ECONOMIC COMMENTARY

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A Correct Value for the Dollar?
by Owen F. Humpage & Nicholas V. Karamouis

The dollar's rapid appreciation in foreign-exchange markets between mid-1985 and September 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 undermined interest among policymakers in managing exchange rates to deviate from their so-called equilibrium values.

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 the factors underlying foreign-currency demands and supplies today are not sustainable in the long term. The practical difficulties of making such judgments are great.

If policymakers wish to alter the exchange rate in a fundamental manner, they must alter the economic environment in which the exchange rate exists by changing monetary and fiscal policies. Often this involves a trade-off with other policy objectives.

Expanding the money supply to encourage dollar depreciation, for example, can risk higher inflation. Moreover, because each exchange rate involves two currencies, a coordinated effort seems necessary to limit exchange rate movements. Otherwise, one nation's gain could become another's loss.

We adopted floating exchange rates in 1973 because of the enormous difficulties in identifying and maintaining "equilibrium" exchange rates. While the current exchange rate system is not perfect, it has yet to be shown inferior to its predecessor.

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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. This Economic Commentary discusses various interpretations of "equilibrium" and of "overvalued" exchange rates.

Equilibrium and the Floating 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 something else with it. 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 this currency will determine the demand for foreign currency.

There are many 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 and political events 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, however, will worry about the dollar if exchange rates are unstable or perceived imbalances in supply and demand.

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1. Because one purchases a foreign currency with dollars, the demand for a foreign currency creates a supply of dollars.

Economic Commentary

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The views stated herein are those of the authors and not necessarily those of the Federal Reserve Bank of Cleveland or of the Board of Governors of the Federal Reserve System.
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 inexact is knowledge of exchange-rate determination. 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 problems, they suggest that we do not know enough about the behavior of exchange rates to predict with 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 the theory suggests 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 a 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 price difference.

Although the logic of the PPP theorem may seem clear, empirical evidence suggests that exchange rates often deviate from their PPP path by large amounts, and for extended periods of time. Moves in the real trade-weighted dollar. When PPP holds, the real trade-weighted dollar should equal 100, its base-year value. By this measure, 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 the exchange rates used to calculate PPP values differ among countries. Consequently, similar price pressures in countries using different constructed price indexes could produce different responses in each price index. 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 equilibrium exchange rates. If the mark is 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 differ depending on which is chosen. For the dollar in February 1985 was overvalued relative to the mark by 81 percent. If mid-1977 is chosen as the base period, the dollar would have been undervalued by only 45 percent.

Another problem with defining the equilibrium exchange rate solely in terms of inflation differentials is that other factors, such as the equilibrium exchange rate productivity differentials, technological changes, changes in tastes, and changes in trade laws can all alter the relationship between relative prices changes among countries and exchange-rate movements independent of the inflation process. Assume, for example, that an oil-importing country raises oil prices. The oil-exporting country would experience a surplus, while the oil-importing country 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 deficit. According to this criterion, the current-account 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 with current-account deficit absorb more resources through private consumption, investment, and government spending. The current-account deficit eventually creates debtors nations; their liabilities to foreigners eventually exceed their holdings of foreign assets.

Current-account deficits can persist only as long as creditor nations will accept the foreign exchange market and purchase foreign currencies. According to 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.

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. 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 country-by-country basis. Assume that the United States has a $30 billion deficit in trade with Japan and a $30 billion surplus 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 balance.

The current-account deficit provided a reasonable guide to the trade-weighted dollar in the early 1970s. In 1970-71 and again in 1977-78, the United States incurred current-account deficits, and the dollar depreciated. This suggested that the dollar was moving to a new equilibrium consistent with a current-account deficit. More recently, however, the United States has experienced record current-account deficits with the dollar showing no tendency to depreciate. The current-account balance and PPP define equilibrium exchange rates in terms of a supply and demand model that reflects only trade in goods and services. Payments to foreigners eventually exceed their holdings of foreign assets. Current-account deficits can persist only as long as creditor nations will accept the foreign exchange market and purchase foreign currencies. Consequently, if a nation 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 and firms hold dollar-denominated assets as store of wealth and to facilitate trade. This role of the dollar is reinforced from the breadth of the U.S. financial market and from the relative stability of the U.S. economic and financial system.

Portfolio Demand For Dollars

The failure of PPP and the current-account criterion as exchange-rate movements has led many researchers to investigate asset preferences for dollars. According to this approach, international investors hold their portfolios denominated in many currencies. Such diversification affords them protection against losses associated with political events or with unobservable 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-denominated 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 current-account deficit is valued 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 intervention depends on the size of such central banks have at their disposal for purchasing the overabundance of any currency. Intervention is necessary if such intervention, if a nation is systematically losing international reserves, its currency would seem to be overvalued.
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 quantitatively significant role in exchange rate determination. Unfortunately, several recent studies have indicated how tenuous is the knowledge of exchange-rate determination. 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 cannot reflect statistical weaknesses, they suggest that we do not know enough about the behavior of exchange rates to provide 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 the theory suggests 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 into foreign currency, will buy 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 against the dollar will lower the mark price of German goods. According to PPP, the mark appreciates until it completely offsets the price index's rise in the United States.

Although the logic of the PPP theorem, experience with price changes, and exchange rates often deviate from their PPP path by large amounts, and for long periods of time. However, 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, 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 attempting to apply PPP is that the price indexes used to calculate PPP values differ among countries. Consequently, similar price pressures in countries using different consumer price indexes would produce different responses in each price index. The price indexes themselves 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 equilibrium exchange rates. A country's average exchange rate 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 differ 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, such as the equilibrium exchange rate's 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 an increase in the oil-producing 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-expanding 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 worry about the problems associated with PPP by focusing directly on the current-account balance. 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 with current-account deficits absorb more resources through private consumption, through investment, and through government spending. Consequently, similar 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 excess absorption by acquiring claims on the deficit countries. If the world's willingness to acquire claims on a deficit country is limited, then current-account imbalances eventually will produce adjustments in exchange rates, prices, and incomes that work to correct the current-account disequilibrium. For example, exchange depreciation could 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.

Portfolio Demand For Dollars

The failure of PPP and the current-account balance as guides to exchange-rate movements has led many researchers to investigate asset preferences for dollars. According to this approach, international investors hold their portfolios denominated in many currencies. Such 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 equals foreigners' demands for dollar-denominated 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. If the latter value is only valued, then 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, and central banks would lose their disposal for purchasing the overabundant currency eventually. Consequently, if a nation 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 balance to international investors. The U.S. dollar is an important currency in world markets. Individuals and firms hold dollar-denominated assets as a store of wealth and to facilitate trade. This role of the dollar has grown from breadth of its use in the U.S. financial market and from the relative stability of the U.S. economic and
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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 unsustain-able, 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.

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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 seld-om overvalued. 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 in-cludes the current account and relative rates of inflation. If exchange-market developments push exchange rates away from the levels dictated by these so-called fundamentals, then the exchange rates are considered overvalued or undervalued, as the case may be, even though they are equivalent to 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 expect the rate to move continually along such an equilibrium path. Economists have observed that prices and trade-account transactions adjust slowly to economic shocks and policy changes, while exchange rates adjust quickly. 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.

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1. Because policymakers label exchange rates as overvalued or too high.
3. The current account measures trade in goods and services and unilateral transfers. Some ana-lysts focus only on trade flows.

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Economists define an equilibrium, or correct, rate as what would prevail if price and relative rates of inflation were constant. Often, therefore, overvalued exchange rates are consistent with the efficient operation of the exchange market. However, what is the correct rate? To answer this question, economists have developed a number of methods for estimating exchange-rate expectations. These methods rely on historical data and economic variables to predict future exchange-rate movements. Economists disagree on the best approach, but most agree that exchange rates are not always consistent with the “fundamental” determinants of exchange rates.

To illustrate the process of estimating exchange-rate expectations, we will consider the case of the dollar. The current account measures trade in goods and services and unilateral transfers. Some analysts focus only on trade flows. However, exchange rates are influenced by many other factors, such as interest rates, inflation rates, and economic developments in other countries. Economists have developed a number of methods for estimating exchange-rate expectations. These methods rely on historical data and economic variables to predict future exchange-rate movements. Economists disagree on the best approach, but most agree that exchange rates are not always consistent with the “fundamental” determinants of exchange rates.

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