MO

Agricultural Economics
Department Paper 1983-38

MARKET STRUCTURE, MACROECONOMIC FORCES, AND AGRICULTURAL TRADE: IMPLICATIONS FOR U.S. AGRICULTURAL POLICY

Paper Presented to

The School of Agricultural Economics and Extention Education

University of Guelph

November 7, 1983

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"Clearly for U.S. agriculture to prosper, it must export. This administration intends for agriculture to prosper, so we intend for agriculture to export."

Daniel G. Amstutz
U.S. Under Secretary of Agriculture

"About 40 percent of our total national farm income now comes from exports. And, when we look at the prospects for growth, it is clear that boosting foreign sales and capturing an increased share of domestic markets are keys to future expansion and prosperity."

Eugene Whelan
Canadian Minister of Agriculture

Every four years, since the Agricultural Adjustment Act of 1933, the U.S. Congress in concert with the Administration enacts "new" farm legislation. Terming the legislation "new" reflects the legal necessity of enacting continuing legislation; the intent and purpose of the legislation has not changed in fifty years. With the coming expiration of existing legislation in 1985, attention has again focused on the legislative process.

But, unlike past years, significant change in the intent and purpose of the legislation seems possible if not probable. The high cost of this year's program -- estimated to be as much as $25 billion -- has drawn the attention of many, unlikely observers. The editorial writers of most newspapers (the Wall Street Journal, for example) and such columnists as George Will, James Kirlpatrick, and Art Buchwald have called for major changes in farm programs. Fortune magazine expressed criticism by recently awarding the current program its "Unintended-Side Effects Award."

In order to understand the environment in which agricultural policy will be debated, it is necessary to review the U.S. export performance of

the 1970s and early 1980s. The value of U.S. agricultural exports increased dramatically from 1972 to 1974 and then reached a plateau of about $23 billion which held until 1977 (Figure 1). Starting in that year, exports expanded rapidly to a peak value of over $43 billion in 1981. In 1982, the value of agricultural exports fell to $36.5; it is expected to fall further to about $34 billion this year.

The growth of export quantities and values of individual commodities was nothing short of spectacular during the 1970s. Corn increased at the fastest rate followed by wheat and soybeans. The average annual growth rates (1970-1980) are:

	Quantity (%)	Value (%)
Corn	14.4	23.6
Wheat	6.8	18.2
Soybeans	5.6	15.3

Corn exports peaked at over 60 million metric tons (MMT) in 1980, more than 3 times greater than the 1970 level; those of wheat peaked at 43.9 MMT in 1981, 150% greater than its 1970 level. Soybean exports increased steadily throughout the decade with the 1982 level reaching 112% of the 1970 level.

The collapse of the U.S. corn and wheat export markets, beginning in 1980, was sudden, large and not at all expected. From their peak values, the quantity of corn and wheat exports have declined by 29% and 22%. The value of these exports have fallen 42% and 32% respectively. While the quantity of soybeans held about on trend, the value has fallen slightly.

As the new administration took office in January, 1981, it seemed assured the export market would take increasing quantities of U.S. agricultural commodities. In the environment of federal budget reductions imposed by new administration, the incentives offered to farmers to reduce

production were small despite large levels of government and private stocks. That attitude prevailed in the second year as well. Production and stocks of major commodities increased to post-war highs. Farm income fell to post-war lows. This year, the administration was forced to take drastic action; the costly payment-in-kind (PIK) program reduced area planted dramatically by trading stocks in payment for idled area. That reduction plus the reduced yields due to the worst drought in fifty years have reduced stocks, and strengthened prices of some commodities and farm incomes.

Maintaining the U.S. share of existing foreign markets and developing new markets is widely viewed as necessary for a prosperous U.S. agriculture during the 1980s. A number of steps have been taken to accomplish those ends: funds for commercial export credit guarantees have been doubled, a blended credit program has been established, market development and Public Law 480 funds have been increased, and subsidized exports have displaced competitors' exports in selected markets. The loan rates, claimed to exceed world market-clearing prices, coupled with a strong dollar were argued to have overpriced U.S. products in world markets. Therefore, some loan rates have been reduced.

The United States has not been content with these measures. The Common Agricultural Policy of the European Community was assailed at the recent GATT ministerial meeting. The point of contention was subsidized exports. Interchanges were so belligerent and dogmatic that some observers concluded an agricultural trade war was in the offing. The trade policies of Japan were criticized as well. The point of contention was import quotas on such products as beef and citrus.

These actions are justified and, at least in part, motivated by the widely held perception that the United States plays fair but other countries do not. To be sure, other factors are mentioned: the large stocks of cereals and cotton, the reduction of planted area by the very expensive PIK program, and the lowest level of real farm income in many decades. But, it is argued that these are symptoms of, among other things, a particular market structure in which the United States acts as the residual supplier. One must quickly add that the United States has accepted that role voluntarily; it is a consequence of U.S. domestic farm policies. I will return to this point later.

The fall in the quantity and value of U.S. agricultural exports is attributed not only to actions of competitors and the residual-supplier market structure but to the world recession and the debt problems of many less-developed countries. The strong dollar is said to over-price U.S. agricultural exports. All of these factors have come to be grouped under the term macroeconomic forces. Some have argued that these forces have come to dominate the level of U.S. agricultural exports and world agricultural trade. I will address these factors after discussing market structure.

Market Structure

Many argue that the United States acts as the residual supplier to world agricultural markets and that other nations take advantage. Attempts to change this status may be reflected in the new legislation.

The description of the United States as the residual supplier in world agricultural markets is widespread in the professional literature and the popular press. Despite its widespread use, it is a slippery concept to

define. For example, Kelly Harrison, then General Sales Manager of the USDA, presented the following view:

> "Since the United States has been a major, if not dominant, supplier in international markets, U.S. domestic price policy has set price levels and other exporters have operated in their own best interests within that environment. The net effect has been an oligopolistic competitive structure with U.S. price leadership and market sharing among other exporters. The United States then acts as the residual supplier through its open export-marketing system. This, of course, is an over simplification of a very complex process" (p. 904-5).

Paarlberg wrote:

> "...we pursued policies that made us--unfortunately--the residual supplier in world markets. We held our export prices above world levels. Other exporters priced their products a cent or two under ours and sold their supplies. Buyers would purchase these bargain products first, then turn to the United States to round out their needs" (p. 35).

Hillman has also described the United States as a residual supplier of temperate zone agricultural products. His analysis emphasizes stock holding either directly by the government or, indirectly, by subsidized private storage. He concludes:

> "That same policy of carrying stocks placed the United States in an unfavorable position during other periods when competing suppliers sold their total crop and forced the United States into a residual supplier status" (p. 140).

My colleague, Harold Breimyer, takes an opposite point of view:

> "We hear it said that the United States is a poor old weak residual supplier in world trade. Hokum! ... There is no such thing as a residual supplier."

Dr. Breimyer points out that the United States is the dominant supplier in world cereal and oilseed markets and that the United States sets the tone. How then, he asks, can the United States be a residual supplier?

Before reconciling these views, it is necessary to review the evidence cited by proponents of the residual supplier notion. They point out that not only is the United States capturing a smaller piece of the international trade pie but, to make matters worse, the pie is getting smaller. The accompanying table summarizes market shares of world trade for wheat and feed grains. Clearly, the size of world markets has declined and the United States has lost a share of the markets, especially for wheat. At the same time, they note the United States has reduced production and accumulated stocks (at great expense) but that competitors have not done so. Proponents usually point to world markets for wheat and feed grains. In response to government policies, U.S. production of wheat was reduced 14 percent from 1982 to 1983. Production of feed grains is down about 48 percent; about a third of that decline is due to government policies and the other two-thirds is due to the drought. Production in other countries has not declined in response to over supply in world markets. For example, Canadian wheat production in 1983 exceeded the record level reached in 1982. The Argentine wheat crop also reached a record level this year.

Just as the U.S. government and farmers envisioned a robust world market for agricultural products in the 1980s, so did the governments and

World Wheat and Feed Grain Exports and
Major Exporters' Share

	1979	1980	1981	1982	1983*
Wheat					
World Exports (mil. met. T.)	86.0	94.2	101.3	97.8	98.5
Share of total (%)					
U.S.	43.3	44.5	48.5	40.9	38.6
Canada	17.4	18.0	17.5	21.6	21.8
EC (10)	12.1	15.6	13.3	13.8	12.7
Feed Grains					
World Exports (mil. met. T.)	100.9	105.5	103.6	89.0	92.4
Share of total (%)					
U.S.	71.0	68.6	59.3	59.9	63.6

*Estimated

farmers of all agricultural exporting countries. Those governments undertook projects to increase export capacity and farmers were prepared to benefit. For example, the Canadian government established an export goal of 35 MMT to be reached by 1985. To meet that goal export facilities to serve Asian markets were increased.

Rail rates, which had been set since the late 1800s, were revised so as to favor investment in railcars to move farm products from the prairie provinces to port facilities. The end result is an agricultural production and export capacity in the 1980s that greatly exceeds that of the past two decades. The governments of all grain exporting nations are under pressure from farmers and politicians to utilize their new capacity.

The essential feature of the residual supplier market structure is that all nations -- importers as well as exporters -- insulate domestic producers and consumers from market forces. The mechanism that determines equilibrium price is a residual of those policies; the U.S. loan rate sets the world market price and it accumulates stocks. The United States may no longer be willing to play that role.

Unless world demand resumes its robust expansion of the 1970s, clearly, world markets will clear only at price levels unacceptable to U.S. or Canadian farmers and their governments. Lets turn now to that question.

Macroeconomic Forces and Agricultural Trade

The Unites States Experience. In order to determine the factors that caused U.S. and world exports to expand and then decline, I will, first, identify the major markets and then changes in exports to those markets. While exports to traditionally important markets -- the European Community (EC) and Japan -- increased, their relative importance declined. That

decline in relative importance is due to the much more rapid growth of other developed countries and less developed countries. The growing importance of these countries is best illustrated by looking at changes in exports rather than absolute levels.

Value of U.S. Agricultural Exports

Buying Countries	1976 bil. $	1976 %	1981 bil. $	1981 %	1982 bil. $	1982 %
EC & Japan	10.0	43.7	15.6	36.3	13.8	37.7
Other Developed	3.7	16.1	6.5	15.1	5.8	15.8
Less Developed	6.8	29.7	16.0	37.2	12.9	35.2
Centrally Planned	2.4	10.5	5.3	12.3	4.3	11.7
Total	22.9	100.0	43.0	100.0	36.6	100.0

Change in Value of U.S. Exports

Buying Countries	1976-81 bil. $	1976-81 %	1981-82 bil. $	1981-82 %
EC & Japan	+5.7	28	-1.8	27
Other Developed	+2.7	13	-0.7	10
Less Developed	+9.2	45	-3.2	48
Centrally Planned	+2.9	14	-1.0	15
Total	+20.3	100	-6.7	100

The astonishing observation to be made is how much of the change in exports, both the 1976-81 increase and the 1981-82 decrease, was accounted for by less developed countries. But the summary data hide some detail. Among less developed nations, oil exporters such as Venezuela and Mexico, and the newly industrializing nations of South Korea, Hong Kong, and Taiwan, joined with fringe countries of Europe (those outside the EC) to

account for 58 percent of the $20 billion increase in U.S. exports from 1976 to 1981. These countries were equally important in the downturn, contributing about 58 percent of the $6.7 billion decline from 1981 to 1982.

Traditionally important markets, the European Community and Japan, accounted for only about a quarter of the growth from 1976 to 1981 and of the decline from 1981 to 1982. Contrary to popular opinion, the Central Planned countries (USSR, China, Poland, etc.) did not play a dominant role in either the expansion or contraction of U.S. agricultural exports during this period.

The Canadian Experience. Unlike U.S. agricultural exports which increased erratically during the 1970s, Canadian exports increased at a remarkably steady rate. At the same time, it must be noted that the growth was not nearly as dramatic as U.S. export growth. Some in the United States point to the increased value and quantity of Canadian exports during 1982 and 1983 as evidence of superior marketing skills of Canadian marketing boards. But as we will see shortly, Canada services a much different clientele than does the United States.

In recent years, Canada's largest market has been the centrally planned countries. To be sure, the EC and Japan are important markets in terms of absolute size but they have not been a major growth market.

Over half of the growth in Canadian export markets from 1978 to 1981 has been accounted for by centrally planned economies. As was the case for the United States, about a quarter was due to growth in the traditional EC and Japanese markets. In sharp contrast to the United States, only 7.5 percent of the export growth was accounted for by less-developed countries; including developed countries outside the EC increases the proportion to only 10 percent.

Value of Canadian Exports

Buying Countries	1978 bil. $	1978 %	1981 bil. $	1981 %	1982 bil. $	1982 %
EC & Japan	1.7	35.4	2.7	30.7	2.5	26.9
United States	0.8	16.7	1.3	14.8	1.6	17.2
Other Developed	0.1	2.1	0.2	2.3	0.3	3.2
Less Developed	1.1	22.9	1.4	15.9	1.6	17.2
Centrally Planned	1.1	22.9	3.2	36.4	3.3	35.5
World Total	4.8	100.0	8.8	100.0	9.3	100.0

Change in Value of Canadian Agricultural Exports

Buying Countries	1978-81 bil. $	1978-81 %	1981-82 bil. $	1981-82 %
EC & Japan	1.0	25.0	-0.2	20.0
United States	0.5	12.5	0.3	20.0
Other Developed	0.1	2.5	0.1	20.0
Less Developed	0.3	7.5	0.2	40.0
Centrally Planned	2.1	52.5	0.1	20.0
Total	4.0	100.0	0.5	100.0

Two observations can be made at this point. First, U.S. exports will be affected more by macroeconomic forces than will those of Canada. Second, Canadian exports will be more affected by weather--particularly good weather--in the centrally planned economies. The comparisons do raise one question: why does the United States supply the lion's share of import requirements of developing countries?

We turn now to an explanation of the decline in imports of developing countries and U.S. agricultural exports.

Newly Industrializing and Oil Exporting Countries. Rising level of income was an important factor in the expansion of consumption and imports of farm products by newly industrializing countries in the late 1970s. But a number of other factors played important roles.

Many of these countries had simply neglected their agricultural sectors in favor of industrial development. At the same time, consumer food prices, particularly of necessities, were held down by low producer prices and/or subsidies. Adoption of these policies was encouraged by the ready availability in world markets of food- and feedstuffs at relatively cheap prices. But that picture changed dramatically when the price of agricultural commodities skyrocketed beginning in 1973. In reaction to the rising import prices, many of these countries adopted new policies later in the decade favoring the agricultural sector and leading to increased production. Many even saw an opportunity to export agricultural products. Increasing agricultural production takes time; the effects of these policies have been evident only recently.

During the mid-1970s and later many of the countries found external credit readily available. Their own foreign exchange earnings were increasing. They were able not only to expand agricultural capacity but to expand industrial capacity, while continuing to subsidize food prices in the face of rapid domestic inflation. Consumers were, in turn, able to increase consumption of animal proteins -- requiring imported feed grains and oilseeds; and of high quality cereal products -- requiring imported wheat. The story varies across countries but Mexico provides a good example. From 1975 to 1980 export earnings increased from $3 billion to $16 billion; per capita real income increased by 3.6 percent annually; meat consumption by 45 percent; and the value of food imports from the United

States (primarily corn, sorghum, and wheat) reached $2.7 billion in 1980. By 1980, Mexico had become the third largest market for U.S. agricultural products.

The 1980s have brought difficult times for these countries. Their foreign debt burden has become huge. Brazil owes $90 billion, Mexico $80 billion. Foreign exchange earnings have declined with the fall in both price and quantity for those countries' exports of oil and other raw materials. Their industrial exports also have declined. As a result, many of these countries have not been able to make interest payments, much less repay the principal of loans.

In an attempt to reduce government spending, food consumption subsidies have been slashed in several of these countries. So, their consumers have faced not only a declining level of income but sharply increased food prices. Animal proteins and high quality cereals bear the brunt of the adjustment of their diets -- and buying. At the same time, those countries have given agriculture a more favorable treatment than before in an attempt to reduce expenditures of foreign exchange earnings for food. These policy changes either reduce the rate of growth of foodstuff imports or in some cases, force a decline.

Expressed in other terms, from 1975 to 1980 a tremendous amount of purchasing power was transferred from industrial countries to less developed countries. This amounted to a shift in purchasing power from consumers who spend a small proportion of added income on food to consumers who spend a large proportion on food. That transfer is another way of accounting for the surge in agricultural exports during the 1970s. In the 1980s the transfer ceased and so did the uptrend in world trade.

Policy Implications

If this appraisal of the world demand for agricultural products is correct, the capacity to produce food will exceed the ability to purchase it, at least for the next several years. Who will bear the costs of adjusting?

U.S. agricultural policies allow U.S. producers to profit when world markets are booming (as in 1973-80) but the policies also force producers to bear the brunt of the world adjustment when markets are over-supplied. That is to say, producers will bear the brunt unless a costly government program transfers a substantial part of the costs to U.S. taxpayers.

Responding to the short run imperative, the very costly PIK program, with considerable help from the drought, has temporarily increased prices and farm income. But, what of the longer run? Will the United States maintain its past reputation as the residual supplier? Will it instead isolate its farmers from world markets and dump excess production into world markets by whatever means necessary? Will policies, as some suggest, get government out of agriculture and let market forces work? Congressman Weaver of Oregon advocates establishing an export corporation, perhaps an export oriented Commodity Credit Corporation. It would play the export game vigorously, and would do so pretty much independently of internal price support program. He has received little support thus far.

Complicating the policy choice is that the United States is so big in world grain markets that its actions have a lot to do with setting the tone -- the terms of doing business -- for those markets. Even after some slippage in recent years the United States supplies about 40 percent of the world's wheat exports and more than 60 percent of feed grains. The United States does not enjoy the strategic freedom of, say, a Thailand or other country that supplies only a small proportion of world supply.

This is a relatively new dimension in the making of farm policy in the United States. The implications of the growing role of world trade in farm products could be dismissed so long as the volume and value of trade kept rising, as it did in the 1970s. When "the cheering stopped," as happened in the early 1980s, the problems associated with the enlarged role of world trade came to the fore.

Several U.S. trading policy options can be identified. One option would be for the U.S. to continue trading within, or subject to, its perceived world political necessities. That is, it would consolidate the residual supplier status; absorbing the shocks or disruptions in world trade. The United States might gain little when trade lags but much when it expands. Another option is to enact legislation to keep trade and trade issues outside of the realm of politics. It involves creating the image of a supplier that trading nations can depend on; but the stance would be aggressive. The U.S. trading institutions that exist (or need to be created) would actively engage in competing with other exporters and lure potential buyers. A third alternative would maintain the residual supplier status, downplaying the importance of the export market and relying more on markets at home and income protection via farm programs. Finally, trade by the U.S. might be conducted on the basis of long term agreements. This option would permit a reduction of the instability in the U.S. farm sector and allow policy makers to define a program more exactly since a large component of the export market would be known.

Clearly, Canadian producers will be affected by whatever policy is adopted by the United States. All countries cannot simultaneously increase agricultural exports unless the market expands. It doesn't appear that the market will expand in the near future. In that case, an effective

resolution cannot be legislated in Washington, Ottawa or Brussels. International cooperation will be the only long run solution.

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