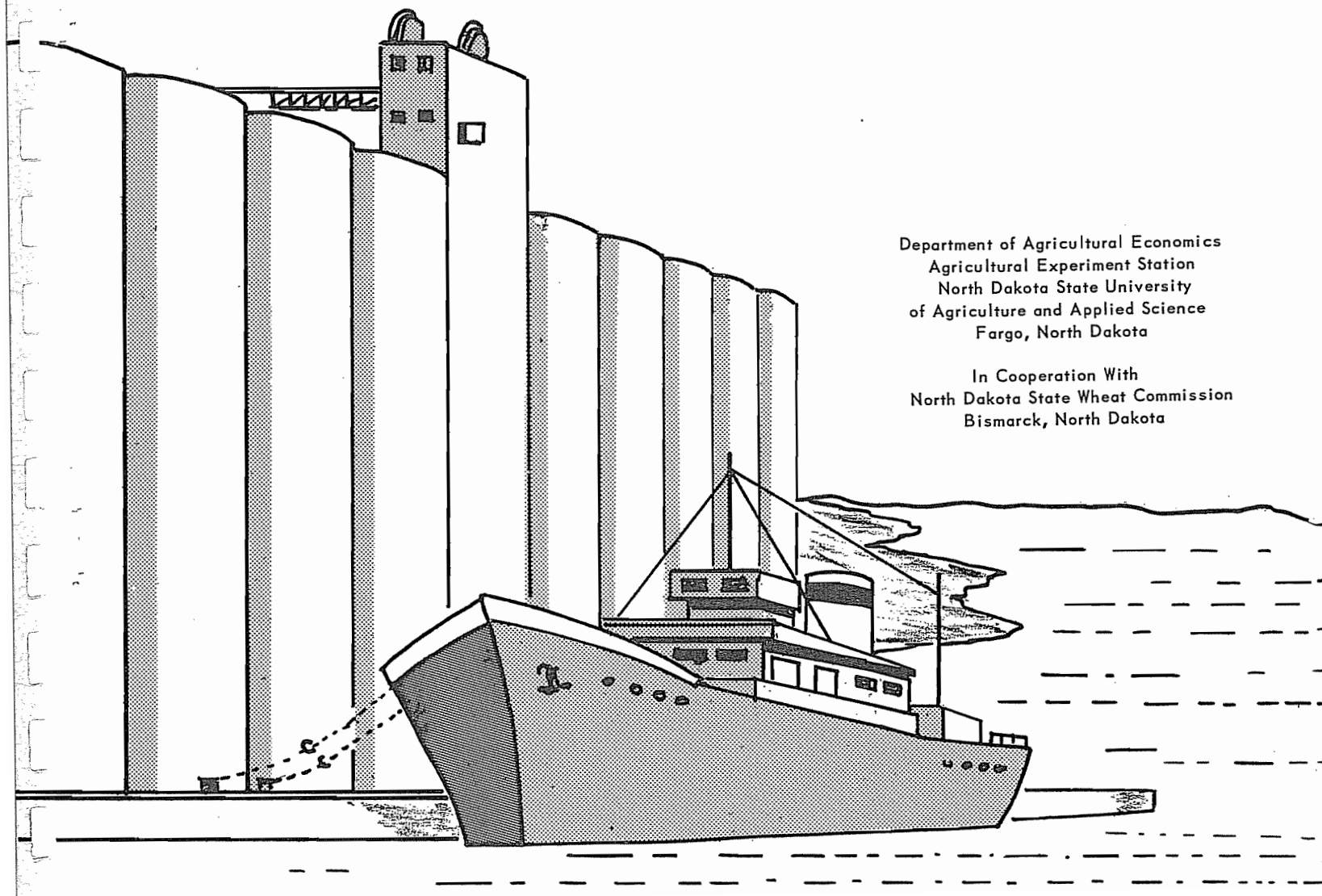
AGRICULTURAL ECONOMICS REPORT NO. 83

APRIL 1972

THE IMPACT OF UNITED STATES WHEAT EXPORT SUBSIDY PROGRAM

By
DONALD E. WALTZ
and
DONALD E. ANDERSON



Department of Agricultural Economics
Agricultural Experiment Station
North Dakota State University
of Agriculture and Applied Science
Fargo, North Dakota

In Cooperation With
North Dakota State Wheat Commission
Bismarck, North Dakota

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SUMMARY

A high degree of competition among substitutable wheat classes offered for sale by major exporters exists in world wheat markets. The United States is facing increasing competition in these markets from Canada, as well as competition from Argentina, Australia, and the Soviet Union. Improved domestic production in such countries as Germany for bread wheats and France for durum also cannot be ignored as competitive factors. With excess capacity of wheat production existing throughout the world, the potential exists for development of price wars that can be mutually destructive. A great deal of importance is attached to those who, on a daily basis, must consider competitive relationships in world markets and establish export subsidies, which are the core for United States pricing policies in international trade. Providing the quality of wheat desired at terms competitive with offers from other countries is absolutely essential to United States wheat trade in internation markets.

United States wheat export subsidies aid in providing an important outlet for excess wheat production by helping maintain the demand for United States wheat in world markets due to competitive pricing policies and, thus, maintaining farm income derived from wheat production. In addition, a tremendous impact on the United States economy is realized in the form of balance-of-payment improvements and storage savings derived because of export subsidy programs. The United States presently could not eliminate such a program without pricing itself out of world wheat markets. Compensation for wheat production would also drop considerably without such a program unless a transition was made to higher domestically supported wheat prices and large-scale land retirement programs. While these programs could maintain income to wheat producers, they would likely have an adverse impact on the United States balance-of-payments position with probable higher costs to United States taxpayers.

During a 1963-68 study period, export subsidies totaling $1,390 million were paid to United States exporters to price an estimated 3,633 million bushels of wheat competitively in world markets. Revenue from the sale of this exported wheat produced an estimated impact of $6,156 million on the United States economy. In addition, the United States saved an estimated $475 million in storage payments by maintaining wheat exports rather than holding the wheat in CCC stocks. Approximately 47 percent of all domestically produced wheats were exported with government assistance during the 1963-68 period, indicating that export subsidies played a vital role in selling United States wheat supplies in export markets.

In an analysis of export subsidy payments for each major class of wheat, it was determined that without export subsidies hard red spring wheat would be in the least competitive position of all classes of United States wheat competing in world markets. The total value of hard red winter and white wheat exports were larger than the value of other classes of wheat exported during the study period. However, it should be noted that a large proportion of exports of these two classes of wheat were made in the form of long-term credit or foreign currency sales, whereas hard red spring and durum wheat exports tend to be exported

largely on a commercial or dollar basis. Hard red spring and durum were valued higher in world import markets than were other wheat classes, as evidenced by the significantly higher export prices for these wheat classes in 1969-70.

Statistical analysis indicated a positive relationship between export subsidy rates and wheat exports. However, the proportion of total variation in wheat exports explained by export subsidy rates was comparatively small in some cases. This indicated that the export subsidy program in some markets is being utilized mainly to price United States wheats competitively and not always as a device to capture increasing market shares. The United States faces intense price competition in world markets. This is the case particularly at West and East Coast ports where United States spring and winter wheat export prices are geared to prices quoted by Canada. In some instances, increasing the export subsidy did little to significantly increase United States wheat exports as the lower United States export prices normally faced similar price decreases by competitors.

THE IMPACT OF UNITED STATES WHEAT EXPORT SUBSIDY PROGRAM

Donald E. Waltz and Donald E. Anderson[1]

INTRODUCTION

Wheat is by far the most widely traded food internationally.[2] It is the most highly commercial grain crop in the world, as well as one of the principal sources of man's food supply.[3]

Many countries have not been endowed with the soil and climatic conditions necessary for the production of wheat as a feasible economic enterprise. Many of these countries are unable to produce all of the wheat they consume, and the deficit must be offset by imports.

There are a number of countries where large-scale wheat production is not only favored by soil and climatic conditions but where production costs, advances in production techniques, mechanization, and relatively sparse populations per unit of available land have facilitated the production of far more wheat than is needed for local requirements. Outstanding in this group of countries is the United States.[4] Certain geographic regions of the United States are particularly dependent upon the production of wheat as a cash crop. Among these regions is the state of North Dakota.

Wheat is the largest single course of farm income in North Dakota, accounting for $280,702,000 or 30.9 percent of all farm income in 1969.[5] The production of all wheat in 1969 exceeded 200 million bushels for the second consecutive year. Production was estimated at 203,561,000 bushels, which includes 109,340,000 bushels of hard red spring wheat, 91,773,000 bushels of

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[1]Waltz is a former Graduate Research Assistant and Anderson is Professor of Agricultural Economics, North Dakota State University.

[2]Hutchinson, J. E.; J. J. Naive; and S. K. Tsu; World Demand Prospects for Wheat in 1980, Foreign Agricultural Economics Report No. 62, Economic Research Service, United States Department of Agriculture, Washington, D. C., July, 1970, p. 57.

[3]Schertz, Lyle P., Foreign Agriculture, Foreign Agricultural Service, United States Department of Agriculture, Washington, D. C., March 7, 1966, p. 3.

[4]Chottepanda, Medappa M., Analysis of International Wheat Markets, Unpublished M. S. Thesis, Department of Agricultural Economics, North Dakota State University, Fargo, North Dakota, 1969, p. 6.

[5]United States Department of Agriculture, Statistical Reporting Service, Farm Income, Fargo, North Dakota, September 11, 1970, p. 1.

durum wheat, and 2,448,000 bushels of winter wheat.[6] North Dakota ranked first in the production of durum wheat in 1969, producing 86 percent of the nation's total; North Dakota also ranked first in the production of spring wheat, producing 53 percent of the nation's total.[7]

The United States is the world's leading exporter of agricultural products, accounting for approximately one-fifth of all farm products entering world trade annually. Despite the efficiency of American agriculture, United States exporters often have difficulty competing in the world market because of lower prices of some foreign products.[8] In such instances the United States government may provide export payment assistance for both sales outside of government-financed export programs (commercial sales for dollars) and sales under government-financed export programs. Assistance consists of a payment to the exporter that bridges the gap between the world price and the domestic price, enabling him to offer the commodity in foreign trade at a lower export market price. When world wheat prices exceeded domestic prices, the exporter was required to purchase an export marketing certificate from the United States government reflecting the difference between world and domestic prices, so domestic prices were adjusted to world prices when wheat was exported. Prices were adjusted in the following manner:

Export Price = Domestic Price + Transportation Costs to the Point of Export (- Export Subsidy or + Export Certificate Payment)

The Department of Agriculture establishes export subsidy programs,[9] revising them when necessary to meet changing supply and demand situations.

To maintain its position as number one exporter of agricultural products, the United States must make its commodities competitive on the world market, meeting specific standards of quality, convenience, reliability, suitability, and price. Of the many factors affecting world trade, competitive pricing

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[6]Price, J. R., and F. R. Taylor, North Dakota Crop and Livestock Statistics--Annual Summary for 1969, Revisions for 1968, Agricultural Statistics No. 21, United States Department of Agriculture, Statistical Reporting Service, and North Dakota State University, Department of Agricultural Economics cooperating, Fargo, North Dakota, May, 1970, p. 11.

[7]Ibid., p. 11.

[8]DeBlois, Eleanor N., Export Payment Assistance to U.S. Agricultural Exports, Year Ended June 30, 1963, Foreign Agricultural Trade of the United States, Washington, D.C., March, 1964, p. 13.

[9]United States Department of Agriculture, Economic Research Service, Our Foreign Agricultural Trade, Agriculture Information Bulletin No. 312, Washington, D.C., May, 1969, p. 9.

ranks among the most important.[10] Export commodities are presently priced competitively through provisions of our export payment assistance program. Commodities receiving the majority of export subsidies paid over recent years include wheat and wheat products, rice, cotton, tobacco, peanuts, and nonfat dry milk.

Subsidization has been referred to as a structural rigidity in the United States economy. While export subsidies have, in the past, been used to price commodities competitively in world markets, a problem arises when legislators and taxpayers concerned about the magnitude of such payments feel that this money could better be spent elsewhere. A question is posed as to whether the benefit derived from these subsidies is sufficient to justify their continuation as a means of maintaining export levels or if these expenditures would benefit the United States more when used in alternative areas or if eliminated entirely. This study was designed to explore that question.

GENERAL EXPORT SUBSIDY METHODOLOGY

Transactions Eligible for Export Payments

The Commodity Credit Corporation (CCC) considers as eligible for an export payment an exportation which is pursuant to a sales transaction between an exporter and buyer as follows:[11]

1. A sale for dollars
2. A sale under P.L. 480 (Title I long-term credit and sales for foreign currency are eligible, whereas government-to-government and government-to-private agency donation programs under Title II of P.L. 480 are ineligible--under Title II programs, commodities are supplied from government-owned stocks, and export payments are not made)
3. A sale financed under the CCC Export Credit Sales Program regulations
4. A sale for exportation under the Barter Program terms and conditions involving wheat acquired from private stocks
5. A sale financed with funds authorized by the Agency for International Development
6. Such other sales as may be determined by CCC to be in the interest of the program

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[10]Tontz, R. L., and E. N. DeBlois, Export Payment Assistance to U.S. Agricultural Exports, Foreign Agricultural Trade of the United States, Washington, D.C., June, 1963, p. 7.

[11]United States Department of Agriculture, Commodity Credit Corporation, Wheat Export Program, Washington, D.C., November, 1967, p. 3.

General Conditions of Eligibility for Export Payments

An exporter who wishes to qualify for an export payment submits an offer to export wheat. Export payment rates are based on rates announced by CCC. Export payments are made in such amounts as CCC determines will make wheat competitive in world markets, avoid disruption of world market prices, and fulfill any applicable international obligations of the United States. The offer submitted by the exporter and its acceptance by CCC constitutes a contract under which the exporter agrees to export the quantity of wheat to which the offer relates. Payment is made to an exporter on the net quantity of wheat exported in accordance with his contract with CCC.

Export Payments

The United States Department of Agriculture has historically made export payments in cash or in kind. Payment-in-kind involved the use of CCC stocks to pay certain specified kinds of obligations of the CCC, such as subsidization of exports of agricultural commodities. The amount of subsidy, or payment per unit, was approximately the difference between the United States and the world price. Use of payments-in-kind for wheat is briefly described as follows: The exporter purchased, from regular commercial sources, the wheat he expected to ship. On this wheat he received as an export payment a certificate redeemable only in CCC-owned wheat at seaboard locations. The value of the certificate was based on the number of bushels of wheat exported times the export payment rate per bushel in effect on the date of the export sale.[12] As of August, 1966, payments-in-kind were eliminated and now practically all payments are made in cash. The payments-in-kind were a means of using government-owned commodities to pay export subsidies. Payment-in-kind export subsidies were discontinued when CCC-owned wheat inventories were reduced to comparatively low levels. This change in policy marked the success of domestic and export programs in bringing production in line with demand and in reducing burdensome surpluses.[13]

Rates of Payment

Setting wheat export payment rates is the responsibility of the USDA. The work is headed by the Export Marketing Service.

At 3:31 p.m. (eastern time) each business day the Export Marketing Service announces in Washington, D.C., the export payment rates which are available to United States exporters until 3:30 p.m. the next market day.

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[12]Sorenson, L. O., and D. E. Anderson, The Grain Marketing Operations of the Commodity Credit Corporation Through 1962, Technical Bulletin No. 458, North Dakota State University, Fargo, North Dakota, September, 1965, p. 48.

[13]United States Department of Agriculture, Economic Research Service, Our Foreign Agricultural Trade, Agriculture Information Bulletin No. 312, Washington, D.C., May, 1969, p. 9.

Rates are announced in cents per bushel for each class of United States wheat--hard red spring, hard red winter, soft red winter, durum, and white. Where quality is a significant price factor, rates are announced for wheat by class and protein content. A separate schedule of rates is announced for each of the United States export coastal areas--the Pacific, Gulf, and East Coast. East Coast rates pertain to the Atlantic, Great Lakes, and St. Lawrence River port areas. Once rates have been determined for the day, they are published to the export trade.

"Old Crop" and "New Crop" Rates

Before the end of a marketing year for wheat, the USDA announces a schedule of export payment rates for the new crop. Since the old crop has storage and other charges against it, its price is normally higher and requires a higher export payment. Announcement of a "new crop" rate permits forward sales in the new crop period. The dual schedule of rates normally remains in effect for several months.

Determining Export Payment Rates

Determining export payment rates is a judgment process carried out by a group of government marketing specialists with extensive experience in observing grain trading. Basically, payment rates are established by collecting full information about United States domestic market prices and about prices at which United States and competing wheats are being offered at key international trading points. Export payments are then fixed at levels which price wheats at United States ports, plus ocean transportation costs, to result in prices in the overseas markets that are competitive with prices of other exporting countries.

Changes in United States domestic wheat market prices do not always bring changes in the export payment rate. On a given day domestic prices may change rather sharply because of such factors as temporary short supplies in the market, reports of drought or other bad weather conditions, unusual domestic and export demand occurring in the market at the same time, withholding of supplies by producers or grain handlers, or unusual speculative activity. In such cases export payment rates may be held at the preceding day's level until the market settles down, and then the export subsidy rate is gradually adjusted.[14]

Subsidies are established on each class and quality of wheat which the United States is trying to move into a particular market to compete with export supplies of other countries for that market. The USDA receives each day from its observers in Europe the prices at which all countries are offering wheat in the European market. This is watched carefully to be sure that United

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[14]United States Department of Agriculture, Export Marketing Service, The U.S. Wheat Export Payment Program, Washington, D.C., October, 1970, p. 2.

States prices for comparable classes of wheat are competitive. The price at which the Canadians are selling their wheat from the St. Lawrence ports and from the West Coast is also determined daily and our net export prices are then geared to make them competitive with Canadian wheat.

If the United States is competing in the European market against Argentina, as well as Canada, sometimes prices are adjusted to be competitive with the Argentines, depending on what business is being aimed at. Generally speaking, in the European market United States hard red spring wheat should be at appropriate discounts under Manitoba's, and our hard red winter wheat should be approximately at a par relationship with Argentine Plate.

United States subsidies on the Gulf and East coasts are adjusted to maintain this price spread. If one of our competitors starts cutting the price, their price cuts are generally met by increasing the subsidy and thus reducing our net export price. The same thing is true with United States export prices off the West Coast--United States spring and winter wheat prices are geared to the prices quoted by the Canadians and the net export price of white wheat is geared to the price competition of the Australians for the FAQ wheat.[15]

Positioning Wheat for Export

Although payment rates vary among coastal points, reflecting differences in transportation and other United States internal costs, it is not the primary purpose of the export payment program to influence the amount of United States wheat which moves to the various coastal positions for export, although this is sometimes an end result. An incremental payment for rail transportation is sometimes made in addition to the regular export payment. This is done in the winter when the Great Lakes and the Mississippi River are closed and permits United States spring and durum wheats to move from production areas to the Gulf and East coasts. Rail rates are higher than barge rates to these export coasts, and since wheat cannot be moved by barge during the winter period, it must be moved by rail. This incremental subsidy bridges the gap between barge and rail rates and enables United States spring and durum wheats to be competitive on a year-round basis in the world market.

HISTORICAL IMPACT OF WHEAT EXPORT PAYMENT ASSISTANCE ON THE UNITED STATES ECONOMY

Increasing exports will improve the balance-of-payments situation of a nation if all other economic variables remain constant. This phenomenon is brought about by the inflow of dollars created through the sale of exported

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[15]Dyess, Jim, National Association of Wheat Growers, Report from Washington, D.C., December 1, 1967.

commodities. The balance-of-payments situation is directly improved by those export sales made on a commercial or dollar basis. However, the economic position of a nation is also improved by export commodity sales in which payments are made in the form of barter, long-term credit, local currency, or various other forms. The improvement in the overall economic position of the United States from export subsidized wheat sales was used as a measure of the primary economic impact derived from export subsidy payments during the 1963-68 study period. The economic impact was expressed as the total dollar value of all wheat exported with government assistance during this period. From an economic standpoint, agricultural export subsidies are considered as a form of transfer payment to the agricultural industry. The export subsidies help maintain market outlets for production above domestic needs, thus bolstering farm income by stimulating the demand for subsidized commodities. The costs of wheat export subsidies to the United States government for the six-year study period were analyzed. Estimates of storage savings due to wheat sales generated by the export subsidy program were also made.

Volume and Value of United States Wheat Exports

United States wheat export volumes and values are illustrated for the period 1962-63 through 1967-68 in Table 1. This table also indicates wheat exports by type of export program. Wheat exports hit record levels in 1963-64 when 755 million bushels were exported and in 1965-66 when 785 million bushels were exported. In 1963-64, demand for United States wheat was stiumulated by a decline in wheat production in Western Europe, the Soviet Bloc, and in Japan. These areas purchased over 75 percent of United States dollar exports of wheat during 1963-64. In 1965-66, wheat sales were stimulated by record Title I (foreign currency) sales to India, which experienced the severest drought in a century. Also, Japan, the EEC, and the United Kingdom were important commercial customers, purchasing near-record levels during 1965-66. Because of concern over small prospective world wheat supplies, increased purchases in the world market by the Soviet Union and Mainland China and continued heavy requirements by India, many other wheat importers made heavier than usual purchases in the first half of the year to cover their anticipated needs. This increase in imports led to record levels of United States wheat exports in 1965-66.

Title I of P.L. 480 (local currency sales) accounted for the largest volume of wheat exports during the period 1962-63 through 1967-68 with 1.9 billion bushels valued at $3.3 billion exported under this program. This program and other concessional programs were designed to strengthen the economies of recipient countries, enabling them to move closer to the day when their trade with the United States can be made on a commercial basis. Commercial sales during this period reached a level of 1.6 billion bushels of wheat valued at $2.6 billion. Commercial sales, generally speaking, increased during this period to a record level of 355 million bushels in 1967-68, evidencing that concessional export programs are fulfilling their objectives of establishing commercial export markets. Wheat exports during the six-year study period totaled 4,077 million bushels and were valued at $7,071.2 million.

Wheat Exports Under the Export Subsidy Program

During the time period 1962-63 through 1967-68, United States exports under Titles II and III of P.L. 480 (donations) were not eligible for export payments. Sales under all other export programs were eligible for subsidies except at times when domestic prices approximated world prices. Table 2 presents data on wheat exports receiving export assistance during this time period.

Approximately 3.9 billion bushels of wheat were eligible for export payments during the 1963-68 time period. Slightly over 3.6 million bushels of this wheat received export assistance or 91.8 percent of all wheat eligible for export subsidies during this time period (Table 3). The balance (8.2 percent) was competitive in world markets without the assistance of export payments.

Wheat Export Payment Assistance

Wheat export payments are illustrated for the time period 1962-63 through 1967-68 in Table 3. Average export payments ranged from a high of $.64 per bushel in 1962-63 to a low of $.11 per bushel in 1967-68. The average export payment on all wheat exported during the six-year study period was estimated at $.38 per bushel.

Total export payments ranged from a high of $380.6 million in 1963-64 to a low of $51.5 million in 1967-68. Wheat export payments for the six-year period totaled $1,390.6 million.

Export subsidy payments were mainly in the form of payments-in-kind until August, 1966, when the CCC discontinued the use of export commodity certificates and resumed cash export payments--the practice prior to 1956. The payment-in-kind export payment programs were a means of using government-owned surpluses to pay export subsidies and at the same time reduce surplus stocks.

Exports under the barter and CCC credit sales programs were facilitated by sales from government-owned stocks at world prices, i.e., domestic prices less export payment allowances. However, export payments in cash have been extended to these sales since April 27, 1967.

Domestic Program

Prior to 1963, wheat producers received a major share of their income in the market. Wheat prices were supported at levels between $1.78 and $2.24 per bushel until a major shift in the national average price support level occurred in the 1963-64 marketing year. In 1963-64 farm income was bolstered by wheat legislation providing cooperating farmers price-support loans of $1.30 per bushel with income payments provided through domestic marketing certificates. Wheat for domestic use was supported at parity through the issuance of domestic marketing certificates. The certificate value reflected parity minus the national average loan level in a given year.

TABLE 1. VOLUME AND VALUE OF UNITED STATES WHEAT EXPORTS BY EXPORT PROGRAM, 1962-63 THROUGH 1967-68

Program	1962-63		1963-64		1964-65		1965-66		1966-67		1967-68		Total	
	Volume (thou bu)	Value (mil dol)	Volume (thou bu)	Value (mil dol)	Volume (thou bu)	Value (mil dol)	Volume (thou bu)	Value (mil dol)	Volume (thou bu)	Value (mil dol)	Volume (thou bu)	Value (mil dol)	Volume (thou bu)	Value (mil dol)
P.L. 480:														
Title I	365,365	632.0	346,314	606.0	415,125	746.4	363,851	593.2	200,852	352.7	220,540	360.0	1,912,047	3,290.3
Title II	22,511	87.0	23,788	92.2	6,336	22.8	24,133	86.2	15,556	31.3	14,704	25.7	107,028	345.2
Title III														
Foreign Donations	959	1.8	5,453	10.6	4,605	8.2	2,648	4.2	4,643	9.4	2,225	6.4	20,533	40.6
Barter	5,491	9.8	35,168	62.2	11,952	20.8	45,416	72.3	64,986	114.9			163,013	280.0
Title IV	4,652	8.0	10,918	19.4	57,271	95.3	67,919	102.5	36,997	63.9	106,797	180.8	284,554	469.9
AID	1,111	2.5	504	1.3	99	.2	167	.3	1,451	3.4	723	1.2	4,055	8.9
Commercial	134,980	232.3	333,187	562.8	139,439	202.7	281,406	414.7	341,301	605.4	355,337	618.4	1,585,650	2,636.3
Total	535,069	973.4	755,332	1,354.5	634,827	1,096.4	785,540	1,273.4	665,796	1,181.0	700,326	1,192.5	4,076,880	7,071.2

SOURCE: United States Department of Agriculture, Economic Research Service, Foreign Agricultural Trade of the United States, Washington, D.C., 1962-63 through 1967-68 editions.

TABLE 2. TOTAL UNITED STATES WHEAT EXPORTS, DONATIONS, WHEAT ELIGIBLE FOR EXPORT PAYMENTS, AND PERCENT OF SUBSIDY-ELIGIBLE WHEAT EXPORTS RECEIVING ASSISTANCE, 1962-63 THROUGH 1967-68

Year	Total Wheat Exports		Total Donations		Wheat Exports Eligible for Export Payments		Wheat Exports Receiving Export Payments		Percent of Eligible Wheat Exports Receiving Export Payments
	Volume (thou bu)	Value (mil dol)	Volume (thou bu)	Value (mil dol)	Volume (thou bu)	Value (mil dol)	Volume (thou bu)	Value (mil dol)	(percent)
1962-63	535,069	973.4	23,470	88.8	511,599	884.6	510,799	882.6	99.8
1963-64	755,332	1,354.5	29,241	102.8	726,091	1,251.7	676,606	1,176.7	93.2
1964-65	634,827	1,096.4	10,941	31.0	623,886	1,065.4	623,886	1,065.4	100.0
1965-66	785,540	1,273.4	26,781	90.4	758,759	1,183.0	758,759	1,183.3	100.0
1966-67	665,786	1,181.0	20,199	40.7	645.587	1,140.3	595,597	1,052.8	92.2
1967-68	700,326	1,192.5	16,929	32.1	683,397	1,160.4	467,327	795.4	68.3
Total	4,076,880	7,071.2	127,561	385.8	3,949,319	6,685.4	3,632,974	6,156.2	91.8

TABLE 3. UNITED STATES WHEAT EXPORTS UNDER EXPORT PAYMENT ASSISTANCE PROGRAM, AVERAGE AND TOTAL EXPORT PAYMENTS, 1962-63 THOURGH 1967-68

Year	Volume of Wheat Exported Under Export Payment Assistance Program (thou bu)	Average Export Payment (dol/bu)	Total Export Payments[a] (mil dol)
1962-63	510,799	$.64	$ 328.1
1963-64	676,606	.55	380.6
1964-65	623,886	.23	143.5
1965-66	758,759	.47	354.3
1966-67	595,597	.22	132.5
1967-68	467,327	.11	51.5
Total	3,632,974	$.38	$1,390.6

[a]Export payments are those reported by the Fiscal Division, Agricultural Stabilization and Conservation Service, United States Department of Agriculture.

The volume of wheat as the producer's share in the national allocation for domestic use was determined by the USDA taking into consideration the domestic demand for wheat, the export demand, and the demand for carry-over of wheat.

In 1964-65 price-support loans were reduced from $1.30 to $1.25 per bushel and remained at $1.25 for the rest of the six-year period. As a result of the lowering of the price supports, United States wheat became more competitive with wheat in world markets. Because of the lower price support rates, smaller payments in the form of export subsidies were needed to move United States wheat into world market channels. Average export payments were $.64 per bushel and total export payments were $328.1 million when wheat was supported at $2.00 per bushel in 1962-63. The average export payment dropped to $.23 per bushel and total export payments dropped to $143.5 million in 1964-65 due to lower market prices and a reduction in the national average loan rate to $1.25 per bushel (Table 3). In the 1967-68 marketing year export payments reached a low of $.11 per bushel on wheat moving in export channels.

Export Certificate Program

Under the export certificate payment program, a commercial exporter was required to pay the federal government $.25 per bushel from August, 1964, to July, 1965, for wheat commercially exported and $.30 per bushel from August, 1965, to June, 1966. This was a protective device to avoid violation of the International Wheat Agreement (IWA). It was designed to assure that the export price of wheat would not fall below the agreed upon minimum set by the IWA. In 1966 export marketing certificates were changed from a predetermined annual value to values changed on a day-to-day basis. If United States prices were above world market prices, an export subsidy reflecting the difference between

the United States price and world price levels was made to exporters. If world prices were above United States prices, an export marketing certificate equal to the difference between the United States price and world prices was collected from exporters. At the end of the marketing year the proceeds from export marketing certificates minus export payments were to be distributed to eligible producers on a pro rata basis.

Economic Impact from Wheat Export Payments

The impact of the export subsidy was expressed as the total dollar value of all wheat exported with government assistance during the six-year study period. Wheat export payments, as well as wheat exports under the export payment program for the study period, are presented in Table 4.

TABLE 4. SUMMARY OF UNITED STATES WHEAT EXPORT PAYMENTS AND WHEAT EXPORTS UNDER EXPORT PAYMENT ASSISTANCE PROGRAM, 1962-63 THROUGH 1967-68

Year	Total Wheat Export Payments (mil dol)	Wheat Exports Under Export Payment Program	
		Volume in Bushels (thou bu)	Value (mil dol)
1962-63	$ 328.1	510,799	$ 882.6
1963-64	380.6	676,606	1,176.7
1964-65	143.5	623,886	1,065.4
1965-66	354.3	758,759	1,183.3
1966-67	132.5	595,597	1,052.8
1967-68	51.5	467,327	795.4
Total	1,390.5	3,632,974	6,156.2

During the 1963-1968 time period, transfer payments totaling $1,390.5 million were paid to wheat exporters to price United States wheat competitively in world markets. These expenditures were utilized to export 3,633 million bushels of wheat. Total revenue from the sale of this wheat was estimated at $6,156.2 million, so the economic position of United States farmers was indirectly improved by this amount due to the use of wheat export subsidies during the study period.

Storage Savings

Storage savings were estimated based on the cost of one year's storage of the wheat that was exported under the export subsidy program. These storage savings ranged from a high of $102 million in 1965-66 when 759 million bushels of wheat were exported with government assistance to a low of $61 million in 1967-68 when approximately 467 million bushels of wheat were exported with the aid of export subsidies. Total storage savings for the six-year study period were estimated at $475 million.

Impact of Export Payments on United States Wheat Production

United States wheat producers have historically produced more wheat than was needed for domestic utilization. Exports to wheat-deficit countries have been an important outlet for excess United States wheat. Without export payments, United States wheat in the 1963-68 time period would have been overpriced in world markets. Export payments have benefited the United States wheat producer, enabling him to sell a portion of his wheat on the domestic market at one price and to sell much of the remaining supplies in foreign markets at a lower world market price. The importance of export payments as a means of selling United States wheat production in world markets is illustrated in Table 5.

TABLE 5. UNITED STATES TOTAL WHEAT PRODUCTION, WHEAT EXPORTS UNDER EXPORT PAYMENT PROGRAM, AND PERCENT OF UNITED STATES WHEAT EXPORTED WITH GOVERNMENT EXPORT ASSISTANCE, 1962-63 THROUGH 1967-68

Year	Total U.S. Wheat Production (mil bu)	Total Wheat Exported With Government Export Assistance (mil bu)	Proportion of U.S. Domestic Wheat Production Exported With Export Assistance (percent)
1962-63	1,092	511	46
1963-64	1,147	677	59
1964-65	1,284	624	48
1965-66	1,316	759	57
1966-67	1,312	596	45
1967-68	1,524	467	30
Total	7,675	3,634	47

United States domestic wheat production during the six-year time period totaled 7.6 billion bushels. The proportion of this wheat that was exported due to government export payment assistance programs ranged from a high of 59 percent of domestic production in 1963-64 to a low of 30 percent in 1967-68. Approximately 47 percent of all wheat produced in the United States in the six-year study period entered world trade with the assistance of export payments, so export subsidies played a vital role in disposing of domestic wheat supplies by maintaining export outlets in importing countries throughout the world. As an end result, producers' income from wheat production was maintained throughout the six-year period due to expanded outlets and increased demand for United States wheat created through the use of the export payment assistance program, combined with domestic price support and marketing certificate programs. Farmers in traditional wheat producing states would undoubtedly have experienced considerable income loss if wheat exports had not been subsidized. These losses would have occurred because of lower wheat prices and reduced acreage allotments due to reduced market demand.

ANALYSIS OF EXPORT SUBSIDIES BY CLASS OF WHEAT

Costs of export subsidies and the economic impact of wheat export sales were estimated by class of wheat for fiscal year 1970. The major classes of export wheat are hard red spring (HRS), durum, hard red winter (HRW), soft red winter (SRW), and white wheat.

Costs of Export Payments

During fiscal year 1970, 532 million bushels of wheat were exported under programs eligible for export subsidy payments (Table 6). An estimated $78 million in export payments was needed to make this wheat competitive in world markets during this time period. Total export payments ranged from a high of $39.6 million for hard red winter wheat to a low of $1.8 million for soft red winter wheat. Average export payment rates ranged from a high of $.30 per bushel for hard red spring wheat to a low of $.06 per bushel for white wheat and averaged $.15 per bushel for all subsidy-eligible wheat.

It appears that without the benefit of export payment assistance, hard red spring wheat would be in the least competitive position of all classes of United States wheat competing in world markets. This is indicated by the higher average export payments made on hard red spring wheat. A possible reason for the price differential between United States and foreign markets lies in the fact that the largest proportion of hard red spring exports (47 percent during study period) are exported from the West Coast, relatively far away from the primary production area for this wheat. Relatively high transportation costs are incurred in moving this wheat to West Coast ports, and larger payments are needed to adjust the price of this wheat to world wheat prices. Canada, in contrast, does not utilize direct subsidy payments to make its wheat competitive in this manner. Under the Crow's Nest Pass Agreement of 1897, the government promotes wheat exports by reimbursing railroads hauling wheat for export to the West Coast area.[16] Export subsidy payments are not necessary, but this procedure may be viewed as indirect subsidization.

Wheat Export Values by Class

Table 6 presents estimates of the value of wheat exported under subsidy-eligible export programs during fiscal year 1970. The total value of all wheat exports was estimated at $794.3 million with an average export price of $1.49 per bushel.

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[16]Wehrivein, Carl F., "Government Grain Programs of Canada, Australia, Japan, and the United Kingdom," Journal of Farm Economics, American Farm Economics Association, George Banta Company, Inc., Menasha, Wisconsin, November, 1965, p. 933.

TABLE 6. SUMMARY OF SUBSIDIZED WHEAT EXPORTS, EXPORT PAYMENTS, AND EXPORT VALUES BY CLASS, 1969-70

Class of Wheat	Volume of Export Subsidized Wheat (thou bu)	Estimated Total Export Payments (thou dol)	Average Export Payment/Bu (dol/bu)	Estimated Value of Exports (thou dol)	Average Export Price (dol/bu)
Hard Red Spring	88,382	26,862	$.30	142,317	$1.61
Durum	34,244	2,997	.09	56,804	1.65
Hard Red Winter	271,814	39,595	.14	392,738	1.44
Soft Red Winter	24,510	1,835	.07	35,150	1.43
White	113,115	6,940	.06	167,343	1.48
Total	532,065	78,229	.15	794,352	1.49

Classes of wheat with largest dollar volume of exports were hard red winter and white wheats with export values of $392 million and $167 million, respectively. These two classes are also largest in total domestic production in the United States. Average export prices ranged from highs of $1.65 and $1.61 per bushel for durum and hard red spring wheat, respectively, to a low of $1.43 per bushel for soft red winter wheat.

Relationship of Export Payment Rates to United States Wheat Exports

In a recent study of wheat exports during a 1962-66 study period, Cudworth noted a high degree of price competition in world wheat markets.[17] He emphasized the fact that the export subsidy rate administered by the USDA has considerable influence upon the sales value of commercially exported hard red spring wheat. During the period of his analysis, the export subsidy rates were relatively high at each coastal export point. Elimination of the export subsidy would have caused a substantial increase in the export price of United States wheat. He reported that since Canada and the United States are the only suppliers of hard red spring wheat in world markets, the Canadian export pricing system has considerable influence on the level of United States hard red spring exports. He noted that changing of the export subsidy rate would have three effects on the degree of competition between United States and Canadian commercially exported wheat:

1. Make the United States price more competitive, or
2. Tend to equalize United States and Canadian prices, or
3. Make the United States prices higher and less competitive with Canadian prices.

In his analysis of Canadian and United States hard red spring wheat export prices, Cudworth determined that if the United States export price decreased (increase of export subsidy) while the Canadian price remained constant, commercial exports of hard red spring wheat would tend to increase substantially. Cudworth's results were further substantiated by analysis of data on wheat exports during the fiscal year 1970. A statistical technique was utilized to determine the relationship of export subsidy rates to exports of all classes of wheat for the 1969-70 marketing year. Positive relationships were found to exist between these two variables (i.e., wheat exports tended to increase with export subsidy rates) in many cases. However, this effect was often found to be lagged. That is, the export subsidy rate did little to influence exports until several months

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[17]Cudworth, Clair W., Factors Affecting the Volume of United States Commercial Hard Red Spring and Durum Wheat Exports, Unpublished M.S. Thesis, Department of Agricultural Economics, North Dakota State University, Fargo, North Dakota, p. 88.

later. Possible explanations for this lag include the relationship of the contract date to the end of the announced subsidy rate period, the internal transportation situation, and the relative proximity of the major area of production for a particular class of wheat to its primary port of export. The world's grain importers, particularly European importers, are accustomed to trading on a forward sales basis. Other wheat exporting nations also negotiate forward sales or purchases. The United States export trade would be handicapped if it were unable to make sales well in advance at an assured export payment rate.

Results of this analysis indicate that the export subsidy rate is a significant factor in determining volume of United States wheat exports. The export subsidy rate, however, is not the only factor affecting the price at which United States wheat is sold to importers. Other factors include the strength of world demand, foreign exchange rates, and an exporter's market position.