

# Current Report

Cooperative Extension Service • Division of Agriculture • Oklahoma State University

## Foreign Exchange Rates and Agricultural Exports in the 1980's

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### THE DOLLAR DILEMMA and AGRICULTURAL EXPORTS

In September 1985, representatives from the United States and four other governments held a historic meeting. They met to discuss taking steps to weaken the dollar internationally. The United States called the meeting because the dollar's value had discouraged our trading partners from buying US grain and other exports. It was the first time since World War II that major world powers had met for the purpose of manipulating the dollar's value.

The relationship between the dollar's value and export sales is not easily understood. That relationship is the topic of this current report.

### FOREIGN EXCHANGE

Foreign exchange is the trading of currencies internationally. The foreign exchange rate is the value of the dollar with respect to a foreign currency. The US dollar and several other currencies have floating exchange rates. This means that their relative value is determined by the forces of supply and demand. But, why would anyone other than an American have a demand for dollars?

There are two major reasons why a foreigner would want to exchange his currency for dollars. The first reason for exchanging currencies is to buy American exports, such as wheat or a Boeing 747. Since an American farmer or factory worker cannot buy groceries or pay the mortgage with yen or lira, the purchases of American exports is transacted with dollars. Thus, a foreign importer buys dollars on the foreign exchange market prior to purchasing the American goods.

The second reason other people demand dollars is to buy US investments. Ownership of

TABLE 1: Trade-Weighted Dollar: Nominal Exchange Rate Index.

Year	Dollar Index Value Total Exports
1974	64
1975	68
1976	74
1977	79
1978	78
1979	79
1980	100
1981	114
1982	140
1983	166
1984	207

American stocks, bonds, or real estate has been very attractive to foreign investors in recent years. Naturally, these investments are exchanged for dollars, not francs or guilder.

If the supply of dollars is unchanged and the demand for the currency increases, the dollar's foreign exchange rate increases (the dollar "strengthens"). If the supply of dollars increases with the demand constant, the dollar's value would fall ("weaken") on foreign exchange markets.

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## FOREIGN EXCHANGE and WORLD TRADE

The dollar's "strength" refers to its overall foreign exchange rate, and not to its value with respect to a single currency such as the deutsche mark. The dollar's value with respect to the currencies of all our trading partners gives a true picture of its foreign exchange value. When the actual volume of trade with the individual countries is taken into account, it is called the trade-weighted value.

The trade-weighted value changes from day to day. Since no single currency is used to measure the dollar's strength, an index of dollar values is used to reflect this change in value over time. The index shows the dollar's current value as a percentage of its value in a base year (1980, for instance). Thus, a trade-weighted index value of 88 indicates that the dollar's current value is 12 percent below that of the base year. A current index of 121 means that it is 21 percent more valuable than in the base year.

The figures in Table 1 are nominal index values which show the behavior of the dollar from 1974 to 1984. The dollar's value in 1980 is the basis for the index (1980 value = 100 percent). Notice that the dollar index went from a value of 79 in 1979 to a value of 207 in 1984. The rise of over 100 percent during this period was not due to demand for US exports, as any Oklahoma farmer or rubber worker can testify. It was due primarily to the attractiveness of American securities to foreign investors.

The stability of our government and economic system is important to investors, but dollar denominated investments were attractive for several other reasons as well. Inflation is one of the most important. Since it represents the erosion of a currency's value, the relative rate of inflation is an important consideration to an investor buying foreign securities. The deep recession of 1980 and the slow economic recovery since then have kept US price changes very small. Even before 1980 US inflation was low relative to most trading partners. Consequently, over the last 10 years foreign investors realized that there was less erosion of value while holding dollars compared to owning any other currency in the world. This increased the demand for dollars.

Another attraction of American investments has been high US interest rates. Record federal budget deficits have meant massive government borrowing. To avoid renewed inflation, the Federal Reserve has restricted growth of the money supply. These policies have combined to sustain interest rates at high levels, making US bonds, CDs and other securities some of the most attractive low-risk investments in the world. Buyers drawn to American investments by the returns over inflation have increased the demand for dollars significantly.

There is yet another reason for the recent high dollar demand. If an investor is holding dollar securities while the dollar's exchange value is rising, he benefits from capital gains. Some investors probably made over 100 percent on their investment in capital gains appreciation alone between 1980 and 1985. For this reason, rising dollar values attract even more dollar purchases.

## DOLLAR EXCHANGE RATES and AMERICAN EXPORTS

The dollar's value does have an effect on demand for US exports. To see how this works, imagine a Japanese importer buying US hard winter wheat in 1980. The importer has to pay \$4.00 per bushel delivered and it costs him 180 yen to buy one dollar in 1980, so his cost per bushel is 720 yen. Let's say that the delivered price of wheat remains constant at \$4.00 and just two years later the same importer is buying dollars to pay for wheat, but in 1982 the price of a dollar has risen to 260 yen. That makes the price per bushel 1040 yen. Anyone knows that with an increase in price, the importer will look for a less expensive source of wheat, import less wheat or import a substitute such as corn or rice instead of wheat. The American farmer, without raising his revenues or margin of profit, has lost sales strictly on the basis of an increase in the foreign exchange rate.

When a currency becomes "overvalued" in this fashion, the tendency in the foreign exchange market is for its value to drop. As fewer exports are purchased because of high exchange rates, fewer dollars are bought. As the demand for the dollar falls, so does its value. In this way, the market forces shifting dollar demand and export demand tend to stabilize the value of currencies. However, US interest rates and inflation have worked to overvalue the dollar for several years. It was not until February 1985 that the demand for dollars to buy US exports became weak enough to override the demand for American investments, and the foreign exchange rate began to fall.

## REAL EXCHANGE RATES for SPECIFIC COMMODITIES

The index of dollar values in Table 1 provides a general indication of the influences of exchange rates on exports, but in order to assess the real impacts, a closer inspection is needed.

COMMODITY-SPECIFIC EXCHANGE INDEX. The foreign exchange index of the dollar listed in Table 1 is a general index measuring the dollar's value with respect to the currencies of all America's trading partners, regardless of what they buy from us. When the trading partners who buy a specific commodity such as soybeans are isolated, the trade-weighted value of the dollar is usually different than the general index. In some cases the change in value can be opposite that of the general index!

Some of America's biggest customers of agricultural exports have currencies which are "pegged" to the value of the dollar or another major floating currency. Because the value of their currency may be linked to ours, a change in the dollar's value might have far less impact on agricultural exports in the short run than one might predict looking at a change in the general index alone. A dollar index reflecting commodity-specific currencies is very helpful in predicting the exchange rate effects on demand.

**NOMINAL and REAL EXCHANGE VALUES.** Another distinction that must be made in assessing the impact of exchange rate changes has to do with the relative inflation rates in the US and its trading partners.

Up to now the discussion has referred to the nominal exchange rate or the nominal index. A change in the nominal exchange rate is the result of two factors: shifts in the relative inflation of trading partners, and shifts in the demand for a currency (assuming a stable supply). Thus, the nominal exchange rate reflects relative inflation plus the demand for dollars.

**INFLATION.** Since a nation's currency is a measure of its ability to command wealth, a country may double the total units of currency without any corresponding change in wealth. After doubling the currency, however, the actual wealth that each unit represents will be half the previous value. If the wealth of a country grows and the currency units grow at the same rate as the economy, the currency will maintain its value. Each unit represents the same amount of wealth. In most countries the supply of money (units of currency) is expanding faster than the economy and the result is inflation. As mentioned earlier, some currencies are inflating at a much different rate than others.

If the inflation rate in the US during a two year period is 10 percent (5% average annual rate), and the inflation in Mexico over the same two years is 110 percent, it means that the number of pesos representing all the market assets of Mexico more than doubled, whereas the number of dollars representing the market assets of the United States rose only 10 percent faster than our economy grew. By themselves, the relative inflation rates of the US and Mexico would cause a shift in the foreign exchange rate of the dollar. In this case the dollar would double in value due solely to the inflation of the peso. But, would this have any real effect on the demand for US exports to Mexico? Unless importers in Mexico have an illusion about the cost of a dollar, it should have no effect. Like the Japanese importer of wheat, the Mexican importer would have to pay more pesos to buy each dollar he needed, but if the number of pesos in circulation had doubled, the pesos

available to the importer would have doubled too, and his capacity and willingness to buy dollars and wheat would not have diminished.

**DOLLAR DEMAND.** Naturally, shifts in the demand for a currency change the exchange rate. Demand for exports and demand for investments were mentioned as having an effect on the dollar's value. Demand for a currency will change its value in a way which raises or lowers the actual purchasing power of an export buyer. In the example of the Japanese wheat importer an increase in the real exchange rate of the dollar was assumed. Real changes in the exchange rate influence demand for exports directly.

Nominal and real changes are the same only when the inflation rates in all trading countries are equal. Since this is never the case, the index has been re-calculated to reflect real values (Table 2). Examining real changes with commodity-specific indices provides a solid understanding of the impacts that dollar values have on export demand.

TABLE 2: Trade-Weighted Dollar: Real Exchange Rate Indices

Year	Total Exports	Non-Agricultural Exports	Agricultural Exports	Wheat Exports	Corn Exports	Soybean Exports
1974	85	86	79	80	69	76
1975	83	85	78	81	67	74
1976	85	86	80	84	70	76
1977	84	86	78	80	68	74
1978	81	83	73	78	63	67
1979	81	83	73	81	62	64
1980	100	100	100	100	100	100
1981	109	108	110	108	110	118
1982	121	120	124	119	127	133
1983	125	124	129	126	133	143
1984	135	134	140	146	136	149

#### REAL BEHAVIOR

Table 2 contains real index values for the dollar between 1974 and 1984. The first column shows total US exports (the same as Table 1 but in real terms). In addition, indices for all agricultural exports, and for wheat, corn and soybeans are listed.

When comparing the trade-weighted index values in Table 2 with those in Table 1, several interesting conclusions can be drawn. The real index values for total US exports in Table 2 do not climb as high in recent years as do the nominal dollar values of Table 1. This indicates that the US inflation rate has been considerably lower than the rates its trading partners are experiencing. Since the real

dollar index did not climb as far as the nominal index, the exchange in real terms was more favorable to US exports than indicated by the nominal values in Table 1. (A visual comparison of the nominal and real indices is made in Figure 1.)

Other important influences are revealed when real indices for the agricultural sector and individual commodities are computed and listed. Looking at the "Agricultural" column in Table 2, the real dollar exchange value for agricultural exports was lower, and thus more favorable, than the real exchange rate for all US exports prior to 1980. The index values for wheat were not as favorable as those for agricultural exports in general, however.

Since 1980, real dollar values for agricultural exports have risen considerably more than the real dollar values for US exports in general. This reflects the greater strength of the dollar when compared only with the currencies of agricultural export buyers. The higher index values indicate a less favorable export environment for agricultural products. Real indices for wheat and soybeans in this period indicate that their price to our overseas customers has risen even more than

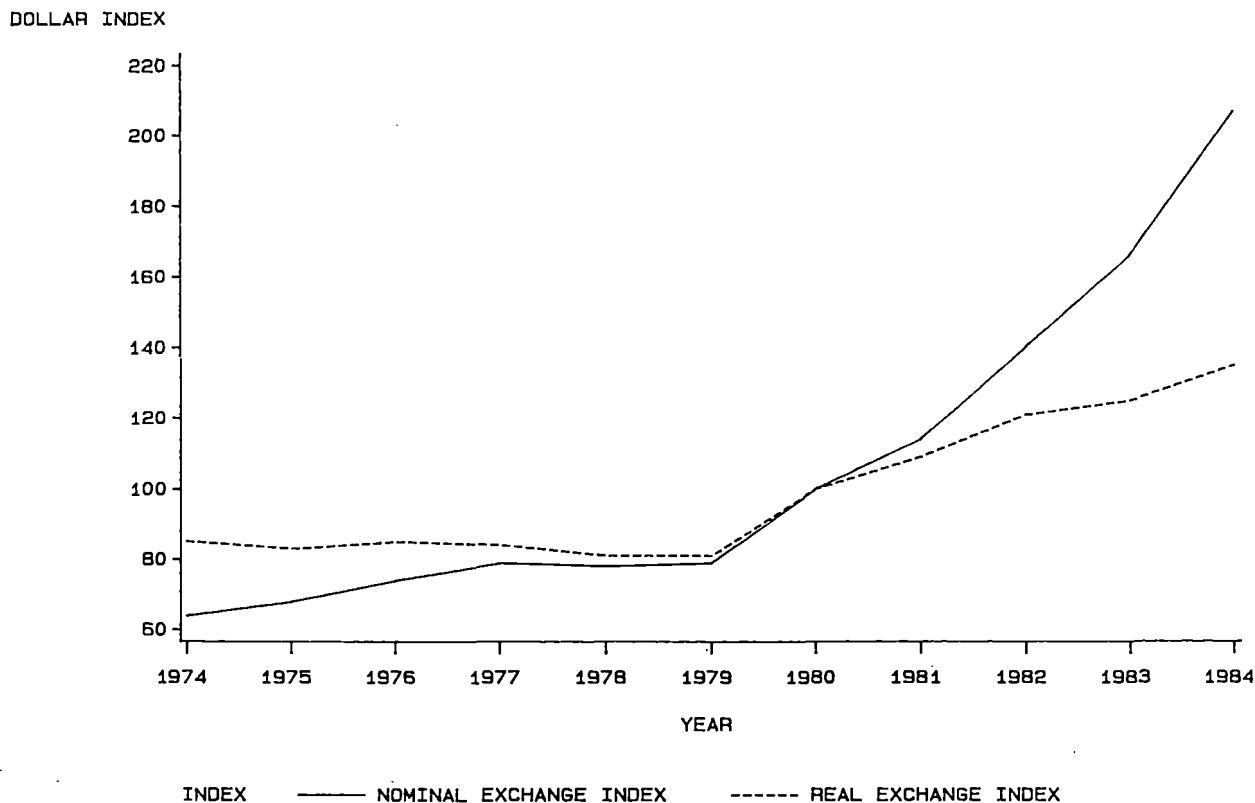
most agricultural exports. American export sales and stockpiles of these commodities reflect this unfortunate situation.

In 1986 the dollar's real value has fallen about 15 percent against the currencies of Western European countries. It is interesting to note, however, that the dollar has yet to change its value in real terms with respect to the currencies of most major wheat importers.

#### UNDERSTANDING FOREIGN EXCHANGE

Influences on export demand are numerous. Some of these influences are matters of government policy, such as production subsidies and tariffs. Other influences are determined more by market factors, such as world supply and demand, and the exchange rates of different currencies. The dollar's value is usually a function of market forces but the United States government has recently attempted to influence the dollar exchange rate to the benefit of American producers. Understanding nominal and real exchange values and the real value's influence on export demand is important for agricultural producers whose commodities are sold abroad.

## TRADE-WEIGHTED EXCHANGE RATE INDICES



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