

**DURUM WHEAT:
CONDITIONS OF COMPETITION
BETWEEN THE U.S. AND
CANADIAN INDUSTRIES**

Report on Investigation No. 332-285
Under Section 332(g) of the
Tariff Act of 1930 as amended



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PREFACE

On October 26, 1989, the U.S. International Trade Commission received a letter from the Committee on Ways and Means, U.S. House of Representatives, requesting a study on the conditions of competition in the U.S. and Canadian durum wheat markets. On November 15, 1989, the Commission received a letter from the Committee on Finance, U.S. Senate, containing an identical request.¹ Therefore, in accordance with section 332(g) of the Tariff Act of 1930, as amended,² the U.S. International Trade Commission instituted investigation No. 332-285, *Durum Wheat: Conditions of Competition Between the U.S. and Canadian Industries*. Specifically, the Commission was asked to report on—

- (1) A description of the U.S. and Canadian durum wheat industries, including patterns of production, processing, and consumption;
- (2) Statistical analyses of both U.S. and Canadian durum production, consumption, exports, imports, and import market shares, in terms of both levels and trends;
- (3) A description of the current conditions of trade in durum wheat between the United States and Canada, and any recent changes in such conditions, including information on prices, exchange rates, transportation costs, and marketing practices (to the extent such practices have measurable effects). To the extent possible, the Commission should assess the regional impact of imports by determining their geographic concentration;
- (4) A description of the Federal, State, or Provincial Government (either U.S. or Canadian) programs and policies to assist durum wheat producers and processors. Examples include programs that reduce fixed costs, programs that enhance revenues, and transportation assistance programs;
- (5) A discussion of all other relevant factors affecting conditions of competition, including product prices, transportation costs, and product quality.

The committees requested that the Commission report the results of its investigation by June 22, 1990.

The information contained in this report was obtained from a variety of sources, including U.S. and foreign Government agencies; State government agencies; U.S. and foreign academic institutions; the United Nations; industry trade associations; and domestic producers, millers, and importers. Fieldwork by USITC staff with various segments of the U.S. and Canadian durum industries also provided information.

¹ The requests are from the Honorable Dan Rostenkowski, Chairman, Committee on Ways and Means, U.S. House of Representatives, and from the Honorable Lloyd Bentsen, Chairman, Committee on Finance, U.S. Senate. (See app. A.)

² 19 U.S.C. 1332(g).

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EXECUTIVE SUMMARY

Durum wheat, unlike wheat varieties commonly used to make bread, is grown only in a few regions, normally sells in a "thin" market that fluctuates widely, and is used in only a few end products (primarily pasta products). Hence, durum wheat often is considered to be a specialty wheat; shifts in supply usually play a more important role in determining prices than shifts in demand. In the United States, durum wheat accounts for about 5 percent of the value of the total annual wheat crop. The value of the U.S. durum wheat crop for 1989/90 is estimated at 4.2 percent of the entire wheat crop, or \$319 million, compared with \$7.6 billion for the entire wheat crop. In Canada, on the other hand, durum is considered more of a major wheat variety; it accounts for about 18 percent of the value of the total annual Canadian wheat crop. The value of the Canadian durum crop for 1989/90 is estimated at C\$420.8 million, compared with C\$2.4 billion for the entire wheat crop.

About 85 percent of U.S. durum wheat production occurs in North Dakota; the remainder is concentrated mostly in other Northern Plains States, with some production in Arizona and California. Canadian production of durum wheat generally is concentrated in areas contiguous to the production areas of the United States. Durum wheat is delivered to local elevators from the farm and is then distributed through a system of local and terminal elevators to export points or to the 14 major millers in the United States and 8 major millers in Canada. The millers subsequently process the wheat into milled durum for use in the manufacture of pasta products.

A profile of the U.S. and Canadian durum wheat sectors for 1985-89, in terms of both levels and trends, is shown in table A.

Table A
Profile of U.S. and Canadian durum wheat industries and markets, 1985-89¹

	1985	1986	1987	1988	1989
United States:					
Acreage planted (million hectares)	1.3	1.2	1.3	1.3	1.5
Production (million metric tons)	3.1	2.7	2.5	1.2	2.5
Yield (metric tons per hectare) ²	2.9	2.6	2.1	1.1	1.8
Imports from Canada (million metric tons) ³ .....	.0	.1	.2	.2	.1
Exports (million metric tons)	1.4	2.2	1.7	.5	1.8
Consumption (million metric tons) ⁴	1.7	.6	1.0	.9	.8
Ratio of imports to consumption (percent) .....	.0	10.3	20.3	20.7	13.1
Ending stocks (million metric tons)	3.3	2.6	2.3	1.6	1.3
Average delivered price to U.S. millers: ⁵					
Grade 1 (dollars per bushel)	(⁶)	4.00	4.15	5.89	5.59
Grade 2 (dollars per bushel)	(⁶)	3.67	3.86	5.46	5.05
Canada:					
Acreage planted (million hectares)	1.7	1.9	2.2	2.3	2.6
Production (million metric tons)	2.0	3.9	4.0	1.9	3.8
Yield (metric tons per hectare)	1.1	2.1	1.8	.9	1.6
Exports (million metric tons)	1.4	2.0	2.7	2.0	2.9
Consumption (million metric tons) ⁷ .....	.5	.9	1.3	.6	(⁸)
Ratio of imports to consumption (percent)	(⁹)				
Ending stocks (million metric tons) ¹⁰ .....	.2	.6	.2	.4	(⁸)
Average delivered price to U.S. millers: ⁶					
Grade 1 (dollars per bushel)	(⁸)	(¹¹)	(¹²)	5.01	5.68
Grade 2 (dollars per bushel)	(⁸)	(¹¹)	(¹²)	5.33	5.84

¹ July-June crop years. Data for 1989 are estimated.

² North Dakota only, the State where about 85 percent of the U.S. crop is produced.

³ All U.S. imports of durum wheat are from Canada.

⁴ Domestic consumption as published by the U.S. Department of Agriculture.

⁵ Prices are based on January-December prices as reported in the questionnaires.

⁶ Questionnaire data started in 1986.

⁷ Domestic use as published by the Canadian Grain Commission.

⁸ Not available.

⁹ Canada does not import any durum wheat.

¹⁰ Canadian Wheat Board "sale to the subsequent pool account;" year ending July 31.

¹¹ No transactions reported.

¹² There are too few transactions to report without violating confidentiality guidelines.

Source: Official statistics of the U.S. Department of Agriculture; the Canadian Wheat Board; the Canadian Grain Commission; the North Dakota Wheat Commission; and responses to questionnaires sent to millers and importers of durum wheat by the U.S. International Trade Commission.

The principal results of this investigation regarding the competitive conditions between the U.S. and Canadian durum wheat industries are as follows:

- *Production of durum wheat in the United States and Canada in 1987 through 1989 was reduced because of drought.*

As drought occurred in the U.S. and Canadian durum wheat-growing areas in 1987 through 1989, U.S. production of durum wheat, which had been declining since 1985, dropped from 2.5 million metric tons (1.3 million hectares planted) in 1987 to 1.2 million metric tons in 1988 (from the same area planted). Canadian production of such wheat, which had been increasing since 1985, declined from 4.0 million metric tons (2.2 million hectares planted) in 1987 to 1.9 million tons (2.3 million hectares planted) in 1988. Production in both countries recovered in 1989, or to 2.5 million metric tons in the United States (from 1.3 million hectares) and 3.8 million metric tons in Canada (from 2.6 million hectares). Yield of durum wheat in Canada averaged 1.5 metric tons per hectare during 1985-89; in the United States durum wheat yield averaged 2.1 metric tons per hectare. The drop in durum wheat production in 1988 was largely due to the drought halving yields in the United States and Canada. During the 1985-89 period, the acreage planted to durum in the United States averaged 1.3 million hectares per year, while that in Canada averaged 2.1 million hectares per year, or about 60 percent higher than in the United States.

- *U.S. ending stocks of durum wheat, which had been declining since 1985, dropped precipitously in 1988 and continued down in 1989 as reserves (mostly farmer-owned) were released. Nonetheless, U.S. prices for durum rose during 1986-88 and remained firm in 1989.*

U.S. ending stocks of durum wheat declined from 3.3 million metric tons in 1985 to 2.3 million metric tons in 1987. Stocks then dropped about 30 percent in 1988 (to 1.6 million metric tons) and fell further (to 1.3 million metric tons in 1989) as farmer-owned reserves (generally the lower grades of wheat—No. 3, or below) were sold. Data are not available to indicate the U.S. price levels that might have been attained for durum had the reserves not been marketed. However, the average annual delivered price for durum wheat at Minneapolis, the only major centralized U.S. market for durum wheat, increased from \$3.65 per bushel in 1986 to \$5.13 per bushel in 1988 (the year of an unusually large drop in production), before declining to \$4.70 per bushel, or about 8 percent, in 1989.

- *U.S. exports of durum wheat declined from 1987 to 1988 as reserves were sold in the domestic market, rather than exported.*

In 1985, the United States developed the Export Enhancement Program (EEP) in order to increase U.S. competitiveness in world agricultural markets. U.S. exports of durum wheat increased irregularly from 1.4 million metric tons in 1985 to 1.7 million metric tons in 1987. About half of the 1987 exports of durum were under the EEP program. In 1988, U.S. exports of durum wheat declined precipitously to 0.5 million metric tons, as reserves were sold in the domestic market rather than exported. (The data suggest that most of the durum wheat exports in 1988 were under the EEP.) In 1989, exports recovered to 1.8 million metric tons, but only about 20 percent were exported under the EEP.

- *U.S. imports of durum wheat increased to a record high in 1988 as U.S. prices rose. Imports then declined only slightly in absolute terms in 1989. The share of imports to U.S. consumption reached a high of 21 percent in 1988 and declined sharply in 1989 to 13 percent. Canada imported no durum wheat during 1985-89.*

U.S. imports of durum wheat, all from Canada, increased from zero in 1985 to 202,500 metric tons in 1987; in 1988, imports declined over 8 percent to 186,000 metric tons. The ratio of imports to consumption increased irregularly from 10.3 percent in 1986 to 20.7 percent in 1988, but fell back to 13.1 percent in 1989. Because of the dynamics of the international wheat markets prices for durum in major world markets were reported to fall below domestic U.S. prices. Thus, durum wheat exports from Canada became increasingly attracted to the U.S. market, where prices on the Minnea-

polis market rose about 28 percent in the 1986-89 period. Canada imported no durum wheat from 1985 to 1989.

- *There was no consistent difference between prices of U.S.-grown durum and imported Canadian durum.*

There was no consistent price difference between like qualities of U.S. and Canadian-produced durum that explained the growth of durum imports from Canada between 1986-89. However, available supplies of high grade durum wheat in the United States and Canada affect prices and flows of durum wheat.

- *Changes in the exchange rates between the U.S. and Canadian dollars could alter the competitive status of these two principal exporting countries in world wheat markets.*

Canada is the world's largest exporter of durum wheat, accounting for about half of the world durum trade in 1989. The United States is a close second in such trade (about 30 percent of the total). During 1986-89, the U.S. dollar depreciated by 20.1 percent, or from US\$0.7124 per Canadian dollar to US\$0.8558 per Canadian dollar, in nominal terms. In real terms, the dollar depreciated by 28.7 percent with respect to the Canadian currency. These changes in the exchange rates indicate that U.S. wheat suppliers gained a competitive edge against Canadian wheat suppliers in international markets during 1986-89.

- *Total transportation costs to terminal markets are comparable in the United States and Canada. The effect of the portion of the Canadian Government payment to grain transportation costs is realized primarily by the Canadian farmers, whose returns are greater by the amount of the payment.*

The Western Grain Transportation Act (WGTA), which became effective in 1984, and replaced the regulatory system established under the Crow's Nest Pass Act of 1897, provides for direct Government payments to Canadian railroads for rail shipments of western grain to Thunder Bay, on Lake Superior. The Canadian Government directly pays the Canadian railroad companies a portion of the transportation costs attributable to the covered grain movements. Shippers are assured that their average cost per ton of covered grain movements cannot exceed 10 percent of the average price per ton of grain.

It is not apparent from data collected by the Commission in this investigation that prices paid by U.S. millers for Canadian durum are significantly different than prices paid for U.S. durum. The impact of most of the fluctuation in grain transportation rates is ultimately borne by the farmer, so that changes in transportation rates are not, for the most part, reflected in the market prices in either country. When transportation rates rise, the farmer's return on the sale of the grain is lower. Also, it has been demonstrated by researchers that the more elastic the demand for the grain, the higher the percentage of rail rate fluctuations absorbed by the farmer. In the United States, an increase in transport costs generally results in a decrease in farmers' returns. In Canada, the Government payment of part of the rail rates cushions the impact on farmer returns of increases in the rail rate by supporting net cash flows.

- *The geographic location of ports in which import documents were cleared for U.S. imports of durum wheat was relatively unconcentrated. Regional impacts of imports, if any, to durum wheat farmers would occur largely in North Dakota, the major durum wheat producing area in the United States.*

During 1989 (the only year for which data on durum imports are available separately), 33 percent of the quantity of U.S. imports of durum wheat entered at the U.S. Customs district of Cleveland, OH; 23 percent at Buffalo, NY; 21 percent at St. Albans, VT; 17 percent at Duluth, MN; and 5 percent at Great Falls, MT. These entry points are all on, or close to, the Great Lakes and the St. Lawrence Seaway. Thus, the grain is transported by lake carriers from Thunder Bay to a U.S. entry point. The remaining 1 percent of the imports come through at Pembina, ND; Detroit, MI; or Seattle, WA.

As most of the U.S. production of durum wheat is concentrated in North Dakota and other Northern Plains States, any adverse regional impact that might have occurred to

durum wheat farmers from imports would appear to be largely in these States, although the imports were probably milled in more distant areas.

- *The United States offers a complex array of Government programs for wheat farmers which concentrate on price and income support. The Canadian Wheat Board, in conjunction with the Canadian Grain Commission, coordinates the purchase, storage, cleaning, grading, transportation, marketing, importing, and exporting of durum wheat.*

Most U.S. durum wheat growers participate in the programs for wheat operated by the U.S. Department of Agriculture. In addition, some exporters of durum wheat receive bonus payments under the Export Enhancement Program in order to make U.S. durum more competitive in foreign markets. Under the U.S. Government programs, many types of payments (such as deficiency, diversion, reserve, storage, disaster, and conservation) are offered to wheat farmers. During 1985 to 1988, total direct payments made to all wheat farmers were equivalent to nearly 50 percent of the value of their production. Data are not available to indicate whether the share of receipts of U.S. durum wheat farmers contributed by Government payments differs from the share received by all wheat farmers.

The Canadian Wheat Board is the sole legal exporter for food-quality wheat in Canada. The Board also designates delivery quotas for farmers and has a marketing monopoly on grains for domestic use. It derives its operating capital from the revenues obtained by marketing wheat; profits above operating costs are returned to the farmer. The Board operates a system of guaranteed floor prices for six different pools of wheat, including durum. If the pool is in deficit, the Canadian Federal Government provides financial assistance. Licenses are required for all imports of wheat. Under the terms of the United States-Canada Free-Trade Agreement, licenses for imports from the United States will not be issued until the U.S. Government support to wheat declines to a level at, or below, the Canadian support for 2 years. The Western Grain Stabilization Act provides improved income stability by supporting net cash flows of grain farmers in Western Canada, where virtually all Canadian durum wheat is grown.

- *Little discernible difference exists between like varieties of durum wheat produced by farmers on each side of the U.S.-Canadian border.*

On both sides of the U.S.-Canadian border, durum wheat is grown in virtually the same type of soil and climate, and under similar farming techniques. In Canada, however, the varietal certification and licensing system helps to assure that all the durum grown will possess the genetic characteristics desirable to flour millers; millers in both countries must meet the ever-tightening specifications of pasta manufacturers. In the United States, however, varietal certification and licensing are not obligatory as in Canada. Hence, some U.S. farmers, seeking to increase their revenues or net income, may plant varieties that produce higher yields, rather than varieties having the end-use characteristics that millers consider desirable. U.S. Government programs, based on quantities produced, offer wheat farmers incentives to use higher yielding wheat varieties.

- *Although the blending of durum wheat at various stages of the postharvest handling and distribution system may facilitate the movement of larger quantities of grain, it also leads to diminished overall quality, than if only high grade durum were sold. This is reflected in lower end-use values to the millers and the manufacturers of pasta.*

In the United States, wheat from different grades, varieties, and crop years may be blended in order to meet the contract specifications while maximizing profit and increasing throughput. While moving durum out of storage after several years and then blending it with newer higher grade durum may offer a price advantage, the results often are increased broken and spoiled kernels, addition of foreign materials, and a lack of uniformity. The result is a lowering of overall end-use quality attributes and lowered milling performance, though meeting the minimum contract specifications. In Canada, blending only occurs within a single grade. Thus, U.S. millers purchasing durum wheat from Canada are assured the average rather than the minimum for that grade as well as greater uniformity. However, the Canadians market their durum wheat almost exclusively on the basis of grade. The U.S. marketing system permits greater flexibility and the market-

ing of durum wheat based on grade as well as on custom specifications (albeit at a premium).

- *High-quality durum wheat is required to produce the milled durum demanded most by U.S. pasta manufacturers.*

During 1987-89, the share of the U.S. durum wheat crop that was classified in U.S. Grade Nos. 1 and 2 increased from 61 percent to 91 percent. During the same period, the share of the Canadian crop that was classified in Canadian Grade Nos. 1 and 2 varied—from 38 percent in 1987, to 71 percent in 1988, back to 38 percent in 1989. Although the grades of the respective countries are not truly comparable, it appears that durum wheat farmers on both sides of the U.S.-Canadian border produce a substantial and varying amounts of a high-quality product. Millers are often not willing to purchase on the basis of grade alone, but will bid for the supplies of high quality U.S. and Canadian durum wheat needed to produce the quality milled product demanded by U.S. pasta manufacturers.

- *The coincidence of a number of market factors led to the perception of supply and quality problems in the U.S. durum wheat industry.*

The U.S. and Canadian durum crops experienced 3 years of drought between 1987 and 1989. Particularly in 1988, this resulted in a sharp downturn in the quantity of durum wheat produced.

Internationally, the European Community (EC) had emerged as a large net exporter of wheat, including durum wheat, to areas that had been Canadian export markets, thus leaving unsold stocks in Canada. At the same time, U.S. supplies were drawn down by the Export Enhancement Program (EEP). The EEP-EC interplay appears to have lowered world wheat, and durum, prices, while not lowering U.S. domestic prices. The U.S. market thus became relatively more attractive, and the Canadians reportedly saw the opportunity to at least temporarily replace their lost markets.

When the U.S. durum wheat crop is abundant, and the overall grade quality produced is good, then there is no problem with the quality being marketed to end-users. Conversely, when the U.S. crop is small, or quality has been lowered by weather factors (such as rain during the harvest), or reserves are being released, then the Canadian wheat may have an advantage in the U.S. market because of the Canadian quality control and marketing system.

Demand for durum wheat in the U.S. market in 1988 was met by reduced levels of high quality U.S. durum, due to a drought having halved production in that year. Demand was met through release of stocks held in the Farmer Owned Reserves (generally recognized as being of lower quality) and through imports of Canadian durum wheat. Though Canadian producers also had lower durum wheat production levels in 1988, the relatively higher prices of durum in the United States compared with the world markets, and the demand for high quality durum by U.S. millers, appeared to have made the U.S. market relatively more attractive to Canadian exports. However, by 1989, more abundant supplies of U.S. durum wheat resulted in lower U.S. prices and reduced imports from Canada.

Chapter 1 Introduction

Durum wheat is a species of hard wheat which, when milled, is used primarily for the manufacture of pasta products. Durum wheat¹ is a species of wheat distinct from the wheat used to make bread and other bakery products. The hard, flinty kernels of durum wheat are specially ground and refined to obtain semolina² and durum flour,³ the two main inputs in the manufacture of pasta. Only a few durum varieties are well suited for use in the manufacture of pasta.

Wheats other than durum may be used to make pasta, but their use changes the quality of the end product. Durum wheat is considered the hardest of all wheats. Essentially, the harder the wheat (and thus, the higher the protein level), the better the wheat serves in the manufacture of pasta (for example, spaghetti, lasagna, elbow macaroni⁴) and couscous (gelatinized, dried particles of dough, most popular in North Africa). Pasta "long goods" require very high-quality durum, usually unblended with other forms of wheat. Hard Red Spring wheat, which is grown in much the same regions as durum, may be used as a substitute for durum wheat. "Short goods" can be made from durum that is blended with a certain percentage of Hard Red Spring wheat. The actual cross-elasticity of substitution between durum and Hard Red Spring wheat depends on regional preferences in pasta consumption. In the United States, where there is a growing consumer demand for pasta with the "al dente" or bite that semolina provides, the cross-elasticity of substitution would be lower than in Canada, where consumer preferences permit the use of

¹ The term "durum wheat" means wheat of the *Triticum durum* species and the hybrids derived from the interspecific crossing of the *Triticum durum* that have the same number of chromosomes (28) as that species.

² In 21 CFR ch 1, §137.320, semolina is legally defined as the food prepared by grinding and bolting cleaned durum wheat to such fineness that it passes through a No. 20 sieve, but not more than 3 percent passes through a No. 100 sieve. Semolina is typically produced from a durum wheat that is 85 to 90 percent dark, hard, and vitreous, with a falling number in excess of 350 (a measure of sprouting damage or alpha-amylase), and with good sedimentation test results.

³ Under the provisions of 21 CFR ch 1 §137.220, durum flour is "the food that is prepared by grinding and bolting cleaned durum wheat. When tested for granulation as prescribed in §137.105(c)(4), not less than 98 percent of such flour passes through the No. 70 sieve. It is freed from bran coat, or bran coat and germ, to such extent that the percent of ash therein, calculated to a moisture free basis, is not more than 1.5 percent. Its moisture content is not more than 15 percent." Ash, moisture, and granulation are determined according to §137.105 (s).

⁴ Macaroni products are defined in 21 CFR ch. 1 §139.110 as the class of food prepared by drying formed units of dough made from semolina, durum flour, farina flour, or any combination of two or more of these. Farina is legally defined as the food prepared by grinding and bolting clean wheat, other than durum wheat, to the same specifications as for semolina.

Hard Red Spring wheat in up to a 50-percent proportion.⁵ Gluten strength is an important consideration in whether a wheat is suited for a particular use.

Durum is not normally used in the manufacture of bread, except in those world regions where no other wheat varieties are available. Lower quality durum can be used to manufacture products such as couscous and bulgur (parboiled wheat).⁶

For the manufacture of pasta, durum wheat must be of a color ranging from amber-yellow to brown and must show a translucent, hornlike vitreous fracture. Semolina has an amber color; durum flour has a yellowish color. The color of durum wheat carries through to the pasta end product. The subclasses are Hard Amber Durum, Amber Durum, and Durum. Red Durum wheat is a separate class in the official U.S. wheat standards. The grades and grade requirements for U.S. durum wheat (as revised May 1985) are indicated in table 1-1; Canadian grades are shown in tables 1-2 and 1-3.

Pasta manufacturers have become increasingly quality conscious and have reflected this in their purchasing patterns. Millers, both in Canada and in the United States, are moving toward increasingly tight quality control, thereby affecting producer and handler quality control. For instance, older cleaning and milling machinery is being replaced by newer machinery that can match the more exacting specifications needed to meet the changing demands of pasta producers.

The durum wheat economy is marked by shortages, surpluses, and price volatility. According to the International Wheat Council, shortages of durum occur much more frequently than they do for bread wheats. Since durum is a specialty crop with a very thin market, producers of durum respond to low prices in a surplus year by production cuts the following year, which may create a shortage in the year following the surplus year.

Supply and demand imbalances are complicated by worldwide price fluctuations, the world geographical patterns of production, and a limited end market for durum wheat.⁷ Unlike bread wheat, durum is grown in few regions and is a good input for few end products.

⁵ The differences in consumer preferences for pasta in the United States and in Canada, and the cross-elasticity of substitution between Hard Red Spring wheat and durum wheat were discussed with Professor Clay Gilson, Department of Agricultural Economics, University of Manitoba, Winnipeg, Canada, during fieldwork in Canada, March 1990.

⁶ The entire product stream from milling durum wheat includes wheat germ, durum bran, feed, semolina (.66-.70 ash), extra fancy durum patent flour (.66-.70 ash), fancy durum patent flour (.80-.85 ash), durum patent flour (1.00 ash), first clear (1.30-1.40 ash), and second clear (1.75-2.00 ash).

⁷ International Wheat Council, *The World Durum Wheat Situation*, Secretariat Paper No. 12 (London, 1983).

Table 1-1
U.S. grades and grade requirements for durum wheat¹

Grade	Maximum limits of defects						Wheat of other classes	
	Minimum test weight per bushel	Heat damaged kernels	Damaged kernels (total)	Shrunken and foreign material	Broken kernels	Defects (total)	Wheat of contrasting classes	Other classes (total)
	- pounds -				Percent			
No. 1	60.0	0.1	2.0	0.5	3.0	3.0	1.0	3.0
No. 2	58.0	.2	4.0	1.0	5.0	5.0	2.0	5.0
No. 3	56.0	.5	7.0	2.0	8.0	8.0	3.0	10.0
No. 4	54.0	1.0	10.0	3.0	12.0	12.0	10.0	10.0
No. 5	51.0	3.0	15.0	5.0	20.0	20.0	10.0	10.0
Other	(²)	(²)	(²)	(²)	(²)	(²)	(²)	(²)

¹ Revised May 1985.

² U.S. sample grade—U.S. sample grade shall be wheat which:

- (a) Does not meet the requirements for the grades U.S. Nos. 1, 2, 3, 4, 5; or
- (b) Contains eight or more stones, two or more pieces of glass, three or more *Crotalaria* seeds (*Crotalaria* spp.), two or more castor beans (*Ricinus communis*), four or more particles of an unknown foreign substance(s) or a commonly recognized harmful or toxic substance(s), or two or more rodent pellets, bird droppings, or an equivalent quantity of other animal filth per 1,000 grams of wheat; or
- (c) Has a musty, sour or commercially objectionable foreign odor (except smut or garlic odor); or
- (d) Is heating or otherwise of distinctly low quality.

Hard Amber Durum Wheat: The subclass Hard Amber Durum shall be Durum Wheat with 75 percent or more hard and vitreous kernels of amber color.
Amber Durum: The subclass Amber Durum Wheat shall be Durum Wheat with 60 percent or more but less than 75 percent of hard and vitreous kernels of amber color.

Durum Wheat: The subclass Durum Wheat shall be Durum Wheat with less than 60 percent of hard and vitreous kernels of amber color.

Unclassed wheat includes Red Durum Wheat, purple-colored wheat, and any other wheat that cannot be properly classed under the criteria provided.

Source: J.W. Dick and others, *The Quality of the Regional (Minnesota, Montana, North and South Dakota) 1988 Durum Wheat Crop*, p. 7.

Table 1-2

Canadian grades of Amber Durum wheat: Primary grade determinants

Grade name	Standard of quality				Maximum limits of			
	Minimum test weight kilograms per hectolitre	Variety	Minimum hard vitreous kernels	Degree of soundness	Foreign material		Wheat of other classes or varieties	
					Matter other than cereal grains	Total including cereal grains	Other classes	Total
No. 1 Canada Western Amber Durum	79.0	Any variety of amber durum wheat equal to Hercules	80.0%	Reasonably well matured, reasonably free from damaged kernels	About 0.2%	About 0.5%	2.0%	5.0%
No. 2 Canada Western Amber Durum	77.0	Any variety of amber durum wheat equal to Hercules	60.0%	Reasonably well matured, reasonably free from severely damaged kernels	About 0.3%	1.5%	3.5%	10.0%
No. 3 Canada Western Amber Durum	74.0	Any variety of amber durum wheat equal to Hercules	40.0%	Fairly well matured, may be moderately bleached or frost damaged, but reasonably free from severely damaged kernels	About 0.5%	2.0%	5.0%	15.0%
No. 4 Canada Western Amber Durum	71.0	Any variety of amber durum wheat equal to Hercules	No Minimum	May be frost damaged, immature or weathered, but moderately free from severely damaged kernels	About 0.5%	3.0%	10.0%	49.0%
No. 5 Canada Western Amber Durum	No Minimum	Any variety of amber durum wheat	No Minimum	Excluded from higher grades on account of light weight or damaged kernels, but shall be reasonably sweet	1.0%	10.0%	49.0%	-
Final Grade Name	No. 5 C.W. Amber Durum	No. 5 C.W. Amber Durum	No. 4 C.W. Amber Durum		Over 1.0% grade Wheat, Sample C.W. Account Admixture	Over 10.0% grade Mixed Grain, C.W. Wheat	Over 49% grade Wheat, Sample C.W. Account Admixture	No.5 C.W. Amber Durum. If W.O.O.C. exceed 49.0% grade Wheat, Sample C.W. Account Admixture

Source: Canadian Grain Commission, *Grain Grading Handbook for Western Canada*, effective Aug. 1, 1989, p. 32.

Table 1-3
Canadian Amber Durum wheat: Primary grade determinants and maximum tolerances

Grade name	Natural stain	Artificial stain no residue	Binburnt severe mildew rotted mouldy	Total heated including binburnt ¹	Fireburnt	Stones	Ergot	Sclerotinia	Shrunken and broken		
									Shrunken	Broken	Total
No. 1 C.W. Amber Durum	0.5%	Nil	2K	0.10%	Nil	3K	3K	3K	6.0%	6.0%	7.0%
No. 2 C.W. Amber Durum	2.0%	3K	4K	0.25%	Nil	3K	6K	6K	10.0%	10.0%	10.0%
No. 3 C.W. Amber Durum	5.0%	7K	6K	0.75%	Nil	3K	12K	12K	12.0%	10.0%	15.0%
No. 4 C.W. Amber Durum	7.5%	12K	2.0%	3.0%	Nil	5K	24K	24K	No Limit	15.0%	No Limit Providing Broken Tolerance Not Exceeded
No. 5 C.W. Amber Durum	No Limit	2.0%	10.0%	10.0%	2.0%	10K	0.25%	0.25%	No Limit	50.0%	No Limit Providing Broken Tolerance Not Exceeded
Final Grade Name	5 C.W. Amber Durum	Over 2.0% grade Wheat, Sample C.W. Account Stained Kernels	Over 10.0% grade Wheat, Sample C.W. Account Heated or Predominant Reason		Over 2.0% grade Wheat, Sample C.W. Account Fireburnt	Over grade tolerance up to 2.5% grade Rejected "grade" account Stone	Over 0.25% grade Wheat Sample C.W. Account Ergot	Over 0.25% grade Wheat, Sample, C.W. Account Admixture	4 C.W. Amber Durum	Over 50% Broken Grade Sample Broken Grain	

¹ Total heated includes binburnt, severe mildew, rotted and mouldy.

Source: Canadian Grain Commission, *Grain Grading Handbook for Western Canada*, effective Aug. 1, 1989, p. 33.

Chapter 2 The World Market

World Production

World durum production has fluctuated between a low of 22.3 million metric tons (mt) in 1983/84 and a high of 29.2 million mt in 1986/87 (table 2-1). Production in 1989/90 is estimated at 24.2 million mt.¹ U.S. Department of Agriculture estimates indicate that for 1985-89 the world durum production area was approximately 13 to 14 million hectares. The United States and Canada—sometimes referred to as the North American durum market—are projected to account for about 26 percent of the world durum crop by the International Wheat Council (IWC) for 1989/90 (table 2-1). The geographic patterns of durum production, area, and yield are shown in figures 2-1 through 2-3.

In late 1989, the U.S. Department of Agriculture (USDA) estimated that world 1989/90 durum production was higher than the production estimates made by the IWC. The USDA estimate was approximately 29 million mt; about 80 percent of that (23 million mt) was produced in 10 countries. The United States and Canada account for close to 23 percent of world production in the USDA estimate.

Producing Nations

The principal nations that produce durum wheat, besides the United States and Canada, include the European Community (EC, of which France, Italy, and Greece are the primary producers), the Soviet Union, Turkey, Morocco, Algeria, and Tunisia.² The United States, Canada, and the EC are the major world producers of what the pasta industry refers to as "pasta grade" durum. These three producers account for close to 95 percent of all world exports of durum wheat.³ Between 1985/86 and 1989/90, exports

of durum wheat from the EC fluctuated between 93,000 mt in 1986/87 and a high of 1.8 million mt in 1988/89. During the same period, U.S. exports of durum wheat fluctuated between 0.5 million mt in 1988/89 and 2.2 million mt in 1986/87. Canadian exports rose from 1.4 million mt in 1985/86 to an estimated 2.9 million mt in 1989/90.

European Community

Over the last 10 years, total EC production of durum wheat has ranged from a low of 4 million mt in 1983 to a high of over 7 million mt in 1987. Estimated 1989 production is 6 million mt, representing a 9-percent decline from the previous year. The drop is due primarily to a reduced Italian crop. EC durum production has risen more than one-third in the past decade due, in part, to sharp increases in price and financial supports given to producers by the EC.

The Soviet Union

Roughly 3 percent of the total Soviet wheat crop consists of durum wheat. Northern and western Kazakhstan grow more than half of Soviet durum. Durum commands a higher procurement price and usually follows fallow in field rotations. The harvested area is about 2 million hectares for durum compared with over 47 million hectares for all wheat. Estimated 1989 Soviet durum production is about 2.5 million mt, compared with 84.4 million mt for all wheat.

¹ International Wheat Council (IWC), *World Wheat Statistics 1986 and 1987*, Market Report 1 Mar. 1990; 1989/90 figures are an IWC forecast as quoted in the statement submitted to the USITC by the Canadian Wheat Board.

² USDA, Foreign Agricultural Service, "1989/90 Durum Wheat Situation and Overview," *World Agricultural Production*, Circular Series WAP 10-89, October 1989.

³ Based on crop years 1983/84 through 1989/90. Calculated from data from the International Wheat Council (IWC), *World Wheat Statistics*, and IWC forecasts, as quoted by the Canadian Wheat Board.

Table 2-1

World durum production, 1983/84 to 1989/90

(In millions of metric tons)

Crop-year	United States	Canada	EC	North Africa	Other ¹	Total
1983/84	2.0	2.6	4.3	2.7	10.7	22.3
1984/85	2.8	2.1	6.6	2.8	9.8	24.1
1985/86	3.1	2.0	5.9	3.8	10.5	25.3
1986/87	2.7	3.9	7.2	3.5	11.9	29.2
1987/88	2.5	4.0	7.5	3.1	11.5	28.6
1988/89	1.2	2.0	6.7	2.7	12.3	24.9
1989/90 ²	2.5	3.8	6.1	2.6	9.1	24.2

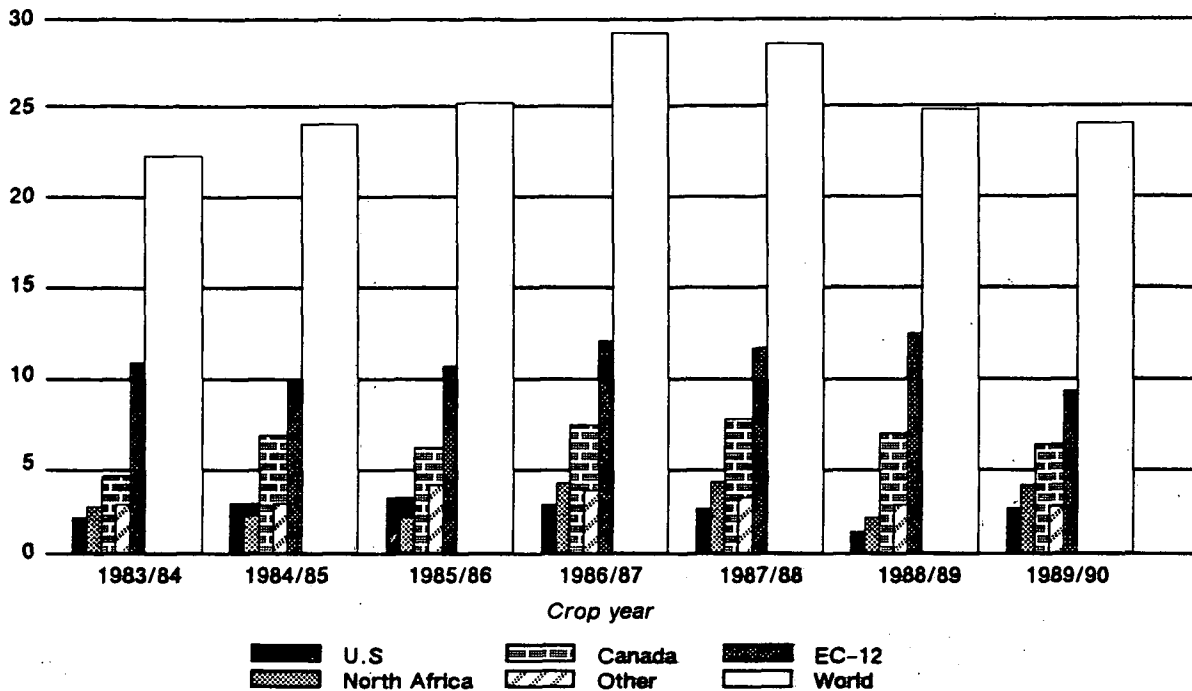
¹ Turkey and the Soviet Union are the major producers in this category.

² Forecast.

Source: International Wheat Council.

Figure 2-1
Durum wheat production: United States, Canada, EC-12, North Africa, other, world, 1983/84 to 1989/90

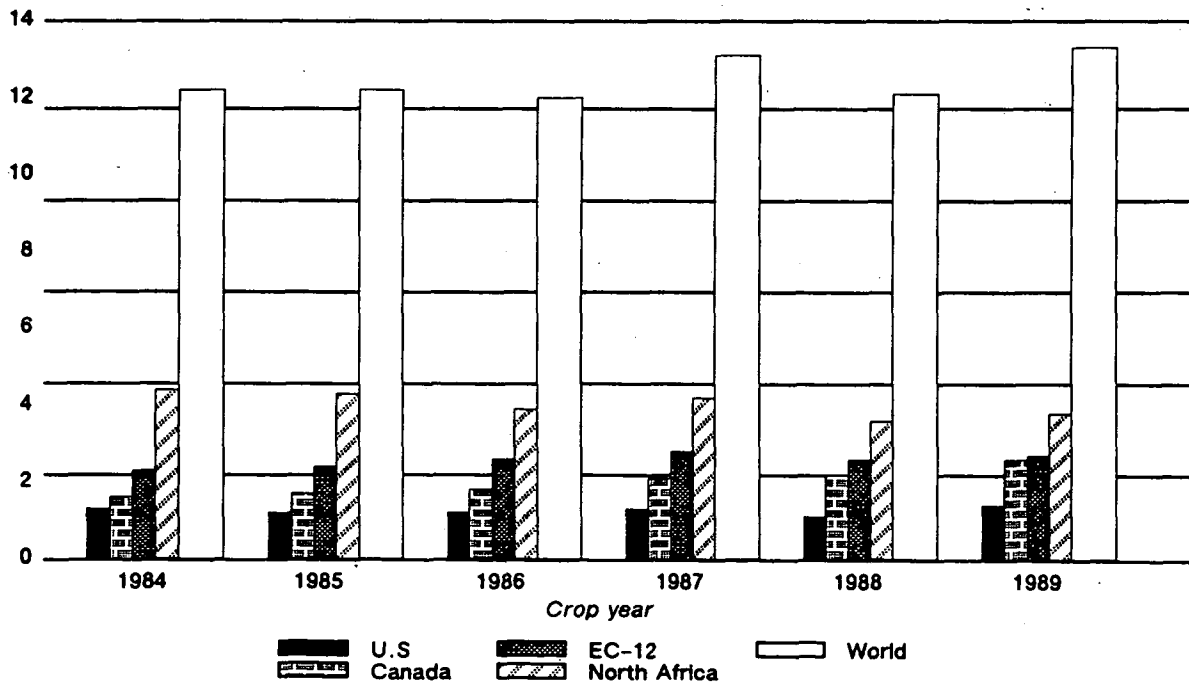
Million metric tons



Source: Official statistics of the International Wheat Council and the U.S. Department of Agriculture.

Figure 2-2
Durum area planted: United States, Canada, EC-12, North Africa, world, 1984-89

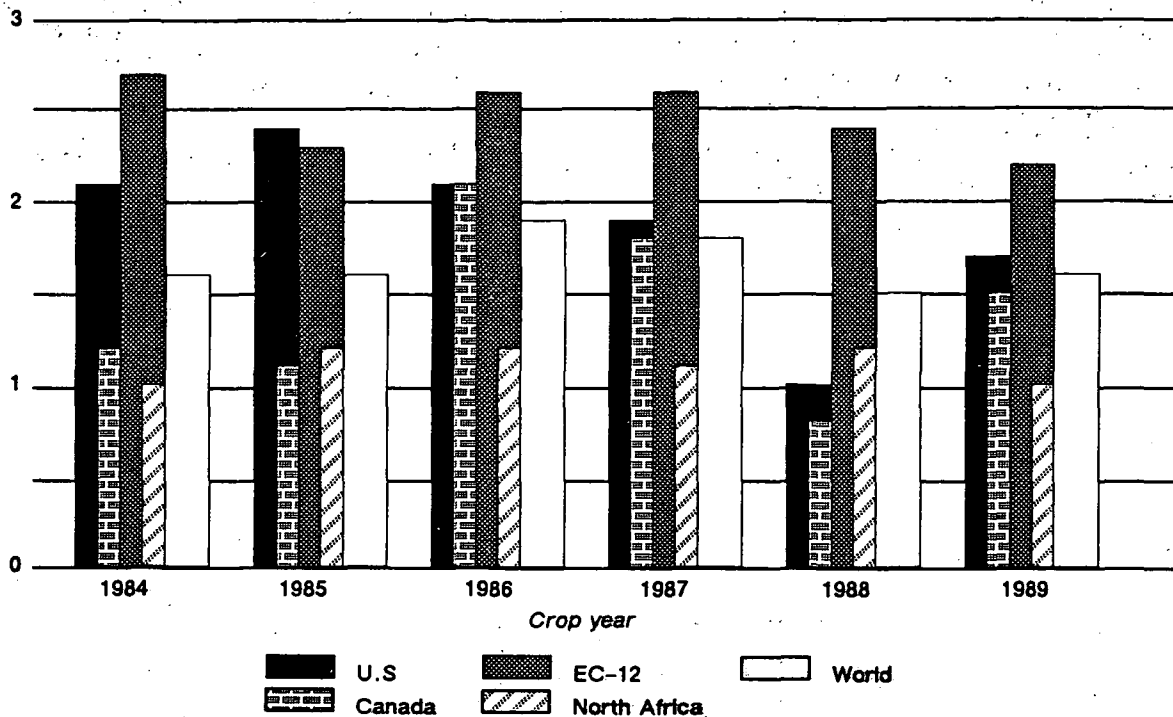
Million hectares



Source: Official statistics of the U.S. Department of Agriculture.

Figure 2-3
Durum yields: United States, Canada, EC-12, North Africa, world, 1984-89

Metric tons
per hectare



Source: Official statistics of the U.S. Department of Agriculture.

Turkey

Turkish production has declined sharply, from 4.8 million mt in 1980 to a low of 1.9 million mt in 1989. Correspondingly, durum area has dropped from 2.9 million hectares to 1.3 million hectares, and yields have dropped from 1.68 mt/hectare to 1.46 mt/hectare. Turkish official statistics do not identify durum wheat separately, however, the USDA estimated that 15 to 20 percent of Turkish total wheat crop is durum.

Morocco

Durum area and yield have been relatively stagnant for the last decade, and production has fluctuated between a low of 610,000 mt in 1981 and nearly 2 million mt in 1986. About half of all Moroccan wheat is durum. However, there has been a shift to soft wheat production from durum wheat production because of a Government decision to drop durum support prices.

Algeria

Almost 75 percent of Algerian wheat acreage is sown with durum. A chronic lack of farm implements, spare parts, agrochemicals, and irriga-

tion water is slowing Government efforts to reduce durum imports through an expansion of the sown durum area. Agricultural input shortages are evident in the yield figures, which do not exceed 1 mt/hectare in any year (compared with 2 to 3 mt/hectare) in Greece. Algerian durum wheat production has fluctuated between a low of 497,000 mt in 1983 and a high of 1.1 million mt in 1985.

Tunisia

About 75 percent of all Tunisian wheat grown is durum. Tunisian yield and production are low and wheat production is often subject to droughts. Tunisian production has fluctuated from a low 167,000 mt in 1988 to a high of 1.1 million mt in 1985 and 1987.

Other Producers

Other nations produce durum, but they often do not separately report it in their wheat statistics. Other significant durum wheat producers include Chile, China, Egypt, Ethiopia, India, Iraq, Jordan, Libya, Peru, and Syria. Minor quantities are also grown in Austria, Yugoslavia, Argentina, Mexico, and Australia.

World Consumption

Durum use is concentrated in a small number of countries, particularly developing countries, which account for about half of world consumption. In the North African markets, the main products using durum wheat are couscous and unleavened bread. Durum consumption in North Africa has decreased because developing North African economies and the accompanying increases in per capita income have changed traditional diets. However, in the Near East durum consumption has not abated. Very little durum is consumed in the Far East.

In Europe and North America, durum is used primarily to manufacture pasta. Traditionally only in Italy has pasta made up a significant part of the diet. In 1989, per capita pasta consumption in Italy was 25 kilograms per year. However, during the last few years per capita consumption of pasta in Italy has declined. In contrast, U.S. pasta consumption has been increasing at an industry-estimated rate of 6 percent per annum and now has reached 8 kilograms per capita per year.⁴

⁴ Compiled from official statistics of the U.S. Department of Commerce and estimates of the National Pasta Association.

Chapter 3 U.S. Industry And Market

The U.S. Industry

Geographic Distribution of Production

Durum wheat is produced primarily in North Dakota, South Dakota, Montana, and Minnesota. Production in the Northern Plains area accounts for up to 90 percent of U.S. durum production. The remainder is grown under irrigated conditions in Arizona and California, which record the highest yields, often 3 to 4 times those in the Dakotas. In Arizona and California, the weather plays substantially less of a role than in the Northern Plains area.

U.S. durum producers are estimated to consist of about 10,000 farms averaging about 1,200 acres each, located mostly in the Great Plains areas of North and South Dakota, Montana, and the Red River Valley of Minnesota. Over 3 million acres are planted to durum wheat.¹ Durum wheat production is primarily a family run business (even if the business structure is corporate, for tax- and estate-planning reasons).

U.S. farmers producing durum wheat grow a wide range of crops including durum wheat. Their choice of crop depends on such factors as USDA program incentives, market signals, crop-rotation requirements, and soil moisture. The alternative crops include primarily corn and other feedgrains, barley, soybeans, sunflower seeds, canola, flaxseed, and other winter wheats.

Production Trends

The U.S. durum crop is sensitive to drought, as evidenced by the decline in production during the drought of 1988. Over the last 5 years, U.S. durum production has ranged from 3.1 million mt (from 1.3 million hectares) in crop year 1985/86 to a low of 1.2 million mt (from the same number of hectares) in 1988/89 (table 3-1). Durum wheat is both a regional and a specialty crop, accounting for roughly 5 percent of all wheat grown (figs. 3-1 and 3-2).

Durum wheat acreage planted and harvested has been relatively constant. Harvested acreage has varied from a low of 1.0 million hectares in 1983/84 to a high of 1.5 million hectares in 1989/90. Virtually all of the durum wheat planted was harvested. The key factor in the fluctuation of durum production was the weather, especially lack of rain during the growing season, sometimes compounded by rain during the harvest. Production was lowest in 1988/89 due to

¹ *Statistical Abstract of the United States*, 1988.

a severe drought.² Production rose again to almost 2.5 million mt in 1989/90. Durum beginning stocks were 3.7 million mt in 1983/84. Ending stocks had declined to 1.3 million mt in 1989/90.

Quality Considerations

Current-crop durum wheat of like varieties, is similar on either side of the U.S.-Canadian border.³ Geographic, climatic, and other natural factors are quite similar. Durum in the United States and in Canada is grown on the same soil types, using similar chemicals, similar practices, and like equipment.

As has been pointed out in a private report financed by the durum wheat industry, there are two dimensions to quality: (1) the content of foreign matter, broken grain, etc., and (2) the quality of the flour produced by that grain.⁴

The factors covered under the first point may be controlled through harvesting and handling techniques. The cleanliness of the grain can be improved and broken kernels can be minimized through proper harvesting techniques. The amount of foreign matter and broken kernels is also affected by postharvest handling techniques. For example, elevator operators may blend lower grade grain with higher grades to match the lowest allowable limits specified by a grade or in a contract. Government programs (which are discussed separately in ch. 4) also affect the quality of the grain in the marketplace.

The second quality factor involves considerations important to millers—the utility of the grain once it has been cleaned. Milling characteristics involve a variety of factors beyond grade specifications (discussed below). If the postharvest handlers of the grain blend in old-season grain with new crop, then the milling characteristics of that grain may decline and the grain may have less practical utility.

The U.S. system of postharvest handling and distribution permits blending between different grades; the Canadian one does not. This factor is

² In 1988, the drought reduced yield figures from a normal 30-36 bushels per acre to less than 16 bushels per acre, according to *Wheat Facts 1988*, the Wheat Grower, October 1988. The drought in the Dakotas started in 1987; however sub-soil moisture permitted production with only slightly diminished yields. In 1988 there was neither rain nor sub-soil moisture, and in 1989 there was some rain but still insufficient sub-soil moisture.

³ J. W. Dick and others, *Durum Wheat Regional Quality Report*, 1987-89, representing Minnesota, Montana, North and South Dakota, published with the approval of the Director of the Agricultural Experiment Station, North Dakota State University.

⁴ Abel, Daft, & Earley, *An Examination of U.S. Durum Imports from Canada*, January 1990; prepared for the North Dakota and South Dakota Wheat Commissions, the Minnesota Wheat Research and Promotion Council, and the Montana Wheat and Barley Committees.

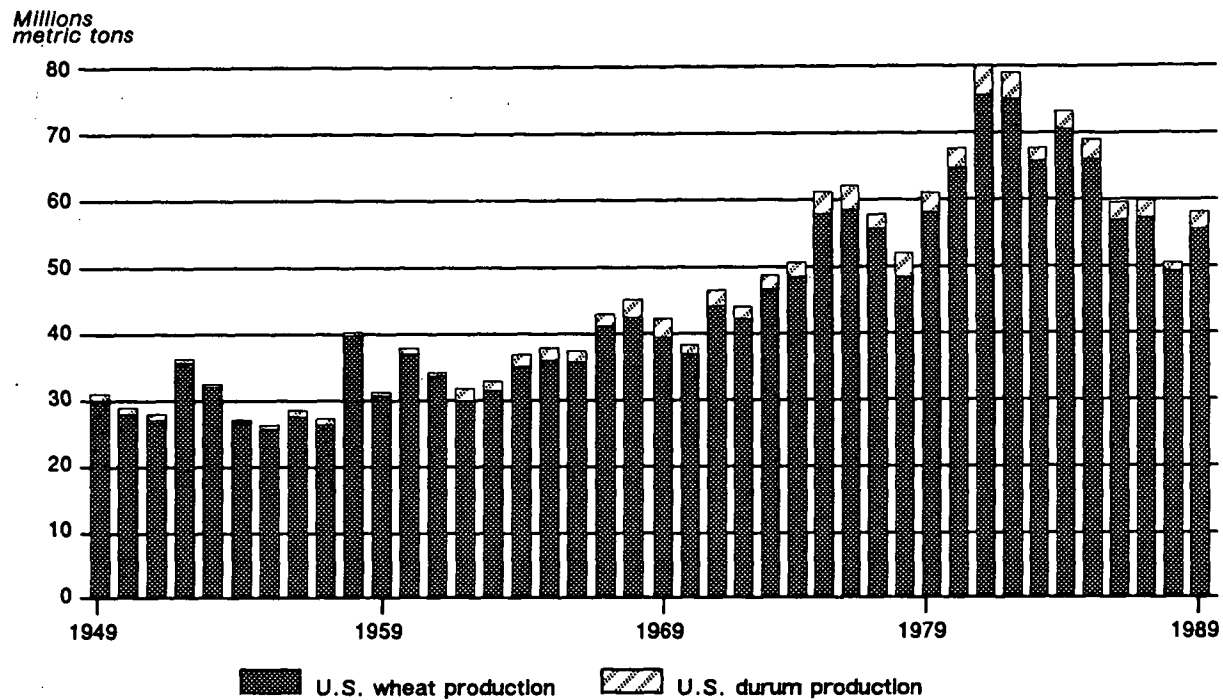
Table 3-1
U.S. production and stocks of wheat and durum wheat, 1983/84-1989/90 (projected)

Type and acreage	1983/84	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90	Percent change, 1983/84-89/90
<i>(Million hectares)</i>								
Planted:								
All wheat	30.9	32.1	30.6	30.8	26.6	26.5	31.0	0.3
Durum	1.1	1.3	1.3	1.2	1.3	1.3	1.5	46.2
Hard Red Spring	4.5	4.9	5.7	5.9	5.4	5.3	6.7	49.6
Harvested:								
All wheat	24.9	27.1	26.2	24.6	22.7	21.5	25.1	1.1
Durum	1.0	1.3	1.3	1.2	1.3	1.1	1.5	48.0
Hard Red Spring	4.3	4.7	5.3	5.7	5.3	4.1	6.4	48.6
<i>(Million metric tons)</i>								
Production:								
All wheat	65.9	70.6	66.0	56.9	57.3	49.3	55.6	(15.6)
Durum	2.0	2.8	3.1	2.7	2.5	1.2	2.5	27.4
Hard Red Spring	8.8	11.1	12.5	12.3	11.7	4.9	12.1	37.2
Ending stocks:								
All wheat	38.1	38.8	51.8	49.6	34.3	19.0	12.1	(68.3)
Durum	2.7	2.7	3.3	2.6	2.3	1.6	1.3	(50.5)
Hard Red Spring	8.5	10.1	13.6	13.3	10.9	5.9	4.1	(51.9)

Note.—Numbers in parentheses are negative.

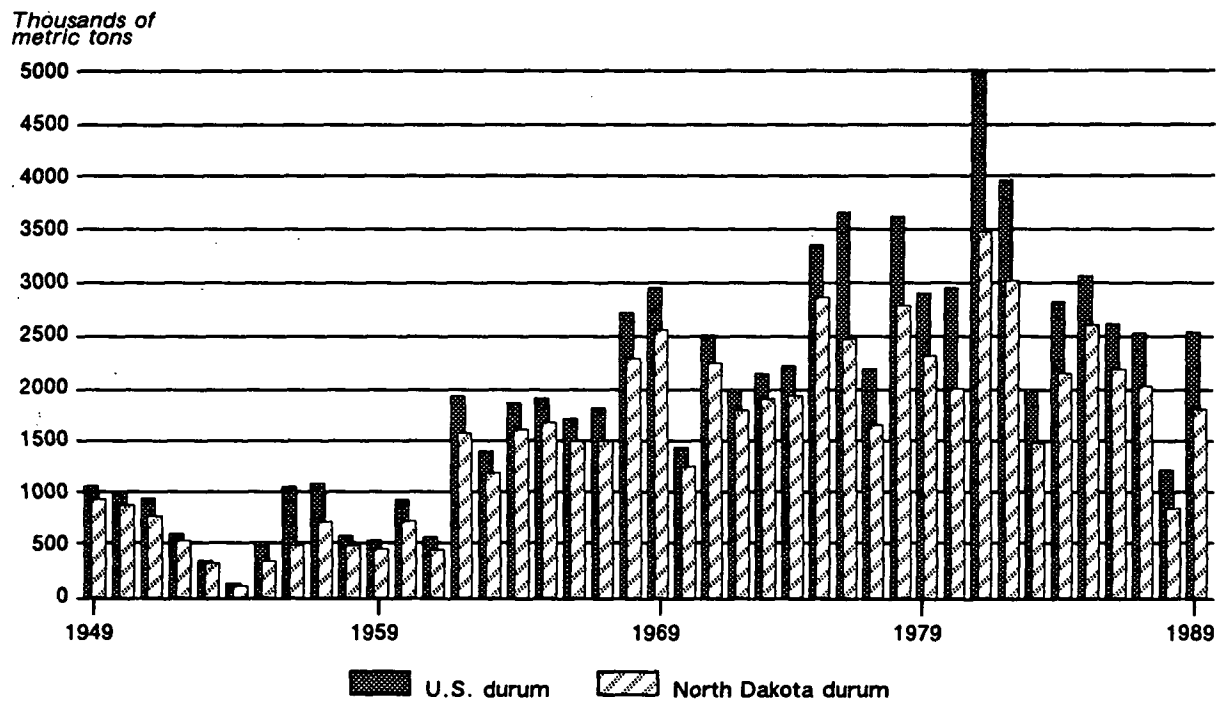
Source: Compiled from official statistics of the U.S. Department of Agriculture.

Figure 3-1
U.S. wheat and durum wheat production, 1949-89



Source: Official statistics of the U.S. Department of Agriculture.

Figure 3-2
Durum wheat production in the United States and North Dakota, 1949-89



Source: Official statistics of the U.S. Department of Agriculture.

not controlled by the farmer, but rather is controlled at the State or Federal Government level or by the private sector if the quality delivered by the farmer is to be carried forward to the manufacturer/consumer. Producers and handlers have often stated that they prefer self-regulation, through contract specifications and self-imposed, market-determined discounts.⁵

The Canadian system is geared to guarantee that a client will receive the average of a grade, whereas the U.S. system permits the marketing of grain that just meets the minimum requirements for a given grade. This difference has led to a perception that U.S. grain is of lower quality than Canadian grain when comparing similar grades.⁶

Another factor that may have contributed to a perception that U.S. grain was a lower quality product is the use by some U.S. farmers of cultivars (varieties) not recommended for quality by the North Dakota seed propagation programs. According to farmer representatives and county extension agents in North Dakota, some farmers sacrificed end-use characteristics that millers consider desirable in order to obtain higher yields. If millers do not offer a sufficient premium for durum wheat with desirable characteristics, growers can maximize their total revenues by growing higher yielding cultivars with less desirable milling characteristics. Government-sponsored price-support programs are tied to quantities produced and thus offer farmers an incentive to use higher yielding varieties.

The following tabulation summarizes the essential characteristics of about 90 percent of the durum wheat produced in the United States for 1987-89 (in percent):⁷

Item	1987	1988	1989
No. 1 Hard Amber Durum (HAD)	27	43	58
No. 2 HAD	34	37	33
No. 3 HAD or better	80	91	96
Vitreous kernel count	90	96	94
Average protein content	14.1	16.2	15.8

Since 61 to 91 percent of the crop was classified in the higher quality grades (No. 2 Hard Amber Durum or better), the quality of U.S. durum at the farm level does not appear to be the principal factor in the choice of Canadian durum over U.S. durum. The U.S. durum farmers produce a high-grade product.

⁵ This preference was repeatedly underlined by various participants in the wheat industry during a USITC staff tour of the wheat-producing areas in the Dakotas and Minnesota during August 1989.

⁶ USITC staff fieldwork in Canada, North Dakota, and Minnesota, March 1990.

⁷ U.S. Wheat Associates in cooperation with Foreign Agricultural Service, USDA, *U.S. Wheat, 1987-1989 Crop Quality Reports*.

Generally, the current-crop grain in the United States is of good quality, relatively clean, and uniform as it leaves the farm. The elevator will mix this grain with other grain of like grade from its marketing area. The elevator may then blend old crop,⁸ new crop, and across grades to achieve the minimum allowable specifications for a grade.

A key concern of U.S. durum growers has been the question of sufficient availability of the high-quality durum needed by pasta manufacturers. The U.S. durum growers stated in their submission to the USITC:⁹

Domestic durum millers and pasta manufacturers can utilize #1 Hard Amber Durum and #2 Hard Amber Durum grades for pasta purposes. These grades accounted for an average of 68.6 percent of the durum grown in Montana, North Dakota, South Dakota and Minnesota during the last 10 years. This would more than satisfy U.S. market demands. For example, 91 percent of the 1989 crop was graded #1 or #2. This calculates to 85 million bushels. In 1988, 80 percent of the crop was graded #1 or #2, amounting to 36 million bushels available for domestic usage. Domestic usage was 59 million bushels for each of these years. Due to drought, 1988 was the first time in recent history that domestic use exceeded production. However, 83 million bushels of durum stocks were on hand to supply the domestic market.¹⁰

However, U.S. durum reserves, both farmer-owned and Government stocks, have tended to be lower grades of wheat (No. 3 or below) during the period of the investigation.¹¹ The available domestic supplies of high-grade durum were purchased by those willing to pay a premium, such as the North Dakota Mill, or were blended with lower quality stocks. Imports from Canada, by contrast, were generally of higher grades, No. 1 or No. 2. According to milling industry sources, the sharp decline in wheat stocks and emptying of the farmer-owned reserve during 1987/89, suggests that imports from Canada supplemented the U.S. market with high quality durum wheat.

The quality variables of concern to millers have grown from basic visual grade specifications to include the following:

- Vitreousness and protein (the quality of the gluten).

⁸ Old crop refers to any wheat produced in a previous growing season. Elevators will blend wheat from various crop years.

⁹ U.S. Durum Growers Association, submitted Mar. 30, 1990, p. 2.

¹⁰ Eighty-three million bushels is equal to 2.3 million mt.

¹¹ Material in this section is based on conversations with officials of the Millers' National Federation and the North Dakota Wheat Commission.

- Crop year(s) used in blending. Each crop year has characteristics that are recognizable to an experienced miller and that require particular settings within the production stream to obtain certain end-product characteristics.
- Moisture content.
- Mold and mildew. These could yield a spotty end product.
- Dockage/cleanliness (the amount of foreign material in the grain).
- Falling number, which is a measure of sprouting damage.
- Sedimentation, which is based on the absorbency of the ground grain.
- Mixograph tests, which measure the strength of the dough.
- Color. While the color of a bread wheat does not carry to the end product, the color of a durum wheat does, thereby determining the color of the pasta end product.

According to milling industry sources, mills are not willing to purchase on the basis of U.S. grade alone. If millers perceive a shortage of quality U.S. grain, or if they perceive that available U.S. durum wheat supplies have been handled by the postharvest handling and distribution system so as to no longer exhibit all the characteristics desired, they will then consider purchasing durum wheat of Canadian origin. Millers purchasing grain from Canada will receive the average of a grade, with cleanliness and uniformity assured. Canada also has varietal certification for its durum wheat production, which assures that purchased grain will possess the genetic characteristics needed for desirable end-use values.¹²

Distribution and Handling Characteristics

According to trade association sources, there has been a structural change in the handling of wheat at intermediate and final consumption points (millers and pasta manufacturers). There has been a shift in orientation from the storage to the throughput of wheat. More often, intermediate and final consumers are demanding wheat with ever-tightening specifications. As a consequence, the option of wheat elevators to blend is becoming more limited. More frequently, elevators must sell high-quality wheat as received or with minimal blending, thus maintaining greater uniformity and improved end-use quality factors.

¹² In contrast to Canada, the United States has no obligatory varietal certification program. Land grant universities, particularly the University of North Dakota, and private seed companies make recommendations and publish yield and end use characteristics for each cultivar.

The strong point of the U.S. postharvest distribution and handling system, when compared with the Canadian system, is its ability to match contract specifications above and beyond grade factors. However, this involves the preparation of tailored contracts and the determination of premiums to be paid. Durum wheat purchasers also would like to receive wheat that matches tighter specifications, but without having to specifically request it or pay specially determined premiums for it. Responses to USITC questionnaires indicate that millers are willing to pay an overall premium on the market price for wheat, if the wheat automatically matches their specifications and no special contract arrangements are required.

Leading experts in the field of wheat argue that—

The grading system in the United States generally does not reflect end-use characteristics due to the lack of technology and/or difficulty in implementing technology in the marketing system...As such there has been increased use of private firms for end-use tests not performed by [the Federal Grain Inspection Service].¹³

While conducting field investigations at the cash grain facilities of the Minneapolis Grain Exchange, the staff of the USITC observed traders sampling the floor samples, for the purpose of analyzing them in private laboratories in the same building. Cash sales often are made on the basis of specific characteristics of the grain that go beyond the official grading standards.

The U.S. Market

The durum wheat market is especially thin. There are few mills to process durum wheat and few products in which it is used.

Intermediate and Final Consumers

Milling Industry

Durum wheat passes from the producer to elevators at various levels in the marketing chain, from county elevators to subterminal elevators to regional elevators. The wheat is then sold to a durum milling firm which is itself an intermediate consumer satisfying the demands of pasta manufacturers.

There are only 14 major durum mills in the United States. These mills represent virtually the entire intermediate demand sector for durum wheat in the United States. The firms listed in table 3-2 have a total daily milling capacity of 3,248 mt and have storage capacity for over

¹³ William W. Wilson, *Grain Marketing Industries and Institutions Impacting Exporter Competition*, Department of Agricultural Economics, North Dakota Experiment Station, North Dakota State University, Staff Paper series (AE 89015, July 1989).

217,723 mt of wheat.¹⁴ The demand of these mills for durum, whether from the United States or from Canada, is especially sensitive to quality variables (as discussed in the section entitled *Quality Considerations*), since these variables affect whether the durum is adaptable to a specific end use. The milling industry has evolved over the last several decades from many small milling operations to a few large regional plants. These newer plants require wheat that is more uniform and exhibits superior end-use characteristics. These mills have less adaptability to fluctuations in grade and nongrade quality considerations.

Interviews with millers, both in the United States and in Canada,¹⁵ indicate that (1) they are willing to buy wheat without regard to national origin, (2) they will always run the wheat through a thorough cleaning process, (3) uniformity of kernel size is an important consideration, (4) any grain must match a number of nongrade specifications, such as ash, mixograph, sedimentation, or color.

¹⁴ 1989 Milling Directory: Buyer's Guide, Milling and Baking News.

¹⁵ Fieldwork was done in Canada (Winnipeg, Ottawa, and Thunder Bay) and in the United States (North Dakota and Minnesota) from Feb. 25 to Mar. 7, 1990. Millers were interviewed in Winnipeg (Soo Line Mills) and in Rush City, MN (Amber Milling, a division of Harvest States Cooperative).

Flour millers are the major U.S. processors of wheat, accounting for over 90 percent of domestic use. Durum wheat millers represent a small segment of the U.S. milling industry, accounting for about 8 percent of capacity. Hard-wheat mills account for about 70 percent of total U.S. wheat-milling capacity; soft-wheat mills account for about 20 percent. The remaining 2 percent of capacity is accounted for by whole wheat mills. Most flour mills grind only one wheat class.¹⁶

Based on the latest available U.S. Census data,¹⁷ between 1982 and 1987, durum flour and semolina production increased from 15.7 million hundredweight (cwt) to 17.7 million cwt, or, in value terms, from \$192.9 million to \$258.3 million. During the same period, total U.S. durum wheat disappearance¹⁸ decreased from 72.0 million cwt to 67.2 million cwt. By 1988/89 the drought was reflected by a drop in disappearance to 48.6 million cwt. Table 3-3 summarizes the situation.¹⁹

¹⁶ USDA, Economic Research Service (ERS), *The U.S. Milling and Baking Industries*, Harwood and others (Agricultural Economic Report No. 611, December 1989).

¹⁷ Bureau of the Census, *1987 Census of Manufactures, Grain Mill Products* (Industry Series MC872-1-2OD, June 1989).

¹⁸ Total disappearance equals domestic use plus exports.

¹⁹ USDA, ERS, *Wheat Situation and Outlook Report* (WS-286, August 1989); data are for crop-years.

Table 3-2
Durum mills in the United States

State	Company	Daily milling capacity (hundredweight)
Arizona	Bay State Milling Company	2,500
Louisiana	Cargill Inc.	1,400
Massachusetts	New England Milling Co., Inc. ¹	8,840
Minnesota	ADM Milling Co.	5,000
	Amber Milling Co. ²	8,000
	Conagra Flour Milling Co.	8,000
Missouri	American Italian Pasta Co. ³	5,000
	U.S. Durum Milling, Inc. ¹	6,800
Montana	Montana Flour & Grains, Inc.	160
North Dakota	Noodles by Leonardo	2,000
	North Dakota Mill & Elevator Association ⁴	11,000
Ohio	Miller Milling Co.	6,000
Oregon	Pendleton Flour Mills	6,000
Utah	Deseret Mills & Elevators	900
Total		71,600

¹ Both the New England Milling Co., in Ayers, MA, and the U.S. Durum Milling, Inc., in St. Louis, MO, are subsidiaries of Italgrani U.S.A., Inc., an Italian pasta manufacturing firm.

² This company is a division of Harvest States, a cooperative.

³ Manufactures durum semolina.

⁴ The only State-owned durum mill in the United States.

Source: 1989 Milling Directory: Buyer's Guide, Milling and Baking News.

Table 3-3

Durum wheat, marketing year supply and disappearance, 1982/83 to 1989/90 (estimated)

(In millions of hundredweight)

Year beginning June 1—	Supply			Disappearance			Ending stocks (May 31)
	Beginning stocks	Production	Total	Domestic use	Exports	Total	
1982/83	63.6	87.6	151.2	36.6	35.4	72.0	81.6
1983/84	81.6	43.8	125.4	30.6	37.2	67.8	59.4
1984/85	59.4	61.8	121.2	26.4	36.6	63.0	60.0
1985/86	60.0	67.8	127.8	25.8	31.8	57.6	72.6
1986/87	72.6	58.8	131.4	29.4	49.2	78.6	57.0
1987/88	57.0	55.8	112.8	30.0	37.2	67.2	49.8
1988/89	49.8	27.0	76.8	36.6	12.0	48.6	36.0
1989/90	36.0	54.6	90.6	32.4	39.0	71.4	25.2
Percent change (average annual)							
1982-90	-7.8	-6.5	-7.1	-1.7	1.4	-0.1	-15.4

Source: Official statistics of the U.S. Department of Agriculture.

Mills used to be located close to the areas of wheat production. However, since the choice of a mill location depends largely on the expected costs of shipment of flour relative to the expected costs of shipping wheat, most companies building flour mills in the 1980s have located them near population centers. Nontransportation costs appear to be of less importance in the choice of a mill site—milling is not labor intensive, workers can be trained easily, and the process is not energy intensive. This relocation of mills away from the durum wheat production areas has the potential for large-scale repercussions on the requirements placed on the U.S. grain-transportation system, by placing a greater demand on its services.

Pasta Industry

The pasta industry defines the volume and type of demand for durum wheat. This industry is "increasingly processing semolina with finer granulations and higher extraction rates," that is, demanding higher quality durum, finer raw materials, and more precise technical specifications.²⁰

U.S. production of dry and packaged pasta rose from 1.2 million mt in 1984 to 1.6 million mt in 1988, representing a 7.5 percent annual increase.²¹ Retail sales of pasta in 1988 are estimated at \$2.1 billion. Mean annual per capita consumption of pasta from all sources in the United States increased from 6.4 kilograms in

1984 to 7.8 kilograms in 1988. For 1989, mean annual per capita pasta consumption is projected at 8 kilograms, and the industry projection for the year 2000 is 13.9 kilograms per capita.

Per capita pasta consumption in the United States grew by more than 22 percent during 1984-89.²² The pasta industry projects a yearly 6-percent growth rate in pasta consumption to the year 2000. According to pasta industry sources, pasta imported into the United States tends to be manufactured from durum wheat that originates in the United States or Canada. Thus, U.S. exports of durum and Hard Red Spring wheat are processed abroad, primarily in Italy, for subsequent export of pasta products to the United States.

Pasta imports constitute direct competition for U.S. pasta producers, and indirectly, the U.S. milling industry. Over 50 percent of the quantity of U.S. pasta imports comes from Italy, and about another 10 percent in quantity from Canada (table 3-4, fig. 3-3).

Pasta imports, primarily from Italy, increased during 1984-89. During the same period, U.S. pasta exports stayed constantly low or declined. Pasta imports rose from over 87 million kilograms in 1984, valued at nearly \$68 million, to over 139 million kilograms in 1989, valued at over \$129 million. This represents a 5-year increase of 60 percent in quantity and 90 percent in value. The unit value of the pasta imported into the United States ranged, during 1984-89, from a low of 54 cents per kilogram at port of entry for Italian pasta in 1986 to a high of \$2.42 for Japanese pasta in 1989. The unit values for

²⁰ Joe Manser, "Degree of Fineness of Milled Durum Products From the Viewpoint of Pasta Manufacture," *Pasta Journal*, July/August 1989, pp. 23-27. Mr. Manser is vice president of Buhler Brothers Limited, Uzwil, Switzerland, and is in charge of its pasta processing division.

²¹ "Pasta consumption continues upward climb in '89", *Pasta Journal*, November/December 1989, based on U.S. Department of Commerce data (Business Trends Analysis Office and Bureau of the Census) and National Pasta Association estimates.

²² Per capita figures were compiled from Official statistics of the U.S. Department of the Commerce and estimates from the National Pasta Association.

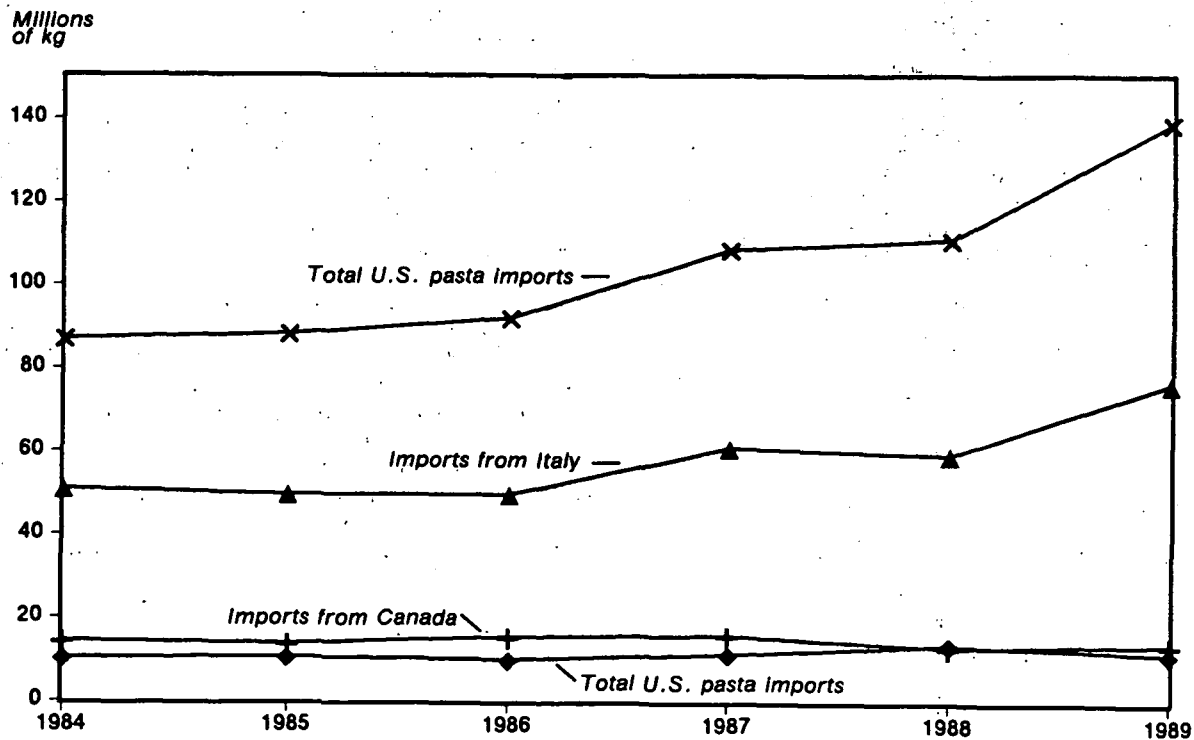
Table 3-4
U.S. pasta and couscous: Imports and exports, 1984-89

Year	Total Imports	U.S. Imports from Italy	U.S. Imports from Canada	Exports
<i>Quantity (1,000 kg)</i>				
1984	87,260	51,014	14,640	10,699
1985	88,501	49,856	13,979	10,705
1986	92,434	49,744	15,440	10,181
1987	108,926	61,169	16,086	11,468
1988	111,326	59,514	13,146	13,782
1989	139,289	76,877	13,980	11,852
<i>Value (1,000 dollars)</i>				
1984	67,902	28,855	11,980	16,594
1985	69,444	27,296	11,736	16,457
1986	72,875	27,047	12,034	15,495
1987	89,331	39,254	11,876	16,652
1988	95,939	39,586	11,271	20,195
1989	129,151	55,426	13,781	13,988
<i>Unit value (per kg)</i>				
1984	\$0.78	\$0.57	\$0.82	\$1.55
1985	.78	.55	.84	1.54
1986	.79	.54	.78	1.52
1987	.82	.64	.74	1.45
1988	.86	.67	.86	1.47
1989	.93	.72	.99	1.18

Note.—kg = kilograms.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Figure 3-3
Pasta imports and exports showing Canada and Italy



Source: Official statistics of the U.S. Department of Agriculture.

U.S. pasta exports ranged from a low of \$1.08 in 1989, to a high of \$1.55 in 1984. The unit value differences may be attributed largely to the differences between exports of "top-of-the-line" pasta in retail-size packages, and lower quality pasta imports (such as might be used in canned soups) packaged for wholesale/bulk distribution.

U.S. Durum Imports

U.S. Tariff Treatment

Tariff Schedules of the United States

Prior to January 1, 1989, durum wheat was not specifically provided for in the Tariff Schedules of the United States Annotated (TSUS). The tariff treatment for durum wheat was the same as for other wheat. Wheat was provided for under several TSUS items as indicated below:

Item number	Description	Column 1 rate of duty
	Wheat:	
	Not fit for human consumption	
130.63.00	Seed wheat	5 percent ad valorem
130.66.00	Other	5 percent ad valorem
130.70	Other	21 cents per bu. of 60 lbs.
130.70.20	Seed wheat	
130.70.40	Other	

Harmonized Tariff Schedule

Since January 1, 1989, the Harmonized Tariff Schedule of the United States (HS) classification has been in effect. Under the provisions of the HS, and as listed in the Schedule of the United States in the United States-Canada Free-Trade Agreement, durum wheat is specifically provided for as follows:

Heading/ Subheading	Description	General rate of duty
1001	Wheat and meslin:	
1001.10.00.00	Durum wheat:	0.77 cents/kg
1001.90	Other:	
1001.90.10.00	Seed:	6.3 percent ad valorem
1001.90.20.00	Other:	0.77 cents/kg

Section 22 Import Restrictions

Provisions exist for quantitative import restrictions on wheat under Section 22 of the Agricultural Adjustment Act, as amended (7 U.S.C. 624), although these provisions were suspended in 1974. Heading 9904.20.10 of the HS indicates that Canada would be subject to a quota quantity of 21,636 mt of wheat and 1,730 mt of milled wheat products. The quota quantities, if reinstated, would apply to all wheat, not just durum wheat.

Quantity of Imports

Imports of durum wheat into the United States are all from Canada. Imports have increased from nil in crop year 1984/85 to 202,500 mt in 1987/88, and 186,000 mt in 1988/89, as indicated in table 3-5.

U.S. imports of durum wheat enter primarily through the U.S. Customs Districts of Cleveland, OH; Buffalo, NY; St. Albans, VT; and Duluth, MN (table 3-6). The data show where the import documents cleared, not necessarily the actual point of entry, however, all the points of entry are on or close to the Great Lakes or the St. Lawrence. Canadian durum wheat is shipped from the Western Provinces to Thunder Bay—thus benefitting from the Western Grain Transportation Act subsidy²³—then to U.S. points of entry on "lakers," or lake cargo ships.

U.S. Durum Exports

In calendar year 1989, U.S. exports of durum wheat were valued at \$166.1 million (table 3-7). Of U.S. exports, \$29.2 million in sales were to Italy, followed by \$25.8 million in sales to Algeria. Prior to 1989, durum wheat was not separately accounted for in U.S. Department of Commerce statistics.

Most U.S. export durum, particularly shipments under the Export Enhancement Program, is of U.S. grades Nos. 3 and 4 and so would not be suitable for the highest grades of pasta.

Wheat exports are most often not milled. Milling is a value-added step which most countries—with perhaps the exception of Public Law 480 recipients²⁴—prefer to do themselves. Also, whole grain is much easier to transport. Milled grain becomes rancid more easily than whole grain. U.S. grain firms have promoted exports of U.S. grain by building milling and baking facilities overseas, and U.S. millers try to promote the export of U.S.-milled grain products.

²³ Discussed in ch. 8.

²⁴ The Public Law 480 program, a food assistance program also known as Food for Peace, has historically been the most important U.S. government program for the export of U.S. flour.

Table 3-5

Canadian wheat and durum wheat: Shipments to the United States and the world, 1984/85 to 1989/90

Year	All wheat	All durum	Wheat to United States ¹	Durum to United States
	Million metric tons		Thousand metric tons	
1984/85 ²	15.2	1.8	159	0.0
1985/86 ²	16.0	1.4	274	.0
1986/87 ²	18.4	2.0	345	61.8
1987/88 ²	20.4	2.8	167	202.5
1988/89 ²	10.1	2.0	69	186.0
1989/90 ³	6.4	1.5	88	127.7

¹ Excluding durum.

² Prior to 1989, imports of durum were not separately reported. Therefore, data on durum imports prior to that year are based on Canadian export statistics, U.S. durum wheat industry and other industry statistics, Agricultural Attache reports, and questionnaire data.

³ Data available for August-June 1989/90; the 12-month period is expected to show a decrease in U.S. imports of Canadian durum compared with the previous year.

Note.—Years shown are July-June crop year.

Source: Compiled from official statistics of the Canadian Wheat Commission and the North Dakota Wheat Commission.

Table 3-6

U.S. durum wheat imports, by Customs District, 1989¹

District	Metric tons	Percent of total
St. Albans, VT	46,356	21.4
Buffalo, NY	50,047	23.1
Seattle, WA	59	(²)
Great Falls, MT	10,217	4.7
Pembina, ND	787	.4
Duluth, MN	37,857	17.5
Detroit, MI	151	.1
Cleveland, OH	70,936	32.8
Total	216,411	100.0

¹ Data are for calendar year 1989, and are therefore not comparable with data on imports for consumption shown elsewhere in this report, which are shown by crop year.

² Less than 0.05 percent.

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 3-7

Durum wheat: U.S. exports, by major buyers, 1989

Country	Value	Quantity	Unit value
	Million dollars	Thousand mt	Per mt
Italy	29.2	160.0	\$183
Algeria	25.8	163.0	158
Venezuela	13.5	78.7	172
China	8.6	58.2	148
Mexico	8.3	49.9	166
Japan	7.1	43.5	163
Poland	5.2	32.5	160
Belgium	4.9	31.8	154
Turkey	4.7	27.5	171
All other	58.6	375.3	162
Total	166.1	1,020.4	160

Source: Compiled from official statistics of the U.S. Department of Commerce.

Chapter 4 U.S. Government Programs¹

The purpose of U.S. agricultural policy is "agricultural price support . . . , to provide for agricultural export, resource conservation, farm credit, and agricultural research . . . , to ensure consumers an abundance of food . . . at reasonable prices."² Current U.S. Federal wheat policies have "pursued price and production objectives through policies including: export quotas and fixed wheat prices, acreage allotments, a soil bank, nonrecourse loans, set-asides, target prices, deficiency payments, and the export enhancement program."³ The Food Security Act of 1985 was "designed to increase U.S. competitiveness in world markets and to support farm income. To achieve these goals, it employed lower loan rates, generic certificates, and export promotion in the wheat program. It . . . allowed exporters greater latitude in setting competitive prices."⁴

A number of programs at the Federal and State level exist to assist wheat producers, including producers of durum, although most programs do not have specific allocations or special provisions applicable to durum alone. U.S. Department of Agriculture (USDA) grain reserve programs can affect the type and quality of wheat available on the market while also helping to stabilize prices. Most U.S. durum growers participate in USDA price-support programs under the provisions of the Food Security Act of 1985. Producers who participate usually must reduce the acreage they plant in order to be eligible for loans and deficiency payments. Under the Export Enhancement Program, some durum exporters have received bonus payments to make U.S. durum more competitive in foreign markets. State-level programs to assist producers are primarily financial in nature.

Federal Farm Programs

The USDA administers a variety of domestic programs to support farm prices and income. Government grain reserves and price- and income-support programs have had major effects on the durum market. The two key USDA agencies that administer farm programs are the Commodity Credit Corporation (CCC) and the Agricultural Stabilization and Conservation Service (ASCS). Legislation in 1981 and 1985 modified some elements of USDA programs, but the basic

¹ For definitions of terms used in the descriptions of Federal programs, see appendix C.

² U.S. House of Representatives, the Committee of Conference, *Food Security Act of 1985, Conference Report*, Dec. 17, 1985, Report 99-447, "Joint Explanatory Statement of the Committee of Conference," p. 325.

³ U.S. Department of Agriculture, Economic Research Service, Commodity Economics Division, Harwood, Joy L. and Young, Edwin C., *Wheat: Background for 1990 Farm Legislation*, Staff Report, November 1989, p. 25.

⁴ *Ibid.*, p. 31.

provisions that have shaped U.S. Government programs for durum have remained the same for many years.

Commodity Credit Corporation

The CCC is a wholly owned Federal corporation within the USDA. The CCC functions as the financial institution through which payments are made. The CCC borrows money from the Treasury to make payments to farmers and repays the Treasury with receipts from loan payments or sales and with congressional appropriations. The CCC also maintains grain reserves and issues certificates for buying and selling grain.

Agricultural Stabilization and Conservation Service

The ASCS is responsible for administering farm price- and income-support programs as well as conservation programs. Local ASCS committees and offices are maintained in nearly all farming counties. ASCS programs affect the quantity of durum planted and the amount that may be placed into grain reserves.

Grain Reserves

General

Grain reserves were originally intended as a safeguard that would provide sufficient grain in the event of emergency shortages. As the world food system has become more interdependent and sophisticated, other buffers have taken over this function. For example, improved transport capacity can now move grain to areas of crop shortfalls and increase the recovery potential of reserve stock from catastrophic crop failures. Also, a much larger percentage of grain now goes into feed grains, which can readily be transferred to direct human consumption in an emergency. These improvements in world grain production and distribution have minimized the need to hold reserves as a last resort against famine. Some analysts are of the opinion that the world may be holding more grain reserves than it really needs for food security.⁵ Another reason for holding grain stocks was the belief that the stocks could elevate farm prices above market clearing levels and thereby maintain farm income. Many wheat experts have said that the nation's experience over the last half-century shows that large grain stocks have not elevated grain prices.⁶ On the

⁵ Dennis T. Avery, Senior Fellow, The Hudson Institute, "The Green Revolution Is Our Real Food Security," testimony before the Subcommittee on Wheat, Soybeans and Feedgrains of the U.S. House Committee on Agriculture, Sept. 26, 1989.

⁶ Peter Helmberger, "Alternative Means for Stabilizing Farm Commodity Prices," testimony before the Subcommittee on Wheat, Soybeans and Feedgrains of the U.S. House Committee on Agriculture, Sept. 26, 1989.

contrary, the unintended effect of a large reserve may have been low grain prices, because with large stocks of grain held in reserve, the price of grain tends to stabilize at a low level. A primary justification for holding grain reserves is that they stabilize prices. More grain moves into storage when prices are low and more grain is sold into the market when prices are high.

Durum that is not consumed domestically or exported goes into carryover stocks. A large part of the total durum carryover is held by the CCC or the farmer-owned reserve (FOR). There is reason to believe that CCC or FOR grain stocks may be of only average or below average quality since the grain may have been held in storage for years and may have deteriorated over time. CCC quality rules also differ from country elevators to terminal elevators, and CCC accepts grain below the quality represented by warehouse receipts.⁷ Also, farmers have financial incentives to sell their best quality grain commercially and to use the lower quality grain for reserve stocks.

Farmer-Owned Reserve

The FOR is designed to provide protection against wheat and feed grain production shortfalls and provide a buffer against unusually sharp price movements. Farmers can place eligible grain in storage and receive extended loans for 3 years with extensions as warranted by market conditions. The loans are nonrecourse in that farmers can forfeit the commodity held as collateral to the Government without penalty and without paying accumulated interest in full settlement of the loan.

The main goal of the FOR is to help provide a "price stability band" for grain, with a trigger release at the top and a loan rate at the bottom. The FOR release is the greater of 140 percent of loan rate or target price. At FOR release prices, the farmer sells wheat out of storage. If market prices fall to the loan rate, the farmer adds to the FOR. Release status is reached whenever the 5-day moving average of certain market prices exceeds the "trigger release level." When in release status, the farmer has three options:

1. Repay FOR loan and sell grain;
2. Leave grain in reserve; or
3. Repay FOR loan and hold grain.

If the market price is above the trigger release level for 2 consecutive months, storage payments to the farmer stop and interest charges resume.

To ensure grain quality in the FOR, the CCC allows farmers to sell old grain in the FOR and

⁷ *Enhancing the Quality of U.S. Grain for International Trade*, Congress of the United States, Office of Technology Assessment, February 1989.

replace it with more recently harvested grain. The farmer is given from 45 to 60 days in which to sell the old grain and replace it with new. During this short period near the end of the crop year, the FOR is "open" to the market without being in release status.

A ceiling was placed on the size of the FOR under the 1985 Food Security Act. If the quantity of wheat in the FOR exceeded 17 percent of estimated wheat usage for the 1986 crop year, entry of 1986-crop wheat was not to be permitted. For 1987 if the quantity of wheat in the FOR exceeded 17 percent of estimated domestic and export disappearance, entry of 1987 crop wheat was not to be permitted. The FOR level for the 1988 crop was 8.2 million mt.⁸ When 9-month loans matured, entry into the reserve was to be permitted only if quantities fell below 8.2 million mt and farm prices did not exceed 140 percent of the current loan rate. The limit on the farmer-owned quantity for wheat was 8.2 million mt for the 1989/90 marketing year. If reserve quantities exceeded the limit at the time that the 1989-crop wheat loans matured or if market prices were greater than 140 percent of the loan rate, no entry into the reserve was to be permitted.

When entry is permitted, the farmer usually converts a standard nonrecourse loan to the FOR by committing to store the grain for at least 3 years or until the market price reaches certain "trigger levels," after which the FOR is said to be in "release," and the commodity may be marketed. In return for keeping the commodity off the market and in reserve, the USDA pays the farmer a storage payment per month and waives interest on the loan after the first year.

Commodity certificates can be redeemed for grain in the FOR. The "trigger release" can be avoided by using certificates. For instance, if the release price is \$3.20 but the Posted Country Price (PCP)⁹ is \$2.50, then a farmer holding a \$1,000 certificate could redeem 400 bushels of his or her own FOR grain—without waiting for FOR release to occur. After such redemption, the farmer must pay back any unearned storage payments that have already been received.

Distinction Between Farmer-Owned Reserve (FOR) and Commodity Credit Corporation (CCC) Storage Programs.

The primary distinction between grain held in FOR storage and CCC storage is ownership. Wheat held in FOR storage is owned by the farmer, CCC-stored wheat is owned by the Government. FOR storage facilities may be either on or off farm but are privately owned, while CCC

⁸ 300 million bushels.

⁹ The posted county price is set periodically by USDA. It is an official price that is calculated by taking the average price paid to farmers by several elevators within a county.

grain is always held off the farm in commercial storage. FOR grain may become CCC grain, for example, if the farmer relinquishes grain as collateral on a loan. The end uses are the same. Certificates may be used to buy either FOR or CCC held wheat and both kinds of wheat may go into the Export Enhancement Program (EEP). Storage provisions are different: with FOR-held wheat the farmer is bound by rotation provisions requiring periodical rotation to maintain freshness. The rotation provisions do not apply to CCC stored wheat; however, the commercial storage company must meet certain storage provisions such as adequate ventilation, temperature and humidity conditions. The release provisions also differ: FOR stocks may be released, without penalty, only through certificates or when a certain market price is reached (target price or 140 percent of loan rate). CCC stocks may be exchanged for certificates or for cash, but for cash only if the price reaches 110 percent of the trigger price.

Reserve Rotation and Substitution

The USDA provides price support to farmers through the nonrecourse loan program, which permits producers to forfeit their crop to the Government when prices are low or place it in storage, often in the FOR. Farmers are required to rotate old wheat out of FOR storage and replace it with new wheat periodically to maintain quality. The substitution policies govern how the wheat may be rotated out of reserves. Under its normal reserve stock rotation provisions, ASCS allowed producers to substitute Hard Red Spring wheat for durum until July of 1989. In years when durum prices were high relative to those for spring wheat, farmers could sell durum out of reserve stocks and replace it with spring wheat. If durum prices were low relative to spring wheat, as they were in the 1989/90 season, farmers could take spring wheat out of reserve and replace it with durum. This substitution between classes of wheat was changed in July 1989, to prevent the substitution provision from being used as a marketing device. Now farmers can only substitute within the same class of wheat. This rule is also significant because it is the first time that USDA has distinguished durum from other classes of wheat in its farm programs.

Stocks

Ending stocks of U.S. durum wheat have declined from 3.3 million mt in 1985/86 to an estimated 1.3 million mt in 1989 (table 4-1). Stocks were drawn down mainly because of the drought in 1988. CCC stocks declined dramatically from 0.9 million mt in 1986/87 to 0.2 million mt in 1987/88 and to only 0.1 million mt by 1988/89. This large-scale release of the CCC stocks in 1987/88 may have contributed to a lowering of

overall quality of U.S. durum since the CCC wheat tends to be of lower quality than current crop production and CCC stocks represented over 25 percent of production.

The emptying of durum reserve stocks prevented prices from rising more than they did during the 1988 drought. The drought allowed more wheat to be removed from reserve than would otherwise have been released. The drawing down of stocks could have important implications for wheat prices in the future. Given the small stocks-to-use ratio in 1989, there is a risk of shortage and high prices if additional production shortfalls and demand increases occur in the near future. As shown in the General Accounting Office study (contained in appendix D), supply and demand forces in 1989 similar to those existing in 1973 would imply a nominal U.S. wheat price of about \$11 per bushel. Small stocks-to-use ratios also imply greater price variability. The decreased role of the United States as a world wheat stockholder (through wheat auctions, generic certificates, and the Export Enhancement Program) has increased the likelihood of short-run year-to-year variations in wheat supply, and thus increased price variability.

Price- and Income-Support Programs

Congress provides for farm price- and income-support programs through legislation. In recent years, basic farm legislation has been revised periodically. Legislation that became effective in 1981 and 1985 provided for program changes that affected the competitive environment for durum.

The Agriculture and Food Act of 1981

The 1981 act extended the wheat target price and deficiency payment programs, FOR program, and acreage reduction programs that had been established in earlier legislation. It also authorized a crop-specific acreage reduction program aimed at better crop selectivity under acreage reductions, although durum has never been distinguished from other wheat in the acreage reduction program. Minimum loan rates and target prices for each year were written into the legislation. The reserve loan rate was set at \$4.00 per bushel for 1982/83. This loan rate attracted a large increase in the reserve stock of wheat, to over 2.7 million mt. In reaction to the stock increase, the 1983 payment-in-kind program put record wheat acreage into conserving uses. However, falling exports and record yields prevented the sharp acreage cut in 1983 from achieving a significant reduction in stocks.

The Food Security Act of 1985

The Food Security Act of 1985 came at a time of large stock buildups and was designed to increase U.S. competitiveness in world markets,

Table 4-1

U.S. durum ending stocks and value, 1984/85-1989/90

Item	1984/85	1985/86	1986/87	1987/88	1988/89	1989/90 ¹
Ending stocks						
(million mt)	2.7	3.3	2.6	2.3	1.6	1.3
CCC (million mt) .....	.4	.8	.9	.2	.1 ²	.1 ²
Reserve (million mt) ...	1.8	1.6	1.5	1.1	.9	.7 ²
Loan and free						
(million mt) .....	.6	1.0	.2	.9	.6	.6 ²
Average cash price						
(per mt)	\$161	\$165	\$131	\$152	\$203	\$156

¹ Data for 1989/90 are estimated.

² Estimated by USITC staff.

Source: *Wheat: Situation and Outlook Report*, USDA, ERS, and *World Agricultural Supply and Demand Estimates*, World Agricultural Outlook Board, USDA, various issues, and ASCS data; converted to metric tons by USITC staff.

continue supporting farm income, lower loan rates, lower grain stockpiles, and reduce the cost of farm programs. One innovative tool to achieve these goals was the introduction of generic certificates. Other goals of the act were to reduce taxpayer costs of farm programs and allay public concerns about soil erosion and the use of farm chemicals. The intent of the act was to provide a transition toward a more market-oriented agricultural policy. It gave the Secretary of Agriculture greater flexibility in setting loan rates and exporters more latitude in setting competitive prices. Producer incomes continued to be protected through loan rates and target prices. The basic loan rate for crop years 1986/87 to 1989/90 was set at 75 to 85 percent of the simple average of the season farm prices over the previous 5 years, excluding high and low values. The loan rate could not fall by more than 5 percent per year.

Reduced (Findley) Loan Rate

The 1985 farm bill also allowed the Secretary of Agriculture the discretion to announce a rate up to 20 percent lower than the basic loan rate,

the so-called reduced (Findley) loan rate. This lower loan rate has gone into effect in every year since 1985. The national average loan rate for wheat was \$3.30 per bushel in 1985. After implementation of the Findley amendment, the loan rate for wheat fell from \$2.40 per bushel in 1986/87 to \$1.95 for crop year 1990/91. The target price for wheat was initially frozen at the 1985 level of \$4.38 per bushel for the 1986/87 crops, and then was allowed to drop to \$4.23 in 1988/89, \$4.10 in 1989/90, and \$4.00 in 1990/91 (table 4-2).

Acreage Reduction Programs

The amount of land idled under acreage reduction programs in the 1985 farm bill was based on the level of stocks. If projected beginning stocks exceeded 2.7 million mt (100 million bushels), the acreage reduction was allowed to range from 15 to 22.5 percent in 1985/86, from 20 to 27.5 percent in 1986/87, and from 20 to 30 percent in 1988/89 through 1989/90. If stocks were less than 2.7 million mt, the acreage reduction could range from 0-15 percent in 1985/86, and from 0-20 percent in 1986/87 through 1989/90.

Table 4-2

Wheat program provisions, 1986/87 to 1990/91

Provisions	1986/87	1987/88	1988/89	1989/90	1990/91
<i>Percent of base acres</i>					
Acreage reduction program	22.5	27.5	27.5	10.0	5.0
<i>Dollars per bushel</i>					
Target price	4.38	4.38	4.23	4.10	4.00
Basic loan rate	3.00	2.85	2.76	2.58	2.44
Findley loan rate	2.40	2.28	2.21	2.06	1.95
Advance deficiency payment .....	.73	.84	.61	.20	(¹)

¹ Not applicable.

Source: Joy Harwood and C. Edwin Young, *Wheat: Background for 1990 Farm Legislation*, U.S. Department of Agriculture, Commodity Economics Division, Economic Research Service, November 1989, p. 34.

Deficiency Payments

Deficiency payments serve both as an insurance program and as income support to farmers. If market prices are less than the target price, the farmer is assured of receiving compensation. The deficiency payment is based on the difference between the target price and the market price (based on the average for the first 5 months of the marketing year) or the loan rate, whichever difference is less.

The 1985 act provides for "regular" deficiency payments; that is, the deficiency payment is paid each December for years in which deficiency payments are made. The 1985 act also allows for advance deficiency payments, made in the beginning of the crop year, for up to 40 percent of the projected deficiency payment.

"Findley" deficiency payments were initiated under the 1985 act. These are emergency compensation payments that are equal to the difference between the basic loan rate and the higher of the announced national average Findley loan rate or the national weighted-average market price received by farmers for the entire marketing year. Findley payments were made in 1986 and 1987, but not in 1988. No Findley deficiency payments are projected for the 1989/90 crop year because the weighted-average market price received by farmers for the marketing year was above the basic loan rate and the national average Findley loan rate.

Wheat producers have the option of participating in an acreage diversion program in which they may underplant their permitted wheat acres and still, under some conditions, receive deficiency payments on a portion of the underplanted acreage. For example, producers participating in the "50/92" program in 1986 and 1987 planted between 50 and 92 percent of their permitted acreage to wheat and placed the remaining acres in a conserving use. Participating farmers were eligible to receive deficiency payments on 92 percent of the permitted acreage. Beginning in 1988, the "50/92" provision was replaced by the "0/92" provision. This option allows wheat producers to use all or a portion of their permitted acreage in conserving uses and receive up to 92 percent of their deficiency payments on the permitted acreage.

Table 4-2 summarizes farm program provisions in effect during 1986/87 to 1990/91. The percentage of acres set aside under acreage reduction programs fell from 22.5 percent in 1986/87 to 5 percent in 1990/91. The target price fell from \$4.38 per bushel in 1987/88 to \$4.00 per bushel in 1990/91. Both the basic loan rate and Findley loan rates declined during this period.

Generic Certificates

Generic certificates can be used to acquire stocks held as collateral on Government loans or owned by the CCC. The use of these certificates permits grain stocks to be taken out of reserve and sold. These stocks would otherwise be unavailable to the market. When market prices are near the loan rate, more stocks are likely to be redeemed with certificates out of reserve. Certificates are part of the focus of the 1985 act on developing a more market-oriented agricultural sector.

Generic certificates have a fixed dollar face value and an 8-month life beginning at the end of the month they are issued. They are not currency. Rather, they are a claim on CCC assets and are backed by commodities owned by the CCC. Because they are generic, they can be exchanged for a variety of commodities under loan and in CCC inventory, including wheat, rice, rye, corn, grain sorghum, barley, oats, soybeans, upland cotton, honey, and dairy products. The certificates are negotiable in that ownership and the right to exchange can be transferred. Generic certificates have been used as payment for participation in several Government programs, including the acreage reduction, paid land diversion, conservation reserve, and disaster programs.

Grain merchants and commodity groups have been issued certificates through the Export Enhancement Program and the Targeted Export Assistance Program.

Farmers exchange generic certificates for grain loan collateral based on an exchange price determined daily by USDA's Agricultural Stabilization and Conservation Service. These exchange prices, or posted county prices, are based on the previous day's closing market prices for 19 terminal markets. Posted county prices are determined for over 3,000 counties and 7,000 warehouse locations by adding or subtracting a predetermined differential to the terminal market price.

Advantages of using certificates include ready access to most program commodities, easy sale or transfer of certificates to others, and the fixed-dollar face value of the certificates. Holders of certificates are protected when commodity prices decline because the amount of commodity for which certificates can be exchanged increases.

Generic certificates may be used at USDA wheat auctions to bid for specific lots of wheat. CCC auctioned 10.6 million mt of wheat between the first wheat auction in November 1987 and February 15, 1989.

Effects of the 1985 Food Security Act

Wheat programs under the 1985 act have had sizable effects on farmers and taxpayers. Most durum wheat growers participate, and participation in the wheat program increased greatly be-

tween 1984 and 1988. Government direct payments for wheat peaked in 1986 and have since trended downward, but are still above pre-1985 levels (table 4-3). Direct payments made to farmers have also increased and now constitute a larger proportion of growers' incomes than they did before 1985. Total direct payments, the sum of deficiency, diversion, reserve storage, disaster, and conservation reserve payments, ranged from \$0.79 billion in crop year 1981/82 to a high of \$3.86 billion in 1986/87. From crop year 1985/86 to 1988/89 direct payments to wheat growers amounted to 48 percent of the value of production.

Generic commodity certificates, new with the 1985 Act, contributed to greater participation among durum wheat growers. Before certificates, when prices were below the loan rate, farmers put their grain under loan for 9 months and paid storage costs. With certificates, producers have other options. For example, they can put their grain under loan, immediately redeem those loans with commodity certificates, and market the grain, thus avoiding storage costs. This can reduce forfeitures of wheat to the CCC, reducing CCC stock buildups.

Under the 1985 act producers may sell or transfer commodity certificates to others. Certificates may sell for more or less than their face value. Certificates sold above their face value between spring 1986, when they were first issued, and spring 1988, thus benefiting producers. Generic certificates provide a mechanism for moving wheat stocks into commercial channels. The use of generic certificates may increase risk to producers who do not participate in Government

programs, since the loan rate no longer sets an effective price floor to those outside the program.

Export Enhancement Program

The Export Enhancement Program (EEP) was devised to help exporters sell more grain in foreign markets by reducing the price of U.S. grain to foreign buyers. Exporters receive a bonus for each metric ton of grain sold in the selected foreign market, which allows them to reduce the price. Exports of durum under EEP declined from 895,000 mt in 1987 to 359,000 mt in 1989. This decrease is attributed to lower supplies of durum available following the 1988 drought.¹⁰ Funding for the EEP has declined from \$770 million in FY 1989 to \$560 million in FY 1990.

Sales to certain countries where U.S. exporters are perceived to be at a disadvantage versus exports from the European Community are eligible for EEP bonuses, as determined by the U.S. Department of Agriculture. In 1989 most EEP exports were to Algeria, Tunisia, and Poland. The EEP bonus is calculated by taking the difference between the U.S. domestic price and the world price, if the world price is lower. The size of the EEP bonus has varied in recent years from a high of \$48 per mt in December 1987 to a low of \$6 per mt in September 1989. The average annual EEP bonus for wheat decreased from a peak of \$40.03 per mt in FY1987 to \$14.20 for FY1990, as shown in the tabulation at the top of the next page.¹¹

¹⁰ Abel, Daft, & Earley, *An Examination of U.S. Durum Imports from Canada*, p. 14.

¹¹ Calculated from database of EEP press releases, Economic Research Service, U.S. Department of Agriculture.

Table 4-3
Direct payments to wheat farmers, 1981/82 to 1988/89 crops

Item	(In billions of dollars)							
	81/82	82/83	83/84	84/85	85/86	86/87	87/88	88/89
Deficiency payments ..	0.42	0.48	0.77	1.05	1.54	3.46	3.29	1.31
Diversion payments ...	—	—	.31	.51	.65	.23	—	—
Reserve storage payments .....	.15	.28	.24	.17	.16	.17	.11	.05
Disaster payments .....	.22	.01	—	—	—	—	—	.28
Conservation reserve payments	—	—	—	—	—	—	.21	.39
Total direct payments .....	.79	.77	1.31	1.73	2.35	3.86	3.61	2.03
Market value of production	10.28	9.54	10.42	9.13	7.37	5.04	5.42	6.77
Total Income	11.06	10.31	11.73	10.86	9.72	8.90	9.03	8.80

— = no payment.

Source: Joy L. Harwood and C. Edwin Young, *Wheat: Background for 1990 Farm Legislation*, U.S. Department of Agriculture, Economic Research Service, November 1989.

Table 4-3—Continued

Direct payments to wheat farmers, 1981/82 to 1988/89 crops

Item	FY1986	FY1987	FY1988	FY1989	FY1990
Average wheat bonus (per mt)	\$21.06	\$40.03	\$38.55	\$18.82	\$14.20
Quantity (thousand mt)	703	895	596	359	(¹)

¹ Not available.

Source: Joy L. Harwood and C. Edwin Young, *Wheat: Background for 1990 Farm Legislation*, U.S. Department of Agriculture, Economic Research Service, November 1989.

Effects of the Export Enhancement Program on the World Wheat Market

The use of EEP bonuses raises durum prices in the U.S. domestic market by increasing the demand for durum, and, in combination with EC export subsidies, depresses prices in the world market. Analysis of the size of the difference in prices between the U.S. and world markets is not available, but the average bonus amount may be used as a guide to trends in the U.S.-world price difference.

Studies sponsored by the U.S. Department of Agriculture have found that the use of EEP bonuses raised U.S. wheat export volume, prices, and revenue.¹² The three studies found that even though the rise in wheat exports was less than actual EEP sales, wheat exports were from 2 to 30 percent higher between 1985 and 1988 than they would have been without EEP, in part because EEP subsidized sales partially replaced unsubsidized commercial sales. The other finding is that U.S. wheat prices may have risen slightly due to the EEP program during part of this period. Higher wheat prices would have improved market earnings for U.S. wheat growers and reduced Government outlays for direct income payments to U.S. farmers. The studies also found that the cost of the EEP program was slightly less than the gains in U.S. gross export revenues due to the EEP, at least during part of this period. These results assume no retaliatory subsidies by the EC which would have offset many of the beneficial results of EEP.

In a two-country world, in long-run equilibrium, in which stock levels are ignored, export bonuses theoretically depress world prices and increase imports and consumption in the rest of the world.¹³ Using the simplest case, suppose a wheat-exporting country imposes a per-unit export bonus equal to the difference between P_s and P^* in frame 2 of figure 4-1. The export bonus would shift the exporting country's excess supply curve to ES' , raising its domestic price and reducing the export price (frames 1 and 2). As a result, the exporting country's exports increase from X to X' , its domestic price increases to P_s ,

and production increases to S' (frame 1). Because demand for wheat in many exporting countries is relatively inelastic, consumption would fall only slightly, to D' . In the rest of the world, the price drops to P^* , causing consumption to rise to D'' and production to fall to S'' (frame 3).

The economic cost of the bonus to the exporting country is represented by the area P^*P_sba in frame 2 of figure 4-1. The area "cba" in frame 2 represents a loss to all parties because the bonus encourages a less-than-optimal pattern of resource use.

The Canadian Wheat Board and the Canadian Government have stated that the clash between the EC and the United States in the world wheat market has reduced world prices and lowered returns to Canadian wheat producers.¹⁴ They state that relatively high U.S. domestic price encourages Canadian exports to the United States,¹⁵ particularly since Canada may have lost sales opportunities in other markets due to EC or U.S. export competition.

It can be argued that the market in which most Canadian durum competes with U.S. durum, premium grade durum, is different from the market that most EEP bonuses affect, medium grade durum. However, there may be some link between prices of high grade and medium grade durum.

State Government Programs

At the State level, farmer assistance programs are primarily of a financial nature, such as interest buy-down programs, homestead declarations, and lien laws. These programs are designed to support the family farm as a viable institution.¹⁶ North Dakota also has financial assistance programs for young farmers wanting to own their own farms.

¹⁴ Canadian Embassy, note to U.S. Department of State, No. 43, Mar. 29, 1990, pp. 2-3; Canadian Wheat Board, submission to USITC, Mar. 30, 1990, p. 2.

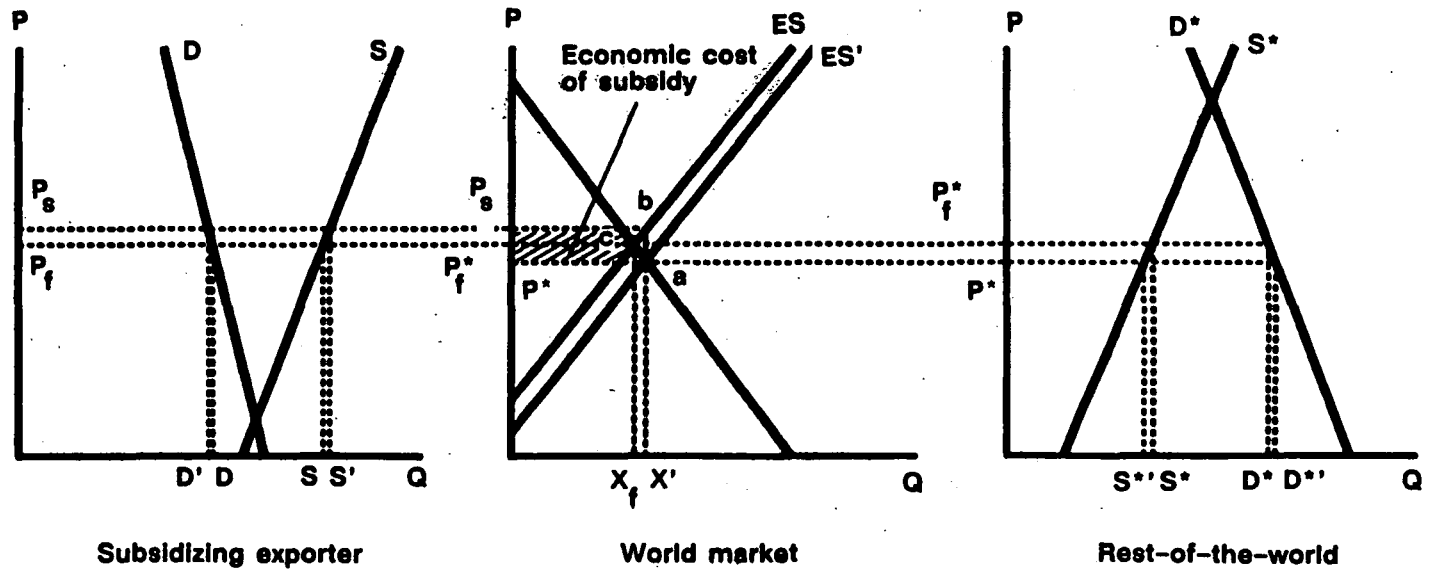
¹⁵ Communications with William W. Wilson, Associate Professor, Department of Agricultural Economics, North Dakota State University; Canadian Wheat Board submission to USITC, p. 2.

¹⁶ U.S. General Accounting Office, *Farm Finance, Minnesota and North Dakota Assistance Programs Available to Farmers*, Fact Sheet for the Chairman, Subcommittee on Conservation, Credit, and Rural Development, Committee on Agriculture, U.S. House of Representatives, June 1987 (GAO/RCED-87-143FS).

¹² *The Export Enhancement Program, How Has it Affected Wheat Exports?* Ann Hillberg Seitzinger and Philip L. Paarlberg, USDA-ERS, December 1989.

¹³ Material in this section is from Philip L. Paarlberg and others, *Impacts of Policy on U.S. Agricultural Trade*, Staff Report No. AGES-840802, U.S. Department of Agriculture, Economic Research Service, December 1984.

Figure 4-1
Economic Implications of an export subsidy



Source: adopted from P. Pearlberg and others, p.10.

United States-Canada Free-Trade Agreement

A goal of the United States-Canada Free Trade Agreement (FTA), as stated in article 701, is to achieve "the elimination of all subsidies which distort agricultural trade." Further, "Neither Party shall introduce or maintain any export subsidy on any agricultural goods originating in, or shipped from, its territory that are exported directly or indirectly to the territory of the other..."

Under the FTA, Canada's Crow Rate—our grain shipment rates specified under the Western Grain Transportation Act—is eliminated for grain shipped through west coast ports for U.S. consumption. According to the Canadian Wheat Board, 75 percent of the shipments that are not shipped through west coast ports to the United States receive the benefit of the Crow Rate (for shipments through Thunder Bay), and 25 percent are subject to the "full compensatory rate."

Canada's import-licensing requirement is addressed in the FTA, article 705: "Commencing at such time as the government support...in the United States...becomes equal to or less than the level of government support for that grain in Canada, Canada shall eliminate any import permit requirements...except that Canada may require...an end-use certificate..." Each Government calculates the level of its own supports to agriculture (measured in producer subsidy equivalents, or PSEs).¹⁷ The PSEs are calculated in accordance with the detailed formulas found in the FTA and are reviewed periodically. The calculations for wheat agreed to by the U.S. and Canadian Governments in 1990 indicate that the 2-year average PSE for the United States is greater than those for Canada. Current PSEs are shown in the following tabulation (in percent):¹⁸

Country	1987	1988	2-year average ¹⁹
Canada	46.55	43.10	44.83
United States ..	61.23	30.36	45.80

¹⁷ A PSE is an estimate of the subsidy equivalent value of a government program, or of how much an industry is aided or supported by a certain government program.

¹⁸ Canada Minister for International Trade, News Release No. 089, May 2, 1990, p. 2.

¹⁹ The use of a 2-year average is required by the FTA in annex 705.4, par. 3.

Government programs included in PSE calculations under the United States-Canada FTA are listed below:²⁰

United States

- Payments of the CCC
- Farmer Owned Reserve (FOR)
- Special Producer Loan Storage
- Conservation Reserve Program (CRP)
- Acreage Reduction Program (ARP)
- CCC generic certificates
- CCC loan forfeiture
- Export Enhancement Program (EEP)
- Advance Payments
- Crop Insurance Programs
- Federal Grain Inspection Service (FGIS)
- Agricultural Research Service (ARS)
- Bureau of Reclamation (BR)
- Corps of Engineers (CE)
- Soil Conservation Service (SCS)
- Agricultural Stabilization and Conservation Service (ASCS)
- Federal Railway Administration (FRA)
- Foreign Agricultural Service (FAS)
- Agricultural Marketing Service (AMS)
- Animal and Plant Health Inspection Service (APHIS)
- Targeted Export Assistance Program (TEAP)
- State Budget Outlays

Canada

- Agricultural Stabilization Act (ASA) payments
- Western Grain Stabilization Act (WGSA) payments
- Special Grains Program payments
- Provincial stabilization payments
- Canadian Grain Commission expenditures
- Wheat Board Pool deficit payments
- Domestic Wheat Pricing (now discontinued)
- Advance Payments
- Crop Insurance
- Western Grain Transportation Supports
- Research expenditures
- Prairie Line Rehabilitation Program
- Prairie Farm Rehabilitation Act
- Agricultural and Rural Development Act (ARDA)
- Economic and Rural Development Agreements (ERDA)
- General Provincial Agricultural expenditures
- Farm Credit Programs

²⁰ Schedules 1 (United States) and 2 (Canada) to annex 705.4 of the FTA.

Chapter 5 The Canadian Industry And Market

The Canadian Industry

Geographic Distribution of Production

Canadian durum producers, like U.S. durum producers, are primarily family-run operations. Average Canadian grain-producing farms tend to be somewhat larger than average U.S. grain-producing farms. The crop mix on farms in the Canadian growing area is very similar to that of the United States, comprising feedgrains, barley, canola, flaxseed, and other winter wheats.

The Canadian Wheat Board has estimated that there are 25,084 durum-producing farms in Canada.¹ The farmers enjoy greater latitude in switching in and out of various crops than their U.S. counterparts do, because of different types of Canadian farm programs. However, Canadian farmers also are more vulnerable to fluctuations in the world market price than are U.S. producers. The Canadians are major world producers and exporters of premium durum and thus have a larger acreage planted to durum (2.6 million hectares) than do U.S. farmers (about 1.5 million hectares).² Durum wheat accounts for about 12 percent of the total Canadian wheat crop in quantity, calculated on a 5-year average.

Large-scale cultivation of durum wheat did not begin in Canada until after 1916, when durum was planted in South Manitoba to replace bread wheat varieties that had been severely damaged by rust. Success with the new crop prompted further cultivation. However, in the mid-1950s, a new strain of rust wiped out durum wheat in the Manitoba area, leaving primarily durum wheat production in Saskatchewan. Saskatchewan now accounts for about 80 percent of Canadian wheat production.³

Over the last 10 years, Canadian durum production has ranged from a high of 3.8 million mt in 1989⁴ to a low of less than 2 million mt the previous year. Canadian durum acreage has increased over the last 6 years, rising from 1.7 million hectares to 2.6 million hectares. The Palliser Triangle of southeast Alberta and southwest Saskatchewan, and central and southern Saskatchewan, are traditional durum production areas.

¹ Estimated on the basis of all farms delivering durum on their allocation. The estimate is considered to be high, since some farms have more than one allocation on which they can deliver.

² U.S. Embassy, Ottawa, *Agricultural Situation Annual and Market Competition Annual*, March 1990.

³ International Wheat Council, *The World Durum Situation*, Secretariat Paper No. 12, p. 6.

⁴ USDA, Foreign Agricultural Service, *World Agricultural Production*, Circular Series WAP-10-89, October 1989.

Varietal Licensing

The Canadians emphasize varietal licensing as a means of maintaining "the integrity of the grade standards...An important part of achieving and maintaining its position in the international market is the way in which Canada has carefully and deliberately cultivated her reputation for consistently uniform, high quality...wheats."⁵

The tight varietal controls exercised by Canada, combined with a grain-grading system that is based almost entirely on visual criteria, have standardized wheat across the prairies. The cost of this standardization has been foregone yield increases.⁶ Other varieties have higher yields, but the Canadians have maintained standards that emphasize end-use values rather than yields.

Grades

Canadian grade standards for No. 1 Canadian Western Amber Durum (CWAD) and No. 2 CWAD are roughly equivalent to U.S. standards for high-grade Hard Amber Durum (HAD). The Canadians have a second set of standards called "export standards".⁷

The objective of having the two standards is to capture for producers generally the benefits of the melding process which occurs in the elevator system. Wheat is received at the primary and the terminal elevators under the primary standard and is shipped from the terminal elevators under the export standard...⁸

For the durum wheat class,⁹ the primary standard exists only for Western Canada. An export standard exists for the three top grades of amber durum. The export standards call for higher test weights; the tolerances for foreign material are more relaxed:¹⁰

The tolerances for 'other grain' in the three top grades of amber durum differ from those for hard red spring under both the primary and the export standard. The tolerances are slightly more relaxed for the two top grades of durum while being more restrictive for the third grade. Admixtures of barley are

⁵ Carter, C.A.; Lyons, R.M.A.; and Ahmadi-Esfahani, Z.F., "Varietal Licensing Standards and Canadian Wheat Exports," *Canadian Journal of Agricultural Economics*, November 1986, pp. 361-377.

⁶ *Ibid.*

⁷ "Those wheat grades to which an export standard applies include No. 1, No. 2, and No. 3 Canada Western Red Spring; No. 1 and No. 2 Canada Utility; Canada Feed; No. 1, No. 2 and No. 3 Canada Western Amber Durum; and No. 1, No. 2 and No. 3 Canada Western Soft Spring Wheat." Canada Grains Council, *Economic Grade Structures for Wheat in a Changing Market Environment-A Treatise*, January 1985.

⁸ Canada Grains Council, *Wheat Grades for Canada—Maintaining Excellence*, January 1985, p. 35.

⁹ Essentially, each different type of wheat is a "class," and within each class of wheat there are primary and export standards for each grade level.

¹⁰ Canada Grains Council, *Economic Grade Structures for Wheat*.

more difficult to separate from durum than from hard red spring...The export standard for the three top grades of durum limits their wild oat content to 0.10 percent, double that allowed in the red spring grades. The wild oat content of shipments...is on average substantially below the tolerance allowed.¹¹

Canadian grade standards for grade Nos. 1 and 2 Canadian Western Red Spring wheat (CWRS) are similar to U.S. standards for high-grade Hard Red Spring wheats. Canadian CWRS is comparable to U.S. Hard Red Winter wheats; grade No. 3 falls into the medium quality class.

Traditional Canadian grade factors and varietal licensing involve visual factors, the use of which has discouraged the development of additional end-use value tests.

The success of plant breeders in maintaining visual distinguishability can be considered to have discouraged the search for other procedures which can be applied throughout the handling system to determine 'quality'.¹²

Whereas grading has been accomplished through visual tests, end-use values were assured through the genetic traits of the licensed cultivars. In reaction to the increasingly tight technical requirements of the milling and pasta industries, the Canadians have been paying greater attention to nonvisual test results in their quality evaluations.¹³ Examples of key nonvisual tests are falling numbers and near-infrared tests.

The Canadian Wheat Board and the Canadian Grain Commission have decided to limit production largely to high-quality wheats.¹⁴ Medium-quality wheats represent both the larger and the growth market, while the high-quality wheat market tends to grow slowly.

Elevators

There are about 3,700 primary elevators (previously called country elevators) in Canada. Within the durum growing areas of Alberta and Saskatchewan alone there are about 3,200 primary elevators.¹⁵ In Saskatchewan, about 755 out of 2,000 elevators are owned by the Saskatchewan Wheat Pool. In Alberta, about 430 primary elevators out of over 1,200 are owned by the Alberta Wheat Pool. Some of the companies that control primary elevators are multinational corporations based in the United States. These include the Cargill Grain Co., Ltd. (including Cargill Nutrena) and United Grain Growers.

¹¹ Ibid.

¹² Canada Grains Council, *Wheat Grades for Canada—Maintaining Excellence*, January 1985.

¹³ Interviews by USITC staff during field work in Canada, especially with the Canadian Grain Commission lab personnel in Thunder Bay.

¹⁴ Ibid.

¹⁵ Estimated by the staff of the USITC, on the basis of Charles F. Wilson, *Grain Marketing in Canada*, Canadian International Grains Institute, 1977.

There are about 25 licensed terminal elevators, having a total capacity of over 3.6 million mt (130.5 million bushels). In Thunder Bay, a major export point for all wheat through the St. Lawrence Seaway, there are 14 terminal elevators, controlled by 6 companies. These are dominated by the Saskatchewan Wheat Pool, which controls six terminal elevators. These six elevators account for 43 percent of the Thunder Bay capacity and 29 percent of Canadian capacity for all terminal elevators. The increase in the concentration of ownership of elevators has resulted in a trend toward greater rationalization of the system, so as to maintain more profitable operations.

The concentration of ownership in Canadian terminal elevators has increased sharply over time. In 1915, with less than 3,000 licensed elevators in service, there were 64 companies in control; in 1977, with over 3,700 licensed elevators, there were only 9 companies in control.

Trends in Production

Durum production in Canada slumped to 2.0 million mt in 1988/89, primarily due to poor growing conditions, in which yields averaged 0.9 mt per hectare. Partially through an increase in acreage devoted to durum wheat, Canadian durum production in 1989/90 is projected at 4.1 million mt. Canada is thus the world's second-largest producer, after the EC. The large production increase between 1988/89 and 1989/90 is attributable to the seeding of a record area (2.6 million hectares) and a good yield of 1.6 mt/hectare (equivalent to the 10-year average).¹⁶

Although untimely rains and frost caused slight damage from sprouting and mildew, the 1989 crop has a good protein content (averaging 14.7 percent), good color, and a good semolina yield with low speck count. The pasta industry reports that the 1989 crop exhibits very good spaghetti-cooking quality.¹⁷

Throughout their publications, the Canadians stress their emphasis on quality in selling their wheat. It has been argued by both the U.S. millers and the Canadians that imports of Canadian durum wheat by U.S. enterprises increased because of a lack of U.S. durum wheat of a sufficiently high quality. Table 5-1 shows the percentage distribution of the quality grades of the Canadian spring and durum wheat crops. It indicates, however, a decline in the share of the crop that was graded Nos. 1 and 2 between marketing year 1983/84 and 1989/90.

¹⁶ Canadian Wheat Board, *Annual Report: 1988/89 Crop Year*.

¹⁷ *The Pasta Journal*, vol. 71, No. 6, November/December 1989.

Table 5-1

Western Canada grain quality, marketing year¹ 1983/84 to 1989/90

Type of wheat	83/84	84/85	85/86	86/87	87/88	88/89	89/90 ²
	Percent						
Spring wheat:							
No. 1 CWRS	56	67	20	35	19	50	28
No. 2 CWRS	21	19	32	21	46	35	24
No. 3 CWRS and below	23	14	48	44	35	16	47
Durum:							
No. 1 CW	33	34	18	34	14	24	12
No. 2 CW	37	47	26	17	24	47	26
No. 3 CW and below	30	19	56	49	62	29	62

¹ The marketing year is from Aug. 1 to July 31.² 1989/90 data are preliminary.

Source: MY 1983/84-1987/88, Canadian Grain Commission; MY 1988/89-1989/90, United Grain Growers September surveys; as reported by the Agriculture Attache, U.S. Embassy, Ottawa (report #CA9160, Oct. 10, 1989).

The Canadian Market

Intermediate and Final Consumers

The Canadians service the same intermediate and final consumer that the United States does: wheat millers and manufacturers of pasta. During fieldwork in Winnipeg, an important difference in consumer preferences was discussed. It appears that Canadians may prefer a blend of durum with 50 percent hard spring wheat in the manufacture of pasta.¹⁸ This blend yields a product with less of a bite or less "al dente" than is preferred in the premium U.S. market. In the United States, premium quality pasta is made entirely from semolina. Both in the United States and in Canada, pasta products made for soups and other canned products are made with blends of durum and Hard Spring wheat, or entirely out of farina, or even non-durum wheat flours.

The U.S. milling industry reports that the United States-Canada Free-Trade Agreement may affect the milling sector:

...flour millers and grain men south of the [U.S.-Canada] border have looked upon the [Canada-United States Free-Trade Agreement] as a non-event, while Canadian counterparts have fretted and studied in the hope of being in a position to take advantage of what they believe will be revolutionary change in how business is conducted in the North American wheat and flour markets. The time is at hand when U.S. interests ought to be aware of the Canadian goal. 'Canadian millers want to be competitive on a North American basis,' said an executive of that country.¹⁹

¹⁸ Regional tastes were discussed with the president of the Soo Line Mill, Winnipeg, Manitoba, Canada.

¹⁹ "Canada Wheat Changes Deserve Attention," editorial, *Milling & Baking News*, Feb. 13, 1990 (Vol. 68, No. 50).

The Canadian Wheat Board (CWB) buys durum wheat from producers and then sells the wheat to pasta millers in Canada. There are currently eight durum wheat mills in Canada. These mills represent the intermediate demand sector for durum wheat in Canada and are listed below:²⁰

Location	Company	Number of durum mills
Winnipeg, Manitoba	Soo Line Mills	1
Lethbridge, Alberta	Ellison Milling	1
Saskatoon, Saskatchewan	Robin Hood Malting Foods	2
Ontario	Hausen & Hausen	1
Toronto, Ontario	Maple Leaf Mills	1
Montreal, Quebec	Ogilvie Mills	1
Toronto, Ontario	Primo Pasta Mill	1

Almost all durum wheat milled in Canada is of Canadian origin since, under provisions of the United States-Canada Free-Trade Agreement (FTA), U.S. wheat is currently prohibited from entering Canada.

Recent changes in CWB pricing will change the economic environment for Canadian millers. Historically, there were two wheat prices in Canada—an internal or domestic price, and an external or export price. In the past, the CWB set the internal price and negotiated the external price based on world market forces. In late 1989, the CWB began setting internal prices according to the Minneapolis and Chicago futures markets. On May 18, 1990, the Board began setting its domestic prices on a weekly basis. The goal for daily pricing is October 1, 1990.

These changes present important implications for the Canadian milling industry. The new CWB

²⁰ As reported by the Canadian National Millers Association.

price system will incorporate price fluctuations from the U.S., and indirectly, the world markets. Canadian millers will need to adjust to the supply and demand considerations that are newly incorporated into the prices of the wheat they purchase. Using futures contracts to hedge on cash wheat requirements will be one option for Canadian millers to consider in their management decisions.

Under current conditions, Canadian millers cannot import durum from the United States without a license. But under the FTA, Canada's import licensing requirement will be suspended if U.S. Government support to agriculture declines to a level at or below Canadian support. Then millers in Canada will have the option of importing from the United States.

Canadian Imports

*Canadian Tariff Treatment*²¹

Canadian trade barriers include tariffs, quotas, and nontariff barriers, such as licensing. The Canadian Wheat Board issues import licenses for wheat and wheat flour only if domestic supplies are not available. Other wheat products, such as baked goods and pasta products, are imported under unlimited-volume licenses, subject to some packaging restrictions, such as metric and bilingual requirements.

Canadian import duties on wheat are as follows:²²

Item	Article description	Base rate
10.01	Wheat and meslin	
1001.10.00	Durum wheat	\$4.41/tonne
1001.90.00	Other	\$4.41/tonne

²¹ U.S. Department of Agriculture, Economic Research Service, Agriculture and Trade Analysis Division, *Government Intervention in Canadian Agriculture*, by Carol A. Goodloe (January 1988); and *U.S.-Canadian Agricultural Trade Issues, Implications for the Bilateral Trade Agreement*, by Mary Anne Normile and Carol A. Goodloe (March 1988).

²² In Canadian dollars, listed as found in annex 401.2, "Schedule of Canada," of the FTA.

Quantity of Imports

The Canadians import no wheat from the United States, nor—under the provisions of the FTA—will they until the Producer Subsidy Equivalents (PSEs)²³ in the United States are at least equal to those in Canada. As long as the Canadian PSE's are lower, Canada can export wheat to the United States.

In accordance with section 705 of the FTA, the Canadians have the regulations in place for the day the PSEs are equalized. Imports of wheat would need to have an end-use certificate, be denatured, or have a seed certificate, ensuring that cultivars of U.S. wheat that had not been approved by the CWB would not enter into the Canadian product stream.

Canadian Exports

Canada is the largest durum wheat exporter in the world. Canadian exports of durum wheat fell steadily from 2.5 million mt in crop year 1983/84 to 1.4 million mt in 1985/86.²⁴ Canadian exports then increased to 2.8 million mt in 1987/88, and dropped to 2.0 million mt in 1988/89, the height of the drought. In 1989/90, Canada exported an estimated 2.9 million metric tons of durum wheat, over half of all world durum exports. Table 5-2 shows world durum exports by major durum exporting countries.

Table 5-3 shows exports of Canadian durum wheat by major importing country. For 1988/89, the largest buyer of Canadian durum was the Soviet Union, followed by Algeria, Italy, and the United States.

²³ A PSE is an estimate of the subsidy equivalent value of a government program, or of how much an industry is aided or supported by a certain government program.

²⁴ Based on information from the Canadian Grain Commission, as listed in the Canadian Wheat Board *Annual Report 1987/88*.

Table 5-2

World durum exports, 1983/84 to 1989/90

(In thousands of metric tons)

Crop-year	Canada	United States	European Community	Other	Total
1983/84	2,545	1,442	85	39	4,111
1984/85	1,826	1,378	101	38	3,343
1985/86	1,385	1,368	498	8	3,259
1986/87	1,957	2,034	93	50	4,134
1987/88	2,754	1,478	765	571	5,568
1988/89	2,003	477	1,800	513	4,793
1989/90	2,900	1,500 ¹	400	610	5,410

¹ Forecast by the International Wheat Council, which differs from data based on official statistics of the U.S. Department of Commerce cited elsewhere in this report.

Source: International Wheat Council, *World Wheat Statistics 1986 and 1987*, Market Report 1 Mar. 1990; 1989/90 figures are IWC forecasts, as quoted by the Canadian Wheat Board.

Table 5-3

Canadian durum exports by importing country, 1983/84 to 1988/89

(In thousands of metric tons)

Crop-year	U.S.S.R.	Algeria	Italy	United States	Other	Total
1983/84	555	813	504	3	670	2,545
1984/85	533	508	182	0	603	1,826
1985/86	254	492	255	0	384	1,385
1986/87	498	423	480	62	494	1,957
1987/88	992	611	232	202	717	2,753
1988/89	714	326	214	186	563	2,003

Source: Canadian Grain Commission for 1987/88 to 1988/89. All previous years, Statistics Canada "Grain Trade of Canada." As cited in *Canadian Wheat Board Annual Report, 1988/89 Crop Year*.

Chapter 6 Canadian Government Programs¹

Federal

The agricultural policy goals of Canada are summarized by the following statement.²

The objectives of Canadian agricultural policy are: more market responsiveness, greater self-reliance in the agri-food sector, recognition of regional diversity within national policy instruments and increased environmental sustainability. The Canadian agri-food sector will be more market oriented and market responsive by concentrating on producing what the market needs rather than simply selling what we produce and by being a reliable and innovative supplier. The agri-food industry must be provided with a framework of consistent and predictable government programs that encourage greater self-reliance in the sector and that allow farmers to freely manage their own operations in response to market signals. This requires national policies which reduce regulatory barriers and which treats all farmers equitably, while at the same time, recognizing and responding to regional diversity. Canadian agricultural policy must be environmentally sustainable for our generation and future generations by preserving our soil and water resources so that our producers can continue to provide a safe and wholesome supply of food for all Canadians.

Canadian Wheat Board

The Canadian Wheat Board (CWB) is a trading agency that is the sole legal exporter for wheat, barley, and oats grown in Western Canada.³ The Canadians argue that the CWB is a "cooperative"; others argue that it is a state agency. It derives its operating capital from the revenues obtained by marketing wheat. Profits above operating costs are then returned to the farmer. However, its obligatory relationship with wheat farmers sets it apart from the usual conception of a cooperative.

The CWB also has a marketing monopoly on grains for domestic uses. The CWB thus operates both as a monopoly and as a monopsony, within the boundaries of Canada. Internationally, the CWB and the large U.S. grain-marketing concerns may be considered as oligopolies operating within the North American wheat market.

¹ Material in this section is based partly on Carol A. Goodloe, *Government Intervention in Canadian Agriculture*. Also, USITC staff visited the grain related organizations and facilities in Winnipeg, Ottawa, and Thunder Bay, Ontario, between Feb. 25 and Mar. 2, 1990.

² Submitted by the Government of Canada, through the Embassy of Canada in Washington, D.C.

³ Hoos, Sidney, ed., *Agricultural Marketing Boards: An International Perspective* (Cambridge, MA: Ballinger, 1979).

...in producing wheat in North America, no single producer can influence aggregate market price. However, this does not necessarily imply that the pricing of wheat is competitive since, to reach this conclusion, one must examine the structure, conduct, and performance of the associated marketing board in Canada and the large private grain traders in the United States.⁴

An important part of the analysis of the CWB consists of the choice of the economic model most useful for analyzing it. The model of the "pure middleman" seems to be that model. It encompasses characteristics of both monopoly and monopsony power. If the board that buys from the producers and sells to the consumers wishes to maximize profits, it would—at the extreme—act as both a monopolist and a monopsonist extracting surplus from both producers and consumers by setting a high consumer price and a low producer price.⁵ However, the mandate of the CWB limits its actions. It is to obtain the highest price possible for the wheat entrusted it and to return as much as possible to the farmer.

As described by the USDA⁶ and observed by the USITC staff during field investigation work at CWB facilities, the CWB operates a price pooling system. Each year, guaranteed floor prices are set for six different pools, one of which is for durum wheat. The receipts from grain sales in a pool account are used to make payments to producers.

The initial payment to producers is based on market projections. If the price obtained for the wheat generates receipts greater than the initial payment plus handling and administrative costs, a final payment is returned to the producers at the end of the crop year. If the pool is in deficit, the Canadian Federal Government provides financial assistance.

The CWB controls access to the grain-handling systems through delivery quotas, which are used to regulate deliveries to elevators. Quotas are changed periodically to reflect sales.

The CWB is authorized to make credit sales. During the 1970s, the CWB made some subsidized wheat sales to Brazil and Algeria. The Canadian Government paid the difference between the subsidized interest rate and the market rate.

Licenses are required for imports of wheat, barley, oats, and their products. This requirement has been modified by the United States-Canada Free Trade-Agreement. Since 1985, the Ministry of External Affairs has controlled the licensing of barley and oat imports, but the CWB retains control over wheat imports.

⁴ Richard E. Just, Darrell L. Hueth, and Andrew Schmitz, *Applied Welfare Economics and Public Policy* (Prentice-Hall, NJ, 1982).

⁵ Just, *Applied Welfare Economics and Public Policy*, ch. 10.

⁶ Goodloe, *Government Intervention in Canadian Agriculture*.

The CWB recently changed the way wheat sold to millers is priced in Canada, preparing the way for the eventual freeing of trade. Historically, there were two wheat prices in Canada—an internal or domestic price, and an external or export price. The internal price was set by the board, and the external price was negotiated on the basis of world market forces. There is now an October 1, 1990, target date for daily pricing of wheat in Canada on the basis of Chicago and Minneapolis wheat futures markets, which will replace the internal price set by the board.

Canadian Grain Commission

The Canadian Grain Commission (CGC) provides grading and inspection services for grains and oilseeds. It is an agency of the Government of Canada under the authority of the Canada Grain Act. The CGC regulates grain handling in Canada and establishes and maintains quality standards for Canadian grain.

The CGC establishes grade specifications, grades grain, supervises grain sanitation, and officially inspects cargoes. The CGC also monitors grain stocks and audits licensed elevators to make certain that classes of grain are not co-mingled.

Grain Research Laboratory

The Grain Research Laboratory (GRL) is an agency of the CGC. GRL programs may be categorized as research, related scientific activities, and provision of scientific and technical expertise. The GRL performs harvest surveys, cargo and carlot monitoring, cultivar evaluation, and instrument monitoring and calibration. It also works on the development of instrumental testing methods and the determination of the effects of degrading factors on the end-use quality of Canadian grain.

The GRL performs market-support activities such as milling and baking research using a client's specifications and regional practices and performs technical missions worldwide. This overseas market development is considered by the CWB as an important aspect of its ability to maintain and/or increase sales of Canadian grain.

The specific wheat-related activities of the GRL involve wheat chemistry and laboratory services, wheat enzyme research, and cereal protein research.⁷

Western Grain Stabilization Act

The Western Grain Stabilization Act (WGSA) was implemented April 1, 1976, and is a voluntary program designed to support net cash-flow for western producers of wheat. Producers con-

⁷ In the United States, the role of organizations such as the GRL and the Canadian International Grains Institute is served by the North Dakota State University and other land grant universities.

tribute between 1 and 2.5 percent of their gross receipts from wheat sales (up to CAN\$60,000). The Canadian Federal Government contributes \$2.00 for every \$1.00 paid by producers. Payments are made when net cash-flow falls below the sliding average for the prior 5 years. The fund has been in deficit since 1985/86.

The stated purpose of the WGSA is to improve income stability for grain farmers in western Canada. Virtually all durum is grown in the western part of the country. Historically, the grain industry in the Prairie Provinces has suffered from wide swings in cash receipts. These swings have had a deleterious effect on the prairie grain economy and on grain producers. The WGSA stabilizes the swings by ensuring a minimum cash-flow to producers. The producers have an "opt-out" option. Producer contributions are made by a checkoff deduction on quota deliveries made to the elevator. All the elevators are tied in to the CWB by computer, so that the CWB has continually updated, complete and accurate information on the entire pipeline of grain supplies.

Canadian Provincial Programs

Provincial governments have played a significant role in Canadian farm programs through the implementation of support payments and commodity stabilization for producers. According to the USDA, the provinces have contributed around 16 percent of the total agricultural expenditures budget.

Under the Prairie Grain Advance Payments Act and the Advance Payments for Crops program, producers of storable crops—such as wheat—receive cash advances in the form of interest-free loans. The loans are fully secured by grain in storage on the farm ready to be delivered on future allocations. Other programs provide rebates on fuel taxes and credit assistance. Through a joint Federal-Provincial crop insurance program available in most Provinces, the Canadian Federal Government pays 50 percent of the premium costs and the Provincial government pays the administrative costs.

At the level of the Province the most important organization to wheat producers is the "Pool," which is a cooperative. There are three pools: the Saskatchewan, Manitoba, and Ontario Wheat Pools. The pools provide Province-level transportation and terminal elevator facilities under contract to the CWB. USITC staff visited the "Sas" pool terminal elevators in Thunder Bay. The elevators contract with the CWB to provide loading, unloading, handling, cleaning, storage, and quality control facilities.

Developments in 1990

According to a report from the U.S. Embassy in Ottawa filed in mid-April 1990,⁸ the three

⁸ U.S. Embassy, Ottawa, Canada Announces New Farm Aid, Apr. 12, 1990, Report # CA0061.

Government of Canada Federal Ministers of Agriculture announced a series of measures to assist Canadian farmers in 1990. The aid package includes \$CAN 500 million in Federal contribution, to be matched by the Provinces. \$CAN 450 million is for grains and oilseeds.

The Federal Ministers announced that the infusion of the \$CAN 1 billion (assuming Provincial matching funds) would bring the forecast for farm income for the 1990/91 crop year in line with the previous 5-year average. Farm income had been expected to fall substantially, especially in the Prairie Provinces (where the durum wheat is grown). In Saskatchewan farm income was expected to decline by up to 100 percent because of lower grain prices.

The Saskatchewan and Manitoba Provincial Agriculture Ministries indicate that matching

funds from the Provinces may not be forthcoming. As reported by the U.S. Embassy, the premier of Saskatchewan, who also holds the Agriculture Portfolio, has stated that he has been "fighting" with the treasuries of the European Community and the United States, and thus the low farm income in his Province is a Federal Government responsibility.

In addition to the aid package, the Government of Canada also announced that it is working to allow the Canadian Farm Credit Corporation to extend arrangements that the Farm Debt Review Board has made with farmers. The CWB will implement procedures under the Prairie Grains Advance Payments Act that will encourage creditors to extend operating loans to producers. As of June 1990, the Provinces and the Canadian Federal Government have yet to come to an agreement over the matching funds.

Chapter 7

Effects of Price Trends on Competitive Conditions for Durum

U.S. producers have recently been concerned because durum wheat prices had fallen below Hard Red Spring (HRS) wheat prices, even though durum prices have historically been above those for HRS (table 7-1). Moreover, durum prices had fallen while durum stocks were reaching record lows.

Availability of Price Information

As emphasized during several meetings with USITC staff, it has been the policy of the Canadian Wheat Board (CWB) to consider transaction prices as privileged and confidential information and therefore CWB staff asked the USITC to release only the yearly average information in the CWB yearbook. In contrast, prices in the United States are readily available, through the Minneapolis cash market and through published USDA price series, which include prices received by farmers, prices at various markets, and international prices, including Export Enhancement Program (EEP) bonuses and prices.

Price Information Obtained by USITC

Information from both public and private sources was used to evaluate the price trends of durum and HRS wheat. The public information consists of price data on wholesale markets in various geographic locations, published periodically by the Market News Service of the USDA. Usually, the public price data on durum and HRS wheat are reported only for U.S. grade No. 1.

To supplement the publicly available data on price, the USITC sent questionnaires to importers of record and millers of durum wheat and HRS wheat. From these data, nationwide average prices were calculated for each of the two types of wheat by U.S. or Canadian grade classification.

USITC staff also used U.S. Department of Commerce import files to obtain information on total imports of durum wheat¹ by month and by customs district, as well as by importer.²

The durum market is quite thin, even more so for durum imports from Canada. The data from the USITC questionnaires showed that in many months, there were no transactions involving Canadian durum. In months in which imports of Canadian durum were reported, the prices were

¹ Since durum wheat was not specifically provided for in tariff schedules until 1989, U.S. Department of Commerce data were only for that year.

² The Net Importer File is considered business confidential and all data were aggregated so that information about individual firms would not be revealed.

averaged. The price data collected by the USITC were kept confidential in order to protect the business interests of the companies who submitted questionnaire responses. To assure confidentiality, the staff of the USITC constructed a blind index, permitting analysis and publication of comparative data without revealing prices. The base of the index remains confidential and unpublished.

Because the transactions are few in number, the data are subject to small sample error. Other factors to consider in analyzing the data base for Canadian prices include the consideration that all prices are c.i.f. (include charges, insurance, and freight), and that no adjustment for transportation cost differences has been made. All prices were considered for the date of delivery, without regard to the length of any forward contract arrangements. Shipment sizes also were not considered. Therefore, month-to-month price differences include statistical "noise," and longer term trends should be evaluated in using this data base.

However, the Canadian Wheat Board has assured the USITC that the questionnaire responses account for virtually all of their sales of durum and HRS wheat to the United States between 1986 and 1989.

Price Analysis

Price analysis has not shown any definite trends. For like qualities of wheat, U.S. prices and Canadian prices fluctuate, with no consistent price difference between U.S. and Canadian durum that explains the growth of durum imports from Canada between 1986 and 1989.

U.S. prices of Hard Amber Durum wheat (durum wheat) and HRS wheat can be measured at three levels. The first level is the farm price—the price received by the grower. The second level is the terminal point price—the price paid by the importer to the supplier or by the terminal elevator to the country elevator or to the subterminal elevator. The third level is the user price—the price paid by the miller to the terminal elevator or to the importer.³ This report addresses prices only at the second and third levels. Since wheat does not perish rapidly, elevators' or importers' mark-ups are lower than those of other, less durable, agricultural commodities.

Major Factors Affecting Prices

Prices of durum and HRS wheat vary according to the market forces, the target price, and the physical characteristics of the grain. Physical characteristics refer to size, weight, protein content, uniformity, and appearance. Higher prices

³ It is possible, but uncommon, that the miller might buy wheat directly from the country elevator or that the grower might sell directly to the terminal elevator. Under these conditions, the second-level price may disappear. The disappearance does not alter the price levels.

Table 7-1

U.S. durum and Hard Red Spring wheat: Average delivery prices, by market, January 1986-December 1989

(In dollars per bushel)

Month	Durum Minneapolis	Hard Red Spring wheat ¹	
		Minneapolis	Portland
1986:			
January	4.01	3.97	4.53
February	4.01	3.90	4.45
March	3.99	4.00	4.64
April	4.07	4.17	4.65
May	4.24	4.03	4.52
June	3.79	3.17	3.66
July	3.08	3.00	3.44
August	3.04	2.86	3.31
September	3.21	2.85	3.34
October	3.31	2.98	3.40
November	3.49	3.09	3.43
December	3.60	3.04	3.39
1987:			
January	3.68	3.08	3.39
February	3.78	3.13	3.37
March	3.89	3.19	3.45
April	3.93	3.17	3.51
May	4.03	3.24	3.71
June	3.91	3.07	3.52
July	3.66	2.94	3.40
August	3.80	2.94	3.38
September	4.30	3.04	3.51
October	4.31	3.15	3.57
November	4.33	3.11	3.57
December	4.22	3.13	3.60
1988:			
January	4.19	3.24	3.71
February	4.22	3.32	3.74
March	4.02	3.15	3.68
April	4.21	3.30	3.90
May	4.39	3.42	4.01
June	6.13	4.32	4.88
July	6.30	4.23	5.03
August	5.85	4.24	4.98
September	5.84	4.32	5.00
October	5.70	4.33	5.04
November	5.56	4.22	5.02
December	5.17	4.26	4.96
1989:			
January	5.20	4.44	5.00
February	5.33	4.40	5.00
March	5.30	4.56	5.12
April	5.02	4.47	5.01
May	5.01	4.55	5.11
June	4.64	4.41	4.97
July	5.02	4.36	4.90
August	4.33	4.18	4.70
September	4.08	4.08	4.62
October	4.12	4.14	4.55
November	4.02	4.12	4.53
December	4.20	4.23	4.66

¹ All prices of Hard Red Spring wheat in these two markets are for U.S. grade No. 1, with ordinary protein content of 14 percent.

Source: Agricultural Marketing Service, U.S. Department of Agriculture.

are generally obtained for durum wheat with larger kernel size, heavier weight, higher protein, and less foreign materials (dockage).

The market price of any variety of wheat is very sensitive to shifts in supply. The demand curve, however, is relatively stable, and the quantity demanded is not very sensitive to changes in price. In determining prices, shifts in supply usually play a more important role than shifts in demand. This is the reason for the low prices im-

mediately after harvests or during high levels of inventory. The supply of wheat is also affected by adverse or good weather. In 1988, for instance, the drought damaged crops and reduced the U.S. supply of wheat. As a result, most wheat prices increased in that year.

Prices for durum and HRS wheat may also be affected by the way the wheat is sold. It can be sold in the spot (cash) market or the forward (future) market.⁴ Spot-market sales usually take

place in a centralized market or in a firm. In forward-market sales, intervals between purchasing and delivering times may vary from a few weeks to several months.⁵ This report stresses prices for spot sales.

Price Trend of Durum Wheat⁶

The evaluation of the price trend of durum wheat in the United States uses both centralized market prices and average prices, derived from data submitted by questionnaire responses. The sample period covers January 1986 to December 1989, with 48 monthly observations. Unless otherwise stated, all prices are for U.S. grade No. 1 wheat, with a base protein content of 14 percent.

Minneapolis Market Prices

Minneapolis is the only major centralized market for durum wheat in the United States. All Minneapolis prices are public record. Usually, sellers and buyers in other places negotiate their price on the basis of the Minneapolis market price. In 1986, the average monthly delivery price for durum wheat in the market started at \$4.01 per bushel in January and reached a high for the year of \$4.24 per bushel in May before turning downward (table 7-1). The price fell to a yearly low of \$3.04 per bushel in August and then increased from \$3.21 in September to \$3.60 in December. In 1987, the average price of durum wheat again fell to its yearly low in July and reached its annual high of \$4.33 in November.

The price of durum wheat increased substantially in 1988. Starting at \$4.19 per bushel in January, it jumped from \$4.39 in May to \$6.13 in June and reached a record high of \$6.30 in July. It decreased continuously from \$5.85 in August to \$5.17 in December. In 1989, the price was more stable than in 1988, ranging from \$4.02 in November to \$5.33 in February.

Except in 1988, the price of durum wheat was relatively low in the summer months. The annual average price increased slightly in 1987 and sub-

⁴ Although there are forward sales of durum, there is no durum futures contract.

⁵ The interval as well as the price is negotiated by the seller and the buyer.

⁶ All prices from questionnaires were converted to a blind index (the base is not revealed) to protect confidentiality while still permitting analysis.

stantially in 1988. It declined in 1989 but was still higher than in 1987. An unusually large reduction in wheat production was the main reason for the price increase in 1988.⁷

Average Prices Paid by Millers

The average prices of durum wheat paid by millers and importers were derived from data submitted in response to questionnaires distributed by the Commission. The millers reported their monthly prices by U.S. or Canadian grade classification. All the prices they paid during the sample period were reported on a delivery basis.⁸

The average price paid by the millers for U.S. grade No. 1 durum wheat started at index number 116 per bushel in January 1986 and dropped to a yearly low of 93 in September (table 7-2). The price rose to 100 in December. During the first 8 months of 1987, the price was relatively stable, fluctuating between 109 in May and 90 in July. It attained a yearly high of 122 in September. In 1988, the price rose rapidly from 118 in March to 194 in July and then declined to 163 in December. The price decreased precipitously in 1989, from 158 in March to 122 at the end of the year.

In most sample months, the average price paid by the millers for U.S. grade No. 2 durum wheat fluctuated similarly to that of U.S. No. 1 durum wheat. In 1986, the price for No. 2 durum wheat began at 104 per bushel and reached a yearly high of 107 in April (table 7-2). The price fell to a low for the year of 85 in October. It exceeded 105 in September 1987, reaching 113, and remained over 105 for the rest of the year. In the summer of 1988, a large price increase occurred, from 116 in May to 184 in June. The price declined in 1989, from 163 in January to 107 in November. Except in July 1987, June 1988, and January 1989, the prices of U.S. grade No. 2 were always lower than those of U.S. grade No. 1, as expected given the quality difference.

⁷ According to the U.S. Department of Agriculture, durum wheat production in 1987, 1988, and 1989 was 92.6, 44.8, and 92.2 million bushels, respectively.

⁸ In the questionnaires, the Commission requested millers and importers to report only their prices for the largest dollar value single purchase for each month. Prices are c.i.f. delivered to their facilities. The abbreviation c.i.f. means that the price includes insurance and freight charges from the shipping point to the delivery point.

Table 7-2

Durum wheat: Average delivery prices paid by U.S. millers, by U.S. and Canadian grade classification, by months, January 1986-December 1989

(Index prices)

Month	Grade No. 1		Grade No. 2		Grade No. 3		Grade No. 4		Grade No. 5	
	U.S.	Canada	U.S.	Canada	U.S.	Canada	U.S.	Canada	U.S.	Canada
1986:										
January	116	(¹)	104	(¹)	97	(¹)	93	(¹)	(¹)	(¹)
February	114	(¹)	101	(¹)	87	(¹)	(¹)	(¹)	(¹)	(¹)
March	113	(¹)	100	(¹)	97	(¹)	94	(¹)	(¹)	(¹)
April	113	(¹)	107	(¹)	102	(¹)	96	(¹)	(¹)	(¹)
May	115	(¹)	106	(¹)	103	(¹)	(¹)	(¹)	(¹)	(¹)
June	111	(¹)	(¹)	(¹)	103	(¹)	94	(¹)	(¹)	(¹)
July	102	(¹)	86	(¹)	84	(¹)	77	(¹)	(¹)	(¹)
August	96	(¹)	94	(¹)	87	(¹)	86	(¹)	(¹)	(¹)
September	93	(¹)	(¹)	(¹)	78	(¹)	75	(¹)	(¹)	(¹)
October	93	(¹)	85	(¹)	83	(¹)	78	(¹)	(¹)	(¹)
November	98	(¹)	96	(¹)	84	(¹)	83	(¹)	(¹)	(¹)
December	100	(¹)	89	(¹)	87	(¹)	86	(¹)	(¹)	(¹)
1987:										
January	101	(¹)	95	(¹)	91	(¹)	89	(¹)	(¹)	(¹)
February	101	(¹)	93	(¹)	91	(¹)	90	(¹)	(¹)	(¹)
March	104	(¹)	95	(¹)	92	(¹)	93	(¹)	(¹)	(¹)
April	107	(¹)	97	(¹)	97	(¹)	94	(¹)	(¹)	(¹)
May	109	(¹)	100	(¹)	99	(¹)	96	(¹)	(¹)	(¹)
June	109	(¹)	99	(¹)	97	(¹)	92	(¹)	(¹)	(¹)
July	90	(¹)	97	(¹)	90	(¹)	93	(¹)	(¹)	(¹)
August	106	(¹)	93	(¹)	101	(¹)	95	(¹)	(¹)	(¹)
September	122	(¹)	113	(¹)	108	(¹)	106	(¹)	(¹)	(¹)
October	122	(¹)	112	(¹)	104	103	101	104	(¹)	97
November	120	(¹)	115	116	109	(¹)	103	(¹)	(¹)	93
December	119	118	110	117	106	(¹)	100	(¹)	(¹)	100
1988:										
January	120	120	113	116	106	(¹)	93	(¹)	(¹)	104
February	124	111	113	136	106	(¹)	98	(¹)	(¹)	(¹)
March	118	111	107	125	103	(¹)	102	(¹)	(¹)	(¹)
April	120	(¹)	113	111	107	(¹)	106	(¹)	(¹)	(¹)
May	123	(¹)	116	126	111	(¹)	111	(¹)	(¹)	98
June	179	(¹)	184	175	198	209	162	124	(¹)	134
July	194	(¹)	155	133	166	(¹)	162	124	(¹)	149
August	193	(¹)	182	125	178	202	164	(¹)	(¹)	161
September	179	(¹)	171	162	149	180	141	(¹)	(¹)	(¹)
October	177	(¹)	171	155	169	(¹)	150	(¹)	(¹)	132
November	169	(¹)	163	(¹)	157	(¹)	148	(¹)	(¹)	(¹)
December	163	184	137	181	146	(¹)	143	(¹)	(¹)	(¹)
1989:										
January	157	186	163	172	144	(¹)	145	(¹)	(¹)	151
February	154	(¹)	153	166	148	(¹)	141	(¹)	(¹)	122
March	158	168	154	183	128	(¹)	139	(¹)	(¹)	(¹)
April	154	184	143	188	118	(¹)	114	(¹)	(¹)	(¹)
May	145	(¹)	140	136	132	(¹)	121	(¹)	(¹)	(¹)
June	153	138	144	149	121	(¹)	113	(¹)	(¹)	(¹)
July	152	148	130	146	121	(¹)	116	(¹)	(¹)	(¹)
August	140	142	120	141	109	(¹)	122	(¹)	(¹)	(¹)
September	127	129	119	132	99	142	103	(¹)	(¹)	(¹)
October	127	123	111	148	106	(¹)	102	(¹)	(¹)	(¹)
November	124	126	107	137	(¹)	(¹)	104	113	(¹)	(¹)
December	122	151	112	148	(¹)	(¹)	105	(¹)	(¹)	(¹)

¹ No transactions.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

In most sample months, the average prices for the U.S. grades No. 3, No. 4, and No. 5 durum wheat fluctuated similarly to those of grades No. 1 and No. 2. They fell to their lowest levels in the fall months of 1986 and reached their highest levels in the summer months of 1988 (table 7-2). In general, the higher grade wheat was sold at a higher price. Sales of the three low grades of wheat, especially grades No. 4 and No. 5, were

relatively small compared with those of grades No. 1 and No. 2.⁹

The millers also bought Canadian durum wheat from U.S. firms. The prices they paid for

⁹ One of two millers who bought U.S. grades No. 4 and No. 5 indicated that during the sample period, grades No. 4 and No. 5 amounted to only 2 percent of the total purchase and grade No. 3 amounted to about 4 percent. Grade No. 1 was 63 percent of the total purchase.

Canadian wheat were reported on a delivery basis. The average price paid by the millers for Canadian grade No. 1 durum wheat ranged from index number 111 in February 1988 to 186 in January 1989 (table 7-2). The millers bought Canadian grade No. 1 durum wheat only in 15 out of 48 months. They also bought Canadian grade No. 2 durum wheat starting in November 1987. The price of No. 2 grade fluctuated between 111 in April 1988 and 188 in April 1989. In addition, they bought small amounts of Canadian grades No. 3 and No. 4 durum wheat. No purchases of Canadian grade No. 5 durum wheat were reported by the millers.

Compared with that of U.S. grade No. 1, the price of Canadian grade No. 1 was higher in 8 out of the 15 months in which Canadian wheat was purchased. It was lower than U.S. grade No. 1 in 6 months; the two prices were the same in January 1988. For grade No. 2, the price of Canadian durum wheat was lower in 7 out of the 25 months in which Canadian wheat was purchased.

Average Prices Paid by Importers

Like the millers, the importers reported their monthly prices by U.S. or Canadian grade classification. They bought both U.S. and Canadian durum wheat for resale. All the prices they paid during the sample period were reported on a delivery basis.¹⁰

According to the questionnaire responses, importers bought mainly grades 1 and 2 durum wheat from Canada starting in late 1987. The average price paid by all importers surveyed for Canadian grade No. 1 durum wheat began at index number 118 in December 1987 and reached a peak of 186 in January 1989 (table 7-3). It declined to 132 at the end of 1989. The average price for Canadian grade No. 2 durum wheat paid by importers started at 116 in November 1987 and reached a peak of 183 in January 1989. It decreased to 129 in December 1989.

The importers bought mainly U.S. grade No. 1 durum wheat. They bought U.S. grade No. 2 durum wheat only in 1 out of the 48 sample months. No purchases of U.S. grades No. 3, No. 4, or No. 5 were reported during the whole sample period. The average price paid by the importers for U.S. grade No. 1 began at 117 per bushel in January 1986 and peaked at 195 in August 1988 (table 7-3). The lowest price (100) was reported in September 1986. During the 14 months in which the prices of both U.S. and Canadian No. 1 durum wheat were reported, the

¹⁰ Most of the U.S. and Canadian durum wheat was purchased by contracts and delivered in later months. Only a portion of shipments were bought and delivered within the same month. Most intervals between purchasing and shipping times were less than 3 months. No advance payments or deposits are required when signing contracts. Usually, sellers are paid on shipping days.

price of Canadian durum wheat was lower than that of U.S. durum wheat in 6 out of the 14 months. The changes in the prices of U.S. and Canadian No. 1 durum during the entire sample period are shown in figure 7-1.

The method used for evaluating the price trend of durum wheat is also used to evaluate the price trend of HRS wheat in the United States. Both HRS and durum wheat are planted in the spring. To growers, they are perfect substitutes for each other, but to most users they can be substituted for each other only to a limited extent. Nevertheless, one would expect prices of HRS to follow a similar pattern as that of durum wheat. In the past, premium durums have commanded a higher price than medium and lower grade durums and than other wheats such as HRS wheat.

Price Trend of Hard Red Spring Wheat

In the dry years of 1987 to 1989, high-protein wheat was in oversupply relative to lower protein wheats. The dry weather caused more wheat than usual to be in the high-protein category. Millers usually specify exact standards because if the wheat is above or below their specifications they must recalibrate their equipment. As a result, wheat sellers may have to blend down to lower protein levels. This may explain the lower prices recently for the highest protein durum relative to HRS. Or, to put it another way, there has been a negative premium recently for high-protein durum.

Minneapolis and Portland are two main markets for HRS wheat in the United States. Price trends for each market are evaluated in the following discussion.

Minneapolis Market Prices

In 1986, the average monthly wholesale price for HRS wheat in the Minneapolis market started at \$3.97 per bushel in January, became \$3.90 in February, and reached a yearly high of \$4.17 in April (table 7-1). It declined to a yearly low of \$2.85 in September, returning to \$3.04 by the end of the year. The price of HRS wheat was more stable in 1987 than in 1986. It fell to \$2.94 in July and August from \$3.24 in May. In 1988, the price increased from \$3.42 in May to \$4.32 in June and remained at the \$4 level throughout the rest of the year. No significant decreases in the price of HRS wheat were reported in 1989. Compared with the 1988 price, the 1989 price was more stable, ranging from \$4.08 in September to \$4.56 in March. All monthly prices in 1989 exceeded \$4.00 per bushel.

On an annual basis, the price of HRS wheat decreased in 1987 but increased in 1988 and again in 1989. In the Minneapolis market, the price of HRS wheat was more stable than that

Table 7-3

Durum wheat: Average delivery prices paid by U.S. Importers, by U.S. and Canadian grade classification, by months, January 1986-December 1989

(Index prices)

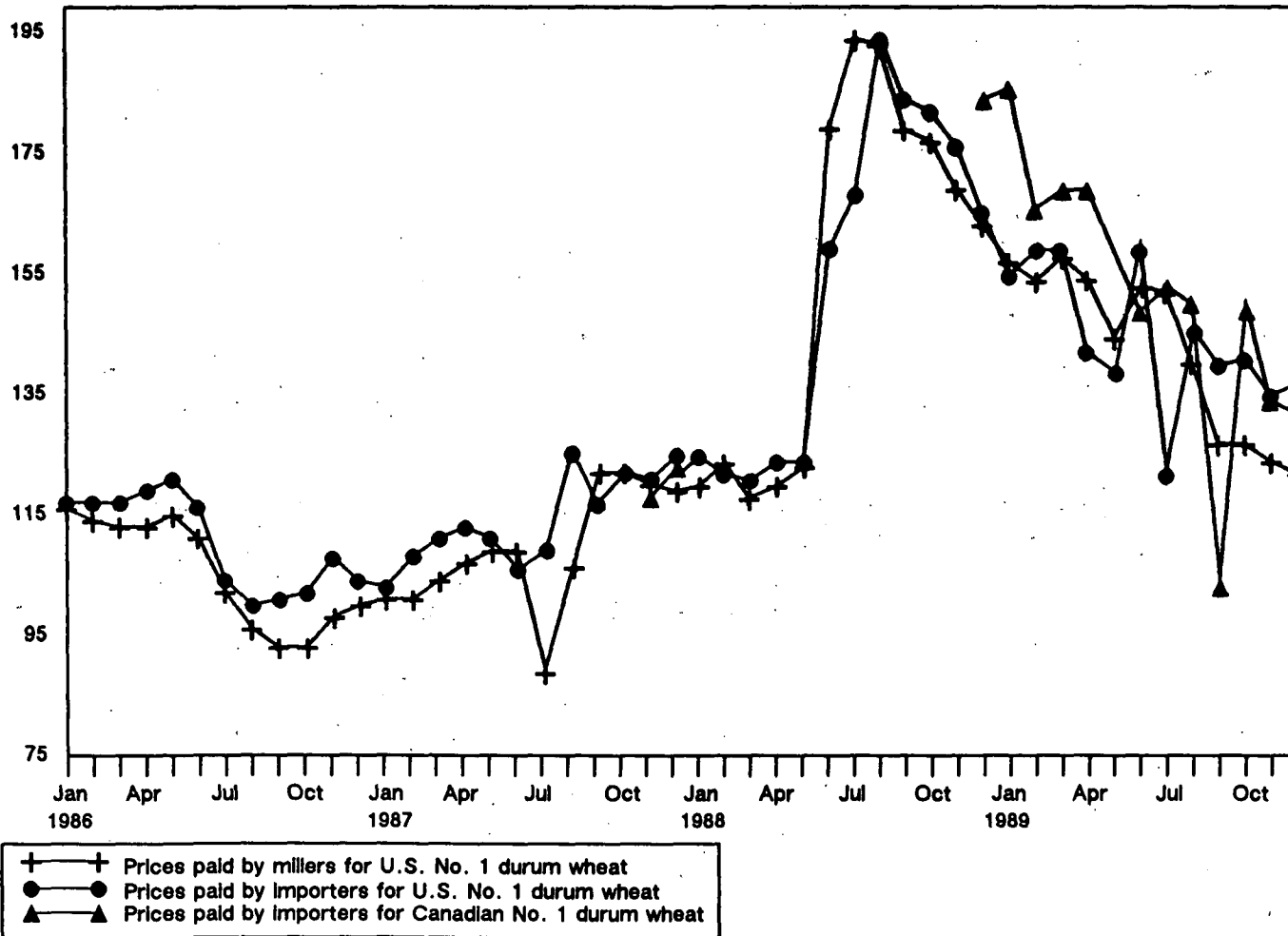
Month	Grade No. 1		Grade No. 2		Grade No. 3		Grade No. 4	
	U.S.	Canada	U.S.	Canada	U.S.	Canada	U.S.	Canada
1986:								
January	117	()	()	()	()	()	()	()
February	117	()	()	()	()	()	()	()
March	117	()	()	()	()	()	()	()
April	119	()	()	()	()	()	()	()
May	121	()	()	()	()	()	()	()
June	116	()	()	()	()	()	()	()
July	104	()	()	()	()	()	()	()
August	104	()	116	()	()	()	()	()
September	100	()	()	()	()	()	()	()
October	101	()	()	()	()	()	()	()
November	102	()	()	()	()	()	()	()
December	108	()	()	()	()	()	()	()
1987:								
January	104	()	()	()	()	()	()	()
February	103	()	()	()	()	()	()	()
March	108	()	()	()	()	()	()	()
April	111	()	()	()	()	()	()	()
May	113	()	()	()	()	()	()	()
June	111	()	()	()	()	()	()	()
July	106	()	()	()	()	()	()	()
August	109	()	()	()	()	()	()	()
September	128	()	()	()	()	()	()	()
October	117	()	()	()	()	()	()	104
November	122	()	()	116	()	()	()	()
December	121	118	()	117	()	()	()	()
1988:								
January	125	123	()	120	()	()	()	()
February	122	()	()	136	()	()	()	()
March	121	()	()	125	()	()	()	()
April	124	()	()	()	()	()	()	()
May	124	()	()	126	()	()	()	()
June	159	()	()	118	()	()	()	()
July	168	()	()	133	()	()	()	()
August	195	()	()	131	()	()	()	124
September	184	()	()	133	()	()	()	()
October	182	()	()	133	()	()	()	()
November	176	()	()	()	()	()	()	()
December	165	184	()	181	()	()	()	()
1989:								
January	155	186	()	183	()	()	()	()
February	159	166	()	169	()	()	()	()
March	159	169	()	166	()	()	()	()
April	142	169	()	167	()	()	()	()
May	139	()	()	()	()	()	()	()
June	161	149	()	146	()	()	()	()
July	124	153	()	150	()	()	()	()
August	146	150	()	147	()	()	()	()
September	140	107	()	127	()	142	()	()
October	141	151	()	148	()	()	()	()
November	135	134	()	137	()	()	()	()
December	137	132	()	129	()	()	()	()

¹ No transactions.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure 7-1
Prices of grade No. 1 durum wheat, January 1986-December 1989

*Dollars
per bushel*



Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission

of durum wheat in 1988. The 1988 drought resulted in a larger price fluctuation for durum wheat. The price of HRS wheat in the market was lower than that of durum wheat in 42 out of the 48 months.

Portland Market Prices

In 1986, the price of HRS wheat in the Portland market started at \$4.53 per bushel in January and reached a yearly high at \$4.65 in April (table 7-1). It fell to a yearly low of \$3.31 in August and rose again to \$3.39 in December. Compared with the 1986 price, the 1987 price was more stable, ranging from \$3.37 in February to \$3.71 in May. It never exceeded \$4 during the entire year. In 1988, the price started at \$3.71 in January and rose rapidly from \$4.01 in May to \$4.88 in June. It reached an annual high of \$5.04 in October and then declined to \$4.96 in December. In 1989, the price rose to a record high of \$5.12 in March but soon declined below \$5 in June. An annual low price of \$4.53 per bushel was reported in November.

As in the Minneapolis market, the price of HRS wheat, on the average, decreased in 1987 but increased in 1988 and again in the first half of 1989. However, the price in Portland was always higher than that in Minneapolis during the 4-year period. The main reason for higher prices in Portland is higher transportation costs. Most HRS wheat is grown in North and South Dakota, which are closer to Minneapolis than Portland.

Average Prices Paid by Millers

The average prices of HRS wheat were derived from data submitted in response to questionnaires of the Commission. The millers reported their monthly prices by U.S. or Canadian grade classification. All the prices they paid during the sample period were reported on a delivery basis.

The average price paid by the millers for U.S. grade No. 1 HRS wheat began at an indexed 108 per bushel in January 1986 and reached a yearly high of 114 in April (table 7-4). It declined to 92 in December. Compared with the 1986 price, the 1987 price was more stable, ranging from 86 in September to 100 in June. The price exceeded 100 in June 1988 and stayed at that level throughout the year, reaching a high of 126 in August. The 1989 price was also stable, fluctuating between 113 in November to 125 in March. Most millers bought grade No. 1 HRS wheat, and only a few millers bought lower grade HRS wheat.

The average price for U.S. grade No. 2 HRS wheat fluctuated widely in 1986, from 74 per bushel in September to 113 in May. The price was fairly stable in 1987, starting at 85 in January. It reached a yearly high of 92 in October and then declined to 77 in December. Like that of U.S. grade No. 1, the price of No. 2 HRS wheat rose sharply in June 1988, from 93 in May to 104

in June, and reached 114 in July. The highest indexed price for No. 2 HRS (118) during the sample period was reported in September 1988. It dropped to 99 in December 1989.

In general, the changes in the prices of the U.S. grades No. 3, No. 4, or No. 5 HRS wheat followed the pattern of the price changes of grade No. 1. The prices of low grades of HRS wheat were relatively high in the summer of 1988. In most of the sample months, the prices of low grades were lower than those of high grades.

Average Prices Paid by Importers

According to data submitted in response to questionnaires of the Commission, the importers bought mainly U.S. grades No. 1 and No. 2 HRS wheat during the sample period. They also bought Canadian No. 2 HRS wheat only in 8 out of 48 sample months. No purchases of other grades of Canadian HRS wheat were reported.

The average price paid by the importers for U.S. grade No. 2 HRS wheat started at 133 per bushel in January 1986 and fell to a yearly low of 91 in November (table 7-5). It rose to 109 at the end of the year. Compared with that of 1986, the 1987 price was more stable, fluctuating from 86 in July to 108 in February. The price increased rapidly from 105 in May to 121 in June 1988 and remained above 105 in the second half of the year and during all of 1989. The highest price (133) during the sample period was reported in January 1986. The price for U.S. grade No. 1 HRS wheat changed in a similar way as the price for No. 2 HRS wheat with a range from 75 in August 1986 to 122 per bushel in March 1989. During the sample period, the prices of U.S. grade No. 2 HRS wheat were always higher than those of No. 1.¹¹

During the 48-month period, prices for Canadian grade No. 2 HRS wheat were reported for only 8 months. The price ranged from 80 per bushel in June 1988 to 116 in November 1989. Compared with those of U.S. No. 2 HRS wheat, all of the 8 monthly prices of Canadian No. 2 HRS wheat were lower.

The questionnaire responses indicated that in most months in which the millers bought both U.S. and Canadian durum wheat, they paid higher prices for Canadian durum wheat. The importers also paid relatively higher prices for Canadian grade No. 1 durum than for U.S. grade No. 1 durum wheat in most of their purchases. However, the importers always paid relatively lower prices for their purchases of Canadian No. 2 HRS wheat than for U.S. grade No. 2 HRS wheat. The changes in the prices of U.S. and Canadian HRS wheat during the entire sample period are shown in figure 7-2.

¹¹ The prices of U.S. No. 1 HRS wheat are estimated figures. Because the prices of U.S. No. 2 HRS wheat are actual delivery prices, they are more reliable than the estimated prices. Only two of the importers reported their purchases of HRS wheat.

Table 7-4

Hard Red Spring wheat: Average delivery prices paid by U.S. millers, by U.S. and Canadian grade classification, by months, January 1986-December 1989

(Index prices)

Month	Grade No. 1		Grade No. 2		Grade No. 3		Grade No. 4		Grade No. 5	
	U.S.	Canada	U.S.	Canada	U.S.	Canada	U.S.	Canada	U.S.	Canada
1986:										
January	108	(1)	102	(1)	97	(1)	(1)	(1)	98	(1)
February	103	(1)	102	(1)	97	(1)	97	(1)	(1)	(1)
March	104	(1)	96	(1)	99	(1)	96	(1)	(1)	(1)
April	114	(1)	105	(1)	(1)	(1)	(1)	(1)	(1)	(1)
May	111	(1)	113	(1)	97	(1)	94	(1)	(1)	(1)
June	96	(1)	85	(1)	(1)	(1)	(1)	(1)	56	(1)
July	92	(1)	96	(1)	64	(1)	54	(1)	67	(1)
August	92	(1)	98	(1)	77	(1)	(1)	(1)	(1)	(1)
September	82	(1)	74	(1)	74	(1)	68	(1)	(1)	(1)
October	88	(1)	80	(1)	75	(1)	62	(1)	(1)	(1)
November	86	(1)	78	(1)	67	(1)	56	(1)	66	(1)
December	92	(1)	85	(1)	81	(1)	66	(1)	(1)	(1)
1987:										
January	96	(1)	85	(1)	67	(1)	64	(1)	(1)	(1)
February	90	(1)	82	(1)	70	(1)	75	(1)	74	(1)
March	93	(1)	82	(1)	77	(1)	(1)	(1)	67	(1)
April	89	(1)	74	(1)	61	(1)	(1)	(1)	63	(1)
May	90	(1)	82	(1)	78	(1)	(1)	(1)	(1)	(1)
June	100	(1)	73	(1)	104	(1)	78	(1)	(1)	(1)
July	98	(1)	83	(1)	100	(1)	57	(1)	56	(1)
August	93	(1)	81	(1)	78	(1)	74	(1)	(1)	(1)
September	86	(1)	77	(1)	74	(1)	60	(1)	(1)	(1)
October	90	(1)	92	(1)	93	(1)	66	(1)	58	(1)
November	88	(1)	84	(1)	80	(1)	64	(1)	64	(1)
December	91	118	77	(1)	78	(1)	72	(1)	(1)	(1)
1988:										
January	93	120	85	(1)	84	(1)	(1)	(1)	63	(1)
February	97	111	86	(1)	85	(1)	(1)	(1)	(1)	(1)
March	91	111	78	(1)	73	(1)	(1)	(1)	65	(1)
April	93	(1)	91	(1)	76	(1)	(1)	(1)	(1)	(1)
May	97	(1)	93	(1)	79	(1)	(1)	(1)	(1)	(1)
June	121	(1)	104	(1)	111	(1)	(1)	(1)	106	(1)
July	121	(1)	114	(1)	115	(1)	(1)	(1)	106	(1)
August	126	(1)	116	(1)	98	(1)	(1)	(1)	98	(1)
September	120	(1)	118	(1)	105	(1)	(1)	(1)	(1)	(1)
October	124	(1)	114	(1)	107	(1)	(1)	(1)	(1)	(1)
November	118	(1)	112	(1)	102	(1)	(1)	(1)	(1)	(1)
December	118	184	112	(1)	104	(1)	(1)	(1)	(1)	(1)
1989:										
January	120	(1)	117	(1)	101	(1)	97	(1)	(1)	(1)
February	122	(1)	89	(1)	99	(1)	(1)	(1)	100	(1)
March	125	(1)	113	(1)	107	(1)	(1)	(1)	(1)	(1)
April	122	(1)	108	(1)	(1)	(1)	(1)	(1)	(1)	(1)
May	124	(1)	115	(1)	106	(1)	(1)	(1)	(1)	(1)
June	124	(1)	111	(1)	(1)	(1)	(1)	(1)	(1)	(1)
July	124	(1)	110	(1)	(1)	(1)	(1)	(1)	(1)	(1)
August	118	(1)	110	(1)	(1)	(1)	(1)	(1)	(1)	(1)
September	116	(1)	107	(1)	(1)	(1)	(1)	(1)	(1)	(1)
October	117	(1)	109	(1)	(1)	(1)	(1)	(1)	(1)	(1)
November	113	(1)	108	(1)	(1)	(1)	(1)	(1)	(1)	(1)
December	114	(1)	99	(1)	(1)	(1)	(1)	(1)	(1)	(1)

¹ No transactions.² The protein content of the largest shipment in this month was below the base level.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Table 7-5

Hard Red Spring wheat: Average c.i.f. delivery prices paid by U.S. Importers, by U.S. and Canadian grade classification, by months, January 1986-December 1989

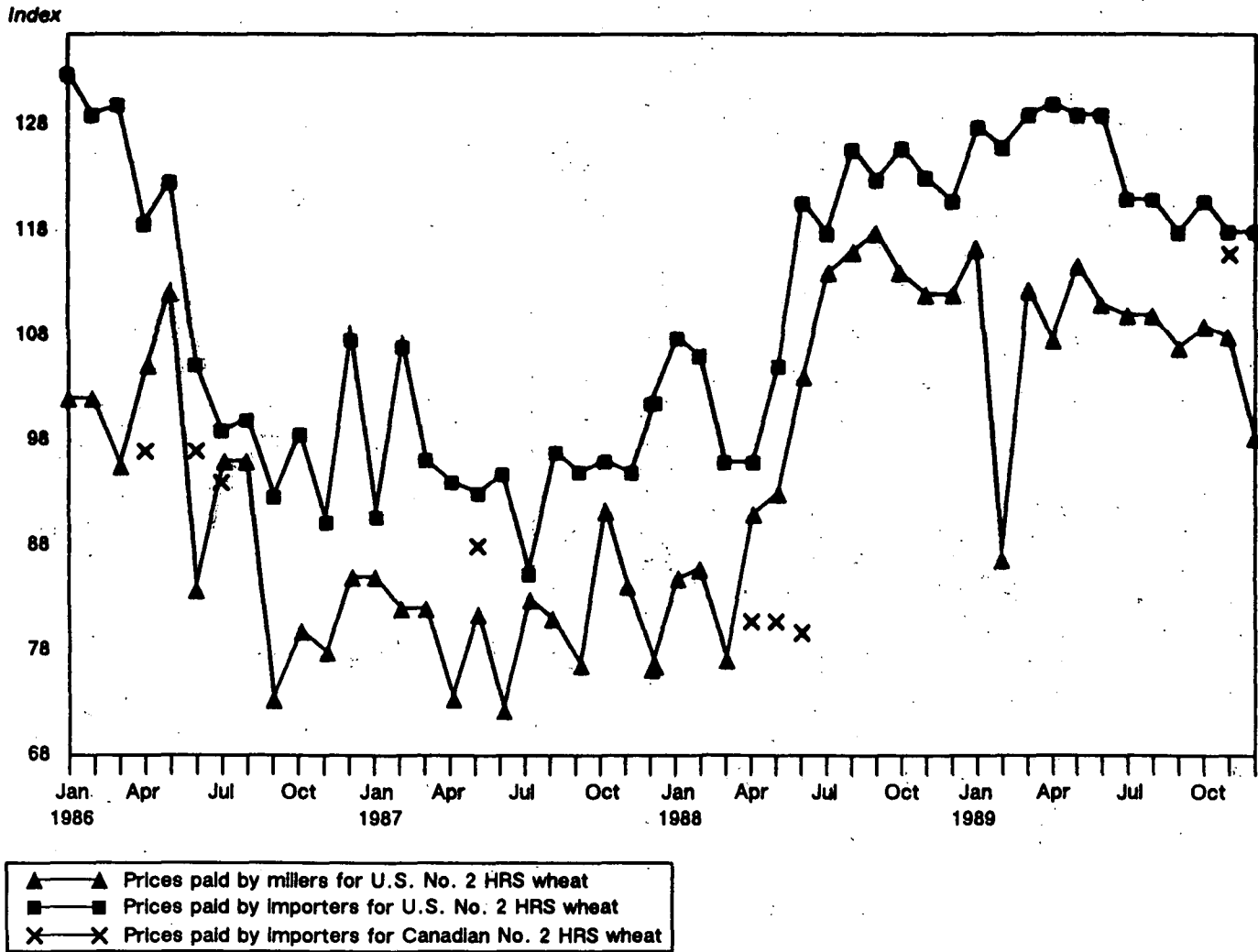
(Index prices)

Period	Grade No. 1		Grade No. 2	
	U.S.	Canada	U.S.	Canada
1986:				
January	104	()	133	()
February	101	()	129	()
March	104	()	130	()
April	107	()	119	97
May	109	()	123	()
June	79	()	105	97
July	78	()	99	94
August	75	()	100	()
September	76	()	93	()
October	77	()	99	()
November	82	()	91	()
December	91	()	109	()
1987:				
January	80	()	92	()
February	82	()	108	()
March	76	()	96	()
April	82	()	94	()
May	87	()	93	88
June	83	()	95	()
July	78	()	86	()
August	78	()	97	()
September	81	()	95	()
October	84	()	96	()
November	82	()	95	()
December	82	()	102	()
1988:				
January	86	()	108	()
February	88	()	106	()
March	82	()	96	()
April	87	()	96	81
May	92	()	105	81
June	(¹)	()	121	80
July	117	()	118	()
August	114	()	126	()
September	114	()	123	()
October	115	()	126	()
November	111	()	123	()
December	111	()	121	()
1989:				
January	116	()	128	()
February	116	()	126	()
March	122	()	129	()
April	119	()	130	()
May	122	()	129	()
June	118	()	129	()
July	113	()	121	()
August	113	()	121	()
September	107	()	118	()
October	109	()	121	()
November	108	()	118	116
December	111	()	118	()

¹ No transactions.

Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission.

Figure 7-2
Prices of grade No. 2 hard red spring wheat, January 1986-December 1989



Source: Compiled from data submitted in response to questionnaires of the U.S. International Trade Commission

Currency Exchange Rates

For durum wheat and HRS wheat, Canada is the only foreign supplier in the U.S. market and a major competitor of the United States in international markets. Thus, changes in the exchange rate between the U.S. dollar and the Canadian dollar could alter the competitive status of the two countries in wheat markets. Table 7-6 presents indexes of producer prices in the United States and Canada and indexes of the nominal and real exchange rates between the U.S. dollar and the Canadian dollar from January-March 1986 (the base period) through October-December 1989. During the sample period, the U.S. dollar depreciated by 20.1 percent, or from US\$0.7124 per Canadian dollar to US\$0.8558 per Canadian dollar, in nominal terms. In real terms, the dollar depreciated by 28.7 percent with respect to the Canadian currency, as shown in table 7-6. The changes in the exchange rates indicate that U.S. wheat suppliers gained a competitive edge against Canadian wheat suppliers in international markets during 1986-89.

General Accounting Office Study

Congress requested that the General Accounting Office (GAO) complete a study analyzing the responsiveness of durum prices to market forces. The GAO used ending stocks-to-use relative to

the loan rate¹² to conclude that 1989 prices were under what historical factors would indicate they should be. The results of the study were presented during a Congressional field hearing in Bismarck, North Dakota, in December 1989.

The U.S. Department of Agriculture (USDA) has suggested that a model of the sort used by GAO might not present an accurate picture, particularly for a commodity such as durum.¹³ The USDA cited several possible drawbacks: (1) the loan rate for wheat may have fallen to that point where it no longer functions as a floor under durum prices, and (2) a small shift in the price curve described by the GAO over time could cause a large change in price forecasts at low stocks-to-use ratios. Data points at low stocks-to-use ratios are few and old. Another problem with the GAO model, according to the USDA, was the use of Minneapolis prices instead of farm-level prices (although the farm-level price data were not collected prior to 1981). The full impact of lower stocks in Government or farmer-owned storage was also not factored in.

¹² Refer to the section on U.S. Government programs for description of the loan rate.

¹³ The Informational Memorandum to the Assistant Secretary for Economics and the GAO study are included in appendix D.

Table 7-6

Exchange rates: Indexes of nominal and real exchange rates between the U.S. dollar and Canadian dollar, and producer price indexes in the United States and Canada, by quarters, January 1986-December 1989

Period	U.S. Producer Price Index	Canadian Producer Price Index	Nominal exchange-rate Index	Real exchange-rate Index
1986:				
January-March	100.0	100.0	100.0	100.0
April-June	98.2	98.5	101.3	101.6
July-September	97.7	96.7	101.2	100.2
October-December	98.1	99.4	101.3	102.6
1987:				
January-March	99.2	99.8	104.9	105.5
April-June	100.8	101.1	105.2	105.5
July-September	101.9	102.6	106.2	106.9
October-December	102.3	103.6	107.0	108.3
1988:				
January-March	102.9	109.3	110.7	117.6
April-June	104.8	110.7	114.1	120.5
July-September	106.2	112.0	115.1	121.4
October-December	106.7	112.9	116.3	123.1
1989:				
January-March	109.0	114.3	117.7	123.4
April-June	110.9	116.2	117.6	123.2
July-September	110.4	117.9	118.7	126.8
October-December	110.9 ¹	118.9	120.1	128.7

¹ The Canadian Producer Price Index for the fourth quarter of 1989 is not available from the IMF. The price index for November 1989 was used as the fourth quarter index.

Note.—Exchange rates expressed in U.S. dollars per unit of Canadian currency. Thus, if the U.S. dollar depreciates with respect to the Canadian dollar, this exchange-rate index rises (the U.S. dollar price per unit of Canadian currency rises).

The real exchange rate is the nominal exchange rate adjusted for the difference between the inflation rates in the two countries involved.

Source: International Monetary Fund, *International Financial Statistics*, March 1990.

Effects of Export Subsidy Programs on Price Trends

Information gathered from fieldwork conducted by USITC staff suggests that an important consideration in the market determination of durum wheat prices is the international interplay of the European Community's export subsidy programs and the U.S. Export Enhancement Program (EEP). These export subsidies may be drawing down world durum prices. The decline in world durum prices relative to U.S. prices could make the U.S. market price appear relatively more attractive to Canadian exporters. Further, if Canada loses traditional markets to the EC and to the United States, then the drawdown of domestic supplies in the United States could be compensated by increased imports from Canada.

The effect of the EEP on participants in the world wheat market was described by the U.S. General Accounting Office:

...the effects of EEP are being felt by other U.S. competitors, specifically Australia, Argentina, and Canada. While EEP was designed to challenge subsidizing competitor nations, particularly the European Community, the above-mentioned countries have been adversely affected, both in terms of lower prices for their commodities and in reduced market shares.¹⁴

¹⁴ Allan I. Mendelowitz, Director, Trade, Energy and Finance Issues, National Security and International Affairs, U.S. General Accounting Office, testimony before the U.S. Senate Committee on Agriculture, Nutrition and Forestry, Feb. 21, 1990. Cited by Canadian Wheat Board.

Chapter 8 Transportation

The U.S. Transportation System for Grain

The transportation system for most of the durum trade in the United States is complicated, involving a number of participants and several transactions for the movement of durum wheat from producer to market. Participants in grain transportation include producers, elevators, commission companies, or brokers, exporters, and domestic processors.¹ A transaction occurs each time the grain passes from one participant to another, and prices are determined at each transaction through forward and spot markets. Prices may differ because of changes in handling, conditioning, and storage at various points in the transportation system and because of differences in profit margins for the various participants. Sales can either be free on board (f.o.b.) or inclusive of charges, insurance, and freight (c.i.f.) and may be negotiated as part of any individual contract.²

U.S. durum wheat is transported by one of four modes: truck, rail, barge, or ship. From farm to country elevator, a relatively short distance, the primary mode of transportation is by truck. However, most U.S. grain is shipped by rail from the country elevator to the terminal elevator. Grain may also be shipped southward by barge along the Mississippi, or in lake carriers beyond Duluth through the Great Lakes and St. Lawrence Seaway.

Transportation of wheat is heavily weighted toward rail because rail is generally the most economical mode of transport for the large quantities of grain that must be moved. Currently, 80 percent of durum transportation is by rail. For the most common destinations, such as Minneapolis-St. Paul and Duluth-Superior, this percentage is about 90 percent.³

Rail Transportation

Because rail is the most common mode for shipment of wheat, transportation in the wheat industry has been markedly affected by the deregulation of the railroad industry in 1980. Although U.S. rail rates generally have declined since deregulation, different conditions may prevail in areas of limited competition between railroads.

¹ William W. Wilson, *Posted Prices and Auctions in Rail Grain Transportation*, North Dakota State University, Department of Agricultural Economics, October 1989, p. 13.

² *Ibid.*

³ Barry M. Olsen and Daniel L. Zink, "North Dakota Grain and Oilseed Transportation Statistics 1988-89," North Dakota State University, The Upper Great Plains Transportation Institute, December 1989, p. 22.

Rail rates in the Northern Plains (North Dakota, Montana, and Wyoming) are much higher than in regions where railroads must compete with each other and with other modes of transportation, such as barges. Only the Soo Line (Canadian-owned) and the Burlington Northern railroads serve most of the North Dakota/Montana area, where most durum is grown. Most durum producers rely on the Burlington Northern (BN).⁴

To illustrate, immediately following deregulation, rail rates for wheat transportation on the BN to Minneapolis rose steadily and stabilized after a few years.⁵ Since then rates have declined somewhat but continue to fluctuate, and they remain relatively higher than rates in areas where more railroads compete for business. For example, a rate from a country elevator to Minneapolis (a gathering rate) may be three times higher than that for a comparable distance from Minneapolis to an end user in an area served by a number of railroads.⁶

Changes in the competitive environment have also strongly influenced the evolution of rail-pricing mechanisms in grain transportation.⁷ Before the Staggers Rail Act (1980), rail rates were set by published tariffs. In about 1983, a number of railroads moved toward bilateral contracts between individual shippers and carriers. A 1987 survey of North Dakota grain shippers indicated that approximately 80 percent shipped using rates set by contract. Most of these shippers were high-volume country elevators able to negotiate their own terms.⁸ Smaller shippers often sold on an f.o.b. basis. In this manner, the smaller shipper was able to take advantage of the buyer's rail contract rates.⁹

Contract terms generally included rates (often negotiated relative to a tariff), minimum volume, car supply, and service. Terms varied between railroads. In addition, certain railroads offered identical terms to all customers, and other railroads negotiated terms with individual shippers.¹⁰

In the last 3 years, there has been a trend away from the use of contracts. Several possible reasons for this trend have been advanced by analysts of grain transport, including a change in the rules for contract disclosure, which allowed rates to become public. If specific contract rates were widely known, bargaining power of the parties would be reduced. Also, grain exports rose sharply, creating more demand for transportation and thus reducing the availability of railcars.

⁴ The BN is the largest grain-hauling railroad in the world, according to North Dakota grain transportation authorities.

⁵ USITC staff interview with North Dakota State University grain transportation analysts, Fargo, ND, March 1990.

⁶ *Ibid.*

⁷ Wilson, *Posted Prices and Auctions in Rail Grain Transportation*, p. 6.

⁸ *Ibid.*

⁹ *Ibid.*

¹⁰ *Ibid.*

Partly as a result of these conditions, BN started selling service guarantees by means of an auction-type mechanism.¹¹ These guarantees have also contributed to a decline in the frequency of contracts. The guarantees, known as Certificates of Transportation (COTs), are guarantees of a certain number of railcars available for use by the buyer within a certain time period, like a futures market in railcar supply. A premium or discount may apply to the COT, depending on the purchase period, thus enabling the railroad to have better knowledge of short-term future demand for railcars and to better control the allocation of railcars to different geographic areas.

The effect of the COT on the grain shipper has been widely discussed. Although in the short run premiums or discounts on COTs fluctuate only an average of 10 percent either way, it has been theorized that the smaller shippers are disproportionately affected because their profit margins are normally very slender.¹² In addition, since COTs are purchased in advance, the smaller shippers with less available cash (and minimal liquidity) are placed at a disadvantage if they must borrow funds in order to purchase a COT.

When the seller is paying the rail transportation costs, rates usually favor the large producer or large country elevator that is able to ship enough grain at one time to form a unit train. Rates are lower for unit trains than for single-car shipments. Those country elevators that have railheads permitting them to load between 26 and 52 car lots in a day have competitive advantage in this regard.

Shifts in Geographic Destinations of U.S. Shipments

There have been a number of differing trends in the movement of durum over the last several years. While shipments by destination have declined because of a decline in total durum shipments,¹³ the patterns of shipments by destination have also altered.¹⁴ Historically, over half of yearly durum shipments had been destined for Duluth-Superior, nearly twice as much as the next most common destination, Minneapolis-St. Paul. Currently, however, equal amounts of durum are shipped to Minneapolis-St. Paul and Duluth-Superior destinations. Whereas the amount of durum shipments to western destinations has remained at 3 percent per year, the quantity of durum destined for other destinations has risen

¹¹ Ibid., p. 8.

¹² USITC staff interview with representative of a grain processing company, Grand Forks, ND, March 1990.

¹³ North Dakota shipments declined from a high of approximately 95,000 bushels in the 1986/87 crop-year to the current 45,000 bushels per year.

¹⁴ Olsen and Zink, "North Dakota Grain and Oilseed Transportation Statistics 1988-89," p.20.

markedly¹⁵, from 16 percent of total shipments in 1984-85 to 50 percent in 1988-89.¹⁶

The fixed percentage of shipments over time to the western United States highlights an important issue with regard to grain transportation. Some western U.S. millers have stated that they find it more economical to buy Canadian durum, not only because Canadian durum supplied to the northwestern United States is several hundred miles closer than durum originating in Montana, but because these millers perceive a growing lack of liquidity in the durum market in the western United States.¹⁷

A particular miller cited two main causes of the liquidity problem. First, only one railroad serves this particular miller's western area from the Midwest durum-growing region. At the same time, however, this miller states that he believes there are more transportation options available to competing mills in the Midwest. Therefore, he believes rail rates from the durum region to his area are higher than rates to the Midwest. Other sources have cautioned that the relatively higher rail rates to western destinations may not be a result of the existence of only one railroad in the area, but may be a result of smaller individual shipments of grain to western destinations, resulting in lower economies of scale. The second contributing factor appears to be a reduced number of grain elevators in far west North Dakota and eastern Montana. One company stated that it has only a single remaining durum supplier in western North Dakota, and that the supplier often does not have the durum needed.¹⁸

Several industry sources noted that U.S. rail tariff rates for flour are significantly higher than those for grain. This disparity has apparently resulted in a relocation of many processing facilities (including durum mills) away from the areas of production and toward consuming centers. The sources of durum for such mills are now all fairly distant. Relocation may have resulted in decreased transportation differentials between U.S. and Canadian sources because Canadian rail rates are the same for flour as for grain.

Effects of an Increase in Rail Transportation Rates

Fluctuations in transportation rates are not, in general, directly reflected in increases in the market price, which is established by a number of other factors.¹⁹ The impact of most of the fluctuation in grain transportation rates is ultimately

¹⁵ Other current destinations include Midland/Southwest States (11 percent of total), other Minnesota/Wisconsin (15 percent), North Dakota (15 percent), and all other (9 percent).

¹⁶ Olsen and Zink, "North Dakota Grain and Oilseed Transportation Statistics 1988-89," p.20.

¹⁷ U.S. durum miller, letter to USITC, March 1990.

¹⁸ Ibid.

¹⁹ See section of the report on prices, ch.7.

borne by the farmer. When transportation rates rise, the farmer's margin on the sale of the grain is lower.²⁰ Also, the more elastic the demand for the grain, the higher the percentage of rail-rate fluctuations absorbed by the farmer. The high elasticity of foreign import demand has caused fluctuations in the transportation rates of export grain to be absorbed more by the farmer than by the consumer.²¹ Because of the recent increase in durum imported from Canada, the elasticity of domestic demand for durum is likely to have risen significantly, causing an increase in the already high proportion of total transportation-rate fluctuations borne by the farmer. Fluctuations in transportation rates may also have a significant effect on the geographic location of mills and elevators, causing changes in patterns of supply and sourcing.

The Canadian Transportation System for Grain

The Western Grain Transportation Act

The Canadian Government has regulated rail shipments of grain since the 19th century. The original regulatory scheme was established by the Crow's Nest Pass Act of 1897. That law established statutory rates for shipments of grain by rail to Thunder Bay, Ontario, and Vancouver, British Columbia. The statutory rates, which were unchanged for many years, became seriously unremunerative for Canadian railroads by the 1970s. As a result, rail transportation deteriorated and the Government was forced to subsidize the railroads' branch line operations.²²

The WGTA, which became effective in 1984, was designed to remedy the problems caused by the Crow's Nest rate system.²³ It provides for direct Government payments to Canadian railroads for certain rail shipments of grain within Canada. The "grain" subject to the statute includes 58 specified commodities.²⁴ These include wheat, wheat germ, and rolled wheat.²⁵ Rail shipments of grain subject to the statute include those on Canadian railroads—

- (1) from any point west of Thunder Bay, Ontario or Armstrong, Ontario to Thunder Bay or Armstrong;

²⁰ USITC staff interview with representative of a grain processing company, Grand Forks, ND, March 1990.

²¹ Won W. Koo, "Impacts on Agriculture of Deregulating the Transportation System: Comment," *American Journal of Agricultural Economics*, (February 1983), p. 188.

²² See Organization for Economic Cooperation and Development, *National Policies and Agricultural Trade: Country Study, Canada 34-36* (1987).

²³ The WGTA is codified in ch. W-8 of the Revised Statutes of Canada (1985), as amended by the following two session laws: 1985, c. 40 and 1987, c. 28, §§ 355-358. Subsequent citations will be to the section of the WGTA only.

²⁴ See schedule I to ch. W-8.

²⁵ *Ibid.*

- (2) from any point west of Thunder Bay or Armstrong to any port in British Columbia for export (except to the United States); and
- (3) from any point west of Thunder Bay or Armstrong to Churchill, Manitoba for export.²⁶

Under the WGTA, the Canadian Government directly pays the Canadian railroad companies a portion of the transportation costs attributable to the covered grain movements.²⁸ The payment consists of two components. One is a fixed payment called the "Crow Benefit."²⁷ The other component represents the Government's portion of increased rail costs. Although the precise methodology for calculating this component is extremely complex, the component is roughly equivalent to the product of (1) the percentage by which the annual increase in rail rates exceeds 6 percent; (2) an annually determined average cost for moving 1 ton of grain; and (3) the amount of grain transported by rail in that year.²⁹ Shippers, however, are assured that their average cost per ton of covered grain movements cannot exceed 10 percent of the average price per ton of grain.³⁰

The statute directs the Canadian Transport Commission to establish an annual scale of freight rates for grain movements subject to the WGTA.³¹ Moreover, the Commission is to calculate, on the basis of an estimate of the amount of Government payment, what percentage of rates is to be borne by the Government and what percentage are to be borne by shippers.³² Tariffs published by the railroad are to reflect this apportionment between the Government and the shippers.³³ Thus, the tariff rate that the shipper

²⁸ See WGTA, § 2(1); United States-Canada Free-Trade Agreement, art. 701(5) (excluding grain shipped through Canadian west coast ports for U.S. consumption from the WGTA). Should grain be transported by rail east beyond Thunder Bay, that portion of the transportation from the point of origin to Thunder Bay would be subject to the WGTA.

²⁷ See WGTA, § 56(1).

²⁹ See WGTA, §§ 55(1), 34(1). The statute indicates that the Crow Benefit is to be equal to \$658.9 million for fiscal 1986-87 and subsequent years. Agriculture Canada figures, by contrast, show fluctuating amounts for the Crow Benefit. That agency's 1989-90 estimates indicate that the Crow Benefit amounted to \$941.2 million for fiscal 1987-88. The benefit was forecast to cost the Government \$721.9 million in 1988-89 and was estimated at \$472.1 million for 1989-90.

The total cost to the Canadian Government of the WGTA in 1989 did in fact decrease from the levels of previous years. This decrease, however, was solely the amount of grain shipped in 1989 decreased. USITC staff interview with Canadian Wheat Board (March 1990). As explained further below, the WGTA benefit per ton of grain in 1989 was comparable to the benefit per ton in previous years.

³⁰ See WGTA, § 55. The Agriculture Canada figures for the cost of this portion of the benefit are as follows: 1987-88, \$47.2 million (actual cost); 1988-89, \$45.1 million (forecast); 1989-90, \$14.1 million (estimate).

³¹ WGTA, §§ 63, 37(2)(a).

³² WGTA, § 35(1).

³³ WGTA, § 37.

³⁴ WGTA, § 44.

must pay the railroad is less than what the railroad receives for the shipment. The shipper's rate is reduced by the Government payment, although the payment is made to the railroad rather than to the shipper directly.

The Alberta Wheat Pool has estimated that, for 1989-90, the WGTA benefit was equivalent to \$21.31 per metric ton, or 58 cents per bushel. The benefit was equivalent to 70.3 percent of the total 1989-90 estimated freight rate of \$30.31 per ton.³⁴

USTR Response to Request for Information

On October 10, 1989, the Office of the United States Trade Representative (USTR) issued a letter to the U.S. Wheat Growers Association discussing certain aspects of the WGTA.³⁵ The letter was in response to a request made by the Wheat Growers Association under section 308 of the Trade Act of 1974.³⁶

In the letter, USTR discussed the WGTA in connection with U.S. rights under the United States-Canada Free-Trade Agreement (FTA). In the FTA, the United States and Canada represent that each country will not "introduce or maintain any export subsidy on any agricultural goods originating in, or shipped from, its territory that are exported directly or indirectly to the territory of the other Party."³⁷ USTR noted that Canada had eliminated the WGTA payment for grain shipped to the United States from Canadian west coast ports and that the only remaining WGTA provision that could be applicable to grain shipped to the United States—that for eastbound rail transportation to Thunder Bay or Armstrong—applied to domestic Canadian shipments as well. USTR therefore concluded that "subsidies [under the WGTA] would not appear to be classified as 'export subsidies'" proscribed by the FTA.³⁸

³⁴ U.S. Wheat Associates brief, p. 6. The level of the WGTA benefit per ton has fluctuated in a fairly level range between 1985/86 and 1989/90. See *ibid.*, at p. 6 (Alberta Wheat Pool Statistics reporting that WGTA benefit ranged between \$21.31 and \$24.97 per ton during this period).

³⁵ Joshua B. Bolton, USTR General Counsel, letter to Winston Wilson, President, U.S. Wheat Growers Association, Oct. 10, 1989 ("USTR Letter").

³⁶ Sec. 308, 19 U.S.C. § 2418, states that upon written request, USTR shall make available information concerning the nature and extent of a specific trade policy or practice with respect to particular goods, services, investment, or intellectual property rights, U.S. rights and remedies under any trade agreement, and past or present domestic and international proceedings and actions with respect to the policy or practice concerned.

USTR Deputy General Counsel A. Jane Bradley advised USITC staff in a Jan. 18, 1990, telephone interview that USTR's responses to sec. 308 requests for information are not tantamount to official interpretations or rulings. Accordingly, the views that the USTR General Counsel expressed in the Oct. 10, 1989, letter to the Wheat Growers Association do not constitute binding opinions of USTR.

³⁷ FTA, art. 701(2). An "export subsidy" is defined as "a subsidy that is conditional upon the exportation of agricultural goods." FTA, art. 711.

³⁸ USTR Letter, pp. 1-2.

USTR also discussed the WGTA in connection with article 10 of the GATT Subsidies Code, which also forbids certain export subsidies. USTR stated that because the subsidy on eastbound rail transportation applied equally to domestic and export shipments, it "would not appear to be covered by Article 10 of the Subsidies Code." Moreover, USTR it noted that article 10 would be relevant to competition between the United States and Canada in third-country markets rather than to U.S. imports of Canadian wheat.³⁹

USTR took no position on whether the WGTA might constitute a subsidy under section 771(5) of the Tariff Act of 1930.⁴⁰ USTR stated that interpretation of that provision was the responsibility of the International Trade Administration (ITA) of the Department of Commerce.⁴¹

The WGTA as a Countervailable Subsidy

Section 701 of the Tariff Act of 1930 authorizes the United States to impose a countervailing duty upon merchandise imported into the United States when (1) a country that is a signatory to the GATT Subsidies Code, or a citizen of such a country, provides a "subsidy" with respect to the manufacture, production, or export of the merchandise and (2) an industry in the United States has been materially injured, threatened with material injury, or materially retarded in its establishment, by reason of sales or importation of the merchandise.⁴² "Subsidy" is defined to encompass "export subsidies" for purposes of the GATT Subsidies Code.⁴³ The "subsidy" definition additionally includes—

[t]he following domestic subsidies, if provided or required by government action to a specific enterprise or industry, or group of enterprises or industries, whether publicly or privately owned and whether paid or bestowed directly or indirectly on the manufacture, production, or export of any class or kind of merchandise:

- (I) The provision of capital, loans, or loan guarantees on terms inconsistent with commercial considerations.
- (II) The provision of goods or services at preferential rates.
- (III) The grant of funds or forgiveness of debt to cover operating losses sustained by a specific industry.

³⁹ USTR Letter, p. 2. The letter also noted that art. 8 of the GATT Subsidies Code, which requires signatories to seek to avoid causing injury to the domestic industry of other signatories through use of subsidies, was not a *per se* prohibition of the use of subsidies.

⁴⁰ 19 U.S.C. § 1677(5). This provision is explained further below.

⁴¹ USTR Letter, p. 3.

⁴² 19 U.S.C. § 1671.

⁴³ See 19 U.S.C. § 1677(5)(A)(i).

(IV) The assumption of any costs or expenses of manufacture, production, or distribution.⁴⁴

The ITA, which has the responsibility for determining what practices constitute countervailable "subsidies" for purposes of section 701, has never considered whether the WGTA constitutes such a subsidy. That agency has, however, considered whether numerous transportation programs in Canada and other countries constitute subsidies. ITA's treatment of such programs indicates principles that it might apply were it required to determine whether the WGTA constitutes a countervailable subsidy.

ITA has considered two categories of transportation programs in its countervailing duty cases.⁴⁵ The first category encompasses programs alleged to constitute "export subsidies described in Annex A to the [GATT Subsidies] Agreement" under section 771(5)(A)(i) of the Tariff Act.⁴⁶ Among the export subsidies described by the GATT Subsidies Code are "[i]nternal transport and freight charges on export shipments, provided or mandated by governments, on terms more favorable than for domestic shipments."⁴⁷ Consequently, ITA determinations concerning transportation charges alleged to constitute export subsidies have focused on whether the export shipments have been made at rates more favorable than those available to shipments for domestic consumption. ITA has found a countervailable export subsidy when a more favorable rate existed for export shipments than domestic shipments, without any independent commercial justification.⁴⁸ When the rate for the export merchandise is not more favorable than the rate for domestically shipped merchandise, no export subsidy exists.⁴⁹

ITA's approach to this issue is also reflected in the proposed regulations that it issued last year seeking to describe the type of programs that would constitute "subsidies" for purposes of section 701. One proposed regulation specifically addresses when transportation charges will be deemed to constitute export subsidies:

(g)(1) *Internal transport and freight charges for export shipments.* Where a government provides internal transport and

⁴⁴ 19 U.S.C. § 1677(5)(A)(ii).

⁴⁵ ITA decisions cited below include countervailing subsidy determinations under both sec. 701 and 303 of the Tariff Act. The latter provision, codified at 19 U.S.C. § 1303, authorizes imposition of countervailing subsidies on merchandise from countries that are not signatories to the GATT Subsidies Code that pay or bestow "any bounty or grant" upon the merchandise. The term "bounty or grant" has the same definition as "subsidy." 19 U.S.C. § 1677(5)(A).

⁴⁶ 19 U.S.C. § 1677(5)(A)(i).

⁴⁷ GATT Subsidies Code, annex A, par. (c).

⁴⁸ See "Certain Steel Products From South Africa", 47 F.R. 39379 (1982).

⁴⁹ See "Low Fuming Brazing Copper Wire From South Africa," 50 F.R. 31642 (1985).

freight services pursuant to an export program, a countervailable benefit exists to the extent that the Secretary [of Commerce] determines that the charges paid by a firm for transport or freight with respect to goods destined for export are less than what the firm would have paid if the goods were destined for domestic consumption.

(2) For purposes of paragraph (g)(1), a countervailable benefit does not exist where the Secretary determines that:

(i) Any difference in charges is the result of an arm's length transaction between the supplier and the user of the transport or freight service; or

(ii) The difference in charges is commercially justified.⁵⁰

The second category of transportation programs that ITA has considered encompasses domestic subsidies. As previously stated, "[t]he provision of goods or services at preferential rates" is a domestic subsidy for purposes of section 701.⁵¹ Examples of transportation programs that ITA has considered to be domestic subsidies include the following:

- Canadian Provincial programs that defrayed the cost of transporting hogs to pork-processing facilities. ITA noted that the programs constituted countervailable subsidies because they were limited to a specific enterprise or industry.⁵²
- An Italian law that established reduced rail rates on the Government-owned railway system for raw mineral substances produced and processed on the Italian islands. Again, ITA concluded that the special rates constituted countervailable subsidies because they were limited to a specific enterprise or industry.⁵³
- A New Zealand law under which the government paid a subsidy on the transport of fertilizer or lime from the works, merchant's store, or port of entry to the farm gate. The law specifically required that the supplier-shipper, who received the subsidy, pass it through to the farmer.⁵⁴

On the other hand, ITA has not considered domestic subsidies to include reduced freight rates available on government owned or controlled carriers for specific commodities that have a commercial basis. Commercially based rates in-

⁵⁰ 54 F.R. 23366, 23382 (May 31, 1989) (proposed 19 C.F.R. § 355.44(g)(1)).

⁵¹ 19 U.S.C. § 1677(5)(A)(ii)(II).

⁵² See Live Swine and Fresh, Chilled, and Frozen Pork From Canada," 50 F.R. 25097 (1985).

⁵³ See "Certain Granite Products From Italy," 53 F.R. 27197 (1988).

⁵⁴ "See Lamb Meat From New Zealand," 46 F.R. 58128 (1981) (preliminary determination).

clude those that are a function of market competition,⁵⁵ those that are a result of arm's-length negotiations between shippers and carriers,⁵⁶ and those that are comparable to rates offered by competing non-government-controlled carriers.⁵⁷ Additionally, reduced freight rate programs available to all industries are not considered domestic subsidies.⁵⁸

ITA's proposed regulations additionally address the question of when does providing goods or services at preferential rates constitute a domestic subsidy. The proposed regulations state that—

[t]he provision by a government of a good or service pursuant to a domestic program confers a countervailable benefit to the extent the Secretary determines that the price charged by the government for the good or service is less than the benchmark price, which normally will be the nonselective prices the government charges to the same or other users of the good or service within the same political jurisdiction.⁵⁹

Effects of the WGTA on Grain Transportation

The shipment of grain in Canada depends almost exclusively on rail transportation, to a degree even greater than in the United States. The distances on the Canadian prairie from farm to grain market are most efficiently traveled by rail. According to the Canadian Wheat Board (CWB), the Canadian system is designed for efficient movement of grain from farm and country elevator to terminal elevator and export or domestic destination.⁶⁰

The CWB schedules grain transportation from country elevators to terminal point or point of export. The CWB regulates farmers' grain deliveries so that customers' needs are met and so that the transportation and handling system can ship grain most efficiently. Each week, the Western Grain Transportation Authority negotiates with the two major railroads in Canada that serve the

grain industry, Canadian National (CN) and Canadian Pacific (CP), for the WGTA's railcar needs for the period. The CWB then allocates the railcars along individual sections of trackage to pick up grain from country elevators at delivery points.⁶¹ The WGTA/CWB together have an overall availability of approximately 20,000 hopper cars. Car turnaround is approximately 20 days; this can be reduced to 12-14 days during extremely busy times.

Fully 90 percent of the Canadian durum moving from western elevators to Thunder Bay under the WGTA is destined for export to the United States.⁶² Shipments moving by rail to points east of Thunder Bay do not receive a reduced rail rate beyond Thunder Bay. There are no subsidized rail rates on grain shipped westward for export if the grain is destined for the United States.

In general, Thunder Bay is the overflow destination for much of Canada's export grain. The two main west coast ports, Vancouver and Prince Rupert, are reported to be operating at maximum capacity. Although Thunder Bay's capacity is much larger than that in either of these ports, the seasonal nature of its operations and the distance from the majority of production make Thunder Bay a less attractive destination choice for most of the CWB's export shipments. In fact, Thunder Bay has never operated at capacity.⁶³ Also, for export destinations other than the United States, westbound durum does receive a transportation subsidy.

From Thunder Bay, most wheat shipments destined for the United States enter through Duluth, Cleveland, and several New York areas, such as Buffalo. These shipments travel by lake carrier. Terms of the contract may differ in that transportation charges for the shipment may be paid under the contract or may be paid by the purchaser.⁶⁴ Although laker rates fluctuate, it is not clear that this has a significant impact on patterns of durum supply to the United States.

⁶¹ With the exception of 2,000 grain hoppers (railcars), the Wheat Board does not own any part of Canada's railway system, including country or terminal elevators; the Wheat Board pays a fee for the use of such. The Wheat Board allocates rail cars in conjunction with the WGTA. The WGTA contracts with the railroads for the use of the necessary cars.

⁶² Most shipments destined for export to other areas are routed to the other ports, Vancouver and Prince Rupert. (Churchill has only been used for shipment of barley recently, and is only served by branch lines that cannot handle fully loaded hopper cars.)

⁶³ USITC staff interview with representative of the Canadian Wheat Board, Winnipeg, Manitoba, March 1990.

⁶⁴ Lake freight charges for grain transportation fluctuate and depend to a significant degree on the availability of other commodities for backhaul. According to a representative of the CWB, there has recently been some decline in rates.

⁵⁵ See, e.g., "Miniature Carnations From Colombia," 52 F.R. 32033 (1987); "Certain Fresh Cut Flowers From Peru," 52 F.R. 6387 (1987).

⁵⁶ See "Certain Softwood Lumber Products From Canada," 51 F.R. 37453 (1986) (preliminary determination).

⁵⁷ See "Potassium Chloride From Israel," 49 F.R. 36122 (1984).

⁵⁸ See "Carbon Steel Structural Shapes From Luxembourg," 47 F.R. 39364 (1982).

⁵⁹ *Ibid.*, p. 23381 (proposed 19 C.F.R. § 355.44(f)(1)). The proposed regulation also provides a means for imputing a benchmark price when none exists. See *ibid.*, pp. 23381-23382 (proposed 19 C.F.R. § 355.44(f)(2)).

⁶⁰ According to the CWB, western Canada's country elevators are designed for high throughput ratios and are not intended for long-term storage; thus the efficient movement of grain is a priority with the CWB.

Chapter 9

Competitive Conditions in the U.S., Canadian, and World Durum Markets

Dimensions of the Market

Durum wheat from the United States and from Canada satisfies one primary market, the manufacture of pasta products. Canada is the world's largest exporter of durum wheat, accounting for 40 to 50 percent of the world durum trade. The United States is a close second in world durum trade. Italy is a major market for "pasta quality" durum wheat. Much of the Italian pasta is subsequently exported back to the North American market. Both the United States and Canada export lower quality durum wheat for the manufacture of products such as couscous in North Africa and lower quality pasta in developing countries.

Government Involvement

Virtually all Governments have policies that attempt to stabilize agricultural prices while assuring the nation of a secure food supply. However, research has demonstrated that "the more governments try to stabilize domestic producer or consumer prices. . . the more they tend to export their fluctuations and hence lead to an increase in the variability of world price."¹ The effects of government policies are magnified for durum wheat, because it is traded in a very thin market, even worldwide, and prices can fluctuate wildly.

The United States has a complex array of Government programs that concentrate on price enhancement through supply-control measures, such as grain reserves and acreage reduction programs. These measures are also supplemented by income-maintenance programs. The Export Enhancement Program (EEP) is used to improve U.S. competitiveness in world markets and to target those overseas markets where the U.S. Government perceives the European Community is gaining due to the use of export subsidies. By going head-to-head in the world markets, the EC-EEP clash has served to reduce world prices.

The Canadian government provides less income protection than the U.S. programs and no acreage controls, but it does provide a vertically integrated farm-to-export marketing system for Canadian durum producers. The Canadian farmer can sell wheat only to the Canadian Wheat Board (CWB), and the amount the farmer delivers at any one time is controlled by delivery quo-

¹ Alexander H. Sarris, "Price Policies and International Distortions in the Wheat Market," ch. in *Agricultural Trade Liberalization and the European Community*, S. Tarditi and others, (eds.), (Oxford: Clarendon Press, 1989).

tas. The CWB operates in Canada as a monopsonist in the purchase of wheat and as an oligopolist in the export of wheat. The Wheat Board, in coordination with the Canadian Grain Commission and various other agencies, coordinates the purchase, storage, cleaning, grading, transportation, marketing, importing, and exporting of durum wheat.

The CWB negotiates directly with Governments and grain marketing organizations² to aggressively market Canadian durum wheat overseas. The CWB is constrained by the world price, and has expressed concern about the price effects of the EC-EEP clash in world grain markets.

Transportation Costs and Competitive Conditions

Although a number of U.S. producers have expressed the opinion that subsidized rail transportation of Canadian grains to terminal markets has played a very significant role in the increase of Canadian wheat and durum movements to the United States,³ it is difficult to evaluate the degree to which the subsidization of the Canadian rail rate affects the market price of durum wheat in the United States. From the following data,⁴ it would appear that total transportation prices to terminal markets have been comparable in the United States and Canada (table 9-1).

The positive effect of the subsidization of Canadian grain transportation is felt primarily by the Canadian farmer, whose profit margins are greater by the same amount. In the United States, an increase in transport costs generally results in a decrease in farmers' profits, rather than an increase in the market price. However, in Canada, the subsidization of the rail rates cushions the impact on the producer of any increase in the rail rate.

It has also been alleged that the subsidized Western Grain Transportation Act (WGTA) rail rate to Thunder Bay allows the CWB to offer lower contract prices to mills in the Eastern United States.⁵ However, it is not apparent (from data collected by the Commission) that prices paid for Canadian durum are significantly different than prices paid for U.S. durum.

The existence of a large marketing entity such as the CWB would promote the idea that overall costs of grain transportation in Canada may be less than in the United States because of improved efficiency. The efficiencies achieved by

² The world grain market is dominated by a handful of privately held corporations. These include primarily Continental, Cargill, Dreyfus, Bunge, and the Andre Group (Garnac).

³ Statement of North Dakota Wheat Commission to USITC.

⁴ Upper Great Plains Transportation Institute, North Dakota State University, Fargo, ND, letter to the North Dakota Wheat Commission, Aug. 5, 1988.

⁵ Statement of the North Dakota Mill to the USITC, April 1990.

Table 9-1

Rail rates from comparable origin to destination pairs, United States and Canada, 1988

Origin/destination	Mileage	Rail rate ¹	
		Producer-paid	Government paid
Cents per bushel			
Winnipeg/Thunder Bay	413	13.3	41.9
Brandon/Thunder Bay	563	15.2	48.1
Regina/Thunder Bay	788	18.2	57.4
Saskatoon/Thunder Bay	888	19.5	61.5
Oberon/Duluth	408	57.0	(²)
Niobe/Duluth	554	79.3	(²)
Glasgow/Duluth	774	85.8	(²)
Hysham/Duluth	891	85.8	(²)

¹ Effective Aug. 1, 1988.² Not applicable.

Source: Canadian Wheat Board and ICC BN Tariff 4022-F.

the WGTA/CWB with regard to the shipment of grain probably result from efficient allocation of railcars and the ability to utilize unit trains. Total rates for CWB-shipped grain may reflect this improved efficiency. The subsidized portion of the Canadian rates, while reflecting a decreased cost to the producer shipping the grain, does not appear to have a significant effect on the delivered price of Canadian durum in the United States.

Price and Quality Considerations

The durum wheat market is extremely quality conscious. Pasta manufacturing requires a high-quality product that exhibits a number of end-use values not included in grade specifications. The durum wheat marketing system in the United States can cater to contracts of great specificity; the Canadian marketing system can market only to grade.

The largest durum mill in the world is the North Dakota Mill and Elevator Association. It purchases durum on privately issued specifications and attests that it has no problems obtaining the quality U.S. grown durum it desires. It does pay a premium to obtain that level of quality.

The Canadians depend on strictly enforced varietal licensing, which has guaranteed certain genetic end-use characteristics in their durum. This ensures more uniformity but sacrifices yield. Canadian export grade specifications exceed domestic requirements primarily in the area of grain cleanliness and uniformity.

Judged strictly on the basis of grade specifications, it appears that the Canadian marketing system is able to supply a larger quantity of higher grade product per unit of durum. However, with regard to the developments in the milling and pasta industries, which increasingly stress quality, uniformity, and nongrade end-use-value test results, the U.S. marketing system is far more flexible and can customize its market response as the Canadians cannot.

The marketing problems experienced by U.S. durum wheat during the period of the investigation are partly attributable to the postharvest handling and processing system. The U.S. system permits (1) blending across grades; (2) blending of old crop with new crop (particularly a problem when Farmer Owned Reserves (FOR) are released, often after 4 years or more in storage); and (3) marketing to minimum, instead of average, grade standards.

Millers' and importers' responses to USITC questionnaires indicate that Commodity Credit Corporation stocks are often of inferior quality. The marketing efforts of U.S. durum farmers, especially in the Great Plains, have been affected by the USDA regulations controlling rotation and substitution of on-farm storage. Grain loan policies have encouraged the placing of lesser quality grain in loan status. However, the shortfall of U.S. durum production in 1988 significantly affected the marketing of high quality U.S. durum during the period of the investigation.

Prospects for the Future

The U.S. Department of Agriculture, in its December 1989 review of the GAO report on durum prices, stated

There does not appear to be any reason to postulate a "fundamental change in the market for durum wheat." The only likely structural change may be in the attitude of U.S. millers to Canadian durum. Some U.S. millers have now become familiar with Canadian durum, found its color acceptable to their customers, and like its milling characteristics and quality. However, less Canadian durum is moving into the U.S. this year because U.S. durum is competitively priced.

The U.S. durum milling industry has evolved over the last several decades from many small milling operations to a few large regional plants. These newer plants require more uniform wheat that has superior end-use and milling characteris-

tics. These larger mills are less adaptable to fluctuations in grade and non-grade quality considerations.

The problems of the U.S. durum industry are partly due to an insufficient adaptation to this technological progress. The problems of the durum industry during the period of the investigation are also due to the convergence of several events: (1) several years of drought especially in 1988, (2) drawdowns of the FOR, and (3) the availability of EC exports of durum affecting both U.S. and Canadian world market shares. These events served to temporarily lower U.S. supplies.

APPENDIX A
LETTERS OF REQUEST FROM CONGRESS

ONE HUNDRED FIRST CONGRESS

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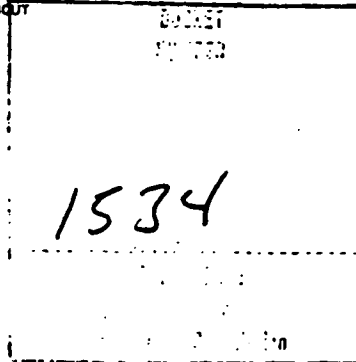
COMMITTEE ON WAYS AND MEANS

U.S. HOUSE OF REPRESENTATIVES

WASHINGTON, DC 20515

ROBERT J. LEONARD, CHIEF COUNSEL AND STAFF DIRECTOR

PHILLIP D. MOSELEY, MINORITY CHIEF OF STAFF



October 26, 1989

OFFICE OF THE CHAIRMAN

99 OCT 26 P 4: 24

RECORDED

The Honorable Anne Brunsdale
 Chairman
 U.S. International Trade Commission
 500 E Street, S.W.
 Washington, D.C. 20436

Dear Madam Chairman:

The Committee on Ways and Means hereby requests that the United States International Trade Commission conduct an investigation, pursuant to section 332 of the Tariff Act of 1930, as amended, of the conditions of competition between the U.S. and Canadian durum wheat industries. The study should focus on the competitive positions of U.S. and Canadian durum wheat in the U.S. market, but should also address, to the extent possible, competitive conditions affecting U.S. and Canadian durum wheat in the Canadian market.

The study should provide the following, to the extent possible:

1. A description of the U.S. and Canadian durum wheat industries, including patterns of production, processing, and consumption.
2. Statistical analyses of both U.S. and Canadian production, consumption, exports, imports, and import market shares, in terms of both levels and trends.
3. A description of the current conditions of trade between the United States and Canada, and any recent changes in such conditions, including information on prices, exchange rates, transportation costs, and marketing practices (to the extent such practices have measurable effects). To the extent possible, the Commission should assess the regional impact of imports by determining their geographic concentration.

The Honorable Anne Brunsdale

October 26, 1989

Page 2

4. A description of the Federal, State, or provincial government (either U.S. or Canadian) programs and policies to assist durum wheat producers and processors. Examples of such programs include programs that reduce fixed costs, programs that reduce variable cost, programs that enhance revenues, and transportation assistance programs.

5. A discussion of all other relevant factors affecting conditions of competition, including product prices, transportation costs, and product quality.

In light of the relevance of this study to the Committee's oversight activities on the implementation of the U.S.-Canada Free Trade Agreement and on the current Uruguay Round GATT negotiations on agriculture, the Committee requests that the Commission submit its report to the Committee on Ways and Means no later than Friday, June 22, 1990. We request that the Commission provide an opportunity for public comment with regard to the issues addressed in this study.

Sincerely yours,


Dan Rostenkowski
Chairman

DR/jnj

LLOYD BENTSEN, TEXAS, CHAIRMAN

SPARK M. MATSUNAGA, HAWAII
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United States Senate

COMMITTEE ON FINANCE
WASHINGTON, DC 20510-6200

VANDA S. McMURTRY, STAFF DIRECTOR AND CHIEF COUNSEL
ED MIHALSKI, MINORITY CHIEF OF STAFF

November 15, 1989

NOV 15 4:11
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99 NOV 16
OFFICE OF THE

The Honorable
Anne Brunsdale
Chairman
United States International
Trade Commission
Washington, D.C. 20436

DOCKET NUMBER
1539
Office of the Secretary Int'l Trade Commission

Dear Madam Chairman:

The Committee on Finance hereby requests that the United States International Trade Commission conduct an investigation, pursuant to section 332 of the Tariff Act of 1930, as amended, of the conditions of competition between the U.S. and Canadian durum wheat industries. The study should focus on the competitive positions of U.S. and Canadian durum wheat in the U.S. market, but should also address, to the extent possible, competitive conditions affecting U.S. and Canadian durum wheat in the Canadian market.

The study should provide the following, to the extent possible:

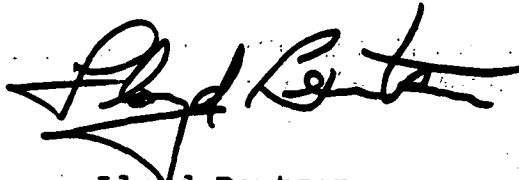
- (1) A description of the U.S. and Canadian durum wheat industries, including patterns of production, processing, and consumption.
- (2) Statistical analyses of both U.S. and Canadian production, consumption, exports, imports, and import market shares, in terms of both levels and trends.
- (3) A description of the current conditions of trade between the United States and Canada, and any recent changes in such conditions, including information on prices, exchange rates, transportation costs, and marketing practices (to the extent such practices have measurable effects). To the extent possible, the Commission should assess the regional impact of imports by determining their geographic concentration.

The Honorable
Anne Brunsdale
November 15, 1989
Page Two

- (4) A description of the federal, state, or provincial government (either U.S. or Canadian) programs and policies to assist durum wheat producers and processors. Examples of such programs include programs that reduce fixed costs, programs that reduce variable cost, programs that enhance revenues, and transportation assistance programs.
- (5) A discussion of all other relevant factors affecting conditions of competition, including product prices, transportation costs, and product quality.

In light of the relevance of this study to the Committee's oversight activities on the implementation of the U.S.-Canada Free Trade Agreement and on the current Uruguay Round GATT negotiations on agriculture, the Committee requests that the Commission submit its report to the Committee on Finance no later than Friday, June 22, 1990. We request that the Commission provide an opportunity for public comment with regard to the issues addressed in this study.

Sincerely,



Lloyd Bentsen

THOMAS DASCHLE
SOUTH DAKOTA

COMMITTEES

AGRICULTURE

FINANCE

INDIAN AFFAIRS

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TOLL FREE 1-800-424-9094

United States Senate

WASHINGTON, DC 20510

November 7, 1989

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SIOUX FALLS, SD 57101
(605) 334-9596
TDD (605) 334-4632

MAIL

Anne E. ~~transale~~
Chairman
United States International Trade Commission
500 E Street, S.W.
Washington, D.C. 20436

OFFICE OF THE CHAIRMAN

NOV 15 9 11

RECEIVED

532-285

Dear Anne:

Durum wheat producers have become concerned about recent increases in imports of durum wheat in the U.S. from Canada. Such imports may be depressing U.S. durum wheat prices and replacing U.S. durum wheat in our domestic market at a time when the Export Enhancement Program is being used to regain export markets.

In light of these concerns, I urge you to conduct an investigation of the competitive conditions in the durum wheat industries of the U.S. and Canada under Section 332 of the Tariff Act of 1930. An investigation would help to lay out the facts, including information on prices and other factors such as Canadian subsidies that may explain the rapid increase in Canadian durum wheat exports to the U.S.

Thank you for your attention to this matter. I hope your agency will be able to conduct a speedy and thorough investigation of durum wheat.

With best wishes, I am

Sincerely,

Tom
Tom Daschle
United States Senate

RECEIVED

NOV 12 9 36

TAD/ndw

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APPENDIX B
FEDERAL REGISTER NOTICE OF INVESTIGATION

Respectfully submitted,

Jeffrey R. Whieldon,

Acting Director, Office of Unfair Import Investigations, 500 E Street, SW, Washington, DC 20436.

[FR Doc. 89-29082 Filed 12-12-89; 8:45 am]

BILLING CODE 7030-02-M

[Investigation No. 332-285]

Durum Wheat; Conditions of Competition Between U.S. and Canadian Industries

AGENCY: United States International Trade Commission.

ACTION: Institution of investigation.

SUMMARY: Following receipt on October 28, 1989, of a request from the Committee on Ways and Means, U.S. House of Representatives, and on November 15, 1989, from the Committee on Finance, United States Senate, the Commission instituted investigation No. 332-285, Durum Wheat: Conditions of Competition Between the U.S. and Canadian Industries, under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)). As requested by the Committees, the study will focus on the competitive positions of U.S. and Canadian durum wheat in the U.S. market, but it will also address, to the extent possible, competitive conditions affecting U.S. and Canadian durum wheat in the Canadian market. As requested by the Committees, the Commission will submit its report not later than June 22, 1990.

EFFECTIVE DATE: December 4, 1989.

FOR FURTHER INFORMATION CONTACT: For information on other than the legal aspects of the study, contact John Pierre-Benoist (202-252-1320) or David Ingersoll (202-252-1309), Agriculture Division, Office of Industries, U.S. International Trade Commission. For information on the legal aspects of the study, contact William Gearhart (202-252-1091), Office of the General Counsel, U.S. International Trade Commission.

Background:

As requested by the Committees, the Commission will seek to provide in its report, to the extent possible, the following information:

- (1) A description of the U.S. and Canadian durum wheat industries, including patterns of production, processing, and consumption;
- (2) Statistical analyses of both U.S. and Canadian durum production, consumption, exports, imports, and

import market shares, in terms of both levels and trends;

(3) A description of the current conditions of trade in durum wheat between the United States and Canada, and any recent changes in such conditions, including information on prices, exchange rates, transportation costs, and marketing practices (to the extent such practices have measurable effects). To the extent possible, the Commission will also seek to assess the regional impact of imports by determining their geographic concentration;

(4) A description of the Federal, State, or provincial government (either U.S. or Canadian) programs and policies to assist durum wheat producers and processors—for example programs that reduce fixed costs, programs that enhance revenues, and transportation assistance programs;

(5) A discussion of all other relevant factors affecting conditions of competition, including product prices, transportation costs, and product quality.

Written Submissions: Interested persons are invited to submit written statements concerning the investigation. Written submissions to be considered by the Commission should be received by the close of business on March 30, 1990. Commercial or financial information which a submitter desires the Commission to treat as confidential must be submitted on separate sheets of paper, each marked "Confidential Business Information" at the top. All submissions requesting confidential treatment must conform with the requirements of § 201.6 of the Commission's Rules of Practice and Procedure (19 CFR 201.6). All written submissions, except for confidential business information, will be available for inspection by interested persons. All submissions should be addressed to the Secretary, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436.

Hearing impaired persons may obtain information on this study by contacting the Commission's TDD terminal on (202-252-1810).

Issued: December 5, 1989.

By order of the Commission.

Kenneth R. Mason,

Secretary.

[FR Doc. 89-29083 Filed 12-12-89; 8:45 am]

BILLING CODE 7030-02-M

[Investigation No. 337-TA-276
(Enforcement Proceeding)]

Certain Erasable Programmable Read Only Memories, Components Thereof, Products Containing Such Memories, and Processes for Making Such Memories; Designation of Commission Investigative Attorney

Notice is hereby given that, as of this date, Thomas L. Jarvis, Esq., of the Office of Unfair Import Investigations is designated as the Commission investigative attorney in the above-cited investigation.

The Secretary is requested to publish this notice in the Federal Register.

Dated: December 7, 1989.

Respectfully submitted,

Jeffrey R. Whieldon,

Acting Director, Office of Unfair Import Investigations, 500 E Street, SW, Washington, DC 20436.

[FR Doc. 89-29084 Filed 12-12-89; 8:45 am]

BILLING CODE 7030-02-M

DEPARTMENT OF JUSTICE

Notice of Lodging Consent Decree; United States v. Marmon Corp.

In accordance with section 122(d)(2)(B) of the Comprehensive Environmental Response, Compensation and Liability Act and with Department of Justice Policy, 28 CFR 50.7, notice is hereby given that on November 28, 1989, a proposed Consent Decree in United States v. The Marmon Corporation, Rival Manufacturing Company, United Gas Pipe Line Company and Kiewit Continental, Inc., Civil Action No. J89-0680(L) was lodged with the United States District Court, Southern District of Mississippi, Jackson Division. The proposed Consent Decree concerns the cleanup of the Flowood, Mississippi Superfund Site ("Site") and reimbursement of expenses incurred and to be incurred by the United States in connection with the Site. The proposed Consent Decree requires the defendants to finance and conduct one hundred percent (100%) of the remedial/design action. The remedial action selected by the Environmental Protection Agency ("EPA") requires the defendants to stabilize/solidify the contaminated soils/sediments and, following stabilization, place the soils/sediments into an excavated slough area. The Consent Decree also requires the defendants to perform operation and maintenance in accordance with the Record of Decision (ROD). Under the

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

(Investigation No. 332-285)

**DURUM WHEAT: CONDITIONS OF COMPETITION BETWEEN THE
U.S. AND CANADIAN INDUSTRIES**

SECRETARY
OF
COMMERCE

DEC 6 PM 1:18

RECEIVED

DOCKET

AGENCY: United States International Trade Commission

ACTION: Institution of investigation

SUMMARY: Following receipt on October 26, 1989, of a request from the Committee on Ways and Means, U.S. House of Representatives, and on November 15, 1989, from the Committee on Finance, United States Senate, the Commission instituted investigation No. 332-285, Durum Wheat: Conditions of Competition Between the U.S. and Canadian Industries, under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)). As requested by the Committees, the study will focus on the competitive positions of U.S. and Canadian durum wheat in the U.S. market, but it will also address, to the extent possible, competitive conditions affecting U.S. and Canadian durum wheat in the Canadian market. As requested by the Committees, the Commission will submit its report not later than June 22, 1990.

EFFECTIVE DATE: December 4, 1989

FOR FURTHER INFORMATION CONTACT: For information on other than the legal aspects of the study, contact John Pierre-Benoist (202-252-1320) or David Ingersoll (202-252-1309), Agriculture Division, Office of Industries, U.S. International Trade Commission. For information on the legal aspects of the study, contact William Gearhart (202-252-1091), Office of the General Counsel, U.S. International Trade Commission.

BACKGROUND: As requested by the Committees, the Commission will seek to provide in its report, to the extent possible, the following information:

- (1) A description of the U.S. and Canadian durum wheat industries, including patterns of production, processing, and consumption;
- (2) Statistical analyses of both U.S. and Canadian durum production, consumption, exports, imports, and import market shares, in terms of both levels and trends;
- (3) A description of the current conditions of trade in durum wheat between the United States and Canada, and any recent changes in such conditions, including information on prices, exchange rates, transportation costs, and marketing practices (to the extent such practices have measurable effects). To the extent

possible, the Commission will also seek to assess the regional impact of imports by determining their geographic concentration;

(4) A description of the Federal, State, or provincial government (either U.S. or Canadian) programs and policies to assist durum wheat producers and processors--for example programs that reduce fixed costs, programs that enhance revenues, and transportation assistance programs;

(5) A discussion of all other relevant factors affecting conditions of competition, including product prices, transportation costs, and product quality.

WRITTEN SUBMISSIONS: Interested persons are invited to submit written statements concerning the investigation. Written submissions to be considered by the Commission should be received by the close of business on March 30, 1990. Commercial or financial information which a submitter desires the Commission to treat as confidential must be submitted on separate sheets of paper, each marked "Confidential Business Information" at the top. All submissions requesting confidential treatment must conform with the requirements of section 201.6 of the Commission's Rules of Practice and Procedure (19 CFR 201.6). All written submissions, except for confidential business information, will be available for inspection by interested persons. All submissions should be addressed to the Secretary, U.S. International Trade Commission, 500 E Street SW., Washington, D.C. 20436.

Hearing impaired persons may obtain information on this study by contacting the Commission's TDD terminal on (202-252-1810).

By order of the Commission.



Kenneth R. Mason
Secretary

Issued: December 5, 1989

APPENDIX C
AGRICULTURAL POLICY TERMS

Loan Rate.—The loan rate is a “floor” price, set by Congress, below which farmers do not have to sell but can instead store wheat in reserve and receive a payment, in the form of a loan, from the Government. This loan enables farmers to hold their crops for sale at some later date. Only farmers participating in farm programs are eligible for loans. The term of the loan is usually 9 months. The loan is “nonrecourse” because the Government has no recourse but to take the crop itself in repayment of the loan, if the farmer so desires—no matter how far market price may have fallen. With the loan in effect, the U.S. market price is unlikely to fall below the loan rate because when the market price approaches or falls below the loan rate, farmers turn their grain over to the Government rather than sell it on the market. The 1985 farm bill permitted the Secretary of Agriculture to set the loan rate according to past market prices but limited to a 5-percent annual drop. The nonrecourse loan also serves as a marketing tool that provides farmers with cash at harvest time to satisfy immediate cash obligations while retaining control of their commodity. The cash obtained from nonrecourse loan payments allows producers to store their crop for sale later in the marketing season when prices are generally more favorable. The loan program helps to even out marketings and ensure adequate supplies at more stable prices to consumers throughout the year.

Target Price.—The target price is a price set by Congress, before the crop season, that is sufficiently high to provide a reasonable return to farmers. If the market or loan price is below target price, the deficiency payment makes up the difference between the target price and the price received by the farmer.

Deficiency Payment.—Deficiency payments serve both as an insurance program and as income support to farmers. If market prices are less than the target price, the farmer is assured of receiving compensation. The deficiency payment is based on the difference between the target price and the market price (based on the average for the first 5 months of the marketing year) or the loan rate, whichever difference is less. The total payment a farm receives is the payment rate multiplied by eligible production. The program does not distinguish durum from other kinds of wheat. This means that even if the price of durum were above target price, the durum farmer would receive a deficiency payment if wheat prices in general were below target price. In order to receive a deficiency payment, farmers must participate—which means that they must have officially assigned “base acres” and “program yield,” and that they must comply with any “acreage reduction program.” The payment limit for the deficiency payment is \$50,000 per farm. A deficiency payment is made if the national weighted-average farm price received by producers for the first 5 months of the marketing year falls below the target level. The deficiency payment is equal to the difference between the target level and the higher of the basic loan rate or the national weighted-average market price received by farmers for the first 5 months of the marketing year. The formula for deficiency payments is the deficiency payment rate times the farm program yield times the payment acreage (the amount of land planted to wheat after meeting any acreage-reduction program requirements).

Disaster Payment.—Disaster payments supplement regular price-and income- support payments when crop loss due to weather or other disasters is significant. Disaster payments depend on the level of yield loss and the target price for the program crop of participating farmers. Disaster payment criteria include the provision that actual yield must be less than 65 percent of program yield for a farmer to be eligible for disaster payments. For nonparticipants, the payment is based on the loan rate rather than the target price. A farmer cannot receive both disaster payments and deficiency payments on the same acreage. During the drought of 1988, over half the durum counties in North Dakota received disaster payments.

Acreage-Reduction Program.—The acreage-reduction program (ARP) is designed to reduce crop surpluses by encouraging farmers to set aside land that otherwise would have been planted to a particular crop. Producers must participate in an ARP in order to be eligible for loans and deficiency payments. ARPs were designed to reduce the costs of price and income supports. For example, if a durum wheat farmer wishes to participate

in USDA price-support programs, a certain percentage of land that would have been planted in durum must be idled. This land must be put into an acreage-conservation reserve (ACR) that is approved for conserving use that protects the land from weeds and from wind and water erosion. Permitted acres are the number of acres on which the crop may be planted after the ARP has been satisfied.

Conservation Reserve Program.—Over 30.6 million acres are now enrolled in the conservation reserve program (CRP), and bids have been made on another 4.2 million acres as of the end of 1989. The 1985 farm bill called for a CRP of 40 to 45 million acres by the end of 1990. The CRP is a long-term retirement program for erodible land. Producers submit bids for a 10-year contract, stating the annual payment they would accept to convert the highly erodible land to vegetative cover. Accepted bids must not exceed prevailing local rental rates for comparable land. In 1989 there were 9.2 million acres of wheat land in the CRP. About 64 percent of CRP acreage has come from program-crop base acres, resulting in a reduction of the total base acres. The remaining 36 percent is termed “slippage” acreage because it comes from land that was not previously used for growing crops.

Commodity Certificates.—Some part of deficiency payments (and some other types of payments) may be made with commodity certificates, or “certs.” This is a noncash payment, issued by the Commodity Credit Corporation (CCC), denominated in a cash amount, and backed by the commodities owned by the CCC. From fiscal years 1986 through 1989, nearly \$24 billion in commodity certificates was issued to farmers as part of the direct payments due them, to exporters under the Export Enhancement Program (EEP), and under other programs administered by the CCC.

Once a farmer receives a cert, the farmer may sell or transfer the cert to another person (the market for certs trades at a percent of face value) or use the cert to redeem the commodities pledged as collateral for a price-support loan. If necessary, the farmer may wait 5 months and return the Cert to the Government for cash. An exporter recipient may exchange the cert for CCC-owned commodities but may not exchange a cert for cash from the government.

Commodity Certificate Redemption Of Wheat (Fy 1986–89)

Loans	CCC Inventory	Total
<i>Billion dollars</i>		
1.5	2.1	3.6

Emergency Compensation Payment Rate.—Also known as Findley deficiency, the emergency compensation payment is based on the difference between the basic loan rate and the reduced loan rate, or the basic loan rate and the 12-month season average market price, whichever difference is smaller. The payment limit for the sum of the original deficiency payment and the emergency compensation payment is \$250,000.

Projected Deficiency Payment Rate.—The USDA announces prior to program signup, in late fall or early winter, a projected deficiency payment rate. The farm bill requires that a portion of the projected payment be made in advance in order to get cash into farmers’ hands quickly. This payment is known as the advance deficiency. Between 40 and 50 percent of the projected deficiency rate is paid as the advance deficiency to wheat farmers, at the discretion of the Secretary of Agriculture.

0-92 Program.—This program allows farmers to idle land (actual plantings are below permitted acres) and receive partial deficiency payments. One requirement of 0-92 is that underplanted acreage must be devoted to conserving use. The partial deficiency payment is based on the number of permitted acres times .92 planted acres times program yield times projected deficiency payment per bushel. The producer can devote to conserving use from zero to all of the maximum permitted acres under the ARP. The producer receives the deficiency payment in two forms: First, the producer receives a

regular deficiency payment on the acreage actually planted to the program crop. Second, the producer receives a partial deficiency payment on part of the remainder—specifically, on 92 percent of the permitted acres less planted acres.

Crop Year.—The official crop-year, sometimes called the marketing year, begins at harvest and extends 12 months. For durum, the crop year usually runs from July through the following June.

Program Production.—The deficiency payment is based on “program production” rather than actual production. The formula for program production is Base Acres minus Idled Acres (Acreage Conservation Reserve, ACR) equals Permitted Acres times Program Yield equals Program Production. Program production is the quantity eligible for deficiency payment when the farmer plants maximum permitted acres. Base acreage for each crop is a 5-year moving average of acres planted to the program crop. Program yields are official averages that were frozen in 1985 and have not been adjusted since.

PIK and Roll.—The acronym PIK (payment-in-kind) means USDA makes payments in the form of commodities rather than in cash. By using PIK and roll the farmer may bring wheat out from under loan (without waiting for the trigger release price to be reached). The program also relieves CCC of excessive inventory and operating costs. The farmer receives deficiency and diversion payments in certs, that can be used to redeem wheat being held as loan collateral. PIK and roll saves the farmer money by avoiding storage costs, plus it gains the farmer the price differential between the loan rate and the exchange price used by CCC, known as the posted county price (PCP), at which the loan is redeemed with certs. This is because the farmer may immediately “PIK out” wheat before it goes into storage. The intent of PIK and roll is to bring wheat out of storage and to make U.S. wheat more competitive in foreign markets since wheat that is PIK'd out of storage can be bought by an exporter through the use of certs. Commodity certificates are given to exporters under the EEP and can be redeemed for grain in the Farmer-Owned Reserve (FOR) as well as CCC reserves.

APPENDIX D
GAO REPORT

GAO

Testimony

For Release on
Delivery
Expected at
1:00 p.m. CST
December 7, 1989

GAO Analysis of Durum Wheat Prices

Statement of
John W. Harman, Director
Food and Agriculture Issues
Resources, Community, and Economic
Development Division

Before the
Subcommittee on Trade
House Committee on Ways and Means



EXHIBIT 3

Mr. Chairman:

We are pleased to be here today to discuss current market conditions for durum wheat, and, in particular, whether durum prices are consistent with supply and demand conditions. Our discussion is based on work recently conducted for Representative Byron Dorgan. To do this work, we developed a statistical model to estimate the historical relationship between average annual durum wheat prices and stocks remaining at the end of the crop year, May 31. We examined this relationship for 16 years, from 1973 to 1988.

Using this model, we found that there is a strong statistical relationship between prices and year-end stocks. That is, price levels bear a strong inverse relationship to stocks on hand at the end of the year, so that the higher the level of stocks, the lower the average annual price, or vice versa. Given this strong historical relationship, our model allows us to look at a given level of ending stocks and estimate a price range commensurate with that level.

Using the USDA November forecasts of ending durum stocks, our model projects an average annual durum wheat price of at least \$5.25 per bushel. Prices for the first 6 months of 1989 indicate an average annual price of about \$4.30 per bushel.

A number of factors have been suggested to explain this difference between our model's results and the anticipated annual average price for this year. Factors suggested include ~~quality~~ quality, ~~levels of imports~~, and forecasts of export. However, we do not know to what extent, if at all, these factors are responsible for this difference. The difference between prices estimated by past relationships and this year's price may indicate a fundamental change in the market for durum wheat.

BACKGROUND

As you know, the crop year for wheat begins on June 1. During the 1988 crop year, durum wheat stocks fell sharply following the drought. Stocks on hand on May 31, 1989, were 60 million bushels. As of November 1989, USDA forecasts that ending stocks on May 31, 1990, will be 49 million bushels. This projected level is the lowest level since 1974. Given this low level of stocks, Representative Dorgan questioned why durum wheat prices were not higher.

Export and domestic use are the major pressures on ending stocks. Domestic use includes some imported wheat. Some of this wheat may remain as stocks at the end of the year for use in subsequent years. However, whatever their disposition, imports have historically constituted a small portion of total durum wheat use. From 1973 until last year's drought, imports represented from 1 to 7 percent of use. During the same period, exports constituted from 42 to 63 percent of use. Therefore, a percentage change in imports would be likely to have a much smaller effect on durum prices than the same change in exports because the base for each is different.

USDA is projecting export and domestic use of 114 million bushels for this crop year. These data indicate that demand pressures will leave a considerably lower level of stocks than usual at the end of the 1989 crop year.

OUR ANALYSES

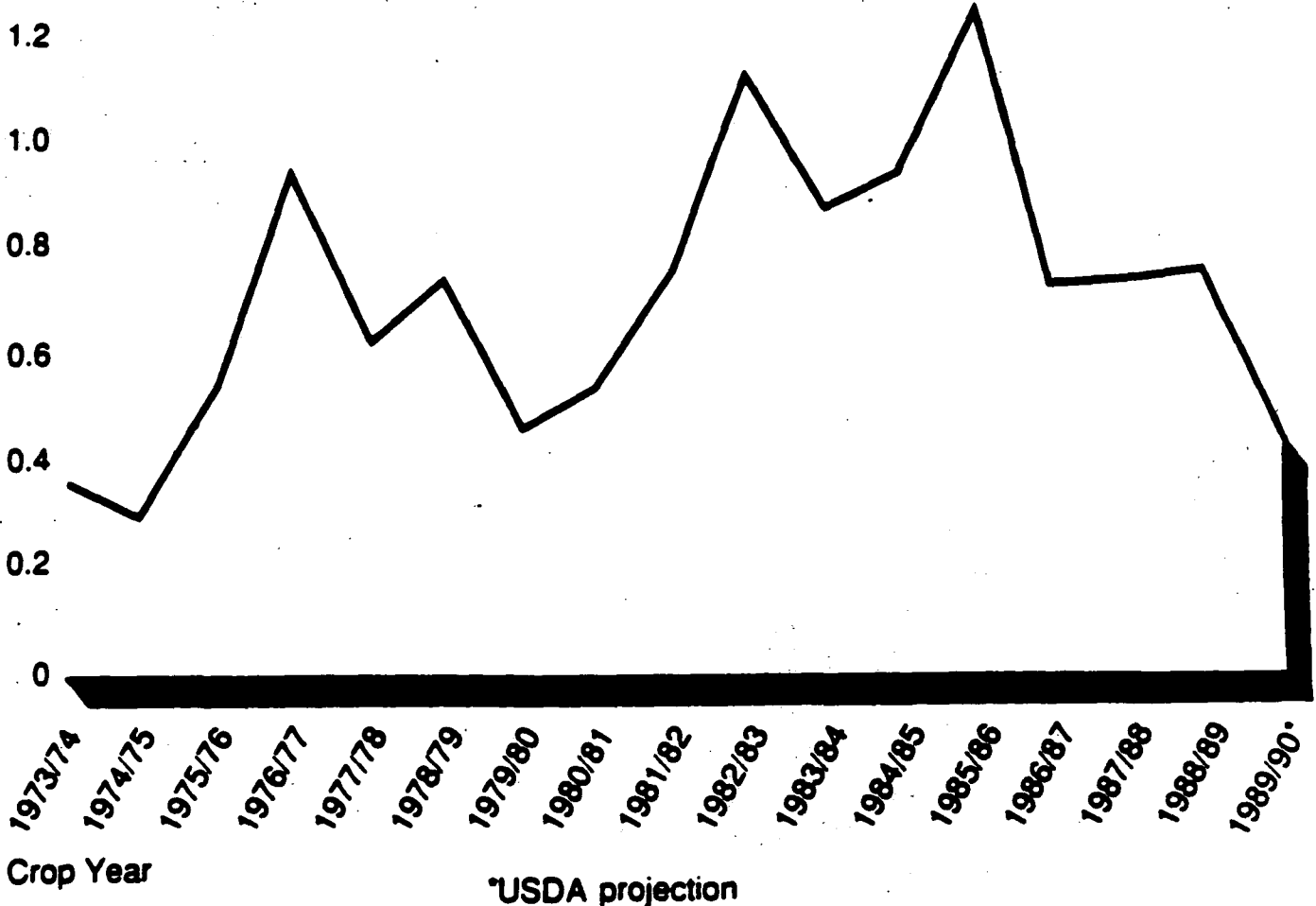
Let me explain how we arrived at our finding that 1989 prices are likely to be lower than estimated by our model. One of the primary indicators of pressures on grain prices is the stocks-to-use ratio. This ratio relates stocks remaining at the end of the year to total grain use for the year. The ratio is a shorthand

method of looking at basic supply and demand for grains. For example, with a projected total use of 114 million bushels, the USDA's November 1989 forecast of 49 million ending bushels implies a stocks-to-use ratio of 43 percent.

Figure 1 shows historical stocks-to-use ratios. For 13 of the 16 years we examined, the equivalent of more than 50 percent of total durum wheat use for the year remained at the end of the year. As you can see, the level forecasted for 1989 is the lowest since 1974.

Figure 1: U.S. Durum Wheat Stocks-to-use Ratio, 1973/74-1989/90

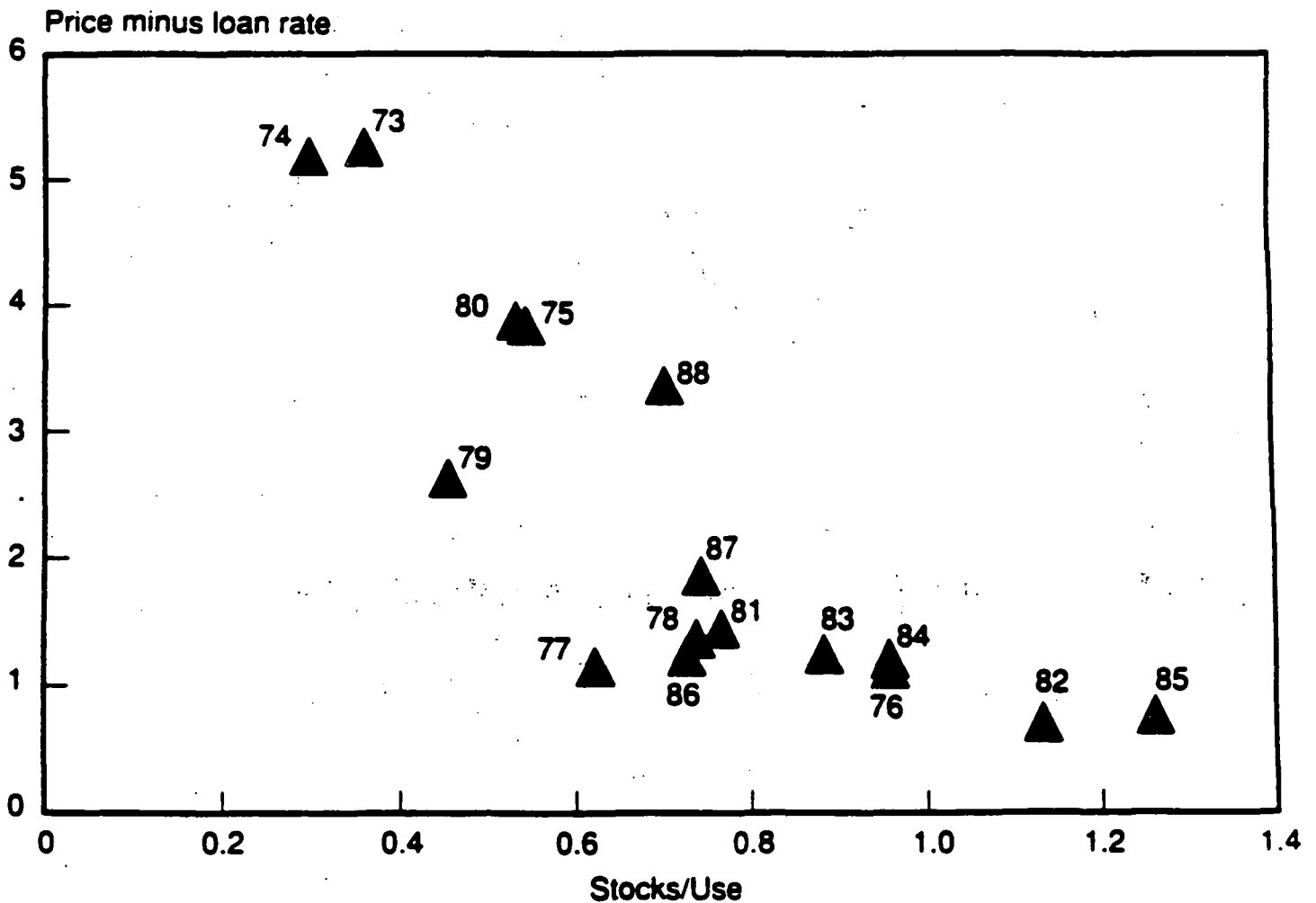
1.4 Stocks-to-use Ratio



Our model estimates the relationship between historical stocks-to-use ratios and average annual durum prices. That is, large expected ending stocks indicate that supply is well above expected demand. When stocks are very large relative to use, the resulting low prices lead farmers to keep their wheat off the market by storing it. Low projected ending stocks indicate that supply is tight relative to use. Buyers then bid prices up, and farmers place their wheat on the market. In this way, the ending stocks-to-use ratio is a barometer of pressures on price.

Figure 2 shows the relationship between the stocks-to-use ratio and price for the period we examined. As you can see, as the ratio increases, prices decline.

Figure 2: Durum Wheat: Annual Cash Price and Ending Stocks-to-use Ratio, 1973/74-1988/89

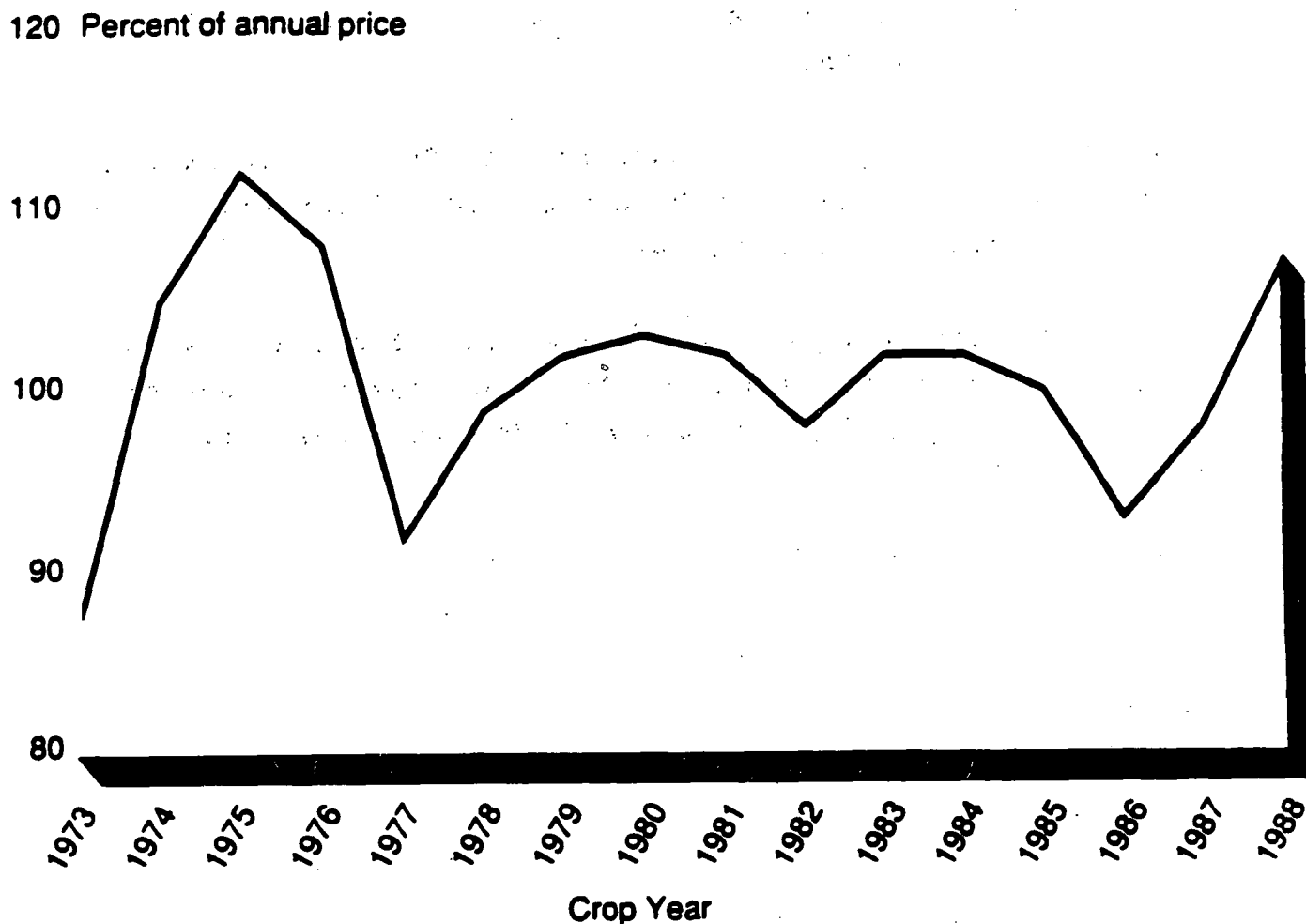


To forecast average annual prices for 1989, we compared historical relationships between prices for the first 6 months of the crop years from 1973 to 1988 with annual average prices for those years. We then applied these relationships to the actual prices for the first 6 months of 1989.

As you can see in figure 3, prices for the first 6 months in 1973 through 1988 have ranged from 87 percent to 112 percent of the average annual prices for these years.

Based on our calculations, the average price for the first 6 months of the 1989 crop year was about \$4.30 per bushel. However, the price could vary from about ~~\$3.74~~ to ~~\$4.82~~ per bushel around this average.

Figure 3: June-November Durum Wheat Prices as a Percent of Average Annual Price



To determine the price one would expect based on historical stocks-to-use ratios, we used the statistical model we developed to estimate the price/stocks-to-use relationship based on 1973-88 data. We also used the model results to estimate a price corresponding with November forecasts of durum wheat stocks on May 31, 1990, the end of the crop year. Figure 4 shows estimates from our model for prices as related to stocks-to-use ratios from 30 percent of use to 120 percent of use.

Figure 4: Estimates of Durum Wheat Prices and Stocks-to-use Ratios

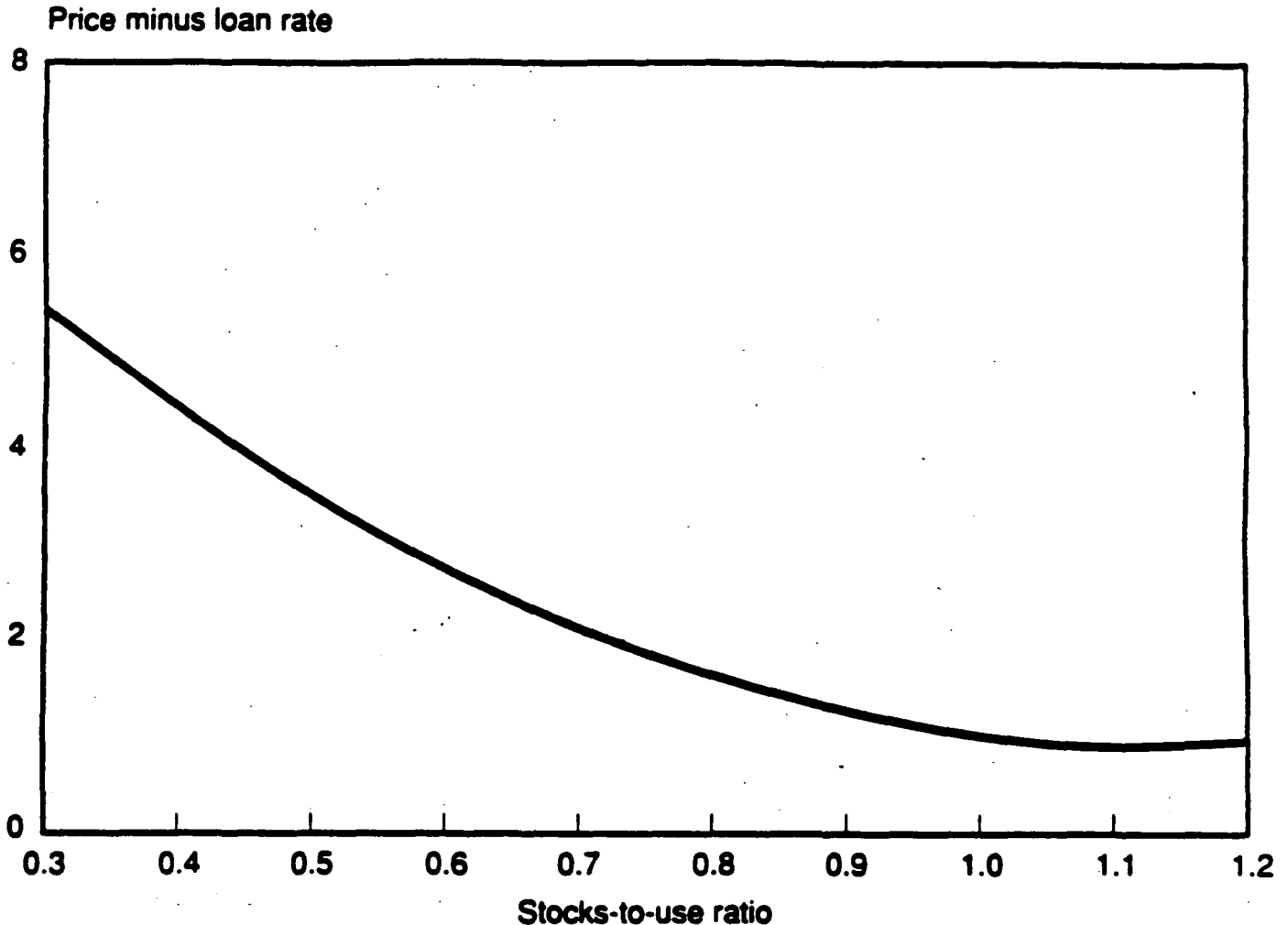
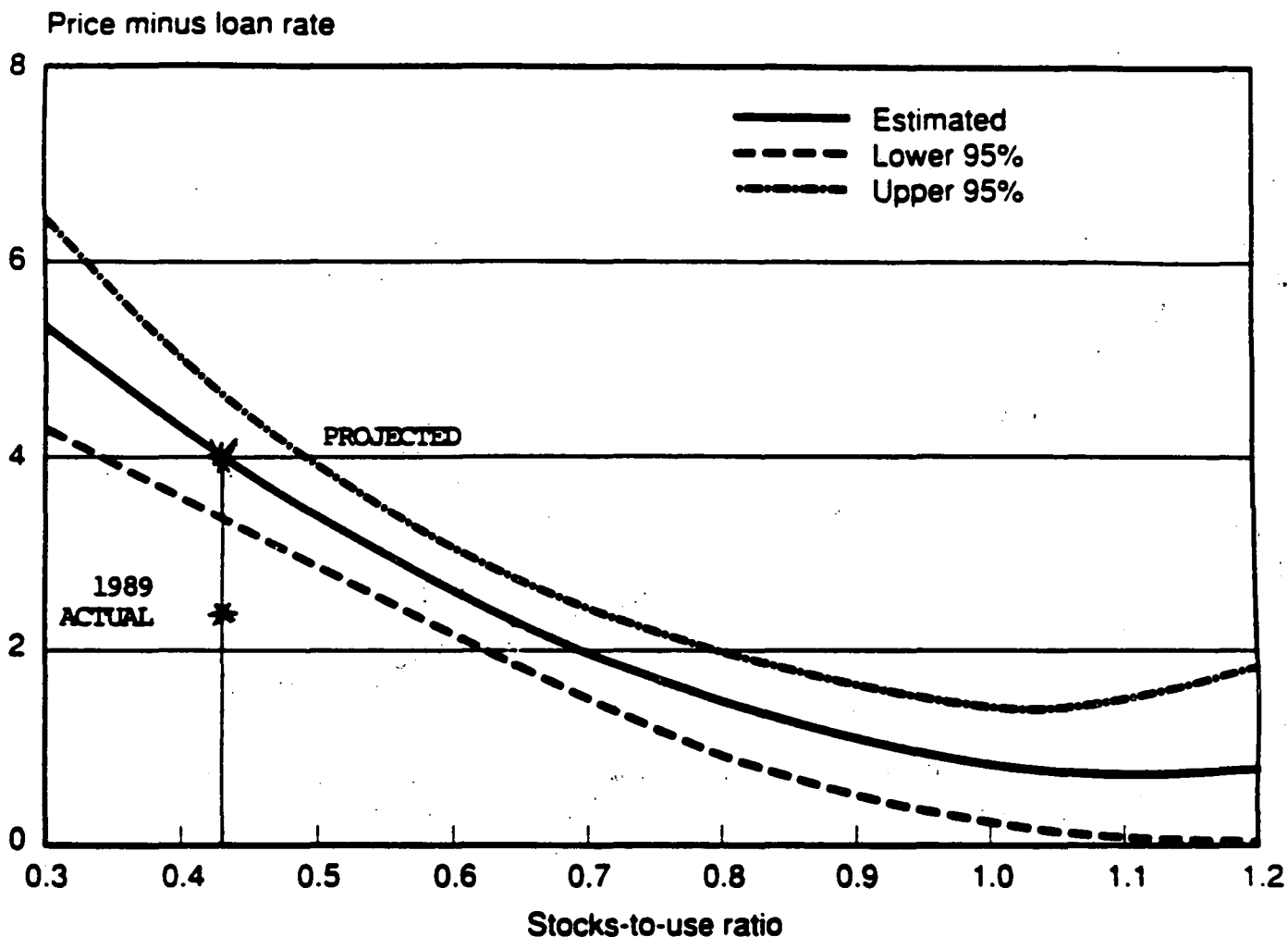


Figure 5 shows these estimates, as well as the ranges associated with the estimates. As you can see, the range becomes larger as the stocks-to-use ratio is less than 50 percent or greater than 90 percent. Consequently, for stocks-to-use ratios of less than 50 percent or more than 90 percent, the model estimates will have greater ranges associated with them. Because the USDA forecast implies a stocks-to-use ratio of 43 percent, the estimated range of price associated with our estimate could be as wide as \$1.50 per bushel. Our model estimated that the price could range from \$5.25 per bushel to as much as \$6.75 per bushel, including the loan rate of about \$2.00 per bushel.

Figure 5: Estimates of Durum Wheat Price Ranges and Stocks-to-use Ratios



REASONS FOR THIS APPARENT DIFFERENCE

To understand the reasons for our model estimate being higher than the average annual price that we expect in 1989, we spoke with durum wheat traders and other analysts. While we have not conducted a scientific survey, their responses offer a number of possible explanations. Some noted that the quality of durum wheat traded in the summer of 1989 was lower than usual.

Others told us that Canadian wheat sold was being sold in the United States at lower prices than domestic wheat, providing a possible explanation for lower average prices. However, as we noted earlier, a percentage change in imports would be likely to have a much smaller effect on durum prices than the same change in exports because the base for each is different.

Finally, several of those we interviewed said that members of the durum wheat trade believe demand in the commercial export market will not be as high as indicated in official forecasts. In that case, the stocks-to-use ratio would be higher than the one we developed. Lower exports would make the stocks-to-use ratio higher than forecast, thereby lowering the market price. We do not know to what extent any of these factors may account for prices that are lower than those indicated by our model. As noted earlier, however, this difference could indicate a fundamental change in the market.

- - - -

This concludes my formal testimony. I would be happy to answer your questions.

December 18, 1989

INFORMATIONAL MEMORANDUM

**TO: Bruce Gardner
Assistant Secretary
for Economics**

**FROM: B. H. Robinson
Associate Administrator**

SUBJECT: Comments on GAO's Analysis of Durum Wheat Prices

ISSUE:

This is in response to your request for comments on GAO's testimony regarding their analysis of durum wheat prices.

DISCUSSION:

We have evaluated the testimony statement, and the attached statement summarizes our comments regarding this report. Ed Young and Ed Allen of the Crops Branch of CED prepared the comments.

SUMMARY:

We feel that the price series selected by GAO as a basis for its analysis is misleading. We also call your attention to several drawbacks of using the "stocks-to-use relative to the loan rate" model.

Attachment

**USDA:ERS:CED:CROPS:MLeath:skv:786-1840:12/15/89
Staff Analysis 90-108**

Comments on GAO Durum Wheat Price Testimony

Reports in the news media indicate that the GAO testimony dampened concerns over the role of Canadian durum imports on the perceived low durum prices in the U.S. market. The GAO testimony identified some of the factors that influence price movements. The role of Canadian durum in the U.S. market was correctly noted and put into perspective.

The U.S. durum export forecast is based on tight world market conditions. Low E.C. and Turkish export supplies are combining with strong demand from the USSR and North Africa. However, given the uncertainties in the North African market, the durum market may not react to the current export forecast until some confirming sales are made. This was correctly noted by GAO.

GAO failed to note that for 1989/90 a smaller portion of durum supplies are tied up in the FOR, the 9-month loan program, or CCC inventory. As the proportion of free stocks to total stocks increases, the greater mobility of the free stocks may be price depressing.

There does not appear to be any reason to postulate a "fundamental change in the market for durum wheat". The only likely structural change may be in the attitude of U.S. millers to Canadian durum. Some U.S. millers have now become familiar with Canadian durum, found it's color acceptable to their customers, and like its milling characteristics and quality. However, less Canadian durum is moving into the U.S. this year because U.S. durum is competitively priced.

The price analysis as reported by GAO is misleading in that GAO used the Minneapolis price of number 1, hard amber durum for their analysis while the testimony implies that the analysis was conducted using the farm gate price of durum. In October, the Minneapolis price was \$4.12 compared to a farm-level price of \$3.31. It is highly probable that someone will misuse the GAO analysis and conclude that the farm price of durum ought to be "at least \$5.25." GAO selected the Minneapolis price because farm-level durum price data are not available prior to 1981.

The "stocks-to-use relative to the loan rate" model has several drawbacks:

- o the loan rate of wheat has fallen to the point that it may not function as a floor under durum prices;
- o the shape of the curve at low stocks-to-use ratios is very hard to specify;
- o a small shift in the curve over time could cause a very large change in price forecasts at low stocks-to-use ratios; and
- o data points at low stocks-to-use ratios are few and old.

These problems suggest that the stocks-to-use model might do a poor job forecasting this year, especially for a commodity like durum.

ERS estimated a stocks-to-use model for farm-level durum prices, based on data beginning with 1981. Farm-level durum prices during 1989/90 are estimated at \$3.62 using this model. Some argue that durum prices behaved abnormally in 1988/89 because a high proportion of durum stocks were tied up in the FOR and were not available to the market. If a dummy variable for 1988/89 is included in the model, the durum price forecast falls to \$3.27 for 1989/90.

APPENDIX E
SUMMARIES OF WRITTEN SUBMISSIONS BY INTERESTED PARTIES

CANADIAN WHEAT BOARD

In the executive summary of its submission, the Canadian Wheat Board (CWB) emphasizes that it "does not provide subsidies to grain producers, and that the Government of Canada is not involved in the commercial operations of the Wheat Board." The CWB states that "Canada's wheat production and marketing are structured to produce wheat of consistent quality." The Canadians emphasize consistency in grain quality.

The CWB further states that the Canadian wheat farmer depends on market price rather than support programs for income. The CWB argues that the effect of the U.S. Export Enhancement Program and the EC export subsidies was to lower prices in Canadian export markets, thus harming the Canadian producer.

Government of Canada

While reiterating some of the CWB statements, the Government of Canada, in its note to the U.S. Department of State, argues that the United States is in violation of the United States-Canada Free-Trade Agreement because of the effect of the Export Enhancement Program on Canadian export markets.

U.S. Wheat Associates, North Dakota Wheat Commission, North Dakota Department of Agriculture, U.S. Durum Grower's Association

These advocates for the grain farmer argued that U.S. durum wheat was of equal, and in some respects superior, quality to Canadian durum wheat. They cited the case of the North Dakota Mill which purchases durum wheat that is, according to its own specifications, of a better quality than provided for by U.S. grade No. 1. The North Dakota Mill testified at a congressional hearing in Bismarck, ND, December 1989, that it had encountered no difficulties in purchasing high-grade U.S. durum wheat.

The associations argued that the Canadian Western Grain Transportation Act created an unfair subsidy that harms the U.S. durum farmer. They reiterated their opposition to the United States-Canada Free-Trade Agreement and their belief that the Canadians were taking unfair advantage of the agreement to predatorily penetrate the U.S. market. The North Dakota Department of Agriculture stated that it believes that the U.S. calculations of Government support to agriculture are full of errors, which work to the detriment of U.S. grain producers.

Other Submissions

Other correspondence received by the U.S. International Trade Commission related to the investigation on durum wheat, but not entered into the record, states that Canadian durum wheat is purchased at a slight premium over U.S. durum wheat. One large corporation stated that it purchased Canadian durum wheat because it was cheaper to ship from Canada to its location than from U.S. points to its location.