

# Research Department Federal Reserve Bank of San Francisco

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## Exchange Rates and Prices

Many critics claim that overvaluation of the dollar in world currency markets has caused U.S. goods to be overpriced in world commodity markets, and thus has contributed to the growing U.S. trade deficit. According to this view, market exchange rates have moved away from levels implied by trade forces, either because of exchange-market intervention by foreign central banks, or because of net private foreign-capital flows into the U.S.

These claims of overvaluation may well be true. However, there is little evidence to support them on the basis of "overpricing" of U.S. goods abroad. Such analyses tend to overlook two important facts:

- \*The tendency for prices of traded goods to be set in world markets by competitive forces, with only temporary or institutional differences across countries — which implies no necessary connection between individual goods prices and exchange rates.

- \*Favorable movements in U.S. wholesale and consumer prices relative to those of its trading partners — which implies no loss in price competitiveness.

### Prices and market forces

According to the overvaluation claim, U.S. goods are overpriced abroad; that is, domestic prices are above those in the rest of the world. However, when a commodity is traded internationally, domestic prices tend

toward the world market price. Any difference between domestic and world prices would allow profitable arbitrage by producers, which in turn would tend to erase this difference. Thus, for an internationally traded good, dollar prices in different countries — that is, the home-currency price times the dollar/home-currency exchange rate — will tend to equality.

Tariffs, transportation costs, and product differentiation can allow price differentials to persist between different countries or between different products within a single country. But none of these factors would prevent roughly parallel changes in commodity prices across countries.

This suggests that movements in individual traded-goods prices will not in fact differ much from country to country, and that any non-competitiveness of U.S. goods will not manifest itself in overpricing abroad. Such non-competitiveness, if it should arise, would most likely show up in costs and profit margins when sales are made at world competitive prices. Any commodity price differentials would reflect commodity-specific factors, and would probably be unrelated to exchange-rate issues.

Consider, for example, the relative price trends between the U.S. and Japan for three groups of traded goods: manufactured goods, iron and steel, and non-ferrous metals (lower panel of chart). In the 1970-72 period of fixed

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rates, little relative price movement occurred despite the existence of widespread exchange and capital controls in both countries and obvious disequilibrium in the exchange markets. In 1973-74, disparate price movements occurred because of the severe disruptions created by the oil embargo, high inflation, the move toward floating, and the ensuing removal of at least some controls. In contrast, relative price movements have been rather moderate during the ensuing three years. If anything, Japanese dollar prices have risen relative to those in the U.S. for virtually every commodity group over the past eighteen months.

## **Movements of broad indices**

This discussion implies we would do better to look at price indices which include non-traded goods for information about the course of exchange rates. Traded-goods prices respond quickly to competitive pressures, so they can be considered effects rather than causes of changes in exchange rates. However, exchange rates respond to underlying economic conditions, measured in part by changes in consumer or wholesale price indices, as well as cost data.

Suppose the overall inflation rate is 5 percent in the U.S. and zero in Japan. Because of U.S.-Japanese competition, the dollar price of traded goods in both countries could be expected to

rise by some figure in between, say 3 percent. The relative price of traded goods to non-traded goods thus will fall in the U.S. and rise in Japan. Similarly, production costs will rise in the U.S. (by 5 percent) and stay about even in Japan.

These conditions would imply initially a trade deficit for the U.S. vis-a-vis Japan, and eventually a 5-percent annual decline in the yen/dollar exchange rate. This result would occur despite the competitive behavior of traded-goods commodity prices, which would have been kept in line by market forces.

If U.S. goods are non-competitive abroad due to higher costs, this should be reflected in adverse movements in U.S. price or cost indices, relative to those abroad. However, again with the Japan-U.S. case used for comparison, Japanese exchange-rate-adjusted wholesale prices and unit labor costs are higher now, relative to U.S. prices and costs, than they were in the third quarter of 1974 (upper panel of chart). Although the choice of a base period is arbitrary, the overall conclusion remains valid regardless of which time period is chosen as a basis for comparison.

## **Other considerations**

Our data thus provide little evidence of a general loss of competitiveness for

U.S. industry vis-a-vis Japan — or vis-a-vis any of our other major trading partners. Yet in fact, the U.S. has experienced a very large trade deficit this year, with little prospect for a turnaround in the near future. What factors, then, have brought about this result?

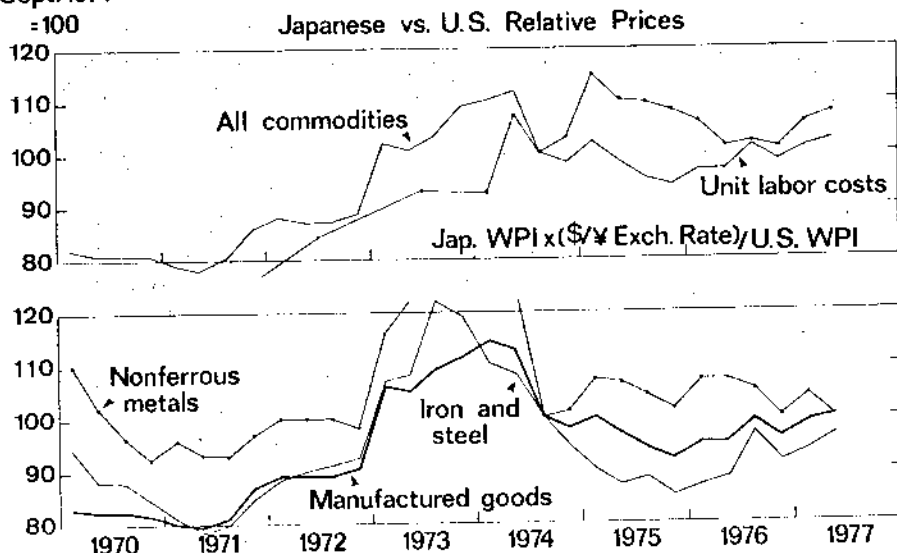
The different phases of the business cycle experienced by the U.S. and its trading partners have served to increase U.S. imports and decrease its exports. Also, the large U.S. oil deficit has accounted for a major part of the overall deficit. Still, as long as OPEC ministers are willing to accumulate dol-

lar assets with their oil surpluses, significant long-run movements in exchange rates would be unlikely to occur in response to these factors.

One worrisome factor, however, could be the prospect of higher U.S. inflation rates, due to the above-target rate of monetary growth over the past year. Higher domestic prices would hamper U.S. competitiveness and would discourage dollar asset holding, and in both ways create strong pressure on dollar exchange rates. This problem will be one of the most closely-watched issues of 1978.

Michael Bazdarich

Sept. 1974



Sources: Economic Planning Agency of Japan, U.S. Council of Economic Advisers, International Monetary Fund