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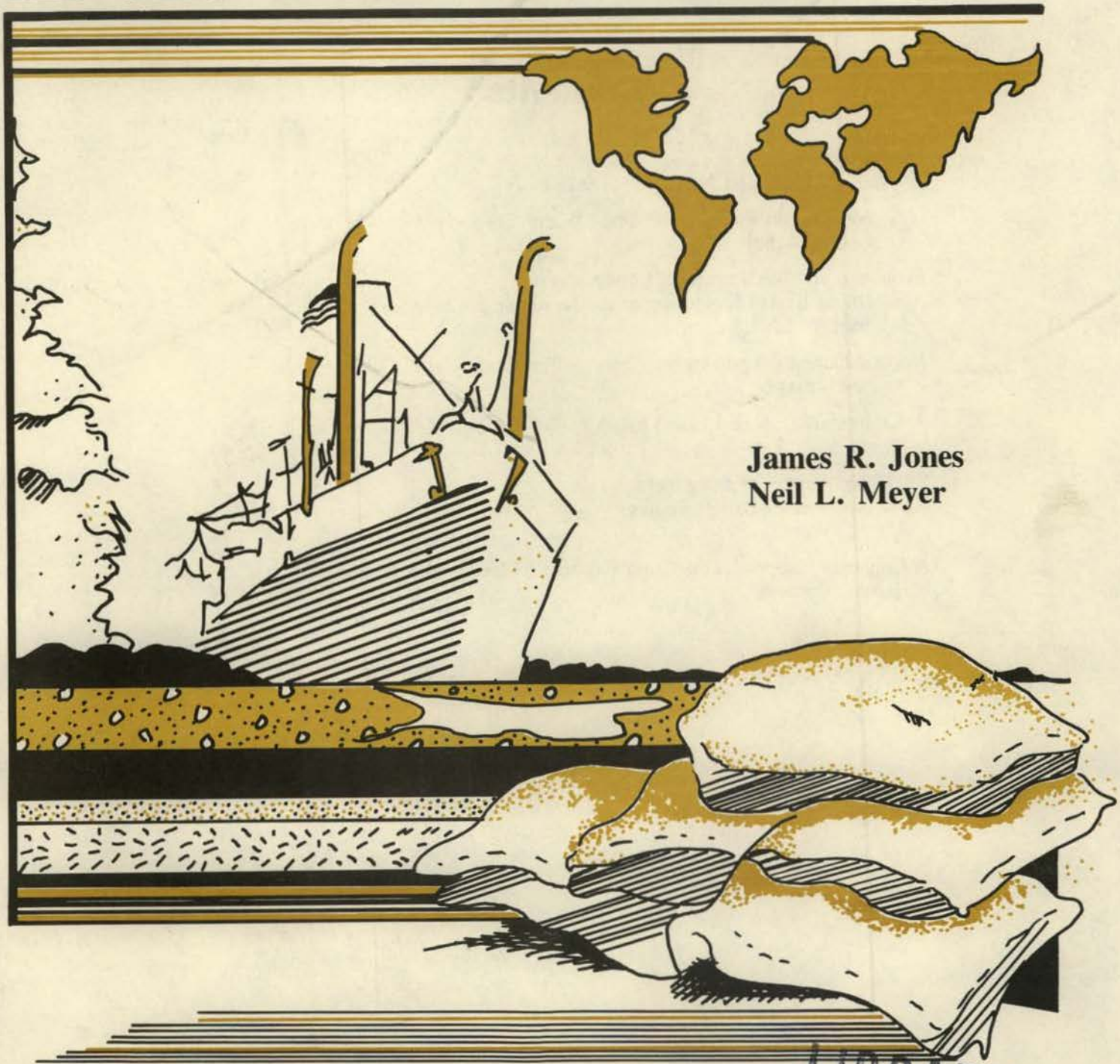
Agricultural Export Issues in the Post Seventies



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Agricultural Export Issues In the Post Seventies

Introduction

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U.S. agricultural marketing policy has received considerable public interest in the 1980s. The problem was created by a decline in U.S. export values since 1981. The papers in this publication point to the fact that many issues are involved, and furthermore, there is considerable controversy among analysts as to which policies are most appropriate.

- G. Edward Schuh presents an overview of the links between U.S. foreign and domestic policies and the realities of the world grain market.
- Michael V. Martin discusses infrastructure constraints to export expansion in the newly industrializing countries.
- Andrew Schmitz and Sherman T. Rice present opposing views on the merits of a grain export cartel.
- Alan J. Webb analyzes long-term grain agreements.
- Harold Bjarnson describes the Canadian export marketing system and provides a Canadian perspective of the grain export problem.

These papers were solicited as a followup to a conference of the International Association of Agricultural Students of the Americas, which the University of Idaho hosted in the summer of 1983. The theme of the conference, in which most of the authors were participants, concentrated on marketing problems facing North American agriculture in international grain markets. In 1983, declines in the export sector had plagued agriculture in the United States for 2 years. This decline is still in progress and is why the editors chose the title "Agricultural Export Issues in the Post Seventies." We fear that it will be sometime before the agricultural export sector in the United States will again witness the expansion experienced in the 1970s, and this enhances the urgency of understanding the issues and alternatives that are available.

The editors' purpose in publishing these papers is not to advocate a particular solution or group of solutions but rather to provide interested parties opportunities to increase their awareness of many issues and proposals suggested by agricultural trade analysts. In the U.S., experts do not shape policy in a vacuum. Instead, policy is formulated in a political process that involves considerable public input. For members of the agricultural community to participate in this process, they need to be informed.

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U.S. Agricultural Policy in an Open World Economy

G. Edward Schuh

An important theme lately is that U.S. agriculture faces severe adjustment problems and that the welfare of farmers will not improve until that adjustment problem is resolved. The need for adjustment came about in part because the U.S. dollar was quite weak in foreign exchange markets during much of the 1970s, inducing additional resources into agriculture, while a strong dollar in the 1980s requires resources be shifted out of agriculture.

Little has been done to address that adjustment problem with the result that the welfare of farmers has been deteriorating. In fact, since 1981 and 1982, agricultural commodity programs have become a serious impediment to agricultural adjustment, with the result that commodity stocks have burgeoned farther above their earlier levels. This led to the PIK program of 1983, a costly return to a bygone era that promised to have given farmers some short term gain in exchange for the potential of considerable longer-term pain.[1] Moreover, it did this without in any way addressing the resource adjustment problem (too much production capacity) that agriculture faces.

The major problem U.S. agriculture faces today is that our commodity programs operate counter to the best interests of both agriculture and the nation. The reason these programs are counter-productive is that they do not take into account the significant changes in the U.S. economy, in the international economy nor in the way the U.S. economy relates to the rest of the world. If we continue with these programs as they are now conceived, we can expect to continue to see excess resources committed to agriculture, program costs that continue at very high levels, and an agriculture that is subject to political decision-making rather than market opportunities.

The changes in the international economy, in the U.S. economy and in how the U.S. economy relates to the international economy are four in number:

1. An increased dependence in trade that has seen the openness of our economy triple from 1965 to 1980;
2. The emergence of a well integrated international capital market that links the economies of the world in ways that are as important as trade;
3. The shift from a system of fixed exchange rates to a system of flexible exchange rates in 1973 and
4. The emergence of a prolonged period of monetary instability starting in about 1968. The combination of numbers 2 and 3 changed the way that monetary policy impacts the general economy, as will be explained in the following section.

[1]See Schu, G. Edward, "The Costs of PIK," Department of Agricultural and Applied Economics, University of Minnesota, St. Paul, May, 1983.

The remainder of the comments are divided into two parts: (1) a discussion of the implications of these changes for agriculture; and (2) an outline of the main elements of a policy perspective for U.S. agriculture that is consistent with the changed economic conditions it faces.

Implications of the Changed International Economy For Agriculture

Increased Elasticity of Demand

An important assumption many analysts have regarding the U.S. agricultural sector is that the elasticity of demand for the output is low. This is assumed to be true both for changes in price of the product and for changes in per capita income. In other words, it is generally presumed that changing the price of an agricultural product will have little effect on the quantity demanded, nor will changes in per capita income.

When exports of U.S. agricultural products were relatively small, these assumptions of low responsiveness (elasticity) of demand to changes in price and income were correct and valid. All the evidence we have is that the domestic price and income elasticity of demand for most agricultural products is quite low, on the order of .1 or .2 in absolute terms. This is because in the absence of trade, there are few close substitutes for agricultural products. Moreover, with per capita income levels as high as they are in the U.S., there is little response to changes in income.

However, the increased dependency of U.S. agriculture on international trade has significantly changed these conditions of demand. This change in the conditions of demand has great significance for U.S. commodity policy. Unfortunately, the significance of these changed conditions of demand is not generally recognized.

With increased dependence on trade, the total demand for U.S. agriculture is a combination of the domestic demand and the foreign demand. My inclination is that the foreign demand is relatively price and income elastic. If trade becomes important, then it is likely that the average elasticity will be greater than it is under the conditions of a closed economy (no international trade).

Why would the elasticity of foreign import demand be relatively high? In part, it is because most importers of agricultural products are only marginal importers. Japan is an important exception. However, most countries import only a small proportion of their total food consumption. That means that these countries have a close substitute for imports readily available. Hence,

when relative prices change, these countries can easily substitute domestic production for imports.

Similarly, individual countries can obtain their import supplies from several sources, as the Soviets have amply demonstrated. Again, this availability of alternative supplies causes the price responsiveness or elasticity of demand for the exports of a particular country to be relatively high.

Finally, while it is noted that many foreign governments attempt to insulate their domestic producers or consumers from variations in world prices, eventually authorities also may have to take into account the impact of higher grain prices on their balance of payments position.

The important point about this issue is that **if the price elasticity of demand for the total output of our product is greater than one, the basis of our price policy significantly changes. Under these circumstances, a decline in our price will actually increase the total revenue to our producers,** not decrease it. That is, a 1 percent decline in the price of our product will increase the quantity sold by more than 1 percent. Hence, total revenue will increase.

This important aspect of our becoming more dependent on international trade has been largely ignored by both policymakers and farm groups. It changes significantly the basis for price policy. Whereas in the past, an increase in price actually increased total farm income, since there was a less than proportional decline in sales; today the reverse is true. Hence, for most commodities that are exported, an increase in price effected through restrictions in domestic supply actually leads to a reduction in total income to agriculture rather than an increase. Unless the government stands ready to acquire the supplies that are not sold when prices rise, farmers actually lose income in the aggregate.

Similar arguments apply with respect to the income elasticity of demand. A larger and larger share of our foreign demand comes from the less-developed countries. For these countries, the income elasticity of demand for agricultural output is relatively high. When this is combined with the domestic component of demand, the average income elasticity of demand becomes significantly higher. Unfortunately, there is little recognition of how our increased dependence on trade has increased the price and income responsiveness of demand for our agricultural output.

Adjustment in the International Economy

Changes in the value of the U.S. dollar in foreign exchange markets bring about important adjustments in the international economy. Failure to recognize these adjustments has caused our domestic commodity programs to be contrary to the best interests of our farmers and the nation as a whole in a way additional to that noted above. This can best be illustrated by referring to the experience of the period 1980 through 1982.

Over that period, the value of the U.S. dollar rose something on the order of 25 percent, depending on how the increase is measured and the exact period chosen as a basis. During that same period, the real value of the loan rate for three of our principal exports — corn, wheat and soybeans — remained approximately constant in terms of our domestic currency. However, in terms of the currencies of countries that import from us, the value of those loan rates increased by approximately the 25 percent that the value of the dollar rose on a trade-weighted basis. Hence, even though there was virtually no change in domestic price as determined by our domestic commodity programs, there was a significant increase in these prices as perceived by the importing countries and other exporting countries.

This rise in price has two important consequences. First, it choked off the quantity demanded of our exports. This is an important reason why the exports of our agricultural products have declined so significantly over the last years — from $43 billion in 1980 to approximately $35 billion in 1983 and an even lower level of exports was expected in 1985. Longmire and Morey[2] of the USDA's Economic Research Service estimate that the rise in the value of the dollar alone in 1981 and 1982 reduced the value of our agricultural exports by $3 billion and volume by 16 million tons, 10 million of which was corn. These numbers indicate the extent to which the foreign demand for our agricultural output is responsive to price. They also indicate the relative role of changes in the value of the dollar in explaining the slump in our exports and the decline in U.S. farm income.

The important point is that the story does not stop there. The rise in prices of these commodities in terms of the currencies of other countries is a strong stimulus to increase output in other countries. This increase in supplies in other parts of the world occurred at the same time that the quantity demanded of our exports declined. This is in addition to the effects of the European Community's use of export subsidies and the lingering effects of the embargo on sales to the Soviet Union. In fact, it may be the most important effect of the three.

The important thing to recognize is that international adjustment should take place with a system of floating exchange rates. When the value of the dollar rises in foreign exchange markets, our share of total trade should decline, other things being equal, and the exports of other countries should increase. But our commodity programs have complicated things by preventing adjustments here at home while reducing our markets abroad.

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[2]Longmire, Jim, and Art Morey, "Exchange Rates, U.S. Agricultural Exports Prices' and U.S. Farm Program Stocks." Economic Research Services, U.S. Department of Agriculture, Washington, DC, November 1982.

It is for this reason that it is so counterproductive for us to berate the Argentines, Canadians and Australians and other exporters because they don't reduce their agricultural output at the same time we do. In fact, we must appear rather foolish to them, for the very price signals we are sending to the international economy are strong incentives for them to increase the output of their export commodities. At the same time, if it were not for our commodity programs, we would be giving even stronger signals to our own producers to reduce their output. That is precisely the way international adjustment should take place.

Current Commodity Programs Counterproductive

Our domestic commodity programs were designed for the most part back in the 1930s when trade was relatively unimportant to U.S. agriculture. These were refined in the immediate post-World War II period and essentially adapted for conditions in which trade was still relatively unimportant and in which the international economy operated with a system of fixed exchange rates.

As trade became more important in the 1970s, the programs underwent significant change with both the 1973 and 1977 legislation to make them more suitable to an open, trading economy. More flexibility in prices was established to enable us to remain competitive over a wider range of conditions, and a reserve program was established, together with a system of deficiency payments, to even out fluctuations in agricultural prices and farm incomes in what was obviously expected to be a more unstable economic environment.

These programs are still counterproductive, however. Target prices are encouraging production at levels that can no longer be absorbed by domestic and foreign markets at prevailing price levels. The price floor established by our loan rates is providing strong incentives for producers in other countries to increase their output. Those same loan rates provide an umbrella for producers in other countries, with the result that they can come in and undersell us while we support the market. Unfortunately, if we were to set out to design a system that would cause us to lose market share, we would be hard pressed to design a better one. Then we lose credibility on the international scene when we lecture others to do something different than the very price signals we are sending out suggest they should be doing.

To summarize, in a world of flexible exchange rates with wide fluctuations in the value of the dollar, our current commodity programs no longer serve us well. In fact, they are demonstrably counterproductive both to farmers and to the nation as a whole. Moreover, they have caused the Treasury costs of the programs to increase at a very rapid rate. Unmarketable supplies are thrust into government-controlled stocks at the very time that deficiency payments remain quite high.

The Budget Deficit and Agriculture

Agriculture did well during the 1970s when the dollar was weak. It has fared poorly in the 1980s when the dollar has been strong. Given that agriculture is an export sector, this was to be expected.

In attempting to understand what has happened to agriculture, it is important to understand what has caused this very great change in the value of the dollar. It is true that other factors affected our export performance both in the 1970s and in the early 1980s. What has not received sufficient attention, however, is the large change in the value of the dollar. Hence, that issue is under focus in this article.

Two important factors have affected the value of the dollar in both periods: our energy policy and our monetary and fiscal policy. The combination of OPEC-induced increases in petroleum prices in the 1970s and our own failure to let those price increases be fully reflected in the domestic economy caused our import bill for petroleum to burgeon significantly. In effect, we were subsidizing the importation of petroleum at the very time the cartel was unilaterally raising prices. The large increase in our petroleum import bill contributed importantly to the weakness of the dollar in the 1970s.

At the same time, inflation was out of control in the domestic economy, and there seemed to be little commitment to do anything about it. This further contributed to a weak dollar — a weak dollar that significantly benefitted agriculture as an export sector.

As we moved into the 1980s, both of these policies changed. The U.S. deregulated the domestic petroleum industry, thereby removing the implicit subsidy on imports, putting more competitive pressure on the OPEC, and eventually contributing to a decline in the price of petroleum. The result has been a significant decline in our petroleum import bill, and this has contributed to the strength of the U.S. dollar in the 1980s.

At the same time, the Federal Reserve Bank has taken significant steps to bring inflation under control while our federal budget deficits have run out of control. The Federal Reserve for all practical purposes stopped monetizing the budget deficits. The result has been high interest rates.

As long as we continue to incur large budget deficits and the Federal Reserve does not monetize the corresponding debt, we are likely to have a strong dollar. In effect, the real interest rate is permitted to rise by a sufficient amount to generate the savings needed to finance the debt. With a well-integrated international capital market, these savings come from domestic sources as well as from abroad. It is the inflow of savings and capital from abroad that has helped push the dollar up.

My point is to emphasize the extent to which the problems of U.S. agriculture are rooted in our domes-

tic monetary and fiscal policies, rather than in the agriculture sector alone.

Monetary Disturbances To Commodity Markets

After two decades of relatively stable prices for agricultural commodities during the 1950s and 1960s, these prices suddenly became very unstable during the 1970s and into the early 1980s. There are many explanations for this increased instability. This discussion focuses on one that generally tends to be neglected — the impact of our unstable monetary policy.

As noted earlier, U.S. monetary policy during the 1950s and 1960s was relatively stable. Moreover, during that period, the nature of our economic system was such that such changes as there were in monetary policy had little effect on agriculture.

Both of these conditions changed in the 1970s. Monetary policy became much more unstable. And the structure of the economy changed so that agriculture suddenly became one of the sectors that bears an important share of the adjustments to changes in monetary policy.

The key factors here are the emergence of a well-integrated international capital market and the shift to a system of flexible exchange rates. Under these conditions, export sectors and sectors that compete with imports bear the burden of adjustment to changes in monetary policy. For example, if the Federal Reserve tries to slow down the economy by slowing down the growth in the monetary aggregates, the result is an increase in interest rates in the domestic economy. This increase in interest rates attracts an inflow of capital (or causes a reduction in the out-flow), which in turn bids up the value of the dollar in foreign exchange markets. The rise in the value of the dollar chokes off our exports, while at the same time causing imports to come in at a lower price in terms of the domestic currency. The result is a dampening down of both the export sectors and the import competing sectors. The Federal Reserve accomplishes what it sets out to do, but the burden of the adjustment is forced on the export and import competing sectors. An important point to note here is that the problems of the automobile industry a few years ago were cut in part from the same fabric as the problems of agriculture.

When the Federal Reserve decides to pursue an easier monetary policy to stimulate the economy, exactly the reverse of the above scenario occurs. Interest rates decline, capital flows out of the country (or the inflow declines), the value of the dollar declines, our exports become more competitive in international markets and imports become expensive. The result is an expansion of the export sectors, including agriculture, and an expansion of the import-competing sectors of the economy. Again, a major share of the burden of adjustment is forced on these sectors of the economy.

The important point is that these changes in the structure of our economy came about precisely at the same time that our monetary policy became a great deal more unstable. Hence, a great deal of the instability of agriculture over the last decade has been because of monetary disturbances, not changes in the weather as is commonly believed. Agriculture, as an export sector, has been victimized by a highly erratic monetary policy at the very time that it became one of the sectors along with domestic housing, autos and others that bore the adjustment to changes in monetary policy.

A Policy Perspective For the Future

A policy for agriculture must take into account the changes in our economy and in the way we relate to the international economy. Given the extent to which our economy has become internationalized, that means that solutions to many of our problems must be sought in the international arena. They will not likely be found in policies designed only with the domestic economy in mind, to the neglect of the international economy.

Commodity Programs

We should recognize that economic development and deregulation of the U.S. economy have reduced much of the need for such commodity programs. We now have well-integrated domestic capital markets, plus commodity markets that are also quite efficient. Farmers can participate in both of these markets in a variety of ways not available to them in the past. Moreover, improvements in communication and transportation have been such that information, stocks and resources can flow reasonably freely. The progressive deregulation of both the commodity and credit markets enable these markets to bear a great deal more of the adjustment to changing demand and supply conditions than they could in the past. Farmers can forward price, contract and make use of credit and capital markets much more extensively than they did in the past. And an efficient capital market is available to enable private speculators to help carry stocks and even out fluctuations in commodity prices.

Here are three more caveats to the suggestion that we take as a goal the elimination of domestic commodity programs as we now know them:

1. The programs do need to be phased out gradually, especially such programs as that for dairy. A period of adjustment, plus positive adjustment policies, are needed to help bring the sector into adjustment.
2. A case can probably be made for a production or income insurance program for small producers, especially those embarking on internal growth. Such producers will probably find it difficult to access credit and capital markets in the same way that larger producers can. Hence, some means should be avail-

able to keep them from being wiped out when natural disasters strike or the market makes a sudden lurch. Such programs should be cost shared, however, along the lines of the present all risk crop insurance program. Moreover, the subsidy should be kept modest so that resources are not induced into areas that would not otherwise be in production, or so as to keep producers in production who would not otherwise be able to survive.

3. One could probably make a case for a modest loan program at relatively low levels. The purpose of such a program should be to circumvent periods of tight credit that might coincide with the planting season or crop marketing. The biological constraints of agriculture are what ultimately give such a program some social value. A period of tight money that coincides with the planting season may not just delay a crop for a period of months, as would occur in the nonfarm sector. It may well cause a loss of production for a year. The same applies to the marketing season, when the inability to borrow at that time may force a crop onto the market, causing prices to decline, only to rise at a later date.

The loan levels for such a program should be kept modest so as to not interfere with trade. The interest rates should be subsidized only in periods of extreme monetary tightness.

Science and Technology Policy

Science and technology policy for U.S. agriculture needs to be seriously rethought. It may now be the key to our remaining competitive in international markets. It may now be an important source of income gains for U.S. farmers.

With increased dependence on trade, producers stand to reap a larger share of the benefits of technical change than they have in the past. As the demand for our agricultural output becomes relatively more elastic, productivity-induced increases in output lead to a relative expansion of sales compared to the decline in price. The producer benefits.

When viewed in this context, farmers should be willing to pay for a larger share of the costs of science and technology. The check-off system now widely used provides a convenient means of assembling the producers' contributions to such programs and channeling them to research institutions. In addition, however, the Federal government now has a greater interest in agricultural research than it had during the 1950s and 1960s. Maintaining a highly productive agriculture is the key to maintaining a strong export performance. And a strong export performance is in the national interest. Hence, in the future we should have a stronger commitment on the part of the Federal government to agricultural science and technology. In fact, such a program should become an important part of our export promotion drive.

Fiscal Policy

The large budget deficits we are now incurring, and that are predicted to continue into the foreseeable future, are doing serious damage to agriculture and are an important cause of current farm problems. These deficits have caused interest rates to be higher than they otherwise would be. This has caused the dollar to be strong, and that in turn has choked off our exports and translated international prices of agricultural commodities into the domestic economy at low levels.

A more balanced budget would cause interest rates to decline. With that decline would come a decline in the value of the dollar and help both our agricultural and automobile industries. In fact, there is probably nothing more important to helping either of these two important sectors of our economy than to get our budget more nearly in balance.

Monetary Policy

An easing of monetary policy would undoubtedly aid agriculture. But that should be done only as the budget is brought into balance, or we will be back on another inflationary spree.

However, at least one aspect of monetary policy could be changed with considerable benefit to agriculture. That is to shift to a more stable policy. The stop-and-go monetary policies of the last 15 years have imposed large monetary shocks on agriculture. A great deal of agriculture's problems would disappear if monetary policy were more stable. It would not have these alternating periods of feast and famine that have characterized these last 15 years. Asset values would not be bid up during periods of easy money, only to be wrenched downward when a policy of monetary tightness followed. Farmers would be able to plan more effectively, and therefore, to make more efficient use of their resources. They would be less likely to come clamoring to Washington for assistance. However, so long as we continue to victimize farmers with erratic monetary policies, we can continue to expect them to seek assistance.

Adjustment Policies

Adjustment policies are important for two reasons. In the short term, there is the need to bring agriculture into adjustment with its current market opportunities. This applies not only to dairy, but to export commodities such as wheat, corn and cotton. If the dollar remains strong, and there is little reason to expect it not to in the short run, resources need to be adjusted out of agriculture if production is to be brought into balance with demand.

The other kind of adjustment is that needed to respond to changing conditions in domestic and international markets over the longer pull. If prices are permitted to flex both in the domestic market and abroad, these kinds of adjustments should come about relatively eas-

ily, unless we should continue to have large monetary disturbances.

In dealing with the short-term adjustment problem, the most efficient solution may be by means of something like the old Soil Bank program. Incentives for participating should be designed to remove from production that land that is subject to greatest wind and water erosion. Such an approach will enable the program to attain both resource adjustment and soil and water conservation objectives.

Market Development

The promotion of exports will be a desirable policy goal into the foreseeable future, both for agriculture and for the economy as a whole. Currently, there are strong pressures to commit additional resources to export subsidies, subsidized export credits and expanded food aid shipments.

Export subsidies and subsidized export credits have similar difficulties. Moreover, serious questions can be raised about their cost effectiveness in a regime of flexible exchange rates. Subsidizing exports will only make the dollar stronger, which will make us still less competitive. An important aspect of the flexible exchange rate system is that it is difficult to dump your domestic problems abroad. Many of our current export promotion strategies do not reflect recognition of that fact.

Earlier remarks mentioned several factors that could help strengthen our export performance: getting a better mix of fiscal and monetary policy and making greater investments in agricultural production technology. Two other actions are desirable. The first is to continue to strengthen the market development activities of the USDA, including their cooperator groups such as the National Wheat Growers Association, American Soybean Producers, the Feed Grains Council, etc. The second is to increase our knowledge of the international economy. As a nation, we have significantly underinvested in understanding how the international economy functions. Consequently, we have only limited knowledge to serve as a basis for developing market development strategies, for understanding how various policies both here and abroad affect our export performance, and for devising appropriate policies and institutions.

Summary Comments

This article sketches out a rather unconventional policy agenda. Domestically, we should move away from commodity programs as quickly as we can deal with the corresponding adjustment problem. At the same time, we need to reduce our budget deficits and work toward a more stable monetary policy so we no longer victimize agriculture with our macro-economic policies.

In summary, except for supply-side effects such as greater investments in science and technology and resource adjustment policies, plus the strengthening of market development programs, we need to shift away from conventional commodity programs and toward improved macro-economic policy and the strengthening of our international institutions. Changes in our economy make these changes of policy imperative. Our commodity programs are demonstrably counterproductive.

About the Author — G. Edward Schuh was professor and head, Department of Agricultural and Applied Economics, University of Minnesota, St. Paul, when this article was written. He is now with the World Bank.

Economic and Infrastructural Constraints to U.S. Agricultural Export Expansion in the Developing Countries

Michael V. Martin

The decade of the 1970s witnessed a significant and precipitous increase in world agricultural trade. Between 1970 and 1981, when the value of U.S. exports peaked, world trade in cereal grains more than doubled from about 110 million metric tons (mmt) to 222.5 mmt (UN-FAO Trade Yearbook, various issues). This trade expansion was fueled largely by the entrance into world markets of certain centrally planned economies and the newly industrializing developing countries (NIDC).

Net cereal imports by centrally planned economies increased nearly 12 fold from 5.2 mmt in 1971 to 61.5 in 1981.[1] The NIDCs increased net cereal imports from 6.6 to 35.7 mmt, or more than five fold.[2] Increased participation in world food markets by the centrally planned economies in Eastern Europe and the Soviet Union represented more a shift in policy than the dynamics of economic factors. Conversely, the market growth in NIDCs resulted principally from increased demand for food (feed), which accompanied increases in population and per capita income.

If world agricultural trade is to resume its growth trajectory in the 1980s, this increase will likely have to come from NIDCs including the Asian centrally planned economies that fit into this same mold.

The Situation

The casual observer is struck by the seemingly paradoxical situation of surplus induced, low grain prices in the U.S. co-existing with abject hunger and despair in other parts of the world. The price and surplus situation in the U.S. (and to a lesser extent in other grain exporting countries) is well recognized. What may occasionally be forgotten is that, "As many as 800 million of the earth's poorest people do not get enough to eat each day, and many more suffer from specific varieties of malnutrition" (President's Commission on World Hunger, Overcoming World Hunger: The Challenge Ahead, June 1980). The explanation is, of course, that while the hungry have a clear and urgent need for food, poverty prevents the articulation of that need as market demand.

Over the next two decades, the opportunity for U.S. commercial agricultural export expansion may well depend on events and initiatives that result in the conversion of need to demand. The potential is, of course, great. The challenge is enormous.

As a very crude estimate of the unfilled need for food, it can be computed that, to raise the daily caloric intake of 800 million people by 800 calories (say from 1,200 to 2,000), more than 70 mmt of wheat (or the equivalent) per year would be needed.[3] In perspective, this represents about 146 percent of U.S. wheat exports or 72 percent of total world wheat trade in 1981-82.

Some, or all, of this need may be met through humanitarian food aid financed by the governments of developed nations. There are many who believe that the wealthy nations have a moral obligation to directly confront hunger, if (or when) other solutions fail. Most preferred to pursue policies aimed at bringing the world's poor into the markets. Serious constraints, however, must be dealt with, regardless of the approach chosen.

Obviously, if the hungry are to become participants in world food markets, the root cause of hunger — poverty — must be overcome. As the President's Commission points out, "the primary cause of world hunger is poverty." According to World Bank statistics, more than 2 billion people (48 percent of the world's population) live in 38 countries with annual per capita incomes of less than $330 (U.S.).[4] Many were, and are, experiencing negative per capita income growth. The majority of these very poor nations, and thus the world's hungry, are in sub-Saharan Africa and parts of the Asian Pacific. Pockets of intense poverty and hunger also exist in Latin America and in the Caribbean. These very low per capita income levels reflect a recent history of large population increases and lethargic economic (income) growth.

Extreme poverty is not only an international problem, it also has intranational dimensions. That is, in many low income developing countries, the income (and wealth) distribution is extremely skewed. While complete data on income distributions are not readily available, there are strong indications that those on the lower rungs of the economic ladder in many countries receive a very small share of the national income. For example, the World Bank reports that in Latin America, the lower 20 percent of the population receive only about 3 percent of the income, while the upper 5 percent receive (or control) about 24 percent of the income. No region-wide income distribution numbers are available for sub-Saharan Africa or South Asia; however, it seems reasonable to assume that conditions are, at best, no better than those in Latin America. The most recent estimate from Zambia indicates that the upper 5 percent of population receive 23 percent of annual income,

[1] U.S.S.R. increased net imports from 5.5 to 28.9 mmt. The PRC increased net imports from 3.2 to 16.4 mmt.

[2] Korea (South), Taiwan, Brazil and Mexico were leaders in this growth.

[3] Assumes that 1 pound of wheat provides about 1,500 calories.

[4] This includes the PRC.

while the lower 20 percent receive about 3.8 percent. In the words of the President's Commission on Hunger, "inequitable distribution of resources, particularly land, is a major cause of poverty."

It has been argued that the economic conditions of the very poor can be best improved through the pursuit of economic development and growth. Much of the evidence seems, however, to contradict this argument. Dandekar and Rath, in their study *Poverty in India* (1971) found:

> "...from the standpoint of the poor, an equitable distribution of gains of development is much more important than a higher rate of overall growth. A process of economic development, without a positive and effective policy to ensure an equitable distribution of gains of development, inevitably benefits the richer classes much more than it does the poorer classes. Indeed, it seems that the rich must grow immensely richer before the poor may secure even the desirable minimum."

It seems then, that if those in greatest need of food are to secure it through market participation, the problem of poverty is a major obstacle. And a serious attack on poverty requires effective efforts to redistribute income (and wealth) both between, and within, nations. On this issue, history is certainly on the side of the pessimist.

Even if the lot of the poor improves, other serious impediments to market participation still exist. These impediments arise as a result of the geography of world hunger. Simply stated, a substantial portion of the world's poor and hungry live in regions, countries or locales that lack systems capable of efficiently delivering large volumes of food (or any other product).

Many, if not most, of the very poor countries suffer from severely underdeveloped infrastructures. As a result, the cost of delivering food and other freight to and within these countries adds significantly to the price consumers (and potential consumers) must pay.

For example, Binkley and Harrer (1981) and Martin and Clement (1982), among others, found that ocean transport rates for shipping U.S. grain to less developed countries were significantly higher than rates to developed countries. It is argued that poorly developed, inefficient ports in low income food deficit countries add substantially to the cost of shipment as ships must forego backhaul traffic and lay up longer in port. The irony is, of course, that those least capable of paying for food imports must pay the highest price.

The large volume, bulk grain export system, developed by U.S. exporters to serve our "traditional" developed country markets, simply does not link up well with the port and infrastructural system in most low income countries. More than 85 percent of the world's ports are incapable of handling vessels of 37,000 deadweight tons or more, a modest size shipment for U.S. exporters. Even where port capacity is not a major constraint, other infrastructure components may contribute to inefficiency. Internal transportation, storage and handling facilities are important components in linking consumers in food deficit countries to surplus producers.

Thus, success in raising nominal incomes of the world's very poor may not ensure that they can convert need into effective demand. Moreover, infrastructural constraints (both physical and institutional) limit the ability to assist many of the needy through humanitarian assistance programs. Loss due to spoilage and/or corrupt diversion of food aid means that the full impact of contributions by the wealthy nations is very rarely felt. And, in disaster situations, minor breakdowns in the food aid delivery/logistics system can lead to chaos.

A Possible Solution

To suggest that a simple solution, or set of solutions, to the world's hunger problem exists would be both silly and naive. But, the need is apparent and urgent. Some measures might be employed that will both serve to ease hunger and expand U.S. agricultural exports. Barring the creation of a "new international economic order," what might be done?

One recommendation worth consideration is a reassessment of the assistance programs of both U.S. and international agencies. Specifically, these agencies might well reorient some portion of their efforts toward the development of infrastructure (both physical and institutional) in Third World countries. The principal focus of most of our past development projects has been on improvement in production systems. While production expansion is certainly important, real development must become broadly based.

Investment in infrastructure holds promise in several respects. First, it can improve efficiency in importing food, lowering delivered prices, thereby increasing the real incomes of the poor even in the absence of nominal income gains and/or income redistribution. Second, it can improve access to both domestic and international markets for Third World producers. Thus, now subsistence (or less than subsistence) farmers may eventually shift toward the production of cash crops to reap gains associated with the exercise of "comparative advantage." Again, this may serve to enhance real incomes through nominal income growth.

Third, construction of physical infrastructure, particularly in Third World countries, is generally labor intensive. Thus, investment in these facilities can provide an employment outlet for the rural underemployed and urban unemployed in these countries. Again, income and purchasing power growth can be stimulated.

Finally, efficient transportation/logistic/institutional infrastructure can serve as a magnet for investment in other employment thus creating labor intense industries. It's no coincidence, for example, that economic development in Southeast Asia has occurred in those countries with modern transportation, communications and port systems (i.e., South Korea, Taiwan).

Summary Comments

The current slump in U.S. agriculture reminds us again that long-term solutions must be found if we are to eliminate the costly short term volatility that has plagued us. We must either work to reignite growth in demand, make basic adjustments in supply or some combination of both.

This paper has, in an admittedly pedestrian way, explored an important potential demand side opportunity. Clearly, there remains a tremendous need for food. The challenge is to convert need into active market demand. Income growth and income redistribution in the poorest of countries is essential. To the extent that U.S. policy can influence such growth and redistribution, it should be our highest priority to do so, if not for self-serving economic reasons, then for moral ones.

Moreover, we should reassess the thrust of our economic development assistance and urge international and other national agencies to do likewise. The potential payoff in focusing a larger portion of our assistance on infrastructure development appears high. Finally, we should encourage U.S. private sector interests to invest in such development individually, or preferably, on a joint venture basis with in-country firms.

Combating world hunger and returning some level of prosperity to U.S. agriculture will require some expansion in world food trade. It is in our national interest that we implement policies that enhance and encourage trade. Short term solutions are frequently necessary. But without a commitment to long-term market development, we will likely continue on a bust-bust cycle.

Modernization of ports, highways, logistics and marketing systems may well serve to both create needed efficiency in world markets and stimulate economic growth in the world's poorest nations. Given the nature of demand for food in these nations, a relatively small increase in real purchasing power, either through nominal income growth or efficiency induced price declines, will likely result in relatively large increases in food consumption. The experience of the past decade certainly supports this contention. Leadership by the U.S. in pursuit of such modernization efforts holds a promise for important payoffs.

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North America's Agricultural Trade — The Grain Cartel Debate

Andrew Schmitz

In the 1970s and 1980s, trade has been recognized to be of critical price importance to U.S. agriculture. Thus, the debate arises over how to deal with the export sector from a policy perspective. After reviewing trade, production stock and price patterns and trade policies in grain export markets, a proposal that the U.S. and other major grain exporters form a grain export cartel is discussed.

The Grain Trade Environment

Over a 30-year period (1950-1980), U.S. agricultural exports grew from roughly 12 percent of the total world agricultural exports to 18 percent. Trade in agricultural products often focuses on wheat, coarse grains and oil crops. U.S. wheat exports in 1981-1982 were 50 percent above those in 1972-1973. Total world exports rose roughly 50 percent. In coarse grains, for the same period, U.S. exports rose roughly 75 percent. (They doubled if the crop year 1980-81 was used rather than 1981-82.) World trade in feed grains increased much faster than for wheat — roughly 70 percent. For soybean and meal, U.S. exports more than doubled. However, Brazil's exports more than tripled. Exports, worldwide, rose by more than 150 percent. Total world trade in wheat, coarse grains and soybeans rose from 145.5 to 253.0 million metric tons (mmt) (roughly a 75 percent rise) while U.S. exports of these crops increased from 83.1 to 143.7 mmt (also roughly 75 percent). In summary, the U.S. exports of grains have expanded as fast as has world trade. However, the largest percentage increase in U.S. exports has been in soybean and meal followed by coarse grains and wheat in that order.

The growth in U.S. exports was also accompanied by a vast expansion in acreage. In 1972-73, U.S. wheat acreage was 47.6 million, but by 1981-82, acreage had expanded to 80.9 million. Accompanying this acreage increase was a large expansion in output. For example, in wheat, from 1968-69 to 1981-82, output increased in Canada by 38.5 percent, and the U.S. increase was 77.2 percent. For the same period, Canada's output of feed grains increased 71.3 percent, while the U.S. output expanded 60.3 percent.

Domestic consumption of U.S. grains grew until 1970-71 and then fell sharply in 1973-74 but increased again in 1975-76 to 1982-83. However, domestic consumption in the early 1980s was no higher than the peak period of the 1970s — 1971-72. However, grain production increased from roughly 180 mmt in 1970-71 to 330 mmt in 1982-83. In essence, domestic consumption did not increase significantly during the 1970s and early 1980s, while production almost doubled. This increase in production found its way to the export market along with a build up of domestic stocks. It is clear that the increase in production was at least in part because of the growth in import demand for U.S. grains. As the gap between production and domestic consumption widened, the U.S. agricultural economy became more and more an "open economy."

In terms of the total of soybeans, coarse grains and wheat, the U.S. has well over 50 percent of the world export share. The U.S. market share peaked in the 1979-80 crop year with the wheat market share reaching highs in 1973-74 and 1981-82. In the 1980s, the U.S. market share of grain exports is declining relative to the growth it experienced in parts of the 1970s.

Declines in market shares can be caused by many factors including production shortfalls. However, for the U.S., this was not the case. For example, in wheat, U.S. production from 1980-81 to 1981-82 rose 16.6 percent — the highest production increase of any major exporter (e.g., Canada had a 5.4 percent increase in production, and Australia had a 3.6 percent increase). The decline in market share for the U.S. was instead reflected in a build up of stocks relative to other trading nations. The build up of world stocks came about largely from the U.S. build up of stocks. Stated differently, world stocks increased roughly by about the same amount as did U.S. stocks. In other words, the build up of world stocks was not shared by other grain producers. Their stock levels either remained the same or declined.

Some have argued that the decline in market shares for the U.S. has been partly caused by U.S. grain embargoes. In talking about U.S. trade in the 1970s, Robbin Johnson of Cargill, Inc. notes:

> "World demand for soybean products — meal and oil — continued to expand at a healthy rate throughout the decade. Unfortunately, the ill-conceived 1973 soybean embargo damaged America's reputation as a reliable supplier and provided an opportunity for Brazilian — and later Argentine — soybean production and exports to grow. The 1980 Soviet grain embargo had an effect on U.S. feed grain exports similar to the 1973 embargo's effect on soybean shipments. The U.S. share of world coarse grain trade fell back to about 60 percent as other exporters, especially Argentina and Canada, seized this opportunity" (Cargill, Inc. 1983).

As U.S. production expanded and a larger percentage of this expanded production was exported, forces external to the U.S. became important. The larger the percentage of production exported, the greater is the impact of the international trading community on the domestic economy.

In this context, there are many external factors that shape the structural dimensions of U.S. agriculture. Immediately apparent are protectionist and explicit buying policies by importers and movements in exchange rates.

Importers, Protectionist and Buying Policies

Major importers such as Japan and the European Economic Community (EEC) protect their producers by means of quotas and tariffs. These tariffs are adjusted so as to maintain stability internally. Thus, in periods of abundant supplies abroad, the tariff levels are high relative to what they are when supplies are tight. Adjusting tariffs in response to worldwide production conditions essentially forces the exporters to continually adjust to world conditions. Importers experience price stability while exporters experience price instability — part of the latter is generated by importer protectionist policies. Along with this generation of instability from importers to exporters, Carter and Schmitz (1979) have shown that importers achieve economic gains from their tariff policies. They tested the "optimum tariff" hypothesis and found that importers gain since the tariff revenue they collect, plus the producer gain from protection is greater than the loss to consumers from higher prices.

Except for the U.S., most trading nations have state organizations that trade in grain. Schmitz et al. (1981) argued in *Grain Export Cartels* that because of this and the multiple sources of supply from which importers can buy, countries such as the U.S.S.R. and China can "manufacture" price instability. That is, they can create false price signals for producers by driving the price up which then turns on the production tap in the U.S. and other countries. Then when production is high, they curtail purchases.[1] This type of buying behavior essentially creates a misallocation of resources for exporters since producers respond to false or wrong price signals. Only a few years ago, we were told to pursue all-out production since markets were unlimited. What happened to these markets?

It is clear that the U.S. alone holds a large percentage of the world grain stocks. Canada also holds large stocks of wheat. Why should the exporters hold these stocks? It is a costly business at today's interest costs. Theory suggests that if exporters had market power, most of the stockholding would be done by major importers such as Japan. Also from a food security standpoint, importers would hold more stocks than they currently are if in fact they were convinced that exporters had bargaining power. Once a nation stockpiles grain, as an exporter, it loses its marketing power.

[1]Importers can also quickly shift their buying patterns which creates uncertainty for exporters. In recent years, the Chinese and the U.S.S.R. have shifted more to Canada and Australia for supplies than previously. This shift has been discussed by Bain (1981).

The Cost of Production Question

With the rapid expansion of U.S. agricultural export trade, the question arises as to the cost of export expansion. For example, if it costs the U.S. more to produce the product than what it can be sold for in the export market, why should the U.S. be proud of its trade expansion? The prices for wheat received by farmers are well below production costs. In a study by Doering et al. (1982), they calculated the "full cost" of U.S. farm exports. The private cost for corn was roughly $2.40 per bushel, and for wheat, it was $3.95 per bushel. However, once social costs were added (e.g., research, soil erosion, etc.), the cost of producing corn ranged from $3.65 to $4.05 per bushel, and for wheat it ranged from $5.17 to $5.96 per bushel. However, note that the land was valued at acquisition cost (i.e. cash rental rates) which is far below the actual purchase price. If the actual purchase price was used, production costs would be much higher than the above amounts. In view of these numbers, it is clear that the "full cost" of farm exports was well above the value of export sales during the period of comparison.

Also, the question arises as to why do producers in importing countries generally cover their cost of production on a continuing basis from actual grain sales whereas export producers experience much more price uncertainty, and at times prices do not cover production costs?

One often reads that centrally planned economies such as the Soviet Union have relatively low yields because of lack of incentives because of their state-owned farms. I would not quarrel with this proposition except to note that perhaps there is more to this debate than the social control issue. For example, if costs of production in the Soviet Union are similar to those in North America, why shouldn't they import part of their needs since they can't produce it as cheaply as what they can import it for? As stated earlier, because of their shrewd buying practices, they can often buy grain from abroad at a price far below their costs of production. In addition, to argue, as is often done, that the Soviet Union needs credit to buy grain when they have the financing to explore outer space is like trying to defend a statement that the U.S. has never been at war.

The Gains from Trade

We have discussed the extent to which U.S. exports expanded and the export market share the U.S. has of major agricultural products. But in economic terms, one cannot look at quantity of exports alone as a good indicator of the economic benefit from trade. In recent years, exports have been sold below cost of production which has to reduce the benefits from trade.

We have stressed in our export cartel book (Schmitz et al. 1981) that substantial barriers to trade exist, and if these were removed, U.S. grain prices would easily rise by 40 percent. The U.S. is currently not deriv-

ing the "free trade" gains from trade because of trade barriers. To make matters worse, we respond to these barriers by using export subsidies, price supports, input subsidies and the like. It can be easily shown that, because of the existing trade barriers and the method in which the U.S. responds to these barriers, the economic gains from trade can be small or zero even though the exports in quanity terms are large.

In a separate paper on the gains from trade question, Chambers, Schmitz and Sigurdson (1983) conclude that: "Even though there may be a substantial volume of trade in a particular commodity, the economic gains to a nation can be small or non-existent." This is especially true when in response to trade barriers, exporters attempt to increase production through subsidies. Such a policy is "passive" in that it does not attempt to have importers remove their trade barriers. An "active" or "retaliatory" policy would include export taxes or minimum purchase price agreements. It is argued here that, because of rent seeking through lobbying by the various participants, a passive policy is likely to be the outcome of the policy process.

For many, it would be difficult to accept the argument that the U.S. as a whole would be just as well off by not exporting wheat given the current U.S. subsidies and existing trade barriers. We appreciate that perhaps the argument made above is too strong. However, we do so in order to point out an important economic phenomenon — a nation's trade volume may be large but the economic gains from such trade, in the presence of distortions, may be negligible.

Summary Comments

In our cartel book, we contend that grain exporters, of which the U.S. is the largest, are price takers, and that major importers set prices and dictate the terms of trade:

1. This is partly facilitated by state trading by major importers. The EEC and Japan, as already mentioned, generate instability for exporters and achieve an economic gain by optimal tariff policies in the context of this instability.
2. Most of the world stocks are held by the U.S. In a world of uncertainty, importers would hold part of these stocks if the U.S. was a price setter rather than a price taker.
3. Passive policies of price supports, input subsidies and the like give importers buying power.
4. Importers create false price signals for exporters.

Many other reasons and observations support the hypothesis that exporters are price takers. If this is the case, what can we do about it? It seems somewhat paradoxical to be selling goods abroad below the cost of production when the U.S. possesses such large market shares. Our current policies are passive in that they do not get at the basic problem which is that the U.S. cannot achieve large gains from trade unless importers give up some of their price setting power. I would like to give the essence of our cartel proposal that is a retaliatory or "active policy" unlike the present passive policies. It is only through such a policy that the U.S. can hope to achieve its true gains from trade — not producer gains that are heavily subsidized by the U.S. government.

My premise is that the U.S. is currently pursuing a passive economic agricultural policy that, coupled with the high tariff and nontariff barriers, yields little economic gain from U.S. agricultural trade. Why not try an active policy that falls within the realm of a cartel (i.e., export cooperation strategy)? Because of the large market share the U.S. alone has in coarse grains and the large combined share the U.S., Canada and Australia has in wheat, why not raise prices instead of lowering them? This is especially an interesting question for feed grains since the growth in export demand is by high income countries. This is not true for wheat since the greatest growth is by the less developed countries. (For wheat, we propose a two price system. The idea of charging a lower price to poor countries is not new in view of P.L. 480 shipments.) One doesn't need a U.S. marketing board to achieve this. All that is needed is an implicit export tax that in essence would price grain somewhat closer to the EEC threshold level. Such a price would essentially eliminate the tariff revenue the EEC now collects, which would create problems for the EEC since this revenue is needed to run the EEC agricultural policy. In addition, it is well known that the import demand by the Japanese is price inelastic. Also, there is no a priori reason why countries such as the Soviet Union and China would drastically increase production in view of production costs.

It is my feeling that by setting such a price below which importers cannot buy, the major grain exporters could both increase price and quantity. This is because at the moment the grain economy is a long way from free trade. By imposing the price floor, importers would have to remove some of their trade barriers. It is this removal of barriers that would result in both a price rise and an increase in output by exporters. Also, part of the instability would be born by importers — not only by exporters as is currently the case. Internal stability of grain prices would also contribute to a much needed expansion in the livestock industry in North America. This sector has been contracting in the past decade. As this sector continues to contract, the U.S. and Canada have to rely more and more on the export market for their grain sales — a situation that increases instability and uncertainty.

The above suggestion is clearly not consistent with the current administration's thinking on trade matters. As already mentioned, the U.S. is pursuing passive and not active policies. As one farmer stated at a recent

meeting in Houston, Texas (1983 National Association of Wheat Growers), why not try the cartel proposal — surely things can't get any worse than they already are!

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A Grain Cartel: A Bad Idea That Will Not Work

Sherman T. Rice

Nobel Laureate, George Stigler, has a book entitled *The Economist as Preacher*. In this paper, I may appear to fill that role. In the tradition with which I am familiar, most preachers base their sermons on one or more texts. I should like to propose two. First, let me quote from Proverbs 11:26:

> "He that withholdeth the corn the people shall curse him: but blessing shall be upon the head of him that selleth it."

The second is not from the Bible but from Aesop's Fables.

> "The Mice summoned a council to decide how they might best devise means for obtaining notices of the approach of their great enemy, the Cat. Among the many plans devised, the one that found most favor was the proposal to tie a bell to the neck of the Cat, that the Mice being warned by the sound of the tinkling might run away and hide themselves in their holes at his approach. But when the Mice further debated who among them should thus 'bell the Cat,' there was not one found to do it."

Let me carry the idea of preacher one more step. A laconic Vermont farmer returned from church. His sick wife asked on what the preacher had preached. "Sin," was the reply. "And what did he say about it," she asked. "He was agin' it."

Similarly, concerning any idea such as a grain export cartel, I'm "agin' it." I oppose any attempt to establish a grain export cartel for many reasons. But the most important are:

1. On humanitarian grounds.
2. The near impossibility of devising a workable arrangement (Who will bell the Cat?).
3. Failure of past efforts to operate an international grains arrangement that is a quasi-cartel.

Many of my remarks will be in response to the book, *Grain Export Cartels* by Schmitz et al. (1981). My objection to a grain export cartel on humanitarian grounds is quite simple. The book cited states that "If products are freely traded prior to the cartel's formation and if the cartel is to be effective, output has to be restricted and quota rules among exporters have to be established." The whole premise is to produce and market less grain under a cartel than in the absence of the cartel. That means consumers in some or all importing countries would either get less cereal-based food or would have to substitute some other food item. Instead of Marie Antoinette's "Let them eat cake," the grain cartel proponents might say "Let them eat meat." But we know that the result would be less food in general and probably not more meat but more of some inferior food such as manioc or turnips.

How would a proposal for the world — primarily several prosperous developed countries — to deliberately reduce world grain production be received? What would be the impact on world opinion in such fora as the United Nations General Assembly, CARE, UNICEF and various church organizations? "He that withholdeth the corn the people shall curse him . . .

Now let us turn to some of the many difficulties of devising a workable grain export cartel. One of the first issues that would have to be addressed is what grains would be included. Would it include rice, wheat, corn, sorghum, barley, oats and rye? Would it include buckwheat, millet, triticale or mixed grains? Would it include processed items such as wheat flour, corn gluten feed, pollards or compound feeds?

Unless all grains and their products such as flour would be included, there would be a tendency to shift land from the controlled crops to noncontrolled crops. And there would be a tendency to reduce usage of the controlled items and increase usage of the noncontrolled items. Increased production of noncontrolled items would seek markets, both domestic and export.

Another item which would have to be considered is pricing. Would the cartel allocate market shares for each grain for each exporting country and let each sell at whatever the grain would fetch, or would there be an attempt to set minimum prices for each grain? Setting prices administratively instead of by open competitive markets is a complicated and tricky operation. How does one decide on the price of rice relative to wheat; wheat relative to corn; or U.S. spring wheat relative to U.S. western white wheat? And how does one set the price of U.S. western white wheat relative to the comparable class of Australian wheat? If the price of U.S. western white and Australian wheat were set to reflect parity cost and freight to Japan with one ocean freight rate, how does one adjust if freight rates change? And how does one achieve parity cost and freight to Egypt or Saudi Arabia?

If there is an intent to allocate market shares among various exporting countries, how can this be done equitably? Under our present exporting system, it is no coincidence that most Australian wheat moves to Asia and African markets where it enjoys a freight advantage to the U.S. Australia ships virtually no wheat to western Europe in competition with the U.S. Similarly, Argentine maize typically competes freely with U.S. corn in Mediterranean markets but not in the Rotterdam or Hamburg markets. And how does one allocate markets done on a strict cash basis, short term credit or on concessional terms? Is a 100,000 ton sale of wheat under PL-480 equivalent to a 1,000,000 ton sale of wheat for cash?

Another question is what does each cartel member do with the productive resources withheld from grain production? Experience in the U.S. suggests that farmers will not withdraw productive land from the production of a given crop unless: (1) they are well compensated for doing so or (2) they are permitted to use the land for another crop. Diversion of productive land to non-use is an expensive proposition. Witness the 1983 programs in the U.S. History indicates that U.S. farmers have tolerated most acreage allotment programs only if permitted to use nonallotment acres for other crops. To a large degree, the expansion in U.S. soybean production is a result of acreage allotment programs for cotton, corn and wheat.

If we reduced U.S. acreage planted to cereal grains, would we produce more cotton, soybeans, sunflowers, alfalfa, etc.? The problem of land diversion would be even more difficult outside the U.S. where there has been little or no experience with such schemes. How would they work in Argentina, Thailand or even Canada and Australia?

An implicit assumption by those proposing a grain export cartel is that it would be primarily for the benefit of exporting countries. If the members of a cartel are successful in establishing prices at a higher level than would exist in the absence of a cartel, it follows that this would work to the detriment of importing countries. This would be true whether the prices would be passed on directly to consumers or if it would reduce the import taxes collected by the importing countries. The import tax would be reduced whether collected as an ad valorem duty, a variable levy as in the European Economic Community or through a government buying monopoly such as Japan's food agency, which is the sole importer of wheat and resells it to users at a profit.

The proponents of a grain export cartel are vague in their analysis of likely response by grain importing countries. And this is one of the major flaws in the theory. Few grain importing countries are totally dependent on imports. The major importers such as the U.S.S.R., China and eastern Europe import a relatively small percentage of their total usage. The European Economic Community is a net exporter of cereals though a major importer of strong wheats and corn. Even India has become largely self-sufficient in wheat and is normally an exporter of rice. A fact many agricultural economists ignore is that grain production is becoming decreasingly dependent on land and labor and increasingly dependent on capital inputs such as irrigation, fertilizer and pesticides. Japan, a major importer of total cereal grains, nevertheless produces a surplus of rice. In two decades, India has tripled wheat production while only doubling area seeded to wheat. The United Kingdom, once the world's largest importer of cereal grain, is now a net exporter. Even Saudi Arabia will produce a substantial quantity of wheat albeit at prices far above competitive world values.

The point is that if a grain export cartel is successful in restricting supplies and increasing prices, many importing countries will take offsetting action. Many will choose to devote more capital resources to increase their domestic grain production.

Surely, OPEC gives us an example of the limitations of a cartel. When prices of any good, even one for which there is an extremely inelastic demand, is raised sharply by a cartel, there will be at least three responses. First, it will encourage conservation or decreased usage of that good. Second, it will encourage importing countries to increase domestic production of that good if possible. Third, it will encourage use of substitutes. Some OPEC members underestimated the potential of importing countries to utilize substitutes. They forgot they were not exporting petroleum but energy. They encouraged a major shift to alternative energy sources, primarily coal.

I believe many proponents of a grain export cartel have underestimated the ability of importing countries to increase domestic usage and to use substitutes. The experience of the European Economic Community provides an interesting example. Almost 60 percent of the wheat plus coarse grains used in the EEC is for livestock feed. Over the past decade, both feed usage and total usage have shown little change. Feed usage over the past decade has averaged about 70 million tons per year. But use of "derivatives" — primarily tapioca, corn gluten feed, pollards, citrus and beet pulp, alfalfa meal and molasses — is over 16 million tons and growing.

Japan's imports of feed grain substitutes are small relative to total feed grain imports. But I am convinced it could greatly increase its use of alfalfa cubes, tapioca and other such items given the proper price incentive.

An institution similar to an export cartel is an international commodity agreement. The history of such agreements provides little encouragement to those who advocate them. If organized primarily by exporting countries, they tend to work in a moderate seller's market but breakdown in a buyer's market. Few persist as envisioned in periods of either extreme shortage or surplus.

The book on grain export cartels refers to the 1967 International Grains Agreement in Chapter 1. It points out that the agreement attempted to raise wheat prices but broke down in 1968 under the pressure of surpluses. The authors do not refer to any of the literature on international commodity agreements. This is regrettable in view of the ample and commendable research on the subject. That done at the Food Research Institute by the late Helen Farnsworth is a prime example.

Time limitations prohibit a detailed examination of past, unsuccessful, international commodity agreements. But let me make a few comments on the 1967 International Grains Arrangement. The 1967 arrangement was conceived in the mid-1960s during a perceived worldwide grain shortage. The Indian subcontinent in particular had poor crops and massive imports. World grain

stocks, especially in the U.S., had been reduced to relatively low levels. But the arrangement was implemented in a period of worldwide grain surpluses. There is considerable doubt whether the arrangement, a treaty, would have been approved by the U.S. Senate had President Johnson not applied massive political pressure. It was the price he paid to the Australians for their participation in Vietnam.

Recently, I discovered a speech given by our head wheat trader in early 1968. Let me quote a few lines:

> "What are the problems of the IGA from the U.S. viewpoint? The first and most obvious is that the minimum price is too high . . . Perhaps the best **prima facie** evidence that the IGA minimum is too high is that nearly all major grades of wheat on the international market are trading at the fringes of the minimum. I say on the fringes because every subterfuge is being used to cut prices to or below the minimum.
>
> "From the very day IGA was implemented, we have been forced to impose an export certificate, or more appropriate a tax, to raise the U.S. price of most wheat classes to agreed world levels. During September 1967, this tax reached 48 cents per bushel for soft red winter wheat and 27 cents per bushel for hard ordinary winter wheat. By taxing the exports of United States wheat to higher world prices, we are indirectly subsidising our competitors, the producer in the five other major IGA exporter countries. We are taxing the efficiency, the technology and know-how of United States agriculture through a high world price that gives incentive to increased production in all other countries whether importer or exporter.
>
> "By agreeing to higher world prices, we simply raised a higher umbrella over all producing areas and invited more competitors to the demand arena. It is difficult to understand the approach of higher prices of IGA as related to humanitarian concept of feed the world. I am sure Madison Avenue would have difficulty selling the slogan 'Eat less — pay more,' even in our country let alone the developing countries."

The IGA, of course, was soon afterwards ignored by all members. There was no attempt to rewrite a similar agreement when it expired in 1971. On reflection, however, it would have been interesting to see how many exporting countries would have observed maximum prices following the massive Soviet grain purchases in 1972 and later.

I have explained briefly my opposition to a grain export cartel for three reasons:

1. On humanitarian grounds,
2. Difficulty, if not impossibility, in developing a workable program and
3. History of the failure of international commodity agreements.

Those who engage in theoretical exercises such as grain export cartels bring to mind a comment by Proust: "Any mental activity is easy if it need not take reality into account." An export cartel is as fascinating a solution to our grain problems as the Mice's solution of belling the Cat. But who will bell the Cat?

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The Effectiveness of Long-Term Grain Agreements as an Export Strategy

Alan J. Webb

The variability of world prices and growing concern about the availability of grain supplies on the world market in the 1970s resulted in a more frequent use of so-called bilateral agreements. Although these agreements usually do not carry the weight of formal treaties, they guarantee supplies to importing countries and, more important, they are perceived as assuring exporters markets for their grain.

The sections that follow describe, in general, how bilateral agreements work and when and how they affect world trade. It is argued that the usefulness of bilateral trade agreements as a grain export strategy for the United States is limited to reducing short-term price fluctuations caused by the variability of imports of a few, large, centrally planned economies. Subsequent sections then discuss in retrospect the 1975 U.S.-U.S.S.R. long-term grains agreement and show that greater grain price stability was, in part, a result of the agreement even though there is no clear evidence that the agreement, by itself, had a significant effect on Soviet grain trade.

General Characteristics Of Bilateral Agreements

Four elements need to be specified in the terms of a bilateral commodity agreement: duration, quantity, price and degree to which the parties are bound by the agreement. The first two elements, duration and quantity, are explicitly spelled out in the formal agreement. Agreements currently average about 3 years in duration with a range from 1 to 5 years. Countries which are concerned about guaranteeing long-term supplies or markets will favor longer term arrangements. Most bilateral agreements specify a minimum quantity to be traded, but they are flexible, allowing an importer to purchase, for example, 6 to 8 million metric tons a year.

Specification of a price is generally determined at the time of the actual sale and is not usually specified in the agreement itself. However, the problem of inconvertible currencies has led centrally planned and many developing countries to negotiate bilateral barter arrangements for many of their mutual commercial transactions. A price is implied in these barter agreements since the quantity of one commodity is specified in terms of another.[1]

The degree to which countries are bound by the terms of an agreement varies with the type of agreement. Because the grain of most countries is traded by government or quasi-government agencies, agreements carry government commitments to complete the transactions. The U.S. government, in contrast, is not directly involved in the delivery of grain to foreign markets. Most U.S. government bilateral agreements are "entitlements" that guarantee an importer access to U.S. grain markets as well as priority in obtaining the quantity specified in the agreements. Although there is no supply guarantee, the U.S. government is expected to do all that is reasonable within its power to make the agreed quantity available.

Finally, there is the issue of to what extent governments will honor their commitments. This is a political issue beyond this author's scope of expertise, but when terms in such agreements are not honored, as in the recent Sino-American agreement, they obviously have limited positive value.

Bilateral Agreements' Effect on Trade

Bilateral agreements do not automatically affect the world market price or the quantities purchased by importers. An importer normally only commits itself to buy a portion of its expected needs while acquiring the remainder of its needs on the world market. Whether this earmarking a portion of trade is likely to have an impact on long-term trade and prices depends upon a number of considerations. There are two cases in which bilateral agreements can affect an individual importing country's trade:

1. **External Factors** — Supplies on the world market may become so short and prices so high that the demand for imports within the importing country falls below its import commitment. Therefore, the importer would reduce import purchases to less than its trade commitment if the agreement did not require a minimum level of purchases.
2. **Internal Factors** — An abundant harvest within the importing country could have the same effect reducing its import needs below the minimum level the importer is committed to purchase under its agreement.[2]

[1]Outright barter has not generally been tied into the major bilateral agreements involving grain trade between major exporters and importers, but this is still a possible feature.

[2]The exporter situation is analogous except that, by constraining exporter trade to a minimum level, trade agreements will tend to foster lower world prices. Again, depending on the world market situation, this can either mitigate or exacerbate world price movements. This paper concentrates on the import side since that is more relevant to the topic of export strategies. The export side cannot be ignored, however, since the use of trade agreements as an export strategy can be a major impediment to an exporter's grain marketing flexibility.

The effect of a bilateral agreement in both cases is to maintain trade at a minimum level. This results in higher world prices because of exports in time of tight supplies and potentially lower domestic prices in the importing country because of importing when domestic supplies are already more than adequate. In the first case, the agreement lowers the degree of transmission of world market price changes onto the domestic market. In the second, it works in reverse, i.e., it prevents transmission of changes in domestic market conditions onto the world market.

How can this information be used to structure bilateral agreements of benefit to the United States? The world grain market is closely linked to the U.S. market. Any measure that either increases the amount of world market variability which is absorbed by other countries or that reduces the level of variability transmitted from individual countries onto the world market will tend to reduce grain price variations in the world market and in the U.S. There are certain circumstances in which bilateral agreements might be used to induce particular importing countries to internalize a greater share of the variations in their own domestic supplies and thereby reduce the amount of variation they transmit to the world market and, by extension to the U.S. market.

Circumstances in which bilateral agreements might be used in this way apply to countries with highly variable import requirements. Bilateral agreements with these importers could force them to become overcommitted in years of abundant harvests and thereby induce them to hold more stocks and reduce the variability of their imports. However, an examination of the policy options open to an importer faced with an overcommitment highlights the narrow scope for the use of trade agreements as a policy tool.

Policy Options of an Overcommitted Importer

The effectiveness of long-term agreements as an export strategy depends in large measure on whether, and under what conditions, the terms can be enforced. An importing country faced with a trade agreement that commits it to import more in a given year than it would in the absence of the agreement faces three broad policy options:

1. Abide strictly by the terms of its international commitments and adjust its domestic market to compensate for the extra quantity it must import to comply with the agreements;
2. Violate the intent (but not the letter of the agreement) by transshipping the amount it does not need and does not wish to store or
3. Renege on one or more of its trade commitments as the Chinese did in 1983 and 1984.[3]

For market economies with a direct link between domestic and world markets, arbitrage will prevent a wide deviation in the margin between domestic and world prices. Therefore, the government will have to intervene to adjust its holdings of stocks (if it has any) to meet its bilateral commitments. This action may be sufficient for a small overcommitment, but for larger divergences between needs and commitments, it may be necessary to transship the excess or renege on the agreement.

The action taken will also depend on the structure of the grain marketing system and whether the government can enforce compliance to a long-term agreement. Countries with grain boards (Argentina, Australia, Canada, South Africa) or food import agencies (Japan, Taiwan, Mexico) can enforce long-term agreements and pass any costs associated with a divergence between actual import needs and commitments along to producer members, consumers or taxpayers. The legal responsibilities are less clearly defined in countries such as the U.S. where government agreements must be carried out by independent private traders. Independent trading companies, for example, may have little incentive to abide by an agreement, particularly if transshipments will involve substantial outlays on their part. This, no doubt, helps account for the apprehension with which many U.S. grain trading firms have viewed the proliferation of trade agreements signed by the U.S. in the late 1970s.

Centrally Planned Economies: The Soviet Case

Centrally planned economies present a special case in that they operate under a different set of constraints from most market economies. Administered internal prices are not linked by automatic market forces with the world market and reflect only broadly existing domestic market availabilities. The participation of these countries in world agricultural trade may be price inelastic and often a function of policy decisions (e.g., imports may depend on planning targets for the level of mix of livestock feeding). If one argues as many analysts do that centrally planned economies are unlikely to respond to price fluctuations in the world market, a trade agreement may have little effect on how centrally planned economies adjust to changes in world market conditions.

A bilateral agreement, however, can affect how centrally planned countries adjust to their own domestic market changes. This will affect the amount of domestic market variability transmitted to the world market. A large bilateral trade agreement with a large, centrally planned trader would tend to stabilize world prices if:

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[3]The Chinese argue that the textile dispute justified their refusal to buy from the U.S., but, in any case, these were years in which abundant domestic and world grain supplies may well have positioned the Chinese where they would have had to purchase more from the U.S. than if the agreement had not been signed.

1. Trade agreements prevent domestic fluctuations in availabilities from being fully translated into changes in transactions on world markets.
2. The size of the agreement is large enough to preclude the use of transshipments as a means of evading the intent of the contract since alternative markets or sources would be more difficult to arrange for large quantities.
3. The agreement itself has the effect of ensuring that centrally planned decision-makers themselves would generally adhere to the set of policy objectives that initially gave rise to the agreement.

The 1976-1981 U.S.-U.S.S.R. LTA and its impact on the world grain market have received more interest than any other bilateral agreement. The agreement was capable of meeting all three of the functions enumerated above and, therefore, by itself, could have been instrumental in bringing a degree of stability back to a nervous and volatile grain market.

The 1975 signing of the U.S.-U.S.S.R. LTA came in response to a series of events and circumstances that had made the early 1970s one of the most disruptive periods for world grain trade in recent history. The Soviet Union made a major policy change when it decided to maintain animal inventories rather than reduce livestock numbers to adjust to fluctuating domestic grain production as had been done in the past. This meant that the Soviet Union would cover domestic grain production shortfalls with purchases on the world market. The Soviet Union had, in the past, been a net exporter of grains. Within a couple of years, after the policy shift, the U.S.S.R. not only became a large net importer, but also a significant disturbance factor since variations in Soviet grain production were now transmitted to the world market rather than being absorbed by adjustments in the Soviet livestock sector.

The Soviet Union had also made large purchases of grain between 1963 and 1966 without causing major disruptions in the market. Conditions, however, had changed substantially in succeeding years. The formulation of the Common Agricultural Policy of the European Economic Community as well as changes in policies in other countries which severed the link between world and domestic markets reduced the price responsiveness of the world market. In addition, oil price increases enhanced import demand in the OPEC countries as they obtained a larger supply of dollars. This combined with a reduction in grain stocks — induced by production controls in Canada, Australia and the United States in the late 1960s — reduced the ability of the market to handle large Soviet imports. In the United States, export subsidies on wheat and an inadequate export reporting procedure delayed access to information that would have permitted U.S. traders to begin an early adjustment to the Soviet purchase.

Three changes in U.S. policy were made to facilitate transactions with the Soviets:

1. In the summer of 1972, the export subsidy guarantee was terminated.
2. An export reporting procedure was established to provide weekly reports of export bookings so that market conditions could be more closely monitored.
3. The U.S. and U.S.S.R. entered into a 5-year long-term grain agreement (LTA) in October 1975.

The agreement, announced in September 1975, specified that the U.S.S.R. would purchase in each 12 month period beginning Oct. 1, 1976, 6 million metric tons (mmt) of wheat and corn in approximately equal proportions. An additional 2 mmt each year could be purchased without consultation unless the U.S. government determined that the U.S. has a supply of less than 225 mmt.[4] The U.S. could authorize sale of larger amounts, and the U.S.S.R. could request the purchase of more wheat and corn. The parties agreed to hold consultations at 6-month intervals that would include periodic inspections of Soviet crop conditions by U.S. observers and the exchange of other information about Soviet grain needs.

The U.S. had three major objectives in signing the agreement:

1. It wanted to stabilize the flow of grain from the U.S. to the U.S.S.R. It was hoped that the minimum purchase requirement would induce the U.S.S.R. to carry larger reserve stocks of grain.
2. The U.S. sought to make U.S.S.R. purchases more predictable even if Soviet import stability could not be attained. Consultations and periodic inspections of the Soviet grain crop during the growing season were intended to reduce some of the price fluctuations generated by uncertainty and misinformation.
3. The U.S. wanted to secure a market for U.S. wheat as well as coarse grains by requiring that the U.S.S.R. purchase at least 3 mmt of wheat. Without this requirement, the U.S.S.R. might have purchased mostly coarse grains from the United States and purchased wheat from other countries.

Performance of the 1975 U.S.-U.S.S.R. Agreement

The 1975 U.S.-U.S.S.R. LTA was to provide additional assurance that the events of 1971 would not be repeated. Some analysts have maintained that the agreement was unnecessary window dressing and that the most important measures had already been taken (i.e., the elimination of export subsidies and the establishment of an export procedure). Yet the earlier measures — though correcting serious defects in the U.S. grain marketing system — did not attempt to address the

[4]In the renegotiated 1983 U.S.-U.S.S.R. agreement the minimum amount was increased to 9 mmt or up to 12 mmt without consultation. The requirements of a U.S. supply greater than 225 mmt was omitted.

source from which the shock to the system had originated. The LTA did, at the very least, provide a framework for greater cooperation between the two countries.

If the agreement was effective in forcing the Soviet Union to transmit less variability of domestic production into world markets, variability of Soviet imports should have declined subsequent to the agreement, while variations in domestic stocks or human and livestock grain utilization should have increased, other things equal. Variability in imports and domestic stocks and livestock utilizaton did not follow this pattern however. Soviet imports of U.S. wheat are significantly less variable following the implementation of the agreement, but the variability of total Soviet imports of both wheat and coarse grains show no significant change.[5] U.S. estimates of Soviet coarse grain stocks indicate a significant increase in variability, but the variability of estimated wheat stocks has remained almost constant.

One factor that may have obscured the value of the trade agreement was the succession of four poor grain harvests beginning in 1979. The Soviets were unable to build up grain inventories, and the estimated average level of beginning wheat and coarse grain stocks combined fell from 19.3 to 9.7 mmt over the 4-year period. Even if the Soviets had wanted to reduce the variability of their imports by shifting more of the adjustments to grain inventories, they were severely constrained by the level of their stock holdings.

While absolute variability seems unaffected, the variation of inputs and stocks relative to their average levels may suggest the agreement had some affect in ameliorating Soviet instability.

Coefficients of variation, that measure variability relative to the mean, provide an indication of the relative adjustments the Soviets have made in their grain management practices since the implementation of the agreement. The coefficients of variation for production and utilization, the two biggest items, have changed little although the coefficients for feed use indicate a tendency toward more stable, coarse grain feed use. Stocks and imports, however, do show substantial change. Beginning stocks' variations as a proportion of their mean volumes appear to have increased,[6] while variation in imports as a percentage of volume have fallen sharply. From the standpoint of the world grain market, a 7 to 8 mmt variation in Soviet purchases is far less disruptive today on a volume of 199 mmt (1982) than it was 10 years ago on a volume of only 137 mmt.

Hence, the basic objective sought by the U.S. in the LTA (i.e., a reduction of the variability of Soviet purchases) was at least achieved in a relative sense. Whether this was in whole or in part the result of the agreement is another question. The crop shortfalls, the grain embargo and the U.S.-U.S.S.R. agreement were the major factors influencing Soviet grain management practices during this period. It is extremely difficult to discern the relative importance of each of these factors in Soviet grain policies.

From a U.S. perspective, the stabilization of Soviet grain imports was only an intermediate objective of the long-term agreements. It was hoped that more stable Soviet purchases would ultimately lead to the more orderly U.S. grain markets (i.e., less price variation) than had prevailed in the early 1970s.

A statistical analysis of grain futures variation conducted by this author seems to suggest the trade agreement did reduce price variability but it was the announcement of the agreement in 1975 — rather than the implementation of the agreement a year later — that proved to be the better explanation of the decrease in price variability. This indicates that traders' perceptions of the riskiness of the market environment can often be just as important an influence on price variability as changes in supply and demand factors. Whether traders perceived the agreement as a constraint on U.S. actions as well as on Soviet policy is not clear, but certainly an atmosphere of greater cooperation on grain trade between the two countries was significant.

Summary Comments

The role of bilateral grains agreements as U.S. export strategy is limited. Trade agreements will not, in the long run, increase U.S. grain exports. They may increase the U.S. share of a single country's market but this gain will usually be offset as displaced competitors take away a portion of the U.S. share of other markets. As a U.S. export strategy, the primary role of bilateral agreements is to increase cooperation and reduce the trade and price variability associated with centrally planned economies. The evidence of the past 7 years suggests that the most important U.S. grain agreement — the 1975 U.S.-U.S.S.R. accord — was at least partially successful in reducing the variability in Soviet imports and the fluctuations in U.S. grain futures prices.

The question arises as to whether the new U.S.-U.S.S.R. agreement, signed in August 1983, was necessary. Developments in world markets and economic conditions have changed substantially the context within which the original agreement was signed. Yet despite the different context, the U.S. and the U.S.S.R. are still the world's largest grain traders, and a substantial degree of uncertainty continues to surround their future trade relationship. The 1983 U.S.-U.S.S.R. agreement at least formalizes a portion of the grain trade between the two countries for the next 5 years and thereby provides some information on the future course of a potentially disruptive trade flow. The new agreement,

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[5]Clifton Luttrell (1981) examines the effect of the U.S.-U.S.S.R. grains agreement on the level and variation in Soviet grain production, utilization and imports. Conclusions reported here are based on a similar approach using updated Soviet balance sheets for wheat and corn.

[6]The unreliability of Soviet stocks data makes this finding tenuous.

like the one which preceeded it, may have little impact on the total quantities of grain which are traded in any given year, but, whether justified or not, it will probably substantially reduce the consternation among grain traders about what those quantities will be and thereby smooth the functioning of U.S. and world markets.

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A Canadian Perspective of Grain Export Problems and Marketing

Harold Bjarnason

The responsibility assigned to me is to give a "Canadian perspective of grain export problems and marketing." In order to understand our perspective, it's important that one has a clear idea of how our marketing system works, which means I'll be devoting much of my formal remarks to the role played by the Canadian Wheat Board that I represent. However, I will be concluding with a few remarks on how we see the grain marketing world today.

I'll begin with a brief review of our growing area and the major crops we produce in it. About 80 percent of all Canadian grain production comes from Western Canada which encompasses Manitoba, Saskatchewan, Alberta and a small part of British Columbia. This region makes up the "Canadian Wheat Board designated area." The Canadian Wheat Board does not merchandise any of the grain grown in Eastern Canada.

The number one crop in Western Canada is hard red spring wheat. Much of the Canadian prairie has limited rainfall during the growing season, and our summers, while short, provide a great deal of sunlight and very warm temperatures. These conditions are ideal for the production of high-quality, high-protein milling wheats. The cooler, higher-moisture areas of the prairies produce barley, oats and rapeseed. Rye and flaxseed are also important crops. There is some production of corn and specialty crops, but these are relatively small.

Canada is a large country in area, but we have a relatively small population of roughly 24 million. As a result, we consume only a small part of Western Canada's total production. The largest quantity (about 65 percent last year) goes to the export market. Wheat dominated Canadian bulk grain exports in 1982 with 18.5 million metric tons or about 70 percent. Barley followed with 5.7 mmt or 21 percent. Rapeseed followed at 1.4 mmt. Flaxseed and rye exports both totaled about one-half mmt. Oats exports have dwindled to virtually nil in recent years.

Of these six crops, the Canadian Wheat Board is responsible for the two most important — wheat and barley, as well as for oats. Any Western Canadian wheat, oats or barley for export from Canada for domestic food use must be sold through the Canadian Wheat Board. The board does not control feed use of these grains. Farmers are free to sell grain stocks to local feeders or feedmills without going through the board. Private and cooperative companies also merchandise feed grains locally and in other parts of the country. The other grains — rye, flaxseed and rapeseed — are handled by the private grain trade. But the board's responsibilities make it by far the largest shipper of grain in Western Canada. Canadian Wheat Board shipments make up about 85 percent of the total.

The Canadian Wheat Board operates under powers granted by the Parliament of Canada. It is classified as an "Agency of the Crown." The board must submit an annual report to Parliament and reports through a cabinet minister who is designated as responsible for the Canadian Wheat Board. However, the Canadian Wheat Board is not part of the Canadian Government. It is an independent agency, and all operations are managed by commissioners and staff. All the costs of running the Canadian Wheat Board and all marketing costs are paid by grain producers. This is important because it reinforces the fact that the board's responsibility is to farmers, not to taxpayers in general.

The Canadian Wheat Board does not own or operate country elevators, terminal elevators or railways, although it does own 2,000 railway hopper cars. All grain handling operations are carried out by the various cooperatives or private elevator companies.

The Canadian Wheat Board has several major responsibilities. They include:

- The pricing and sale of Western Canada's wheat, oats and barley,
- Pooling sales returns,
- Organizing grain shipments,
- Equalizing delivery opportunities and
- Issuing cash advances.

Sales

In 1982, the Canadian Wheat Board exported more than 23 mmt of grain (out of total Western Canadian exports of more than 27 mmt), worth about $5.1 billion Canadian. This makes it one of the largest businesses in Canada.

Two basic methods are used to sell board grain — direct sales and indirect sales. Direct sales now account for most of the business. Depending on the year, 80 percent or more of the board's volume is direct sales. As the name implies, these are sales that the board has negotiated directly with a customer.

However, the Canadian Wheat Board is an instore or FOB (end of spout) seller only. Ocean freight, insurance, stowing and trimming and foreign exchange transactions are for the account of the buyer. Most of our larger customers prefer to make most of these arrangements themselves.

Some of the smaller customers aren't in the same position and require assistance in arranging delivery of Canadian grain to their own ports. Many of these customers, therefore, prefer to purchase indirectly; that

is, through one of our accredited exporters. These are 22 companies authorized to buy grain from the Canadian Wheat Board at terminal positions and resell it to their customers overseas.

The Canadian Wheat Board's prices to all customers are determined by prevailing levels on the world market, and this generally means we must be competitive with U.S. grain. As the U.S. is by far the largest grain exporter, its prices set the trends for all the other exporters. The Canadian Wheat Board doesn't automatically follow every change in the U.S. market, but the basic level and trend of its prices must generally reflect those established for U.S. exports of similar quality.

I would like to emphasize that the Canadian Wheat Board does not increase or decrease its competitive advantage as the value of the Canadian dollar goes up or down. The board adjusts its prices daily, based on any change in the exchange rate between the U.S. and Canadian dollars so as to maintain price relationships in terms of U.S. dollars — the basic trading currency in the world.

Canadian Wheat Board sales are all on a strictly commercial basis; that is either cash or credit at competitive interest rates. The board offers credit for up to 3 years, based on prevailing rates. This credit is financed by the board through borrowings from Canadian chartered banks. Board credit is guaranteed by the federal government; if a customer went into default, the government would have to reimburse the Canadian Wheat Board. This has never happened. The Canadian government does not subsidize Canadian Wheat Board credit sales in any way.

Pooling Sales Returns

Under our system, all farmers share in the ups and downs of the grain market over the course of a crop year, and every farmer receives the same price for the same grade of grain. We call this price pooling. The principle of price pooling is relatively simple. When the farmer delivers a load of grain to an elevator, he receives the initial payment for the particular grain and grade. Freight, elevation and cleaning charges are deducted, and the farmer receives what is called a cash ticket, which is negotiable at any bank.

After the board closes its pool accounts at the end of the crop year, it calculates the average selling price of each grade through the year. It deducts marketing costs, and the surplus is sent to farmers in a final payment, on the basis of each farmer's record of deliveries.

For example, in 1982 our farmers received an initial payment of Cdn $174.50 per metric ton for top grade wheat delivered between Aug. 1, 1981, and July 31, 1982. In January 1983, they received a final payment of $25.12 per metric ton, bringing their total return to $199.62 per metric ton or $5.43 per bushel. This is basis Thunder Bay or Vancouver. At the time of delivery, the elevator company would have deducted freight, elevation and cleaning charges totalling about $12.00 per metric ton or 33 cents per bushel.

In some years, there has been a sharp increase in world prices a few months into the crop year. This allows the board to increase the initial payment. Anyone who has delivered before the increase receives an adjustment payment to bring the previous deliveries up to the new level. The last time this happened was in 1980-81.

The prices that farmers receive under this system are entirely dependent on prices in the world market. Sometime before the beginning of every crop year, the federal government announces an initial price for each of the main types of grain handled by the board. This price can move up or down from year-to-year, depending on world prices.

Of course, the board has some input in this process; but setting of the initial price is an important area of involvement for the federal government. This is because if the selling price minus marketing costs turns out to be less than the initial price, the government would be required to subsidize. In fact, this has happened only a few times in the board's history.

Canadian Wheat Board grain has six separate pool accounts. These are wheat, durum wheat, barley, designated barley (high quality barley for malting or pearling), oats and designated oats (high quality milling oats).

Each of these pool accounts stands on its own. For instance, if there happened to be a deficit in the barley account, it would not be made up from any surplus in the wheat account. Most of the marketing costs are storage, interest and other handling charges. The administration cost of the board itself is relatively small — about 2 cents per bushel per year.

The board publishes an annual report that contains a full accounting of all marketing costs, as well as a review of events through the crop year. A condensed version of the report is mailed to all farmers who have delivered grain to the board.

Organizing Grain Shipments

Equalizing Delivery Opportunities

I'm covering these two responsibilities in one section because they are accomplished with the same mechanism, which is the quota system. In recent years, the word "quota" has developed connotations that do not apply to the Canadian Wheat Board system, so before I describe how it works, I would like to clarify a couple of points.

First, Canadian Wheat Board quotas are not applied to production. There are no controls, restrictions or incentives of any kind applied to grain production in Western Canada.

Second, Canadian Wheat Board quotas cannot be bought and sold. They are applied to land and are available to the person farming that land. One acre of land equals 1 acre of quota.

Quotas are applied to delivery into a country elevator or a railcar. They are not applied to sales to local feedlots or feedmills.

Several different types of quota systems have existed since the first was adopted in 1940. The first systems were solely to ration delivery opportunity in periods when prairies had a large grain surplus.

Today, equalizing delivery opportunity is usually the secondary purpose of the quota system. Its first purpose is inventory control — to bring in grain in accordance with market demand. At a given time, quotas for particular grains are often higher in one area than in another, depending on grain movement among ports.

As you can imagine, this ability to control deliveries in a given area helps to make sure that the country elevator system can be run very efficiently. However, we do try to keep delivery opportunities as equitable as possible, and to make sure everyone has had the same opportunity by the end of the year.

As stated earlier, quotas depend on acreage. At the beginning of every crop year, each farmer obtains a new Canadian Wheat Board permit book. He fills out an application that contains two columns. In one, he lists the number of acres actually seeded to each grain. In the other, he lists the number of acres he wants to assign for delivery of each grain.

This system allows him flexibility in deliveries. A farmer's total delivery opportunity depends on his farm size. But within that total opportunity, he can determine how much of each grain he wants to deliver.

Here is a simple example. Suppose a farmer has a farm with 500 acres in wheat and 200 acres in barley. If the crop year opened with quotas of 5 bushels per acre for wheat and 5 bushels for barley, this farmer could deliver five times 500 or 2,500 bushels of wheat and five times 200 or 1,000 bushels of barley, for a total of 3,500 bushels.

But suppose this farmer feeds cattle or wants to sell his barley to a neighbor. This means that he will not deliver barley to the elevator system. Therefore, he can "assign" his 200-barley acres to delivery of wheat, and use his quota to deliver 3,500 bushels of wheat.

This is a simple example, as all cultivated acreage, including summerfallow, can be assigned for delivery of any of the six major grains. Farmers are allowed to make two adjustments per year to their acreage assignment. All these changes must be reported to the board, because this information allows us to determine how much grain will come in at a particular quota level.

Our objective is to end each crop year with quotas that are high enough to allow every farmer to deliver his whole crop. In some years, this objective is achieved. Sometimes, because of weak markets or limited transportation, it is not. In this case, the equalization function of quotas becomes very important.

Issuing Cash Advances

Canadian Wheat Board quotas open progressively through the year, but farmers cannot deliver until a quota has been authorized. This can create cash flow problems early in the crop year, and recognizing this, our government has established an interest-free cash advance program that is administered by the board.

The program allows individual farmers to borrow up to $15,000 against undelivered grain on their farms. Corporations can borrow up to $45,000. These are relatively low figures, and there is a possibility they will be raised. The advance must be repaid by delivering grain when quotas open and must be completely retired by the end of the year.

That sums up my description of the Canadian Wheat Board. Areas I hoped to have clarified for our American friends are government involvement, and non-involvement, in our industry. Government is involved in grain marketing in both of our systems, but the emphasis is much different.

In the U.S., the government generally does not control the marketing of the product. But it does exert a great deal of influence on supply and demand through its various programs.

In Canada, the government has a lot of authority over the way grain is marketed, but the authority is exercised through a producer-oriented and producer-funded board.[1]

The point I want to make very clear is that the grain farmer on the Canadian Prairies receives much less government support than his counterpart in the United States. There is no loan program, no 3-year reserve, no paid acreage reduction and no deficiency payment. If our farmers have not sold their crop by the end of the crop year, they receive no payment for it and no storage assistance.

This makes it essential for the Canadian Wheat Board, as the sales agency for most Canadian grain, to get out and move as much as possible into the world market, so our farmers receive some cash flow. Grain prices are so low that if we did not offset them with good sales volume, thousands of Canadian farmers would go out of business.

If the market continues to go down, we have no choice but to follow it and continue to make sales at prevailing levels. Other exporters are in the same boat and will continue to do the same thing.

This is why we are concerned about current government policy changes in the U.S. There is a belief that if U.S. grain prices are lowered by methods such as reducing the loan rate, U.S. grain will become more competitive in the world market, and U.S. export sales will increase.

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[1]Editor's note: This analysis does not consider the rail subsidy included in Canadian grain exports.

This belief ignores the fact that the main determinant of world grain prices is the price of U.S. grain. If that price drops, so does the price charged by other exporters. Therefore, lowering the price of U.S. grain will have no effect on the U.S. market share, and will simply mean that importers will get an even better bargain than they do now.

We recently did a study of various commodity prices since 1960. On an indexed basis, wheat is selling at virtually the same level, while other commodities like oil and gold are at far higher levels. In 1960, a bushel of wheat was more expensive than a barrel of oil, whereas in 1982 a barrel of oil would buy nine bushels. In 1960, an ounce of gold bought 20 bushels of wheat, while in 1982, it bought 130 bushels. It's probably not possible or even desirable for wheat prices to climb as much as oil or gold, but my feeling is that it's only fair that wheat prices share in at least some of the increases seen by other commodities.

The low prices are even more disturbing when you consider the demand for wheat is not materially affected by the price. Consumers in most importing countries do not pay the world price for wheat. They pay an internal price fixed by the government, and this price does not change as the Chicago market moves up and down. In some cases, notably the European Economic Community and Japan, consumers pay far more than world prices. The difference goes into the government treasury.

In short, our view is that the problems affecting the world grain market will not be solved by giving the product away and transferring money from our farmers and governments to the treasuries of importing countries.

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