

Fresh and Processed Potatoes: Competitive Conditions Affecting the U.S. and Canadian Industries

Investigation No. 332-378

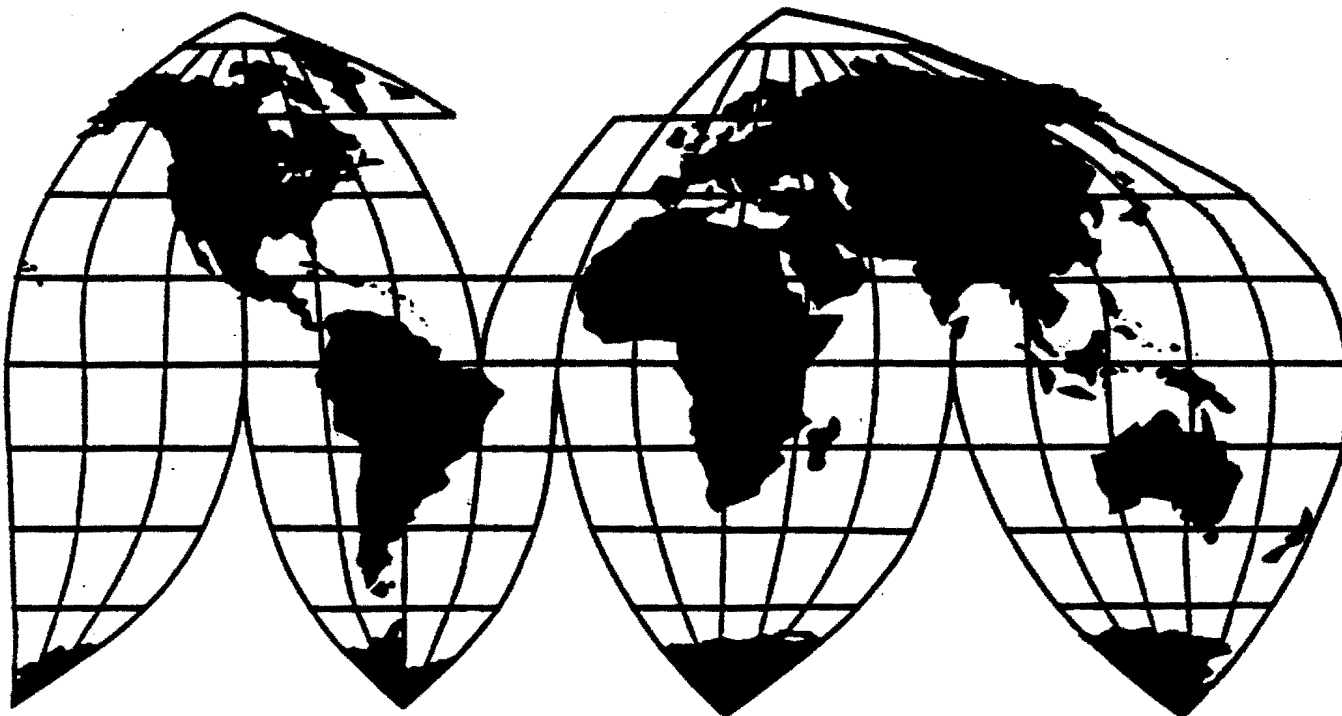
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Fresh and Processed Potatoes: Competitive Conditions Affecting the U.S. and Canadian Industries



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PREFACE

On January 29, 1997, at the request of the United States Trade Representative (USTR),¹ and in accordance with section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)), the U.S. International Trade Commission (Commission) instituted investigation No. 332-378, *Fresh and Processed Potatoes: Competitive Conditions Affecting the U.S. and Canadian Industries*, for the purpose of providing a report on the conditions of competition between the United States and Canada in potatoes and potato products. The USTR reported that the U.S. fresh and processed potato industries have expressed concerns about increased imports from Canada and believe that these imports may be benefiting from Canadian Government policies and industry pricing practices. USTR requested that the Commission report on factors affecting trade between the United States and Canada in (1) fresh table stock potatoes, (2) seed potatoes, (3) raw potatoes for processing, and (4) frozen processed potatoes.

Public notice of the institution of the investigation and hearing was posted in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, in the *Federal Register* of February 5, 1997 (97 F.R. 5484), and on the Commission's Internet site (www.usitc.gov).² A public hearing on the investigation was held on April 30, 1997, in Washington, DC.³

The information presented in this report was obtained from a number of sources, including: the Commission's files; the public hearing; fieldwork, which included visits with U.S. and Canadian growers and processors and their respective associations, importers, exporters, and processors of potatoes and frozen processed potato products in the United States and in Canada, as well as Federal, State, and Provincial Government agencies; and academic researchers. The Commission was requested to report the results of the investigation as soon as possible, but no later than July 15, 1997.⁴

¹ The request from the United States Trade Representative is reproduced in appendix A.

² A copy of the Commission's notice of institution and hearing, together with a copy of the *Federal Register* notice, is included in appendix B.

³ A list of witnesses who testified at the hearing is included in appendix C.

⁴ The information and analysis provided in this report are for the purpose of this report only. Nothing in this report should be construed to indicate how the Commission would find in an investigation conducted under statutory authority covering the same or similar subject matter.

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Abbreviations and Acronyms

AAFC	— Agriculture and Agri-Food Canada
AAFRD	— Alberta Agriculture, Food and Rural Development
ACOA	— Atlantic Canada Opportunities Agency (Federal Canada)
ADB	— Agriculture Development Board (New Brunswick)
ADC	— Agricultural Development Corp. (Alberta)
ADF	— Agriculture Development Fund (Sashatchewan)
ADT	— Canadian Antidumping Tribunal
AFFB	— Alberta Farm Fuel Benefit
AFSC	— Agricultural Financial Service Corp. (Alberta)
AMS	— Agricultural Marketing Service
APCA	— Advance Payments for Crops Act
ARFAA	— Atlantic Region Freight Assistance Act of 1969
ARIF	— Agricultural Research Investment Fund (P.E.I.)
BRR	— Bacterial ring rot
CAIP	— Canada Agri-Infrastructure Program
CARD	— Canadian Adaptation and Rural Development Fund
CBSC	— Canada Business Service Centre
CFBMP	— Canadian Farm Business Management Program
CFEP	— Cash Flow Enhancement Program
CFIA	— Canadian Food Inspection Agency
CITT	— Canadian International Trade Tribunal
CMAAS	— Canada-Manitoba Agreement on Agricultural Sustainability
DFAIT	— Department of Foreign Affairs and International Trade (Federal)
EEC	— European Economic Community
EU	— European Union
FAS	— Foreign Agricultural Service, U.S. Department of Agriculture
FCC	— Farm Credit Corporation (Federal Canada)
FIDP	— Canada/Alberta Agreement on the Farm Income Disaster Program
FIMCLA	— Farm Improvement and Marketing Cooperative Loan Act
FLIP	— Farm Land Identification Program (New Brunswick)
FSA	— Farm Service Agency
FTC	— Food Technology Centre (P.E.I.)
GATT	— General Agreement on Tariffs and Trade
GRIP	— Gross Revenue Insurance Program
HRDC	— Human Resources Development Canada
IREF	— Irrigation Rehabilitation Endowment Fund (Alberta)
IRP	— Irrigation Rehabilitation Program (Alberta)
LTL	— Larger than Largest
MACC	— Manitoba Agricultural Credit Corporation
MCDC	— Manitoba Crop Diversification Centre
MEDT	— Ministry of Economic Development and Tourism (P.E.I.)
MII	— Matching Investment Initiative

Abbreviations and Acronyms—*Continued*

MRFAA	— Maritime Freight Rates Act of 1927
N.B.	— New Brunswick
NBAC	— New Brunswick Agricultural Council
NISA	— National Income Stabilization Account
NPC	— National Potato Council
NPPB	— National Potato Promotion Board
OMAFRA	— Ontario Ministry of Agriculture, Food, and Rural Affairs
P.E.I.	— Prince Edward Island
PAMWI	— Canada/Manitoba Partnership Agreement on Municipal Water Infrastructure
PARD	— Canada Saskatchewan Partnership Agreement Rural on Development
PAWBED	— Canada/Saskatchewan Agreement on Water-Based Economic Development
PEMD	— Program for Export Market Development
PFRA	— Prairie Farm Rehabilitation Administration (Federal Canada)
PPR	— Processed Products Regulations
PRDA	— Canada/P.E.I. Corporation Agreement on Primary Resource Development
PSTV	— Potato Spindle Tuber Viroid
REDA	— Regional Economic Development Agreement (Federal Canada/P.E.I.)
Sask Water	— Saskatchewan Water Corp.
SIBED	— Canada/Saskatchewan Economic and Regional Development Subsidiary Agreement on Irrigation-Based Economic Development
SIDC	— Saskatchewan Irrigation Development Centre
USDA	— U.S. Department of Agriculture
WD	— Western Economic Diversification Canada
WGTA	— Western Grain Transportation Act
WGTAf	— Western Grain Transportation Adjustment Fund
WGTPP	— Western Grain Transition Payments Program
WMSIP	— Water Management Systems Improvement Program (Alberta)
WTO	— World Trade Organization

Executive Summary

The Commission instituted this investigation on January 29, 1997, following receipt of a request from the Office of the United States Trade Representative. The investigation was conducted under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)) to investigate the competitive conditions affecting the U.S. and Canadian fresh and processed potato industries. More specifically, the Commission report includes information on factors affecting trade between the United States and Canada in fresh table stock potatoes, seed potatoes, raw potatoes for processing, and frozen potato products.

Potatoes are the underground tubers of a succulent, nonwoody, temperate zone plant. Potato tubers are produced in numerous sizes, shapes, and skin colors, and are often grouped by type (russet, red, white, or yellow-flesh) or by variety (e.g., Russet Burbank, Centennial Russet, Superior, or Yukon Gold). Potatoes or parts of potatoes used to produce new plants are called seed potatoes. Potatoes sold for fresh-market use are termed table stock. Potatoes used for making frozen french fries and other frozen potato products are termed raw potatoes for processing. Potatoes used for making potato chips or other potato-based snack foods are called chipping potatoes.

Potatoes are commercially grown in nearly every State, with the bulk of production accounted for by about 20 States. In general, fresh potato production is often described as 'fall-harvested' or 'summer-harvested,' depending upon the time of year harvest takes place. In recent years, an estimated 90 percent annually of the total U.S. potato crop was fall-harvested. Summer-harvested production data generally includes production harvested during the winter, spring, and summer months. Potato production is also described in terms of regions where the potatoes are grown. In recent years, an estimated 65 percent of annual production was accounted for by growers in the Western region, followed by 22 percent from growers in the North Central region. An estimated 7 percent of the total volume of U.S. production was accounted for by States in the Northeastern United States region, with the remainder of production distributed throughout a number of other States.

U.S. potato industry representatives have expressed concerns about increased imports of fresh and frozen potato products from Canada. Concerns have also been raised about the level and type of assistance provided to fresh potato production and processing in Canada by the Canadian Federal and Provincial Governments.

The United States is a larger global exporter of potatoes and potato products than Canada, with Japan being our primary market, but significant quantities of U.S.-grown potatoes are also exported to Canada. Virtually all U.S. imports of fresh and processed potato products are supplied by Canada, despite the fact that Canada accounts for only a small share of global potato production. U.S. global exports are sometimes greater than total U.S. imports. Total U.S. consumption of potatoes has been increasing. However, in recent years consumers have been demanding potatoes in different product forms. Until recently, consumption of fresh

potatoes was in a long term decline, but has been more than offset by increased consumption of processed (principally frozen) potato products.

Canadian production and marketing of potatoes are believed to have followed trends similar to those in the United States, with production in Eastern Canada still the largest by far, but with growing production taking place in the Prairie Provinces (Alberta, Saskatchewan, and Manitoba) along with increased production of frozen products (especially in New Brunswick and Prince Edward Island (P.E.I.)). Overall Canadian production is an estimated one-fifth as large as that in the United States. Overall per capita consumption of potatoes in Canada is at a higher level than that in the United States, although data on the respective amounts of products consumed are not available.

A tabular profile of the U.S. and Canadian industries and trade is provided at the end of this summary. The principal conclusions of the study are highlighted below:

Background

- Potatoes are grown commercially throughout the United States, with the commercial production of individual types and varieties geographically concentrated in the Western, North Central, and Northeastern regions. Potatoes are harvested throughout the year, with the bulk of production harvested in the fall.
- There are several different types and varieties of potatoes, with consumer preferences for each. Russet varieties are preferred in most areas of the United States for use as table stock. In the Northeastern United States, round white varieties are often preferred, and in the Midwest, red varieties are the potato of preference. Frozen french fries are made almost exclusively from Russet varieties. Certain varieties of round white potatoes are used predominantly in making potato chips.
- Consumption of table stock potatoes in the United States has stabilized or increased only slightly in recent years after a long term decline. Consumption of frozen processed potato products, however, has been growing, albeit at a much lower rate in recent years than during the period 1960-90.
- U.S. producers of table stock potatoes in the Northeast have been concerned about imports of Canadian potatoes into the United States since the early 1980s. Recently, increased imports of frozen french fries from Canada have concerned U.S. producers of frozen processed potato products and growers of raw potatoes for processing throughout the United States.

Production

- Entry into the potato industry is very expensive at both the grower and processor level. At the grower level, potato production requires machinery which has no other uses. It also requires specific skill and knowledge applicable only to potatoes, as well as a crop rotation in which potatoes are grown preferably only 1 year out of 3 or 4 years on the same field. At the processor level, entry involves the purchase and operation of expensive machinery together with the need to contract for a suitable supply of raw potatoes for processing.
- There are no apparent, large, cost-of-production advantages between the United States and Canada in the growing of potatoes or in the production of frozen processed potato products. Growers in both countries raise many of the same varieties of potatoes in rotation with similar crops. Some processors in each country own and operate facilities in the other country using much of the same technology and equipment.
- Average prices for potatoes for all uses received by U.S. growers during the last 5 marketing years (1991/92-1995/96) rose by 36 percent. However, there was substantial variation by region as growers in the Western and North Central regions experienced increasing prices in both nominal and real or deflated terms while Northeastern grower prices fell, or increased slightly faster than producer price inflation.
- The major U.S. growing areas for potatoes include States in the Western, North Central, and Northeastern regions. In the past five years, fresh potato production has been increasing in the Western region and declining in the Northeastern region, but increasing in Maine. Canadian production is largest in the East (New Brunswick and P.E.I.), but has been rapidly growing in Manitoba. U.S. frozen potato product production is centered in the Western States, with some additional production in the North Central States and in Maine. Canadian frozen product production is also centered in the East, with growing output in Manitoba.
- Much of Canada's output of table stock potatoes and frozen processed potato products is produced in New Brunswick and P.E.I., from which shippers have a transportation cost advantage over the large Western U.S.-producing region in certain Northeastern U.S. markets. In these same markets, much of the potatoes delivered are grown in the Western United States.
- Most U.S. and Canadian processed potato producers (freezers and chippers) acquire the bulk of their raw product inputs through contracts with growers. Most table stock production is not grown under contract. In the Northeastern United States, most growers are also shippers; in the Western United States, most fresh potatoes are handled by brokers or independent shippers.

- The U.S. and Canadian frozen processed potato products industries are dominated by a few large multinational companies. Their primary product is frozen french fries, for which the primary purchasers are the large-volume quick service restaurant chains. Sales to these outlets are mostly through contracts for which price is a primary consideration. There were 11 U.S. frozen potato processing companies, operating 29 plants in the United States and 2 in Canada, and 4 Canadian companies, operating 6 plants in Canada and 3 in the United States, in 1996.

Trade

- U.S. imports of fresh potatoes and frozen processed potato products are almost entirely from Canada. Such imports have been increasing for a number of years, but they still supply only 6 percent of U.S. consumption and are smaller than U.S. exports.
- U.S. imports of fresh potatoes primarily enter the Northeastern region (especially Maine) and primarily affect the growers in that area, and Northeastern U.S. markets.
- U.S. seed potatoes, table stock potatoes, raw potatoes for processing, and frozen processed potato products are believed to compete directly in some situations with comparable potatoes and potato products from Canada.
- U.S. exports of fresh potatoes from Washington, Oregon, and California into British Columbia face a long standing antidumping duty order, which results in U.S. exports being sold at higher prices than potatoes grown in British Columbia.
- Canadian regulations require that containers holding food products, such as frozen french fries, be packed and labeled in metric increments of 500 grams or more. This regulation was modified in December 1995 to require that only the outside of the container be so labeled. Following this regulatory modification, U.S. exports of french fries increased substantially in 1996.
- Canadian regulations restrict imports of bulk shipments of fresh potatoes for processing or repacking. These regulations also apply to inter-Provincial shipments within Canada. To import bulk shipments of fresh potatoes, processors and repackers must obtain a ministerial exemption, which is generally granted for such imports, but only after Canadian officials have determined that a shortage of Canadian potatoes exists. The United States maintains no such restrictions.

- Duties on potatoes and potato products imported into the United States from Canada and into Canada from the United States were reduced under the U.S.-Canada Free Trade Agreement. Most products are currently free of duty and the low remaining duties will be removed in 1998.
- Terms of sale for fresh potatoes and processed potato products may differ somewhat within the United States and between the United States and Canada. Fresh potato prices usually are quoted on a free-on-board (f.o.b.) origin or a delivered basis, with payment specified within a certain period. Sales from Maine into the Northeastern U.S. market mostly are sold through brokers or dealers. Prices for processed potato products generally are quoted on an f.o.b. origin basis, with payment due within a specified time, typically 15-30 days. A discount is usually given for early payment, typically 1-2 percent for payment within 10-15 days. Neither country appears to hold a significant competitive advantage because of terms of sale. Rather, the final cost of the product to the buyer is the most important factor.
- Russet Burbank potatoes from P.E.I. consistently were priced lower than Russet Burbank potatoes from Idaho in the Boston and New York City markets during January 1994-April 1997. During the same period and in the same markets, round white potatoes from Maine were priced lower than round white potatoes from P.E.I., although the differential narrowed during the period until Maine potatoes were priced higher than P.E.I. potatoes in Boston during January-April 1997. Prices generally have been less of a competitive factor for frozen potato products at the retail level as compared with fresh potatoes, possibly because of price stability resulting from annual contracts between processors and quick service restaurants, the importance of product specifications, and product differentiation.
- Nominal and real Canadian/U.S. exchange rates have increased since 1988, by about 11 percent and 10 percent, respectively, thereby weakening the Canadian dollar relative to the U.S. dollar in both nominal and real terms. Canadian inflation appears not to have offset nominal rate increases. Thus, it appears that exchange rate movements have accounted for some of the Canadian price advantages over comparable U.S. potatoes in Northeast U.S. markets.

Government Assistance

- U.S. Federal and State Government assistance to the potato growing and processing industries consists of crop insurance; disaster assistance; credit assistance, including loans and loan guarantees provided through the U.S. Department of Agriculture, business loan guarantees, and community grants for infrastructure; research and extension; export promotion; U.S. Government purchases of potatoes and potato products for school lunch and other food programs; and past development of irrigation projects, which provide current benefits.

- The Canadian Federal and Provincial Governments have facilitated the development of potato-growing and processing industries in Canada through a variety of programs, including low- or zero-interest loans to processing and packing operations, financial assistance for construction of wastewater recovery facilities, grants or zero-interest loans to build potato storage facilities, low-cost land leasing arrangements, and development of irrigation facilities.
- Canadian farmers, including potato growers, are eligible for a number of Federal and Provincial financial assistance programs such as direct loan and loan guarantee programs, as well as crop and disaster insurance. The National Income Stabilization Account additionally provides whole farm income insurance to participating Canadian growers. These programs provide capital for the high start-up costs associated with potato production, as well as reduce the risks associated with agricultural production.
- Owing to the general nature of many government assistance programs both in the United States and in Canada, it is not possible to determine an aggregate numerical level of support for each country specific to potato production. The Canadian programs have had the goal of diversifying Canadian agriculture throughout the Provinces and have helped to develop a potato-growing and processing infrastructure that can serve both the U.S. and Canadian markets.

Econometric Model Results

- Commission staff developed an econometric model to illustrate the competitive conditions existing in and between the U.S. fresh table stock and frozen french fry potato markets. Simulation results from the econometric model suggest that increasing U.S. imports of fresh table stock potatoes appear to have little effect on U.S. production and prices nationally, but do appear to directly displace fresh table stock potatoes produced and consumed in the Northeastern United States. These results are supported by data and evidence which show that nearly 60 percent of Canadian potato acreage and production are in Eastern Canada, and that Canadian fresh potatoes captured 31 percent of the 1996 share of the Boston market's fresh arrivals. U.S. producers supplied nearly 70 percent, with the largest shares captured by Idaho and Maine.
- Simulation results from the econometric model suggest that variations in U.S. prices and quantities of fresh table stock potatoes influence the traded volumes of fresh table stock potatoes to a greater proportional degree in the Northeastern U.S. markets than in other U.S. markets. These results support testimony and record evidence from Northeast U.S. growers and lawmakers suggesting that effects of variation in fresh prices and fresh quantities are more directly felt in Northeast markets than in other major U.S. fall production areas.

- Simulation results from the econometric model suggest that price and quantity movements in the U.S. fresh table stock and frozen french fry markets have some modest influences on each other. The model results showing modest degrees of fresh table stock/frozen french fry market interaction may be explained by U.S. processor evidence suggesting that only minor portions of fresh potatoes for processing are obtained from the fresh noncontracted markets, and that these fresh noncontracted markets supply processors only residually.

Executive Summary Table 1
Potatoes: U.S. consumption and import penetration, 1992-1996

Item	1992	1993	1994	1995	1996	Change 1996 over 1992 Percent
Frozen potato products:						
U.S. consumption ¹ (1,000 lbs)	6,848,012	7,679,919	8,036,890	8,448,615	8,579,426	25
Ratio of total U.S. imports to consumption (percent) . . .	2.86	3.77	3.84	4.19	5.28	85
Ratio of U.S. imports from Canada to consumption (percent)	2.84	3.76	3.84	4.18	5.27	86
Table stock potatoes:						
U.S. consumption (1,000 lbs.)	12,903,598	13,187,260	12,699,662	13,779,347	13,011,237	1
Ratio of total U.S. imports to consumption (percent) . . .	2.12	4.11	3.20	3.33	5.31	150
Ratio of U.S. imports from Canada to consumption (percent)	2.12	4.10	3.20	3.33	5.31	150
Seed potatoes:						
U.S. consumption (1,000 lbs.)	2,327,837	2,520,744	2,655,647	2,682,922	2,847,227	22
Ratio of total U.S. imports to consumption (percent) . . .	5.50	6.79	8.92	8.42	10.39	89
Ratio of U.S. imports from Canada to consumption (percent)	5.50	6.78	8.92	8.42	10.38	89

¹ Based on production data from American Frozen Food Institute.

Source: Based on production data taken from U.S. Department of Agriculture, Economic Research Service, *Potato Facts*, various issues, except as noted. Import and export data compiled from official statistics of the U.S. Department of Commerce.

Executive Summary Table 2

Potatoes: U.S. and Canadian production of fresh potatoes and frozen french fries, 1992-96

Production	1992	1993	1994	1995	1996	Change 1996 over 1992
						<i>Percent</i>
Fresh potatoes (1,000 lb.):						
United States						
Seasons:						
Fall	37,173,000	37,952,500	38,593,500	41,964,500	40,300,900	8
Winter	260,900	299,800	255,200	237,200	247,300	(5)
Spring	2,063,600	2,153,500	1,965,400	2,264,600	2,019,300	(2)
Summer	2,264,700	2,130,900	2,055,200	2,239,100	1,793,100	(21)
Total	41,762,200	42,536,700	42,869,300	46,705,400	44,360,600	6
United States						
Regions:						
Western	26,945,300	26,462,500	28,831,200	30,859,200	28,682,700	6
North Central	9,275,200	9,398,500	8,190,700	9,923,300	9,879,700	7
Northeastern	3,017,300	3,909,000	3,368,100	3,154,000	3,073,800	2
Other	2,524,400	2,766,700	2,479,300	2,768,900	2,724,400	8
Total	41,762,200	42,536,700	42,869,300	46,705,400	44,360,600	6
Canada						
Regions:						
Eastern	5,024,300	4,566,200	4,618,000	5,138,000	5,148,200	2
Central	2,077,400	1,779,300	2,443,200	2,148,200	2,468,700	19
Western	851,200	1,074,800	1,049,600	1,146,600	1,011,000	19
Total	7,952,900	7,420,300	8,110,800	8,433,700	8,627,900	8
Frozen french fries:						
United States	5,533,254	5,786,395	6,237,047	6,782,243	7,203,402	30
Canada	573,201	826,732	914,917	1,332,772	1,433,003	150

Source: U.S. production of fresh potatoes compiled from official statistics of the U.S. Department of Agriculture; Canadian production compiled from official data of Statistics Canada, StatsCan Online data base; U.S. frozen french fry production compiled from statistics of the American Frozen Foods Institute; and Canadian frozen french fry production compiled from data of the U.S. Department of Agriculture, Foreign Agricultural Service.

Executive Summary Table 3

Potatoes: U.S. and Canadian area planted, 1992-96 and number of U.S. and Canadian farms, 1981/82, 1986/87, and 1991/92

Item	1992	1993	1994	1995	1996	Change 1996 over 1992
Area planted: (1,000 acres):						Percent
United States						
Seasons:						
Fall	1,203.2	1,151.7	1,189.9	1,213.0	1,224.1	2
Winter	13.2	13.4	14.3	12.9	13.3	1
Spring	90.2	85.3	86.9	91.6	88.3	(2)
Summer	100.9	88.9	94.1	95.8	72.5	(28)
Total	1,407.5	1,339.3	1,385.2	1,413.3	1,398.2	(1)
United States						
Regions:						
Western	739.4	698.3	738.0	771.5	752.9	(2)
North Central	395.0	377.6	380.3	378.5	385.2	(2)
Northeastern	140.0	138.1	137.3	133.2	131.9	(6)
Other	133.1	125.3	129.6	130.1	128.2	(4)
Total	1,407.5	1,339.3	1,385.2	1,413.3	1,398.2	(1)
Canada						
Regions:						
Eastern	184.5	185.7	196.8	215.0	214.1	16
Central	87.3	86.6	94.4	103.4	112.3	29
Western	34.6	35.8	38.2	38.9	39.5	14
Total	306.4	308.6	328.4	357.3	365.9	19
	1981/82		1986/87		1991/92	
	Farms	1,000 acres	Farms	1,000 acres	Farms	1,000 acres
United States	26,928	1,268.2	14,782	1,310.0	14,502	1,351.1
Canada	7,139	272.7	4,885	275.6	4,692	302.4

Source: Area planted compiled from official statistics of the U.S. Department of Agriculture and Statistics Canada; number of farms and acres compiled from Census of Agriculture and official data of Statistics Canada, StatsCan Online database.

Executive Summary Table 4

Potatoes: U.S. and Canadian trade statistics, 1992-1996

Item	1992	1993	1994	1995	1996	Change 1996 over 1992
U.S. imports of frozen, processed potatoes from:	Quantity (1,000 pounds)					Percent
Canada	194,822	288,594	308,436	353,493	451,902	132
All other	743	795	550	584	797	7
Total	195,565	289,389	308,986	354,077	452,699	131
U.S. imports of table stock potatoes from:						
Canada	273,288	541,293	405,849	458,832	690,761	153
All other	224	84	46	89	0	(100)
Total	273,512	541,377	405,895	458,921	690,761	153
U.S. imports of seed potatoes from:						
Canada	127,926	170,840	236,789	225,881	295,556	131
All other	144	359	120	59	139	(3)
Total	128,070	171,199	236,909	225,940	295,695	131
U.S. exports of frozen, processed potatoes to:						
Canada	5,181	6,135	6,696	6,815	11,466	121
All other	140,814	156,109	200,249	263,556	266,415	89
Total	145,995	162,244	206,945	270,371	277,881	90
U.S. exports of table stock potatoes to:						
Canada	59,522	68,395	75,662	67,823	64,811	9
All other	5,692	7,222	10,771	10,651	13,613	139
Total	65,214	75,617	86,433	78,474	78,424	20
U.S. exports of seed potatoes to:						
Canada	2,957	1,980	2,490	2,742	3,192	8
All other	576	1,375	1,072	1,876	2,276	295
Total	3,533	3,355	3,562	4,618	5,468	55
Canadian imports of frozen, processed potatoes from:						
United States	11,734	14,709	16,231	16,629	28,730	145
All other	119	134	212	229	240	102
Total	11,853	14,843	16,443	16,858	28,970	144
Canadian imports of table stock potatoes from:						
United States	461,033	458,917	557,956	474,018	482,960	5
All other	22	1	6	11	22	0
Total	461,055	458,918	557,962	474,029	482,982	5
Canadian imports of seed potatoes from:						
United States	32,079	22,308	24,030	29,729	29,138	(9)
All other	0	0	0	0	227	—
Total	32,079	22,308	24,030	29,729	29,365	(8)
Canadian exports of frozen, processed potatoes to:						
United States	194,864	288,534	308,348	353,418	466,791	140
All other	64,647	66,946	99,426	161,543	130,740	102
Total	259,511	355,480	407,774	514,961	597,531	130
Canadian exports of table stock potatoes to:						
United States	267,367	528,802	396,224	448,239	674,923	152
All other	169,549	288,102	149,324	272,480	115,259	(32)
Total	436,916	816,904	545,548	720,719	790,182	81
Canadian exports of seed potatoes to:						
United States	124,902	166,833	231,320	220,533	288,624	131
All other	123,142	97,106	91,451	136,242	87,781	(29)
Total	248,044	263,939	322,771	356,775	376,405	52

Executive Summary Table 4—Continued
Potatoes: U.S. and Canadian trade statistics, 1992-96

Item	1992	1993	1994	1995	1996	Change
						1996 over 1992
	Value (1,000 dollars)					Percent
U.S. imports of frozen, processed potatoes from:	1992	1993	1994	1995	1996	
Canada	47,624	71,922	78,182	98,231	125,823	164
All other	286	262	286	377	484	69
Total	47,910	72,184	78,468	98,608	126,307	164
U.S. imports of table stock potatoes from:						
Canada	19,710	45,475	42,619	39,112	63,039	220
All other	74	18	13	46	0	(100)
Total	19,784	45,493	42,632	39,158	63,039	219
U.S. imports of seed potatoes from:						
Canada	8,231	11,963	21,997	17,462	26,907	227
All other	57	97	31	25	41	(28)
Total	8,288	12,060	22,028	17,487	26,948	225
U.S. exports of frozen, processed potatoes to:						
Canada	5,181	6,135	6,696	6,815	11,466	121
All other	140,814	156,109	200,249	263,556	266,415	89
Total	145,995	162,244	206,945	270,371	277,881	90
U.S. exports of table stock potatoes to:						
Canada	59,522	68,395	75,662	67,823	64,811	9
All other	5,692	7,222	10,771	10,651	13,613	139
Total	65,214	75,617	86,433	78,474	78,424	20
U.S. exports of seed potatoes to:						
Canada	2,957	1,980	2,490	2,742	3,192	8
All other	576	1,375	1,072	1,876	2,276	295
Total	3,533	3,355	3,562	4,618	5,468	55
Canadian imports of frozen, processed potatoes from:						
United States.	4,963	6,256	7,208	7,224	11,555	133
All other	69	79	125	151	178	158
Total	5,032	6,335	7,333	7,375	11,733	133
Canadian imports of table stock potatoes from:						
United States.	51,766	63,943	77,386	70,088	66,517	28
All other	3	0	4	7	11	267
Total	51,769	63,943	77,390	70,095	66,528	29
Canadian imports of seed potatoes from:						
United States.	2,680	1,856	2,689	2,939	3,380	26
All other	0	0	0	0	8	—
Total	2,680	1,856	2,689	2,939	3,388	26
Canadian exports of frozen, processed potatoes to:						
United States.	49,011	78,343	79,981	100,133	131,903	169
All other	22,190	24,426	33,557	53,569	45,088	103
Total	71,201	102,769	113,538	153,702	176,991	149
Canadian exports of table stock potatoes to:						
United States.	20,893	50,600	43,965	40,705	66,197	217
All other	20,140	24,414	16,758	28,885	10,381	(48)
Total	41,033	75,014	60,723	69,590	76,578	87
Canadian exports of seed potatoes to:						
United States.	8,699	13,295	23,055	18,874	28,694	230
All other	15,173	10,796	8,776	19,198	8,649	(43)
Total	23,872	24,091	31,831	38,072	37,343	56

Source: U.S. imports and exports compiled from official statistics of the U.S. Department of Commerce; Canadian imports/exports compiled from official data of Statistics Canada, StatsCan Online database.

CHAPTER 1

Introduction

The Office of the United States Trade Representative (USTR), in a letter received at the U.S. International Trade Commission (Commission) on January 15, 1997, requested that the Commission institute an investigation for the purpose of providing a report on factors affecting trade between the United States and Canada in fresh table stock potatoes, seed potatoes, raw potatoes for processing, and frozen processed potato products. The USTR requested that, to the greatest extent possible, the following information should be provided for each of the four product areas:

1. Production and/or processing volumes and trends in Canada and in the United States over the past 5 years;
2. U.S. imports from Canada over the last 5 years, including market share of Canadian imports, with particular emphasis on any increases in U.S. imports from Canada;
3. Consumption trends for raw and finished processed potato products in Canada and the United States over the last 5 years;
4. Federal, Provincial, and municipal aid programs for potato growers and processors in Canada, including aid for the construction of storage, water treatment, and processing facilities, together with a compilation of existing literature and industry views on the impact of such aid on the competitiveness of Canadian producers;
5. For the last 3 years, prices of Canadian products in Canada and in U.S. markets, together with prices of U.S. products in U.S. markets;
6. The effect of exchange rates and terms of sale factors on Canadian prices;
7. The cost of production in Canada and in the United States, including raw material costs for processed products, over the last 3 years;

The USTR requested that the report focus on the most recent 5-year period and that, wherever possible, the Commission supplement the national data presented with regional and/or seasonal highlights. The USTR also requested that the Commission include an analysis of any other factors affecting the conditions of competition between the U.S. and Canadian fresh potato and processed potato industries. Finally, the USTR requested that the Commission report the results of its investigation on an expedited basis, but not later than 6 months from receipt of the request letter, or by July 15, 1997. On May 5, 1997, the USTR also requested that the Commission provide information on the comparative market access factors affecting U.S. and Canadian exports of potatoes and potato products to Mexico.

Background

Production and Trade Trends

The United States is a major global producer of potatoes, ranking fourth in world fresh potato production and accounting for about 7 percent of world production in 1996 (table 1-1). By contrast, Canada is a much smaller global producer, ranking 14th in world production of potatoes and accounting for about 1 percent of the world share of production in 1996. The share of world production for both countries has remained constant over the 1992-96 period.

World exports of fresh potatoes follow the same trend as fresh potato production for both the United States and Canada. Over the 1992-95 period,¹ the U. S. share of total world exports of fresh potatoes remained relatively constant at about 7 percent, while Canada's share remained steady at about 1 percent. The United States exported \$84 million of fresh potatoes (including seed and table stock) and \$278 million of frozen processed potatoes in 1996. The Canadian market absorbed about 81 and 4 percent, respectively, of those exports. In 1996, Canada exported \$114 million of fresh potatoes (seed and table stock) and \$177 million of frozen processed potatoes. The U.S. market received about 83 and 75 percent, respectively, of those exports. Although neither country supplies a substantial share of world potato exports, almost 100 percent of total U.S. imports of fresh potatoes (seed and table stock) and frozen processed potatoes in 1996 originated in Canada. Similarly, almost 100 percent of total Canadian imports of fresh and frozen processed potatoes in 1996 originated in the United States.

The U.S. domestic potato industry is a capital-intensive, highly competitive industry that has experienced a number of changes in industry structure during the past few decades. Principal changes include substantial increases both in the amount of potatoes processed and in the amount of potatoes grown and processed in regions outside of the Northeastern United States,² together with decreases in the amount of planted acreage in the Northeastern region. The size of the industry has changed, with the overall number of potato growers throughout the United States falling in recent years but the individual size of the remaining farms nearly doubling.³ Total U.S. harvested acreage has fluctuated somewhat since 1992, with fall-harvested acreage trending upward and harvested acreage in all other seasons trending downward. Acreage harvested in the Western U.S. region has risen in recent years, while acreage harvested in all other regions and the United States overall has trended downward. Additionally, markets in the Eastern United States have been supplied with increased amounts of fresh potatoes from

¹ The most recent years for which data are available.

² For the purpose of this report, U.S. production regions, together with the respective states included therein, have been defined as follows: Northeastern-CT, MA, ME, NH, NJ, NY, PA, RI, and VT; North Central-IA, IL, IN, MI, MN, NE, ND, OH, SD, and WI; and, Western-CA, CO, ID, MT, NV, OR, UT, WA, and WY.

³ Based on the amount of harvested acreage reported in U.S. Department of Commerce, Bureau of the Census, *U.S. Census of Agriculture*, 1982: vol. 1, Part 51, AC82-A-51, Oct. 1984; 1987: vol. 1, Part 51, AC87-A-51, Nov. 1989; and, 1992: vol. 1, Part 51, AC92-A-51, Oct. 1994.

Table 1-1
Potatoes: World production,¹ 1992-96

Country	1992	1993	1994	1995	1996	Change 1996 over 1992
	Quantity (In millions of pounds) ²					Percent
China	83,369	101,255	107,481	100,841	101,458	22
Russian Federation .	84,479	82,981	74,556	87,940	91,466	8
Poland	51,547	79,940	50,819	54,860	52,896	3
United States	42,524	42,863	46,780	44,349	45,843	8
India ³	36,119	33,568	38,333	39,545	39,545	9
Ukraine	44,690	46,304	35,489	32,463	35,264	-21
Germany ³	24,812	27,871	23,440	22,881	22,881	-8
Belarus ³	19,801	25,663	18,163	18,888	18,888	-5
Netherlands ³	16,740	16,968	15,922	16,228	16,228	-3
United Kingdom ³ ...	17,196	15,571	14,206	13,229	13,229	-23
France	14,721	12,915	12,042	12,681	13,224	-10
Turkey ³	10,138	10,249	9,587	10,469	10,469	3
Spain	11,418	8,422	8,507	9,243	8,816	-23
Canada ³	7,951	7,308	8,109	8,319	8,319	5
All other	146,218	153,543	143,596	147,652	148,868	2
Total	611,722	665,422	607,028	619,588	627,394	3

¹ Includes fresh table stock, seed potatoes, and raw product for processing.

² Data converted from metric tons by multiplying by 2.204 pounds per kilogram.

³ Data are estimated for 1996 based on 1995 levels.

Source: Food and Agriculture Organization of the United Nations, Rome, Italy, 1996.

production areas in the Western United States as a result of changes in consumer demand toward greater consumption of russet potatoes. There has been a shift throughout the United States in consumer demand away from round white potatoes to greater consumption of russet-type potatoes. On a regional basis, this has negatively affected production in the Northeastern States, where an estimated 30 percent or less of production is russet-type potatoes, as compared with production in the Western States of more than 90 percent russets.

U.S. Industry Concerns

U.S. potato growers and processors have expressed concerns about imports of fresh potatoes and frozen potato products from Canada for many years. According to industry sources,⁴ such concerns were first publicized in the late 1970s and early 1980s. Such concerns have centered upon the alleged expansion of seed, table stock, and processed potato product exports from

⁴ See transcript of the hearing, pp. 43-46.

Canada to U.S. markets, as well as Western U.S.-grown potatoes being denied access to markets in Western Canada.⁵ More specifically, U.S. potato industry officials have stated that increased imports of fresh potatoes from Canada since 1992 have disrupted the U.S. industry and market in several ways: (1) they allege that increasing sales of low-priced Canadian potatoes to U.S. processors and sales in the U.S. open market have resulted in U.S. product displacement and increased sales of U.S.-grown potatoes at "distressed" prices; (2) that there has been a shift in U.S. processing capacity to Canada, resulting in a lowering of long term demand for domestically-grown processing potatoes in the United States; (3) that there has been greater accessibility to U.S. markets for Canadian-grown potatoes under the U.S.-Canada Free Trade Agreement, but continued restricted access to Canadian markets for U.S.-grown potatoes; and, (4) that the availability of Canadian Federal and Provincial Government assistance to Canadian growers affects their supply capabilities, as compared with U.S. Government assistance.⁶ The following tabulation summarizes the concerns of the domestic industries.

Producers	Concerns
Western U.S. growers	<p>British Columbia antidumping duties</p> <p>Imports of Canadian frozen french fries into the United States</p> <p>Imports of Canadian table stock potatoes into Northeast U.S. markets (and ripple effects of declining table stock & processing sales)</p> <p>Recently completed state-of-the-art processing and raw potatoes storage facilities in Prince Edward Island.</p> <p>Possible expansion of New Brunswick land available for increased potato plantings.</p> <p>Possible expansion of Canadian frozen french fry operations into Manitoba and Saskatchewan</p> <p>Purchase of Ore-Ida food service operations by McCain (and resulting uncertainty for growers of future raw product needs)</p> <p>Restrictions on sale of U.S. product to Canada:</p> <ul style="list-style-type: none"> Provincial marketing boards Bilingual, metric, and other packaging regulations Retail pack size restrictions Bulk easement restrictions Prohibition of consignment sales

⁵ Ibid.

⁶ Ibid.

Producers	Concerns
North Central U.S. growers	<p>Possible expansion of Canadian frozen french fry operations into Manitoba and Saskatchewan</p> <p>Imports of Canadian frozen french fries into the United States</p> <p>Purchase of Ore-Ida food service operations by McCain (and resulting uncertainty for growers of future raw product needs)</p> <p>Start-up of a Dutch-owned frozen potato products producer (AVIKO) in Jamestown, ND, in 1997</p> <p>Restrictions on sale of U.S. product to Canada:</p> <ul style="list-style-type: none"> Provincial marketing boards Bilingual, metric, and other packaging regulations Retail pack size restrictions Bulk easement restrictions Prohibition of consignment sales
Northeastern U.S. growers	<p>Imports of Canadian table stock potatoes into Northeast U.S. markets with benefit of alleged subsidies</p> <p>Acceptance of U.S. seed certification practices by Canadian officials</p> <p>Restrictions on sale of U.S. product to Canada:</p> <ul style="list-style-type: none"> Provincial marketing boards Bilingual, metric, and other packaging regulations Retail pack size restrictions Bulk easement restrictions Prohibition of consignment sales
U.S. seed producers	<p>Import competition from (alleged) subsidized Canadian producers-competition in export markets, particularly Mexico</p> <p>Acceptance of U.S. seed certification practices by Canadian officials</p> <p>Short turn-around time during which Canadian officials can restrict U.S. exports</p> <p>SPS restrictions (nematode)</p> <p>Non-comparability of U.S./Canadian testing requirements</p>

Producers	Concerns
U.S. frozen potato product producers	<p>Increased imports of frozen french fries into the United States, particularly contract sales to Quick Service Restaurant chains</p> <p>Purchase of Ore-Ida by McCain (competition)</p> <p>Start-up of a Dutch-owned frozen potato products producer (AVIKO) in Jamestown, ND, in 1997</p> <p>Development of Canadian potato product infrastructure with benefit of (alleged) subsidies</p> <p>Competition in export markets, particularly Pacific Rim</p> <p>Possible expansion of Canadian frozen french fry operations into Manitoba and Saskatchewan</p>
U.S. chipping potato growers and potato chip producers	Continued availability of chipping-type potatoes from all sources (including Canada)

Since January 1, 1980, the Commission has conducted four investigations into the competitiveness of fresh and frozen potato products from Canada in U.S. markets.

- The Commission instituted a preliminary countervailing duty investigation, effective January 1, 1980, on frozen potato products imported from Canada, following receipt of a notice from the Department of Commerce that a countervailing duty investigation had been initiated. The Commission made a negative injury determination. As a result, Commerce terminated its investigation and no countervailing duty order was issued.⁷
- On April 1, 1982, following receipt of a request from the USTR, the Commission instituted an investigation under section 332(g) of the Tariff Act of 1930 for the purpose of gathering information on the competitive status of major supply regions for fall-harvested, fresh white or Irish potatoes in selected markets. The Commission transmitted its report to the USTR in August 1982.⁸
- On April 30, 1982, as a result of a petition filed by counsel on behalf of McCain Foods, Inc., the Commission instituted a preliminary antidumping investigation with respect to frozen french fried potatoes imported from Canada. This investigation also resulted in a negative Commission injury

⁷ U.S. International Trade Commission (USITC), *Frozen Potato Products From Canada* (investigation No. 701-TA-3 (preliminary)), USITC publication 1035, 1980.

⁸ USITC, *The Competitive Status of Major Supply Regions for Fall-Harvested Fresh White or Irish Potatoes in Selected Markets*, USITC publication 1282, 1982.

determination. As a result, Commerce terminated its investigation and no antidumping duty order was issued.⁹

- On February 9, 1983, following the filing of a petition by the Maine Potato Council alleging that fall-harvested, round white potatoes imported from Canada were being sold in the United States at less than fair value, the Commission and Commerce instituted antidumping investigations. The Commission made an affirmative determination in its preliminary injury investigation.¹⁰ Following preliminary and final determinations by Commerce, the Commission made a negative injury determination in its final investigation.¹¹ As a result, no antidumping duty order was issued.

Products, Industries, and Market Coverage

Products

The primary products in this investigation are fresh table stock potatoes, seed potatoes, raw potatoes for processing, and frozen processed potatoes. Also discussed in this study, although to a lesser extent, are potato chips and shoestring potatoes, dehydrated potato products (including starch and flour), and canned potatoes and other canned products, since all of these products are ultimately derived from fresh or processed potatoes.

As used in this report, the term 'fresh potatoes' includes table stock potatoes, seed potatoes, and raw potatoes for processing. 'Table stock potatoes' are those that are sold into the fresh market for food use, in contrast to those that are used for seed or are processed. 'Seed potatoes' are used for planting, whether or not they are certified seed potatoes. 'Raw potatoes for processing' (also called 'raw product') and 'chippers' or 'chipping potatoes' are those potatoes that are sold for processing use.

The potato (*Solanum tuberosum* L.) is a member of the nightshade family, closely related to tomatoes, peppers, and eggplant. The potato plant is a succulent, nonwoody, annual, temperate zone plant that grows best in world regions with cool summers. The plant develops tubers underground at the ends of horizontal stems. The tuber is an enlarged portion of the underground stem and stores surplus carbohydrates not used by the plant for other life processes. Tubers normally begin to form about 6 weeks after planting when the plant is in the early bud stage. The tuber contains groups of dormant buds together with leaf scars called 'eyebrows.' The eyebrow together with the bud is termed the 'eye.' The majority of the eyes

⁹ USITC, *Frozen French Fried Potatoes from Canada* (investigation No. 731-TA- 93 (preliminary)), USITC publication 1259, 1982.

¹⁰ USITC, *Certain Fresh Potatoes from Canada* (investigation No. 731-TA- 124 (preliminary)), USITC publication 1364, 1983.

¹¹ USITC, *Fall-Harvested Round White Potatoes from Canada* (investigation No. 731-TA- 124 (final)), USITC publication 1463, 1983.

are generally formed on the upper side of the tuber since they have a tendency to develop in the direction of light. The eyes with a piece of flesh attached are often referred to as seed pieces or seed and are used for vegetatively propagating (i.e., starting) a new crop. The period of growth from planting seed potatoes to tuber maturity and harvest ranges from about 80 to 150 days, depending upon the type and variety of potato, the production region, and the time of year when grown.

Potatoes are produced in many sizes, shapes, and colors, with white-fleshed white or Irish potatoes the type most commonly grown in the United States.¹² Potatoes are often grouped by type (e.g., russet, red, white, and yellow-flesh) and by variety (e.g., Russet Burbank, Centennial Russet, Norland, Pontiac, Superior, Norchip, and Yukon Gold). In crop year 1995/96 (Oct. 1-Sept. 30), the five most important fall-harvested varieties¹³ grown in the United States included Russet Burbank, Shepody, Snowden, Superior (round white), and Russet Norkotah. A large number of other varieties accounted for the remainder of certified seed acreage planted. The number of potato varieties currently in production is large, with plant breeders working to develop new varieties with such characteristics as different flesh colors, higher yields, improved insect and disease resistance, and better fresh market and processing qualities.

Seed Potatoes

Seed potatoes are pieces of fresh potatoes or small potatoes used to produce new plants. Most seed potatoes planted in the United States are certified seed. There is no Federal seed certification program currently in the United States similar to the one in place in Canada, although all States require that a final shipping point inspection be included and a certification tag showing seed class and size must be attached prior to sale and distribution. Approximately 20 States have seed certification programs in operation. Certification standards vary by State but are similar in content. Most State standards require that fields entered for certification be planted with seed approved by the respective State certifying agency. In addition, State standards usually stipulate the distance that certified seed fields must be from fields of other potatoes, along with requirements that samples of seed be grown during the winter in the Southern United States (sometimes referred to as a Florida test) to test whether the resulting potatoes are free from disease. Potatoes grown to be certified as seed must be inspected, both while growing and after harvest, by qualified inspectors employed by the official State certification agency. Only potatoes that meet State standards for certification as seed may be sold as certified seed. With seed potatoes, a tag is attached to each sack of potatoes with the words 'certified seed potatoes' and the name of the certifying agency listed on the tag. The total U.S. acreage certified for seed in 1996/97 was an estimated 179,866 acres, up 7 percent from

¹² Sweet potatoes (*Ipomoea batatas*) are not botanically related to the white or Irish potatoes commonly grown throughout the United States and Canada, and are not believed to be raised by the same growers or used in very many of the same forms (especially processed products) as white, red, russet, or yellow-flesh potatoes.

¹³ Based on the percent of major varieties of fall-harvested potatoes planted in 11 major States as reported in National Potato Council (NPC), *1996 Potato Statistical Yearbook* (Englewood, CO, NPC, 1996) p. 31.

the 1992 level, with Idaho accounting for 29 percent, and North Dakota and Maine accounting for 18 and 13 percent, respectively, of total certified seed acreage in 1996.¹⁴

Table Stock and Processing Potatoes

Russet and round white types of potatoes are sold both for table stock use and for processing. The Russet Burbank variety is in greater demand than round whites for both the fresh market and for processing. It is the most commonly used potato for baking in restaurants and other commercial establishments. It is processed primarily into frozen french fries, other frozen potato products, and dehydrated potatoes, as opposed to round whites which are not used for frozen potato products as much. Retail consumers use it for baking, frying, boiling, and for making french fries. Idaho, Washington, and Oregon were the primary States producing this variety in 1995, although it is also grown in a number of other States.

The Kennebec variety is used mainly for processing (especially for potato chips); however, it also has good boiling and baking qualities, which allows it to be competitive in the fresh market as well. It is primarily grown in North Dakota, Minnesota, and Pennsylvania. Norchip is a round white variety used principally for processing. The major areas of production include North Dakota, Minnesota, and Michigan. The Superior variety cooks white and is excellent for boiling and for making chips. It is grown in Maine, New York, and Wisconsin. Katahdin is a late maturing variety considered to be good for processing and boiling. The major producing States for this variety include Maine, New York, and Pennsylvania.

Processed Potato Products

French fries are the principal frozen potato product. They are produced from washed, peeled, raw potatoes that are partially cooked (deep fried) in vegetable oil. Those that are to be marketed to the retail market are cooked longer than those that are for the restaurant or institutional market. Other forms of frozen products include hash browns, formed potato puffs or potato tots, and frozen mashed potatoes; these frozen potato products typically are produced as by-products of the production of frozen french fries.

Historically, most potato chips have been prepared from washed, peeled, raw potatoes, which are sliced or chipped and then deep fried. The most common potato type used for chipping is the round white type, as this type has the characteristics most desired for making potato chips. The chips are usually mixed with salt, and sometimes artificial flavorings or colors, prior to being sealed in a package. In recent years, increasing amounts of potato-based snack foods have been prepared from cooked mashed potatoes; these products are typically baked and called potato crisps.

Dehydrated potato products are made from cooked or uncooked potatoes from which most of the moisture has been removed. The most important dehydrated products are potato granules and flakes, with other products including dices, slices, strips, flour, and starch. Instant potato

¹⁴ U.S. Department of Agriculture (USDA), Economic Research Service (ERS), *Potato Facts—Situation and Outlook Report*, Apr. 1997, p. 8.

granules are dehydrated individual potato cells or small agglomerates of cells, prepared by dehydrating cooked, mashed potatoes in air-lift driers. Potato flakes are cooked, mashed potatoes that are dehydrated on a drum drier. Both potato granules and flakes may contain vitamins, milk or milk products, and seasoning and preserving ingredients.

Dehydrated potato dices, slices, and strips consist of blanched or partially cooked potatoes from which most of the moisture has been removed. Potato flour is prepared from cooked potatoes that are compressed and dried into thin sheets, and then ground and sieved, yielding a flour which is used principally in bakery products. Canned potatoes are generally canned small, whole or sliced round white or red potatoes. Other canned potato products are products such as stews, soups, or hash in which cut potatoes are included.

Industries

The industries involved in the growing and processing of potatoes in both the United States and Canada are significant in size. The U.S. industry is believed to be significantly larger than that in Canada, both in terms of amounts of raw potatoes grown and consumed (fresh and processed), and in the number and output of potato freezers. The fresh potato and frozen processed potato products industries in both countries are believed to possess extensive and comparably developed infrastructures, with the industries of both countries made up of growers, handlers, shippers, brokers, wholesalers, and processors.

There were an estimated 14,500 potato growers in the United States in 1991/92,¹⁵ as compared with an estimated 4,700 growers in Canada in the same period. There were 12 U.S. frozen potato processing companies, operating 29 plants in the United States and 2 in Canada, and 4 Canadian companies operating 6 plants in Canada and 3 plants in the United States in 1996.¹⁶ In recent years, U.S. exports of fresh potatoes have been increasing, but were equivalent to less than 5 percent of U.S. production. U.S. exports of frozen potato products (mainly french fries to Japan) have risen dramatically in recent years and were equivalent to an estimated 5 percent or less of U.S. production annually during 1992-96. Canadian exports of fresh potatoes, principally to the United States, have been increasing significantly since 1992, and Canadian exports of frozen potato products to the United States have risen significantly. In 1996, the ratio of U.S. imports from Canada to consumption amounted to 10.4, 5.3, and 5.3 percent for seed potatoes, table stock, and frozen potato products, respectively.

Market Coverage

Both domestically produced and imported fresh and processed potato products compete in all market segments, including wholesale, retail, institutional, and food service. An estimated two-

¹⁵ There were an estimated 10,500 commercial potato grower members of the National Potato Council in 1996. See transcript of the hearing, p. 43.

¹⁶ O'Melveny & Myers LLP, Counsel to Food Institute of Canada, prehearing brief, Apr. 21, 1997, p. 6.

thirds of U.S. table stock potatoes were sold through wholesale terminal markets in 1995/96; the remaining one-third of fresh potatoes were sold through retail markets. An estimated 90 percent of U.S. frozen processed potato products were sold through the food service sector in 1995/96, with the remaining 10 percent sold through retail markets.¹⁷ An estimated 50 percent of U.S. potato chips were sold in supermarket outlets in 1995. The bulk of all dehydrated potato products are sold for institutional and food service use.

For purposes of this investigation, the major supply regions for the subject fresh potatoes and processed potato products on a nationwide basis have been designated as including certain Western, North Central, and Northeastern States. These same three U.S. supply regions, established on the basis of their large concentration of annual raw product production, have been designated as the major marketing regions as well. Canadian supply regions are designated as Atlantic, Central, and Western.¹⁸

Approach

This report provides information about factors affecting trade between the United States and Canada in fresh table stock potatoes, seed potatoes, raw potatoes for processing, and frozen processed potato products. The information was gathered from written submissions, testimony presented at the Commission public hearing, domestic and foreign fieldwork, responses to Commission's inquiries, literature searches, U.S. Department of Agriculture and Department of State telegrams, telephone interviews, previous Commission studies, official data of the United Nations, U.S. Department of Commerce, and Statistics Canada, and other sources. Domestic fieldwork included visits with producers in Maine, Idaho, Pennsylvania, and Washington. Foreign fieldwork included travel to Alberta, Manitoba, Ontario, New Brunswick, and P.E. I. The USTR letter requested that the Commission focus its data collection and analysis on the most recent 5-year period (1992-96), with the inclusion of certain data on a 3-year basis (1994-96).

Organization of Report

Chapter 2 provides a basic description of the U.S. fresh and processed potato industry structure, together with information on production, consumption, pricing, and grading. It also presents current U.S. trade and regulatory measures applicable to the potato industry, along with the U.S. tariff treatment of imports. Finally, it includes a discussion of U.S. government programs applicable to the fresh and processed potato industry. Chapter 3 provides data on global trade flows of fresh potatoes and processed potato products, including bilateral trade between the United States and Canada. Import and export levels for both the United States and Canada are

¹⁷See transcript of the hearing, pp. 56-58.

¹⁸For the purpose of this report, Canadian supply regions, together with the respective Provinces included therein, have been defined as follows: Atlantic-Nova Scotia, New Brunswick, P.E. I., and Newfoundland; Central-Québec and Ontario; Western-British Columbia, Alberta, Manitoba, and Saskatchewan. In certain instances, Prairie Provinces is used to include Manitoba, Saskatchewan, and Alberta.

discussed, including changes in import levels. Chapter 4 provides a basic description of the Canadian fresh and processed potato industry structure, together with information on production, consumption, pricing, and grading. It also presents current Canadian trade and regulatory measures, as well as Canadian Government programs applicable to the potato industry and Canadian tariff treatment of imports. Chapter 5 provides an analysis of competitive factors affecting U.S. and Canadian growers and processors in the U.S. potato market, including raw potato and processed product supply, consumption trends, government policies, exchange rates and terms of sale, prices of U.S. and Canadian products, and other factors. It also presents a summary table describing advantages and disadvantages held by the U.S. and Canadian industries in each of these factors. Statistical data are presented throughout the report and more detailed data tables are included in appendix D.

CHAPTER 2

U.S. Industry and Market

Structure and Operation of the U.S. Industry

The U.S. fresh potato and processed potato products industry is made up of many different segments, including the following: seed and table stock growers, growers of raw potatoes intended for processing, shippers, repackers, cold storage facility operators, wholesalers, terminal market buyers, and processors, among others. Some of these segments overlap, such that the distinctions between them are less clear. On the raw production end, many growers raise potatoes for a single intended market, such as seed or chipping potatoes. In other situations, however, some growers raise potatoes for two different end uses, such as for both seed and table stock, or for table stock and for processing.¹

With potatoes, the soil type, day length, and available water supply quite often limit the location where potatoes can be grown and the types of potatoes that can be grown there. Also, specific potato types and varieties require specific cultivation practices, including such factors as water requirements, fertilizer requirements, pest control, and overall management practices. On a regional basis, the production area in the Western States of Idaho, Oregon, and Washington is described as ideal for potato cultivation because of the following factors: warm days and cool nights; loose, well drained soils of volcanic ash and optimum nutrient levels; low rainfall but extensive irrigation capabilities; low daily humidity; and a long growing season (upwards of 160 days).² In the North Central region, the growing area is described as very good for raising potatoes. The soil types found throughout this region tend to be more variable in terms of soil structure, drainage capability, and nutrient content. This region is favored by warm days, but has less-favorable warm nights. Rainfall is described as irregular and is usually supplemented with irrigation on potatoes for processing. Finally, this region has less desirable levels of high humidity and lower natural light intensities, and a shorter growing season (125 days). The third U.S. region, the Northeastern United States, is described as less desirable for raising certain types of potatoes, including some russets. The soils are more rocky, the nights are sometimes unfavorably warm, annual rainfall is less than in the Western United States, humidity is higher, and the length of the growing season is the least number of days (110 days) of any region.³

Once the potato crop is ready for harvest, a number of decisions must be considered, such as when and how to remove the vines, the type of harvesting equipment to use, and where to store the potatoes. Storage is usually on-farm or in nearby facilities. Properly stored potatoes are reported to last 9-12 months without much decline in quality. After examining the costs of

¹ Based on USITC staff interviews with industry officials, Houlton, ME, May 9, 1997.

² Lamb Weston, *Product and Profitability Guide* (Tri-Cities, WA: Lamb Weston, Inc., 1994), pp. 2.3-2.8.

³ Ibid.

production, harvest, and storage, the next step in the operation is to price the product and decide when and what quantities to sell out of storage. Finally, transportation is calculated and arrangements made to get the potatoes delivered to their end user.

Seed, Table Stock, and Raw Product Growers

Growers include those that raise primarily potatoes as well as those that raise a number of other crops in addition to potatoes. According to industry sources, potatoes are the primary source of income from all crops raised by some potato growers.⁴ Most growers raise certain varieties of potatoes, based upon such considerations as the overall environmental conditions indigenous to their growing area, expected demand for their production at harvest time and throughout the months following harvest, and commitments with processors or others to grow and supply specific varieties and certain volumes. Many seed potato growers raise both seed and table stock potatoes.

The commercial potato industries of both the United States and Canada have relied heavily in recent years on the use of disease-free and genetically-viable certified seed potatoes. The U.S. seed potato certification program exists only in certain States and may be controlled by a land-grant university, a State Department of Agriculture, or by certain State-wide grower production associations, depending upon the respective State in which the program is located. In Canada, by contrast, the Canadian Federal Government controls the seed certification program on a national scale, with every Province administering the same Federal regulations. In more recent years, improvements in seed certification programs in both countries have helped to alleviate many of the easily identifiable disease problems associated with planting noncertified seed. The use of laboratory controlled propagation techniques have been especially beneficial in this area.⁵

Processors

Potatoes have been processed in the United States since 1831 when the first potato starch plant was established.⁶ Potato chip and frozen potato product processing both were started by the 1940s. Historically, frozen and dehydrated potato products processors were located near their sources of supply. As a result, most of these plants are currently operating in the production areas of the North Central and western region States. Potato chip processors, on the other hand, are located near population centers, since potato chips are less dense and very expensive to ship in small amounts.

There were four major U.S. producers of frozen processed potato products in 1996—Lamb Weston, Inc. (Tri-Cities, WA), J.R. Simplot Company (Boise, ID), Ore-Ida Foods, Inc. (Boise,

⁴ Based on USITC staff conversations with officials of the fresh and processed potato industry, Apr. 1997.

⁵ The Potato Association of America, *Commercial Potato Production in North America* (Orono, ME: Potato Association of America, 1993), p. 23.

⁶ *Ibid.*, p. 23.

ID),⁷ and Nestle-Carnation (Moses Lake, WA). Other processors included the following single-facility producers: AVIKO (ND), a Dutch-owned firm, Katie Foods (ID), Magic West (WA), Northern Star (MN),⁸ Oregon Potato (OR), and Twin City Foods (WA), and multifacility producer McCain Foods (ME), a Canadian-owned firm.⁹ An estimated 80 percent of annual frozen potato products sales in the U.S. market in recent years was accounted for by the four largest firms.¹⁰

The majority of U.S. frozen processed potatoes facilities are located in Idaho, Oregon, and Washington. There are 21 production facilities in these States, collectively accounting for an estimated 80 percent of total U.S. production capacity. The States of Michigan, Minnesota, North Dakota, South Dakota, and Wisconsin in the North Central region account for nearly all of the rest of U.S. production capacity. One other processing facility is in Maine. There was an estimated 9.5 billion pounds of total U.S. frozen processed potato products production capacity in 1996, up from 8.5 billion pounds in 1994 and 9.2 billion pounds in 1995.¹¹ U.S. frozen processed potato production capacity utilization was estimated at 80-85 percent in 1996, down from 87 percent in 1994 and 1995.¹²

Production, Harvesting, and Storage Practices

Seed and Table Stock Potatoes

Seed potatoes make up a small but important part of the fresh potato market.¹³ However, the bulk of table stock growers do not raise seed potatoes. Most U.S. and Canadian growers rely heavily on the use of high-quality certified seed potatoes. Most of the seed potatoes produced in the United States and Canada are used in each country, with small amounts of seed potato production exported to third-country markets from Canada. Most U.S. seed potato certification agencies operate tissue culture laboratories, from which are developed stocks of pathogen-free seed stock materials. An estimated 100 percent of all seed stock material produced in the United States from tissue culture techniques is tested for the presence of disease-causing organisms. Seed certification agencies may test limited amounts of the certified seed stock at a later stage of development as well.

⁷ In Mar. 1997, part of Ore-Ida Foods, Inc., a subsidiary of H.J. Heinz, Inc., was purchased by McCain Foods, Inc., New Brunswick, Canada. The Heinz-owned part of Ore-Ida Foods retained the retail side of the business. See transcript of the hearing, p. 77.

⁸ Michael Foods, Inc. announced in Mar. 1997 that it was closing its Minneapolis subsidiary, Northern Star, as of May 31, 1997.

⁹ Collier, Shannon, Rill & Scott, PLLC, Special Counsel for the National Potato Council (NPC), Frozen Processed Potatoes Segment, prehearing brief, Apr. 21, 1997, pp. 6-7.

¹⁰ Ibid., p. 7.

¹¹ Collier, Shannon, Rill & Scott, prehearing brief, Apr. 25, 1997, p. 1.

¹² Ibid. p. 7.

¹³ In recent years, seed use has accounted for about 5 percent of fresh potato utilization. Based on data presented in U.S. Department of Agriculture (USDA), National Agricultural Statistics Service (NASS), *Potatoes*, 1995 Summary, Pot 6(96), Sept. 1996, p. 14.

The tissue culture process results in the production of tiny immature plants called plantlets. These plantlets are produced in large enough quantities to conduct field trials for tuber production. Most often, the plantlets are grown in greenhouses or screen houses. From these field trials are harvested the minitubers that are stored until the following season for later seed production. Seed from these sources is certified for use only for from 5 to 9 years after greenhouse production. Once these minitubers are planted in large enough numbers to generate a large supply of tubers, the resulting tubers become the certified seed supply from which commercial plantings are grown. Both the United States and Canada have a voluntary seed generation system, which allows for further disease testing. In some areas, this process is mandatory.¹⁴ Certified seed potatoes may be started from minitubers or plantlets grown by individual seed growers or on State- or Provincial-operated farms. Farmers then purchase their certified seed for planting directly from these farms.

Growers of table stock potatoes select certified seed potatoes of varieties which they believe to be adapted to their specific growing areas. As with all other field-grown crops, potato production is affected directly by the vagaries of weather, along with specific cultivation, fertilization, rainfall/irrigation, and insect and disease pest control practices. According to industry sources, the availability and timing of water may be the single most important factor affecting potato quantities produced and yield per acre. Because potato plants are heavy feeders of nutrients and because certain soil-borne pest problems tend to remain in the soil for a few years after the plants have been harvested, potatoes are often grown in a 3- or 4-year rotation program with such other crops as barley, oats, flax, or broccoli. Pest control is an important part of potato growing, with certain especially serious weed, insect, and disease problems requiring diligent and often expensive control methods. The use of integrated pest management techniques is common throughout the U.S. potato growing industry. With the added environmental concerns facing agriculture today, growers are striving to design and implement management practices that maximize yields and efficiency, minimize effects to the environment, and help sustain available soil and water resources.¹⁵

Depending upon the varieties planted and the growing conditions experienced during the growing season, most potatoes are harvested from 110 to 160 days after planting. Because potatoes are grown in so many States throughout the year, they are harvested every month of the year. Potatoes designated as winter, spring, or summer crop potatoes are harvested while the vines are still green and the potato tubers still in an immature stage of development.¹⁶ These potatoes are generally sold directly after harvesting for fresh market or processing use. Fall-harvested potatoes, on the other hand, are harvested when both the vines and tubers are more mature. At this development stage, the tubers are somewhat higher in dry matter content and the skins more resistant to skinning and bruising during harvest. Such potatoes are usually better suited for processing and extended storage.

Throughout the United States, most potatoes are mechanically harvested directly into bulk trucks for transport to packing sheds, warehouses, storage facilities, or to processors. No matter what the particular method of mechanical harvesting used, industry officials agree that bruising

¹⁴ *Commercial Potato Production in North America*, p. 24.

¹⁵ *Ibid.*, p. 35.

¹⁶ *Ibid.*, p. 40.

of the potatoes during these operations is usually very costly. An estimated 20 percent of returns may be lost to bruising, usually through reduced prices for the potatoes, reduced storage life because of increased shrinkage, and increased processing costs.¹⁷ The amount of bruising is generally affected by the soil condition at harvest, the overall maturity and temperature of the tubers, and certain characteristics of the harvesting operation (such as harvester blade depth and alignment, harvester apron pitch, speed, and agitation, harvester traveling speed, blade spill-out and blade undersweep, and the amount of padding used on various parts of the machines during the harvesting operation).¹⁸

The bulk of potatoes grown in the United States are stored for some period of time prior to sale. Large amounts of potatoes for storage were historically kept in underground pits with no temperature, humidity, or ventilation control. In recent years, increasing amounts of potatoes are being stored in modern, insulated above-ground storage facilities wherein humidity and temperature are closely and efficiently controlled. Such storage units typically hold from 500 to 20,000 tons of potatoes and range in size and type of operation from smaller private units on individual farms to large, publicly- and privately-owned centrally located facilities miles away from the growing areas. With the increase in the use of potatoes for processing in recent years, additional larger storage units are being built near processing facilities.

After the potatoes have been grown and harvested, growers must then get their products to the desired markets or into storage. Potato growers in Northeastern States typically act as their own shippers and generally have their own packing operations. Growers in the Western region usually sell through independent sales agents. Shippers of potatoes from the Western region also compete for fresh potatoes at the grower level with processors using potatoes grown in their area.¹⁹

Fresh potatoes are typically sold in a variety of containers and different grade specifications. At the institutional level, sales are often in 100-pound bags, usually of a mixed lot of large- to small-sized potatoes. Potato sales at the institutional and retail levels are also common in 50-pound cardboard boxes, or count cartons, wherein the box is labeled as to the exact number of potatoes contained therein. Other bulk-style packs include 50-pound cartons or sacks and 50-pound baled containers of either 5 10-pound bags or 10 5-pound bags.²⁰ The more common retail-size packs include 5-, 8-, 10-, 15-, and 20-pound bags, as well as loose potatoes in bulk bins. Through the administration of marketing orders, certain production areas regulate inspection for grade standards of all fresh potatoes leaving their area.

¹⁷ Ibid., p. 41.

¹⁸ Ibid., p. 41.

¹⁹ Ibid., p. 11.

²⁰ "1996 Produce Availability & Merchandising Guide," *The Packer* (Lenexa, KS: Vance Publishing Co., 1996), pp. 344-364.

Raw Potatoes for Processing—Frozen Processed Potato Products

In recent years, frozen french fries and other frozen potato products accounted for the largest share of potatoes utilized for processing.²¹ According to industry sources,²² the predominant processing potato type is the russet type and the most important variety is the Russet Burbank. An estimated 90 percent of frozen processed potato products are prepared from Russet Burbank potatoes.²³ Other important processing varieties include Shepody and Ranger, which do not store well and must be processed soon after harvest. In general, an estimated 2 pounds of raw potatoes will yield 1 pound of frozen potato product.

Processors of frozen potato products generally contract for the bulk of their raw potato needs, with a single-year contract the most common type. Such contracts typically include the following items: the location where the crop will be grown; specific grower obligations covering production and harvesting practices; terms of crop evaluation method; contract terms for crop valuation, typically including incentives and disincentives for higher or lower crop quality; criteria for rejection of product; storage and delivery terms; and, legally binding language for the grower and processor.²⁴ For both summer- and fall-harvested potatoes, such contracts typically are negotiated with groups of growers during the winter and spring months before spring and summer planting occurs.²⁵ The length of a typical contract is for the production from one season's crop. Contracts allow for an orderly system of product procurement by a processor, while at the same time allowing for more stable prices to growers. In recent years, an estimated 75 percent of raw product for processing was procured through contracts.²⁶

Processors also acquire raw potatoes for processing through the use of multiyear contracts, with production quantities specified on an annual basis, and through open-purchase contracts, wherein purchases are made throughout the growing season on the open market. In some instances, processors have entered into joint-venture agreements with growers, in which part of the grower's raw-product production costs are shared by the processor.²⁷ Some processors also enter into custom farming agreements with growers, wherein growers are paid agreed-upon rates for performing certain cultural practices and the processor assumes all risks and profits associated with raising and selling the potato crop.²⁸

Raw Potatoes for Processing—Other Processed Potato Products

Potato chip producers acquire most of their raw product under contract with growers. Some is typically purchased on the open market (through brokers). Potato chips are produced close to major markets (centers of population) rather than close to the source of raw product. Most chip

²¹ USDA, NASS, *Potatoes*, 1995 Summary, Sept. 1996, p. 4.

²² Collier, Shannon, Rill & Scott, prehearing brief, Apr. 21, 1997, p. 2.

²³ *Ibid.*, pp. 2-3.

²⁴ Collier, Shannon, Rill & Scott, prehearing brief, Apr. 25, 1997, pp. 2-3.

²⁵ *Ibid.*, p. 2.

²⁶ *Ibid.*, p. 3.

²⁷ *Ibid.*, p. 3.

²⁸ *Ibid.*, p. 4.

producers do not store raw product and have the potatoes shipped to the factory daily. Raw product is typically sourced from nearby growers beginning with the fall harvest and continuing until the winter-harvested crop becomes available. For producers in the Northeastern United States, supplies are purchased from areas progressively further north as the season progresses. A certain potato chip producer reportedly requires in its contracts with growers that they grow a proprietary variety of potatoes exclusively for that company.²⁹

Dehydrators operate differently from other processors in their raw product acquisition. Some growers will not raise potatoes specifically for the dehydration market since grower returns on potatoes for dehydration usually are not high enough. As a result, dehydrators purchase fresh potatoes both under contract and on the open market. Once their potatoes are delivered, they first sort their potatoes and ship the better quality ones to the fresh market. The rest are dehydrated. Some dehydrators also purchase off-grade potatoes directly from fresh packers.³⁰

Domestic Production, Inventories, Consumption, Prices, and Grading

Production

Seed Potatoes

The amount of certified seed acreage planted throughout the United States trended upward from 173,000 acres in the 1991/92 season to 182,193 acres in the 1995/96 season (table 2-1). Since 1992, the leading States in area of seed potato plantings included Idaho, North Dakota, Maine, and Minnesota. The share of acreage represented by each region remained steady at an estimated 40 percent each of the total for the Western and North Central regions, followed by the Northeastern U.S. region accounting for an average 17 percent annually. The volume of the overall U.S. fresh potato crop used for seed potatoes has increased steadily since the 1992/93 season and amounted to 2.7 billion pounds in 1996/97, as shown in the following tabulation (in thousands of pounds):³¹

	1992/93	1993/94	1994/95	1995/96	1996/97 ¹
Utilization	2,352.9	2,422.3	2,461.6	2,577.0	2,662.0

¹ Estimated by USITC staff.

²⁹ USITC staff interview with U.S. potato chip producer, Apr. 15, 1997.

³⁰ USITC staff conversations with officials of the fresh and processed potato industries, May 1997.

³¹ Compiled by USITC staff from USDA, NASS, *Potatoes*, Pot 6 (95), Sept. 6 1995, p. 4, and Pot 6 (96), Sept. 1996, p. 4.

Table 2-1

Seed potatoes: Certified seed potato acreage, by selected States, 1991/92 to 1995/96

	1991/92	1992/93	1993/94	1994/95	1995/96
	<i>In Acres</i>				
Western:					
California	0	1,082	1,036	1,204	¹
Colorado	9,799	10,038	9,893	10,568	¹
Idaho	43,315	40,314	44,425	52,908	51,989
Montana	8,782	7,987	8,576	9,702	¹
Oregon	3,802	2,918	3,057	3,018	¹
Washington	2,278	2,042	2,045	2,267	¹
Subtotal	67,976	64,381	69,032	79,667	51,989
North Central:					
Michigan	2,750	2,403	2,314	2,820	¹
Minnesota	21,146	20,690	15,610	19,804	19,727
Nebraska	6,264	7,095	8,017	8,082	¹
North Dakota	33,421	28,747	25,696	30,111	32,099
South Dakota	1,867	1,924	1,844	1,437	¹
Wisconsin	10,831	10,825	10,459	10,517	9,624
Subtotal	76,279	71,684	63,940	72,771	61,450
Northeastern:					
Maine	26,212	29,035	28,279	28,481	25,153
New York	1,913	1,820	1,840	1,990	¹
Pennsylvania	224	228	244	184	¹
Subtotal	28,349	31,083	30,363	30,655	25,153
All other	396	193	138	172	43,601
Total	173,000	167,341	163,473	183,265	182,193

¹ Not yet available.

Source: USDA, ERS, *Potato Facts*, PTS-1, Apr. 1997, p. 8, and National Potato Council, *Potato Statistics Yearbook* (Englewood, Co.: NPC, 1992-96).

Limited data are available on the costs of production for potatoes for all uses, primarily through the Cooperative Extension Service programs at certain U.S. land-grant colleges. Such data are not directly comparable, on either a product or variety basis, since the data are constructed using different production factors, different potato types, and cover different years. Nonetheless, recent production cost data show a considerable amount of variation throughout a number of States (table 2-2).

Fresh Potatoes

Potatoes are grown throughout the United States, with production concentrated in the Western United States along the Snake River Basin, in the North Central region along the Red River, and in the Northeastern States of Maine, New York, and Pennsylvania (figure 2-1). Significant amounts of production also take place in Florida and other Southern States, with much of this production intended for processing use. U.S. potato production totaled 44.4 billion

Table 2-2

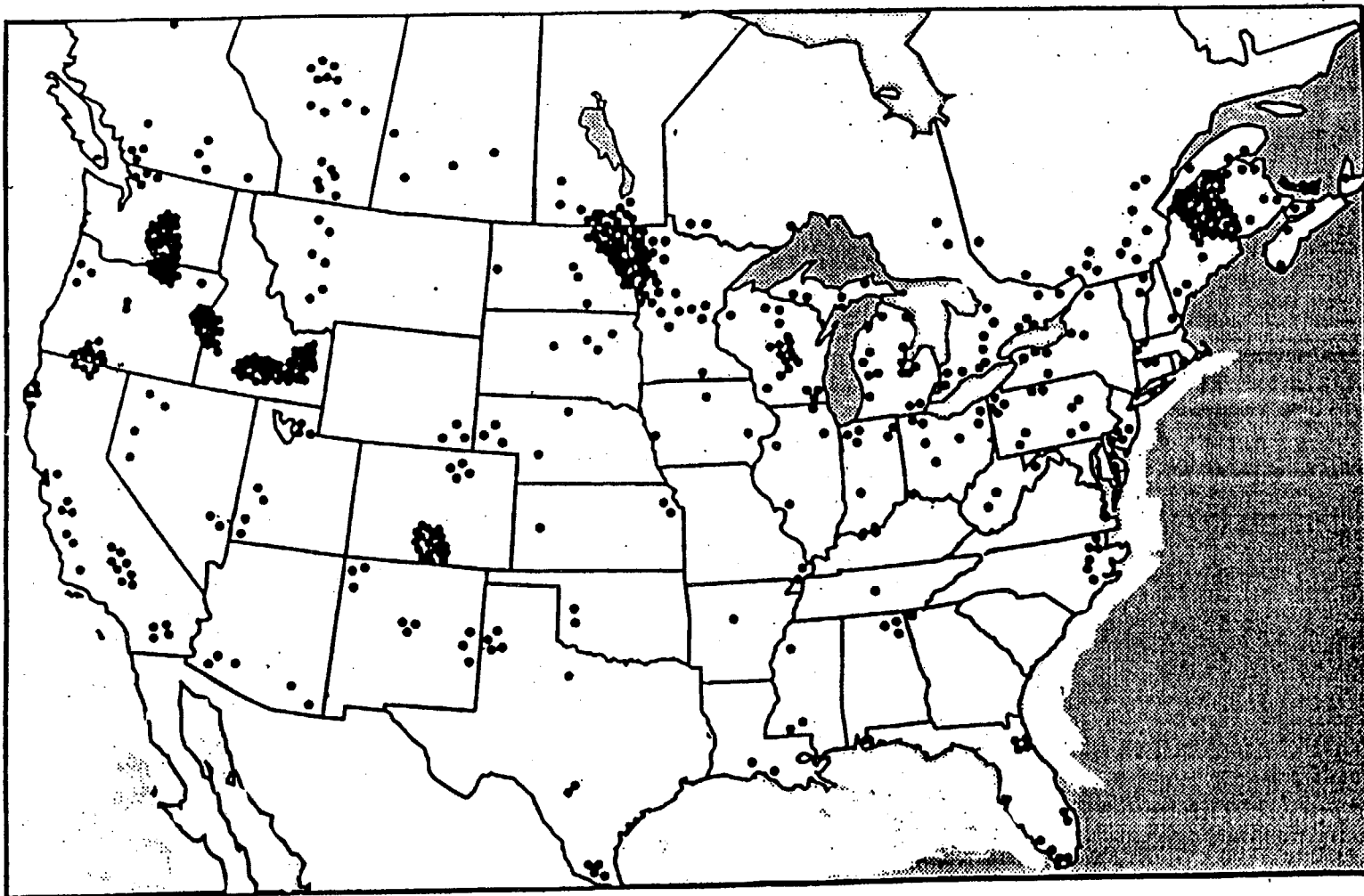
Potatoes: U.S. per-acre estimated costs of production, by year and by potato type

Area	Year	Type of potato	Costs (\$ per acre)
Idaho ¹	Not specified	Seed	1,428 (\$6.08/cwt.)
North Dakota ¹	Not specified	Seed	1,003 (\$5.42/cwt.)
Idaho ¹	1995	Table stock	1,316
Maine ²	1994	Not specified	1,932
Idaho ³	1995	R. Burbank (no storage)	2,056
Idaho ⁴	1995	R. Burbank (no storage)	1,586
Idaho ⁵	1995	Shepody (no storage)	1,908 (\$4.15/cwt.)
Idaho ⁶	1995	R. Burbank (no storage)	1,316
Idaho ⁷	1995	R. Burbank (on farm storage)	1,574 (\$5.00/cwt.)
Idaho ⁸	1995	Chipping potatoes (on farm storage)	1,721 (\$5.22/cwt.)
Idaho ⁹	1995	R. Burbank seed (on farm storage)	1,428 (\$6.08/cwt.)
Washington ¹⁰	1992	Fall potatoes, center pivot irrigation	2,425
Wisconsin ¹¹	1991/97	Russet Burbank	1,921
Red River Valley ¹¹	1996/97	Russet Burbank	1,172
Oregon ¹¹	1996/97	Shepody	1,911
Washington ¹¹	1996/97	Early varieties	2,126
Washington ¹¹	1996/97	Russet Burbank	2,232

¹ Prehearing submission of National Potato Council, Apr. 21, 1997.² Farm Credit of Maine, ACA, *Cost of Production Projected Per Acre*.³ Paul E. Patterson, Mir-M. Seyedbagheri, Darrel G. Bolz, and Robert L. Smathers, *1995 Southwest Idaho Crop Costs and Returns Estimate*, EBB2-Pol-95, Univ. of Idaho.⁴ Paul E. Patterson, Ivan C. Hopkins, C. Wilson Gray, and Robert L. Smathers, *1995 Southcentral Idaho Crop Costs and Returns Estimate*, EBB1-Pol-95, Univ. of Idaho.⁵ Paul E. Patterson and Robert L. Smathers, *1995 Southwestern Idaho Crop Costs and Return Estimate*, EBB2-PO2-95, Univ. of Idaho.⁶ Paul E. Patterson, William H. Bohl, and Robert L. Smathers, *1995 Southeastern Idaho Crop Costs and Returns Estimate*, EBB4-PO1-95, Univ. of Idaho.⁷ Paul E. Patterson, William H. Bohl, and Robert L. Smathers, *1995 Southeastern Idaho Crop Costs and Returns Estimate*, EBB4-PO2-95, Univ. of Idaho.⁸ Paul E. Patterson, William H. Bohl, and Robert L. Smathers, *1995 Southeastern Idaho Crop Costs and Returns Estimate*, EBB4-PO3-95, Univ. of Idaho.⁹ Paul E. Patterson, Jim C. Whitmore, and Robert L. Smathers, *1995 Southeastern Idaho Crop Costs and Returns Estimate*, EBB4-PO4-95, Univ. of Idaho.¹⁰ Herbert Hinman, Gary Pelter, Elvin Kulp, Erik Sorenson, and William Ford, *1992 Enterprise Budgets for Alfalfa Hay, Potatoes, Winter Wheat, Grain Corn, Silage Corn, and Sweet Corn Under Center Pivot Irrigation, Columbia Basin, Washington*, Farm Business Management Reports No. EB1667, Washington State University.¹¹ Produce Marketing Association of North America, *Cost of Production Survey*, as supplied by Wisconsin Potato and Vegetable Growers Associations, Inc.

Source: Compiled by USITC staff as noted above.

Figure 2-1
Potatoes: U.S. production areas, 1996



Source: Reprinted with permission, from the American Potato Journal, The Potato Association of America, Orono, ME.

pounds in 1995/96, 6 percent above the level in 1991/92 (table 2-3).³² In 1995/96, 91 percent of total production was fall-harvested, with most of the remainder harvested in the spring and summer. An estimated 88 percent of both acres planted and harvested were from the fall harvest. In recent years, over 90 percent of production was accounted for by growers in the Western U.S. region (table 2-4). Idaho leads U.S. production of potatoes (29.7 percent in 1995), followed by Washington (18.3 percent). Colorado, Oregon, Wisconsin, and North Dakota each produce between 5 and 6 percent of total U.S. production. Other major producing States in 1995 were Minnesota (4.7 percent), Maine (3.8 percent), Michigan (3.7 percent), and California (3.3 percent). Florida, New York, and Nebraska each produced between 1 and 2 percent of total U.S. production, and all other States produced less than 1 percent each (figure 2-1).

There has been a measurable shift in U.S. potato production since the early 1980s, in terms of farm size, total harvested acreage, harvested acres per farm, and location of farms. According to government sources,³³ the number of farms reporting potato production declined from 26,928 in 1982 to 14,502 in 1992,³⁴ a decline of 46 percent (table 2-5). The number of harvested acres and the number of acres harvested per farm, however, has risen considerably since 1982. On a regional basis, the same general trends are noted. As with potato acreage and number of farms in general, a decreasing number of potato farmers have grown potatoes under irrigation since 1982. However, the amount of irrigated acreage harvested in 1992 was 19 percent greater than in 1982. The number of irrigated acres harvested per farm amounted to 190 acres in 1992, as compared with only 134 acres in 1982 (table 2-6). The same general trends again are noted on a regional basis.

Data on production costs for fresh potatoes also vary considerably from State-to-State, and by variety and use (table 2-2). Data for Maine potato growers showed a projected per-acre production cost of \$1,931.73 in recent years, with nearly 50 percent of total costs accounted for by interest, labor, management, and chemicals.³⁵ Data on production costs for fall-harvested irrigated potatoes in Washington State have trended upward since 1992, as shown in the following tabulation (in dollars per acre):¹

	1992	1996	1994
Production costs...	\$2,243	\$2,911	\$2,265

¹ Data taken from *Estimated Irrigated Crop Costs of Production*, Big Bend Community College, Moses Lake, WA, various years.

³² Data are for all seasons and for all uses. Certain data for limited production seasons are available elsewhere. See USDA, ERS, *Potato Facts* Nov. 1996, p. 5.

³³ *Census of Agriculture*, 1982, 1987, and 1992 editions.

³⁴ The most recent year for which data are available. These data are collected and reported only every 5 years. They are gathered in a different format from data reported elsewhere in this report. Hence, data for certain years do not match data reported for the same year but under a different format.

³⁵ Report from Farm Credit of Maine, ACA, using data collected from 40 farms.

Table 2-3

Potatoes: U.S area planted and harvested, yield, and production, by season, 1991/92 to 1995/96

	1991/92	1992/93	1993/94	1994/95	1995/96
	<i>Area planted (Acres)</i>				
Season:					
Fall	1,203,200	151,700	1,189,900	1,213,000	1,224,100
Winter	13,200	13,400	14,300	12,900	13,300
Spring	90,200	85,300	86,900	91,600	88,300
Summer	100,900	88,900	94,100	95,800	72,500
Total	1,407,500	1,339,300	1,385,200	1,413,300	1,398,200
	<i>Area harvested (Acres)</i>				
Season:					
Fall	1,177,400	1,132,600	1,130,400	1,184,700	1,205,200
Winter	12,200	13,400	13,600	12,300	11,900
Spring	87,500	83,000	83,800	90,400	84,300
Summer	97,300	86,000	89,200	92,300	70,700
Total	1,374,400	1,315,000	1,317,000	1,379,700	1,372,100
	<i>Yield (Pounds per acre)</i>				
Season:					
Fall	31,572	33,509	34,141	35,422	33,439
Winter	21,385	22,373	18,765	19,285	20,782
Spring	23,584	25,946	23,453	25,051	23,954
Summer	23,275	24,778	23,040	24,259	25,362
Average	30,386	32,347	32,551	33,852	32,330
	<i>Production (1,000 pounds)</i>				
Season:					
Fall	37,173,000	37,952,500	38,593,500	41,964,500	40,300,900
Winter	260,900	299,800	255,200	237,200	247,300
Spring	2,063,600	2,153,500	1,965,400	2,264,600	2,019,300
Summer	2,264,700	2,130,900	2,055,200	2,239,100	1,793,100
Total	41,762,200	42,536,700	42,869,300	46,705,400	44,360,600

Note.--Data are believed to cover potatoes for all uses and do not match potatoes for utilization data presented elsewhere.

Source: Compiled by Commission staff from official data presented in *USDA, NASS, Potatoes*, 1993 Summary: Sept. 1994, Pot 6(94), pp. 5-7; 1994 Summary: Sept. 1995, Pot. 6(95), pp. 5-7; and, 1995 Summary: Sept. 1996, Pot. 6(96), pp. 5-7.

Table 2-4

Potatoes: U.S area planted and harvested, yield, and production, by region, 1991/92 to 1995/96

	1991/92	1992/93	1993/94	1994/95	1995/96
<i>Area planted (Acres)</i>					
Region:					
Western	739,400	698,300	738,000	771,500	752,900
North Central	395,000	377,600	380,300	378,500	385,000
Northeastern	140,000	138,100	137,300	133,200	131,900
Other	133,100	125,300	129,600	130,100	128,200
Total	1,407,500	1,339,300	1,385,200	1,413,300	1,398,200
<i>Area harvested (Acres)</i>					
Region:					
Western	729,000	694,200	734,000	769,200	749,400
North Central	380,400	364,500	325,800	355,300	370,700
Northeastern	136,800	134,800	133,600	128,600	130,300
Other	128,200	121,500	123,600	126,600	121,700
Total	1,374,400	1,315,000	1,317,000	1,379,700	1,372,100
<i>Yield (Pounds per acre)</i>					
Region:					
Western	36,962	38,119	39,280	40,119	38,274
North Central	24,383	25,785	25,140	27,929	26,651
Northeastern	22,056	28,999	25,210	24,526	23,590
Other	19,691	22,771	20,059	21,871	22,386
Average	30,386	32,347	32,551	33,852	32,330
<i>Production (1,000 pounds)</i>					
Region:					
Western	26,945,300	26,462,500	28,831,200	30,859,200	28,682,700
North Central	9,275,200	9,398,500	8,190,700	9,923,300	9,879,700
Northeastern	3,017,300	3,909,000	3,368,100	3,154,000	3,073,800
Other	2,524,400	2,766,700	2,479,300	2,768,900	2,724,400
Total	41,762,200	42,536,700	42,869,300	46,705,400	44,360,600

Note.--Data are believed to cover potatoes for all uses and do not match potatoes for utilization data presented elsewhere.

Source: Compiled by Commission staff from official data presented in USDA, NASS, *Potatoes*, 1993 Summary: Sept. 1994, Pot 6(94), pp. 5-7; 1994 Summary: Sept. 1995, Pot. 6(95), pp. 5-7; and, 1995 Summary: Sept. 1996, Pot. 6(96), pp. 5-7.

Table 2-5

Potatoes: Number of farms, harvested area, and harvested area per farm, by region and selected States, 1982, 1987, and 1992

Region/states	Number of farms			Harvested area			Harvested area per farm		
	1982	1987	1992	1982	1987	1992	1982	1987	1992
	Number			Acres					
Western:									
Idaho	1,892	1,792	1,616	320,019	352,670	372,028	196	197	230
Washington ..	533	486	431	104,738	110,157	129,110	197	227	300
Colorado	389	369	326	54,950	65,420	70,070	141	177	215
Oregon	520	448	350	52,297	58,597	48,856	101	131	140
California	313	303	265	49,414	46,976	46,461	158	155	175
All other	442	306	220	33,086	24,954	25,322	75	82	115
Subtotal ..	4,089	3,704	3,248	614,504	658,774	691,847	150	178	213
North Central:									
Minnesota	746	525	490	78,659	78,268	85,271	105	149	174
Wisconsin	766	470	447	68,340	72,149	78,231	89	154	175
Michigan	768	564	492	48,703	44,105	47,061	63	78	96
North Dakota	647	557	453	121,366	136,704	139,511	188	245	308
Nebraska	197	125	92	9,722	10,547	13,010	49	84	141
All other	1,816	480	827	27,087	28,881	23,331	15	60	28
Subtotal ..	4,940	3,121	2,801	353,877	370,654	386,415	72	119	138
Northeastern:									
Maine	1,134	839	770	99,251	83,261	87,650	88	99	114
New York	865	602	587	43,644	35,682	28,861	50	59	49
Pennsylvania	1,631	1,113	956	20,412	21,707	17,393	13	20	18
All other	573	360	408	17,395	11,301	8,950	30	31	22
Subtotal ..	4,202	2,914	2,721	180,702	151,951	142,854	43	52	53
Other:									
Florida	219	166	200	31,003	36,435	43,499	142	219	217
North Carolina	2,020	712	857	15,955	17,281	18,775	8	24	22
Texas	698	366	306	15,497	15,468	10,487	22	42	34
Alabama	648	280	262	13,512	13,583	10,355	21	49	40
All other	10,112	3,519	4,107	43,170	45,817	46,925	4	13	11
Subtotal ..	13,697	5,043	5,732	119,137	128,584	129,991	9	25	23
Grand total	26,928	14,782	14,502	1,268,220	1,309,963	1,351,107	47	89	93

Source: U.S. Department of Commerce, Compiled from *Census of Agriculture*, 1982, 1987, and 1992 reports.

Table 2-6

Potatoes: Number of irrigated farms, irrigated harvested area, and irrigated harvested area per farm, by region and selected States, 1982, 1987, and 1992

	Number of irrigated farms			Irrigated harvested area			Irrigated harvested area per farm		
Region/states	1982	1987	1992	1982	1987	1992	1982	1987	1992
	Number			Acres					
Western:									
Idaho	1,892	1,792	1,616	320,019	352,670	372,028	196	197	230
Washington . .	443	451	398	100,074	105,482	122,678	226	234	308
Colorado	389	369	326	54,950	65,420	70,070	170	177	215
Oregon	480	433	337	51,538	58,073	48,172	107	134	143
California	313	303	265	49,414	46,976	46,461	158	172	175
All other	392	273	246	33,005	24,876	25,248	84	91	103
Subtotal . .	3,909	3,621	3,188	609,000	653,497	684,657	156	180	215
North Central:									
Wisconsin	241	220	238	50,738	57,508	70,218	211	261	295
Michigan	237	230	217	26,556	23,866	30,752	112	104	142
Minnesota	85	96	96	18,865	23,081	26,788	222	240	279
North Dakota . .	14	22	65	261	3,186	19,570	19	145	301
Nebraska	69	65	58	9,529	10,176	12,669	138	157	218
All other	129	111	123	6,494	10,169	11,396	50	92	93
Subtotal . .	775	744	797	112,443	127,986	171,393	145	172	215
Northeastern:									
New York	230	142	114	15,736	9,475	7,110	68	67	63
Maine	41	34	59	3,175	3,485	5,562	77	103	94
Pennsylvania . .	93	122	67	1,717	2,629	2,021	18	22	30
All other	159	95	96	8,585	5,343	3,242	54	56	34
Subtotal . .	523	393	336	29,213	20,932	17,935	56	53	53
Other:									
Florida	149	134	159	25,977	34,750	41,344	174	259	260
Texas	183	168	109	14,094	14,630	9,871	77	87	91
New Mexico . .	36	31	31	2,998	9,972	9,543	83	322	308
Missouri	10	20	35	26	1,709	5,448	3	85	156
Arizona	27	28	28	3,799	3,618	5,125	141	129	183
Virginia	76	69	67	4,579	6,354	3,848	60	92	57
All other	360	340	297	6,712	12,585	9,359	19	37	32
Subtotal . .	841	790	726	58,185	83,618	84,538	69	106	11
Grand total	6,048	5,548	5,047	808,841	886,033	958,523	134	160	190

Source: Compiled from U.S. Department of Commerce, *Census of Agriculture*, 1982, 1987, and 1992 reports.

Processed Potato Products

Since 1982, the processed potato products industry has experienced significant changes in industry structure. Data from the *U.S. Census of Manufactures*, although gathered only every 5 years and often in rather broad categories, are nonetheless useful in presenting trends in an agricultural crops. French fry plants are located principally along the Snake River in Washington and Idaho, and near the Red River in North Dakota and Minnesota (figure 2-2). In 1992, there were an estimated 13 establishments producing frozen fried potatoes, as compared with 21 establishments in 1982 (table 2-7). The number of establishments producing other frozen potato products was also down. The value of shipments of frozen french fries and other frozen potato products, however, was up in 1992 as compared with 1982. The number of establishments processing canned potatoes fell in 1992, with an accompanying 8 percent drop in shipments to \$48.8 million in 1992. The number of establishments reporting dried potato shipments rose to 8 firms in 1992, with shipments in 1992 amounting to \$153.3 million. There were 17 establishments reporting shipments of vegetable flours (including potato flour) in 1992, with shipments in that year amounting to \$285.2 million.

Table 2-7
Potato products: Number of establishments and product shipments, by census year and by products, 1982, 1987, and 1992

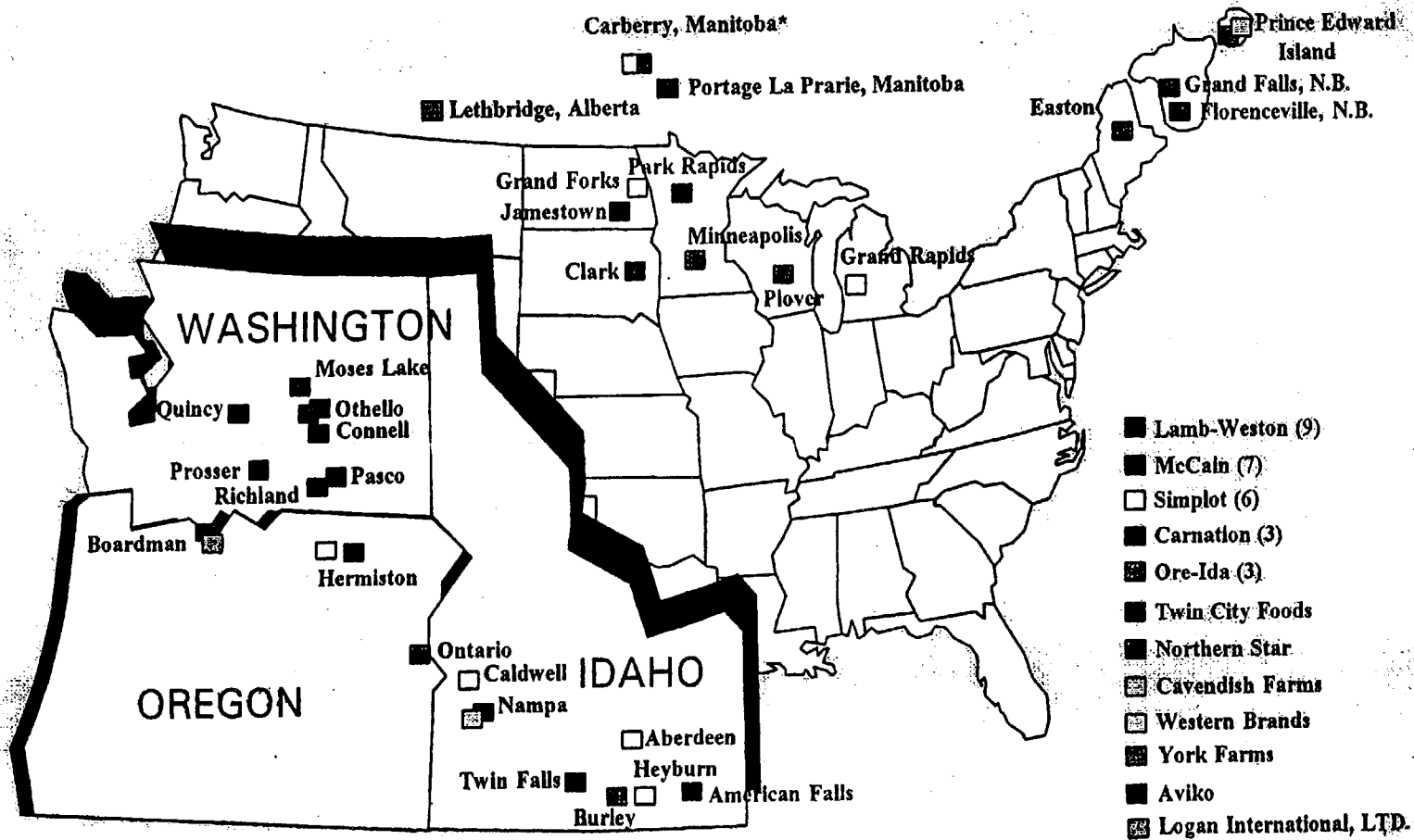
	No. of establishments			Product shipments (million dollars)		
	1982	1987	1992	1982	1987	1992
Frozen french fried potatoes	21	15	13	1,167.8	1,465.6	1,841.2
Other frozen potato products	28	20	21	288.8	387.8	435.0
Other vegetable flours	-	2	17	NA	3.5	285.2
Dried potatoes	6	6	8	NA	NA	153.3
Canned white potatoes	22	16	13	52.8	46.5	48.8

Source: Bureau of Labor Statistics, *U.S. Census of Manufactures*, 1982, 1987, and 1992 reports.

U.S. production of frozen potato products rose steadily from 6.8 billion pounds in 1992 to 8.4 billion pounds in 1996 (table 2-8). Throughout the 1992-96 period, frozen french fries accounted for an average of 85 percent annually of total U.S. frozen potato products production, with food service packs accounting for about 90 percent of french fry production. Most of the remainder of frozen french fry production was in retail size packages. Production in the Western United States accounted for about 80 percent of total production on a regional basis, with nearly all other production taking place throughout the rest of the country.

The number of processing plants in the United States that produced potato chips declined from 148 in 1992 to 126 in 1995 (table 2-9). In 1995, 44 plants were in the North Central region, 36 in the Northeastern region, and 22 in the Western region. Within each region, individual

Figure 2-2
Frozen french fries: U.S. freezer plants, 1996



*Joint Venture Simplot & Carnation Canada

Source: Provided by Lamb Weston, Inc., with permission.

plants are widely dispersed around population centers. The volume of potatoes used to produce potato chips rose from 4.5 billion pounds in 1992 to 4.7 billion pounds in 1995.

Table 2-8

Frozen potato products: U.S. production, by product and style of pack, and by region, 1992-96

	1992	1993	1994	1995	1996
	1,000 pounds				
Product and style of pack:					
French fries:					
Food service	5,123,607	5,546,454	6,048,409	6,539,190	6,540,532
Retail	653,401	701,004	715,273	650,175	728,832
Bulk	9,387	(10,411) ¹	18,561	14,037	(24,313) ¹
Subtotal	5,786,395	6,237,047	6,782,243	7,203,402	7,245,051
Other frozen ²	1,012,047	1,015,727	1,152,606	1,161,507	1,174,152
Total	6,798,442	7,252,774	7,934,849	8,364,909	8,419,203
Region:					
West ³	5,549,111	5,940,275	6,581,340	6,767,082	6,683,060
East ⁴	1,237,430	1,301,018	1,342,152	1,589,697	1,726,071
California	11,901	11,481	11,357	8,130	10,072
Total	6,798,442	7,252,774	7,934,849	8,364,909	8,419,203

¹ Deficits are attributable to previous years' carry over and imported product repacked in the United States.

² Includes hash browns and miscellaneous potato products (tater products, water blanched, whole, diced, stew, puffs, tasti fries, cottage fries, stuffed, pancakes, Au Gratin, O' Brien, morsels, patties, cubes, home fries, oven baked and hash puppies.

³ Includes AZ, CO, ID, MT, NM, OR, UT, WA, and WY.

⁴ Includes East (CT, DE, ME, MA, MD, NJ, NY and PA), South (AL, AR, FL, GA, KY, LA, MS, MO, NC, OK, SC, TN, TX and VA), and Midwest (IL, IN, MI, MN, NE, ND, OA, SD, and WI).

Source: Compiled by Commission staff from official data presented in *Frozen Food Pack Statistics*, American Frozen Food Institute, McLean, VA, various editions.

Table 2-9

Potato chips: Number of plants and quantity of raw potatoes processed, by region, 1991-95

Country	Number of plants					Quantity processed				
	1991	1992	1993	1994	1995	1991	1992	1993	1994	1995
	1,000 pounds									
Northeastern	80	41	41	39	36	1,249,100	1,340,700	1,388,600	1,295,100	1,192,400
North Central	52	52	44	44	44	1,471,600	1,486,900	1,399,300	1,388,400	1,462,900
Other	26	26	24	24	24	1,035,800	1,181,300	1,269,800	1,310,400	1,345,700
Western	30	28	24	24	22	737,400	767,500	777,700	874,400	734,800
Total	148	147	141	131	126	4,538,900	4,776,400	4,835,400	4,868,300	4,735,800

Note.--The designated regions includes the same states as shown in other tables except that, for this tables, the Northeastern region also includes Delaware, Maryland Virginia, and the District of Columbia, the North Central region also includes Kansas, Missouri, and West Virginia, the Western region also includes Arizona, Hawaii, and New Mexico.

Source: Compiled by USITC staff from USDA, ERS, *Potato Facts*, Nov. 1996, p. 16.

Inventories

Fresh potatoes

Since 1992, actual volumes of stocks on hand have risen during the months following fall harvest (table 2-10). The share of stocks held by month, however, has remained about the same for each month. Stocks on hand held by growers, dealers, and processors in December have changed erratically by State since 1991/92 (table 2-11). In recent years, greater amounts of imports sold especially in the Northeastern U.S. markets during the fall season have led to increased competition for fresh market sales, which in turn may result in greater amounts of domestically-produced potatoes being held in inventory in Maine in the beginning of the harvest season. Unlike many fresh vegetables which are perishable to the point of having to be sold within a few weeks or months after harvest, however, potatoes generally may be held for up to 10-12 months after harvesting. As a result, stocks held in storage may fluctuate up or down from year to year because growers and dealers are trying to hedge on market prices turning upward some time in the upcoming months.

Frozen potato products

Since 1992, 77 percent annually of frozen potato product stocks were frozen french fries. During 1992-96, the annual average amount of stocks of frozen french fries held in cold storage throughout each year rose steadily from 766 million pounds in 1993 to 895 million pounds in 1996 (table 2-12). During the 1992-96 period, stocks of other frozen products trended downward. On a regional basis, stocks of frozen potato products were always greatest in the Western region. Since 1992, stocks of frozen french fries have risen dramatically in both the Western and Northcentral regions, the principal U.S. production areas.

Consumption

U.S. per capita utilization (consumption) of potatoes has risen dramatically since 1982, with virtually all of the increase noted for processed potato products (table 2-13). During the 1992-96 period, consumption of frozen potato products rose 16 percent from 51 pounds in 1992 to 59 pounds in 1996, with a downward trend in consumption of potato chips and shoestrings during the same period. Consumption of both dehydrated and canned potato products has trended upward since 1992. Data for the 1992-96 5-year average show a rise in fresh potato consumption over the 5-year averages of 1982-86 and 1987-91. Data on frozen potato product utilization over the three most recent 5-year periods show a substantial increase in the 1992-96 average utilization of frozen potato products as compared with averages for the 1982-86 and 1987-91 periods.³⁶

³⁶ These data are estimates of the amount of raw product intended for each respective use. As such, they are considered an approximation of actual consumption patterns.

Table 2-10

Fresh potatoes: Stocks on hand, by regions, by certain States, and by selected months, 1991/92 to 1995/96

	1991/92	1992/93	1993/94	1994/95	1995/96
	1,000 pounds				
Western:					
California:					
December	420,000	420,000	370,000	420,000	400,000
January	360,000	360,000	320,000	370,000	350,000
February	300,000	310,000	270,000	320,000	280,000
March	250,000	270,000	220,000	270,000	230,000
April	200,000	190,000	170,000	210,000	170,000
May	140,000	120,000	120,000	140,000	110,000
Colorado:					
December	1,785,000	1,770,000	1,825,000	1,890,000	1,820,000
January	1,560,000	1,550,000	1,580,000	1,630,000	1,610,000
February	1,315,000	1,360,000	1,330,000	1,370,000	1,340,000
March	1,250,000	1,180,000	1,090,000	1,130,000	1,120,000
April	875,000	940,000	835,000	850,000	910,000
May	615,000	690,000	610,000	610,000	620,000
Idaho:					
December	8,750,000	9,250,000	9,450,000	10,050,000	9,600,000
January	7,900,000	8,350,000	8,500,000	8,950,000	8,500,000
February	6,900,000	7,400,000	7,550,000	7,800,000	7,350,000
March	5,900,000	6,400,000	6,500,000	6,800,000	6,250,000
April	5,650,000	5,100,000	5,200,000	5,500,000	4,950,000
May	3,050,000	3,550,000	3,500,000	3,950,000	3,600,000
Oregon:					
December	1,800,000	1,650,000	1,900,000	2,030,000	1,720,000
January	1,550,000	1,400,000	1,680,000	1,760,000	1,410,000
February	1,380,000	1,170,000	1,490,000	1,520,000	1,230,000
March	1,070,000	90,000	1,210,000	1,300,000	990,000
April	820,000	700,000	880,000	1,010,000	750,000
May	600,000	450,000	540,000	700,000	450,000
Washington:					
December	3,700,000	3,310,000	4,350,000	4,750,000	3,950,000
January	3,220,000	2,910,000	3,800,000	4,300,000	3,500,000
February	2,700,000	2,490,000	3,200,000	3,750,000	3,050,000
March	2,120,000	1,980,000	2,650,000	3,050,000	2,500,000
April	1,500,000	1,510,000	2,000,000	2,350,000	1,800,000
May	960,000	1,040,000	1,350,000	1,700,000	1,250,000
North Central:					
Michigan:					
December	550,000	700,000	730,000	800,000	960,000
January	440,000	550,000	580,000	650,000	830,000
February	340,000	420,000	440,000	500,000	650,000
March	260,000	290,000	310,000	400,000	480,000
April	170,000	170,000	180,000	250,000	270,000
May	60,000	60,000	70,000	120,000	120,000

Table 2-10—Continued
Fresh potatoes: Stocks on hand, by regions, by certain States, and by selected months, 1991/92 to 1995/96

	1991/92	1992/93	1993/94	1994/95	1995/96
	<i>1,000 pounds</i>				
Minnesota:					
December	1,260,000	1,200,000	860,000	1,250,000	1,350,000
January	1,130,000	1,050,000	730,000	1,080,000	1,170,000
February	950,000	880,000	610,000	940,000	1,020,000
March	760,000	710,000	500,000	800,000	870,000
April	550,000	510,000	370,000	600,000	680,000
May	340,000	260,000	230,000	410,000	450,000
North Dakota:					
December	2,280,000	1,900,000	1,480,000	1,930,000	1,700,000
January	1,850,000	1,600,000	1,260,000	1,620,000	1,400,000
February	1,500,000	1,300,000	1,020,000	1,250,000	1,150,000
March	1,200,000	1,050,000	790,000	1,040,000	920,000
April	850,000	670,000	520,000	750,000	700,000
May	500,000	400,000	230,000	450,000	450,000
Wisconsin:					
December	1,430,000	1,590,000	1,440,000	1,560,000	1,600,000
January	1,200,000	1,340,000	1,250,000	1,300,000	1,350,000
February	960,000	1,090,000	1,020,000	1,030,000	1,050,000
March	740,000	870,000	820,000	760,000	800,000
April	540,000	640,000	560,000	490,000	500,000
May	345,000	390,000	330,000	280,000	200,000
Northeastern:					
Maine:					
December	1,220,000	1,790,000	1,470,000	1,340,000	1,380,000
January	1,030,000	1,560,000	1,270,000	1,140,000	1,240,000
February	810,000	1,310,000	1,030,000	940,000	1,040,000
March	640,000	1,070,000	820,000	770,000	850,000
April	410,000	770,000	580,000	520,000	570,000
May	200,000	440,000	350,000	280,000	280,000
New York:					
December	360,000	400,000	365,000	420,000	340,000
January	280,000	310,000	200,000	300,000	250,000
February	185,000	224,000	120,000	180,000	150,000
March	114,000	146,500	71,500	92,000	90,000
April	43,500	84,500	43,000	46,500	40,000
May	10,000	21,000	20,000	10,500	15,000
Pennsylvania:					
December	190,000	260,000	260,000	220,000	240,000
January	160,000	220,000	180,000	160,000	190,000
February	140,000	160,000	140,000	110,000	120,000
March	90,000	110,000	90,000	70,000	80,000
April	60,000	57,000	40,000	42,000	40,000
May	30,000	30,000	10,000	13,500	18,000

Source: USDA, NASS, *Potatoes*, Pot. 6(94), Sept. 1994, p. 18; Pot. 6(95), Sept. 1995, p. 18; and Pot 6(96), Sept. 1996, p. 18.

Table 2-11

Fresh potatoes: Stocks on hand, by quantity and share of production, 1991/92 to 1996/97

Year	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97
Stocks on hand as of:			1,000 pounds			
December	24,207	24,682	24,971	27,229	25,631	29,930
January	21,100	21,599	21,780	23,796	22,315	25,652
February	17,851	18,456	18,609	20,187	18,896	22,046
March	14,582	15,279	15,413	16,897	15,572	18,456
April	10,886	11,578	11,597	12,882	11,625	14,323
May	6,911	7,504	7,386	8,750	7,617	10,078
Ratio of stocks to production as of:			Percent			
December	67	67	67	67	65	66
January	58	59	58	58	57	58
February	49	50	50	49	48	50
March	40	41	41	41	40	42
April	30	31	31	32	30	32
May	19	20	20	21	19	23

Source: USDA, NASS, *Potato Stocks*, May 14, 1997.

Table 2-12

Frozen potato products: Frozen stocks in cold storage, by product and by region, 1992-96

Product/Year	Western	North Central	Northeastern	All other	Total
1,000 pounds					
Frozen french fries:					
1992	560,614	111,035	60,449	54,237	786,335
1993	533,390	112,821	71,077	48,681	765,969
1994	593,593	122,245	57,481	39,553	812,871
1995	657,229	138,616	53,157	38,445	887,447
1996	653,917	168,825	47,811	24,135	894,688
Other frozen potatoes:					
1992	145,001	54,687	23,122	23,774	246,585
1993	145,731	56,985	15,385	24,686	242,786
1994	164,092	56,875	22,212	24,475	267,654
1995	139,011	49,191	27,492	25,494	240,787
1996	126,577	43,647	25,131	9,319	204,673
Frozen potato products:					
1992	705,614	165,722	83,572	78,011	1,032,919
1993	679,121	169,806	86,463	73,367	1,008,756
1994	757,685	179,120	79,693	64,028	1,080,526
1995	796,240	187,807	80,649	63,539	1,128,235
1996	780,494	212,472	72,941	33,453	1,099,360

Source: Compiled by Commission staff from USDA, NASS, *Cold Storage*, Co. St. 1(93), Feb. 1993, pp. 50-51; Co. St. 1(94), Feb. 1994, pp. 50-51; and Co. St. 1(97), Feb. 1997, pp. 52-53.

Table 2-13

Potatoes: Per capita utilization, by end use, 1982-86, 1987-91, and 1992-96 5-year averages, and 1992-96 annual

End use:	5-year average			Annual				
	1982-86	1987-91	1992-96	1992	1993	1994	1995	1996
<i>Pounds, fresh-weight equivalents</i>								
Fresh	48.1	47.9	49.4	48.9	49.7	48.6	50.7	49.2
Processed: ¹								
Frozen ²	42.6	47.9	55.8	51.0	51.0	59.3	55.3	59.0
Chip & Shoestring	17.7	17.2	17.2	17.5	17.6	17.1	16.9	17.0
Dehydrated	10.6	11.7	13.6	13.2	13.4	13.5	13.0	15.0
Canned	1.9	1.9	1.9	1.8	1.7	1.7	2.0	2.1
Subtotal	72.8	78.8	78.8	83.5	87.2	91.6	87.2	93.1
Total	120.9	126.7	137.9	132.4	136.9	140.2	137.9	142.3

¹ Excludes starch and flour.

² Includes french fries and other frozen products.

Source: Compiled by USITC staff from USDA, ERS, *Potato Facts*, Nov. 1996, p. 17, and National Potato Council, *1996 Potato Statistical Yearbook* (Englewood, CO: NPC, 1996), p. 36.

Seed potatoes

Apparent U.S. consumption of seed potatoes rose 19 percent from 2.4 billion pounds in 1992 to 2.9 billion pounds in 1996 (table 2-14). During the 1992-96 period, U.S. production has risen to a greater extent than imports, but the ratio of imports to consumption has risen considerably. In 1996, the ratio of imports to consumption was 10 percent. The ratio of U.S. exports to production has trended upward throughout the period and was 2 percent in 1996.

Table 2-14

Seed potatoes: U.S. imports for consumption, domestic production, exports of domestic merchandise, apparent consumption, ratio of imports to consumption, and ratio of exports to production, 1992-96

Year	Imports	Production	Exports	Apparent consumption	Ratio of imports to consumption	Ratio of exports to production
	(1,000 pounds)				(Percent)	
1992	128,070	2,352,900	38,044	2,442,926	5.2	1.6
1993	171,199	2,422,300	32,714	2,560,785	6.7	1.4
1994	236,909	2,461,600	34,652	2,663,857	8.9	1.4
1995	225,940	2,557,000	47,428	2,735,512	8.3	1.9
1996	295,695	2,662,000	46,043	2,911,652	10.2	1.7

Source: Imports and exports compiled from official statistics of the U.S. Department of Commerce; 1992-95 production data compiled from USDA, NASS, *Potatoes*, Pot. 6(96), Sept. 1996; 1996 production estimated by the staff of the U.S. International Trade Commission.

Table stock

Apparent U.S. consumption of fresh table stock potatoes has trended steadily upward since 1992 amounting to 46.5 billion pounds in 1996 (table 2-15). Most of the rise in consumption was because of U.S. production and beginning stocks, both of which rose significantly since 1992. Both the ratio of imports to consumption and the ratio of exports to production remained insignificant at about 1 percent throughout this period.

Frozen Potatoes

Annual data for U.S. stocks (beginning and ending), trade (imports and exports), production, and apparent consumption of frozen potato products for the 1992-96 period are shown in table 2-16. Four facts which readily appear from the data are: (1) frozen french fries dominate U.S. frozen potato product markets in volume; (2) total imports are less than seven percent of total consumption; (3) virtually all U.S. frozen potato product imports are from Canada; and (4) there is a rising trend in apparent U.S. consumption of frozen potato products.^{37, 38}

Over the 1992-96 period, U.S. production of all frozen potato products rose 24 percent, but the growth rate fell to less than one percent for 1995-96 (table 2-16). During the 1992-96 period, U.S. production of frozen french fries behaved similarly, expanding 25 percent or by an average 6.3 percent annually, while the 1995-96 rate of growth dropped to 0.6 percent. U.S. production increases for other frozen potato products rose 16 percent for the 1992-96 period, or by an average 4 percent annually, while the rate of increase dropped dramatically to 1.1 percent for 1995-96. The generally increasing 1992-96 U.S. frozen potato products production coincides with industry³⁹ findings of expanding U.S. and foreign markets for frozen potato products. The markedly declining rates of increase for the 1995-96 subperiod coincide with testimony by U.S. processors of markedly slowing production in 1996 and alleged imminent layoffs in 1997.⁴⁰ In fact, the 1995-96 U.S. frozen potato products production increases calculated for all frozen potato products, frozen french fries, and other frozen potato products were 1.1 percent or less, slightly below what U.S. processors projected as depressed growth rates of 2.0 percent annually for the next 3 years.⁴¹

³⁷ J. Guenther, A. Levi, and B. Lin, "Factors that Affect the Demand for Potato Products in the United States," *American Potato Journal*, vol. 68, No. 9 (Sept. 1991), p. 569.

³⁸ T. Richards, A. Kagan, and X. Gao, "Factors Influencing Changes in Potato and Potato Substitute Demand," *Agricultural and Resource Economics Review*, vol. 26, No. 1 (Apr. 1997), pp. 52-53.

³⁹ Ibid.

⁴⁰ Transcript of the hearing, testimony of M. Coursey on behalf of U.S. frozen potato processors, pp. 54-55.

⁴¹ Collier, Shannon, Rill & Scott, posthearing brief, May 27, 1997, p. 4.

Table 2-15

Table stock potatoes: U.S. beginning stocks, imports for consumption, production, exports of domestic merchandise, ending stocks, apparent consumption, ratio of imports to consumption, and ratio of exports to production, 1992-96

Year	Beginning stocks	Imports	Production	Exports	Ending stocks	Apparent consumption	Ratio of imports to consumption	Ratio of exports to production
	(1,000 pounds)						Percent	
1992	21,100,500	273,512	42,536,700	4 99,890	21,599,000	41,811,822	0.7	1.2
1993	21,599,000	541,377	42,869,300	506,626	21,780,000	42,723,051	1.3	1.2
1994	21,780,000	405,895	46,705,400	620,367	23,796,000	44,474,928	0.9	1.3
1995	23,796,000	458,921	44,360,600	536,505	22,315,000	45,764,016	1.0	1.2
1996	22,315,000	690,761	49,711,911	564,005	25,652,000	46,501,656	1.5	1.1

Note.--Does not include seed potatoes, but may include potatoes for processing.

Source: Stocks from USDA, NASS, *Potato Stocks*, various issues; imports and exports from U.S. Department of Commerce; production from USDA, NASS, *Crop Production*, various issues.

Table 2-16

Frozen potato products: U.S. beginning stocks, imports for consumption, production, exports of domestic merchandise, ending stocks, and apparent consumption, by type, 1992-96

Year and type	Beginning stocks	Imports		Production	Exports		Ending stocks	Apparent consumption	Ratio of imports to consumption		Ratio of exports to production	
		Canada	Total		Canada	Total			Canada	Total	Canada	Total
(1,000 pounds)									Percent			
Frozen french fries:												
1992	742,000	188,119	188,607	5,786,395	13,033	429,162	742,000	5,545,840	3.39	3.40	0.23	7.42
1993	742,000	277,786	278,384	6,237,047	15,260	482,538	779,000	5,995,893	4.63	4.64	0.24	7.74
1994	779,000	289,227	289,434	6,782,243	16,233	596,019	835,000	6,419,658	4.51	4.51	0.24	8.79
1995	835,000	332,252	332,424	7,203,402	16,625	778,558	904,000	6,688,268	4.97	4.97	0.23	10.81
1996	904,000	422,950	423,319	7,245,051	28,820	800,820	921,000	6,850,904	6.17	6.18	0.40	11.05
Other frozen potatoes:												
1992	228,000	6,751	7,022	1,012,047	3,456	34,659	221,000	991,410	0.68	0.71	0.00	2.01
1993	221,000	11,528	12,073	1,015,727	2,620	45,206	227,000	976,594	1.18	1.24	0.00	1.97
1994	227,000	19,769	20,212	1,152,606	391	42,037	261,000	1,096,781	1.80	1.84	0.00	1.77
1995	261,000	21,627	22,573	1,161,507	1,124	55,613	219,000	1,170,467	1.85	1.93	0.00	2.55
1996	219,000	30,084	30,939	1,174,152	902	57,084	177,000	1,190,007	2.53	2.60	0.00	2.49
Frozen potato products:												
1992	970,000	194,870	195,629	6,798,442	16,489	463,821	963,000	6,537,250	2.98	2.99	0.19	6.61
1993	963,000	289,314	290,457	7,252,774	17,880	527,744	1,006,000	6,972,487	4.15	4.17	0.21	6.93
1994	1,006,000	308,996	309,646	7,934,849	16,624	638,056	1,096,000	7,516,439	4.11	4.12	0.20	7.77
1995	1,096,000	353,879	354,997	8,364,909	17,749	834,171	1,123,000	7,858,735	4.50	4.52	0.20	9.66
1996	1,123,000	453,034	454,258	8,419,203	29,722	857,550	1,098,000	8,040,911	5.63	5.65	0.34	9.85

Source: Beginning and ending stocks taken from USDA, NASS, *Cold Storage*, various issues; production taken from American Frozen Food Institute, *Frozen Food Pack Statistics* (McLean, VA: AFFI, 1996); imports and exports compiled from official statistics of the U.S. Department of Commerce.

U.S. levels of frozen potato products stocks, both ending and beginning, have behaved with varying patterns for the different frozen potato products. Beginning stocks for total frozen potato products over the 1992-96 period increased by nearly 16 percent or by an average 4 percent annually, while ending stocks for all frozen potato products behaved similarly. U.S. beginning and ending stocks of frozen french fries behaved similarly and rose from 22 to 24 percent (or by 5-6 percent annually) over the same period. Meanwhile, U.S. stocks of other frozen potato products behaved differently. Beginning stocks rose by less than 4 percent and less than 1 percent annually, while ending stocks declined by nearly 20 percent over the 1992-96 period or by nearly 5 percent annually.

Table 2-13 demonstrates that U.S. trade in frozen potato products maintained a surplus with the world and a deficit with Canada during the 1992-96 period. U.S. frozen potato products imports are mostly from Canada. Table 2-16 shows that since 1992, U.S. imports of all Canadian frozen potato products increased 132 percent or by an average 33 percent annually. These trends for all frozen potato products have been driven by U.S. imports of Canadian frozen french fries, which expanded 124.8 percent or by an average increase of 31 percent annually over the same period. U.S. exports of frozen potato products increased during the 1992-96 period. Total U.S. frozen potato product exports increased 85 percent (or by an average annual increase of about 21 percent) during 1992-96, while these trends were driven by U.S. frozen french fry exports which rose 87 percent or by an average annual increase of about 22 percent. In volume terms, U.S. export increases have exceeded import increases.

U.S. frozen potato product exports to Canada during the 1992-96 period were only a small part of overall exports. Since most U.S. frozen potato product exports go to countries other than Canada, and most U.S. imports of these products arrive from Canada, U.S. frozen potato exports to Canada amounted to 6.6 percent of U.S. imports of Canadian frozen potato products in 1996 (table 2-16). The U.S. market shares attributed to Canadian-produced products have risen during the 1992 to 1996 period: from 3.4 to 6.2 percent for frozen french fries; from 0.7 to 2.5 percent for other frozen potato products; and from 3 to 5.6 percent for total frozen potato products.

Prices

Prices Received by Growers—Potatoes for all uses

Table 2-17 provides annual season average prices received by U.S. growers during the 1991/92-1995/96 period for potatoes sold for all uses.⁴² Generally, overall U.S. prices received by growers rose 36 percent from \$4.96 per hundredweight (cwt) in 1991/92 to \$6.77 in 1995/96. This increase exceeds the cumulated increase of about 10 percent in U.S. producer prices as measured by a nearly 10 percent rise in the U.S. producer price index for all items.⁴³ On a regional basis, grower prices in the Western and North Central regions rose in nominal terms, as well as in real terms, since these nominal price increases exceeded the nearly 10 percent rise

⁴² USDA, ERS *Potato Facts*, Nov. 1996, p. 12.

⁴³ U.S. producer prices rose by about 9.6 percent to an index value of 109.8 (100.0=1990) during 1991-1996. This producer price increase includes 1996 to reflect trends of that year embedded in the 1995/96 market year. See International Monetary Fund (IMF), *International Financial Statistics* (Washington, DC: IMF, Apr. 1997), p. 708. This 9.6 percent estimate of inflation relevant to potato growers is based on movements in a very aggregate price index and should be taken with caution.

in the U.S. producer price index for all items. Grower prices in the Western and North Central regions not only rose nominally for all listed States during the last five marketing years, but such price increases all noticeably exceeded the 1991/92 to 1995/96 cumulated increase of about 10 percent in U.S. producer prices. Northeastern U.S. grower price trends, on the other hand, were mixed. Maine's grower prices rose just over 10 percent and barely kept up with producer price inflation. New York's grower prices fell 14 percent over the last 5 marketing years.⁴⁴

Table 2-17

Potatoes: Season average potato prices received by growers, by region and by selected States, 1991/92 to 1995/96

	1991/92	1992/93	1993/94	1994/95	1995/96
	<i>Per cwt</i>				
Western:					
California	\$9.90	\$9.85	\$12.40	\$10.60	\$13.10
Colorado	2.25	4.20	6.05	3.75	6.25
Oregon	3.95	5.50	5.70	4.75	6.70
Idaho	4.00	5.15	4.65	4.95	6.20
Washington	3.80	5.00	5.30	4.75	6.85
North Central:					
Michigan	6.11	6.40	7.20	6.70	6.90
Minnesota	4.10	4.55	5.65	4.90	5.25
North Dakota	3.95	4.55	6.25	4.55	5.40
Wisconsin	4.20	4.90	6.60	5.00	6.40
Northeastern:					
Maine	5.80	5.10	6.95	6.10	6.40
New York	8.70	6.65	8.20	9.75	7.45
Other:					
Delaware	7.30	7.65	10.10	8.80	8.40
Florida	20.40	9.90	17.00	11.90	9.40
North Carolina	7.50	4.35	5.80	7.40	6.55
Texas	9.00	12.90	10.70	12.20	11.00
Virginia	15.00	8.80	11.50	14.10	10.80
United States	4.96	5.52	6.17	5.58	6.77

¹ State marketing year average prices were computed by weighing State monthly prices by estimated sales for the month.

Note.--These prices are averages of potatoes sold for all uses, including fresh market, processing, seed, and livestock feed.

Source: USDA, ERS, *Potato Facts*, Nov. 1996, p. 12.

Northeastern U.S. grower prices changed the least of the three major U.S. fall production regions during the last 5 marketing years. Northeastern U.S. grower prices did, however, either fall, or matched producer price inflation, while grower prices in the Western and North Central regions grew noticeably in both nominal and real terms. Slack or negative growth rates for U.S. Northeast grower prices relative to prices in other major U.S. fall production areas are consistent with both testimony and Commission staff's empirical modeling results. Maine growers and

⁴⁴ USITC staff cannot explain the fall in New York prices. These prices are aggregated across all uses (see table 2-17 notes).

lawmakers testified that fresh potato imports from Canada, particularly from New Brunswick and P.E.I., enter in significant volumes through Northeastern U.S. ports; that such imports compete more directly and more severely with U.S. production in the Northeast areas than in other production areas such as the U.S. West; and that such imports are depressing U.S. potato prices.⁴⁵ Further, the Commission staff's empirical modeling results⁴⁶ suggest that fresh table stock potato imports (primarily from Canada) displace U.S. volumes produced and consumed more in the Northeastern U.S. region than elsewhere in the United States, and that the effects of variations in price and quantities from such events as increased U.S. imports of fresh Canadian potatoes are more directly and severely felt in the Northeastern United States than in other U.S. fall production areas. In fact, Canada captured 31 percent of the 1996 share of Boston's fresh potato arrivals (table 5-13). And while combined U.S. regions supplied at least 43 percent of Boston's 1996 fresh potato arrivals, Canada's 31 percent share exceeded shares of any single U.S. State, including Maine's 20 percent and Idaho's 16 percent.⁴⁷

In addition to increased U.S. imports of fresh Canadian potatoes, the slower 1992-96 all-use potato price growth in the U.S. Northeast relative to price increases in the North Central and Western regions may have arisen from demand factors. In recent years, U.S. demand for processed potato products has been increasing, while growth in demand for fresh table potatoes has been relatively flat.⁴⁸ With larger shares of Northeastern production directed towards the fresh table market than in the U.S. West and North Central States, part of New York's price decline and part of the slow Maine price growth in table 2-14 may have arisen from the stagnant U.S. demand for fresh table potatoes.

U.S. prices received for potatoes for all uses by month are reported in table 2-18.⁴⁹ Seasonal influences quite often characterize U.S. potato markets.⁵⁰ Hence, discerning whether variations in monthly potato prices across seasons are affected more from seasonal influences (e.g. climatic variation's effects on supply and prices) or more from specific market developments is not clear. Consequently, Commission staff summarized monthly prices of fresh potatoes for all uses shown in table 2-18 into season averages, nominal annual averages, and constant dollar or deflated annual averages as reported in table 2-19. A number of conclusions emerge from these analyses. First, grower prices in each season have fluctuated significantly, and without obvious patterns since 1994. Second, nominal annual prices rose 5.7 percent to \$6.44 per cwt during the 1994-1996 period (table 2-19). Third, while annual prices have risen nominally, deflated annual prices have declined slightly (by less than one percent) from 1994-96. Fourth, limited data available for 1997 suggest that season average prices have dropped even further. The 1997 winter season average of \$4.33 per cwt is down nearly 35 percent from the 1996 winter season

⁴⁵ Transcript of the hearing, testimonies of G. Smith, pp. 46-48; National Potato Council, pp. 145-147; Olympia Snowe, U.S. Senator from Maine, pp. 9-19; and Susan Collins, U.S. Senator from Maine, pp. 20-28.

⁴⁶ See chapter 5 for a detailed discussion of modeling results.

⁴⁷ See table 5-13. This 43 percent represents the combined shares of Boston's 1996 fresh potato arrivals from Idaho, California, Washington, Oregon, Colorado, Wisconsin, North Dakota, and Maine.

⁴⁸ G. Zepp, C. Plummer, and B. McLaughlin, "Potatoes: A Comparison of U.S. Canadian Structure," *Canadian Journal of Agricultural Economics*, special 1995 issue, pp. 165-176.

⁴⁹ USDA, ERS, *Vegetables and Specialties—Situation and Outlook Report*, VGS-271, Apr. 1997, p. 53.

⁵⁰ Such seasonal influences were addressed as an important modeling issue in M. Miranda and J. Glauber, "Intraseasonal Demand for Fall Potatoes Under Rational Expectations," *American Journal of Agricultural Economics*, vol. 75 (Feb. 1993), pp. 108-110. Examples of such influences include climatic variation's effects on supply and prices.

levels. If the deflated winter average for 1997 approximates real year-long trends, the real grower price is likely to drop further during the remainder of 1997.

Prices Received at Retail—Fresh White Potatoes

Monthly retail price data for fresh white potatoes are presented in table 2-20.⁵¹ Commission staff summarized this monthly data into nominal season averages, nominal annual averages, and deflated averages in table 2-21. A number of points concerning the retail prices of fresh white potatoes emerge from analysis of these data. First, retail fresh prices in nominal terms have not moved much, either annually across time or seasonally, since 1994. Second, retail fresh prices in deflated dollars declined by 3.6 percent during 1994-1996, with this decline continuing into 1997.

Prices Received by Growers—Raw potatoes for processing

According to industry sources,⁵² grower prices received for raw potatoes intended for processing are less sensitive than grower prices for fresh table stock potatoes because of negotiated contracts between grower and processor. During the 1992-95 period, season average grower prices of raw potatoes for processing trended upward, from 4.5 cents per pound to 5.2 cents per pound, although the 1996 average was down slightly (table 2-22). Since 1993, monthly prices received have fluctuated within a narrower range of high and low than in previous years.

Prices Received at Retail—Frozen French Fries

Monthly retail price data for frozen french fries are presented in table 2-23. Commission staff summarized the monthly data into nominal seasonal averages, nominal annual averages, and deflated annual averages in table 2-24.⁵³ Retail prices of frozen french fries have been rising in both nominal and deflated terms. Nominal seasonal averages of retail fry prices have risen since 1994 for all seasons. Nominal annual retail fry prices increased nearly 4 percent during the 1994-1996 period. While deflated retail fry prices declined over the 1994-96 period, these prices fell 2.9 percent to \$0.738 in 1995, and recovered somewhat by 1996 (table 2-12). Based on the partial 1997 deflated price, this recovery may be continuing into 1997. Relative to fresh prices, retail fry prices have been increasing more in nominal terms, and dropping less, in real terms. Since 1995, there has been a slight increase in annual deflated fry price at the retail level.

⁵¹ Monthly fresh and french fry prices were converted to seasonal averages, and the Dec. price of the year previous to 1994 (Dec. 1993) were included in calculating the Winter 1994 seasonal average prices. Data were taken from USDA, ERS, *Potato Facts*, Apr. 1997.

⁵² Transcript of the hearing; p. 52.

⁵³ Monthly retail french fry prices were converted to seasonal averages, and the Dec. price of the year previous to 1994 (Dec. 1994) was included in calculating the Winter 1994 seasonal average price. Data were taken from USDA, ERS, *Potato Facts*, Apr. 1997.

Table 2-18

Potatoes:¹ Prices received by U.S. growers, by month, 1993-97

Year	Jan.	Feb.	March	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	<i>U.S. dollars per cwt</i>											
1993	²	²	²	²	²	²	²	²	²	²	²	6.12
1994	6.01	6.42	7.65	6.68	6.59	6.67	7.50	6.28	5.04	4.58	4.75	4.87
1995	4.88	4.90	5.39	5.54	5.77	6.97	8.66	6.69	5.76	6.30	6.42	6.29
1996	6.65	6.92	7.51	7.83	8.09	8.14	8.09	5.79	4.83	4.75	4.46	4.22
1997	4.23	4.55	²	²	²	²	²	²	²	²	²	²

¹ Potatoes for all uses.² Not applicable.Source: USDA, ERS, *Vegetables and Specialties Situation and Outlook Report*, VGS-271, Apr. 1997, p. 53.

Table 2-19

Potatoes:¹ Seasonal and annual average prices received by U.S. growers, 1994-97

Year	Winter	Spring	Summer	Fall	Nominal annual	Deflated annual
<i>Dollars per cwt</i>						
1994	6.18	6.97	6.82	4.79	6.09	5.88
1995	4.88	5.57	7.44	6.16	6.13	5.71
1996	6.62	7.81	7.34	4.68	6.44	5.87
1997	4.33	²	²	²	²	3.89

¹ Potatoes for all uses.² Not applicable.

Note.--Winter prices are the simple average of the year's January and February values, as well as the previous year's December value. Spring prices are simple averages of the March, April, and May values, while Summer prices are the simple averages of the June, July, and August values. Autumn prices are simple averages of September, October, and November prices. Annual nominal averages are simple calendar year averages of the year's 12 monthly data points. The 1994-1996 deflated annual prices are in constant 1990 dollars, and were calculated by Commission staff by deflating the nominal annual averages by the following U.S. all-item producer price index (PPI) values; 1.036 for 1994; 1.073 for 1995; and 1.098 for 1996. The deflated 1997 price is only a partial price, whereby Commission staff divided the 1997 Winter average price by the PPI of 1.112, which is the simple average of the monthly PPIs for December 1996 and January 1997 -- the two most recently available PPIs published.

Sources: Calculated by USITC staff using monthly price data obtained from USDA, ERS, *Vegetables and Specialties--Situation and Outlook Report*, VGS-271, Apr. 1997, p. 3, and with U.S. producer price index data from International Monetary Fund, *International Financial Statistics*, Apr. 1997, pp. 706-713.

Table 2-20

Fresh white potatoes: Monthly U.S. retail prices, 1993-97

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<i>Dollars per pound</i>												
1993	¹	¹	¹	¹	¹	¹	¹	¹	¹	¹	¹	.364
1994 .	.369	.373	.395	.413	.389	.390	.401	.389	.355	.340	.339	.335
1995 .	.339	.337	.348	.359	.357	.396	.439	.425	.399	.396	.377	.380
1996 .	.385	.385	.392	.394	.392	.401	.408	.403	.375	.359	.343	.335
1997 .	.335	.331	.330	¹	¹	¹	¹	¹	¹	¹	¹	¹

¹ Not applicable.Source: USDA, ERS, *Potato Facts*, Apr. 1997, p. 13.

Table 2-21

Fresh white potatoes: Seasonal and average annual U.S. retail prices, 1994-97

Product, year	Winter	Spring	Summer	Fall	Annual, nominal	Annual, deflated
<i>Dollars per pound</i>						
1994 ...	0.370	0.399	0.393	0.345	0.374	0.330
1995 ...	0.337	0.355	0.420	0.391	0.379	0.325
1996 ...	0.383	0.393	0.404	0.359	0.381	0.318
1997 ...	0.334	¹	¹	¹	¹	0.274 [*]

¹ Not applicable.

Notes.--"Winter" prices are the simple average of the year's January and February values, as well as the previous year's December value. "Spring" prices are the simple averages of the March, April, and May values, while "Summer" prices are the simple averages of the June, July, and August values. "Autumn" prices are the simple averages of the September, October, and November prices. Annual averages are the simple January-December calendar year averages of the monthly prices and these simple averages are published by the USDA source below as the annual nominal price. The deflated annual prices are the constant 1990 dollar annual (calendar year) average of the monthly prices. The deflated retail prices are the 1994-1996 calendar year averages divided by the following all-item consumer price indices (CPIs): 1.134 for 1994; 1.166 for 1995, and 1.20 for 1996. The 1997 deflated "annual" average prices, those superscripted with asterisks in the table, are the 1997 Winter averages divided by the CPI deflator of 1.22 which is the simple average of Dec. 1996 and Jan. 1997 deflators, as the Feb. 1997 is not published yet.

Sources: USDA, ERS, *Potato Facts*, Apr. 1997, p. 13. Deflators were the U.S. CPI's, all items, published by the International Monetary Fund, *International Financial Statistics*, Apr. 1997, pp. 706-713.

Table 2-22

Processing potatoes: Prices received by U.S. growers, by month, 1992-96

	1992	1993	1994	1995	1996
<i>Cents per pound</i>					
January	4.3	4.9	5.1	5.0	5.4
February	4.1	4.9	5.1	4.8	5.4
March	4.2	5.1	5.4	4.8	5.7
April	3.7	6.3	5.0	4.8	5.9
May	3.9	7.1	4.8	4.8	6.6
June	3.9	5.4	5.5	5.0	6.5
July	3.9	5.4	4.9	5.7	6.0
August	5.1	5.0	4.9	5.0	4.9
September	4.6	4.6	4.9	4.9	4.7
October	4.3	4.6	4.5	4.7	4.7
November	4.8	4.7	4.6	5.2	4.9
December	4.8	5.0	4.7	5.4	4.9
Season average ...	4.5	5.0	4.8	5.2	4.8

Source: Compiled by USITC staff from USDA, NASS, data as reported in USDA, ERS, *Vegetables and Specialties--Situation and Outlook Report*, VGS-271, Apr. 1997, p. 53.

Table 2-23
Frozen french fries: Monthly U.S. retail prices, 1993-97

	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	<i>Dollars per pound</i>											
1993	1	1	1	1	1	1	1	1	1	1	1	.871
1994	.887	.881	.877	.845	.871	.871	.844	.856	.870	.853	.846	.838
1995	.847	.839	.854	.841	.863	.879	.869	.876	.864	.852	.886	.864
1996	.854	.896	.866	.868	.904	.906	.899	.921	.909	.908	.912	.897
1997	.924	.926	.914	1	1	1	1	1	1	1	1	1

¹ Not applicable.

Source: USDA, ERS, *Potato Facts*, Apr. 1997, p. 13.

Table 2-24
Frozen french fries: Seasonal and average annual U.S. retail prices, 1994-97

Product, year	Winter	Spring	Summer	Fall	Annual, Nominal	Annual, Deflated
	<i>Dollars per pound</i>					
1994 ...	0.880	0.864	0.857	0.856	0.862	0.760
1995 ...	0.841	0.853	0.875	0.867	0.861	0.738
1996 ...	0.871	0.879	0.909	0.910	0.895	0.746
1997 ...	0.916	1	1	1	1	0.751 [*]

¹ Not applicable.

Notes.--"Winter" prices are the simple average of the year's January and February values, as well as the previous year's December value. "Spring" prices are the simple averages of the March, April, and May values, while "Summer" prices are the simple averages of the June, July, and August values. "Autumn" prices are the simple averages of the September, October, and November prices. Annual averages are the simple January-December calendar year averages of the monthly prices and these simple averages are published by the USDA source below as the annual nominal price. The deflated annual prices are the constant 1990 dollar annual (calendar year) average of the monthly prices. The deflated retail prices are the 1994-1996 calendar year averages divided by the following all-item consumer price indices (CPIs): 1.134 for 1994; 1.166 for 1995, and 1.20 for 1996. The 1997 deflated "annual" average prices, those superscripted with asterisks in the table, are the 1997 Winter averages divided by the CPI deflator of 1.22 which is the simple average of Dec. 1996 and Jan. 1997 deflators, as the Feb. 1997 is not published yet.

Prices Received at Retail—Other Processed Products

Average monthly retail prices for potato chips trended upward since 1993, amounting to \$3.06 per pound in 1996 (table 2-25). During 1992-96, retail prices received for all potato chips sold in all major outlets were up considerably (table 2-26). In 1996, prices ranged from \$2.56 per pound for grocery store sales to \$3.42 per pound for sales through convenience stores. The share of total sales through various outlets has remained about the same since 1992. In 1996, sales through supermarkets and convenience stores accounted for 46 and 13 percent, respectively, of total sales that year, followed by sales through mass merchandisers, warehouse clubs stores, and grocery stores at 9, 8, and 7 percent, respectively.

Grading

The Food Production Act of 1917 established and encouraged the use of grades for food products. Potatoes were the first farm product with Federal grade standards.⁵⁴ Both the inspection and grading of potatoes are administered by the U.S. Department of Agriculture. For fresh table stock potatoes, grades include U.S. Extra No. 1, U.S. No. 1, U.S. Commercial, and U.S. No. 2 (table 2-27). U.S. standards for grades of seed potatoes include one grade, U.S. No. 1 Seed Potatoes. The standards for each grade are specific as to such factors as maturity, size, color, shape, firmness, texture, and freedom from defects. Except in those States where potatoes are covered by marketing orders, grading is voluntary and grading activities are funded by industry user fees. Potatoes need not be inspected and certified to be labeled with a USDA grade. However, potatoes labeled with a USDA grade must meet the standards of the marked grade or may result in the suspension of a packer's license to deal in potatoes. The produce industry sometimes uses private grades to specify quality. Although Federal regulations do not apply to state or region grades, such grades frequently are more stringent than USDA grades.

⁵⁴ See USDA, Agricultural Marketing Service (AMS), *United States Standards for Grades of Potatoes* and *United States Standards for Grades of Seed Potatoes*, various issues.

Table 2-25
Potato chips: Retail prices, by month, 1992-96

	1992	1993	1994	1995	1996
	<i>Per pound</i>				
January	\$2.94	\$2.83	\$2.87	\$3.08	\$3.00
February	2.91	2.93	3.02	3.01	2.96
March	2.94	2.84	2.97	2.97	3.03
April	2.86	2.84	3.01	3.05	3.07
May	2.87	2.90	3.00	2.95	2.99
June	2.91	2.83	2.97	2.99	2.98
July	2.94	2.89	2.90	2.97	3.11
August	2.97	2.97	2.99	3.03	3.07
September	2.86	2.89	2.96	2.97	3.07
October	2.94	2.91	2.92	3.02	3.15
November	2.84	2.84	3.02	2.98	3.10
December	2.84	2.92	3.01	3.03	3.12
Average ¹	2.90	2.88	2.97	3.00	3.06

¹ Simple annual average of 12 months.

Source: USDA, ERS, *Potato Facts*, Apr. 1997, p. 14.

Table 2-26
Potato chips: Prices, by type of sales outlet, 1992-96¹

Sales outlet	1992	1993	1994	1995	1996
	<i>Per pound</i>				
Supermarket	\$2.49	\$2.55	\$2.56	\$2.61	\$2.78
Grocery store	2.38	2.49	2.44	2.52	2.56
Mass merchandiser .	2.44	2.47	2.46	2.42	2.66
Drug store	2.44	2.73	2.78	2.82	2.90
Warehouse club ...	2.32	2.10	2.14	2.46	2.69
Convenience store .	3.06	3.19	3.11	3.37	3.42

¹ The most recent year for which data are available.

Source: Snack Food Association, *State-of-the-Industry Report*, various issues.

Table 2-27

Potatoes: U.S. standards for grades of identity, by product

Product	Effective Date	Standards
Potatoes (i.e. table stock)	Mar. 27, 1991	Grades: U.S. Extra No. 1, U.S. No. 1, U.S. Commercial, U.S. No. 2, Unclassified ¹ Sizes: A, B, Small, Medium, Large Other: tolerances, samples, skinning, and definitions
Potatoes for processing	April 14, 1983	Grades: U.S. No. 1 Processing, U.S. No. 2 Processing Sizes: minimum, maximum, or range specified in diameter or weight Other: usable price, unusable material, definitions, and defects
Seed Potatoes	Mar. 6, 1987	Grades: U.S. No. 1 Seed Potatoes Other: tolerances, samples, definitions, and classification of defects. Identified as certified seed by the state of origin on blue tags fixed to the containers or official State or Federal State certificates accompanying bulk loads, which identify the variety, size, class, crop year, and grower or shipper of the potatoes, and the State certification agency.
Frozen french fried potatoes	Feb. 8, 1967	Grades: U.S. Grade A, U.S. Grade A Short, U.S. Grade B, Substandard Types: Retail type, Institutional type Fry color types: Extra light, light, medium light, medium, dark Styles: General, strips, slices, dices, rissole, and other Length designations: Extra long, long, medium, short Flavor: Good flavor, Reasonably Good Flavor
Peeled potatoes	Aug. 11, 1986	Grades: U.S. Grade A, U.S. Grade B, Substandard Grading: color (A, B, Sstd), size (whole, whole and cut, cut and whole, sliced, diced, French style or shoestring, and cut), defects, and texture
Frozen hash brown potatoes	Nov. 15, 1976	Grades: U.S. Grade A, U.S. Grade B, Substandard Grading: color (A, B, Substandard), style (shredded, diced, chopped), defects, and texture
Canned white potatoes	Aug. 24, 1987	Grades: U.S. Grade A, U.S. Grade B, Substandard Grading: Styles (whole, sliced, diced, shoestring, pieces, and julienne), sizes (tiny, small, medium, and large), quality factors, fill of container, drained weights, and sample sizes

¹ Not a true grade but rather a designation for showing that no grade has been applied.Source: USDA, AMS, *United States Standards for Grades of Potatoes*, various issues.

Transportation

Potatoes are shipped in both fresh and processed forms great distances throughout the United States. Modes of transportation commonly used by shippers include both boxcar and piggyback by rail, as well as by truck.⁵⁵ Types of carrier generally vary depending upon such factors as the production area from which the potatoes are being shipped, the overall distances traveled, the locations of the purchasers, and whether any discounts or special pricing might be available for bulk shipments or shipments into certain areas. The transportation mode also varies depending upon the product form (i.e., chips, fresh, or frozen) and whether the product needs specific refrigeration or frozen-storage handling during transit. Finally, the mode of transportation selected is also a factor of the costs of the respective transportation modes available.

Seed and Table Stock Potatoes

Seed potatoes are often shipped great distances from production areas to planting areas. Historically, over 50 percent of seed potatoes purchased by growers in Washington State were sourced from Montana.⁵⁶ In recent years, seed potatoes grown in the Red River Valley region of North Dakota and Minnesota have been sold in Washington, Oregon, and parts of Idaho.⁵⁷ Also, seed potatoes from Canada and Northeastern Idaho have been sold in these same states. Seed potatoes grown in the Upper Peninsula of Michigan have been sold throughout Michigan and Wisconsin, but also sold into Minnesota and North Dakota. Maine-grown seed potatoes have been sold throughout the New England states, New York, Pennsylvania, and Ohio, and even to Florida.⁵⁸ Most of these seed potato shipments are believed to have been made by truck.

Fresh table stock potatoes have been shipped even greater distances than seed potatoes. In recent years, the share of shipments from certain states have varied by production region. In the Northeastern region, 100 percent of table stock potato shipments from Maine and New York were shipped by truck in 1994-96 (table 2-28). Shipments from North Central region States varied by State, with 100 percent of shipments from Wisconsin shipped by truck.⁵⁹ During the same period, nearly 90 percent of shipments from Minnesota and about 55 percent of shipments from North Dakota were by truck, respectively, with the share of shipments by truck from both states rising since 1994 (table 2-28). In the Western region, the share of shipments by truck reported for selected states have been rising since 1994. In 1996, the share of shipments by truck from Washington, California, and Idaho were 92, 76, and 66, respectively. Limited data reported for shipments from Canada showed 100 percent

⁵⁵ Little if any shipments of potatoes are believed to be transported by water or air.

⁵⁶ Transcript of the hearing, pp. 141-142.

⁵⁷ Commission staff conversations with officials of the U.S. potato industry, May 6, 1997.

⁵⁸ Ibid.

⁵⁹ Ibid.

of shipments by truck during 1994-96. Data were examined for the arrivals of fresh-market potatoes in three Eastern United States markets from selected States in the three major U.S. supply regions (table 2-29).

During 1994-96, 100 percent of arrivals from both Maine and New York in Boston, New York City, and Baltimore were delivered by truck. Arrivals in Baltimore from the North Central region states of Minnesota, North Dakota, and Wisconsin were essentially 100 percent delivered by truck, with 90 percent or better of arrivals from these same States delivered in Boston also by truck. Arrivals in New York City from Minnesota were also principally by truck, but arrivals from North Dakota and Wisconsin were predominately by rail. Finally, arrivals in these same three markets from States in the Western United States region varied by market as to the type of transport mode used. In Baltimore, most arrivals from Washington were by truck, as compared with 68 and 61 percent by truck from Idaho and California, respectively. About one-third of arrivals in New York from the Western Region were by truck. Arrivals by truck in Boston accounted for 9 to 44 percent of total arrivals.

The initial loading costs are reported to be higher for rail than for truck, but shipping greater distances by rail tends to average out the costs in favor of rail transport. The total distance shipped, however, is not the only factor involved in transport selection. Shipments in a North to South direction in the Eastern United States typically are transported by truck, whereas shipments of similar distance but in a West to East direction typically go by rail. One of the major reasons for the preference for truck shipments in the Eastern United States may be the greater accessibility of trucks into distribution centers or stores. Shipments by rail, on the other hand, generally have to be off-loaded from the nearest rail head and then transported some additional distance by truck.

Another important reason for the preference of truck to rail shipments is the total travel time involved. Rail shipments typically may take from two to three times as long to travel comparable distances. In the Northeastern United States, in particular, truck shipments from producing areas in Maine, New Brunswick, and P.E.I. may be landed in Boston and New York City the next working day, and into Philadelphia or the Baltimore/Washington area within 24 to 36 hours of loading.⁶⁰ Also, shipping by rail throughout the Eastern United States often may take longer because it involves travel over rails owned and operated by a number of different railroads. By contrast, shipments from Idaho to Chicago or New York City may involve two or three railroads at the most.

None the less, significant amounts of fresh table stock potatoes are shipped by rail. According to industry sources, Idaho growers are reported to be the largest user of refrigerated rail cars used throughout the United States.⁶¹ Idaho shippers use rail transportation for about one-third of their total shipments annually, principally to Eastern United States markets. Idaho shippers report that they can ship by rail from Idaho into New

⁶⁰ USITC staff conversations with officials of the New Brunswick, P.E.I., and Maine potato industries, May 6-9, 1997.

⁶¹ Transcript of the hearing, p. 113.

Table 2-28

Fresh-market potatoes: Choice of transport mode for shipments from selected growing areas, 1994-96

<i>Share (percent) of shipments delivered by—</i>						
Growing area	Truck			Rail		
	1994	1995	1996	1994	1995	1996
<i>Percent</i>						
United States:						
Northeastern:						
Maine	100	100	100	0	0	0
New York	100	100	100	0	0	0
North Central:						
Minnesota	87	82	90	13	18	10
North Dakota	53	53	58	47	47	42
Washington	88	89	92	12	11	8
Western:						
California	77	80	76	23	20	24
Idaho	54	60	66	46	40	34
Wisconsin	100	100	100	0	0	0
Canada	100	100	100	0	0	0

Source: Compiled by USITC staff from data supplied by the USDA, AMS, Market News Branch, June 1997.

Table 2-29

Fresh-market potatoes: Share of arrivals in selected cities from specified growing areas, by mode of transportation, 1994-96

Destination/growing Area	Share (percent) of arrivals delivered by--					
	Truck			Rail		
	1994	1995	1996	1994	1995	1996
	Percent					
Boston:						
United States:						
Maine	100	100	100	0	0	0
New York	100	100	100	0	0	0
North Central:						
Minnesota	69	64	90	31	36	10
North Dakota	54	86	90	46	14	10
Wisconsin	95	96	90	5	4	2
Western:						
California	8	6	9	92	94	91
Idaho	16	21	31	84	79	69
Washington	31	27	44	69	73	56
Canada	100	100	100	0	0	0
New York:						
United States:						
Maine	100	100	100	0	0	0
New York	100	100	100	0	0	0
North Central:						
Minnesota	84	84	88	16	16	12
North Dakota	35	19	10	65	81	90
Wisconsin	85	100	24	15	4	76
Western:						
California	44	32	33	56	68	67
Idaho	36	22	27	64	78	73
Washington	48	48	38	52	52	62
Canada	100	100	100	0	0	0
Baltimore:						
United States:						
Northeastern:						
Maine	100	100	100	0	0	0
New York	100	100	100	0	0	0
North Central:						
Minnesota	100	100	100	0	0	0
North Dakota	100	100	100	0	0	0
Wisconsin	100	99	98	0	1	2
Western:						
California	76	66	61	24	34	39
Idaho	43	55	68	57	45	32
Washington	67	94	93	33	6	7
Canada	100	100	100	0	0	0

Source: Compiled by USITC staff from data supplied by the USDA, AMS, Market News Branch, June 1997.

York City for around \$5.00 per cwt of potatoes, as compared with an estimated cost of about \$9.40 per cwt by truck.⁶² Rail shipments may take from 10-14 days by rail, as compared with 3-4 days by truck. Many of the refrigerated rail cars still used today, however, are described as old and are being taken out of service. Estimated costs for shipping fresh potatoes by rail from Idaho to various U.S. markets are shown in the following tabulation (in dollars per cwt):⁶³

Market	Cost	Market	Cost
Boston	\$5.17	Miami	\$5.08
Chicago	2.98	Montreal	5.01
Houston	3.24	Toronto	5.27
Los Angeles	1.95	Washington, DC	4.90

Industry sources have reported that transportation costs affect competitive conditions between U.S. and Canadian growers.⁶⁴ According to industry sources, transportation costs are not cost prohibitive for potatoes that were grown in one region from being shipped and sold in other regions.⁶⁵ In recent years, fresh potatoes are reported to have been sold all over the United States in spite of increasing transportation costs.⁶⁶ Growers in the Eastern United States in particular report that transportation costs in the East are the same for all Northeastern suppliers.⁶⁷

Raw potatoes for processing

In general, processors of frozen potato products attempt to source raw potatoes for processing as close to the processing plant as possible, which is why most of the processing operations in the United States are located near the extensive production areas in North Central and Western States.⁶⁸ Industry sources consider it a definite cost disadvantage to have to source their potatoes from any further away than 100-150 miles from the processing plant.⁶⁹ All raw potatoes for processing are believed to be transported from field or cold storage to processing plant by truck since the distances traveled are relatively short.

Processors of potato chips and related potato products are believed to source their raw product from great distances, although most regional chip processors usually purchase a share of their raw potatoes from sources within their region.⁷⁰ Chipping potatoes processed

⁶² Ibid.

⁶³ NPC, posthearing brief, May 27, 1997, p. 10.

⁶⁴ Transcript of the hearing, p. 110.

⁶⁵ NPC, posthearing brief, p. 3.

⁶⁶ Ibid., p. 10.

⁶⁷ Transcript of the hearing, p. 146.

⁶⁸ Commission staff conversations with officials of the U.S. potato growing and processing industries, Mar.-May 1997.

⁶⁹ Transcript of the hearing, p. 114.

⁷⁰ Commission staff conversations with officials of the potato chipping industry, Mar. 1997.

in the Mid-Atlantic region (e.g., Pennsylvania) have been procured from as far away as Florida, Maine, Canada, while chip processors in the Western United States have regularly purchased fresh potatoes for chipping from North Dakota to Texas.⁷¹ Industry sources state that, while it is desirable, it is not always possible to source their chipping potatoes close to their processing facility.⁷² The industry has often had to source raw potatoes from Canada in recent years due to an inadequate supply available in the United States.⁷³ In 1996, an estimated 50 percent of U.S. chip producers sourced as least some of their raw potatoes for chipping from Canada, although in most cases the share of raw potatoes from Canada was usually less than 5 percent of their total purchases.⁷⁴ One major U.S. chip processor is reported to have shipped raw potatoes from the United States to Canada for processing in its own processing plants there.⁷⁵ Chip processors prefer not to store their raw potatoes for any significant length of time and therefore have to source potatoes from additional areas as production in other areas becomes available.⁷⁶ This allows their plants to operate throughout the entire year. All of their potatoes are believed to be transported from field or cold storage to chipping plant by truck.

Raw potatoes for dehydration are transported by truck from field or cold storage to processing plant. Truck transport allows for easier access to grower fields and easier unloading at the dehydration facility. Truck availability is also reported to be greater than rail transport and in all cases cheaper to use for short hauls.

Processed potato products

Frozen potato products are processed as close to their raw potato supply as possible. As a result, processing takes place principally in the major production areas of the Western and North Central regions of the United States. Most frozen processed potato products are transported from these areas throughout the United States by rail from the Western United States and by truck from North Central States and Maine. Industry sources report that the use of rail transport has allowed processors in the Pacific Northwest to minimize their transportation costs to distant markets in a number of ways.⁷⁷ First, distribution centers have been set up in various regions of the United States to allow processors to make bulk deliveries to those centers. This helps to keep down processors' freight costs by allowing them to make fewer shipments to the centers of larger volumes of products. Second, some processors have purchased their own rail cars which are used for making the bulk shipments.

Industry sources state that rail transport is generally more advantageous than truck transportation for distances in excess of 1,000 miles and not economical for short distance

⁷¹ See transcript of the hearing, p. 153.

⁷² Grocery Manufacturers of America, posthearing brief, May 13, 1997, p. 1.

⁷³ Ibid.

⁷⁴ Transcript of the hearing, p. 156.

⁷⁵ Ibid., p. 158.

⁷⁶ Ibid., p. 154.

⁷⁷ Ibid., p. 112.

hauls.⁷⁸ They also state that they benefit from certain cost efficiencies with rail as opposed to truck shipments in that a 1,000 mile delivery in the Eastern United States would be more than a delivery of the same length from the Western United States.⁷⁹ Finally, U.S. industry sources have stated that although transportation costs are important, they are not the only consideration when comparing costs and prices in various U.S. markets for domestic and Canadian processors from various regions.⁸⁰ Further, U.S. processors state that they have been successful in competing in past years in spite of any alleged cost disadvantage due to transportation. Also, that manufacturing costs generally differ from region to region, which may help processors overcome any transportation disadvantages specific to their individual locations.⁸¹ U.S. frozen potato products processors have stated that Boston is currently the only U.S. market wherein products from Canadian processors appear to have any freight advantage.⁸²

Channels of Distribution

The channels of distribution for seed potatoes are similar to those for table stock potatoes.⁸³ Seed potatoes, both certified and other, are purchased from both individual growers and State-operated seed farms. In the United States, State-supported seed farms are located in Maine, New York, and Wisconsin.⁸⁴ Seed potato producers usually perform all the functions of growing, storing, packing, and selling their own products. Sales are usually direct sales to growers of table stock and raw potatoes for processing. Seed potato growers generally keep some of their own seed stock to use for planting the following year's seed crop.

The channels of distribution for table stock potatoes vary somewhat depending on the region of the country in which the potatoes are grown. In general, growers in the Northeastern United States are also shippers. They wash, pack, and ship their own product. Some of the smaller-volume growers may have these services performed for them by a larger operation nearby, at a cost to the grower. Also, Northeastern U.S. growers tend to store more of their crop on their own farm, while the handler/shippers in the West perform this function. In the Western United States, growing and shipping are usually separate businesses, with the shipper purchasing potatoes from growers and performing the washing, packing, storing, and shipping operations themselves. In Washington State, for example, there are 435 potato growers and 42 fresh packers.⁸⁵ Growers of table stock potatoes seldom produce their crop under contract. Sales through terminal markets, especially in the larger cities in the Eastern United States, are an important but declining part of the marketing channel for table stock potatoes.

⁷⁸ Collier, Shannon, Rill & Scott, posthearing brief, p. 18.

⁷⁹ Ibid., p. 19.

⁸⁰ Ibid.

⁸¹ Transcript of the hearing, p. 113.

⁸² Collier, Shannon, Rill & Scott, posthearing brief, p. 18.

⁸³ Potato Association of America, *Commercial Potato Production in North America*.

⁸⁴ Ibid., p. 25.

⁸⁵ Transcript of the hearing, p. 65.

The freezing and dehydration industries are located close to the sources of raw product and generally source their raw product needs within a certain distance from the processing plant. The chipping industry, on the other hand, is widely dispersed near population centers. The production of chipping potatoes is spread throughout the United States, with virtually all of the growing of chipping varieties being performed under contract with the chippers. Growers typically store the potatoes and deliver them to the chippers, who maintain minimal storage facilities. Most of the production of potatoes for freezing and dehydration are grown under contract with the processors. However, there is a significant open or spot market for processing type potatoes and recently some of the processors have contracted for a much smaller part of their supplies of raw potatoes for processing. Contracts usually specify variety, price, and include incentives/disincentives for quality (size, specific gravity, defects, etc.).

Potato chips are typically distributed by the potato chip producers, who typically sell to a limited geographic area. Potato chips are usually one of several snack food products produced by the chipper, with pretzels and corn chips and other products rounding out a line of snack food products that are shipped by the producer directly to chain stores or to the producer's regional distribution warehouses. Potato chips are usually distributed immediately after being produced and are not stored. Typically, potato chips have a shelf life of 60 days or less.

Frozen processed potato products (mostly frozen french fries) are sold to quick service restaurant chains, institutional outlets, and to grocery stores. The products sold to quick service restaurants are sold under contract between the producer and the chain. The contracts typically are for a year and specify price, quantity, type and size of packaging, delivery, and quality (length of cut, specific solids, type of oil to be used, etc.). These contracts are of major importance to the typical frozen processed potato products producer since they cover the major share of the market and allow the producer to know and schedule his production and shipments (and contract for raw product) accordingly. The producer can schedule his production so that he optimizes his output and storage costs. These contracts also allow the producer to lower his costs of production by avoiding stoppages in production to make costly changes in product specifications.

The frozen processed potato products producer also typically packs products for institutional users and sells these products directly to such users or through food brokers. Not all processors produce products for retail (grocery store) sale. Brand name recognition is significant, with the Ore-Ida brand dominating the retail market. Other producers sell private label products which compete primarily on price. Sales of retail products are typically through food brokers.

State Potato Marketing Organizations and Associations

There are a number of State potato organizations that participate in market development, advertising, research, education, standards and grade setting, and representation. Such organizations include the Washington State Potato Commission, which is funded through an assessment of a 4 cents per cwt on all potatoes sold, and the Washington Potato and Onion Association.⁸⁶ Additionally, the Maine Potato Board collects a 5-cent tax on each cwt of potatoes sold which goes towards research, promotion, education, and issues that arise that threaten growers' ability to raise potatoes. The Board receives no Federal or State money and is a public board separated from the State Government.⁸⁷

The Idaho Potato Commission (IPC) collects a levy of 8 cents per cwt of Idaho potatoes that go into human consumption, of which 60 percent is paid by growers, 20 percent by shippers, and 20 percent by processors. The 1996-97 budget is approximately \$9 million.⁸⁸ The money is used for advertising, promotion, research, and education. An important function of the IPC is to promote and protect the use of the "Grown in Idaho" seal, and to ensure that the trademark is properly used. The IPC also has contracts with agencies located in Chicago and New York City which handle retail trade advertising, public relations, and foodservice trade advertising.

The Idaho Crop Improvement Association (ICIA) inspects crops, including potatoes, for varietal purity and freedom from pests and diseases. It assesses an inspection fee of \$17.75 per acre and an additional \$10 per acre for each additional potato variety, with a \$25 membership fee for each application submitted under a different applicant name.⁸⁹ The Potato Growers of Idaho represent grower interests in legislation, marketing, and in negotiations with processors. About half of the Idaho potato growers are members and pay a fee of one-sixth of one percent of all potato revenues as dues, up to a maximum cap of \$1,920 per farm.⁹⁰ The Idaho Growers and Shippers Association is also funded through member dues, and is concerned with legislative, regulatory, transportation, and packaging issues.

⁸⁶ Based on information supplied to USITC staff, dated May 27, 1997, by the Washington State Potato Commission.

⁸⁷ Information provided by the Maine Potato Board through a memorandum dated June 2, 1997.

⁸⁸ Idaho Potato Commission, informational facsimile sent to USITC staff on June 25, 1997.

⁸⁹ ICIA, Inc., *Rules of Certification for Seed Potatoes* (Meridian, Idaho: ICIA, Jan. 1997), p. 7.

⁹⁰ Potato Growers of Idaho official, telephone conversation with USITC staff, June 25, 1997.

U.S. Trade and Regulatory Measures, and Tariff Treatment

Trade and Regulatory Measures

U.S. imports of fresh seed and table stock potatoes, dried or dehydrated potato products, and processed potatoes and potato products are subject to import duties as provided for under the Harmonized Tariff Schedule of the United States (HTS). Quotas on imports of fresh potatoes are no longer in existence. All fresh potatoes and processed potato product imports are subject to Federal health and sanitary regulations, administered by the Food and Drug Administration. Such imports are also subject to Federal grading and packaging regulations, as administered by the USDA. There are no antidumping duties or countervailing duty orders currently in existence on imports of fresh potatoes or processed potato products, nor have there ever been any in existence. Also, there are no State-administered regulations governing the movement of imported Canadian potatoes or potato products into or through States, unlike such regulations that exist on a Provincial basis in Canada.

Tariff Treatment

Potatoes and processed potato products are provided for principally in chapters 7 and 20 of the HTS. Table 2-30 shows the current rates of duty applicable to imports, including the reduced rates applicable to imports of products of Canada. The general (column 1) rate applicable to imports of fresh potatoes (seed, tablestock, or raw potatoes for processing) is 0.6 cent per kilogram; imports of Canadian potatoes (entered under general note 12 of the Goods of Canada Provision of the North American Free Trade Agreement) are duty free. U.S. imports of frozen cooked (steamed or boiled) potatoes are dutiable at the general rate of 15.8 percent ad valorem, but only at the rate of 1.7 percent if products of Canada.

Imports of dried whole, cut, or sliced potato products are dutiable at the general rate of 2.6 cents per kilogram, but free if products of Canada. Potato flour, meal, and powder are dutiable at 0.2 cent per kilogram if products of Canada, but otherwise dutiable at 2.2 cents per kilogram. Potato flakes, granules, and pellets are dutiable at 0.2 cent per kilogram if products of Canada and at the general rate of 2.1 cents per kilogram if from other countries. Potato starch is dutiable at the general rate of 0.72 cent per kilogram and 0.1 cent per kilogram if product of Canada. The general duty rates for frozen prepared or preserved potatoes (including french fries) are 8.2 percent ad valorem for yellow potatoes and 9 percent for other potatoes; the rates for these products if products of Canada is 1 percent ad valorem. The column 1 rate for other (not frozen) prepared or preserved potatoes is 8.2 percent ad valorem. The rate for products of Canada is 1 percent ad valorem.

Table 2-30

Potatoes: Harmonized Tariff Schedule subheading; description; U.S. col. 1 rate of duty as of Jan. 1, 1997; U.S. exports, 1996; U.S. imports, 1996

Potatoes: Harmonized Tariff Schedule Subheading, description, U.S. rate of duty as of Jan. 1, 1997, U.S. exports, 1996, U.S. imports, 1996		Col. 1 rate of duty as of Jan. 1, 1997		Bound duty, Uruguay Round ²	U.S. exports 1996	U.S. imports 1996
HTS subheading	Description	General	Special ¹			
---Thousand dollars---						
0701	Potatoes, fresh or chilled:					
0701.10.00	Seed	0.6¢/kg	Free (CA,E,IL,J, MX)	1.7¢/kg	5,468	26,948
0701.90	Other:					
0701.90.10	Yellow (Solano) potatoes	0.6¢/kg	Free (A,CA,E,IL,J, MX)	1.7¢/kg	(³)	(³)
0701.90.50	Other	0.6¢/kg	Free (CA,E,IL,J) 0.1¢/kg (MX)	1.7¢/kg	78,424	63,039
0710.10.00	Potatoes (uncooked or cooked by steaming or boiling in water), frozen	15.8%	Free (E,IL,J) 1.7% (CA) 3.5% (MX)	35%	7,849	755
0712	Dried vegetables, whole, cut, sliced, broken or in powder, but not further prepared:					
0712.90.30	Potatoes, whether or not cut or sliced	2.6¢/kg	Free (A,CA,E,IL,J) 0.5¢/kg (MX)	6¢/kg	7,205	204
1105	Flour, meal, powder, flakes, granules and pellets of potatoes:					
1105.10.00	Flour, meal and powder	2.2¢/kg	Free (A,E,IL,J,MX) 0.2¢/kg (CA)	5.5¢/kg	43,223	1,993
1105.20.00	Flakes, granules and pellets	2.1¢/kg	Free (E,IL,J,MX) 0.2¢/kg (CA)	6.1¢/kg	2,067	199

Table 30-Continued

Potatoes: Harmonized Tariff Schedule subheading; description; U.S. col. 1 rate of duty as of Jan. 1, 1997; U.S. exports, 1996; U.S. imports, 1996

		Col. 1 rate of duty as of Jan. 1, 1997		Bound duty, Uruguay Round ²	U.S. exports 1996	U.S. imports 1996
HTS subheading	Description	General	Special ¹			
---Thousand dollars---						
1108.13.00	Potato starch	0.72¢/kg	Free (CA,E,IL,J) 0.1¢/kg (MX)	5.5¢/kg	2,083	19,941
2004	Other vegetables prepared or preserved otherwise than by vinegar or acetic acid, frozen, other than products of heading 2006:					
2004.10	Potatoes:					
2004.10.40	Yellow (Solano) potatoes	8.2%	Free (A,E,IL,J,MX) 1% (CA)	35%	(⁴)	(⁴)
2004.10.80	Other	9%	Free (E,IL,J) 1% (CA) 2% (MX)	35%	277,881	126,307
2005.20.00	Potatoes, prepared or preserved otherwise than by vinegar or acetic acid, not frozen	8.2%	Free (A,E,IL,J,MX) 1% (CA)	35%	188,659	2,663

¹ Programs under which special tariff treatment may be provided, and the corresponding symbols for such programs as they are indicated in the "Special" subcolumn, are as follows: Generalized System of Preferences (A or A*); Automotive Products Trade Act (B); Agreement on Trade in Civil Aircraft (C); North American Free-Trade Agreement, goods of Canada (CA) and Mexico (MX); Caribbean Basin Economic Recovery Act (E); United States-Israel Free-Trade Agreement (IL); and Andean Trade Preference Act (J).

² Uruguay Round bound rates of duty are published by the office of the U.S. Trade Representative, *Results of the Uruguay Round Market Access Negotiations, GATT Schedule XX, United States of America, Vol. 1, General Notes, Agriculture*, Washington, DC; U.S. Government Printing Office, Apr. 1994.

³ Data are included in 0701.90.50.

⁴ Data are included in 2004.10.80.

Source: Subheadings, product descriptions, and rates of duty compiled from the Harmonized Tariff Schedule of the United States; U.S. exports and imports compiled from official statistics of the U.S. Department of Commerce.

Federal Marketing Orders

Federal marketing order regulations are authorized by the Agricultural Marketing Agreement Act of 1937. The stated purpose of this Act is to (1) provide orderly marketing; (2) enhance producer prices (but not above parity); (3) protect consumer interests; and, (4) provide for the orderly intra seasonal flow of agricultural commodities. Federal marketing orders regulate the selling of 21 fruits and 6 vegetables (including potatoes). Marketing orders are regulated by USDA's Agricultural Marketing Service (AMS).

Marketing orders are initiated by the industry, implemented through Federal rulemaking and producer referenda, and administered by committees of growers or growers and handlers (the first buyers of the commodity). Marketing orders typically specify shipping and handling regulations, seed certification, varieties that may be sold, grade and size standards, packing standards, and container regulations. In addition, some marketing orders, particularly those that are national in scope, may promote potatoes through advertising, trade shows, and demonstration projects. Funds to cover administration of the orders are usually acquired by levying an assessment on each first handler of potatoes. All handlers of potatoes in the area covered by the order must abide by a marketing order's rules or face stiff penalties.

Five Federally-regulated marketing orders for U.S.-grown potatoes cover Irish potatoes grown in certain counties in Idaho and Malheur County in Oregon; Washington; Modoc and Siskiyou Counties, California and in all counties in Oregon except Malheur; Colorado; and certain Southeastern States (Virginia and North Carolina) as shown in table 2-31. A sixth marketing order existed at one time in Maine, but was voted out of use over 30 years ago, and was finally dropped from the books in 1996.⁹¹ Regulations for marketing orders are periodically updated.

Table 2-31
Federal potato marketing orders: year established and provisions

Marketing order	Year established	Provisions
Idaho-Eastern Oregon	1941	Package and container requirements Size and grade requirements
Colorado	1941	Generic advertising and promotion Production and research Package and container requirements Size and grade requirements
Southern Oregon-Northern California	1942	Generic advertising and promotion Production and research Size and grade requirements
Virginia-North Carolina	1948	Size and grade requirements
Washington State	1949	Size and grade requirements

Source: 7 CFR parts 945-953.

⁹¹ USITC staff conversations with officials of the USDA, AMS, Feb. 1997.

Perishable Agricultural Commodities Act (PACA)

The PACA of 1930,⁹² administered by USDA's Agricultural Marketing Service (AMS), promotes fair trading in the fruit and vegetable industry by requiring buyers and sellers of fresh and frozen fruits and vegetables to live up to the terms of their contracts. The PACA provides informal and formal procedures to resolve disputes outside the civil court system and regulates the buying and selling of fresh and frozen fruits and vegetables, including potatoes, to prevent unfair or fraudulent trade and to assure that sellers will be paid promptly. Federal law requires that almost everyone who deals in fresh and frozen fruits and vegetables hold a PACA license. One exception is growers who only sell their own produce. A party found to have committed repeated and flagrant unfair practices faces license suspension or revocation, which severely restricts future operations in fruit and vegetable trade. Operation without a valid license may result in stiff penalties.

Dealer license fees of \$550 per year in 1997 entirely cover the estimated \$7.2 million cost of operating PACA in FY 1997.⁹³ The maximum annual fees for firms with multiple locations is \$3,000. Current fees are at the statutory maximum permitted by law. On November 15, 1995, Public Law 104-48 was passed which sought to restructure and strengthen PACA. The new law provides that license fees may be raised if reserve funds fall below 25 percent of the projected operating cost for the following year. While there were about 16,000 licenses granted for all agricultural commodities in 1996, there are no separate statistics on the number of PACA licenses granted for potatoes. The number of licenses varies from year to year since the license must be renewed every year. The number of licenses granted in recent years for all agricultural commodities has varied between 15,000 and 17,000.⁹⁴

Government Assistance Programs Affecting the U.S. Potato Industry

U.S. potato producers are believed to benefit from a number of Federal, State, and local programs which help to stabilize production costs and prices, and enhance returns. Potato producers have benefited directly from production-related programs, such as Federally-supported irrigation, agricultural credit, crop insurance, and disaster assistance. Domestic and foreign market promotion programs help to enhance both market prices and sales. Agricultural research programs support a variety of activities that assist the long-run competitiveness of the potato industry. In addition, potato producers are generally eligible for Federal and State tax provisions that apply to farming operations and exemptions from

⁹² June 10, 1930, C. 436 §1 46 Stat. 531.

⁹³ USDA, AMS, *Highlights of the 1995 PACA Legislation*, as revised Sept. 1996.

⁹⁴ Based on USITC staff conversation with officials of the USDA, AMS, May 6, 1997.

excise taxes on purchases of inputs used in agriculture. A summary table of U.S. assistance programs is provided in table 2-32.

U.S. Federal Government Programs

Crop Insurance—Federal Crop Insurance Corporation (FCIC)

The FCIC provides voluntary crop insurance to agricultural producers which covers crop losses in the event of a natural disaster. Participating growers may choose coverage at 50, 65, or 75 percent of the farm's 10-year average yield. For example, a producer who has a 10-year average potato yield of 400 cwt per acre and chooses 75-percent coverage would receive an indemnity payment for each cwt that his/her actual yield fell below 300 cwt per acre. Two-thirds of the premium is paid by the farmer and one-third by the Federal Government.

In the 1996 crop year, 822,986 acres grown in potatoes were covered by Federal crop insurance for a total insured value of \$513 million, or about \$623 per acre.⁹⁵ This indicates a participation rate of about 58 percent since there were 1.4 million acres of potatoes planted in 1996.⁹⁶ As recently as 1991, the participation rate was only 20 percent.⁹⁷ The FCIC paid out about \$17 million in premiums for potato growers and an additional \$28 million in indemnity for potato crop losses in 1996.⁹⁸

Disaster/Emergency Assistance

Ad hoc disaster assistance

In the past, the USDA has provided ad hoc disaster assistance to reimburse farmers for uninsured losses caused by natural disasters. Potato producers received \$13 million, \$34 million, and \$24 million in such disaster payments in 1992, 1993, and 1994, respectively.⁹⁹ To receive this assistance, potato growers had to suffer a 35-40 percent loss and then were awarded a percentage of the market price for the loss above 40 percent (35 percent if the grower had crop insurance).¹⁰⁰

⁹⁵Based on information supplied to USITC staff by the Field Underwriting Services Branch, FCIC, Apr. 1997.

⁹⁶ USDA, ERS, *Potato Facts*, Nov. 1996, p.5.

⁹⁷ According to USDA, ERS, only 283,000 acres of potatoes out of 1.4 million were insured in 1991. USDA, ERS, "Public Programs for U.S. Potato Growers," unpublished study, 1997.

⁹⁸ Based on information supplied to USITC staff by Field Underwriting Services Branch, FCIC.

⁹⁹ Canadian Embassy, prehearing brief, Apr. 28, 1997, p. 5.

¹⁰⁰ Based on information supplied to USITC staff by the Maine Potato Board, dated June 2, 1997.

Table 2-32

Summary of Federal and State programs applicable to potatoes and potato industries

Type of program	Federal program	State program
Farm-level programs:		
Crop insurance	<ul style="list-style-type: none"> Federal Crop Insurance Corporation (FCIC) insures about 58 percent of potato acres 	
Farm disaster assistance	<ul style="list-style-type: none"> Ad hoc disaster assistance provided to potato growers 1992-94 Noninsured Crop Disaster Assistance Program (NAP) reimburses farmers who are not covered by crop insurance since 1996 Emergency Loan Assistance (EM) covers production and physical losses in counties declared disaster areas Emergency Conservation Program (ECP) provides emergency funds for farmers to rehabilitate farmland damaged by wind erosion, floods, hurricanes, or other natural disasters, and for water conservation 	
Credit/financial assistance	<ul style="list-style-type: none"> Farm Service Agency provides direct loans and guaranteed loans up to \$400,000. 	<ul style="list-style-type: none"> Potato Marketing Improvement Fund, Maine Finance Authority of Maine (FAME), Agricultural Marketing Loan Fund, Maine Idaho Department of Agriculture Rural Rehabilitation Loans
Rural development	<ul style="list-style-type: none"> Rural Business-Cooperative Service (RBS) provides programs to assist development of rural businesses and farmer cooperatives 	
Irrigation infrastructure	<ul style="list-style-type: none"> Department of Interior, Bureau of Reclamation provides water to about 22 percent of U.S. potato acreage. Between 1902 and 1992 Federal investments in water reclamation reached \$11 billion 	
Marketing assistance/ promotion	<ul style="list-style-type: none"> Agricultural Marketing Service (AMS) administers Federal marketing orders and provides market assistance through grants to States National Potato Promotion Board (NPPB), administered by AMS, promotes potato sales Section 32 program purchases of surplus commodities Market Access Program administered by USDA's Foreign Agricultural Service (FAS) promotes exports GSM Export Credit Guarantees (allocations) 	<ul style="list-style-type: none"> Activities of State Departments of Agriculture may include market promotion and assistance to farmers, food processors, and shippers

Table 2-32—Continued

Summary of Federal and State programs applicable to potatoes and potato industries

Type of program	Federal program	State program
Research, extension, and information services	<ul style="list-style-type: none"> Federal funding provided through the Agricultural Research Service and the Cooperative State Research, Education, and Extension Service Data and information provided through the Economic Research Service, National Agricultural Statistics Service, FAS, and AMS 	<ul style="list-style-type: none"> State programs provide research funding and matching extension funds
Plant Quarantine and Protection	<ul style="list-style-type: none"> USDA's Animal and Plant Health Inspection Service checks products entering the United States for diseases and pests 	
Production assistance/tax incentives	<ul style="list-style-type: none"> Special use valuation provides for lower tax valuation of farmland Unified Credit allows couple to pass on \$1.2 million in farmland to heirs with no tax Federal fuel tax exemptions for off-road use 	<ul style="list-style-type: none"> Farm use valuation provides for lower State and local property taxes Retail sales tax exemption on business inputs Seed potato production programs, Maine
Infrastructure, processing/agribusiness assistance:		
Rural development	<ul style="list-style-type: none"> Federal grants support community and infrastructure development in rural areas 	
Research and market promotion programs	<ul style="list-style-type: none"> NPPB programs, include Market Access Funds for frozen potato products Section 32 purchases of surplus commodities Export credit guarantee allocations 	<ul style="list-style-type: none"> Activities of State Departments of Agriculture may assist marketing of processed potato products
Financial assistance	<ul style="list-style-type: none"> RBS Loan Guarantees and Intermediary Relending Loan programs 	<ul style="list-style-type: none"> State and local business and community development programs may promote rural businesses

Source: U.S. International Trade Commission.

Noninsured Crop Disaster Assistance Program

In 1996, Congress passed the Agricultural Marketing Transition Act (AMTA) which contained provisions for a new disaster insurance program, the Noninsured Crop Disaster Assistance Program (NAP), to replace the ad hoc programs which had been provided in the past. The NAP, which is administered by the Farm Service Agency (FSA), only applies to farmers who are not covered by crop insurance. However, in contrast to crop insurance, where individual farmers in a given area know in advance the conditions under which indemnities will be paid, growers do not know whether they will receive NAP payments until a widespread disaster occurs.

Significant changes in NAP distinguish it from previous ad hoc disaster legislation. First, NAP does not require emergency Congressional legislation, but is funded on a fiscal year basis in anticipation of need. Claim requirements for farmers are more stringent. Farmers must file an acreage and production report with the local FSA office prior to the crop reporting date in order to be eligible.¹⁰¹ NAP crops, including potatoes, are eligible when the expected "Area Yield" is less than 65 percent of normal. In the event of a natural disaster they must present proof of loss, and an FSA claims adjuster must verify the actual loss. NAP payments are made to eligible producers when individual crop losses are in excess of 50 percent of the individual's approved yield at 60 percent of the crop's average market price (determined by FSA). Payments to any one producer under NAP cannot exceed \$100,000 for any given crop year.¹⁰²

Because of these more stringent requirements, budgetary outlays for disaster assistance have fallen since the enactment of NAP.¹⁰³ Funds allocated in the year ending June 30, 1997, amounted to \$200 million for all crops, of which only \$41.7 million had been utilized as of May 15, 1997.¹⁰⁴

Emergency Loan Assistance

Emergency Loan Assistance (EM) is sponsored by the FSA to provide loans to help cover production and physical (property) losses in counties declared as disaster areas by the President or designated by the Secretary of Agriculture, for up to \$500,000 per disaster, or 80 percent of the actual loss, whichever is less. For physical losses only, the FSA Administrator may authorize EM assistance. Loans for crop losses are normally repaid in over 1 to 7 years, depending upon the loan purpose, repayment ability, and collateral available as loan security. The current annual interest rate is 3.75 percent.¹⁰⁵ Although separate amounts for potato growers are not tracked, the total amount of loans in FY 1996

¹⁰¹ USDA, FSA, *Noninsured Crop Disaster Assistance Program*, Farm Program Fact Sheet, May 1996.

¹⁰² Ibid.

¹⁰³ Based on USITC staff conversation with FSA official, May 22, 1997.

¹⁰⁴ USDA, FSA, "Status of 1996 NAP Funds as of May 15, 1997," facsimile data, May 15, 1997.

¹⁰⁵ USDA, FSA, *Emergency Loan Assistance*, Farm Program Fact Sheet, May 1996.

for all crops was \$176 million, and the amount for FY 1997, through April 30, 1997, was \$77 million.¹⁰⁶

Emergency Conservation Program

The Emergency Conservation Program (ECP) provides emergency funds, appropriated by Congress, for farmers to rehabilitate farmland damaged by wind erosion, floods, hurricanes, or other natural disasters, and to carry out emergency water conservation measures during periods of severe drought. The natural disaster must have created new conservation problems which, if not treated, would impair or endanger the land, materially affect the productive capacity of the land, represent unusual damage which, except for wind erosion, is not the type likely to recur frequently in the same area, and be so costly to repair that Federal assistance is or will be required to return the land to productive agricultural use. Conservation problems existing prior to the disaster involved are not eligible for cost-sharing assistance. The ECP is administered by State and County Agricultural Stabilization and Conservation (ASC) committees.¹⁰⁷ In 1996, the ECP provided \$26 million in cost-sharing funds to 6,555 farms in the United States at an average of \$19 per acre. There are no separate statistics by crop.

Credit/Financial Assistance

Farm Service Agency

The FSA, formerly the Farmers Home Administration (FmHA), is the lender of last resort for family farmers who cannot obtain credit elsewhere. FSA provides credit assistance to family-size farmers through both direct loans and loan guarantees. Direct loans are made and serviced exclusively by the FSA while guaranteed loans are made and serviced by commercial lenders. Applicants must be unable to obtain credit elsewhere to be eligible.¹⁰⁸ Data are not available on the number of potato growers who are FSA borrowers.

FAS *Farm Ownership loans* assist beginning farmers to establish themselves in agriculture or help existing owner-operators make improvements to their operations or restructure debt. Direct loans for these purposes may not exceed \$200,000 and guaranteed loans may not exceed \$300,000, and may be repaid over 40 years. *Farm Operating loans* may be made to assist beginning and existing family farmers to purchase essential operating inputs in amounts up to \$400,000. As noted above, *Emergency Disaster loans* are made available

¹⁰⁶ USDA, FSA, "Status of Loan and Grant Obligations/Allotments or Distribution Fiscal Year 1996, and Fiscal Year 1997, as of April 30, 1997." Form FSA 389-175-1297222, Emergency Loans.

¹⁰⁷ USDA, FSA, *Emergency Conservation Program*, Farm Program Fact Sheet, Oct. 1996, revised Nov. 1996.

¹⁰⁸ USDA, FSA, "Farm Loan Programs, Explanation of Programs," and "Farm Credit Programs Obligations Report," as of Sept. 30, 1996.

in designated counties where property damage or severe production losses occurred as a result of a natural disaster. In FY 1996 total FSA obligations were \$2.7 billion.

Rural Business-Cooperative Service (RBS)

RBS provides commercial lending services, including Business and Industrial (B&I) Guaranteed Loans. The B&I program guarantees loans made by commercial lenders against a portion of loss resulting from borrower default. Loans may be used to finance working capital, machinery and equipment, buildings, real estate, and certain types of debt refinancing for rural business or integrated production and processing projects for which no more than 50 percent of the loan guarantee is for agricultural production.¹⁰⁹ Another RBS program is the Intermediary Relending Loan Program, which provides direct loans at 1 percent interest to establish revolving loan funds for businesses and community development projects in rural areas. In addition to USDA, RBS direct loan and guarantee programs, States and localities may also provide their own financial assistance programs for rural businesses.

Irrigation/Rural Development

Federal grants—infrastructure and community development

Rural areas received roughly \$6 billion in Federal grants for infrastructure and community development in 1994, with most of these grants provided for highway planning and construction, Community Development Block Grants, and public works.¹¹⁰ Additionally, USDA's Rural Utilities Service is a major source of grant funds for water and wastewater disposal facilities.

Cooperatives assistance

The Cooperative Service (CS) under the RBS promotes the understanding and use of the cooperative form of business by providing information, technical assistance, and related services to farmer cooperatives. The CS spent approximately \$3.2 million in FY 1996.¹¹¹ In 1995, there were 241 fruit and vegetable farmers' cooperatives with over 49,000 members, although there are no separate statistics for potatoes.¹¹²

¹⁰⁹ RBS official, telephone interview by USITC staff, June 19, 1997. Data on the number and amount of RBS guaranteed loans for U.S. potato processors was not available from USDA, RBS.

¹¹⁰ USDA, ERS, *Credit in Rural America*, Agricultural Economic Report No. 749, Apr. 1997.

¹¹¹ Based on USITC staff conversation with the Budget Office of the RBS, June 20, 1997.

¹¹² USDA, RBS, *Farmer Cooperative Statistics 1995*, Report 52, Nov. 1996, p. 3.

Irrigation programs

Many Western U. S. potato producers and processors receive water and water services from projects sponsored by the Bureau of Reclamation (Reclamation) of the U.S. Department of the Interior (DOI). In 1992, the most recent year for which data are available, Reclamation water irrigated about 9.2 million acres of land. Potatoes accounted for approximately 3 percent of this land area and 6 percent of the value of crops grown.¹¹³ The decision of how to equitably divide water between agricultural and nonagricultural uses such as urban, wildlife habitat preservation, and aesthetic and recreational river uses arises during years of short supply. The current law allows 960 acres to be irrigated with Reclamation water.¹¹⁴

The Snake River in Idaho is a Reclamation project which supplies much of the irrigation to potato farmers in Idaho, Oregon, and Washington. Farmers and processors pay the same prices as other users for water from the Snake River, which varies according to the amount of hydroelectrically generated electricity needed to pump the water from the river to fields.¹¹⁵ Additionally, the Columbia Basin Project in Washington provides irrigation to potato growers in that State.¹¹⁶

It is difficult to compute the exact benefit to potato growers and processors of Federal water projects because many of the capital-intensive projects, such as dams, were built with money that was borrowed at below-market or zero interest rates under the Reclamation Act of 1939, but have since been repaid. Also, the water is available to other users besides farmers and potato processors. The Reclamation Act of 1939 added the stipulation that irrigation costs beyond the irrigators' ability to pay may be shifted to other project beneficiaries such as hydroelectric power users. Reclamation estimates the amount an irrigator is able to pay based on developed farm budgets typical of an area, and water rates for each district are set accordingly.¹¹⁷

In 1992, the most recent reporting period, a total of 269,000 irrigated acres planted in 17 Western States, or 22 percent of 1.3 million total acres planted in potatoes in the United States, benefited from Reclamation irrigation projects.¹¹⁸ The total value of crops grown on Reclamation irrigated land in 1992 was \$2.3 billion, of which potatoes accounted for \$222 million or about 10 percent. By 1992, Federal investments going back 90 years in completed Reclamation project facilities reached \$11.0 billion, including \$2.2 billion in specific irrigation facilities, \$1.9 billion in electric power facilities, and the rest in other facilities.

¹¹³ DOI, Bureau of Reclamation, *1992 Summary Statistics, Water, Land, and Related Data* (Denver, CO: Bureau of Reclamation, 1993), p. 1 and pp. 55-56.

¹¹⁴ 43 CFR 426.6, p. 561.

¹¹⁵ Based on USITC staff conversation with the Idaho Water Users Association, Apr. 15, 1997.

¹¹⁶ DOI, Bureau of Reclamation, *The Story of the Columbia Basin Project* (Washington, DC: GPO, 1978).

¹¹⁷ Richard Wahl, *Markets for Federal Water: Subsidies, Property Rights, and the Bureau of Reclamation*, (Washington, DC: Resources for the Future, 1989), p. 39.

¹¹⁸ DOI, *1992 Summary Statistics, Water, Land, and Related Data*, p. 22.

Marketing Assistance, Domestic and Foreign Market Promotion

Agricultural Marketing Service

As noted earlier, Federal marketing orders for potatoes are regulated by USDA, AMS. Of the roughly \$4 million spent by AMS in 1996 in administering the 37 Federal marketing orders, approximately 10 percent (\$400,000) was spent on the five marketing orders for potatoes.¹¹⁹

AMS also provides research and technical assistance aimed at improving the efficiency of food distribution facilities that help farmers market fruits, vegetables, and other perishable crops. Its transportation activities seek to improve transportation systems and policies as they pertain to farm products, and to provide technical assistance and information to producers and shippers for rural development and export shipping. The Federal-State Marketing Improvement Program provided \$1.2 million in grants to States (on a 50-percent matching basis) in FY 1996 for projects intended to improve the marketing of agricultural products, including potatoes.¹²⁰

National Potato Promotion Board (NPPB)

Federal legislation, including the Potato Research and Promotion Act,¹²¹ currently authorizes several freestanding generic promotion programs not tied to marketing orders. Similar to marketing orders, however, such programs are operated by a producer board. The NPPB is one of five programs for fruits and vegetables designed to expand sales. In addition to the goal of expanding export markets, a stated goal of the NPPB is to "improve the perception of the potato through an integrated marketing plan." There are approximately 2,000 handlers, 6,000 producers, and 105 importers covered by the program.¹²²

The NPPB operates at the national level and is administered by the USDA, AMS.¹²³ Federal costs are minimal because potato growers pay about \$6 million annually in assessments. The NPPB collects an assessment of 2 cents per cwt from all U.S. growers who produce five or more acres of potatoes handled for human consumption or seed planting.¹²⁴ Assessments apply to any potatoes produced in the 50 States. A comparable assessment is collected on imported table stock and seed potatoes, and the fresh weight equivalents of imported frozen or processed potatoes for human consumption. The importer pays the assessment at the time of product entry into the United States. The Board receives the assessments from the U.S. Customs Service,

¹¹⁹ Estimated by USITC staff based on conversations with officials of the USDA, AMS, Mar. 24, 1997.

¹²⁰ Based on USITC staff conversation with USDA, AMS official, June 20, 1997.

¹²¹ Title III, Public Law 91-670, 84 Statute 2041-2047, Jan. 11, 1971.

¹²² USDA, AMS, "Research and Promotion Programs for Fruits, Vegetables, and Specialty Crops," memorandum dated Apr. 3, 1996.

¹²³ In June 1997, a group of Idaho's potato growers petitioned for the abolishment of the NPPB, stating that promotion by the NPPB was too generic and contradictory to the Idaho growers' contention that Idaho potatoes were superior table stock potatoes. President of the Idaho/Growers/Shippers Association, conversation with USITC staff, June 19, 1997.

¹²⁴ 7 U.S.C. 2611-2627, Section 308.

under an agreement with the AMS.¹²⁵ Proceeds from the assessments go towards research, development, advertising, and promotion of potatoes in a manner prescribed by the plan.¹²⁶ The NPPB reimburses AMS, the Department's Office of General Counsel, and U.S. Customs for costs incurred in administering the program.

The NPPB's approved budget for the period July 1, 1996, through June 30, 1997, is \$8.1 million, a 15 percent decline from the 1996 budget of \$9.552 million.¹²⁷ Projected assessment income is \$7.8 million (96 percent from domestic production and 4 percent from imports). Interest income of \$245,000 will augment assessments to fund the Board's programs.¹²⁸ The NPPB also received \$585,000 from USDA's Foreign Agricultural Service (FAS) under the Market Access Program to promote U.S.-grown potatoes in foreign markets (see below).

The NPPB, with the cooperation of the National Cancer Institute and the endorsement of the USDA, is currently participating in a national promotional campaign aimed at boosting fruit and vegetable consumption. The NPPB works in partnership with the Snack Food Association to promote chips and other potato-based snack foods. The NPPB also sponsors market research, both domestically and internationally, to find the best marketing opportunities and to ensure that promotional activities are working.¹²⁹

The NPPB is classified an instrumentality of the United States Government by the Internal Revenue Service under Internal Revenue Service Code Section 115(a) and therefore is not subject to income taxation.¹³⁰ Permanent mandatory assessments are not usually imposed until approved in a producer referendum. The Potato Research and Promotion Plan (PRPP) is authorized by the Potato Research and Promotion Act (Act) [U.S.C. 2611-2627], which was signed into law on January 11, 1971, and became effective on March 9, 1972.¹³¹ The Act has been amended three times.

¹²⁵ 57 FR 40083, Sept. 2, 1992, as amended at 58 FR 3359, Jan. 8, 1993; 59 FR 63696, Dec. 9, 1994.

¹²⁶ 7 U.S.C. 2611-2627, Section 304.

¹²⁷ USDA, AMS, "Approval of Amendment of the National Potato Promotion Board's FY-97 Marketing Plan and Budget," memorandum dated Jan. 23, 1997.

¹²⁸ Ibid.

¹²⁹ NPPB, information package, received May 27, 1997.

¹³⁰ NPPB, *1995 Annual Report* (Denver, CO: NPPB, 1996), p. 10.

¹³¹ USDA, AMS, "Research and Promotion Programs for Fruits, Vegetables, and Specialty Crops."

Market Access Program (MAP)

The MAP is administered by the USDA, FAS to help U.S. producers, private companies, and other trade organizations finance promotional activities for U.S. agricultural exports. Activities financed include consumer promotions, market research, technical assistance, and trade servicing. The Export Incentive Program (EIP), which is part of the MAP, helps U.S. commercial entities conduct new promotion activities including advertising, trade shows, in-store demonstrations, and trade seminars.¹³²

The MAP program has primarily assisted in the promotion of U.S. exports of frozen french fries; funding is provided through the NPPB. In the 1997 program year (July 1997-June 1998), the MAP will provide \$1.3 million to promote processed potato exports.¹³³ MAP allocations for processed potato products declined during program years 1992/93 to 1996/97, as shown in the following tabulation (in millions of dollars):

	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98
Allocations	5,600	2,670	1,020	1,110	585	1,291

The MAP for potato products initially targeted Pacific Rim countries, but the program has more recently included markets in China and Latin America. The NPPB has recently formed a task force to assist the seed potato industry in developing an export promotion program. In 1996, research was conducted to identify potential markets and recommend marketing strategies for seed potatoes.¹³⁴

Export Credit Guarantee Programs

The Export Credit Guarantee Program (GSM-102), administered by USDA, FAS, assists commercial sales of U.S. agricultural products to countries that may not be able to purchase U.S. commodities without credit. GSM-102 guarantees repayment of short-term commercial credit (up to 3 years). A new program, the Supplier Credit Guarantee Program (SCGP), covers short-term financing extended directly by U.S. exporters to foreign buyers and requires that the importers sign a promissory note in case of default on the loan guarantee.

In FY 1997, GSM and Supplier Credit Guarantees for fresh and processed potatoes have been authorized for Brazil, Central America, China, Czech Republic, East Africa, Egypt, Indonesia, Jamaica, Mexico, Poland, Russia, Southeast Asia, and Southern Africa. However, exporters have never applied for any export credits for potatoes or processed potato products under these programs.¹³⁵

¹³² USDA, FAS, *Market Access Program*, FAS Fact Sheet, June 1996.

¹³³ USDA, FAS News Release, "USDA Announces Market Access Program Allocations for Fiscal 1997," No. 0075.97, Mar. 6, 1997, found at <http://www.usda.gov>. release.

¹³⁴ USITC staff conversations with USDA, FAS officials, Feb. 18, 1997.

¹³⁵ USDA, FAS official, telephone conversation with USITC staff, June 27, 1997.

Section 32 program

Section 32 of the Agricultural Adjustment Act of 1935 authorizes a permanent appropriation of funds to encourage exports of farm products, to reestablish farmers' purchasing power, and to encourage domestic consumption of farm products by diverting surpluses from normal channels and expanding their use by low-income groups. The Section 32 appropriation is equal to 30 percent of total annual U.S. customs receipts from the prior year, along with up to \$300 million in any unobligated prior-year carryover funds. The Food and Nutrition Service (FNS), AMS, and FSA administer the program. Currently, a large share of the revenue (about \$8.7 billion in FY 1997, up from \$8.3 billion in FY 1996) is transferred to a cash account to pay most of USDA's child nutrition program costs.¹³⁶ USDA uses a significant amount of the remaining funds to directly purchase perishable farm products, including vegetables.

The USDA, AMS purchased 65 million pounds of potatoes and potato products at a value of about \$19 million in FY 1996 as shown in the following tabulation of AMS data:

Potato product	Quantity (1000 pounds)	Value (1000 dollars)
Fresh potatoes	18,160	2,953
Canned potatoes	2,607	847
Frozen potato rounds	16,592	5,065
Dehydrated potatoes	2,850	2,346
Frozen oven-fried potatoes	24,790	7,380
Total	64,999	18,591

Most purchases under Section 32 are processed rather than fresh items. The potato products purchased are typically french fries, rounds, and wedges. Similar USDA data for potato and potato product purchases were \$18.8 million in FY 1993, \$30.6 million in FY 1994, \$20.8 million in FY 1995.¹³⁷ USDA recently announced that it would purchase \$23.5 million of processed potato products for donation to child nutrition and other feeding programs in FY 1997.¹³⁸

The U.S. Government has also announced crop diversion programs for potatoes under Section 32. In 1992, a National Diversion program paid potato growers to divert excess potatoes to

¹³⁶ Based on USITC staff conversation with officials at FNS, Apr. 18, 1997.

¹³⁷ USDA, AMS, facsimile data received by USITC staff, Apr. 18, 1997.

¹³⁸ USDA News Release, "USDA Announces Plans for \$23.5 Million Potato Purchase," Release No. 0150.97, May 5, 1997.

cattle feed.¹³⁹ On May 9, 1997, the USDA announced plans to pay potato growers to divert 1996-crop fresh Irish round white and russet potatoes to charitable institutions through the FNS. This program will be effective from May 29, 1997, to July 28, 1997. Producers diverting potatoes will receive \$1.50 per cwt.¹⁴⁰

Research/Extension/Information Services

Research and extension

Federal potato research is sponsored by USDA's Agricultural Research Service (ARS) and the Cooperative State Research Education and Extension Service (CSREES). ARS conducts ongoing potato research at 13 ARS laboratories throughout the country, staffed by ARS personnel, and cooperative research in 12 States. CSREES covers many of the same areas of research as ARS, but differs in that it only provides funding to land-grant universities that do the actual research. Much of the CSREES research is driven by research needs in the particular States, while ARS research is national in scope.

ARS funding for all agricultural research in FY 1997 is \$717 million, of which \$12.9 million went to potato research.¹⁴¹ ARS research topics include late blight, ring rot, early dying, aphids, potato beetle, weeds, variety development, soils, agricultural engineering, and potato storage.¹⁴² CSREES funding on all agricultural research in FY 1997 was \$489 million, of which \$5.4 million was spent on potato research.¹⁴³ It is also estimated that the U.S. industry spends \$3 to \$4 billion on agricultural research each year. If true, this would indicate that Federal funding on agricultural research is less than 30 percent of the total. In 1994, a \$1.4 million CSREES demonstration project for potatoes was provided to develop information on late blight. The information from this project was published and used nationally.

CSREES also spent \$428 million on agricultural extension in FY 1996, which was matched by about \$1 billion at the State, County and private levels. CSREES requires that its extension spending be matched, while there is no such requirement for research spending.

¹³⁹ This program is cited by the Canadian Embassy in appendix 2 of their prehearing brief as awarding Maine potato growers \$4.1 million. According to information supplied by the Maine Potato Board, a similar program also operated in a number of potato-growing Provinces in Canada with such assistance amounting to about \$7 million. Maine Potato Board, memorandum dated June 2, 1997.

¹⁴⁰ 62 F.R. 29649, June 2, 1997.

¹⁴¹ Based upon USITC staff interview with ARS official on June 24, 1997.

¹⁴² Based on information provided to the USITC by USDA, ARS Information Staff, May 12, 1997.

¹⁴³ Based on USITC staff interview with CSREES official on June 24, 1997.

Information services

U.S. potato growers benefit from USDA-sponsored market news and economic information. The Economic Research Service (ERS), National Agricultural Statistics Service (NASS), FAS, and AMS gather, analyze, and disseminate information that assists growers to produce and market their crops. The AMS uses a portion of its annual market news budget to gather and disseminate sales, supply, inventory, and other market statistics on 415 fruits, vegetables, and related commodities in 800 markets. NASS has offices in 45 States. ERS prepares monthly, quarterly, and annual outlook and situation reports on potato production, earnings, trade, and other data, and conducts studies of the industry's structure and performance. FAS prepares monthly reports on tropical and horticultural products, potential export markets, and recent trade flows to and from selected markets and suppliers.

Plant Protection and Quarantine

USDA's Animal and Plant Health Inspection Service (APHIS) is charged with controlling and eradicating plant and animal pests and diseases threatening U.S. production. Its programs include inspecting travelers, particularly for species with no natural enemies in the United States, and detecting and eliminating pests and diseases that do enter the country. They also are charged with controlling the interstate movement of pests and diseases such as citrus and potato nematodes, and providing scientific and support services. APHIS has a total fiscal year 1997 budget of nearly \$435 million, of which about \$98 million is paid by user fees, but large portions go for controlling animal as well as plant diseases and pests. Among the FY 1997 funds devoted primarily to potato producers were \$444,000 for work against the golden nematode.¹⁴⁴

Federal Taxes

Property/estate taxation

Farmers are taxed at the Federal, State, and local levels. About two-thirds of taxes paid by farmer sole-proprietors are Federal, including taxes for income and self-employment, capital gains, and estate and gift taxes.¹⁴⁵ While Federal estate taxes paid by farm sole proprietors are small relative to other Federal taxes, \$500 million versus about \$18 billion, they play a crucial role in intergenerational transfers of farmland. Two provisions in the Federal tax law which are available to all taxpayers, the 'unified credit' and 'special use valuation,' are particularly beneficial to farmers.¹⁴⁶

¹⁴⁴ Based on information provided by officials of the Budget and Accounting Division, USDA, APHIS.

¹⁴⁵ Statement of Keith Collins, Chief Economist, USDA, before the Committee on Agriculture, Nutrition, and Forestry, United States Senate, Feb. 25, 1997, p. 2.

¹⁴⁶ Ibid.

The unified credit is one of the most important provisions for farmers of the Federal tax system because it provides an exemption from the estate tax for many estates. The unified credit was increased substantially in 1981 to effectively exempt the first \$600,000 of an estate. Through the credit, a married couple should be able to transfer a minimum of \$1.2 million in assets to their heirs without incurring Federal estate and gift taxes. Only about 5 percent of U.S. farms have a net worth in excess of \$1.2 million.¹⁴⁷ To illustrate the impact, in 1981, based on U.S. average values for farm real estate, the unified credit allowed 214 acres of farm real estate to be transferred tax-free. In 1997, because of the substantial increase in the credit, about 675 acres may be transferred tax-free, even as the value of farm land has gone up.

It was precisely the concern of farmers to be able to transfer the farming operation to the next generation that led to the enactment of the "special use valuation" provision available to farmers and other small businesses. This provision allows farmers to value their farmland at its farm value rather than its fair market value, which may reflect development potential for non-farm use. While savings from the special use valuation provision reportedly vary, the value of the real estate portion of the estate in many instances can be cut in half. While the total reduction in the value of the farmer's estate is limited to \$750,000, relatively few farm estates are affected by this limit. Based on 1994 IRS data, the average reduction in value for Federal estate tax purposes for those electing special use valuation was \$343,000.¹⁴⁸

Fuel tax exemptions

Fuel may be exempt from the Federal excise tax if it is for "off-road" use, which includes agricultural purposes. In 1995, the latest year for which information exists, 3.6 billion gallons of diesel fuel, 1.4 billion gallons of gasoline, and 0.8 billion gallons of liquefied natural gas used in agriculture were exempted from the Federal excise tax.¹⁴⁹ These taxes are 24.3 cents per gallon for diesel fuel, and 18.3 cents per gallon for gasoline and liquefied natural gas.

State Programs-Taxation

State and Local Taxes

As of 1991, there was wide variation in the taxation of agricultural real estate.¹⁵⁰ State and local taxes account for about one-third of the taxes paid by sole proprietor farmers. This has amounted to savings of about \$3.5-\$4.0 billion per year in State and local income taxes on a national basis, and another \$4 billion in real estate and other property taxes.¹⁵¹ The primary

¹⁴⁷ Ibid.

¹⁴⁸ Ibid.

¹⁴⁹ USDA, NASS, *Farm Production Expenditures Survey Data*, table 2, as updated by USITC staff, June 19, 1997.

¹⁵⁰ J. Peter DeBraal, *Taxes on U.S. Agricultural Real Estate, 1890-1991, and Methods of Estimation*, ERS, USDA Statistical Bulletin No. 866, Sept. 1993, p. 15.

¹⁵¹ Ibid, p. 2.

State taxes are income and sales taxes, while at the local level it is primarily the property tax which is derived principally from real estate. Ninety-six percent of revenues from property taxes go to local governments.¹⁵² The use-valuation laws are regulated at the State level and allow farm and ranch lands to be assessed for their current use and not their market value. These laws are designed not only to reduce agricultural real estate taxes but also to encourage the protection of farm and ranch land for such aesthetic reasons as open space.¹⁵³

Tax Exemptions

Most States fully exempt or refund State fuel taxes for agriculture. Other States partially exempt or refund fuel taxes or credit them towards State income taxes.¹⁵⁴ State gasoline taxes vary from 7.5 cents per gallon in Georgia to 39 cents in Connecticut, with similar or slightly different rates for diesel fuel, liquefied petroleum gas, and gasohol.¹⁵⁵ Weighted-average State taxes for fuels as of April 1, 1997, were 18.73 cents per gallon for gasoline, 19.10 cents for diesel fuel, 13.50 cents for liquefied petroleum gas, and 19.62 cents for gasohol.¹⁵⁶ Farmers in most States also do not pay retail sales taxes on business purchases for farm operations.

State Programs—Idaho

Credit/Financial Assistance—Rural Rehabilitation Program

Rural Rehabilitation Program loans are sponsored by the Idaho Department of Agriculture and provide loans to farmers, including potato farmers, up to \$35,000.¹⁵⁷ To be eligible, an individual or organization in Idaho must have an agricultural project or effort which will provide for rural economic development in Idaho and must not obtain credit from conventional sources. Special consideration is given to projects which show a high level of innovation and initiative.

Marketing Programs

Idaho State Department of Agriculture

The Idaho State Department of Agriculture has several marketing programs that stimulate economic diversification in Idaho agriculture. It provides U.S. and international marketing

¹⁵² Ibid.

¹⁵³ Ibid. p. ii.

¹⁵⁴ Only Vermont and the District of Columbia have no agricultural exemption or refund.

¹⁵⁵ DOT, Office of Highway Information Management, *Tax Rates on Motor Fuel - April 1, 1997*, and *Exemption and Refund Provisions of State Gasoline Taxation*, status as of January 1, 1995.

¹⁵⁶ DOT, Office of Highway Information Management, *Tax Rates on Motor Fuel - April 1, 1997*.

¹⁵⁷ Idaho Department of Agriculture, information sent via facsimile June 20, 1997.

assistance to Idaho farmers, food processors, and shippers.¹⁵⁸ Domestic business development services may include workshops, domestic market information, "how to" publications, trade or consumer directories, in-state and U.S. promotions, buyer and supplier contacts, and individual consulting. Consumer education is done through promotions and special events.

The collection and distribution of produce market news is handled through the Federal-State Market News office and provides daily market information on price, supplies, movement, demand, and quality of Idaho potatoes to assist growers and shippers with market decisions. Exporter education provides market information, buyer contacts, and technical assistance from marketing specialists. Individual export counseling may include foreign packaging and labeling requirements, additive restrictions, phytosanitary documentation, food consumption preferences and trends, food distribution systems, and transportation issues. A variety of export seminars and market specific workshops are held throughout the year to provide exporters with up-to-date market intelligence. Exporters may participate in state-sponsored trade missions or exhibits in Idaho pavilions at industry-specific trade shows in foreign markets. The Department has led delegations to a number of countries around the world in recent years. The Department also hosts foreign buying teams and industry representatives to Idaho.

Trade offices

The State of Idaho has four trade offices strategically located in key markets to assist exporters with their marketing efforts. The offices, located in Mexico, Taiwan, Japan, and Korea, develop business contacts, analyze market opportunities, assist with Idaho promotional activities, and educate Idaho companies on business practices, cultural preferences, distribution, and government regulations. The Idaho-Mexico Trade Office is managed by the Idaho State Department of Agriculture in cooperation with the Idaho Department of Commerce and several Idaho agricultural organizations.

State Programs—Washington State¹⁵⁹

Tax Exemptions

All agricultural production enterprises in the State of Washington are exempted from the provisions of the Business and Occupations (B&O) tax on the value of agricultural commodities they produce. Businesses providing goods and services to agricultural producers are subject to

¹⁵⁸ Ibid.

¹⁵⁹ A number of programs discussed in the prehearing brief of the Embassy of Canada are not included in this section because information provided by the Washington State Potato Commission indicated that the programs were not operational or were not used by potato growers or processors. The programs excluded include Crop Credit Associations, Washington Land Bank, National Small Business Loan Program, Economic Development Authority programs, International Trading Partners Program, International Marketing Program for Agricultural Commodities, Sale or Pledge of Bonds to the U.S. Government, and Receipt of Aid from the Federal Government for Diking and Drainage.

the tax.¹⁶⁰ Inventories of agricultural products produced for sale, as well as inventories produced for resale by businesses, are exempt from property tax.¹⁶¹

Irrigation assistance

Irrigation water

According to the Washington State Potato Commission, irrigation water is supplied to potato and other growers by direct diversion of surface water, pumping of groundwater, or delivery by local irrigation Districts. Farmers who divert or pump water bear all the costs associated with delivery of that water to cropland. Irrigation Districts deliver water to land within the District's boundaries through a system of canals or pipes. Districts get their water either by direct diversion from surface water or from irrigation works constructed and operated by the Bureau of Reclamation. Irrigation District patrons repay the cost of construction on the works developed by the Bureau of Reclamation, as well as the costs associated with the maintenance and operation of the District's systems.¹⁶²

Income from sale of electricity

Three of the irrigation Districts that operate within the boundaries of the Columbia Basin Project have hydroelectric generating facilities. Revenue generated by these facilities is used to partially offset the cost of lifting water from behind the Grand Coulee Dam at the project's source.

General infrastructure capital costs

The Columbia Basin has benefited from water control provided by dams on the Columbia River. The cost of the dams and other related infrastructure has been born by the U.S. and Canadian Federal Governments, partially under the Columbia River Treaty.¹⁶³ These dams prevent flooding during the spring and provide irrigation water during the summer and fall. According to the Washington State Potato Commission, growers with lands within the Columbia Basin Project are repaying the capital costs of project construction over a 50 year repayment period.¹⁶⁴

¹⁶⁰ Information received via facsimile from the Washington State Potato Commission, May 27, 1997.

¹⁶¹ Ibid.

¹⁶² Ibid.

¹⁶³ Canadian Embassy, prehearing brief.

¹⁶⁴ Information received via facsimile from the Washington State Potato Commission, May 27, 1997.

Research

The State of Washington sponsored 12 ongoing potato research programs and began 12 new ones in the FY 1995/96, with a total spending level of \$534,000. Some of the larger projects were for storage research, testing clones and cultivars, nematode management, integrated pest management, and nitrogen management. Most of this research is through Washington State University.¹⁶⁵

State Programs—Maine

Credit/Financial Assistance

Potato Marketing Improvement Fund

The Potato Marketing Improvement Fund (PMIF) provides direct, fixed rate loans to potato growers and packers to help finance the construction of new storage or packing facilities, the modernization of existing facilities, or the acquisition and installation of packing equipment.¹⁶⁶ The PMIF started from a State bond of \$5,000,000 in 1980 and operates as a revolving loan fund with financing from local banks (45 percent), from the State of Maine through the Finance Authority of Maine (FAME) (45 percent), and from participating growers (10 percent).¹⁶⁷ Any individual or entity storing or packing Maine potatoes is eligible. Currently, all loans for new facilities and packing equipment must be repaid over 15-20 years, while loans for storage retrofit must be repaid over 10 years. All loans carry a fixed interest rate of 5 percent.¹⁶⁸ PMIF may finance up to 45 percent of total project costs for new facilities (50 percent for projects owned by two or more growers) and 55 percent for storage retrofit. All funded storages must meet strict standards set by the Potato Marketing Improvement Committee.

By end 1996, the PMIF had financed 242 projects, including 18 new projects in that year.¹⁶⁹ Of these total projects, 125 were for new storages, 26 were for packing equipment, 18 were for packing sheds, and 73 were for retrofitting storage and packing facilities. By end 1996, total PMIF financed storage capacity amounted to 7.9 million cwt.

Provisions under the PMIF allow grants from interest earned on cash balances to individuals and organizations for research on potato storage and handling technologies. In 1994 a grant was approved for the Maine Seed Potato Board for research on packing techniques and construction

¹⁶⁵ Information received via facsimile from the Washington State Potato Commission, Mar. 3, 1997.

¹⁶⁶ PMIF, *1996 Annual Report* (Augusta: Maine Department of Agriculture, Food, and Rural Resources, 1997).

¹⁶⁷ Based on information supplied to USITC staff by the Maine Potato Board, dated June 2, 1997.

¹⁶⁸ PMIF, *1996 Annual Report* (Augusta: Maine Department of Agriculture, Food and Rural Resources, 1997).

¹⁶⁹ Ibid.

of a new packing shed at the Porter Seed Farm. Disbursement was spread equally over FYs 1994 and 1995.¹⁷⁰

Agricultural Marketing Loan Fund

An Agricultural Marketing Program bond issue was passed by voters in the State of Maine in November 1996. The bond issue supported the creation of the Agricultural Marketing Loan Fund (AMLF), a revolving loan fund for agricultural enterprises which will be administered through FAME.¹⁷¹ The AMLF provides direct loans for design, construction, or improvement of storage, packing, and marketing facilities; renovation or acquisition of land, buildings and equipment used in connection with agricultural enterprises; and for purchase and installation of machinery or equipment. The AMLF will provide loans for a term of up to 25 years an interest rate equal to the prime rate less 2 percent, provided that rate is no less than 5 percent or greater than 8 percent.¹⁷²

Since the AMLF has just recently been approved, there is no information on its use by individual growers or processors.¹⁷³ McCain Foods in Easton, Maine is planning to provide matching low-interest loans to participating potato growers that produce raw potatoes on contract to McCain.¹⁷⁴ The purpose of McCain's program is to provide matching assistance for purchase of irrigation equipment similar to the type of assistance it currently provides to New Brunswick potato growers (see the section on New Brunswick Provincial programs in chapter 4).¹⁷⁵

Processor assistance

Financial assistance has been recently provided to a potato processing plant, "Naturally Potatoes" in Maine.¹⁷⁶ This company is building a \$14 million plant for production of chilled potato products. The plant received an 80-percent loan guarantee on \$8.6 million of the \$14 million plant cost through the USDA. The plant also received \$400,000 through a Community grant, and \$1.4 million in tax investment financing.¹⁷⁷ The plant owners paid \$2.0 million for their own wastewater treatment system. The plant will use 5,000-10,000 acres of potatoes.

¹⁷⁰ Ibid.

¹⁷¹ Information on the AMLF was provided to USITC staff by the Maine Department of Agriculture, Food and Rural Resources on June 19, 1997.

¹⁷² Ibid.

¹⁷³ It was reported that 1 loan was approved during the month of June, but not to a potato grower. FAME official, telephone conversation with USITC staff, June 24, 1997.

¹⁷⁴ O'Melveny & Myers, LLP, Counsel to McCain Foods, posthearing brief, May 27, 1997. The information supplied in this posthearing brief indicates that efforts by McCain Foods in Easton, Maine were instrumental in the creation of the AMLF.

¹⁷⁵ Ibid.

¹⁷⁶ Interview with Naturally Potatoes officials by USITC staff, May 9, 1997.

¹⁷⁷ Under the tax investment financing, the owners pay taxes on the valuation of the plant, but part of the taxes are dedicated to paying off the \$1.4 million.

Finance Authority of Maine

FAME is an independent State agency that provides both direct loans and loan guarantees covering up to 90 percent of loans up to \$7 million. Direct loans are provided at interest rates higher than conventional commercial rates (prime plus 4 percent) to encourage borrowers to seek other modes of financing.¹⁷⁸ The Linked Investment Program provides operating loans to Maine farmers for purchase of production inputs at 2 percent below current deposit rates. Potato growers have used 80-90 percent of the \$4 million provided by the State of Maine annually for this program.¹⁷⁹

Crop Development/Inspection

Potato Quality Inspection

The Maine Bag Program is a trademark program for potatoes packed as better than U.S. #1 grade potatoes.¹⁸⁰ Growers using the program are charged 2 cents per cwt of potatoes less for inspection to encourage growers to pack in this pack which has the outline of the State of Maine in its trademark. The State of Maine absorbs the 2-cent difference in the inspection cost through a State appropriation of \$150,000 - \$200,000 per year. The rest of the cost is born by growers not packing in this bag.

Since August 1996 all Maine potatoes must be inspected whether the bags are packed in the trademark program bag or in another brand. Potato growers are required to pay for this mandatory inspection.

Division of Plant Industry

The Division of Plant Industry in the Maine Department of Agriculture, Food and Rural Resources enforces statutes relating to the certification of seed potatoes, and it operates programs to ensure that Maine seed producers have an adequate supply of foundation seed potatoes for commercial use.¹⁸¹ The Division provides rouging services, a Florida test for virus levels at a State-owned farm in Homestead, Florida, and a seed certification program, all of which are financed through grower fees.¹⁸²

The Division of Plant Industry operates the Porter Seed Farm, a State-owned farm producing nuclear seed which is sold to commercial seed potato farmers for further propagation. The farm

¹⁷⁸ Telephone interview with FAME official by USITC staff, June 24, 1997. The official indicated that FAME direct loans and loan guarantees have been used by potato growers and processors.

¹⁷⁹ Based on information supplied to USITC staff by the Maine Potato Board.

¹⁸⁰ Ibid.

¹⁸¹ Canadian Embassy, prehearing brief.

¹⁸² Based on information supplied to USITC staff by the Maine Potato Board.

is financed through its sales of seed to farmers as well as through an annual State appropriation of about \$235,000.¹⁸³

Aroostook Water and Soil Management Board

This Board received Federal research grants of \$182,909 and \$252,000 in 1992/93 and 1993/94, respectively, for research into the proper construction of and feasibility of irrigation in Aroostook County.¹⁸⁴

Research

The University of Maine conducts irrigation research benefiting potatoes and other crops. This research also benefits from a grant from McCain Foods. The University also sponsors, through the State of Maine, the State of Maine Breeding Program for seed potatoes, which also benefits from a contribution from McCain Foods.¹⁸⁵

State Programs—North Dakota

The North Dakota Agricultural Products Utilization Commission (APUC) made a number of grants benefiting the potato industry in 1997. These include, \$83,000 for agricultural research and marketing grants, \$45,000 to American Gold Grower Cooperative to complete feasibility, engineering and environmental studies for a proposed potato processing plant, \$5,000 to Valley Pocket Foods to explore the market feasibility of producing perogies, and \$18,840 for the High Value Irrigated Crops Task Force to partially fund a coordinator.¹⁸⁶

¹⁸³ Division of Plant Industry official, telephone interview by USITC staff, June 19, 1997.

¹⁸⁴ Canadian Embassy, prehearing brief and *ibid*.

¹⁸⁵ McCain Foods, posthearing brief.

¹⁸⁶ Canadian Horticultural Council, posthearing brief, Apr. 21, 1997, exhibit 34.

CHAPTER 3

Trade Flows

Overall U.S. Trade Flows

U. S. imports and exports of fresh potatoes and processed potato products both increased over the 1992-96 period. Although exports were more than double the value of imports, imports grew at a faster rate. Canada and Japan have remained the primary U.S. trading partners for such products over the 1992-96 period, with Japan accounting for 35 percent, by value, of U.S. exports or \$212 million in 1996 (table 3-1) and Canada supplying 91 percent, by value, of U.S. imports or \$220 million in 1996 (table 3-2). Canada, the second-leading export market in terms of value, accounted for an average of 20 percent of the value of U.S. exports or \$120 million in 1996. Japan's share of the total value of U.S. exports was higher than Canada's share over the period, due in part to the composition of exports being mainly value-added processed potato products. Canada accounted for a greater share of the total quantity of U.S. exports, with most of the volume accounted for by fresh potatoes. A notable trend in U.S. exports to these trading partners was that while absolute quantity and value of exports to each country have been increasing, Canada's share of U.S. exports has been declining, both in quantity and value, while Japan's share has been increasing.

Over the 1992-96 period, total U.S. imports have been supplied primarily by Canada. Exports have been principally to Japan and Canada, with significant amounts also exported to a number of other countries. The number of U.S. export markets has increased over the period, with Japan, Canada, and Mexico, together, accounting for 63 percent of total export value in 1992 but falling to 59 percent in 1996. Although Mexico was the third-largest market for U.S. exports over the period, it represented only 5 percent of total U.S. exports in 1996. By comparison, the top four Asian markets (after Japan) together accounted for 15 percent of the value of U.S. exports over the 1992-96 period (table 3-1).

U.S. Global Trade Balance

The United States has maintained a global trade surplus in fresh potatoes and processed potato products since 1992. The total trade balance in all products rose by nearly two-thirds from \$264 million in 1992 to \$437 million in 1995, before dropping back to \$371 million in 1996 (table 3-3). The U.S. trade surplus was greatest with Japan, improving by 93 percent from the 1992 level of \$110 million to \$212 million in 1996 (table 3-3). The U.S. trade balance with Canada, by comparison, fell steadily from a surplus of \$26 million in 1992 to a deficit of \$100 million in 1996. Other important U.S. trading partners in 1996 included Belgium, Mexico, South Korea, the Philippines, Hong Kong, and Taiwan.

Table 3-1

Potatoes:¹ U.S. exports of domestic merchandise, by principal markets, 1992-96

Change						Change
1996 over						1992
Market	1992	1993	1994	1995	1996	1992
Quantity (1,000 pounds)						Percent
Japan	327,228	351,262	429,185	504,393	521,106	59
Canada	544,984	540,059	646,798	566,633	588,050	8
Belgium	4	71	24,063	28,526	33,833	(²)
Mexico	69,377	86,441	113,759	78,018	116,345	68
South Korea	36,979	39,679	44,328	49,536	66,296	79
Philippines	16,543	20,526	29,651	36,575	45,388	174
Hong Kong	30,194	39,580	43,747	57,785	65,060	116
Taiwan	26,304	33,968	38,903	44,210	48,642	85
All other	141,809	167,453	206,242	363,671	251,554	77
Total	1,193,423	1,279,039	1,576,678	658,321	627,118	45
Value (1,000 dollars)						
Japan	109,800	124,621	191,183	212,024	212,274	93
Canada	104,193	110,622	120,128	111,040	119,608	15
Belgium	4	85	37,949	48,536	49,903	(²)
Mexico	16,937	21,797	36,782	16,755	29,951	77
South Korea	14,891	17,119	16,820	19,990	28,027	88
Philippines	10,875	13,188	17,583	17,794	23,542	117
Hong Kong	10,571	17,266	20,413	21,273	22,630	114
Taiwan	17,947	26,893	27,094	22,178	20,177	12
All other	79,842	103,480	141,573	196,575	156,650	96
Total	365,060	434,987	571,575	617,630	612,860	68
Unit value (dollars per pound)						
Japan	\$0.34	\$0.35	\$0.45	\$0.42	\$0.41	21
Canada .....	.19	.20	.19	.20	.20	5
Belgium	1.10	1.20	1.58	1.70	1.45	32
Mexico .....	.24	.25	.32	.21	.26	8
South Korea .....	.40	.43	.38	.40	.42	5
Philippines .....	.66	.64	.59	.49	.52	(21)
Hong Kong .....	.35	.44	.47	.37	.35	0
Taiwan .....	.68	.79	.70	.50	.41	(40)
All other .....	.56	.62	.61	.50	.55	(3)
Average .....	.31	.34	.36	.36	.35	13

¹ Schedule B codes 0701.10, 0701.90, 0710.10, 0712.10, 0712.90.30, 1105.10, 1105.20, 1108.13, 2004.10, and 2005.20.

² Change greater than 5,000 percent.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and percent changes calculated using unrounded data.

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

Table 3-2

Potatoes:¹ U.S. imports for consumption, by principal sources, 1992-96

Source	1992	1993	1994	1995	1996	Change 1996 over 1992
	Quantity (1,000 pounds)					Percent
Canada	602,149	1,008,224	955,587	1,044,754	1,447,087	140
The Netherlands	44,627	60,945	56,086	51,136	42,483	5
Germany	16,552	28,306	24,694	33,850	27,128	64
Denmark	29,618	25,942	15,465	13,720	15,220	(49)
All other	7,606	11,498	5,744	5,639	5,458	(28)
Total	700,552	1,134,915	1,057,576	1,149,098	1,537,377	119
	Value (1,000 dollars)					
Canada	78,163	131,357	143,984	156,521	219,690	181
The Netherlands	8,485	9,401	7,599	9,326	9,543	12
Germany	2,906	4,017	4,127	8,734	6,973	140
Denmark	3,993	3,022	2,020	2,341	3,240	(19)
All other	7,102	6,005	3,975	3,794	2,603	(63)
Total	100,650	153,801	161,705	180,716	242,049	140
	Unit value (dollars per pound)					
Canada	\$0.13	\$0.13	\$0.15	\$0.15	\$0.15	15
The Netherlands .....	.19	.15	.14	.18	.22	16
Germany .....	.18	.14	.17	.26	.26	44
Denmark .....	.13	.12	.13	.17	.21	62
All other .....	.93	.52	.69	.67	.48	(48)
Average .....	.14	.14	.15	.16	.16	14

¹ HTS numbers 0701.10, 0701.90, 0710.10, 0712.10, 0712.90.30, 1105.10, 1105.20, 1108.13, 2004.10, and 2005.20.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and percent changes calculated using unrounded data.

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

Table 3-3
Potatoes:¹ U.S. trade balance, by principal partners, 1992-96

Totals: U.S. trade balance, by principal partners, 1992-96						Change 1996 over 1992
Partner	1992	1993	1994	1995	1996	1992
Quantity (1,000 pounds)						Percent
Japan	327,151	351,176	429,019	504,274	520,958	59
Belgium	(154)	(627)	23,277	28,258	32,840	(²)
Mexico	65,277	84,282	112,772	77,465	116,345	78
South Korea	36,953	39,626	44,311	49,527	66,254	79
Philippines	16,543	20,526	29,644	36,575	45,388	174
Hong Kong	30,173	39,440	43,627	57,716	64,936	115
Taiwan	26,217	33,828	38,811	44,035	48,468	85
Germany	(5,510)	(27,611)	(24,115)	(32,652)	(26,555)	(382)
The Netherlands ...	(41,753)	(57,992)	(36,758)	(14,035)	(39,694)	5
Canada	(57,165)	(468,164)	(308,789)	(478,121)	(859,037)	(1,403)
All other	95,139	129,641	167,302	307,206	228,996	141
World	492,871	144,124	519,101	580,248	198,897	(60)
Value (1,000 dollars)						
Japan	109,694	124,467	190,882	211,800	212,044	93
Belgium	(55)	(12)	37,817	48,435	48,632	(²)
Mexico	11,158	17,635	34,588	15,569	29,951	168
South Korea	14,881	17,081	16,810	19,983	27,998	88
Philippines	10,875	13,188	17,579	17,794	23,542	116
Hong Kong	10,560	17,209	20,357	21,219	22,556	114
Taiwan	17,889	26,762	27,039	22,067	20,071	12
Germany	434	(3,368)	(3,686)	(8,184)	(6,719)	(1,647)
The Netherlands ...	(7,626)	(7,852)	1,055	3,697	(8,412)	(10)
Canada	26,030	(20,735)	(23,856)	(45,482)	(100,082)	(484)
All Other	70,570	96,810	91,285	130,015	101,229	43
World	264,410	281,186	409,871	436,914	370,811	40

¹ HS codes 0701.10, 0701.90, 0710.10, 0712.10, 0712.90.30, 1105.10, 1105.20, 1108.13, 2004.10, and 2005.20.

² Change greater than 5,000 percent.

Note.—Because of rounding, figures may not add to the totals shown. Percent changes calculated using unrounded data.

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

On an individual commodity basis, the United States held a global trade surplus in value for all major potato categories, except fresh seed potatoes and potato starch, during 1992-96. The surplus was greatest for other processed potatoes (mainly potato chips) at \$186 million in 1996, followed by frozen processed potatoes (mainly french fries) at \$152 million and potato flour and meal at \$43 million (table 3-4). The surplus increased for each of these categories during the 1992-96 period. On a commodity basis, the largest declines in the U.S. global trade balance during the period occurred for fresh table stock potatoes and fresh seed potatoes.

Table 3-4
Potatoes:¹ U.S. global trade balance, by principal items, 1992-96

U.S. Global Trade Balance, by Principal Items, 1992-96						Change 1996 over 1992
Item	1992	1993	1994	1995	1996	1992
	Quantity (1,000 pounds)					Percent
Primary products:						
Frozen processed potatoes ² . . .	253,944	213,122	307,396	454,098	376,977	48
Fresh table stock potatoes	226,377	(34,751)	214,472	77,584	(126,756)	(156)
Fresh seed potatoes	(90,025)	(138,485)	(202,256)	(178,513)	(249,653)	(177)
Other:						
Other processed potatoes ³	95,354	128,619	193,540	183,656	160,796	69
Potato flour and meal ⁴	71,923	60,244	75,195	103,833	82,786	15
Other frozen potatoes	14,248	24,165	21,015	25,076	26,314	85
Dried potatoes	13,228	14,264	8,293	14,150	13,208	(⁵)
Potato starch	(92,177)	(123,054)	(98,553)	(99,636)	(84,776)	8
Total	492,871	144,124	519,101	580,248	198,897	(60)
	Value (1,000 dollars)					
Primary Products:						
Frozen processed potatoes	98,085	90,060	128,477	171,763	151,574	55
Fresh table stock potatoes	45,430	30,125	43,801	39,316	15,386	(66)
Fresh seed potatoes	(4,755)	(8,704)	(18,467)	(12,869)	(21,480)	(352)
Other:						
Other processed potatoes	102,734	142,292	225,086	198,763	185,996	81
Potato flour and meal	25,284	26,202	31,426	42,887	43,098	70
Other frozen potatoes	4,625	8,152	7,302	8,263	7,094	53
Dried potatoes	7,768	9,543	5,530	6,544	7,001	(10)
Potato starch	(14,761)	(16,483)	(13,284)	(17,752)	(17,858)	21
Total	264,410	281,186	409,871	436,914	370,811	40

¹ HTS 0701.10, 0701.90, 0710.10, 0712.10, 0712.90.30, 1105.10, 1105.20, 1108.13, 2004.10, and 2005.20.

² HTS number 2004.10; other potatoes, prepared or preserved, frozen (includes frozen french fries).

³ HTS number 2005.20; other potatoes, prepared or preserved, not frozen (includes potato chips).

⁴ HTS number 1105; also includes flakes, granules, and pellets.

⁵ Decrease of less than 0.5 percent.

Note.—Because of rounding, figures may not add to the totals shown. Percent changes calculated using unrounded data.

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

U.S. Global Imports

Principal fresh potatoes and processed potato products imported into the United States in 1996 included frozen processed potatoes (mainly frozen french fries) valued at \$126 million or 52 percent of total potato import value, table stock potatoes valued at \$63 million or 26 percent of the total, and fresh seed potatoes at \$27 million or 11 percent (table 3-5). U.S. imports of these products rose dramatically during 1992-96, with frozen processed potatoes rising 131 percent in quantity and 164 percent in value, fresh table stock potatoes rising 153 percent in quantity and 219 percent in value, and fresh seed potatoes increasing 131 percent in quantity and 225 percent in value during the period.

Table 3-5

Potatoes:¹ U.S. imports for consumption, by principal items, 1992-96

Exports of U.S. Imports for consumption, by principal items, 1992-96						
Item	1992	1993	1994	1995	1996	Change
						1996 over 1992
Quantity (1,000 pounds)						Percent
Primary products:						
Frozen processed potatoes ² ..	195,565	289,389	308,986	354,077	452,699	131
Fresh table stock potatoes	273,512	541,377	405,895	458,921	690,761	153
Fresh seed potatoes	128,070	171,199	236,909	225,940	295,695	131
Other:						
Potato starch	95,597	125,764	100,435	103,220	89,816	(6)
Other processed potatoes ³	5,770	3,489	2,055	1,349	3,013	(48)
Potato meal and flour ⁴	1,699	2,412	2,349	4,405	3,537	108
Other frozen potatoes	64	1,068	660	920	1,559	2,348
Dried potatoes	277	217	288	266	297	7
Total potatoes	700,552	1,134,915	1,057,576	1,149,098	1,537,377	119
Value (1,000 dollars)						
Primary products:						
Frozen processed potatoes	47,910	72,184	78,468	98,608	126,307	164
Fresh table stock potatoes	19,784	45,493	42,632	39,158	63,039	219
Fresh seed potatoes	8,288	12,060	22,028	17,487	26,948	225
Other:						
Potato starch	16,191	17,532	14,047	19,289	19,941	23
Other processed potatoes	7,570	5,065	3,032	1,919	2,663	(65)
Potato flour and meal	717	1,007	1,098	3,573	2,192	205
Other frozen potatoes	30	347	173	470	755	2,421
Dried potatoes	160	115	226	211	204	28
Total potatoes	100,650	153,801	161,705	180,716	242,049	140
Unit Value (dollars per pound)						
Primary products:						
Frozen processed potatoes	\$0.24	\$0.25	\$0.25	\$0.28	\$0.28	14
Fresh table stock potatoes ....	.07	.08	.11	.09	.09	26
Fresh seed potatoes .....	.06	.07	.09	.08	.09	41
Other:						
Potato starch .....	.17	.14	.14	.19	.22	31
Other processed potatoes ..	1.31	1.45	1.48	1.42	.88	(33)
Potato flour and meal .....	.41	.41	.41	.61	.54	32
Other frozen potatoes .....	.47	.32	.26	.51	.48	3
Dried potatoes .....	.58	.53	.79	.79	.69	19
Average all products .....	.14	.14	.15	.16	.16	14

¹ HTS numbers 0701.10, 0701.90, 0710.10, 0712.10, 0712.90.30, 1105.00, 1108.13, 2004.10, and 2005.20.² HTS number 2004.10; other potatoes, prepared or preserved, frozen (includes frozen french fries).³ HTS number 2005.20; other potatoes, prepared or preserved, not frozen (includes potato chips).⁴ HTS number 1105; also includes flakes, granules, and pellets.

Note.—Because of rounding, figures may not add to the totals shown.

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

U.S. Global Exports

Total U.S. exports of fresh potatoes and processed potato products rose 46 percent in quantity and 68 percent in value during 1992-96, reaching 1.7 billion pounds, valued at \$613 million, in 1996 (table 3-6). The increase was paced by substantial increases in exports of value-added processed potato products such as frozen french fries and milled potato products.¹ U.S. exports of fresh potatoes and processed potato products went to 135 different markets during 1992-96, with exports to the top two markets together accounting for over 55 percent of the total export value. The top two export markets in 1996 included Japan, which accounted for 35 percent by value of the total, and Canada, which accounted for 20 percent (table 3-1). During the 1992-96 period, Asian markets exhibited the highest growth rate of all markets for U.S. exports. The Philippines and Hong Kong each expanded by over 100 percent during the period, followed by Japan and South Korea which expanded 93 and 88 percent, respectively (table 3-1).

The top three potato exports by value over the 1992-96 period included frozen processed potatoes, (mainly french fries) other processed potatoes (especially potato chips) and fresh table stock potatoes. Over the 1992-96 period, frozen processed potatoes grew in value by 90 percent to \$278 million in 1996, other processed potatoes grew 71 percent to \$189 million, and table stock potatoes grew by 20 percent to \$78 million (table 3-6). Other product categories showing significant growth included potato flour and meal² and other frozen potatoes, both of which outpaced the 68-percent average growth rate for all fresh potatoes and processed potato products during the period.

Exports of frozen french fries, the leading processed potato product exported from the United States in recent years, were valued at \$265 million in 1996, an increase of 93 percent over the 1992 level (table 3-7).³ The principal U.S. export markets for frozen french fries in 1996 included Japan, 53 percent, South Korea, 7 percent, Hong Kong, 6 percent, and Taiwan, Canada, and the Philippines with 4 percent each. Growth in such exports was fueled primarily by rising consumer incomes, expanding demand in fast-food and other restaurants located in those countries, and by assistance provided by the Market Access Program of the U.S. Department of Agriculture.⁴

Potato chips are the second leading processed potato product exported by the United States. Potato chip exports totaled \$159 million in 1996, an increase of 68 percent since 1992 (table 3-8).⁵ The primary U.S. export markets for potato chips in recent years were Belgium and Japan, with growth in each country rising over 1,000 percent in value from 1992 to 1996.

¹ Includes flour, meal, flakes, granules, pellets, and starches.

² Includes flour, meal, flakes, pellets, and granules.

³ An expanded version of table 3-7, including quantity and unit value data, appears in appendix D.

⁴ U.S. Department of Agriculture (USDA), Foreign Agricultural Service (FAS), *World Horticultural Trade and U.S. Export Opportunities*, Jan. 1997.

⁵ An expanded version of table 3-8, including quantity and unit value data, appears in appendix D.

Table 3-6

Potatoes:¹ U.S. exports of domestic merchandise, by principal items, 1992-96

Exports of domestic merchandise, by principal items, 1992-96						
						Change 1996 over 1992
Item	1992	1993	1994	1995	1996	1992
	Quantity (1,000 pounds)					Percent
Primary products:						
Frozen processed potatoes ²	449,509	502,511	616,382	808,175	829,677	85
Fresh table stock potatoes	499,890	506,626	620,367	536,505	564,005	13
Fresh seed potatoes	38,044	32,714	34,652	47,428	46,043	21
Other:						
Other processed potatoes ³	101,123	132,109	195,595	185,005	163,809	62
Potato flour and meal ⁴	73,620	62,656	77,544	108,237	86,322	17
Other frozen potatoes	14,312	25,233	21,674	25,996	27,873	95
Dried potatoes	13,505	14,482	8,581	14,416	13,505	0
Potato starch	3,420	2,709	1,882	3,584	5,040	47
Total	1,193,423	1,279,039	1,576,677	1,729,346	1,736,273	46
	Value (1,000 dollars)					
Primary products:						
Frozen processed potatoes	145,995	162,244	206,945	270,371	277,881	90
Fresh table stock potatoes	65,214	75,617	86,433	78,474	78,424	20
Fresh seed potatoes	3,533	3,355	3,562	4,618	5,468	55
Other:						
Other processed potatoes	110,303	147,356	228,118	200,682	188,659	71
Potato flour and meal	26,000	27,208	32,524	46,460	45,290	74
Other frozen potatoes	4,655	8,499	7,474	8,733	7,849	69
Dried potatoes	7,928	9,658	5,756	6,754	7,205	(9)
Potato starch	1,430	1,049	763	1,537	2,083	46
Total	365,060	434,987	571,575	617,630	612,860	68
	Unit value (dollars per pound)					
Primary products:						
Frozen processed potatoes	\$0.32	\$0.32	\$0.34	\$0.33	\$0.33	3
Fresh seed potatoes . . . . .	.09	.10	.10	.10	.12	28
Fresh table stock potatoes . . . . .	.13	.15	.14	.15	.14	7
Other:						
Other processed potatoes	1.09	1.12	1.17	1.08	1.15	6
Potato flour and meal . . . . .	.35	.43	.42	.42	.52	49
Other frozen potatoes . . . . .	.33	.34	.34	.34	.28	(13)
Dried potatoes . . . . .	.59	.67	.67	.47	.53	(9)
Potato starch . . . . .	.42	.39	.41	.43	.41	(1)
Average . . . . .	.31	.34	.36	.36	.35	15

¹ Schedule B codes 0701.10, 0701.90, 0710.10, 0712.10, 0712.90.30, 1105.10, 1105.20, 1108.13, 2004.10, and 2005.20.

² HTS number 2004.10; other potatoes, prepared or preserved, frozen (includes frozen french fries).

³ HTS number 2005.20; other potatoes, prepared or preserved, not frozen (includes potato chips).

⁴ HTS number 1105; also includes flakes, granules, and pellets.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and percent changes calculated using unrounded data.

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

Table 3-7

Frozen french fries:¹ U.S. exports of domestic merchandise, by principal markets, 1992-96

Market	1992	1993	1994	1995	1996	Change
						1996 over 1992
	Value (1,000 dollars)					Percent
Japan	84,578	88,975	104,222	124,069	139,892	65
South Korea	10,917	10,592	12,797	14,673	18,442	69
Hong Kong	6,373	7,428	9,250	13,447	15,932	150
Taiwan	4,419	5,924	7,372	9,352	11,666	164
Canada	5,181	6,135	6,696	6,815	11,466	121
Philippines	3,289	4,634	7,275	9,681	10,683	225
Malaysia	3,660	4,275	7,166	11,228	8,743	139
Mexico	4,751	6,204	9,609	5,440	8,405	77
All other	14,068	20,089	34,489	64,396	40,082	217
Total	137,236	154,255	198,876	259,101	265,310	93

¹ Schedule B number 2004.10.8020.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and percent changes calculated using unrounded data.

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

Table 3-8

Potato chips:¹ U.S. exports of domestic merchandise, by principal markets, 1992-96

Market	1992	1993	1994	1995	1996	Change
						1996 over 1992
	Value (1,000 dollars)					Percent
Belgium	4	80	37,914	48,105	45,289	(²)
Japan	2,010	6,795	52,442	49,437	36,502	1,716
Canada	25,487	22,087	21,128	19,653	24,401	(4)
Philippines	5,529	6,793	6,998	5,234	6,743	22
South Korea	3,064	5,824	3,277	4,210	6,259	104
Taiwan	12,298	19,355	17,743	10,336	5,980	(51)
Mexico	4,538	5,626	15,332	200	5,430	20
All other	41,689	63,949	45,113	31,190	28,245	(32)
Total	94,618	130,509	199,947	168,365	158,849	68

¹ Schedule B number 2005.2020 in 1992 through 1995; changed to 2005.20.0020 in 1996.² Greater than 5,000 percent.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and percent changes calculated using unrounded data.

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

U.S. potato chip exports to Canada, accounting for about 15 percent of total export value in 1996, declined steadily during 1992-95 before rebounding somewhat in 1996.

U.S. exports of fresh table stock potatoes, the third-leading category of U.S. potato exports, rose 20 percent from \$65 million in 1992 to \$78 million in 1996 (table 3-9).⁶ Canada was the primary market for U.S. exports of fresh table stock potatoes throughout the 1992-96 period, accounting for 83 percent of the total in 1996. Mexico was the second-leading market but accounted for only 12 percent of the total in 1996. Export growth in table stock potatoes has been greatest in the traditionally smaller Asian markets of Singapore and Hong Kong, the Latin American markets of Barbados, the Dominican Republic, and Jamaica, and in Russia.

Table 3-9
Fresh table stock potatoes:¹ U.S. exports of domestic merchandise, by principal markets, 1992-96

Market	1992	1993	1994	1995	1996	Change
						1996 over 1996
	Value (1,000 dollars)					Percent
Canada	59,522	68,395	75,662	67,823	64,811	9
Mexico	4,270	5,531	6,486	6,215	9,524	123
Singapore	45	225	339	586	928	1,982
Hong Kong	291	641	614	615	617	112
Russia	42	0	2,204	275	542	1,193
Barbados	51	172	110	127	371	623
Dominican Republic	0	0	0	3	273	(²)
Jamaica	35	68	45	129	256	639
All other	960	586	973	2,703	1,103	15
Total	65,214	75,617	86,433	78,474	78,424	20

¹ Schedule B number 0701.90.

² Not meaningful.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and percent changes calculated using unrounded data.

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

⁶ An expanded version of table 3-9, including quantity and unit value data, appears in appendix D.

U.S. Trade With Canada

Trade Balance

The U.S. trade deficit with Canada in fresh potatoes and processed potato products increased from the 1992 surplus of \$26 million to a deficit of \$100 million in 1996 (table 3-10). This decline has been due primarily to decreases in the trade balances of frozen processed potatoes (mainly french fries), fresh table stock potatoes, and seed potatoes. The U.S. trade balance with Canada in each of these categories worsened substantially during the period, with a deficit in frozen processed potatoes increasing from \$42 million in 1992 to \$114 million in 1996 and a deficit in fresh seed potatoes increasing from \$5 million to \$24 million during the same period. These were the two largest absolute deficits in 1996. The largest surplus with Canada was in other processed potatoes (mainly potato chips), at \$33 million in 1996. However, the trade balance remained relatively constant or declined for most of those categories holding a surplus during the 1992-96 period.

Table 3-10
Potatoes:¹ U.S. trade balance with Canada, by principal items, 1992-96

						Change 1996 over 1992
Item	1992	1993	1994	1995	1996	1992
	Quantity (1,000 pounds)					Percent
Other processed potatoes ²	29,467	32,244	37,168	37,341	36,107	23
Dried potatoes	3,166	3,758	4,012	3,014	3,266	3
Fresh table stock potatoes	186,486	(82,410)	153,805	15,018	(207,887)	(211)
Potato flour and meal ³	550	1,136	2,263	3,048	1,458	160
Potato starch	(2,368)	(2,914)	(859)	(4,080)	(2,094)	12
Other frozen potatoes	3,408	1,900	(169)	738	(229)	(107)
Fresh seed potatoes	(96,085)	(148,545)	(212,807)	(196,330)	(266,546)	(177)
Frozen processed potatoes ⁴	(181,789)	(273,335)	(292,203)	(336,868)	(423,081)	(133)
Total	(57,165)	(468,164)	(308,789)	(478,121)	(859,037)	(1,403)
	Value (1,000 dollars)					
Other processed potatoes	30,525	28,731	28,934	28,249	33,132	9
Dried potatoes	1,873	2,229	3,567	2,225	1,994	6
Fresh table stock potatoes	39,812	22,920	33,043	28,711	1,772	(96)
Potato flour and meal	232	564	1,516	1,776	1,139	391
Potato starch	(250)	(300)	50	(643)	101	141
Other frozen potatoes	1,556	892	25	336	(147)	(109)
Fresh seed potatoes	(5,274)	(9,983)	(19,507)	(14,720)	(23,715)	(350)
Frozen processed potatoes	(42,444)	(65,787)	(71,486)	(91,416)	(114,357)	(169)
Total	26,030	(20,735)	(23,856)	(45,482)	(100,082)	(484)

¹ HTS codes 0701.10, 0701.90, 0710.10, 0712.10, 0712.90.30, 1105.10, 1105.20, 1108.13, 2004.10, and 2005.20.

² HTS number 2005.20; other potatoes, prepared or preserved, not frozen (includes potato chips).

³ HTS number 1105; also includes flakes, granules, and pellets.

⁴ HTS number 2004.10; other potatoes, prepared or preserved, frozen (includes frozen french fries).

Note.—Because of rounding, figures may not add to the totals shown. Percent changes calculated using unrounded data.

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

Import Levels and Trends

As stated previously, Canada accounted for 94 percent by quantity and 91 percent by value of total U.S. imports of fresh potatoes and processed potato products in 1996. During 1992-96, imports from Canada rose by 140 percent in quantity and 181 percent in value, reaching 1.4 billion pounds valued at \$220 million in 1996 (table 3-11). Frozen processed potatoes were the leading U.S. import category from Canada in 1996 at \$126 million, followed by fresh table stock potatoes at \$63 million and fresh seed potatoes at \$27 million (table 3-11). The value of these three product categories together grew an average of 286 percent during 1992-96. Quantity trends followed a similar pattern as value trends.

Average unit values for U.S. imports of most fresh potatoes and processed potato products from Canada increased during 1992-96, particularly for frozen processed products, fresh table stock, and seed potatoes. The overall average unit value for all fresh potatoes and products rose 17 percent during the 1992-96 period. Fresh seed potatoes exhibited the highest individual product growth in unit value at 42 percent during the period. Fresh table stock potatoes and frozen processed potatoes followed at 27 percent and 14 percent growth, respectively. The average unit value for other processed potatoes, potato flour and meal, and potato starch all declined from 1992 to 1996 (table 3-11).

Export Levels and Trends

Since 1992, the leading U.S. potato export to Canada has been fresh table stock potatoes, which amounted to \$65 million in 1996 and accounted for 54 percent of the total value of exports to Canada in that year (table 3-12). U.S. exports of table stock potatoes to Canada rose 9 percent by value during 1992-96. Exports of other processed potatoes (mainly potato chips) were valued at \$35 million in 1996, amounted to 29 percent of total exports in 1996, and rose 10 percent from 1992 to 1996. U.S. exports of frozen processed potatoes (mainly french fries) rose 121 percent from \$5 million in 1992 to \$11 million in 1996, but still only accounted for a 10 percent share of total potato export value in 1996. The increase was facilitated by the liberalization of Canadian packaging regulations in December 1995 that allowed the import of food service packages larger than standard retail packs.⁷ Fresh seed potatoes exported to Canada amounted to \$3 million in 1996, up 8 percent from the 1992 level but accounting for only 3 percent of total 1996 exports. The average unit value for U.S. exports of all fresh potatoes and processed potato products to Canada remained fairly stable between during 1992-96, varying between 19 and 20 cents per pound.

⁷ USDA, FAS, "Frozen French Fry Annual," U.S. Embassy, Ottawa, No. CA6064, Oct. 18, 1996.

Table 3-11

Potatoes:¹ U.S. imports for consumption from Canada, by principal items, 1992-96

Item	1992	1993	1994	1995	1996	Change 1996 over 1992
Quantity (1,000 pounds)						Percent
Frozen processed potatoes ²	194,822	288,594	308,436	353,493	451,902	132
Frozen french fries	188,119	277,786	289,227	332,252	422,950	125
Fresh table stock potatoes	273,288	541,293	405,849	458,832	690,761	153
Other than russet or yellow	198,716	371,197	278,161	356,299	551,961	178
Russet	73,177	167,837	123,641	95,268	121,426	66
Fresh seed potatoes	127,926	170,840	236,789	225,881	295,556	131
Other processed potatoes ³	1,211	685	510	294	2,222	83
Potato flour and meal ⁴	1,397	2,019	1,570	1,177	1,894	36
Potato starch	3,324	3,986	1,873	4,690	3,488	5
Frozen potatoes	48	720	560	386	1,132	2,261
Dried potatoes	132	87	0	0	132	(⁵)
Total	602,149	1,008,224	955,587	1,044,754	1,447,087	140
Value (1,000 dollars)						
Frozen processed potatoes	47,624	71,922	78,182	98,231	125,823	164
Frozen french fries	45,895	68,841	72,252	91,187	116,890	155
Fresh table stock potatoes	19,710	45,475	42,619	39,112	63,039	220
Other than russet or yellow	13,713	29,437	27,881	31,144	50,978	272
Russet	5,860	15,788	14,138	7,114	10,320	76
Fresh seed potatoes	8,231	11,963	21,997	17,462	26,907	227
Other processed potatoes	1,321	316	135	257	2,007	52
Potato flour and meal	598	846	620	470	808	35
Potato starch	611	669	307	862	544	(11)
Frozen potatoes	18	134	124	127	508	2,768
Dried potatoes	51	34	0	0	53	6
Total	78,163	131,357	143,984	156,521	219,690	181
Unit value (dollars per pound)						
Frozen processed potatoes	\$0.24	\$0.25	\$0.25	\$0.28	\$0.28	14
Frozen french fries	.24	.25	.25	.27	.28	13
Fresh table stock potatoes	.07	.08	.11	.09	.09	27
Other than russet or yellow	.07	.08	.10	.09	.09	34
Russet	.08	.09	.11	.07	.08	6
Fresh seed potatoes	.06	.07	.09	.08	.09	42
Other processed potatoes	1.09	.46	.26	.88	.90	(17)
Potato flour and meal	.42	.42	.39	.40	.32	(24)
Potato starch	.18	.17	.16	.18	.16	(15)
Frozen potatoes	.37	.19	.22	.33	.45	21
Dried potatoes	.38	.39	-	-	.40	6
Average	.13	.13	.15	.15	.15	17

¹ HTS numbers 0701.10, 0701.90, 0710.10, 0712.10, 0712.90.30, 1105.10, 1105.20, 1108.13, 2004.10, and 2005.20.

² HTS number 2004.10; other potatoes, prepared or preserved, frozen (includes frozen french fries).

³ HTS number 2005.20; other potatoes, prepared or preserved, not frozen (includes potato chips).

⁴ HTS number 1105; also includes flakes, granules, and pellets.

⁵ Change of less than 0.5 percent.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and percent changes calculated using unrounded data.

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

Table 3-12

Potatoes:¹ U.S. exports of domestic merchandise to Canada, by principal items, 1992-96

Exports of domestic merchandise to Canada, by principal items, 1992-96						Change 1996 over 1992
Item	1992	1993	1994	1995	1996	1992
	Quantity (1,000 pounds)					Percent
Fresh table stock potatoes	459,774	458,884	559,655	473,850	482,874	5
Other processed potatoes ²	30,679	32,929	37,678	37,635	38,329	25
Frozen processed potatoes ³	13,033	15,260	16,233	16,625	28,820	121
Fresh seed potatoes	31,841	22,295	23,982	29,550	29,010	(9)
Dried potatoes	3,298	3,846	4,012	3,014	3,398	3
Potato flour and meal ⁴	1,947	3,154	3,833	4,225	3,322	71
Potato starch	956	1,072	1,014	609	1,394	46
Frozen potatoes	3,456	2,620	391	1,124	902	(74)
Total	544,984	540,059	646,798	566,633	588,050	8
	Value (1,000 dollars)					
Fresh table stock potatoes	59,522	68,395	75,662	67,823	64,811	9
Other processed potatoes	31,846	29,046	29,070	28,506	35,139	10
Frozen processed potatoes	5,181	6,135	6,696	6,815	11,466	121
Fresh seed potatoes	2,957	1,980	2,490	2,742	3,192	8
Dried potatoes	1,924	2,263	3,567	2,225	2,047	6
Potato flour and meal	1,459	2,542	3,689	4,194	2,919	100
Potato starch	361	368	357	219	646	79
Frozen potatoes	1,574	1,025	149	463	361	(77)
Total	104,193	110,622	120,128	111,040	119,608	15
	Unit value (dollars per pound)					
Fresh table stock potatoes	\$0.13	\$0.15	\$0.14	\$0.14	\$0.13	4
Other processed potatoes	1.04	.88	.77	.76	.92	(12)
Frozen processed potatoes .....	.40	.40	.41	.41	.40	(⁵)
Fresh seed potatoes .....	.09	.09	.10	.09	.11	19
Dried potatoes .....	.58	.59	.89	.74	.60	3
Potato flour and meal .....	.75	.81	.96	.99	.88	17
Potato starch .....	.38	.34	.35	.36	.46	23
Frozen potatoes .....	.46	.39	.38	.41	.40	(12)
Average .....	.19	.20	.19	.20	.20	6

¹ Schedule B numbers 0701.10, 0701.90, 0710.10, 0712.10, 0712.90.30, 1105.10, 1105.20, 1108.13, 2004.10, and 2005.20.

² HTS number 2005.20; other potatoes, prepared or preserved, not frozen; and potato chips.

³ HTS number 2004.10; other potatoes, prepared or preserved, frozen, and frozen french fries.

⁴ HTS number 1105; also includes flakes, granules, and pellets.

⁵ Increase of less than 0.5 percent.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and percent changes calculated using unrounded data.

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

U.S.-Canada Regional Trade

Regional Trade

Since 1992, regional trade in fresh potatoes and processed potato products has primarily moved north-south between the United States and Canada. In the Northwestern United States, potato trade flows are primarily north into British Columbia from the United States. In the Northeastern United States, trade flows are primarily south through Maine and New York from New Brunswick, Prince Edward Island (P.E.I.), and Québec. Primarily due to transportation costs, significant amounts of trade between Eastern and Western U.S. or Canadian regions have been limited to certain products, with a much greater share of Western U.S. production sold in Eastern U.S. markets. Most of the U.S.-Canada trade in the Northeastern United States, is directed toward markets in Boston, New York, and Philadelphia.

In 1996, the largest share of U.S.-Canada trade occurred in the Northeastern⁸ United States where 58 percent of the value (\$119 million) of total imports of potatoes and processed potato products from Canada were entered (table 3-13).⁹ Of those imports, 89 percent originated in the Atlantic region of Canada.¹⁰ The second-highest value of trade in 1996 occurred in the Northwestern United States where Canada imported \$57 million, or 66 percent of the value of its imports of fresh potatoes and processed potato products, from the United States. Of those imports, 78 percent entered through British Columbia and the Atlantic region. Before 1996, the second-highest value of trade originated in the U.S. South, with imports primarily entering Canada in the Central region. The third-highest value of trade between the United States and Canada in 1996 occurred in the Central region, where Canada exported \$32 million from the Central and Prairie regions, collectively, to the U.S. Midwest, accounting for 83 percent of the Canadian exports to that region.

⁸ In the *Regional trade* section, United States regions are defined as Northeast: CT, DE, ME, MD, MA, NH, NJ, NY, OH, PA, RI, VT; Midwest: IL, IN, MI, MN, ND, WI; South: AL, AR, AZ, CA, DC, FL, GA, IA, KS, KY, LA, MO, MS, NC, NE, NM, OK, SC, TN, TX, VA, WV; and Northwest: AK, CO, HI, ID, MT, NV, OR, SD, UT, WA, WY.

⁹ Includes HTS numbers 0701.10, 0701.90, 0710.10, 1105.20, 2004.10, and 2005.20. Data not available for the remaining HTS numbers.

¹⁰ In the *Regional trade* section, Canadian regions are defined as Atlantic: Newfoundland, P.E.I., Nova Scotia, and New Brunswick; Central: Québec and Ontario; Prairies: Manitoba, Saskatchewan, and Alberta; and BC and Territories: British Columbia, Northwest Territories, and Yukon Territory.

Table 3-13

Potatoes: ¹ Regional trade flows between the United States and Canada, 1992-96

	1992		1993		1994		1995		1996	
	Canadian imports ² from:	Canadian exports ² to:	Canadian imports from:	Canadian exports to:	Canadian imports from:	Canadian exports to:	Canadian imports from:	Canadian exports to:	Canadian imports from:	Canadian exports to:
<i>In thousands of dollars</i>										
U.S. Northeast ³ :										
Atlantic ⁴	3,617	51,927	2,022	73,314	3,422	75,198	2,665	75,836	2,281	106,205
Central ⁴	17,614	3,853	16,351	7,961	12,217	4,993	11,219	4,999	0	12,383
Prairies ⁴	528	306	719	280	95	690	203	487	492	867
BC ⁴	366	0	195	8	182	0	89	0	310	0
Total	22,125	56,085	19,287	81,565	15,917	80,880	11,778	81,322	3,084	119,455
U.S. Midwest ³ :										
Atlantic	143	13,558	96	2,144	87	4,387	12	2,981	62	6,727
Central	8,354	3,824	6,419	14,311	6,132	17,818	7,280	30,633	7,015	8,570
Prairies	3,676	520	2,485	1,434	2,637	2,426	2,188	3,770	3,355	24,553
BC	161	0	51	9	42	0	73	5	147	0
Total	12,335	17,702	9,051	17,899	8,898	24,630	9,554	37,390	10,580	39,850
U.S. South ³ :										
Atlantic	3,451	5,716	3,319	9,395	3,583	9,488	3,028	8,299	2,094	19,164
Central	20,333	237	24,882	333	36,017	832	32,612	818	0	1,908
Prairies	3,963	463	5,611	6,356	7,295	1,305	7,042	1,679	6,399	3,975
BC	5,047	208	6,949	283	6,011	479	5,231	605	6,416	682
Total	32,795	6,625	40,761	16,366	52,907	12,104	47,913	11,400	14,908	25,730
U.S. Northwest ³ :										
Atlantic	175	1,310	69	1,707	249	2,051	54	372	21,459	393
Central	5,886	147	7,032	238	1,347	471	7,864	8	6,476	2
Prairies	2,063	2,820	2,378	4,274	4,022	10,631	3,939	10,865	6,077	17,305
BC	18,206	11,965	20,636	2,218	20,096	2,558	18,125	2,689	22,519	4,104
Total	26,330	16,242	30,115	8,436	25,715	15,711	29,981	13,933	56,531	21,803
Total trade	93,585	96,654	99,214	200,266	103,437	133,325	99,226	144,045	85,175	206,838

¹ Includes Canadian Import and Export Classification numbers 0701.10, 0701.90, 0710.10, 0712.10, 1105.20, 2004.10 and 2005.20; 0712.10 deleted in 1996 and included in 0712.90.

² Figures converted from Canadian dollars to U.S. dollars by dividing by average annual exchange rate in Canadian dollars per U.S. dollars. Average annual exchange rates from IMF International Financial Statistics, *Exchange Rates*, p. 156, Feb. 1997.

³ United States regions defined as Northeast: CT, DE, ME, MD, MA, NH, NJ, NY, OH, PA, RI, VT; Midwest: IL, IN, MI, MN, ND, WI; South: AL, AR, AZ, CA, DC, FL, GA, IA, KS, KY, LA, MO, MS, NC, NE, NM, OK, SC, TN, TX, VA, WV; Northwest: AK, CO, HI, ID, MT, NV, OR, SD, UT, WA, WY.

⁴ Canadian regions defined as: Atlantic: Newfoundland, Prince Edward Island, Nova Scotia, and New Brunswick; Central: Quebec and Ontario; Prairies: Manitoba, Saskatchewan, and Alberta; BC and Territories: British Columbia, Northwest Territories, and Yukon Territory.

Source: Compiled from official statistics of Trade Data Online at http://strategis.ic.gc.ca/sc_mrkti/tdst/engdoc/tr_homep.html.

Trade by Customs Districts

Imports

The flow of fresh potatoes and frozen processed potato products from Canada into the United States is concentrated among a few Customs Districts. In general, most U.S.-Canada trade in potatoes consists of U.S. imports of fresh potatoes and processed potato products from Canada destined for the Northeastern United States and entered through the Portland, Maine Customs District. Imports of fresh potatoes and processed potato products through the Portland District amounted to \$116 million and accounted for 54 percent the value of total imports in 1996. The second-leading district of entry in 1996 was Pembina, North Dakota with imports amounting to \$38 million and accounting for 17 percent of total value, followed by San Juan, Puerto Rico at \$21 million and 9 percent of total value.

Fresh table stock potato imports from Canada have also entered primarily through Portland in recent years. In 1996, imports entered through Portland were valued at \$34 million, an increase of 162 percent over the 1992 level. Imports through Portland accounted for 54 percent of the total value of table stock imports in 1996 (table 3-14).¹¹ Russet potatoes accounted for 71 percent of the total value of table stock imports through Portland in that year. Significant amounts of table stock imports from Canada also entered through San Juan, and were 190 percent greater in value in 1996 than in 1992. Imports entered through Ogdensburg, New York, intended principally for the New York market, rose 460 percent from 1992 to 1996.

Table 3-14

Fresh table stock potatoes:¹ U.S. imports for consumption from Canada, by principal Customs Districts, 1992-96

Districts, 1992-96						Change
Customs District	1992	1993	1994	1995	1996	1996 over 1992
	Value (1,000 dollars)					Percent
Portland, Maine	12,901	30,019	28,633	23,505	33,844	162
San Juan, Puerto Rico	3,255	5,322	5,779	4,845	9,451	190
Buffalo, New York	1,246	4,159	2,460	1,960	6,617	431
Ogdensburg, New York	843	3,262	1,816	2,361	4,725	460
Pembina, North Dakota	483	1,229	1,870	3,309	3,847	697
Detroit, Michigan	149	574	587	1,301	2,054	1,276
Great Falls, Montana	17	44	610	1,172	1,840	(²)
All other	814	864	865	658	662	(19)
Total	19,710	45,475	42,619	39,112	63,039	220

¹ Includes HTS number 0701.90.

² Change greater than 5,000 percent.

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

¹¹ An expanded version of table 3-14, including quantity and unit value data, appears in appendix D.

In 1996, 60 percent of the value of U.S. imports of frozen french fries from Canada entered through Portland, 28 percent entered through Pembina, and 10 percent entered through San Juan. Imports through Portland reached \$70 million in 1996, an increase of 81 percent over the 1992 level (table 3-15).¹² Imports through Pembina rose 747 percent from 1992 to 1996, reaching \$33 million. The value of frozen french fry imports entered through San Juan reached \$11 million in 1996, an increase of 332 percent. Industry officials have attributed the rise in imports through San Juan to low transportation costs associated with shipping over water instead of land.¹³

Table 3-15
Frozen french fries:¹ U.S. imports for consumption from Canada, by principal Customs Districts, 1992-96

Customs District	1992	1993	1994	1995	1996	Change 1996 over 1992
						Percent
Value (1,000 dollars)						
Portland, Maine	38,638	42,543	44,643	46,184	69,867	81
Pembina, North Dakota . .	3,841	20,599	20,091	32,388	32,554	747
San Juan, Puerto Rico . .	2,579	4,104	5,199	10,245	11,154	332
Detroit, Michigan	55	475	1,429	1,018	1,324	2,307
Buffalo, New York	231	363	392	841	1,084	369
Ogdensburg, New York . .	449	576	321	443	636	42
All other	103	182	177	67	270	162
Total	45,895	68,841	72,252	91,187	116,890	155

¹ HTS number 2004.10.8020.

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

Fresh seed potatoes from Canada have primarily entered through Great Falls, Montana since 1992. In 1996, imports of fresh seed potatoes through this District were valued at \$16 million, up 492 percent from 1992 levels and accounting for 59 percent of the total value in 1996 (table 3-16).¹⁴ Such imports entered through Portland and Seattle also rose significantly from 1992 to 1996. Although imports entered through the Detroit Customs District amounted to only 4 percent of total seed potato imports in 1996, the value of those imports increased over 1,000 percent during 1992-96.

¹² An expanded version of table 3-15, including quantity and unit value data, appears in appendix D.

¹³ Transcript of the hearing, p. 12.

¹⁴ An expanded version of table 3-16, including quantity and unit value data, appears in appendix D.

Table 3-16**Fresh seed potatoes:¹ U.S. imports for consumption from Canada, by principal Customs Districts, 1992-96**

1992-96

Customs District	1992	1993	1994	1995	1996	Change
						1996 over 1992
	Value (1000 dollars)					Percent
Great Falls, Montana	2,660	4,419	9,490	9,182	15,743	492
Portland, Maine	4,146	5,136	7,399	5,452	7,021	69
Seattle, Washington	1,163	1,742	2,139	2,216	2,569	121
Detroit, Michigan	104	366	2,299	207	1,195	1,049
Pembina, North Dakota	140	225	608	244	295	110
All other	18	75	62	161	85	370
Total	8,231	11,963	21,997	17,462	26,907	227

¹ HTS number 0701.10.

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

Exports

Although U.S. exports were reported through 13 Customs Districts during 1992-96, about one-third of the total value of U.S. fresh potato and processed potato product exports to Canada were shipped through Detroit. Other important Districts for export included Seattle (16 percent of total value), Great Falls (14 percent), and Buffalo, New York (10 percent). In the Western United States and Canada, most potato trade consists of U.S. exports of fresh potatoes and processed potato products shipped from the United States through the Seattle Customs District to British Columbia.

On an individual product basis, exports to Canada of fresh table stock potatoes were primarily through the Customs Districts of Detroit and Seattle. In 1996, exports through these two Districts totaled \$17 million and \$12 million, respectively, and accounted for 45 percent, collectively, of total exports of table stock potatoes (table 3-17).¹⁵ Significant amounts also were shipped through Great Falls and Buffalo.

Table 3-17**Fresh table stock potatoes:¹ U.S. exports of domestic merchandise to Canada, by principal Customs Districts, 1992-96**

Customs Districts, 1992-99

Customs District	1992	1993	1994	1995	1996	Change
						1996 over 1992

¹ HTS number 0701.90.

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

¹⁵ An expanded version of table 3-17, including quantity and unit value data, appears in appendix D.

In 1996, exports of frozen french fries to Canada valued at \$4 million were shipped through the Seattle Customs District, accounting for 32 percent of total frozen french fries export value in 1996 (table 3-18).¹⁶ Shipments through Great Falls, valued at \$3 million, accounted for 27 percent of the total. A significant share of exports also were exported through the Pembina District. From 1992 to 1996, the rise in shipments through these three Customs Districts was substantial.

Table 3-18
Frozen french fries:¹ U.S. exports of domestic merchandise to Canada, by principal Customs Districts, 1992-96

Customs District	1992	1993	1994	1995	1996	Change 1996 over 1992
	<i>Value (1,000 dollars)</i>					<i>Percent</i>
Seattle, Washington	1,431	1,894	2,433	2,442	3,720	160
Great Falls, Montana	395	1,040	1,004	739	3,044	671
Pembina, North Dakota	732	746	810	994	2,529	245
Detroit, Michigan	1,635	1,487	1,030	930	742	(55)
Buffalo, New York	87	35	162	152	632	627
All other	901	934	1,257	1,558	800	(11)
Total	5,181	6,135	6,696	6,815	11,466	121

¹ HTS number 2004.10.8020.

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

About 45 percent of the U.S. exports of fresh seed potatoes to Canada in 1996 were exported through the Pembina Customs District. Exports of seed potatoes through Pembina totaled about \$1.4 million in 1996, followed by \$706,000 through Portland and \$420,000 through Detroit (table 3-19).¹⁷ The total value of U.S. exports of fresh seed potatoes, relative to exports of table stock and french frozen fries, was small.

The overall growth of U.S. exports of fresh potatoes and processed potato products to Canada during 1992-96 through all major Customs Districts was moderate as compared with imports through the same Districts. Export value through Detroit rose 35 percent by value during the 1992-96 period and included mainly potato chips and fresh table stock potatoes. Exports through Seattle rose 11 percent (mainly frozen french fries and fresh table stock potatoes), Great Falls rose 61 percent (mainly frozen french fries and fresh table stock potatoes), and exports through Ogdensburg rose 8 percent (with a rise in potato chips and a drop in fresh table stock potatoes). Exports of mainly potato chips and fresh table stock potatoes through Buffalo, however, fell 28 percent during the period.

¹⁶ An expanded version of table 3-18, including quantity and unit value data, appears in appendix D.

¹⁷ An expanded version of table 3-19, including quantity and unit value data, appears in appendix D.

Table 3-19

Fresh seed potatoes:¹ U.S. exports of domestic merchandise to Canada, by principal Customs districts, 1992-96

districts, 1992-96

Customs District	1992	1993	1994	1995	1996	Change
						1996 over 1992

¹ HTS number 0701.10.

Note.—Because of rounding, figures may not add to the totals shown. Percent changes calculated using unrounded data.

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

Overall Canadian Trade Flows

Canadian Global Trade Balance

Canada has maintained a trade surplus in fresh potatoes and processed potato products over the 1992-96 period, yet remains a net importer in certain product categories. During 1992-96, Canada was a net exporter of fresh seed potatoes and frozen processed potatoes, and became a net exporter of fresh table stock potatoes in 1995. During the 1992-96 period, Canada was a net importer of dried potatoes, potato starch, and other processed potatoes (mainly potato chips), and became a net importer of potato flour and meal.¹⁸

Canadian Global Imports

In 1996, Canadian imports of fresh potatoes and processed potato products amounted to \$116 million, an increase of 19 percent since 1992 (table 3-20)¹⁹. The leading Canadian potato import in 1996 was fresh table stock potatoes valued at \$59 million, followed by other processed potatoes at \$36 million and frozen processed potatoes valued at \$11 million. The three products of greatest import value each grew in value during 1992-96, with the greatest increase noted for frozen processed potatoes at 107 percent. This increase is attributable to an

¹⁸ Also includes flakes, granules, and pellets.

¹⁹ An expanded version of table 3-20, including quantity and unit value data, appears in appendix D.

Table 3-20

Potatoes:¹ Canadian imports for consumption, by principal items, 1992-96

Potatoes: Canadian imports for consumption, by principal items, 1992-96						Change 1996 over 1992
Item	1992	1993	1994	1995	1996	1992
	Value (1,000 dollars) ²					Percent
Fresh table stock	51,769	59,909	68,499	61,734	58,975	14
Other processed potatoes ³	30,915	28,157	28,271	27,820	35,594	15
Frozen processed potatoes ⁴	5,032	5,935	6,490	6,495	10,401	107
Potato starches	3,264	4,047	5,089	4,827	3,943	21
Fresh seed potatoes	2,680	1,739	2,380	2,588	3,003	12
Dried potatoes ^{5,6}	1,890	2,294	3,564	2,301	1,782	(6)
Potato flour and meal	835	1,436	2,086	2,173	1,911	129
Other frozen potatoes	1,509	965	154	595	784	(48)
Total	97,896	104,482	116,535	108,535	116,392	19

¹ Canadian Import Classification numbers 0701.10, 0701.90, 0710.10, 0712.10, 1105.10, 1105.20, 1108.13, 2004.10, and 2005.20.

² Data converted from Canadian dollars to U.S. dollars by dividing by average annual exchange rate, in Canadian dollars per U.S. dollars. Average annual exchange rates from the International Monetary Fund (IMF) *International Financial Statistics*, Feb. 1977, if exchange rate, p. 156. Average annual exchange rate not available for 1996. Estimated by USITC staff by averaging the quarterly rates for 1996.

³ CIC number 2005.20; other potatoes, prepared or preserved, not frozen (includes potato chips).

⁴ CIC number 2004.10; other potatoes, prepared or preserved, frozen (includes and frozen french fries).

⁵ Data not available in 1996; Canadian code 0712.10 was discontinued and collapsed into 0712.90 (dried vegetables). Data estimated by USITC staff using an average of the ratio of dried potatoes to dried vegetables in category 0712.90 between 1992 and 1995 and multiplying the 1996 data for 0712.90 by that ratio.

⁶ 1996 total will not match 1996 total in table 3-21 because 3-21 does not include dried potatoes.

Note.—Because of rounding, figures may not add to the totals shown. Percent changes calculated using unrounded data.

Source: Compiled from official statistics of Statistics Canada, StatsCan Online database.

increase in frozen french fried potato imports, which increased in quantity by 56 percent during the 1995/96 marketing year.²⁰

The United States has been by far the only significant supplier of fresh potatoes and processed potato products to Canada since 1992. In 1996, Canadian imports from the United States amounted to \$109 million (table 2-21)²¹. Over the 1992-96 period, the value of Canadian imports from the United States rose only 17 percent. Canadian imports from nearly all other countries rose considerably more over the 1992-96 period, but together accounted for less than 5 percent of the total value of imports in 1996.

²⁰ "Canadian French Fries Go Down Very Well in USA," *Foodnews*, Nov. 22, 1996, p. 3.

²¹ An expanded version of table 3-21, including quantity and unit value data, appears in appendix D.

Table 3-21

Potatoes:¹ Canadian imports for consumption, by principal sources, 1992-96

Statutes: Canadian imports for consumption, by principal sources, 1992-96						Change 1996 over 1992
Source	1992	1993	1994	1995	1996	1992
	Value (1,000 dollars) ²					Percent
United States	94,251	100,062	110,989	102,808	108,626	15
The Netherlands	1,020	1,274	1,063	1,285	1,618	59
Germany	1,858	2,393	3,606	3,373	1,501	(19)
Belgium	203	233	168	253	1,160	471
United Kingdom	195	174	223	296	429	120
Jamaica	0	0	0	145	412	(³)
Japan	28	27	48	57	274	880
All other	340	318	354	317	592	74
Total	97,896	104,482	116,535	108,535	114,611	17

¹ Canadian Import Classification numbers 0701.10, 0701.90, 0710.10, 0712.10, 1105.10, 1105.20, 1108.13, 2004.10, and 2005.20.

² Data converted from Canadian dollars to U.S. dollars by dividing by average annual exchange rate, in Canadian dollars per U.S. dollar. Average annual exchange rates from the IMF, *International Financial Statistics*, Feb. 1997, of exchange rate, p. 156. Average annual exchange rate not available for 1996. Estimated by USITC staff by averaging the quarterly rates for 1996.

³ Not meaningful.

Note.—Because of rounding, figures may not add to the totals shown. Percent changes calculated from unrounded data.

Source: Compiled from official statistics of statistics Canada, StatsCan Online database.

Canadian Global Exports

Canadian exports of fresh potatoes and processed potato products were valued at \$303 million in 1996, an increase in of 115 percent over the 1992-96 period (table 3-22)²². The United States has remained the primary market for Canadian exports of fresh potatoes and processed potato products during the 1992-96 period, accounting for 75 percent of total Canadian potato exports. Other important markets for Canadian exports include Japan, Venezuela, and Cuba.

The highest value export in 1996 was frozen processed potatoes, valued at \$177 million, followed by fresh table stock potatoes at \$77 million and fresh seed potatoes at \$37 million (table 3-23)²³. Exports of frozen processed potatoes increased 149 percent in value from 1992 to 1996 and accounted for 67 percent of the total in 1996. This increase can largely be accounted for by Canada's expanding frozen french fried potatoes industry. Industry sources stated that, in the 1995/96 marketing year, the rise in exports was in large part due to sales into the United States, which in turn were favored by the Canadian/U.S. exchange rate and by tariff reductions negotiated under the North American Free Trade Agreement.²⁴

²² An expanded version of table 3-22, including quantity and unit value data, appears in appendix D.

²³ An expanded version of table 3-23, including quantity and unit value data, appears in appendix D.

²⁴ "Canadian French Fries Go Down Very Well in USA," *Foodnews*, Nov. 22, 1996, p. 3.

Table 3-22

Potatoes:¹ Canadian exports of domestic merchandise, by principal markets, 1992-96

Market	1992	1993	1994	1995	1996	Change 1996 over 1992
<i>Value (1,000 dollars)²</i>						
United States	81,274	135,013	148,226	161,506	230,922	184
Japan	12,984	12,973	12,768	11,881	12,486	(4)
Venezuela	14,108	16,949	13,645	10,707	6,030	(57)
Cuba	3,790	4,401	4,484	3,610	4,945	30
Brazil	468	605	4,019	6,067	3,875	727
Trinidad	6,368	4,448	4,796	5,985	3,788	(41)
Barbados	2,245	1,809	1,927	2,971	2,455	9
Norway	3	0	980	3,690	2,299	(³)
All other	19,919	18,712	41,194	64,688	36,445	83
Total	141,159	194,910	232,039	271,105	303,245	115

¹ Canadian Export Classification numbers 0701.10, 0701.90, 0710.10, 0712.10, 1105.10, 1105.20, 1108.13, 2004.10, and 2005.20.

² Data converted from Canadian dollars to U.S. dollars by dividing by average annual exchange rate, in Canadian dollars per U.S. dollars. Average annual exchange rates from IMF, *International Financial Statistics*, Feb. 1997, of exchange rate, p. 156. Average annual exchange rate not available for 1996. Estimated by USITC staff by averaging the quarterly rates for 1996.

³ Change greater than 5,000 percent.

Note.—Because of rounding, figures may not add to the totals shown. Percent changes calculated on the unrounded data.

Source: Compiled from official statistics of Statistics Canada, StatsCan Online database.

Canadian Trade with the United States

Export Levels and Trends

Total exports of fresh potatoes and processed potato products to the United States increased by 116 percent between 1992 and 1996, reaching \$305 million in 1996 (table 3-23). The highest value export to the United States in 1996, frozen processed potatoes at \$132 million, accounted for 75 percent of all Canadian exports of frozen processed potatoes in that year (Executive Summary table 4). The next leading items exported to the United States in terms of value included fresh table stock potatoes (\$66 million) and fresh seed potatoes (\$29 million), accounting for 86 and 77 percent, respectively, of total Canadian exports of those commodities. Exports to the United States in all three leading categories increased substantially over the 1992-96 period.

Import Levels and Trends

In 1996, the United States supplied 95 percent of the value of total Canadian imports of fresh potatoes and processed potato products. Such imports totaled \$114 million in 1996, an increase of 15 percent during 1992-96 (table 3-21). The leading imports from the United States included fresh table stock potatoes at \$66 million, frozen processed potatoes at \$12 million, and fresh

seed potatoes at \$3 million in 1996 (Executive Summary table 4). In each of these categories, U.S. imports represented about 99 percent of the total import value of each commodity. Imports of frozen processed potatoes from the United States showed the highest growth at 133 percent over the 1992-96 period, while table stock potatoes and seed potatoes grew by 28 and 26 percent, respectively.

Table 3-23
Potatoes:¹ Canadian exports of domestic merchandise, by principal items, 1992-96

Item	1992	1993	1994	1995	1996	Change 1996 over 1992
						Percent
	Value (1,000 dollars) ²					
Frozen processed potatoes ³	71,201	96,317	113,538	153,702	176,991	149
Fresh table stock potatoes	41,033	70,304	81,390	69,590	76,578	87
Fresh seed potatoes	23,873	22,579	31,831	38,072	37,343	56
Other processed potatoes ⁴	1,842	639	1,393	5,424	6,729	265
Potato flour and meal ⁵	2,497	4,140	3,279	3,238	4,026	93
Other frozen potatoes	22	211	272	163	989	4,438
Potato starches	640	688	321	896	589	(8)
Dried potatoes ^{6,7}	52	34	16	20	1,776	243
Total	141,159	194,910	232,039	271,105	305,021	88

¹ Canadian Export Classification codes 0701.10, 0701.90, 0710.10, 0712.10, 1105.10, 1105.20, 1108.13, 2004.10, and 2005.20.

² Data converted from Canadian dollars to U.S. dollars by dividing by average annual exchange rate, in Canadian dollars per U.S. dollar. Average annual exchange rates from the IMF, *International Financial Statistics* of exchange rate, p. 156, Feb. 1997. Average annual exchange rate not available for 1996. Estimated by USITC staff by averaging the quarterly rates for 1996.

³ CEC number 2004.10; other potatoes, prepared or preserved, frozen (frozen french fries).

⁴ CEC number 2005.20; other potatoes, prepared or preserved, not frozen (includes potato chips).

⁵ CEC number 1105; also includes flakes, granules, and pellets.

⁶ Data not available in 1996; Canadian code 0712.10 was discontinued and collapsed into 0712.90 (dried vegetables) in 1996. Data estimated by USITC staff using an average of the ratio of dried potatoes to dried vegetables in category 0712.90 between 1992 and 1995 and multiplying the 1996 data for 0712.90 by that ratio.

⁷ 1996 total does not match 1996 total in table 3-22 because table 3-22 does not include dried potatoes in that year.

Note.—Because of rounding, figures may not add to the totals shown. Percent changes calculated using unrounded data.

Source: Compiled from official statistics of Statistics Canada, StatsCan Online database.

CHAPTER 4

Canadian Industry and Market

Canada was the 14th-largest world producer of potatoes in 1996. Canada's share of world production decreased from 1.3 percent in 1992 to 1.1 percent in 1993 as a result of poor weather in Canada and record world production (table 4-1). Canada's share has risen to 1.4 percent of world production following three consecutive years of record output.

The potato industry is the most important segment of Canada's vegetable sector, accounting for about 40 percent of all vegetable farm cash receipts in 1995 (Can\$586 million).¹ Potatoes are

Table 4-1
Potatoes: Canadian, U.S., and world production and area harvested, and the share of world production and harvested acreage accounted for by Canada and the United States, 1992-96

Location	1992	1993	1994	1995	1996
Production (million pounds)					
Canada	7,953	7,310	8,110	8,434	8,628
United States	42,536	42,869	46,705	44,361	49,712
World	611,889	665,604	607,193	619,757	631,402 ¹
Share of world production (percent)					
Canada	1.3	1.1	1.3	1.4	1.4
United States	7.0	6.4	7.7	7.2	7.9
Area harvested (acres)					
Canada	306,400	308,600	328,000	355,400	354,600
United States	1,315,100	1,317,000	1,379,700	1,372,100	1,424,600
World	45,430,299	45,026,513	44,585,983	45,334,968	45,568,180
Share of world harvested acreage (percent)					
Canada	0.7	0.7	0.7	0.8	0.8
United States	2.9	2.9	3.1	3.0	3.1

¹ Total world production revised to include final U.S. production data for 1996.

Source: United Nations Food and Agriculture Organization (FAO) Website, FAO Commodity Code 116, Fresh Potatoes.

¹ John Vandenberg and Gilbert Parent, "1996/97 Canadian Potato Crop Situation and Trends," Agriculture and Agri-Food Canada (AAFC), Mar. 4, 1997.

produced in every Province in Canada. Although potato production was concentrated in the Atlantic Provinces and Central Canada² in recent years, Provinces in Western Canada have increased in importance as new markets for potatoes for processing have developed. Industry sources estimated that nearly one-half of Canadian potato production is processed.³ About 40 percent of Canadian potato output is processed into frozen french fries and other frozen potato products, and 10 percent into potato chips.

Structure and Operation of the Canadian Industry

The Canadian potato industry consists of potato growers producing for table stock, seed, and processing uses, shippers of table stock and seed, and processors of potato products. Consumers of potatoes and potato products include retailers (primarily grocery stores), hotels, restaurants, institutions, and food service providers that prepare food for consumption. In general, growers in the Atlantic Provinces and in Central Canada produce a greater share of their potatoes for table stock. Growers in Western Canada produce a greater share of their product for processing, primarily frozen french fries.

Growers

The Canadian potato growing industry has undergone a restructuring in recent years similar to that which occurred in U.S. agriculture in which small, inefficient growers were replaced by large, highly efficient growers that are able to take advantage of economies of scale. Lower production costs and higher production in Western Canada has offset higher transportation costs required to move the finished product from these areas to market.

From 1981 to 1991, the number of potato growers in Canada declined from 7,139 with 272,728 acres planted in 1981 to 4,692 with 302,435 acres planted in 1991 (table 4-2). The number of farms increased to 4,989 with 371,441 acres planted in 1996. The average number of acres planted per grower increased by 95 percent, from 38 acres in 1981 to 74 acres in 1996.⁴ In 1996, the average potato farm size was largest in Manitoba (257 acres), followed by Prince Edward Island (P.E.I.) (166 acres). In 1991 (the latest year for which data are available), the 298 largest potato farms (having at least 278 acres of potatoes each), or 6.4 percent of farms producing potatoes, accounted for 47 percent of the area planted to potatoes.⁵

² As noted in chapter 1, Atlantic Canada includes the Provinces of Nova Scotia, New Brunswick, Prince Edward Island (P.E.I.), and Newfoundland; Central Canada includes the Provinces of Québec and Ontario; and Western Canada includes the Provinces of Manitoba, Saskatchewan, Alberta, and British Columbia.

³ O'Melveny & Myers LLP, Counsel to the Food Institute of Canada, prehearing brief, Apr. 21, 1997, p. 1.

⁴ Statistics Canada, *Census Overview of Canadian Agriculture: 1971-1991 and Census Overview of Canada Agriculture 1996*.

⁵ Ibid.

Table 4-2

Potatoes: Number of Canadian farms and acreage planted, by region and Province, 1981, 1986, 1991, and 1996

Region and Province	1981		1986		1991		1996	
	Farms	Acres	Farms	Acres	Farms	Acres	Farms	Acres
Atlantic Canada:								
P.E.I. ¹	823	63,878	656	64,219	613	77,809	652	108,158
New Brunswick ...	740	53,793	547	48,466	442	50,621	439	54,064
Other Atlantic ²	538	4,796	310	4,619	314	5,053	360	5,592
Subtotal	2,101	122,467	1,513	117,304	1,369	133,483	1,451	167,814
Central Canada:								
Québec	2,170	42,432	1,254	42,673	994	43,280	864	46,283
Ontario	1,711	39,115	1,165	34,940	1,113	35,070	1,218	39,592
Subtotal	3,881	81,547	2,419	77,613	2,107	78,350	2,082	86,180
Western Canada:								
Manitoba	271	40,916	204	46,417	227	49,478	272	70,063
Saskatchewan	(3)	(3)	(3)	(3)	(3)	(3)	232	6,888
Alberta	277	16,628	267	22,450	362	28,339	456	31,488
British Columbia ..	450	8,673	335	7,862	451	8,324	496	9,000
Subtotal	998	66,217	806	76,729	1,040	86,141	1,456	117,441
All other	159	2,497	147	3,943	176	4,461	-	-
Total Canada	7,139	272,728	4,885	275,589	4,692	302,435	4,989	371,441

¹ Prince Edward Island

² Includes Newfoundland and Nova Scotia.

³ Included in data for total Canada.

Source: Compiled by USITC staff from Statistics Canada, *Census Overview of Canadian Agriculture: 1971-1991*, Cat. 93-348, and *Census Overview of Canada Agriculture 1996*, Cat. 93-356-XPB.

The predominant types of ownership among farms producing potatoes in Canada are individuals and partnerships.⁶ In 1991, 80 percent of all farms reporting potato production were so owned. Large farms (15 percent of all farms producing potatoes) are more likely to be incorporated; however, most of these farms are family-owned corporations.^{7,8}

During 1992-96, Canadian acreage harvested in potatoes increased steadily from 306,000 acres in 1992 to 355,000 acres in 1996 (table 4-3). Acreage harvested in Atlantic Canada in 1996

⁶ Glenn Zepp, Charles Plummer, and Barbara McLaughlin, "Potatoes: A Comparison of Canada - U.S. Structure," *Canadian Journal of Agricultural Economics*, 1995 Special Issue, p. 168.

⁷ Ibid.

⁸ USITC staff conversations with industry representatives.

Table 4-3
Potatoes: Canadian acreage harvested, by region and Province, crop years 1992-96

	(1,000 acres)				
Region and Province	1992	1993	1994	1995	1996
Atlantic Canada:					
P.E.I.	84.8	87.0	95.0	108.0	104.0
New Brunswick	50.0	51.0	52.7	55.0	53.0
Other Atlantic ¹	5.2	5.2	5.6	6.0	6.0
Subtotal	140.0	143.2	153.3	169.0	163.0
Central Canada:					
Québec	44.5	42.5	42.5	45.2	45.0
Ontario	35.0	34.3	35.1	38.1	35.0
Subtotal	79.5	76.8	77.6	83.3	80.0
Western Canada:					
Manitoba	47.5	48.0	54.5	60.0	67.5
Saskatchewan	4.8	4.3	4.8	4.8	5.3
Alberta	26.1	27.7	29.0	29.5	30.0
British Columbia	8.5	8.6	8.8	8.8	8.8
Subtotal	86.9	88.6	97.1	103.1	111.6
Total Canada	306.4	308.6	328.0	355.4	354.6

¹ Newfoundland and Nova Scotia.

Source: Compiled by USITC staff from official statistics of Statistics Canada, StatsCan Online database.

accounted for 46 percent of the total acreage and ranged from 140,000 acres in 1992 to 169,000 acres in 1995. During 1992-96, acreage in Central Canada ranged from 77,000 acres in 1993 to 83,000 acres in 1995. Acreage harvested in Western Canada increased steadily from 87,000 acres in 1992 to 112,000 acres in 1996. Central and Western Canada accounted for 22 and 32 percent, respectively, of 1996 acreage.

Data are not available on the acres of potatoes produced by variety in Canada. However, data are available on the number of acres of potatoes planted for and passing inspection for use as seed potatoes (table 4-4). It is estimated that 90 percent or more of the commercial potato

Table 4-4

Seed potatoes: Acreage approved for certification, by variety and Province, 1992-96

	Alberta	Manitoba	New Brunswick	P.E.I.	Québec	Saskatchewan	Other	Total
1992:								
Russet Burbank	2,337	4,131	2,500	22,329	-	60	607	31,964
Superior	24	-	2,351	12,530	3,142	-	173	18,220
Shepody	1,468	328	2,235	7,341	146	11	522	12,051
Kennebec	-	1	1,995	8,010	481	8	316	10,811
All other	1,608	1,799	10,167	9,129	685	322	2,037	25,747
Total	5,437	6,259	19,248	59,339	4,454	401	3,655	98,793
1993:								
Russet Burbank	2,547	3,905	2,948	6,688	-	89	502	16,679
Superior	4	-	2,270	6,276	2,408	-	73	11,031
Shepody	1,328	719	2,559	1,450	152	21	558	6,787
Kennebec	-	-	1,663	6,215	548	5	186	8,617
All other	1,732	2,097	11,903	10,891	544	384	1,954	29,505
Total	5,611	6,721	21,343	31,520	3,652	499	3,273	72,619
1994:								
Russet Burbank	2,277	3,616	1,505	5,044	-	102	449	12,993
Superior	7	-	1,636	7,153	2,542	-	66	11,440
Shepody	2,148	1,228	2,088	2,112	131	305	592	8,604
Kennebec	1	-	1,399	4,576	548	-	196	6,719
All other	2,520	2,396	13,359	13,704	672	820	2,221	35,656
Total	6,952	7,240	19,987	32,589	3,893	1,227	3,524	75,412

Table 4-4—*Continued*

Seed potatoes: Acreage approved for certification, by variety and Province, 1992-96

	Alberta	Manitoba	New Brunswick	P.E.I	Québec	Saskatchewan	Other	Total
1995:								
Russet Burbank	1,690	3,689	1,407	6,294	-	261	349	13,690
Superior	8	-	1,216	8,280	2,831	-	141	12,476
Shepody	2,031	1,495	2,385	3,101	193	342	646	10,193
Kennebec	11	-	1,411	4,312	514 ¹	2	145	6,395
All other	3,306	2,815	14,036	12,423	941	1,911	2,622	38,054
Total	7,046	7,999	20,455	34,410	4,479	2,516	3,903	80,808
1996:								
Russet Burbank	2,097	5,506	1,121	4,744	-	457	308	14,233
Superior	10	-	888	4,880	2,746	-	106	8,610
Shepody	2,280	2,132	2,359	2,750	390	478	538	10,927
Kennebec	2	-	1,608	5,211	614	1	163	7,599
All other	3,750	2,378	12,371	10,567	963	1,476	2,331	33,836
Total	8,139	10,016	18,327	28,152	4,713	2,412	3,446	75,205

¹ Less than 0.5 acre.

Sources: AAFC, *Potato Market Review*, various issues, National Potato Council, *1996 Potato Statistical Yearbook* (Englewood, CO: NPC, 1996); and Potato Certification Association of Nebraska.

growers use certified or foundation seed when planting potatoes for commercial production.⁹ Hence, the number of acres of seed potatoes being certified is indicative of the importance that variety plays in overall production. In 1996, the four leading varieties—Russet Burbank, Shepody, Superior, and Kennebec—accounted for 55 percent of the acreage (table 4-4).

It is estimated that three varieties (Russet Burbank, Shepody, and Superior) accounted for about 45 percent of Canadian potato production in 1996 (based on acreage accepted for seed certification in 1995). Other varieties of note were Atlantic, Chieftain, and Russet Norkotah. Although Kennebec is one of the top four seed varieties produced in Canada, its relative importance in Canadian potato production is most likely less, since it is believed that a significant portion of the certified Kennebec seed is exported to Europe, Cuba, Central America, and South America. Also, Kennebec does not have as long a storage life as Russet Burbank, Superior, or Shepody, and thus does not lend itself to the long-term storage and processing needs of manufacturers. Russet Burbank and Shepody are the main frying varieties; Snowden, Norchip, and Superior are the main chipping varieties; and Russets, Superior, Norland, Kennebec, and Yukon Gold are the leading table stock varieties.¹⁰

The sharp drop in the number of acres of potatoes approved for certification after 1992 reflects the implementation by the Canadian Government of cost-recovery fees based on acres certified. Prior to 1993, there were no fees based on certified acreage and growers would have their entire producing acreage certified.

Fresh Potato Inventories

Fresh potato inventories may be held in on-farm storage facilities, in commercial storage facilities, or in processor-owned facilities. These facilities can range from simple wood or metal sheds to specialized storage facilities with automated handling systems and a controlled environment that ensures the availability of high quality potatoes. According to industry sources, the majority of the fresh potato inventories in Canada are held by potato growers. In recent years, shippers, brokers, dealers, and processors have reduced their storage holdings to minimum levels to reduce costs and risk from losses and spoilage.

Canadian fresh potato inventories are at their highest levels in November (immediately after harvest). Inventories decline steadily each month thereafter and by June are generally nil. Fresh potato inventories as of November 1 decreased from 5.5 billion pounds in 1992 to 5.2 billion pounds in 1993, as a result of the poor harvest in that year (table 4-5). Inventory levels increased each year thereafter to a record 6.6 billion pounds on November 1, 1996. The majority of the potato stocks are held in Atlantic Canada. However, the share has been declining irregularly since 1992, ranging from a high of 62 percent in 1992 to a low of 51 percent in 1996, as production has expanded in Western Canada.

⁹ See the discussion of "Seed Potato Certification Regulations" for additional information on potato seed classes.

¹⁰ Vandenberg and Parent, "1996/97 Canadian Potato Crop Situation," p. 1.

Table 4-5
Potatoes: Canadian storage holdings,¹ by Province, on November 1, 1992-96

(1,000 pounds)					
Province	1992	1993	1994	1995	1996
P.E.I.	2,059,900	1,919,800	1,895,700	2,425,900	2,209,500
Nova Scotia	48,300	42,200	39,800	44,900	41,500
New Brunswick	1,277,500	1,074,700	1,025,900	1,028,300	1,097,800
Québec	672,400	578,900	567,100	621,400	676,600
Ontario	384,900	319,700	377,100	421,100	428,300
Manitoba	455,400	689,300	1,098,000	936,100	1,359,500
Saskatchewan	61,800	53,900	88,000	131,300	106,900
Alberta	402,300	415,600	506,700	540,500	550,900
British Columbia	135,300	111,000	98,400	110,700	119,700
Total	5,497,800	5,205,100	5,696,700	6,260,200	6,590,700

¹ Potato holdings include both table stock and seed, and cover total stocks in P.E.I. and New Brunswick.

Source: Compiled from official statistics of Statistics Canada, InfoHort database.

Processors

Number of Processors

The number of processors of frozen potato products is believed to be fewer than 12 firms. Three firms dominate the Canadian industry—McCain Foods Ltd. (McCain), Cavendish Farms (Cavendish), and Midwest Food Products Inc. (Midwest), formerly Nestle-Simplot.^{11, 12} McCain has processing plants in Florenceville, New Brunswick, and Portage la Prairie, Manitoba. McCain is a multinational corporation with worldwide potato-processing facilities, including facilities in the United States (Washington, South Dakota, and Maine).¹³ Cavendish operates plants in Dieppe, New Brunswick, and New Amman, P.E.I. Midwest has a single plant in Carberry, Manitoba. A fourth processor, York Farms, has a midsized processing plant in Lethbridge, Alberta. There are about six smaller processors in Canada serving the local markets.

¹¹ USDA, Foreign Agriculture Service (FAS), "Frozen French Fry Annual," U.S. Embassy, Ottawa, No. CA6064, Oct. 18, 1996, p. 3.

¹² Food Institute of Canada, posthearing brief, May 27, 1997, p. 1.

¹³ USDA, FAS, "Frozen French Fry Annual," Oct. 18, 1996, p. 2.

All of these facilities produce frozen french fried potatoes. Most of these facilities also produce other frozen potato products such as hash browns, potato patties, croquettes, dehydrated potato flakes, and other specialty items, as coproducts.¹⁴ On March 14, 1997, McCain announced that it had reached an agreement with Ore-Ida Foods, Inc., a subsidiary of the H.J. Heinz Co., to purchase the assets of the Ore-Ida food service business. The Ore-Ida food service business includes frozen french fry and potato specialties as well as other appetizer and stuffed pasta specialties.¹⁵

Production Capacity

Frozen french fry production capacity has increased dramatically over the last 5 years. In mid-1996, Canadian french fry production capacity was estimated at 1.6 billion pounds. From mid-1996 to the end of the year, an additional 449 million pounds of capacity was scheduled for completion, an increase of over 25 percent. About 60 percent of the increased capacity is located in Central and Western Canada, with the remainder in Atlantic Canada. Production capacity for the major frozen french fry producers in early 1996 and year-end 1996 are shown in the following tabulation (in million pounds).¹⁶

Company	Production capacity	
	Mid-1996	Year-end 1996
McCain	774	954
Cavendish	452	637
Midwest	338	422
York Farms	74	74
Total	1,638	2,087

Frozen French Fry Inventories

Canadian inventories of frozen french fries have declined steadily from 198 million pounds in 1992 to 110 million pounds in 1996 (table 4-6). Canadian consumption and export sales have grown faster than expansion in the Canadian production sector. However, frozen french fry inventories are expected to increase 10 percent by the end of the 1996 marketing year, as production is expected to exceed growth in demand.¹⁷

¹⁴ Food Institute of Canada, prehearing brief, p. 1.

¹⁵ Ore-Ida Foods Inc. has frozen french fry plants in Ontario, Oregon; Burley, Idaho; and Plover, Wisconsin.

¹⁶ Presentation by the National Potato Council (NPC), Ore-Ida Foods, Inc., and Lamb Weston, Inc., Sept. 1996.

¹⁷ USDA, FAS, "Frozen French Fry Annual," Oct. 18, 1996.

Table 4-6

Frozen french fries: Canadian production, exports, imports, beginning stocks, and apparent consumption, marketing years 1992-96

(1,000 pounds)

Market year ¹	Beginning stocks	Production	Exports	Imports	Apparent consumption
1992	198,414	826,725	320,787	12,191	540,175
1993	176,368	914,909	366,482	16,479	575,929
1994	165,345	1,322,760	482,272	16,413	900,993
1995	121,253	1,432,990	504,893	25,644	964,764
1996 ²	110,230	1,543,220	584,219	35,274	983,252

¹ Marketing year begins July 1 of year indicated and ends June 30 of the following year.

² Preliminary.

Note.—Data prior to 1994 are not comparable to later years. Production in 1992 and 1993 is believed to be underestimated.

Sources: USDA, FAS, *World Horticultural Trade and U.S. Export Opportunities*, Dec. 1995; USDA, FAS, "Frozen French Fry Annual," U.S. Embassy, Ottawa, No. CA4068, Oct. 24, 1994; and USDA, FAS, "Frozen French Fry Annual," Oct. 18, 1996.

Potato Production, Consumption, Prices, and Grading

Production

Fresh Potatoes

Table 4-7 shows total Canadian potato production for all uses, by region and Province, for 1992-96. Canadian production of potatoes declined from 8.0 billion pounds in 1992 to 7.3 billion pounds in 1993 because of poor weather. Production increased steadily thereafter to a record 8.6 billion pounds in 1996 (table 4-7). The value of Canadian potato production increased from Can\$377 million in crop year 1992 to Can\$597 million in crop year 1994 before declining to Can\$586 million in 1995 (table 4-8).

Table 4-7
Potatoes: Canadian production, by region and Province, crop years 1992-96¹

<i>(Million pounds)</i>					
Region and Province	1992	1993	1994	1995	1996
Atlantic Canada:					
P.E.I.	2,459.2	2,262.0	2,327.6	2,862.0	2,600.0
New Brunswick	1,425.1	1,326.1	1,317.5	1,210.0	1,404.5
Other Atlantic ²	121.6	107.4	108.5	121.1	118.1
Subtotal	4,005.9	3,695.5	3,753.6	4,193.1	4,122.6
Central Canada:					
Québec	1,018.5	870.8	864.4	945.9	1,025.3
Ontario ²	824.5	703.0	789.6	807.7	693.0
Subtotal	1,843.0	1,573.8	1,654.0	1,753.6	1,718.3
Western Canada:					
Manitoba	1,140.0	984.0	1,526.0	1,230.0	1,653.8
Saskatchewan	112.9	92.3	127.2	110.4	121.9
Alberta	600.3	745.1	805.7	878.2	804.2
British Columbia	250.8	219.3	246.5	268.4	206.8
Subtotal	2,104.0	2,040.7	2,705.4	2,487.0	2,786.7
Total Canada	7,952.9	7,310.0	8,113.4	8,433.7	8,627.6

¹ Crop year beginning Nov. 1 of year indicated.

² Includes Newfoundland and Nova Scotia.

Note.—Totals may not add because of rounding.

Source: Compiled from official statistics of Statistics Canada, StatsCan Online database.

Table 4-8
Potatoes: Value of Canadian production, by region and Province, crop years 1992-95¹

<i>(1,000 Canadian dollars)</i>				
Region and Province	1992	1993	1994	1995 ²
Atlantic Canada:				
P.E.I.	82,923	170,688	188,014	166,823
New Brunswick	54,054	92,517	86,799	77,258
Other Atlantic ³	9,115	8,562	9,159	10,069
Subtotal	146,092	271,767	283,972	254,150
Central Canada:				
Québec	49,863	79,941	66,880	72,557
Ontario	42,021	55,607	64,232	54,020
Subtotal	91,884	135,548	131,112	126,577
Western Canada:				
Manitoba	56,399	54,380	81,153	79,010
Saskatchewan	13,456	13,046	15,138	14,758
Alberta	46,561	59,314	53,713	73,435
British Columbia	22,134	24,054	32,196	38,554
Subtotal	138,550	150,794	182,200	205,757
Total Canada	376,526	558,109	597,284	586,484

¹ Crop year beginning Nov. 1 of year indicated.

² Data for 1996 are not available.

³ Includes Newfoundland and Nova Scotia.

Source: Compiled from official statistics of Statistics Canada, StatsCan Online database.

Production in Atlantic Canada ranged from a low of 3.7 billion pounds in crop year 1993 to a high of 4.2 billion pounds in 1995. Production in this region in 1996 totaled 4.1 billion pounds, accounting for 48 percent of Canada's production. P.E.I. is the leading producing area in Canada, accounting for 30 percent of production in 1996. New Brunswick was the third-largest producing area in that year, accounting for 16 percent of production.

Production in Central Canada ranged from a high of 1.8 billion pounds in 1992 to a low of 1.6 billion pounds in 1993. Production in 1996 totaled 1.7 billion pounds, accounting for 20 percent of Canada's production. Western Canadian production rose irregularly over the period from a low of 2,041 million pounds in 1993 to a peak of 2,787 million pounds in 1996, or 32 percent of production. Manitoba is the second-largest producing Province in Canada and the largest producer in Western Canada. In 1996, Manitoba accounted for 19 percent of Canadian production.

Data are not separately available on the production of potatoes for seed, table stock, or processing uses in Canada. Industry sources estimated that seed accounts for 13 percent of production; table stock, 27 percent; processing, 50 percent (40 percent frozen potato products, 10 percent chips); and culls, 10 percent. Cull potatoes are used to produce other processed potato products (e.g., hash browns, sliced, and diced potatoes), potato flakes, dehydrated potatoes, cattle feed, and fertilizer.

Frozen French Fries

Canadian production of frozen french fries increased steadily from 826.7 million pounds in 1992 to an estimated 1.5 billion pounds in 1996, an increase of more than 80 percent (table 4-6). Production will most likely continue to increase over the next couple of years as a result of increases in production capacity during 1996. According to USDA, FAS, "Processors in Canada have expanded their production capacity to satisfy robust demand for frozen french fries in both the domestic and international markets."¹⁸

Potato Chips

Canadian potato chip production has increased steadily over the period 1992-95 from 185 million pounds to 194 million pounds (table 4-9).¹⁹ Substantial quantities of U.S.-produced potatoes are used by Canadian chip processors. During 1992-95, imported potatoes used in the manufacture of potato chips ranged from a high of 142 million pounds in 1994 to a low of 86 million pounds in 1995. Because product quality is adversely affected when potatoes have been held in storage for an extended time, Canadian chip processors use imported potatoes in the spring and early summer when Canadian fresh potato quality is low. Data are not available on production in Canada of other processed potato products.

Table 4-9
Potato Chips: Canadian production and raw potatoes used by source, 1992-95¹

Year	(Million pounds)		Total chips manufactured
	Imports	Total ²	
1992	108.0	694.4	184.8
1993	114.5	701.8	191.7
1994	141.9	734.5	194.2
1995	86.4	1,342.3	194.4

¹ Data are not available for 1996.

² All sources.

Source: Canadian Snack Food Association, *Statistical Survey Results*, various issues.

¹⁸ USDA, FAS, *World Horticultural Trade and U.S. Export Opportunities*, Jan. 1997, p. 14.

¹⁹ Data based on information from Nielsen Marketing Research covering the period May 1, 1994-Apr. 30, 1995.

The Canadian snack food industry includes a number of foreign-owned multinationals, such as Hostess Frito-Lay, Humpty Dumpty Foods, LTD, Nabisco Brands, Nalley's Canada, and Old Dutch Foods Ltd. Canadian snack food companies include Murphy's Snack Foods and Small Fry Snack Foods Inc.²⁰

Production Costs

Fresh potatoes

The data on the cost of producing potatoes in various Provinces in Canada that are available from various studies are not directly comparable since these studies use constructed data that may include different factors, and they cover different types of potatoes and different years (table 4-10). However, the data indicate that the costs of producing seed potatoes are higher than the costs for producing table stock or processing potatoes.

Table 4-10
Potatoes: Per acre estimated costs of production, by type, various years

Area	Year	Type of Potato	Costs (\$ per acre)
Saskatchewan ¹	1997	Seed	2,077
Alberta ²	Not specified	Processing potato	1,236
New Brunswick ³	1991	Processing potato	1,285
New Brunswick ³	1992	Processing potato	1,329
New Brunswick ³	1993	Processing potato	1,440
New Brunswick ³	1994	Processing potato	1,507
New Brunswick ³	1991	Seed	1,390
New Brunswick ³	1992	Seed	1,458
New Brunswick ³	1993	Seed	1,430
New Brunswick ³	1994	Seed	1,459
Saskatchewan ⁴	1997	Seed	1,860
Saskatchewan ⁴	1997	Table stock (red)	1,478
Saskatchewan ⁴	1997	Processing (Alberta)	1,495
Ontario ⁵	1996/97	Chipping Potatoes	1,379
Alberta ⁵	1996/97	Russet Burbank, grower storage	1,180
Manitoba ⁵	1996/97	Russet Burbank, grower storage	821

¹ <http://eru.usak.ca/agec/Potatoes/~prodeco.htm>.

² <http://www.agric.gov.ab.ca/economic/product/97cpirr2.htm>.

³ <http://www.gov.nb.ca/agricult/fbm/potcop.htm#Processing>.

⁴ <http://www.agr.ca/pfra/sidcpub/icrop97.htm>.

⁵ Produce Marketing Association of North America, Cost of Production Survey, as supplied by Wisconsin Potato and Vegetable Growers Associations, Inc.

Source: Compiled by the staff of the U.S. International Trade Commission as noted above.

²⁰ Roseanne Hall, "All About Canada's Snack Food Industry," AAFC, Feb. 14, 1997, p. 1.

There are also significant startup costs for potato production, whether it be for the production of seed, table stock, or processing potatoes. Many of the capital costs associated with beginning potato production are for buildings and equipment that can only be used for potato production. According to a Saskatchewan report,²¹ 1997 startup costs for potato farmers are estimated at Can\$1,240,000 for new equipment and Can\$1,065,500 for used equipment. The same report also estimates that profits from a well managed potato farm can be up to Can\$2,600 per hectare (Can\$1,053 per acre).

Another Saskatchewan report²² on expected irrigated crop returns in 1997 indicates that while total costs per acre to produce potatoes are higher than those for any other crop, expected returns per acre to land, management, and investment are at least double those of any other crop (except spearmint). A similar report on crop production costs and returns on irrigated land in Alberta²³ indicates that the costs per acre for producing raw potatoes for processing greatly exceed the costs per acre for producing alternative crops, such as dry beans and sugar beets. However, the expected returns from sugar beets are 20 percent higher than those from producing raw potatoes, while the expected returns for raw potatoes are 25 percent higher than those for beans.

Based on a random sample of 1,625 potato farms, Canadian potato farms reportedly had average total operating expenses of Can\$261,246 in 1994, with average total revenues of Can\$320,975.²⁴ Crop expenses accounted for about one-third of the total, with fertilizer and lime accounting for 13.3 percent, seed and plants for 9.1 percent, and pesticides for 8.7 percent. Machinery costs, at 13.6 percent of total operating expenses, labor, at 18.8 percent, and interest costs, at 6.8 percent, were also important expense items. Net farm income for the 1,625 Canadian potato farms averaged Can\$59,728 in 1994, up 48 percent from that in 1993. The operating margin of Can\$0.19 per dollar of revenue in 1994 is significant. Potatoes are by far the most important product sold by Canadian potato farms, with revenues from the sale of potatoes accounting for 81.5 percent of total revenues in 1994. The share of total revenues accounted for by the sale of potatoes ranged from 70.6 percent in Manitoba to 84.3 percent in P.E.I. Direct program payments and insurance proceeds accounted for 2.9 and 1.3 percent of the total revenues, respectively, in 1994. This ranged from 7.4 and 3.8 percent in Québec to 1.8 and 0.6 percent in P.E.I.

²¹ Saskatchewan Agriculture and Food and the College of Agriculture and Extension Division, University of Saskatchewan, *Economics and Agronomics of New Crops-Seed Potatoes*, Sept. 24, 1996, found at <http://eru.usask.ca/agec/Potatoes/~prodeco.htm>.

²² Saskatchewan Irrigation Development Centre, found at <http://www.agr.ca/pfra/sidcpub/icrop97.htm>.

²³ Alberta Agriculture, Food and Rural Development, found at <http://www.agric.gov.ab.ca/economic/product/97cpirr2.html>.

²⁴ AAFC, *An Economic Overview of Farm Incomes, by Farm Type, Canada, 1994*, AAFC Working Paper, Economic and Industry Analysis Division, found at <http://www.agr.ca/policy/farmfin/english/toc.htm>, May 1997. The random sample was obtained from Statistics Canada's Taxation Data Program.

Processed potatoes

Cost of production data are not available for Canadian processed potato products.²⁵ However, general information was obtained by USITC staff during fieldwork regarding the cost structure for frozen potato products. The cost structure for such products appears to be similar for producers both in Canada and in the United States.²⁶ A 1996 Canadian study has indicated that the costs of doing business in Canada in the frozen foods industry in general were 5.9 percent lower than costs in the United States due primarily to lower construction, labor, and energy costs, and smaller employer-sponsored benefits, in Canada.²⁷

Consumption

Fresh Potatoes

During 1992-95, Canadian potato disappearance (consumption) for all uses (fresh basis) increased from 4.4 billion pounds in 1992 to 4.8 billion pounds in 1993 before declining steadily to 4.6 billion pounds in 1995, the last year data are available (table 4-11). Strong domestic and export demand for processed potato products, primarily frozen french fries, is believed to have accounted for the decline in Canadian consumption of fresh potatoes as processors out-bid purchasers of table stock potatoes. U.S. food service companies have increased their imports of Canadian french fries. Good product quality and greater Canadian manufacturing capacity are the reasons for higher exports.²⁸ U.S. grower interests indicate that favorable exchange rates are another reason for U.S. imports of Canadian french fries.²⁹ During 1992-95, per capita disappearance of potatoes ranged from a low 153 pounds in 1992 to a high of 167 pounds in 1993. Per capita disappearance totaled 156 pounds in 1995. Consumption of french fries continues to increase while fresh usage slowly declines.³⁰

²⁵ Food Institute of Canada, posthearing brief, appendix B, p. 6.

²⁶ Canadian and U.S. frozen potato products producers, interviews by USITC staff, Apr. 8-18, 1997.

²⁷ KPMG, *The Competitive Alternative: A Comparison of Business Costs in Canada and the United States* (Ottawa: Prospectus Inc., 1996). The study was sponsored by Canada's Department of Foreign Affairs and International Royal Bank of Canada and the Economic Developers Association of Canada.

²⁸ USDA, FAS, *World Horticultural Trade & U.S. Export Opportunities*, Jan. 1997, p. 13.

²⁹ NPC, prehearing brief, Apr. 21, 1997; transcript of the hearing, testimony of G. Smith, NPC, p. 108.

³⁰ Vandenberg and Parent, "1996/97 Canadian Potato Crop Situation."

Table 4-11

Fresh potatoes: Supply and disappearance in Canada, 1992-96

(Million pounds)

Year	Beginning stocks	Production	Imports	Total supply	Exports	Manufacturing ¹	Waste ²	Ending stocks	Net supply
1992	3,530.9	7,952.9	564.3	12,048.1	1,366.5	541.9	964.9	4,809.0	4,364.9
1993	4,809.9	7,310.0	638.4	12,758.3	2,009.5	547.8	1,287.5	4,071.5	4,842.0
1994	4,071.5	8,113.4	729.9	12,914.8	2,110.4	578.7	1,192.8	4,362.7	4,670.2
1995	4,362.7	8,433.7	665.5	13,461.9	2,414.4	620.6	978.8	4,841.2	4,606.9
1996	4,841.2	8,627.6	³	³	³	³	³	³	³

¹ Manufacturing data includes potatoes used for seed.² Waste data includes potatoes used for animal feed.³ Not available.

Note.—Processed potato import and export data have been converted to fresh equivalent.

Source: Compiled from official statistics of Statistics Canada.

Frozen French Fries

Canadian consumption of frozen french fries has risen steadily from 540 million pounds in 1992 to an estimated 983 million pounds in 1996 (table 4-6). The rise in frozen french fry consumption reflects changes in dietary lifestyles and the rapid expansion of fast food outlets in Canada.³¹ Dietary trends have resulted in a shift from table stock consumption to consumption of processed potatoes.³² Per capita consumption of frozen french fries in Canada at 33 pounds is substantially higher than that in the United States of about 25 pounds.

Potato Chips

Potato chips are the most important salty snack food in Canada accounting for 62 percent of sales of such snacks in 1994. Potato chip sales were valued at Can \$507 million in 1994.³³ Data are not available for other years covered by this study for potato chips. However, data on the value of sales of all salty snack foods in Canada increased from Can \$718 million in 1992 to Can \$959 million in 1996. During the last several years, an increasing volume of imports have been found in the Canada potato chip market. Imports amount to more than 10 percent of domestic manufactured volumes. They are either distributed by Canadian based firms or shipped into the market by U.S. firms.³⁴

Canadian Prices

The average farm prices received by Canadian potato growers by Provinces for 1992-95 are shown in table 4-12. In general, farm prices are highest in those Provinces that are deficit production areas with the majority of the output being marketed as table stock (Newfoundland and British Columbia) and in Saskatchewan which markets a greater portion of its production as high-value seed potatoes. Prices in Manitoba, New Brunswick, and P.E.I. are generally the lowest. These three Provinces are surplus production areas and market a substantial share of their output to processors, to other Provinces, and to export markets.

³¹ USDA, FAS, "Frozen French Fry Annual," Oct. 24, 1994, p. 6.

³² Ibid.

³³ Data based on information from Nielsen Marketing Research covering the period May 1, 1994-Apr. 30, 1995.

³⁴ Hall, "All About Canada's Snack Food Industry," p. 1.

Table 4-12

Fresh potatoes: Average farm price received by Canadian growers, by Province, 1992/93 to 1995/96¹

<i>(Canadian dollars per pound)</i>				
Province	1992/93	1993/94	1994/95	1995/96
Newfoundland	\$0.176	\$0.182	\$0.172	\$0.172
P.E.I. ....	.041	.092	.088	.069
Nova Scotia .....	.076	.089	.082	.087
New Brunswick .....	.049	.080	.085	.073
Québec .....	.057	.088	.100	.082
Ontario .....	.059	.089	.087	.076
Manitoba .....	.062	.085	.070	.077
Saskatchewan .....	.137	.134	.166	.152
Alberta .....	.087	.076	.091	.091
British Columbia .....	.114	.147	.142	.165
Average Canada .....	.057	.085	.090	.080

¹ Crop year beginning Nov. 1 of year indicated.

Source: Official statistics of Statistics Canada, InfoHort database.

Prices of potatoes in Canada vary according to the type of potato (russet, red, yellow, or round white), the origin, and the type of container (count carton, bags, or sacks). Table 4-13 provides 1995-96 data for wholesale to retail market prices for russet potatoes in 80-count cartons in Montreal and Toronto. During 1995-96, prices in the Montreal market for russet potatoes from Canadian sources remained relatively stable over the first 6-month period of each year. Prices rose in the July-September period reflecting the availability of new potatoes in the market place. However, in the fourth quarter of 1995, prices for new crop russet potatoes increased sharply as production in the United States was smaller than anticipated and competition increased for processing stock in the Western United States.³⁵ On the other hand, prices for russet potatoes in the fourth quarter of 1996 were substantially lower than those for the corresponding period of 1995. Record production of fall-harvested potatoes in both the United States and Canada was responsible for the decline.

No price data were reported for russet potatoes in the Montreal market from non-Canadian sources in the first two quarters of either 1995 or 1996. However, prices for russet potatoes from the United States were quoted in both the third and fourth quarters of 1995. Prices for U.S.-sourced potatoes were higher than those sourced from Canada in every instance during the third quarter of 1995 in the Montreal market. There was only one instance in the third quarter of 1996 (August 1996) when price comparisons were available. U.S.-sourced potatoes were priced the same as those from Québec and were higher than those from P.E.I.

³⁵ John Vandenberg, "1995/96 Canadian Potato Crop," AAFC, May 8, 1996.

Table 4-13

Russet potatoes: Wholesale to retail market prices, 80-count cartons, in selected markets, by sources, Jan. 1995-Dec. 1996

(Canadian dollars per carton)

Market/source	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1995:												
Montreal:												
P.E.I.	11.84	11.64	12.46	13.99	(1)	13.50	(1)	(1)	(1)	15.62	15.00	16.56
Québec	(1)	(1)	(1)	12.00	12.85	(1)	16.25	14.25	14.33	14.30	13.70	12.65
Idaho	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	15.12	15.55	15.25
Texas	(1)	(1)	(1)	(1)	(1)	(1)	(1)	21.12	23.10	22.12	18.25	(1)
California	(1)	(1)	(1)	(1)	(1)	(1)	28.95	20.75	(1)	(1)	(1)	(1)
Alberta	(1)	(1)	(1)	(1)	(1)	(1)	29.50	(1)	(1)	(1)	(1)	(1)
Toronto:												
P.E.I.	12.25	12.30	13.50	13.25	14.93	17.75	18.50	(1)	(1)	(1)	(1)	14.56
Idaho	(1)	(1)	(1)	(1)	17.88	22.12	(1)	(1)	(1)	(1)	(1)	(1)
California	(1)	(1)	(1)	(1)	(1)	30.00	(1)	(1)	(1)	(1)	(1)	(1)
Wisconsin	11.75	12.34	13.71	13.25	16.09	(1)	(1)	(1)	20.74	19.89	19.40	19.25
Washington ...	(1)	(1)	(1)	(1)	(1)	(1)	(1)	23.18	20.85	21.21	(1)	19.75
Nebraska	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)
1996:												
Montreal:												
P.E.I.	14.68	13.00	12.60	14.25	14.65	16.90	17.38	17.08	18.00	11.81	10.32	9.09
Québec	11.75	10.93	11.53	13.31	14.87	17.87	18.00	18.00	16.92	14.52	12.40	11.06
Idaho	(1)	(1)	(1)	(1)	(1)	(1)	(1)	18.00	(1)	(1)	(1)	(1)
Texas	(1)	(1)	(1)	(1)	(1)	(1)	(1)	18.00	(1)	(1)	(1)	(1)
Texas	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)

Table 4-13—Continued

Russet potatoes: Wholesale to retail market prices, 80-count cartons, in selected markets, by sources, Jan. 1995-Dec. 1996

(Canadian dollars per carton)

Market/source	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1996-Continued:												
Toronto:												
P.E.I.	14.35	14.25	14.25	13.75	14.15	14.95	14.50	(1)	(1)	(1)	(1)	(1)
Idaho	(1)	(1)	(1)	(1)	(1)	(1)	(1)	17.68	(1)	(1)	(1)	(1)
California	(1)	(1)	(1)	(1)	(1)	(1)	20.85	21.00	(1)	(1)	(1)	(1)
Wisconsin	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	12.00	(1)	(1)	(1)
Washington ...	20.00	21.50	22.00	(1)	(1)	(1)	21.00	(1)	15.50	(1)	(1)	(1)
Nebraska	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	13.00	12.50	10.45	(1)
Texas	(1)	(1)	(1)	(1)	(1)	(1)	(1)	14.00	(1)	(1)	(1)	(1)

¹ Nothing reported.

Note.—When a range of prices were reported, a simple average of the prices was reported. If the range of prices was not evenly divisible, the average was rounded down to the nearest cent.

Source: Compiled from official statistics of Statistics Canada, InfoHort database.

The Toronto market allowed for a significant number of instances to compare Canadian-sourced and U.S.-sourced russet potatoes over the 1995-96 period. In every month where comparison could be made, U.S.-sourced potatoes were priced higher except for January 1995 when Canadian-sourced potatoes were priced higher. Prices in the Toronto market followed the same general price movements that occurred in the Montreal market over the January 1995 to December 1996 period.

Wholesale to retail prices in the Montreal and Toronto markets for round white potatoes in 50-pound bags or sacks are presented in table 4-14. Prices in both Montreal and Toronto were substantially lower for potatoes from Canadian sources when compared to those of U.S. origin. Potatoes from Florida were the most frequently quoted U.S.-sourced potatoes. California-sourced potatoes were the only other U.S.-sourced potatoes quoted. The high prices for Florida potatoes and California potatoes are indicative of the premium the market places on new potatoes in the spring and early summer months.

Seed Potato Certification Regulations

Canadian seed potato producers are regulated under a Federal certification program, administered by Agriculture and Agri-Food Canada (AAFC). Because potatoes are vegetatively propagated, diseases are easily spread. Once a disease is present in the seed, it can quickly spread. The certification program is a way to provide varietal purity and disease-free planting stock to breeders and growers.

Seed certification starts with tissue-cultured plantlets that are tested for the presence of any disease pathogens. After the plantlets are found to be pathogen-free they are propagated in a protected environment. The resulting tubers from these plants are referred to as nuclear stock. Nuclear stock is planted in the field for multiplication. There are seven classes of field grown seed potatoes; pre-elite, elite 1, elite 2, elite 3, elite 4, foundation, and certified. Each class represents one generation in the field (e.g., the seed produced from the foundation class is certified seed). In the higher classes (nuclear stock, pre-elite, and elite 1), there is zero tolerance for disease and varietal mix. In other classes; the tolerance for disease and varietal mix increases slightly.³⁶

Canadian Grading System

Although potatoes come in various sizes, shapes, and colors of skins or flesh, they are generally classified in Canada as one of five types: round white, russet (a long white), round red, yellow flesh, or long white. Potatoes within each classification are subject to quality regulations (grades).

³⁶ *Economics and Agronomics of New Crops, Seed Potatoes.*

Table 4-14

Round white potatoes: Wholesale to retail market prices, 50-pound bags or sacks, in selected markets, by source, Jan. 1995-Dec. 1996

<i>(Canadian dollars per bag)</i>												
Market/source	Jan.	Feb.	Mar.	April	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
1995:												
Montreal:												
P.E.I.	8.53	9.09	10.14	9.95	9.10	10.98	11.98	13.12	9.40	6.54	6.45	6.70
Québec	(1)	(1)	(1)	(1)	(1)	9.25	8.50	(1)	6.83	6.18	5.71	5.74
New Brunswick	(1)	(1)	(1)	(1)	(1)	10.87	11.75	(1)	(1)	(1)	(1)	(1)
Manitoba	(1)	(1)	(1)	(1)	(1)	12.75	12.75	(1)	(1)	(1)	(1)	(1)
California	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	(1)	33.50	32.30
Toronto:												
P.E.I.	8.96	9.25	9.53	10.12	10.48	11.25	11.50			6.66	7.20	7.17
Ontario	(1)	(1)	(1)	(1)	(1)	(1)	9.47	7.25	5.02	4.84	7.00	(1)
Florida	(1)	33.00	29.35	23.12	19.54	16.31	16.50	(1)	(1)	(1)	(1)	(1)
1996:												
Montreal:												
P.E.I.	6.24	6.08	6.55	6.69	7.73	11.93	11.86	(1)	(1)	5.55	5.23	5.26
Québec	5.87	5.50	5.31	5.50	6.77	19.01	12.00	4.75	4.53	5.63	5.31	5.36
Florida	17.00	(1)	28.28	24.79	19.55	15.44	13.15	(1)	(1)	(1)	(1)	(1)
Toronto:												
P.E.I.	7.15	6.75	6.90	6.80	7.58	11.65	12.90	12.50	(1)	(1)	6.12	(1)
Ontario	(1)	(1)	(1)	(1)	(1)	(1)	(1)	9.55	8.04	6.70	6.25	(1)
Florida	(1)	27.00	22.72	22.10	18.69	14.68	14.25	(1)	(1)	(1)	(1)	(1)

¹ Nothing reported.

Note.—When a range of price, were reported, a simple average of the prices were reported. If the range of prices was not evenly divisible, the average was rounded down to the nearest cent.

Source: Compiled from official statistics of Statistics Canada, InfoHort database.

In Canada, there are two grades of potatoes defined as Canada No. 1 grade and Canada No. 2 grade.³⁷ Potatoes of both grades must meet certain minimum quality standards, including being properly packed and being free from various diseases and insects. Canada No. 2 grade permits a greater range of permissible defects than Canada No. 1 grade. The regulations have also established certain minimum and maximum size requirements for potatoes: (1) Canada No. 1 grade of round varieties must have a minimum diameter of $2\frac{1}{4}$ inches and a maximum diameter of $3\frac{1}{2}$ inches or a weight of 5 to 12 ounces; (2) Canada No. 1 grade of long varieties must have a minimum diameter of 2 inches and a maximum diameter $3\frac{1}{2}$ inches or weight of 4 to 12 ounces, with the additional requirement that at least 60 percent of the lot have a diameter of at least $2\frac{1}{4}$ inches, or a weight of more than 5 ounces; and (3) Canada No. 2 grade must have a minimum of $1\frac{3}{4}$ inches and a maximum diameter of $4\frac{1}{2}$ inches or a weight of less than 18 ounces. Potatoes that do not meet either the Canada No. 1 grade or Canada No. 2 grade may be used by dehydrators or used as cattle feed.

Canadian regulations also cover imported potatoes. Specifically, the regulations state that potatoes imported from the United States meeting the U.S. Extra No. 1 grade or U.S. No. 1 grade can be imported. In addition, imported potatoes of long varieties must have a minimum diameter of 2 inches and a maximum diameter of $3\frac{1}{2}$ inches, and at least 60 percent of the lot must have a diameter of more than $2\frac{1}{4}$ inches; likewise, imported potatoes of round varieties must have a minimum diameter of $2\frac{1}{2}$ inches. Thus, imports of U.S. potatoes into Canada generally meet the same size and quality standards as Canada No. 1 grade. Canadian regulations do permit imports of other U.S. grades when there is insufficient supply of domestic product. Importers must apply for a ministerial exemption that allows imports of bulk potatoes for processing that do not meet the U.S. Extra No. 1 or U.S. No. 1 grade.

Channels of Distribution

The Canadian market for potatoes generally consists of many sellers (growers) and few buyers (brokers, handlers, packers, and processors). Growers may sell potatoes for use as table stock, seed, or for processing. About one-half of the potatoes in Canada go to processing. Growers producing potatoes for processing usually do so under contract. The contract would normally stipulate the variety of potato to be planted, planting and harvesting dates, disease control programs, horticultural practices, and delivery schedules. Processors of potatoes sell to food brokers, food service distributors, wholesalers, grocery chainstores, fast food outlets, restaurants, and institutional users. Processors may produce a single potato product line such as frozen french fries or they may have multiple potato product lines. Processors may produce branded products or they may produce private label products.

Growers producing potatoes for table stock sell their production to handlers, brokers, and shippers or they market their production directly to retail and institutional outlets. These growers have a greater latitude in the potato varieties and horticultural practices they use.

³⁷ *Fresh Fruit and Vegetables Regulations* (C.R.C. 1978, C. 285) pursuant to the Canada Agricultural Products Act (R.S.C. 1985, c. 20 (4th Supp.)).

However, the markets they service may in part dictate the varieties they plant (e.g., consumers in the Manitoba market prefer red potatoes).

Seed potato growers sell directly to growers or through dealers or brokers. Most seed potatoes are marketed in 50-pound or 100-pound bags. Seed potatoes are usually sold sized. Some growers prefer to plant small, uncut tubers (1½-2 ounces) because of the reduced risks of disease and better stand of plants in the field. Large size potatoes are marketed to growers that cut the tuber to produce seed pieces that range in size from 1.5 - 3 ounces. Some seed potatoes may also be cut commercially and marketed to growers as cut seed pieces. Cut seed pieces require special handling since they are more susceptible to disease, shriveling, and decay.

Marketing Methods

Potatoes can be sold either in the fresh market (table stock) or in the processing market. Potatoes for the fresh market are marketed in a wide variety of containers. Potatoes can be marketed in individual bags weighing 5, 10, 15, 20, 50, 75, or 110 pounds. Potatoes are also sold in bales with a number of bags of potatoes wrapped together in clear plastic wrap. The two most common types of bales are a 5/10 pound bale, which consist of 5 10-pound bags, and a 10/5 pound bale, which contains 10 5-pound bags. The bags can be made out of paper, mesh, polyethylene, or jute.

Potatoes can also be sold in 20-pound or 50-pound cartons. Count-size potatoes are those of uniform size and shape that are sold in 50-pound cartons. For example, an 80-count size means that there are 80 potatoes in a carton. The higher the count size, the greater the number of potatoes in a carton and the smaller the size of each individual potato.

Provincial Potato Grower Organizations

Provincial potato boards or agencies (boards) exist in each major producing Province. The boards are funded through fees paid by growers. In Ontario, fresh potato packers are also assessed fees. New Brunswick requires a license fee to be paid by shippers and growers, in addition to fees paid by producers.³⁸ The boards have authority to collect fees for marketing, promotion, and potato disposal. All of the boards exist pursuant to the Canadian Agricultural Products Marketing Act. These grower organizations, formed under Provincial farm product marketing legislation, have limited powers.

Most of the boards are indirectly involved in the negotiation of contracts between growers and processors of potatoes. They also evaluate requests for bulk easements, and provide recommendations on the granting of bulk easements (see below). AAFC makes the final determination of whether fresh potatoes are imported into a Province.

³⁸ Canadian Horticultural Council, posthearing brief, appendix pp. 1-8.

The potato boards in British Columbia and Ontario are involved in the orderly marketing of intra-Provincial potato production by establishing market prices. Table stock potatoes grown in Manitoba are sold through a central selling desk.³⁹ However, the boards in these Provinces do not have any control over the price or marketing of potatoes in inter-Provincial or international trade.

Canadian Trade and Regulatory Measures

Tariff Treatment

Canadian imports of potatoes and potato products are subject to import duties as provided under the Canadian Customs Tariff Schedule. The tariff rates applicable to potatoes and potato products imported into Canada from the United States range from free to 1.2 percent ad valorem. Imports of dried potatoes, whether or not cut or sliced but not further prepared enter free of duty. Fresh or chilled potatoes are dutiable at 77.2 Canadian cents per metric ton; frozen potatoes, potato flakes, granules, and pellets, and frozen or unfrozen prepared or preserved potatoes are dutiable at 1 percent ad valorem; and potato flour, meal, and powder and potato starch are dutiable at 1.2 percent ad valorem. All of the dutiable items are scheduled to be reduced to free on January 1, 1998 (see appendix E).

Antidumping and Countervailing Duties

On June 4, 1984, the Canadian Antidumping Tribunal (Inquiry No. ADT-4-84) found that the dumping of whole potatoes with netted or russeted skin, excluding seed potatoes, in non-size A., also commonly known as strippers, originating or exported from the State of Washington, for use or consumption in the Province of British Columbia was the cause of material injury. In a second investigation in April 1986 (CIT 16-85), the Canadian International Trade Tribunal (CITT), successor to the Antidumping Tribunal, found that dumping in Canada of whole potatoes from the United States exported to British Columbia was the cause of material injury. Antidumping duty orders were issued in both instances.

On September 14, 1990, the CITT, in review No. RR-89-010, gave notice that it had continued, without amendment, the findings in Inquiry Nos. ADT-4-84 and CIT-16-85. On September 14, 1995, the CITT, in review No. RR-94-007 under subsection 76(2) of the Special Import Measures Act, gave notice that it continued the above findings pursuant to subsection 76(4) of the Special Import Measures Act, but with an amendment to exclude imports during the period from May 1 to July 31, inclusive, of each calendar year.

³⁹ Ibid, appendix p. 7.

As part of Canada's administration of the antidumping finding, Revenue Canada has established normal values for imports of potatoes from the United States.⁴⁰ When the U.S. market price for a particular potato pack is less than the applicable normal value as determined by Revenue Canada, the normal value, rather than the U.S. market price, is used as the basis for determining a landed Vancouver, British Columbia cost. Adjustments are made for freight, the Canada-United States exchange rate, and the regular tariff. In other words, the normal value sets a "floor" for the price of U.S. potatoes in British Columbia.⁴¹ See appendix F for the dumping duties applied to U.S. imports for the period April 20-April 26, 1997.

Fresh Fruit and Vegetables Regulations

Under Canadian law, potatoes must be marketed in "standard containers" to facilitate consumer trade. Potatoes sold at the retail level can be sold only in 5, 10, 20, 50, 75, and 110 pound packages. There are no comparable requirements for wholesale containers, except for bulk containers, i.e. over 110 pounds.⁴²

Inter-Provincial and import shipments of bulk shipments of potatoes for repackaging and processing are regulated under the Fresh Fruit and Vegetable Regulations of the Canada Agricultural Products Act (CAPA). If a processor intends to import bulk potatoes, whether from another Province, or from another country, a Ministerial Exemption (Easement) to the Fresh Fruit and Vegetable Regulations is required. Imports of potatoes into Canada from the United States under an easement require a "Memorandum of Inspection for Canadian Destinations" issued by USDA. An easement is granted to an importer only when a shortage in Canada exists. The easement is good for a certain period of time and for a specific amount of product.

These regulations are designated to facilitate the orderly marketing of bulk potatoes when there is a shortage in Canada.⁴³ According to information supplied by the Canadian Horticultural Council, requests for ministerial exemptions are virtually never rejected, whether they involve potatoes from Canadian Provinces or from the United States.⁴⁴

The Larger-than-Largest (LTL) size requirement under the Processed Products Regulations (PPR) of the CAPA implemented in November 1993 required that all food products be sold in bags labeled in 500 gram incremental metric units rather than in pounds. U.S. and Canadian processors whose labels were registered with AAFC were granted a 2-year exemption.

On December 8, 1995, AAFC revised the PPR labeling requirements for LTL-size products. If the shipping container is the unit sold to end users, a common situation in the case of products

⁴⁰ There are currently normal values for 11 different packs of potatoes from Washington, California, Oregon, and Idaho, for a total of 44 different normal values. CITT, Review No. RR-94-007, Sept. 14, 1995, p. 5.

⁴¹ Ibid.

⁴² Canadian Horticultural Council, prehearing brief, pp. 19-20.

⁴³ Canadian Horticultural Council, prehearing brief, p. 19.

⁴⁴ Ibid, p. 20.

shipped to hotels, restaurants, institutions, etc., individual inner packages will not be subject to the labeling-on-packaging requirements of the PPR. However, the outside container must bear an approved label and meet the LTL requirements respecting package size.

Prohibition on Consignment Sales

The CAPA prohibits sales of produce without a prearranged buyer (consignment sales).⁴⁵ This law applies to domestic product traded between Provinces and imported product. The CAPA also prohibits Canadian producers from selling on consignment to the United States.⁴⁶ Product that is traded within a Province is not covered by the law. Processed products, such as frozen french fries, are not covered by the law.

Disinfection Requirements to Meet European Union Standards

The European Union (EU) prohibits the importation of seed potatoes, except when permitted under specific exemption (or derogations). Since 1977, Canada has had derogations to the EU discipline for seed potatoes. These derogations have allowed Canada to ship seed potatoes from Bacterial Ring Rot (BRR) and Potato Spindle Tuber Viroid (PSTV)-free zones in P.E.I. and New Brunswick. These two Provinces are the only areas in North America which have BRR-free and PSTV-free zones.⁴⁷

In order for New Brunswick⁴⁸ and P.E.I.⁴⁹ to maintain their status for shipping seed potatoes to the EU, New Brunswick and P.E.I. have put in place special measures to comply with the EU derogation. The planting in P.E.I. or New Brunswick of seed potatoes from areas outside of designated disease-free zones in these two Provinces would result in the immediate loss of eligibility to ship seed potatoes to the European Union. Thus, the planting of U.S. seed potatoes in the disease free zones of P.E.I., for example, would result in the loss of disease-free status for the zone.⁵⁰ Table stock and processing potatoes are permitted to enter the disease-free zones.

⁴⁵ USDA, FAS, *Review of Canadian Support Programs for the Potato Sector*, FAS Staff Paper 1-96, July 1996, p. 13.

⁴⁶ Canadian Horticultural Council, posthearing brief, p. 3.

⁴⁷ Canadian Horticultural Council, prehearing brief, pp. 6 and 7.

⁴⁸ All trucks entering New Brunswick that are intended for potato transport must be disinfected by private companies at a cost of Can\$20 -30 per inspection.

⁴⁹ All trucks entering P.E.I. that are intended for potato transport are disinfected at the border.

⁵⁰ See *Official Journal of the European Communities*, Commission Decision of 24 January 1997, authorizing certain member States to provide for derogations from certain provisions of Council Directive 77/93/EEC in respect of seed potatoes originating in Canada.

Canadian Food Inspection Agency

In April 1997, the Canadian Food Inspection Agency (CFIA) was created. The CFIA consolidates food inspection and animal and plant health service of AAFC, Health Canada, and Fisheries and Oceans Canada. All inspection and associated activities related to food safety, economic fraud, trade-related requirements, and animal and plant health programs, are provided by this agency. The following section provides a summarization of fees and charges pertaining to potatoes by the precursor agencies to the CFIA.

Fresh Fruit and Vegetable and Dairy Products Inspection

Fresh fruit and vegetables and dairy products that are imported, exported, or moved inter-Provincially under Federal standards are inspected and monitored by AAFC. Produce is monitored for safety, grade, and quality. Produce labels and packaging are reviewed to avoid fraud.⁵¹ Shippers, dealers, and brokers are licensed and may apply to have marketing disputes settled by an independent Board of Arbitration.

The fresh fruit and vegetable industry pays a portion of the Federal Government's costs of delivering inspection and certification services for fresh produce marketed in import, export, or inter-Provincial trade as well as for registration of packing establishments. As of July 8, 1996, users are required to pay a larger share of what it costs the government to provide services. Fees will also apply to services that were previously provided at no charge, such as permits for exports and inter-Provincial shipments.⁵²

Fees are outlined below:

1. Inspections—
 - a. at shipping point--inter-Provincial and export: Can\$0.27 per cwt inspected. A minimum inspection fee of Can\$30 for export inspections of onions, potatoes, and field tomatoes to the United States, which ever is greater. In all other cases the minimum fee is Can\$68.
 - b. at destination--market condition inspections: Can\$0.5325 per cwt inspected or a minimum fee of Can\$68, which ever is greater.
2. Registration of a Produce Warehouse: Can\$750 per year.
3. Release Permits: Can\$15.

⁵¹ AAFC Press Release, "Cost Recovery Fees for Fresh Fruit and Vegetable and Dairy Products, Inspection," Jul. 8, 1996, p. 30.

⁵² Ibid.

4. Ministerial Exemptions: Regulated produce shipments which do not meet quality, packaging, and labeling standards set out in regulations for inter-Provincial or international trade can be marketed under ministerial exemptions: Can\$20 per load, upon approval by AAFC.
5. Label Reviews: For voluntary label reviews by an AAFC official, Can\$100 per label.
6. Special Contracted Inspection and Monitoring Service: Can\$68 per hour or Can\$0.27 per cwt inspected, whichever is chosen by the applicant.
7. Grading of produce at a produce establishment: Can\$68 per hour or Can\$17 per quarter hour, whichever is greater. Charge will be rounded off to the nearest quarter hour for fee assessment purposes.
8. Federal Produce Licenses: All Canadian dealers operating in the inter-Provincial or international marketing of fresh produce are required to possess a valid license to operate at a charge of Can \$750 per year. For registered charitable organizations, the Federal produce license is Can\$50 per year.
9. Dump Certificate: Dump certificates are issued to demonstrate produce has been irretrievably discarded in a dumpsite and has no market value. The charge is Can\$50 per certificate issued or Can\$0.27 per cwt, whichever is greater.
10. Board of Arbitration Filing Fee: The Board of Arbitration acts as an impartial judicial body which renders binding decisions and orders on loads which are the subject of inter-Provincial and international disputes between produce buyers and sellers. The filing fee is Can\$400 per registered complaint.

Animal and Plant Health Service

The Animal and Plant Health Service provides inspection under the Seeds Act (inter-Provincial shipments) and the Plant Protection Act (international). The Seeds Act provides for inspection of seed potatoes moved inter-Provincially for prohibited plant pests. In particular, movement of potatoes from areas that are infested with certain types of nematodes are prohibited to non-infested areas. Movement of potatoes from Newfoundland and Vancouver Island are prohibited owing to the presence of Golden nematode in those areas. Growers are charged an inspection fee of Can\$8 per acre for seed certification plus a Can\$50 fee.

Imported seed potatoes are required to have a phytosanitary certificate if they are from areas of the United States that are known to have prohibited plant pests. Imported seed potato lots must also be laboratory tested for ring rot at the importers expense (approximately Can\$100).

The Plant Protection Act provides for inspection and issuing of phytosanitary certificates and permits for imports and exports of seed potatoes and potatoes for consumption and processing. A fee of Can\$17 to Can\$34 is charged for an import permit. An additional fee of Can\$10 is accessed if a permit is amended or requires modification by an inspector. In addition, an import inspection fee of Can\$30 per lot is accessed plus Can\$10 fee for verification of import documents.

Fees for export certification of each lot of potatoes, including the issuance, if applicable, of the first Canadian Phytosanitary Certification is Can\$30 for bulk shipments of seed potatoes, and potatoes for consumption or processing; Can\$50 for bagged seed potatoes and bagged potatoes for consumption or processing. Additional Phytosanitary Certificates issued for a single lot inspection are Can\$5.

Food and Drug Act and Regulations

Health Canada administers the Food and Drug Act and Regulations. Health Canada inspectors routinely inspect facilities in Canada where processed food products are manufactured.⁵³ Inspection may entail taking samples to determine if a product meets required standards for health and safety. Inspectors also sample and inspect products on importation. Health Canada does not charge for these services, however, a fee schedule is being developed by the CFIA.

Provincial Potato Disinfection Programs

P.E.I. has funded a program to disinfect warehouses, storages, truck trailers, equipment, and ocean vessels as required by the Province's Plant Health Act.⁵⁴ Additionally, all trucks and truck trailers coming into the Province to pick up potatoes must carry Provincial certification of disinfection. A fee of Can\$10 per vehicle has been charged starting in the 1997/98 fiscal year for the disinfection service for trucks coming into the Province.⁵⁵

For several years, New Brunswick has provided a disinfection service for trucks so that potatoes can safely be loaded. The service is provided through five privately owned stations that are licensed to disinfect vehicles. Fees are Can\$20-\$30 per inspection. The cost of the disinfection is split between the truck owner/shipper and the grower. The New Brunswick (N.B.) Potato Agency, which is entirely grower funded, supervises the operation and pays the grower portion on behalf of the growers. The N.B. Potato Agency also provides a disinfection service for potato storage facilities and equipment. This service is funded by the growers on a user-pay basis.

⁵³ Hall, "All About Canada's Snack Food Industry," p. 2.

⁵⁴ P.E.I. Agriculture official, telephone interview by USITC staff, May 14, 1997.

⁵⁵ Canadian Embassy, prehearing brief, Apr. 28, 1997, p. 8.

Canadian Assistance Programs

Overview

This section provides information on Federal and Provincial assistance programs available to the fresh potato and processed potato products industry in Canada. An overview of such programs is provided in table 4-15. Table 4-15 includes programs that currently are, or have been, utilized by potato growers, handlers, and processors in Canada, as well as programs that are available to a number of agricultural sectors, including the potato industry. Provincial programs are discussed for the top six potato-producing Provinces in 1996—P.E.I., Manitoba, New Brunswick, Québec, Alberta, Ontario—and for Saskatchewan.⁵⁶

In addition to the number of acres planted to potatoes in each of these Provinces, the importance of potato growing as an economic activity also varies. For instance, in 1996, potatoes accounted for 48.8 percent of farm cash receipts in P.E.I., 2.8 percent in Manitoba, 24.0 percent in New Brunswick, 1.7 percent in Québec, 0.8 percent in Alberta, 0.7 percent in Ontario, 0.2 percent in Saskatchewan, and 1.8 percent in Canada as a whole.⁵⁷

At the USITC hearing, Canadian interests suggested that the Canadian programs for the fresh potato and processed potato products industry are either producer funded, paid for through cost-recovery measures, or provide nonspecific support that is of the "GATT Green" type.⁵⁸ The issue of whether or not Canadian programs are "green," i.e., exempt, under the World Trade Organization's (WTO's) Agreement on Agriculture is not discussed here.⁵⁹ Under WTO procedures, member countries notify the WTO as to whether or not their agricultural programs are "green."⁶⁰ These notifications are reviewed by the WTO members, and the classification of programs may change as a result. A country can also challenge another country's classification of programs through a WTO Dispute Settlement Panel.

⁵⁶ Saskatchewan, the eighth largest potato-producing Province in 1996, is included due to concerns raised by U.S. growers about potato expansion activities in that Province.

⁵⁷ Statistics Canada, "1996 Farm Cash Receipts" facsimile data received July 11, 1997. Cash receipts include receipts from all crop and livestock sales.

⁵⁸ Transcript of the hearing, p. 227.

⁵⁹ Annex 2 of the WTO Agreement on Agriculture provides the criteria under which domestic support measures are considered to be exempt from reduction requirements under the WTO Agreement on Agriculture. According to these criteria, such support measures must (1) be provided through a publicly-funded government program not involving transfers from consumers, and (2) must not have the effect of providing price support to producers. Additionally, policy-specific criteria are set out for specific types of support measures.

⁶⁰ WTO agriculture official, telephone interview by USITC staff, May 16, 1997.

Table 4-15

Summary of Federal and Provincial programs available to potato growers and potato industries

Type of program	Federal program	Provincial programs
Farm-level programs:		
Income support	National Income Stabilization Account (NISA)	<ul style="list-style-type: none"> Enhanced NISA: P.E.I., Saskatchewan (potatoes eligible 1996 only); Federal-only contribution, Alberta Québec Farm Income Stabilization Insurance, Québec
Crop insurance	Federal crop insurance guidelines require that farmers pay no more than 50 percent of crop insurance premium	<ul style="list-style-type: none"> Enhanced crop insurance: Manitoba, Saskatchewan, Alberta
Farm disaster insurance		<ul style="list-style-type: none"> P.E.I. and Alberta
Western Grain Transportation Payments	Payments to Alberta potato and other growers under Arable Acres Companion Agreement	
Credit assistance/direct loans/loan guarantees	Advance Payments for Crops Act Farm Credit Corporation (FCC) direct loan programs Farm Improvement and Marketing Loans Act guarantees	<ul style="list-style-type: none"> Enterprise P.E.I. loan programs, P.E.I. Manitoba Agricultural Credit Corporation (MACC) loans and guarantees, Manitoba Agricultural Development Board programs (Farm Machinery Loans Act canceled Mar. 1996; interest rebate program canceled 1992); New Brunswick N.B. Debt Refinancing Program, New Brunswick Office du Crédit Agricole du Québec, interest rate assistance for agricultural operations, Québec Agricultural Financial Services Corp (AFSC), direct loans and guarantees, Alberta Operating credit programs, Ontario Agricultural Credit Corporation of Saskatchewan, Saskatchewan
Diversification loan guarantees		<ul style="list-style-type: none"> MACC, target groups include cattle feedlots, potato growers, and hog producers; Manitoba

Table 4-15—Continued

Type of program	Federal program	Provincial programs
Land lease/purchase programs	FCC Family Farm Loans FCCAgri-Land Investment Lease	<ul style="list-style-type: none"> • P.E.I. Land Development Corporation Land/Lease Purchase Program, operated over last 20-25 years, ended 1995; P.E.I. • Agricultural Development Board Land/Lease Purchase Program, ended Mar. 1996, folded into Potato/Agricultural Crop Expansion Programs, New Brunswick • Crown Land Leasing and Sales, Saskatchewan
Irrigation infrastructure/crop development/water supply	Prairie Farm Rehabilitation Administration (PFRA) <ul style="list-style-type: none"> • Rural Water Development Projects • Cost-shared programs with Manitoba, Alberta, and Saskatchewan Canada-Manitoba Agreement on Agricultural Sustainability (CMAAS) (cost-shared)	PFRA cost-shared programs: <ul style="list-style-type: none"> • Canada-Saskatchewan Partnership Agreement on Water-Based Economic Development (PAWBED) • Canada/Saskatchewan Economic and Regional Development Subsidiary Agreement on Irrigation-Based Economic Development (SIBED) (ended FY 1995/96) • Saskatchewan Irrigation Development Centre • Manitoba Crop Diversification Centre • Canada Agri-Infrastructure Program (CAIP), Manitoba Provincial programs: <ul style="list-style-type: none"> • CMASS implementation, Manitoba • Souris Valley Irrigation Centre, Manitoba • Soil/water assessment grants for irrigation, Manitoba • Alberta Irrigation Districts, Alberta • Saskatchewan Water Corporation, Saskatchewan
Potato expansion programs		<ul style="list-style-type: none"> • Potato Expansion and Land Stewardship Program, New Brunswick • Surplus Water Irrigation Initiative, Manitoba • Saskatchewan Water Corporation, potato expansion initiatives, Saskatchewan
Potato disinfection	PVYn Compensation (P.E.I., New Brunswick, Ontario)	<ul style="list-style-type: none"> • Potato Quality Program provides disinfection services and grants for potato cull burial, user fees for trucks instituted Apr. 1997, P.E.I.

Table 4-15—Continued

Type of program	Federal program	Provincial programs
Production assistance/tax incentives		<ul style="list-style-type: none"> • Limestone Rebate Program (terminated 1992), P.E.I. • Potato Seed Incentive Program (terminated 1995), P.E.I. • Plant Propagation Centre, New Brunswick • Bon Accord Seed Farm, New Brunswick • Irrigation equipment grants, New Brunswick • Farm Land Identification Program, provides for tax deferred status of land in agricultural use, New Brunswick • Provincial fuel/input tax rebates, P.E.I., Manitoba, New Brunswick, Québec, Alberta, Ontario, Saskatchewan • Provincial property tax rebates, Québec, Ontario
Extension/training	Canadian Farm Business Management Program (CFBMP)	<ul style="list-style-type: none"> • Provincial implementation of CFBMP initiatives • Extension, farm business management, and market development initiatives supported through Provincial Departments of Agriculture
Agricultural research programs:		
Research and demonstration programs benefiting agricultural producers and agribusinesses	Charlottetown Research Centre Fredericton Research Centre Lethbridge Research Centre Matching Investment Initiative	<ul style="list-style-type: none"> • Soil and Feed Testing Laboratory, P.E.I. • Plant Health and Research Laboratory, P.E.I. • Food Technology Centre, P.E.I. • Food Technology Centre, Manitoba • N.B. Department of Agriculture and Rural Development, analytical laboratory services, New Brunswick • N.B. Horticulture Centre, New Brunswick • Potato Centre, research and extension, New Brunswick • Crop Diversification Centre, Alberta • Food Processing Development Centre, Alberta • Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA) funding for various research and demonstration centers, Ontario

Table 4-15—Continued

Type of program	Federal program	Provincial programs
Programs providing grants to individuals, businesses, and organizations for adaptive research, market studies, marketing, and industry development	Business Planning for Agri-Ventures Program (AAFC/FCC) Western Diversification (WD) Canadian Adaptation and Rural Development Fund (CARDF)	<ul style="list-style-type: none"> • Agricultural Research Investment Fund, P.E.I. • Manitoba Agri-Ventures Initiative, Manitoba • Sustainable Development Innovations Fund, Manitoba • Strategic Partnership Development Fund, New Brunswick • Canada-Québec Subsidiary Agreement on Agri-Food Development, Québec • Processing Industry Division Programs, Alberta • Grow Ontario Investment Program, Ontario • Canada/Saskatchewan Partnership Agreement on Rural Development • Agri-Food Innovation Fund, Saskatchewan • Agriculture Development Fund, Saskatchewan • Agri-Food Equity Fund, Saskatchewan • Agriculture Industry Assistance program, Saskatchewan • Saskatchewan Department of Economic and Co-operative Development (SECD), Business Investment Program, Saskatchewan
Market development assistance and representation:		
Foreign market development	Department of Agriculture and Agri-food (AAFC) programs: <ul style="list-style-type: none"> • Agri-Food Trade 2000 • Program for Export Market Development • InfoHort • Agri-Food Trade Service Atlantic Canada Opportunities Agency (ACOA) <ul style="list-style-type: none"> • Direct programs • Regional Economic Development Agreements (REDAs) 	<ul style="list-style-type: none"> • Provincial Departments of Agriculture, foreign market development assistance and programs • ACOA REDAs and Direct Programs—Provincial implementation, New Brunswick, P.E.I. • P.E.I. Trade Development Centre, P.E.I. • Strategic Partnership Development Fund, New Brunswick • SECD, Diversification Program, Saskatchewan
Representation	AAFC assistance for the Canadian Horticultural Society	

Table 4-15—Continued

Type of program	Federal program	Provincial programs
Transportation assistance:		
Rail and truck rate assistance within Atlantic Canada	Atlantic Region Freight Assistance Act (ARFAA)/Maritime Freight Rates Act (MFRA) ended FY 1995/96	<ul style="list-style-type: none"> • ARFAA/MFRA replaced with Can\$326 million fund for road improvements
Processing/agribusiness assistance:		
Wage assistance programs	Targeted Wage Subsidy Program Job Opportunities for Youth-Wage Subsidy Program Transitional Jobs Fund	<ul style="list-style-type: none"> • Wage assistance for farm and other labor, Ontario
Loans/other assistance for storage and packing operations	ACOA, Direct Programs and REDAs, P.E.I., New Brunswick PFRA-cost shared programs	<ul style="list-style-type: none"> • Provincial implementation, ACOA programs, P.E.I. and New Brunswick • PAWBED, Saskatchewan
Energy assistance/tax assistance		<ul style="list-style-type: none"> • Electrical Rate Relief Program, P.E.I. • Energy initiatives for manufacturers/processors, P.E.I. • Provincial tax exemption on electricity used in manufacturing; 10 percent manufacturing investment tax credit, Manitoba
Processor loans and grants, contributions for wastewater treatment and infrastructure, and other assistance	ACOA, Direct Programs and REDA contributions, P.E.I. and New Brunswick PFRA, Canada/Manitoba Partnership Agreement on Municipal Infrastructure (PAMWI) CAIP Agricultural Value-Added Loan Fund, WD	<ul style="list-style-type: none"> • Ministry of Economic Development and Tourism loan programs, P.E.I. • Enterprise P.E.I. Development Assistance Program, P.E.I. • Enterprise P.E.I. Small Business Support Program, P.E.I. • PAMWI, Manitoba • CAIP, Manitoba • Rural Economic Development Initiative, Manitoba • Ministry of Economic Development and Tourism loan and contribution programs, New Brunswick • Small Entrepreneur Capital Assistance Program, New Brunswick • AFSC direct loans and guarantees for agribusiness, Alberta • Saskatchewan Opportunities Corporation, Saskatchewan

Source: U.S. International Trade Commission.

Trends in Canadian Programs

A number of important changes to both Federal and Provincial agricultural programs in Canada have occurred since 1995 that have affected a wide variety of agricultural activities, including potato production, handling, and processing. First, in Canada's 1995 Federal budget, the Canadian Government eliminated most transportation assistance payments, including payments made under the Western Grain Transportation Act (WGTA),⁶¹ which had primarily been applied to grains moving west for export. To assist producers and processors in making the transition to market transportation rates, the Federal Government announced that it would provide Can\$300 million to the four Western Provinces—Manitoba, Saskatchewan, Alberta, and British Columbia—under the Western Grain Transportation Adjustment Fund (WGTAf), as well as a Can\$1.6 billion capital payment to owners of prairie farmland affected by the elimination of the WGTA.

Second, FY 1995/96⁶² was the last year of the Gross Revenue Insurance Program (GRIP) in most Provinces. The GRIP was a revenue insurance program for certain eligible crops that allowed participating Canadian farmers to achieve a certain target revenue through its crop insurance and revenue protection components. The termination of GRIP required the distribution of financial surpluses to the Provinces in many cases, which have resulted in the funding of new Provincial programs assisting all agricultural producers, including potato growers, handlers, and processors. Additionally, the Canadian Government has been working with the Provincial Governments to develop Province-specific companion programs to replace the GRIP. These have included enhancements to existing Safety Net Programs (such as the Crop Insurance Program and the Net Income Stabilization Account (NISA)), disaster assistance, the introduction of new market development and adaptation programs, as well as the continuation of some Province-specific programs.⁶³

Both the GRIP and the WGTA were discontinued because of concerns that these two programs would not meet the criteria for "GATT Green" status under the WTO Agreement on Agriculture, and thus be subject to reductions under WTO rules.⁶⁴ Although potatoes were not directly covered by the GRIP,⁶⁵ or by the WGTA, potato growers, handlers, and processors have been affected by the elimination of these programs and the subsequent policy changes. Potato production, particularly in the Prairie Provinces, is a high-value crop providing an opportunity for agricultural producers to diversify from grain-dependent economies. Many of the new Provincial programs are currently being used to assist current potato production, to develop

⁶¹ The WGTA committed the Canadian Government to sharing the costs of rail transportation of Western grain destined for specified Canadian ports (primarily Thunder Bay and Vancouver). The WGTA benefit was paid directly to the railroads on behalf of Canadian producers.

⁶² The Canadian fiscal year runs from Apr. 1 to Mar. 31.

⁶³ AAFC, *1996-97 Estimates Part III Expenditure Plan* (Ottawa: AAFC, 1996), p. 16.

⁶⁴ AAFC, *Performance Report for the Period Ending March 31, 1996* (Ottawa: Minister of Public Works and Government Services, 1996), p. 1.

⁶⁵ Potatoes were not included in the GRIP because of variability in prices and quality, which make it difficult to devise an adequate price support program. Interview with AAFC official by USITC staff, May 5, 1997.

new opportunities for an expansion in potato acreage, and to attract agricultural processing industries.

Canadian Federal Government Assistance Programs

Safety-net Programs

Net Income Stabilization Account (NISA)

The NISA,⁶⁶ established in 1991, is a voluntary program designed to help participating agricultural producers stabilize their farm income. Under this program, agricultural producers can deposit a percentage of their eligible sales into a NISA account and receive a matching contribution from the Federal and Provincial Governments. In years of low income, producers are allowed to make withdrawals from their NISA accounts. Income from all primary agricultural commodities (including potatoes), except for dairy, poultry, and eggs, is eligible for this program.⁶⁷

Enrolled farmers currently contribute up to 3 percent of eligible net sales to an individual NISA account, with the Federal and Provincial Governments providing matching contributions of 2 and 1 percent, respectively.⁶⁸ Farmers deposit after-tax dollars into these accounts, but they receive an interest bonus equal to a tax break on the deposit amount. Withdrawals are allowed when net farm income falls below the average for the last 5 years or below a minimum household income of Can\$10,000. The Government contribution is taxable when withdrawn, but the farmer's own contribution is not taxed.

Eligible sales under NISA are limited to Can\$250,000, thus capping annual contributions per farmer at Can\$7,500. AAFC officials have indicated that potato growers in P.E.I. have complained that, since potatoes are high-value crops, the NISA provides only limited benefits because the contribution cap is too low.⁶⁹ As noted in the section on P.E.I. programs, P.E.I. growers are currently allowed to make higher NISA deposits, based on a 6 percent Federal contribution. According to AAFC, NISA is not commodity specific, thus it is not possible to measure the assistance only to potatoes. Sales by participants in NISA represented 81 percent of Canadian farm cash receipts of eligible commodities in 1995.⁷⁰

⁶⁶ In its administrative reviews of the countervailing duty order on live swine from Canada, the Department of Commerce found the NISA program to be noncountervailable. See 61 F.R. 52410, Oct. 7, 1996.

⁶⁷ USDA, FAS, *Review of Canadian Support Programs for the Potato Sector*.

⁶⁸ These contribution rates were effective as of the 1995 stabilization year.

⁶⁹ Interview with AAFC official by USITC staff, May 5, 1997. NISA does allow for up to 10 individuals in a partnership to have separate NISA accounts.

⁷⁰ Canadian Embassy, posthearing brief, June 19, 1997.

Crop Insurance

All Provinces in which potatoes are grown operate crop insurance programs on a cost-share basis with the Federal Government. Program details vary by Province, but levels of coverage are generally up to 80 percent of the grower's own average farm yield, with the Federal and Provincial Governments providing at least 50 percent of the premium and the administrative costs.⁷¹ Three Provinces—Manitoba, Alberta, and Saskatchewan—provide enhanced crop insurance as discussed in the Provincial Programs sections.

In crop year 1996/97 1,288 potato growers in Canada were enrolled in Crop Insurance, down from 1,463 in crop year 1995/96, as shown in the following tabulation of data by Province provided by AAFC:

New Brunswick	555
P.E.I.	273
Manitoba	198
Québec	144
Ontario	40
Alberta	30
Other	48
Total	1,288

Credit Assistance

Advance Payment for Crops Act (APCA)

APCA is available to producers of all storable fruit, vegetable, and field crops, except wheat and barley grown in the designated area of the Canadian Wheat Board. The plan advances up to Can\$250,000 per farm at preferred rates negotiated by producer organizations and AAFC. The Federal Government guarantees 98 percent of the principal and interest. APCA provides an incentive for producers to store their crops and to market the product later in the year when prices may be improved. In 1996, APCA loan guarantees of Can\$366 million, or 9.3 percent of such guarantees, were extended to potato growers.⁷²

The Cash Flow Enhancement Program (CFEP) under APCA provides nontaxable interest rebates on advances of less than Can\$50,000 to APCA participants.⁷³ Expenditures under the

⁷¹ AAFC, CROP INSURANCE- AAF, found at <http://www.agr.ca/progser/aafc.html>, updated Oct. 3, 1996.

⁷² Canadian Embassy, posthearing brief.

⁷³ AAFC, ADVANCE PAYMENTS FOR CROPS ACT-APCA, found at <http://aceis.agr.ca/progser/apca.html>, updated Aug. 6, 1996.

CFEP were Can\$5.71 million in FY 1995/96, of which potato growers received Can\$909,100.⁷⁴ Expenditures for potatoes by Province are shown in the tabulation below (Can\$):

Maritimes ¹	534,700
Québec	190,000
Manitoba	77,000
Ontario	46,200
Alberta	43,200
Saskatchewan	10,700
British Columbia	7,300
Total	909,100

¹New Brunswick, P.E.I., and Nova Scotia.

Farm Credit Corporation (FCC)

The FCC, a Crown Corporation reporting to the AAFC, is Canada's largest agricultural long-term lender. The FCC provides financial assistance to Canadian farmers and agribusiness; it is also the Federal delivery partner for a number of Federal Government agricultural programs. According to AAFC officials, the FCC, under its legislative mandate, cannot subsidize or lose money on its loans.⁷⁵

The FCC provides fixed-rate loans for up to 20 years, as well as long-term loans with amortization periods between 3 and 29 years, to qualified farmers and farming operations.⁷⁶ FCC loans finance acquisition of farmland and equipment, or they may be used to erect or modernize farm buildings, refinance debt, or build farm manufacturing or processing facilities.⁷⁷ Such loans are provided at competitive interest rates.

Loans extended by the FCC to potato producers increased during 1992-96 as shown in the following tabulation of AAFC data:

Year	Number of loans	Amount (Can\$'000)
1992	85	10,165.8
1993	75	10,492.4
1994	109	14,961.3
1995	188	22,573.1
1996	212	27,954.8

⁷⁴ Canadian Embassy, prehearing brief, p. 4.

⁷⁵ Interview with AAFC officials by USITC staff, May 5, 1997.

⁷⁶ AAFC, FARM CREDIT CORPORATION, found at <http://www.agr.ca/progser/aaffcca.html>, updated Nov. 26, 1996.

⁷⁷ USDA, FAS, *Review of Canadian Support Programs*, pp. 6-7.

The increased use of FCC loans by potato growers is likely due to the fact that FCC loans generally have much higher lending limits than the loans provided by the Provincial lending institutions.

FCC specialized loans⁷⁸ include Family Farm Loans which make it easier to transfer farm real estate from one generation to the next. Under this program, the seller receives a percentage of the appraised value of the property at the time of sale and is paid in full after 4 years, while the buyer benefits by having loan payments go toward building equity rather than paying interest costs. Under FCC's Farm Builder Construction Loan, a builder has up to 1 year to complete a construction project before making a payment or renewing the loan through another FCC lending instrument. The FCC's Agri-Land Investment Lease provides farmers with long-term leasing options of FCC land holdings.⁷⁹ The FCC's Shared-Risk Mortgage provides borrowers with financing over a 6-year term with a ceiling of 2.5 percent on rate increases. Rate adjustments are shared equally by the borrower and the FCC.

AAFC's Commodity-Based Loan Program allows producers to convert regular FCC loans into loans that will allow them to make payments according to their ability to pay under conditions of variable commodity prices. AAFC transferred Can\$9.6 million to the FCC in FY 1995/96 in support of this program. It is not known whether any of this transfer was applied to potato producers.⁸⁰

The FCC is also the delivery agent for AAFC's Business Planning for Agri-Ventures Program (BPAV), which pays up to 50 percent of the cost of development of a business plan. Program eligibility requires that the business be a farm or agribusiness that is diversifying, or is a new agribusiness with employment creation potential.⁸¹ Funding for this program, which ends in March 1999, is provided by AAFC through the Canadian Adaptation and Rural Development Fund.

Farm Improvement and Marketing Cooperatives Loans Act (FIMCLA)

FIMCLA helps producers and producer-owned cooperatives gain access to intermediate term credit on reasonable terms to improve farm assets, strengthen production, and improve financial stability. Under FIMCLA, the AAFC provides a loan guarantee to designated lending institutions. The loans are based on up to 80 percent of the current appraised value or the purchase price. Loans are obtained through direct lending institutions. FIMCLA loans are available to all agricultural producers, including potato growers.⁸² Any defaults on loans are picked up by the lending institution (5 percent of the remaining balance) and by AAFC.

⁷⁸ See FCC, *Annual Report 1995-96* (Guelph, Ont: FCC, 1996) for a description of programs and services.

⁷⁹ This program was put into place in Apr. 1994 to help farmers regain ownership of FCC-owned land. As of Mar. 31, 1994, 90 percent of this land was in Saskatchewan.

⁸⁰ Receiver-General for Canada, *Public Accounts of Canada 1996* (Ottawa: Public Works and Government Services Canada, 1996).

⁸¹ AAFC, BUSINESS PLANNING FOR AGRI-VENTURES, found at <http://www.ca/progser/agrivene.html>, Mar. 20, 1997.

⁸² Official from the Royal Bank of Canada, telephone interview by USITC staff, May 23, 1997.

Economic Development Assistance

Atlantic Canada Opportunities Agency (ACOA)

ACOA is a Federal agency whose goal is to improve the economies of the Atlantic Provinces—New Brunswick, Nova Scotia, P.E.I., and Newfoundland—by providing assistance to small-and medium-size businesses.⁸³ ACOA largely has a manufacturing focus; however, its project portfolio has included agribusiness-related projects, such as potato processing, storage, and packing. ACOA administers its Direct Programs, and it is the Federal partner in a number of Regional Economic Development Agreements (REDAs) with the Provinces, which support economic development in the Atlantic region.

Under its Direct Programs, ACOA provides interest-free, repayable contributions for qualifying projects through the Business Development Program. ACOA provides assistance for capital projects, as well as for training and improved business management, including marketing studies and trade shows. Assistance is limited to 50 percent for capital projects and to 75 percent for operating costs, including training, marketing, and quality assurance. Through the REDAs, ACOA has provided assistance for private business development and infrastructure, highway construction, industrial parks, education, and training. As of August 1996 ACOA no longer provides direct assistance to the private sector through REDAs; instead such assistance is now directed to community infrastructure, training, provision of technology and information, and similar type projects.

A complete list of ACOA projects benefiting the potato sector was requested but not provided to USITC staff. An incomplete listing of ACOA projects compiled by USITC staff is provided in table 4-16.

Western Economic Diversification Canada

Western Economic Diversification Canada (WD) promotes economic development and diversification in the four Western Canadian Provinces. The program provides contributions to programs or projects, but not to individual companies, that will (1) result in the expansion of enterprises or new businesses, (2) promote research and development, and (3) contribute to business infrastructure. In FY 1995/96, WD provided a contribution of Can\$231,910 to the Manitoba Horticultural Productivity Enhancement Centre, a nonprofit corporation consisting of Keystone Vegetable Producers, Carnation Foods, and McCain Foods.⁸⁴ WD, along with other donors, also provided development funds for the Manitoba Crop Development Centre (see the Provincial Programs section). An additional WD program affecting agriculture involves the Agricultural Value-Added Loan fund which is designed to benefit small and medium-sized agricultural processors. The Fund provides loans with favorable repayment terms at interest

⁸³ Interview with ACOA official by USITC staff, May 5, 1997.

⁸⁴ *Public Accounts of Canada 1996*.

Table 4-16

Contributions by the Atlantic Canada Opportunities Agency to potato industries in P.E.I. and New Brunswick, 1994-96

Beneficiary/Province	Project	Contribution	Date
King's County Development Corp./P.E.I.	Build a potato storage facility for lease to Cavendish Farms and to benefit up 2,600 acres of potatoes	Can\$4.3 million ¹	May 1994
P.C.L. & Eastern Packaging Ltd./New Brunswick	Assist packaging operation that supplies packages for potatoes	Can\$514,058	FY1994/95
Toner Farms Ltd./New Brunswick	Assist potato packing operation	Can\$100,035	FY1994/95
Lewis Potato Packers Ltd. and Lewis Bros Inc./P.E.I.	Assist potato packing operation	Can\$116,500	FY1995/96
M&W Potato Co. Ltd./P.E.I.	Not available	Can\$225,495	FY1995/96
O'Leary Potato Packers Ltd/P.E.I.	Assist potato packing operation	Can\$309,821	FY1995/96
AKL Agricultural Development Inc./New Brunswick	Build a potato storage, packing, and shipping facility to expand seed potato production by 360 acres and improve marketing	Can\$192,280 ²	March 1996

¹ Contribution made through ACOA and related regional development initiatives on a grant basis.

² Contribution made under the Canada-New Brunswick Cooperation Agreement on Economic Diversification which is jointly funded by the Federal Government through ACOA and the Government of New Brunswick.

Sources: USDA, FAS, *Review of Canadian Support Programs for the Potato Sector*; "How ACOA Spends Its Cash in NB," *Telegraph Journal*, Nov. 23, 1995; and Receiver-General of Canada, *Public Accounts of Canada 1996*.

rates that range from 3 to 6 percent above the lender's prime rate through the FCC and a number of commercial banks.⁸⁵

Canadian Adaptation and Rural Development Fund (CARDF)

The CARDF is a Can\$60 million-per-year-program announced in the 1995/1996 Federal Budget. CARDF programs are designed to support growth and job creation in the agricultural sector and in rural communities. CARD funds enhance existing departmental initiatives, undertake national programs with industry boards, and support Provincial initiatives by industry-led adaptation councils.⁸⁶ CARD programs at the Federal level include financial assistance to the Canadian Farm Business Management Program, Business Planning for Agri-Ventures, the Agri-Food Trade Service, which supplies market information and intelligence for Canadian food exporters, and the Matching Investment Initiative, among others.

Initiatives through adaptation councils are being formulated at the Provincial level. CARD funding of Can\$1.5 million, which includes assistance for marketing, and for promotion of rural agricultural development, human resources, environmental sustainability, public/private

⁸⁵ WD, LOANS FOR VALUE-ADDED AGRICULTURAL PROCESSORS, found at <http://www.wd.gc.ca/eng/content/funds/xavaf.html>.

⁸⁶ AAFC, *A Guide to the Canadian Adaptation and Rural Development Fund*, found at <http://www.agr.ca/policy/adapt/cardwhat.html>, May 23, 1997.

partnerships, technology implementation, value-added activity, agricultural communications, and agribusiness management, was announced for New Brunswick in April 1997.⁸⁷ Similarly, Can\$40 million in CARD funding over 4 years will be provided to the Conseil pour le développement de l'agriculture du Québec and the Fonds québécois d'adaptation des entreprises agroalimentaires in Québec. CARD funding of Can\$28 million was announced in March 1996 for Ontario's Agricultural Adaptation Council to be used to make Ontario's agricultural sector more competitive and self-reliant. CARD funding of Can\$2.2 million was additionally announced for Manitoba in January 1997.⁸⁸

Irrigation, Infrastructure, and Crop Development Assistance—Prairie Farm Rehabilitation Administration (PFRA)

PFRA, a branch of AAFC, delivers a range of programs in Manitoba, Saskatchewan, Alberta, and the Peace River region of British Columbia in cooperation with the Provinces, communities, and agricultural producers. PFRA programs promote sustainable development of land and water resources and diversification into activities that contribute to economic security. In regard to potatoes, PFRA is currently assisting producers by identifying and mapping suitable lands and available water supplies, locating potato storage sheds, and analyzing how water is currently delivered to the land.⁸⁹

PFRA's Rural Water Development Program (RWDP) provides technical and financial assistance covering up to one-third of the cost of farm water development projects, or up to one-half the cost of water development schemes for small communities or rural groups.⁹⁰ In an interview with USITC staff, a PFRA official indicated that such projects provide water supplies to farms and rural households, and are generally not commodity-driven.⁹¹ In FY 1995/96 PFRA's expenditures for the development of dependable water supplies amounted to Can\$5.2 million and included Can\$724,276 for the Coteau Hills Rural Water Pipeline in Saskatchewan, as well as other projects.⁹²

PFRA is also the Federal implementing agency for a number of Federal/Provincial programs that have provided assistance for potato production and processing in Canada as shown in table 4-17. These programs are further discussed in the Provincial programs sections.

⁸⁷ Government of New Brunswick News Release, "New Brunswick Agricultural Council Receives CARD Funding," Apr. 17, 1997.

⁸⁸ AAFC News Releases, "Federal Funding Delivered for Agricultural Adaptation in Ontario," Mar. 25, 1996, and "Federal Funding Delivered for Rural Adaptation," Jan. 14, 1997.

⁸⁹ AAFC, "All About Canada's Vegetable Industry," found at <http://aceis.agr.ca/cb/facts/fao14e.html>.

⁹⁰ AAFC, *1996-97 Estimates*, pp. 56-57.

⁹¹ PFRA official, interview by USITC staff, May 5, 1997.

⁹² *Public Accounts of Canada 1996*.

Table 4-17**Federal-Provincial cost-shared programs affecting potato industries administered by the Prairie Farm Rehabilitation Administration**

Cost-shared program	Purpose	Provincial partner
Canada-Saskatchewan Partnership Agreement on Rural Development (PARD)	Provides assistance to rural entrepreneurs in business planning, market and human resource development	Saskatchewan Economic and Co-operative Development
Canada-Saskatchewan Partnership Agreement on Water-Based Economic Development (PAWBED)	Provides assistance for water-based infrastructure development, increasing on-farm irrigation efficiencies, and expansion of commercial crop storage and value-added crop processing facilities	Saskatchewan Water Corporation and other Provincial agencies.
Canada-Saskatchewan Agri-Food Innovation Agreement	Supports research and development of emerging agricultural commodities and sustainable agriculture. A Can\$91 million program terminating March 31, 2000	Saskatchewan Agriculture and Food
Canada/Saskatchewan Economic and Regional Development Subsidiary Agreement on Irrigation-Based Economic Development (SIBED)	Assistance for irrigation-based economic development in Saskatchewan. A Can\$100 million program signed in October 1986 and terminated in FY 1995/96	Saskatchewan Water Corporation
Saskatchewan Irrigation Development Centre (SIDC)	Conducts, funds, and facilitates irrigation research and demonstration activities to encourage diversification to higher valued crops	Saskatchewan Water Corporation
Canada/Manitoba Partnership Agreement on Municipal Water Infrastructure (PAMWI)	Assistance for municipal water infrastructure to eliminate constraints to economic development	Manitoba Rural Development
Manitoba Crop Diversification Centre (MCDC)	Identifies, evaluates, and facilitates use of new crops, technologies, and value-adding opportunities for agriculture	Manitoba Horticulture Productivity Enhancement Centre, Inc. and the Government of Manitoba
Canada Agri-Infrastructure Program (CAIP) ¹	In Manitoba, funds will be used to assist infrastructure development for agro-processing industries, including development of water supplies and related infrastructure, and irrigation	Government of Manitoba, various agencies

¹ The CAIP will provide Can\$140 million in Federal funding for agricultural-related infrastructure projects in Manitoba, Alberta, Saskatchewan, and British Columbia as follows: Manitoba (Can\$84.6 million), Alberta (Can\$29.0 million), Saskatchewan (Can\$25.9 million), and British Columbia (Can\$0.5 million). CAIP is one of several initiatives included under the Federal Government's 3-year Can\$300 million WGTAFF. Funds allocated to this program will be primarily used for road improvements. In Manitoba, however, the funds will be used to support irrigation and infrastructure development for agricultural industries. See AAFC News Release, "Federal Funding Announced for Manitoba Agricultural Infrastructure Improvements," Feb. 28, 1997.

Source: PFRA, "Prairie Farm Rehabilitation Administration (PFRA) Programs," found at <http://www.agr.ca/pfra/pfproge.htm>, updated Feb. 1997.

Export Promotion, Marketing, Training, and Representation

Canadian Farm Business Management Program (CFBMP)

The CFBMP assists farmers to upgrade their business management skills thereby leading to improved competitiveness in domestic and global markets, and to improved financial viability.⁹³ The CFBMP, a partnership program between AAFC, the Provinces and producers, was initiated in 1992. The original 3-year program ended in March 1995; it was renewed in the 1995/96 Federal budget and continues until March 31, 1999. Federal CFBMP contributions in FY 1995/96 amounted to Can\$8.4 million, which were distributed to Provincial agricultural institutions and to the Canadian Farm Business Management Council in Ottawa.⁹⁴

Export promotion and marketing

AAFC and Canada's Department of Foreign Affairs and International Trade (DFAIT) operate export market development programs to promote Canadian food and agricultural exports.⁹⁵ AAFC administers the Agri-Food Trade 2000 (AFT 2000) program which includes a branded program similar to the Market Access Program in the United States. DFAIT administers the Program for Export Market Development (PEMD), an all-industry export assistance fund. The PEMD includes access to international market information and provides services to facilitate export links. If export sales result from a PEMD plan or mission, companies must reimburse a portion of the PEMD contribution. To be eligible for AFT 2000 and PEMD funds, companies must participate through nonprofit agricultural or agribusiness associations which develop long-term export market strategies that are reviewed by the funding agencies.

USDA, FAS has estimated that the value of Canadian Government export market expenditures for both PEMD and AFT-2000 in FY 1995/96 totaled Can\$36.4 million, over half of which was spent on general market intelligence and market servicing.⁹⁶ AAFC reports expenditures of Can\$109,252 and Can\$77,600 during FYs 1995/96 and 1996/97, respectively, for promotional activities relating to processed potato products in markets outside the United States under AFT-2000.⁹⁷

Marketing and trade data

Marketing and trade data dissemination to Canadian horticultural producers is provided through "InfoHort" an electronic bulletin board maintained by Statistics Canada. Potato producers who

⁹³ AAFC, *Canadian Farm Business Management Program (CFBMP)* found at <http://www.agr.ca/policy/adapt/cardwhat/html>, May 23, 1997.

⁹⁴ *Public Accounts of Canada 1996*.

⁹⁵ USDA, FAS, *Review of Canadian Support Programs for the Potato Sector*, p. 11.

⁹⁶ *Ibid.*

⁹⁷ Canadian Embassy, posthearing brief.

subscribe to InfoHort receive information covering Canadian production, Provincial storage levels, weekly price data, and export movements. The cost is Can\$250 per year. AAFC also operates the Agri-Food Trade Service, which is an electronic system for trade and marketing information and advice. The program is similar to the Trade Leads Program and other market information programs offered by USDA, FAS.⁹⁸

Representation—Canadian Horticultural Council

The Canadian Horticultural Council represents the Canadian fruit, vegetable, floriculture and nursery production sectors, including potatoes. The Council represents the majority of the horticultural producing sectors across Canada with the purpose of developing industry consensus on issues.⁹⁹ The Council receives a grant from AAFC through the annual budget, which amounted to Can\$280,000 in FY 1995/96.

Transportation Assistance—Atlantic Region Freight Assistance Act (ARFAA)/Maritime Freight Rates Act (MFRA)

Prior to FY 1995/96, shippers of agricultural and manufactured products, including potatoes and frozen french fries, in Newfoundland, P.E.I., New Brunswick, Nova Scotia, and part of Québec were eligible for Federal transportation assistance under ARFAA, which applied primarily to truck movements, and MFRA, which applied primarily to rail.¹⁰⁰ Two types of assistance were available: the Selective Westbound Assistance Program, which provided a 50-percent subsidy to commercial carriers for the transportation of goods harvested, grown, or manufactured that were moved to points westward in Canada outside the select territory, and the Intra-Regional Assistance Program, which provided a 10-percent transportation subsidy on the shipment of eligible goods moved within the territory where the distance was at least 5 miles.¹⁰¹ The assistance did not apply to import or export traffic, including shipments to or from the United States.

Because the assistance was paid to the carrier, it is not possible to determine its value to the potato industry. Annual outlays under both programs were approximately Can\$99 million.¹⁰² The Federal Government's FY 1995/96 budget terminated ARFAA and MFRA. To ease the loss of the program, the Federal Government introduced a Can\$326 million adjustment program, to be paid over 5 years, through Federal/Provincial agreements to meet local shipper's

⁹⁸ USDA, FAS, *Review of Canadian Support Programs for the Potato Sector*, p. 11-12.

⁹⁹ Canadian Horticultural Council, prehearing brief, Apr. 21, 1997, p. 1.

¹⁰⁰ Canadian Embassy, prehearing brief, p. 9.

¹⁰¹ USDA, FAS, "Frozen French Fry Annual," Oct. 24, 1994.

¹⁰² USDA, FAS, "Frozen French Fry Annual," U.S. Embassy, Ottawa, No. CA5071, Oct. 25, 1995.

adjustment needs and to provide for improved infrastructure, such as roads. Payments by Province are shown in the tabulation below (Can\$ million).¹⁰³

New Brunswick	121
Nova Scotia	85
Québec	78
P.E.I.	21
Newfoundland	21
Total	326

It was noted at the USITC hearing by a representative of the National Potato Council and by AAFC in a 1995/96 report that the move to market freight rates in Eastern Canada could likely make the markets in the Eastern United States more attractive to Canadian producers.¹⁰⁴ Information submitted to the USITC by the National Potato Council for the Frozen Processed Potatoes Industry Segment indicated that freight rates from Eastern Canada to markets in Central and Western Canada were expected to rise by 20-30 percent following the elimination of these programs.¹⁰⁵ Officials from the N.B. Potato Agency and P.E.I. Potato Board, however, indicated to USITC staff that truck rates for potatoes have not changed significantly in recent years and that supply and demand are more important factors in determining trade flows.¹⁰⁶

Agricultural Research

AAFC administers 18 research centers, each with a mandate based both on national research issues and on issues affecting the crops grown in the area where the center is located.¹⁰⁷ Three of these research centers, the Charlottetown Research Centre, the Fredericton Research Centre, and the Lethbridge Research Centre have research mandates directed at potatoes as well as other crops and livestock.¹⁰⁸

AAFC introduced the Matching Investment Initiative (MII), a 5-year project, in FY 1995/96 to promote collaborative research with private industry, universities, and the Provinces. The MII

¹⁰³ Canadian Embassy, prehearing brief. The Canadian Embassy estimates that three-quarters of the assistance provided under this program was to shippers of manufactured goods.

¹⁰⁴ Transcript of the hearing, p. 111. Also, Vandenberg, "1995/96 Canadian Potato Crop."

¹⁰⁵ Collier, Shannon, Rill & Scott, prehearing brief, Apr. 21, 1997, exhibit 2, Atlantic Provinces Transportation Commission Media Release, "Freight Subsidy Loss Will Be Damaging," Feb. 28, 1995.

¹⁰⁶ Interviews conducted by USITC staff, May 6-7, 1997. One source indicated that transportation rates from New Brunswick to Toronto are around US\$2.00 per cwt and US\$2.50 per cwt from New Brunswick to New York, and that these rates have not changed appreciably in recent years.

¹⁰⁷ Research officer from the Charlottetown Research Centre, P.E.I., interview by USITC staff, May 7, 1997.

¹⁰⁸ Ibid. The officer noted that the Research Centre at Kentville, Nova Scotia has a mandate for research in food processing and occasionally has potato research projects.

provides progressively larger funding in each year (up to Can\$35.8 million in the fifth year).¹⁰⁹ MII funds can be accessed by all research centers, but only if there is a partner that is supporting 50 percent of the research cost. According to an AAFC official, MII funds cannot be used for new product development or to offset specific grower or company costs.¹¹⁰

Charlottetown Research Centre

The Charlottetown Research Centre has a mandate for potato management and feed crops that serve P.E.I. and the Atlantic Provinces, and a research mandate for clover breeding in Eastern Canada. The Centre's budget in FY 1997-98 will be about Can\$5.6 million, of which one-quarter is devoted toward potatoes.¹¹¹ Recent projects relating to potatoes include—¹¹²

- A survey on problems of the Maritime potato industry, with the P.E.I. Potato Board, the N.B. Potato Board, and the Fredericton Research Centre;
- Evaluation of growth characteristics and production of new seedlings and cultivars to support registration of superior cultivars and sales promotion in North America and overseas;
- Research on improved management practices for potato rotations, including use of fall cover crops;
- Identification of crop sequences to improve ability to suppress diseases of potatoes;
- Research on the dynamics of the Colorado potato beetle and other insect pests.

Fredericton Research Centre

The Fredericton Research Centre develops new cultivars and technologies for the production, handling, and management of potatoes, as well as develops technologies for sustainable food production from dairy and beef cattle. It has a total budget of about Can\$7.8 million.¹¹³ The centre operates a National Breeding Program for potatoes. Its mandate also includes research on pest management for potatoes. Recent projects for potatoes include—¹¹⁴

- Research on resistance to common scab and late blight;
- Research on potato viruses;
- Research on varietal selection to reduce mechanical injury of potatoes during harvest.

¹⁰⁹ AAFC, *1996-97 Estimates*.

¹¹⁰ Research officer from the Charlottetown Research Centre, P.E.I., interview by USITC staff, May 7, 1997.

¹¹¹ Ibid. The Centre's potato research is tied into its research program on soil management due to the need for rotation crops in potato production.

¹¹² Charlottetown Research Centre, "Potato Research Program," found at <http://www.res.agr.ca/charlotte/crcpot.htm>, updated Jan. 1997.

¹¹³ AAFC, "Fredericton," found at http://www.agr.ca/research/director/doc_10e.html#mandate, Mar. 10, 1997.

¹¹⁴ Ibid.

Lethbridge Research Centre

The Lethbridge Research Centre produces new technology and information to help develop more sustainable production systems for rain-fed and irrigated cultivated land and rangeland in the Prairie Provinces and part of British Columbia. Its crop research focuses on cultivar development, pest and disease management, and agronomy of cereals, forages, potatoes, and special crops. Recent activities related to potatoes include development of a DNA method to identify potato cultivars; research on resistance to thiabendazole, a chemical licensed in Canada for use in storage; disease ratings and registration for a new cultivar AC Ptarmigan; and research on molecular genetics for Amisk, a table potato suitable for french fries.¹¹⁵

Matching Investment Initiative (MII)

The following projects affecting potatoes were implemented under the MII during FY 1995-96—¹¹⁶

- Scientists at the Charlottetown Research Centre worked with Canada's potato industry to combat late blight, a serious fungal disease of potatoes. The focus is on the dynamics of the disease-how it spreads and how it evolves.
- The Fredericton Research Centre created a test for detecting the PVYn virus in dormant potato tubers. Previously the export-limiting virus could only be detected by growing the potatoes in Florida test plots in January, holding up shipments that were ready by November. Now, the potatoes can be tested any time after harvest.
- The Kentville Research Centre in Nova Scotia is working with the manufacturer of a product that maintains the processing quality of stored potatoes. The study will characterize the effect of the product to determine how best to control sprouting and disease.

Additionally, an official from the Charlottetown Research Centre has indicated that up to March 31, 1997, the Centre had 30 MII projects ranging from Can\$5,000 to Can\$100,000, with about 50 percent of these projects related to potatoes and/or soil management.¹¹⁷

Disease Control —PVYn Compensation

The PVYn Compensation Program reimbursed potato producers in P.E.I., New Brunswick, and Ontario for losses incurred as a result of the potato virus Y necrotic (PVYn) eradication program. The PVYn virus was first found in P.E.I. in late 1991 and early 1992. AAFC test results first indicated the virus was widespread, but subsequent retesting indicated that the

¹¹⁵ AAFC, Lethbridge Research Centre, found at http://www.agr.ca/research/directory/doc_27e.html, May 21, 1997.

¹¹⁶ AAFC, 1996-97 *Estimates*.

¹¹⁷ Research officer from the Charlottetown Research Centre, P.E.I., interview by USITC staff, May 7, 1997.

incidence was much less.¹¹⁸ This program compensated farmers who experienced financial losses due to the PVYn virus and the inaccurate test. Direct payments to producers in P.E.I., New Brunswick, and Ontario under this program amounted to Can\$2.4 million in 1993, of which Can\$988,000 and Can\$1.4 million went to potato producers in P.E.I. and New Brunswick, respectively. An additional payment of Can\$15.3 million was made to producers in New Brunswick in 1995.¹¹⁹

General Programs—Wage Assistance

Human Resources Development Canada (HRDC) programs available to food processors and other employers in Canada include the *Targeted Wage Subsidy Program*, which provides to employers a contribution of up to 60 percent of the wage of workers for up to 30 weeks, as well as training costs, for employment of currently unemployed workers.¹²⁰ The *Job Opportunities for Youth-Wage Subsidy Program* provides wage assistance of up to 60 percent for up to 26 weeks, as well as training costs, to hire young people.¹²¹ The *Transitional Jobs Fund* provides wage assistance for employers who are expanding an existing business, manufacturing a new product, and/or providing a new service to a community.¹²² It is not known whether these programs have specifically benefited the potato industry.¹²³

Provincial Programs—Prince Edward Island

Safety-net Programs

Enhanced NISA

Under an agreement between P.E.I. and the Federal Government, agricultural producers of NISA-eligible commodities in P.E.I. are eligible for a NISA “top off” for 3 years. Currently, producers can contribute 6 percent of their eligible net sales to a NISA account, with their

¹¹⁸ According to officials from the P.E.I. Department of Agriculture and Forestry, the retests showed that, in P.E.I., the virus was confined to 6 farms.

¹¹⁹ Statistics Canada, *Agriculture Economic Statistics*, Nov. 1996.

¹²⁰ Canada Business Service Centre (CBSC), *Targeted Wage Subsidy Program*, found at <http://cbsc.org/english/fedbis/bis/2028.html>, updated Jan. 2, 1997.

¹²¹ CBSC, *Job Opportunities for Youth-Wage Subsidy Program*, found at <http://cbsc.org/english/fedbis/bis/2142.html>, updated Apr. 18, 1997.

¹²² HRDC, *Transitional Jobs Fund*, found at http://www.hrdc-drhc.gc.ca/hrdc/guide/sect7_e.html, May 29, 1997.

¹²³ A Maine potato processor indicated to USITC staff that if he had located his plant in New Brunswick, half of his labor costs would have been paid by the Government in his first year of operation. Interview by USITC staff, May 9, 1997.

contributions being matched by the Federal Government at 4 percent and by the Provincial Government at 2 percent.¹²⁴

Bacterial Ring Rot Insurance

Bacterial Ring Rot Insurance is financed through a cost-sharing arrangement between potato producers and the Provincial Government. This program provides insurance to compensate producers in cases of potato crops positively infected with bacterial ring rot. The program was first made available in 1995 to eliminate ad hoc payments in cases of positive identification. In 1995, about one-sixth of P.E.I.'s seed potato farms were participating.¹²⁵

Agricultural Disaster Insurance Program (ADIP)

The ADIP, along with the Agriculture Research Investment Fund (discussed under research programs below) are P.E.I.'s two Safety Net Companion Programs introduced in 1995. ADIP allows producers to purchase protection against a disastrous drop in income due to commodity price increases, input cost decreases, or productivity decreases for a fee of Can\$50.¹²⁶ Payments are made if the difference between a farm's eligible agricultural income and expenses suffers more than a 30 percent drop in one year, compared to the previous 3-year average. To access ADIP funds, a farmer must be enrolled in NISA and withdraw his NISA funds first.

Credit Assistance Programs

Enterprise P.E.I. lending for potato farms

Enterprise P.E.I., a Provincial corporation, administers agricultural operating and term (capital) loans at rates that are competitive with those of commercial lenders.¹²⁷ Loans are currently provided at the Provincial lending rate plus 1.75 percent.¹²⁸

Lease/purchase program

The P.E.I. Land Development Corporation purchased agricultural land at fair market prices over the last 20-25 years and leased the land to farmers. The term of each lease was 5 years, and lease payments were calculated based on equal annual payments calculated at Enterprise P.E.I.'s

¹²⁴ P.E.I., "Agricultural Insurance Corporation, Agricultural Safety Net Programs," *Corner Post*, Feb. 1997, found at <http://www.gov.pe.ca/af/cornerpost/html>.

¹²⁵ P.E.I. Agriculture, Fisheries and Forestry, *Annual Report 1995* (Charlottetown: P.E.I. Department of Agriculture, Fisheries, and Forestry, 1995).

¹²⁶ Ibid.

¹²⁷ Canadian Embassy, prehearing brief, p. 4.

¹²⁸ Official from the P.E.I. Department of Agriculture and Forestry, interview by USITC staff, May 7, 1997. According to the Canadian Embassy, prehearing brief, Enterprise P.E. I. lending rates are more than 0.5 percent higher than the rates available from commercial lenders.

current cost of funds plus 1.75 percent.¹²⁹ All legal and other costs were charged to the account of the lessee. According to P.E.I. agriculture officials, the lease program was terminated in 1995 and the P.E.I. Land Development Corporation no longer exists.¹³⁰ Existing lease agreements continue to be honored with the last lease expiring in 2001.

Provincial lending for potato processing

A number of loans provided through the Ministry of Economic Development and Tourism (MEDT) to assist the expansion or development of potato processing and storage operations in P.E.I. were cited in the prehearing and posthearing briefs submitted to the USITC and are shown in table 4-18.

Table 4-18
Potato processing and storage loans and grants, P.E.I., 1994-96

Company	Loan amount (Can\$)	Loan terms	Purpose
King's County Development Corp.	Can\$4.3 million ¹	Grant	Build a potato storage facility for lease to Cavendish Farms and to benefit up to 2,600 acres of potatoes
Cavendish Farms	Can\$25 million	9 years, 8.02 percent fixed interest rate ²	1996 Can\$75 million french fry plant expansion
Small Fry Snack Foods	Can\$5 million ³	unknown	1996 opening of potato chip plant
Master Packaging, Ltd.	Can\$6.5 million,	5 years, interest set at the Provincial cost of borrowing (about 3 and a quarter percent)	1996 opening of plant to produce card-board boxes utilized by Cavendish Farms

¹ Contribution made through ACOA and related regional development initiatives.

² Cavendish Farms reports that the company did not receive any financial benefit from the loan received for its 1996 plant expansion because interest rates have since declined below the fixed rate currently being paid to the Province.

³ Contribution made through Canada/P.E.I. Cooperation Agreement on Industrial Development.

Sources: Cavendish Farms, posthearing brief, May 27, 1997; Collier, Shannon, Rill & Scott, prehearing brief, exhibit 2; Government of P.E.I., Legislative Assembly, *Hansard*, Mar. 29, 1996, found at <http://www.gov.pe.ca/leg/hansard/996/spring/29mar/han4.html>.

Production/Extension Programs

Potato Seed Incentive Program

This program provided assistance up to Can\$30 per acre to potato seed growers who were forced to sell infected seed in the lower-priced market for table stock. According to USDA, FAS, the annual average cost of the program was approximately Can\$28,000. It was terminated in 1995 due to budget cuts and the low incidence of bacterial ring rot.¹³¹

¹²⁹ Ibid.

¹³⁰ Official from the P.E.I. Department of Agriculture and Forestry, interview by USITC staff, May 7, 1997.

¹³¹ USDA, FAS, *Review of Canadian Support Programs for the Potato Sector*.

Limestone Rebate Program

This program, which provided rebates on purchases of limestone to improve soil ph, benefited potato, cereal, and forage production in P.E.I. The program was terminated in 1992. The annual cost of the program in that year was Can\$477,000.¹³²

Extension/Agricultural Resources Assistance

The Agricultural Resource Team (ART) of P.E.I.'s Department of Agriculture and Forestry provides advice, assistance, and information in the areas of horticultural and potato crop production, livestock production, land and soil resource management, mechanization, and farm engineering services. In FY 1996/97 the ART provided grants to agricultural producers, forecast at Can\$1.0 million.¹³³ A P.E.I. agriculture official has indicated that these funds were not allocated to potato growers.¹³⁴

Tax Assistance

Farmers' purchases of certain goods, including marked gasoline for use in vehicles used only on the farm, are exempt from the Provincial sales tax otherwise applicable to those goods.

Assistance for processors

A number of programs operated by the MEDT have benefited food processors, particularly in reducing environmental and energy costs. The MEDT has operated an Electrical Rate Relief Program which provides certain manufacturing and processing industries, including potato processors, a rebate of 5 to 8 percent on their electricity costs. The budget for this program is forecast at Can\$659.7 thousand in FY 1996/97.¹³⁵ The MEDT has funded energy audits in the past. If companies, including potato packers and processors, complied with the changes suggested in these audits, they were reimbursed for 25 percent of the associated costs.¹³⁶ The amount budgeted for these audits in FY 1997/98 is Can\$3,200, down from Can\$70,000 in FY 1996/97.

The Province has also funded the cost of infrastructure, such as wastewater treatment improvements, required of food processors and other manufacturers.¹³⁷ According to Cavendish Farms, such assistance helps to defray the capital cost of P.E.I.'s higher environmental

¹³² Ibid., p. 9.

¹³³ P.E.I., *Estimates 1997-98*.

¹³⁴ P.E.I. agriculture official, telephone interview by USITC staff, May 28, 1997.

¹³⁵ P.E.I., *Estimates 1997-98* (P.E.I.: Department of the Provincial Treasury, 1997).

¹³⁶ Legislative Assembly of P.E.I., *Hansard*, Mar. 29, 1996.

¹³⁷ Ibid.

standards.¹³⁸ Companies are expected to maintain any wastewater treatment facilities located on their plants and/or pay fees for the use of any municipal wastewater treatment facilities.

Disease Control under the Plant Health Act

The P.E.I. Department of Agriculture and Forestry funds the Potato Quality Program, which provides for education, enforcement, and monitoring in regard to the Province's Plant Health Act. FY 1996-97 expenditures under this program are forecast at Can\$687.6 thousand and FY 1997/98 expenditures are estimated at Can\$728.4 thousand.¹³⁹

Disinfection Program

P.E.I.'s Plant Health Act requires that warehouses, storage, trucks and trailers, equipment, and ocean vessels that handle P.E.I. potatoes be disinfected.¹⁴⁰ Starting in FY 1997/98, a fee of Can\$10 per vehicle will be charged to cover the cost of the disinfection service for these trucks.¹⁴¹ The Province disinfects approximately 20,000 transport vehicles each year. The fee is expected to add much less than 1 percent to the cost of shipping potatoes out of the Province.¹⁴² A mobile disinfection program will continue to be offered free of charge.

Potato Cull Burial

This program has two parts, Cull Burial and Cull Composting. Under the Cull Burial plan, which is designed to eliminate a source of contamination by bacterial ring rot, producers may apply for financial assistance equal to one-half the cost of burying cull potatoes, up to a maximum of Can\$300 per farm per year. Under the Cull Composting plan, producers may apply for financial assistance equal to one-half the cost of composting cull potatoes, up to a maximum of Can\$600 per farm per year. Payments to potato producers under this program were Can\$13,000 in 1994, Can\$7,000 in 1995, and Can\$3,000 in 1996.¹⁴³

Research

Laboratory Services and Plant Health Research

The Soil and Feed Testing Laboratory, which is operated by the Department of Agriculture and Forestry, provides chemical analysis on soil, feed, plant tissue and greenhouse media. It also

¹³⁸ Cavendish Farms, posthearing brief.

¹³⁹ Ibid.

¹⁴⁰ Telephone interview with P.E.I. Department of Agriculture official by USITC staff, May 14, 1997.

¹⁴¹ Embassy of Canada, prehearing brief, p. 8.

¹⁴² P.E.I., "Budget Emphasizes New Priorities," *Corner Post*, Apr. 1997.

¹⁴³ Statistics Canada, Agriculture Economic Statistics, pp. 24-25.

provides specialized tests, such as seed germination, manure, and compost analysis. A range of fees are charged for these tests.¹⁴⁴ The Department's Plant Health and Research Laboratory provides professional, technical, and other support services in the areas of plant health research and diagnostics. The Laboratory also maintains a Potato Pest Information Hotline.

Agricultural Research Investment Fund (ARIF)

The ARIF was established in 1995 by the Department of Agriculture and Forestry to assist agricultural organizations, agribusinesses, and individuals to finance applied and developmental research projects. The ARIF will match up to 3 dollars to every 1 dollar contributed by commodity boards or producer/industry associations. For individual producers and private businesses, the ARIF will match 1 dollar to every 3 dollars contributed by the applicant. The maximum contribution from the ARIF is Can\$60,000.¹⁴⁵

P.E.I. Food Technology Centre (FTC)

The FTC, which reports to the MEDT, was established in 1987 to provide scientific and technical expertise to agriculture and fisheries industries of P.E.I.¹⁴⁶ The FTC is involved in product development, sensory analysis, nutrition labeling, food safety, analytical services, and research and development.¹⁴⁷ Through its Technology Partnering Program, the FTC is active in helping to establish new food companies in P.E.I. by providing its technology knowledge and expertise in exchange for equity in a new food business. The FTC also provides some services on a fee-for-service basis.

Trade/Enterprise/Market Development Assistance

Enterprise P.E.I.

Enterprise P.E.I., a Provincial agency that reports to the MEDT, operates a number of programs to assist the development of private enterprises on P.E.I.¹⁴⁸ One such program is the *P.E.I. Trade Development Centre*, which promotes international trade and development through collection and distribution of information on export markets; applied research on the marketing of internationally competitive products and services; export awareness education and training, market entry and development initiatives, and the provision of export marketing advice.¹⁴⁹

¹⁴⁴ P.E.I., *Soil and Feed Testing Laboratory*, found at <http://www.gov.pe.ca/af/soilfeed/index.html>, May 25, 1997.

¹⁴⁵ P.E.I., "ARIF-Securing a Strong Agricultural Future," *Corner Post*, Feb. 1997.

¹⁴⁶ P.E.I., *Food Technology Centre*, found at <http://www.gov.pe.ca/ftc/index.html>, May 25, 1997.

¹⁴⁷ One such research project is assisting the potato processing industry by examining improvements in the utilization of potato waste.

¹⁴⁸ Many of these Enterprise P.E.I. programs have been supported through the Canada/P.E.I. Cooperation Agreement on Industrial Development and other Cooperation agreements.

¹⁴⁹ P.E.I., *Estimates 1997-98*.

Enterprise P.E.I. also operates a *Small Business Support Program* which provides services on a cost-shared basis to reduce financial risk in new product and market development, new business start ups and business expansions. Expenditures on this program are forecast at Can\$695 thousand in FY 1996/97 and at Can\$2.2 million in FY 1997/98, including Can\$1.0 million in Small Business Support. The *Development Assistance Program* provides infrastructure assistance,¹⁵⁰ venture capital programs, tax incentives, and other types of assistance to attract investment in P.E.I. Forecast expenditures under this program in FY 1996-97 amounted to Can\$13.8 million, of which Can\$9.9 million involved infrastructure assistance.¹⁵¹ Expenditures under this program were budgeted to decline to Can\$8.5 million in FY 1996/97.

Canada/P.E.I. Agreement on Regional Economic Development (REDA)

This REDA is a 5-year (April 1, 1996-March 31, 2001) plan providing support in seven strategic areas: strategic infrastructure, tourism, educational support, community economic development, export trade development prospecting, planning, and primary resource development.¹⁵² This REDA consolidates and replaces two former Cooperation Agreements.¹⁵³ It will provide Can\$20 million in additional funds, which will be cost-shared between the Federal and Provincial Governments on a 70:30 basis. ACOA is the Federal delivery partner. As noted earlier, ACOA is no longer lending to private businesses under regional agreements formed after August 1996. Thus, assistance will be provided only for noncommercial activities.

Provincial Programs—Manitoba

Safety-net Programs—Enhanced Crop Insurance

Manitoba's Enhanced Crop Insurance was implemented in the 1996 crop year. Under this program, the Federal and Provincial Governments pay the entire premium cost of insuring crops for up to 50 percent of long-term average yield, while producers pay a Can\$.20/per acre administration fee.¹⁵⁴ Producers are able to buy higher protection (70 to 80 percent) by paying

¹⁵⁰ Assistance for environmental infrastructure is supported through the P.E.I. Cooperation Agreement on Industrial Development.

¹⁵¹ Ibid.

¹⁵² P.E.I., News Release, "New Canada/P.E.I. Agreement of Regional Economic Development Announced," Feb. 17, 1997.

¹⁵³ One of the agreements replaced was the Canada/P.E.I. Cooperation Agreement on Primary Resource Development (PRDA) which ran from Apr. 1, 1994, to Mar. 31, 1996, and helped primary resource groups, organizations, and individuals to position themselves to take advantage of export development, import substitution, and niche and diversification market opportunities. According to MEDT officials, however, this agreement provided virtually no assistance to the potato sector in P.E.I. MEDT official, telephone interview by USITC staff, May 27, 1997.

¹⁵⁴ Manitoba Government News Release, "New Crop Insurance Enhancements Announced," Dec. 15, 1995.

a portion of the additional premium cost, with the remaining portion paid by Government. The enhancements are in effect for a 3-year trial period, and apply to all crops eligible for insurance, including potatoes.

Credit Assistance—Manitoba Agricultural Credit Corporation (MACC)

Direct loans and loan guarantees

MACC provides farmers with intermediate and long-term direct loans of up to Can\$250,000 for the purchase of, or improvements to, land, and for construction of farm buildings at an interest rate equal to MACC's cost of borrowing from the Province, plus 1 percent.¹⁵⁵ MACC also provides direct loans for debt consolidation at an interest rate of 9 percent for the first 5 years, after which the rate is set at the prevailing MACC rate. MACC's Young Farmer Rebate Program provides to eligible young farmers (39 years of age and under) a 2 percent rebate on the first Can\$100,000 of MACC loan principal, for each of the first 5 years of the loan, up to a lifetime maximum of Can\$10,000.¹⁵⁶ MACC also provides loan guarantees for operating credit made to producers through lending institutions at an interest rate not exceeding prime plus 1 percent. The loan guarantee cannot exceed Can\$250,000 and the loan is repayable annually at the end of the production cycle.

According to Manitoba officials, very few potato producers have been involved in these MACC lending programs because potato start up costs are relatively high and most potato farmers would go over the lending limits.¹⁵⁷ Additionally, MACC rates are relatively high.¹⁵⁸ According to these officials, MACC programs are primarily utilized by smaller, lower cost operations.¹⁵⁹ Loan limits for MACC loans and loan guarantees were raised from Can\$200,000 to Can\$250,000 in late 1995.¹⁶⁰

Diversification loan guarantees

The Diversification Loan Guarantee Program, a Can\$10 million program designed to help farmers adjust to the loss of Federal grain transportation subsidies, was implemented in December 1995. The program assists producers to move into profitable crops and value-added

¹⁵⁵ Manitoba Agriculture, "Programs and Services," found at <http://www.gov.mb.ca/agriculture/programs/aaa20s01.html> and Embassy of Canada, prehearing brief, Apr. 28, 1997.

¹⁵⁶ Manitoba Agriculture, *Annual Report 1995-96*, p. 13.

¹⁵⁷ Interview with officials from the Government of Manitoba by USITC staff, Apr. 11, 1997.

¹⁵⁸ MACC programs primarily serve higher-risk farmers who would have difficulty obtaining funds from other sources.

¹⁵⁹ Ibid.

¹⁶⁰ Manitoba Government News Release, "Loan Guarantee Program to Help Farmers Meet Post-Crow Challenge: Enns," Dec. 21, 1995.

projects by guaranteeing a portion of start-up funds borrowed from private lenders.¹⁶¹ The program guarantees 25 percent of loans ranging up to Can\$3 million and is available for a variety of enterprises, although the announced target areas include hog operations, beef cattle feedlots, and potato production and storage.¹⁶² According to Provincial officials, Can\$3.8 million in loans had been approved for hog and potato producers by August 1996.¹⁶³

Irrigation/Wastewater Treatment Assistance/Infrastructure

Canada/Manitoba Partnership Agreement on Municipal Water Infrastructure (PAMWI)

PAMWI is an 8-year agreement ending March 31, 1999, with equal contributions from the Federal, Provincial, and Municipal Governments for water and wastewater system upgrades in selected rural communities where industrial and residential development has been limited by the size and condition of existing systems.¹⁶⁴ The Provincial and Federal Governments have each committed up to \$30 million for this initiative, with the remaining \$30 million provided by the communities participating in the program.

During FY 1995/96, expenditures under PAMWI totaled Can\$20.2 million with a Federal share of Can\$8.4 million.¹⁶⁵ During FY 1995/96 PAMWI initiated a Can\$15 million project to upgrade a wastewater treatment plant at Portage la Prairie which would allow for the continued operation of a potato processing facility owned by McCain Foods Ltd.¹⁶⁶ McCain Foods subsequently announced that it would implement a Can\$68.8 million expansion in its facility following the completion of this wastewater project.¹⁶⁷ This expansion is projected to require an additional 6,880 hectares of irrigated potatoes, almost double its previous requirements.¹⁶⁸

Rural Economic Development Initiative (REDI)

REDI, which is administered by Manitoba Rural Development, provides assistance for commercially feasible development initiatives, particularly in the areas of business development and manufacturing. REDI initiatives include the Infrastructure Support Program, which

¹⁶¹ Manitoba Government News Release, "Diversification Loan Guarantee Program Well Received," Aug. 21, 1996.

¹⁶² Ibid.

¹⁶³ Ibid.

¹⁶⁴ "Canada/Manitoba Partnership Agreement on Municipal Water Infrastructure," found at <http://www.agr.ca/pfra/pamgene.htm>, updated Aug. 16, 1996..

¹⁶⁵ AAFC, *1996 Performance Report*, p. 34.

¹⁶⁶ USDA, FAS, "Frozen French Fry Annual," Oct. 18, 1996 and AAFC, *1996-97 Estimates*, p. 56.

¹⁶⁷ "Portage Expansion Begins," Collier, Shannon, Rill & Scott, prehearing brief, exhibit 2, Apr. 21, 1997.

¹⁶⁸ "A Potato Coup for Portage," *Winnipeg Free Press*, Sept. 20, 1995.

provided Can\$1.0 million in FY 1996/97 for the Portage la Prairie wastewater infrastructure program.¹⁶⁹

Canada Agri-Infrastructure Program (CAIP)

CAIP initiatives totaling Can\$30.6 million in Federal funding were announced for Manitoba in February 1997. These initiatives include Can\$1.9 million for agricultural and agribusiness research (through the Manitoba Rural Adaptation Council), and Can\$17.55 million for development of water supply/waste treatment and other infrastructure to assist the establishment of value-added industries, including an additional Can\$4.0 million for wastewater treatment improvements at Portage la Prairie.¹⁷⁰ An additional Can\$7.1 million will assist projects that provide water for domestic use and for development of value-added agricultural industries, including Can\$3.0 million for the Surplus Water Irrigation Initiative (see below).¹⁷¹ The Government of Manitoba, municipalities, and other interested participants will be invited to contribute an additional Can\$42.3 million for these projects under a cost-sharing arrangement.

Crop Expansion-Surplus Water Irrigation Initiative

Manitoba's Surplus Water Irrigation Initiative is directed at the development of community irrigation infrastructure to enable a further expansion in the 68,000 acres of potatoes that were produced in 1996.¹⁷² The Government of Manitoba gave its tentative approval for this irrigation project in mid-1996, the cost of which is projected at between Can\$16-20 million.¹⁷³ The project will develop retention ponds to hold water diverted from heavy spring runoffs. The ponds would hold 300-400 acre/feet of water designed to irrigate about 700 acres of potatoes through a pipeline system. It is estimated that up to 30,000 acres of potatoes (new and existing) could benefit by the end of the century. About 60 percent of Manitoba potatoes are under irrigation currently. The new plan would raise the level to about 75 percent.

According to USDA, FAS, the program is expected to offer interest relief loans for irrigation development through the MACC for up to 5.5 years and to provide average annual loan assistance of about Can\$160 per acre.¹⁷⁴ Provincial officials estimate that most commercial potato farmers grow about 500 acres of potatoes. District groups will be formed to allocate and charge farmer members for the water.

¹⁶⁹ Legislative Assembly of Manitoba, *Hansard*, May 30, 1996, found at http://www.gov.mb.ca/leg-asmb/hansard/2nd-36th/vol42b/h042b_1.html.

¹⁷⁰ *Ibid.*

¹⁷¹ *Ibid.*

¹⁷² AAFC, *1996 Performance Report*, p. 32.

¹⁷³ USDA, FAS, "Frozen French Fry Annual," Oct. 18, 1996.

¹⁷⁴ *Ibid.* This is based on interest relief of 8 percent on Can\$2,000, the maximum eligible amount per acre.

A commitment of Can\$500,000 was included in Manitoba Agriculture's FY 1996-97 budget to support this initiative.¹⁷⁵ Additionally, AAFC announced in February 1997 that Can\$3.0 million in Federal funding would be allocated for this project through the CAIP program.¹⁷⁶ CAIP funds will finance research and development, surplus water retention and distribution, water quality, environmental sustainability, soil conservation, and land use initiatives under this program.

Canada-Manitoba Agreement on Agricultural Sustainability (CMAAS)

CMAAS is a Can\$20.8 million cost-shared program between the Canadian Government and the Government of Manitoba to respond to sustainable agriculture issues and to expand efforts to improve resource management. The program runs to December 31, 1997.¹⁷⁷ Benefits for potato producers under this program have included an integrated pest management project involving selected vegetable, potato, and pulse crops.¹⁷⁸ During 1994-96 CMAAS financed the 3-year Assiniboine Delta Aquifer (ADA) Monitoring Project at the Manitoba Crop Diversification Center (MCDC) in order to assess the impact of irrigation on the movement of agricultural chemicals into the aquifer. More than 15,000 acres are irrigated from the ADA annually, most of which are used for potato production. The increase in acreage under irrigation has raised concerns about its effect on water quality.¹⁷⁹

CMAAS also contributed Can\$210,000 during FY 1995/96 for the Agazziz irrigation association for irrigation development that could provide up to 1,600 of additional irrigated acres, including potatoes.¹⁸⁰ Other contributions to this project included Can\$200,000 from the MCDC, Can\$300,000 from Manitoba Rural Development, and Can\$100,000 from Manitoba Natural Resources.

Rural development grants for irrigation

The Manitoba Rural Development, through the Manitoba Water Services Board, provides a small grant of Can\$3,000 to farmers who wish to develop irrigation farming. The Soil and Water Management Section of Manitoba Agriculture provides an assessment of soils and water

¹⁷⁵ Legislative Assembly of Manitoba, *Hansard*, May 23, 1996, found at http://www.gov.mb.ca/leg-asmb/hansard/2nd-36th/vol38b/h038b_2html.

¹⁷⁶ AAFC Release, "Federal Funding Announced for Manitoba Agricultural Infrastructure Improvements," Feb. 28, 1997.

¹⁷⁷ PFRA, "Canada-Manitoba Agreement on Agricultural Sustainability (CMAAS)," found at <http://www.agr.ca/pfra/cmaase.htm>, updated Feb. 18, 1997.

¹⁷⁸ Manitoba Agriculture, *Annual Report 1995-96* (Winnipeg: Manitoba Agriculture, 1996), p. 23.

¹⁷⁹ MCDC, *1996 Annual Report* (Carberry, Manitoba: MCDC, 1996).

¹⁸⁰ Legislative Assembly of Manitoba, *Hansard*, June 6, 1995, found at http://www.gov.mb.ca/leg-asmb/hansard/1st-36th/vol11/h011_4html

for irrigation suitability along with this grant program. Potential irrigators must apply for a license through the Water Services Board.¹⁸¹

Manitoba Crop Diversification Centre

The MCDC, located in Carberry, Manitoba, is a co-operative facility based on a 10-year agreement signed in 1993 between three partners: the Government of Canada, the Province of Manitoba, and producers and processors through the Manitoba Horticultural Productivity Enhancement Centre.¹⁸² The MCDC has participated in the development of the potato industry in Manitoba through applied research and demonstration activities at six locations in Manitoba. Its activities include identification, evaluation, and demonstration of new crops, technologies and value added opportunities for sustainable agriculture, including development of irrigated agriculture. Client services include technical assistance and educational activities that facilitate the appropriate development in irrigation and crop diversification.

Souris Valley Irrigation Centre

The Souris Valley Irrigation Centre was formed in 1994 by a group of farmers to promote new farming practices and crops in southwestern Manitoba with the assistance of a grant from the Sustainable Development Innovations Fund. In 1996, the center grew various crops, both irrigated and dryland, including potatoes, which are the cornerstone for the rotation at the center. The center currently receives support from local businesses, agricultural corporations and government, through Manitoba Agriculture and the West Souris River Conservation District.¹⁸³ In 1996 the center produced white potatoes for french fry processing, which were delivered to Midwest Foods of Carberry.

Tax Assistance

Agricultural producers in Manitoba benefit from an exemption from the Provincial sales tax on gasoline and diesel fuel used for agricultural production. Additionally, manufacturers in Manitoba are exempt from the Provincial sales tax (7 percent) on electricity used in manufacturing. Manufacturers also benefit from a 10-percent manufacturing investment tax credit.¹⁸⁴

¹⁸¹ Legislative Assembly of Manitoba, *Hansard*, June 5, 1995, found at http://www.gov.mb.ca/leg-asmb/hansard/1st-36th/vol10b/h010b_1.html.

¹⁸² AAFC, *1996-97 Estimates*, p. 120.

¹⁸³ MCDC, *1996 Annual Report*.

¹⁸⁴ "Manitoba Basic Business Taxes and Tax Incentives," found at http://www.area-development.com/FT_MAN.htm, June 11, 1997.

Research Programs

Sustainable Development Innovations Fund

Manitoba's Sustainable Development Innovations Fund provides funding for the development, implementation, and promotion of environmental innovation projects which support sustainable development. During FY 1995/96, the Fund provided Can\$340.2 thousand for agricultural projects. Included in this funding was Can\$95,000 for Manitoba's Seed Potato Growers Association and Can\$17.8 thousand for the Manitoba Potato Industry.¹⁸⁵

Manitoba Agri-Ventures Initiative (MAVI)

The MAVI provides matching funding for feasibility studies and business plans related to agricultural diversification initiatives and value-added projects. The program provides matching grants of up to Can\$5,000 for business development projects and matching grants of up to Can\$10,000 for collaborative projects in technology transfer and market development. As of April 1996, the MAVI had provided Can\$50,379 in assistance, with Can\$5,000 made available for a project to study the feasibility of creating a healthy potato chip product and the potential for all-season fresh strawberry and jam production.¹⁸⁶

Food Technology Centre (FTC)

The FTC, which is located in Portage la Prairie, provides a range of services to local, national and international food, feed, and beverage industries. Services include product development and testing, nutritional analysis, and labeling, sensory evaluation and shelf-life studies, process development, and engineering studies. The FTC is funded through Manitoba Rural Development. Services are provided on a fee-for-service basis.

Provincial Programs—New Brunswick

Credit Assistance

New Brunswick Debt Refinancing Program

The N.B. Debt Refinancing Program is an agreement with the Province of New Brunswick and the FCC announced in May 1995 to provide interest relief to New Brunswick potato and other

¹⁸⁵ Manitoba Agriculture, *1995-96 Annual Report*, pp. 75-76.

¹⁸⁶ Government of Manitoba News Release, "Manitoba Agriculture Helps Manitobans Explore Agri-business Opportunities," Apr. 18, 1996.

horticultural producers affected by blight and drought in 1994. Under the program, eligible producers were able to obtain an interest-free, debt refinancing loan from the FCC for 80 percent of their unpaid debt relating to the 1994 crop, repayable over a maximum 5-year period.¹⁸⁷ The interest-free loans were restricted to a maximum loan of Can\$500 per acre, or Can\$100,000 per farm. The remaining 20 percent of the unpaid debt could be refinanced at the commercial rate from the FCC or other financial institutions.

According to officials from the N.B. Department of Agriculture and Rural Development (NBDARD), 49 potato farmers in New Brunswick participated in this program.¹⁸⁸ Total interest paid by the Province amounted to Can\$65,720 in FY 1995/96.¹⁸⁹ Federal payments amounted to Can\$114,000 in FY 1995/96.¹⁹⁰ The interest relief is cost-shared 60 percent Federal-40 percent Provincial on the first Can\$5 million, and 80 percent Federal-20 percent Provincial on any excess over Can\$5 million.

Agricultural Development Bank (ADB)—Lending Programs

The ADB provides loans and loan guarantees to both viable agricultural operations as well as higher risk operations. The ADB administered the Farm Machinery Loans Act, which was terminated April 1, 1996,¹⁹¹ it also administers ad hoc Loan Guarantee programs that assist certain commodities from time to time.¹⁹² Loans to assist with the purchase of machinery under the Farm Machinery Loans Act had a favorable interest rate of prime plus 1 percent. Outstanding loans under this program amounted to Can\$539,234 as of March 31, 1996.¹⁹³

Under a program canceled in 1992, the ADB provided borrowers with partial interest rebates on loans with interest rates greater than 7 percent, or on FCC loans with interest rates greater than 9 percent. Maximum rebates could not exceed Can\$10,000 per year for loans advanced by the FCC and Can\$15,000 on loans advanced by the ADB.¹⁹⁴ No new loans were approved under this program after April 1, 1992. A 5-year phaseout ending March 31, 1997, was established for existing loans.¹⁹⁵

The New Entrant Financing Program provides loans of up to Can\$450,000 for 5 years to new farmers. During FY 1995/96 New Entrant Loans for all farming activities amounted to Can\$1.8

¹⁸⁷ Government of New Brunswick News Release, "Agricultural Loans for Potato and Horticultural Producers," NB 48, May 5, 1995.

¹⁸⁸ NBDARD officials, interview by USITC staff, May 6, 1997.

¹⁸⁹ NBDARD, *1995/96 Annual Report* (Fredericton: Department of Agriculture and Rural Development, 1996), p. 49.

¹⁹⁰ AAFC, *1996 Performance Report*, p. 61.

¹⁹¹ Canadian Embassy, prehearing brief, p. 7.

¹⁹² NBDARD, *1995/96 Annual Report*.

¹⁹³ Ibid. The *Annual Report* also reports 20 loans amounting to Can\$198,000 extended in FY 1995/96.

¹⁹⁴ USDA, FAS, *Review of Canadian Support Programs for the Potato Sector*.

¹⁹⁵ Canadian Embassy, prehearing brief, p. 6.

million.¹⁹⁶ NBDARD officials report that this program has been primarily used by dairy farmers.¹⁹⁷

ADB-Land Lease Purchase Program

The ADB has offered a Land Lease/Purchase Program to enable existing farmers to acquire additional land necessary to make a more viable farm unit.¹⁹⁸ Under this program, farmers could lease-to-purchase land held by the ADB. The term of the lease was 5 years, with the leasing fee equal to one Canadian dollar in the first 2 years. For years 3 to 5, the annual fee was 5 percent of the ADB's original capital investment. After the 5-year period, the farmer could purchase the property at the ADB's original investment or lease it for one additional 5-year term with a lease payment based on the new appraised value. All new leases after December 1993 were restricted to one 5-year term with the understanding that the property would be purchased within the 5-year term for the amount of the ADB's investment.¹⁹⁹

As of March 31, 1996, 35 leases involving 6,580 acres, or 75 percent of acres under this program, had been extended to potato-growing operations.²⁰⁰ According to NBDARD officials, this program was primarily used for transferring farms from father to son.²⁰¹ The Land Lease Purchase Program ended March 31, 1996;²⁰² however, the program has been placed under the Potato Expansion and Crop Expansion and Land Stewardship Programs (discussed below) to assist in bringing new land into production. The terms for leasing remain the same as under the previous program.²⁰³

Potato Expansion and Land Stewardship Program

In June 1995 a 5-year, Can\$2.5 million Potato Expansion and Land Stewardship Program was implemented to improve land-use management and increase potato production in New Brunswick. The purpose of the program is to improve plant stands; lead to better irrigation, land clearing, drainage and erosion control on existing farms and under-utilized agricultural land; and to provide better marketing schemes for small potatoes.²⁰⁴

¹⁹⁶ Ibid.

¹⁹⁷ Interview by USITC staff, May 6, 1997.

¹⁹⁸ NBDARD, *1995/96 Annual Report*.

¹⁹⁹ USDA, FAS, *Review of Canadian Support Programs for the Potato Sector*, and Canadian Embassy, prehearing brief.

²⁰⁰ NBDARD, *1995/96 Annual Report*, p. 52.

²⁰¹ Interview by USITC staff, May 6, 1997.

²⁰² Canadian Embassy, prehearing brief.

²⁰³ NBDARD officials, interview by USITC staff, May 6, 1997.

²⁰⁴ New Brunswick Department of Finance, *The New Brunswick Economy 1996* (Fredericton: New Brunswick Department of Finance, 1996).

Irrigation development/land clearing/stewardship

This program has several parts. The development of irrigation for potatoes is one component. Potato growers can apply for an interest buy-down to a maximum of 10 percent on the cost of developing water sources for irrigation.²⁰⁵ The improvement of crop rotation and expansion of available land for potatoes and other crops is supported through a land-clearing component. Assistance in the form of an interest buy-down is provided for costs associated with land clearing, leveling, and liming.²⁰⁶ A land-stewardship component is also included to provide an interest buy-down on the costs of eligible land drainage and soil conservation activities.

During FY 1995/96, 1,257 acres benefited from farmland development and conservation projects under the Potato and Agricultural Crop Expansion²⁰⁷ and Land Stewardship Programs.²⁰⁸ Interest buy-down amounted to Can\$30,000 under the Potato Expansion Program and to Can\$195,576 for various crops under the Land Stewardship Program in FY 1995/96.²⁰⁹

Soil and mapping survey

The NBDARD completed a Can\$104,000 mapping and soil survey in April 1997 to identify lands suitable for production in the Province's potato belt.²¹⁰ This project was jointly funded with McCain Foods Ltd. The purpose of this project was to identify areas in the Province's potato belt that could be suitable for expansion of potato, grain, and forage production.²¹¹

Tax assistance

Farm Land Identification Program (FLIP)

The FLIP currently provides a deferral of the Provincial tax on land and buildings used in agricultural production for registered land owners for up to 10 years. After 10 years, it is possible to receive a tax exemption for land and buildings that are still in agricultural use.²¹²

²⁰⁵ Canadian Embassy, prehearing brief, p. 7.

²⁰⁶ The interest buy down is based on a simple interest rate set at prime plus 1 percent, or an interest rate of 10 percent, whichever is less. The interest buy-down is applied to 100 percent of the approved cost in year 1 and the applicable amount for the interest buy down is reduced by 20 percent of the original amount in each subsequent year.

²⁰⁷ The Agricultural Crop Expansion program is for crops other than potatoes.

²⁰⁸ NBDARD, 1995/96 Annual Report, p. 27.

²⁰⁹ Ibid., p. 41.

²¹⁰ Government of New Brunswick News Release, "Mapping and Soil Survey Completed," NB397, Apr. 4, 1997.

²¹¹ Ibid.

²¹² NBDARD officials and New Brunswick farm representatives, interview by USITC staff, May 6, 1997.

A proposal to extend the tax deferred status of agricultural land and buildings for up to 15 years, starting January 1, 1998, is under review.²¹³ The FLIP provided a benefit of Can\$8 per acre in deferred taxes to registered land owners in tax year 1996.²¹⁴ Deferred taxes must be repaid with interest when the land use changes. NBDARD officials noted that farmers must still pay municipal taxes on agricultural land and buildings.²¹⁵

Tax rebates and exemptions

Agricultural producers may receive a rebate on taxes paid on gasoline used in tractors and combines for agricultural production. Diesel fuel is delivered as nontaxable to farmers, so no rebate is required. This rebate program is available for all natural resource-based business activities. Farmers also receive input tax credits on purchases of inputs used in agricultural operations.

Research/Extension, and Production

Farm Infrastructure and Technology Program

In May 1994, the Government of New Brunswick implemented a Can\$2.9 million program to improve farm infrastructures and marketing potential and to increase the availability of technology.²¹⁶ According to information supplied by McCain Foods, the Government of New Brunswick provides grant assistance of 25 percent for the purchase of irrigation equipment to expand use of this technology. This grant is available to potato as well as other growers. This grant is matched by McCain Foods in Florenceville, New Brunswick for potato growers under contract with McCain in the amount of Can\$20,000 with an additional Can\$5,000 if the equipment is purchased through a certain New Brunswick dealer.²¹⁷ McCain Foods has indicated that since the program began in 1994 it has provided only four matching grants.²¹⁸

NBDARD Programs

NBDARD finances the activities of a number of research, extension and crop development programs benefiting potatoes as shown in table 4-19.

²¹³ Government of New Brunswick News Release, "Farm Land Identification Program/Amendments," NB 157, Feb. 7, 1997.

²¹⁴ Based on a savings of Can\$3.5 million in deferred real property tax and 188,630 hectares registered in the program. NBDARD, *1995/96 Annual Report*, p. 25.

²¹⁵ Interview by USITC staff, May 6, 1997.

²¹⁶ N.B. Department of Finance, *The New Brunswick Economy 1995* (Fredericton: N.B. Department of Finance, 1995).

²¹⁷ Officials from McCain Foods, interview in Easton, Maine by USITC staff, May 8, 1997 and O'Melveny & Myers, LLP, Counsel to McCain Foods, posthearing brief, May 27, 1997.

²¹⁸ McCain officials, telephone interview by USITC staff, June 23, 1997.

Table 4-19

New Brunswick Department of Agriculture and Rural Development research and extension activities

Program	Recent activities
Plant Propagation Centre	Produces nuclear potato material for delivery to the Bon Accord Seed Potato Farm and the N.B. potato industry. Location of the Canadian Potato Variety Repository.
The Bon Accord Seed Farm	Provides high quality nuclear and Elite I seed potatoes to private producers for further propagation. ¹
N.B. Horticulture Centre	Provides field and greenhouse facilities in support of technical and demonstration projects involving vegetables, small fruit, potatoes, and ornamentals.
Potato Centre	Provides technical information and guidance to potato growers in the areas of seed, table and processing production, and pest, storage, and physiological management. FY 1995/96 highlights include <ul style="list-style-type: none"> • establishment of a Late Blight Alert Network in partnership with McCain Foods and the N.B. Potato Agency; • obtaining registration of a new product to control the Colorado potato beetle; • evaluating the benefits of supplementary irrigation; • assistance to the industry in the Federal Government's revision of the Seed Regulations and inspection fees; and • evaluation of new potato storage construction technologies.
Soil and Climate section, N.B. Department of Agriculture and Rural Development	Provides analytical laboratory services for soil, feed, and tissue. Fees are charged for laboratory services. Other recent activities include adaptive research trials on irrigation for potatoes, advice and recommendations on crop suitability for various soil and climatic locations, and other advisory services.

¹ According to USDA, FAS, Bon Accord's seed is purchased at approximately 20 percent below its production cost. New Brunswick potato officials have indicated that this is because Bon Accord is a high-cost, inefficient seed producer.

Source: NBDARD, 1995/96 Annual Report, pp. 31-35, and USDA, FAS, Review of Canadian Support Programs for the Potato Sector.

Agribusiness/Rural Development/Market Development

Strategic Partnership Development Fund

This Fund provides partnership assistance to help industry applicants access funds for agricultural production, food processing, rural-based small businesses, and marketing. During FY 1996-97, Can\$300,000 was available under this program, which was used to support farm safety projects, adaptive research, and industry efforts to sell New Brunswick's agricultural products internationally. Approximately Can\$2.0 million will be available in FY 1997-98.²¹⁹ The following research, marketing, and industry development projects for the potato industry were announced in May 1997 (Can\$).²²⁰

²¹⁹ Government of New Brunswick News Release, "Applications/Strategic Partnership Development Fund," NB1881, Dec. 20, 1996.

²²⁰ Government of New Brunswick News Release, "Strategic Partnership Development Fund," NB 620, May 6, 1997.

<i>Organization</i>	<i>Project</i>	<i>Amount</i>
C&M Farms	Site-specific potato management	24,850
Tobique Farms Ltd.	Mexico seed potato market expansion	17,950
N.B. Seed Potato Growers	Study on prespouting and spacing	11,600
Michaud Equipment Ltd.	Potato planter evaluation	6,800
Cavendish Farms	Study on Centre Pivot Irrigation	6,000
Killoween Farms	Study on forage seed/potato system	5,250
Kevin Floyd Ltd.	Potato quality control laboratory	5,000
N.B. Seed Potato Growers	Development project	4,550
N.B. Potato Agency	Potato chip development	4,255
Ferme Michaud Ltd	Tuber and drip irrigation	1,350
Max van Cingel/Killoween Farms	Study of crops for potato belt	1,350
McCain Foods Ltd	Study on drip tape methods	1,045

Canada/New Brunswick Regional Economic Development Agreement (REDA)/Department of Agriculture and Rural Development

The Marketing and Business Development Branch of the NBDARD participates in industry and market development initiatives with primary producers and food-processing companies. Trade expansion initiatives have been funded through the New Brunswick REDA.²²¹ For example, two trade missions were conducted in March 1997 to the Leeward Islands and to Mexico to promote seed potato exports.²²² Additionally, in 1996 the N.B. Agriexport Inc. was formed under NBDARD. N.B. Agriexport is an umbrella company that plans and carries out feasibility studies and technology transfer projects; sources supplies and inputs; and provides training and business financing for the purpose of facilitating export projects.²²³ Primary areas of expertise of this company include fresh and processed potatoes, livestock, and other horticultural products.

²²¹ The REDA, a 5-year agreement between the Government of Canada and the Province of New Brunswick, was signed in August 1996 to provide funding for economic development projects in New Brunswick. The agreement consolidated five previous Cooperation agreements between the Federal government and New Brunswick, and it provided for additional funding of Can\$53.7 million, of which 70 percent will be provided by the Federal government. The REDA is administered by ACOA and by New Brunswick's Regional Development Corporation (RDC).

²²² Government of New Brunswick, "Trade Missions to Leeward Islands and Mexico," NB 308, Mar. 17, 1997.

²²³ NBARD, *Agriexport, Inc.*, found at <http://www.gov.nb.ca/agricult/export.htm>, June 25, 1997.

Food Processing Incentives

A number of incentives are available to food processors and other value-added industries to locate in New Brunswick. For instance, a blueberry processing plant undertaking a Can\$3.5 million expansion in 1996 received a repayable, interest-free contribution under ACOA's Business Development Program, a non-repayable contribution through the Federal Government's Transitional Job Creation fund, and a 3-year interest-free loan and matching contribution from New Brunswick's Ministry of Economic Development and Tourism (NBMEDT).²²⁴ Also in 1996, the NBMEDT and ACOA announced their support for a new potato processing plant that will produce and market value-added potato products from fresh market grade out potatoes, although the details of any assistance were not made known.²²⁵ The new potato processing plant, which includes a U.S. investor, will target the Northeastern United States as its initial market.²²⁶

An additional program under the NBMEDT available to help rural businesses is the *Small Entrepreneur Capital Assistance Program*. This program provides nonrepayable assistance for eligible capital costs and salaries to help small businesses (less than 25 employees) develop or expand.²²⁷

Provincial Programs—Québec

Safety-net Programs—Québec Farm Income Stabilization Insurance Program (FISI)

The FISI²²⁸ program, which is administered strictly at the Provincial level, guarantees net annual returns to participating producers for a wide range of field crops and livestock, including potatoes. The program calculates commodity support levels according to a cost of production model. The formula includes fixed and variable costs, depreciation, and an adjustment for difference between the average wage of farm workers and the average wage of other workers in the Province.

²²⁴ Government of New Brunswick News Release, "N.B. Blueberry Plant Expands and Creates Jobs," NB 933, June 24, 1996.

²²⁵ Government of New Brunswick News Release, "Twenty-five New Jobs for Centreville," NB418, Apr. 12, 1996.

²²⁶ Ibid.

²²⁷ Government of New Brunswick, Small Entrepreneur Capital Assistance Program (SECAP), found at http://www.gov.nb.ca/edt/biz_eng/smbus1.html, June 4, 1997.

²²⁸ In a posthearing submission for the Gouvernement du Québec dated May 15, 1997, Pepper, Hamilton and Scheetz LLP indicated that the FISI is not a countervailable subsidy as determined by three separate panels under the Canada-United States Free Trade Agreement. However, in its administrative reviews of the countervailing duty order on live swine from Canada, the Department of Commerce found the FISI program to be countervailable. See 61 F.R. 52420, Oct. 7, 1996.

For potato producers, an insured yield is determined based on historical average yields for the Province. The gross payout per hectare equals the insured yield multiplied by the 'compensation finale' (the predetermined support price per kg) and FISI cash advances. The Province pays two-thirds of the cost, with producers paying the remainder. According to Statistics Canada, payouts of Can\$20.7 million and Can\$2.7 million were made to potato growers in 1993 and 1994, respectively, under the FISI.²²⁹ Statistics Canada reported no net payouts under this program for potatoes in 1995 and a payout of Can\$7.3 million in 1996.²³⁰ The posthearing brief filed for the Gouvernement du Québec indicated that insurance payments equal to Can\$8.2 million were made for the period August 15, 1995-July 31, 1996.²³¹

Agricultural Credit

The Office du Crédit du Agricole du Québec provides interest rate assistance to finance agricultural operations through a number of programs. On long-term loans, Québec provides assistance equal to one-half of the interest rate where it exceeds 4 percent. An additional 'subsidy' in the first 4 years of the loan is available, depending on the educational level of the farmer. For example, farmers with degrees or college courses in agriculture are entitled to an additional interest rate subsidy of 4 percent in the first year, declining to 1 percent in the fourth year. Other farmers may receive an additional interest rate subsidy half that available to the more schooled applicants.²³² According to Statistics Canada, interest rebates to all farmers in Québec amounted to Can\$34 million in 1996.²³³

Tax Assistance

Farmers in Québec receive a tax rebate on Provincial taxes due on agricultural property used in agricultural production. The amount of this rebate to all farmers in Québec in 1996 amounted to Can\$50 million in 1996.²³⁴ Québec agricultural producers are also exempt from retail sales taxes on fuel used for agricultural purposes.

²²⁹ Statistics Canada official, telephone interview by USITC staff, May 14, 1997.

²³⁰ Ibid. and facsimile data from Statistics Canada received May 30, 1997.

²³¹ Pepper, Hamilton, & Scheetz, posthearing submission, May 27, 1997. The Statistics Canada data are on a calendar year basis. The payout of Can\$8.2 million includes part of the 1994 payment reported by Statistics Canada.

²³² Ibid., p. 8.

²³³ Statistics Canada, facsimile data received by USITC staff, May 30, 1997.

²³⁴ Ibid.

Agribusiness Development/Research—Canada-Québec Subsidiary Agreement on Agri-Food Development

This agreement is a Can\$40 million multiyear cost-shared agreement contributing to agribusiness development in the Province.²³⁵ The agreement funds research projects which take both a global and specific approach, as well as projects that bring university, government, and private-sector partners together. The agreement also funds projects which are aimed at developing new innovative technologies.²³⁶

Provincial Programs—Alberta

Safety-net Programs

Bilateral agreements

The Alberta Government signed a series of bilateral agreements with the Federal Government in July 1996 to implement a number of income safety net programs following Alberta's withdrawal from the GRIP.²³⁷ These agreements are effective for 3 years ending March 31, 1999. The bilateral agreements include—

The Agricultural Safety Net Management Agreement, which allows the establishment of industry development initiatives, includes initiatives for beef, hogs, sheep and wool, and agribusiness development.

The NISA Companion Agreement, which allows Alberta to withdraw from the NISA program after 1996. The Government of Canada plans to offer the NISA to Alberta farmers as a "Federal-only" program with the Federal government matching NISA contributions by Alberta farmers up to the maximum of 3 percent of eligible sales.

The Canada-Alberta Agreement on the Farm Income Disaster Program (FIDP), which provides for the Federal Government's contribution to this Alberta program. Under the FIDP,

²³⁵ AAFC, "Research gets boost in Québec," found at <http://www.agr.ca/cb/agvision/n19611e.html>, Jan. 9, 1997.

²³⁶ In its administrative reviews of the countervailing duty order on live swine from Canada, the Department of Commerce found the Technology Innovation Program under the Canada/Québec Subsidiary Agreement on Agri-Food Development to be countervailable, but not the research program. See 62 F.R. 18089, Apr. 14, 1997.

²³⁷ AAFC News Release, "Alberta Signs Significant Agricultural Income Safety Net Agreements with Government of Canada," July 4, 1996.

which was formerly known as the Alberta Farm Income Stability Program, Alberta farmers may receive a payment from the Agriculture Financial Services Corp. (AFSC) if the difference between their eligible agricultural income and expenses suffers more than a 30 percent drop in one year compared to their previous 3-year average.

The *Arable Acres Supplementary Payment Companion Agreement*, which provides Can\$50 million in Federal funding to cover payments to landowners who own eligible cultivated acres that did not receive a payment under the Western Grain Transition Payments Program (WGTPP). Landowners targeted for this program include those who did not return their WGTPP application forms, and those who had tame hay, forage, pasture, horticultural crops (including potatoes), or other arable acres that were ineligible for payment under WGTPP rules.²³⁸

Crop Insurance

The Alberta Government announced changes in the cost-sharing formula for 1997 which will result in lower premiums for farmers at every coverage level.²³⁹ For coverage up to 50 percent, the farmer pays 20 percent of the premium, with the Government paying the remaining 80 percent. For coverage between 50 and 80 percent, the farmer pays 50 percent and the Government 50 percent, the same as in previous years.

Credit Assistance²⁴⁰

Agricultural Financial Services Corp.

The AFSC was formed during FY 1994/95 as a result of a merger between the former Agricultural Development Corp. (ADC) and the Alberta Hail and Crop Insurance Corp.²⁴¹ The ADC had previously operated a program to assist potato producers in improving or constructing storage facilities. This program was ended in March 1994.²⁴²

²³⁸ Alberta Agriculture, Food and Rural Development (AAFRD), *Agrinews for the Week of January 13, 1997*, found at <http://www.gov.ab.ca/ministry/comdv/agn9702.html#arable.html>.

²³⁹ Government of Alberta, *Introduction of "New Look" Crop Insurance*, found at <http://www.gov.ab.ca-pab/4526.html>, Mar. 20, 1997.

²⁴⁰ Statistics Canada reports that Alberta farmers received Can\$7.2 million in interest rebates in 1995 and Can\$8.1 million in 1996. It is not known under which credit assistance these rebates were provided or whether the rebates benefited potato growers in Alberta. Statistics Canada, *Agriculture Economic Statistics*, Nov. 1996, and facsimile data received May 30, 1997.

²⁴¹ Government of Alberta News Release, "1994-95 Sees Many Accomplishments and Cost Savings," Sept. 27, 1995.

²⁴² USDA, FAS, *Review of Canadian Support Programs*, p. 6.

The AFSC provides loans to beginning farmers and to high-risk farmers wishing to refinance, as well as disaster insurance.²⁴³ The AFSC provides direct loans to established farmers who cannot obtain alternative financing at its cost of borrowing rounded up to the nearest one-half percent. AFSC's Beginning Farmer Program provides direct loans of up to Can\$200,000 to beginning farmers at rates fixed at 9 percent for the life of the loan and for up to 20 years. The AFSC also provides guarantees for loans made through commercial lenders. Under this program, the maximum interest rate for loans of 10 years or less is prime plus one percent; for loans over 10 years, the maximum rate is prime plus one and one-half percent.

AFSC's Farm Disaster Assistance program provides direct and guaranteed loans to producers who have suffered an agricultural disaster and who do not have adequate insurance coverage or other compensation in place, or are unable to obtain financing on reasonable terms and conditions. Interest rates under this program are defined individually, and may be reduced for up to a 5-year period at the AFSC's discretion.

AFSC additionally provides direct loans or guarantees to businesses that process or sell agricultural products, or service and supply the agricultural industry. Commercial interest rates apply to such lending. In FY 1995/96 20 Alberta agribusinesses received Can\$5.3 million in funding through AFSC, and through joint efforts with the FCC, Can\$8.6 million of financing was arranged for seven other agribusinesses.²⁴⁴ It is not known whether any of this funding applied to potato processing activities.

Alberta Farm Credit Stability Program

The Alberta Farm Credit Stability Program provided fixed-rate loans at 9 percent interest for terms of up to 20 years. The lending phase of the program ended in July 1990, but loans may be transferred from one borrower to another provided the new borrower meets the program's eligibility criteria. The loans were provided to assist farmers in restructuring outstanding debt, or for improving the efficiency and productivity of farm operations through approved projects.²⁴⁵ The purpose of the program was to reduce and stabilize the cost of borrowed capital for eligible farmers, with the loans being administered by chartered banks, credit unions, and Treasury Branches. The Alberta Agriculture, Food and Rural Development (AAFRD) has estimated that over 30,000 loans totaling Can\$1 billion were outstanding as of March 31, 1996.²⁴⁶

²⁴³ AAFRD, *Agricultural Financial Services*, found at <http://www.agric.gov.ab.ca/sperg/financia.html>.

²⁴⁴ AAFRD, *Annual Report 1995/96*, found at <http://www.agric.gov.ab.ca/ministry/annul96i.html>.

²⁴⁵ AAFRD, *Farm Credit Stability Program*, found at <http://www.agric.gov.ab.ca/sperg/financia.html>.

²⁴⁶ AAFRD, *Annual Report 1995/96*.

Irrigation Assistance

The Irrigation Branch of AAFRD assists irrigators through consultations, research, planning, demonstrations, and education on matters relating to agricultural irrigation. The Government of Alberta provides financial assistance for irrigation development, maintenance, and rehabilitation to 13 organized Irrigation Districts as well as to private irrigators.²⁴⁷ Aside from domestic or certain agricultural users, water users in Alberta must have a license, which provides the licensee a right to an allocation of water for certain purposes.

The 13 Irrigation Districts manage and administer water delivery infrastructure for municipalities, industries, rural residences, livestock facilities, as well as farms. In 1996, the Districts supplied water to 1.27 million assessed irrigated acres. In 1996, potatoes accounted for 21,441 acres, or less than 2 percent, of the assessed acres in the 13 Irrigation Districts.²⁴⁸

The Irrigation Rehabilitation Program (IRP) and the Irrigation Rehabilitation Endowment Fund (IREF) have provided financing for rehabilitation of Alberta's irrigation infrastructure and for improving operational efficiency and effectiveness of irrigation systems in the 13 Irrigation Districts. This assistance has been provided through a cost-share formula under which, currently, the Province pays 75 percent and the water users pay 25 percent.²⁴⁹ In 1995/96, Can\$17.2 million was expended under the IRP and Can\$7.2 million was expended under the IREF by the Irrigation Council, an agency of AAFRD.²⁵⁰ From 1969 to FY 1995/96, grants amounting to Can\$437.7 million were expended under these and other irrigation rehabilitation and expansion programs.²⁵¹ Currently, funds under the IREF have been fully spent and the program is scheduled to expire as part of a reduction in spending by the Provincial Government.²⁵²

Approximately Can\$558 million was expended by Alberta Environmental Protection under its Water Management Systems Improvement Program (WMSIP) to upgrade headworks systems and a number of main canal systems in the Irrigation Districts.²⁵³ The WMSIP funding ended in March 1995.

²⁴⁷ Grant assistance is provided for private irrigation development on a 50-50 cost-share basis. However, according to the Government of Alberta, there are few, if any, private irrigators producing potatoes. Telephone interview with Government of Alberta official by USITC staff, Apr. 28, 1997.

²⁴⁸ Facsimile data received by USITC staff from Cameron & Hornbostel LLP, Apr. 22, 1997.

²⁴⁹ Irrigation districts increased their share of the cost to rehabilitate irrigation infrastructure to 25 percent from 14 percent during FY 1995/96.

²⁵⁰ AAFRD, *1995/96 Annual Report*.

²⁵¹ AAFRD, *The Land Base*, found at <http://www.agric.gov.ab.ca/agdex/000/0002500b.html#Irrigation>.

²⁵² Interview with Government of Alberta officials by USITC staff, Apr. 9, 1997.

²⁵³ AAFRD, *The Land Base*.

Farmers in the Irrigation Districts pay an annual per acre water fee. In 1996, these rates ranged from Can\$6.50 per acre to Can\$16.15 per acre, depending upon the Irrigation District.²⁵⁴ Most irrigated potato production is located in the higher rate Districts.

Tax Assistance—Alberta Farm Fuel Benefit Program (AFFB)

The AFFB offers motor fuel to Alberta farmers at a rate competitive with the rates offered to farmers in other parts of North America. The AFFB consists of a fuel tax exemption and the Alberta Farm Fuel Distribution Allowance, which further reduces the cost of diesel fuel. Since September 1996, the tax exemption portion has allowed farmers to purchase marked gasoline and diesel without paying the 9 cents per liter provincial fuel tax. The Alberta Farm Fuel Distribution Allowance reduces the cost of marked diesel fuel further by 6 cents per liter. Farmers are additionally exempt from the tax on propane of 6.5 cents per liter provided the propane is used for eligible farming purposes.²⁵⁵ AAFRD estimates that approximately 50,000 farmers have received Can\$32 million in benefits from the 6 cent per liter reduction on diesel fuel, in addition to the provincial tax exemption.²⁵⁶

Research, Industry Assistance, and Market Development

Crop Diversification Centre

The Crop Diversification Centre is a Provincial research institution funded by the AAFRD. The Centre maintains an ongoing research project to assist variety development of new potato cultivars by providing information on processing and quality attributes for raw potato varieties.

Industry assistance

The Processing Industry Division of AAFRD works with Alberta agribusinesses to encourage expansion and new investment. Assistance is provided in the form of information and access to technical and other services. The Industry Development Branch of this Division provides cost-shared financial assistance for feasibility projects, provided the projects are conducted by a third-party consultant.²⁵⁷ The Food Processing Development Centre, also part the Processing Industry Division, is a fully-equipped development laboratory facility. Services are provided to industries according to a fee schedule.

²⁵⁴ Facsimile data received from Cameron & Hornbostel LLP, Apr. 22, 1997. There is an additional pressure charge for acres serviced by a gravity pressure pipeline.

²⁵⁵ AAFRD, *Alberta Farm Fuel Benefit (AFFB)*, found at <http://www.agric.gov.ab.ca/sperg/financia.html>.

²⁵⁶ AAFRD, *Annual Report 1995/96*.

²⁵⁷ AAFRD, *Industry Development Branch—Financial Incentive Program*, found at <http://www.agric.gov.ab.ca/ministry/org.idbf.html>.

Market development

AAFRD assists Alberta agricultural industries to take advantage of overseas marketing opportunities in a number of ways.²⁵⁸ The AAFRD established an electronic networking system (Agriculture Food Alliance) to facilitate information sharing and cooperation on marketing opportunities. AAFRD also holds trade shows and participates in overseas trade missions to promote Alberta's exports and investment opportunities. AAFRD additionally opened a trade office in Portland, Oregon in July 1996 to ensure access to the Pacific Northwest and to develop market information about industry opportunities in the Western United States.²⁵⁹

Provincial Programs—Ontario

Credit Assistance

Ontario provides loan guarantees to farmers under two programs. One program provides operating credit at competitive rates for 12 months. The second, a Young Farmer Credit Program, guarantees loans through chartered banks and designated credit agencies at 1 percent above the prime rate. The guarantee under the latter program is for 10 years.²⁶⁰ The Food Industry Financial Assistance Program has provided funding, primarily loans, to food processing companies for new technology and infrastructure improvements.

Agricultural Research

The Ontario Ministry of Agriculture, Food, and Rural Affairs (OMAFRA) funds a network of researchers and laboratories at Guelph, the Horticultural Research Institute of Ontario, and three regional agricultural colleges. Research undertaken at these facilities is developed into on-farm applications at over 10 different experiment stations, each focused on adapting research results to Ontario's diverse agricultural regions.

²⁵⁸ Ibid.

²⁵⁹ Government of Alberta News Release, "Alberta Agriculture Open for Business in Vancouver, Washington," July 31, 1996.

²⁶⁰ USDA, FAS, *Review of Canadian Support Programs*, p. 8.

Tax and Input Assistance

Tax assistance

The Farm Tax Rebate Program²⁶¹ provides farmers with a rebate on the Provincial property tax levied on farmland and outbuildings. The rebate was increased to 75 percent in FY 1994-95.²⁶² In January 1997, the Government of Ontario announced a new farm tax initiative to replace this program effective January 1, 1998. The new program will maintain a separate property class for farm lands, which will continue to be assessed on their farm use. Such eligible lands will be taxed at 25 percent of the municipal residential tax rate. This measure is estimated to provide a Can\$171 million tax cut for Ontario farmers.²⁶³

The Retail Sales Tax Rebate Program provides farmers with rebates on the Provincial sales tax of 8 percent on any building materials purchased to either help build or modernize a building or structure used exclusively for farm purposes.²⁶⁴ This program was originally announced in Ontario's 1996 budget, and current plans are to extend this program until March 31, 1998. Statistics Canada reports that agricultural producers received a rebate of Can\$6.9 million on the Provincial sales tax on purchases of fuel used for agricultural purposes in 1996.²⁶⁵

Wage assistance

Statistics Canada reports that agricultural producers in Ontario received wage assistance amounting to Can\$893,000 for agricultural labor in 1996.²⁶⁶ Agricultural producers in Ontario will be eligible to receive wage assistance amounting to Can\$2.00 per hour for youth employed from April 15, 1997, up to September 30, 1997.²⁶⁷ This Provincial program is expected to help an additional 1,500 employees obtain jobs working in Ontario fields during the summer of 1997.²⁶⁸

²⁶¹ In its administrative reviews of the countervailing duty order on live swine from Canada, the Department of Commerce found the Ontario Farm Tax Rebate Program to be noncountervailable. See 61 F.R. 52410, Oct. 7, 1996.

²⁶² Ontario Ministry of Agriculture, Food and Rural Affairs, *Annual Report 1994/95* (Ontario: Queen's Printer, 1995), p. 12.

²⁶³ Government of Ontario News Release, "New Initiative Brings Fairness to Farm Property Owners," Jan. 16, 1997, found at <http://www.gov.on.ca/OMAFRA/english/about/new/press/html>.

²⁶⁴ Government of Ontario News Release, "Tax Rebate Spurs Farm Construction and Jobs, Villeneuve Tells Ontario Farmers," Mar. 27, 1997, found at <http://www.gov.on.ca/OMAFRA/english/about/new/press/html>

²⁶⁵ Statistics Canada, facsimile data received by USITC staff, May 30, 1997.

²⁶⁶ Ibid.

²⁶⁷ Government of Ontario, *1997 Summer Jobs Service*, found at <http://www.gov.on.ca/OMAFRA/english/infores/jobs.html>, June 1, 1997.

²⁶⁸ "Summer Job Program Should Help Farmers," *Ontario Tater Times*, Apr. 1997.

Agribusiness and Rural Development—Grow Ontario Investment Program

The Grow Ontario Investment Program is a Can\$15 million provincial initiative announced in Ontario's 1996 budget to develop new value-added products and services.²⁶⁹ The program provides research funds for projects such as developing value-added products and services and applying new technologies; it provides marketing funds for such projects as quality enhancement, branding "Ontario" agricultural products, import replacement, or export promotion and marketing. Competitiveness funds are provided for strategic investments to help the rural sector and for promotion of innovation. No direct support to individuals or businesses is provided under this program.

Provincial Programs—Saskatchewan

Safety-net Programs

Enhanced NISA

An Enhanced NISA Program allowed Saskatchewan producers to make additional contributions to their NISA accounts during the 1995 and 1996 calendar years. Eligible producers were allowed to contribute an additional 2 percent of eligible net sales which was matched by Government.²⁷⁰ Participants were also eligible for a Federal "top-up" contribution of 1.45 percent of eligible net sales. Potato producers were not eligible for Enhanced NISA in 1995, but were eligible in 1996. The Enhanced NISA ended in 1997 with only the base NISA program in effect in that year.²⁷¹

Enhanced Crop Insurance

The Federal and Provincial Governments have agreed to pay 80 percent of the premium for 50 percent coverage with the producer paying 20 percent in 1997. Coverage as high as 80 percent can also be purchased with the producer paying 60 percent of the incremental premium cost and the Government contributing 40 percent of the cost. The Provincial and Federal Governments have also reduced the debt accumulated by the Saskatchewan Crop Insurance Program through contributions of Can\$128 million and Can\$162 million, respectively. These contributions,

²⁶⁹ OMAFRA, *The Grow Ontario Program*, found at <http://www.gov.on.ca/OMAFRA/english/about/grow/index.html>, June 2, 1997.

²⁷⁰ Saskatchewan Agriculture and Food (SAF), NET INCOME STABILIZATION ACCOUNT (NISA)- 1995 Stabilization (Tax) Year, found at <http://www.gov.sk.ca/agfood/programs/nisa/htm>.

²⁷¹ SAF official, telephone interview by USITC staff, Mar. 7, 1996.

along with debt pay-down through normal operations, will reduce crop insurance premiums for Saskatchewan producers by about 10 percent on average.²⁷²

Credit/Financial Assistance

Agricultural Credit Corporation of Saskatchewan (ACS)

The ACS provides long-term loans and loan guarantees to Saskatchewan farmers to help establish, develop, and diversify farm operations for which financing is not readily available and covers all guarantees in case of default.²⁷³ The ACS Capital Loan Program provides direct loans to individuals, partnerships, companies, or cooperatives for development or expansion of livestock or other diversified agricultural enterprises at interest rates equal to the ACS cost of borrowing plus 1-2 percent. Interest rates are fixed for the entire term of the loan.²⁷⁴

Crown Land Leasing and Sales

Saskatchewan Agriculture and Food (SAF) operates Crown Land Lease and Crown Land Tender Sales Programs. The former provides leases for Crown land designated for agricultural use for up to 33 years with the opportunity to renew or transfer the lease to a family member. According to SAF, over 6.8 million acres of Crown land are under lease to 13,500 farmers for the purpose of grain farming, grazing, and hay production.²⁷⁵ Land not under lease and eligible for sale is tendered for sale to eligible buyers under the latter program.

Irrigation/Water Supply Assistance

Irrigation development/services—Saskatchewan Water Corporation (Sask Water)

Sask Water is a Provincial Crown Corporation which owns, manages, controls, develops and administers the use of all water resources in Saskatchewan. Sask Water receives revenue from Saskatchewan's General Revenue Fund, as well as from other agencies, to fund its acquisition of capital assets and operations. Sask Water has developed more than Can\$250 million worth

²⁷² Saskatchewan Crop Insurance Corporation, "Canada-Saskatchewan Crop Insurance," found at <http://www.gov.sk.ca/agfood/scic97high.htm>.

²⁷³ SAF, "Mandate," found at <http://www.gov.sk.ca/govt/agfood/mandate.htm>, June 6, 1997. The Government of Saskatchewan reports that it provided Can\$500,000 in interest 'subsidies' and Can\$8.1 million for loan losses to the ACS in FY 1995/96. See Government of Saskatchewan, *Public Accounts 1995/96* (Regina: Ministry of Finance, 1996), p. 40.

²⁷⁴ SAF, "Capital Loan Program," found at <http://www.gov.sk.ca/agfood/programs.htm>, June 6, 1997.

²⁷⁵ SAF, "Crown Land Lease Program," found at *ibid.*, June 9, 1997.

of irrigation projects over the past 25 years.²⁷⁶ As of end 1995, 322,000 acres of land in Saskatchewan were under irrigation.²⁷⁷ Saskatchewan's 5,600 acres of potatoes, which are produced under irrigated conditions, represent less than 1 percent of these acres. However, increased production of high value crops, including dry beans and potatoes for seed and table stock markets, in the Lake Diefenbaker Development Area of Saskatchewan is a priority for Sask Water.²⁷⁸

Sask Water provides technical and agronomic assistance to Sask Water users. This assistance includes feasibility analysis, engineering and technical assistance for irrigation water supply development, including up to 100 percent of actual costs of reservoirs, head work, and supply systems owned and operated by user groups and individuals, and up to 50 percent of costs for the purpose of conveying water from the source to the irrigated parcel for individual projects. Additionally, Sask Water provides erosion control and farm dugout pumping assistance.²⁷⁹ Grants to persons, communities, and organizations in 1995 included Can\$3.3 million for Irrigation Development and Can\$212 thousand for individual irrigation-Agricultural Development.²⁸⁰ Sask Water users pay irrigation fees through their local irrigation districts. Fees are structured to recover all operational costs. In addition, local districts pay annual fees which are directed into replacement funds.²⁸¹

Sask Water potato expansion

In 1995, Sask Water established an Irrigation and Agricultural Services Division to promote economic development and diversification through water-based projects.²⁸² In December 1996, SPUDCO, a division of Sask Water, was created to expand production of potatoes in the Lake Diefenbaker area. According to news reports, SPUDCO is planning to cost-share production by providing financing for as much as 75 percent of new potato production and to take a 49 percent equity position in storage facilities, if necessary.²⁸³ It is reported that Sask Water, through SPUDCO, has budgeted up to Can\$12 million over 3 years to finance this initiative.²⁸⁴

²⁷⁶ USDA, FAS, "Frozen French Fry Annual," Oct. 18, 1996.

²⁷⁷ Sask Water, *Annual Report* (Moose Jaw, Saskatchewan: Sask Water, 1996).

²⁷⁸ *Ibid.*, p. 17.

²⁷⁹ SAF, "Programs," found at <http://www.gov.sk.ca/agfood/programs.htm>, Apr. 20, 1997.

²⁸⁰ Sask Water, *Annual Report*, p. 30. A program providing financial assistance for development of on-farm irrigation had been discontinued by FY 1995/96. See Government of Saskatchewan, *Public Accounts 1995/96*, p. 197.

²⁸¹ USDA, FAS, "Frozen French Fry Annual," Oct. 18, 1996.

²⁸² Sask Water, *Annual Report*.

²⁸³ "Potato Producers Split over Gov't Subsidies," *The Star Phoenix*, Saskatoon, Saskatchewan, Feb. 17, 1997.

²⁸⁴ Canadian Taxpayers Federation Saskatchewan, "Let's Talk Taxes," A Weekly Commentary, Jan. 31, 1997.

Canada/Saskatchewan Economic and Regional Development Subsidiary Agreement on Irrigation-Based Economic Development (SIBED)

SIBED, which was administered by PFRA and Sask Water, was a Can\$100 million program completed in FY 1995/96.²⁸⁵ The program provided assistance for development of new cost-effective irrigation supply systems and irrigation-related research; value-added processing; improvement of existing irrigation systems; and construction of new works in Southwestern Saskatchewan.

Canada/Saskatchewan Partnership Agreement on Water-Based Economic Development (PAWBED)

PAWBED was created in 1991; the current partnership agreement ends on December 31, 2000. Three programs have been approved under PAWBED—²⁸⁶

- Program 1—development of water-related infrastructure to improve the viability of communities or to increase their capacity to support agriculture and agribusiness-related development;
- Program 2—improvements to existing irrigation infrastructure, promotion of irrigated crop production, and removal of water related constraints to diversification possibilities; and
- Program 3—support for secondary economic activities such as produce cleaning, grading, processing and storage.

PAWBED has provided assistance for diversification and intensification of irrigated production, particularly for potatoes and mint, as well as for a wide variety of agricultural processing industries, including potato, flax straw, alfalfa, beef, aquaculture and vegetables.²⁸⁷ PAWBED has been active in funding potato storage facilities as well as a business plan for the Coteau Hills Potato Corporation, which has been expanding seed potato production in the Province in the area of Lucky Lake.²⁸⁸ According to a newspaper announcement, the largest potato packaging plant in Western Canada, a Can\$7-million project of the Coteau Hills Potato Corporation, will be up and running in the town of Lucky Lake in the fall of 1997.²⁸⁹

A list of approved PAWBED water-development projects in potato-growing areas, and other projects assisting the potato sector in Saskatchewan is provided in table 4-20.

²⁸⁵ AAFC, *1996-97 Estimates*, p. 110.

²⁸⁶ Ibid.

²⁸⁷ AAFC, *1995-96 Performance Report*, p. 34.

²⁸⁸ PAWBED Feature Article, "Seed Potato Acres on the Rise," found at <http://www.agr.ca/pfra/pawbar6.htm>, updated Dec. 3, 1996.

²⁸⁹ "Potato Packaging Plant Set," *Regina Leader-Post*, Feb. 4, 1997. Also, SAF, "SK Potatoes," *AGBITS*, Vol. 5, Issue 11, May 26, 1997

Table 4-20

Approved projects for general water supply infrastructure, irrigation effectiveness, and commercial development affecting the potato sector under the Canada/Saskatchewan Partnership Agreement on Water Based Economic Development, as of February 1997

Program	Beneficiary	Type of project
Assistance for water supply infrastructure:	- Coteau Hills Pipeline Pumpstation-Sask Water	Assistance for pumpstation works to provide raw water to proposed rural pipeline project
	- Coteau Hills Rural Development Corporation	Rural water pipeline to supply year-round water to 90 farms and 3 villages; also potato storage facility and 4 large hog operations;
	- Saskatchewan Centre for Soil Research	Maps showing the suitability of areas in Saskatchewan for growing potatoes and dry beans
Assistance for enhanced irrigation effectiveness	- Craven Riverside Gardens	Irrigation improvement to allow a more precise application for the production of vegetables and potatoes
	-Saskatchewan Irrigation Development Centre	Research and demonstration
Assistance for processing and commercial development to support the establishment or expansion of water-dependent industries ¹	<ul style="list-style-type: none"> - Birch Holdings -Norman & Marilyn Cay -Robert & Tracey Cay - Coteau Hills Potato - Craven Riverside Gardens - Dave Dolman - Dutch Potato Farm - Ed & Jane Fielder - Gursky Potato - Hyland Seed Potato - Hyland Seed Farm - Ingram Seeds - Lakeview Growers - Jim Massey - Mor-Kare Farms - Prairie Dome Potatoes - Albert J. Robertson -Riverhurst Agricultural Products -Sask Ida Farms -Saskatchewan Seed Potato Growers Association -Ray Skalicky & Son -J. Torrie 	<ul style="list-style-type: none"> Potato storage facility Potato storage and processing facility Nuclear seed potato lab and greenhouse Complete a feasibility/business plan; provide for an expansion of an existing potato storage facility; purchase of a scale Equipment requirements to expand markets for gourmet potatoes Construct an addition to existing potato storage and washing building Additional potato storage and work area for distribution of seed potatoes Seed potato storage facility Potato storage facility Construct a new potato processing and storage facility Help purchase a scale Expansion of seed potato storage facility Construction of potato storage Renovations to potato storage Construction of seed potato storage and purchase of related equipment Seed potato storage facility Potato storage and production of seed potatoes Increase storage and production capacity for seed potatoes Purchase and renovate for potato storage Funding for industry-wide marketing initiative Potato storage facility Renovation for potato storage facility

¹ For storage facilities, PAWBED generally provides 25 percent of eligible capital costs. The contributions are repayable, with the first Can\$20,000 exempt from repayment unless the total Government contribution exceeds Can\$100,000, in which case the entire contribution is repayable. Recipients are required to make payments in five equal installments. Interest is charged only if the payment is delayed.

Source: Compiled from "Partnership Agreement on Water Based Economic Development Summary of Approved Projects," found at <http://www.agr.ca/pfra/pawbappe.htm>, updated Aug. 16, 1996, and Feb. 20, 1997, and Canadian Embassy, posthearing brief.

Saskatchewan Irrigation Development Centre

The SIDC serves as a focal point for irrigation research and demonstration activities in Saskatchewan. Efforts by the SIDC have led to producer diversification into seed potato production in irrigated areas in the Province. According to a recent SIDC performance report, SIDC played a pivotal role in the identification of the Northern Vigor concept²⁹⁰ and the average 20 percent yield increase using Saskatchewan-grown seed potatoes.²⁹¹ Seed potato production acres doubled in Saskatchewan between 1993 and 1994 and doubled again between 1994 and 1995 to reach 2,512 acres in the latter year.²⁹²

Tax Rebates

The Saskatchewan Farm Fuel Program reduces farm input costs through a refund of the Provincial tax on gasoline and a tax exemption on the purchase of colored diesel fuel purchased for farming operations. The maximum yearly refund on all gasoline and propane purchased is Can\$900 per farm family. The total estimated benefits of the tax exemption on diesel and refund on gasoline was estimated at Can\$117 million in 1993.²⁹³

In March 1997 the Government of Saskatchewan announced a tax rebate on the Provincial sales tax payable on building materials used in livestock operations and horticultural facilities, including greenhouses and vegetable and raw fruit storage facilities.²⁹⁴ The purpose of the tax program is to assist the diversification of the rural economy by providing a favorable climate for investment in the construction of livestock and horticultural facilities.

Research and Agribusiness Development

Under Saskatchewan's long-term economic development strategy, the *Partnership for Growth*, three programs, the Agri-Food Innovation Fund, the Agriculture Development Fund, and the Agri-Food Equity Fund, are to be targeted to make investments that promote diversification of Saskatchewan's agricultural sector, especially into "pork, potatoes and food processing."²⁹⁵ Additional industry assistance programs are administered by SAF and Saskatchewan Economic and Co-operative Development (SECD).²⁹⁶

²⁹⁰ This concept refers to the phenomenon that northern grown seed potatoes have higher yield potential than southern-grown seed.

²⁹¹ "SIDC Current Focus and Achievements," found at <http://www.agr.ca/pfra/sidcproe.htm#ment>, updated Dec. 1, 1996.

²⁹² *Economics and Agronomics of New Crops-Seed Potatoes*.

²⁹³ SAF, "Farm Fuel Program," found at <http://www.gov.sk.ca/agfood/programs.htm>.

²⁹⁴ Government of Saskatchewan News Release, "Budget Provides Tax Rebate for Agriculture," Agriculture and Food 97-113, Mar. 24, 1997.

²⁹⁵ Saskatchewan Department of Economic Development, *Partnership for Growth*, Feb. 1996, found at <http://www.gov.sk.ca/govt/econdev/page7b.htm>.

²⁹⁶ The Department of Economic Development was renamed the Department of Economic and Co-operative Development in Mar. 1997.

Canada/Saskatchewan Partnership Agreement on Rural Development (PARD)

PARD is a Federal-Provincial cost-shared program in Saskatchewan that provides assistance for project planning, marketing and human resource development to increase entrepreneurial skills. Funding for 147 PARD projects totaled more than \$1.5 million in FY 1995/96.²⁹⁷ A potato project funded in that year involved development of a feasibility study and business plan for storing, processing and marketing potatoes, carrots, berries, and fiddle heads for B&B Agri. Ltd.²⁹⁸ All projects under PARD must be completed by March 1998.

Agri-Food Innovation Fund

The Agri-Food Innovation Fund is a \$91 million Federal-Provincial program terminating March 31, 2000, which supports research and development of emerging agricultural commodities and sustainable agriculture. The strategic areas targeted for funding under this initiative include horticulture (Can\$3.0 million), food processing (Can\$13.0 million), sustainable agriculture (Can\$8.0 million), biotechnology (Can\$19.0 million), as well as other general and commodity-specific areas (Can\$48 million).²⁹⁹

Agriculture Development Fund (ADF)

The ADF provides financial assistance for research projects undertaken by producers, researchers, companies, cooperatives, associations, and food processors that develop, diversify, and advance Saskatchewan agribusiness industries. As of August 1995, an ADF project financed storage studies for the development of a sous vide potato product by a local potato packaging plant, while others were involved in financing the development of economic diversification strategies for the agricultural sector.³⁰⁰ Twenty-two additional agriculture research and development projects approved to receive a total of Can\$1.25 million from ADF were announced in August 1996.³⁰¹

²⁹⁷ AAFC News Release, "Agreements Promote Economic Development in Rural Saskatchewan," Mar. 15, 1996.

²⁹⁸ "PARD Summary of Approved Projects," found at <http://www.agr.ca/pfra/pardappe.htm>, updated Dec. 3, 1996.

²⁹⁹ "Agri-Food Innovation Fund, "Initial Strategic Area Allocations," found at <http://www.gov.sk.ca/agfood/afif/allocate.htm>.

³⁰⁰ ADF, "Current Project Listing (August 1995)," found at http://www.eru.usask.ca/research_and_funding/adf/Adf.htm.

³⁰¹ Government of Saskatchewan News Release, "Agriculture Development Fund Project Approvals Announced," No. 400, Aug. 16, 1996, found at <http://www.ca/saskgov/newsrel/1996Aug/400.96081601.html>.

Agri-Food Equity Fund

The Agri-Food Equity Fund is a 5-year, Can\$20 million program established by ACS in early 1995 to provide equity capital for new or expanding value-added agriculture and food businesses. The fund purchases equity in and provides management assistance to new or expanding businesses, with the maximum equity investment not exceeding Can\$500,000 or 49 percent of the total equity of the business.³⁰² As of January 30, 1997, the Agri-Food Equity Fund had made six investments, with Can\$17 million remaining to be expended.³⁰³ None of the six approved projects involved the potato industry.

Market development/industry assistance

SAF administers the Agriculture Industry Assistance program which provides financial assistance to various agricultural organizations which, in turn, provide services, administrative, assistance, and financial assistance to support agribusiness industries. SAF provided Can\$1.9 million in such assistance in FY 1995/96; it is unknown whether any of this assistance benefited the potato industry.³⁰⁴

SECD administer's a number of programs to assist industry development, including value-added processing, in Saskatchewan. The *Diversification Program* assists with domestic procurement and international trade opportunities; identifies potential investment sources; and encourages out-of-Province business firms to locate their business operations in Saskatchewan.³⁰⁵ The *Business Investment Program* supports technology and market development, and value-added business projects. In FY 1995/96, Can\$15.2 million was transferred to various businesses and organizations for product and market development under this program, of which Can\$60,000 and Can\$11,500 was provided to the Vegetable Producers of Saskatchewan and the Saskatchewan Food Processors Assoc., respectively.³⁰⁶ It is unknown whether these specific amounts benefited the potato industry.

The SECD also provides an operating grant to the *Saskatchewan Opportunities Corporation*, which delivers a range of financial services including direct loans, loan guarantees, and equity to small- and medium-sized Saskatchewan businesses. The Corporation targets value-added, export-oriented and import-replacement industries with priority given to agriculture and food processing, among other industries.³⁰⁷

³⁰² "The Agri-Food Equity Fund," found at http://www.funding/ag_equity/Ag_food.htm#overview.

³⁰³ SAF, "Equity Fund," *AGBITS*, Vol. 5, Issue 4, Feb. 17, 1997.

³⁰⁴ Government of Saskatchewan, *Public Accounts 1995/96*, p. 39.

³⁰⁵ *Ibid.*, p. 44.

³⁰⁶ Government of Saskatchewan, *Public Accounts 1995/96*, p. 50.

³⁰⁷ *Ibid.*, p. 45.

CHAPTER 5

Analysis of Competitive Factors

Introduction

This chapter provides an analysis of the competitive conditions that affect the U.S. and Canadian fresh and processed potato industries, concentrating on the U.S. market. Separate analyses are provided for supply factors, demand factors, exchange rates, terms of sale, and government involvement. These factors are summarized in table 5-1. Finally, this chapter provides an econometric analysis of the U.S. potato market.

Table 5-1
Potatoes: Listing of competitive factors affecting the U.S. and Canadian fresh and processed potato industries

Competitive factor ¹	
Supply factors: Industry structure: Number of producers Capacity Concentration Production Location Availability of inputs Ownership Integration International trade Stocks Technology Costs: Production costs Transportation costs	Demand factors: Market structure: Market size and distribution Demand attributes and shifts Consumer income Seasonality Market share Stocks Prices Exchange rates Terms of sale Government assistance, trade, and regulatory programs: Government assistance programs Seed certification Trade policy: Tariffs Nontariff barriers Market access in Mexico

¹ May vary according to region or individual firm.

Source: Compiled by the staff of the U.S. International Trade Commission.

The competitive environment in the U.S. potato market has changed significantly in recent years. A variety of factors have contributed to an increasingly competitive situation faced by U.S. fresh and processed potato producers with respect to Canadian producers. There has been a shift in market demand away from fresh potatoes toward further processed products; the expansion of Canadian fresh potato production and processing capacity; changes in government programs to conform to the WTO Agreement on Agriculture; growth in exports; increasing foreign investment in the processed potato sector; and, a shift to North-South regional trading patterns between the United States and Canada.

Supply Factors

The primary competitive factors affecting the supply of fresh and processed potatoes in the United States and Canada include industry structure, stocks, technology, and production and transportation costs. This section compares these factors in the United States and Canada.

Industry Structure

Industry structure affects competitiveness in terms of the ability to supply markets in absolute terms as well as in terms of production efficiencies. Major structural factors in the fresh and processed potato industries include the number of producers, capacity, concentration, production, location, the availability of inputs, the nature and source of ownership, the level of integration, and international trading activity.

Number of Producers

In 1992, the year of the latest *U.S. Census of Agriculture*, there were about three times as many potato farms in the United States (14,500) as in Canada (4,700 in 1991) (table 2-5, table 4-2). There has been a long-term trend toward fewer farms in both countries. In 1996, the U.S. frozen potato products industry comprised 11 firms and 29 plants. The Canadian industry consisted of four major firms with six plants and about a half dozen smaller-volume regional firms in 1996.¹

Capacity

The area planted in potatoes in the United States far exceeds that of Canada. In 1996, U.S. acreage was about four times as great as that in Canada for potatoes other than seed (table 2-3, table 4-2). However, U.S. acreage for seed potatoes was only about two and one-half times

¹ USITC staff interviews with officials of the U.S. and Canadian frozen potato products industries, Apr. 7-17, 1997; U.S. Department of Agriculture (USDA), Foreign Agricultural Service (FAS), "Frozen French Fry Annual," U.S. Embassy, Ottawa, No. CA6064, Oct. 18, 1996, p. 3.

greater than Canadian acreage (table 2-1, table 4-4). The average U.S. potato farm was 45 percent larger than the average Canadian potato farm in 1991/92 (table 2-5, table 4-2). Potato farms in some of the major potato-producing U.S. States are larger than those in the major potato-producing Canadian Provinces, averaging 230 acres in Idaho and 300 acres in Washington (compared to 127 acres in Prince Edward Island (P.E.I.) and 218 acres in Manitoba in 1991/92 (table 2-5, table 4-2)). Larger farm size generally allows for increased production efficiencies, which may contribute to a competitive advantage, albeit in conjunction with other factors, such as climate.

U.S. frozen potato products capacity was about four and one-half times greater than similar Canadian capacity in 1996.² However, in 1997, U.S. processors announced capacity cutbacks of about 4 percent. In 1996, expansions in potato processing capacity occurred in P.E.I. and Manitoba. Additionally, as noted in Chapter 4, Manitoba has implemented a Surplus Water Irrigation Initiative to meet the expected increase in demand for irrigated processing potatoes from this expansion in capacity. New Brunswick and Saskatchewan are also seeking to expand production of fresh potatoes through programs and incentives.

Concentration

Both the U.S. and Canadian fresh potato industries exhibit very low levels of concentration. The largest U.S. fresh potato producer, R.D. Offutt Company, accounts for less than 4 percent of total acreage planted and production of potatoes; the next largest producer is reportedly one-third this size.³ Comparable information is not available for Canadian producers.

Both the U.S. and Canadian frozen processed potato industries are relatively concentrated compared with their fresh potato counterparts. The following tabulation shows the concentration ratios for the U.S. and Canadian frozen processed potato industries at the end of 1996 (estimated by USITC staff based on information provided by the National Potato Council (NPC), in share of production capacity):

Share (percentage) held by:			
Country:	Top 1 firm	Top 4 firms	Top 8 firms
United States	36	85	¹ 100
Canada	46	¹ 100	¹ 100

¹ A small share may be accounted for by additional firms.

² Presentation by the National Potato Council (NPC), Ore-Ida Foods, Inc., and Lamb-Weston, Inc., Sept. 1996.

³ Michelle Conlin, "The Sultan of Spuds," *Forbes*, May 19, 1997, found at <http://207.87.27.10/forbes/97/0519/5910060a.htm>.

Production

In 1996, U.S. production of fresh potatoes was nearly six times the level of Canadian production (table 2-15, table 4-1). In regard to production of frozen french fries, Canadian production has been increasing relative to production in the United States as shown in the following tabulation (compiled from data in table 2-16, table 4-6, in terms of quantity):

	1992	1993	1994	1995	1996
U.S./Canadian production	6.99	6.82	5.13	5.03	4.69

The ratio of production in the United States compared with that in Canada fell by one third during 1992-96, reflecting the greater increase in Canadian expansion of capacity and production.

Location

Fresh potatoes

Location plays a key role in the competitiveness of the fresh potato industries of the United States and Canada. Location determines production conditions, mainly climate, soil type, and availability of inputs, as well as marketing conditions, such as distance to markets. In general, the U.S. fresh potato industry is more geographically dispersed than the Canadian industry, providing for a longer nation-wide growing and harvest season, and the possibility of greater absolute acreage. This minimizes the risk of adverse weather conditions and disease that might negatively influence any one area at any given time. However, the optimal production areas in the United States are relatively concentrated, since the desired russet potatoes for processing are grown primarily in a few regions.

Relevant climatic elements include the length of the growing season, mean daily temperatures and temperature variations, and moisture. Certain soil types are naturally more conducive to potato production. In the United States, the growing season among major potato-producing areas is longest in Washington at 175 days, compared with about 140 days in North Dakota, 120 days in Idaho, and 110 days in Maine. Canadian growing areas generally experience a somewhat shorter growing season, ranging from 163 days in P.E.I. to 110 days in Manitoba.⁴ Long, warm days and cool nights are optimal for potato production; these conditions are more prevalent in the United States.⁵ Relatively low levels of precipitation and humidity enable the control of moisture levels (in conjunction with irrigation) which reduces plant stress, lowers the

⁴ USITC staff interviews with Canadian potato industry officials.

⁵ However, the higher latitude of Canadian production areas provide more light during the summer, somewhat mitigating this U.S. advantage. USITC staff interview with Idaho potato farmers, Rexburg, ID, Apr. 13, 1997.

incidence of disease, and contributes to quality. Loose, nutrient-rich soils (such as volcanic ash and sand) are optimal for potato production. Such soils are in greater supply in U.S. producing areas, primarily in Washington and Idaho. These climatic factors affect yields (mainly in terms of size) and quality (mainly in terms of solids content).⁶

Desirable climatic conditions for seed potatoes are different than those for fresh table stock and processing potatoes. Seed potatoes generally are produced at higher altitudes and colder temperatures, as compared with table stock and processing potatoes, because of the increased incidence of serious disease damage in drier, more moderate areas. Canadian producers contend that these conditions, particularly in Alberta and Saskatchewan, contribute to a trait in seed potatoes referred to as "northern vigor," which they claim provides a heartier seed that produces higher yields.⁷ Also, the colder winters in Canada are alleged to naturally limit disease and insect damage.⁸ However, some U.S. producers contend that studies are inconclusive regarding the superiority of Canadian seed in terms of yield.⁹

Potato processing

Competitive advantages conferred by location vary between the United States and Canada in potato processing. As discussed later in the section in this Chapter on transportation costs, potato processors in P.E.I., New Brunswick, and Maine hold an advantage in marketing to the relatively populous Northeastern U.S. market; processors in Manitoba and the Midwestern United States hold an advantage over Western U.S. processors both in Northeastern and Midwestern U.S. markets; and Western U.S. and Canadian processors hold an advantage over other U.S. and Canadian processors in the Western U.S. and Canadian markets as well as in exporting to the Pacific Rim.

Availability of Inputs

Fresh potatoes

The major inputs for fresh potato production include seed, fertilizer, chemicals, water, power, labor, fuel, land, storage, and capital. The relative competitive position of the U.S. and Canadian industries varies significantly by location within each country with respect to these inputs. For example, there is a substantial amount of dryland farming of potatoes in each country, yet there is extensive irrigation in parts of both countries. The availability of labor may vary within a particular State or Province, depending on the season or production location, and appears to have no limiting effect on producers in either country.

⁶ Washington State Potato Commission, "Growing World-Class Potatoes", informational brochure, WSPC-47-93.

⁷ See, for example, Gabor I. Botar and N. Richard Knowles, "A Synopsis of 'Northern Vigor' in Canadian Seed Potatoes," Department of Agricultural, Food and Nutritional Science, University of Alberta, Mar. 18, 1997.

⁸ Transcript of the hearing, testimony of Larry Buba, pp. 228-229.

⁹ USITC staff interviews with members of the Idaho seed potato industry, Apr. 14, 1997.

Expansion of potato production in both the United States and Canada is limited by the need to grow potatoes in rotation with other crops to control the spread of disease. For instance in Atlantic Canada, in general, potatoes are rotated every 2 to 3 years with grain or other crops. P.E.I. officials have also indicated the availability of land is a constraining factor on any future expansion of potato acreage in the Province.¹⁰ New Brunswick's Potato Expansion Program includes a land-clearing component to bring suitable new land into production. In Manitoba, the availability and cost of water for irrigation, as well as environmental concerns about the use of additional water for irrigation purposes, are factors potentially limiting future supplies of potatoes from that Province.

Potato processing

Potato processors in Idaho, Washington, and Oregon hold a competitive advantage in terms of availability of most production inputs. Processors in these areas are located along the Snake and Columbia Rivers, which provide ample power and water and are the site of the most extensive and efficient raw potato production areas in North America. These areas also produce a large amount of other fresh potatoes that can be purchased on the open market for processing.¹¹ Processors in other U.S. and Canadian locations do not have the same access to inputs.

Some Canadian processors must import raw potatoes from the United States or other Provinces. Cavendish imported about 70 million pounds of raw potatoes from Maine during 1993-96, with 50 million pounds imported in 1996.¹² Manitoba plants also have imported raw potatoes, with more than 15 million pounds being sourced from Washington annually in some recent years.¹³

Ownership

The ownership structure is similar in both the U.S. and Canadian fresh potato industries. Most farms are privately owned and additional land is rented. According to the *1992 Census of Agriculture*, 77 percent of U.S. farms reporting potato production were individually owned. In Canada, 53 percent of such farms were individually owned in 1991 and 27 percent of farms were held in partnerships.¹⁴ Canadian potato farms showed a greater share of corporate ownership, likely the result of tax policy.¹⁵ Available data indicate that corporate ownership is greater for irrigated and larger farms in the United States. Such farms likely are associated with

¹⁰ P.E.I. agriculture officials, interview by USITC staff, May 7, 1997.

¹¹ NPC, posthearing brief, May 27, 1997, pp. 17-18.

¹² O'Melveny & Meyers, LLP, Counsel to the Food Institute of Canada, posthearing brief, May 27, 1997, appendix A, p. 2.

¹³ Ibid.

¹⁴ Glenn Zepp, Charles Plummer and Barbara McLaughlin, "Potatoes: A Comparison of Canada-U.S. Structure," *Canadian Journal of Agricultural Economics*, 1995 Special Issue, p. 170.

¹⁵ Ibid., p. 168.

potato processors and shippers since processors often require their raw potato suppliers to use irrigation, and dehydrators and fresh potato shippers often have their own potato acreage.¹⁶

The ownership structure in the U.S. and Canadian processed potato industries is mixed, as shown in the following tabulation (based on information obtained from USITC staff fieldwork and annual company reports):

Country and firm	Owner	Status
United States:		
Lamb Weston	ConAgra, Inc.	Public (U.S.)
Simplot	J.R. Simplot Co.	Private (U.S.)
Ore-Ida	H.J. Heinz/McCain Foods ¹	Public (U.S.)/Private (Canada)
Nestle	Nestle SA	Public (Switzerland)
McCain	McCain Foods	Private (Canada)
Aviko	Cebeco-Handelsraad	Private (Netherlands)
Canada:		
McCain	McCain Foods	Private (Canada)
Cavendish	Irving Oil	Private (Canada)
Midwest Foods . . .	Nestle-Simplot	Public (Switzerland)/Private (U.S.)
York Farms	Maple Leaf Foods	Public (Canada)

¹Heinz owns the retail portion and McCain is in the process of purchasing the foodservice portion of Ore-Ida.

A greater share of U.S. production is accounted for by publicly held firms while the bulk of Canadian production is by privately-held firms. Foreign direct investment is present in both the U.S. and Canadian processed potato industries. Although specific data are not available, it appears that the level of such investment is greater in the United States than in Canada, with three major U.S. firms showing foreign investment compared to 1 firm in Canada. This structure may affect competitiveness in terms of company strategy, management goals, time-horizons, and capital availability.

Integration

Integration is more prevalent in the U.S. fresh potato industry than in the Canadian industry. Some U.S. large-scale fresh potato packers/shippers and dehydrators mainly in the Western U.S.

¹⁶ USITC staff interviews with potato industry officials in Idaho and Washington, Apr. 14-17, 1997.

region have their own potato acreage.¹⁷ The U.S. potato industry also generally is not forward integrated into distribution, as most fresh potatoes and potato products are sold through brokers and distributors.¹⁸ The greater degree of backward integration in the U.S. fresh potato industry offers greater control with respect to logistics, costs, and quality, but also involves a greater degree of risk with respect to factors affecting their raw potato production.

U.S. frozen potato processors generally contract for the majority of their raw materials.¹⁹ However, some firms may own potato storage facilities and raw potato delivery trucks.²⁰ The industry generally is not forward integrated into distribution, although some firms own forward distribution centers (notably Lamb Weston²¹) and use refrigerated rail cars (notably Lamb Weston²² and Simplot²³). Canadian frozen potato processors are not generally backward or forward integrated.²⁴

International Trade

Fresh potatoes

Canada trades a greater share of its production of fresh potatoes internationally than does the United States. Most of Canada's trade consists of exports to the United States. In 1996, Canadian seed potato exports were more than eight times the quantity of such U.S. exports (table 3-6, supplemental table 3-23). Exports of table stock potatoes from Canada were 1.4 times greater than those from the United States in 1996 (table 3-6, supplemental table 3-23). Canada exported about 34 percent of its table stock and seed potato production in 1996, up from 20 percent and 24 percent, respectively, in 1992.²⁵ In contrast, the United States exported about 1 percent of its table stock potatoes²⁶ and 2 percent of its seed potatoes in 1996, about the same as in 1992 (table 2-14, table 2-15).

In absolute terms, Canada imported a greater quantity of table stock and processing potatoes (combined) in 1996 than did the United States (table 3-25, supplemental table 3-20).²⁷ In 1996,

¹⁷ Ibid; transcript of the hearing, testimony of Gary Ball, p. 87.

¹⁸ USITC staff interviews with potato industry officials in Idaho and Washington, Apr. 14-17, 1997.

¹⁹ Collier, Shannon, Rill & Scott, PLLC, prehearing brief, Apr. 25, 1997, p. 3.

²⁰ USITC staff visits to potato production facilities, Idaho and Washington, Apr. 14-17, 1997.

²¹ Lamb Weston, *Product and Profitability Guide* (Tri-Cities, WA: Lamb Weston, Inc, 1994), pp. 1-5. The firm owns forward distribution centers in Rochelle, IL; Vineland, NJ; and Atlanta, GA.

²² USITC staff interview with officials of Lamb Weston, Inc., Richland, WA, Apr. 16, 1997.

²³ USITC staff interview with officials of J.R. Simplot Co., Boise, ID, Apr. 15, 1997.

²⁴ USITC staff visits to potato production facilities, Alberta and Manitoba, Apr. 8-9, 1997.

²⁵ Estimated from data in supplemental table 3-23 and table 4-7. Canadian seed potato production is estimated at 13 percent of total fresh potato production, fresh table stock potatoes at 27 percent, and fresh processing potatoes at 60 percent.

²⁶ A significant share was for processing.

²⁷ According to Canadian industry officials, a significant portion, at least 50 million pounds, more than 10 percent of the total, was imported in 1996 by frozen potato processors. Food Institute of

(continued...)

Canada imported about 9 percent of its consumption of table stock potatoes,²⁸ compared with about 2 percent for the United States, and about 4 percent of its consumption of seed potatoes,²⁹ compared with 10 percent for the United States (tables 2-14 and 2-15). Canada imported about 6 percent of its consumption of raw potatoes in 1996,³⁰ compared with a smaller share by the United States.³¹

Processed potato products

The United States is more active than Canada in international trade of processed potato products on an absolute basis, but is less active in relative terms. As is the case for fresh potatoes, the Canadian frozen potato products industry is larger relative to its domestic market than is the U.S. industry and market. The U.S. frozen processed potato products industry has been more export oriented than the Canadian industry, as shown by the following tabulation (derived from data of the U.S. Department of Commerce, and Statistics Canada, in terms of quantity):

	1992	1993	1994	1995	1996
Ratio of U.S./Canadian exports	1.73	1.41	1.51	1.57	1.39

U.S. exports of frozen processed potato products in 1996 were 39 percent greater in quantity compared with such Canadian products (table 3-6, supplemental table 3-23). This ratio generally declined during 1992-96. In relative terms, the Canadian industry is substantially more oriented to exports compared with the U.S. industry, as shown in the following tabulation demonstrating the share of frozen french fry production that is exported (derived from data of the U.S. Department of Commerce and Statistics Canada, in percent of quantity):

	Ratio of exports to production:	
	1992	1996
Canada	39	38
United States	7	11

²⁷(...continued)

Canada, posthearing brief, appendix A, p. 2. Also, Canadian potato chip manufacturers imported about 86 million pounds of raw potatoes for processing in 1996 (table 4-9).

²⁸ Estimated from data in supplemental table 3-20 and table 4-7. Canadian seed potato production is estimated at 13 percent of total fresh potato production, fresh table stock at 27 percent, and raw potatoes at 60 percent.

²⁹ Ibid.

³⁰ Ibid.

³¹ Virtually no processing potatoes are imported by U.S. frozen processed potato producers, while less than 5 percent of total raw potato inputs are imported by U.S. potato chip manufacturers. USITC staff interviews with officials of the U.S. frozen processed potato industry, Apr. 14-17, 1997; transcript of the hearing, p. 156.

The Canadian share of frozen french fry production that was exported remained relatively flat during 1992-96, while the U.S. share increased.

In terms of imports of frozen processed potatoes, the United States is substantially more active than Canada on an absolute basis, as shown in the following tabulation (derived from data of the U.S. Department of Commerce, Statistics Canada, in percent, quantity basis):

	1992	1993	1994	1995	1996
Ratio of U.S./ Canadian imports	16.5	19.5	18.8	21.0	15.6

The United States imported from 16 to 21 times the quantity of frozen processed potato products than did Canada during 1992-96. The decline in the ratio in 1996 largely reflects a gain in Canadian market access by U.S. exporters owing to the elimination of Canadian packaging restrictions.³² In relative terms, the U.S. frozen processed potato products market is more active with respect to imports. The ratio of imports to consumption in the U.S. frozen french fry market increased from 3 percent in 1992 to 6 percent in 1996 (table 2-16). The ratio in Canada also rose during the period, from 2 percent to 4 percent (table 4-6). Although the frozen french fry market share held by imports doubled for both countries during 1992-96, the share of the U.S. market held by imports was 50 percent greater than the share in the Canadian market both in 1992 and 1996.

Stocks

The great bulk of fresh potato production in both the United States and Canada, whether for seed, table stock, or processing, is harvested within a relatively short period, mainly during the fall, is held in storage, and is drawn down throughout the year. Stocks generally are lowest in the late spring,³³ after the previous fall's stored production has been drawn down and the current spring crop is being harvested. The ratio of stocks to the previous fall's harvest is an indicator of the success of the industry to supply the market throughout the marketing year.³⁴ The ratio of monthly stocks to U.S. fall production during crop years 1991-96 declined regularly from 67 percent in December to 20 percent in May.³⁵ In 1997, however, the ratios in March-May were larger than those in any previous year in the period.

It is believed that Canadian stocks are depleted more quickly than U.S. stocks.³⁶ As a result, Canada typically is at a relative disadvantage in terms of ability to supply the U.S. market toward the end of the marketing year, particularly during July-September.

³² Food Institute of Canada, posthearing brief, appendix B., p. 14.

³³ May is the last month for which data on stocks are available.

³⁴ This ratio is also an indicator of market conditions, as discussed in the following section on market factors.

³⁵ Based on data from the USDA, National Agricultural Statistics Service (NASS), *Potato Stocks*, May 14, 1997.

³⁶ USITC staff telephone interviews with Canadian industry officials, March-May 1997.

Inventories are an important competitive factor in terms of the ability of firms to supply frozen processed potatoes to the market. Producers, both in the United States and Canada, compete on service commitments, generally striving to respond to customer requirements within a prescribed time period and order share.³⁷ There is an inventory cycle based on a production cycle, which, in turn, is based on the fresh potato harvest cycle. The frozen processed potato production cycle generally begins in the late summer, as early varieties such as Shepody are harvested. Inventories are built beginning at this time and are drawn down by the following summer, when plants are usually shut down for maintenance. Inventory levels differ by firm and generally range from a 2-week supply to 2-month supply.³⁸ There has also been an effort by the United States and Canadian frozen potato products industries to lower inventories as a cost-saving measure.³⁹ Monthly U.S. inventories of frozen french fries as a share of annual production generally declined during 1992-96 (table 5-2). U.S. producers maintained monthly inventories of frozen french fries at about 10-15 percent of annual production during 1992-96. Comparable data are not available for Canada.

Technology

The primary technologies employed in the production of fresh potatoes are seed technology, planting and harvesting equipment, irrigation methods and equipment, and storage methods and facilities. These technologies are approximately similar in the United States and Canada with the exception of irrigation. The use of irrigation currently is much greater in the United States, particularly in Washington and Idaho. This practice, generally demanded by potato processors, improves yields and quality. As a result of the use of irrigation, as well as the aforementioned factors related to scale, climate, and soil, average yields for U.S. potato production in the main production areas of Washington and Idaho exceed those for Canadian production. The average U.S. yield for potato production was a third higher than that in Canada in 1996 (323 cwt per acre in the United States compared with 243 cwt per acre in Canada) (table 2-3, table 4-3, table 4-7). However, the use of irrigation in Canada is rising, as irrigation infrastructure projects proceed in Manitoba and Saskatchewan, and as potato processors increasingly demand in their contracts that irrigation be used to insure that quality potatoes are grown.

³⁷ USITC staff interviews with U.S. and Canadian frozen processed potato products officials, Alberta, Manitoba, Idaho, and Washington, Apr. 8-17, 1997.

³⁸ Ibid.

³⁹ Ibid.

Table 5-2

Frozen french fries: Monthly changes in stocks, January 1992-April 1997, and share of monthly stocks to annual production, January 1992-December 1996

Year	January	February	March	April	May	June	July	August	September	October	November	December
<i>Change from previous month (percent)</i>												
1992	9.5	1.9	2.6	10.2	-4.3	4.5	1.8	-16.3	-3.3	1.4	15.1	-0.1
1993	9.6	-1.1	6.0	-5.8	-5.3	5.6	-0.1	-5.3	-3.2	16.7	16.0	-1.5
1994	12.9	0.8	1.9	1.9	-3.9	4.1	-0.9	-9.9	6.3	7.5	9.1	-1.4
1995	6.7	6.0	5.0	-5.3	1.0	-1.0	-0.9	-12.0	-0.4	19.6	8.5	-5.4
1996	3.6	3.1	2.3	-1.2	-4.6	-3.6	-3.1	-15.8	7.6	21.0	11.9	-6.7
1997	4.3	-0.1	5.3	-1.2	-	-	-	-	-	-	-	-
<i>Share of annual production (percent)</i>												
1992	12.8	13.1	13.4	14.8	14.1	14.8	15.0	12.6	12.2	12.3	14.2	14.2
1993	11.9	11.8	12.5	11.8	11.1	11.8	11.7	11.1	10.8	12.6	14.6	14.3
1994	11.5	11.6	11.8	12.0	11.5	12.0	11.9	10.7	11.4	12.3	13.4	13.2
1995	11.6	12.3	12.9	12.2	12.3	12.2	12.1	10.6	10.6	12.7	13.8	13.0
1996	12.5	12.9	13.2	13.0	12.4	12.0	11.6	9.8	10.5	12.7	14.2	13.3

Source: Stocks from USDA, NASS, *Cold Storage*, various issues; production from American Frozen Food Institute, *Frozen Pack Statistics*, various issues.

The technologies employed by frozen potato product processors are generally similar in the United States and Canada, as much of the machinery is from similar U.S. or European sources and the overall production process is similar in each country.⁴⁰ Also, there is a significant amount of production in each country accounted for by firms based in the other (such as McCain, Nestle, and Simplot). Differences in technology do exist among individual firms within each country, however. Thus, there is no clear competitive advantage in terms of technology held by either the U.S. industry or the Canadian industry. Industry sources have reported that some of the recent closing of U.S. facilities have been plants described as having older technology or equipment.

Costs

Production Costs

Comparable data on production costs for fresh potatoes in the United States and Canada were not available to USITC staff. U.S. and Canadian fresh potato farmers generally use similar production methods and machinery and face similar cost items. As mentioned earlier, costs appear to be higher for seed potatoes compared with table stock and processing potatoes. In addition, the startup costs for potato production are relatively high, owing mainly to dedicated machinery and the increasing use of irrigation equipment.

Cost of production data are not available for U.S. or Canadian frozen potato products.⁴¹ A Canadian study showing a comparison of business costs in Canada and the United States, while not specifically studying costs of producing processed potato products, indicated that all Canadian locations studied enjoyed a cost advantage relative to all U.S. locations studied in the production of frozen foods.⁴² The study indicated that for the frozen foods industry, costs of doing business in Canada were 5.9 percent lower than the costs in the United States. The principal reasons for the lower costs in Canada were lower construction, labor, and energy costs, and smaller employer-sponsored benefits.

The cost structure for frozen potato products appears to be similar for producers both in Canada and in the United States.⁴³ However, one recent development in the cost structure for U.S. processors involves the contracting of raw potatoes for processing. The lack of a contract between processing potato growers and frozen potato processors in Idaho in 1996 coupled with a large crop that contributed to relatively low prices on the open market appears to have provided Idaho processors with a recent substantial cost savings on raw potatoes, which

⁴⁰ USITC staff visits to U.S. and Canadian frozen processed potato products production facilities, Alberta, Manitoba, Idaho, and Washington, Apr. 7-17, 1997; P.E.I., New Brunswick, and Maine, May 6-9, 1997.

⁴¹ Collier, Shannon, Rill & Scott, PLLC, posthearing brief, May 27, 1997, p. 17; the Food Institute of Canada, posthearing brief, appendix B, p. 6.

⁴² KPMG, *The Competitive Alternative: A Comparison of Business Costs in Canada and the United States* (Ottawa: Prospectus, Inc., 1996).

⁴³ USITC staff interviews with Canadian and U.S. frozen potato products producers, Apr. 8-18, 1997.

normally account for approximately 50 percent of production costs.⁴⁴ This advantage may only be temporary, as raw potato supply conditions are likely to change in the future.

Transportation Costs

Fresh potatoes

The costs of transporting fresh potatoes from production areas to markets vary substantially among and between different production regions in the United States and Canada. These costs principally are determined by the distance from major markets and the type of transportation mode available and have had a major role in trade patterns that have developed between the two countries.

Table 5-3 presents data on the distance between major U.S. and Canadian fresh potato production areas and markets.⁴⁵ In general, shippers in Maine, New Brunswick, and P.E.I. have a transportation advantage over Idaho and Washington shippers in delivering fresh potatoes to major U.S. markets in the Northeastern United States. Likewise, shippers in Idaho and Washington hold an advantage in shipping to markets in the Western United States and Western Canada.

Table 5-4 provides data on transportation rates from major fresh potato supply areas and destinations in the U.S. and Canadian markets. These rates generally reflect the distance between the production areas and markets. Fresh potatoes are a relatively heavy, low-value commodity for which transportation costs represent a large share of the total value. The following tabulation shows wholesale prices, transportation costs, and the share of estimated wholesale market prices accounted for by transportation costs for fresh table stock potatoes shipped from Idaho and P.E.I. into the Boston market in April 1997:

Source and type	Wholesale price ¹ (dollars per cwt)	Transportation cost ¹ (dollars per cwt)	Transportation cost/ wholesale price (percent)
Idaho—russets	9.25	5.20	56
P.E.I.—russets	6.00	2.20	37
P.E.I.—round whites	4.00	2.20	51

¹ Price data from the U.S. Department of Agriculture; transportation data from industry submissions.

⁴⁴ *Fraser's Potato Newsletter*, Jun. 12, 1997, p. 3.

⁴⁵ The data represent point-to-point mileage. Actual road mileage may be significantly higher.

Table 5-3

Fresh potatoes: Distance between major U.S. and Canadian production areas and markets

Market	Production area						
	United States				Canada		
	Easton, ME	Monte Vista, CO	Burley, ID	Othello, WA	St. John, N.B.	Charlottetown, P.E.I.	Winnipeg, MAN

(Miles)

United States:

Boston	334	1,878	2,161	2,356	327	476	1,347
New York	510	1,730	2,045	2,267	517	666	1,285
Atlanta	1,241	1,249	1,702	2,025	1,263	1,412	1,290
Miami	1,590	1,724	2,223	2,576	1,564	1,696	1,894
Chicago	1,031	1,026	1,337	1,588	1,111	1,253	719
Houston	1,877	821	1,350	1,736	1,922	2,072	1,392
Los Angeles	2,744	721	633	883	2,840	2,973	1,532
Seattle	2,513	1,073	545	158	2,635	2,734	1,157

Canada:

Montreal	284	1,761	1,993	2,159	371	506	1,134
Toronto	596	1,462	1,730	1,933	672	814	943
Vancouver	2,510	1,168	644	247	2,634	2,727	1,161

Source: Derived from distance calculator found at <http://www.indo.com/distance>.

Table 5-4

Fresh potatoes: Freight rates between major U.S. and Canadian producing areas and markets

Market	Production area		
	Idaho ¹	Prince Edward Island	Manitoba
(Per pound)			
United States:			
Boston	\$0.052	\$0.022	-
Hartford	-	.024	-
New York	-	.029	-
Washington, D.C. ....	.049	.031	\$0.034
Miami .....	.051	-	-
Chicago .....	.030	-	.018
Houston .....	.032	-	.034
Los Angeles .....	.020	-	.038
Canada:			
Montreal .....	.050	.016	.038
Toronto .....	.053	.019	.038
Vancouver	-	-	.038

¹ Rail shipments based on 125,000 pound loads.

Note.—Canadian data converted to U.S. dollars using an exchange rate of US\$1=Can\$1.37.

Source: National Potato Council, posthearing brief, May 27, 1997, p. 10; Canadian Horticultural Council, posthearing brief, May 27, 1997, app. B, pp. 4-5.

Transportation costs appear to have been a major factor affecting the development of a north-south trading pattern in fresh potatoes between the United States and Canada since 1992, as is demonstrated by the relative market share held by various fresh potato origins in major selected U.S. markets (table 5-5). In general, fresh potatoes are shipped principally to major markets that are relatively nearby. In 1996, 61 percent of table stock arrivals from Canada were in the Boston market, followed by 17 percent in New York and 11 percent in Philadelphia. A similar pattern holds for arrivals from Maine.

In the West, 35 percent of table stock arrivals from Oregon, 56 percent of those from California, and 23 percent of those from Washington were in Los Angeles. In the Midwest, 68 percent of arrivals from North Dakota and 21 percent of arrivals from Wisconsin were delivered into Chicago, while 50 percent of arrivals from Colorado were in Dallas. The major exception is for Idaho, the major source of table stock potatoes in most U.S. markets. Idaho potatoes generally are believed to hold a price premium in most major markets, which mitigates the transportation factor.

Another factor in transportation costs is the mode of transportation. Rail shipments tend to cost less for higher volume, longer distance shipments. Rail is also used in relatively isolated areas. North Dakota, California, and Idaho utilize rail for a relatively large share of their shipments of table stock potatoes (table 2-28). In contrast, Maine and Canada ship virtually all of their table stock potatoes shorter distances by truck, which is a more flexible and faster mode of transportation (table 2-28).

The mode of transportation also varies by market. In major Eastern U.S. markets, arrivals of table stock potatoes in New York occur mainly by rail, 57 percent in 1996, reflecting the dominance of distant Idaho and California in that market.⁴⁶ In Boston, 74 percent of arrivals were by truck that year, reflecting the dominant share of shipments from Canada and Maine.⁴⁷

Processed potatoes

Transportation costs also have contributed to the current patterns in trade in frozen potato products between the United States and Canada. In general, frozen potato product processors in the Eastern United States and Canada hold an advantage in the Northeastern U.S. market with respect to transportation costs. Producers in the Eastern and Midwestern United States and Canada hold a roughly equal advantage in Southeastern U.S. markets, while Western U.S. producers hold the advantage in Western U.S. and Canadian markets.

⁴⁶ Derived from data provided by USDA, Agricultural Marketing Service (AMS), Market News Branch, June 1997.

⁴⁷ Ibid.

Table 5-5

Fresh table stock potatoes: Arrivals in selected U.S. cities, by major shipping origins, 1992-96

Year and city	Shipping origin										Total
	Idaho	California	Washington	Oregon	Colorado	Wisconsin	N. Dakota	Maine	Canada	All others	
(Percent)											
1992:											
Boston	5	10	4	1	1	3	7	58	63	6	8
New York	24	12	6	2	3	7	10	18	23	9	13
Philadelphia	7	3	1	0	1	3	9	8	7	10	6
Atlanta	6	1	2	2	6	19	2	1	0	6	5
Chicago	6	3	7	1	1	36	53	0	0	10	9
Detroit	7	4	0	0	0	2	2	0	0	7	4
St Louis	7	0	0	0	7	3	4	0	0	6	4
Dallas	2	2	2	0	46	0	2	0	1	4	6
Los Angeles	9	45	33	56	20	0	6	0	0	5	16
Others ²	26	21	45	37	16	26	6	15	6	38	28
Total	100	100	100	100	100	100	100	100	100	100	100
1993:											
Boston	4	8	4	1	1	3	4	51	57	5	9
New York	22	13	9	4	2	4	12	20	24	13	14
Philadelphia	6	3	2	0	1	4	10	7	9	10	5
Atlanta	7	1	3	2	9	18	3	1	0	4	5
Chicago	6	4	9	5	1	34	46	0	0	11	9
Detroit	9	5	2	2	0	4	1	0	0	8	5
St Louis	8	0	1	0	14	2	7	0	0	6	5
Dallas	3	1	2	1	35	0	1	0	1	3	5
Los Angeles	8	45	24	41	19	0	0	0	0	9	15
Others ²	28	21	45	42	18	31	16	20	9	31	28
Total	100	100	100	100	100	100	100	100	100	100	100
1994:											
Boston	4	9	5	2	1	5	5	51	50	4	8
New York	26	10	9	9	2	4	6	25	31	10	16
Philadelphia	6	3	3	0	1	4	7	5	7	11	5
Atlanta	6	1	2	1	15	11	2	1	0	5	5
Chicago	11	6	12	24	0	35	57	0	0	10	13
Detroit	9	3	2	1	0	5	1	0	1	7	5
St Louis	8	1	2	0	15	4	4	0	0	5	5
Dallas	2	2	2	0	25	0	0	0	1	3	3
Los Angeles	3	40	22	36	16	0	0	0	0	6	12
Others ²	26	25	41	27	25	32	16	19	9	39	28
Total	100	100	100	100	100	100	100	100	100	100	100
1995											
Boston	5	8	5	1	1	6	4	51	63	6	8
New York	21	10	5	1	1	1	2	12	15	9	11
Philadelphia	6	3	2	1	0	6	5	6	10	14	5
Atlanta	5	0	1	1	11	15	2	1	0	6	4
Chicago	17	7	12	42	0	25	66	0	0	9	17
Detroit	8	4	2	0	0	4	2	0	0	7	5
St Louis	8	0	1	0	14	6	4	0	0	7	6
Dallas	3	1	2	0	49	0	2	0	1	4	6
Los Angeles	3	43	30	34	13	0	0	0	0	7	14
Others ²	24	23	41	19	10	37	12	30	11	31	25
Total	100	100	100	100	100	100	100	100	100	100	100
1996:											
Boston	4	6	4	1	1	7	4	43	61	9	9
New York	19	7	5	2	0	2	3	12	17	12	11
Philadelphia	6	2	3	1	0	8	4	7	11	16	6
Atlanta	5	1	1	1	15	19	2	1	0	5	4
Chicago	20	7	12	32	0	21	68	0	0	5	15
Detroit	10	2	1	0	0	4	2	0	0	7	5
St Louis	10	1	2	1	21	4	5	0	0	8	6
Dallas	3	1	2	0	50	1	0	0	0	4	5
Los Angeles	2	56	23	35	6	0	0	0	0	5	16
Others ²	22	17	49	27	5	34	12	37	11	30	24
Total	100	100	100	100	100	100	100	100	100	100	100

¹ Includes both rail and truck arrivals. Unloads at Canadian cities are excluded from origin totals.² Includes Baltimore, Buffalo, Cincinnati, Columbia, Denver, Miami, New Orleans, Pittsburg, San Francisco, and Seattle.

Source: USDA, AMS.

Table 5-6 shows general transportation rates for major frozen potato products origins and destinations in the United States and Canada. These rates generally reflect the distance relationships between production facilities and markets. Although transportation costs do not represent as great a share of the total cost of frozen potato products compared with table stock potatoes, this share is still substantial, as shown in the following tabulation (estimated based on industry submissions, assuming a wholesale price of 30 cents per pound for frozen french fries and truck rates in table 5-6, in percent):

Source	Destination:					
	Boston	New York	Atlanta	Chicago	Los Angeles	Seattle
United States:						
Columbia Basin	25	24	21	16	10	5
Idaho	23	-	18	14	8	8
North Dakota	18	-	14	7	18	14
Canada:						
Manitoba	18	-	15	8	18	13
P.E.I.	7	12	17	18	32	29

Transportation costs have been a major factor in the expansion of Canadian frozen potato product capacity in Manitoba, P.E.I., and New Brunswick; the expansion of U.S. capacity in the Western region to export to the Pacific Rim,⁴⁸ and a shift in overall U.S. capacity to the Midwest. The following tabulation shows the share of total U.S. production of frozen potato products accounted for by various regions (data from the American Frozen Foods Institute (AFFI), *Frozen Food Pack Statistics*, various annual issues, in percent, quantity basis):

Region:	Share of total production:				
	1992	1993	1994	1995	1996
West	81.6	81.9	82.9	80.9	79.4
East, Midwest, and South ¹ ...	18.2	17.9	16.9	19.0	20.5
California .....	.2	.2	.2	.1	.1
Total	100.0	100.0	100.0	100.0	100.0

¹Mainly Midwest.

⁴⁸ The proximity of Western U.S. processing plants to the major port of Seattle provides this advantage.

Table 5-6

Frozen potato products: Freight rates, by mode of transportation, between major U.S. and Canadian producing areas and markets

Market:	Production area and mode of transportation									
	United States						Canada			
	Columbia Basin		Idaho		North Dakota/ Minnesota		Manitoba		Prince Edward Island	
	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail	Truck	Rail
(Per pound)										
United States:										
Boston	\$0.075	\$0.055	\$0.070	\$0.050	\$0.055	-	\$0.053	-	\$0.021	-
New York .....	.072	.066	-	-	-	-	-	-	.037	-
Baltimore .....	.068	.048	.063	.043	.045	-	-	-	-	-
Atlanta .....	.063	.043	.055	.038	.043	-	.046	-	.051	-
Miami .....	.085	.065	.078	.058	.063	-	.066	-	.073	-
Chicago .....	.048	.033	.043	.028	.020	-	.025	-	.054	\$.044
Dallas .....	.053	.040	.045	.033	.050	-	.037	-	.075	-
Seattle .....	.015	-	.023	-	.043	-	.039	-	.088	-
Los Angeles .....	.030	-	.023	-	.055	-	.053	-	.097	-
Canada:										
Montreal .....	.078	.068	.075	.063	.063	-	.040	-	.018	-
Toronto .....	.068	.060	.063	.055	.053	-	.036	-	.020	-
Vancouver .....	.013	-	.028	-	.050	-	.039	-	.098	.070

Source: Collier, Shannor, Rill, & Scott, posthearing brief, May 27, 1997, exhibit 14.

In absolute terms production in the Midwest rose 28.6 percent during 1992-96, while that in the West only rose 1.5 percent.⁴⁹

The transportation cost disadvantage in the eastern U.S. market borne by producers in Idaho, Washington, and Oregon has been mitigated somewhat by the use of company-owned rail cars and company-owned forward distribution centers located near major market areas. As shown in table 5-6, rail rates are substantially lower than truck rates, generally by 25-30 percent. Data are not available on the share of frozen potato product shipments by mode of transportation.

Demand Factors

This section analyzes in detail the relative competitive position of the U.S. and Canadian potato industries with respect to factors that affect demand, as summarized in table 5-1. The primary factors that affect market demand for fresh and processed potatoes include market structure, stocks, and prices. These factors are discussed in detail below for the United States and Canada.

Market Structure

Market structure is determined by the size and distribution of the market, demand attributes and shifts, consumer income, seasonality, and the share of the market held by domestic and foreign producers. These factors define the specific competitive environment faced by these producers.

Market Size and Distribution

The U.S. market size, as measured by population, was 265.3 million people as of July 1996.⁵⁰ This was nearly nine times the Canadian population of 30.0 million that year.⁵¹

Fresh potatoes

The following tabulation shows seed, table stock, and processing potato consumption in the United States and Canada in 1996 (derived from USDA and Statistics Canada data, in million pounds):

	Seed	Table stock	Processing	Total
United States	2,847	13,011	25,555	41,413
Canada	¹ 775	¹ 1,686	¹ 5,513	7,974

¹Estimated by USITC staff.

⁴⁹ Based on data from the AFFI, *Frozen Food Pack Statistics*, various issues. Midwest region includes a relatively minor amount of production from the East and South.

⁵⁰ U.S. Bureau of Census, found at <http://www.census.gov/population/estimates/nation/intfile2-1.txt>.

⁵¹ Statistics Canada, found at <http://www.statcan.ca/english/Pgdb/People/Population/demo02a.htm>.

The predominant position of raw potatoes used for processing in the U.S. market reflects the long-term growth in consumption of processed potato products compared with table stock potatoes. The geographic distribution of the U.S. fresh potato market can be approximated by arrivals in major U.S. cities. The primary U.S. market for table stock potatoes is Los Angeles, which accounted for 16 percent of total arrivals in 1996 (table 5-5). Following Los Angeles that year were Chicago (15 percent), New York (11 percent), and Boston (9 percent). Data are not available for Canadian markets. However, it is believed that the distribution of table stock potatoes in Canada is influenced by population in major cities as in the U.S. market.

Processed potato products

The United States is a much larger market for processed potato products compared with Canada. The U.S. market for frozen french fries, at 6.9 billion pounds, was about seven times larger than the Canadian market in 1996 (table 2-16, table 4-6). Consumption increased by 24 percent in the U.S. market during 1992-96. Consumption increased by 9 percent in Canada and 7 percent in the United States during 1994-96.⁵² The rate of growth in the market for frozen french fries is slowing both in the United States and Canada, however, as shown in the following tabulation (derived from USDA and AFFI data, in terms of quantity, in percent):

Market	Increase in consumption over previous year:			
	1993	1994	1995	1996
United States	8.1	7.1	4.2	2.4
Canada	(¹)	(¹)	7.1	1.9

¹Not meaningful.

This decline in growth in the frozen french fry markets has occurred in conjunction with slower growth in quick service restaurant sales, which account for the greatest share of frozen french fry consumption. Projected sales in such restaurants in the United States totaled \$103.5 billion in 1997, up 5.2 percent in nominal terms and 2.5 percent in real terms compared with 1996.⁵³ This growth rate was below the 5.8 percent (nominal) annual average during 1994-97. Recent developments in the QSR industry suggest that the U.S. market for frozen processed potatoes may be approaching saturation.⁵⁴ In addition, the growth in total U.S. consumer average annual expenditures for food away from home declined from 2.0 percent between 1993-94 to 0.2 percent during 1994-95, the latest year for which data are available; expenditures averaged \$1,702 in 1995.⁵⁵

⁵² Data estimation for Canadian production changed in 1994; prior years are believed to be understated.

⁵³ National Restaurant Association, *1997 Restaurant Industry Forecast*, found at <http://www.restaurant.org/research/forecast/index.htm>.

⁵⁴ Collier, Shannon, Rill & Scott, PLLC, posthearing brief, May 27, 1997, pp. 20-21; "Fallen Arches," *Time*, June 9, 1997, found at http://www.pathfinder.com/@@NZPTQwUAKM7EUF3j/time/magazine/1997/dom/970609/business.fallen_arches_.html.

⁵⁵ U.S. Department of Labor, Bureau of Labor Statistics Press Release, "Consumer Expenditures in 1995," Jan. 22, 1997, found at <http://stats.bls.gov/news.release/cesan.toc.htm>.

Demand Attributes and Shifts

The U.S. and Canadian markets for fresh potatoes generally are similar in terms of consumer demand attributes. Two-way trade exists for seed and table stock potatoes, generally for similar varieties and uses.⁵⁶ Demand shifts, such as an increase in demand for certain varieties, generally have been parallel in each country. For example, the demand for processing varieties, such as Russet, Shepody, and Norkotah, has increased in both countries. Per capita utilization of table stock potatoes in the U.S. market has been relatively flat and totaled 49.2 pounds in 1996, whereas per capita consumption of table stock potatoes in Canada totaled 56.3 pounds in 1996, down from 64.8 pounds in 1992⁵⁷ and indicating a shift in demand in both markets from table stock potatoes to processed potato products.

Per capita use of processed potato products in the United States increased by 10 percent during 1992-96, of which most of the growth was accounted for by frozen potato products (table 2-13). Comparable data are not available for Canada; however, the trend toward processed potatoes has been reported to be similar to that in the U.S. market.⁵⁸ Thus, demand attributes and shifts appear to affect the competitiveness of the U.S. and Canadian fresh potato industries in a similar manner.

Per capita consumption is compared for frozen french fries in the U.S. and Canadian markets in the following tabulation (derived from data of the U.S. Bureau of Census, AFFI, USDA, and Statistics Canada, in pounds per person):

Country	Per capita consumption:				
	1992	1993	1994	1995	1996
United States	21.7	23.3	24.7	25.4	25.8
Canada	(¹)	(¹)	30.8	32.6	32.8

¹ Not meaningful.

Canadian per capita consumption of french fries was about one-third higher than that in the United States in 1996. U.S. per capita consumption grew by 4.5 percent during 1994-96 while Canadian per capita consumption grew by 6.5 percent.

⁵⁶ Trade in fresh potatoes for processing largely flows from the United States to Canada, owing mainly to advantages held by U.S. processors, mainly freezers, in available supplies located near primary U.S. production areas. Some fresh potatoes for processing are imported from Canada by U.S. chippers owing to seasonal availability and quality concerns.

⁵⁷ Estimated by USITC staff.

⁵⁸ John Vandenberg and Gilbert Parent, "1996/97 Canadian Potato Crop Situation and Trends," Agriculture and Agri-Food Canada, Mar. 4, 1997, p. 1.

Consumer Income

Consumer income levels in the United States and Canada, as measured by per capita gross domestic product (GDP), are shown in the following tabulation (derived from data from the International Monetary Fund, Bureau of the Census, and Statistics Canada, in U.S. dollars per capita, except where noted):

Market	Per capita GDP:				
	1992	1993	1994	1995	1996
United States	24,487	25,419	26,638	27,593	28,558
Canada:					
Can\$	24,179	24,627	25,542	26,213	26,625
US\$	19,999	19,090	18,699	19,106	19,520

In nominal terms, U.S. per capita income grew 16.6 percent during 1992-96 compared with 10.1 percent in Canada. Canadian income declined on a U.S. dollar basis during 1992-94 and rose during 1994-96, but to a level below that in 1992. In terms of U.S. dollars, U.S. per capita income exceeded that in Canada by 46 percent in 1996. Thus, the U.S. market is wealthier than the Canadian market, both in terms of absolute level and growth. The large and growing U.S. market is attractive to Canadian exports.

Seasonality

Seasonality affects competitiveness mainly in the U.S. table stock market. Such potatoes are harvested and marketed from many sources to numerous markets at varying levels throughout the year. Table stock potatoes from Canada (primarily New Brunswick and P.E.I.) and Maine generally are harvested in the fall and marketed mainly through the fall and winter. Potatoes from Idaho generally are harvested in the fall and are marketed relatively evenly throughout the year. Potatoes from other sources, such as California, may be harvested in different seasons and marketed within a relatively short window of time. These seasonal harvesting and marketing patterns affect competitiveness in terms of available supplies and price effects in discrete markets.

Competition from Canadian table stock potatoes is greatest in the U.S. markets of Boston, New York, and Philadelphia. The imports compete most directly in terms of monthly arrivals with Maine potatoes. Table stock potatoes from Canada and Maine generally are harvested and marketed during similar periods. Arrivals of table stock potatoes from Canada and Maine in the Boston market generally peaked during October-April each year during 1992-96 (table 5-7). Arrivals from these two sources during September-May generally accounted for the largest share of total arrivals in Boston annually during 1992-96 (table 5-8). Arrivals from Idaho in the Boston market were relatively constant on a monthly basis during 1992-96, while those from

Table 5-7

Fresh table stock potatoes: Share, by source, of monthly arrivals in Boston, by principal sources, 1992-96

Source and year	Month												Total
	January	February	March	April	May	June	July	August	September	October	November	December	
	Share by source (Percent)												
Canada:													
1992	9.7	6.1	7.1	12.1	3.7	2.0	0.0	4.3	15.9	19.4	22.9	17.3	9.8
1993	16.4	19.3	18.3	25.4	19.3	9.3	0.7	2.7	31.7	36.5	25.2	25.6	19.8
1994	21.0	21.5	27.4	18.4	15.9	3.9	0.5	5.0	19.1	27.5	22.9	14.9	17.0
1995	10.7	9	10.1	11.1	4.2	1.7	2.2	4.4	32.1	41.0	46.3	50.0	18.0
1996	43.8	45.6	35.5	42.4	22.0	16.7	0.4	4.0	22.0	31.5	39.2	42.5	30.5
Maine:													
1992	51.1	56.8	57.8	49.2	18.6	3.4	0.4	1.6	21.6	37.4	29.0	55.2	33.1
1993	55.6	65.9	60.6	54.5	37.8	17.0	0.0	0.9	17.2	18.5	54.3	50.2	40.1
1994	51.5	63.7	47.4	49.2	31.1	6.7	3.3	2.5	11.5	22.3	37.6	41.6	33.0
1995	54.0	48.2	55.1	40.1	30.9	4.3	0.9	0.0	3.2	19.5	25.4	28.0	27.6
1996	34.8	31.9	35.2	26.1	5.5	4.1	3.8	4.4	10.1	13.1	24.8	29.8	20.3
Idaho:													
1992	27.6	26.2	19.5	16.4	19.9	22.2	16.7	4.9	20.2	24.3	24.3	15.4	19.9
1993	19.3	8.0	13.3	12.3	17.9	14.1	9.5	6.8	9.1	15.8	5.0	10.3	12.1
1994	15.1	8.2	13.1	16.8	18.9	21.8	14.1	10.7	23.0	22.8	14.3	25.7	16.8
1995	20.8	23.7	20.9	29.4	33.0	22.9	24.0	9.9	10.4	14.3	13.0	8.0	19.9
1996	10.4	11.7	13.8	18.2	22.7	12.6	12.8	12.1	26.8	22.7	20.4	15.1	16.2
California:													
1992	0.4	0.0	0.3	0.4	39.9	55.3	39.8	6.0	0.0	0.0	0.5	0.3	12.9
1993	0.6	0.8	0.3	0.3	17.6	48.9	53.4	18.7	1.1	1.4	0.0	0.0	10.0
1994	0.7	0.0	0.0	1.2	17.0	57.4	61.0	20.2	2.6	0.5	0.0	0.0	12.2
1995	1.4	2.9	0.9	2.2	11.8	53.9	38.2	12.6	4.5	2.4	2.0	1.9	11.7
1996	1.9	1.3	1.2	4.2	33.3	45.9	36.3	19.4	1.8	1.9	0.8	1.2	11.6
All other:													
1992	11.2	10.9	15.3	21.9	17.9	17.1	43.1	83.2	42.3	18.9	23.3	11.7	24.2
1993	8.0	6.0	7.5	7.5	7.5	10.7	36.5	70.8	40.9	27.9	15.5	13.9	18.0
1994	11.7	6.6	12.1	14.5	17.0	10.2	21.1	61.6	43.8	26.9	25.2	17.8	20.9
1995	13.1	16.3	13.0	17.2	20.0	17.1	34.7	73.1	49.8	22.9	13.4	12.1	22.8
1996	9.0	9.4	14.4	9.2	16.5	20.7	46.6	60.1	39.3	30.8	14.8	11.5	21.4
Total:													
1992	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1993	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1994	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1995	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1996	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: U.S. Department of Agriculture, Agricultural Marketing Service, Fruit and Vegetable Division, Market News Branch, *Fresh Fruit and Vegetable Arrivals in Eastern Cities*, various issues.

Table 5-8

Fresh table stock potatoes: Share, by month, of monthly arrivals in Boston, by principal sources, 1992-96

Source and year	Month												Total
	January	February	March	April	May	June	July	August	September	October	November	December	
Share by month (Percent)													
Canada:													
1992	8.7	4.7	7.4	10.4	3.7	2.0	0.0	2.7	11.1	14.4	16.1	18.8	100.0
1993	7.9	7.5	9.8	13.2	10.4	3.9	0.2	0.9	9.2	12.6	13.4	11.2	100.0
1994	11.0	12.2	20.0	8.5	7.7	2.0	0.2	2.2	8.1	9.5	10.6	8.1	100.0
1995	5.3	3.8	6.0	5.3	2.4	1.0	0.9	1.4	12.2	14.8	24.4	22.6	100.0
1996	15.7	13.4	11.9	15.8	6.3	4.0	0.1	1.0	3.6	8.1	9.6	10.5	100.0
Maine:													
1992	13.6	12.9	17.7	12.5	5.5	1.0	0.1	0.3	4.5	8.2	6.1	17.8	100.0
1993	13.2	12.6	16.0	13.9	10.0	3.5	0.0	0.2	2.5	3.1	14.2	10.8	100.0
1994	13.9	18.7	17.8	11.7	7.8	1.8	0.6	0.6	2.5	4.0	9.0	11.7	100.0
1995	17.4	13.2	21.2	12.5	11.4	1.7	0.2	0.0	0.8	4.6	8.7	8.3	100.0
1996	18.8	14.1	17.8	14.7	2.4	1.5	1.3	1.6	2.5	5.0	9.2	11.1	100.0
Idaho:													
1992	12.2	9.9	9.9	6.9	9.7	10.7	6.8	1.5	6.9	8.9	8.4	8.2	100.0
1993	15.2	5.1	11.7	10.4	15.7	9.6	3.6	3.8	4.3	8.9	4.3	7.4	100.0
1994	8.0	4.7	9.7	7.8	9.3	11.3	5.5	4.7	9.9	8.0	6.8	14.2	100.0
1995	9.3	9.0	11.1	12.7	16.9	12.2	8.4	2.8	3.6	4.6	6.2	3.3	100.0
1996	7.1	6.5	8.7	12.8	12.2	5.8	5.6	5.6	8.3	10.9	9.5	7.1	100.0
California:													
1992	0.3	0.0	0.3	0.3	29.9	41.1	24.9	2.8	0.0	0.0	0.3	0.3	100.0
1993	0.6	0.6	0.3	0.3	18.8	40.7	24.4	12.7	0.6	0.9	0.0	0.0	100.0
1994	0.5	0.0	0.0	0.8	11.5	40.8	32.5	12.3	1.5	0.3	0.0	0.0	100.0
1995	1.1	1.8	0.8	1.6	10.3	48.9	22.6	6.1	2.6	1.3	1.6	1.3	100.0
1996	1.8	1.0	1.0	4.1	25.1	29.2	22.0	12.4	0.8	1.3	0.5	0.8	100.0
All other													
1992	4.1	3.4	6.4	7.6	7.2	6.8	14.4	20.8	11.9	5.7	6.6	5.2	100.0
1993	4.3	2.6	4.4	4.3	4.4	5.0	9.2	26.5	13.0	10.6	9.1	6.7	100.0
1994	5.0	3.1	7.2	5.4	6.7	4.2	6.6	21.8	15.1	7.6	9.5	7.9	100.0
1995	5.1	5.4	6.1	6.5	8.9	8.0	10.6	18.0	14.9	6.5	5.6	4.3	100.0
1996	4.6	3.9	6.9	4.9	6.7	7.1	15.3	20.9	9.2	11.2	5.2	4.1	100.0
Total:													
1992	8.8	7.5	10.1	8.4	9.7	9.6	8.1	6.0	6.8	7.3	6.9	10.6	100.0
1993	9.6	7.7	10.6	10.3	10.7	8.3	4.5	6.7	5.7	6.8	10.5	8.6	100.0
1994	8.9	9.7	12.4	7.8	8.3	8.7	6.5	7.4	7.2	5.9	7.9	9.3	100.0
1995	8.9	7.6	10.6	8.6	10.2	10.6	6.9	5.6	6.8	6.5	9.5	8.1	100.0
1996	11.0	8.9	10.2	11.4	8.7	7.4	7.0	7.4	5.0	7.8	7.5	7.6	100.0

Source: U.S. Department of Agriculture, Agricultural Marketing Service, Fruit and Vegetable Division, Market News Branch, *Fresh Fruit and Vegetable Arrivals in Eastern Cities*, various issues.

California and other sources were concentrated during May-August, when arrivals from Canada and Maine are relatively low.

The effect of seasonality on competitiveness is less clear in the New York and Philadelphia markets, where arrivals from Idaho dominate (table 5-9, table 5-10). Arrivals in New York from Canada and Maine tended to be lowest during August-October each year during 1992-96 (table 5-11). Arrivals in Philadelphia from Canada tended to be lowest during June-August and those from Maine during July-September each year during 1992-96 (table 5-12).

Market Share

Fresh potatoes

The U.S. fresh potato industry holds a large advantage over the Canadian industry in terms of U.S. market share. The share of the U.S. fresh potato market held by domestic producers is greatest for potatoes other than those used for seed, at about 98 percent (table 2-15). Separate data are not available for table stock and processing potatoes. However, the market share held by domestic producers is greatest for processing potatoes, as most U.S. processors source their raw material near production facilities for cost and quality considerations and do not import raw potatoes for processing.⁵⁹ The share of the domestic market held by U.S. seed potato producers declined from 95 percent in 1992 to 92 percent in 1996 (table 2-14).

The share of the market for table stock potatoes in major U.S. cities is shown in table 5-13. U.S. producers hold a predominant share of all major domestic markets. In terms of individual sources, table stock potatoes from Idaho hold the largest share of most major U.S. markets, with some regional exceptions such as California (in Los Angeles) and Colorado (in Dallas). Imports of table stock potatoes from Canada hold the leading share in Boston, the only U.S. market in which they lead. Canadian fresh potato producers also hold a large share of their domestic market. Canadian producers hold 91 percent of the domestic seed potato market and 94 percent of the combined table stock and processing potato market.⁶⁰

⁵⁹ USITC staff interviews with officials of the U.S. potato industry, Apr. 14-17, 1997; transcript of the hearing, testimony of the Snack Food Association, p. 157. A relatively small share of processing potatoes are imported by U.S. potato chip producers.

⁶⁰ Estimated by the USITC staff.

Table 5-9

Fresh table stock potatoes: Share, by source, of monthly arrivals in New York, by principal sources, 1992-96

Source and year	Month												
	January	February	March	April	May	June	July	August	September	October	November	December	Total
Canada:	<i>Share by source (Percent)</i>												
1992	0.0	0.0	0.8	3.4	6.8	4.6	0.0	0.0	1.4	0.8	2.7	2.1	2.1
1993	5.7	8.2	6.0	6.2	4.4	5.5	0.4	0.0	1.0	4.3	7.0	13.9	5.3
1994	11.0	7.2	3.3	4.5	11.7	4.5	3.7	0.8	0.5	1.9	6.6	9.5	5.5
1995	3.5	2.5	2.9	2.4	2.8	1.7	0.8	0.0	0.0	4.3	8.0	9.8	3.1
1996	6.0	8.5	8.0	8.0	9.4	6.3	7.4	5.8	0.0	5.2	8.5	6.4	6.8
Maine:													
1992	7.4	6.3	9.1	11.6	9.9	9.7	3.0	0.0	0.8	0.8	6.5	5.7	6.2
1993	14.5	11.8	19.5	13.4	10.4	14.1	8.1	0.2	0.8	7.2	9.1	11.8	10.1
1994	12.6	13.1	11.4	15.3	13.0	10.4	5.8	0.4	1.0	6.6	6.1	6.5	8.5
1995	12.3	6.5	7.1	8.7	5.9	5.7	2.3	0.0	0.0	0.0	0.3	2.3	4.7
1996	3.0	5.2	5.7	9.1	8.5	5.1	6.6	1.2	0.0	0.0	3.1	5.0	4.7
Idaho:													
1992	65.6	65.1	67.0	71.9	57.0	54.0	62.0	36.1	43.6	52.4	61.4	67.0	59.2
1993	61.0	65.1	59.4	67.7	58.2	43.9	53.5	28.6	18.2	35.5	43.1	41.7	46.9
1994	49.7	65.4	69.2	60.8	48.9	54.5	57.3	26.7	48.6	62.3	71.9	69.2	56.0
1995	65.2	75.5	73.2	72.6	66.6	61.7	70.1	40.5	24.7	58.7	70.8	63.3	63.6
1996	66.7	60.1	65.8	63.0	54.6	57.3	54.7	52.5	39.1	61.4	52.7	65.8	58.0
California:													
1992	6.2	8.6	5.5	4.1	19.4	22.8	13.3	9.1	6.8	0.4	0.0	0.2	8.9
1993	0.8	0.7	1.5	0.0	14.0	25.8	25.2	17.8	8.6	4.9	4.4	4.2	9.8
1994	3.9	2.0	0.2	0.7	11.5	18.8	19.0	16.2	3.4	1.7	0.5	1.1	7.4
1995	2.9	8.5	10.5	3.7	13.8	24.9	19.2	16.7	10.6	5.2	2.9	8.3	11.0
1996	5.4	6.4	3.7	9.1	17.9	23.1	21.3	14.0	9.2	6.2	6.5	5.3	11.2
All other:													
1992	20.8	20.0	17.6	9.1	7.0	8.9	21.7	54.8	47.4	45.5	29.3	25.0	23.7
1993	17.9	14.1	13.5	12.7	12.9	10.7	12.8	53.3	71.4	48.0	36.4	28.5	27.9
1994	22.8	12.2	15.9	18.8	14.9	11.8	14.1	55.9	46.5	27.5	14.8	13.7	22.6
1995	16.0	7.0	6.3	12.6	10.9	5.9	7.6	42.8	64.7	31.8	18.0	16.3	17.6
1996	18.9	19.8	16.7	10.8	9.6	8.3	10.0	26.5	51.6	27.2	29.3	17.4	19.3
Total:													
1992	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1993	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1994	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1995	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1996	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: U.S. Department of Agriculture, Agricultural Marketing Service, Fruit and Vegetable Division, Market News Branch, *Fresh Fruit and Vegetable Arrivals in Eastern Cities*, various issues.

Table 5-10

Fresh table stock potatoes: Share, by month, of monthly arrivals in New York, by principal sources, 1992-96

Source and year	Month												Total
	January	February	March	April	May	June	July	August	September	October	November	December	
Canada:	<i>Share by month (Percent)</i>												
1992	0.0	0.0	2.8	14.0	29.9	27.1	0.0	0.0	4.7	3.7	9.3	8.4	100.0
1993	8.1	9.2	10.3	6.6	5.9	10.3	0.7	0.0	1.5	5.5	12.8	29.3	100.0
1994	19.2	9.4	5.0	5.6	20.6	8.8	6.2	1.2	0.9	2.1	7.7	13.3	100.0
1995	9.6	7.4	9.6	6.6	10.3	5.1	2.2	0.0	0.0	10.3	19.9	19.1	100.0
1996	7.1	9.9	11.3	10.3	14.5	7.8	12.4	5.3	0.0	6.0	8.9	6.4	100.0
Maine:													
1992	8.0	7.1	10.6	16.3	15.1	19.6	5.4	0.0	1.0	1.3	7.7	8.0	100.0
1993	10.9	7.0	17.7	7.6	7.4	14.0	7.8	0.2	0.6	4.9	8.9	13.2	100.0
1994	14.3	11.0	11.2	12.4	14.9	13.3	6.3	0.4	1.1	4.6	4.6	5.9	100.0
1995	22.3	12.6	15.5	16.0	14.6	11.2	4.4	0.0	0.0	0.0	0.5	2.9	100.0
1996	5.1	8.7	11.8	16.9	19.0	9.2	15.9	1.5	0.0	0.0	4.6	7.2	100.0
Idaho:													
1992	7.4	7.6	8.2	10.6	9.0	11.3	11.7	2.8	5.3	8.6	7.6	9.8	100.0
1993	9.8	8.3	11.6	8.2	8.8	9.4	11.0	5.9	2.9	5.1	9.0	10.0	100.0
1994	8.6	8.4	10.4	7.5	8.5	10.6	9.4	4.1	8.4	6.6	8.2	9.5	100.0
1995	8.7	10.8	11.7	9.8	12.0	8.9	9.9	4.9	2.1	6.8	8.5	5.9	100.0
1996	9.3	8.2	11.0	9.5	9.9	8.4	10.7	5.6	5.0	8.3	6.5	7.7	100.0
California:													
1992	4.7	6.7	4.5	4.0	20.5	31.9	16.7	4.7	5.6	0.4	0.0	0.2	100.0
1993	0.6	0.4	1.4	0.0	10.1	26.2	24.7	17.5	6.6	3.4	4.4	4.8	100.0
1994	5.0	2.0	0.2	0.7	15.1	27.6	23.6	18.6	4.4	1.3	0.4	1.1	100.0
1995	2.3	7.0	9.7	2.9	14.5	20.9	15.7	11.8	5.2	3.5	2.1	4.5	100.0
1996	3.9	4.5	3.2	7.1	16.8	17.5	21.6	7.8	6.0	4.3	4.1	3.2	100.0
All other:													
1992	5.9	5.9	5.4	3.3	2.8	4.7	10.3	10.5	14.5	18.7	9.0	9.1	100.0
1993	4.8	3.0	4.4	2.6	3.3	3.9	4.4	18.4	19.3	11.6	12.8	11.5	100.0
1994	9.7	3.9	5.9	5.8	6.4	5.7	5.8	21.1	19.8	7.2	4.2	4.7	100.0
1995	7.7	3.6	3.6	6.2	7.1	3.1	3.9	18.7	19.5	13.4	7.8	5.5	100.0
1996	7.9	8.1	8.4	4.9	5.3	3.6	5.9	8.5	19.6	11.0	10.8	6.1	100.0
Total:													
1992	6.7	6.9	7.2	8.7	9.4	12.4	11.2	4.6	7.2	9.7	7.3	8.6	100.0
1993	7.5	5.9	9.1	5.7	7.1	10.0	9.6	9.6	7.5	6.8	9.8	11.3	100.0
1994	9.6	7.2	8.4	6.9	9.7	10.9	9.2	8.5	9.6	5.9	6.4	7.7	100.0
1995	8.5	9.1	10.1	8.6	11.5	9.2	8.9	7.7	5.3	7.4	7.7	6.0	100.0
1996	8.0	7.9	9.7	8.7	10.5	8.5	11.3	6.2	7.3	7.8	7.1	6.8	100.0

Source: U.S. Department of Agriculture, Agricultural Marketing Service, Fruit and Vegetable Division, Market News Branch, *Fresh Fruit and Vegetable Arrivals in Eastern Cities*, various issues.

Table 5-11

Fresh table stock potatoes: Share, by source, of monthly arrivals in Philadelphia, by principal sources, 1992-96

Source and year	Month												Total
	January	February	March	April	May	June	July	August	September	October	November	December	
Canada:	<i>Share by source (Percent)</i>												
1992	2.8	0.7	1.6	4.8	1.2	0.0	0.0	0.7	0.5	1.8	2.3	3.2	1.5
1993	5.0	6.9	7.1	9.0	8.6	2.6	0.0	0.7	2.9	5.7	7.5	9.7	5.3
1994	9.2	4.5	5.2	10.5	4.6	2.9	0.5	0.4	0.5	4.3	4.7	5.2	4.0
1995	6.8	3.7	3.1	1.3	0.0	0.0	0.0	0.4	2.4	9.3	13.8	19.2	4.3
1996	13.2	19.4	14.4	11.0	9.5	5.1	1.6	0.0	3.2	8.1	13.6	13.3	8.6
Maine:													
1992	13.2	14.8	15.5	13.8	5.8	0.4	0.0	0.0	0.0	1.2	11.6	10.6	6.8
1993	13.3	17.8	15.3	23.4	12.3	4.8	0.0	0.0	4.7	10.0	13.7	8.3	9.9
1994	15.8	13.6	9.7	11.4	4.6	1.0	0.0	0.0	0.0	0.6	6.7	5.8	5.0
1995	7.3	8.8	13.6	16.5	8.3	0.5	0.0	0.8	2.4	1.2	4.6	3.2	5.3
1996	13.2	13.3	12.5	12.6	6.5	2.0	0.4	0.5	0.0	1.0	1.6	4.0	5.0
Idaho:													
1992	50.7	55.6	54.4	51.0	43.6	46.2	40.9	12.0	26.2	37.1	37.8	41.3	41.2
1993	41.1	26.7	38.8	32.4	37.7	35.5	30.4	23.5	15.3	32.1	43.2	40.7	33.4
1994	36.8	43.9	42.2	53.5	42.3	37.8	38.3	26.1	35.5	45.7	48.0	48.3	40.5
1995	44.1	54.4	43.8	51.9	48.0	44.5	38.0	12.4	16.7	31.1	36.8	33.6	37.1
1996	43.1	33.7	38.8	40.8	29.9	36.0	39.7	24.1	24.7	35.5	38.7	43.4	35.7
California:													
1992	0.7	0.7	1.0	0.0	21.5	19.6	13.9	0.0	0.5	0.0	0.0	0.0	5.5
1993	0.0	1.0	0.0	1.4	17.9	18.6	11.1	2.7	0.6	0.0	0.0	0.0	5.1
1994	0.7	0.0	0.0	1.8	14.4	16.7	17.5	7.3	2.7	1.8	0.0	2.3	6.2
1995	2.3	3.7	3.7	1.3	12.7	16.5	10.9	6.2	3.6	1.9	2.9	4.8	6.4
1996	2.9	3.1	1.3	11.5	15.9	16.2	13.1	3.7	1.6	3.0	1.6	2.9	6.9
All other:													
1992	32.6	28.1	27.5	30.3	27.9	33.8	45.2	87.3	72.8	59.9	48.3	45.0	45.0
1993	40.6	47.5	38.8	33.8	23.5	38.5	58.5	73.2	76.5	52.1	35.6	41.4	46.3
1994	37.5	37.9	42.9	22.8	34.0	41.6	43.7	66.2	61.3	47.6	40.7	38.4	44.3
1995	39.5	29.4	35.8	29.1	31.0	38.5	51.0	80.2	75.0	56.5	42.0	39.2	47.0
1996	27.6	30.6	33.1	24.1	38.3	40.6	45.2	71.7	70.5	52.3	44.5	36.4	43.7
Total:													
1992	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1993	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1994	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1995	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1996	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Source: U.S. Department of Agriculture, Agricultural Marketing Service, Fruit and Vegetable Division, Market News Branch, *Fresh Fruit and Vegetable Arrivals in Eastern Cities*, various issues.

Table 5-12

Fresh table stock potatoes: Share, by month, of monthly arrivals in Philadelphia, by principal sources, 1992-96

Source and year	Month												
	January	February	March	April	May	June	July	August	September	October	November	December	Total
Canada:	<i>Share by month (Percent)</i>												
1992	12.5	3.1	9.4	21.9	6.3	0.0	0.0	3.1	3.1	9.4	12.5	18.8	100.0
1993	8.8	6.9	13.7	12.7	13.7	5.9	0.0	1.0	4.9	7.8	10.8	13.7	100.0
1994	17.3	7.4	9.9	14.8	11.1	7.4	1.2	1.2	1.2	8.6	8.6	11.1	100.0
1995	13.0	5.4	5.4	2.2	0.0	0.0	0.0	1.1	4.3	16.3	26.1	26.1	100.0
1996	12.1	10.0	12.1	11.1	10.0	5.3	2.1	0.0	3.2	8.4	13.7	12.1	100.0
Maine:													
1992	13.4	14.1	21.1	14.1	7.0	0.7	0.0	0.0	0.0	1.4	14.1	14.1	100.0
1993	12.6	9.4	15.7	17.8	10.5	5.8	0.0	0.0	4.2	7.3	10.5	6.3	100.0
1994	23.5	17.6	14.7	12.7	8.8	2.0	0.0	0.0	0.0	1.0	9.8	9.8	100.0
1995	11.5	10.6	19.5	23.0	16.8	0.9	0.0	1.8	3.5	1.8	7.1	3.5	100.0
1996	20.7	11.7	18.0	21.6	11.7	3.6	0.9	0.9	0.0	1.8	2.7	6.3	100.0
Idaho:													
1992	8.4	8.7	12.1	8.5	8.7	12.0	9.8	2.1	6.1	7.2	7.5	9.0	100.0
1993	11.4	4.2	11.7	7.3	9.4	12.7	8.0	5.4	4.0	7.0	9.7	9.1	100.0
1994	6.8	7.0	7.9	7.4	9.9	9.5	8.5	7.4	8.0	9.1	8.7	10.0	100.0
1995	9.8	9.3	9.0	10.3	13.9	11.2	9.2	4.0	3.5	6.3	8.1	5.3	100.0
1996	9.5	4.2	7.8	9.9	7.6	9.0	12.7	5.7	5.9	8.9	9.4	9.5	100.0
California:													
1992	0.9	0.9	1.7	0.0	32.2	38.3	25.2	0.0	0.9	0.0	0.0	0.0	100.0
1993	0.0	1.0	0.0	2.0	29.3	43.4	19.2	4.0	1.0	0.0	0.0	0.0	100.0
1994	0.8	0.0	0.0	1.6	22.0	27.6	25.2	13.4	3.9	2.4	0.0	3.1	100.0
1995	2.9	3.7	4.4	1.5	21.3	24.3	15.4	11.8	4.4	2.2	3.7	4.4	100.0
1996	3.3	2.0	1.3	14.4	20.9	20.9	21.6	4.6	2.0	3.9	2.0	3.3	100.0
All other:													
1992	5.0	4.0	5.6	4.7	5.1	8.0	9.9	13.8	15.5	10.6	8.8	9.0	100.0
1993	8.1	5.4	8.5	5.5	4.2	9.9	11.1	12.2	14.5	8.1	5.8	6.7	100.0
1994	6.3	5.5	7.3	2.9	7.3	9.6	8.8	17.1	12.6	8.6	6.7	7.3	100.0
1995	7.0	4.0	5.8	4.6	7.1	7.7	9.7	20.6	12.5	9.0	7.3	4.9	100.0
1996	5.0	3.1	5.5	4.8	8.0	8.3	11.8	13.9	13.9	10.7	8.8	6.5	100.0
Total:													
1992	6.9	6.4	9.2	6.9	8.2	10.7	9.9	7.1	9.6	7.9	8.2	9.0	100.0
1993	9.3	5.2	10.1	7.5	8.4	11.9	8.8	7.7	8.8	7.2	7.5	7.5	100.0
1994	7.4	6.5	7.5	5.6	9.5	10.2	9.0	11.4	9.1	8.0	7.3	8.4	100.0
1995	8.3	6.4	7.6	7.4	10.7	9.3	9.0	12.1	7.9	7.5	8.1	5.8	100.0
1996	7.9	4.4	7.2	8.6	9.1	8.9	11.4	8.5	8.6	8.9	8.6	7.8	100.0

Source: U.S. Department of Agriculture, Agricultural Marketing Service, Fruit and Vegetable Division, Market News Branch, *Fresh Fruit and Vegetable Arrivals in Eastern Cities*, various issues.

Table 5-13
Fresh table stock potatoes: Arrivals in selected U.S. cities, by major shipping origins, 1992-96

	Shipping origin										
City and year	Idaho	California	Washington	Oregon	Colorado	Wisconsin	North Dakota	Maine	Canada	All others	Total
(Percent)											
1992:											
Boston ...	20	13	4	0	1	3	3	33	10	13	100
New York .	59	9	4	1	2	4	3	6	2	10	100
Philadelphia	41	5	3	0	2	5	6	7	2	30	100
Atlanta ...	36	2	4	2	9	29	1	1	0	17	100
Chicago ..	21	3	8	1	1	30	20	0	0	16	100
Detroit ...	57	9	1	0	0	4	1	0	0	28	100
St Louis ..	54	1	1	0	13	6	3	0	0	22	100
Dallas ...	12	4	3	0	69	1	1	0	0	11	100
Los Angeles	17	28	20	18	10	0	1	0	0	5	100
Others ² ..	31	8	17	7	5	8	1	3	0	22	100
Total ..	33	10	10	5	8	8	4	5	1	16	100
1993:											
Boston ...	12	9	4	1	1	3	2	40	20	9	100
New York .	47	10	6	2	1	2	3	10	5	14	100
Philadelphia	33	5	4	0	1	5	7	10	5	30	100
Atlanta ...	37	1	5	2	14	25	2	1	0	12	100
Chicago ...	19	5	9	3	1	27	18	0	0	19	100
Detroit ...	54	10	3	3	0	6	1	0	0	24	100
St Louis ..	49	1	2	0	22	3	5	0	0	18	100
Dallas ...	17	3	4	1	63	0	1	0	1	12	100
Los Angeles	16	33	15	15	10	0	0	0	0	10	100
Total ..	33	10	10	5	8	8	4	5	1	16	100
1994:											
Boston ...	17	12	6	2	1	4	2	33	17	6	100
New York .	56	7	6	4	1	2	1	9	6	8	100
Philadelphia	41	6	6	1	1	5	5	5	4	27	100
Atlanta ...	38	3	5	1	22	14	1	1	0	14	100
Chicago ...	29	5	10	12	0	17	16	0	0	11	100
Detroit ...	61	8	4	1	0	6	1	0	0	19	100
St Louis ..	51	1	3	0	22	5	3	0	0	13	100
Dallas ...	18	5	7	0	56	0	1	0	1	12	100
Los Angeles	9	36	19	19	10	0	0	0	0	7	100
Others ² ..	31	10	15	6	7	7	2	4	1	18	100
Total ..	33	11	11	6	8	6	4	5	3	13	100
1995:											
Boston ...	20	12	6	1	1	3	2	28	18	10	100
New York .	64	11	4	1	0	0	1	5	3	10	100
Philadelphia	37	6	3	1	0	5	5	5	4	33	100
Atlanta ...	38	1	2	1	21	16	2	1	0	17	100
Chicago ...	35	5	7	22	0	7	19	0	0	7	100
Detroit ...	61	9	5	1	0	3	2	0	0	19	100
St Louis ..	50	1	3	1	21	5	4	0	0	16	100
Dallas ...	15	2	3	0	69	0	1	0	0	9	100
Los Angeles	7	36	21	21	8	0	0	0	0	6	100
Others ² ..	33	11	16	7	3	7	2	5	1	16	100
Total ..	33	12	10	9	8	4	5	4	2	13	100
1996:											
Boston ...	16	12	5	1	1	3	1	20	31	11	100
New York .	58	11	4	1	0	1	1	5	7	12	100
Philadelphia	36	7	5	2	0	5	2	5	9	29	100
Atlanta ...	39	3	2	1	22	17	1	1	0	14	100
Chicago ...	44	8	8	16	0	5	14	0	0	4	100
Detroit ...	68	8	3	1	0	4	1	0	0	16	100
St Louis ..	55	2	3	1	20	3	2	0	0	14	100
Dallas ...	18	2	3	0	66	1	0	0	0	9	100
Los Angeles	3	60	14	17	2	0	0	0	0	3	100
Others ² ..	29	12	20	8	1	5	2	6	2	14	100
Total ..	33	17	10	8	6	4	3	4	4	11	100

¹ Includes both rail and truck arrivals. Unloads at Canadian cities are excluded from origin totals.

² Includes Baltimore, Buffalo, Cincinnati, Columbia, Denver, Miami, New Orleans, Pittsburg, San Francisco, and Seattle.

Source: USDA, AMS.

Processed potatoes

The share of the U.S. market for frozen processed potato products held by U.S. processors⁶¹ declined by 3 percent during 1992-96 while the share held by Canadian processors⁶² nearly doubled (table 2-16). Canada held virtually the entire U.S. import market for frozen potato products during 1992-96. Most of this gain in Canadian share resulted from relatively large contracts won from major U.S. QSRs, mainly in the Northeast and Midwest regions.⁶³

Stocks

As noted earlier, fresh potatoes are stored and marketed throughout the year. U.S. stocks on May 1, 1997, were up 7 percent from the corresponding period in 1996 and up 59 percent from 1992.⁶⁴ The high level of fresh potatoes in storage in May 1997 reflects increased production levels in 1996 and also indicates an excess of supply in relation to market demand. In response to the high storage levels, USDA recently announced a diversion program to reduce fresh potato stocks.⁶⁵

Comparable monthly data are not available for Canada. Stocks generally are nil by June each year.⁶⁶ However, Canadian storage holdings of fresh potatoes as of November 1, the highest monthly level, rose during 1992-96 to a record level of 6.6 billion pounds in 1996 (table 4-5), reflecting high production levels that year. The Canadian stock situation was similar to that in the United States in 1996, and the above average stock levels in both countries have affected competitive conditions in the U.S. market for both U.S. and Canadian producers.

Inventories of processed potatoes reflect market conditions as well as supply conditions. Generally declining U.S. monthly inventories of frozen french fries as a share of annual production during 1992-96 suggest positive market conditions during the period (table 5-2). However, at least one U.S. processor recently cited a buildup in inventories as a contributing factor in a cutback in production capacity.⁶⁷ Slower growth in the U.S. market in 1996 may affect inventory levels in 1997.

⁶¹ Includes production by facilities located in the United States regardless of ownership.

⁶² Includes production by facilities located in Canada regardless of ownership.

⁶³ Collier, Shannon, Rill & Scott, PLLC, posthearing brief, p. 2; USITC staff interviews with officials of the U.S. and Canadian frozen processed potato industries, Apr. 8-17, 1997.

⁶⁴ Based on data from the USDA, NASS, *Potato Stocks*, May 14, 1997.

⁶⁵ USDA Press Release 138-97, May 29, 1997, found at <http://www.usda.gov/ams/138.htm>

⁶⁶ See discussion in chapter 4 on fresh potato inventories.

⁶⁷ Collier, Shannon, Rill & Scott, PLLC, posthearing brief, exhibit 8.

Prices

Fresh Potatoes

U.S. and Canadian prices of table stock potatoes are compared in two Northeastern U.S. markets, Boston and New York City. Canadian fresh table stock potatoes enter the United States and are sold primarily in Northeastern U.S. markets.⁶⁸ USDA data show that Canada was the source of the largest share of Boston's 1996 fresh potato arrivals, 31 percent, a share which exceeded even Maine's 20 percent and Idaho's 16 percent.⁶⁹

To compare U.S. and Canadian prices, the USITC staff used a monthly price series for comparable classes and quality of a number of U.S. and Canadian potatoes sold in the Boston and New York City markets. Monthly prices were collected for comparable U.S. and Canadian russets and round white potatoes for each of the two cities, resulting in the development of eight price series. Prices for each product were not available for all months during the January 1994-April 1997 period. Monthly comparisons are limited to those months for which both U.S. and Canadian prices were reported in a particular market. Generally, two comparisons are made for each potato type in each market:

(1) A "yearly" average of the monthly U.S./Canadian price differences or margins, calculated for as many of each year's months as comparable U.S. and Canadian prices were reported. These yearly averages are averages of the monthly differences and are calculated for each year and potato type in each of the two urban markets.

(2) A second set of "early year" comparisons were performed for a common season in order to uncover seasonal distortions of U.S./Canadian price comparisons. U.S./Canadian price differences or margins were calculated for as many of each year's first four months as comparable U.S. and Canadian prices were both reported. Early year averages were calculated for each year and potato type in each of the two urban markets [data were not complete enough to effect other seasonal comparisons].

The *average monthly differences* between U.S. and Canadian prices during a year are focused on, rather than the difference in average U.S. and average Canadian prices each year.

⁶⁸ Producers testified as to significant regional concerns in the Northeastern United States where Canadian potato exports, especially from the Provinces of P.E.I. and New Brunswick, primarily enter the United States, and hence compete most directly with U.S. production in those markets. Transcript of the hearing, testimonies of G. Smith, pp. 46-48, and NPC, pp. 145-147.

⁶⁹ See table 5-13.

Price comparisons for russets and round white potatoes in Boston

The following four monthly price series were obtained for the comparison period (January 1994-April 1997) and are reported in table 5-14: Idaho russet price, P.E.I. russet price, Maine round white price, and P.E.I. round white price.⁷⁰ Since 1994, P.E.I. russet potato prices have been far more competitive than Idaho russet prices in the Boston market. Idaho russet prices exceeded P.E.I. russet prices in Boston by an average monthly margin of 51 to 67 percent annually during the January 1994-April 1997 period.⁷¹ Early year averages to monthly Idaho russet price excesses over P.E.I. russet prices ranged from of 54 to 75 percent.⁷²

Data shown in table 5-14 suggest that P.E.I. and Maine round white potatoes are closer in value to each other than are Idaho and P.E.I. russet potatoes. Further, it appears that Maine round white prices have shifted from one of competitive advantage to one of disadvantage relative to P.E.I. round white prices in the Boston market since 1994. The average monthly margin by which Maine round white potato prices fell below P.E.I. prices was 5.9 percent in 1994. This average monthly advantage in U.S. over Canadian price fell to 4.7 percent during 1995, and to a far lower 0.7 percent in 1996. In January-April 1997, Maine round white potato prices actually exceeded P.E.I. prices by an average monthly margin of 2.9 percent in Boston. When comparing prices during the early months of 1994-96 in Boston, Maine prices of round white potatoes fell below P.E.I. prices by an average monthly margin of 11 percent in 1994, and this average monthly margin of Maine price advantage increased to more than 14 percent in 1995.⁷³ In 1996, however, the early-year Maine price advantage fell markedly to 2.4 percent and then turned to disadvantage with Maine prices actually exceeding P.E.I. price in early 1997 by an average monthly margin of 2.9 percent in Boston.

Based on such limited available data, Canadian russet potato prices have been more competitive than prices of Idaho russets since 1994, while the Maine price advantage over P.E.I. for round white potatoes declined during 1994-96 and turned to a disadvantage in early 1997. The more pronounced Canadian price advantages over U.S. potatoes in Boston is confirmed by 1996 USDA data on Boston fresh potato arrivals which indicate that Canadian fresh potatoes

⁷⁰ The following prices were obtained: (1) Canadian grade-one Russet Burbank potatoes of size 70 from P.E.I. and sold in Boston on the last market day of each month in 50 lb. cartons, (2) U.S. grade-one Russet Burbank potatoes of size 70 from Idaho and sold in Boston on the last market day of each month in 50 lb. cartons, (3) U.S. grade-one Maine round white potatoes of size A sold in Boston on the last market day of each month in 50 lb. sacks, and (4) Canadian grade-one P.E.I. round white potatoes of size A sold in Boston on the last market day of each month in 50 lb. sacks. These prices were obtained from USDA, AMS, Market News Branch, *Onions and Potatoes*, found at <http://mis.ifas.ufl.edu/cgi-bin/barc/barc?a=v&d>.

⁷¹ As previously stated, these are annual averages of the monthly Idaho/P.E.I. russet price differences calculated for each year during the months for which both Idaho and P.E.I. prices were reported as per table 5-15.

⁷² Early year average margins of Idaho price excess over P.E.I. price were calculated with differing numbers of monthly data depending on data availability as follows: with February-April data in 1994 and 1996; and January through April in 1997. Early year P.E.I. data were not reported during the early year period for 1995.

⁷³ Because of data unavailability, the early year average Maine/P.E.I. price differences for round white potatoes in Boston were calculated with data for Jan. through Mar. in 1994; Jan. and Feb. in 1995; Jan. through Mar. in 1996; and Jan. and Mar. data in 1997.

Table 5-14

Fresh table stock potatoes: Monthly prices in the Boston market for U.S. and Canadian Russet Burbank and round white potatoes, by year and by month, Jan. 1994-Apr. 1997

Year and month	Russet Burbank		Round white	
	P.E.I.	Idaho	P.E.I.	Maine
	<i>U.S. dollars per 50 lb. carton</i>		<i>U.S. dollars per 50 lb. sack</i>	
1994:				
Jan	n/a	\$16.75	\$6.00	\$5.50
Feb	\$11.50	18.25	6.50	5.75
Mar	12.75	21.00	7.00	6.00
Apr	12.75	19.50	n/a	6.00
May	n/a	19.75	n/a	6.00
Jun	n/a	21.00	n/a	n/a
Jul	n/a	21.50	n/a	n/a
Aug	n/a	n/a	6.75	6.00
Sept	n/a	9.50	5.25	5.50
Oct	n/a	10.75	5.50	5.37
Nov	n/a	10.00	5.50	5.50
Dec	n/a	9.00	5.50	5.25
1995:				
Jan	n/a	9.50	6.00	5.25
Feb	n/a	11.00	6.25	5.25
Mar	n/a	11.50	n/a	5.25
Apr	n/a	10.75	n/a	5.37
May	n/a	19.00	n/a	n/a
Jun	n/a	19.50	n/a	n/a
Jul	n/a	20.00	n/a	n/a
Aug	n/a	n/a	n/a	n/a
Sept	n/a	n/a	4.75	n/a
Oct	13.00	17.50	5.00	n/a
Nov	11.00	18.50	5.00	5.50
Dec	n/a	18.00	4.92	4.87
1996:				
Jan	10.25	n/a	4.92	4.87
Feb	9.75	18.25	5.00	4.87
Mar	10.75	18.50	4.92	4.75
Apr	11.25	18.50	5.00	n/a
May	11.50	18.00	5.75	n/a
Jun	n/a	18.00	n/a	9.75
Jul	n/a	14.50	n/a	n/a
Aug	n/a	15.00	5.25	n/a
Sept	n/a	10.00	n/a	n/a
Oct	n/a	8.75	4.00	4.25
Nov	n/a	8.75	4.00	3.87
Dec	5.75	8.75	4.00	4.00
1997:				
Jan	6.00	9.25	3.75	3.97
Feb	6.00	8.75	4.00	n/a
Mar	6.00	9.75	4.00	4.00
Apr	6.00	9.25	n/a	4.00

Note.—The "n/a" denotes data that are not available. Russet Burbank prices at Boston are for (1) Canadian grade-one russets of size 70 from P.E.I. in 50 lb. cartons, and (2) U.S. grade-one russets of size 70 from Idaho, in 50 lb. cartons. Prices of round white potatoes (RWP) at Boston are (1) Canadian grade-one RWPs from P.E.I. of size A in 50 lb. sacks, and (2) U.S. grade-one RWPs from Maine of size A in 50 lb. sacks. Prices were those reported on the last market day of each month. When price ranges were reported, Commission staff recorded the mid-point price for evenly divisible ranges, and the mid-point price rounded-down to one full cent when ranges were not evenly divisible.

Source: U.S. Department of Agriculture, Market News Branch, *Onions and Potatoes*, found at <http://mis.ifas.ufl.edu/cgi-bin/barc/barc?a=v&d>.

accounted for 31 percent of Boston's fresh arrivals.⁷⁴ This market share of arrivals exceeds that of any other source country or State, including Maine, which supplied only 20 percent of Boston's fresh arrivals that year.⁷⁵

Price comparisons for russets and round white potatoes in New York City

The following four prices were examined for the period January 1994 through April 1997 (table 5-15): price of New Brunswick russets (hereafter New Brunswick russet price), Idaho russet price, price of P.E.I. round white potatoes, and price of Maine round white potatoes.⁷⁶ New Brunswick russet prices were more competitive than Idaho prices in New York City throughout the January 1994-April 1997 period. The average monthly margin by which the Idaho russet price exceeded the New Brunswick russet price was 36 percent in 1994, 17 percent in 1995, and 49 percent in 1996.⁷⁷

Early-year comparisons also suggest competitive price advantages of New Brunswick russets over Idaho russets in New York. Average early-year margins by which Idaho russet prices exceeded New Brunswick russet prices were 38 percent in 1994, 21 percent in 1995, and about 51 percent in 1996.⁷⁸

Table 5-15 demonstrates that data needed for U.S.-Canadian comparisons of round white potato prices are scarce and such comparisons should be cautiously implemented. Generally, Maine round white potatoes were more competitively priced than P.E.I. round white potatoes in the New York market. The average monthly margin by which the price of Maine round white potatoes fell below the price of comparable P.E.I. product was 4.3 percent in 1994; 8 percent in 1995; and 5.4 percent in 1996.⁷⁹ USITC staff did not make the early-year price comparisons of U.S.-Canadian round white potato prices in New York City because data were not available.

⁷⁴ See table 5-13.

⁷⁵ Ibid.

⁷⁶ USITC staff collected the following: (1) Canadian grade-one Russet Burbank potatoes of size 70 from New Brunswick and sold in the New York City market on the last market day of each month in 50 lb. cartons, (2) U.S. grade-one russets of size 70 from Idaho and sold on the New York City market on the last market day of each month in 50 lb. cartons, (3) Canadian grade-one P.E.I. round white potatoes of size A sold on the New York City market during the last market day of each month in 50 lb. sacks, and (4) U.S. grade-one Maine round white potatoes of size A sold on the New York City market during the last market day of each month in 50 lb. sacks. Prices were obtained from USDA, AMS, Market News Branch, *Onions and Potatoes*. U.S. and Canadian monthly potato price comparisons are limited to 1994, 1995, and 1996, as New York City prices of the above cited Canadian potatoes were not reported.

⁷⁷ These average monthly differences or margins were calculated over differing months each year depending on when data were reported. The margins averages were calculated with 5 months of data in 1994, 3 months of data in 1995, and 6 months of data in 1996.

⁷⁸ Data unavailability necessitated that these average early-year margins were calculated for different numbers of months: with Jan.-Feb. and Apr. data in 1994 and 1996, and with only March data in 1995.

⁷⁹ These average monthly margins of U.S. price advantage were calculated with 2 months of data in 1994; 1 month of data in 1995; and 3 months of data in 1996.

Table 5-15

Fresh table stock potatoes: Monthly prices in the New York market for U.S. and Canadian Russet Burbank and round white potatoes, Jan. 1994-Apr. 1997

Year and month	Russet Burbank		Round white	
	New Brunswick	Idaho	New Brunswick	Maine
	U.S. dollars per 50 lb. carton		U.S. dollars per 50 lb. sack	
1994:				
Jan	\$11.50	\$16.50	\$6.50	\$6.25
Feb	12.00	17.50	6.87	6.25
Mar	n/a	17.50	6.87	6.87
Apr	13.50	17.00	n/a	6.75
May	14.00	18.50	n/a	8.00
Jun	14.00	18.50	n/a	8.00
Jul	n/a	n/a	n/a	n/a
Aug	n/a	n/a	n/a	n/a
Sept	n/a	9.00	n/a	n/a
Oct	n/a	9.00	n/a	5.62
Nov	n/a	10.00	n/a	5.62
Dec	n/a	8.75	n/a	5.25
1995:				
Jan	n/a	n/a	n/a	5.25
Feb	n/a	10.50	n/a	5.25
Mar	9.50	11.50	n/a	5.75
Apr	n/a	n/a	n/a	5.82
May	12.50	14.00	n/a	6.50
Jun	13.50	16.00	n/a	6.50
Jul	n/a	17.00	n/a	n/a
Aug	n/a	19.00	n/a	n/a
Sept	n/a	n/a	n/a	n/a
Oct	n/a	16.00	6.25	n/a
Nov	n/a	15.50	6.25	5.75
Dec	n/a	16.50	n/a	5.50
1996:				
Jan	11.00	16.50	n/a	5.37
Feb	11.00	17.00	n/a	5.50
Mar	11.00	n/a	n/a	5.50
Apr	11.50	17.00	5.75	6.00
May	9.00	17.50	8.50	6.75
Jun	13.50	17.50	n/a	7.25
Jul	12.50	15.00	n/a	7.50
Aug	n/a	n/a	n/a	n/a
Sept	n/a	12.00	n/a	n/a
Oct	n/a	8.25	n/a	n/a
Nov	n/a	8.75	4.25	4.25
Dec	n/a	8.50	n/a	4.50
1997:				
Jan	n/a	8.50	n/a	4.50
Feb	n/a	8.50	n/a	4.50
Mar	n/a	n/a	n/a	4.50
Apr	n/a	8.50	n/a	n/a

Note.—The "n/a" denotes data that are not available. The four New York City (NYC) prices are for: (1) Canadian grade-one Russet Burbank potatoes of size 70 from New Brunswick and sold on the NYC market on the last market day of each month in 50 lb. cartons, (2) U.S. grade-one russets of size 70 from Idaho and sold on the NYC market on the last market day of each month in 50 lb. cartons, (3) Canadian grade-one PEI round white potatoes of size A sold on the NYC market during the last market day of each month in 50 lb. sacks, and (4) U.S. grade-one Maine round white potatoes of size A sold on the NYC market during the last day of each month in 50 lb. sacks. When ranges were reported, Commission staff recorded the mid-point price for evenly divisible ranges, and the mid-point price rounded-down one full cent when ranges were not evenly divisible.

Source: USDA, AMS, Market News Branch, *Market Information System, Onions and Potatoes*, at <http://mis.ifas.ufl.edu/cgi-bin/barc/barc?a=v&d>.

Summary of U.S./Canadian wholesale potato price comparisons

A number of conclusions emerge from the analyses of the wholesale prices reported by the USDA. First, prices of Canadian russets have been lower than prices of Idaho russets in the Boston and New York City markets. Second, patterns of U.S.-Canadian price differences are less clear in the two markets for comparable sales of round white potatoes.

In the Boston and New York City markets, Canadian russets have been priced lower than Idaho russets since 1994. Some of the persistently higher Idaho russet prices over comparable Canadian prices in the Northeastern U.S. markets (tables 5-14 and 5-15) may be attributed to substantial rail and truck transportation costs noted in testimony by Idaho growers.⁸⁰ Since 1994, the once-standing price advantage of Maine round white potatoes over P.E.I.-grown product in the Boston market has not only diminished, but has turned into a price disadvantage. Since 1994, data in the New York City market, which are more limited than data in the Boston market, suggest that Maine-produced round white potatoes are lower priced than comparable product from P.E.I.

The conclusions that U.S. russets are more expensive than Canadian (P.E.I., New Brunswick) russets in these two markets, and that Canadian round white potatoes have begun to sell at lower prices than Maine product in the Boston market, coincide with other evidence and with modeling results. Canadian data (chapter 4) suggest that 59 percent of Canada's 1996 potato acreage and production are concentrated in P.E.I., New Brunswick, Québec, Newfoundland, and Nova Scotia.⁸¹ Maine industry sources have testified that fresh potato imports from Canada (particularly from P.E.I. and New Brunswick) enter in significant volumes through Northeastern U.S. ports; that such imports compete with U.S. production more in Northeastern U.S. markets than in other regions such as Western U.S. markets where grower/processor production contracts are more common; and that such imports are displacing U.S. production and depressing U.S. potato prices.⁸² Such testimony is supported by USDA data on Northeast U.S. fresh potato arrivals that suggest (1) Canada captured the largest share of Boston's 1996 fresh arrivals, 31 percent, which exceeded Maine's 20-percent share and Idaho's 16-percent share, and (2) that most (78 percent) of the 1996 U.S. arrivals of fresh Canadian potatoes arrived in New York or Boston.⁸³ Further, results from the Commission staff's modeling analyses presented and detailed in later sections suggest that (1) fresh table stock imports (virtually all of Canadian origin) primarily displace U.S. product in the Northeast; and (2) that variations in price and quantity of fresh potatoes from such events as increased imports of Canadian potatoes influence Northeastern potato markets more than other U.S. markets. Finally, analysis of movements in nominal and real exchange rate (in terms of Canadian dollars per U.S. dollar) suggest that the nominal U.S./Canadian price comparative patterns are rather close

⁸⁰ Transcript of the hearing, testimony of Gary Ball, a grower from Idaho, pp. 113-114.

⁸¹ See tables 4-2 and 4-7 in chapter 4. This proportion was calculated by USITC staff from official statistics of Statistics Canada.

⁸² Transcript of the hearing, testimonies of G. Smith, pp. 46-48; the NPC pp. 145-147; Olympia Snowe, U.S. Senator from Maine, pp. 9-19; and Susan Collins, U.S. Senator from Maine, pp. 20-28.

⁸³ See tables 5-5 and 5-13.

approximations of real patterns when the relative inflation patterns are accounted for in both countries.⁸⁴

Processed Potato Product Prices

Prices generally have been less of a competitive factor for processed, particularly frozen, potato products compared with fresh potatoes. This is mainly because of price stability conferred by annual contracts between producers and QSRs; the relative importance of product specifications; product differentiation; and robust market expansion. However, recent market developments have accentuated the role of price in determining the competitiveness of U.S. and Canadian processed potato producers. These developments include a substantial expansion of capacity and production in the United States and Canada; increasing competition from Canada in the U.S. market; and a slowdown in the U.S. growth of the QSR industry. In addition, major processed potato items, particularly frozen french fries, have become more of a commodity-type product where price is a significant attribute, much like fresh table stock potatoes. As a result, both U.S. and Canadian producers increasingly are under competitive price pressure in the U.S. market.

Exchange Rates

Canadian processing interests⁸⁵ and U.S. growers⁸⁶ have stated that exchange rates influence U.S.-Canadian potato sales through price. U.S. growers stated that the weaker Canadian dollar renders Canadian potatoes cheaper for U.S. purchasers in terms of U.S. dollars, and encourages Canadian potato exports to the U.S. market, which in turn displace U.S. production and depress U.S. prices.⁸⁷ Canadian processing interests⁸⁸ stated that while nominal exchange rates may seem to influence Canadian potato sales through price, this advantage is offset by such rates making U.S.-produced farm inputs and processing equipment used in Canada more expensive for Canadian farmers to purchase. Further, they contend that Canada's rate of inflation has been

⁸⁴ The nominal Canadian dollar per U.S. dollar exchange rate (hereafter, nominal Can\$/US\$ rate) is the nominal "rf" exchange rate in nominal Canadian dollars per nominal U.S. dollar. The real Canadian/U.S. dollar exchange rate is calculated as follows: nominal Can\$/US\$ exchange rate multiplied by the ratio (PPIUS/PPICN), where the PPIUS and PPICN are the producer price index for the U.S. and Canada, respectively. The nominal Can\$/US\$ exchange rate is the rf exchange rate of Canadian dollars per U.S. dollar obtained from the Canada page; PPICN was obtained from the Canada page (line 63), and PPIUS was obtained from the United States page of the International Monetary Fund (IMF), *International Financial Statistics*, 1996 Yearbook and Apr. 1997 issues. The real exchange rate calculation follows J. Longmire and A. Morey, "Strong Dollar Dampens Demand for U.S. Farm Exports," in Foreign Agricultural Economic Report No. 193, Dec. 1983. During 1994-96, the IMF's nominal rf exchange rates were nearly constant within the 1.364-1.366 range, as were real rates within the 1.26-1.30 range.

⁸⁵ Food Institute of Canada, prehearing brief, Apr. 21, 1997, pp. 16-19.

⁸⁶ NPC, prehearing brief, Apr. 21, 1997. Transcript of the hearing, testimony of G. Smith, a grower from Maine and a member of the NPC, p. 108.

⁸⁷ NPC, prehearing brief, p. 15.

⁸⁸ Food Institute of Canada, prehearing brief, pp. 16-19. Also transcript of the hearing, statement of D. Westfall on behalf of the Food Institute of Canada, p. 203.

higher than that in the United States, such that the real Can\$/US\$ exchange rates, and hence real Canadian-U.S. purchasing power, have changed very little.⁸⁹

USITC staff examined the nominal exchange rates, expressed in terms of Canadian dollars (Can\$) per U.S. dollar (US\$), for 1987-96 (table 5-16). The real Can\$/US\$ exchange rate provides the actual purchasing power of the Canadian dollar relative to the U.S. dollar when the nominal exchange rate is adjusted for relative inflation patterns among the two countries.⁹⁰ The exchange rate between two freely convertible currencies, here Canadian and U.S. dollars, reflects the supply and demand conditions for those currencies in the two nations, particularly in their respective money markets. Changes in the nominal and real exchange rates may influence U.S.-Canadian potato trade through effects on US\$-denominated prices of Canadian potato products in the U.S. market and Can\$-denominated prices of U.S. potato products in the Canadian market. A rise in the nominal and real Can\$/US\$ exchange rates, as shown in table 5-16, suggests that more Canadian dollars are required to equal a U.S. dollar, signaling a fall in the strength of the nominal and real Canadian dollar relative to the U.S. dollar. If the nominal rate's rise is offset by an increase in relative U.S.-Canadian inflation so as to negate any change in the real rate, the exchange rates should have neutral effects on Canadian-U.S. price competitiveness.

As shown in table 5-16, nominal and real Canadian-U.S. exchange rates have increased since 1988, by about 11 percent and 9.5 percent, respectively, thereby weakening the Canadian dollar relative to the U.S. dollar in both nominal and real terms. Canadian inflation appears not to have adequately offset nominal Can\$/US\$ exchange rate increases or canceled out exchange-rate-induced price advantages. Subsequently, since Canada's currency has weakened relative to U.S. currency by nearly 10 percent in real terms since 1988, it appears that exchange rates have resulted in a price advantage to Canadian potato growers and processors relative to U.S. growers and processors. The extent to which the relative weakening of the Canadian dollar to the U.S. dollar in real terms has offset potato price advantages with increased Canadian production expenses through higher prices of U.S.-produced farm inputs is unclear. Yet exchange rates may account for some of the price advantages that Canadian potatoes have had over comparable U.S. products noted above in the Boston and New York City markets, and are supported by U.S. producer testimony.⁹¹

⁸⁹ Food Institute of Canada, prehearing brief, pp. 16-19.

⁹⁰ The real Canadian/U.S. dollar exchange rate is calculated as follows: nominal C\$/US\$ exchange rate multiplied by the ratio (PPIUS/PPICN), where the PPIUS and PPICN are the producer price index for the U.S. and Canada, respectively. The nominal exchange rate of Canadian dollars per U.S. dollars was obtained from the Canada page; PPICN was obtained from the Canada page (line 63), and PPIUS was obtained from the United States page of IMF, *International Financial Statistics*, 1996 Yearbook and Apr. 1997 issues. The real exchange rate calculation follows J. Longmire and A. Morey, "Strong Dollar Dampens Demand for U.S. Farm Exports." This form of the real exchange rate has been used before, as referenced in agricultural economics literature such as D. Bessler and R. Babula, "Forecasting Wheat Exports: Do Exchange Rates Matter?," *Journal of Business and Economic Statistics*, Vol. 66 (1987), pp. 397-406.

⁹¹ Transcript of the hearing, testimony of Gary Smith, p. 108.

Table 5-16

Nominal and real Canadian dollar/U.S. dollar exchange rates, 1988-96

Year	Nominal exchange rate	Real exchange rate
1988	1.231	1.16
1989	1.184	1.15
1990	1.167	1.17
1991	1.146	1.16
1992	1.209	1.22
1993	1.290	1.28
1994	1.366	1.30
1995	1.372	1.26
1996	1.364	1.27

Note.—The real Canadian/U.S. dollar exchange rates were calculated by Commission staff as follows: nominal Can\$/US\$ exchange rate multiplied by the ratio (PPIUS/PPICN), where the PPIUS and PPICN are the producer price index for the U.S. and Canada, respectively. The nominal exchange rate of Canadian dollars per U.S. dollar was obtained from the Canada pages; PPICN was obtained from the Canada pages (line 63), and PPIUS was obtained from the United States pages of the International Monetary Fund (IMF) source below. The real exchange rate calculation follows J. Longmire and A. Morey, "Strong Dollar Dampens Demand for U.S. Farm Exports," in Foreign Agricultural Service Economic Report No. 193, Dec. 1983.

Source: International Monetary Fund *International Financial Statistics*, 1996 Yearbook and Apr. 1997 issues.

Terms of Sale

The terms of sale may affect competitiveness by influencing buyers decisions to source fresh potatoes from suppliers that offer favorable logistical and financial terms. Fresh potato prices usually are quoted on a free-on-board (f.o.b.) origin or a delivered basis, and payment is usually specified within a certain period. For example, for fresh table stock potato sales from New Brunswick into the Northeastern U.S. market, prices generally are quoted on an f.o.b. origin basis,⁹² in U.S. funds, with all duties and assessments included in the price.⁹³ Payment generally is due in full within 21 days, although this period may be significantly longer in practice; no discounts are given for early payment. For sales from P.E.I., prices generally are quoted on a delivered basis,⁹⁴ with the other terms being similar to those for sales from New Brunswick.⁹⁵ Sales from Maine into the Northeastern U.S. market mostly are sold through brokers or dealers, with growers quoting prices to them on an f.o.b. origin basis; the brokers or dealers arrange for transportation and quote prices to their buyers on a delivered basis. Payment generally is due

⁹² This is mainly owing to the proximity to the U.S. border, which allows for the use of U.S. trucks for most shipments.

⁹³ USITC staff telephone conversation with a Canadian fresh table stock potato industry official, June 25, 1997.

⁹⁴ This is mainly owing to the distance from the U.S. border, which causes shippers to use their own or other Canadian trucks for most shipments.

⁹⁵ USITC staff telephone conversation with a Canadian fresh table stock potato industry official, June 25, 1997.

in full within 30 days, but as with Canadian sales, this period may be significantly longer in practice.⁹⁶ Prices of fresh table stock potatoes shipped from Idaho generally are quoted on an f.o.b. origin basis, with payment due in full within 30 days and no discounts for early payment.⁹⁷

Although these terms may differ somewhat within the United States and between the United States and Canada, any such differences do not appear to lead to a significant competitive advantage for fresh potato shippers in either country.⁹⁸ Rather, the final cost of the product to the final buyer is the most important consideration.⁹⁸

The terms of sale for processed potato sales may affect competitiveness in a similar manner as compared with fresh potatoes. In general, the terms of sale for processed potatoes are similar for U.S. and Canadian suppliers; as such, the terms of sale do not appear to result in a competitive advantage for producers in either country.⁹⁹ Prices generally are quoted on an f.o.b. origin basis, with full payment due within a specified time, typically 15-30 days. A discount is usually given for early payment, typically 1-2 percent for payment within 10-15 days. These terms generally are similar for QSR and retail sales. As is the case for table stock potatoes, the final delivered cost is more important to the processed potato buyer than the pricing basis (f.o.b. or delivered), as such buyers are sensitive to prices.¹⁰⁰

Government Assistance, Trade, and Regulatory Programs

Government Assistance Programs

As shown in chapters 2 and 4, the U.S. and Canadian Governments provide assistance programs at different levels that either directly or indirectly affect their fresh and processed potato industries. In the United States, Federal Government assistance to the potato industry includes export and market development programs, market support and regulatory programs, crop insurance, disaster assistance, research and extension, irrigation assistance through the Bureau of Reclamation, and financial assistance for rural businesses. Although programs vary by State, State assistance includes tax incentives, financial assistance, research, and market development and promotion.

Canadian assistance programs affecting potato growing and processing industries include income safety net programs, crop insurance, regional and economic development programs, production financing and credit programs, research, and export and marketing assistance. Many Federal Canadian assistance programs are administered with the Provinces through cost-sharing arrangements between the Federal and Provincial Governments.

⁹⁶ USITC staff telephone conversation with a Maine fresh table stock potato industry official, June 25, 1997.

⁹⁷ USITC staff telephone conversation with an Idaho fresh table stock potato industry official, June 25, 1997.

⁹⁸ Transcript of the hearing, p. 110.

⁹⁹ USITC staff interviews with officials of the United States and Canadian frozen processed potato industries, Apr. 8-17, 1997.

¹⁰⁰ Collier, Shannon, Rill & Scott, prehearing brief, p. 26.

Owing to the general nature of many government assistance programs both in the United States and Canada, it was not possible for USITC staff to determine an aggregate numerical level of support for each country specific to the potato industry. In general, both countries provide a wide range of programs, many of which are similar in nature. However, one difference appears to be the intent of certain Canadian programs to facilitate the diversification out of relatively low-value crops, such as wheat, to higher value crops and agricultural products, such as potatoes. Similarly, as part of this diversification strategy, certain Canadian programs appear to be directed at the development of agricultural value-added activities, such as potato processing and packing. Crop expansion programs for potatoes were cited in chapter 4 for potato growers in Manitoba, New Brunswick, and Saskatchewan, all of which are benefiting from either Federal or Provincial assistance, or both.

Seed Certification

Government involvement with respect to seed certification differs in Canada and the United States. Canada has a single, national certification agency, administered by the Canadian Food Inspection Agency, with common terminology and criteria.¹⁰¹ The United States has 18 separate State seed potato certification agencies, many with different terminology and criteria. The single agency and standard may provide Canadian seed potato producers an advantage, particularly in export markets.¹⁰² Some U.S. and Canadian seed potato industry members believe that the single certification agency has given Canadian exporters an advantage in gaining markets, particularly in Mexico.¹⁰³ The U.S. seed potato industry is attempting to establish a similar national certification agency in the United States in conjunction with the USDA.¹⁰⁴

Trade Policy

Fresh Potatoes

Tariffs

Tariffs on fresh potato trade between the United States and Canada have been negotiated under the Canada-United States Free Trade Agreement (CFTA) and the subsequent North American Free Trade Agreement (NAFTA), as shown in the following tabulation (data from the Canada-United States Free Trade Agreement, Final Text, December 9, 1987; the Harmonized Tariff Schedules of the United States Annotated, 1997; and the Canadian Harmonized Tariff Schedules, 1997, in percent ad valorem or national currency):

¹⁰¹ Canadian Horticultural Council, prehearing brief, Apr. 21, 1997, p. 4, exhibit 6.

¹⁰² Transcript of the hearing, testimony of Larry Buba, Ivan Noonan, pp. 245-246.

¹⁰³ USITC staff interviews with officials of the Canadian and U.S. seed potato industries, Apr. 7-17, 1997.

¹⁰⁴ USITC staff interviews with officials of the U.S. seed potato industry, Apr. 14-17, 1997.

Country and item	Base rate	Rate as of Jan. 1, 1997:
United States:		
Seed	0.77¢/kg.	Free
Other .....	.77¢/kg.	Free
Canada:		
Seed	\$7.72/mt.	77.2¢/mt.
Other	\$7.72/mt.	77.2¢/mt.

In addition, the Canadian Province of British Columbia has imposed antidumping duties on imports of fresh potatoes from Washington, Oregon, California, and Idaho since 1984. The antidumping duties vary based on the difference between a calculated "normal value" and the export price for various varieties, packs, and sources. For example, during Apr. 20-26, 1997, antidumping duties ranged from zero to Can\$5.62 per hundredweight (app. F). Such imports enter free of duty during May 1-July 31. The U.S. industry has expressed concern about several points regarding the imposition of the antidumping duties, including the use of "mostly prices," the calculation of "normal values," and the implications of the size of the U.S. industry regarding the threat of dumping.¹⁰⁵

Nontariff barriers

Sanitary and phytosanitary (SPS) restrictions and inspection requirements, which concern the control of disease and pests, are generally similar in the United States and Canada. U.S. seed potato exporters are particularly concerned with Canadian restrictions on imports of U.S. seed potatoes with respect to nematodes.¹⁰⁶ Canadian exporters of fresh table stock potatoes are particularly concerned with a "spot-check" program in Maine¹⁰⁷ during 1995-96 and with "stratified compliance examinations."¹⁰⁸

According to U.S. industry officials, differences in U.S. and Canadian grading regulations result in more restrictive Canadian import requirements with respect to fresh potato sizes. U.S. regulations allow for smaller potatoes from Canada to be imported, while Canadian regulations require larger size potatoes from the United States.¹⁰⁹ The NPC and the Potato Committee of the Canadian Horticultural Council currently are working to harmonize grades.¹¹⁰

¹⁰⁵ Transcript of the hearing, testimony of Joel Junker, pp. 67-74; NPC, 1997 *National Trade Estimate Report*, submitted to the Office of the U.S. Trade Representative, Nov. 27, 1996, p. 4.

¹⁰⁶ USITC staff interviews with officials of the U.S. seed potato industry, Apr. 14-17, 1997; transcript of hearing, testimony of Henry Michael, p. 66.

¹⁰⁷ Canadian Horticultural Council, prehearing brief, p. 16.

¹⁰⁸ Canadian Horticultural Council, posthearing brief, p. 3.

¹⁰⁹ USITC staff interviews with officials of the U.S. fresh potato industry, Apr. 14-17, 1997; transcript of hearing, testimony of Henry Michael, p. 66.

¹¹⁰ Canadian Horticultural Council, prehearing brief, p. 15; exhibit 20.

U.S. exports of fresh potatoes to Canada are limited by restrictions under of the Fresh Fruit and Vegetable Regulations of the Canada Agricultural Products Act (CAPA). These restrictions, which also apply to inter-Provincial shipments of fresh potatoes within Canada, generally prohibit bulk shipments of fresh potatoes for processing or repacking. Processors and repackers must request a ministerial exemption for such shipments. The following tabulation shows the amount of U.S. exports of fresh potatoes granted such exemption during 1994-96 (in thousands of pounds):¹¹¹

Purpose	1994	1995	1996
Processing ¹	436,511	355,602	336,202
Repacking	40,785	50,375	138,420

¹ According to the Canadian Snack Food Association, 141.9 million pounds were imported in 1994 and 86.4 million pounds were imported in 1995 for potato chip processing. The remainder is believed to be destined for frozen processed potato production.

Canadian interests contend that ministerial exemptions are “virtually never rejected.”¹¹² However, a letter from the responsible Canadian Government agency to the U.S. Embassy states that “nearly all requests are postponed until there is evidence of a shortage and are then granted.”¹¹³ U.S. potato industry officials contend that “procedural delays often curtail marketing opportunities for U.S. shippers.”¹¹⁴ The United States maintains no such restrictions on imports of fresh potatoes from Canada.¹¹⁵

Another Canadian restriction that affects U.S. trade in fresh potatoes is the prohibition of consignment sales under the CAPA. U.S. interests contend that Canadian shippers are not constrained by this prohibition when shipping between Provinces¹¹⁶ or into the United States,¹¹⁷ which does not have a similar restriction. However, Canadian interests maintain that Canadian fresh potato shippers are prohibited from consignment sales regardless of the origin and destination.¹¹⁸

¹¹¹ Canadian Horticultural Council, prehearing brief, p. 20.

¹¹² Canadian Horticultural Council, prehearing brief, p. 20.

¹¹³ Letter from R.A Carberry, Director, Dairy, Fruit and Vegetable Division, Food Production and Inspection Branch, AAFC, Dec. 6, 1995, presented in *ibid.*, exhibit 25.

¹¹⁴ NPC, posthearing brief, p. 15.

¹¹⁵ Bulk shipments of fresh potatoes from Canada to U.S. States with marketing orders may require a certificate of privilege to certify the destination. Transcript of the hearing, testimony of Gary Ball, p. 107.

¹¹⁶ National Potato Council, 1997 “National Trade Estimate Report,” submitted to the Office of the U.S. Trade Representative, Nov. 27, 1996, p. 3; NPC, posthearing brief, exhibit 1, May 27, 1997.

¹¹⁷ NPC, posthearing brief, p. 16.

¹¹⁸ Canadian Horticultural Council, posthearing brief, p. 3.

Market Access in Mexico

A major concern of the U.S. fresh potato industry is the relative market access accorded the United States and Canada to Mexico under the NAFTA.¹¹⁹ The access to the Mexican market differs substantially for seed and table stock potatoes. Although Mexican imports of seed potatoes are duty-free and market access was not negotiated specifically under NAFTA, Mexico historically has restricted imports owing to phytosanitary considerations. These considerations have been addressed since 1976, when the North American Plant Protection Organization (NAPPO) was established to develop regional phytosanitary standards which can be used by member countries as recommendations to be implemented by their internal regulatory and legislative processes.¹²⁰ NAPPO established North American seed potato trade standards on October 18, 1995.¹²¹ An ad hoc potato working group, comprising federal plant protection officials of Canada, the United States, and Mexico drafted work plans to implement the standards.

Mexico, in October 1996, expressed its desire to have separate, bilateral work plans with the United States and Canada and wanted reciprocity in terms of market access. The U.S. contingent was unprepared for immediate reciprocity, as more time was needed to address the proximity of the U.S. market to Mexico and pest and disease concerns. U.S. and Mexican representatives currently are continuing discussions.¹²² The Canadian contingent signed a bilateral work plan on October 24, 1996.¹²³ Canadian concerns regarding reciprocity are mitigated largely by transportation factors. Despite the bilateral work plan between Canada and Mexico, U.S. exports of seed potatoes to Mexico exceed those from Canada, as shown in the following tabulation (data from the U.S. Department of Commerce and Statistics Canada, in thousands of U.S. dollars):

Source	1992	1993	1994	1995	1996	Jan.- Mar. 1996	Jan.- Mar. 1997
United States . .	344	463	505	498	1,189	460	2,566
Canada	13	0	0	0	9	0	0

For market access for fresh table stock potatoes under NAFTA, Mexico converted an import licensing system to a transitional, 10-year tariff-rate quota (TRQ). The initial within-quota

¹¹⁹ Charlene Barshefsky, United States Trade Representative, letter to the Honorable Marcia Miller, Chairman, U.S. International Trade Commission, May 5, 1997, in appendix A.

¹²⁰ NAPPO, information found at http://www.nappo.org/menu_E.htm.

¹²¹ NAPPO, *Requirements for the Importation of Potatoes Into, and Movement Within, the Regional Territories of the North American Plant Protection Organization*, found at http://www.nappo.org/pot-std_E.htm.

¹²² USITC staff telephone conversation with a NAPPO official, June 13, 1997.

¹²³ Workplan Between Agriculture and Agri-Food Canada and the Department of Agriculture, Livestock and Rural Development of Mexico, Establishing the Phytosanitary Measures for Bilateral Trade in Seed Potatoes Between Canada and Mexico.

amount for U.S. exports of fresh table stock potatoes was 15,000 metric tons, while the amount for Canada was 4,000 metric tons.¹²⁴ The within-quota quantity increases by 3 percent annually. The over-quota quantity, both from the United States and Canada, was dutiable at \$354 per metric ton, but not less than 272 percent ad valorem. An aggregate 24 percent of the over-quota tariff is being eliminated during the first 6 years of the agreement, while the remainder will be phased out over the rest of the 10-year transition period. In 1996, the U.S. TRQ was 15,914 metric tons (35.084 million pounds), while that for Canada was 4,244 metric tons (9.356 million pounds). The over-quota tariff rate in 1996 was \$311 per metric ton, but not less than 239.3 percent. Compared with 1996 production levels, the U.S. TRQ was approximately 0.07 percent of production while the Canadian TRQ was about 0.11 percent of production. In 1997, the U.S. TRQ is 16,391 metric tons (36.136 million pounds) and that for Canada is 4,371 metric tons (9.637 million pounds). The over-quota tariff rate in 1997 is \$297 per metric ton, but not less than 228.4 percent ad valorem.

Processed Potatoes

Tariffs

Tariffs on processed potato product trade between the United States and Canada have been negotiated under the CFTA and NAFTA, as shown in the following tabulation (data from the CFTA, Final Text, December 9, 1987; the Harmonized Tariff Schedules of the United States Annotated, 1997; and the Canadian Harmonized Tariff Schedules, 1997; in percent ad valorem or national currency):

Country and item	Rate as of Jan. 1, 1997	
	Base rate	
United States:		
Frozen, not pp	17.5%	1.7%
Dried	2.9¢/kg.	Free
Flour	2.6¢/kg.	.2¢/kg.
Flakes	2.9¢/kg.	.2¢/kg.
Starch .....	.88¢/kg.	Free
Frozen, pp	10%	1%
Other, pp	10%	1%
Canada:		
Frozen, not pp	10%	1%
Dried	10%	Free
Flour	12.5%	1.2%
Flakes	10%	1%
Starch	12.5%	1.2%
Frozen, pp	10%	1%
Other, pp	10%	1%

¹²⁴ NAFTA, Annex 302.2, Schedule of Mexico, chapter 7, p. 1, footnotes 2-4.

Nontariff barriers

Nontariff barriers faced by Canadian frozen processed potato exporters in the U.S. market are minimal. Similar product standards and inspection requirements exist between the two countries. Nontariff barriers faced by U.S. exporters of frozen processed potatoes to Canada, however, have been more significant.

The Processed Products Regulations of the CAPA required that immediate containers holding food products, such as frozen french fries, be packed and labeled in metric increments of 500 grams or more. This requirement resulted in the industry standard 5-pound inner packages inside a master carton being labeled as 2 kilograms. This so-called "Larger-than-Largest" size regulation was modified in December 1995 to require that only the outside container be so labeled.¹²⁵ U.S. interests contend that this regulation suppressed U.S. exports to Canada and that such exports rebounded following its modification.¹²⁶ Canadian interests state that Canadian producers were opposed to the regulation and also benefit from its modification.¹²⁷ Another barrier faced by the U.S. industry is the requirement to include both French and English labels, although this requirement applies to Canadian producers as well.¹²⁸

Market access in Mexico

As with fresh potatoes, an issue of concern to the U.S. frozen processed potato industry is the relative market access gained by the United States and Canada in Mexico under NAFTA.¹²⁹ Under NAFTA, Mexican duties on various processed potatoes will be phased out over 10 years and will be covered by a special agricultural safeguard, which is a seasonal TRQ. Under the safeguard, the under-quota amount is based on the highest annual quantity of imports during 1989-91 plus 5 percent and will expand at an annual compounded rate of 3 percent over the 10-year transition period.¹³⁰ The over-quota tariff rate is the lower of either the initial MFN rate or the rate in effect at the time of the safeguard action. The following tabulation shows the initial Mexican MFN tariff applicable to over-quota imports from the United States, the current Mexican NAFTA tariff applicable to under-quota imports from the United States, the initial safeguard base, and the safeguard base for 1996 and 1997 for U.S. exports of various processed potato products (data from the NAFTA, Annex 302.2, Schedule of Mexico):

¹²⁵ Memorandum from the Dairy, Fruit and Vegetable Division, AAFC, Dec. 8, 1995, provided in the Canadian Embassy's prehearing brief, "Government of Canada Response in the 332 Investigation on Potatoes and Processed Potato Products, Apr. 24, 1997, response 7.

¹²⁶ Collier, Shannon, Rill & Scott, prehearing brief, p. 12; and *ibid.*, posthearing brief, p. 22.

¹²⁷ Food Institute of Canada, prehearing brief, p. 22.

¹²⁸ USITC staff interviews with officials of the U.S. frozen processed potato industry, Apr. 14-17, 1997.

¹²⁹ Charlene Barshefsky, United States Trade Representative, letter to the Honorable Marcia Miller, Chairman, U.S. International Trade Commission, May 5, 1997, in appendix. A.

¹³⁰ NAFTA annex 302.2, Schedule of Mexico, chapter 7, p. 7., footnotes 22 and 23; chapter 7, p. 8, footnote 25; chapter 11, p. 2; and, chapter 20, p. 2, footnotes 5 and 6.

Product	Initial MFN tariff	1997 NAFTA tariff	Safeguard base:		
			Initial	1996	1997
			(Million pounds)		
(Percent ad valorem)					
Frozen potatoes ¹	15	9	3.97	4.21	4.34
Dried potatoes	20	12	.44	.47	.48
Frozen french fries	20	12	6.83	7.25	7.47
Other prepared potatoes . . .	20	12	11.9	12.8	13.01

¹Not prepared or preserved.

The 1996 safeguard base for frozen french fries represented 0.1 percent of U.S. production that year.

The Mexican concessions for imports of processed potato products from Canada are similar to those for imports from the United States. However, the safeguard base for frozen and dried potatoes are aggregated (1,000 metric tons), as is the base for frozen french fries and other processed potatoes (1,000 metric tons); the initial MFN base tariff rate applicable to over-quota imports from Canada is 15 percent ad valorem for all these products; and the safeguard base increases by 5 percent per year, as shown in the following tabulation (compiled from the NAFTA, annex 302.2, Schedule of Mexico):

Product	Initial MFN tariff	1997 NAFTA tariff	Safeguard base:		
			Initial	1996	1997
			(Million pounds)		
	(Percent ad valorem)				
Frozen potatoes ¹ , dried potatoes ...	15	9	2.20	2.43	2.55
Frozen french fries, other prepared potatoes	15	9	2.20	2.43	2.55

¹Not prepared or preserved.

The concessions granted by Mexico to Canada for processed potato products generally are superior to those granted to the United States, as the initial tariff and the current under-quota tariff rates are 25 percent lower for most products (except frozen potatoes, not prepared or preserved), and the increase in the safeguard base is two-thirds higher. Assuming that the category for frozen french fries and other prepared potatoes is accounted for by frozen french fries, the safeguard base in 1996 represented about 0.17 percent of production, 55 percent higher than the share for U.S. production.¹³¹

¹³¹ There were no exports of other prepared or preserved potatoes to Mexico from Canada during 1992-96, according to data from Statistics Canada, StatsCan Online database.

Econometric Analysis of the U.S. Fresh Potato and Frozen French Fry Markets^{132,133}

Review of Economic Literature on Potatoes

Economic literature on the U.S. and Canadian potato industries falls into two general categories: descriptive analyses of market trends and modeling analyses which apply empirical techniques to data for insights on potato-related issues. Two descriptive analyses of U.S. and/or Canadian potato market trends since the early 1960s were located. Buckley and Mai¹³⁴ examined a number of U.S. potato market trends, including the increasing U.S. market shares captured by Western producers at the expense of Eastern U.S. producers, and increasing U.S. consumption shares attributed to processed potato products. Although imports of Canadian potatoes gained in U.S. market shares, particularly in the Eastern States, Eastern U.S. producers have also faced competition and market share erosion from Western U.S. producers.¹³⁵ Apparently, per capita

¹³² For Vice Chairman Bragg's views on econometric modeling, see U.S. International Trade Commission, *The Economic Effects of Antidumping and Countervailing Duty Orders and Suspension Agreements*, USITC publication 2900, 1995, p. xii, and *The Impact of the North American Free Trade Agreement on the U.S. Economy and Industries: A Three Year Review*, USITC publication 3045, 1997 (expected to be released to the public in July 1997).

¹³³ Commissioner Newquist notes that although he does not necessarily disagree with many of the "findings" in this report, he is generally skeptical of conclusions drawn from economic models rather than empirical quantification. In his view, economic modeling is essentially an exercise in untested, unverifiable, and often unrealistic theory. At its base level, economic modeling is nothing more than the manipulation of "data" and often vague or unspecific "variables." Underlying the data collection and identification of variables is the individual modeler's prejudices and subjective assumptions.

Thus, individuals measuring the impact of a particular event or occurrence, may employ completely different assumptions and focus on different variables—to say nothing of "ranges within the assumptions and variables. Likewise, the quality and representativeness of data collected must be assessed and acknowledged.

Commissioner Newquist does not dispute that model results in this report may represent a particular manipulation of available data using certain assumptions. However, given the limitations of the modeling exercise, he questions the extent to which policy decisions should be based on these manipulations, particularly where, as here, some of the "measuring" is of events that did not occur.

For further discussion of Commissioner Newquist's view regarding economic modeling, particularly its limitations, see U.S. International Trade Commission, *The Impact of the North American Free Trade Agreement on the U.S. Economy and Industries: A Three Year Review*, USITC publication 3045, 1997, appendix F, and *The Economic Effects of Antidumping and Countervailing Duty Orders and Suspension Agreements*, USITC publication 2900, 1995, p. XI ("Views of Commissioner Don Newquist"). See also, U.S. International Trade Commission, *Potential Impact on the U.S. Economy and Industries of the GATT Uruguay Round Agreements*, Volume I, USITC publication 2790, 1994, p. I-7, n. 17, and *Potential Impact on the U.S. Economy and Selected Industries of the North American Free-Trade Agreement*, USITC publication. 2597, 1993, p. 1-6, n.9.

¹³⁴ K. Buckley and B. Mai, "Fresh Potato Market Shares in Eastern U.S. Cities, 1960-1984," in USDA, ERS, *Vegetable Situation and Outlook Report*, TVS-23, Sept. 1986.

¹³⁵ Ibid.

consumption in the United States has increased because demand for processed potato products increased more than demand for fresh potatoes decreased.¹³⁶

Zepp, Plummer, and McLaughlin¹³⁷ summarized the development of the United States and Canadian potato industries since the 1930s. Both nations' industries share a number of common trends: rising potato farm size; increasing yields and productivity; and rising production, despite large reductions in acreage.¹³⁸ There are a number of differing trends among the U.S. and Canadian industries. U.S. production has shifted from east to west, while regional Canadian production shares have been stable.¹³⁹ In the Atlantic and Central regions of Canada, some potato acreage has shifted out of Québec and Ontario, while acreage in P.E.I. has increased.¹⁴⁰ Fresh potato consumption has a greater share of total consumption in Canada than in the United States.¹⁴¹

There have been several articles summarizing modeling tool applications to issues relating to the U.S. and Canadian potato industries in the literature since the mid-1980s. Richards, Kagan, and Gao¹⁴² estimated own-price elasticities of -0.48 for Marshallian U.S. fresh potato demand, and of -0.22 for the Hicksian U.S. fresh potato demand.¹⁴³ They note that their fresh potato elasticities are somewhat higher than other literature estimates such as those of Guenther, Levi, and Lin (discussed below) because some of these other studies reflect analysis periods which omit some of the recent proliferation of potato-competing substitutes (curly fries, premixed rice products, gourmet breads, etc.) which tend to render U.S. own-price elasticity of fresh potato demand more elastic.¹⁴⁴

Miranda and Glauber¹⁴⁵ combined maximum likelihood estimation methods with stochastic dynamic programming, and developed a nonlinear rational expectations model of the U.S. fall potato market. In particular, they focused on quantifying the dynamic attributes of the intraseasonal demand for U.S. fall potatoes. They modeled U.S. table stock demand, processing demand, and ending stock demand, and considered total demand to be the summation of these demand components.¹⁴⁶ They provided a number of U.S. potato market parameter estimates: income elasticities of 0.021 for fresh table demand (hereafter table demand) and 0.6 for processing demand, as well as own price elasticities of -0.4 for table demand, -0.17 for

¹³⁶ Ibid.

¹³⁷ Zepp, Plummer, and McLaughlin, "Potatoes: A Comparison of Canada-U.S. Structure."

¹³⁸ Ibid.

¹³⁹ Ibid.

¹⁴⁰ Ibid.

¹⁴¹ Ibid.

¹⁴² T. Richards, A. Kagan, and X. Gao, "Factors Influencing Changes in Potato and Potato Substitute Demand," *Agricultural and Resource Economics Review*, vol. 26, No. 1 (Apr. 1997), pp. 52-56.

¹⁴³ Ibid., p. 62. More specifically, the authors employed a linear approximation of an almost ideal demand system (LA/AIDS) model to investigate the effect of relative prices, expenditures, and various socioeconomic variables on U.S. potato-based demands. Their model was estimated with iterated seemingly unrelated regression.

¹⁴⁴ Ibid., p. 62. Richards, Kagan, and Gao's estimated Marshallian and Hicksian own-price elasticities of frozen product demand were positive, and hence not used here because of the unexplained sign.

¹⁴⁵ M. Miranda and J. Glauber, "Intraseasonal Demand for Fall Potatoes Under Rational Expectations," *American Journal of Agricultural Economics*, vol. 75, Feb. 1993, pp. 104-112.

¹⁴⁶ Ibid., pp. 105-106.

processing demand, and -0.9 for ending stock demand.¹⁴⁷ Expected price played an important positive role in ending stocks, with stocks moving in the same direction as expected price.¹⁴⁸ Processing demand, as expected, was far more income-elastic than table demand.¹⁴⁹ Of the three modeled demands, stock demand was the most price-elastic, while table demand was more price-elastic than processing demand.¹⁵⁰ Results concerning the dynamic nature of intraseasonal demand for U.S. fall potatoes suggest that total demand levels fall and become less price-elastic as the marketing year progresses; and potato prices generally rise throughout the market year.¹⁵¹

Guenthner, Levi, and Lin¹⁵² estimated an annual econometric model of U.S. potato-related demands at the following levels: potato chips, dehydrated food service, dehydrated retail, fresh, frozen food service, and frozen retail. They reported the following estimated own-price elasticities of demand: -0.14 for fresh potato demand; -0.55 for frozen product demand at retail; -0.77 for dehydrated product demand at retail; and -0.67 for potato chip demand.¹⁵³ At the Commission hearing, Guenthner treated these elasticity estimates as if they are the approximate inverses of own price elasticities of demand.¹⁵⁴ -7.0 for fresh potato demand; -1.8 for frozen product demand at retail; -1.3 for dehydrated product demand at retail; and -1.5 for potato chip demand.¹⁵⁵

A number of results of interest to this investigation emerged from the Guenthner, Levi, and Lin analysis: that the price elasticity of fresh potato demand is very inelastic, while the price flexibility of fresh potato demand is very high; that income effects (and income elasticities of demand) were positive on demands for frozen products and chips but negative on demands for fresh and dehydrated products; that societal preferences for enhanced convenience may be

¹⁴⁷ Ibid., p. 109.

¹⁴⁸ Ibid., p. 109.

¹⁴⁹ Ibid., p. 109.

¹⁵⁰ Ibid., p. 109.

¹⁵¹ Ibid., p. 110.

¹⁵² J. Guenthner, A. Levi, and B. Lin, "Factors that affect the Demand for Potato Products in the United States," *American Potato Journal*, vol. 68, No. 9, 1991, pp. 569-579. They estimated their model with ordinary and generalized least squares methods.

¹⁵³ Ibid., p. 574.

¹⁵⁴ This article served as part of the basis for the NPC's economic testimony at the hearing. After receiving the transcript of the hearing and the NPC's prehearing submission, it appears that the NPC mislabeled these price flexibilities of demand as price flexibilities of supply. USITC staff uses the correct term, price flexibilities of demand, for what were submitted as price flexibilities of supply since this article by Guenthner, Levi, and Lin has a fresh potato own-price elasticity of demand of -0.14 which inverts into the -7.0 price flexibility reported as price flexibility of supply by the NPC. The NPC prehearing brief mentions this article as the basis for their price flexibility of supply. Thus it appears that the -7.0 and other price flexibilities reported in the NPC's prehearing brief are actually price flexibilities of demand but misreported as price flexibilities of supply. See transcript of the hearing, pp. 50-54, and the NPC's prehearing brief, p. 13.

¹⁵⁵ For a particular demand, inverting own-price flexibilities into own-price elasticities should be done with caution. An own-price flexibility can be inverted into an approximate, lower-bound estimate of the absolute value of the own-price elasticity only under certain conditions. With zero cross-price effects, and essentially no substitutes, the inverse of the own-price flexibility approximates the lower bound of the own-price elasticity. If there are significant cross price effects, then the price flexibility is less than the own-price elasticity (in absolute value). See W. Tomek and K. Robinson. *Agricultural Product Prices* (Ithaca, NY: Cornell University Press, 1985), pp. 66-68. For the seminal work, see J. Houck, "The Relationships of Direct Price Flexibilities to Direct Price Elasticities," *Journal of Farm Economics*, vol. 47 (1965), pp. 789-792.

resulting in a switch from fresh to processed potatoes; and that movements of fresh potato price had a positive effect on frozen demand, suggesting that fresh and frozen potatoes are substitutes.¹⁵⁶ Further, the model estimated by Guenther, Levi, and Lin was estimated with annual data from 1970 or 1975 through 1988.¹⁵⁷

Love and Willet¹⁵⁸ estimated a 27-relation model of the U.S. potato industry. Included among their results are a -0.34 estimate of the price flexibility of U.S. fresh potato demand and a -0.22 estimate of the price flexibility of U.S. frozen product demand.¹⁵⁹

Goodwin, Fuller, Capps, and Asgill (hereafter, Goodwin et. al.)¹⁶⁰ estimated a four-equation potato price model, which included one equation for each of the Chicago, Dallas, Denver, and St. Louis markets. Estimated with monthly data and cross-section, time-series methods, the model included the following among its dependent variables: quantity traded; remaining fall stocks in storage; terminal market location; packaging type; and marketing season.¹⁶¹ Results suggest that state of origin, package type, and season marketing significantly influence price.¹⁶² Evidence also suggests that price differences exist between potato types because of marketing season and levels of fall potato stocks.¹⁶³ Grower-controlled and shipper-controlled factors such as cultivar selection, cultural practices, and market selected can be used to increase price and expand markets.¹⁶⁴

Econometric Relationships among Prices, Stocks, Market-Clearing Quantities, and Trade: The U.S. Markets for Fresh Potatoes and Frozen French Fries

For ease of presentation and expression, the term "U.S. fresh potatoes" refers to U.S.-produced fresh fall table stock potatoes; "french fries or fries" refers to frozen french fries; "fresh potato imports" refer to U.S. imports of fresh non-seed potatoes; and "market-clearing quantities" refers to the reduced form or equilibrium concept of quantities demanded and supplied rather

¹⁵⁶ Guenther, Levi, and Lin, "Demand for Potato Products," pp. 574-575.

¹⁵⁷ Ibid.

¹⁵⁸ J. Love and L. Willett, "Modeling the U.S. Potato Industry," *Vegetables and Specialties Situation and Outlook Report*, TVS-250, March 1990, pp. 16-24. The model has 27 relations (endogenous variables and a number of definitional identities) that subdivide the U.S. potato industry into five subsectors. All endogenous variables were econometrically estimated with annual 1961-1988 data. There is a four-relation production sector; an eight-relation utilization subsector; a stock subsector that includes two stock equations (for fresh and frozen potatoes); a seven-equation trade sector; and a retail sector with price-dependent retail demand functions for fresh and for frozen potatoes.

¹⁵⁹ Love and Willet, "Modeling the U.S. Potato Industry," p. 19.

¹⁶⁰ H. Goodwin, F. Fuller, O. Capps, and O. Asgill, "Factors Affecting Fresh Potato Price in Selected Terminal Markets," *Western Journal of Agricultural Economics*, vol. 13, No. 2, Dec. 1988, pp. 233-243.

¹⁶¹ Ibid.

¹⁶² Ibid.

¹⁶³ Ibid.

¹⁶⁴ Ibid.

than quantities specifically demanded or supplied. A monthly econometric model of the U.S. fresh potato and U.S. frozen potato markets, and its relevant simulations, are useful in illuminating the following competitive conditions:

- (1) how increased U.S. fresh potato imports influence U.S. fresh and frozen product markets through impacts on relevant prices, stocks, and market-clearing quantities,
- (2) how changes in U.S. fresh potato supply (stocks or traded quantities) affects the domestic fresh market, particularly fresh price; price, stocks, and market-clearing quantities in the domestic frozen potato market; and U.S. trade in these in these products.
- (3) how changes in U.S. fresh potato price influence U.S. fresh potato stocks and market-clearing quantities; U.S. prices, stocks, and market-clearing quantities of frozen potato products; and U.S. trade volumes of such products, and
- (4) how changes in market-clearing quantities of frozen potato products influence U.S. frozen potato prices and stocks; U.S. fresh potato prices, stocks, and market-clearing quantities; and ultimately U.S. trade in these products.

With adequate data, such a monthly econometric model can address regional issues and considerations such as whether U.S. fresh potato imports more adversely impact Northeastern U.S. growers through displaced shipments and lower prices than in such other major U.S. growing areas as the West.¹⁶⁵

Modeling Approach

Theory is useful in addressing some of these issues, but often only to a limited nonempirical degree. For example, theory may suggest that increased U.S. fresh potato imports displace U.S.-produced quantities and reduce domestic prices; that increased U.S. prices may lead to lower volumes of market-clearing quantities and increased imports; and that fresh potatoes, as a major frozen product input, have price and quantity variations which influence the U.S. frozen potato markets. Yet such theory often provides only limited insights concerning the empirical degree to which such relationships and competitive conditions are manifest. Further, there are truly empirical issues, such as whether U.S. fresh potato imports adversely influence Northeastern U.S. markets more severely than in the U.S. West, about which *a priori* theory has little to say. An empirical econometric model of the U.S. fresh and frozen potato markets is needed to generate evidence about as many of the USTR's requested insights as possible.

Commission staff reviewed the agricultural economic and modeling literature related to potatoes, and examined the available data bases for variables most relevant to this investigation's focus. For reasons summarized briefly here but detailed in the Technical Modeling Appendix, Commission staff chose a vector autoregression (VAR) model of the following nine monthly endogenous variables (hereafter denoted by the parenthetical, upper-cased labels):

¹⁶⁵ A Northeastern potato grower from Maine testified that imports do compete more with the Northeastern fresh market than with the Western fresh market. Transcript of the hearing, pp. 145-147.

1. U.S. imports of fresh, primarily Canadian, potatoes sold in the U.S., seed potatoes excluded (FRESHIMP)
2. Stocks of fresh U.S.-produced fall table potatoes (FRESHSTK)
3. Shipments of fresh fall table potatoes produced and sold (consumed) in the Northeast United States (NESHIP)¹⁶⁶
4. Shipments of fresh fall table potatoes produced and sold in the remainder or "non-Northeast" United States (RESTSHIP)
5. Quantities of U.S.-produced frozen french fries consumed (FRYQ)
6. U.S. fresh potato price (PFRESH)
7. U.S. french fry price (PFRIES)
8. Stocks of U.S.-produced french fries (FRYSTOCK)
9. U.S. exports of frozen french fries (EXPFRY)

Data definitions and sources are provided in the Technical Modeling Appendix. For reasons presented in the Technical Modeling Appendix, Commission staff chose to estimate (with ordinary least squares) the above nine potato-related variables as a monthly VAR model in levels converted to natural logarithms (hereafter, logged levels) over the period January, 1987 through November, 1996 (i.e., 1987:1-1996:11).¹⁶⁷ Following accepted procedures outlined in the Technical Modeling Appendix, the VAR model posits each of the nine endogenous current variables as a function of four lags of itself and of four lags of each of the remaining eight endogenous variables.¹⁶⁸ Each equation also includes a constant, a time trend, and 11 seasonal binary variables to account for time-ordered trends and seasonal factors not endogenous to the model.

The Technical Modeling Appendix details a number of staff's specification-related considerations that led to the choice of the above variables, and these considerations are only briefly mentioned here. First, the U.S. potato market was subdivided into fresh and frozen components to address USTR requests for information and analysis on the competitive conditions of both components. Second, the fresh fall table stock portion of the U.S.-grown fresh market was modeled, because in addition to data limitations, U.S. fall potato production accounts for the preponderance (about 90 percent in 1995) of U.S. fresh potato production (see chapter 2). Third, the french fry portion of the U.S. frozen potato market was modeled because

¹⁶⁶ As detailed in the Technical Modeling Appendix, the "Northeast U.S." fresh potato shipments include fresh table stock potatoes reported as shipped in Maine, New York (including Long Island), and New Jersey by rail, piggyback, and truck. There were no data on these volumes reported from other Northeastern States such as Vermont, New Hampshire, etc.

¹⁶⁷ Hereafter, monthly dates are numerically denoted with a colon, with the year denoted to the colon's left and the month numerically denoted to the colon's right. Hence, 1995:1 and 1995:12 denote Jan. and Dec. of 1995.

¹⁶⁸ R. Babula and D. Bessler, "The Corn-Egg Price Transmission Mechanism," *Southern Journal of Agricultural Economics*, vol. 22, No. 2 (Dec. 1990), pp. 80-83.

this segment constitutes most of the frozen market: nearly 90 percent of 1995 U.S. frozen product production.¹⁶⁹

Fourth, because a reduced form model was used (for reasons stated in the Technical Modeling Appendix), the modeled nonstock quantities of fresh shipments (NESHIP, RESTSHIP) and the volumes of U.S.-produced frozen french fries consumed domestically (FRYQ) are not quantities specifically produced (supplied) or specifically demanded, but rather the market-clearing quantities both produced and consumed.¹⁷⁰ And likewise, the modeled prices, the U.S. fry price or PFRIES and the U.S. price of fresh potatoes or PFRESH, are not specifically the supply prices at which products are offered or specifically the prices at which the products are demanded, but are rather those prices at which demand and supply volumes equate and clear the market.

Fifth, U.S. imports of fresh potatoes (FRESHIMP) were modeled as a source of North American-produced supply consumed in the U.S. market, and not as a trade flow within a U.S. import demand/foreign (primarily Canadian) supply framework. This is justified because of evidence suggesting that comparatively classed supplies of U.S. and imported (primarily Canadian) fresh potatoes are nearly perfect, if not perfect substitutes, such that increases in such imports are likely to have similar, if not identical, effects on U.S. markets as equal increases in U.S. production.

Sixth, there is no one monthly "market clearing quantity" series for U.S.-produced fresh tablestock potatoes. Therefore, data on fresh U.S.-produced fresh tablestock fall potatoes (FRESHSTK), fresh U.S. imports of tablestock potatoes as a North American supply produced for and consumed in the U.S. market (FRESHIMP), and shipments of fresh U.S.-produced fall table stock potatoes (NESHIP plus RESTSHIP) were included to represent monthly supply as best as limited data resources would allow.

And seventh, total U.S. fresh shipments of fall potatoes were subdivided into two variables: Northeast shipments (NESHIP) and shipments for the rest of the United States (RESTSHIP). This permits the addressing of certain "regional highlights" requested by USTR.

Model Simulations and Results

VAR econometrics is well suited to address the above-cited issues and competitive conditions. The method provides a tool called an impulse response function which can be used to shock the system of nine endogenous potato-related variables by a shock in one of the variables, say U.S. fresh potato imports. It is of interest to see how, and to what degree, that such a shock in one of the variables such as imports influences the other modeled variables such as Northeast fresh shipments as opposed to other U.S. fresh shipments, U.S. fresh and frozen french fry prices,

¹⁶⁹ U.S. french fry production in 1995 accounted for 86 percent of the 1995 volume of U.S. frozen potato product production according to the AFFI, *1995 Frozen Food Pack Statistics* (McLean, VA: AFFI, 1996), p. 30.

¹⁷⁰ See R. Babula, "An Empirical Examination of U.S. Lamb-Related Import and Domestic Market Relationships Near the Farmgate," *Journal of International Food and Agribusiness Marketing*, vol. 8, No. 2, 1996, p. 71.

stocks of french fries and fresh potatoes, etc.¹⁷¹ Given the USTR's requests in this investigation, the four simulations described below were chosen.

Before presenting the simulations and results, a number of points are required about the model and simulations. First, the model was estimated in logged levels such that shocks to and impulse responses in the logged variables are approximate proportional changes in the nonlogged variables and approximate percent changes when multiplied by 100.¹⁷² Second, the size and the direction (increase and decrease) of each shock are arbitrary because of the generality emerging from the model's linearity.¹⁷³

Simulation 1: 10 percent shock (increase) in stocks of fresh U.S.-produced fall potatoes (FRESHSTK) to generate responses in the remaining eight endogenous variables.¹⁷⁴

Simulation 2: 10 percent increase in U.S. fresh potato price (PFRESH) to generate responses in the remaining eight endogenous variables.

Simulation 3: 10 percent increase in quantities of U.S.-produced french fries produced and consumed (FRYQ) to generate responses in the remaining eight endogenous variables.

Simulation 4: 10 percent increase in U.S. fresh potato imports (FRESHIMP) to generate responses in the remaining eight endogenous variables.

Impulse responses (or responses) of the VAR model estimated in logged levels generated by such simulated shocks represent history's average percentage responses over and above time trends and seasonal factors. Response multipliers can be calculated from each simulation's statistically non-zero responses.¹⁷⁵ The multipliers, provided in table 5-17, indicate the model's percentage change in the response variable per percentage change in the shock variable. Sign is important: a positive multiplier suggests that each percentage change in the shock variable has generally coincided with the response variable changes, while negative multipliers suggest a variable's response in the opposite direction of the shock. For example, simulation 1's multiplier of -0.77 for PFRESH suggests that on average historically, each percentage increase

¹⁷¹ R. Babula, P. Colling, and G. Gajewski, "Dynamic Impacts of Rising Lumber Prices on Housing-Related Prices," *Agribusiness: An International Journal*, vol. 10, No. 5 (Sept./Oct. 1994), pp. 377-378.

¹⁷² See USITC, *Lamb Meat*, chapter 5 and appendix L, and Babula, Colling, and Gajewski, "Dynamic Impacts of Lumber Prices," pp. 377-378.

¹⁷³ That is, the simulated responses from a one percent shock in some variable may be converted to a 10 percent shock by multiplying results by a scalar of 10.0, and a positive shock's simulated results may be converted to a negative shock's results through result multiplication by negative one. See Babula, Colling, and Gajewski, "Dynamic Impacts of Lumber Prices," pp. 377-378.

¹⁷⁴ For ease of presentation, the simulations are defined in terms of positive shocks of 10 percent increases, although other sized shocks and other signed shocks are easily generalized from the linear model's results.

¹⁷⁵ For detailed calculation methods and interpretations of such multipliers, see Babula, Colling, and Gajewski, "Dynamic Impacts of Lumber Prices," pp. 379-381.

(decrease) in FRESHSTK has coincided with an oppositely-directed¹⁷⁶ -0.77- percent decrease (increase) in fresh potato price. Commission staff emphasized multipliers which were statistically nonzero at approximately the 1-percent statistical significance level. Certain results which emerged at the lower 95- percent significance level (hereafter denoted a "marginal" significance level) were considered when of particular relevance to the investigation's issues.

Simulation 1: Effects of a 10 Percent Rise in Stocks of U.S.-Produced Fresh Potatoes

A primary reason for this simulation was to obtain a data-based and empirical price response to the quantity of fresh potatoes. A 10 percent FRESHSTK increase was chosen for this because most fresh fall U.S.-produced potatoes are stored immediately after harvest, and because of the finding of Goodwin et. al.¹⁷⁷ that the primary "price/quantity" relationship is between stocks and price of fresh potatoes -- a finding supported empirically by Miranda and Glauber's¹⁷⁸ strong fresh potato price/stock relationships.

Table 5-17 provides the multipliers which emerged from simulation 1's results. On average historically, each percent change in FRESHSTK elicited a 0.77 percent oppositely-directed response in PFRESH, such that a 7.7 percent decline in price results from a 10 percent stock increase.

The -0.77 reduced form PFRESH multiplier from the shock in FRESHSTK falls generally within, but nearer the lower end of, a rather wide range of price flexibilities of U.S. fresh potato demand reported in or implied by the literature.¹⁷⁹ These literature estimates range from the U.S. producers' estimate of -7.0,¹⁸⁰ down to the USDA potato model's (POTSIM's) low-end estimate of -0.34 reported by Love and Willett.¹⁸¹ USITC staff concludes with Richards, Kagan and Gao¹⁸² that the price flexibility of demand likely falls below the -7.0 estimate of the NPC. Richards, Kagan, and Gao¹⁸³ note that some of the less recent literature, which includes the

¹⁷⁶ For ease of expression and presentation, "oppositely-directed" refers to responses that move in the opposite direction of the initiating shock: decreasing responses from positive shocks and increasing responses from negative shocks.

¹⁷⁷ Goodwin and others, "Factors Affecting Potato Price," p. 238.

¹⁷⁸ Miranda and Glauber, "Intraseasonal Demand," pp. 108-109.

¹⁷⁹ The multiplier is not an estimated price flexibility of fresh potato demand, but rather a multiplier of market-clearing (i.e., reduced form) price response from changes in quantities demanded and supplied, that is a net price response from offsetting movements in quantities demanded and supplied. The estimated price flexibilities of demand in the literature are price effects of a change of quantities demanded, and not price effects net of demand changes offset by oppositely directed supply changes. Insofar as the multiplier for PFRESH is a price adjustment net of changes in quantities demanded and supplied, then the multiplier is useful as a lower limit (in absolute value) comparison for the literature's price flexibilities of demand. So while not exactly identical, the multiplier for PFRESH and the literature's estimated price flexibilities of fresh potato demand are similar enough for useful comparisons. See Babula, "Empirical Examination of Lamb-Related Relationships."

¹⁸⁰ Transcript of the hearing, testimony of J. Guenther on behalf of the NPC, p. 52.

¹⁸¹ J. Love and L. Willett, "Modeling the U.S. Potato Industry," p. 19.

¹⁸² Richards, Kagan, and Gao, "Factors in Potato Demand," p. 62.

¹⁸³ Ibid., p. 62.

Table 5-17

Multipliers of Simulated Responses to Selected VAR Model Shocks

Response variable:	Simulation 1: rise in FRESHSTK	Simulation 2: rise in PFRESH	Simulation 3: rise in FRYQ	Simulation 4: rise in FRESHIMP
Fresh imports (FRESHIMP)	-0.86	2.4		SHOCKED
Fresh fall stocks (FRESHSTK)	SHOCKED	-0.4		
Fresh shipments, Northeast U.S. (NESHIP)	2.0	-1.8*	-0.83	-0.2*
Fresh shipments, rest of U.S. (RESTSHIP)		-0.4	-0.18	
U.S. fresh price (PFRESH)	-0.77	SHOCKED		
Frozen fry quantity (FRYQ)	0.27	-1.6*	SHOCKED	
U.S. fry price (PFRIES)		0.12*	-0.24	
French fry stocks, (FRYSTOCK)		-1.9*	1.5	
French fry exports (EXPFY)				-0.07*

Note.—Results are interpreted as the percent change in the response variable per percentage change in the shock variables. "SHOCKED" denotes the variable shocked (increased) in the simulation. Generally, multipliers are statistically nonzero at about the 1 percent significance level, except for the asterisk-superscripted multipliers which are statistically nonzero at the 5 percent significance level and considered "marginally significant." Blank cells reflect an absence of a statistically significant response.

Source: Calculated by Commission staff from results of simulations of the econometric model.

Guenthner, Levi, and Lin¹⁸⁴ article serving as a basis for the NPC's prehearing brief, uses econometric samples through 1988, and hence ignores, during the last 10 years or so, the proliferation of potato-competing products which would tend to elasticize own-price elasticities, and thus reduce price flexibilities, of potato-related demands.

Simulation 1's results suggest that the 10-percent FRESHSTK increase elicited a 2.0 percent rise in Northeast shipments (NESHIP multiplier of 2.0), but did not result in a statistically significant (significant) response in other U.S. fresh shipments. That the 10 percent shock (rise) in fresh stocks influenced Northeast fresh shipments to a greater extent than in such other major U.S. markets as the West coincides with testimony that suggests that the fresh potato market fluctuations in traded volumes and prices influence the Northeast fresh markets more heavily than other major markets because of the Northeast's reliance on open, non-contracted free markets and less reliance on production contracts.¹⁸⁵

¹⁸⁴ Guenthner, Levi, and Lin, "Demand for Potato Products."

¹⁸⁵ Transcript of the hearing, testimony of G. Smith, pp. 146-147.

Simulation 1's changes in fresh potato stocks influence the frozen fry market through market clearing fry volumes. With a FRYQ multiplier of 0.27, the model's data-embedded evidence suggests that on average historically, a 10 percent rise in fresh fall U.S. stocks (FRESHSTK) results in a 2.7 percent rise in the quantity of frozen french fries produced and consumed. The less than proportional nature of the FRYQ response coincides with the fact that fresh potatoes are only one of an array of frozen fry production inputs. Further, record evidence suggests that the fresh retail market supplies unforeseen surges in the fry market volume on a residual basis, which may explain the less than proportional FRYQ response.¹⁸⁶ The muted impacts of increased fresh potato stocks on the frozen fry market is supported by U.S. processor contentions that processors source only a minor part of raw potatoes from the open fresh potato markets.¹⁸⁷

A particularly interesting result is that increasing fresh stocks of U.S.-produced fresh fall potatoes appears to effectively deter fresh imports. With a response multiplier of -0.86 for U.S. fresh imports (FRESHIMP), data-embedded evidence suggests that on average historically, a 10 percent rise in fresh stocks elicits a decline of about 9 percent in imports.

Simulation 2: Effects of a 10 Percent Rise in U.S. Fresh Potato Price

Table 5-17 provides multipliers of -0.4 for both fresh potato stocks (FRESHSTK) and fresh shipments in the non-Northeast U.S. (RESTSHIP), as well as a multiplier of -1.8 for fresh shipments in the Northeastern United States (NESHIP). These multipliers suggest that market-clearing shipments and stocks of fresh potatoes decline as fresh price increases. On average historically, a 10% rise in U.S. fresh potato price (PFRESH) results in a 4-percent decline in fresh potato stocks, perhaps as stock holders take advantage of higher prices, as well as declines in shipments (declines of 18 percent in the Northwestern United States and of 4 percent elsewhere), as higher prices appear to decrease fresh potato demand to a greater extent than the higher prices increase fresh potato production. That Northeast shipments respond to price increases proportionally more than U.S. shipments elsewhere coincides with U.S. producer testimony that Northeast markets are prone to more pronounced adjustments from fresh price variations, given that the Northeast markets are less insulated than such other major markets as the U.S. West from price and quantity variations.¹⁸⁸ There seems to be a regional disparity here: that the volumes of fresh fall potatoes produced, shipped, and consumed are more severely influenced by price variation in the Northeastern U.S. than in other parts of the country. However, this disparity should be examined with caution in that the -1.8 multiplier for NESHIP emerged at a marginal level of significance.

The -0.4 response multipliers for fresh stocks (FRESHSTK) and fresh non-Northeast U.S. shipments (RESTSHIP) represent the model's majority of U.S. fresh frozen potato volumes produced and consumed in the United States; are reduced form analogues for the literature's estimated own-price elasticities of fresh U.S. demand;¹⁸⁹ and fall within, and near the

¹⁸⁶ NPC prehearing brief, pp. 8-9.

¹⁸⁷ Collier, Shannon, Rill, and Scott, posthearing brief, pp. 11-14.

¹⁸⁸ Transcript of the hearing, testimony of G. Smith, pp. 146-147.

¹⁸⁹ These multipliers of -0.4 for RESTSHIP and FRESHSTK resemble the own-price elasticities of U.S. fresh potato quantity (stocks plus RESTSHIP). The response multipliers are not exactly such elasticities, but are rather the market-wide or reduced form changes in such quantities from a change

(continued...)

moderately elastic subrange of, the literature's range of such estimates. The -0.4 multipliers of fresh stock and non-Northeastern shipments, as a reduced form guide for the price elasticity of fresh potato demand, is nearly three times the NPC's inelastic estimate of -0.14;¹⁹⁰ about equals the -0.36 estimate of Miranda and Glauber;¹⁹¹ and falls slightly below the -0.48 estimate of Richards, Kagan, and Gao.¹⁹² Given the data-embedded evidence that emerged from the Commission staff's empirical model, as well as literature estimates of the U.S. own-price elasticity of fresh potato demand, the own-price elasticity of U.S. fresh potato demand is probably more elastic than that suggested by the -0.14 value cited by the U.S. growers.¹⁹³ Richards, Kagan, and Gao¹⁹⁴ provide a reason for the NPC's reported -0.14 estimate's inelasticity: the Guenther, Levi, and Lin¹⁹⁵ article, published in 1991, employs annual samples of 1970 or 1975 through 1988, time frames which ignore proliferation of potato-competing products (curly fries, premixed rice dishes, new pasta products, gourmet breads, etc.) during the last decade. Such an emerging array of potato-competing products tends to augment the price-elasticity of potato-related demands.¹⁹⁶

High U.S. prices were effective in attracting U.S. fresh potato imports, modeled as a reduced form North American supply consumed in the U.S. market. Simulation 2's 10-percent rise in fresh potato price (PFRESH) coincided, on average historically, with a 24-percent rise in fresh potato imports, virtually all Canadian. The rather elastic 2.4 multiplier probably arises from the very minor share of U.S. table stock consumption (3.4 percent in 1995) attributed to fresh imports.¹⁹⁷

Simulation 2's shock in fresh price had muted effects on the U.S. frozen french fry market: the 10 percent rise in PFRESH elicited declines of less than 2 percent in traded fry volumes (FRYQ) and fry inventories (FRYSTOCK), as well as a 1.2 rise in french fry price (PFRIES multiplier of 0.12), and all three effects emerged at a marginal level of statistical strength. In that PFRESH is an important input cost for french fry production, the declines in fry volumes

¹⁸⁹(...continued)

in price. In terms of the simulation's upward shock in fresh price, the multipliers reflect the oppositely directed, own-price-induced movement in fresh quantity net of the offsetting but combined quantity effects: the drop in demand and the rise in supply of the increased fresh price. So the model suggests that -0.4 is a lower limit of the literature's estimates of the own-price fresh demand elasticities, which, unlike the reduced form multipliers of the model, are only demand-side adjustments and not net quantity adjustments of both sides of the market. See Babula, "Empirical Examination of Lamb-Related Relationships."

¹⁹⁰ Guenther, Levi, and Lin, "Demand for Potato Products," p. 574.

¹⁹¹ Miranda and Glauber, "Intraseasonal Demand," pp. 108-109.

¹⁹² Richards, Kagan, and Gao, "Factors in Potato Demand," p. 62. This -0.48 estimate is an estimate of the own-price elasticity of the U.S. Marshallian demand for fresh potato; and the article also provides a -0.23 estimate of the U.S. Hicksian or income-compensated demand for fresh potatoes (on the same page).

¹⁹³ NPC, prehearing brief, p. 13 and Guenther, Levi, and Lin, "Demand for Potato Products," p. 574.

¹⁹⁴ Richards, Kagan, and Gao, "Factors in Potato Demand," p. 62.

¹⁹⁵ Guenther, Levi, and Lin, "Demand for Potato Products," p. 574.

¹⁹⁶ Richards, Kagan, and Gao, "Factors in Potato Demand," p. 62.

¹⁹⁷ This 3.4 percent figure was calculated by Commission staff from information from two sources. The 1995 U.S. fresh potato imports of 458.921 million pounds was an official statistic of the Department of Commerce. The 1995 U.S. fresh table stock consumption level of 13.465 billion pounds was published in NPC, *1996 Potato Statistical Yearbook* (Englewood, CO: NPC, 1996), p. 47.

produced and consumed, the depletion of fry stocks, and a positive effect on fry price were expected. Yet the fry-related multiplier's muted or inelastic magnitudes, and their marginal statistical strength, are supported by testimony and record evidence submitted by U.S. growers and frozen potato processors.¹⁹⁸ Such evidence and testimony suggest that the preponderance of fresh potatoes processed into frozen fries and other products are procured through year-long contractual agreements between growers and processors, and that these year-long contracts deflect all but minimal and muted impacts that monthly variations in fresh market price have on french fry volumes stocks, and price.¹⁹⁹ Processors further state that insofar as some minor portions of fresh potatoes processed into frozen products are procured on the non-contracted and open fresh potato markets, then a fresh price shock should have some influence on the fry market.²⁰⁰ Such impacts, however, are expected to be minimal, as suggested by the fry-related response multipliers' inelastic values and marginal statistical significance.

Simulation 3: Effects of a 10 Percent Rise in U.S. Frozen French Fry Volume Produced and Consumed

Simulation 3's results suggest that increased frozen fry market activity influences the frozen market variables primarily, and has only limited influence on the fresh potato variables. With a response multiplier of -0.24 for fry price (PFRIES), the simulation's 10 percent rise in the volumes of frozen fries produced and consumed in the United States, on average historically, results in a 2.4 percent decline in french fry price, and is the model's reduced form analog to the literature's estimated price flexibilities of U.S. frozen product demand. The Commission staff model's -0.24 reduced form multiplier for fry price (PFRIES) about equals the USDA POTSIM model's -0.22 price flexibility estimate for frozen product demand reported by Love and Willett,²⁰¹ and falls below the NPC's estimate of -2.0 (in absolute value).²⁰²

With a multiplier for volumes stocks of frozen fries (FRYSTOCK) of 1.5, the 10 percent rise in volumes of frozen fries produced and consumed (FRYQ) elicits, on average historically, a 15 percent rise in such stocks. This 15-percent fry stock response (increase) about equals the 10 percent upward shock in fry volume (FRYQ) on a pound for pound basis, as over the last 2 years, FRYQ has been about 50 percent greater than FRYSTOCK.²⁰³ Yet, additional dynamics suggest a one-month (although marginally significant) fry stock depletion, during which older fry stocks of frozen fries may have been sold off as a sort of "rotation" process to make way for the newer and increased frozen fry volumes on the market. After the one-month depletion, FRYSTOCK seems to be re-stocked with the newer volumes during the ensuing four months, when stocks seem to change by an amount about equal to the fry volume shock on a pound for

¹⁹⁸ Transcript of the hearing, p. 52; Collier, Shannon, Rill, and Scott, prehearing brief, pp. 8-10 and posthearing brief, pp. 11-15.

¹⁹⁹ Ibid.

²⁰⁰ Collier, Shannon, Rill, and Scott, posthearing brief, p. 12.

²⁰¹ J. Love and L. Willett, "Modeling the U.S. Potato Industry," p. 19.

²⁰² Transcript of the hearing, testimony of G. Guenther, for the NPC, p. 52. This -2.0 estimate appears to USITC staff to be a "rounding off" of the -1.8 estimate in Guenther, Levi, and Lin, "Demand for Potato Products," p. 574.

²⁰³ This calculation is based on USITC staff calculations based on confidential monthly data on FRYQ and FRYSTOCK for 1986:1-1996:11 obtained from a series of unpublished and confidential annual reports compiled by, and provided to USITC staff by, the Frozen Potato Products Institute. See also the Technical Modeling Appendix for detailed data definitions and sources.

pound basis. Such results coincide with U.S. frozen potato processor contentions that the frozen processing industry generally maintains an average 2-months supply of product in inventories, which serve as a "buffer" between frozen market supplies and demands.²⁰⁴

Another regional highlight emerges from simulation 3. On a proportional basis, Northeast shipments of fresh potatoes are more depleted by an unexpected rise in levels of the frozen fry quantities produced and consumed than from other parts of the U.S. With multipliers of -0.83 for Northeast fresh shipments (NESHIP) and -0.18 for fresh U.S. shipments elsewhere (RESTSHIP), the 10 percent rise in FRYQ elicits, on average historically, decreases of 8.3 percent in Northeastern fresh shipments and of only 1.8 percent in fresh shipments in other U.S. areas. Apparently, unexpected increases in U.S. fry market volumes are residually supplied more from the Northeast fresh market, where supplies are available for purchase by U.S. processors (primarily located in the U.S. West), and are largely not contracted as in such other U.S. areas as the West. The lack of a fresh price response may arise from the residual nature of this fresh market supply: fresh market potatoes are only occasionally and residually diverted to frozen processing, and on average historically, by not enough to influence the price of fresh potatoes.²⁰⁵ These results also suggest that primarily western processor demands compete with Northeastern U.S. fresh potato demands to procure Northeastern fresh potatoes, and may indicate a degree of competition among U.S. regions for fresh potatoes.

Simulation 4: Effects of a 10 Percent Rise in U.S. Fresh Potato Imports

The 10-percent increase in fresh potato imports have very little national effects aside from coinciding with a slight and marginally significant drop in exports of less than a percent (EXPFRY multiplier of -0.07). However, one notable regional highlight emerges, although at a marginal level of significance: the 10 percent rise in imports does little or nothing to displace U.S. shipments, displace quantities, or affect price except in the Northeast. With a multiplier of -0.2, the 10 percent rise in imports seems to displace 2.0 percent of the U.S. fresh shipments in the Northeast market.

So imports seem to have little market influence except in the Northeast. This result coincides with analysis of Canadian data which suggests that more than half of Canadian potato acreage and production are concentrated in Eastern Canada (P.E.I., New Brunswick, Quebec, Newfoundland, and Nova Scotia) and near Northeastern U.S. markets.²⁰⁶ Although U.S. producers have testified that U.S. fresh potato imports displace U.S.-produced product and depress U.S. prices,²⁰⁷ the model's data-based evidence suggests that fresh U.S. table stock potato imports, which constitute minor shares of U.S. tablestock consumption (3.4 percent in

²⁰⁴ Collier, Shannon, Rill, and Scott, posthearing brief, pp. 14-17.

²⁰⁵ That the Northeast market is less influenced by grower/processor production contracting was stated by G. Smith, a Maine grower, in transcripts of the hearing, pp. 145-147. That the fresh markets only residually supply unexpected rises in volumes traded in the processed frozen markets emerges from information from the NPC's prehearing brief, pp. 8-9.

²⁰⁶ USITC staff made such calculations based on official statistics of Statistics Canada. See chapter 4, tables 4-2 and 4-7.

²⁰⁷ Transcript of the hearing, testimony of G. Ball, NPC, pp. 45-46.

1995²⁰⁸), have little impact on the U.S. fresh or frozen fry prices and quantities except in the Northeast. Further, the mild impacts such imports have historically had in terms of displaced Northeastern U.S. fresh shipments achieved only marginal levels of statistical significance. That imports displace production and sales of U.S.-produced fresh potatoes disproportionately more in the Northeast than in other areas such as the West is a result supported by Northeast U.S. grower testimony.²⁰⁹ Northeast growers testified that Northeastern U.S. production has been especially challenged competitively by fresh potato imports from New Brunswick and Prince Edward Island.²¹⁰

The modeling results suggesting that Northeast U.S. markets are more challenged competitively by U.S. imports of fresh Canadian potatoes than other U.S. markets are supported by USDA data on fresh potato arrivals in Northeastern U.S. and other markets.²¹¹ These data suggest that 78 percent of total 1996 U.S. arrivals of Canadian fresh potatoes were destined for Boston and New York.²¹² Further, Canada supplied the single largest 1996 share (31 percent) of Boston's fresh potato arrivals, a share exceeding even those of Maine (20 percent) and Idaho (16 percent).²¹³

Simulation Results: Summary and Implications

Simulation results and published research suggest that the U.S. price elasticity of fresh potato demand is moderately elastic, perhaps within the range of -0.3 to -0.5, and above the -0.14 estimate reported by the NPC (in absolute value). This may explain the lack of strong import-induced national market effects outside of the Northeast markets. Further, imports appear to decline as market-clearing volumes of domestically produced fresh potatoes increase.

While simulation results do suggest that U.S. fresh potato and frozen french fry markets interact and influence each other, the strength of inter-relations is muted. Increased fresh potato prices did elicit declines in fry volumes traded and stored, and a rise in fry price, although such fry-market effects were muted and emerged at a marginal degree of statistical strength. Fresh stock increases influence the frozen fry market through augmenting fry market volumes, but to less than proportional degrees. Increased fresh potato imports had little or no effect on the modeled frozen fry relationships. The upward shock in traded volumes of french fries had little effect on the fresh market, aside from a decline in shipments, which was disproportionately large in the Northeast markets where U.S. growers point out that fresh potatoes are traded largely on the free and open market and not under contract.²¹⁴ Further, such drops in fresh shipments, primarily from the Northeast, supports testimony and evidence from U.S. processors that fresh

²⁰⁸ This 3.4 percent figure was calculated by USITC staff from information from two sources. The 1995 U.S. fresh potato imports of 458.921 million pounds was an official statistic of the Department of Commerce. The 1995 U.S. fresh tablestock consumption level of 13.465 billion pounds was published in NPC's, *1996 Potato Statistical Yearbook*, p. 47.

²⁰⁹ Transcript of the hearing, testimony of G. Smith, pp. 45-48 and 145-146.

²¹⁰ Ibid., p. 47.

²¹¹ See tables 5-4 and 5-14.

²¹² Ibid.

²¹³ Ibid.

²¹⁴ Transcript of the hearing, testimony of G. Smith, pp. 146-147.

markets supply minor amounts of fresh potatoes to processors, and only on a residual basis, when there are unexpected surges in the frozen processed markets.²¹⁵

Regional highlights do emerge from the simulation results. First, imports seem to be a Northeast issue more than a national one, insofar as increases in fresh imports elicited almost no changes aside from an oppositely directed, if marginally significant, displacement of Northeast shipments. Northeast markets seem more prone to bear the brunt of fresh market price and quantity movements than in such other areas as the U.S. West.²¹⁶ Additionally, unexpected surges in frozen fry volumes appear to tap fresh supplies to a greater proportional degree in the Northeast than elsewhere.

²¹⁵ NPC, prehearing brief, pp. 8-9; NPC, posthearing brief, p. 15.

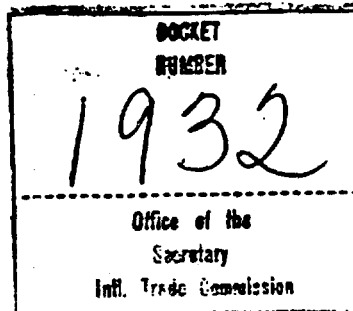
²¹⁶ This may constitute evidence of competition among U.S. regions for fresh potatoes.

APPENDIX A

Letter of Request from USTR

OFFICE OF THE UNITED STATES
TRADE REPRESENTATIVE
EXECUTIVE OFFICE OF THE PRESIDENT
WASHINGTON
20506

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



January 9, 1997

'97 JAN 15 12:14

OFFICE OF THE
U.S. INTERNATIONAL
TRADE COMMISSION

Dear Chairman Miller:

It has recently come to my attention that the U.S. fresh and processed potato industries have concerns about increased U.S. imports of fresh potatoes (excluding sweet potatoes) and processed potato products from Canada. The domestic industry believes these imports may be benefiting from Canadian government policies and industry pricing practices. I am writing to request, under the authority delegated by the President and pursuant to Section 332(g) of the Trade Act of 1930, as amended (19 USC 1322(g)), that the Commission institute an investigation for the purpose of providing a report on factors affecting trade between the United States and Canada in (1) fresh table stock potatoes, (2) seed potatoes, (3) raw potatoes for processing, and (4) frozen processed potatoes.

Specifically, for each of these four product areas the following information should be provided, to the greatest extent possible:

- (1) Production and/or processing volumes and trends in Canada and in the United States over the past five years.
- (2) U.S. imports from Canada over the last five years, including market share of Canadian imports, with particular emphasis on any increases in U.S. imports from Canada.
- (3) Consumption trends for raw and finished processed potato products in Canada and the United States over the last five years.
- (4) Federal, provincial, and municipal aid programs for potato growers and processors in Canada, including aid for the construction of storage, water treatment, and processing facilities; a compilation of existing literature and industry views on the impact of such aid on the competitiveness of Canadian producers would also be appreciated.
- (5) For the last three years, prices of Canadian products in Canada and in U.S. markets, together with prices of U.S. products in U.S. markets.
- (6) The effect of exchange rates and terms of sale factors on Canadian prices.
- (7) The cost of production in Canada and in the United States, including raw material costs for processed products, over the last three years.

Where data permit for the specific items listed above, it would be appreciated if the national data provided were supplemented with regional and/or seasonal highlights. In addition to these specific items, an analysis of any other factors that may be affecting the conditions of competition between the U.S. and Canadian fresh potato and processed potato industries would be appreciated.

In light of the considerable importance of this investigation to the U.S. potato industry, we ask the Commission to report the results of the investigation on an expedited basis, but no later than six months from the receipt of this letter.

In accordance with USTR policy, I direct you to mark as confidential such portions of the Commission's report and its working papers as my office will identify in a classification guide.

Executive Order 12958 and its implementing regulations require that classification guides identify or categorize the elements of information which require protection. According, I request that you provide my office with a preliminary outline of this report as soon as possible. Based on this outline, and my office's knowledge of the information to be covered in the report, a USTR official with classification authority will provide detailed instructions.

We appreciate the Commission's assistance.

Sincerely,

A handwritten signature in black ink, appearing to read 'Charlene Barshefsky', with a long horizontal flourish extending to the right.

Charlene Barshefsky
United States Trade Representative - Designate

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE
WASHINGTON, D.C. 20508

MAY 5 1997

The Honorable Marcia Miller
Chairman
U.S. International Trade Commission
500 E Street, S.W.
Washington, DC 20436

DOCKET

Dear Chairman Miller:

Pursuant to USTR's request for the International Trade Commission to investigate the factors affecting trade between the United States and Canada in fresh table stock potatoes, seed potatoes, raw potatoes for processing and frozen processed potatoes, investigation No. 332-378, please also provide information, to the extent possible, on the comparative market access factors affecting U.S. and Canadian exports of these potato products to Mexico.

If possible, we request that the Commission report the results of this additional information, concurrent with the full report, on an expedited basis, but not later than July 15, 1997.

We appreciate the Commission's assistance.

Sincerely,



Charlene Barshefsky

RECEIVED
OFFICE OF THE SECRETARY
U.S. INT'L TRADE COMMISSION
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APPENDIX B

Commission's Notice of Institution of Investigation and Scheduling of Hearing

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, DC

(Investigation 332-378)

FRESH AND PROCESSED POTATOES: COMPETITIVE CONDITIONS
AFFECTING THE U.S. AND CANADIAN INDUSTRIES

AGENCY: United States International Trade Commission

ACTION: Institution of investigation and scheduling of hearing

EFFECTIVE DATE: January 29, 1997

SUMMARY: Following receipt on January 15, 1997, of a request from the Office of the United States Trade Representative (USTR), the Commission instituted investigation No. 332-378, *Fresh and Processed Potatoes: Competitive Conditions Affecting the U.S. and Canadian Industries*, under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)), for the purpose of providing a report on factors affecting trade between the United States and Canada in fresh tablestock potatoes, seed potatoes, raw potatoes for processing, and frozen processed potatoes. As requested by the USTR, the Commission's report on the investigation will focus on the period 1992-96, and to the extent possible, 1997, and will include the following information for each of the four product areas:

- (1) Production and/or processing volumes and trends in Canada and the United States over the past 5 years.
- (2) U.S. imports from Canada over the last 5 years, including market share of Canadian exports, with particular emphasis on any increases in U.S. imports from Canada.
- (3) Consumption trends for raw and finished processed potato products in Canada and the United States over the last 5 years.
- (4) Federal, provincial, and municipal aid programs in Canada for Canadian growers and processors, including aid for the construction of storage, water treatment, and processing facilities; a compilation of existing literature and industry views on the impact of such aid on the competitiveness of Canadian producers.
- (5) For the last 3 years, prices of Canadian products in Canada and in U.S. markets, together with prices of U.S. products in U.S. markets.
- (6) The effect of exchange rates and terms of sale factors on Canadian prices.
- (7) The cost of production in Canada and in the United States, including raw material costs for processed products, over the last 3 years.

As requested, the Commission will, to the extent possible, supplement national data presented in the report with regional and/or seasonal highlights, and that the Commission also include an analysis of any other factors affecting the conditions of competition between the U.S. and Canadian fresh potato and processed potato industries.

As requested by the USTR, the Commission will submit the results of its investigation on an expedited basis, but not later than July 15, 1997.

FOR FURTHER INFORMATION: Information on industry aspects may be obtained from Tim McCarty, Office of Industries (202-205-3324) or Douglas Newman, Office of Industries (202-205-3328); and legal aspects, from William Gearhart, Office of the General Counsel (202-205-3091). The media should contact

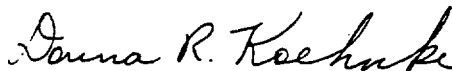
Margaret O'Laughlin, Office of External Relations (202-205-1819). Hearing impaired individuals are advised that information on this matter can be obtained by contacting the TDD terminal on (202-205-1810).

PUBLIC HEARING: A public hearing in connection with the investigation will be held at the U.S. International Trade Commission Building, 500 E Street SW, Washington, DC, beginning at 9:30 a.m. on April 30, 1997. All persons will have the right to appear, by counsel or in person, to present information and to be heard. Requests to appear at the public hearing should be filed with the Secretary, United States International Trade Commission, 500 E Street SW, Washington, DC 20436, no later than 5:15 p.m. April 14, 1997. Any prehearing briefs (original and 14 copies) should be filed not later than 5:15 p.m., April 21, 1997; the deadline for filing posthearing briefs or statements is 5:15 p.m., May 15, 1997. In the event that, as of the close of business on April 14, 1997, no witnesses are scheduled to appear at the hearing, the hearing will be canceled. Any person interested in attending the hearing as an observer or non-participant may call the Secretary to the Commission (202-205-1816) after April 14, 1997, to determine whether the hearing will be held.

WRITTEN SUBMISSIONS: In lieu of or in addition to participating in the public hearing, interested persons are invited to submit written statements concerning the matters to be addressed in the report. Commercial or financial information that a party desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly 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 made available for inspection by interested persons in the Office of the Secretary to the Commission. To be assured of consideration by the Commission, written statements relating to the Commission's report should be submitted at the earliest practical date and should be received no later than May 15, 1997. All submissions should be addressed to the Secretary, United States International Trade Commission, 500 E Street SW, Washington, DC 20436.

Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-205-2000.

By order of the Commission.



Donna R. Koehnke
Secretary

Issued: January 29, 1997

Date signed: January 29, 1997.
 Bruce Babbitt,
 Secretary of the Interior.
 [FR Doc. 97-2768 Filed 2-4-97; 8:45 am]
 BILLING CODE 4310-04-P

National Park Service

Subsistence Resource Commission Meeting

SUMMARY: The Superintendent of Lake Clark National Park and the Chairperson of the Subsistence Resource Commission for Lake Clark National Park announce a forthcoming meeting of the Lake Clark National Park Subsistence Resource Commission.

The following agenda items will be discussed:

- (1) Chairman's welcome.
- (2) Introduction of Commission members and guests.
- (3) Review agenda.
- (4) Approval of minutes of last meeting.
- (5) Old business:
 - a. Review NPS Subsistence Issue Paper.
- (6) New business:
 - a. Election of Chairperson.
- (7) Agency and public comments.
- (8) Determine time and date of next meeting.
- (9) Adjourn.

DATE: The meeting will be held Monday, February 17, 1997. The meeting will begin at 10 a.m. and conclude around 5 p.m.

LOCATION: The meeting will be held at the Lake Clark National Park Visitor Center, Port Alsworth, Alaska.

FOR FURTHER INFORMATION CONTACT: Bill Pierce, Superintendent, Lake Clark National Park and Preserve, 4230 University Drive, #311, Anchorage, Alaska 99508. Phone (907) 271-3751.

SUPPLEMENTARY INFORMATION: The Subsistence Resource Commissions are authorized under Title VIII, Section 808, of the Alaska National Interest Lands Conservation Act, Pub. L. 96-487, and operate in accordance with the provisions of the Federal Advisory Committees Act.

Paul R. Anderson,
 Acting Field Director.
 [FR Doc. 97-2833 Filed 2-4-97; 8:45 am]
 BILLING CODE 4310-10-M

INTERNATIONAL TRADE COMMISSION

[Investigation 332-378]

Fresh and Processed Potatoes: Competitive Conditions Affecting the U.S. and Canadian Industries

AGENCY: United States International Trade Commission.

ACTION: Institution of investigation and scheduling of hearing.

EFFECTIVE DATE: January 29, 1997.

SUMMARY: Following receipt on January 15, 1997, of a request from the Office of the United States Trade Representative (USTR), the Commission instituted investigation No. 332-378, *Fresh and Processed Potatoes: Competitive Conditions Affecting the U.S. and Canadian Industries*, under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)), for the purpose of providing a report on factors affecting trade between the United States and Canada in fresh tablestock potatoes, seed potatoes, raw potatoes for processing, and frozen processed potatoes. As requested by the USTR, the Commission's report on the investigation will focus on the period 1992-96, and to the extent possible, 1997, and will include the following information for each of the four product areas:

- (1) Production and/or processing volumes and trends in Canada and the United States over the past 5 years.
- (2) U.S. imports from Canada over the last 5 years, including market share of Canadian exports, with particular emphasis on any increases in U.S. imports from Canada.
- (3) Consumption trends for raw and finished processed potato products in Canada and the United States over the last 5 years.
- (4) Federal, provincial, and municipal aid programs in Canada for Canadian growers and processors, including aid for the construction of storage, water treatment, and processing facilities; a compilation of existing literature and industry views on the impact of such aid on the competitiveness of Canadian producers.
- (5) For the last 3 years, prices of Canadian products in Canada and in U.S. markets, together with prices of U.S. products in U.S. markets.
- (6) The effect of exchange rates and terms of sale factors on Canadian prices.
- (7) The cost of production in Canada and in the United States, including raw material costs for processed products, over the last 3 years.

As requested, the Commission will, to the extent possible, supplement national

data presented in the report with regional and/or seasonal highlights, and that the Commission also include an analysis of any other factors affecting the conditions of competition between the U.S. and Canadian fresh potato and processed potato industries.

As requested by the USTR, the Commission will submit the results of its investigation on an expedited basis, but not later than July 15, 1997.

FOR FURTHER INFORMATION: Information on industry aspects may be obtained from Tim McCarty, Office of Industries (202-205-3324) or Douglas Newman, Office of Industries (202-205-3328); and legal aspects, from William Gearhart, Office of the General Counsel (202-205-3091). The media should contact Margaret O'Laughlin, Office of External Relations (202-205-1819). Hearing impaired individuals are advised that information on this matter can be obtained by contacting the TDD terminal on (202-205-1810).

PUBLIC HEARING: A public hearing in connection with the investigation will be held at the U.S. International Trade Commission Building, 500 E Street SW., Washington, DC, beginning at 9:30 a.m. on April 30, 1997. All persons will have the right to appear, by counsel or in person, to present information and to be heard. Requests to appear at the public hearing should be filed with the Secretary, United States International Trade Commission, 500 E Street SW., Washington, DC 20436, no later than 5:15 p.m. April 14, 1997. Any prehearing briefs (original and 14 copies) should be filed not later than 5:15 p.m., April 21, 1997; the deadline for filing posthearing briefs or statements is 5:15 p.m., May 15, 1997. In the event that, as of the close of business on April 14, 1997, no witnesses are scheduled to appear at the hearing, the hearing will be canceled. Any person interested in attending the hearing as an observer or non-participant may call the Secretary to the Commission (202-205-1816) after April 14, 1997, to determine whether the hearing will be held.

WRITTEN SUBMISSIONS: In lieu of or in addition to participating in the public hearing, interested persons are invited to submit written statements concerning the matters to be addressed in the report. Commercial or financial information that a party desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly 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 made available for inspection by interested persons in the Office of the Secretary to the Commission. To be assured of consideration by the Commission, written statements relating to the Commission's report should be submitted at the earliest practical date and should be received no later than May 15, 1997. All submissions should be addressed to the Secretary, United States International Trade Commission, 500 E Street SW., Washington, DC 20436.

Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-205-2000.

Issued: January 29, 1997.

By order of the Commission.

Donna R. Koehnke,

Secretary.

[FR Doc. 97-2829 Filed 2-4-97; 8:45 am]

BILLING CODE 7020-02-P

DEPARTMENT OF JUSTICE

Notice of Lodging of Consent Decree Pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act of 1980

Notice is hereby given that on January 15, 1997, a proposed Consent Decree in *United States v. Connor Investment Co.*, Civil Action No. 97-5006-CV-SW-3 (W.D. Mo.) was lodged with the United States District Court for the Western District of Washington. This Consent Decree resolves the United States' claims in this action against Connor Investment Company ("Connor") and Lima Hill Mining Company ("Lima") (collectively "Settling Defendants") regarding their liability under Section 107(a) of CERCLA, 42 U.S.C. 9607(a), for response costs incurred or to be incurred by the United States in connection with the Oronogo/Duenweg Mining Belt Superfund Site in Jasper County, Missouri ("Site").

The Consent Decree requires, *inter alia*, that the Settling Defendants shall provide the United States Environmental Protection Agency ("EPA") and the State of Missouri with broad access rights to their property at the Site for the creation, operation, and maintenance of a hazardous waste repository. In addition, the Consent Decree requires that the Settling Defendants place restrictive covenants

on the property in conformance with future use of the repository and reflecting any institutional controls established through the remedial action. The Consent Decree grants to the Settling Defendants a covenant not to sue and the contribution protection afforded by Section 1133(f)(2) of CERCLA, 42 U.S.C. 9613(f)(2). The Consent Decree also contains a reopener that permits the United States, in certain situations, to institute additional proceedings to require the Settling Defendants perform further response actions or reimburse the United States for additional costs of response.

The Department of Justice will receive comments relating to the proposed Consent Decree for a period of thirty (30) days from the date of this publication. Comments should be addressed to the Assistant Attorney General of the Environment and Natural Resources Division, Department of Justice, Washington, DC 20530, and should refer to *United States v. Connor Investment Co.*, D.O.J. No. 90-11-3-1001C.

The proposed Consent Decree may be examined at the Office of the United States Attorney for the Western District of Missouri, 1201 Walnut Street, Kansas City, MO 64106; the Region VII Office of the U.S. Environmental Protection Agency, 726 Minnesota Ave., Kansas City, KS 66101; and at the Consent Decree Library, 1120 G Street, NW., 4th Floor, Washington, DC 20005 (Tel: (202) 624-0892). A copy of the proposed Consent Decree may be obtained in person or by mail from the Consent Decree Library, 1120 G Street, NW., 4th Floor, Washington, DC 20005. When requesting a copy, please enclose a check in the amount of \$13.50 (25 cents per page reproduction cost) payable to the Consent Decree Library.

Joel M. Gross,

Chief, Environmental Enforcement Section,
Environment and Natural Resources Division.
[FR Doc. 97-2769 Filed 2-4-97; 8:45 am]

BILLING CODE 4410-16-M

Notice of Lodging of Consent Decree Pursuant to Clean Air Act

Notice is hereby given that on January 24, 1997, a proposed Consent Decree in *United States of America v. North American Chemical Company*, Civil Action No. 97-0477-WJR (CWx), was lodged with the United States District Court for the Central District of California. This Consent Decree represents a settlement of claims against North American Chemical Company ("NACC") pursuant to section 113(b) of the Clean Air Act (the "Act"), 42 U.S.C.

7413(b), for NACC's alleged violations of provisions of the State Implementation Plan for San Bernardino, California, as well as for violations of the New Source Performance Standards and Prevention of Significant Deterioration ("PSD") provisions of the Clean Air Act. See Standards of Performance for Nonmetallic Mineral Processing Plants, 40 CFR part 60, subpart OOO and the PSD provisions of the Act, 42 U.S.C. 7470-7501. The alleged violations occurred at a facility owned and operated by NACC located near Trona, California.

Under this settlement between the United States and NACC, NACC will be required to reduce emissions of nitrogen oxides from a gas turbine at the facility. The settlement provides for a civil penalty of \$320,000. In addition, NACC will conduct a supplemental environmental project to reduce particulate matter emissions at the facility.

The Department of Justice will receive for a period of thirty (30) days from the date of this publication comments relating to the proposed consent decree. Comments should be addressed to the Assistant Attorney General of the Environment and Natural Resources Division, Department of Justice, Washington, DC 20530, and should refer to *United States of America v. North American Chemical Company*, DOJ Ref. #90-5-2-1-2001.

The proposed consent decree may be examined at the Office of the United States Attorney, Central District of California, 7516 Federal Building, 300 North Los Angeles Street, Los Angeles, California 90012 and at Region IX, Office of the Environmental Protection Agency, Air Division, 75 Hawthorne Street, San Francisco, California 94105, and at the Consent Decree Library, 1120 G Street, NW., 4th Floor, Washington, DC 20005 (202) 624-0892. A copy of the proposed consent decree may be obtained in person or by mail from the Consent Decree Library, 1130 G Street, NW., 4th Floor, Washington, DC 20005. In requesting a copy, please refer to the referenced case and enclose a check in the amount of \$8.25 (25 cents per page reproduction cost), payable to the Consent Decree Library.

Joel M. Gross,

Chief, Environmental Enforcement Section,
Environment and Natural Resources Division.
[FR Doc. 97-2771 Filed 2-4-97; 8:45 am]

BILLING CODE 4410-15-M

APPENDIX C

List of Witnesses Appearing at the Hearing

CALENDAR OF PUBLIC HEARINGS

Those listed below appeared as witnesses at the United States International Trade Commission's hearing:

Subject	:	FRESH AND PROCESSED POTATOES: COMPETITIVE CONDITIONS AFFECTING THE U.S. AND CANADIAN INDUSTRIES
Inv. No.	:	332-378
Date and Time	:	April 30, 1997 - 9:30 a.m.

Sessions were held in connection with the investigation in the Main hearing room 101, 500 E Street, S.W., Washington, D.C.

Congressional Appearances: (In order of appearance)

The Honorable Olympia J. Snowe, United States Senator, State of Maine

The Honorable Susan M. Collins, United States Senator, State of Maine

**The Honorable Richard (Doc) Hastings, United States Congressman, 4th District,
State of Washington**

**The Honorable John E. Baldacci, United States Congressman, 2nd District,
State of Maine**

**The Honorable Michael D. Crapo, United States Congressman, 2nd District,
State of Idaho**

The Honorable Larry E. Craig, United States Senator, State of Idaho

ORGANIZATION AND WITNESS

**TIME
CONSTRAINTS**

Panel 1

U.S. Growers

40 minutes

National Potato Council (NPC)
Englewood, Colorado

(15 mins.)

Gary F. Ball, Grower, State of Idaho and Vice President for Trade,
National Potato Council

Dr. Joseph F. Guenthner, Economic Consultant, State of Idaho

Greg Smith, Grower/Shipper, State of Maine

Bruce P. Malashevich, Economist, Economic Consulting Services,
Incorporated

David J. Levine, Counsel, McDermott, Will and Emery

Jerry C. Hill, Counsel, McDermott, Will and Emery

U.S. Processors

(15 mins.)

Michael Coursey, Counsel, Collier, Shannon, Rill and Scott

Lynn E. Duffy, Counsel, Collier, Shannon, Rill and Scott

Michael T. Kerwin, Economist, Georgetown Economic Consulting
Services

Washington State Growers

(10 mins.)

Henry Michael, President, Washington State Potato
Commission

Joel R. Junker, Junker and Thompson, Counsel to the Washington
State Potato and Onion Association

ORGANIZATION AND WITNESS CONT'D:

**TIME
CONSTRAINTS**

Panel 2

Snack Food Industry

Snack Food Association
Alexandria, Virginia

10 minutes

**Mark Troyer, Vice President, Troyer Potato Products, Incorporated,
Waterford, Pennsylvania**

James A. McCarthy, Senior Vice President, Snack Food Industry

Panel 3

Canadian Processors

O'Melveny and Myers, L.L.P.
Washington, D.C.
on behalf of

15 minutes

Food Institute of Canada ("the Institute")

Chris Kyte, Executive Director

Donald W. Westfall, Vice President

**Gary N. Horlick)
)--OF COUNSEL
F. Amanda DeBusk)**

ORGANIZATION AND WITNESS CONT'D:

**TIME
CONSTRAINTS**

Panel 4

25 minutes

Canadian Growers

Cameron and Hornbostel, L.L.P.
Washington, D.C.
on behalf of

Canadian Horticultural Council ("the Council")

Potato Growers of Alberta

Larry Buba, Crop Manager, Lewis Farms, Spruce Grove, Alberta

Alan Stuart, Manager, Potato Growers of Alberta

Keystone Vegetable Producers Association

Garry Sloik, a grower from Portage La Prairie, Manitoba

New Brunswick Potato Agency

Gary Hatfield, President, Gary Hatfield Limited, Hartland, New Brunswick

Anne Fowlie, Assistant Executive Director, New Brunswick Potato Agency

Ivan Noonan, Manager, Prince Edward Island Potato Board

P. Earl Smith, General Manager, P.E.I. Produce Co. Ltd.,
Summerside, P.E.I.

Morley Wood, Chairman, Prince Edward Island Potato Board

William K. Ince)
)—OF COUNSEL
Michele C. Sherman)

APPENDIX D

Supplemental Tables

Table 3-7

Frozen french fries:¹ U.S. exports of domestic merchandise, by principal markets, 1992-96

Market	1992	1993	1994	1995	1996	Change 1996 over 1992
Quantity (1,000 pounds)						Percent
Japan	266,647	281,673	318,709	374,279	418,657	57
South Korea	33,149	34,528	40,539	44,686	57,422	73
Hong Kong	22,597	25,622	30,278	45,266	52,886	134
Taiwan	14,202	19,061	23,156	30,281	38,563	172
Canada	13,033	15,260	16,233	16,625	28,820	121
Philippines	10,379	13,831	22,152	28,032	31,637	205
Malaysia	10,715	12,988	18,655	25,723	26,628	149
Mexico	14,633	18,827	29,137	17,403	26,018	78
All other	43,807	60,749	97,159	196,262	119,835	174
Total	429,162	482,538	596,019	778,558	800,466	87
Value (1,000 dollars)						
Japan	84,578	88,975	104,222	124,069	139,892	65
South Korea	10,917	10,592	12,797	14,673	18,442	69
Hong Kong	6,373	7,428	9,250	13,447	15,932	150
Taiwan	4,419	5,924	7,372	9,352	11,666	164
Canada	5,181	6,135	6,696	6,815	11,466	121
Philippines	3,289	4,634	7,275	9,681	10,683	225
Malaysia	3,660	4,275	7,166	11,228	8,743	139
Mexico	4,751	6,204	9,609	5,440	8,405	77
All other	14,068	20,089	34,489	64,396	40,082	217
Total	137,236	154,255	198,876	259,101	265,310	93
Unit value (dollars per pound)						
Japan	\$0.32	\$0.32	\$0.33	\$0.33	\$0.33	3
South Korea .....	.33	.31	.32	.33	.32	(3)
Hong Kong .....	.28	.29	.31	.30	.30	7
Taiwan .....	.31	.31	.32	.31	.30	(3)
Canada .....	.40	.40	.41	.41	.40	0
Philippines .....	.32	.34	.33	.35	.34	6
Malaysia .....	.34	.33	.38	.44	.33	(3)
Mexico .....	.32	.33	.33	.31	.32	0
All other .....	.32	.33	.34	.33	.34	6
Average .....	.32	.32	.33	.33	.30	(6)

¹ Schedule B number 2004.10.8020.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and changes calculated using unrounded data.

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

Table 3-8

Potato chips:¹ U.S. exports of domestic merchandise, by principal markets, 1992-96

Market	1992	1993	1994	1995	1996	Change 1996 over 1992
	Quantity (1,000 pounds)					Percent
Belgium	4	69	23,981	27,458	26,131	(²)
Japan	1,221	3,786	31,672	46,730	32,292	2,545
Canada	22,946	21,038	21,944	20,130	21,732	(5)
Philippines	4,534	4,574	5,089	4,829	5,031	11
South Korea	2,233	3,927	2,158	2,996	5,013	125
Taiwan	8,827	11,809	11,987	8,203	5,224	(41)
Mexico	6,799	7,979	23,683	268	10,400	53
All other	37,804	57,071	34,592	25,144	22,933	(39)
Total	84,368	110,252	155,252	135,758	128,757	53
	Value (1,000 dollars)					
Belgium	4	80	37,913	48,105	45,289	(²)
Japan	2,010	6,795	52,442	49,437	36,502	1,716
Canada	25,487	22,087	21,128	19,653	24,401	(4)
Philippines	5,529	6,793	6,998	5,234	6,743	22
South Korea	3,064	5,824	3,277	4,210	6,259	104
Taiwan	12,298	19,355	17,743	10,336	5,980	(51)
Mexico	4,538	5,626	15,332	200	5,430	20
All other	41,689	63,949	45,113	31,190	28,245	(32)
Total	94,618	130,509	199,947	168,365	158,849	68
	Unit value (dollars per pound)					
Belgium	\$1.10	\$1.70	\$1.58	\$1.75	\$1.73	57
Japan	1.65	1.79	1.66	1.06	1.13	(32)
Canada	1.11	1.05	.96	.98	1.12	1
Philippines	1.22	1.49	1.38	1.08	1.34	10
South Korea	1.37	1.48	1.52	1.41	1.25	(9)
Taiwan	1.39	1.64	1.48	1.26	1.14	(18)
Mexico .....	.67	.71	.65	.75	.52	(22)
All other	1.10	1.12	1.30	1.24	1.23	12
Average	1.12	1.18	1.29	1.24	1.23	10

¹ Schedule B number 2005.20.20 in 1992 through 1995; changed to 2005.20.0020 in 1996.² Change greater than 5,000 percent.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and changes calculated using unrounded data.

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

Table 3-9

Fresh table stock potatoes:¹ U.S. exports of domestic merchandise, by principal markets, 1992-96

Market	1992	1993	1994	1995	1996	Change 1996 over 1992
	Quantity (1,000 pounds)					Percent
Canada	459,774	458,884	559,655	473,850	482,874	5
Mexico	32,362	38,380	35,394	34,329	56,297	74
Singapore	322	1,469	2,383	3,330	5,332	1,555
Hong Kong	1,799	3,374	4,135	3,784	4,297	139
Russia	412	0	13,390	1,800	3,880	841
Barbados	334	1,123	795	797	2,063	518
Dominican Republic	0	0	0	9	2,261	(²)
Jamaica	266	321	250	700	1,589	497
All other	4,620	3,074	4,365	17,904	5,411	20
World	499,890	506,626	620,367	536,504	564,004	13
	Value (1,000 dollars)					
Canada	59,522	68,395	75,662	67,823	64,811	9
Mexico	4,270	5,531	6,486	6,215	9,524	123
Singapore	45	225	339	586	928	1,982
Hong Kong	291	641	614	615	617	112
Russia	42	0	2,204	275	542	1,193
Barbados	51	172	110	127	371	623
Dominican Republic	0	0	0	3	273	(²)
Jamaica	35	68	45	129	256	639
All other	960	586	973	2,703	1,103	15
World	65,214	75,617	86,433	78,474	78,424	20
	Unit Value (dollars per pound)					
Canada	\$0.13	\$0.15	\$0.14	\$0.14	\$0.13	4
Mexico .....	.13	.14	.18	.18	.17	31
Singapore .....	.14	.15	.14	.18	.17	26
Hong Kong .....	.16	.19	.15	.16	.14	(11)
Russia .....	.10	---	.16	.15	.14	37
Barbados .....	.15	.15	.14	.16	.18	17
Dominican Republic	---	---	---	.28	.12	(²)
Jamaica .....	.13	.21	.18	.18	.16	24
All other .....	.21	.19	.22	.19	.20	(2)
Average world .....	.13	.15	.14	.15	.14	14

¹ Schedule B number 0701.90.² Not meaningful.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and changes calculated using unrounded data.

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

Table 3-14

Fresh table stock potatoes:¹ U.S. imports from Canada, by principal Customs districts, 1992-96

Customs District	1992	1993	1994	1995	1996	Change 1996 over 1992
	Quantity (1,000 pounds)					Percent
Portland, Maine	192,043	380,562	287,482	284,541	394,633	105
San Juan, Puerto Rico	39,762	50,592	43,975	37,881	72,038	81
Buffalo, New York	14,896	40,799	25,605	27,664	67,784	355
Ogdensburg, New York	11,891	37,551	15,967	20,969	45,992	287
Pembina, North Dakota	6,755	15,761	18,264	62,180	55,361	720
Detroit, Michigan	982	5,665	3,161	12,783	18,422	1,777
Great Falls, Montana	185	433	4,634	7,097	28,287	(²)
All other	6,775	9,930	6,761	5,716	8,244	22
Total	273,288	541,293	405,849	458,832	690,761	153
	Value (1,000 dollars)					
Portland, Maine	12,901	30,019	28,633	23,505	33,844	162
San Juan, Puerto Rico	3,255	5,322	5,779	4,845	9,451	190
Buffalo, New York	1,246	4,159	2,460	1,960	6,617	431
Ogdensburg, New York	843	3,262	1,816	2,361	4,725	460
Pembina, North Dakota	483	1,229	1,870	3,309	3,847	697
Detroit, Michigan	149	574	587	1,301	2,054	1,276
Great Falls, Montana	17	44	610	1,172	1,840	(²)
All other	814	864	865	658	662	(19)
Total	19,710	45,475	42,619	39,112	63,039	220
	Unit value (dollars per pound)					
Portland, Maine	\$0.07	\$0.08	\$0.10	\$0.08	\$0.09	28
San Juan, Puerto Rico ....	.08	.11	.13	.13	.13	60
Buffalo, New York .....	.08	.10	.10	.07	.10	17
Ogdensburg, New York ....	.07	.09	.11	.11	.10	45
Pembina, North Dakota ....	.07	.08	.10	.05	.07	(3)
Detroit, Michigan .....	.15	.10	.19	.10	.11	(27)
Great Falls, Montana .....	.09	.10	.13	.17	.07	(30)
All other .....	.12	.09	.13	.12	.08	(33)
Average .....	.07	.08	.11	.09	.09	27

¹ HTS number 0701.90.² Increase greater than 5,000 percent.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and changes calculated using unrounded data.

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

Table 3-15

Frozen french fries:¹ U.S. imports from Canada, by principal Customs districts, 1992-96

Customs District	1992	1993	1994	1995	1996	Change 1996 over 1992
	Quantity (1,000 pounds)					Percent
Portland, Maine	153,907	165,952	171,700	174,698	255,282	66
Pembina, North Dakota	20,194	90,400	90,250	113,900	118,710	488
San Juan, Puerto Rico	10,843	15,316	18,446	34,600	36,009	238
Detroit, Michigan	291	2,032	5,619	4,097	5,766	1,884
Buffalo, New York	926	1,245	1,353	2,956	3,855	316
Ogdensburg, New York	1,840	2,284	1,244	1,788	2,429	32
All other	320	557	616	213	899	181
Total	188,119	277,786	289,227	332,252	422,950	125
	Value (1,000 dollars)					
Portland, Maine	38,638	42,543	44,643	46,184	69,867	81
Pembina, North Dakota	3,841	20,599	20,091	32,388	32,554	747
San Juan, Puerto Rico	2,579	4,104	5,199	10,245	11,154	332
Detroit, Michigan	55	475	1,429	1,018	1,324	2,307
Buffalo, New York	231	363	392	841	1,084	369
Ogdensburg, New York	449	576	321	443	636	42
All other	103	182	177	67	270	162
Total	45,895	68,841	72,252	91,187	116,890	155
	Unit value (dollars per pound)					
Portland, Maine	\$0.25	\$0.26	\$0.26	\$0.26	\$0.27	9
Pembina, North Dakota ....	.19	.23	.22	.28	.27	44
San Juan, Puerto Rico ....	.24	.27	.28	.30	.31	28
Detroit, Michigan .....	.19	.23	.25	.25	.23	22
Buffalo, New York .....	.25	.29	.29	.28	.28	13
Ogdensburg, New York ....	.24	.25	.26	.25	.26	7
All other .....	.32	.33	.29	.32	.30	(7)
Average .....	.24	.25	.25	.27	.28	13

¹ HTS number 2004.10.8020.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and changes calculated using unrounded data.

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

Table 3-16

Fresh seed potatoes:¹ U.S. imports from Canada, by principal Customs districts, 1992-96

Customs District	1992	1993	1994	1995	1996	Change 1996 over 1992
	Quantity (1,000 pounds)					Percent
Great Falls, Montana	49,710	56,277	100,188	126,041	163,052	228
Portland, Maine	60,670	87,372	90,593	70,978	96,855	60
Seattle, Washington	14,304	17,210	19,211	20,962	22,269	56
Detroit, Michigan	1,012	5,555	19,611	2,060	9,794	868
Pembina, North Dakota	1,988	3,365	6,619	3,485	2,790	40
All other	242	1,060	567	2,354	796	229
Total	127,926	170,840	236,789	225,881	295,556	131
	Value (1,000 dollars)					
Great Falls, Montana	2,660	4,419	9,490	9,182	15,743	492
Portland, Maine	4,146	5,136	7,399	5,452	7,021	69
Seattle, Washington	1,163	1,742	2,139	2,216	2,569	121
Detroit, Michigan	104	366	2,299	207	1,195	1,049
Pembina, North Dakota	140	225	608	244	295	110
All other	18	75	62	161	85	370
Total	8,231	11,963	21,997	17,462	26,907	227
	Unit value (dollars per pound)					
Great Falls, Montana	\$0.05	\$0.08	\$0.09	\$0.07	\$0.10	80
Portland, Maine .....	.07	.06	.08	.08	.07	6
Seattle, Washington .....	.08	.10	.11	.11	.12	42
Detroit, Michigan .....	.10	.07	.12	.10	.12	19
Pembina, North Dakota ....	.07	.07	.09	.07	.11	50
All other .....	.07	.07	.11	.07	.11	43
Average .....	.06	.07	.09	.08	.09	41

¹ HTS number 0701.0.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and changes calculated using unrounded data.

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

Table 3-17

Fresh table stock potatoes:¹ U.S. exports to Canada, by principal Customs districts, 1992-96

Customs District	1992	1993	1994	1995	1996	Change 1996 over 1992
	Quantity (1,000 pounds)					Percent
Detroit, Michigan	90,494	88,012	113,147	113,312	103,647	15
Seattle, Washington	84,718	83,329	69,615	72,692	95,585	13
Great Falls, Montana	47,915	64,325	95,218	62,888	73,473	53
Buffalo, New York	75,891	63,096	76,478	65,662	53,223	(30)
Ogdensburg, New York	52,128	53,492	61,347	55,197	45,463	(13)
Portland, Maine	27,996	29,623	51,993	30,745	25,684	(8)
Pembina, North Dakota	17,092	26,934	21,870	14,980	17,848	4
All other	63,539	50,073	69,987	58,373	67,950	7
Total	59,774	458,884	559,655	473,850	482,874	5
	Value (1,000 dollars)					
Detroit, Michigan	11,727	15,154	17,687	19,333	16,710	42
Seattle, Washington	10,264	11,821	9,436	10,135	12,297	20
Great Falls, Montana	7,169	10,118	11,367	9,078	9,400	31
Buffalo, New York	10,477	9,204	11,408	8,854	7,268	(31)
Ogdensburg, New York	6,534	7,869	8,755	7,010	6,266	(4)
Portland, Maine	3,971	4,114	5,819	3,918	2,916	(27)
Pembina, North Dakota	2,293	3,828	3,133	2,113	1,889	(18)
All other	7,087	6,287	8,057	7,381	8,065	14
Total	59,522	68,395	75,662	67,823	64,811	9
	Unit value (dollars per pound)					
Detroit, Michigan	\$0.13	\$0.17	\$0.16	\$0.17	\$0.16	24
Seattle, Washington .....	.12	.14	.14	.14	.13	6
Great Falls, Montana .....	.15	.16	.12	.14	.13	(14)
Buffalo, New York .....	.14	.15	.15	.13	.14	(1)
Ogdensburg, New York ....	.13	.15	.14	.13	.14	10
Portland, Maine .....	.14	.14	.11	.13	.11	(20)
Pembina, North Dakota ....	.13	.14	.14	.14	.11	(21)
All other .....	.11	.13	.12	.13	.12	6
Average .....	.13	.15	.14	.14	.13	4

¹ Schedule B number 0701.90.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and changes calculated using unrounded data.

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

Table 3-18

Frozen french fries:¹ U.S. exports to Canada, by principal Customs districts, 1992-96

Customs District	1992	1993	1994	1995	1996	Change 1996 over 1992
	Quantity (1,000 pounds)					Percent
Seattle, Washington	3,568	4,760	6,059	6,180	8,581	141
Great Falls, Montana	1,114	2,501	2,499	1,822	7,788	599
Pembina, North Dakota	2,201	2,186	2,074	2,670	7,900	259
Detroit, Michigan	3,813	3,717	2,665	2,186	1,435	(62)
Buffalo, New York	155	59	294	319	1,172	658
All other	2,183	2,037	2,642	3,449	1,944	(11)
Total	13,033	15,260	16,233	16,625	28,820	121
	Value (1,000 dollars)					
Seattle, Washington	1,431	1,894	2,433	2,442	3,720	160
Great Falls, Montana	395	1,040	1,004	739	3,044	671
Pembina, North Dakota	732	746	810	994	2,529	245
Detroit, Michigan	1,635	1,487	1,030	930	742	(55)
Buffalo, New York	87	35	162	152	632	627
All other	901	934	1,257	1,558	800	(11)
Total	5,181	6,135	6,696	6,815	11,466	121
	Unit value (dollars per pound)					
Seattle, Washington	\$0.40	\$0.40	\$0.40	\$0.40	\$0.43	8
Great Falls, Montana .....	.35	.42	.40	.41	.39	10
Pembina, North Dakota .....	.33	.34	.39	.37	.32	(4)
Detroit, Michigan .....	.43	.40	.39	.43	.52	21
Buffalo, New York .....	.56	.60	.55	.48	.54	(4)
All other .....	.41	.46	.48	.45	.41	(²)
Average .....	.40	.40	.41	.41	.40	(³)

¹ Schedule B number 2004.10.8020.² Decrease of less than 0.5 percent.³ Increase of less than 0.5 percent.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and changes calculated using unrounded data.

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

Table 3-19

Fresh seed potatoes:¹ U.S. exports to Canada, by principal Customs districts, 1992-96

U.S. exports to Canada, by principal Customs districts, 1992-96						Change
Customs District	1992	1993	1994	1995	1996	1996 over 1992
	Quantity (1,000 pounds)					Percent
Pembina, North Dakota	2,661	3,155	7,280	5,126	12,352	364
Portland, Maine	13,536	7,954	8,948	11,085	7,776	(43)
Detroit, Michigan	7,355	6,629	4,164	5,240	4,131	(44)
Great Falls, Montana	1,166	388	1,792	2,304	2,571	120
Ogdensburg, New York	538	811	525	1,858	434	(19)
Buffalo, New York	842	267	0	247	558	(34)
All other	5,743	3,091	1,272	3,691	1,188	(79)
Total	31,841	22,295	23,982	29,550	29,010	(9)
	Value (1,000 dollars)					
Pembina, North Dakota	239	287	800	486	1,432	500
Portland, Maine	1,350	721	913	1,044	706	(48)
Detroit, Michigan	743	612	412	481	420	(44)
Great Falls, Montana	130	46	177	237	403	210
Ogdensburg, New York	74	84	57	223	58	(22)
Buffalo, New York	89	30	0	19	50	(44)
All other	332	202	131	252	124	(63)
Total	2,957	1,980	2,490	2,742	3,192	8
	Unit value (dollars per pound)					
Pembina, North Dakota	\$0.09	\$0.09	\$0.11	\$0.09	\$0.12	29
Portland, Maine . . . . .	.10	.09	.10	.09	.09	(9)
Detroit, Michigan . . . . .	.10	.09	.10	.09	.10	1
Great Falls, Montana . . . . .	.11	.12	.10	.10	.16	41
Ogdensburg, New York . . . . .	.14	.10	.11	.12	.13	(3)
Buffalo, New York . . . . .	.11	.11	--	.08	.09	(15)
All other . . . . .	.06	.07	.10	.07	.10	80
Average . . . . .	.09	.09	.10	.09	.11	18

¹ Schedule B number 0701.10.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and changes calculated using unrounded data.

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

Table 3-20
Potatoes:¹ Canadian imports for consumption, by principal items, 1992-96

Potatoes: Canadian imports for consumption, by principal items, 1992-96						Change 1996 over 1992
Item	1992	1993	1994	1995	1996	1992
Quantity (1,000 pounds) ²						Percent
Fresh table stock	461,055	458,921	557,993	474,042	483,008	5
Other processed potatoes ³	31,784	31,392	36,739	37,766	40,381	27
Fresh seed potatoes	32,079	22,308	24,030	29,729	29,365	(8)
Frozen processed potatoes ⁴ ..	11,853	14,843	16,443	16,858	28,970	144
Potato starches	12,494	16,541	21,689	19,611	13,893	11
Dried potatoes ^{5,6}	3,200	3,837	3,890	2,726	4,649	45
Potato flour and meal ⁷	2,077	3,352	3,914	4,292	3,414	64
Other frozen potatoes	3,517	2,635	421	1,441	1,915	(46)
Total	558,057	553,829	665,119	586,466	605,595	9
Value (1,000 dollars) ⁸						
Fresh table stock	51,769	59,909	68,499	61,734	58,975	14
Other processed potatoes	30,915	28,157	28,272	27,820	35,594	15
Frozen processed potatoes	5,032	5,935	6,490	6,495	10,401	107
Potato starches	3,264	4,047	5,089	4,827	3,943	21
Fresh seed potatoes	2,680	1,739	2,380	2,588	3,003	12
Dried potatoes	1,891	2,294	3,564	2,301	1,782	(6)
Potato flour and meal	835	1,436	2,086	2,173	1,911	129
Other frozen potatoes	1,509	965	154	595	784	(48)
Total	97,896	104,482	116,535	108,535	116,392	19
Unit value (dollars per pound)						
Fresh table stock	\$0.11	\$0.13	\$0.12	\$0.13	\$0.12	9
Other processed potatoes .....	.97	.90	.77	.74	.88	(9)
Frozen processed potatoes .....	.42	.40	.39	.39	.36	(15)
Potato starches .....	.26	.24	.23	.25	.28	9
Fresh seed potatoes .....	.08	.08	.10	.09	.10	25
Dried potatoes .....	.59	.60	.92	.84	.38	(36)
Potato flour and meal .....	.40	.43	.53	.51	.56	40
Other frozen potatoes .....	.43	.37	.37	.41	.41	(5)
Average .....	.18	.19	.18	.19	.19	5

¹ Canadian Import Classification numbers 0701.10, 0701.90, 0710.10, 0712.10, 1105.10, 1105.20, 1108.13, 2004.10, 2005.20

² Data converted from kilograms by multiplying by 2.2046 pounds per kilogram.

³ CIC number 2005.20; other potatoes, prepared or preserved, not frozen; includes potato chips.

⁴ CIC number 2004.10; other potatoes, prepared or preserved, frozen; includes frozen french fries.

⁵ Data not available in 1996; Canadian code 0712.10 was discontinued and collapsed into 0712.90 (dried vegetables). Data estimated by USITC staff using an average of the ratio of dried potatoes to dried vegetables in category 0712.90 between 1992 and 1995 and multiplying the 1996 data for 0712.90 by that ratio.

⁶ 1996 total will not match 1996 total in table 3-21 because table 3-21 does not include dried potatoes in that year.

⁷ CIC number 1105; also includes flakes, granules and pellets.

⁸ Data converted from Canadian dollars to US dollars by dividing by average annual exchange rate, in Canadian dollars per US dollars. Average annual exchange rates from IMF International Financial Statistics, if exchange rate, p. 156, Feb. 1997. Average annual exchange rate not available for 1996. Estimated by USITC staff by averaging the quarterly rates for 1996.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and changes calculated using unrounded data.

Source: Compiled from official statistics of Statistics Canada, StatsCan Online database.

Table 3-21
Potatoes:¹ Canadian imports for consumption, by principal sources, 1992-96

Source	1992	1993	1994	1995	1996	Change 1996 over 1992
	Quantity (1,000 pounds)²					Percent
United States	544,063	535,902	648,452	564,798	583,337	7
The Netherlands	146	125	189	53	48	(67)
Germany	1,223	1,167	1,269	270	570	(53)
Belgium	545	617	655	563	1,107	103
United Kingdom	364	345	396	476	523	43
Jamaica	0	0	0	296	1,163	--
Japan	55	47	41	41	452	725
All other	11,662	15,624	20,927	19,956	13,721	18
Total	558,057	553,826	671,929	586,452	600,919	8
	Value (1,000 dollars)³					
United States	94,251	100,062	110,989	102,808	108,626	15
The Netherlands	1,020	1,274	1,063	1,285	1,618	59
Germany	1,858	2,393	3,606	3,373	1,501	(19)
Belgium	203	233	168	253	1,160	471
United Kingdom	195	174	223	296	429	120
Jamaica	0	0	0	145	412	--
Japan	28	27	48	57	274	880
All other	340	318	354	317	592	74
Total	97,896	104,482	116,535	108,535	114,611	17
	Unit value (dollars per pound)					
United States	\$0.17	\$0.19	\$0.17	\$0.18	\$0.19	7
The Netherlands	6.99	10.23	5.29	24.30	33.97	386
Germany	1.52	2.05	2.82	12.49	2.63	73
Belgium .....	.37	.38	.39	.45	1.05	181
United Kingdom .....	.53	.50	.56	.62	.82	53
Jamaica	--	--	--	.49	.35	--
Japan .....	.51	.59	1.16	1.38	.61	19
All other .....	.03	.02	.02	.02	.04	48
Average .....	.18	.19	.17	.19	.19	9

¹ Canadian Import Classification numbers 0701.10, 0701.90, 0710.10, 0712.10, 1105.10, 1105.20, 1108.13, 2004.10, and 2005.20.

² Data converted from kilograms by multiplying by 2.2046 pounds per kilogram.

³ Data converted from Canadian dollars to US dollars by dividing by average annual exchange rate, in Canadian dollars per U.S. dollar. Average annual exchange rates from IMF International Financial Statistics (rf exchange rate), p. 156, Feb. 1997. Average annual exchange rate not available for 1996. Estimated by USITC staff by averaging the quarterly rates for 1996.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and changes calculated using unrounded data.

Source: Compiled from official statistics of Statistics Canada, StatsCan Online database.

Table 3-22

Potatoes:¹ Canadian exports of domestic merchandise, by principal markets, 1992-96

Market	1992	1993	1994	1995	1996	Change 1996 over 1992
	Quantity (1,000 pounds) ²					Percent
United States	593,246	991,576	940,366	1,028,738	1,436,852	142
Japan	37,870	38,747	39,665	35,176	37,414	(1)
Venezuela	120,483	168,009	101,045	81,794	47,808	(60)
Cuba	42,763	85,007	60,620	37,030	67,683	58
Brazil	1,151	1,927	17,731	20,719	11,552	904
Trinidad	43,283	36,591	35,290	56,230	34,918	(19)
Barbados	15,476	19,208	14,277	18,155	17,543	13
Norway	110	0	5,659	30,560	17,657	(*)
All other	100,369	109,468	274,288	271,617	115,144	15
Total	954,750	1,450,534	1,488,942	1,580,018	1,786,571	87
	Value (1,000 dollars) ³					
United States	81,274	135,013	148,226	161,506	230,922	184
Japan	12,984	12,973	12,768	11,881	12,486	(4)
Venezuela	14,108	16,949	13,645	10,707	6,030	(57)
Cuba	3,790	4,401	4,484	3,610	4,945	30
Brazil	468	605	4,019	6,067	3,875	727
Trinidad	6,368	4,448	4,796	5,985	3,788	(41)
Barbados	2,245	1,809	1,927	2,971	2,455	9
Norway	3	0	980	3,690	2,299	(*)
All other	19,919	18,712	41,194	64,688	36,445	83
Total	141,159	194,910	232,039	271,105	303,245	115
	Unit value (dollars per pound)					
United States	\$0.14	\$0.14	\$0.16	\$0.16	\$0.16	20
Japan .....	.34	.33	.32	.34	.33	(3)
Venezuela .....	.12	.10	.14	.13	.13	8
Cuba .....	.09	.05	.07	.10	.07	18
Brazil .....	.41	.31	.23	.29	.34	(18)
Trinidad .....	.15	.12	.14	.11	.11	(26)
Barbados .....	.15	.09	.14	.16	.14	(4)
Norway .....	.03	—	.17	.12	.13	351
All other .....	.20	.17	.15	.24	.32	60
Average .....	.15	.13	.16	.17	.17	13

¹ Canadian Export Classification numbers 0701.10, 0701.90, 0710.10, 0712.10, 1105.10, 1105.20, 1108.13, 2004.10, and 2005.20

² Data converted from kilograms by multiplying by 2.2046 pounds per kilogram.

³ Data converted from Canadian dollars to US dollars by dividing by average annual exchange rate, in Canadian dollars per US dollars. Average annual exchange rates from IMF International Financial Statistics, if exchange rate, g. 156, Feb. 1997. Average annual exchange rate not available for 1996. Estimated by USITC staff by averaging the quarterly rates for 1996.

*Increase greater than 5,000 percent.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and changes calculated using unrounded data.

Source: Compiled from official statistics of Statistics Canada, StatsCan Online database.

Table 3-23
Potatoes¹: Canadian exports of domestic merchandise, by principal items, 1992-1996

Potatoes : Canadian exports of domestic merchandise, by principal items, 1992-1996						Change 1996 over 1992
Item	1992	1993	1994	1995	1996	1992
	Quantity (1,000 pounds) ²					Percent
Fresh table stock potatoes ...	436,916	816,904	545,548	720,719	790,182	81
Frozen processed potatoes ³ ..	259,511	355,476	407,774	514,961	597,531	130
Fresh seed potatoes	248,044	263,939	322,771	356,775	376,405	52
Potato flour and meal ⁴	5,336	10,178	7,798	7,254	8,414	58
Other processed potatoes ⁵ ...	1,431	852	1,424	4,610	5,967	317
Other frozen potatoes	53,823	961,166	1,423	429,507	4,487	8,236
Potato starches	3,326	3,986	1,863	4,690	3,532	6
Dried potatoes ^{6,7}	132	87	7	27	19,903	51
Total	270,474	372,621	421,157	533,048	621,297	130
	Value (1,000 dollars) ⁸					
Frozen processed potatoes ..	71,201	96,317	113,538	153,702	176,991	149
Fresh table stock potatoes ...	41,033	70,304	81,390	69,590	76,578	87
Fresh seed potatoes	23,873	22,579	31,831	38,072	37,343	56
Other processed potatoes ...	1,842	639	1,393	5,424	6,729	265
Potato flour and meal	2,497	4,140	3,279	3,238	4,026	93
Other frozen potatoes	22	211	272	163	989	4,438
Potato starches	640	688	321	896	589	(8)
Dried potatoes	52	34	16	20	1,776	243
Total	141,159	194,910	232,039	271,105	305,021	88
	Unit value (per pound)					
Other processed potatoes ...	\$1.29	\$0.80	\$0.98	\$1.18	\$1.13	(12)
Dried potatoes .....	.39	.41	.42	.75	.89	128
Potato flour and meal .....	.45	.42	.40	.45	.46	2
Frozen processed potatoes ..	.27	.29	.28	.30	.30	8
Other frozen potatoes .....	.41	.23	.19	.38	.22	(46)
Potato starches .....	.19	.18	.17	.19	.17	(13)
Fresh seed potatoes .....	.10	.09	.10	.11	.10	3
Fresh table stock potatoes ...	.09	.09	.11	.10	.10	3
Average .....	.40	.33	.56	.47	.42	5

¹ Canadian Export Classification codes 0701.10, 0701.90, 0710.10, 0712.10, 1105.10, 1105.20, 1108.13, 2004.10, 2005.20.

² Data converted from kilograms by multiplying by 2.2046 pounds per kilogram.

³ CEC number 2005.20; other potatoes, prepared or preserved, not frozen; includes potato chips.

⁴ CEC number 2004.10; other potatoes, prepared or preserved, frozen; includes frozen french fries.

⁵ CEC number 1105; also includes flakes, granules and pellets.

⁶ Data not available in 1996; Canadian code 0712.10 was discontinued and collapsed into 0712.90 (dried vegetables) in 1996. Data estimated by USITC staff using an average of the ratio of dried potatoes to dried vegetables in category 0712.90 between 1992 and 1995 and multiplying the 1996 data for 0712.90 by that ratio.

⁷ 1996 total does not match 1996 total in table 3-22 because 3-22 does not include dried potatoes in that year.

⁸ Data converted from Canadian dollars to US dollars by dividing by average annual exchange rate, in Canadian dollars per U.S. dollar. Average annual exchange rates from IMF International Financial Statistics (if exchange rate), p. 156, Feb. 1997. Average annual exchange rate not available for 1996. Estimated by USITC staff by averaging the quarterly rates for 1996.

Note.—Because of rounding, figures may not add to the totals shown. Unit values and changes calculated using unrounded data.

Source: Compiled from official statistics of Statistics Canada, StatsCan Online database.

APPENDIX E

Excerpts from Canada Customs Tariff Schedule Pertaining to Potatoes and Potato Products

SCHEDULE 1

07 - 1

Tariff Item	SS	Description of Goods	Unit of Meas.	M.F.N. Tariff	G.P. Tariff	U.S. Tariff	Mexico Tariff	Mexico-U.S. Tariff
07.01		Potatoes, fresh or chilled.						
0701.10.00	00	—Seed	TNE	88.33 /tonne CIFTA Free	X	77.2¢ /tonne	77.2¢ /tonne	N/A
0701.90.00	00	—Other	TNE	88.33 /tonne	X	77.2¢ /tonne	77.2¢ /tonne	N/A
0702.00		Tomatoes, fresh or chilled.						
0702.00.10		—For processing		1.61¢/kg but not less than 12.5%	X	0.2¢/kg but not less than 1.5%	0.2¢/kg but not less than 1.5%	N/A
	10	—Cherry	KGM					
	20	—Roma	KGM					
	30	—Other	KGM					
		—Other:						
0702.00.91		—Imported during such period, which may be divided into two separate periods, specified by order of the Minister or the Deputy Minister, not exceeding a total of 32 weeks in any 12 month period ending 31st March		5.1¢/kg but not less than 13.9%	X	0.5¢/kg but not less than 1.5%	N/A	N/A
	10	—Cherry	KGM					
	20	—Roma	KGM					
	90	—Other	KGM					
0702.00.99		—Other		Free	Free	Free	Free	N/A
	10	—Cherry	KGM					
	20	—Roma	KGM					
	90	—Other	KGM					
07.02		Onions, shallots, garlic, leeks and other alliacious vegetables, fresh or chilled.						
0702.10		—Onions and shallots						
0702.10.10	00	—Onion sets	KGM	5.42¢/kg but not less than 12.5%	X	0.6¢/kg but not less than 1.5%	0.6¢/kg but not less than 1.5%	N/A
		—Onions, Spanish-type, for processing:						
0702.10.21	00	—Imported during such period specified by order of the Minister or the Deputy Minister, not exceeding 12 weeks in any 12 month period ending 31st March	KGM	2.72¢/kg but not less than 12.5%	X	0.3¢/kg but not less than 1.5%	0.3¢/kg but not less than 1.5%	N/A
0702.10.29	00	—Other	KGM	Free	Free	Free	Free	N/A

SCHEDULE I

07 - 10

Tariff Item	SS	Description of Goods	Unit of Meas.	M.F.N. Tariff	G.P. Tariff	U.S. Tariff	Mexico Tariff	Mexico-U.S. Tariff
07.10		Vegetables (uncooked or cooked by steaming or boiling in water), frozen.						
0710.10.00	00	—Potatoes	KGM	8.2%	5%	1%	1%	N/A
		—Leguminous vegetables, shelled or unshelled:						
0710.21.00	00	—Peas (<i>Pisum sativum</i>)	KGM	12.5%	X	1.5%	1.5%	N/A
0710.22.00		—Beans (<i>Vigna</i> spp., <i>Phaseolus</i> spp.)		12.5%	7%	1.5%	1.5%	N/A
	10	—Snap	KGM					
	20	—Lima	KGM					
	90	—Other	KGM					
0710.29		—Other						
0710.29.10	00	—Chickpeas (garbanzo), lupini beans, pigeon peas (Congo, dahi and toor), adzuki peas, no-eye peas, Angola peas and guar seeds	KGM	Free	Free	Free	Free	N/A
0710.29.90	00	—Other	KGM	12.5%	7%	1.5%	1.5%	N/A
0710.30.00	00	—Spinach, New Zealand spinach and orache spinach (garden spinach)	KGM	Free	Free	Free	Free	N/A
0710.40.00	00	—Sweet corn	KGM	12.5%	X	1.5%	1.5%	N/A
0710.80		—Other vegetables						
0710.80.10	00	—Asparagus	KGM	20.8%	X	2.2%	13.5%	N/A
0710.80.20	00	—Broccoli and cauliflowers	KGM	18.4%	X	2%	N/A	N/A
0710.80.30	00	—Brussels sprouts	KGM	18.4%	10%	2%	2%	N/A
		—Carrots:						
0710.80.41	00	—Baby carrots (of a length not exceeding 11 cm)	KGM	14.4%	X	1.7%	10.5%	N/A
0710.80.49	00	—Other	KGM	12.5%	X	1.5%	1.5%	N/A
0710.80.50	00	—Mushrooms	KGM	18.4%	10%	2%	2%	N/A
		—Other:						
0710.80.91	00	—Artichokes (globe or Chinese), bamboo shoots, cactus leaves (nopales), cardoons, dillweed (Chinese or Mexican parsley or Yen Bai), fennel, leaf chervil, melanga, okra, tamarillo (tree tomatoes), tarragons, tomatoes, tomatillos, truffles, verdolagas and water chestnuts	KGM	Free	Free	Free	Free	N/A
0710.80.99	00	—Other	KGM	12.5%	X	1.5%	1.5%	N/A

SCHEDULE I

87 - 11

Tariff Item	SS	Description of Goods	Unit of Meas.	M.F.N. Tariff	G.P. Tariff	U.S. Tariff	Mexico Tariff	Mexico-U.S. Tariff
0710.00.00	00	-Mixtures of vegetables	KGM	13.9%	10%	1.5%	0%	N/A
07.11		Vegetables provisionally preserved (for example, by sulphur dioxide gas, in brine, in sulphur water or in other preservative solutions), but unsuitable in that state for immediate consumption.						
0711.10.00	00	-Onions	KGM	10.3%	0%	1.2%	1.2%	N/A
0711.20.00	00	-Olives	KGM	Free	Free	Free	Free	N/A
0711.30.00	00	-Capers	KGM	6.5%	X	1.2%	Free	N/A
0711.40.00	00	-Cucumbers and gherkins	KGM	11.6%	X	1.2%	7.5%	N/A
0711.90.00	00	-Other vegetables; mixtures of vegetables	KGM	10.5%	0%	1.2%	1.2%	N/A
07.12		Dried vegetables, whole, cut, sliced, broken or in powder, but not further prepared.						
0712.30.00	00	-Onions	KGM	8.2% CIFTA Free	5%	Free	Free	N/A
0712.30		-Mushrooms and truffles						
0712.30.10	00	—Mushrooms	KGM	8.2% BPT Free CIFTA Free	X	1%	1%	N/A
0712.30.20	00	—Truffles	KGM	Free CIFTA Free	Free	Free	Free	N/A
0712.90		-Other vegetables; mixtures of vegetables						
0712.90.10	00	—Tarragon, sweet marjoram and savory	KGM	Free CIFTA Free	Free	Free	Free	N/A
0712.90.20	00	—Sweet corn seed	TNE	\$1.57 /tonne CIFTA Free	Free	31.56 /tonne	31.56 /tonne	N/A
0712.90.30	00	—Potatoes whether or not cut or sliced but not further prepared	KGM	8.2% CIFTA Free	X	Free	1%	N/A
0712.90.40	00	—Garlic	KGM	8.2% CIFTA Free	X	1%	1%	N/A

SCHEDULE I

11-4

Tariff Item	SS	Description of Goods	Unit of Meas.	M.F.N. Tariff	G.P. Tariff	U.S. Tariff	Mexico Tariff	Mexico-U.S. Tariff
11.05		Flour, meal, powder, flakes, granules and pellets of potatoes.						
1105.10.00	00	-Flour, meal and powder	KGM	11.6%	8%	1.2%	1.2%	N/A
1105.20.00	00	-Flakes, granules and pellets	KGM	9.3%	5%	1%	1%	N/A
11.06		Flour, meal and powder of the dried leguminous vegetables of heading No. 07.13, of sago or of roots or tubers of heading No. 07.14 or of the products of Chapter 8.						
1106.10		-Of the dried leguminous vegetables of heading No. 07.13						
1106.10.10	00	—Guar meal	KGM	Free CIFTA Free	Free	Free	Free	N/A
1106.10.90	00	—Other	KGM	8.3% CIFTA Free	5%	1%	1%	N/A
1106.20		-Of sago or of roots or tubers of heading No. 07.14						
1106.20.10	00	—Flour of sago or cassava	KGM	0.63\$/kg CIFTA Free	Free	0.1\$/kg	Free	N/A
1106.20.90	00	—Other	KGM	Free CIFTA Free	Free	1%	1%	N/A
1106.30.00	00	-Of the products of Chapter 8	KGM	Free CIFTA Free	Free	1%	1%	N/A
11.07		Malt, whether or not roasted.						
1107.10		-Not roasted						
		—Whole:						
1107.10.11	00	—Within access commitment	KGM	0.50\$/kg CIFTA Free	X	Free	Free	N/A
1107.10.12	00	—Over access commitment	TNE	\$175.47 /tonne	X	N/A	60c /tonne	N/A
		—Other:						
1107.10.91	00	—Within access commitment	KGM	0.80\$/kg CIFTA Free	Y	0.1\$/kg	0.1\$/kg	N/A

SCHEDULE I

11-6

Tariff Item	SS	Description of Goods	Unit of Meas.	M.F.N. Tariff	G.P. Tariff	U.S. Tariff	Mexico Tariff	Mexico-U.S. Tariff
1107.10.02	00	Over access commitment	TNE	\$178.98 /tonne	X	N/A	\$1.00 /tonne	N/A
1107.20		Roasted						
		Whole:						
1107.20.11	00	Within access commitment	KGM	0.50¢/kg CIFTA Free	X	Free	Free	N/A
1107.20.12	00	Over access commitment	TNE	\$158.17 /tonne	X	N/A	60¢ /tonne	N/A
		Other:						
1107.20.01	00	Within access commitment	KGM	0.7¢/kg CIFTA Free	X	0.1¢/kg	0.1¢/kg	N/A
1107.20.02	00	Over access commitment	TNE	\$123.13 /tonne	X	N/A	\$1.00 /tonne	N/A
11.08		Starches; inulin.						
		Starches:						
1108.11		Wheat starch						
1108.11.10		Within access commitment		1.78¢/kg	0.8¢/kg	0.2¢/kg	0.2¢/kg	N/A
	10	For food use	KGM					
	20	For industrial use (non food)	KGM					
1108.11.20		Over access commitment		\$283.20 /tonne	X	\$2.20 /tonne	\$2.20 /tonne	N/A
	10	For food use	TNE					
	20	For industrial use (non food)	TNE					
1108.12.00		Malt (corn) starch		1.81¢/kg	Free	0.2¢/kg	0.2¢/kg	N/A
	10	For food use	KGM					
	20	For industrial use (non food)	KGM					
1108.13.00		Potato starch		11.8%	6%	1.2%	1.2%	N/A
	10	For food use	KGM					
	20	For industrial use (non food)	KGM					
1108.14.00	00	Manioc (cassava) starch	KGM	1.58¢/kg	Free	0.1¢/kg	Free	N/A
1108.19		Other starches						
		Barley starch:						
1108.19.11	00	Within access commitment	KGM	1.58¢/kg	Free	0.1¢/kg	Free	N/A

SCHEDULE I

20 - 2

Tariff Item	SS	Description of Goods	Unit of Meas.	M.F.N. Tariff	G.P. Tariff	U.S. Tariff	Mexico Tariff	Mexico-U.S. Tariff
00.04		Other vegetables prepared or preserved otherwise than by vinegar or acetic acid, frozen, other than products of heading No. 20.05.						
2004.10.00	00	-Potatoes	KGM	8.2%	X	1%	1%	N/A
2004.80		-Other vegetables and mixtures of vegetables						
2004.80.10	00	—Asparagus	KGM	18.8%	X	2.2%	13.5%	N/A
2004.80.20	00	—Broccoli and cauliflowers	KGM	18.8%	X	12%	12%	N/A
2004.80.30	00	—Brussels sprouts	KGM	18.8%	X	2%	2%	N/A
		—Carrots:						
2004.80.41	00	—Baby (of a length not exceeding 11 cm)	KGM	18.2%	X	1.7%	1.7%	N/A
2004.80.49	00	—Other	KGM	12.3%	X	1.5%	1.5%	N/A
2004.80.50	00	—Spinach	KGM	Free	Free	Free	Free	N/A
		—Other:						
2004.90.91	00	—Artichokes (globe or Chinese), bamboo shoots, cactus leaves (nopales), cardoons, chickpeas (garbanzos), culantro (Chinese or Mexican parsley or Yen Sai), jicama, leaf chervil, malanga, ota, peas (Angola, otfang, no-eye, pigeon), tamarillos (tree tomatoes), tarragons, tomatillos, topedos and verdolagas	KGM	Free	Free	Free	Free	N/A
2004.90.99		—Other		12.3%	X	1.5%	1.5%	N/A
	10	—Snap or lima beans	KGM					
		—Peas and corn:						
	21	—Peas	KGM					
	22	—Corn	KGM					
	90	—Other	KGM					
20.05		Other vegetables prepared or preserved otherwise than by vinegar or acetic acid, not frozen, other than products of heading No. 20.04.						
2005.10.00	00	-Homogenized vegetables	KGM	10.3%	X	1.2%	1.2%	N/A
2005.20.00		-Potatoes		8.2%	X	1%	1%	N/A
	10	—Potato salad, not in air-tight containers	KGM					
	20	—Potato chips, flakes, fills	KGM					
	90	—Other	KGM					
2005.40.00	00	-Peas (Pisum sativum)	KGM	10.3%	X	1.2%	1.2%	N/A

APPENDIX F

Revenue Canada Export Price and Margin of Dumping Report for Potatoes for April 20-26, 1997

CASE #518 AND 689:

POTATOES

PG2/2

MOSTLY OR RANGE REPOR PER 100#	EXPORT PRICE PER 100#	NORMAL DUMPING VALUE PER 100#	DUTY ER 100
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CALIFORNIA

RUSSET					
00519	5/10# film bags	4.00-4.50	\$4.25	\$9.37	\$5.12
00517	10/5# film bags	6.00-6.25	\$6.13	\$10.32	\$4.19
00511	50# carton 60s		\$10.00	\$9.39	\$0.00
00522	50# carton 70s		\$10.00	\$9.39	\$0.00
00514	50# carton 80s	8.00-9.00	\$8.50	\$9.39	\$0.89
00516	50# carton 90s	7.00-8.00	\$7.50	\$9.39	\$1.89
00518	50# carton 100s	6.00-7.00	\$6.50	\$9.39	\$2.89
29402	50# carton 10 Oz.	8.00-9.00	\$8.50	\$9.39	\$0.89
00510	100# sack	2.50-3.00	\$2.75	\$8.28	\$5.53
41466	10# paper/poly		\$4.25	\$8.98	\$4.73
41467	15# paper/poly		\$4.25	\$8.71	\$4.46
41468	20# paper/poly		\$4.25	\$8.39	\$4.14
ROUND RED					
29334	5/10# film bags	7.50-8.00	\$7.75	\$9.37	\$1.62
29335	10/5# film bags	8.50-9.00	\$8.75	\$10.32	\$1.57
29340	50# carton, 10 oz min			\$9.39	
29342	100# sack	5.00-5.50	\$5.25	\$8.28	\$3.03
29341	50# carton size A		\$12.00	\$9.39	\$0.00
29343	50# sack size B		\$14.00	\$8.70	\$0.00
29336	10# paper/poly		\$7.75	\$8.98	\$1.23
29337	15# paper/poly		\$7.75	\$8.71	\$0.96
29338	20# paper/poly		\$7.75	\$8.39	\$0.64
LONG WHITE					
29347	50# carton	17.00-20.00	\$18.50	\$9.39	\$0.00
29346	100# sack size A		\$14.00	\$8.28	\$0.00
29345	50# sack		\$10.00	\$8.70	\$0.00
00512	20# paper/poly			\$8.39	
06337	15# paper/poly			\$8.71	
00513	10# paper/poly			\$8.98	
33630	100# sack, US #2	4.00-6.00	\$5.00	\$8.28	\$3.28
41444	100# sack size B	6.00-7.00	\$6.50	\$8.28	\$1.78

***** ALL VARIETIES OF POTATOES ARE
SUBJECT TO ANTI-DUMPING DUTY

EXPORT PRICE AND MARGIN OF DUMPING REPORT (VALUES IN US\$)

CASE #518 AND 689: POTATOES

P.01/02

NWVR DATE: April 17, 1997
 REPORT PERIOD: April 20 - 26, 1997

TRS NO.	PRODUCT DESCRIPTION	MOSTLY OR RANGE REPOR PER 100#	EXPORT PRICE PER 100#	NORMAL DUMPING VALUE PER 100#	DUTY ER 100
*****	*****	*****	*****	*****	*****

WASHINGTON

ALL VARIETIES

00487	5/10# film bag	3.50-4.00	\$3.75	\$9.37	\$5.62
00504	10/5# film bag	5.50-6.00	\$5.75	\$10.32	\$4.57
42339	50# carton 60s	9.00-10.00	\$9.50	\$9.39	\$0.00
42340	70s	9.00-10.00	\$9.50	\$9.39	\$0.00
42341	80s	7.00-8.00	\$7.50	\$9.39	\$1.89
42342	90s	6.50-7.00	\$6.75	\$9.39	\$2.64
29328	100s		\$6.00	\$9.39	\$3.39
31501	100# sack	2.50-3.00	\$2.75	\$8.28	\$5.53
40049	100# sack, US No.2	2.50-3.00	\$2.75	\$8.28	\$5.53
00498	10# paper/poly		\$3.75	\$8.98	\$5.23
40285	15# paper/poly		\$3.75	\$8.71	\$4.96
41469	20# paper/poly		\$3.75	\$8.39	\$4.64
42271	50# sack, 6oz		\$4.50	\$8.70	\$4.20
42272	50# sack, 10oz		\$7.00	\$8.70	\$1.70
41736	50# carton, 10 oz		\$7.00	\$9.39	\$2.39

OREGON

ALL VARIETIES

00488	5/10# film bag	3.50-4.00	\$3.75	\$9.37	\$5.62
00505	10/5# film bag	5.50-6.00	\$5.75	\$10.32	\$4.57
42343	50# carton 60s	9.00-10.00	\$9.50	\$9.39	\$0.00
42344	70s	9.00-10.00	\$9.50	\$9.39	\$0.00
42345	80s	7.00-8.00	\$7.50	\$9.39	\$1.89
42346	90s	6.50-7.00	\$6.75	\$9.39	\$2.64
31841	100s		\$6.00	\$9.39	\$3.39
00476	100# sack	2.50-3.00	\$2.75	\$8.28	\$5.53
00502	10# paper/poly		\$3.75	\$8.98	\$5.23
00485	15# paper/poly		\$3.75	\$8.71	\$4.96
00482	20# paper/poly		\$3.75	\$8.39	\$4.64
31844	50# sack, 6oz		\$4.50	\$8.70	\$4.20
31846	50# sack, 10oz		\$7.00	\$8.70	\$1.70
42337	50# carton, 10 oz		\$7.00	\$9.39	\$2.39

IDAHO

ALL VARIETIES

29320	5/10# mesh bags	5.00-5.50	\$5.25	\$10.51	\$5.26
29323	10/5# mesh bags	7.00-7.50	\$7.25	\$11.47	\$4.22
29322	5/10# film bags	3.50-4.50	\$4.00	\$9.37	\$5.37
29321	10/5# film bags	5.00-6.00	\$5.50	\$10.32	\$4.82
42347	50# carton 60s	9.00-11.00	\$10.00	\$9.39	\$0.00
42348	70s	9.00-11.00	\$10.00	\$9.39	\$0.00
42349	80s	8.50-9.50	\$9.00	\$9.39	\$0.39
42350	90s	7.50-8.50	\$8.00	\$9.39	\$1.39
00489	100s	6.00-8.00	\$7.00	\$9.39	\$2.39
42338	50# carton 10/12 Oz	8.00-10.00	\$9.75	\$9.39	\$0.00
00500	100# sack	2.50-3.00	\$2.75	\$8.28	\$5.53
29324	20# paper/poly		\$4.00	\$8.39	\$4.39
00497	15# paper/poly		\$4.00	\$8.71	\$4.71
00503	10# paper/poly		\$4.00	\$8.98	\$4.98
31848	50# sack, 6 oz min	3.00-3.50	\$3.25	\$8.70	\$5.45
31850	50# sack, 10 oz. m	5.00-5.50	\$5.25	\$8.70	\$3.45

Appendix G

Technical Modeling Appendix

Technical Modeling Appendix

As part of the investigation No. 332-378 task of examining the competitive conditions affecting trade in fresh and processed potato products between the United States and Canada, the USITC is requested to provide information on U.S. production, consumption, prices, and trade, and if possible, with regional highlights. An econometric model, and its simulations, of U.S. fresh and processed potato markets, trade in such markets, and interactions among these markets aids the Commission and Commission staff to accomplish these tasks.

Commission staff employed VAR econometrics to identify policy-relevant empirical regularities and market parameters among the following *monthly* variables of the potato market's fresh and frozen subsectors or markets (parenthetical labels hereafter denote these variables):

1. U.S.-produced fresh fall table stock potatoes (FRESHSTK).
2. Shipments of U.S.-produced table stock potatoes from the Northeast United States as defined below (NESHIP).
3. Shipments of fresh U.S.-produced table stock potatoes from the U.S. areas other than the Northeast United States (RESTSHIP).
4. U.S. imports of fresh potatoes (FRESHIMP).
5. U.S. fresh potato price (PFRESH).
6. U.S. french fry production (FRYQ).
7. U.S. french fry price (PFRIES).
8. U.S. frozen french fry stocks (FRYSTOCK).
9. U.S. exports of frozen french fries (EXPFRY).

A number of considerations led to the Commission staff's modeling of these nine monthly variables. First, a mix of relevant fresh and frozen french fry (hereafter fry) variables is required to address USTR requests for competitive conditions about the fresh potato market, frozen potato products market, and the interactions between these two markets. Further, Guenther, Levi, and Lin¹ noted that such market subdivision into fresh and processed components is a common way to analyze U.S. potato-related markets. How price and quantity

¹ J. Guenther, A. Levi, and B. Lin, "Factors that Affect the Demand for Potato Products in the United States," *American Potato Journal*, vol. 68, No. 9, 1991, p. 570.

shocks in the fresh market affect the frozen fry market and vice versa are important competitive conditions.

Second, U.S. imports of fresh potatoes (FRESHIMP) were modeled as a source of North-American-produced supply consumed in the U.S. market, and not as a trade flow within a U.S. import demand/foreign (primarily Canadian) supply framework. This seemed justified because of evidence suggesting that comparatively classed U.S. and Canadian fresh potatoes are nearly perfect, if not perfect, substitutes in the U.S. market,² and that fresh U.S. imports account for a very minor share, about 3.4 percent in 1995, of U.S. fresh table stock consumption.³ Consequently, imports of fresh, primarily Canadian, potatoes probably have identical effects on U.S. fresh and french fry markets as would identical changes in comparably classed U.S.-produced quantities. These conditions are very similar to those which recently led Commission staff to similarly treat U.S. imports of primarily Canadian wheat.⁴ Therefore, model simulations treat a change in imports as changes in North American (primarily Canadian) supply consumed in the U.S. market. Third, Commission staff modeled only the french fry portion of the U.S. potato product market because french fry production accounts for the preponderance of U.S. frozen product production (nearly 90 percent in 1995⁵).

Fourth, a reduced form modeling methodology emerged as the most effective and straightforward way to model the USTR's requests. For example, the degree to which fresh potato imports ultimately influence U.S. market price and U.S.-produced quantities (i.e., reduced form or market-clearing price and quantities) seem the most relevant. A reduced form model provides overall market effects or movements in variables such as U.S. quantities and prices, and such overall market effects are the most germane to the USTR requests. Yet overall import-induced effects may not be obvious from a structural demand/supply framework which focuses individually on demand-side and supply-side effects, and which leaves readers, often non-economists, with the task of mentally aggregating them into total effects. Consequently, Commission staff chose a reduced form model as recently done with wheat and lamb.⁶

Fifth, fresh potato "supply" does not exist as one variable, and hence fresh potato stocks (FRESHSTK), fresh potato shipments in the U.S. (NESHIP plus RESTSHIP), and fresh imports (FRESHIMP) as a North American supply source for consumption in the U.S. market, were all included to capture most of the reduced form fresh potato quantities produced and consumed.

² Based on information obtained from Commission staff field work in Alberta, Manitoba, and Washington State on April 7-17, 1997 for Investigation 332-378.

³ This 3.4 percent figure was calculated by Commission staff from information from two sources. The 1995 U.S. fresh potato imports of 45.892 million pounds was an official statistic of the Department of Commerce. The 1995 U.S. fresh tablestock consumption level of 13.465 billion pounds was published in National Potato Council (NPC), *National Potato Council's 1996 Potato Statistical Yearbook* (Englewood, CO: NPC, 1996), p. 47.

⁴ USITC, *Wheat, Wheat Flour, and Semolina, Investigation No. 22-54*, USITC publication no. 2794, July, 1994, Chapter II and Appendix N.

⁵ This calculation was done by Commission staff using data published by the American Frozen Food Institute (AFFI), *Frozen Food Pack Statistics, 1995* (McLean, VA: AFFI, 1996), p. 30.

⁶ See USITC, *Wheat*, Chapter II and Appendix N, and *Lamb Meat*, Chapter 5 and Appendix L.

Sixth, northeast shipments of fresh U.S.-produced fall potatoes were separated out from the U.S. total to provide separate NESHIP and RESTSHIP variables because of the request for regional highlights, and because investigation evidence suggests that imports and other market force variations such as price fluctuations may have more pronounced influences on the Northeast fresh potato markets than in other U.S. markets such as the West.⁷

Data Sources

FRESHSTK are monthly stocks of U.S.-produced fresh fall table stock potatoes (hereafter, U.S. fresh or fresh fall potatoes) in millions of pounds and are published by the U.S. Department of Agriculture's (USDA's) Economic Research Service.⁸ For reasons stated below, the VAR model that includes FRESHSTK is modeled in logged levels. FRESHSTK data are only reported for December through May of each September-August marketing year, with zero values reported for the other months. FRESHSTK levels diminish to zero or near-zero levels rapidly after May,⁹ and since the natural logarithm of a zero value is undefined, Commission staff used the "starter log" method of Mosteller and Tukey¹⁰ and added a minimal constant to all FRESHSTK values (an increment of 1,000 pounds) such that FRESHSTK values were all nonzero in order that the variable could be included in the VAR model in logged form.

Fresh fall U.S.-produced potato shipments (hereafter, fresh potato shipments) are compiled by the USDA's Agricultural Marketing Service (AMS) and published and/or available from both USDA's AMS and ERS in millions of pounds. The total fresh U.S. potato shipments were published by the USDA's AMS and ERS.¹¹ The Northeast U.S. fresh shipments (NESHIP) were obtained from USDA, AMS¹² and summed across rail, truck and piggyback shipments in Maine, New York (and Long Island), and New Jersey. The RESTSHIP variable representing U.S.-produced fall potato shipments for all of the United States except the Northeast was calculated as the difference in total shipments less NESHIP.

⁷ Transcript of the Commission hearing for investigation No. 332-378: G. Smith, Grower/Shipper from Maine, pp. 145-147.

⁸ USDA, ERS, *Potato Facts*, Nov., 1996, p. 8.

⁹ This information was provided to Commission staff in a telephone conversation with staff of the USDA's National Agricultural Statistics Service, who compile and provide the FRESHSTK levels to the USDA, ERS to publish. March 14, 1996.

¹⁰ F. Mosteller and J. Tukey, *Data Analyses and Regression: A Second Course in Statistics* (Reading, MA: Addison-Wesley Publishing Co., 1977), pp. 89-91.

¹¹ The 1996:1-1996:11 data were received in a facsimile transmission received by USITC staff from USDA, AMS staff on March 14, 1997. The 1991:1-1995:12 data were obtained from the USDA, AMS, *Fresh Fruit and Vegetable Shipments by Commodities, States, and Month*, annual issues 1991-1995. The 1986:1-1990:12 data are published in USDA, ERS, *U.S. Potato Statistics, 1949-1989*, prepared and personally written by G. Lucier, A. Budge, C. Plummer, and C. Spurgeon, Statistical Bulletin No. 829 (Washington DC, Aug. 1991), p. 100.

¹² Data were obtained in two facsimile transmissions to Commission staff from USDA, AMS, the compiling agency for these shipment data, on March 14 and April 11, 1997. The Northeast shipment variable is the sum of shipments of U.S. fall fresh table stock potatoes, in millions of pounds, reported for Maine, New Jersey, New York (and Long Island) by truck, piggy back, and rail. Such shipments were not reported for other Northeast states such as New Hampshire, Vermont, etc.

Fresh U.S. potato imports and exports, in millions of pounds, are the official statistics of the Department of Commerce. Commission staff was not able to locate a wholesale fresh potato price. The best available proxy for monthly U.S. fresh potato price, PFRESH in the model, is the consumer price index (CPI), of all urban consumers, for fresh potatoes available from the Department of Labor, Bureau of Labor Statistics (Labor, BLS).¹³ Labor, BLS¹⁴ also provided a U.S. average french fry price (in dollars per pound).

U.S. french fry production and stocks data, in millions of pounds, are the confidential monthly data provided to Commission staff by the Frozen Potato Products Institute (FPPI).¹⁵ To the knowledge of Commission staff and the FPPI, there are no known, publicly available monthly data on U.S. levels of frozen french fry production and inventories (stocks). This report does not provide any of these confidential data, although it uses aggregate coefficients and parameters derived from econometric estimations using such confidential data. That such data were provided only for the 1986:1-1996:11 period is the reason for limiting the data with which the model was specified to this period, and, for reasons stated below, the estimation period to 1987:1-1996:11.

Choice of the VAR Method, the Estimated VAR Model, and Adequacy of Specification

A VAR Model in logged levels vs. A Vector Error-Correction Model of a Cointegrated System

When a vector system of individually nonstationary variables move in tandem in a stationary manner, variables are said to be cointegrated, and rather than follow out-moded univariate methods and model the system in a mis-specified way as a VAR model in differenced levels, one would appropriately model the system as a maximum likelihood estimation of a vector error correction (VEC) model.¹⁶ However, should the vector elements each be stationary, then the

¹³ The 1986:1-1996:8 monthly data for the consumer price index (CPI), all urban consumers, U.S. city average for fresh potatoes were obtained from Labor, BLS' survey, Consumer Price Indexes for the Urban Population, on the LABSTAT Database. The 1996:9-1996:11 values for this CPI were provided to Commission staff in a telephone communication with Labor, BLS staff on March 31, 1997.

¹⁴ The 1986:1-1996:8 monthly data for the average french fry price, U.S. City average in dollars per pound, were available from Labor/BLS' survey, Average Prices for Foods and Fuel for the U.S. and Selected Areas, on the LABSTAT data base. The 1996:9-1996:11 data for this average french fry price were provided to Commission staff in a telephone communication with Labor, BLS staff on January 17, 1997.

¹⁵ These confidential monthly data for 1986:1-1996:11 were obtained from a series of unpublished and confidential annual reports compiled by, and provided to Commission staff by, the FPPI.

¹⁶ S. Johansen and K. Juselius, "Maximum Likelihood and Inferences on Cointegration: With Applications to the Demand for Money," *Oxford Bulletin of Economics and Statistics*, vol. 52, 1990, (continued...)

VAR may be appropriately estimated as a VAR in levels.¹⁷ Cointegration does not appear to be an issue here, and Commission staff deemed modeling the above 9 variables as a VAR model in logged levels as appropriate. This is because evidence from unit root tests conducted on the logged variables generally suggested that the nine time series were stationary in logged levels.¹⁸ The VAR was estimated in logged levels because shocks to and impulse responses in the logged variables are approximate proportional changes in the nonlogged values, and approximate percent changes when multiplied by 100.¹⁹

The Estimated VAR Model

A VAR model is a data-driven one. Using methods detailed below, Commission staff estimated a monthly VAR model of FRESHSTK, NESHIP, RESTSHIP, FRESHIMP, PFRESH, FRYQ, PFRIES, FRYSTOCK, and EXPFRY in logged levels. By a VAR model's definition, each of

¹⁶(...continued)
pp. 169-210.

¹⁷ See D. Hendry, "Econometric Modelling with Cointegrated Variables: An Overview," *Oxford Journal of Economics and Statistics*, vol. 48, 1986, pp. 201-212, and R. Babula, F. Ruppel, and D. Bessler, "U.S. Corn Exports: The Role of the Exchange Rate," *Agricultural Economics*, vol. 13, 1995, pp. 75-88.

¹⁸ Dickey-Fuller (or DF) τ_t tests for unit roots (i.e., nonstationarity) were conducted on the logged levels, and generated the parenthetical DF test statistics, as follows: FRESHSTK (-4.9), NESHIP (-6.5), RESTSHIP (-10.4), EXPFRY (-3.4), FRESHIMP (-5.0), PFRESH (-3.6), FRYQ (-9.0), FRYSTOCK (-4.9), PFRIES (-2.8). If such test statistics are negative and have absolute values equal to or above 3.45, then evidence at the 95 significance level is sufficient to reject the null hypothesis of nonstationarity. Evidence was sufficient to reject the null hypothesis of nonstationarity for FRESHSTK, NESHIP, RESTSHIP, FRESHIMP, PFRESH, FRYQ, and FRYSTOCK. In staff's opinion, evidence was close enough to reject the null hypothesis of nonstationarity for EXPFRY, especially when Sargan-Bhargava's Durbin-Watson-based value test for unit roots generated a test value of 0.32 which exceeded the 0.26 critical value needed to reject the null of nonstationarity. PFRIES' DF test value of -2.8 suggests that the variable may be nonstationary, although the Sargan-Bhargava value of 0.24 nearly equals the critical value needed to reject nonstationarity. Commission staff concluded that PFRIES was probably stationary, because its inclusion in logged levels did not inject nonstationarities into the PFRIES VAR equation or the other VAR equations: as seen later, all VAR equations, including the PFRIES equation, generated residuals that were stationary. The Sargan-Bhargava test is detailed in J. Sargan and A. Bhargava, "Testing Residuals from Least Squares Regression for Being Generated by the Gaussian Random Walk," *Econometrica*, vol. 51 (1983), pp. 153-174. In addition, this test evidence concerning PFRIES and EXPFRY suggested that both series may be stationary but close to having a unit root. In such cases, it is well known that when dealing with finite samples, the DF tests for unit roots are often biased toward accepting the DF null hypothesis of nonstationarity, as explained in R. Harris, *Using Cointegration Analysis in Econometric Modeling* (New York: Prentice Hall, 1995), pp. 27-28. In light of such insights, treating EXPFRY and PERIES as stationary seemed reasonable.

¹⁹ R. Babula, P. Colling, and G. Gajewski, "Dynamic Impacts of Rising Lumber Prices on Housing-Related Prices," *Agribusiness: An International Journal*, vol. 10, No. 5, Sept./Oct., 1994, pp. 373-388.

the nine endogenous variables was posited a function of a specified number of lags (here, 4)²⁰, of not only itself, but of the other eight endogenous variables as well. Following Bessler's²¹ reasoning, the VAR model is a monthly system of nine endogenous variables, where each such variable is permitted to influence all other endogenous variables through lags.

Zepp, Plummer, and McLaughlin²², Goodwin et. al.,²³ and Guenther, Levi, and Lin²⁴ note a number of trending forces in the U.S. potato industry, including, among others, increasing total (fresh plus frozen) potato consumption; increasing yields; and trends towards larger potato farms. Consequently, Commission staff included a time trend in each of the nine VAR equations. Following Miranda and Glauber²⁵, and Goodwin et. al.²⁶, Commission staff recognized the importance and appropriateness of including 11 seasonal indicator variables to account for the high degrees of seasonal influences affecting the U.S. fresh potato and frozen fry markets. The above specified model was appropriately estimated with monthly 1987:1-1996:11 data because Commission staff set-aside the 12 monthly 1986 observations for the Tiao-Box lag search, and because data after November 1996 were not available when staff commenced the modeling analysis. Following Commission staff procedure in recent investigations,²⁷ the four-order lag VAR model of nine variables was appropriately estimated with ordinary least squares (OLS) using Doan's Regression Analysis of Time Series (RATS) software.²⁸

Adequacy of Specification

²⁰ Following Babula, Ruppel, and Bessler, Commission staff employed Tiao and Box's likelihood ratio method of lag selection, and these likelihood ratio tests suggested a four-lag structure. See the method detailed in G. Tiao and G. Box, "Modeling Multiple Time Series: With Applications," *Journal of the American Statistical Association*, vol. 76, 1981, pp. 802-816. For the cited application, see R. Babula, F. Ruppel, and D. Bessler, "U.S. Corn Exports: The Role of the Exchange Rate," *Agricultural Economics*, vol. 13, 1995, pp. 75-88. Further, this technique was successfully used by Commission staff in specifying the VAR econometric models of two recent investigations: USITC, *Lamb Meat: Competitive Conditions Affecting the U.S. and Foreign Lamb Industries*, Investigation No. 332-357, U.S. publication 2915, August 1995, and *Wheat*, USITC publication 2794, Chapter 5 and Appendix N.

²¹ D. Bessler, "Analysis of Dynamic Economic Relationships: An Application to the U.S. Hog Market," *Canadian Journal of Agricultural Economics*, vol. 66, No. 25, 1984, pp. 109-124.

²² G. Zepp, C. Plummer, and B. McLaughlin, "Potatoes: A Comparison of Canada-U.S. Structure," *Canadian Journal of Agricultural Economics*, 1995 special (un-numbered) issue, pp. 165-176.

²³ Goodwin and others, "Factors Affecting Potato Price," p. 233-243.

²⁴ Guenther, Levi, and Lin, "Demand for Potato Products," p. 569.

²⁵ M. Miranda and J. Glauber, "Intraseasonal Demand for Fall Potatoes Under Rational Expectations," *American Journal of Agricultural Economics*, vol. 75, Feb. 1993, pp. 104-112.

²⁶ Goodwin and others, "Factors Affecting Potato Price," pp. 233-243.

²⁷ See USITC, *Lamb Meat*, USITC publication 2915, and *Wheat*, USITC publication 2794.

²⁸ T. Doan, *Regression Analysis of Time Series (RATS), User's Manual, Version 3.11* (Evanston, IL: VAR Econometrics, 1990). See Bessler, "Dynamic Economic Effects," for appropriateness of estimating VAR models with OLS.

Following Babula, Colling, and Gajewski,²⁹ Commission staff ran three diagnostic tests on each of the VAR equations' estimated residuals in order to discern whether evidence suggested adequacy of specification: Dickey-Fuller (DF) τ_μ test, DF τ_τ test, and the Ljung-Box portmanteau test. Generally, stationarity of the VAR model's equations, reflected in stationary residual estimates (hereafter, residuals), is a reflection that the relations have been adequately specified by econometric standards established in the literature.

Fuller³⁰ and Dickey and Fuller³¹ developed the well-known tests for unit roots in time series processes: the DF τ_μ and τ_τ tests. The t-like values on the nondifferenced regressors were negative and had absolute values of at least 10.0 for all equation residuals and both DF tests.³² Since these 18 DF test statistics were all negative and had absolute values which exceeded those of the critical values published in Hamilton³³ (-3.51 for the τ_μ test and -4.04 for the τ_τ test), then evidence at the 1-percent significance level is sufficient to reject the null hypothesis that the residuals were nonstationary for each of the 9 equations. The evidence generated by both DF tests on the residuals of each of the nine VAR equations suggests that the relations were adequately specified.

Harvey³⁴ and Granger and Newbold³⁵ note that the Ljung-Box portmanteau value may be calculated from an econometrically estimated equation's residuals and used to test the null hypothesis that the equation was adequately specified. The Ljung-Box values ranged from 21.7 to 45.5 for eight of the VAR equations — all equations except the FRESHSTK equation. These eight Ljung-Box values all fell below the critical chi-square value of 50.9 (30 degrees of freedom) published in Kmenta,³⁶ suggesting that evidence at the 1-percent significance level is insufficient to reject the null hypothesis of model adequacy for these eight equations.

The FRESHSTK equation's residuals generated a 78.3 Ljung-Box value, which taken of itself, would suggest that evidence is sufficient to reject the null hypothesis of model adequacy. Yet Granger and Newbold³⁷ caution against the exclusive reliance on the Ljung-Box portmanteau as a test of model adequacy, and this accounts for the Commission staff's decision to conduct all three tests on each equation's residuals. Taken collectively, most (2) of the three tests for model adequacy conducted on the FRESHSTK residuals suggested evidence of such adequacy, which led to the staff conclusion that FRESHSTK was probably adequately specified.

²⁹ Babula, Colling, and Gajewski, "Dynamic Impacts of Lumber Prices," pp. 373-388.

³⁰ W. Fuller. *Introduction to Statistical Time Series* (New York, NY: John Wiley and Sons, 1976).

³¹ D. Dickey and W. Fuller, "Distribution of the Estimates for Autoregressive Time Series with a Unit Root," *Journal of the American Statistical Association*, vol. 74, 1979, pp. 427-431.

³² Full details on the tests' procedures are found in D. Dickey and W. Fuller, "Estimates with a Unit Root," pp. 427-431.

³³ J. Hamilton. *Time Series Analysis* (Princeton, NJ: Princeton University Press, 1994).

³⁴ A. Harvey. *The Econometric Analysis of Time Series*, (Cambridge, MA: MIT Press, 1990), pp. 212-213.

³⁵ C. Granger and P. Newbold. *Forecasting Economic Time Series*, (New York: Academic Press, 1986), pp. 99-101.

³⁶ J. Kmenta. *Elements of Econometrics* (New York: Macmillan Publishing Company, 1971), p. 622.

³⁷ Granger and Newbold, *Forecasting*, p. 100.

Most evidence generated from the two Dickey-Fuller tests and the Ljung-Box portmanteau test conducted on each of the 9 sets of VAR equation residuals suggests that the VAR equations have been adequately specified. Commission staff concludes that the VAR model is appropriate to simulate for evidence concerning the competitive conditions of the U.S. fresh and frozen fry markets.

A number of studies (Richards, Kagan, and Gao,³⁸ Zepp, Plummer, and McLaughlin,³⁹ Goodwin et. al.,⁴⁰ among others) point to various changes in the U.S. potato markets: changes in production sector organization, changing per capita consumption levels, and evolving changes in tastes and preferences, among other developments. These changes could conceivably have generated structural change over the 1987-1997 monthly sample, and could have consequently rendered the model with time-varying parameters or "structural change," among fundamental modeled relationships.

For an econometric (linear regression) model of a market, "structural change" or "time-variance" of parameters occurs when events, such as those just cited, act to fundamentally change modeled market relationships over the sample period. Given structural change, the regression parameter estimates are not constant and hence do not validly characterize the modeled potato market relationships over the sample.⁴¹ Existence of structural change usually requires division of the sample into subsamples at the junctures of the change's occurrence, and the re-estimation of the model separately for the subperiods.⁴² If such literature-noted trends and changes are not adequately strong to have induced structural change, then it is appropriate to estimate over the entire sample period and proceed as if parameter estimates are time-invariant.⁴³

Following procedures in recent research,⁴⁴ the above 9-variable VAR is estimated over the 1987:1-1996:11 sample period, and recursive residuals were generated for each equation and used to implement, for each of the 9 VAR equations, the data-analytic CUSUM and CUSUM-squared plot tests for structural change summarized in Harvey.⁴⁵ Plots were not included here because of space constraints. At the points where the CUSUM and/or CUSUM-squared plots discerned a possibility of structural change, a Chow test for structural change was conducted

³⁸ Richards, Kagan, and Gao, "Factors in Potato Demand," pp. 52-66.

³⁹ Zepp, Plummer, and McLaughlin, "Potatoes: Canada-U.S. Structure."

⁴⁰ Goodwin and others, "Factors Affecting Potato Price," pp. 233-243.

⁴¹ R. Babula, "Economic Effects of a Countervailing Duty Order on the U.S. Lamb Meat Industry," *Agricultural and Resource Economics Review*, vol. 26, No. 1 (Apr. 1997), pp. 90-91.

⁴² See Harvey, *Econometric Analysis*, pp. 163-164, and B. Larue and R. Babula, "Evolving Dynamic Relationships Between the Money Supply and Food-Based Prices in Canada and the United States," *Canadian Journal of Agricultural Economics*, vol. 42 (1994), pp. 163-164.

⁴³ Larue and Babula, "Evolving Dynamic Relationships."

⁴⁴ See R. Babula, F. Ruppel, and D. Bessler, "U.S. Corn Exports: The Role of the Exchange Rate," *Agricultural Economics*, vol. 13 (1995), pp. 75-88, and B. Larue and R. Babula, "Evolving Dynamic Relationships."

⁴⁵ A. Harvey. *The Econometric Analysis of Time Series* (Cambridge, MA: The MIT Press, 1990).

at each point. And following recent research⁴⁶ and recent Commission staff procedure,⁴⁷ Commission staff concluded that evidence was insufficient to suggest structural change when the F-tests failed to reject the null hypothesis of no structural change at the points of possible change suggested by the CUSUM and CUSUM-squared tests. Evidence at the 1-percent significance level generated by Chow F-tests for the following equations and at the following junctures suggested by the CUSUM and CUSUM-squared tests was insufficient in all cases to reject the null hypothesis of no structural change: FRESHIMP at October 1995; FRESHSTK at June, 1996; RESTSHIP at December 1991; NESHIP at March 1993 and August 1995; PFRESH at March 1993; FRYQ at July 1991 and November 1994; and EXPFRY at November 1995.

The nine VAR equations may have contemporaneously correlated innovations or residuals. Failure to correct for contemporaneously correlated current errors will produce impulse responses not representative of historical patterns.⁴⁸ A Choleski decomposition resolves the problem of contemporaneously correlated current innovations.⁴⁹ A Choleski decomposition was imposed on the VAR for each of the four simulations.

Each of the four Choleski decomposition requires the imposition of an arbitrary Wold causal ordering among the current values of the dependent variables.⁵⁰ Following established VAR modeling procedures, the shock variable was placed atop each ordering, with the remaining variables ordered in accordance with theory.⁵¹ The following orderings were chosen:

Simulation 1 (shock in FRESHSTK): FRESHSTK, RESTSHIP, NESHIP, FRESHIMP, PFRESH, PFRIES, FRYQ, FRYSTOCK, EXPFRY.

Simulation 2 (shock in PFRESH): PFRESH, FRESHIMP, FRESHSTK, RESTSHIP, NESHIP, PFRIES, FRYSTOCK, FRYQ, EXPFRY.

Simulation 3 (shock in FRYQ): FRYQ, PFRIES, FRYSTOCK, EXPFRY, FRESHSTK, RESTSHIP, NESHIP, PFRESH, FRESHIMP.

Simulation 4 (shock in FRESHIMP): FRESHIMP, FRESHSTK, NESHIP, RESTSHIP, PFRESH, PFRIES, FRYQ, FRYSTOCK, EXPFRY.

⁴⁶ Babula, "Economic Effects of a Countervailing Duty Order," pp. 82-93. See also See Babula, Ruppel and Bessler, "The Role of the Exchange Rate," pp. 75-88, and Larue and Babula, "Evolving Dynamic Relationships."

⁴⁷ USITC, *Economic Effects of Antidumping and Countervailing Duty Orders and Suspension Agreements, Investigation No. 332-344*, Chapter 8, Lamb Meat, and Appendix D.

⁴⁸ C. Sims, "Macroeconomics and Reality," *Econometrica*, vol. 48 (1980), pp. 1-48.

⁴⁹ Ibid.

⁵⁰ D. Bessler, "Dynamic Economic Relationships."

⁵¹ See Sims, "Macroeconomics," and Bessler, "Dynamic Economic Relationships."