FEDERAL RESERVE BANK OF PHILADELPHIA

How U.S. Multinationals Manage Currency Risk

By Janice M. Westerfield*

Foreign investment offers U.S. multinational corporations great opportunities for finding new markets and realizing new profits. But these foreign operations carry with them a number of risks. One of the most important of these risks is currency risk the risk that exchange rate fluctuations will change the value of transactions or alter the returns on assets and liabilities.

Businesses with interests abroad traditionally have responded to currency risk by hedging—finding ways to reduce exposure from currency risk and to alter the amounts of assets and liabilities they hold to take account of expected currency value changes. But two developments have complicated the hedging picture. One of these is the change from fixed exchange rates to floating rates; the other is an accounting ruling (FASB-8) that changes the way multinationals value

³Janice M. Westerfield, who received her Ph.D. from the University of Pennsylvania in 1974, writes frequently on international finance and trade. their assets and their liabilities when they make up their annual income statements. These two developments have compelled multinational corporations to develop more sophisticated hedging techniques.

After several years of stress, some corporations think they perceive the light at the end of the tunnel. Floating rates have become more familiar, and the accounting ruling that complicated the corporate treasurer's life appears to be in for revision. Further, many corporations have developed a number of new methods to manage their currencies. These new methods along with revisions that may be made to accounting rules should help American multinationals maintain their position in foreign markets.

U.S. MULTINATIONALS EXPAND

In recent decades, U.S. corporations have stepped up operations in many foreign countries. According to one study, U.S. firms set up about 6,000 new foreign subsidiaries from 1950 to 1965. Over the next five years,

they set up about 4,400 subsidiaries, and in the first five years of the 1970s, about 3,200 more were added. Although some subsidiaries have been shut down from time to time, about 11,000 were operating in the mid-1970s. Foreign assets and liabilities now account for a significant portion of the business of U.S. parent companies. Assets of majority-owned foreign affiliates have risen, and so have U.S. direct foreign investment in and loans to foreign affiliates. The U.S. direct investment position grew from about \$51 billion in 1966 to \$118 billion in 1974 and rose steadily to about \$168 billion in 1978.

Foreign earnings have grown along with investment. From 1970 to 1974, foreign income more than doubled to reach \$19 billion, or over 22 percent as a share of total income. Although a brief period of retrenchment followed, foreign income has resumed its upward trend. Thus U.S. firms have a big stake in their foreign operations.

This growth has occurred during a period of changing international monetary arrangements. Over the past four years, corporate treasurers have had to face significant changes in exchange rates. With the advent of floating exchange rates in 1973, currency values have fluctuated on almost a daily basis. Such fluctuations have complicated the management not only of currency but also of other assets and of liabilities, since those typically are denominated in the currency of the host country. [Assets—claims on property owned or used by the firm—

include such items as cash, accounts receivable, inventory, and plant and equipment; liabilities—claims held by nonowners against the firm—typically include accounts payable and short-term and long-term debt.) Currency fluctuations under floating rates cause such assets and liabilities to change in dollar value almost continuously. Thus exchange rate changes are central to a firm's economic exposure and affect real cash flows. And management of these exposed funds can serve to reduce the economic impact of exchange rate changes.

Many of the complexities of currency exposure for American multinationals can be traced to the floating rate system, which makes it more difficult to forecast future exchange rates. But part of the difficulty also can be laid at the door of U.S. accounting practices which, beginning in 1976, revised the guidelines for translating foreign assets and liabilities into dollar terms. As a result of this change, many firms found themselves with more liabilities than assets exposed. (An account item is considered exposed if its value restated in dollar terms changes with fluctuations in the exchange rate.) With more liabilities exposed, and with the dollar depreciating, these firms showed lower profits or even losses in their total foreign operations when they wrote their annual reports. Further, the profits and losses from currency value changes often swamped the figures for foreign operating income. Thus the profit and loss statements did not reflect an accurate picture of the management and underlying economics of a firm's operations in a foreign country. The profitability picture was distorted by the impacts of currency value changes and changes in accounting rules. Faced with paper losses, American firms and their owners—the stockholding investors—have been trying to figure out just what happened and how the situation can be made more palatable. Part of the answer, they think, must come from changes in the rules of accounting for foreign opera-

¹J. P. Curhan, W. H. Davidson, R. Suri, Tracing the Multinational: A Sourcebook on U.S.-Based Enterprises (Cambridge: Ballinger Publishing Company, 1977), p. 19. Their data is based on a sample of 187 U.S. parent firms.

 $^{^2{\}it Economic}$ Report of the President, January 1978, p. 350.

³For an article expressing doubts about further U.S. expansion abroad, see Stephen Blank and James Greene, "Turning Point for the Foreign Adventure?" The Conference Board Magazine, August 1978.

ACCOUNTING FOR FOREIGN UNITS

American firms that operate abroad ordinarily conduct business in foreign currencies, buying supplies and paying their employees mainly in their host country's money rather than in U.S. dollars. Foreign units of these firms usually keep their books in the local currency, too. When the parent firm wants to generate financial information about its foreign operations or to consolidate its financial statements, however, it must convert the local-currency position of its foreign units into dollar terms.

Fixed Rates. Under fixed currency exchange rates, no special financial or accounting difficulties arose from expressing business activities in a variety of currencies. Whether stated in home-country or host-country currency, financial records were nearly unambiguous. Just as a segment of length can be measured in either inches or meters and translated from one to the other without confusion provided the exchange rate is fixed continuously at so many inches per meter, a financial transaction under fixed rates could be expressed interchangeably in either of two currencies.

There were some exceptions, of course, even under fixed rates, because fixed rates weren't entirely fixed: currency values could be changed officially under provisions of the Bretton Woods agreement and its amendments. Thus even under fixed rates some accounts were exposed to exchange rate devaluation or revaluation. Suppose a U.S. multinational's investment in a foreign company was expected to earn a million dollars' worth of marks at one exchange rate. If the dollar was officially devalued before the investment matured, then the U.S. multinational could convert the marks into more than a million dollars, thus realizing a currency gain. If the mark was devalued, however, the investment would yield less than a million dollars. Currency devaluations did occur under fixed rates, but they were relatively few and far between. Thus they posed comparatively few difficulties for multinationals.

Floating Rates and Accounting Changes. In 1973, when the switch from fixed rates to floating rates was made, the pace of changes in the relative values of currencies picked up sharply. No longer could firms count on long-term stability in exchange rates, and so they had to keep a continuous watch on the changing dollar values of their foreign assets and liabilities.

But this was no simple matter, because different assets and liabilities conventionally were translated into dollar terms at different rates, depending on the nature of the balance sheet item, when it was acquired, and other circumstances. The difficulties associated with having different translation systems in effect at the same time led many members of the corporate financial community to seek more uniformity in accounting procedures. 4 In response, a professional industry group the Financial Accounting Standards Board -issued its Statement 8 in 1975. FASB-8 required the adoption of a uniform accounting standard and prohibited the deferral of most exchange gains and losses arising from the application of the FASB-8 method. This ruling eliminated the reserves that previously were used by some firms to smooth the

⁴Basically, there are two approaches to handling exchange gains and losses associated with foreign currency transactions. One involves considering the exchange gain or loss as part of the revenue or expense of a transaction denominated in a foreign currency. Thus the currency value change is included in the price of the transaction. When a U.S. parent recouped revenue from the operations of a foreign unit, for example, it would include the exchange gain or loss in the net revenue transfer. The second approach is to separate the exchange gain or loss from the transaction. The amount of hedging against currency risk is viewed as a financial decision to speculate, to accept part of the exchange risk, or to cover. In this approach, the transaction of a foreign unit would be translated into dollars and currency value changes would be considered separately. Exchange rate gains and losses would be disclosed separately on the parent firm's financial statements. This second approach is closest to FASB-8.

effects of exchange rate fluctuations on earnings. These reserves were accounts set aside to cushion the effects of exchange rate changes and to buffer a firm's operating statement from such changes. Exchange rate gains and losses now are required to be carried through to the income statement of the current accounting period whether or not the gain or loss is actually realized in that period.

The uniform accounting standard chosen by FASB-8 for reporting foreign currency items is the so-called temporal method. The temporal method attempts to link the exchange rate associated with the original transaction to the balance sheet item. Thus many feel it maintains the appropriate measurement base.5 For all practical purposes, this method is very close to the monetary/nonmonetary method in which assets and liabilities of a fixed monetary amount are translated at the balance sheet date while nonmonetary assets and liabilities are measured at the historical exchange rates in effect when they were acquired or incurred. The most important changes under the FASB-8 method concern inventory and long-term debt. Most inventory is carried at the historical rate prevailing when the assets were acquired and thus is not exposed to exchange rate gains and losses, while longterm debt is carried at current rates and thus is exposed to fluctuations in the value of the dollar against foreign currencies. The net result is that multinationals which previously used other accounting methods have found

that compliance with the ruling alters their accounting exposure. With more liabilities exposed and fewer assets exposed, the net exposure—the sum of exposed assets minus the sum of exposed liabilities—becomes shorter and moves towards a net liability exposure.

At the same time as the typical firm's net accounting exposure was becoming larger on the liability side, the U.S. dollar was depreciating against many foreign currencies. The combination of dollar depreciation and net liabilities led to large accounting losses. 6 Loud cries were heard from many firms who felt that FASB-8 was not the method most appropriate to their case. Some criticized the FASB's choice of the current or the historical exchange rate required to translate certain assets or liabilities. Critics still argue that the accounting results under FASB-8 often are at odds with the economic results (see ECONOMIC RESULTS OFTEN DIFFER...).

One of the major concerns about currency rate changes initially was how to convey information about their financial impact in a clear and useful way to the public. Would investors be fooled by large swings in exchange rates and associated fluctuations in quarterly earnings, resulting in lower returns for those securities most seriously affected?

⁵Under the temporal method, account items carried on the balance sheet at the local-currency price of the past transaction, such as inventory, plant, and equipment, are translated at the historical exchange rates in effect when the assets were acquired. The current rate prevailing as of the balance sheet date is used to translate cash, accounts receivable, accounts payable (including long-term debt), and marketable equities carried at current prices. A few accounts, such as revenue and expense accounts, are translated at average exchange rates.

⁶Suppose a U.S. firm has a wholly owned foreign subsidiary in West Germany. This subsidiary denominates its assets and liabilities and many of its transactions in deutsche marks. The subsidiary has no exposure because its financial records are all kept in deutsche marks. And suppose that when its financial records are consolidated with the U.S. parent, the parent has DM 10 million of assets exposed and DM 15 million of liabilities exposed under the FASB-8 method of accounting. In other words, the U.S. firm has a net negative exposure of DM 5 million. If the deutsche mark appreciates from 50 to 52 cents against the dollar during a quarterly earnings period, an exchange loss of \$100,000 (2 cents/DM x DM 5 million) results. Whereas such exchange losses used to be absorbed in a reserve account where they often were offset by exchange gains, they now are carried through directly to the income statement in the accounting period in which they occur.

Or would they be able to see through exchange gains and losses arising from accounting exposure? The Some firms made a special effort to educate their stockholders about the pitfalls of foreign exchange exposure and ways of handling it.

This adjustment to currency fluctuations and FASB-8 has evolved somewhat over time. After the initial confusion over the accounting ruling, many firms concentrated on reducing their accounting exposure in order to minimize the effects of exchange

⁷See Roland A. Dukes, "An Empirical Investigation of the Effects of Statement of Financial Accounting Standards No. 8 on Security Return Behavior," Financial Accounting Standards Board of the Financial Accounting Foundation, Stamford, Connecticut, December 1978.

rate gains and losses on their quarterly earnings. Now they are moving towards more emphasis on the economic effects of currency fluctuations. The biggest difference probably is that today firms are forced to address exchange rate changes as a cost of doing business.

HOW FIRMS RESPOND

Multinationals have chosen to respond to the complexities of currency management in many ways. Drawing on the strengths of their own financial managers as well as outside consultants with international experience, they have developed a whole new range of exposure management techniques.

In-House Expertise. As part of their inhouse capability, many corporate treasurers have tried to define and measure exposure,

ECONOMIC RESULTS OFTEN DIFFER FROM ACCOUNTING RESULTS UNDER FASB-8

The FASB-8 ruling on foreign exchange translation has been the subject of considerable controversy since it became effective in 1976. Among the difficulties frequently mentioned by firms addressing foreign exchange gains and losses is that economic and accounting results tend to differ. This disparity may be reflected in greater variability in reported earnings and associated investor confusion.

How economic results and accounting results might differ can be seen by comparing the effects of currency value changes on cash flow (the economic variable) to their effects on reported earnings (the accounting variable). To see how these effects might differ, suppose that the U.S. parent has a West German subsidiary which keeps records and pays dividends in deutsche marks. Assume that the value of the subsidiary's dividends and reported earnings remains constant in deutsche marks and that the U.S. dollar depreciates, The effect of the deutsche mark appreciation on cash flow is positive—each deutsche mark now translates into more dividends for the U.S. parent. But when the parent consolidates the affiliate's balance sheet with its own, it will show an exchange loss that lowers reported earnings, according to the FASB-8 method of accounting.

As a second example of how economic and accounting results might diverge, consider the West German subsidiary of a U.S. parent which decides to issue deutsche mark denominated debt and use the proceeds to finance the construction of a new facility. The subsidiary expects that the new plant will generate sufficient cash flow to repay the debt. Under current accounting rules, the long-term debt is exposed to a change in the value of the dollar whereas the plant facility is not. So if the dollar depreciates, the U.S. parent has a consolidated balance sheet with an exchange rate loss on the books. Yet in another sense, a changed value of the dollar relative to the deutsche mark would not result in an economic loss because both the earnings generated by the plant and the debt payments have appreciated. The income streams cancel each other out and, in a real sense, the company is no worse off.

to forecast currency movements, and to develop appropriate strategies and risk management techniques. Once a company exposure manager has decided where his company's exposure is greatest and which currencies are most important to operations, for example, he may track those currencies or attempt to forecast their movements. These forecasts then are available to feed back into management strategies which make allowance for strong or weak currencies. Further, other complicated strategies take account of maximum loss limits as well as distortions in balance sheet exposure. High-priced new employee positions, such as Assistant Treasurer International, have been created just to manage foreign exposure and exchange risk. 8 And many other people now allocate part of their time to forecasting or currency management as well. Because of the bewildering complexity of alternatives, or simply to be on the safe side, multinationals are supplementing their in-house capability with outside forecasting and advisory or consulting services.

Outside Expertise. With floating rates and the dramatic increase in variability of those rates, many international money managers have come to rely on foreign exchange forecasting services. And many firms have found the subscription fees well worth the cost. These forecast services provide information about future exchange rates based on judgmental or econometric models. The judgmental forecasters rely on a qualitative approach and appear to forecast slightly better over the short term. The econometric models may be quite sophisticated, using simultaneous equations or similar empirical models, and they appear to predict better in the longer run (over one year). Exchange rate forecasts provide a quarterly average for some time in the future or a point estimate of

⁸For further discussion of the position of assistant treasurer international see "The New Hero of American Business," Euromoney, March 1979.

currency prices for a given future date.

Forecasting services presumably are in demand because firms are willing to pay to reduce the uncertainty of unanticipated exchange rate changes. These forecasting services have a reasonably good track record—a record that looks better than if they were only guessing.9

Just as there is a demand for exchange rate forecasts, so many firms rely on bank advisory services. These bank currency advisory groups tend to be more comprehensive. offering a wide array of services. Most of the major money center banks have currency advisory services as well as consulting services. Basically, these services help companies maneuver through the pitfalls of floating rates and FASB-8. They advise company clients on a myriad of international concerns -including traditional hedging actions for financial transactions, the effects of currency fluctuations on cash flows from both existing and planned investments, and tax implications of foreign currency gains and losses.

Currency managers today strive to be on top of new hedging techniques and currency forecasts and to assess the total financial impact of the firm's foreign operations. And since resources for managing currency risk compete with other resources in the firm, managers must ask if they are getting the most benefits from the funds that are spent.

Strategies for Managing Exchange Exposure. Whether multinational firms rely on
outside services or have developed an inhouse capability, they still must choose from
among many alternatives in managing their
exchange risk. Traditional hedging strategies
for reducing exchange risk exposure focus
on increasing strong currency assets (those

⁹For further discussion of foreign exchange forecasting services, see Richard M. Levich, "Analyzing the Accuracy of Foreign Exchange Advisory Services: Theory and Evidence," NBER Working Paper 336, April 1979.

likely to appreciate) and reducing weak currency assets (those likely to depreciate). At the same time, weak currency liabilities are increased and strong currency liabilities are reduced. Although such practices have been standard for some time, new emphasis has been placed on tailoring them to multinationals with exposure in many currencies. Borrowing in weak currencies makes sense because when the loan comes due, it may be repaid in a cheaper currency. But although the firm may better its exposure picture, there are costs for the firm as well. One of these costs is that higher interest rates may have to be paid when borrowing in weak currencies, 10

Leads and lags are central to hedging strategies. With debt financing, for example, outstanding debt in strong currencies may be repaid prematurely, leading (advancing) the payments to avoid a more expensive payback later on. Similarly for receivables and payables. In the case of weak currency transactions with outside parties, the firm can try to tighten credit terms or prices. Or it may choose to forego discounts for prepayment of payables in a weak currency or to delay accounts payable. Within the firm. there are many ways to reduce exposure. Adjustments can be made in the speed with which one subsidiary pays off its accounts with another subsidiary. Subsidiaries with strong local currencies could delay or lag the remittances of dividends, royalties, and fees to other subsidiaries of the multinational to decrease their liabilities. Those in weak currency countries could try to lead, or pay promptly, their liabilities and reduce their asset exposure. All these things would tend to reduce the consolidated balance sheet exposure.

Other basic risk management techniques

involve the purchase or sale of forward contracts for currencies. A forward contract is a promise to buy or sell a currency at a specified time in the future at a price agreed upon today. Forward market hedging has increased greatly since the advent of floating rates and new accounting procedures (see FORWARD CURRENCY HEDGES overleaf). For example, a company expecting to receive payment in a weak currency three months hence can hedge against downside currency risk by selling the weak currency forward. If the company expects to make payment in a weak currency three months hence and wants to be certain of the currency rate, it could enter into a forward purchase contract.

Of course, the firm may want to accept some currency risk and gamble that it will come out ahead. If it is paying in a weak currency, it may decide to wait and hope the currency depreciates before buying. Or the firm may decide to hedge a portion of its currency exposure. As these examples make clear, hedging, or covering exchange risk, and speculating, or accepting exchange risk, are two sides of the same coin. The firm can do some of each by deciding on a maximum currency exposure and covering the remainder. When choosing such maximum exposure, the firm could take account of its estimate of reasonable changes in exchange rates to estimate the maximum possible exchange

A few companies apparently decided that it might be worthwhile to educate the public about currency effects to reduce investor uncertainty. Scott Paper, for example, attempted to explain the pitfalls of foreign exchange exposure to its stockholders in its annual reports. 11 These companies usually tried to distinguish economic effects from accounting effects of currency fluctuations. Economic effects, such as cash flows, were emphasized over the reported earnings fluc-

¹⁰ Higher interest rates may be palatable, however, if the firm is concerned most about its accounting exposure, since interest is hidden under interest expense and does not show up separately on the income statement.

¹¹Scott Paper Company Annual Report 1976, p. 21.

FORWARD CURRENCY HEDGES

One of the more sophisticated forward currency hedges, a parallel hedge, recognizes that exchange gains and losses are treated differently under FASB-8, depending upon the reason the firm entered the contract. If the firm entered the forward contract to hedge an identifiable foreign currency commitment for a given amount, the exchange gains or losses can be deferred until the transaction occurs. Then the exchange gain or loss can be used to adjust the dollar basis of the transaction, but the gain or loss does not flow through to the income statement. Moreover, there are other recognized reasons for entering into a forward contract. If the purpose is to hedge an exposed foreign currency net asset or liability position, exchange rate gains and losses are recognized as of the balance sheet date. Thus even if this contract has not matured, the change in value of the contract can offset the gain or loss on the related asset or liability that is hedged.

The firm can take advantage of these differing treatments by entering into a parallel hedge, also known as back-to-back forwards contract. In this technique, the firm simultaneously enters into two forward contracts, one a forward purchase and the other a forward sale, for the same maturity and amount. For instance, suppose a U.S. multinational decides to build an automobile plant in Europe. The construction of the plant would be financed with long-term debt denominated in the foreign currency, which is exposed. When the plant is in operation, the cash flows will be used to retire the debt. Using a parallel hedge, the firm buys the foreign currency foward to hedge the long-term debt repayments. This hedge of a net liability position offsets the exchange gains or losses on the income statement. Simultaneously, the firm sells the foreign currency forward to cover the unrealized cash flows from the plant. Since the sale is termed an identifiable foreign currency commitment, the exchange gain or loss will be deferred. Thus the foreign currency exposure is eliminated and the forward contracts will cancel each other when they mature.

tuations caused by currency value changes. And a longer range perspective was stressed in an effort to help stockholders see that losses in earnings per share in one year resulting from exchange rate fluctuations might be offset by gains in earnings per share in another year. In cases where currency fluctations had a greater impact on profits and losses than the operations of foreign subsidiaries, that was noted, too (see EARN-INGS FROM INTERNATIONAL AFFILI-ATES . . .).

Whether the objective is to manage the accounting or the economic effects of foreign currency exposure, the costs may be substantial. Such costs include the labor hours and other resources spent complying with regulations and the resources that go toward trying to change those regulations. Besides these direct costs, other costs may be involved in various types of hedging strategies. Forward markets, for example, sometimes do not have the depth or breadth to accommodate

participants in the currencies they desire. And the difference of spot rates from forward rates quoted at the same date may be so slight that, when transaction costs are taken into account, the costs of forward market hedging may be greater than doing nothing. In any case, exposure levels may be changing so frequently that monitoring and finding appropriate hedging levels are difficult. Innovations in currency management will continue as managers develop new strategies to take advantage of accounting rules, tax laws, and the changing international monetary system.

THE OUTLOOK

Multinationals are still adjusting to the double whammy of fluctuating exchange rates and accounting rulings for handling exchange rate gains and losses. FASB-8 has come under such heavy criticism that the Financial Accounting Standards Board has held hearings to reconsider the ruling. And

EARNINGS FROM INTERNATIONAL AFFILIATES CAN VARY WITH EXCHANGE RATE CHANGES

International affiliates of Scott Paper Company, a Philadelphia-based firm with worldwide operations, earned the parent company over \$25 million, or 27 percent of net income, in 1978. In its 1978 Annual Report, Scott explained that those earnings included an exchange loss of \$2.153 million from the translation of financial statements in foreign currencies and a gain of \$3.022 million from "consuming lower valued inventories translated at prior exchange rates." In comparison, Scott suffered an exchange loss of \$.78 million in 1977 and a gain from inventories of \$.061 million. The yen was mentioned as a reason for negative exchange adjustments in 1978, as was the Belgian franc. The 1978 total exchange loss is shown below along with exchange adjustments by geographic region (in thousands of dollars).

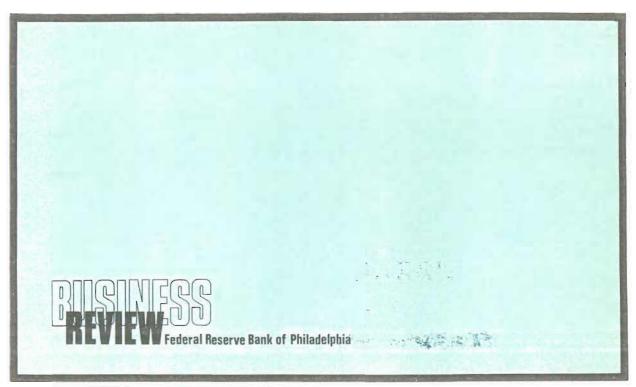
	Earnings before Exchange	Exchange Adjustment	Total Earnings
Europe	\$ 13,017	\$(2,809)	\$ 10,208
Far East	9,408	(1,263)	8,145
Latin America	2,613	1,178	3,791
Canada	2,249	741	2,990
Totals	\$ 27,287	\$(2,153)	\$ 25,134

the Board has established a task force to suggest revisions. One option would be to require the translation of foreign currency denominated financial statements into dollars at the current rate, exposing all assets and liabilities. The Board is expected to issue an exposure draft for comment by mid-1980. Some critics are hoping for a draft which would move toward a reduction in funds used by multinationals to manage their accounting exposure, and from there to an emphasis on economic effects. Moreover, these critics hope that the revision will clarify the presentation of exchange rate impacts on financial records so as to lessen any investor confusion.

Even if this troublesome accounting situation is eased somewhat, exchange rate fluctuations still will keep the pressure on multinationals and other groups engaged in foreign currency transactions. At the same time, governments may continue to increase their already appreciable intervention to reduce uncertainty in exchange rates. This

movement has included the increased cooperation of central bankers, with frequent telephone consultations. For several currencies, there are informal target zones. Further, more exchange rates appear to be pegged to major currencies or to one another, as in the European Monetary System. But even if day-to-day currency fluctuations are reduced, countries still will need a way to allow their currencies to adjust when underlying factors differ from nation to nation. So exchange risk still will be here even if currency rates are managed more.

The continued growth of foreign trade and international business assures that foreign exchange risk management will become more important to multinationals and others. New currency management strategies, new techniques will continue to develop. Banks can be expected to market their advisory services aggressively. Foreign currency market participants have learned a lot about exposure, exchange risk, and the tax implications, and they have a lot more to learn.



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