How the World Economy Affects Agriculture

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American agriculture is now far more dependent upon the health of the world economy than ever before. During the past 30 years, the share of U.S. agricultural output involved in world trade has increased. For example, the proportion of U.S.-produced grain sold overseas rose from an average 21 percent in the 1960's to 32 percent in the 1980's. The same situation occurred in many other industrial nations. Altogether, about a quarter of industrial countries' grain production was exported in the 1960's. By 1980-87, over a third of their production found its way into international markets *(table 1)*.

At the same time, international economic developments—a shift to flexible exchange rates and expanding world financial markets—changed the environment in which agricultural trade operates. Both factors contributed to growing U.S. agricultural exports during the 1970's. However, appreciation in the dollar and a slowdown in world financial markets led to shrinking overseas sales in the early 1980's.

The international value of the dollar is important to U.S. farmers and exporters because it is a key factor in determining the international price of U.S. goods, and therefore how well U.S. commodities sell in overseas markets. When the dollar's value rises, it takes more foreign currency to purchase each dollar. Importers are then faced with paying more for a specific amount of imported American goods. Other things being equal, this means they buy less. The opposite happens when the dollar depreciates. Wide fluctuations in the dollar's value have an impact on the ability of U.S. exporters to sell our farm products overseas.

Spurred in part by the rapid rise in international banking, world financial markets have become more integrated over the past two decades. Investment, currency transfers, and other banking activities are more closely linked across national borders. This growing integration has both paralleled and, to some extent, fostered the growth of global product markets, upon which the United States and other countries are increasingly dependent.

Without international financial markets to provide the needed funds, the growth in world trade would have been greatly restricted. In export-dependent industries, such as U.S. agriculture, the impact has been all that much more important. In addition, the growth of world financial markets has enhanced the ability of investment funds to move between countries, greatly boosting economic growth in some of U.S. agriculture's most promising export markets.

Flexible Exchange Rates

During the 1970's, the world moved from a system of fixed exchange rates to one of flexible exchange rates. Under the fixed-rate system, individual governments set their own exchange rates. The system was anchored by the U.S. dollar and its guaranteed convertibility into gold. The fixed system collapsed in the early 1970's because inflation and a longstanding balance-of-payments deficit in the United States led to a loss of faith in the dollar's value. (When a country imports more than it exports, and therefore pays out more money than it

Table 1. Trade Has Become an Increasingly Important Part of World Grain Production

Year	Amount of production taken by trade					
	World		Industrialized countries		Less developed countries	
	Exports	Imports	Exports	Imports	Exports	Imports
	Percent					
1961-70	9.6	9.4	24.0	16.3	3.4	7.6
1971-75	11.0	10.8	31.2	17.5	2.8	8.3
1976-80	12.6	12.4	36.5	16.9	3.3	10.2
1981-85	13.5	13.3	37.0	13.8	3.7	11.9
1985	12.4	12.2	32.8	12.8	3.5	10.9
1986	11.2	11.1	30.0	12.3	2.9	10.6
1987	12.5	12.3	35.8	12.7	2.4	12.2

Source: Food and Agriculture Organization, United Nations.

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receives, the nation has a balance-of-payments deficit.) This eroding confidence in the dollar caused a run on U.S. gold reserves that reached crisis proportions by the late 1960's. Faced with a loss of over half its gold reserves, the U.S. Government suspended the conversion of dollars to gold in 1971, fostering the move to a system of flexible exchange rates.

Today, flexible exchange rates are determined in currency markets located throughout the world, with the major ones being New York, Chicago, London, and Tokyo. Within these markets, traders buy and sell the world's currencies, spurred on by the foreign currency needs of individuals and companies. The New York Federal Reserve Bank, for example, estimated that the average volume of daily currency transactions in April 1989 in the New York, London, and Tokyo markets was $431 billion.

Like any other commodity, if more dollars are offered for sale than are desired, the dollar's price—the exchange rate—will fall. That is, there will be a depreciation in the value of the dollar. On the other hand, an increased demand for dollars will cause the U.S. currency to rise in value.

With several currency markets operating around the world and separate exchange rates existing for the dollar and each currency it is traded with, changes in the dollar's value can vary considerably among countries. The dollar can, for example, depreciate against the British pound while rising vis-a-vis the Japanese yen. Such an event might happen because of differing interest rates in Britain and Japan—a higher rate in Britain might make the pound temporarily desirable. On the whole, however, the value of the dollar will move in the same general direction against most foreign currencies, responding to the total demand and supply of dollars.

Flexible exchange rates are determined in currency markets located throughout the world.

The demand for dollars is generally determined by two factors. First, since dollars are used to purchase a wide variety of goods and services in international markets, an increase in demand for those goods would cause a rise in demand for dollars. Petroleum, for example, is priced in U.S. dollars. A growing demand for oil or a rise in its price will thus expand the need for dollars.

However, the most important factor influencing foreigners to hold more or fewer dollars is the rate of interest. The belief that a stock or a bond denominated in dollars will earn a higher rate of return than its mark or yen equivalent will be sufficient to ensure a rising demand for U.S. currency.

Economic Policies and Trade

Government policies that influence interest rates can therefore affect the dollar's exchange value, and consequently have a strong impact on a country's competitive position in world markets. Governments can control interest rates through two types of policies. Monetary policy controls the money supply, the number of dollars available in the economy. Fiscal policy concerns government spending decisions, which determine the amount of money the government must borrow.

A restrictive monetary policy lowers the supply of money available to the economy. This would result in banks having less money available for lending to the public, so that the price of credit—the rate of interest—would rise. The same effect, higher interest rates, could be the result of an expansionary fiscal policy. This means the government is spending more money, obtained through borrowing or taxes. Such a policy expands the demand for credit, and interest rates rise. Given these effects, an expansionary fiscal policy or a restrictive monetary policy will tend to raise the value of the dollar.

These relationships are particularly important to those sectors of a country's economy whose health is dependent on success in international markets. In the United States, agriculture is such a sector. When the value of a nation's currency declines under conditions of easy monetary policy (more money is available and interest rates fall), export commodities—such as U.S. farm products—gain an advantage in world markets. Restrictive monetary conditions, since they tend to raise the value of a currency, make exports more expensive for overseas buyers.

As should be expected, U.S. agricultural exports have been very responsive to changes in the dollar's exchange rate during the last 30 years. As the value of

Figure 1. U.S. Agricultural Exports Rise When the Dollar Falls in Value

¹Value of the dollar measured against the currencies of the major customers for U.S. agricultural products (excluding the USSR), adjusted by their share of U.S. exports, after accounting for inflation. ²By value, after accounting for inflation.

the dollar dropped in our major agricultural markets in the 1960's and early 1970's, export sales increased *(figure 1)*. The largest gain in sales, between 1969 and 1973, came as the dollar was falling sharply. The sharp rise in the dollar early in the 1980's curtailed a two-decade expansion of U.S. farm exports. A drop in the dollar's value after 1985, however, has helped boost overseas sales during the last few years.

The implication is that if changes in monetary and fiscal policies are frequent or volatile, then exchange rates will reflect this uncertain environment. This kind of volatility may well have led to the increased protectionism and farm policy intervention that has occurred in a number of countries during the 1980's.

The Quick Fix

Changes in monetary and fiscal policies by economic powers—like the United States, West Germany, and Japan—can, and have, significantly altered supply and demand conditions in world commodity markets. Shifts in competitiveness now often result from exchange rate realignments, rather than changes in production costs or technology. Some countries have come to recognize that their own economic policies can affect others. There is now general agreement that steady and sustainable exchange rates and stable monetary and fiscal policies are important to the health of not only the world economy, but domestic economies as well.

With this understanding, the major industrial powers—the United States, Japan, West Germany, France, the United Kingdom, Canada, and Italy—agreed to coordinate economic policies beginning in the fall of 1985. The cooperation of France, the United Kingdom, Canada, and Italy—along with hoped-for actions by some of the newly industrialized countries, such as South Korea and Taiwan—was seen as important. However, the United States, Japan, and West Germany were the actors that mattered the most.

The Plaza Agreement, adopted in September 1985, and the Louvre Accord of February 1987 provide the framework for this coordinated policy effort. The Plaza Agreement—so named because meetings were held at the Plaza Hotel in New York City—was hammered out by finance ministers and central bank representatives from the industrialized nations. The agreement had a specific goal: an engineered decline in the value of the dollar. Devaluation was needed to reduce the U.S. trade deficit and diffuse protectionist pressures building within the United States.

The countries had an unwritten target of 10 to 12 percent. Central bank intervention in the currency markets was the immediate method used in pushing the dollar's value down. For example, the U.S. central bank, the Federal Reserve, sold dollars in world currency markets. This lowered the dollar's value by making more of them available.

Individual country actions were intentionally left vague, but clearly a sustainable solution involved the reduction of U.S. interest rates relative to those of other nations. The results of this coordinated effort were more dramatic than expected. By mid-1988, the dollar had fallen over 30 percent from its value in early 1985, and at the time, there was no clear indication that the slide would stop.

Faced with being too successful in their efforts, the major industrial countries realized they needed coordinated policies to stabilize the dollar's value.

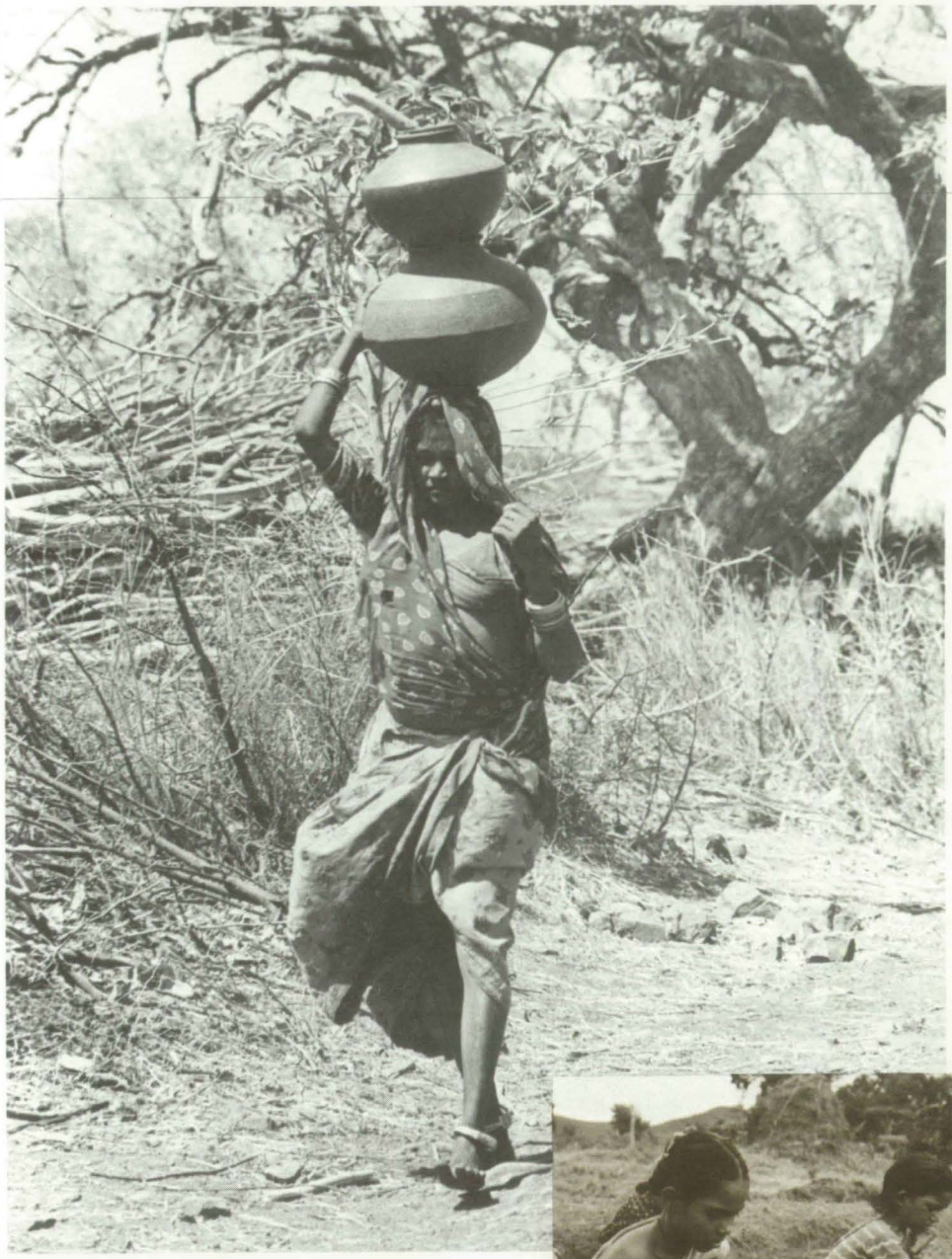
That was the chief objective of the Louvre Accord. Though not explicit in the agreement, it was understood that if the exchange value of the dollar rose or fell beyond certain ranges, central banks of the major economies would intervene in world currency markets, buying or selling dollars in an attempt to keep the dollar within bounds.

These agreements did lead to some clear successes. The value of the dollar dropped and, for a time, was fairly stable. But, the achievements were measured, with only small improvements in the basic economic factors that led to the dollar's 1981-85 appreciation and the burgeoning U.S. trade deficit. Further, there were times when domestic political and economic concerns impinged on the spirit of international cooperation. Yet, to the extent that the dollar became less volatile, the global food trading system became more stable and efficient. An added bonus was that, as the dollar's value dropped into more sustainable ranges, U.S. food exports became more competitive.

The Real Fix

The realignment of the dollar, through the short-term intervention by the central banks in world currency markets, was the immediate goal of cooperation. But the permanent solution to instability of exchange rates required the "proper mix" of basic monetary and fiscal policies. That is, trade-surplus countries, like Japan and West Germany, needed to follow policies that were expansionary and allowed interest rates to rise. The United States, as a trade-deficit country, needed to do the opposite.

Looking back, the countries involved in the Plaza and Louvre agreements still held their domestic economic agendas ahead of their international commitments. For instance, the United States supplied money to the U.S. banking system following the stock market crash on



Countries are now poised to make constructive reforms in agricultural trade.

Black Monday, October 19, 1987. This permitted U.S. interest rates to fall, weakening the dollar's value. Internationally at the time, countries were concerned with preventing further declines in the dollar. But domestic fears of recession held the upper hand. Clearly, individual countries would not go to the length of risking recession to reach their international goals.

International Capital Markets

One of the most important aspects of growing world trade is the emergence of a well-developed world financial system. Banks, investors, and governments now use international banking centers and currency markets to shift money across borders with dazzling speed and efficiency.

Immediately after World War II, international capital movements were almost

exclusively government-to-government transfers. However, a number of changes in the world economy fostered the development of integrated financial markets:

- First, countries became more dependent on trade. Agriculture is not the only industry where a larger share of production is sold overseas. Video equipment and microcomputer components are other examples. With this expansion came a growing need for transferring money across national borders.
- Second, the United States had a sustained period of balance-of-payments deficits in the 1950's and 1960's, which resulted in a large sum of dollars being held overseas. This created a need for an overseas financial market that would "recycle" these funds. Financial markets also expanded after the rapid rise in petroleum prices in 1973 and 1979. Since oil is quoted in dollars, these price hikes greatly increased the number of dollars available internationally. As a result, world financial markets burgeoned in Europe during the 1960's and 1970's.
- Third, world bankers and financiers created "offshore" banking centers, like those in the Cayman Islands, the Bahamas, Singapore, and Hong Kong, to escape the growing regulation of domestic financial markets. Today, major international capital markets operate all over the world.
- Fourth, world financial markets were able to efficiently transfer "surplus" savings from countries, like Japan, to those with lower savings, such as the United States. The United States has provided the Japanese with a higher rate of return on their savings, while channelling the money into productive investments here at home.

Changes in these capital markets can exert a great deal of influence on trade. Money from currency markets and international banking centers is used to finance world trade. Thus, if these assets are growing, so will international trade. The reverse is also true. The declines in world trade that occurred during 1975 and 1981-82 were accompanied by marked drops in the growth of overseas bank assets *(figure 2)*.

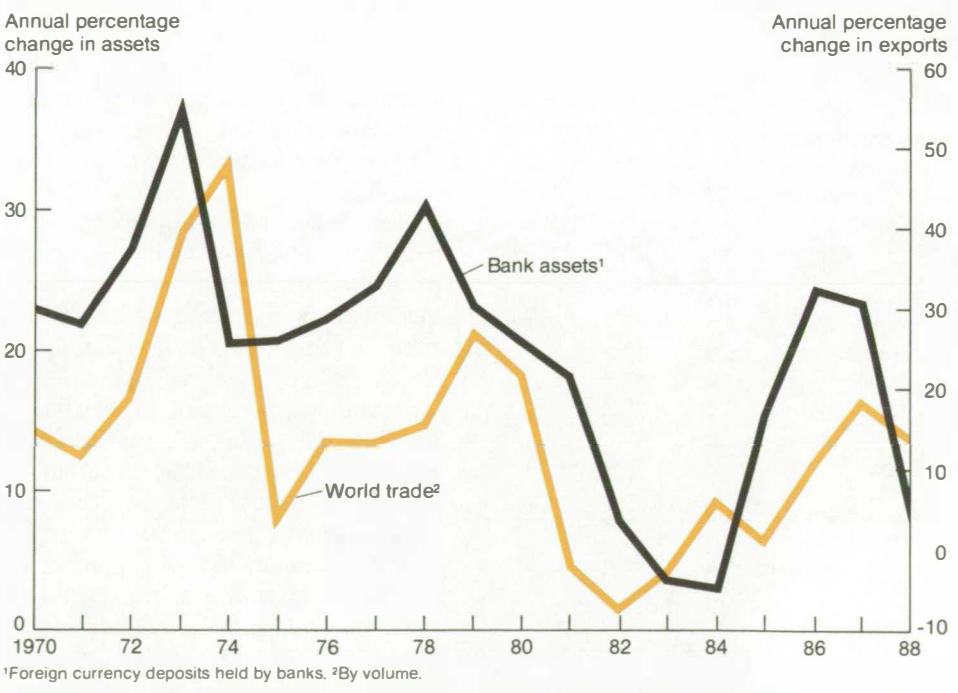
A 1986-87 surge in trade was accompanied by a similar growth in assets. However, the rising level of trade has largely been confined to the industrialized countries and the so-called Four Tigers, the growing economies of Hong Kong, Singapore, South Korea, and Taiwan. Unfortunately, many less developed and most Soviet Bloc countries have been excluded from world capital markets, primarily because of the international debt crisis, which has blocked their full participation in international trade.

The Debt Crisis and Trade

During the 1970's, when capital markets were growing rapidly, many less developed countries (LDCs) borrowed heavily, allowing more investment, but also fostering increased consumption. For example, export industries in Taiwan and South Korea, and to a lesser extent in Mexico and Brazil, experienced greater investment. LDCs expanded their purchases of U.S. farm products in the 1970's by 10.9 percent per year, after inflation *(table 2)*.

Monetary policy in the industrial countries favored growth in the supply of

Figure 2. The 1975 Decline in World Trade Matched the Drop in Overseas Bank Assets



¹Foreign currency deposits held by banks. ²By volume.

money, causing interest rates to remain low. At the same time, inflation was quite high. The end result was a negative "real" interest rate, which is calculated by subtracting inflation from the nominal interest rate. In the United States, for example, annual interest rates averaged around 10.5 percent during 1978-80. At the same time, inflation was about 11.5 percent per year, making the real interest rate -1 percent. This combination of factors led many LDCs to believe that money could be borrowed at no cost or even some gain.

The situation, however, changed in the early 1980's. Industrial economies reversed their monetary policies, tightening the money supply, pushing interest rates to historic highs and driving down inflation. At the same time, commodity prices dropped rapidly.

Higher interest rates meant that the most heavily indebted nations had to make larger loan payments, while lower commodity prices and a worldwide recession reduced export earnings. This combination of soaring interest rates and declining export earnings meant that some countries could not repay their loans. This situation first occurred on a worldwide basis in 1982 and became known as the debt crisis. Its persistence continues to adversely affect international trade.

Because of their debt problems, many developing countries have severely limited imports, saving the foreign currency earned from exports for debt repayment. Agricultural products have not been exempt from this trend. LDC purchases of U.S. commodities during this decade have declined 4 percent per year, in stark contrast to their imports of the 1970's. Yet, despite this fall, the developing world's share of total U.S. agricultural exports has risen to over 40 percent. Their importance to U.S. farmers continues.

Import demand has also been constrained by declining incomes. This is particularly true for the most heavily indebted nations of Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Ivory Coast, Mexico, Morocco, Nigeria, Peru, the Philippines, Uruguay, Venezuela, and Yugoslavia. Income growth in these countries (after accounting for inflation) was directly related to the amount of capital available for investment.

During most of 1973-81, capital flowed in from overseas, investment increased, and incomes rose in these countries. The reverse occurred during the rest of the 1980's, as capital flowed out of indebted countries at a growing rate. In the most heavily indebted countries, investment fell from an annual average of over 27 percent of national income during the 1970's to below 18 percent in the 1980's.

The resultant sluggish growth produced tepid demand for U.S. farm products. Between 1973 and 1981, these LDCs increased their imports of U.S. agricultural commodities at an average annual rate of 15.4 percent. However, between 1981-87, imports from the United States declined an average of 10 percent per year.

The increased share of farm production sold overseas emphasizes the importance of a stable trading environment for world agriculture. Steady and sustainable exchange rates and solid growth in international capital markets will alleviate some of the pressure on individual countries to change their monetary or fiscal policies. The continued cooperation of the United States, Japan, and West Germany will be important. Only a stable world trading environment, fostered by consistent monetary and fiscal policies, will allow countries to compete in a direct, efficient manner.

World capital markets will also have to find a solution to the LDC's debt problems so these countries can fully participate in world trade. U.S. agricultural exports to the LDCs will never reach their potential otherwise. ■

Table 2. During the 1970's, LDCs Expanded Their Imports of U.S. Farm Products

	Changes in U.S.agricultural exports[1]		
	1962-73	1973-81	1981-87
	Percent		
Less developed countries	7.4	10.9	-4.0
Central America	7.8	6.6	-3.1
Caribbean	8.5	5.6	-0.9
South America	11.4	14.6	-11.1
West Asia	6.3	13.4	2.3
South Asia	2.5	2.2	-7.0
Southeast Asia	11.6	4.9	-6.1
Other East Asia	15.0	10.2	0.9
North Africa	3.0	19.8	-0.3
Sub-Saharan Africa	7.8	16.7	-7.0
Four tigers[2]	15.0	10.5	0.9
Major debtors[3]	8.8	15.4	-10.0

[1]By value, adjusting by average export unit values.
[2]Hong Kong, South Korea, Singapore, and Taiwan.
[3]Argentina, Bolivia, Brazil, Chile, Colombia, Ecuador, Ivory Coast, Mexico, Morocco, Nigeria, Peru, Philippines, Uruguay, Venezuela, and Yugoslavia.

Source: *Foreign Agricultural Trade of the United States*, ERS, USDA, various issues.

References

Shane, Mathew and David Stallings. "The Global Trade Environment and Agriculture." *World Agriculture Situation and Outlook Report*, WAS-55. ERS, USDA, June 1989.

Stallings, David and Timothy Baxter. "Recent Developments in International Economic Cooperation." *World Agriculture Situation and Outlook Report*, WAS-53. ERS, USDA, December 1988.