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Feeding the World Vs. Domestic Agricultural Security

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Should U.S. exports be juggled in an effort to keep prices low for U.S. consumers? Japanese auto manufacturers, for example, have been encouraged to cut exports to the U.S. Can the U.S. expect Japan to continue buying its agricultural products if the U.S. is cutting back on Japan's cars? Here is some of the rationale.

Perhaps no issue has been quite as troublesome, in a discussion of food and agriculture policy, as the possible conflict between feeding U.S. population at reasonable prices and sustaining U.S. agricultural exports. Some observers fully expect the U.S. to follow the route of many less developed countries in curtailing exports to keep domestic food prices down. Others believe that U.S. agriculture has unlimited capacity to produce and this precludes any potential problem.

This issue will be discussed in three parts. The first part is a brief background on the current U.S. agricultural trade situation and how U.S. agricultural markets have changed over this last decade. The second part is a review of recent developments in the world food situation, with special emphasis on the less developed countries and the centrally planned economies (China, Russia, and Eastern Europe). The third part discusses the outlook for the 1980s, with a view to identifying possible conflicts between supplying the domestic economy and sustaining and even increasing U.S. export markets.

There is nothing *inherent* in the current situation that should cause the U.S. to interrupt exporting in order to supply the domestic economy. However, there are uncertainties in the decade ahead, especially with regard to policies and developments in other countries. There are uncertainties about U.S. policies also, and the key to how the U.S. comes out in the 1980s will be whether a sound policy can be maintained both at home and abroad.

Background on U.S. Trade Situation

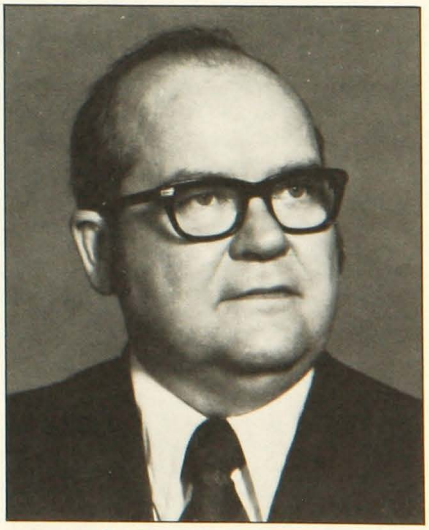
Trade has become very important to U.S. agriculture. Exports now account for about 30 percent of the value of total farm sales, and the output of slightly more than 1 of every 3 acres goes abroad. For individual commodities, the share of output is even higher. Approximately 60 percent of the output of wheat and rice is exported, over 50 percent of soybeans and cotton, and roughly 30 percent of the output of coarse grains and tobacco.

The dramatic aspect of this trade situation is the rate at which exports have grown. The U.S. did not become a net exporter of agricultural products until about 1963. Yet, in 1980, the most recently concluded marketing year, U.S. agricultural exports amounted to $40.5 billion and earned a surplus of $23 billion.

Between 1971 and 1979, U.S. agricultural exports increased almost five times in value, from $8 billion to $37 billion; and more than doubled in volume, from 70 million metric tons to 160 million metric tons. Between 1979 and 1980 export values increased over 25 percent. The projections for the current marketing year (1981) are that the value of agricultural exports will be $48.5 billion and the volume of exports 170 million metric tons.

Agricultural exports are important to total economic health. These make up about 20 percent of U.S. exports. Petroleum imports are running at about $60 billion per year, so the surplus in agricultural trade pays for more than a third of these imports. Without a strong agricultural export performance the value of the dollar would undoubtedly be weaker and the standard of living of U.S. citizens lower.

It should also be noted that today's U.S. farm programs are predicated on a strong export performance. Without large exports, U.S. farm policies would be very different and more costly.



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The destination of U.S. agricultural exports has changed significantly, with important implications both for trade policy and for market development. U.S. agricultural markets have traditionally been in the European Community, other Western European countries, and Japan. But in the 1970s the trade pattern shifted strongly towards the centrally planned economies and the developing countries. For example, net grain imports by the centrally planned economies increased 740 percent in the 1970s, from 6.5 million metric tons to 54.6 million tons; and by the developing countries 610 percent, from 8.9 million tons to 54.5 million tons. During the same period, exports to major traditional markets, including Japan, the European Community, and other Western European countries, increased only 40 percent, from 27.4 million metric tons to 38.3 million tons. Within this group, imports by Japan increased 131 percent, from 10.3 million tons to 23.8 million tons. European Community imports, on the other hand, actually declined by 68 percent, from 13 million tons to 4.2 million tons.

Prospects on the World Food Situation[1]

During 1973-75 there were many dire predictions that food prices would remain at or near the high levels of those years, and that such prices would impose great burdens on the world's low income countries. The expectation was that high energy prices would result in fertilizer prices that would restrict use, that arable land could not be increased further, and that the increased use of grain as feed would take food away from poor people. Mixed in with all these predictions were speculations that either the U.S. was entering a bad weather cycle, or that U.S. residents had permanently damaged U.S. environment, with resulting chronic food shortages into the foreseeable future.

Fortunately, these dire forebodings did not materialize. By 1980, prices of basic foodstuffs—especially the grains—were as low as they had been in the late 1960s and early 1970s if adjustment were made for inflation, and actually as low as they had been since the 1930s. Moreover, fertilizer prices increased at a slower pace than general inflation, the amount of arable land continued to increase (8 percent in the low-income market economies alone), and these same countries found the resources to increase their irrigated area 25 percent. The use of grain for feed began to level off—affected by regular market forces.

Consider some of the basic data on output and consumption in thinking about the decade ahead: first, the less developed countries; then, the centrally planned countries. These are the two groups of countries that might be expected to give the U.S. the most serious problems.

The Less Developed Countries

Recall that it was the less developed countries that most observers expected to be in a lot of trouble by now. How have these countries fared? The growth of food production in the low income countries during the 1970s reflects a remarkable performance. During the 1970s food production grew at an average rate of 3.2 percent per year while food production in the developed or high income countries grew at a rate of only 2.0 percent per year.

In per capita terms, the annual growth rate was 0.7 percent per year for this same decade. In light of the high population growth rates for those less developed countries, that was a remarkable achievement. Rather than becoming worse off as many expected, these countries generally improved per capita food availability. And often improved it under rather trying circumstances.

Performance among individual low income countries varied a great deal, of course, and there were significant differences even among regions. Africa is the region of the world that has done quite poorly during the 1970s, with per capita production some 12 percent lower in 1979 than it had been in the early 1960s. However, East Asia (Indonesia, the Philippines, Korea, and Thailand) did unusually well with a 20 percent increase in per capita production. Of course, India has now become almost famous by shifting from a net importer to a net exporter in the face of a rapidly growing population.

South America has done quite well in recent years, as countries like Argentina, Brazil, and Chile have changed economic policies which discriminated against their agriculture. Central American countries and Mexico, of course, have done less well.

Another way of looking at this picture is to see what has happened to the price of grain in international markets. If demand were growing more rapidly than supply, as many predicted would occur during the latter half of the 1970s, the real or deflated prices of grain would have increased. Note prices for these two commodities which are important in these markets:

Year	Wheat	Corn
	—price per ton— in 1967 dollars	
1968	$60	$48
1969	57	48
1970	53	52
1971	54	50
1972	54	46
1973	80	63
1974	110	79
1975	95	76
1976	80	64
1977	58	52
1978	61	50
1979	67	50

By the end of the 1970s grain prices were right back down to the levels they had been at the end of the 1960s. Grain prices by the end of the 1970s were lower than during the early 1930s—the Great Depression. The point, of course, is that there has been a long term down-trend in the prices of cereals due to the significant technological breakthroughs in this sector. Despite the cries of the doomsdayers, the events of the early 1970s were only a temporary divergence from that trend. By the end of the decade the U.S. was almost back on the trend line.

[1]Data in this section are taken from Johnson, D. Gale, "The World Food Situation: Developments During the 1970's and Prospects for the 1980's," *Contemporary Economic Problems, 1980,* (Washington: American Enterprise Institute, 1980), pp. 301-39.

The Centrally Planned Economies

As noted earlier, imports by the centrally planned countries grew very rapidly during the 1970s. It is useful to think distinctly of the Soviet Union, the Eastern European countries, and Mainland China in attempting to evaluate the centrally planned countries.

The growth of grain imports by the Soviet Union and Eastern Europe during the 1970s was due to the demand for livestock feed increasing at a more rapid rate than domestic sources of supply, given the agricultural and food policies of those countries. The growth of grain imports by the Soviet Union was much greater, both relatively and absolutely, during the 1970s than in the Eastern European countries. Eastern Europe doubled grain imports during the decade —from about 8 million tons at the start of the decade to 16 million tons at the finish. The Soviet Union, on the other hand, was a small net *exporter* at the beginning of the decade—4 million tons on the average—but by 1979-1980 it had become the world's largest grain *importer* with about 31 million tons.

It is reasonable to anticipate further growth in grain imports by the Soviet Union and Eastern Europe in the 1980s. The demand for livestock products will increase as real incomes grow. Moreover, the so-called "meat problem" in the Soviet Union and some of the Eastern European countries is exacerbated by a commitment to keep retail prices of meat at a constant level. There, prices are not permitted to adjust to equate demand and supply, long queues develop when there are shortfalls, and the political pressure to increase meat production becomes very large. Even with good weather the Soviet Union will likely need to sustain its grain imports at a level of about 20 million tons in the first half of the 1980s to meet its livestock and livestock product targets.

Considering China, the picture clouds because what is going on in that vast country really isn't known, and it is very difficult to predict its future. Not many years ago visitors to China were returning with rave notices about what they had seen and advice that we should all be imitating the Chinese system. With the small opening to China we now have, and a bit more candor from Chinese officials, the situation does not look so favorable. In fact, recent appraisals of the food situation by Chinese officials present a picture that is potentially alarming both to the Chinese and to the entire world.

On the demand side, population now appears to be rapidly approaching the 1 billion level, which implies that the population growth rate in the past has been about 1.9 percent per year. The Chinese government appears to have made a commitment to increase per capita incomes in the decade ahead. That means that demand for agricultural output could be quite strong.

China has emerged as the world's third largest importer of grain—after Japan and the Soviet Union. There is abundant evidence that China has *not* solved its food problem, and that many of its citizens are malnourished and go hungry. Moreover, with the political opening China has now experienced, the pressures to sustain present consumption levels when production shortfalls do occur will be quite great. So one might expect rather large import demands in individual years of Chinese shortfall. Some of these import demands could put rather large demands on international commodity markets.

The Outlook for the Decade Ahead

In attempting to judge the 1980s and whether there will be a conflict between U.S. export markets and domestic food security, a number of things must be considered. How the situation evolves may be very much determined by what governments and policymakers—including those in the U.S. do. Some of these factors follow.

Population growth rates

Perhaps one of the greatest surprises on the world scene during the 1970s was the unexpected decline in birth rates in many developing countries. Countries with population exceeding 2 billion in mid-1977 had estimated declines of birth rates of 15 percent or more between 1960 and 1977. A number of countries had declines of 35 percent or more: Colombia, 35; South Korea, 49; Tunisia, 37; Costa Rica, 40; Chile, 40; Taiwan, 48; Hong Kong, 46; Singapore, 50; China, 39; and Trinidad and Tobago, 40.

Declines in birth rates, of course, are not immediately translated into declines in population growth rates. First, there are also significant declines in the death rates in many of these countries. Second, it takes about 20 years or so for a decline in the birth rate to have an impact on population growth rates.

However, the declines now emerging do promise to offer some relief from the relentless pressure of population growth post World War II. They also may promise increases in per capita incomes and alleviation of the grinding poverty problem that affects most of the world's population.

Investments in Agricultural Research

The importance of new production technology as the basis of modernizing agriculture and feeding the world's population is increasingly recognized on the world scene. The international community, under U.S. leadership, has made a major commitment to develop a capacity to produce the new technology needed for world agriculture. There are now 12 International Agricultural Research Centers, and more on the books and in the planning phase. These centers of immense potential have already produced the new wheats and rices that have kept the world from experiencing a serious food problem.

Many less developed countries have also recognized the importance of investing in agricultural research. The federal budget for agricultural research in Brazil, for example, is almost half what the U.S. spends. On a per capita basis, it is almost the same. And there are a lot of other developing and centrally planned countries that are making similar commitments. These investments have a long gestation period. But the day is rapidly approaching when the payoffs from past investment will bear fruit.

The Research and Development (R&D) policy of the U.S. relative to agriculture is also a key factor in determining whether the U.S. can meet its export potential. Since about the mid-1960s the U.S. has backed away from its commitment to agricultural R&D. At the federal level, expenditures on agricultural research have been declining as a share of U.S. agricultural gross national product, while research has been increasing in other countries. Continuation of these trends can cause the U.S. to lose its competitive edge, even in agricultural trade.

Economic Policy

Two dimensions of economic policy are quite important to today's issues. The first is that many of the less developed countries' economic policies have discriminated very severely against the agricultural sector. Most of this discrimination has been through trade policy, with significant export taxes and implicit subsidies on imports. These policies are one of the reasons imports have grown so rapidly.

If these policies should change, so that farmers receive stronger incentives to produce, the chances for a world food crisis are much less severe. India is an important example of a country that rapidly shifted from being a net importer of grains to being a net exporter because of changes in economic policy and in R&D policy.

Improved policy in other countries need not be a threat to U.S. producers. On the contrary, it will cause per capita incomes to increase more rapidly in those countries, and that is the key to future U.S. markets. Improved policy will reduce some of the unnecessary burdens on international markets, despite burdens that arise from import subsidies.

The second dimension to economic policy that is important in the potential conflict between U.S. domestic and foreign markets is U.S. monetary and fiscal policy. Once this nation shifted to a system of flexible exchange rates, with the well-developed international markets for capital that now exist, shifts in monetary and fiscal policy began to impose major shocks on commodity markets. U.S. monetary policy has been quite unstable this past decade, and it has imposed major shocks on U.S. commodity markets. It is this instability that brings forth the pleas for export controls. U.S. agricultural interests have a vested interest in more stable monetary policy and should begin to express that interest.

Energy

The discussion here is the growing commitment to biomass for fuel or to gasohol in various countries around the world, including the U.S. Brazil was the first country to develop a significant program for the production of gasohol. But the U.S. and Australia are close behind. If present goals are met, the U.S. will be using 100 million tons of corn to produce something like 2 percent of the U.S. gasoline needs by the year 1990.

This is not the place for a thorough analysis of the gasohol program. It should be obvious, however, that a commitment of that order cannot be met without some loss of export markets and some disturbances to the livestock sector and domestic economy. In the context of the present discussions, the higher food prices that result from such a policy will sharpen the conflict between exports and domestic food supplies. With the subsidies to the gasohol program now projected to run on the order of $10-$12 billion a year, it is not likely that the public will be very patient if food prices start to rise.

If Brazil and Australia also persevere in their gasohol programs, there are apt to be significant upward pressures in international commodity markets. It is these upward pressures that sharpen the conflict between the domestic and foreign markets.

U.S. Import Policies

It may sound strange to argue that U.S. import policies will determine whether there will be a conflict between U.S. exports of agricultural commodities and an adequate food supply for the domestic economy. But trade is a two-way street. Other countries must be able to export if they are to import U.S. agricultural commodities.

Experience with the Soviet Union has probably misled the U.S. on this issue. The Soviets are one of the world's major gold producers. Whenever they want to import more grain they just increase their gold sales. Over the last decade they have been able to sell that gold into a rising market. The U.S. did not have to increase its imports of other Soviet products for the Soviets to be able to buy U.S. grain.

That is not the situation with China or the less developed countries. For them to be able to import grains and other agricultural products from the U.S., they have to have foreign exchange. For the most part they will earn foreign exchange by selling (to the U.S. and other developed countries) the products they have a comparative advantage in. Often these are labor-intensive products that the U.S. is not always willing to accept: shoes, textiles, and manufactured products.

Japan is an outstanding example of where U.S. willingness to accept Japanese exports is the key to how strong U.S. agricultural exports to Japan will be. Japan is the U.S.'s largest customer for agricultural products—over $6 billion in 1980. The U.S. cannot ban imports of automobiles from Japan and expect Japan to be willing to continue to accept U.S. agricultural exports.

Concluding Comments

Whether the U.S. will be forced to cut off agricultural exports in order to supply the domestic economy depends on many factors, most of them beyond the control of farmers. The need is strong to keep the U.S. house in order by investing in agricultural research and keeping U.S. agriculture competitive. But events in China, the Third World, and decisions about gasohol in the U.S. and abroad will also play a major role. What happens to agriculture no longer depends solely on agricultural policies. Other policies in the U.S. and in other countries around the world are equally important.

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