ECONOMIC COMMENTARY

The dollar’s rapid appreciation in foreign-exchange markets between mid-1980 and February 1985 greatly reduced the international competitiveness of many U.S. industries, contributed to unemployment in the trade-sensitive sectors of the economy, and heightened calls for protectionist legislation. Although the dollar has since depreciated in foreign-exchange markets, many analysts contend that it remains “overvalued” or “too high.”

Complaints about the performance of the dollar in recent years have renewed interest among policymakers in managing exchange rates through more frequent exchange-market intervention. Some analysts advocate alternative exchange-rate systems which, in their view, would limit the ability of exchange rates to deviate from their so-called equilibrium values.

There is considerable disagreement and misunderstanding about what the term “overvalued” means. It implies that the present value of the dollar is incorrect in some sense, that it is unsustainable, and that the observer knows the correct, or equilibrium, rate. In this Economic Commentary, we discuss various interpretations of “equilibrium” and of “overvalued” exchange rates.

Equilibrium and the Foreign Exchange Market
An exchange rate is the price of one nation’s currency in terms of another’s. Like all prices, exchange rates are determined by the laws of supply and demand. A currency appreciates in the foreign-exchange market when the quantity demanded exceeds the quantity supplied. Individuals acquire foreign currency primarily because they wish to purchase goods or services that are not available in their home country. They might wish to purchase foreign goods and services, or to invest in foreign plants and equipment, or to hold a foreign financial asset. Consequently, the factors that underlie the demand for these items determine the demand for foreign currency.

There are many such factors, but differences in prices, income levels, and interest rates among nations seem to determine exchange rates most directly. Prices, income levels, and interest rates, in turn, are influenced by monetary and fiscal policies, by technological developments, and by other variables. Often the connections between these economic variables and exchange rates are complex and the relative importance of individual factors can change. It is also important to remember that exchange markets are forward looking; participants adjust their exchange-rate quotes when expectations of future economic developments change. Economists define an equilibrium price as that which, at a given time, balances quantities demanded with quantities supplied in an unrestricted market. In this sense, the dollar is seldom overvalued. Exchange-market analysts must consider other factors such as shifts in supply and demand, and the speed at which changes are reflected in exchange rates.

Economists do not know enough about the determinants of portfolio demands for dollar-denominated assets to determine when the U.S. current-account deficits will saturate foreign asset demands for dollars. Some recent projections of the scale of U.S. indebtedness relative to various measures of wealth and GNP suggest that in 10 or 20 years the proportion of dollar-denominated assets in foreign portfolios will be high by historic standards. Moreover, as interest rates to foreigners grow, becoming an increasing share of the total current-account deficit, the portion of the current-account deficit attributable to the trade deficit must eventually shrink. Otherwise, U.S. liabilities to foreigners eventually would exceed foreigners’ willingness to hold dollar-denominated assets. A dollar depreciation, therefore, will be necessary to facilitate the smaller trade deficit. Unfortunately, we cannot pinpoint either the size or the timing of such a depreciation.

Is the Dollar Overvalued?
There are many difficulties in determining if an exchange rate is either overvalued or at its long-term equilibrium value. Generally, exchange rates are “overvalued” only in the sense that exchange-market analysts usually base their assessment of what constitutes an equilibrium exchange rate on a limited set of factors that they regard as the “fundamental” determinants of exchange rates. This set usually includes the current account and relative rates of inflation. If exchange-market analysts focus on fundamentals and neglect the movement of exchange rates, the exchange rates are considered overvalued or undervalued, as the case may be, even though they are adjusting quantities of currencies demanded and supplied.

While exchange-market analysts might define exchange-rate equilibrium in terms of the trade account, or in terms of relative inflation rates, they do not pay much attention to foreign exchange rates, which are determined more slowly by economic developments and by other variables. Consequently, following an unexpected event, or a change in the market’s expectations, exchange rates can overshoot these equilibrium paths. Often, therefore, overvalued exchange rates are consistent with the efficient operation of the exchange market. In actions that move exchange rates minute by minute to quickly offset emerging or perceived imbalances in supply and demand.

Of course, exchange-market analysts have a more stable view of equilibrium in mind when they label an exchange rate overvalued. Because of the great difficulties in identifying and maintaining the long-term equilibrium, exchange-market analysts usually base their assessment of what constitutes an equilibrium exchange rate on a limited set of factors that they regard as the “fundamental” determinants of exchange rates. This set usually includes the current account and relative rates of inflation. If exchange-market analysts focus on fundamentals and neglect exchange rates, the exchange rates are considered overvalued or undervalued, as the case may be, even though they are adjusting quantities of currencies demanded and supplied.

The current account measures trade in goods and services and unilateral transfers. Some analysts focus only on trade flows.
addition, speculation can push exchange rates off these equilibrium paths for short periods of time. The important point is that these deviations are transitory.

The Long-Run "Fundamentals": When exchange-market analysts speak of the fundamentals, such as the current account or inflation differentials among countries, they presume to fully understand the linkages among these fundamentals and other economic variables, and to understand their quantitative significance for exchange rates. Unfortunately, several recent studies have indicated how tenuous is the knowledge of exchange-rate determination in this instance. One study showed that predictions from major economic models of exchange rates generally were no more accurate than a simple guess that tomorrow's exchange rate will equal today's rate. Other empirical studies of exchange rates often produce relationships among the variables that are not statistically significant or that are contrary to accepted theories. Although such results could reflect statistical models, they suggest that we do not know enough about the behavior of exchange rates to project their "fundamental" determinants, or "equilibrium" values.

Despite the many unsuccessful attempts to model exchange-rate behavior, many analysts continue to judge the appropriateness of exchange rates on the basis of certain factors that they say could be fundamental determinants of the long-term value of exchange rates. Below, we discuss three such factors: relative inflation rates, the current accounts, and asset preferences for currencies.

Purchasing Power Parity

The purchasing power parity theorem (PPP) maintains that relative rates of inflation determine long-term equilibrium exchange-rate movements. According to PPP, exchange rates adjust so that a dollar, after conversion to the foreign-currency equivalent, buys as much abroad as it does in the United States. If inflation in the United States is higher than in Germany, German goods will gain a competitive price advantage over U.S. goods in world markets. As consumers buy more German goods and services, demand for German marks increases, and the mark appreciates in exchange markets. The mark's appreciation raises the foreign-currency price of German goods and lowers the mark price of non-German goods. According to PPP, the mark appreciates until it completely offsets the percentage increase in the price of goods.

Although the logic of the PPP theorem is intuitively appealing, empirical evidence shows that exchange rates often deviate from their PPP path by large amounts, and for extended periods of time. Such movements in the real trade-weighted dollar. When PPP holds, the real trade-weighted dollar should equal 100, its base-year value. By this measure, then, the dollar has deviated from PPP for four years and by as much as 46 percent in February 1985. The patterns suggest that the mechanisms to ensure a return to PPP might take decades, rather than months, to work through.

Many technical difficulties hamper the application of PPP. Unless one can obtain good estimates of the equilibrium exchange rates with PPP, one can never judge existing exchange rates as overvalued or undervalued. One major difficulty in applying PPP is that the price indexes used to calculate PPP values differ among countries. Consequently, similar price patterns in countries using different construction methods could produce different responses in exchange rates. The price indexes then would not provide a reliable guide to exchange-rate movements.

Another problem with applying PPP is that it should be measured against a base period characterized by equilibrated exchange rates. This is because PPP is based on the neural exchange rates chosen because the current account or trade account was in balance. Often there is more than one possible base period, and the resulting PPP path will diverge depending on which is chosen. If mid-1977 is chosen as the base period for the PPP calculation, the dollar in February 1985 was undervalued relative to the mark by 81 percent. If mid-1981 is chosen as the base year, the dollar was overvalued by only 43 percent.

Another problem with defining the equilibrium exchange rate solely in terms of inflation differentials is that other factors can affect the equilibrium exchange rate. Productivity differentials, technological changes, changes in tastes, and changes in trade laws can all alter the relationship between relative price changes among countries and exchange-rate movements independent of the inflation process. Assume, for example, that a currency country raises oil prices. The oil-exporting country would experience a surplus, while the oil-importing countries would experience a deficit. Even if inflation differentials between these countries did not change, we would expect the currencies of the oil-importing countries to depreciate relative to the currency of the oil-exporting country. The depreciation would reflect the need of the oil importers to sell more goods to pay for the higher-priced oil.

The Current-Account Balance

Many exchange-market analysts evaluate the problems associated with PPP by focusing on the current account. According to this criterion, the equilibrium exchange rate will maintain balance in the current account after allowing for the short-term effects of business cycles and the distortions of trade barriers. Nations whose current-account deficit absorbs more resources through private consumption, investment, and current transfers than the current-account deficit that they produce. Since incomes reflect the value of production, nations running current-account deficits absorb in excess of their income and finance the difference with foreign savings. Nations that persistently run current-account deficits eventually become debtor nations; their liabilities to foreigners eventually exceed their holdings of foreign assets.

Current-account deficits can persist only as long as creditor nations will finance the current-account deficit eventually be dejected by foreign investors, their liabilities to foreigners eventually exceed their holdings of foreign assets. Current-account deficits cannot persist only as long as creditor nations will finance the excess absorption by acquiring claims on the deficit country. If the world's willingness to acquire claims on a deficit country is limited, then current-account imbalances eventually produce adjustments in exchange rates, prices and incomes that work to correct the current-account imbalances. For example, should experience depreciating currencies that work to reduce imports and to increase exports.

By this criterion, only exchange rates that maintain a balance in a nation's current account are sustainable in the long term. With allowances for business cycles and trade barriers, an exchange rate that permits a current-account deficit to persist is overvalued, and one that permits a current-account surplus to persist is undervalued.

While one might apply the current-account criterion to a trade-weighted average exchange rate, one cannot use the criterion on a currency-by-currency basis. Assume that the United States has a $30 billion deficit in trade with Japan and a $30 billion surplus in trade with Germany, while Germany has a $30 billion trade surplus with Japan. There is no reason for the exchange rates among these currencies to change, since for each currency the overall quantities demanded and supplied are equal.

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Portfolio Demand for Dollars

The failure of PPP and the current account to explain exchange-rate movements has led many researchers to investigate asset preferences for dollars. According to this approach, international investors hold their portfolios in dollar-dominated assets in many currencies due to diversification affords them protection against losses associated with political events or with unforeseeable exchange-rate movements. The dollar exchange rates and interest rates adjust to ensure that the supply of dollar-denominated assets through the current-account deficit equals foreigners' demands for dollar-dominated assets.

According to this view, a current-account deficit can persist if the quantity of currency being supplied through a current-account deficit matches the quantities demanded by private international investors. The United States is overvalued only if the current-account deficit supplies more dollars to the exchange market than private asset demands can absorb.

Central banks can support this situation for a limited time by intervening in the foreign exchange market and purchasing the excess currency. However, the quantity of international reserves is limited. Each country has a certain level of reserves that it would never use, but only if it were to purchase the overabundance of currency, government may need to intervene. However, if a country is systematically losing international reserves, its currency would seem to be overvalued.

The size of the sustainable current-account deficit depends on the attractiveness of a nation's current account to international investors. The U.S. dollar is an important currency in world markets. Individuals can buy dollar-denominated assets as a store of wealth and to facilitate trade. This role of the dollar is supported from both the broad role of the U.S. financial market and from the relative stability of the U.S. economic and