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# THE COMPETITIVENESS OF U.S. FARMERS IN WORLD MARKETS

**Raymond Daniel**

The 1980s explosion in the federal deficit, interest rates and subsequently the U.S. dollar dramatically impacted the farm economy. Approximately 20% of U.S. farmers were considered to be in serious financial difficulty. The major factor which caused the financial crisis in U.S. agriculture was federal monetary policies which increased interest rates, thus making interest payments one of the major expenses for U.S. farmers, and also led to the explosion of the U.S. dollar and subsequent collapse of U.S. agriculture exports.

The problems experienced in the U.S. farm economy in the 1980s contributed to the largest decline in real farm assets since the 1930s. Between 1979 and 1984 real farm assets declined 26% or almost \$200 billion. Real farm cash receipts decreased \$12 billion and real farm income was the lowest since the depression of the 1930s.

The purpose of this paper is to clarify the debate concerning farm export policies by addressing the major issues facing agricultural exports and thus challenging policymakers to seek a correct mixture of monetary, farm and export programs, and domestic production. To enhance U.S. exports, the choices should encompass programs that will improve the marketing of U.S. agricultural products and reduce the value of the U.S. dollar, but provide a protective net for U.S. farmers against major swings in the markets. The 1980s collapse in export prices was the cause of many farm bankruptcies, which under more normal situations are solid, viable production units.

## U.S. POSITION IN WORLD GRAIN TRADE

The 1980s collapse in U.S. export market share would indeed imply that the U.S. farmer's ability to compete in world trade has eroded. The issue of whether the U.S. farmer has lost his competitive position in world trade has significant ramifications for the future of not only U.S. farmers, but also for rural communities, especially in the major U.S. farm states.

The observed loss in market share (tables 1 and 2) and the recent doubling of wheat imports into the United States -- while the United States continues to carry near-record grain inventories -- certainly implies that a major change occurred in world agricultural

trade. Moreover, this change reduced the ability of U.S. farmers to sell their products in world markets. Several sectors of government, agribusiness and even farm organizations have warned about a significant change in the competitiveness of U.S. farmers in world markets. Current evidence does not refute that claim.

The major factors which impact the competitiveness of U.S. farmers include: 1) U.S. farm production costs versus those of competing countries, 2) Trade barriers, 3) Government intervention, 4) U.S. monetary policy (value of U.S. dollar), and 5) U.S. farm prices.

## U.S. Farm Production Costs Versus Other Selected Countries

The issue of whether one farmer in one state or country is competitive with another is usually determined by a comparison of production costs, assuming "free market" conditions. Accurate measures of production costs are not available for all U.S. competitors. Crop production cost estimates were, however, available for Argentina and Canada (1). After adjusting for the differences in currencies, it appears that both Argentina and Canada had lower farm production costs than the United States in 1984, tables 3 to 5. The differences are, however, less after adjusting for internal marketing costs, export taxes, and ocean freight.

Canada appears to have lower wheat production costs and higher wheat quality. Argentina has the lowest farm production costs for wheat, corn, and soybeans, but higher ocean transportation costs. Argentina also has an 18% export tax on wheat and a 25% export tax on corn and soybeans. After adjusting for all marketing and distribution costs, the high value of the U.S. dollar and farm costs, Argentina still had a cost advantage for wheat, corn, and soybeans in European Markets (tables 6 and 7).

The data suggest that total farm production costs in Argentina are \$1.25/bushel lower for corn, \$4.07/bushel lower for soybeans, and \$2.17/bushel lower for wheat than U.S. farm production costs. Argentina data may not be as representative of farm production costs as are U.S. data but it is indicative of the substantial differences in farm production costs between the two countries (tables 3 and

4). The export tax in Argentina on grains, differences in domestic marketing costs and higher Argentine ocean freight rates, however, reduce the differences in costs to \$1.99/bushel for soybeans, \$0.23/bushel for corn, and \$0.92/bushel for wheat in European markets (tables 6 and 7). These data suggest that U.S. farmers may be losing their comparative advantage in world markets.

#### Trade Barriers

Strong world trade barriers against U.S. farm commodities is a continuing problem. For example, over 90% of all countries buying grain has either tariffs, import subsidies for their farm products, or import restrictions. Two examples are the European Common Market and Japan.

#### U.S. Government Trade Intervention

Another significant factor reducing U.S. competitiveness in world markets is U.S. government intervention in specific markets. The Soviet grain embargo reduced U.S. market share of U.S.S.R. grain imports from a 70% average between 1976 and 1978 to less than 40% in 1983. Embargoes in general have hurt U.S. farmers. The U.S. is perceived as being an unreliable supplier and this has stimulated production in both exporting and importing countries.

Long-term trade agreements by non-U.S. exporting countries with major grain importers have also reduced the ability of U.S. farmers to compete. The U.S. has not pursued this avenue of trade expansion aggressively. In addition, the agreement with the Soviet Union that is in effect has no penalty clause for noncompliance.

The single most dramatic change that occurred between 1979 and 1985 was the explosion in the value of the U.S. dollar due to U.S. monetary and fiscal policies. For example, the value of the U.S. dollar in countries where corn is sold has increased by approximately 50% between 1979 and early 1985. The value of the U.S. dollar in countries where soybeans and wheat are sold increased by at least 60%. When comparing the dollar relative to the value of one of our new emerging competitors -- Argentina -- we find that the ratio of the Argentinian peso to the U.S. dollar more than doubled between the 1979-81 period and 1985, a major reason why the dollar adjusted costs are so low. U.S. interest rates also rose rapidly to record levels over this period. Even after the 1985 decline in interest rates, real interest rates remained above pre-1979 levels. U.S. corn, wheat, cotton and soybean market prices have, however, remained relatively flat and declined from 1980/81 levels in 1985. Real farm prices (1972\$) collapsed to pre-1972 levels.

#### FUTURE OF U.S. AGRICULTURE IN WORLD TRADE

It appears that U.S. farmers have indeed become less competitive in world markets.

But, the problem has not been increases in U.S. farm commodity prices, since real farm prices (1972\$) have actually collapsed to pre-1972 levels. The major contributing factors to the loss of U.S. farmers' market share in world trade have been record increases in the value of the U.S. dollar.

U.S. farm programs also are oriented toward what happened last year and/or to correcting current grain excess inventories or low prices. In addition, when voluntary acreage set aside programs are effective in improving prices in one year, farmers abandon the program the second year because of the high capital costs in agriculture and the lack of the long-term commitment by the government to maintaining a stable program. The subsequent resurgence in production again creates surpluses and weak farm prices. Such instability has caused a major expansion in farm debt and hurt the entire farm community.

However, a perfect U.S. farm policy program will fail without appropriate U.S. monetary policies to make U.S. farmers competitive in world markets through lower interest rates and a lower value of the U.S. dollar. A major change in U.S. monetary policy strategy should be undertaken to reduce real interest rates and the current high value of the U.S. dollar. If the U.S. dollar were reduced by 30% to 50%, then we could see a significant increase in U.S. market share in world grain trade and subsequently improve the viability of U.S. agriculture and the rural community.

The Federal Government should also be required to evaluate the impact of future changes in monetary policy not only on inflation and overall economic growth, but also on specific industries such as agriculture. Also, monetary policy should be made compatible with other policies such as agricultural programs to enhance U.S. farm exports and not negate their effectiveness.

#### SUMMARY AND IMPLICATIONS

U.S. agriculture has lost most of its competitiveness in world markets due to: 1) continued export tariffs and farm subsidies in developed nations, 2) U.S. government intervention in centrally planned markets such as the Soviet Union, and 3) high interest rates and high value of the U.S. dollar in all other markets. Lower U.S. farm prices as a method for stimulating farm exports will therefore not be effective in improving U.S. farm income for at least four to five years, thus forcing an increased financial burden on U.S. farmers or the U.S. Government through higher support payments unless interest costs are reduced, and the value of the dollar is reduced by 30% to 50%.

Farm export programs in the 1980s need to become more compatible with the realities of world grain trade. This is especially true in the grain sector which has been characterized by more periods of crop surpluses, low prices,

and acreage reduction programs, than by periods of balanced supply and demand with no government intervention. The Chase Econometrics outlook for the decade indicates that world economic recessions, balance of trade problems, continued high value of the U.S. dollar, and high real interest rates will persist, thus slowing the growth of world grain trade to less than one-half the rate experienced in the 1970s. Therefore, grain surpluses are projected to continue and subsequent grain acreage withdrawal programs will need to remain in effect. Thus, the number of farm failures will continue and may likely accelerate over the next three years.

Future agricultural export programs should also recognize that a "free market" for grains is no longer a reality due to grain embargoes, long-term trade agreements by competitors, barriers to trade (i.e. import levies and restrictions), cargo preference requirements, and other noncompetitive market restrictions of governments throughout the world. U.S. farmers would welcome actual free markets where U.S. producers were not penalized by market restrictions, the high value of the dollar, high real interest rates, and government interventions. However, this current noncompetitive structure of world grain trade requires that the United States must recognize the need for the government to assist U.S. farmers in their struggle against institutions and barriers which foster constraints to trade, foreign subsidized commodity prices and, subsequently, low U.S. farm income.

The U.S. farmer has become non-price competitive in world markets because the record high value of the U.S. dollar adds \$1.00/bu to the U.S. farm price of wheat, \$0.72/bu to the price of corn, and \$2.00/bu to the price of soybeans. Concurrently, agricultural legislation is not necessarily equitable for all producers; by supporting market prices, current programs reward farmers who continue to expand production while penalizing farmers who cooperate by participating in agricultural programs. Government monetary policies which maintain high real interest rates also severely handicap U.S. agriculture -- a capital-intensive industry.

All of the above factors must be dealt within the development of a consistent farm export policy. The bottom line is that every effort should be made to stimulate new programs which enhance farm income, reduce the impact of monetary policy on the U.S. dollar, and thus increase the competitiveness of U.S. farmers.

#### **New Directions: Goals and Objectives of U.S. Monetary and Farm Policies**

U.S. monetary and farm policies should become complementary and not competitive. They should address the new world agricultural environment more effectively. The specific goals and objectives of both should be the following:

1. To improve farm income by enhancing the farmers' competitiveness through a lower value U.S. dollar, and reduce expenses with lower interest rates.
2. To expand and enhance U.S. grain trade through joint efforts of farmers, government agencies, agribusinesses, input suppliers, and the grain merchants by offsetting the impact of the U.S. dollar and interest rates through federal credits.
3. To balance U.S. wheat and other grain production with domestic and world demand, thus reducing U.S. grain surpluses.
4. To maintain U.S. grain prices at levels which equalize the effect of government subsidies paid to farmers in each competing country and the value of the U.S. dollar.
5. When U.S. supply management programs are necessary, they should be equitable to all U.S. grain farmers and based on more recent production levels and adjusted for higher costs caused by government monetary actions.
6. Production management programs, when needed, should include more effective control over production, not just acreage.
7. Participation in production management programs should be more oriented toward long-term stability and less toward short-term adjustments which create instability in world grain markets.
8. Export grain programs should provide income security to farmers during times of unexpected increases in grain inventories which depress prices.
9. The cost of export programs should be funded more by the sectors receiving the largest program benefits (i.e., grain producers, agribusinesses and consumers). Government program costs should be minimized to help balance the federal deficit.
10. Adequate grain reserves should be maintained to protect domestic and export customers against droughts and other crop failures.
11. U.S. Government export programs should also be sensitive to the impact of programs on the future structure of agribusinesses, farms, and rural communities. Program changes do significantly impact ownership, size, and regional growth.

#### **The Use of Lower U.S. Farm Prices to Stimulate Agricultural Exports and Improve Farm Income**

The most important single export market parameter governing the benefits of different export programs to farmers is the price

elasticity of demand for exports. The magnitude of the elasticity of demand varies considerably from situation to situation and its value is subject to much misinterpretation. Nonetheless, sufficient consensus is now emerging about the range of elasticity estimates.

The fundamental cornerstone of U.S. farm export policy has been based upon the assumption that the aggregate demand for U.S. farm products is inelastic. Recent research continues to support the contention that the short-term (1 to 2 years) and intermediate term (2 to 4 years) is inelastic for major U.S. grains. The longer run (5+ years) appears to be elastic.

Therefore, a decline in crop prices will reduce farm total revenues for at least four years before the price decline is offset by higher volume exports. The current financial crisis in agriculture appears to limit the flexibility of U.S. farmers to sustain a four-year decline in total revenue.

A reduction in U.S. farm prices in world markets would adversely affect U.S. farm income since total dollar exports would decline even though additional tonnage was sold at the lower price. The decline in farm income would have to be offset by increased government subsidies or U.S. farmers would continue to go bankrupt. Since other countries are willing to support their farmers, it would appear that the major adjustment in world agriculture to lower U.S. farm prices would be a decline in the number of U.S. farmers and higher U.S. farm subsidies. However, when the U.S. dollar increases in value with increasing interest rates, this negates the impact of lower farm commodity price policies.

#### Agricultural Export Stimulation Programs through the Use of Monetary Policy

Farmers and economists strongly support efforts to stimulate stable growth in the export demand for U.S. farm products. Efforts that enhance the movement of U.S. farm products at prices which provide for potential growth in U.S. agriculture should be aggressively pursued.

The United States must become more aggressive and innovative in marketing U.S. farm products. The consent of free markets as the solution to farm surpluses is one which has always had great appeal. However, real world trade in agricultural commodities is clouded by protectionist policies, fiscal policies, other government constraints, and the high value of the U.S. dollar.

For example, the U.S.S.R., Canada, and other countries have made several long-term trade agreements, the European Community

subsidizes exports, and many countries utilize government agencies to purchase and/or sell agricultural products, thus circumventing the free market system. Currently, about 90%, or more, of all grains are either bought or sold through government agencies.

In general, government efforts in agriculture export trade should be directed more toward demand stimulation rather than toward supply control. However, policymakers should be cognizant of the fact that even with successful demand stimulation policies, demand is unlikely to catch up with U.S. supply capabilities during this decade. Until there is a better balance between the supply of and the demand for U.S. grain, demand stimulation policies alone will not be enough to solve the problems of the agricultural sector. Consequently, U.S. supply control and support programs will continue to be necessary to maintain a viable agricultural economy. These programs need to be structured in a manner which will supply the U.S. agricultural industry with a "safety net" without encouraging overproduction.

Current farm programs are very short-run attempts at correcting depressed market prices by encouraging farmers to voluntarily commit to one-year acreage set-aside programs. A Secretary of Agriculture stated that, "The present program for readjusting productive acreage to market requirements is admittedly but a temporary method of dealing with an emergency. It could not be relied upon as a permanent means of keeping farm production in line with market requirements." The Secretary of Agriculture was Henry A. Wallace, the year was one year after the current Agricultural Adjustment Act was first enacted in 1933. Fifty years later we still have the same "temporary" voluntary acreage set-aside programs.

Recent government farm programs not only have been very short-run oriented, but their implementation has also been on a very ad hoc basis. The details of farmer acreage control programs have not even been announced until after winter wheat farmers have already planted their crops. Farmers, therefore, do not know how to plan their cropping program or what to expect from government assistance programs.

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#### Notes and References

- (1) Source of Argentina production cost data is the U.S. Agricultural Attache, U.S. Embassy Argentina, 1984: Canadian Data was obtained from Saskatchewan Province sources.

Table 1. World coarse grain exports, 1981/82 to 1985/86<sup>a</sup> (mmt).

	1981/ 82	1982/ 83	1983/ 84	1984/ 85	1985/ 86 <sup>b</sup>
Argentina	10.3	11.6	10.9	10.6	11.7
Canada	7.2	7.1	5.4	3.3	5.2
South Africa	4.7	2.3	0.1	0.2	0.0
Australia	3.1	1.0	5.6	7.2	4.9
Thailand	3.5	2.3	3.3	3.2	3.3
Others	9.4	11.6	10.9	20.6	18.7
U.S.	58.4	54.0	55.8	55.6	50.2
World Total	96.6	89.9	91.9	100.8	94.0
U.S. Share, %	60.4	60.0	60.7	55.2	53.4

a. October to September marketing year.

b. CE projections

Source: World Grain Situation and Outlook, USDA, FAS, October 1985.

Table 3. Argentine crop production costs 1984 (\$/bu).

	Corn	Wheat	Soybeans
	\$/bu		
Seed	0.22	0.31	0.38
Chemicals	0.22	0.13	0.22
Fuel Cost	0.13	0.14	0.25
Harvesting	0.24	0.25	0.55
Labor	0.21	0.19	0.39
Insurance	0.07	0.09	0.20
Interest <sup>a</sup>	0.10	0.12	0.19
Subtotal	0.99	1.23	2.18
Farm & Machinery Cost	0.13	0.16	0.27
Taxes	0.05	0.03	0.08
Amortized Costs of Capital	0.14	0.19	0.26
Subtotal	1.31	1.61	2.79
Land Costs	0.25	0.26	0.43
Total Farm Costs	1.56	1.87	3.22
Marketing Costs	0.48	0.50	0.73
Total	2.04	2.37	3.95
Yield	63.0	34.2	37.2
Market Price <sup>b</sup>	2.02	2.48	4.37
Export Tax <sup>c</sup>	0.67	0.54	1.46
Total	2.69	3.02	5.83

a. Excludes land.

b. Export price (FOB Argentina) 1985.2 (CE estimates).

c. Export tax for corn and soybeans = 25%; wheat = 18% of export price.

Source: U.S. Agricultural Attache, U.S. Embassy, Argentina, 1984.

Table 2. World wheat exports, 1981/82 to 1985/86<sup>a</sup> (mmt).

	1981/ 82	1982/ 83	1983/ 84	1984/ 85	1985/ 86 <sup>b</sup>
Australia	11.0	8.1	11.6	16.6	15.2
Canada	17.6	21.4	21.8	19.4	20.4
EC-10	15.5	15.6	15.4	17.5	17.7
Argentina	4.3	7.5	9.6	8.6	6.7
Subtotal	48.5	52.6	58.4	62.1	59.8
Others	4.06	6.1	5.6	8.1	7.0
Non-U.S.	52.5	58.7	64.0	70.2	66.8
U.S.	48.8	39.9	38.9	38.1	33.4
World Total	101.3	98.6	102.9	108.2	91.5
U.S. Share, %	48.2	40.5	37.8	35.2	31.4

a. July to June marketing year.

b. CE projections

Source: World Grain Situation and Outlook, USDA, FAS, October 1985.

Table 4. United States grain and soybean production costs 1984 (\$/bu).

	Corn	All wheat	Soybeans
	\$/bu		
Seed	0.18	0.17	0.37
Fertilizer	0.45	0.49	0.30
Chemicals	0.16	0.07	0.60
Custom operations	0.05	0.13	0.13
Fuels and Lub.	0.16	0.32	0.39
Repairs	0.12	0.26	0.32
Drying	0.06	-	-
Water	-	0.01	-
Labor	0.13	0.31	0.54
Miscellaneous	-	0.01	0.01
Subtotal	0.99	1.23	2.18
General overhead	0.15	0.20	0.32
Taxes & Ins.	0.16	0.24	0.45
Interest	0.49	0.60	1.12
Operating and other capital	0.17	0.31	0.42
Sub-total	2.28	3.12	4.97
Land	0.56	0.92	2.32
Yield <sup>c</sup>	111.5	35.8	28.5
Total <sup>a</sup>	2.84	4.04	7.29
Farm price <sup>b</sup>	2.79	3.31	5.93

a. Excludes management cost.

b. 1984.2.

c. Yield for wheat in 1984 was four bushels above trend due to excellent weather.

Table 5. U.S. and Canadian wheat productions costs, 1984 (\$/bu).

	United States		Canada
	All wheat	Hard Red spring wheat <sup>a</sup>	Spring wheat <sup>b</sup>
Seed	0.17	0.24	0.25
Fertilizer	0.49	0.45	0.46
Chemicals	0.07	0.15	0.35
Custom operations	0.13	0.06	NA
Fuels and Lub.	0.32	0.34	0.28
Repairs	0.26	0.36	0.22
Water	0.01	-	-
Labor	0.31	0.34	CB
Miscellaneous	0.01	-	0.24
Subtotal	1.77	1.94	1.80
General overhead	0.20	0.26	0.76
Taxes & Ins.	0.24	0.29	0.15
Interest	0.60	0.82	CB
Operating and other capital <sup>d</sup>	0.31	0.41	0.80
Sub-total	3.12	3.72	3.51
Land	0.92	1.25	1.25 <sup>e</sup>
Total <sup>f</sup>	4.04	4.97	4.76
Farm price <sup>g</sup>	3.31	3.68	3.61
Yield <sup>h</sup>	35.8	28.1	26.8

- a. North Dakota and South Dakota.  
b. Saskatchewan.  
c. Misc. in Canada includes utilities, taxes, hired labor, operating interest, etc.  
d. In Canada represents operator living allowance.  
e. Allocated return to land assumed same for U.S. and Canada, since not available for Canada.  
f. Excludes management cost.  
g. U.S. farm price all wheat and Spring wheat. Min. 1985, 2 estimates; final payment to farm estimated for 1985 in Canada.  
h. All wheat yield was four bushels above trend in 1984 due to excellent weather.

Table 6. Wheat production, distribution freight, and other costs landed in Rotterdam by country, 1984 (\$/bu.).

	Argentina	United States <sup>a</sup>	Canada <sup>b</sup>
	Farm costs		
Cost (ex. land)	1.61	3.12	3.51
Land	0.26	.92	1.25 <sup>b</sup>
Total	1.87	4.04	4.76
Other internal costs <sup>c</sup>	0.50	0.14	0.31
Export taxes	0.54	-	-
Ocean freight	0.65	0.28	0.23
Total	3.54	4.46	5.30
Wheat prices:			
Rotterdam 1984.2	4.42	4.43	5.37
1985.2	3.67	4.18	5.15

- a. All wheat, see Table 5 for other data.  
b. Canada produces a higher value wheat (13.5% protein).  
c. Land cost is not available for Saskatchewan, used North Dakota estimate.  
d. Marketing costs in Argentina; U.S. Marketing costs estimated during the average difference between K.C. Hard Red winter wheat price and Gulf Price for 1981-1984, Canadian Marketing costs from farm to Thunder Bay.

Table 7. Comparison of farm, marketing, and ocean freight costs for corn and soybeans in Argentina and the United States, 1984, delivered Rotterdam.

	United States		Argentina	
	Corn	Soybeans	Corn	Soybeans
Farm cost (excl land)	2.28	4.97	1.31	2.79
Total farm costs	2.84	7.29	1.56	3.22
Domestic marketing <sup>a</sup>	0.43	0.43	0.48	0.73
Export tax	-	-	0.67	1.46
Ocean freight <sup>b</sup>	0.29	0.31	0.62	0.66
Total	3.56	8.06	3.33	6.07

Total differences:

Actual	+0.23	+1.99
Percent	+7	+33

- a. U.S. domestic marketing was approximated using the average difference between Omaha and Gulf corn prices and Central Illinois and Gulf soybean prices.  
b. Ocean freight rate from country of origin to Rotterdam.