

Research Department
Federal Reserve
Bank of
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An Overvalued Dollar?

The current level of the dollar as measured against many foreign currencies has led many people to exclaim that the dollar is overvalued. What does this mean? The value of the dollar should adjust to the "correct" level automatically with freely floating exchange rates. Although many industrial countries either intervene in the foreign exchange market or narrowly float their currency against a basket of currencies, they generally float their currency freely against the dollar.

To answer the question, we must examine the relationship between exchange rates and prices because exchange rates convert the purchasing power of one currency into the purchasing power of another.

Exchange rates and prices

Imagine a world where there are few goods produced by several different countries. In such a world, in the absence of transportation costs and other barriers to trade, goods would be priced uniformly in different markets. In general, it makes sense that people will value currencies for what they will buy and will therefore tend to exchange them at rates which roughly express their relative purchasing power. In other words, the dollar that buys a dozen eggs should be exchanged for foreign currency that buys the same dozen eggs.

A major tenet of this theoretical view is the existence of commodity arbitrage. Arbitrage is the purchase and sale of a good for a profit. It is arbitrage that suggests that prices of similar goods should be the same across countries as any difference in prices would represent a potential for profit. Since people are motivated by profits, it stands to reason that arbitrage will play an important role in linking prices and exchange rates.

Evidence for this theoretical relationship should lie in the relationships among prices of various commodities as measured in dif-

ferent currencies. If exchange rates among different currencies behave differently from the prices of the traded commodities, then we would have reason to believe that the relationship between individual prices and exchange rates had been violated.

A fractured link

One type of exchange rate is a bilateral exchange rate such as the dollar price of yen or francs. However, if we are interested in how the dollar performs against the yen, the deutschemark and the pound sterling simultaneously, we would look at the U.S. rate against a weighted basket of foreign currencies (shown in the chart). Similarly, we can relate U.S. prices to world prices by comparing the U.S. price index (here, wholesale prices) to a weighted basket of indexes of foreign prices.

Abstracting from the notion that the ratios of international prices should equal the exchange rate—the ultimate result of arbitrage—we might expect that the effective exchange rate and the ratio of foreign to U.S. prices would move in much the same way. The chart indicates that while the long-term movement is similar, there are many short-term differences that give evidence of a fractured link between exchange rates and prices.

The shadow

As T.S. Eliot put it: "Between the idea and the reality... falls the shadow." The evidence that the common currency prices for the same internationally traded goods are not the same suggests that there are other considerations.

Transportation Cost. One difficulty with examining prices lies in the cost of moving goods across national boundaries. Researchers who have examined this issue run into the problem that good information on transportation costs is not available. However, anyone who has shipped anything, even

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through the U.S. mail, knows that the transport cost can be high.

The presence of transportation costs means that two prices for the same commodity, sold in different countries, would have to differ by slightly more than the transportation costs to induce arbitrageurs to enter the market. If the dollar price differences were less than transportation costs, goods arbitrage could only result in a loss for the arbitrageur.

Risk premium. Furthermore, anyone engaging in moving goods across national borders is undergoing a certain amount of risk. One risk is that by the time the goods are moved from one market to another, their prices may have changed. Another is that, over the same period, the exchange rate may have changed. Either of these events could result in having to sell the goods at less than the price that was originally paid plus the cost of transportation. This risk is a common feature of any traded commodity and it is possible, by using forward contracts, to hedge some or all of the risk. However, formal markets for forward contracts do not exist for many traded goods. When contracts do exist, they are frequently of the wrong duration. This means that any trader would have to make a substantial effort to arrange a forward contract that would cover him for just the time the goods are in transit. Given the amount of work involved in such arrangements, traders may prefer not to insure themselves fully against price and exchange rate changes. Instead, traders may ask higher prices for their goods as compensation for their uninsured risk.

Other factors. Barriers to trade in the form of tariffs and quotas can also present difficulties when looking at international prices. These trade restrictions can cause disparities between different sets of prices, such as wholesale and export prices.

Another problem comes from whether items can be substituted for one another. For example, a pound of copper from one country would be virtually indistinguishable from

a pound of copper from another country. But another item, different tractors, for example, may not be good substitutes. Apparently, the more narrowly a product is defined, the better the chance of finding identical goods across countries.

Still another reason that a consumer may be willing to pay a higher price for the same good is the uncertainty regarding the reliability of suppliers. A customer may have established a good working relationship with a supplier, or commitments to certain equipment, as the result of prior purchases.

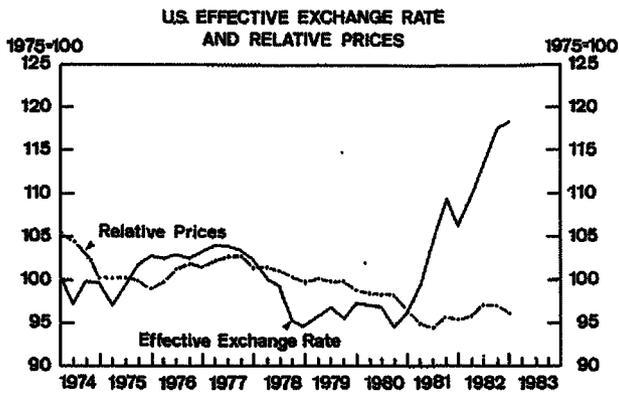
Price differences in different markets may be the result of a few sellers whose strategies are to maintain a certain price position relative to rivals. Such behavior might exist if the firm's long-term profit maximization would suffer from a loss of market share. A firm may also opt to sell at lower prices over a period of time to break into a market or to expand its market share.

Evidence

Different researchers* have examined the prices of the U.S., W. Germany, Canada and France and reached considerably different conclusions. But, at least some of their differences can be explained by the difficulty of taking into account some of the problems mentioned before.

In order to avoid the problem of comparing apples with oranges, the researchers selected products from the most disaggregated commodity list for which prices could be matched across countries. All researchers found evidence that certain commodities are uniformly priced in common currency units across countries. The results held especially well for the most homogeneous commodities such as coffee, cocoa and, in the earlier example, copper. The general conclusions

* Work in this area has been conducted by Peter Isard of the Federal Reserve Board, J. David Richardson of the University of Wisconsin and Liliane Crouche-Veyrac, Michel Croucy and Jacques Melitz of Centre d'Enseignement Supérieur des Affaires and I.N.S.E.E.



are that when disparities in prices are observed, the disparities tend to last for a period of not more than two years.

Generally, the results indicate that commodity arbitrage does take place but not significantly for every commodity group. When it does take place, it is never perfect.

Although evidence exists that for many internationally traded commodities the common currency (dollar equivalent) prices are the same or very similar across countries, there is little to suggest that the composition of price indexes is the same across countries. Even in the extreme case where the price indexes consist of items that have displayed the same price across countries, the indexes themselves will only be the same in common currency when the relative consumption shares of foreign and domestic goods are the same.

Protectionism

What happens when the exchange rate gets "out of line"? Since the exchange rate is such an important price, it affects almost all aspects of the economy. If the U.S. dollar were "out of line", say higher than what we might expect it to be (in the sense that it buys more of a foreign currency), then the level of foreign prices would appear lower. American goods would become expensive relative to foreign goods and both Americans and foreigners would buy fewer American goods and more foreign goods. The situation can, at times, lead to calls for protectionist measures for American industries.

Any government is concerned with the national expansion of its export and import industries which depend directly on one another. Limiting imports by tariffs or quotas also limits exports because it reduces the purchasing power of customers and raises the costs of domestic producers dependent on foreign materials, making them less competitive. If, to save jobs, many countries simultaneously follow a program of restricting imports, more jobs may be destroyed than

saved. Furthermore, jobs will be destroyed in the export industries, which for the U.S. are the most productive.

Concerns about protectionism resulted in the establishment of the General Agreement on Tariffs and Trade known as the GATT in the 1940s. Although GATT has achieved substantial reductions in tariffs since its inception, trade growth has slowed in recent years and protectionist pressures have increased. Furthermore, trade restrictions have resulted in tensions in the international financial system.

There are multiple links between international trade and financial markets. One is that an exporting country must keep an open market for imports so that foreign debtors can earn the foreign exchange needed to service their debts. Another is that domestic firms are increasingly organized on a global scale. Since the majority of the banking system's assets are loans to domestic firms, the quality of those assets must depend on their profitability which, in turn, depends on the stability of international business.

Conclusion

Although there appears to be no "good" measure for a long-term exchange rate, the evidence suggests that prices and exchange rates cannot be divorced from one another. Furthermore, perceptions that the exchange rate is "out of line"—based on whatever measure—carry with them the possibility that industries will feel threatened and ask for protection. Granting protection, however, has far-reaching consequences and may produce more devastating results than the originally perceived evil—an over-valued dollar.

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

Selected Assets and Liabilities	Amount Outstanding	Change from	Change from	
			Dollar	Percent
Large Commercial Banks	12/29/82	12/22/82		
Loans (gross, adjusted) and investments*	163,668	668	7,061	4.5
Loans (gross, adjusted) — total#	143,376	579	7,976	5.9
Commercial and industrial	45,826	373	4,416	10.7
Real estate	57,331	- 13	1,436	2.6
Loans to individuals	24,005	172	183	0.8
Securities loans	2,827	91	800	39.5
U.S. Treasury securities*	6,996	10	1,153	19.7
Other securities*	13,296	99	- 2,068	- 13.5
Demand deposits — total#	43,144	1,075	- 750	- 1.7
Demand deposits — adjusted	29,684	888	21	0.0
Savings deposits — total	44,376	2,874	14,201	47.1
Time deposits — total#	88,242	-1,987	- 1,735	- 1.9
Individuals, part. & corp.	78,303	-2,020	- 2,538	- 3.1
(Large negotiable CD's)	30,503	- 818	- 5,908	- 16.2
Weekly Averages	Week ended	Week ended	Comparable	
of Daily Figures	12/29/82	12/22/82	year-ago period	
Member Bank Reserve Position				
Excess Reserves (+)/Deficiency (-)	115	134	-	352
Borrowings	9	25		14
Net free reserves (+)/Net borrowed(-)	106	109		338

* Excludes trading account securities.

Includes items not shown separately.

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