity for foreign exchange gains. Accordingly, a growing number of corporate managers now seek to establish a desirable level of exposure subject to acceptable risks and costs. This has had a number of consequences.

(1) More firms have chosen to manage their foreign exchange positions actively and to diversify their exposures across currencies. As a result, many transactions previously regarded as risky are now part of sound financial practice. Also, exposure management tools once thought to be rarefied have gained broader acceptance among corporate treasurers. These include financial pooling and the reinvoicing of trade among subsidiaries to satisfy all but the net funding and foreign exchange requirements of local units, sometimes through the vehicle of multicurrency management centers established in offshore low tax areas.

(2) Even while remaining essentially risk adverse and continuing to attach more importance to avoiding exchange losses than to benefiting from exchange rate gains, corporate managers are now more willing to respond to actual and expected changes in exchange rate returns. Leading and lagging, shifts in borrowing, variations in inventories, and other mechanisms to change the mix of assets and liabilities are more commonly used to move into currencies with actual and anticipated rising yields and to move away from currencies with actual and anticipated falling yields.

(3) Companies report a growing willingness to shift in and out of hedges. Reversing a hedge or a covering mechanism may be essential to minimize actual or opportunity losses if exchange rates move in directions opposite to forecast or if rates reach levels more quickly than initially anticipated. With rate movements becoming more volatile, the risks of actual losses have increased, while the opportunity costs of not buying or selling foreign currencies at the most favorable prices (which are never known with certainty) have also mounted. Not surprisingly, therefore, a growing number of corporate treasurers have turned to a more active approach to exposure management, with the

result that foreign exchange transaction volumes have increased dramatically.[4]

Multicurrency portfolios

Amid heightened exchange rate volatility, the desirability of holding multicurrency portfolios has become increasingly obvious. Diversified portfolios are insulated from the effects of exchange risk to the extent that the distribution of currencies on the asset side is matched to actual or expected liabilities. Alternatively, if some currency exposure is accepted, then diversification can lead to lower portfolio risk for a given level of expected return, essentially because there is reason to expect fluctuations in the return of any one currency to be partially offset by opposite fluctuations in the return of another currency. Accordingly, the risk of a given portfolio is expected to be smaller than the weighted average of the risks of the several currency assets in that portfolio. These diversification incentives have played an important role in the growing volume of foreign exchange traded in the United States and elsewhere around the globe.

Tables 5 and 6 show the performance of five major currencies *vis-à-vis* the United States dollar in two recent periods, the first from April 1977 through the third quarter of 1979 and the second from October 1979 through March 1981. Judging from these calculations, it is obvious that holding different currencies on an uncovered basis may involve a high degree of risk since returns can change substantially over time with variations in interest rates and exchange rates. History provides little grounds for confidence in the expectation that differences in nominal interest yields will be compensated for by spot exchange rate changes. As the tables show, there are substantial differences across currencies in the annual average returns that were earned during each of the two periods.

The tables also present several multicurrency portfolios, constructed from the vantagepoint of a United States-based investor interested in dollar-denominated returns. The first two portfolios show the results of a passive investment strategy, with major currencies represented in proportion to their share in the total market capitalization of stocks and bonds in selected major industrial countries at the end of 1979. By choosing portfolios that represent the "market", the passive investment approach seeks to diversify away all risk except that associated with the market as a whole. This approach is advantageous for small investment trusts, pension funds, and other institutions that may wish to diversify internationally but lack sufficient research services and analysts to pursue an active investment program. By contrast, the last two portfolios contain various foreign currencies in equal amounts. Their performance indicates the sensitivity of overall portfolio returns to the mix of chosen assets under changing financial conditions. Portfolios that turned out to yield the highest return after October 1979 are those that did not include the mark as one of the selected currencies, while in the earlier period excluding the mark would have significantly lowered portfolio returns.

Two aspects of diversification are worth bearing in mind. Foreign investors, as well as domestic residents with funds initially allocated entirely to domestic currency assets, appear ready to respond not only to developments between the United States and foreign markets but to developments among nondollar currency centers as well. The growing number of currencies that have become attractive candidates for diversified portfolios has been a major boost to the expansion of foreign exchange market activity.

Second, with considerable attention focusing on official reserve diversification, the importance of private-sector shifts of funds is frequently underrated. Indeed, there is little question that private portfolios around the world are losing their exclusively domestic character as businesses, investment trusts, and individuals diversify the currency denomination of their money, bond, and equity portfolios. Divergent returns among various domestic monies and among the world's major stock and bond markets have made it possible to improve portfolio earnings without an increase in risk and to protect financial assets in an unsatisfactory investment climate from the loss of real purchasing power. Moreover, private asset managers are generally quick to adjust the currency composition of their portfolios to changes in the relative risks and expected returns that they perceive, while there is reason to believe that official portfolio shifts may be less abrupt and may involve a longer term transition to a desired mix of currencies. Therefore the availability and movement of internationally switchable funds, which have played an important part in the growth of the foreign exchange markets, should be seen even more as the response of private market participants than of official institutions to high exchange risk and to an otherwise volatile financial environment.

[4] Active hedging practices may have led corporate treasurers to use the forward market more intensively. Forward contracts may be closed out at any time prior to maturity and may therefore be easier to reverse than some alternative combination of spot and money market transactions. In the March 1980 survey, nonfinancial institutions transacted about 61 percent of their exchange business through outright forwards and swaps and the remainder in the spot market. Unfortunately, the data do not permit a comparison with the 1977 survey.

Table 5

Average Return and Risk of Selected Currencies

April 1977 through September 1979*

Currency	Average annualized exchange rate change	Interest rate return	Total average annualized return	Standard deviation of total return
United States dollar		7 37	7 37	1 73
German mark	11 18	4 07	15 25	23 84
French franc	6.65	8 27	14 91	19 98
Japanese yen	8 77	4 92	13 69	35 49
Sterling	10 15	7 75	17 90	25 57
Canadian dollar	— 4 22	8 61	4 40	15 03
Portfolio I†	3 50	6 72	10 21	8 60
Portfolio II‡	7 95	5 92	13 86	20 26
Portfolio III§	6 51	6 72	13 23	15 36
Portfolio IV‖	5 34	7 39	12 72	14 61

Table 6

Average Return and Risk of Selected Currencies

October 1979 through March 1981*

Currency	Average annualized exchange rate change	Interest rate return	Total average annualized return	Standard deviation of total return
United States dollar		12 08	12 08	2 48
German mark	—12 18	9 12	— 3 06	34 01
French franc	—12 80	11 71	— 1 09	32 94
Japanese yen	1 29	9 66	10 95	44 67
Sterling	— 0 19	13 65	13 46	30 75
Canadian dollar	— 1 42	13 02	11 60	11 21
Portfolio I†	— 1 46	11 51	10 16	12 14
Portfolio II‡	— 3 36	10 79	7 54	29 35
Portfolio III§	— 5 06	11 43	6 47	25 41
Portfolio IV‖	— 3 28	12 01	8 82	24 71

* Exchange rate changes are based on the monthly average of daily exchange rate changes Interest rate returns are based on the monthly average of selected short-term rates in national markets for all currencies except the dollar Interest returns on the dollar reflect the monthly average of daily yields on three-month United States Treasury bills Source International Monetary Fund, *International Financial Statistics,* and Morgan Guaranty, *World Financial Markets*

† Portfolio I consists of 56 percent of dollars, 18 percent of yen 10 percent of marks, 8 percent of sterling, 5 percent of Canadian dollars, and 3 percent of French francs

‡ Portfolio II consists of 41 percent of yen, 22 percent of marks, 18 percent of sterling, 11 percent of Canadian dollars, and 8 percent of French francs

§ Portfolio III consists of 20 percent each of German marks, French francs, Japanese yen, pound sterling, and Canadian dollars

‖ Portfolio IV consists of 25 percent each of French francs, Japanese yen, pound sterling, and Canadian dollars

Foreign currency futures

Foreign currency futures have become a popular alternative to traditional financial instruments for individual investors seeking to maintain or improve upon the real value of their assets. Foreign currency futures offer the prospect of large exchange gains, while the possibility of setting foreign exchange losses against ordinary income may also motivate some investors seeking to protect their aftertax income from higher, inflation-induced tax rates. Individual investors may constitute a larger class of transactor on the futures market than other participants, such as small corporations or commodities trading firms. Because commercial banks are reluctant to deal with parties not having recognized commercial or financial transactions, individuals have few other opportunities to speculate in foreign exchange. Even individuals with access to the interbank exchange market may find that the costs of transacting business are sometimes quite high. By contrast, there is considerable scope for leveraging positions with modest capital outlays on the futures exchanges, such as the International Monetary Market of the Chicago Mercantile Exchange (IMM) where most currency futures are traded.

IMM orders, which customarily enter the interbank market through the arbitrage activities of a special class of IMM clearing member, represent a fast growing and important source of foreign exchange activity in the United States. Such activity accounted directly in the March 1980 survey for 15 percent of commercial banks' total customer business (spot, swap, and forward) and fully 35 percent of banks' customer business done in the forward market. But these numbers understate the impact of the IMM on the interbank market in at least two respects. Direct arbitrage by commercial banks, which initiate IMM trades through floor brokers and then lay off these positions in the interbank market, has increased as banks have begun using their trading expertise actively to exploit the profit potential between the IMM futures and the interbank forward market. Moreover, banks writing forward contracts with IMM arbitragers typically cover their currency risk through offsetting purchases or sales in the spot market and their maturity risk through a series of swaps. Like regular customer orders, IMM orders thus set in motion multiple transactions in the interbank market.

Innovation in foreign exchange dealing relationships

Market mechanisms in the United States, developed when exchange rates were fixed and the need for foreign exchange services in the United States was far smaller, came naturally under increasing strains with the rapid expansion in foreign exchange demands and far-reaching disturbances to the global economy. Over time, the need to respond quickly to rapidly moving events put a premium on mechanisms which were swift and efficient and challenged the adequacy of traditional dealing relationships In 1978, after several years of debate, banks and brokers in the United States introduced three major changes in market practice.

- Foreign exchange trading banks, rather than doing business among themselves almost exclusively through the intermediation of United States foreign exchange brokers, began dealing directly with each other at home and using international brokers not domiciled in the United States when dealing abroad.

- Foreign exchange brokers located in the United States began to broker internationally, accepting bids and offers from banks located abroad.

- Exchange rate quotations for currencies other than the pound sterling shifted from United States terms, that is, dollars and cents per unit of foreign currency, to European terms, that is, foreign currency units per United States dollar.

These changes facilitated the expansion of foreign exchange trading by eliminating conventions that had come to discourage full participation in the market and by integrating the United States market more closely with markets overseas.

Previously, banks in the United States would deal either directly with banks abroad or through the local brokerage system. There was little direct bank-to-bank trading in the United States market. Under this system, traders were not always assured of getting up-to-date market information and the freshest bids and offers. This disadvantage was particularly acute for banks lacking widespread name recognition or a sizable customer and correspondent base and consequently not in a good position to establish direct dealing relationships with the broader and more active European market. The high cost of telex and telephone communications linking New York to Europe also deterred many banks from direct dealing abroad. Direct dealing with foreign banks was therefore limited to banks with broad foreign exchange trading relationships and with management support for a reasonably large trading operation.

Before 1978, therefore, United States brokers frequently found it difficult to locate willing buyers and sellers since a relatively small number of banks trading direct overseas accounted for the bulk of foreign exchange turnover. Direct dealing accounted for about

70 percent of spot turnover in the United States in the April 1977 foreign exchange survey, after adjusting for double counting of transactions between United States banks (Table 7). By the same token, a number of banks —not sure of being able to do business in the brokers market but equipped to handle foreign exchange transactions for their customers—looked instead to larger correspondent banks to execute their orders.

While the rigidities implied by conventional dealing relationships had their greatest impact on the local brokers market, even banks dealing direct abroad were affected. When, for example, business was heavily concentrated in the foreign brokers market, information on bids and offers could be acquired only with certain delays. The extra search time involved in getting business done and the dangers of being stuck with positions that could not be unwound quickly or on acceptable terms became serious issues as the market grew in complexity and as exchange rate movements picked up momentum.

Direct dealing between United States names has helped overcome many of these problems. Direct dealing banks can expect each other to provide fresh rate quotations for marketable amounts in a spirit of reciprocity. To be sure, differences in bank size and expertise in various currencies will influence the cost of reciprocity and also the readiness of individual banks to deal direct. However, banks accepting these mutual obligations find that they can execute transactions at almost any time during the business day and have greater flexibility in handling large or odd-dated customer orders not readily suited to the brokers market. These capabilities have added depth to the market and have enlarged transactions volumes through more regular participants.

For their part, now that United States brokers have communications links to Europe, they are able to collect bids and offers provided by a large number of European, Middle Eastern, and Far Eastern banks and to pass these on to traders in New York and in other United States cities either by phone calls or in many cases over speakerphones. The ability to deal through the brokers on a competitive basis by receiving fresh and timely prices has provided additional impetus for regional and comparatively small United States banks to set up foreign exchange trading departments and for established trading rooms to expand their operations. With more and more banks willing to deal through the brokers, the market has gained liquidity, *i.e.,* participants can get more business done without affecting the prevailing price. Also, brokers can and frequently do provide the best international bid and offer. The advantage to the banks is that the broker's commission may at times be smaller than the cost of the spread when dealing direct. Because commission arrangements now include the granting of discounts with increasing business volumes, there are also benefits to dealing through the brokers in size. Further, the savings in staff, equipment, and time that otherwise would be required to stay in contact with the growing number of banks that trade foreign exchange provide still another inducement to trading through the brokers. For all these reasons, use of the brokers has increased dramatically, in large part at the expense of direct dealing overseas. In the March 1980 survey, transactions through brokers accounted for more than 50 percent of the sample's spot foreign exchange business, compared with about 30 percent in 1977 (Table 7).

Table 7

United States Foreign Exchange Turnover by Type of Dealing

As a percentage of spot turnover in the interbank market*

Type of dealing	Direct dealing April 1977	Direct dealing March 1980	Brokered dealing April 1977	Brokered dealing March 1980
Between United States banks	†	14	27	20
Between banks in the United States and banks abroad	73	34	†	32
Total	73	48	27	52

* Based on gross spot currency transactions of ninety and forty-four banking institutions, respectively, in March 1980 and April 1977, after adjusting for double counting of transactions between banks located in the United States

† Negligible

With the shift to European terms, United States dealers began using the same pricing convention as that employed elsewhere, in effect adopting the terminology of other markets for the sake of greater efficiency. The decision was not made lightly since the question of how dealers quote prices involves the language of the marketplace and is therefore a matter of identity and tradition as well as of technical convenience. But, whatever the initial concerns, the use of European terms has made it easier to trade with other markets by removing a source of potential confusion in communications and by cutting down on the time needed to execute individual transactions.

In sum, direct dealing between United States names, international brokering, and the switch to European terms as a common standard for quoting rates have improved the functioning of the United States foreign exchange market. With information disseminated rapidly and completely and with traders readily able to buy and sell at current and uniformly quoted prices, the market is both more efficient and more liquid than before.

Concluding remarks

The upsurge of foreign exchange trading in the United States has occurred essentially in response to the increasing volatility of exchange rates and to the internationalization of the United States exchange market and its fuller integration with the global foreign exchange market. So long as the international economy continues to experience high and variable inflation, major current account imbalances, divergent monetary and fiscal policies, and other factors recognized as contributing fundamentally to exchange rate instability, the challenge of heightened exchange rate volatility is likely to persist.

Meanwhile, barriers to the movement of trade and capital notwithstanding, national economies are becoming more interdependent, broadening further the scope for sophisticated foreign exchange management by a variety of institutions and individuals. Active hedging policies and the development of multicurrency-denominated asset (and liability) portfolios are still on a relatively limited scale. Yet the incentives to move further in this direction are strong, in an environment of variable inflation and exchange rate volatility, and the opportunities to do so are growing, with the development of new financial instruments and the opening-up of national financial markets around the world. The sheer size of the United States money and capital markets, unparalleled innovations within and among those markets, and the growing sensitivity of investors and borrowers to expected exchange rate changes as an important component of the yield or cost of financial assets all suggest that the scope for additional private-sector participation in the United States foreign exchange market is substantial.

But also, working in the opposite direction, are some factors suggesting a somewhat more moderate pace of growth in the years ahead. There are limits to the expansion of intraday spot trading by market professionals in terms of transaction costs, payment errors, and settlement risk. And, in the absence of a well-developed foreign currency deposit market in the United States or in neighboring offshore markets, there are also natural limits to the expansion of swap trading. These considerations make it doubtful that interbank positioning will continue in the future to play as paramount a role in boosting trading volumes as in the past. At the same time, most foreign banks with an interest in locating in the United States have already done so, while the centralization of exchange risk management at United States corporate headquarters is by now already well-developed. In many countries abroad, restrictions on foreign exchange trading have also begun to ease. Moreover, international brokering and direct dealing among United States names, while facilitating the expansion of foreign exchange business and making it possible for the United States market to become more fully integrated with markets overseas, are by their nature structural changes whose impact on volume growth can be expected to dwindle over time. Therefore, while there are good reasons to expect continued growth of the United States foreign exchange market, the likelihood is that the future expansion of the market will be less than the very rapid pace of recent years.

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