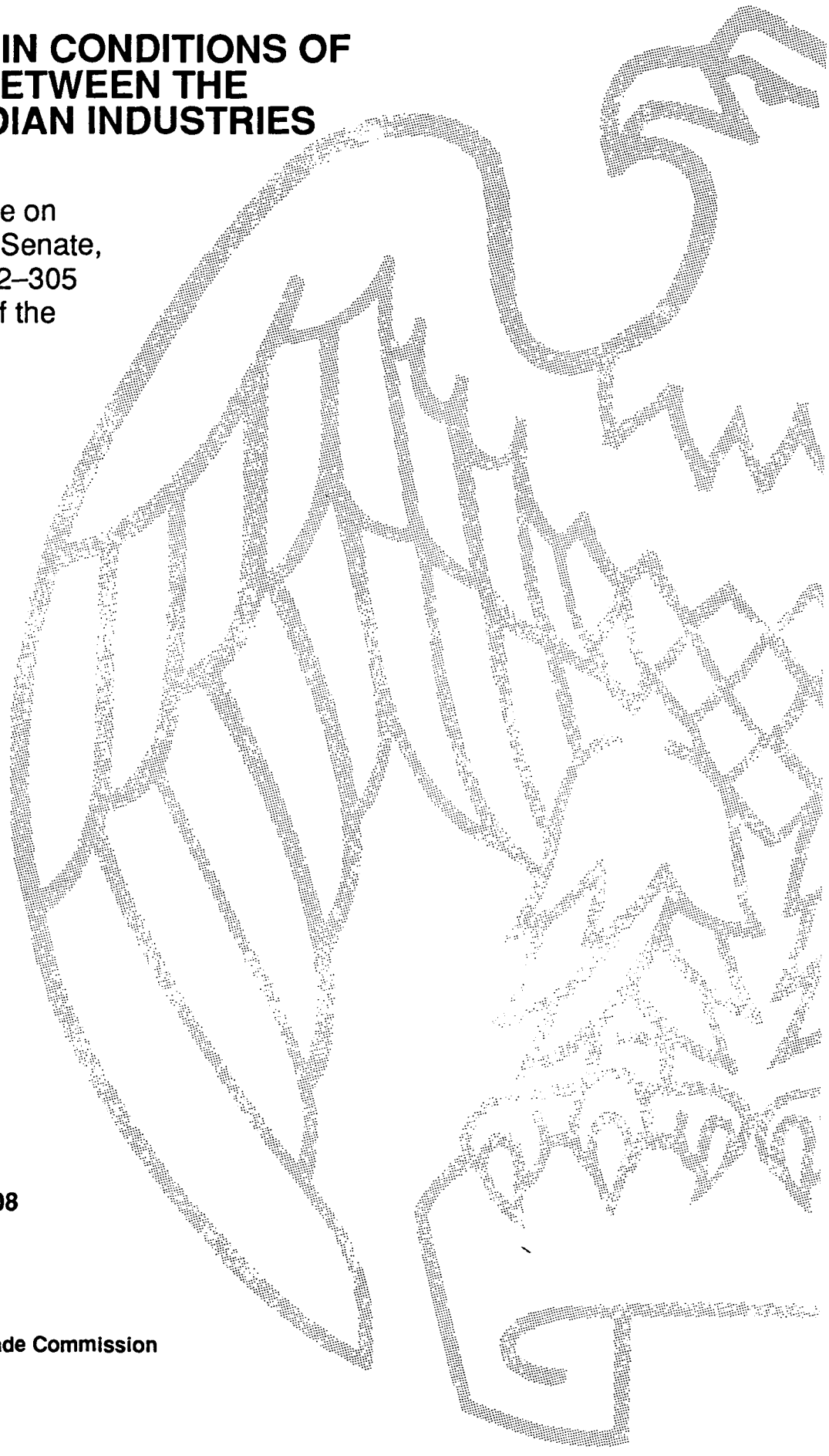
APPLES: CERTAIN CONDITIONS OF COMPETITION BETWEEN THE U.S. AND CANADIAN INDUSTRIES

Report to the Committee on Finance, United States Senate, on Investigation No. 332–305 Under Section 332(g) of the Tariff Act of 1930



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PREFACE

On November 19, 1990, at the request of the Committee on Finance, U.S. Senate, 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 instituted investigation No. 332-305, Apples: Certain Conditions of Competition Between the U.S. and Canadian Industries, for purposes of providing the following information:

(1) The purpose, nature, quantity, and use of the policies and practices of the Canadian national and Provincial governments affecting apples, including—

   (a) rebates provided to retailers by Canadian marketing organizations;

   (b) advertising allowances offered to retailers by marketing organizations or national or provincial agencies;

   (c) payments to growers under the Agricultural Stabilization Act (ASA), the National Tripartite Price Stabilization Program, and the British Columbia Farm Income Insurance Program when average prices fall below benchmark costs, and how the benchmark prices are set; and

   (d) other import, price, and supply proposals being considered by the National Farm Products Marketing Council.

(2) The volume and value of U.S. imports of fresh apples from Canada over the last 5 years, with special emphasis on how such imports have concentrated in individual regional markets throughout the United States;

(3) An analysis of the competitive factors in each industry, including a comparison, by market regions wherever obtainable, of sales prices of U.S. and Canadian apples in the U.S. and Canadian markets, and an analysis of each country's costs of production;

(4) A comparison of the quality of U.S. and Canadian apples destined for the fresh apple market;

(5) A comparison of the consumption and utilization trends in Canada and the United States for apples destined for the fresh and processed market; and

(6) A comparison of total Canadian and U.S. apple production by region and province over the last 5 years.

The Senate Finance Committee's request, reproduced in appendix A, asked that the Commission provide a final report of the results of its investigation not later than August 1, 1991.

Notice of the investigation was posted at the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and published in the *Federal Register* (90 F.R. 27935) of November 28, 1990.

There was no public hearing on the investigation, although the Commission invited interested persons to submit written statements concerning the investigation.

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EXECUTIVE SUMMARY

In 1990, U.S. apple production totaled 9.7 billion pounds, valued at over $1 billion (table A). Apples are the third most valuable fruit crop in the United States after grapes and oranges. Because of increased plantings in the late 1970s and early 1980s, U.S. apple production rose during the study period, 1986-90, and is expected to continue to increase over the next few years. Canada's apple production totaled 1.1 billion pounds, valued at about Can$121 million in 1990, and was that country's most valued fruit crop. Canadian apple production also increased during the study period, mainly because of an increase in bearing orchards in eastern Canada and an increased number of bearing apple trees per acre in British Columbia.

Nearly 60 percent of the U.S. apple crop is consumed as fresh-market apples; a similar percentage of the Canadian crop is also consumed as fresh-market apples. The principal fresh-market apples are the Red Delicious in the United States and the McIntosh and Red Delicious in Canada. Most Red Delicious apples are produced in one geographic area, within the State of Washington and the Province of British Columbia. U.S. and Canadian growers, packers, and brokers in this area compete head-to-head for fresh-marekt sales throughout the United States and Canada, and in off-shore markets.

The following summary highlights the questions asked by the Senate Finance Committee in their request for this investigation and information regarding these questions developed during the course of the investigation.

Table A

Profile of U.S. and Canadian apple industry and markets, 1986-90

Source	*1986*	*1987*	*1988*	*1989*	*1990*
United States:					
Commercial apple growers[1]	(2)	32,872	(2)	(2)	(2)
Acreage in trees[1]	(2)	601,021	(2)	(2)	(2)
Production (million pounds)	7,859	10,742	9,131	9,966	9,703
Yield (1,000 pounds per acre)	(2)	17.5	(2)	(2)	(2)
Imports from Canada (million pounds)	98.2	94.9	107.0	104.9	113.7
Total imports (million pounds)	290.2	294.1	270.1	254.9	234.0
Exports (million pounds)	446.5	559.4	756.2	603.9	796.5
Consumption (million pounds)	7,703	10,477	8,645	9,617	9,141
Ratio of imports to consumption (percent)	3.8	2.8	3.1	2.7	2.6
Season-average grower prices (fresh):					
United States (cents per pound)	19.10	12.70	17.40	13.40	(2)
Washington State (cents per pound)	18.60	10.40	16.10	11.90	(2)
Canada:					
Commercial apple growers	6,119	(2)	(2)	(2)	(2)
Acreage in trees	85,241	(2)	81,230	80,560	(2)
Production (million pounds)	856	1,115	1,104	1,183	1,115
Yield (1,000 pounds per acre)	10.0	(2)	13.6	14.7	(2)
Imports from the U.S. (million pounds)	121.8	189.6	221.6	148.2	169.8
Total imports (million pounds)	226.3	284.1	293.9	203.6	214.6
Exports (million pounds)	123.9	108.7	179.3	145.6	140.8
Consumption (million pounds)	958	1,290	1,219	1,241	1,189
Ratio of imports to consumption (percent)	23.6	22.0	22.3	16.4	18.1
Season-average grower prices (fresh):					
Canada (Can cents per pound)	9.49	4.73	8.31	6.37	(2)
British Columbia (Can cents per pound)	9.38	7.06	9.00	7.70	(2)

[1] U.S. Department of Commerce, Bureau of the Census, *1987 Census of Agriculture.*
[2] Not available.

Source: U.S. Department of Commerce, International Apple Institute, and Agriculture Canada.

1. ***The purpose, nature, quantity, and use of the policies and practices of the Canadian national and provincial governments affecting apples***

(a) ***Rebates provided to retailers by Canadian marketing organizations***

Although apparently not a policy or practice of the Canadian national Government or any of the provincial governments, rebates reportedly have been offered to buyers of Canadian apples by at least one privately-owned Canadian marketing organization, B.C. Tree Fruit Ltd. These rebates are described as quantity discounts based on target amounts that are

set by the marketing organization offering the rebates; such target amounts are established by variety. U.S. apple growers have expressed concern about these rebate programs, apparently fearing that payments from the government stabilization programs provide Canadian growers with a competitive advantage by allowing them to make deeper discounts than would be possible without the government programs.

The extent of this marketing practice is not known, as neither the buyers to whom the rebates have reportedly been offered nor the marketing organization would discuss this issue for the record. No other independent information has been obtained that would reveal anything more than examples of the targets and hypothetical estimates of the rebates should these targets be met or exceeded. We do know, however, that such rebates appear to operate much like quantity discounts and that such discounts are offered by many U.S. marketing organizations.

(b) ***Advertising allowances offered to retailers by marketing organizations or by national or provincial agencies***

Although reportedly not a policy or practice of the Canadian national Government or of any of the provincial governments, advertising allowances have also reportedly been offered to retailers who purchase apples from B.C. Tree Fruit Ltd. This program was reported to be in effect from late 1989 through early 1990. Neither the retailers nor the marketing organization would discuss this issue for the record. No other information was obtained during the course of the investigation that would reveal the extent of this marketing practice or its relationship to any other program or marketing practice.

(c) ***Payments to growers under the Agricultural Stabilization Act (ASA), the National Tripartite Price Stabilization Program, and the British Columbia Farm Income Insurance Program when average prices fall below benchmark costs, and how benchmark prices are set***

Under the Agricultural Stabilization Act, payments were made to growers in Canada in 7 years since 1975. The only payment under this program reported in the last 5 years was to growers of Red Delicious apples in 1987. The National Tripartite Price Stabilization Program (NTPS) for apples began on July 1, 1987. The reported payments under this program have amounted to Can$15.5 million and Can$16.6 million for 1987 and 1989, respectively; an interim payment was reportedly made for 1990. The payments under the NTPS are essentially deficiency payments to growers in those years in which the market price falls below the support price. Under the British Columbia Farm Income Insurance Program, payments have reportedly averaged Can$0.024 per pound during the 1980s, with payments made when prices fall below the cost of production as calculated by the provincial government. U.S. apple growers do not receive any kind of price support or deficiency payments.

(d) ***Other import, price, and supply proposals being considered by the National Farm Products Marketing Council***

The Canadian National Farm Products Marketing Council has recommended a national supply management program for apples. This proposal calls for the establishment of a Canadian Apple Marketing Agency with broad powers to regulate domestic production and limit imports. Two Canadian studies have questioned the advisability of such a program, and the program has yet to be adopted.

2. ***The volume and value of U.S. imports of fresh apples from Canada over the last 5 years, with special emphasis on how such imports have concentrated in individual regional markets throughout the United States***

Canada was the leading foreign supplier of fresh apples, by volume, into the United States during 1986-90. Canada accounted for nearly 50 percent of U.S. imports during 1990, supplying 114 million pounds. The value of these imports reached $15.6 million in 1990, the first time over the last 5 years that Canada was the leading source of imported apples in terms of value. The volume of U.S. imports of fresh apples for consumption has steadily declined from 294 million pounds in 1987 to 234 million pounds in 1990, and has always been less than U.S. exports.

Imports of apples by individual regions (municipal districts) are not reported by the U.S. Department of Commerce, although they are reported by U.S. Customs Districts

(ports-of-entry). Seattle, Washington; Buffalo, New York; and Detroit, Michigan were the most significant ports-of-entry, averaging 41, 26, and 14 percent of total imports, respectively, by volume for 1989 and 1990. However, most of these shipments continue on to other major metropolitan areas for sale. According to industry sources, the majority of Canadian shipments of apples are transported by truck into major U.S. metropolitan areas.

3. ***An analysis of the competitive factors in each industry, including a comparison, by market regions wherever obtainable, of sales prices of U.S. and Canadian apples in the U.S. and Canadian markets, and an analysis of each country's costs of production***

There are no significant differences in the delivered prices of Canadian and U.S. apples of the same variety and comparable quality (e.g., Fancy or Extra Fancy grades). However, because a smaller proportion of Canadian apples meet the standards for a given grade, proportionately more apples from Canada sell for a lower price in any given market because their average quality and grade are lower. As a result, the season-average price received by Canadian growers is significantly lower than that received by U.S. growers. Tables 4-4 through 4-6 show selected U.S. and Canadian apple prices.

Costs of growing apples are believed to be lower in the United States than in Canada. Costs of pesticides and other chemicals are lower in the United States, because U.S. orchards have a higher tree density per acre, which reduces the chemical cost per harvested apple; in addition, Canadian industry sources report that Canadian regulations restrict the availability of certain chemicals that are used by U.S. growers. Interest rates and land costs (including taxes) are also lower in the United States than in Canada.

Other conditions affecting competition in the U.S. and Canadian apple industries include industry structure, technology, and exchange rates. The structure of the U.S. industry is highly competitive, with hundreds of independent buyers facing thousands of independent sellers. In contrast, the Canadian industry is characterized by provincial sales agencies that have almost exclusive control over the marketing and/or pricing of the Provinces' apple output. Although small relative to the entire U.S.-Canadian apple market, these agencies can be significant players in regional and municipal markets. Imports of Canadian apples into the United States enter duty free, as do U.S. apples into Canada; however, imports into Canada of U.S. Delicious apples have been subject to a Canadian antidumping order since 1988.

A significant technological difference between the two industries is in the use of controlled-atmosphere (CA) storage of fresh apples, instead of the normal cold storage. CA storage keeps apples fresh for up to a year, and enables fresh apples to be marketed yearround. The relatively low use of CA storage in Canada means that up to 70 percent of Canada's fresh-apple supply must enter the market within 5 months of harvest. U.S. CA capacity, in contrast, is sufficient to hold 75 percent of the supply, so that marketing can be more evenly distributed over the year. As a result, U.S. producers can avoid the surpluses and shortages that characterize Canadian marketing patterns and that are partly responsible for the low returns to Canadian growers.

The steady decline since 1985 in the real (inflation-adjusted) value of the U.S. dollar in terms of the Canadian dollar has improved U.S. industry competitiveness. By making U.S. apples less expensive in Canada, the U.S. dollar's depreciation has helped U.S. export performance. Conversely, the appreciation of the Canadian dollar has raised the effective price of Canadian apples in the U.S. market and thereby weakened Canadian industry competitiveness.

4. ***A comparison of the quality of United States and Canadian apples destined for the fresh apple market***

Apples sold in the fresh market in both the United States and Canada are graded according to quality, e.g., Fancy and Extra Fancy. There is no significant difference between the United States and Canada in the standards required of apples in those grades; a U.S. Extra Fancy apple is of the same quality as a Canadian Extra Fancy apple. There is, however, a large difference in the proportion of U.S. and Canadian apples that meet those standards. In Washington State, for example, 75 percent of the industry's 1985 output of Red Delicious apples was graded Extra Fancy, compared with 58 percent of the crop in British Columbia.

5. ***A comparison of the consumption and utilization trends in Canada and the United States for apples destined for the fresh and processed markets***

During the study period, Canada's fresh-market sales averaged 54 percent of total Canadian production, but the average fresh-market sales for the United States was 59 percent of total

U.S. production; these trends have held fairly constant during the last 10 years. Processed apple production is concentrated in eastern Canada and in the Eastern and Central regions (east of the Rocky Mountains) of the United States. However, fresh-market apple production is concentrated in the Pacific Northwest. British Columbia produced nearly half of all Canadian apples for fresh-market consumption during 1986-90, compared with Washington State production which averaged 55 percent of the U.S. fresh-market apples consumed.

6. ***A comparison of total Canadian and U.S. apple production by region and province over the last 5 years***

Annual Canadian apple production averaged 1.1 billion pounds during 1986-90, or 12 percent of the annual U.S. average of 9.5 billion pounds during the same period. Ontario and British Columbia each accounted for 35 percent of Canadian apple production during the study period; the remaining 30 percent was produced in Quebec, Nova Scotia, and New Brunswick. During the same period, the U.S. Western region accounted for 58 percent of total U.S. production, the Eastern region for 28 percent, and the Central region for the remaining 14 percent.

Chapter 1
Introduction

The major objectives of this investigation are to provide an analysis of the competitive factors in the U.S. and Canadian apple industries and to outline the policies and practices of the Canadian National and Provincial governments that affect the Canadian industry. The investigation was instituted on November 19, 1990, following receipt of a request on October 16, 1990, from the Committee on Finance, U.S. Senate.[1]

Study Time Frame and Data Sources

In most instances, the period covered throughout this study is 1986-90, especially with regard to trade data. For other data, the most recent data available are presented. Throughout this report, dollar values are expressed in one (U.S. or Canadian) currency only in the text; that is. equivalent U.S. values are not included when Canadian values are expressed, and vice versa. However, where appropriate, values are shown in both currencies on some tables. As a general guide for currency conversion, note that the rate of exchange between the U.S. and Canadian dollars ranged between 1.3 and 1.1 Canadian dollars per U.S. dollar during the period (1986-90) covered by this study.

The investigation consisted of a combined analysis of information obtained from published sources and from staff interviews with industry representatives, government officials, and academic researchers, both in the United States and Canada. To the extent that some areas of interest have been the subject of previous government or academic studies, such studies were consulted and appropriately integrated into the present investigation to minimize duplication of effort.

The Concept of Competitiveness

The first step in assessing an industry's competitiveness vis-a-vis its international rivals is to define competitiveness and how it is to be measured. The competitiveness measures included in this study (see chapter 4) are market shares and profitability.

Changes in the shares held by the U.S. and Canadian apple industries in both the domestic and total North American markets indicate whether the respective industry has been able to maintain the market's acceptance of its products. Market share is a better measure than total sales value (or volume) when one is interested in comparing the performance of one nation's industry with that of another's. Factors internal to firms in the industry that can influence apple market shares and are considered in this study include, among others, changing production or marketing costs (e.g., land, labor, and chemicals); varietal development and promotion; management; and product quality. External factors include technological developments; interest rates; exchange rates; and government involvement (e.g., regulation, financial support, and trade barriers).

Organization of This Report

Chapters 2 and 3 provide a detailed look at the U.S. and Canadian apple industries and markets, respectively. The two chapters have a parallel structure: each describes in turn the country's industry (including its production and its distribution, storage, handling, and grading); the country's market (with a focus on marketing and pricing, quality, and trade; and finally government programs that affect the industry.

Chapter 4 analyzes prices and quality of apples in the U.S. and Canadian markets and reviews the competitive conditions in the U.S. and Canadian markets. It examines the major factors affecting prices, such as variety, size, and grade, and discusses prices in selected markets of the United States and Canada.

Overview

Apples are the world's single most important tree fruit crop, accounting for some 60 percent of global tree fruit production. World apple production has increased steadily by 2 percent annually over the past 20 years; most of this increase is attributable to the United States, Turkey, Chile, Argentina, New Zealand, and South Africa.[2] However, there are limited signs of attenuation in this growth: the acreage devoted to apple production has recently stabiliized and may even have dropped slightly. In general, efficient management techniques, improved horticultural methods, and better trees are sustaining the production increases amid dwindling prices. The bulk of world apple production and consumption takes place in Europe and, to a lesser extent, Asia.

The United States is consistently among the top three countries—the Soviet Union and China being the other two—in apple production. World production was about 45 billion pounds in 1990, of which the United States produced 21.6 percent (9.7 billion pounds) and Canada 2.4 percent (1.1 billion pounds). U.S. apples are grown in all 50 States; commercial production is reported annually for 36 States by the U.S. Department of Agriculture. In 1987, according to the U.S. Census of Agriculture, nearly 37,000 farms in the United States had a total of 69 million apple trees on about 600,000 acres. The number of commercial apple growers in 1987 was reported to be 32,872. Seven States account for the bulk of U.S. apple production—California, Michigan, New York, North Carolina, Pennsylvania, Virginia, and Washington.

U.S. trade in apples and apple products has been dominated by exports of fresh-market apples ($213 million in 1990) and imports of apple juice ($172 million in 1990). Exports of fresh-market apples were equivalent to about 9 percent of the total U.S. apple crop in 1990. Imports as a share of domestic consumption, of all apples, have remained steady at 2 percent.

[1] The request from the Senate Committee on Finance is reproduced in app. A.

[2] Submission by B.C. Tree Fruits Limited, May 24, 1991.

Canadian apples are grown in all 10 Provinces and both territories. However, commercial operations are found mostly in British Columbia, Ontario, Quebec, Nova Scotia, and New Brunswick. The most recent Canadian Census data (for 1986) show that over 6,100 farms had apple trees, with about 4,500 of these considered commercial operations. The industry as a whole maintained more than 85,000 acres of farmland containing 7.2 million bearing trees and 3.4 million nonbearing trees.

During the study period, Canada consumed about 1 billion pounds of apples annually, of which approximately 600 million pounds were fresh-market apples and the rest were processed. Canada generally imports about 260 million pounds, or 26 percent of its total consumption. Exports total around 135 million pounds, mostly fresh-market apples destined for the Pacific Rim and the United States.

There are hundreds of apple varieties, but only a few are grown commercially. Ten major varieties of apples account for about 90 percent of the U.S. crop: Red Delicious, Golden Delicious, Granny Smith, McIntosh, Rome, Jonathan, York, Newton, Stayman, and Idared; of these, the Delicious, Granny Smith, and McIntosh are the principal varieties. Canada has six major varieties that account for 83 percent of the total apple crop: McIntosh, Red Delicious, Golden Delicious, Northern Spy, Spartan, and Cortland; the McIntosh and Delicious are the principal varieties produced.

Trends in apple production in the United States and Canada depend on the rate of tree plantings and removals, and the management and horticultural practices used. The density of tree plantings generally varies from 70 to more than 800 trees per acre, depending on the type of tree-planting method selected by the individual grower. The current trend favors higher density plantings of so-called "dwarf trees" to produce larger fruit, better color, and easier harvesting.[3] Dwarf trees differ from the larger standard apple trees in that they begin bearing fruit within 3 to 4 years, as opposed to 7 to 10 years for standard trees. In addition, dwarf trees and their branches are much shorter in length, so that the picker can usually reach the apples without a ladder. With the dwarf trees, the grower can actually plant over 1,200 trees per acre, as opposed to the average of only 84 standard trees per acre. Although a dwarf tree will not yield as many apples as a standard tree, an acre of dwarf trees will yield more apples than an acre of standard trees. Dwarf trees also yield a greater proportion of higher-quality apples. Closer plantings of dwarf trees facilitate spraying, pruning, and picking operations, and substantially increase annual yields.

Regardless of geographic location, the various functions of growing a commercial apple crop are much the same, although the decisions on which varieties to grow and how to market them vary by grower and location. Major grower activity begins in late winter with pruning of excess branches from trees before new growth begins in the spring; the preferred practice is to prune each tree every year or at least once every 2 years. Then, starting in the spring (the date depends on the weather) and continuing throughout the summer until near harvest time, a pest management program is followed to ensure quality fruit. Harvesting, which starts in July or August in southern States and extends until November for late-harvest crops, is done virtually all by hand. Most harvest laborers are seasonal, and they are often housed nearby in facilities provided by the growers. The apples are picked and placed, without sorting, into large bins (wooden crates) in the orchard. Each bin holds up to 25 bushels (from 800 to 900 pounds). Unsorted apples thus placed in bins are called orchard-run fruit. The bins of orchard-run fruit are then sorted for fresh-market packing, canning, juice production, or placed in storage.

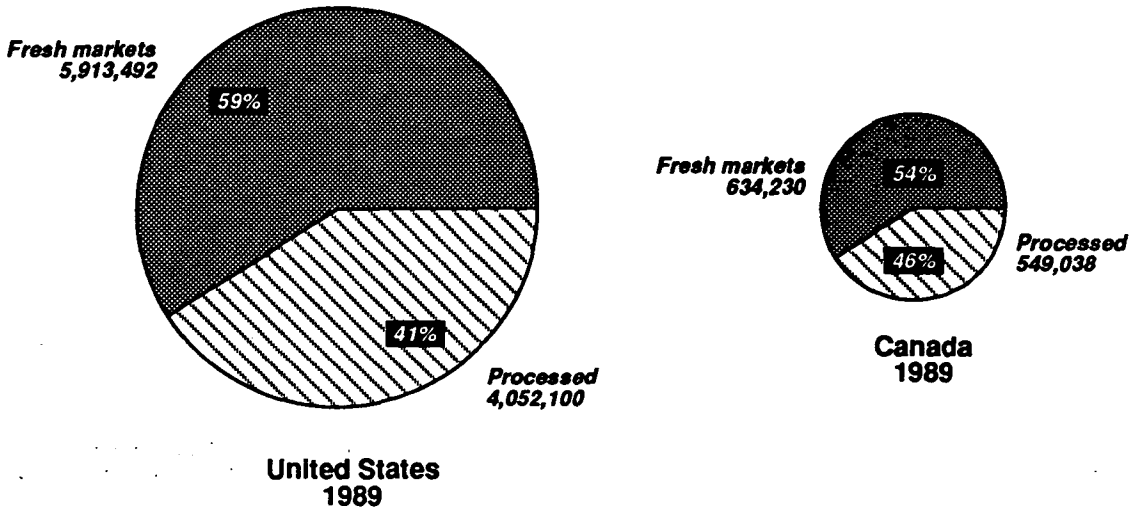
Storage of apples is necessary to ensure their availability and orderly marketing throughout the year. There are two methods of storage utilized in the United States and Canada, regular and controlled atmosphere (CA). Regular storage, in refrigerated rooms, provides temporary storage in which apples remain in good condition for up to 120 days. CA storage rooms are refrigerated hermetically-sealed rooms in which the oxygen level is reduced from the normal 20.5 percent to around 1 percent. CA rooms provide for long-term storage as the apples remain in good condition for up to 1 year.

The commercially most important use of apples is fresh-market fruit. The primary criterion for the fresh market is eye appeal: apples that have good color and shape and are free of surface blemishes are sold as fresh-market fruit. Quality is also determined by such factors as crispness and taste; size affects price as well, although a high-quality small apple can command a higher price than a low-quality large apple. The second major use of apples is for processing or canning. The principal processed products are applesauce, apple juice, sweet apple cider, and apple cider vinegar. Other important products include canned, frozen, and dried apple slices. Canning apples ("peelers") must be over 2-1/2 inches in diameter; they may have surface damage since they will be peeled in the process of making apple sauce or slices, but they must be round so the peeling machines can handle them properly. The last major use of apples is for juice. The sources of juice apples traditionally are sort-outs, orchard-run fruit, weather-damaged fruit, drops, and leftovers from other grades. The share of apples destined for the fresh market and for processing in the United States and Canada in 1989 is shown in figure 1-1a, and their shares in Washington State and British Columbia are shown in figure 1-1b.

Although apples are commercially grown in 36 States and 5 Provinces, the bulk of apple production takes place in the Pacific Northwest. Washington State apple growers produced 50 percent of the total 1990

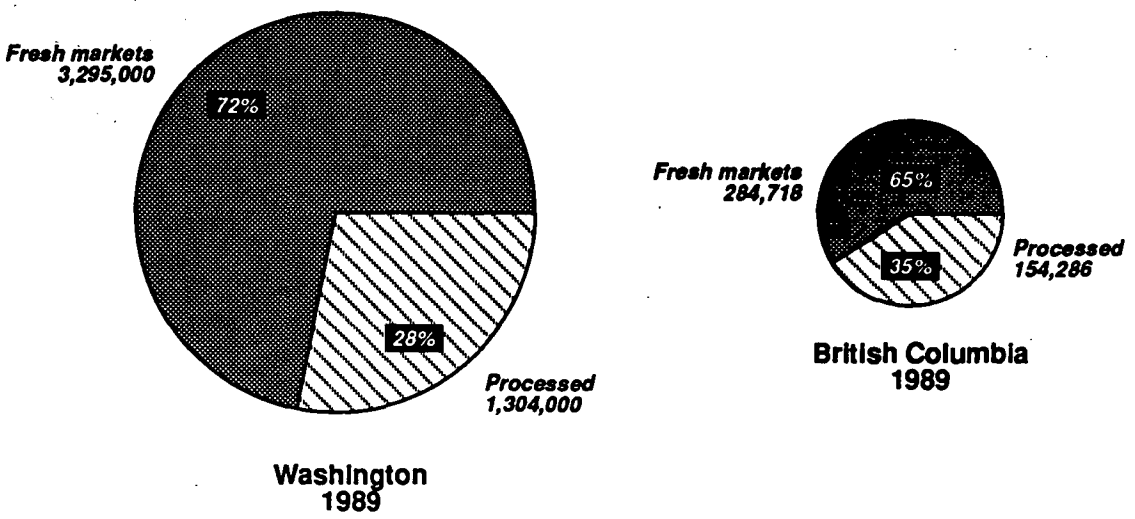
[3] Ralph J. Barrie, chairman, *Report of the Inquiry into the Merits of Establishing a National Marketing Agency for Apples Destined for the Fresh Market* (Ottawa: National Farm Products Marketing Council, March 1991); hereafter referred to as the "Barrie Report."

Figure 1-1A
Apples: United States and Canada, fresh and processed, 1,000 pounds



Source: International Apple Institute and Agriculture Canada.

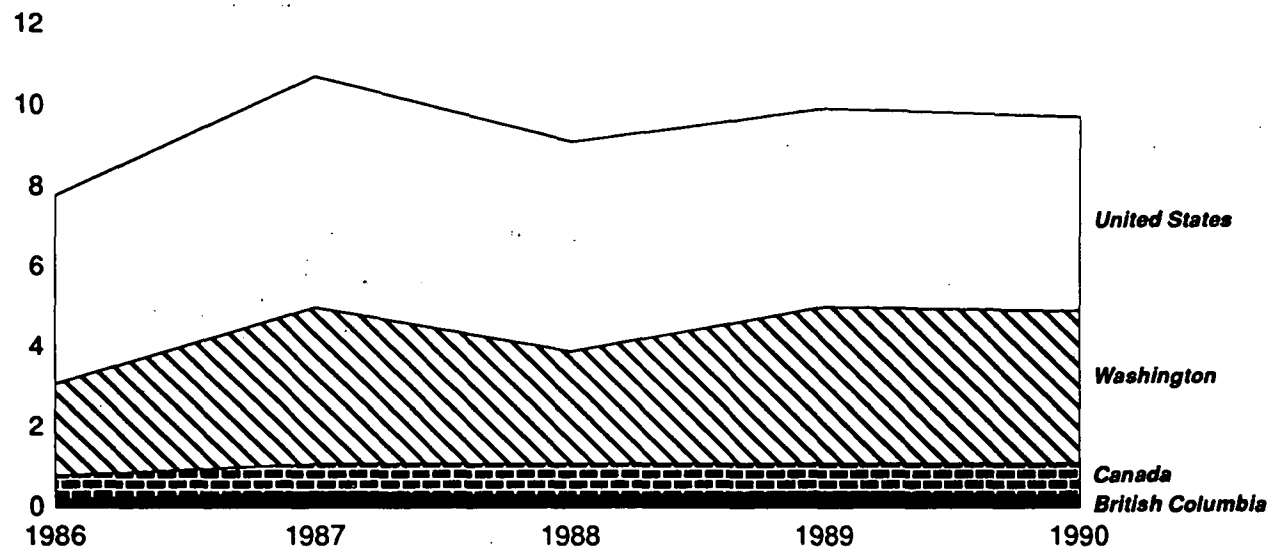
Figure 1-1B
Apples: Washington and British Columbia fresh and processed, 1,000 pounds



Source: International Apple Institute and Agriculture Canada.

U.S. apple crop, and British Columbia accounted for 31 percent in Canada; combined, these two areas accounted for 48 percent of both countries' apple production in 1990. Figure 1-2 shows the comparison, by production, of the United States and Canada, as well as the relative importance of Washington State and British Columbia. Delicious apple production dominates total apple production in this region, as well as in the North American fresh apple market overall, accounting for 51 percent of the combined apple crop in the United States and Canada in 1990 and averaging 55 percent during the study period. As shown in Figure 1-3,

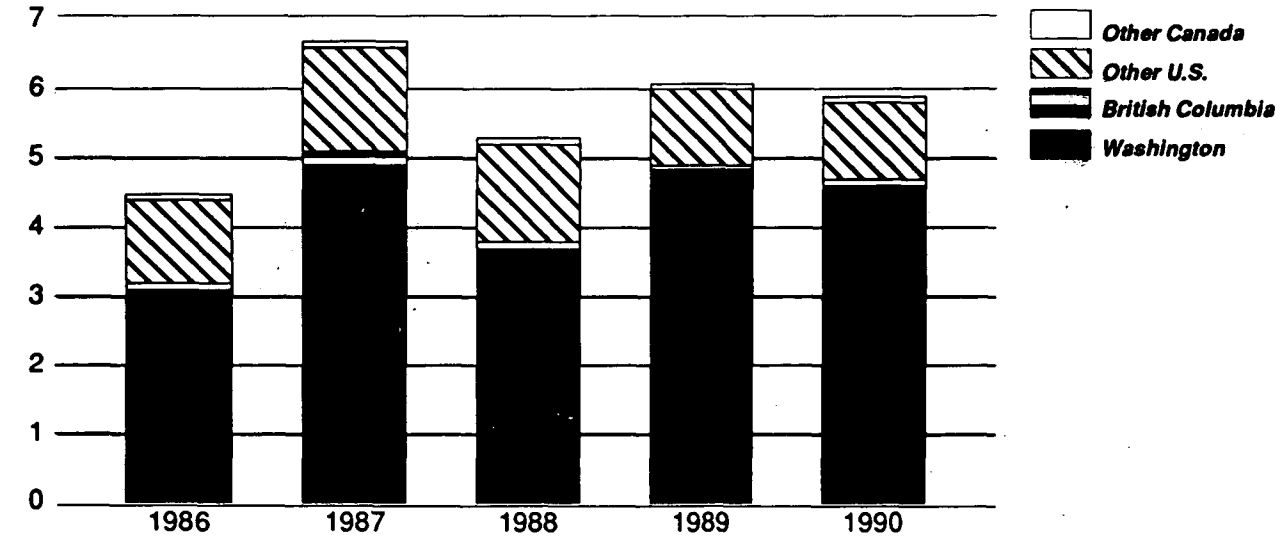
Figure 1–2
Apples: Total apple production by specified area



Source: International Apple Institute and Agriculture Canada.

Figure 1–3
Apples: Delicious apple production in the United States and Canada

Billion pounds



Source: International Apple Institute and Agriculture Canada.

Washington State is clearly the major producer of Delicious apples in the United States, and British Columbia, while the major producer of Delicious apples in Canada, is a small producer relative to its neighbor to the south. Given the importance of the Pacific Northwest in terms of total production and the importance of Delicious apples in the North American market, this examination of the competitive conditions in the United States and Canadian apple markets focuses primarily on those conditions applicable in Washington State and British Columbia.

Chapter 2
The U.S. Industry and Market

The U.S. Industry

Production

Apple production is the largest noncitrus tree-fruit agribusiness in the United States. During the last two decades, apple production in the United States has been increasing. There have been increases in the acreage planted and the standard-size trees have been replaced with dwarf and semidwarf trees, principally during the late 1970s and early 1980s. Total U.S. apple production in 1990 is estimated at 9.7 billion pounds, valued at $1.29 billion. The principal varieties of apples produced in the United States (figure 2-1) are Red Delicious (44 percent of total production in 1990), Golden Delicious (16 percent), Granny Smith (7 percent), and McIntosh (6 percent).

Acreage Planted and Harvested and Geographic Distribution

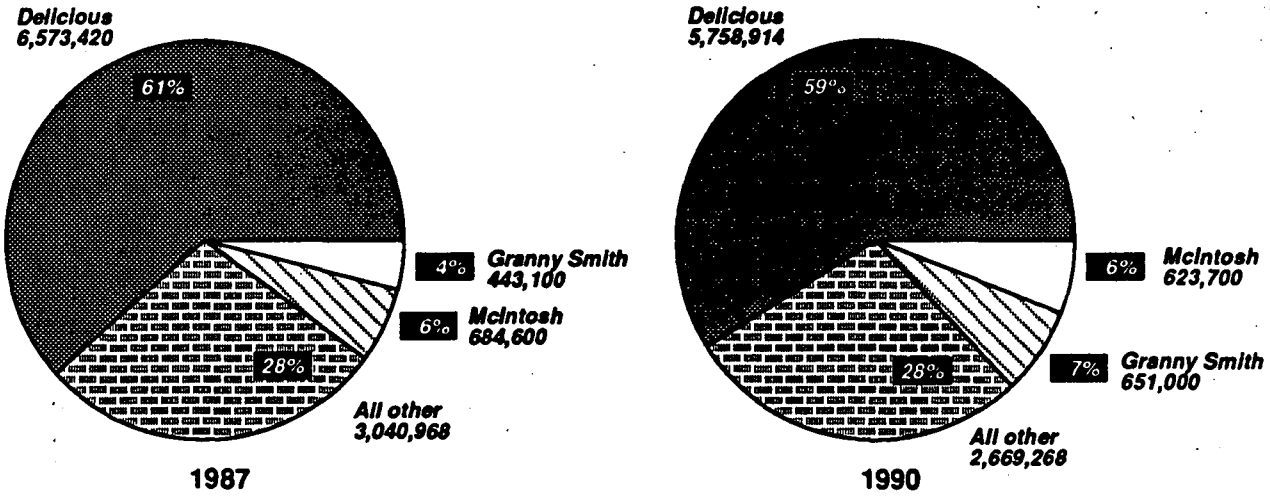
According to the 1987 *U.S. Census of Agriculture*, apples were produced on 36,718 farms, with over 69 million apple trees on 601,021 acres. During 1978-87, there was a 6-percent decrease in the number of farms, a 48-percent increase in the number of trees planted, and an 8-percent increase in the number of acres producing apples, as reported by the last three editions of the *U.S. Census of Agriculture*.—Increased plantings in the late 1970s and early 1980s caused an uptrend in production in the late 1980s; production is expected to level off by the turn of the century. Nationally, dwarf and semidwarf trees are replacing standard-size trees as the latter are taken out of rotation.

As noted in chapter 1, apples are grown in all 50 States. However, 7 States—Washington, New York, Michigan, California, Pennsylvania, North Carolina, and Virginia—together accounted for 85 percent of total U.S. apple production in 1990; Washington alone accounted for about one-half of total U.S. production. Statistics on apple production in the continental United States is reported on the basis of Western, Eastern, and Central regions. Figure 2-2 shows these three regions and the seven major apple-producing States.

The majority of U.S. apples are produced in the Western region. Red Delicious and Golden Delicious are the major varieties produced in Washington State—in the valleys of Yakima and Wenatchee, and the Columbia River Basin—Oregon, and Idaho. In California, Granny Smith, Red Delicious, Pippin, and Golden Delicious are the major varieties grown.

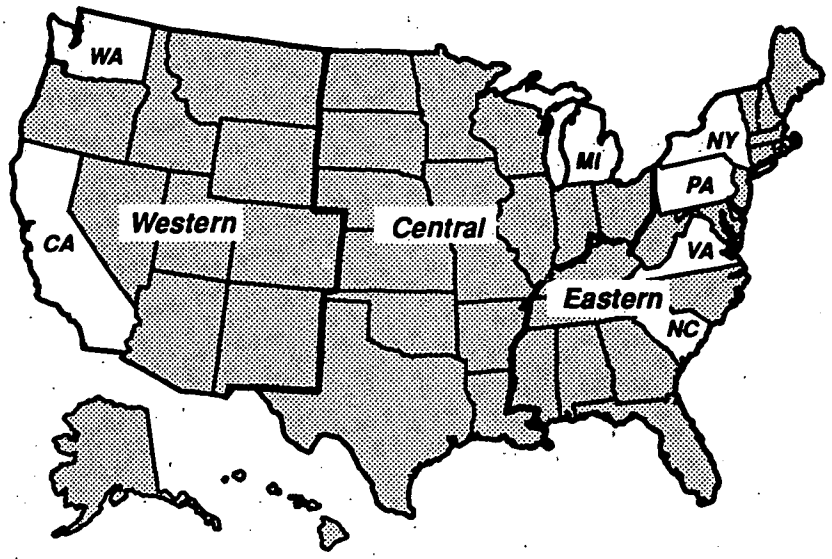
The principal apple-producing States in the Eastern region are New York, Pennsylvania, Virginia, and North Carolina. The varieties of apples produced and hence the end uses of apples in this region vary widely from area to area. For example, in eastern New York, approximately 65 percent of the apples produced are for fresh-market sales, but in western New York, about 80 percent of production is processed. The leading fresh-market apples produced in the region are McIntosh, Cortland, Spartan, Idared, and Empire.

Figure 2-1
Apples: Major U.S. varieties 1987 and 1990 production, 1,000 pounds



Source: International Apple Institute.

Figure 2–2
Apple producing regions and 7 major producing states



Source: International Apple Institute, McLean, Virginia.

The Central region's largest producer is Michigan, which is also the major U.S. producer of processing apples; about two-thirds of Michigan's annual apple crop is sold to processors. The region's major varieties are the Jonathan, Red Delicious, and McIntosh.

All U.S. regions produce both Red Delicious and Golden Delicious apples, although Washington State is the predominant producer of both; these varieties vary considerably in size depending on the region in which they are produced, with the largest being produced in the Western region. The McIntosh apple, grown in all three regions, was the third leading variety produced in the United States until 1989, when the Granny Smith supplanted it. The Granny Smith is grown predominantly in the Western region, specifically California.

Trends in Varieties and Utilization

All varieties of apples may be used for fresh-market sales or for processing. However, some varieties are intended primarily for the fresh market (e.g., Red Delicious, McIntosh, and Granny Smith), and others are noted for their use in processing (e.g., York and Northern Spy). Some varieties (e.g., Golden Delicious and Rome) are well suited for both uses. As indicated in table 2-1, during the study period, total U.S. production of apples increased by 23 percent. Production of the leading variety, Red Delicious, increased by 39 percent; that of Golden Delicious, by 11 percent; Granny Smith, by 165 percent; and McIntosh, by 4 percent. The following tabulation lists the leading varieties available in the United States and their principal uses:

Fresh-market	*Processing*	*Dual-purpose*
Red Delicious	York	Golden Delicious
McIntosh	Rhode Island Greening	Rome
Winesap	Gravenstein	Jonathan
Granny Smith	Northern Spy	Stayman
Empire		Cortland
		Newton
		Idared

During 1986-90, fresh-market use of apples in the United States increased regularly, with a sharp increase in the bumper crop year of 1987 (table 2-2). The fresh-market share of apple utilization increased during the period from 57 to 59 percent. Utilization of apples in processed products varied widely, depending on the size of the crop; most of the variation was in use in juice and cider. Of the apples processed during 1986-89, 53 percent were processed into juice or cider, 32 percent were canned, 7 percent were frozen, 7 percent were dried, and the remainder were processed into other products.

Distribution

In the United States, apple growers may deliver their apples to a cooperative or private packinghouse, sell orchard-run fruit to a cash buyer on the spot market, or market their own fruit.

Growers must belong to the cooperative organization to market through a cooperative and share in the proceeds from the cooperative's sales. Some cooperatives specialize in handling apples for processing;

Table 2-1
Apples: U.S. production, by variety and by region, 1986-90
(1,000 pounds)

Variety/region	*1986*	*1987*	*1988*	*1989*	*1990*
Red Delicious:					
Eastern	537,600	659,400	676,200	441,000	495,600
Central	198,828	366,240	234,780	305,760	201,600
Western	2,301,600	3,810,240	2,800,560	3,624,600	3,532,914
Total	3,038,028	4,835,880	3,711,540	4,371,360	4,230,114
Golden Delicious:					
Eastern	405,300	368,340	392,700	239,400	294,000
Central	134,400	186,900	143,640	162,540	126,000
Western	838,740	1,182,300	990,780	1,159,200	1,108,800
Total	1,378,440	1,737,540	1,527,120	1,561,140	1,528,800
Granny Smith:					
Western	246,120	443,100	504,420	638,400	651,000
Total	246,120	443,100	504,420	638,400	651,000
McIntosh:					
Eastern	474,600	516,600	504,000	451,500	462,000
Central	123,480	168,000	139,860	173,460	161,700
Total	598,080	684,600	643,860	624,960	623,700
Rome:					
Eastern	331,800	337,260	344,400	288,540	302,400
Central	71,400	94,920	89,040	94,080	88,200
Western	109,200	199,500	145,740	174,300	168,000
Total	512,400	631,680	579,180	556,920	558,600
Jonathan:					
Eastern	39,900	40,320	41,160	32,760	32,340
Central	210,000	288,120	236,880	254,940	239,400
Western	65,100	73,500	71,400	73,080	71,400
Total	315,000	401,940	349,440	360,780	343,140
York:					
Eastern	357,000	285,600	294,000	237,300	231,000
Total	357,000	285,600	294,000	237,300	231,000
Newton:					
Western	142,800	178,500	165,060	182,700	180,600
Total	142,800	178,500	165,060	182,700	180,600
Stayman:					
Eastern	184,800	168,000	165,480	135,660	142,800
Central	33,180	51,240	32,340	41,160	29,400
Total	217,980	219,240	197,820	176,820	172,200
Idared:					
Eastern	63,000	70,560	71,820	71,400	75,600
Central	52,500	73,920	68,880	90,720	86,520
Total	115,500	144,480	140,700	162,120	162,120
Winesap:					
Eastern	37,800	38,640	39,060	34,020	32,340
Central	17,640	31,500	26,460	29,400	25,200
Western	77,700	100,800	82,320	89,040	84,000
Total	133,140	170,940	147,840	152,460	141,540
Empire:					
Eastern	(1)	(1)	(1)	54,600	81,900
Central	(1)	(1)	(1)	18,900	16,800
Total	(1)	(1)	(1)	73,500	98,700
R.I. Greening:					
Eastern	96,600	91,560	78,120	106,260	82,320
Central	12,600	23,100	16,380	20,580	15,120
Total	109,200	114,660	94,500	126,840	97,440
Cortland:					
Eastern	100,800	89,040	83,160	74,340	78,120
Central	23,520	37,800	23,940	17,640	15,120
Total	124,320	126,840	107,100	91,980	93,240

See footnotes at end of table.

Table 2-1—*Continued*
Apples: U.S. production, by variety and by region, 1986-90
(1,000 pounds)

Variety/region	*1986*	*1987*	*1988*	*1989*	*1990*
Northern Spy:					
Eastern	29,400	33,600	28,560	26,040	25,200
Central	79,800	95,760	72,240	84,420	67,200
Total	109,200	129,360	100,800	110,460	92,400
Gravenstein:					
Western	73,500	107,100	77,700	89,880	92,400
Total	73,500	107,100	77,700	89,880	92,400
Other:					
Eastern	205,884	241,626	241,332	181,650	155,274
Central	105,126	163,464	151,578	148,470	137,214
Western	77,280	125,538	97,020	117,852	113,400
Total	388,290	530,628	489,930	447,972	405,888
United States:					
Eastern	2,864,484	2,940,546	2,959,992	2,374,470	2,490,894
Central	1,062,474	1,580,964	1,236,018	1,442,070	1,209,474
Western	3,932,040	6,220,578	4,935,000	6,149,052	6,002,514
Total	7,858,998	10,742,088	9,131,010	9,965,592	9,702,882

[1] Not available.

Source: International Apple Institute, McLean, VA.

Table 2-2
Apple utilization in the United States, 1986-90
(Millions of pounds)

Year	*Total utilized production*	*Fresh-market*	*Total pro-cessed*	*Canned*	*Juice and cider*	*Frozen*	*Other*[1]
1986	7,907.3	4,531.8	3,375.5	1,179.0	1,648.9	257.3	290.3
1987	10,451.3	5,610.1	4,841.2	1,305.8	2,928.8	249.1	357.5
1988	9,081.4	5,240.3	3,841.1	1,399.1	1,824.6	265.7	351.7
1989	9,920.2	5,875.3	4,044.9	1,318.6	2,065.7	321.5	339.1
1990	9,484.7	(2)	(2)	(2)	(2)	(2)	(2)

[1] Dried, vinegar, wine, and fresh slices for pie making. [2] Not available.

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

others may specialize in fresh-market fruit only.[1] For membership in the cooperative, growers purchase stock in the cooperative, usually on the basis of apple tonnage. This gives them the privilege of delivering fruit to the cooperative for sale or processing in its plant. The profits of the cooperative are shared among the members.

Apple growers may also sell their orchard-run fruit to cash buyers on the spot market. Producers of domestic apple juice that are noncooperatives buy juice apples for cash at the going market price.[2]

[1] At present, some cooperatives accept no new members, as is the case with Knouse Foods, a grower-owned firm located in Pennsylvania that produces processed apple products and juice. Knouse buys only processing and juice apples, not fresh-market apples. Knouse also purchases apples from nonmembers when there is additional demand. Tree Top, also a cooperative, similarly buys only processing and juice apples and has closed its membership rolls.

[2] Firms such as Duffy-Mott and National are noncooperative cash buyers.

The third marketing option is a do-it-yourself method whereby the grower invests in a packinghouse, storage facilities, and fresh-market packing equipment and/or fresh-juice-pressing equipment (e.g., cider mill). These grower operations, when large enough, sell fresh apples regionally, nationally, and internationally, or when smaller, locally.

Storage

As discussed earlier, storage of apples is necessary to ensure their availability and orderly marketing. Apple storage is generally a function of packinghouses. Regular storage, in refrigerated rooms, provides temporary storage in which apples remain in good condition for up to 120 days. Controlled atmosphere (CA) storage, in large, specially-constructed, hermetically-sealed rooms in which the oxygen level is reduced from the normal 20.5 percent to 1 percent, provides storage in which apples remain in good condition for up to 1 year.

Controlled-atmosphere (CA) storage capacity in the United States has been increasing; in 1989, it amounted to 4.6 billion pounds,[3] up from the 3.9 billion pounds reported for 1987, as compiled by the International Apple Institute (IAI).[4] According to the 1988 IAI survey, 580 facilities had CA storage capacity in 1987. The 4.6 billion pound storage capacity in 1989 is equivalent to roughly 40 percent of total annual U.S. apple production, or 75 percent of U.S. fresh-market apple sales. This CA capacity is located in 23 of the 36 commercial apple-producing States. Washington accounted for 3.5 billion pounds of this storage, or 75 percent of the national total; Michigan, New York, and Virginia, together, accounted for another 15 percent, as shown in the following tabulation:

Million pounds

Washington	3,459
Michigan	329
New York	254
Virginia	104
Oregon	99
Pennsylvania	86
All other	282
Total	4,613

CA storage facilities are usually much larger in the Western than in other regions. In the Western region, a typical facility had an average capacity of 13.7 million pounds per facility in 1987; this compares with 2.9 million pounds per facility in the Central region and 2.3 million pounds in the Eastern region.

Eleven States, accounting for 85 percent of total U.S. CA capacity, provided information for periods 5 and 10 years prior to the IAI survey. On the basis of this information, it is estimated that national CA capacity increased by 672 million pounds during the preceding 5 years, or by 26 percent, and by 1.4 billion pounds during the preceding 10 years, or by 76 percent. In addition, the data indicate that more than 90 percent of the national growth over the preceding 10 years occurred in the State of Washington; Washington CA storage capacity rose by 86 percent in the preceding 10 years, thus providing fresh-market apples to consumers all year. Over this same 10-year period, CA capacity in the Eastern region grew by 24 percent. The historical information for the Central region was incomplete.

Handling

In the United States, there are approximately 1,215 packinghouses that handle and market fresh and processed apple products. These packinghouses are (1) privately owned and pack their own products exclusively, (2) privately owned and pack their own and others' products, or (3) owned by cooperatives. In the Eastern region, there are approximately 549 packinghouses, most of which are privately owned. The Central region has about 397, also most of which are privately owned. The Western region has approximately 269 packinghouses[5] that routinely handle their own production; those packinghouses in Washington are divided almost equally among the three types, but most of those in California are privately owned.

Grading

Product quality in apple marketing is important because poor-quality apples cannot be sold in the fresh market and must instead be processed, where they bring significantly lower prices for the grower. For apples good enough for the fresh market, product attributes have mainly to do with the demand for one type of apple over another, and not with apples in general. In addition to price, there are several quality attributes of apples that cause consumers to prefer one variety over another:

- Crispness (crisp or mealy)
- Size (small, medium, or large)
- Color (uniformly red, uniformly green, red-green combination, or yellow)
- Flavor (sweet or tart)

Apples are graded according to certain of these attributes. The U.S. Department of Agriculture (USDA) has established a system of nonmandatory grade standards for apples in the United States (46 F.R. 63203). These standards generally relate to such characteristics as product size, color, tolerances, quality, general appearance, and state of maturity. Apples are classified into five grades: U.S. Extra Fancy, U.S. Fancy, U.S. No. 1, U.S. Utility, and Combination. Also, the Export Apple and Pear Act (48 Stat. 123; 7 U.S.C. 581 et seq.) provides for minimum requirements for apples offered for export; in general, exported apples must be at least U.S. No. 1. Though the grade standards are not mandatory for domestically sold fresh-market apples, an estimated 30 percent of the fresh-market apples sold in the United States are sold under these Federal grades.[6]

Many States have their own grade standards, most of which are higher than the USDA standards.[7] Washington State's grades are Washington Extra Fancy and Washington Fancy; requirements state that apples with those grades be equal to or better than U.S. Extra Fancy

[3] Data from USDA, National Agricultural Statistics Service; cited in T.C. Butler and C.R. Anderson, *1990 Apple Crop Statistics and Market Analysis* (American Agricultural Marketing Association, July 1990), p. 61.

[4] International Apple Institute, *IAI Controlled Atmosphere (CA) Storage Capacity Survey National Summary* (McLean, VA: January 1988).

[5] International Apple Institute, *Numbers of Apple Storages/ Packers and Storage Holdings November 1, 1989 and 5-year Average by Major Regions* (McLean, VA: July 1990).

[6] Staff conversations with officials of the Agricultural Marketing Service, U.S. Department of Agriculture, June 1991.

[7] Staff conversation with Bill Bryant, vice president for International Affairs for the Northwest Horticultural Council, Yakima, WA.

and U.S. Fancy. New York State Seal of Quality contract specifications require apples with the seal to be of better quality than U.S. Extra Fancy.

The U.S. Market

Marketing and Pricing

The U.S. apple market is typical of many agricultural markets in its highly competitive structure. There are hundreds of buyers and thousands of sellers dealing in fungible, largely homogeneous, and, in the fresh market, perishable products. Entry into the industry is not particularly easy, especially in the short run; growers must invest capital and several years in developing apple orchards, and processors and distributors face the fixed costs of capital and brand-name development. Exit is similarly constrained in the short run by fixed costs. However, in many regions the ready availability of alternative outlets for apples (e.g., fresh versus juice markets) means that price changes can affect the quantities supplied and demanded in any one of these markets, even in the short run.

Individual growers are too small and numerous to influence market prices significantly; as noted earlier, in 1987 there were some 37,000 orchards with apple trees. For these producers, marketing is not complex, they simply deliver their apples to buyers at prevailing market prices or deliver to cooperatives that do the marketing for them. Futures contracts, crop switching, and other management options available to producers of grains and other crops are generally not available to tree-crop growers. Although many apple growers have organized into cooperatives to, among other things, boost their bargaining power vis-a-vis the more concentrated processing and distribution sector, no cooperatives or growers are large enough to exert significant influence over grower-level prices. Particularly in the Eastern and Central regions, growers or their cooperatives have some ability to shift their apples between the fresh market and the various processed-apple markets as relative prices dictate.[8] Another marketing option available to all growers, either individually or through their cooperatives, is to withhold supplies (at the risk of spoilage and the expense of storage) with the hope of higher prices in the future.

In the United States, the function of marketing a commercial fresh-apple crop is much the same throughout the three regions. In areas that concentrate on the fresh market, sales normally are by the grower/packer. These sales occur at the field, at the grower's privately owned packinghouse, or at grower-owned cooperatives. Sales may also be through a broker on a commercial basis. At the retail level, an estimated 75 to 80 percent of domestic fresh-market sales are made through supermarket chain stores. The remainder are sold through smaller retail outlets, institutional sales, roadside stands, and farmers' markets.

[8] In the Western region, this option is not as significant, because the orchards there are geared almost exclusively to the fresh market.

Apples for processed products are sent by truck from the orchards or storage warehouses to the processor's facilities. Here they are washed, sorted, graded, and categorized either as peeler apples to make sauce/slices or as juice apples to make juice. Juice apples for processors that strictly make juice are also purchased directly from the orchard. Processors market their products through their own sales staff, through regional food brokers, or through wholesalers; they generally purchase their apples directly from growers or packinghouses.

Quality of U.S. Apples

U.S. industry sources, including the International Apple Institute and the Northwest Horticultural Council, indicate they believe that the quality of U.S. fresh-market apples available for sale in the U.S. and foreign markets has been high and has increased in recent years, principally as a result of the increased capacity of CA storage and the development of niche markets. These factors have resulted in the availability of high-quality domestic apples throughout the year.

Trade

During the last 2 decades, the United States has consistently been a substantial and growing net exporter of fresh apples. In 1990, exports (796 million pounds, valued at $213 million) were more than triple the volume of imports (234 million pounds, valued at $40 million). In that year, exports of fresh apples were equivalent to about 9 percent of total U.S. production, and imports, to about 2 percent. Canada is the United States' major trading partner, suppling nearly one-half of all U.S. apple imports and receiving about one-quarter of total exports. On December 22, 1988, Revenue Canada imposed antidumping duties on certain apples imported from the United States (see the section in Chapter 3 on Canadian Tariff Treatment for additional information).

U.S. trade in processed apple products has been dominated by imports of apple juice, which in 1990 were valued at $172 million. Imports of other products have been small, dried apple imports were valued at $4 million in 1990, and those of prepared or preserved apples, at $2 million. U.S. exports of processed apple products also have been mostly apple juice. Apple juice exports in 1990 amounted to $39 million and went principally to Japan (58 percent) and Canada (22 percent).

U.S. imports

During 1986-90, Canada was the leading supplier of fresh apples to the United States, accounting for nearly 40 percent of total imports, by volume. In 1990, imports of apples from Canada reached 114 million pounds, valued at $15.6 million (table 2-3). New Zealand, Chile, and Argentina accounted for virtually all the remaining imports in 1990.

Table 2-3
Fresh apples: U.S. imports for consumption, by principal sources, 1986-90

Source	1986	1987	1988	1989	1990
	Quantity (1,000 pounds)				
Canada	98,249	94,878	106,968	104,894	113,681
New Zealand	59,344	75,735	53,742	51,511	58,923
Chile	68,434	94,743	85,455	59,500	48,797
Argentina	4,303	23,263	16,521	34,361	12,317
Grenada	0	0	4	20	205
Hungary	0	0	0	88	40
Brazil	0	24	0	0	37
United Kingdom	0	0	0	0	11
All other	59,873	5,399	7,370	4,528	0
Total	290,203	294,143	270,062	254,903	234,012
	Value (1,000 dollars)				
Canada	18,212	16,750	16,515	14,588	15,602
New Zealand	19,970	22,884	17,142	16,720	15,192
Chile	10,914	17,028	15,240	8,437	7,146
Argentina	1,046	3,912	2,886	5,292	2,214
Grenada	(1)	(1)	1	8	78
Hungary	(1)	(1)	(1)	19	9
Brazil	(1)	5	(1)	(1)	6
United Kingdom	(1)	(1)	(1)	(1)	4
All other	20,229	1,655	1,343	1,569	(1)
Total	70,371	62,234	53,127	46,633	40,252
	Unit value (Cents per pound)				
Canada	19	18	15	14	14
New Zealand	34	30	32	32	26
Chile	16	18	18	14	15
Argentina	24	17	17	15	18
Grenada	(1)	(1)	23	40	39
Hungary	(1)	(1)	(1)	(1)	(1)
Brazil	(1)	21	(1)	(1)	(1)
United Kingdom	(1)	(1)	(1)	(1)	36
All other	34	31	18	35	(1)
Average	24	21	20	18	17

[1] Not applicable.

Note.—Due to rounding, data may not add to totals shown.

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

Imports as a share of U.S. consumption have fallen steadily from a high of 3.7 percent in 1986 to 2.6 percent in 1990. Although no official U.S. statistics are collected on imports by variety, it is believed the majority of apples imported from Canada are Red Delicious and McIntosh.

Data are not available on the consumption of imported apples by region. Data are available on the entry of imports through individual customs districts; however, it is believed that a substantial portion of the imports entering a particular customs district passes through to other areas of the country for consumption.

Analysis of imports from Canada by individual customs districts indicates that during 1986-90, the top two ports of entry together accounted for two-thirds of the total quantity of imports from Canada, and the top five, for about 94 percent, as shown in the following tabulation (in percent):

Customs district	*1986-90*
Seattle, WA	41
Buffalo, NY	26
Detroit, MI	14
Ogdensburg, NY	9
St. Albens, VT	4
All Other	6
Total	100

U.S. imports of fresh apples showed a downward trend during 1986-90. This trend is a result of increased U.S. production (both total and of such newer varieties as Granny Smith) and expanded CA storage, which have made imports, with the exception of those from Canada, less necessary to supply U.S. consumers with a range of apple varieties throughout the year. Also, many foreign competitors have been marketing aggressively in countries with less production than the United States, where they can compete more favorably.

U.S. tariff treatment

Imported apples and apple products are provided for under Harmonized Tariff Schedule (HTS) subheading 0808.10.00 for fresh apples, 0813.30.00 for dried, 2008.99.05 for otherwise prepared or preserved, and 2009.70.00 for juice (see app. D). Fresh apples enter "free" of duty, dried apples enter at a rate of duty of 1.1 cents/kilogram, and apples otherwise prepared or preserved enter at a rate of duty of 0.8 cents/kilogram. The current rates of duty applicable to imported apple juice are "free" for products from countries eligible for column 1 treatment and 1.3 cents/liter for products of column 2 countries. Imports of apple juice from the European Community (EC) are subject to nonrestrictive quotas of 531,240,000 liters for juices not mixed and not containing over 1.0 percent ethyl alcohol by volume. Jams and jelly, provided for under HTS subheadings 2007.99.45 and 2007.99.75, respectively, both enter at a column 1 rate of duty of 7 percent ad valorem and a column 2 rate of duty of 35 percent ad valorem; pastes and purees (HTS No. 2007.99.48) enter at 15 and 35 percent ad valorem, respectively, for column 1 and column 2 rates of duty.

U.S. exports

During 1986-90, U.S. exports of fresh apples increased steadily (with the exception of 1989, following the Alar scare of 1989) and averaged 632 million pounds, valued at $150.4 million (table 2-4). The leading export markets, by volume, were Canada, Taiwan, Hong Kong, the United Kingdom, Saudi Arabia, Thailand, Singapore, and Mexico. Together, these 8 countries accounted for 76 percent, by volume, of U.S. exports during 1986-90.

Table 2-4
Fresh apples: U.S. exports, by principal markets, 1986-90

Market	*1986*	*1987*	*1988*	*1989*	*1990*
	Quantity (1,000 pounds)				
Canada	121,847	189,587	221,562	148,194	176,789
Taiwan	94,266	94,141	152,349	108,411	153,643
Hong Kong	43,790	58,045	74,460	75,812	91,495
United Kingdom	20,335	23,796	40,179	41,151	69,218
Saudi Arabia	33,871	26,610	30,280	32,712	52,983
Thailand	7,511	7,090	12,978	25,933	37,862
Singapore	20,373	17,344	31,812	25,203	27,509
Mexico	3,388	6,609	16,746	20,322	26,515
All other	101,098	136,154	175,814	148,878	200,475
Total	446,479	559,376	756,180	603,916	796,489
	Value (1,000 dollars)				
Canada	23,206	46,066	43,758	45,338	54,180
Taiwan	18,418	16,840	31,744	23,815	35,078
Hong Kong	12,432	13,545	15,911	16,634	21,089
United Kingdom	5,217	5,723	9,026	9,401	15,388
Saudi Arabia	10,300	4,518	5,336	7,127	14,223
Thailand	2,621	2,407	3,943	7,289	11,112
Singapore	5,730	3,988	7,809	6,292	6,748
Mexico	748	1,169	2,892	4,755	6,852
All other	28,390	26,879	36,909	32,336	48,688
Total	107,062	121,135	157,328	152,987	213,358
	Unit value (Cents per pound)				
Canada	19	24	20	31	31
Taiwan	20	18	21	22	23
Hong Kong	28	23	21	22	23
United Kingdom	26	24	22	23	22
Saudi Arabia	30	17	18	22	27
Thailand	35	34	30	28	29
Singapore	28	23	25	25	25
Mexico	22	18	17	23	26
All other	28	20	21	22	24
Average	24	22	21	25	27

[1] Not applicable.

Source: Compiled from official statistics of the U.S. Department of Commerce, except for 1986-89 exports to Canada which are from Agriculture Canada.

The rates of duty for the principal markets for U.S. fresh apple exports are shown in the following tabulation (all duty rates are *ad valorem*):

Hong Kong	duty-free
Singapore	duty-free
Mexico	10 percent
Thailand	20 percent
Saudi Arabia	20 percent
Taiwan	50 percent

Imports into the United Kingdom (and the rest of the European Community) are assessed a sliding rate of duty determined by the date of entry:

Aug.1–Dec. 31	14 percent c.i.f., with a minimum charge of 2.4 ECU per 100 kg.
Jan.1–Mar. 31	8 percent c.i.f., with a minimum charge of 2.3 ECU per 100 kg.
Apr.1–Jul. 31	6 percent c.i.f., with a minimum charge of 1.4 ECU per 100 kg.

In addition, Mexico is currently considering implementation of a phytosanitary certification program; however, industry sources indicate that this would probably have little if any adverse effect on U.S. exports, which would most likely be able to meet such phytosanitary requirements. In Thailand, there is currently underway a study of the extent of the presence of the coddling moth, an insect that is common to the United States and which can be transmitted in apple shipments. The study is reportedly expected to be completed by the end of 1991.

During 1986-90, U.S. apple exports rose irregularly from 5 to 9 percent of production as a result of aggressive marketing by U.S. interests and successful efforts to eliminate foreign trade barriers. These continuing efforts are expected to increase exports to the EC, Mexico, and various Pacific Rim countries.

U.S. Government Programs

In the United States, Government involvement in the apple industry is at both the Federal and State level. Although there are no Federal programs, or any kind of price support or deficiency payments specifically for apples, there are a number of Federal- and State-supported programs that affect apple producers. There are also a number of Federal and State Government operations providing related nonfinancial services, such as research and development programs. Since most of these programs are not product specific, apples are not the only commodity they affect. The following is a brief review of current, recent, or proposed Government actions affecting apple producers.

Under the Food, Agriculture, Conservation, and Trade Act of 1990, the Targeted Export Assistance (TEA) program, initiated under the Food Security Act of 1985, has been replaced by the Market Promotion Program (MPP). Under the MPP, the USDA is mandated to use Commodity Credit Corporation funds or commodities to "encourage the development, maintenance and expansion of commercial export markets for cost share assistance to eligible trade organizations that implement a foreign market development." The TEA program requirement limiting eligibility to commodities adversely affected by unfair foreign trade practices is eliminated in the MPP. However, such commodities are considered a priority for participation in the MPP; once their promotional needs have been satisfied, consideration may be given to assisting other commodity groups. The following tabulation shows funds allocated and approved under the TEA/MPP for use by the Washington State Apple Commission in international promotions (in millions of dollars):[9]

Fiscal year beginning Sept 1—	*Allocated*	*Approved*
1986	1.4	1.4
1987	1.5	1.5
1988	2.0	1.9
1989	2.85	1.48
1990	3.8	(1)
1991	4.34	(1)

[1] Not available.

The USDA purchases fresh apples and apple products for use in various nutrition and feeding programs. Government expenditures on such purchases during fiscal years 1986-90 ranged from $2.9 million in 1987 to $33.9 million in 1988; expeditures in fiscal year 1990 amounted to $29.5 million.[10]

The sale of all fresh and frozen fruit into interstate and foreign commerce is covered under the Perishable Agricultural Commodities Act of 1930 (PACA) (7 U.S.C. 499a). PACA is administered by the USDA's Agricultural Marketing Service. Its purpose is to protect buyers and sellers, including foreign sellers, of perishable items from unfair and fraudulent trade practices, and to enforce marketing contracts so that sellers, including foreign sellers, are paid promptly. All brokers, commission merchants, shippers, growers' agents, and dealers (including jobbers, truckers, wholesalers, and retailers) that trade in large quantities at a wholesale level must be licensed and must observe all rules of fair trade under PACA.

Domestic growers must comply with the marketing, storage, and use requirements of the pesticide materials they use, as regulated by the Environmental Protection Agency. They are required to manage carefully the application of pesticides and to keep accurate records of usage to ensure against illegal pesticide residues on fruits offered for sale.

The Food and Drug Administration (FDA) administers the Federal Food, Drug, and Cosmetic Act (FFDCA) to protect the public from food contamination, including contamination from exposure to illegal pesticide residues in imported and domestic food. Under its pesticide monitoring program, FDA collects and analyzes samples of shipments of imported and domestic food to determine whether illegal residues are present. During 1987-91, the FDA detained 192,000 pounds of fresh apples from Canada and Chile.

[9] Horticultural and Tropical Products Division, Foreign Agricultural Service, USDA.
[10] Food and Nutrition Service, USDA.

Since 1912, Federal plant quarantines and regulations (7 CFR 319) have been in effect for numerous fruits, including apples, to prevent the spread of injurious plant pests. These provisions are administered by the Animal and Plant Health Inspection Service (APHIS) of the USDA. They require that importers obtain permission to enter fresh or frozen fruit into the United States. In addition, every shipment is subject to inspection at the port of entry.[11] When a particular crop of a producer country is host to an unwanted pest, permission for entry is denied unless an acceptable treatment program has been established. APHIS administers similar programs for domestically produced fruits. With regard to fresh-apple imports from Canada, APHIS is primarily concerned with the ermine moth. The ermine moth, which is not found in the United States, can be found as a hitch hiker in shipments of fresh apples. The United States does not inspect for ermine moth if the shipment is certified by authorized regulatory officials of Canada as being pest-free.

Certain programs relate specifically to fruit processing. One such program, administered by the Occupational Safety and Health Administration, contains safety regulations applicable to plant workers.[12] Product quality and identity and proper filling of containers are regulated by the FDA, and processors must adhere to these regulations. The contents and placement of information on package labels must be in accordance with regulations of the Fair Packaging and Labeling Act, and additional requirements of the FFDCA must be met, ensuring that the processed fruit is produced under sanitary conditions; that all packaging and labeling is informative, truthful, and in no way deceptive; and that the finished products are pure, wholesome, and safe to eat.

There are State marketing orders currently in place in most of the leading apple-producing areas. Marketing orders are in place in Washington, Michigan, New York, the New England States, Pennsylvania, Virginia, West Virginia, North Carolina, Utah, Ohio, Idaho, and Maryland. Growers pay into the marketing program on the basis of the amount of apples they sell. These fees are then used for advertising, promotion, public relations, and merchandising. These State marketing orders cannot have quantitative controls.

[11] Excluding entries from Canada.

[12] Buckley et al., *U.S. Fruit and Vegetable Processing Industries.*

Chapter 3
The Canadian Industry and Market

The Canadian Industry

Production

Apples are Canada's most important fruit crop in terms of both volume and value of production. In 1989, apples accounted for 65 percent of the quantity of all fruit produced in Canada (85 percent of all tree fruit) and 35 percent of the farm value of all fruit. Apple production in Canada has increased over the past 20 years, although the past 4 years have been stable. As table 3-1 indicates, production averaged 1.1 billion pounds, during 1986-90; 1986 was a down year because of severe weather. At the same time, although apple production has been increasing and apples have retained a significant share of total fruit production in Canada, their share of the farm value of all fruits has declined significantly over the last 25 years.[1]

Total fresh Canadian apple production for 1990 has been estimated at 1.1 billion pounds,[2] down from 1.2 billion pounds in 1989. Sales of all apples and apple-related products in Canada totaled an estimated Can$600 million,[3] with the value of production at the farm level in 1990 at Can$121 million.[4] The Canadian

[1] Elizabeth Campbell, *Apple Industry Profile* (Ottawa: National Farm Products Marketing Council, June 1990), p. 2.
[2] *Fruit and Vegetable Production*, Catalog #22-003, p. 13.
[3] *The Canadian International Trade Tribunal* (February 20, 1990), p. 4.
[4] *Fruit and Vegetable Production*, Catalog #22-003, pp. 10-13.

Table 3-1
Canadian apple production, by variety and by Province, 1986-90
(1,000 pounds)

Variety/Province	*1986*	*1987*	*1988*	*1989*	*1990*
All Varieties					
Nova Scotia	100,800	117,600	176,400	113,400	138,600
New Brunswick	15,120	15,120	15,330	10,290	17,010
Quebec	126,210	168,002	186,212	196,812	202,062
Ontario	347,360	377,204	347,530	423,764	410,860
British Columbia	266,290	437,378	378,490	439,002	346,540
Canada (total)	855,780	1,115,304	1,103,962	1,183,268	1,115,072
McIntosh					
Nova Scotia	32,760	40,740	63,000	39,900	50,400
New Brunswick	7,560	7,098	7,224	4,620	8,190
Quebec	(1)	114,702	111,548	120,456	123,312
Ontario	124,768	129,572	118,698	201,498	181,100
British Columbia	84,214	112,378	113,828	127,992	102,000
Total	(2)	404,490	414,298	494,466	465,502
Delicious					
Nova Scotia	10,920	12,180	16,800	9,240	9,660
Ontario	76,752	86,004	82,680	74,820	83,630
British Columbia	121,396	236,136	187,226	224,300	172,000
Total	209,068	334,320	286,706	308,360	265,290
Northern Spy					
Nova Scotia	10,500	9,660	14,700	11,340	12,180
Ontario	65,316	72,196	57,172	52,742	50,244
Total	75,816	81,856	71,872	64,082	62,424
Spartan					
Ontario	7,740	8,446	7,314	8,800	9,544
British Columbia	48,182	71,574	60,522	68,894	65,244
Total	55,922	80,020	67,836	77,694	55,700
Cortland					
Nova Scotia	12,600	14,280	21,000	12,600	18,900
New Brunswick	4,536	4,746	4,788	2,940	5,040
Quebec	(1)	18,060	24,944	26,040	26,040
Total	(2)	37,086	50,732	41,580	49,980
All others					
Nova Scotia	34,020	40,740	60,900	40,320	49,054
New Brunswick	3,024	3,276	3,318	2,730	3,430
Quebec	(1)	35,240	49,720	50,316	47,818
Ontario	72,784	80,986	81,666	85,904	78,332
British Columbia	12,498	17,290	16,914	17,816	15,278
Total	(2)	177,532	212,518	197,086	187,912

[1] Because of changes in methodology, production figures are not available for Quebec apples by variety in 1986.
[2] Not available.

Source: Statistics Canada, Fruit and Vegetable Production, 1986-90.

apple industry directly hires approximately 15,000 full- and part-time workers at the farm level, representing about 13 percent of total agricultural employment.[5] There are approximately 5,000 workers employed at the processing level, and an additional 10,000 to 15,000 workers in support jobs (e.g., chemical, mechanical, packaging, transportation, financing, retailing) that depend on the apple industry.[6]

Table 3-2 shows the acreage of bearing and nonbearing apple trees in Canada for 1986, 1988, and 1989, the only years during the study period for which data are available. The total number of acres devoted to apple production has fallen in all Provinces except British Columbia, where total acreage rose by less than 1 percent. Ontario has by far the largest area planted, but its productivity per acre is substantially less than that of British Columbia.

Acreage Planted and Harvested and Geographic Distribution

Apples are grown throughout Canada on approximately 8,000 farms, using about 112,000 acres.[7] Although some production occurs in virtually all Provinces, the principal growing regions are in British Columbia, Ontario, Quebec, New Brunswick, and Nova Scotia (fig. 3-1). The average apple orchardin Canada has just under 14 acres, but the size ranges from less than 1 acre to over 128 acres (there are about 48 orchards over 128 acres). Nova Scotia has the largest orchards averaging 22 acres of apple trees; the average in other provinces ranges from 14.5 acres in Quebec, 10 acres in New Brunswick, 9.6 acres in Ontario, to the smallest at 6.9 acres in British Columbia.

Trends in Varieties and Utilization

As figure 3-2 illustrates, the McIntosh is the most widely produced apple variety in Canada, consistently accounting for about 35 to 40 percent of total Canadian apple production. This contrasts markedly with production in the United States, where the McIntosh typically accounts for only 5 to 7 percent of total annual production. The McIntosh is produced in all of the five major apple-growing Provinces, but primarily in Ontario, Quebec, and British Columbia. It is the most commonly grown variety in all of the major producing Provinces except British Columbia. In contrast with current consumer preferences in the United States, Canadians reportedly prefer McIntosh over Delicious apples.

The Delicious apple—particularly the Red Delicious—is the second most widely grown variety in Canada. Although substantial quantities of Delicious apples are grown in Ontario and Nova Scotia, British Columbia typically accounts for 65 percent of total Canadian production of this variety. Production of the original Delicious variety, which is red with yellow streaks, has been declining in the last decade in favor of the Red and Golden Delicious.[8] British Columbia is ideally suited for growing Delicious and Spartan apples, which grow better in the hot, dry weather conditions of the Province's interior valleys. The Red Delicious is primarily a fresh-market apple; the Golden Delicious is a dual-purpose variety that can either be sent to the fresh market or used for processing.

The other principal varieties grown in Canada include the Northern Spy, Cortland, and Spartan. Together, these varieties constitute 15 to 20 percent of Canada's total apple production in a given year. The following tabulation summarizes the varieties available in Canada and their common uses.[9]

[5] *Apple Industry Profile*, p. 5.
[6] Ibid.
[7] The Barrie Report.
[8] Agriculture Canada, *A Study of Canada's Apple Industry*, p. 10.
[9] *The Effect of U.S. Delicious Apple Exports on Canadian Delicious Apple Growers*, Prepared for the Canadian Import Tribunal, p. 26.

Table 3-2
Canadian acreage of bearing and nonbearing apple trees, by Province, 1986, 1988, and 1989

Province	*1986*	*1988*	*1989*
Nova Scotia	10,314	9,980	9,660
Bearing	(1)	9,740	9,485
Nonbearing	(1)	240	175
New Brunswick	1,577	1,580	1,550
Bearing	(1)	1,220	1,190
Nonbearing	(1)	360	360
Quebec	21,945	19,815	19,820
Bearing	(1)	16,690	17,010
Nonbearing	(1)	3,125	2,810
Ontario	32,109	30,390	30,190
Bearing	(1)	27,190	27,050
Nonbearing	(1)	3,200	3,140
British Columbia	19,118	19,350	19,220
Bearing	(1)	18,350	18,150
Nonbearing	(1)	1,000	1,070
Canada	85,240	81,230	80,560
Bearing	(1)	73,275	74,965
Nonbearing	(1)	7,955	5,595

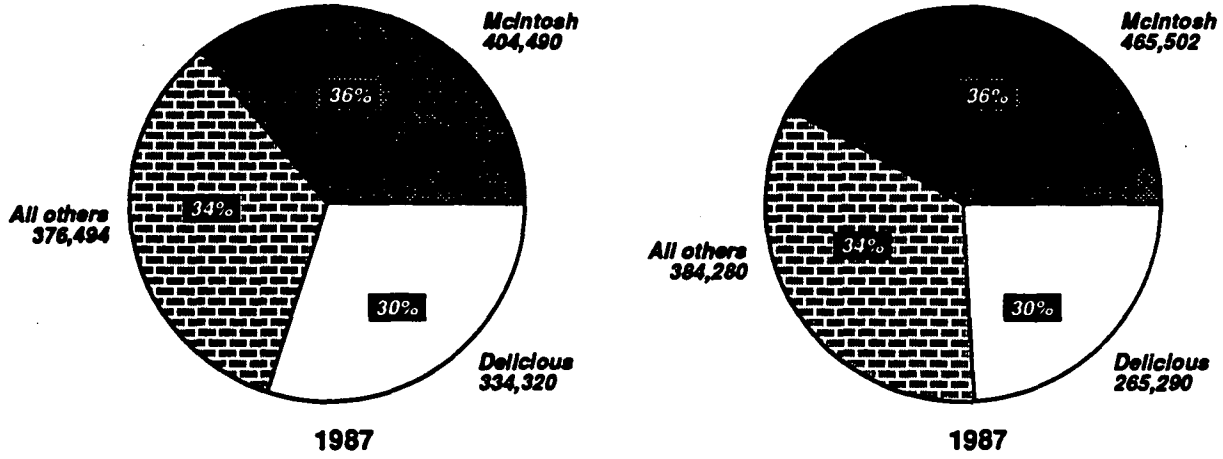
[1] Not available.

Source: *Request for a Canadian Apple Marketing Agency*, app. 11, p. 25.

Figure 3–1
Major apple producing provinces

Source: IAgriculture Canada.

Figure 3-2
Major Canadian varieties, 1987 and 1990 production, 1,000 pounds



Source: Agriculture Canada.

Fresh-market	*Processing*	*Dual-purpose*
Red Delicious	York	Jonathan
McIntosh	Greening	Golden Delicious
Winesap	Gravenstein	Rome
Granny Smith		Stayman
Empire		Newton
Spartan		Cortland
		Idared
		Northern Spy
		Mutsu
		Lobo

Apple processing in Canada is concentrated mainly in the manufacture of apple juice, which uses, on average, about 35 percent of Canada's total apple production in a given year. Only about 5 percent of total production enters the processing market for other apple products. Juice apples are primarily overripe or damaged, and the bulk are available for processing during the fall harvest. Small quantities of Canadian apples are sent to juice processors during the winter as a result of culling in the fresh-market packing line. Processors of apple juice are located primarily in British Columbia, Ontario, Quebec, and Nova Scotia.

Although Canada produces significant volumes of apple juice, it produces only negligible amounts of apple juice concentrate. The technology for concentrating apple juice is highly sophisticated, very expensive, and constantly changing; thus, the costs of concentrating apple juice in Canada are deemed prohibitive relative to those of other world suppliers.[10] The leading suppliers of apple juice concentrate to the Canadian market are Germany, Austria, and Hungary, accounting for about 55 percent of such imports in 1986, the last year for which data are available.[11]

Table 3-3 shows total apparent consumption of domestic fresh-market apples in Canada during 1980-89. The table suggests that a large apple crop leads to a higher percentage of Canadian apples being used in processing. Data indicate that total apple consumption in Canada has remained relatively flat at approximately 26 pounds per capita since 1960.[12]

[10] *A Study of Canada's Apple Industry*, p.14.

[11] Because of the changeover to the Harmonized System, trade data for apple juice concentrate are not available after 1986.

[12] *Apple Industry Profile*, 1990, table 36.

Distribution

In Canada, the distribution of fresh apples to their destination depends primarily on the Province in which they are grown. In British Columbia, the majority of the Provincial crop is sold through B.C. Tree Fruits, Lt. (BCTF), a grower-owned cooperative that markets members apples. Three other Provincial organizations—the Ontario Apple Marketing Commission, the Federation des Producteurs de Pommes du Quebec, and the New Brunswick Apple Marketing Board—have pricing committees that meet regularly throughout the marketing season to establish a recommended minimum price, free on board (f.o.b.) packinghouse, for all fresh apples grown in their respective Provinces. Because these three organizations meet frequently, Canadian industry officials believe that the prices they establish reflect the forces of supply and demand for each variety. Directors and/or members of the board of these organizations are elected and include representatives of growers, dealers and brokers, processors, retail traders, and consumers.[13]

Storage

On average, approximately 60 percent of Canada's total apple production enters the market as fresh-market apples. Significant improvements in controlled-atmosphere (CA) storage have increased the storage life of several fresh-market varieties, such as McIntosh and Golden Delicious. This factor has acted to increase year-round availability of fresh-market apples in the Canadian market. However, there is sufficient CA capacity for only about 30 percent of a year's production. As a result, 70 percent of the apple crop must be sold

[13] Based on ITC staff conversation with Crosby Mitchell at the Ontario Apple Marketing Commission, January 25, 1991. He described the basic functions of this organization, which are probably representative of the other two organizations (in Quebec and New Brunswick). According to Mitchell, the Board of the Ontario Apple Marketing Commission comprises 23 members—12 growers (9 elected directly from their area, 3 at large), 5 apple dealers, 4 processors, 1 retail trader, and 1 consumer representative.

Table 3-3
Apples: Canadian exports, sales to processing and apparent consumption of fresh-market products, 1986-90
(1,000 pounds)

Year	*Production*	*Exports*	*Percent of production*	*Sales to processing*	*Percent of production*	*Apparent consumption of domestic fresh market apples*
1980	1,218,227	168,323	14	520,934	43	528,970
1981	931,175	133,277	14	468,358	50	329,539
1982	1,052,965	137,788	13	413,665	39	501,513
1983	1,068,903	146,198	14	452,082	42	470,623
1984	957,610	87,591	9	435,658	45	434,361
1985	1,047,445	123,916	12	445,402	43	478,127
1986	885,780	82,825	9	360,886	41	442,069
1987	1,115,304	108,644	10	471,343	42	535,317
1988	1,103,962	179,254	16	445,667	40	479,011
1989	1,183,268	145,604	12	549,038	46	488,626

Source: *Apple Market Review*, Agriculture Canada, 1986-90.

within 4-5 months of harvest; this inhibits orderly marketing in Canada and puts downward pressure on apple prices during these first months.[14] As shown in Table 3-4, supplies in storage are highest in late fall and the early winter months, just after harvesting, and lowest in the summer months.

Handling

As in the United States, storage of Canadian apples is a function of the packinghouses that handle the apples from the time they are picked. Although an estimated 200 packinghouses are equipped to handle apples, approximately 95 percent of the fresh-market apple crop is handled by about 100 packinghouses. In British Columbia, most of the packing is done by cooperatives, while in the eastern Provinces, most packinghouses are privately owned.

[14] The technology for CA storage clearly exists, but the Commission was unable to discover why it has not been widely adopted by the Canadian industry.

Grading

The grading system in Canada is based on uniformity of size and shape; minimum and maximum diameter; color; maturity; and freedom from disease, pests, or damage. Apples intended for the fresh market are graded and packaged as either Canada Extra Fancy or Canada Fancy, according to the regulations set by the Canada Agricultural Products Standards Act. Apples intended for processing are graded as Canada Commercial. Most of the Provinces have grading standards that are similar to those of the Federal Government.

The Canadian Market

Marketing and Pricing

The sale of fresh and frozen fruit in Canada is covered by Agriculture Canada under the Licensing and Arbitration Law. This law was established in 1934 and

Table 3-4
Apples: Canadian controlled-atmosphere and total storage, by Province, Nov. 1, 1989-June 1, 1990

Crop year	British Columbia	Ontario	Nova Quebec	New Scotia	Brunswick	Total
Total [1]	439,002	423,002	196,812	113,400	10,290	1,183,268
	Controlled atmosphere storage (1,000 pounds)					
1989/90						
Nov. 1	145,894	103,721	54,174	13,098	3,736	320,623
Dec. 1	148,295	97,226	55,633	10,450	3,736	315,340
Jan. 1	153,341	93,647	55,532	8,344	3,340	314,204
Feb. 1	159,078	77,529	47,226	6,020	3,252	293,105
Mar. 1	127,147	61,868	33,414	3,793	1,375	227,597
Apr. 1	108,212	44,833	19,794	3,441	604	176,884
May 1	78,387	30,814	12,183	1,475	84	122,943
June 1	40,303	15,297	5,593	1,021	0	62,214
	Total storage (1,000 pounds)					
1989/90						
Nov. 1	349,968	199,589	90,036	29,660	5,491	674,744
Dec. 1	334,807	174,505	75,365	24,783	4,870	614,330
Jan. 1	271,320	144,341	63,793	17,598	4,016	501,068
Feb. 1	249,042	102,542	50,157	11,794	3,252	416,787
Mar. 1	178,289	72,513	33,902	8,036	1,558	294,298
Apr. 1	143,289	49,855	20,060	4,787	634	218,625
May 1	104,696	32,676	12,183	3,147	84	152,786
June 1	57,237	16,627	5,593	1,705	0	81,162
	Ratio of CA storage to total apple production (percent)					
1989/90						
Nov. 1	33	24	28	12	36	27
Dec. 1	34	23	28	9	36	27
Jan. 1	35	22	28	7	32	27
Feb. 1	36	18	24	5	32	25
Mar. 1	29	15	17	3	13	19
Apr. 1	25	11	10	3	6	15
May 1	18	7	6	1	1	10
June 1	9	4	3	1	(2)	5

[1] 1989 Canadian apple crop.
[2] Not applicable.

Source: Agriculture Canada, *Apple Market Review*, 1990.

is patterned after the Perishable Agricultural Commodities Act (PACA) of 1930, which is administered by the U.S. Department of Agriculture (see discussion of PACA in ch. 2). The Canadian law is designed to ensure ethical trade practices by buyers and sellers of fruits and vegetables.

The marketing channels for apples in Canada differ among Provinces. In British Columbia, over 85 percent of the Provincial crop is sold through a grower-owned, "one-desk" sales agency known as B.C. Tree Fruits, Limited. BCTF was created in 1939 by its parent organization, the B.C. Fruit Growers Association, under Provincial legislation, to "co-ordinate the sales of their product and orchestrate shipments of fruit to distant markets."[15] In 1983, there were reportedly 2,000 members, but as of 1989, that number appears to have declined to 1,500. This agency has been identified as having "by far the most encompassing powers" of any regional apple marketing agency in Canada.[16] It has the power to set the cooperative's prices, product promotion and licensing, and the flow of information on inventories in each of the six cooperative packinghouses. The apples are pooled, then graded and priced at the packinghouse according to variety. The costs of packing, storage, and marketing are deducted from grower returns, which are based on the delivered fruit price.

Advertising allowances have also reportedly been offered to retailers who purchase apples from B.C. Tree Fruit Ltd. This program was reported to be in effect from late 1989 through early 1990. Neither the retailers nor the marketing organization would discuss this issue for the record. No other information was obtained during the course of the investigation that would reveal the extent of this marketing practice or its relationship to any other program or marketing practice.

About 70 percent of the British Columbia apple crop is sold in the fresh market. Approximately 85 percent of the crop destined for the fresh market passes through the BCTF, and about one-fourth of that amount is exported. Of the 15 percent that is not marketed through BCTF, about one-third is sold through local farmers' markets, and about two-thirds is sold independently to retailers or processors through standard marketing channels.

On average, about 30 percent of the British Columbia apple crop is sold to processors. Those growers who are members of BCTF sell their apples for processing to another cooperative organization known as Sun-Rype Products, Ltd. Sun-Rype is reportedly the largest juice manufacturer in Canada, with annual sales estimated at Can$50 million.[17] It also produces other apple products and products that use apples as one among several ingredients (e.g., fruit cocktail).

In Ontario, apples intended for the fresh market pass through the traditional marketing channels of grower-packer-wholesaler-retailer. The Ontario Apple Marketing Commission exerts some influence through these channels by suggesting minimum f.o.b. prices for fresh-market apples sold to distributors and juice apples sold to processors. About one-half of Ontario's apple crop is sold through supermarket chains. "U picks" (orchards that invite consumers to pick their own) are more important to the Ontario apple industry than they are to the British Columbia industry. Ontario sells around 40 percent of its harvest to processors and about 10 percent to export markets, primarily the U.S. market.

La Federation des Producteurs de Pommes du Quebec and the New Brunswick Apple Marketing Board have powers similar to those of their counterpart in Ontario. Both have the authority to suggest minimum prices for apples at the packinghouse level. Whereas apple processing is apparently negligible in New Brunswick, over 40 percent of the Quebec output is processed. In both Provinces, fresh-market apples travel through the traditional grower-packer-wholesaler-retailer channels.

Nova Scotia is the only apple-producing Province that does not have a grower marketing organization. Processing here uses about 50 percent of total apple production. Local farmers' markets, U-picks, and exports account for about 10 to 15 percent of annual output, with 35 to 40 percent marketed through the grower-packer-wholesaler-retailer channel.

In the market for fresh Delicious apples, the most important of these agencies is BCTF. BCTF markets about 85 percent of the Provinces's production of fresh-market Delicious apples, which in turn account for nearly 75 percent of total Canadian supply.[18] BCTF "was developed to provide coordinated services and reduce grower-to-grower competition."[19] The increased bargaining power BCTF provides to growers appears intended to counter the market power of fresh-apple buyers, which increases as one moves down the marketing chain. About 5,000 farms sell (individually or through cooperatives) to about 100 packinghouses, which in turn sell 95 percent of their output to the 4 or 5 food-store chains that dominate each region in Canada.[20] These chains, which with their smaller rivals number about 45 in the country as a whole, account for 85 to 90 percent of Canada's domestic apple sales. In addition, there are only about 70 apple-processing firms in the country as a whole, so that integration between BCTF and Sun-Rype, a British Columbia manufacturer and marketer of processed apple products, helps British Columbia growers compete in that segment of the apple market as well. Thus, through BCTF, British Columbia apple growers are integrated both horizontally into a near monopoly on British Columbia fresh-apple sales, and vertically "downstream" into export sales of fresh apples[21] and

[15] The B.C. legislation referred to here is the Natural Products Marketing Act of 1934. See *A Study of Canada's Apple Industry*, p. 9.
[16] *The Canadian International Trade Tribunal*, p. 4.
[17] B.C. Fruit Growers' Association, *Celebrating 100 Fruitful Years*, p. 12.
[18] *Apple Industry Profile*, p. 20.
[19] Ibid.
[20] The Barrie Report, p. 9, 26-27.

manufacturing and marketing of processed apple products.

Although apparently not a policy or practice of the Canadian national Government or any of the provincial governments, rebates reportedly have been offered to buyers of Canadian apples by at least one privately-owned Canadian marketing organization, B.C. Tree Fruit Ltd. These rebates are described as quantity discounts based on target amounts that are set by the marketing organization offering the rebates; such target amounts are established by variety. U.S. apple growers have expressed concern about these rebate programs, apparently fearing that payments from the government stabilization programs provide Canadian growers with a competitive advantage by allowing them to make deeper discounts than would be possible without the government programs.

The extent of this marketing practice is not known, as neither the buyers to whom the rebates have reportedly been offered nor the marketing organization would discuss this issue for the record. No other independent information has been obtained that would reveal anything more than examples of the targets and hypothetical estimates of the rebates should these targets be met or exceeded. We do know, however, that such rebates appear to operate much like quantity discounts and that such discounts are offered by many U.S. marketing organizations.

Quality of Canadian Apples

U.S. and Canadian sources have stated that the quality of Canadian apples available for sale in the Canadian market has declined in recent years. At least three reasons have been given to support this assertion.

First, because prices are said to be declining in Canada, there is reportedly a propensity to export the best of the Canadian crop to areas where market prices are higher. British Columbia, for example, ships approximately 25 percent of its crop—the majority of which are extra fancy—to the Pacific Rim, where apples are considered a specialty fruit and command a higher market price.

Second, recent Canadian studies have stated that grower returns in recent years may not have been sufficient to cover production costs. Many growers reportedly have had to find off-farm employment to supplement their income. This may contribute to a loss in the overall quality of the Canadian crop, as less time is spent on pruning, spraying, and overall care of the orchards.[22]

Third, many of the large chain grocery stores in Canada have moved toward central warehousing of their products. Central warehousing allows grocery store chains to coordinate purchasing, control inventories, and maintain consistent retail prices throughout all stores. This strategy also increases chains' bargaining power with the wholesalers so they can purchase larger volumes of apples at lower per-unit prices. However, this practice increases the amount of shipping and handling of the apples, which otherwise would be delivered directly from the wholesaler/shipper to the grocery store. This in turn reportedly has an adverse effect on the quality of apples, especially the softer varieties such as the McIntosh.[23]

Trade

Canadian imports

With the exception of 1981, Canada has been a net importer of apples for the last 15 years; imports supplied about 34 percent of apparent Canadian consumption during the study period. The United States is by far the largest foreign supplier of fresh apples to the Canadian market, with its volume share of Canadian imports increasing from 54 percent in 1986 to 79 percent in 1990 (table 3-5). These imports supplied nearly 23 percent of apparent Canadian consumption during the study period. The U.S. share of Canadian imports by value rose from 38 to 69 percent during the same period. U.S. exports of fresh apples to Canada generally have a lower unit value than those of other major foreign suppliers because of the geographic proximity of the two countries.

Trends in Canadian Imports by Variety

Like the United States, Canada does not routinely maintain data on imports of fresh apples by variety. In 1987, however, Industry, Science, and Technology Canada (IST), a Federal organization, conducted a study and found that about 60 percent of Canada's apple imports consisted of McIntosh, Red Delicious, and Golden Delicious varieties.[24] This represents a decrease in market share for these varieties from a 1980 study, which found that these varieties accounted for 70 percent of Canadian imports.[25] Another report estimated that Granny Smith apples—which are primarily from Chile, France, and South Africa—had increased their market share from around 5 percent in 1975 to over 10 percent in 1988.[26] Canada also imports Granny Smith apples from the United States, primarily from California. Such imports are said to have increased from about 2 percent of total imports from the United States in 1980 to 23 percent in 1986, according to the IST study.

Supply and Disposition of U.S. Apples in the Canadian Market

Precise and up-to-date information is not available on the varieties of U.S. fresh-apple exports to Canada or on the intended use of those apples once they reach Canada. Fresh apples which are graded and shipped to

[21] British Columbia accounted for 73 percent of Canada's apple exports in 1989 (66 percent for all of 1980-89), of which well over half were destined for the U.S. market. See Peter A. Lusztig, chairman, *Report of the Commission of Inquiry—British Columbia Tree Fruit Industry* (Vancouver: Commission of Inquiry—British Columbia Tree Fruit Industry, May 31, 1990), table 1-9, p. 21, and table 1-15, p. 30; hereafter referred to as the "Lusztig Report."

[22] The Barrie Report, p. 39.

[23] *Apple Industry Profile*, p. 27.

[24] Ibid., June 1990, p.25.

[25] Ibid., June 1990, p. 25.

[26] Ibid., table 43.

Table 3-5
Apples: Canadian imports, by principal sources, 1986-90

Source	1986	1987	1988	1989	1990
	Quantity (1,000 pounds				
United States	121,847	189,587	221,562	148,194	169,779
New Zealand	45,193	44,674	45,006	35,514	22,562
Chile	15,129	27,984	23,539	16,647	17,822
Argentina	(1)	(1)	2,400	2,511	3,847
France	16,478	15,088	1,181	363	366
South Africa	26,560	3,996	(1)	(1)	(1)
All other	1,052	2,761	168	358	189
Total	226,259	284,090	293,856	203,587	214,565
	Value (Can$1,000)				
United States	32,245	61,084	53,853	53,680	55,404
New Zealand	19,946	19,668	20,514	16,784	10,766
Chile	7,927	12,409	9,342	6,245	6,898
Argentina	(1)	(1)	1,269	1,060	1,908
France	8,322	7,544	609	186	146
South Africa	16,685	2,370	(1)	(1)	(1)
All other	712	966	81	94	69
Total	85,837	104,041	85,668	78,049	75,191
	Unit value (Can cents per pound)				
United States	26.5	32.2	24.3	36.2	32.6
New Zealand	44.1	44.0	45.6	47.3	47.7
Chile	52.4	44.3	39.7	37.5	38.7
Argentina	(2)	(2)	52.9	42.2	49.6
France	50.5	50.0	51.6	51.2	39.9
South Africa	62.8	59.3	(2)	(2)	(2)
All other	67.7	35.0	26.3	26.3	36.5
Average	37.9	36.6	29.2	38.3	35.0

[1] Negligible trade reported from this source.
[2] Not applicable.

Source: *Apple Market Review*, 1986-90.

the Canadian market in tray-packed cartons or retail-sized bags are believed to be sold exclusively in the fresh market. Such shipments are believed to have accounted for more than 85 percent of total Canadian imports of U.S. apples in recent years.

Apples shipped in bulk are believed to account for 12 to 15 percent of total U.S. apple exports to Canada in recent years. A 1988 study by Agriculture Canada revealed the following with respect to the end use of U.S. apples shipped in bulk to Canada in 1987 and 1988 (in thousands of pounds):

End use	1987	1988
Processing	9,830	11,602
Repack	9,705	7,050
Juice/bulk	9,325	9,082
Total	28,860	27,738

[1] Not available.

Some fresh apples shipped to Canada in bulk (repack) are sorted and packaged for retail sale by the wholesaler/distributor in Canada. In 1988, for example, 25 percent of all U.S. apples received by Canada in bulk were repacked for retail sale. This percentage varies widely by Province, ranging from 5 percent in British Columbia (where provincially grown apples account for most of the fresh market) to 48 percent in Ontario, where most of the Canadian apple processors and most of the surrounding areas (both in the United States and Canada) produce apples suitable for processing.

Canadian tariff treatment

Fresh apples imported into Canada are free of duty from all sources. Appendix E lists the Harmonized Tariff Schedule numbers and brief descriptions for apples and apple products entering Canada. In July 1988, Canada initiated an antidumping case with respect to imports of fresh whole Delicious, Red Delicious, and Golden Delicious apples from the United States. On December 22, 1988, Revenue Canada Customs and Excise (Revenue Canada) made a final determination of dumping against such imports from the United States. The Canadian International Trade Tribunal[27] conducted simultaneous investigations to determine wheth-

[27] The final determination was actually made by the Canadian Import Tribunal on Dec. 22, 1988, which was replaced by the Canadian International Trade Tribunal on Dec. 31, 1988. The latter organization therefore continued the inquiry and issued its finding on Feb. 3, 1989.

er material injury had occurred to the Canadian industry producing the subject goods. On February 3, 1989, the Tribunal ruled in the affirmative under subsection 43(1) of Canada's Special Import Measures Act.

Revenue Canada ruled that U.S. Delicious apples sold in Canada should have a normal value, per 42-pound box, of f.o.b. US$11.87 for apples from regular storage and f.o.b. US$12.23 for apples from CA storage. Individual antidumping duties are equal to the amount by which U.S. f.o.b. prices fall below these normal values. As warranted, or within approximately 12 to 18 months of the final determination, Revenue Canada is to conduct a review of the case; it is due to report its findings in late summer 1991 as to whether the normal values currently in effect remain appropriate.

In 1988, Canada collected Can$19,000 in duties on shipments to Canada of Delicious apples valued at Can$196,000 that had f.o.b. prices below the normal values. In 1989, Can$9,000 in duties was collected on approximately Can$100,000 in such shipments.[28] Although precise data are not available, these shipments amounted to a negligible portion of total U.S. shipments of all Delicious apples to Canada. That is, the bulk of U.S. shipments of these varieties either met or exceeded the threshold f.o.b. price.

Nontariff Requirements

Most complaints from U.S. apple shippers exporting to Canada center on the packaging and labeling requirements for fresh-market sales in Canada. These complaints concern primarily the lack of lead time in the publication of these requirements, rather than the requirements themselves. According to industry officials and shippers, such labeling and packaging requirements have been issued yearly (over the last few years) with little lead time, making it difficult to purchase prestamped bags and boxes, since such materials become useless upon issuance of new requirements U.S. growers, packers, and brokers agree they would prefer to have packaging requirements change less often.

Also, Canada's uniform minimum-size requirements restrict imports of U.S. apple varieties not grown commercially in Canada. The Canadian Government has reportedly rejected U.S. proposals to allow certain varieties not grown in Canada to bypass Canada's minimum-size requirements. The basis for this rejection is the assumption that most apple varieties are readily substitutable and can impact the price of other varieties. An example is the U.S. Granny Smith and the recently developed Canadian Shamrok, which are difficult to distinguish visually.[29]

Exports

Although Canada is a net importer of apples, its exports have remained static at approximately 10 to 15 percent of its fresh crop every year. Major export markets in 1990 were the United States at 67 percent, the Pacific Rim at 17 percent, and the United Kingdom at 12 percent of total Canadian exports. British Columbia generally accounts for 55 to 70 percent of Canadian exports, most of which are Red Delicious. Ontario is the second-largest exporting Province, accounting for 15 to 25 percent of annual export volume. Exports from the remaining Provinces generally account for 5 percent of the total and are usually of the McIntosh variety. Table 3-6 summarizes Canadian exports, by-Province and by country of destination, during 1986-90.

Canadian Government Programs

Introduction

Government involvement in the tree fruit industry in Canada occurs at both the Federal and Provincial levels. Current programs for apple growers are of three types: direct, indirect, and nonfinancial.[30] Direct programs, as the name implies, provide growers with payments that supplement their income directly. Such programs include the National Tripartite Price Stabilization Plan (NTPSP), The Agricultural Stabilization Board, Farm Income Insurance, and Crop Insurance, as well as several other programs discussed later. Indirect programs reduce growers' costs for such things as irrigation and storage; the industry as a whole, not just the grower, benefits from these programs. These programs occur mainly at the Provincial level through such programs as the Canadian Agri-Food Development Initiative. Nonfinancial programs provide services such as research and development and training, as well as social service tax exemptions and gasoline tax exemptions for farm vehicles. These programs occur at both the Federal and the Provincial level. According to the Lusztig Report,[31] the majority of programming at both levels of government appears to be ad hoc in response to short-term needs rather than part of a long-range, coordinated plan. This section reviews the programs of these three types at both governmental levels known to be ongoing in Canada at this time.

Federal Programs

National Tripartite Price Stabilization Plan

The purpose of the NTPSP is to mitigate losses of income due to market risks by stabilizing the price of a specified commodity. The NTPSP derives its authority from Section 13 of the Agricultural Stabilization Act. To achieve its purpose, the program requires that the Federal Government, the Provincial governments, and participating producers each contribute to a stabilization fund. In periods of low market returns, support payments from this fund are made to farmers on the basis of output. Participation in the program is voluntary. The costs of the program are shared by the Federal Government, the Provincial Governments, and those producers who elect to participate. The Government of Canada has entered into agreements with the Provinces

[28] Telephone conversation with Revenue Canada.

[29] Conversation with George Myles, U.S. embassy staff, Ottawa, April, 1991.

[30] The Lusztig Report, p. 63.

[31] Ibid., p. 63.

Table 3-6
Apples: Canadian exports, by Province and by destination, 1986-90
(In 1,000 pounds)

Province/destination	*1986*	*1987*	*1988*	*1989*	*1990*
Nova Scotia	3,519	1,274	2,750	15,068	2,326
United States	152	0	220	12,500	1,358
United Kingdom	34	1,134	2,407	2,521	889
All other	3,333	140	123	47	79
New Brunswick	16	63	165	619	640
United States	16	54	152	604	640
St. Pierre	0	9	13	15	0
Quebec	12,410	3,447	8,255	6,351	11,054
United States	8,793	3,339	7,122	6,065	10,714
United Kingdom	3,307	108	1,132	261	339
All other	310	0	1	25	1
Ontario	43,328	43,770	51,511	39,413	48,475
United States	32,887	32,713	40,698	31,667	44,507
United Kingdom	8,596	9,548	9,176	7,424	3,624
All other	1,845	1,509	1,637	322	344
British Columbia	64,644	60,110	116,573	84,153	78,258
United States	41,345	31,196	80,695	45,847	37,208
Pacific Rim[1]	11,885	19,312	18,020	23,750	23,982
United Kingdom	9,552	7,128	15,376	12,356	11,888
All other	1,862	2,474	2,482	2,200	5,180
Canada total	123,917	108,664	179,254	145,604	140,753
United States	83,193	67,302	128,887	96,683	94,427
Pacific Rim	11,885	19,312	18,020	23,750	23,982
United Kingdom	24,592	17,918	28,091	22,562	16,740
All other	4,247	4,132	4,256	2,609	5,604

[1] Includes Hong Kong, Malaysia, Singapore, Taiwan, Thailand, Fiji Island, Tahiti, Philippines, China, Indonesia, and New Zealand.

Source: *Apple Market Review*, various issues, 1987-90.

for the following commodities: hogs, lambs, beef, sugar beets, white pea beans, other dry edible beans, and apples.

The National Tripartite Price Stabilization Program (NTPS) for apples came into effect on July 1, 1987. It is administered by a committee with nine members—three Federal, three Provincial, and three producer representatives. Administrative costs are borne by the two levels of government.

The support price for apples is equal to 85 percent of the indexed moving average price, which is derived by taking a representative sample of the market for apples and calculating an inflation-adjusted, national average market price for the preceding 10-year period. A payment representing the difference between the calculated support price and the realized market return to participating growers is triggered if the support price is higher than the average market price for that year. The Stabilization Committee may also opt to issue an interim payment before the end of the year, provided that it does not exceed 75 percent of the estimated total payment for that year.

Payments to apple growers were made for 1987, 1989, and 1990. In 1987, the average annual market-price was Can 20.42 cents per kilogram, falling Can 3.55 cents short of the support price of Can 23.97. The Stabilization Committee approved a payout of Can 1.96 cents/kilogram after an interim payment had been paid out in June 1987 at Can 1.59 cents/kilogram. With about 2,500 Canadian growers enrolled in the program, total payouts for crop year 1987 were Can$15.5 million. The growers received just less than half that amount (Can$7.6 million) in the interim payment of June 1988 (crop year 1987/88). Although total payouts to growers were not to exceed stabilization funds, the payout did exceed the fund balance by about Can$3.6 million in 1988.[32]

The NTPS did not trigger a payment on the 1988 crop. However, for the 1989 crop, the total NTPS payment was Can$16.6 million, with the support price equaling Can 23.91 cents/kilogram, and the market price Can 19.92 cents/kilogram. Grower participation in the NTPS during this crop year rose to 2,772 out of the approximately 8,000 Canadian growers. This was due in part to the termination of certain Provincial programs, such as the apple stabilization program that had been available to growers in Ontario.

Agricultural Stabilization Board

The Agricultural Stabilization Board, a Federal direct assistance program, was created in 1958 and operates under the authority of the Agricultural Stabilization Act. According to the preamble in the Agricultural Stabilization Act, the main objective of the board is to stabilize "the prices of agricultural commodities in order to assist the industry of agriculture to realize fair returns for its labor and investment, and to maintain a fair relationship between prices received by farmers and the costs of the goods and services that they buy, thus to provide farmers with a fair share of the national income."[33] The board accomplishes this objective primarily by making deficiency payments to producers for specified commodities, reducing the risk of short-term income losses owing to falling commodity prices and/or rising input costs.

[32] Agriculture Canada, 1988 News Release, M-42/11.
[33] *Annual Report of the Agricultural Stabilization Board* (March 31, 1989).

The Agricultural Stabilization Board[34] has issued deficiency payments to apple growers a number of times since 1975. The following tabulation, from data of the Agricultral Board, summarizes the payments made to the Canadian apple industry under the Agricultural Stabilization Act (in millions of Canadian dollars).

Year	*Amount*
1975	13.3
1977[1]	3.5
1980	19.0
1982	21.2
1983	5.3
1984	7.2
1987[2]	5.3

[1] Quebec only.
[2] Special assistance to Red Delicious growers.

Although the creation of the NTPS for apples reduced the payments made directly to apple growers by the Agricultural Stabilization Board, one special payment was made in 1987 in the form of "special assistance" to Red Delicious apple growers throughout Canada. The Agriculture Minister stated that assistance additional to that received by growers of other types of apples was required for Red Delicious apple growers because of extraordinarily low prices that year. He added that while overall national apple prices fell from Can 30 cents in 1986 to Can 20 cents/kilogram by 1987, Red Delicious apple prices fell to as low as 4 cents/kilogram.[35]

Provincial Programs

British Columbia

Since the early 1970s, the Federal Government and the Provincial governments have supported the British Columbia fruit tree industry through a variety of programs designed to stabilize prices and grower income. According to the Lusztig Report, between 1974 and 1989, the British Columbia tree fruit industry received approximately Can$350 million in financial assistance and about Can$95 million in research and extension programs.

Orchardists having a "farm classification" obtain indirect benefits. A farm classification is conferred on a property by the B.C. Assessment Authority when the owner can show a minimal level of agricultural production and sales. The classification then continues as long as there is no change in ownership and certain minimum requirements are met. These minimum requirements include sales of Can$1,600 of primary agricultural products and production requirements according to farm size. In return for meeting these requirements, holders of a farm classification gain varying tax concessions, combined with preferential land assessment. Packinghouse facilities owned by growers on a cooperative basis do not qualify for these benefits.

[34] The Agricultural Stabilization Board is a Schedule II departmental corporation under the Financial Administration Act within Agriculture Canada. See *Annual Report of the Agricultural Stabilization Board* (March 31, 1989).
[35] Agriculture Canada, 1988 News Release, M-42/11.

The Agricultural Land Development Assistance Program (ALDA) is a Provincial program providing both direct and indirect assistance designed to encourage permanent land development and the adoption of new technology. In to order participate in this program, farmers state their intention to engage in one of several eligible projects, including land clearing, fencing, well drilling, and improvements in irrigation and soil quality. Farmers approved for the project are eligible to receive a fixed-rate loan at one-half the bank prime rate for up to Can$75,000 per farm. In 1989-90, there was about Can$15 million in outstanding loans, at an average rate of 6 percent.[36]

Another combination direct and indirect program, known as the Orchard Renovation Program, was introduced in 1986 and is designed to improve fruit quality and yields over the long term. As with the ALDA program, apple and other fruit-tree orchardists can borrow money at one-half the bank prime rate. One intention of the program is to help improve the management of higher density plantings of smaller (dwarf) trees. At the end of fiscal year 1988-89, loans under this program totaled Can$800,000.[37]

The Farm Income Insurance (FII) program, a direct assistance program established in 1973, is one of British Columbia's major farm support programs. Paid for equally by farmers and the Provincial government, the FII provides indemnity payments to growers when market returns (including monies received from other federal and Provincial support measures) fall below a calculated cost-of-production figure. In the case of apple growers, industry sources indicate that this program has been somewhat controversial in Canada because payments to British Columbia apple growers have reportedly been very high. In fact, the Council of Industries reports that the average annual FII payment to apple growers during the 1980s was Can 2.4 cents/pound. This payment usually amounted to about 25 percent of the average market return during the period. Since 1985, coverage has been restricted to apples of Grade C or better to exclude culls; however, it is generally assumed that about 80 percent of all apples qualify for FII coverage.

The British Columbia Crop Insurance Program, another direct assistance program, was established to reduce the need for ad hoc assistance through the stabilization of income fluctuations stemming from crop reduction as the result of natural problems. The purchase of coverage by fruit growers is optional. When purchased, Crop Insurance contracts run continuously year to year unless canceled by the grower. Premiums are billed at the time the contract is written, but are payable at the end of the year after harvest. Premiums do not cover operating or carrying costs on the program deficit; these expenses are met by the Federal Government and Provincial governments. Furthermore, the Federal Government and Provincial governments share equally in paying 50 percent of the growers' premiums (25 percent each). For the year ending March 1990, British

[36] The Barrie Report.
[37] Ibid.

Columbia's Provincial costs for the Crop Insurance Program totaled over Can$750,000.[38]

The Agri-Food Regional Development Subsidiary Agreement (ARDSA), a combination indirect and non-financial program, began in 1985 as an extension of the General Development Agreement (GDA) of 1974 between the governments of Canada and British Columbia. The GDA was developed to increase productive employment and balanced development in British Columbia. The ARDSA portion of the GDA is divided into three main parts—the Productivity Enhancement Program, the Resource Development Program, and the Commodity Development Program. The Productivity Enhancement Program assists the Province's commercial agriculture in becoming more competitive by supporting market and new product development, technology development, and educational programs. The Resource Development Program strives to maintain and improve soil and water resources through support of regional irrigation systems, drainage outlets, and soil and water conservation; many projects under this program are eligible for payment of up to 75 percent of total costs. The Commodity Development Program provides interest-free loans (with the applicant providing up to 25 percent of equity funding) for such things as new or expanded market facilities; the estimated total value of all approved projects under this program through December 1989 was over Can$78 million.[39]

Assistance to the apple industry is also provided in a less direct form through several other programs and institutions. For example, the Summerland Research Station's primary role is to provide technical assistance to the British Columbia fruit industry. Its assistance to British Columbia apple growers includes support for the development of new varieties of fruit, new storage methods, and improved pest and disease control. British Columbia's Ministry of Agriculture and Fisheries provides similar extension services through training programs and advice available through various tree fruit specialists, horticulturists, and economists.

Ontario

Ontario reportedly had a price stabilization program in place for apples until 1987, when the NTPSP was instituted. At that point, the Provincial government became a signatory to the NTPSP, and growers were given the option of remaining in the Ontario program 1 additional year or transferring immediately to the NTPSP. In 1988, the Provincial program was terminated. One Provincial assistance program still exists for selected crops, including apples under which growers received Can$494 per hectare for their 1989 apple crop.

Proposed Programs

A perceived decline of apple prices in Canada, lower grower returns, quality problems, and a shifting marketing structure have caused concern among Canadian apple producers. To address these problems, a coalition of Canadian apple-producing organizations[40] is currently proposing the formation of a fresh-apple national marketing agency (app. C). Such an agency would have authority to regulate apple production and prices, as well as to restrict imports. The proposed agency would restrict supply, with marketing and import quotas determined by a committee composed of consumers, retailers, wholesalers and packers, and producers. Provincial governing boards and growers would be subject to penalties if they failed to comply with the marketing quota. Under such an agency, prices for fresh apples would be established on the basis of the cost of production, but also reflecting the market preference for grades and varieties. Under the current proposal, imports, which account for a substantial portion of Canadian retail sales of fresh apples, would have volume controls, probably based on the 5-year average for the years 1985-1989, inclusive.

The Canadian National Farm Products Marketing Council (NFPMC), a Federal agency established in 1972 to oversee Canada's national marketing agencies, held a series of required public hearings throughout the summer of 1990 to assess the amount of support for the proposed marketing agency throughout the country. In August 1990, the U.S. Government, representing U.S. apple exporters, who supply 73 percent of Canadian apple imports, formally stated its opposition to the formation of an apple-marketing agency in Canada.[41] Following the last of the hearings on September 7, 1990, the Council delivered its report to the Minister of Agriculture in March 1991. The Council concluded that the majority of apple producers support the establishment of an agency with marketing powers. Alternative policy mechanisms, according to the NFPMC Report, would not achieve the same levels of stability and returns. Consequently, the Council recommended that a national marketing agency for apples be formed under section 17 of the Farm Products Marketing Agencies Act (FPMAA).

The national marketing agency proposed by the NFPMC would be known as the Canadian Apple Marketing Agency, and would have the powers allowed by section 22 of the FPMAA, along with the ability to determine the quantity of fresh apples to be marketed. This power would extend to all Canadian apples going to the fresh market. The Council further specifically recommended that the apple marketing agency have a board of directors consisting of one member from each of the participating Provinces and at least two members from other interests, such as consumers.

Recent Studies

Of the three recent studies examined, only the Barrie Report endorses a supply-controlled marketing plan as an answer to the problems of Canadian apple pro-

[38] The Lusztig Report, p. 71.
[39] The Lusztig Report, p. 73.

[40] Nova Scotia Fruit Growers Association, The New Brunswick Apple Marketing Board, La Federation des Produceurs de Pommes du Quebec, The Ontario Apple Marketing Commission, and The British Columbia Tree Fruit Marketing Board.
[41] Conversation with George Myles, American Embassy staff, Ottawa, Ontario, April, 1991.

ducers. The other two studies—the British Columbia Study and *An Economic Analysis of Issues in Marketing Canadian Apples*[42]—conclude that a supply management policy would not correct the industry's difficulties and would not confer benefits to apple producers in proportion to the consumer cost of the program. Instead, these two studies recommend new management practices and an increase in the quality and diversity of fruit. The Barrie Report and the Guelph Study do agree that there is a world oversupply of apples. In particular, they observe that the United States, especially the State of Washington, produces a surplus of apples.

Barrie Report

The National Farm Products Marketing Council (the Council), which was established in 1972 to oversee Canadian agencies administering marketing plans, published in March 1991 its *Report of Inquiry* (the Barrie report) concerning the establishment of a national marketing agency for apples. The Council, which is required under the Farm Products Marketing Agencies Act (the Act) to conduct an inquiry on proposed marketing agencies, gathered data for this report from a series of hearings conducted throughout the summer of 1990.

Based upon the responses of those who testified in the hearings and from additional data gathered, the Council in its Report concluded that a majority of apple producers do support the establishment of an agency with marketing powers. Alternative policy mechanisms, according to the Council Report, would not achieve the same levels of stability and returns. Consequently, the Council recommended that a national marketing agency for apples be formed under Section 17 of the Farm Products Marketing Agencies Act (FPMAA).

The national marketing agency proposed by the Council would be known as the Canadian Apple Marketing Agency, and would have the powers allowed by Section 22 of the FPMAA along with the ability to determine the quantity of fresh apples to be marketed. This power would extend to all Canadian apples going to the fresh market. The Council further recommended that the apple marketing agency have a board of directors consisting of one member from each of the participating provinces and at least two members from other interests such as consumers.

[42] L. Martin, C. Gaston, and E. Goddard, *An Economic Analysis of Issues in Marketing Canadian Apples* (University of Guelph, April 15, 1990); hereafter referred to as the "Guelph Study."

British Columbia Study

The British Columbia Study was conducted by a Commission of Inquiry at the request of the British Columbia government in December 1989. The goal of the Commission was to present a comprehensive report on the financial condition and future viability of the tree fruit industry in British Columbia. This Study was also to include the constraints and opportunities affecting the industry, as well as policy options for improving self-reliance, growth, and development.

Along with an overview of the state of the apple industry in the Province and beyond, the Study examined the effects of Federal Government and Provincial government support. It concluded that although this support has exceeded Can$350 million—adjusted for inflation in 1988 dollars and including direct and indirect support—over a 20-year period, the average tree grower still is in "difficult" circumstances owing to declining returns.

Concerning the possibility of benefits from supply management, the Study recommends that the Provincial government oppose such a policy for apples. It states that such a policy would burden consumers without adequately addressing the problems of the British Columbia apple industry. The Study suggests programs to improve the quality and diversity of fruit in order to improve the financial situation of British Columbia growers. Specific programs recommended are Provincial replanting programs, nursery supply programs, and programs to develop better market information. Finally, the Study suggests greater decentralization of the British Columbia marketing structure.

The Guelph Study

The purpose of the Guelph Study, was to determine whether a supply management program would help the income problems of Canadian apple growers. Using the financial records of 12 growers in Ontario and 12 growers in British Columbia, the Guelph Study develops alternative supply management programs based on differing assumptions and using an econometric model.

The Guelph Study model suggests a reduction in production of 17 percent, with a resulting increase in revenue of 6.6 percent. In addition, it concludes that although supply management would increase returns of all growers, the major benefits would accrue to those least in need and would not make all operations profitable. Under the Guelph scenario, although consumer costs would be 5 to 10 times greater than gains to growers, import quota holders would be accruing benefits of Can$9 to $44 million per year, and grower production quotas would assume values of between Can16 and 50 cents/pound. The Study suggests that improved management practices could have a greater effect on profitability than supply management.

Chapter 4
Competitive Conditions in the U.S. and Canadian Industries

Introduction

In addition to the vagaries of the weather, the apple industries of the United States and Canada are facing some common "problems." These problems include rising world production; trade in new and highly popular varieties; advances in varietal development and storage technology; and extended periods of low returns, particularly in some regions.

The effects of these problems for producers are especially strong in Canada, particularly in British Columbia, traditionally the largest apple-producing Province. As discussed in chapter 3, years of declining real prices and rising costs, together with rising imports from the United States and third-countries, recently have led to industry calls for a national apple-marketing scheme, that is, a Government marketing board empowered to reduce competition (through domestic supply management and import controls), set "fair" prices, and control other aspects of the Canadian apple market.[1] As noted earlier, almost all Canadian apples are already either marketed by Provincial marketing entities or are subject to minimum sales prices set by Provincial Boards and agencies. However, claims of inter-Provincial dumping and a general lack of marketing coordination among the Provinces[2] led to the proposal for a national marketing agency.

The competition faced by British Columbia is strongest from the United States, not from other Provinces. The industry in Washington State is the principal U.S. competitor with British Columbia for a number of related reasons. One is geographical proximity, which means that the two industries have roughly the same soil, weather, and climate conditions, and they face similar transport costs to the urban markets of the United States and Canada. In addition, the two industries produce much the same varieties of apples, notably the Red Delicious—the most widely consumed fresh apple in the North American market. Thus, not only do growers in the two locations face similar supply-side forces, but they also compete head-on in the marketplace.

Despite these similarities, there are also differences between the two industries. For example, their respective industry structures are different; the several thousand largely independent Washington growers compete with a Provincial sales agency that controls most of the British Columbia apple supply. The orchards themselves differ dramatically in size, and for the much smaller British Columbia orchards, this can increase their operating costs per unit of output relative to those of their rivals to the south. Government involvement also differs between the two countries: the more extensive Canadian involvement may raise production costs (i.e., regulation of pesticides and other inputs), yet it keeps growers in business with substantial financial support.

This chapter examines competitive conditions affecting the U.S. and Canadian apple industries with the focus on Washington State and British Columbia. The next section briefly reviews some measures of competitiveness. Succeeding subsections examine costs of production, price levels and trends, and factors affecting prices. The chapter ends with a discussion of the key determinants of competitiveness.

Measures of Competitiveness

As noted in chapter 1, the measures of competitiveness used in this study are market share and profitability. In this study, the concept of market share applies to the U.S. market, the Canadian market, and the combined U.S.-Canadian market. Market share is measured in terms of volume, not value, of apples produced by each industry and consumed in each market. An industry's competitiveness is a matter not only of its ability to win a share of the market, but also a function of profitability. Public data on recent industry profitability are scarce for both the U.S. and Canadian industries. Trends in revenues and costs, changes in the selling prices of apples or the prices or productivity of inputs, and increasing or decreasing financial support from the Government, are all factors that can produce changes in profitability. To the extent the data allow, these factors and their influence on apple industry competitiveness are discussed in this chapter.

Market Share

Changes in market shares held by the U.S. and Canadian apple industries are particularly useful indicators of the competitive position of those industries. Determinants of market shares (e.g., production costs) can be used to evaluate the economic condition of the U.S. industry compared with that of its Canadian rival. A set of market-share measures is presented in table 4-1.

U.S. growers' share of U.S. apparent consumption of apples (all varieties and uses) remained fairly steady in recent years, ranging from a low of 96.2 percent in 1986 to a high of 97.4 percent in 1990. U.S. imports from Canada stayed within a similarly narrow range of 0.9 to 1.3 percent of U.S. apparent consumption during 1986-90. As a share of the Canadian apple market (apparent consumption), domestic Canadian supply grew from about 73 percent in 1986 to 82 percent in 1990, and U.S. exports rose from 12 percent in 1986 to 14 percent in 1990. Although in absolute terms production grew in both countries, the higher rate of growth in the smaller Canadian industry enabled Canada to both maintain a steady share of the U.S. market and increase its share of its own domestic market. Sharply lower Canadian imports from third countries enabled U.S. exporters to increase their share of the Canadian market.

[1] The proposal for a Canadian marketing board is presented in app. C.
[2] The Barrie Report, p. 25.

Table 4-1
Apples: U.S.-Canadian selected measures of market and industry shares, 1986-90

Item	1986	1987	1988	1989	1990
All apples:					
U.S. utilized production (million pounds)	7,933	10,742	9,131	9,966	9,703
Washington (million pounds)	3,007	4,451	3,549	4,599	(1)
Canadian production (million pounds)	886	1,115	1,104	1,183	1,115
British Columbia (million pounds)	266	437	378	439	346
Total (million pounds)	8,819	11,857	10,235	11,149	10,818
Apparent consumption:(2)					
U.S. (million pounds)	7,703	10,477	8,645	9,617	9,141
Canada (million pounds)	1,029	1,290	1,219	1,241	1,189
Share of U.S. apparent consumption of apples accounted for by—(percent)					
U.S. domestic supply	96.2	97.2	96.9	97.3	97.4
Imports from Canada	1.3	0.9	1.2	1.1	1.2
Share of Canadian apparent consumption of apples accounted for by—(percent)					
Canadian domestic supply	73.3	78.0	75.9	83.6	81.9
Imports from United States	12.2	14.7	18.2	11.9	14.3
Canadian share of volume of U.S. exports (percent)	17.2	19.9	16.3	19.1	21.1
U.S. share of volume of Canadian exports (percent)	67.1	61.9	71.9	66.4	67.1
Canadian share of volume of U.S. imports (percent)	33.8	32.3	39.6	41.2	48.6
U.S. share of volume of Canadian imports (percent)	53.8	66.7	75.4	72.8	79.1
Fresh-market apple shipments:					
U.S. (million pounds)	4,532	5,610	5,240	5,875	(1)
Washington (million pounds	2,308	2,859	2,673	3,295	(1)
Canadian (million pounds)	525	644	658	634	(1)
British Columbia (million (pounds	(1)	270	255	285	(1)
Total (million pounds)	5,057	6,254	5,898	6,509	(1)
U.S. share (percent)	89.6	89.7	88.8	90.3	(1)

[1] Not available.
[2] Apparent consumption is defined as: all apples harvested plus all apples imported under HTS 0808.10 minus all apples exported under HTS 0808.10.
Source: Compiled from tables in chapter 2 and 3 of this report.

In the combined U.S.-Canadian market for fresh apples (excluding imports from third countries), the U.S. share has also been large, and (through 1989) stayed within a narrow range of 89.6 to 90.3 percent. Because of rising U.S. production, U.S. growers held their share of the U.S. fresh-apple market (apparent consumption) fairly constant during 1986-90, with only slight annual fluctuations around an average 97 percent (by volume).

In general, the data in table 4-1 suggest that production from both nations' industries has contributed to the region-wide increase in apple consumption during the 1980s, and that the U.S. industry continues to enjoy the dominant role in both the U.S. market and the combined U.S.-Canadian market. Relative shares of the overall market have not changed much, but trade has expanded because production volumes are up, which have pushed out imports from third-country sources, especially in Canada.

Financial Conditions

An industry's profitability is a familiar indicator of its competitive position relative to that of its foreign rivals. For example, an increase in net returns can be a sign of improved efficiency (which reduces costs) or marketing of higher quality products (which increases revenues) or of increased demand. Likewise, a decline in net returns may be attributable to a failure either to take full advantage of new technology or to produce and market products consumers want. No detailed financial information on either the U.S. or Canadian industry was made available to the Commission. However, constructed cost data and average market returns for Canadian apple growers were available and are summarized in the following tabulation (cost and value in Canadian cents per pound):[3]

[3] *Apple Industry Profile*, table 17. Additional financial data are contained in the Lusztig Report. See also the following discussion of costs of production for cost data for Washington State and British Columbia growers (supplied by Canadian sources).

	1980	1981	1982	1983	1984	1985	1986	1987	1988
Output value[1]	7.0	10.7	8.2	9.0	9.5	11.0	13.0	9.4	11.6
Input costs[1]	7.8	11.0	10.6	10.5	12.0	11.3	13.9	11.5	14.7
Ratio of value to costs[1]	0.90	0.97	0.77	0.86	0.79	0.97	0.94	0.81	0.79

[1] Calculated from unrounded data.

According to these cost constructed estimates and market price data, in no year since at least 1980, did the typical Canadian apple grower earn a positive return. Indeed, on average during the period, the estimated input costs exceeded output value by about 13 percent.

Costs Of Production

General

Production cost is the single most important factor influencing the competitive positions of U.S. and Canadian apple growers. Along with demand, this factor largely explains trends in output, prices, and trade. Moreover, it has been at the heart of import-injury complaints—most notably the Canadian Government's decision in 1988 to impose an antidumping duty on Canadian imports of U.S.-produced Delicious apples; such apples were found by Canada to be sold below the "normal" cost of production[4] (See the discussion in ch. 3).

The costs of operating apple orchards, as with any tree crop, involve substantial up-front expenses and relatively low maintenance costs thereafter (through the economic life of the trees). Therefore, because of the high ratio of fixed to total annual costs and biological constraints, domestic apple supply is highly price-inelastic in the short run (i.e., between seasons). Prices can vary within a wide range, in the short run, without causing annual output to change significantly. In fact, prices may have to remain low for several seasons to induce a decline in the volume of apples harvested; conversely, high prices over time may result in an increase in apple production after a delay of several seasons (the time it takes to set up new orchards or expand existing ones).

In the apple industry, the high fixed investment in orchards and the low marginal cost of producing apples keep growers in business even when prices decline. According to one source, fixed costs are on the order of 55 percent of total production costs for a mature stand.[5] Such costs include (in addition to buildings and machinery) orchard establishment costs, such as upgrading of the irrigation system, ground preparation, and (re)planting, all amortized over the life of the orchard. Once the orchard is in place, annual maintenance costs (such as labor, sprays, and fertilizer) are the principal economic consideration for the grower; prices must at least cover these costs or the grower will stop harvesting the apples. Since, by one source, variable costs make up 45 percent of total costs,[6] the price can fall considerably before output will cease. As a result, the apple industry can and does sustain extended periods of poor returns before individual growers will exit in large numbers. This inflexibility exacerbates the problem of low prices for growers, since a long time can elapse before growers exit, market supply declines, and prices rise again.

Cost studies

Although production costs vary from grower to grower depending on management practices, orchard siting, and climate, a general conclusion from several studies noted below is that, on average, apple production costs are probably higher in British Columbia than in the State of Washington.

A variety of studies report estimates of apple production costs for representative orchards.[7] Tables 4-2 and 4-3 summarize the comparisons in the University of British Columbia and Lusztig studies, respectively. These studies estimate that total production costs range between Can 1.2 cents and Can 2.3 cents per pound—about 10 to 20—percent higher in British Columbia than in Washington State. The Washington advantage holds for both variable and fixed costs. The Lusztig Report attributes the difference mainly to higher interest rates in British Columbia and to economies of scale in the larger orchards of Washington. The UBC Study makes a similar finding, but reports it differently, noting higher costs per acre for depreciation of machinery, which implies economies of scale, and higher opportunity costs, i.e., higher interest rates on invested capital.

The B.C. Fruit Growers Association (BCFGA) in testimony before the Canadian Tribunal in February 1991, cites higher costs for labor, interest on capital and operating loans, agricultural chemicals, fuel, land, and irrigation water in British Columbia.[8] According to the testimony, British Columbia apple growers "produce fruit in a high cost of production area. Farm labor is expensive and scarce . . . Strong labor legislation in British Columbia works to the disadvantage of our industry."[9] BCFGA's testimony went on to state that estimates of labor rates in Washington State are only 60 percent of those paid by British Columbia growers. However, the UBC Study reports lower per acre labor costs in British Columbia and nearly the same labor costs per pound (table 4-2).

International Monetary Fund (IMF) statistics support the contention that interest rates are higher in Canada. Nominal interest rates are higher in Canada; in

[4] The normal value is defined in the Canadian Special Imports Measures Act as the constructed (estimated) cost of production plus a reasonable profit, defined in the act as 8 percent. Amy L. Sparks et al., *Apple Import Demand: Four Markets for U.S. Fresh Apples* (Commodity Economics Division, Economic Research Service, USDA). Agriculture Economic Report No. 641, Dec. 1990, p. 3. See also, *Fresh, Whole, Delicious, Red Delicious, and Golden Delicious Apples Originating In or Exported From the United States of America* (Findings of the Canadian International Trade Tribunal in Inquiry No. CIT-3-88 Under Section 42 of the Special Import Measures Act, Feb. 3, 1989).

[5] The Lusztig Report, table 7-1, p. 110.

[6] Ibid.

[7] See, for example, the Lusztig Report, and George Kennedy and Mei Li Lee, "Cost of Producing Apples in B.C. Versus Washington State," University of British Columbia, Department of Agricultural Economics, Discussion Paper No. 85-04 (August 1985); hereafter referred to as the "UBC Study."

[8] B.C. Fruit Growers' Association, *Brief to the Canadian International Trade Tribunal With Respect to the Competitiveness of the Canadian Fresh and Processed Fruit and Vegetable Industry* (February 15, 1991), p. 3; hereafter referred to as the BCFGA Brief.

[9] The Barrie Report.

Table 4-2
Apple production costs: UBC comparison of British Columbia with Washington State, 1985

Item	British Columbia Value		Washington Value		Washington cost as a share of B.C. cost
	Can$	Percent	Can$	Percent	Percent
	Per acre				
Depreciation	835	22.1	751	17.9	89.9
Opportunity cost	494	13.1	445	10.6	90.1
Insurance, nonland taxes	218	5.8	305	7.3	139.9
Repairs & maintenance	68	1.8	87	2.1	127.9
Fuel & lubricant	16	0.5	2	0.1	12.5
Labor	799	21.2	1,010	24.1	126.4
Materials and service	956	25.3	1,019	24.3	106.6
Tax & rent on land	185	4.9	357	8.5	193.0
Overhead and interest	202	5.4	222	5.3	109.9
Total cost/acre	3,773	100.0	4,198	100.0	111.3
	Per pound				
Depreciation	0.030		0.020		66.7
Opportunity cost	.018		.012		66.7
Insurance, nonland taxes	008		.008		100.0
Repairs and maintenance	.002		.002		100.0
Fuel & lubricant	.001		(1)		(2)
Labor	.029		.027		93.1
Materials and service	.034		.028		82.4
Tax & rent on land	.007		010		142.9
Overhead and interest	.007		.006		85.7
Total cost/pound	.136		.113		83.1

[1] Less than 0.0005 Canadian dollars.
[2] Not available.

Source: George Kennedy and Mei Li Lee, "Cost of Producing Apples in B.C. Versus Washington State, University of British Columbia, Department of Agricultural Economics, Discussion Paper No. 85-04, August 1985, tables 6 and 7.

Table 4-3
Apple production costs: Comparison of British Columbia with Washington State, 1990

Density	Yield	Variable cost		Fixed cost		Total cost	
		B.C.	Wash.	B.C.	Wash.	B.C.	Wash.
trees per acre	pounds per acre	Canadian dollars per pound					
202	32,000	0.067	0.059 (88)	0.080	0.075 (94)	0.147	0.134 (91)
382	35,000	.063	.055 (87)	.081	.072 (89)	.143	.127 (89)
518	45,000	.054	.047 (87)	.064	.056 (88)	.119	.103 (87)
670	45,000	.054	.046 (85)	.067	.058 (86)	.121	.104 (86)
726	45,000	.054	.046 (85)	.061	.054 (89)	.115	.100 (87)
808	45,000	.052	.045 (87)	.062	.057 (92)	.113	.101 (89)

Note: Washington costs as a percentage of B.C. costs are in parentheses.

Source: Peter A. Lusztig, commissioner, *Report of the Commission of Inquiry—British Columbia Tree Fruit Industry* (Vancouver: Commission of Inquiry—British Columbia Tree Fruit Industry, May 31, 1990), table 7-9, p. 118.

recent years, short-term lending rates have run about 3 to 4 percentage points higher, and long-term bond rates have run about 1 to 3 percentage points higher. With similar inflation rates in both countries, real interest rates are higher in Canada as well.[10] The Lusztig and UBC studies also assume higher interest rates in Canada.

Chemical costs have been cited as a source of competitive disadvantage for Canadian growers,[11] although they are a small share of total orchard costs.[12] Canadian growers appear to be disadvantaged in the two main factors that determine chemical costs per unit of apple output: the cost of a unit of chemicals, and the orchard density (trees per acre). The prices of several chemicals are reportedly higher in Canada than in the United States as a result of Canada's Pest Control Products Act and Regulations, which restrict or ban certain chemicals Canadian growers seek to use.[13] Also, even if the product is registered in Canada, the Pest Control Products Act and Regulations prohibit a British Columbia grower from purchasing it in the United States where it may cost less. For example, the pesticide Diazinon reportedly sells for CAN$5.80 per pound in British Columbia, or 22 percent more than in Washington State. The herbicide Gramoxone reportedly sells for CAN$16.70 per liter in British Columbia, or 20 percent more than in Washington State.

However, even if chemical prices were the same, the cost of applying chemicals would probably still be higher in Canada because of the lower density of the average Canadian orchard. That is, the ratio of treated trees per unit of chemicals applied is lower (and at constant chemical prices, the chemical cost per pound of harvested apples is higher) in Canada than in the United States.[14]

Fuel is another area BCFGA cites as a source of competitive disadvantage for Canadian growers.[15] BCFGA attributes this disadvantage to the relatively high Canadian tax rate on fuel and the tax rebate received by U.S. growers for off-road use. According to both the Lusztig and UBC studies, estimated fuel costs are higher in British Columbia than in Washington State. Another source, the Canadian Task Force on Competitiveness in the Agri-Food Industry, found that fuel prices in Canada may be 60 percent higher. Although fuel cost differences may not be substantial in terms of production cost (table 4-2), the differences may more significant in terms of distribution costs.

Land costs are also frequently cited as a competitive disadvantage for British Columbia.[16] Apparently, the Okanagan region is a popular tourist area, and land costs are being bid up for nonagricultural reasons; such pressures are small in Washington State. This is a problem mainly if new orchards are being planted or growers are adding to their existing orchards.[17] Grower profitability is affected mainly in that it may be more profitable to sell orchard land for residential purposes than to stay in the apple-growing business.

The British Columbia and Canadian Governments operate a number of programs, detailed earlier in this report, that tend to keep orchards and orchardists in business that might otherwise leave under market pressures. According to one source, these programs, which are intended to stabilize grower incomes and preserve agricultural land from urban encroachment, are largely responsible for the higher overall average costs in British Columbia.[18] The Lusztig Report states that income stabilization programs that attempt to cover all costs, such as British Columbia Farm Income Insurance, "fail to encourage farmers to control costs and discourage exit from the industry of those growers whose costs really have risen above market returns, thereby thwarting the natural process of industry renewal."[19] The British Columbia Agricultural Land Reserve limits the conversion of agricultural land to other purposes.[20] This helps to keep inappropriately sited land in apple production, resulting in lower yields and higher costs per pound, as well as a higher proportion of apples suitable only for processing.[21]

The conclusion that costs are higher in Canada than in the United States was supported by BCFGA in testimony before the Canadian Trade Tribunal in February 1991.[22] It was suggested that—

> part of the reason for the low farmgate return is that input costs tend to be high relative to some of our competitors. Another very real concern is the lack of availability of some farm inputs for B.C. horticulture which are readily available to our U.S. counterparts . . . Many of our problems have been a long time in the making and in some cases have been exacerbated by government policy.[23]

It is very likely that the higher production costs in British Columbia can be attributed in part to British Columbia and Canadian policies that retard the incentive for growers who are less efficient or who farm less suitable land to leave the industry.

[10] The real long-term rates may in fact be nearly the same. Real interest rates cannot be directly measured since they involve the difference between nominal interest rates and expected inflation. For short-term rates, actual inflation is a good proxy for expected inflation. The relation between recent inflation experience and that expected over the life of a long-term bond is less clear. The higher Canadian rates may represent an inflation premium relative to the United States because the inflation came down slower in Canada in the 1980's, and inflation might be expected to have the same pattern in the future.

[11] Ibid.

[12] The Lusztig Report (table 7-2) reports that chemicals account for an average of 5 percent of total cash costs.

[13] The BCFGA Brief, p. 8.

[14] The Lusztig Report, p. 111.

[15] The BCFGA Brief, pp. 11-12.

[16] The BCFGA Brief, p. 13. See also the UBC Study, p. 11, and the Lusztig Report, p. 111.

[17] The adverse effects of rising land costs could be mitigated to some extent by replanting orchards with dwarf trees. Although this is a widespread practice in the U.S. industry, Canadian growers have yet to replant more than a minor share of their acreage with dwarf trees.

[18] Staff telephone conversation with Dr. Desmond O'Rourke, professor of Agricultural Economics, Washington State University, Apr. 1, 1991.

[19] The Lusztig Report, p. 67.

[20] Ibid., p. 68.

[21] Staff conversation with Dr. O'Rourke, Apr. 1, 1991.

[22] The BCFGA Brief.

[23] Ibid., p. 2.

Price Levels and Trends

This section describes the trends in prices at the retail level and the grower level in both the United States and Canada. This section also examines some of the reasons for the trends and price differentials.

Grower returns are significantly higher in Washington State than in British Columbia, although the difference narrows when Government payments to growers are included.[24] However, BCFGA asserts that "even with support from federal and/or provincial financial programs, [British Columbia] growers almost always come up short of their cost of production." The Lusztig Report confirms that "prevailing [British Columbia] producer prices during 1989, according to the evidence submitted, averaged about 9.5 cents per pound, while average costs of production was [sic] in the range of 14 to 15 cents per pound."[25]

The difference in market returns between British Columbia and Washington State has exceeded 5 cents (U.S.) per pound in recent years. The Lusztig Report estimates that during 1980-88, average net returns for British Columbia growers were 50 percent of average net grower returns in Washington State.[26] The difference is attributed primarily to lower returns paid by the marketing agencies, primarily B.C. Tree Fruits, Ltd. (BCTF) for fresh apples, and Sun-Rype, Ltd. for processing apples, to growers. According to the Lusztig Report, these lower returns are a result of higher marketing and packinghouse costs.[27]

[24] See tables 4-2 and 4-3, and the Lusztig Report, p. 111
[25] The BCFGA Brief.
[26] The Lusztig Report, table 2-4, p. 53.
[27] Ibid., ch. 2.

United States

Grower-Level Prices

Season-average grower prices in U.S. apple markets have generally declined in recent years; in 2 of the last 3 years of the study period, for example, prices reached their lowest levels in nearly a decade. Table 4-4 presents data illustrating trends in prices during 1970-89. Prices for both the U.S. industry as a whole and the Washington State industry are presented, and apples for the fresh market are distinguished from those destined for processing. Individual varieties are not broken out; rather, the prices are averages for all varieties combined.

The data in table 4-4 show that in most years Washington State growers receive a lower price for their apples sold in the fresh fruit market than do growers in other parts of the country. At the same time, average prices—combining both fresh and processed sales—received by producers in Washington are slightly greater than those received by other producers. Several factors appear to contribute to this. First, fresh Red Delicious apples tend to have a lower unit value than other varieties. Second, growers in Washington State must sell their apples over a larger geographic area than do other growers and therefore incur greater transportation costs. Third, a greater percentage of Washington apples are sold in the fresh fruit market.

Table 4-4
Apples: U.S. and Washington State season-average grower prices, 1970-89[1]
(Cents per pound)

Year	United States			Washington State		
	Fresh	Processing	All	Fresh	Processing	All
1970	6.53	1.96	4.54	6.15	1.45	5.07
1971	6.97	2.17	4.92	7.22	2.66	6.20
1972	8.92	3.14	6.43	9.37	3.89	8.21
1973	10.70	6.25	8.80	9.40	5.30	8.40
1974	11.10	4.81	8.40	10.70	3.80	9.30
1975	8.80	2.84	6.50	7.00	3.22	6.10
1976	11.50	5.40	9.10	10.10	6.05	9.20
1977	13.80	6.10	10.60	14.70	7.20	13.00
1978	13.90	5.85	10.40	13.70	8.50	12.60
1979	15.40	5.70	10.90	15.50	5.70	12.70
1980	12.10	4.20	8.70	9.70	3.85	8.20
1981	15.40	5.10	11.10	13.40	3.50	10.90
1982	13.20	5.90	10.00	10.70	6.05	9.70
1983	14.80	5.20	10.50	13.80	4.72	11.40
1984	15.50	5.60	11.10	13.30	4.78	11.10
1985	17.30	5.15	11.70	20.40	5.25	17.00
1986	19.10	5.80	13.40	18.60	4.78	15.50
1987	12.70	3.97	8.60	10.40	1.99	7.30
1988	17.40	6.15	12.70	16.10	4.35	13.00
1989	13.40	5.40	10.20	11.90	3.33	9.30

[1] Commercial crop in orchards of 100 or more bearing trees.

Source: National Agricultural Statistics Service, U.S. Department of Agriculture.

Retail Prices

Table 4-5 and figures 4-1a (Northeast), 4-1b (North Central), and 4-1c (West) show comparisons of retail prices for fresh apples in three regions of the United States during 1980-89. On a nominal basis, retail prices for fresh apples rose (somewhat irregularly) in all three regions during the decade. However, after adjusting for inflation, real prices in the Northeast and North Central regions remained almost unchanged over the long run, although there were wide year-to-year swings. In the West region, prices declined by 2 percent per year on average.

From month to month within a season, retail prices follow the same trend followed by grower prices (figure 4-2). However, over the past several seasons, the spread between retail and grower-level prices haswidened (figure 4-3). This is particularly true in the Northeastern and North Central regions of the United States, where the retail-grower price spread grew by about 6 and 4 percent per year, respectively, during the 1980s.[28] The West region has not been immune, however; there, the price spread grew by 2 to 3 percent per year during the same period. According to one source, the increase in the West region price spread would have been greater but for recent consumer concerns over alar.[29] Such concerns reportedly reduced apple demand, particularly for fresh Red Delicious apples; the resulting drop in retail prices closed much of the retail-grower gap in the 1988/89 crop year.

Table 4-5 indicates that the rising retail-grower price spread is due mainly to a growing spread between wholesale and grower prices, as there has been no discernable trend in the spread between retail and whole

[28] These growth rates were calculated on the basis of season-average retail and grower prices reported in Joan Pearrow, "Washington Red Delicious Apples: Fresh Market Prices and Spreads, 1980/81-88/89," in *Fruit and Tree Nuts: Situation and Outlook Yearbook*, TPS-250, USDA, Economic Research Service (August 1989), pp. 89-93.

[29] Boyd M. Buxton, "Economic Impact of Consumer Health Concerns About Alar on Apples," in *Fruit and Tree Nuts: Situation and Outlook Yearbook*, TPS-250, USDA, Economic Research Service (August 1989), pp. 85-88.

Table 4-5
Apples: Fresh Red Delicious, season average retail and wholesale prices, nominal and inflation-adjusted,[1] by region, 1980-89

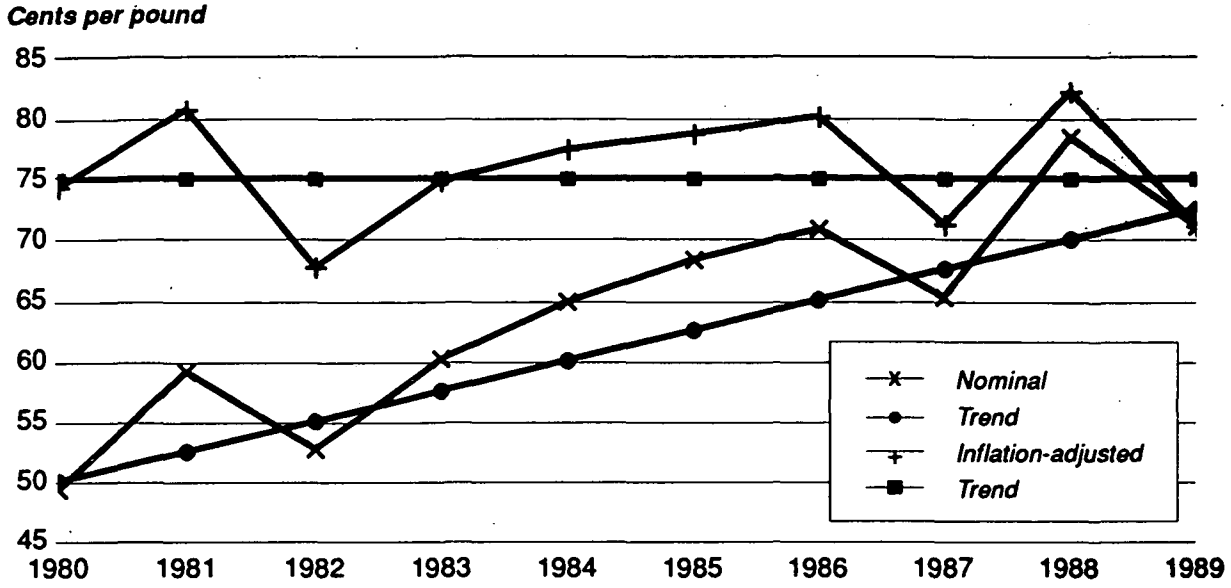
(Cents per pound)

	Northeast[2]		North Central[3]		Western[4]	
Year	Nominal	Inflation-adjusted	Nominal	Inflation-adjusted	Nominal	Inflation-adjusted
RETAIL						
1980	49.38	74.31	51.62	77.68	46.71	70.30
1981	59.17	80.71	62.81	85.68	59.33	80.94
1982	52.74	67.77	53.86	69.21	50.67	65.11
1983	60.12	74.85	61.76	76.89	53.02	66.01
1984	64.86	77.40	66.69	79.59	60.36	72.03
1985	68.31	78.72	64.69	74.55	67.98	78.34
1986	70.83	80.14	71.36	80.73	69.05	78.12
1987	65.29	71.26	65.88	71.91	53.95	58.89
1988	78.48	82.26	72.93	76.44	61.79	64.76
1989	71.10	71.10	64.90	64.90	53.36	53.36
WHOLESALE						
1980	30.76	46.29	30.95	46.56	26.60	40.03
1981	44.90	61.25	45.07	61.48	43.38	59.18
1982	37.93	48.74	31.93	41.08	33.17	42.62
1983	37.57	46.78	36.86	45.89	35.52	44.22
1984	49.43	58.99	41.95	50.06	44.98	53.68
1985	48.74	56.17	46.86	54.00	45.95	52.95
1986	45.74	51.75	45.43	51.40	44.76	50.64
1987	33.43	36.49	35.21	38.43	34.31	37.45
1988	44.26	46.39	39.93	41.85	40.07	42.00
1989	33.95	33.95	34.05	34.05	33.33	33.33

[1] Inflation-adjusted data are expressed in 1989 dollars.
[2] Red Delicious apples in the Northeastern region, weighted by monthly arrivals of all Washington apples at New York City.
[3] Red Delicious apples in the North Central region, weighted by monthly arrivals of all Washington apples at Chicago.
[4] Red Delicious apples in the Western region, weighted by monthly arrivals of all Washington apples at Los Angeles.

Source: Prices from USDA, Economic Research Service (ERS), *Fruit and Tree Nuts: Situation and Outlook Yearbook*, TFS-250 (August 1989), pp. 90 and 93, and ERS current computer printout; Consumer Price Index used for deflating from U.S. Department of Labor, Bureau of Labor Statistics.

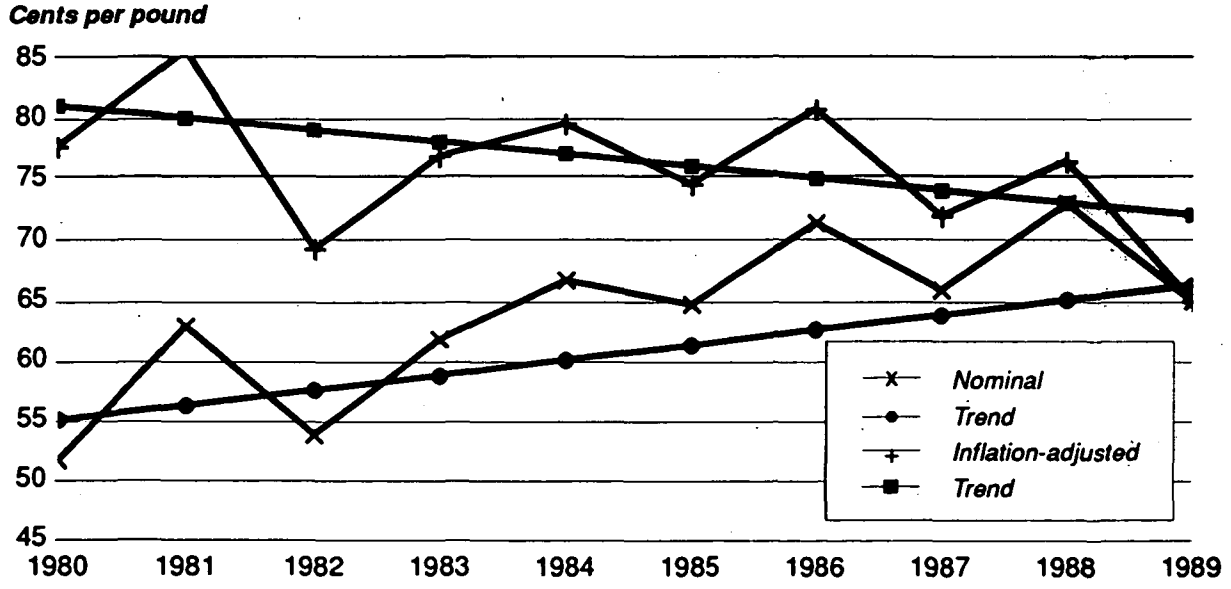
Figure 4-1a
Fresh red delicious apples: season-average retail prices, nominal and inflation-adjusted by region, 1980-89



Northeast Region

Source: Ecoonomic Research Service, USDA.

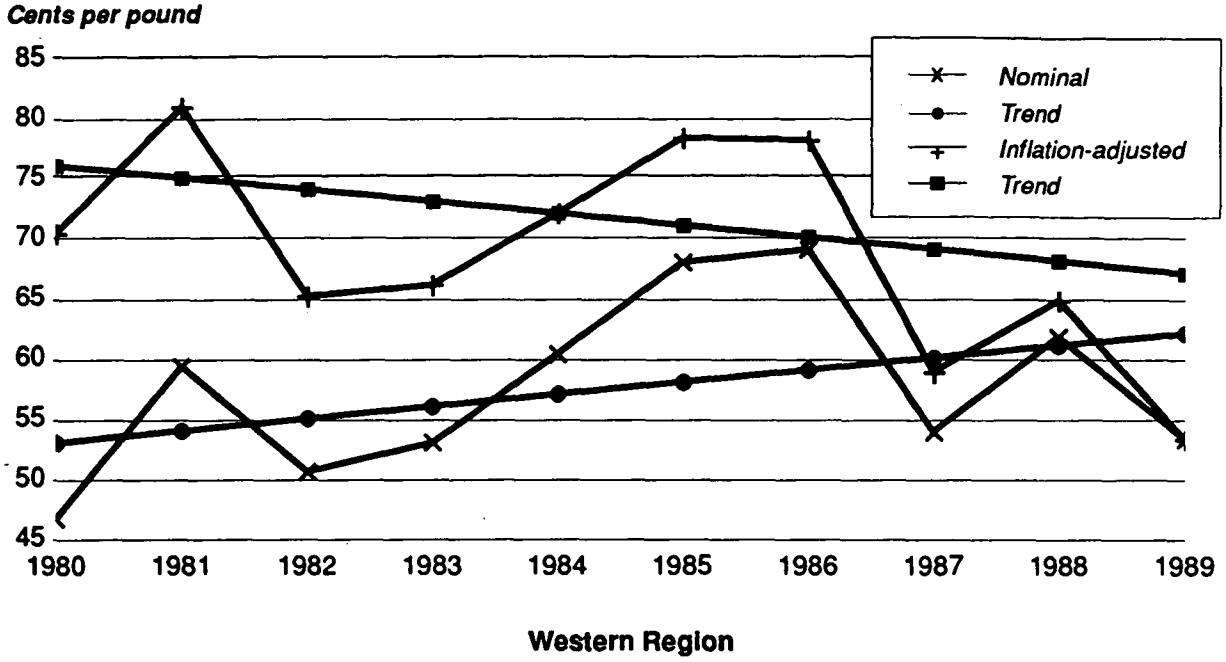
Figure 4-1b
Fresh red delicious apples: season-average retail prices, nominal and inflation-adjusted by region, 1980-89



North Central Region

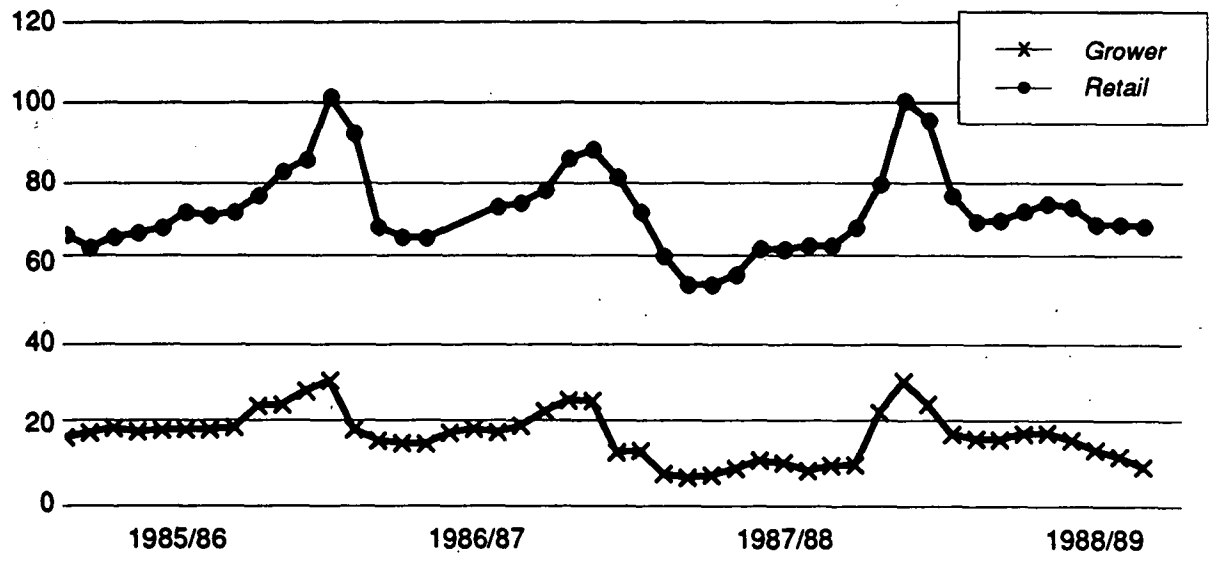
Source: Ecoonomic Research Service, USDA.

Figure 4-1c
Fresh red delicious apples: season-average retail prices, nominal and inflation-adjusted by region, 1980-89



Source: Ecoonomic Research Service, USDA.

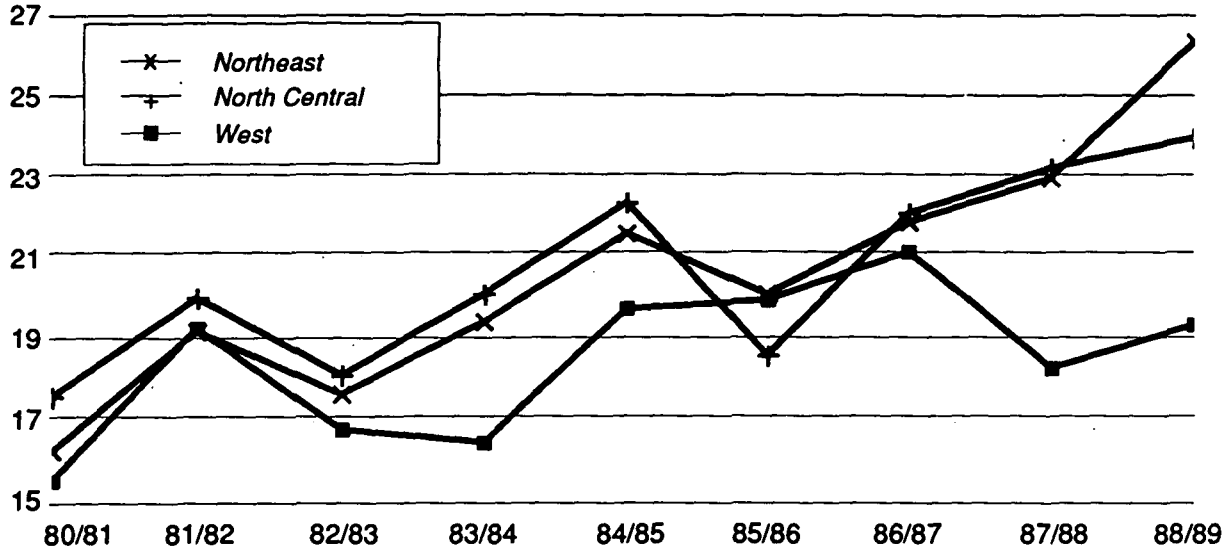
Figure 4-2
Fresh red delicious apples: U.S. monthly retail and grower prices, 1985/86-88/89 by region, 1980-89



Source: Economic Research Service, USDA, August 1989, and Washington States Department of Agriculture.

Figure 4-3
Fresh red delicious apples: retail-grower price margins, 1980/81-88/89

Dollars per bushel



Source: Ecoonomic Research Service, USDA, August 1989.

sale prices. Factors that account for a wholesale-grower price spread mainly include the cost of such wholesalers' services as grading, packing, and transportation to retail markets. The 4- to 6-percent rate of increase in such costs suggests that general inflationary pressure is the most logical explanation for the growing price spread in recent years; Commission staff has not uncovered any other information that would explain this growing spread.

Canada

Prices received by Canadian growers have followed trends similar to those in the U.S. market, reaching recent lows in 1987 and 1989 (table 4-6). Nationwide, prices fell to Can 9.12 cents per pound in 1989, about 11 percent below the 1981-88 average of Can 10.24 cents, and 30 percent below the record high of Can 13.03 cents in 1986. In British Columbia, the decline was even greater: 1989 prices fell to Can 7.54 cents per pound, about 15 percent below the 1981-88 average of Can 8.89 cents, and 43 percent below the record high of Can 13.18 cents in 1986.

When expressed in U.S. dollars (table 4-6), the declines are smaller because changes in the relative value of the U.S. and Canadian dollars erased some of the trend in local currency. Converted to U.S. dollars, prices received by growers in Canada in 1989 declined by only 3 percent from the 1981-88 average, and by 18 percent from the 1986 high. The corresponding declines for British Columbia growers are 8 and 33 percent, respectively.

The Canadian prices expressed in U.S. dollars can be compared with the prices received by U.S. and Washington growers as shown in table 4-4 (see also fig. 4-4a and 4-4b). Prices received by British Columbia growers in every year are significantly below those received in Washington State (an average of 42 percent lower during 1981-89); in both regions, these prices are mainly for Red Delicious apples destined for the fresh market. Prices received nationwide, however, are not as directly comparable because of the different mixes of varieties (a large U.S. share of Granny Smiths, for example); for the apple-growing industry as a whole, nationwide average prices are consistently lower in Canada than in the United States (an average of 28 percent lower during 1981-89).

Two factors that help explain recent changes in apple prices are the price elasticity of demand for apples and the trends in prices of other fruits that consumers may consider substitutes for apples. The price elasticity of demand measures the proportional change in the quantity of apples demanded by consumers in response to a proportional change in apple prices; that is, it indicates the relative responsiveness of prices and quantities. Also, changes in prices of apple substitutes affect apple prices by inducing consumers to reduce their demand for apples if prices of substitutes fall, which puts downward pressure on apple prices (and vice versa if prices of substitutes rise).

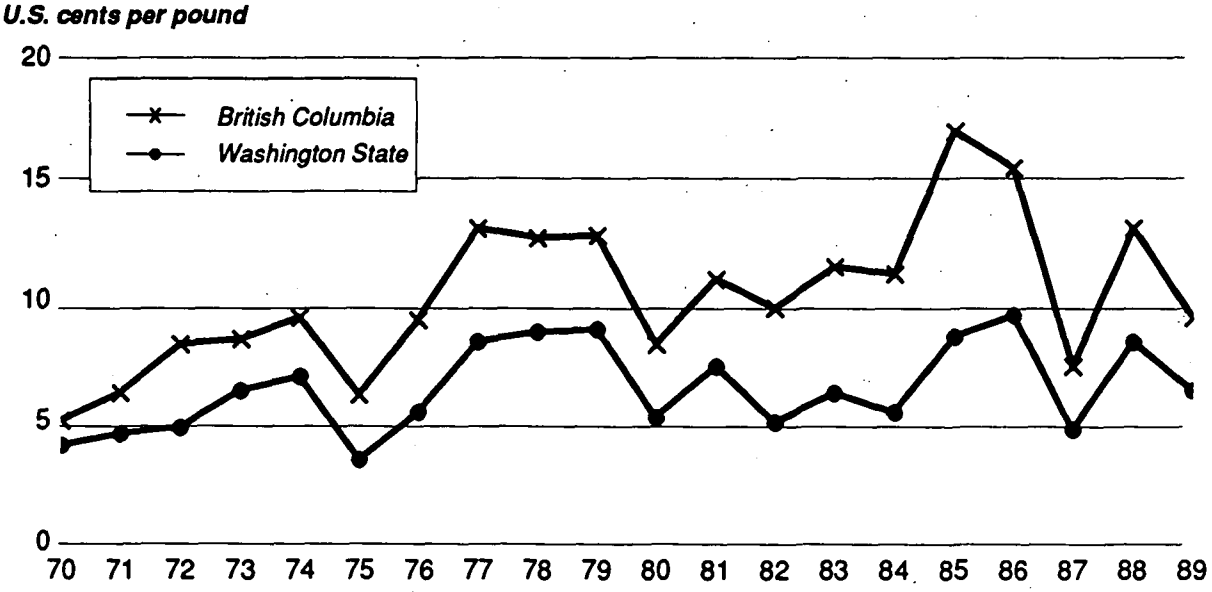
In the case of the price elasticity of demand for apples, one source reports that it is -0.72 at the retail

Table 4-6
Apples: Season-average grower prices, British Columbia and Canada, 1970-89

Year	British Columbia	Canada	British Columbia	Canada
	Canadian cents per pound		U.S. cents per pound	
1970	4.22	3.41	4.04	3.26
1971	4.58	3.08	4.53	3.05
1972	4.73	4.29	4.77	4.33
1973	6.28	7.96	6.28	7.96
1974	6.71	6.02	6.86	6.16
1975	3.50	4.14	3.44	4.07
1976	5.35	6.74	5.42	6.84
1977	8.90	7.66	8.38	7.21
1978	9.99	9.39	8.77	8.24
1979	10.31	10.12	8.81	8.64
1980	6.13	7.05	5.24	6.03
1981	8.86	10.71	7.39	8.93
1982	6.22	8.18	5.04	6.63
1983	7.64	9.02	6.20	7.32
1984	7.09	9.51	5.47	7.34
1985	11.60	11.04	8.50	8.08
1986	13.18	13.03	9.49	9.38
1987	6.27	9.36	4.73	7.06
1988	10.23	11.07	8.31	9.00
1989	7.54	9.12	6.37	7.70

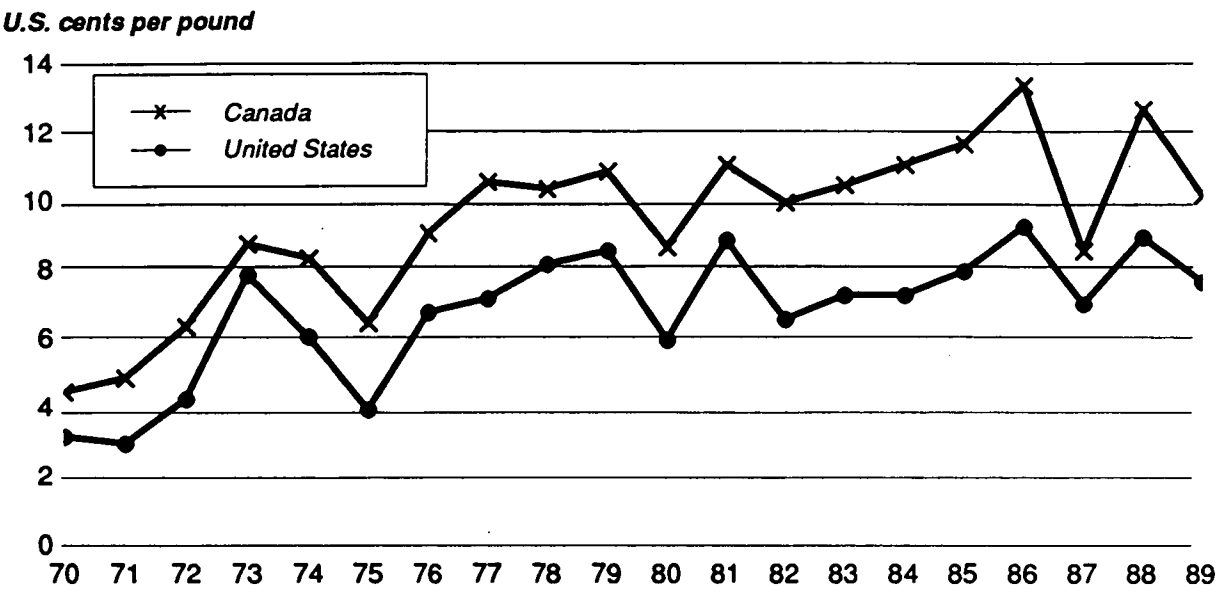
Source: Average prices for 1970-87 derived from Elizabeth Campbell, *Apple Industry Profile*, Ottawa: National Farm Products Marketing Council (June 1990), tables 1 and 4; 1988-89 data derived from Statistics Canada, *Fruit and Vegetable Production*, #22-003 (December 1990), table 2. Exchange rates used to obtain prices in U.S. dollars are annual averages published by the Board of Governors of the Federal Reserve System.

Figure 4-4A
Apples: Season-average, grower prices, Washington and British Columbia, 1970-89



Source: National Agricultural Statistics Service, USDA and Agriculture Canada.

Figure 4-4B
Apples: Season-average, grower prices, United States and Canada, 1970-89



Source: National Agricultural Statistics Service, USDA and Agriculture Canada.

level and -0.68 at the grower level,[30] suggesting that apple demand is price-inelastic; that is, a 1-percent increase in price causes the quantity of apples demanded (at constant prices) to drop by about 0.7 percent. Given that supply is perfectly inelastic, then another way to interpret this is that prices are highly responsive to changes in supply. That is, if the quantity of harvested apples sent to market increases by 1 percent, price will fall by more than 1 percent, and conversely, a drop in quantity supplied by a given proportion would cause a proportionally greater rise in price.

Fruits that may be considered substitutes for apples include cherries, pears, peaches, prunes, and plums. Data on recent trends in the prices of these substitute fruits are presented in table 4-7. Although these are grower-level prices, they probably reflect similar trends in retail prices for the fresh product. During 1985-89, prices for most of these fruits declined: the most rapid decline (as a proportion of the 1985-89 average) was for fresh Bartlett pears in Washington, the price for which fell by about 3 cents per pound annually, or about 23 percent of the 1985-89 average price. The price for fresh Bartlett pears in the United States as a whole also declined sharply, by an average of 2 cents per pound annually, or 17 percent of the 1985-89 average price. However, the prices for pears other than for the fresh market increased so much that the weighted-average price for all pears actually increased slightly during 1985-89. Prices for sweet cherries, Washington-grown peaches, and prunes and plums also declined during 1985-89. The decline in the prices of these substitutes may also have had a depressing impact on the price of apples.

Summary of Costs and Prices

It appears apple growers in Canada have suffered from low or negative returns for several years. It also appears that the causes of lower grower returns in Canada stem from both sides of the financial coin—low revenues and high costs. A recent Canadian Government investigation of issues relating to the marketing of fresh apples in Canada found that—

> the major contributing factor to [the growers' poor financial situation] is deemed to be low prices for apples in recent years. Additional factors include lack of co-ordinated interprovincial marketing of apples, an imbalance between buyers and sellers of apples, decreasing quality of apples during periods of low prices and other considerations, notably, retail prices and margins and import controls.[31]

[30] P.S. George and G.A. King, "Consumer Demand for Food Commodities in the United States with Projections for 1980," Giannini Foundation Monograph 26 (March 1971); cited in William G. Tomek and Kenneth L. Robinson, *Agricultural Product Prices*, 2nd ed. (Ithaca: Cornell University Press, 1981), p. 69. A similar estimate (-0.83) for the Canadian market was arrived at by Larry J. Martin et al., "An Economic Analysis of Issues in Marketing Canadian Apples," The George Morris Centre, University of Guelph (Ontario), Working Paper WP90/ 02 (June 1990), p. 32. In sharp contrast with the George and King study, D.B. Suits ("Agriculture," p. 6) suggests that U.S. apple demand is moderately elastic (-1.27). Without access to the methods underlying these estimates, which study is more reliable is not certain.

[31] The Barrie Report, p. 19.

Table 4-7
Selected fruits: season-average prices received by growers, Washington State and U.S. average, 1985-89

Commodity	1985	1986	1987	1988	1989	Average annual change as a percent of price during 1985-89[1]
	Cents per pound					Percent
Sweet cherries:						
Fresh, Washington	71.5	57.0	56.5	66.0	47.45	-6.6
Fresh, U.S. average	59.6	54.7	47.65	55.0	46.6	-4.9
All, Washington	51.75	47.55	46.15	49.15	40.1	-4.6
All, U.S. average	39.95	41.25	37.4	39.4	35.6	-2.6
Bartlett pears:						
Fresh, Washington	19.45	20.55	9.35	9.5	9.45	-22.7
Fresh, U.S. average	14.95	17.55	8.7	9.25	9.05	-16.9
All, Washington	12.4	12.0	18.8	11.1	13.1	0.4
All, U.S. average	11.8	11.4	17.15	12.2	13.3	2.9
Peaches:						
All, Washington	23.8	23.1	16.5	19.3	25.5	-0.2
All, U.S. average	15.0	14.6	13.8	15.6	16.3	2.4
Prunes and plums:						
All, Washington	11.0	18.3	6.7	9.35	8.1	-13.8
All, U.S. average	11.5	12.9	6.95	9.15	10.45	-5.7

[1] Average annual change in price during 1985-89 divided by average price during 1985-89.

Source: National Agricultural Statistics Service, USDA, *Noncitrus Fruits and Nuts Summary* (annual).

The Barrie Report claims "ample evidence ... of apples selling below their cost of production."[32] In 1989, Canadian growers received an average of Can 9.5 cents per pound for their apples, compared to estimated production costs of Can 14 to 15 cents per pound. The Report also notes that "la Federation des producteurs de pommes du Quebec indicated that although current cost of production approximated 17 cents per pound, price received was only around 7 cents per pound."[33]

Finally, as noted above, the various government programs intended to stabilize apple prices tend to keep orchards and orchardists in business who might otherwise leave the market.[34] Such production will add to the total supply of apples and thereby tend to reduce the price of apples generally, and since such orchards will tend to be relatively high cost, keeping these facilities in production will increase average costs.

Key Determinants of Competitiveness

This chapter has examined the competitive conditions in the U.S and Canadian apple industries. While the two industries have essentially maintained their respective market shares, it seems apparent that the Canadian industry has experienced lower net returns, or profitability, over the last several years. This section notes those determinants of financial condition which appear to be key to the differences between the two industries.

[32] Ibid., p. 24.
[33] Ibid., p. 21.
[34] See p. 4-5.

Technology

At least two important technological factors influence the relative competitiveness of the U.S. and Canadian industries, CA storage capacity and the development of dwarf trees.

The more widespread use of CA storage in the United States than in Canada enables U.S. producers to withhold a larger share of their production from the market and distribute it more evenly over the marketing year. As a result, prices are stabilized, and markets are more orderly.

In addition to creating a surplus on the market early in the marketing season, the lack of sufficient CA capacity in Canada helps create a supply shortage later in the season that must be filled by imports. The wide seasonal swings in domestic supply contribute to the problem of low grower returns. The early surplus depresses prices for the bulk of the Canadian crop, while the relatively high import supply later in the year keeps prices down for that share of supply held in CA storage. Most of the annual Canadian imports from the United States (presumably held in CA storage) are shipped later in the season when the Canadian domestic supply is depleted. This competitive disadvantage for Canada is likely to decline if CA capacity is increased, particularly in British Columbia.[35]

The development of dwarf and semidwarf trees has reduced the acreage needed to produce a given volume of apples and reduced the per-pound cost of such inputs as chemicals and labor. Dwarf trees are closer together,

[35] *Apple Industry Profile*, p. 12.

so more apples are grown per acre than with the larger standard trees; moreover, because dwarfs are shorter than standard trees, it takes less labor to harvest them. As a result, on a per-acre basis, revenues are higher and costs are lower. The U.S. industry has taken greater advantage of this new technology than the Canadian industry, as indicated by the data in earlier chapters showing a greater number of trees per acre in the United States. However, through such Canadian Government programs as ALDA and the Orchard Renovation Program (se ch. 3), future Canadian plantings of dwarf trees are likely to increase.

Quality

Although there are varietal differences, as discussed in Chapters 2 and 3, between the U.S. and Canadian crops, qualitative differences are one of the more significant competetive factors. These differences affect grower returns in two ways. First, for apples destined for the fresh market, the greater the proportion of apples meeting the higher grades, the greater the returns to the grower. For example, the following tabulation shows relative prices during the 1989/90 marketing season for apples sold in north central Washington State (free-on-board prices per box):[36]

Extra Variety	*Fancy*	*Fancy*	*Difference*
Red Delicious	$9.80	$8.50	$1.30
Golden Delicious	11.52	8.22	3.30
Granny Smiths	14.00	8.17	5.83
Winesaps	10.68	6.80	3.88
Red Romes	12.22	8.00	4.22
Average	10.60	8.47	2.13

For Red Delicious apples in this market, the difference in quality between Extra Fancy and Fancy means a loss in wholesale price of $1.30 per box, or 13 percent. For the minor Washington State varieties, this proportionate drop in price is considerably higher (as high as 42 percent for Granny Smiths). Second, since apples marketed as fresh fruit command higher prices than those sold for processing, the greater the proportion going to the fresh market, the greater the returns to the grower.

For fresh-market apples, there are no significant differences between U.S. and Canadian apples that meet the standards for, say, Fancy or Extra Fancy. However, the proportion of apples that do meet these high grades are lower in Canada than in the United States. According to the Canadian Import Tribunal Inquiry, 28 percent of Washington's Red Delicious crop was of a "large" size in 1984, but only 9 percent of British Columbia's crop was considered "large." That same year, 65 percent of Washington's Red Delicious crop and 83 percent of its Golden Delicious crop made the Extra Fancy grade. Only 35 percent of British Columbia's Red Delicious crop and only 45 percent of its Golden Delicious crop qualified as Extra Fancy. The following year, 75 percent of Washington's Red Delicious crop was graded Extra Fancy, as was 93 percent of its Golden Delicious crop. For British Columbia, these shares were 58 and 52 percent, respectively.[37] In other words, Washington State, on average, produces more, larger, higher-quality apples at a lower cost than does British Columbia.

The larger the share of harvested apples that do not meet fresh-market standards and so must be consigned to the processing market, the lower the average return received for a grower's crop, because as noted, apples for processing bring a sharply lower price than those for the fresh market. Table 4-8 presents U.S. and Canadian Government data on total apple production and the share destined for the fresh market from 1980-1989. By this measure, it appears that the average quality of U.S.-and Canadian-produced apples are equal.

Exchange Rates

Changes in the value of the U.S. dollar in terms of the Canadian dollar affect U.S. industry competitiveness by changing the effective price of each country's apples sold in the other's market. Such changes therefore affect the ability of U.S. apple marketers to bid sales away from their Canadian rivals, both in the domestic and Canadian apple markets. The rate of exchange between the U.S. and Canadian dollars is determined by several factors, ranging from differences in the respective current account balances to differences in real interest rates. However, in the long run, the exchange rate is expected to reflect the difference in the overall price levels between the two countries.

The real (inflation-adjusted) value of the U.S. dollar has declined steadily in recent years, from about Can$1.36 per U.S. dollar in 1985 to about Can$1.14 in 1990, or by approximately 17 percent, with an annual average decline of 3.6 percent (see table 4-9). Thus, it became increasingly easy to market U.S. apples in Canada during this period, because the depreciation of the U.S. dollar caused the effective price of U.S. apples to Canadian buyers to decline by 17 percent even if the price in U.S. dollars received by U.S. exporters had stayed the same. Conversely, Canadian apples became increasingly uncompetitive in the U.S. market during this period, because the appreciation of the Canadian dollar raised the effective price of Canadian apples paid by U.S. buyers.

[36] Washington Growers Clearing House Association, Inc., *33d Annual Apple Price Summary ... 1989-90 Season*, p. 2.

[37] *Canadian Import Tribunal Inquiry* (Kemp, Dec. 13, 1988), pp. 10-11.

Table 4-8
Apples: U.S. and Canadian production and shares destined for the fresh market, 1980-89

Year	United States			Canada		
	Total Production[1]	Fresh marketings	Percent of total	Production	Fresh marketings	Percent of total
	Million pounds			Million pounds		
1980	8,818.4	4,934.1	56	1,218.2	697.3	57
1981	7,739.6	4,442.2	57	931.2	462.8	50
1982	8,122.0	4,536.7	56	1,053.0	639.3	61
1983	8,378.5	4,620.5	55	1,068.9	616.8	58
1984	8,333.0	4,666.1	56	957.6	521.9	55
1985	7,923.5	4,227.7	53	1,047.5	602.1	57
1986	7,933.0	4,531.8	57	885.5	524.6	59
1987	10,742.1	5,610.1	52	1,115.3	644.0	58
1988	9,131.0	5,240.3	57	1,104.0	658.3	60
1989	9,965.6	5,875.3	59	1,183.3	634.3	54

[1] Quantity actually harvested plus quantities that would have been acceptable for fresh market or processing but were not harvested because of economic or natural reasons.

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

Table 4-9
U.S. and Canadian consumer price indexes and exchange rates, 1985-90

Year	Consumer price index		Canadian-U.S. exchange rate	
	United States	Canada	Nominal	Inflation-adjusted
	1985=100		Canadian dollars per U.S. dollars	
1985	100.0	100.0	1.3655	1.3655
1986	101.9	104.2	1.3895	1.3588
1987	105.7	108.7	1.3260	1.2894
1988	109.9	113.1	1.2307	1.1959
1989	115.2	118.7	1.1840	1.1491
1990	121.4	124.4	1.1668	1.1387

Source: International Monetary Fund, *International Financial Statistics*, June 1991.

APPENDIX A
LETTER OF REQUEST FROM SENATE COMMITTEE ON FINANCE

United States Senate

COMMITTEE ON FINANCE
WASHINGTON, DC 20510-6200

October 16, 1990

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

Dear Madam Chairman:

The Committee on Finance requests that the U.S. International Trade Commission conduct an investigation under section 332(g) of the Tariff Act of 1930, as amended (19 U.S.C. 1332(g)), for the purposes of assessing current and proposed practices and policies of the Canadian Government with respect to the apple industry, particularly the proposed national supply management program for apples in Canada.

In its investigation, the Commission should, to the extent possible, develop information regarding the apple growing industry in the United States and Canada and the apple market in Canada, including, but not limited to, the following factors:

(1) The purpose, nature, quantity, and use of the policies and practices of the Canadian national and provincial governments affecting apples, including:

(a) rebates provided to retailers by Canadian marketing organizations;

(b) advertising allowances offered to retailers by marketing organizations or national or provincial agencies;

(c) payments to growers under the Agricultural Stabilization Act ("ASA"), the National Tripartite Price Stabilization Program, and the British Columbia Farm Income Insurance Program when average prices fall below benchmark costs, and how the benchmark prices are set; and

(d) other import, price, and supply proposals being considered by the National Farm Products Marketing Council.

(2) The volume and value of U.S. imports of fresh apples from Canada over the last five years, with special emphasis on how such imports have concentrated in individual regional markets throughout the United States;

(3) An analysis of the competitive factors in each industry, including a comparison, by market regions wherever obtainable, of sales prices of U.S. and Canadian apples in the U.S. and Canadian markets, and an analysis of each country's costs of production;

(4) A comparison of the quality of U.S. and Canadian apples destined for the fresh apple market;

(5) A comparison of the consumption and utilization trends in Canada and the United States for apples destined for the fresh and processed market; and

(6) A comparison of total Canadian and U.S. apple production by region and province over the last five years.

The Commission should report the results of the investigation no later than August 1, 1991.

Thank you for your cooperation in this important matter.

Sincerely,

Lloyd Bentsen
Chairman

APPENDIX B
COMMISSION'S NOTICE OF INSTITUTION OF INVESTIGATION

UNITED STATES INTERNATIONAL TRADE COMMISSION
Washington, D.C.

(Investigation No. 332-305)

APPLES: CERTAIN CONDITIONS OF COMPETITION BETWEEN THE U.S. AND CANADIAN INDUSTRIES

AGENCY: United States International Trade Commission

ACTION: Institution of investigation

SUMMARY: Following receipt on October 16, 1990, of a request from the Committee on Finance, United States Senate, the Commission instituted investigation No. 332-305, Apples: Certain Conditions of Competition Between the U.S. and Canadian Industries, under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)). As requested by the Committee, the Commission will, to the extent possible, develop information regarding the apple growing industries and the apple markets in the United States and Canada. The Committee requested that the Commission submit its report not later than August 1, 1991.

EFFECTIVE DATE: November 19, 1990

FOR FURTHER INFORMATION CONTACT: For information on other than the legal aspects of the study, contact Frederick W. Ruggles (202-252-1325) (after 1/11/91 - 202-205-3325) or David Ingersoll (202-252-1309) (after 1/11/91 - 202-205-3309), Agriculture Division, Office of Industries, U.S. International Trade Commission. For information on the legal aspects of the study, contact William Gearhart (202-252-1039) (after 1/11/91 - 202-205-3091), Office of the General Counsel, U.S. International Trade Commission. Hearing-impaired persons can obtain information on this study by contacting our TDD terminal on (202) 252-1810 (after 1/11/91 - 202-205-1810).

BACKGROUND: In its letter, the Committee stated that it was requesting that the Commission conduct the investiation "for the purposes of assessing current and proposed practices and policies of the Canadian Government with respect to the apple industry, particularly the proposed national supply management program for apples in Canada." As requested by the Committee, the Commission will seek to provide in its report, to the extent possible, the following information:

(1) The purpose, nature, quantity, and use of the policies and practices of the Canadian national and provincial governments affecting apples, including:

(a) rebates provided to retailers by Canadian marketing organizations;

(b) advertising allowances offered to retailers by marketing organizations or national or provincial agencies;

(c) payments to growers under the Agricultural Stabilization Act (ASA), the National Tripartite Price Stabilization Program, and the British Columbia Farm Income Insurance Program when average prices fall below benchmark costs, and how the benchmark prices are set; and

(d) other import, price, and supply proposals being considered by the National Farm Products Marketing Council.

(2) The volume and value of U.S. imports of fresh apples from Canada over the last 5 years, with special emphasis on how such imports have concentrated in individual regional markets throughout the United States;

(3) An analysis of the competitive factors in each industry, including a comparison, by market regions wherever obtainable, of sales prices of U.S. and Canadian apples in the U.S. and Canadian markets, and an analysis of each country's costs of production;

(4) A comparison of the quality of U.S. and Canadian apples destined for the fresh apple market;

(5) A comparison of the consumption and utilization trends in Canada and the United States for apples destined for the fresh and processed market; and

(6) A comparison of total Canadian and U.S. apple production by region and province over the last 5 years.

WRITTEN SUBMISSIONS: Interested persons are invited to submit written statements concerning the investigation. Written submissions to be considered by the Commission should be received by the close of business on May 3, 1991. Commercial or financial information which a submitter desires the Commission to treat as confidential must be submitted on separate sheets of paper, each marked "Confidential Business Information" at the top. All submissions requesting confidential treatment must conform with the requirements of section 201.6 of the Commission's Rules of Practice and Procedure (19 CFR 201.6). All written submissions, except for confidential business information, will be available for inspection by interested persons. All submissions should be addressed to the Secretary, U.S. International Trade Commission, 500 E Street SW, Washington, DC 20436.

By order of the Commission.

Kenneth R. Mason
Secretary

Issued: November 21, 1990

APPENDIX C
CANADIAN REQUEST FOR A *CANADIAN APPLE MARKETING AGENCY*

REQUEST FOR A CANADIAN APPLE MARKETING AGENCY

PRESENTED BY

THE NOVA SCOTIA FRUIT GROWERS' ASSOCIATION

THE NEW BRUNSWICK APPLE MARKETING BOARD

LA FÉDÉRATION DES PRODUCTEURS DE POMMES DU QUÉBEC

THE ONTARIO APPLE MARKETING COMMISSION

THE BRITISH COLUMBIA TREE FRUIT MARKETING BOARD

PRESENTED TO

THE MINISTER OF AGRICULTURE CANADA

AND

THE CHAIRMAN OF THE NATIONAL FARM PRODUCTS MARKETING COUNCIL

February 8, 1990

CONVERSION FACTORS

In the text of the Request and the attached appendices volumes and linear measures have been expressed in the same form as presented in the original documents to assist the total audience in understanding the significance of the data by expressing these measures in a familiar manner.

For conversion purposes the following conversion rates can be applied:

1 metric tonne = 2204.6 pounds or 1 pound = .45359 kilograms

1 bushel = 42 pounds

- Metric tonnes are converted to bushels by multiplying by 2204.6 and dividing by 42.

1000 pounds = 453.59 kilograms = 23.81 bushels

1 hectare = 2.471 acres or 1 acre = .4047 of a hectare

INTRODUCTION

This is a request pursuant to section 7 (1) (a) of the Farm Products Marketing Agencies Act by the apple growers of Canada, through the following provincial associations in the five major commercial apple growing areas of Canada, for the establishment of a national marketing agency in respect of apples:

i) The Nova Scotia Fruit Growers' Association
ii) The New Brunswick Apple Marketing Board
iii) La Fédération des producteurs de pommes du Québec
iv) The Ontario Apple Marketing Commission
v) The British Columbia Tree Fruit Marketing Board

Apple growers in each of the five growing provinces, through their Associations, have authorized their representatives on the Canadian Apple Marketing Agency Task Force to develop a proposal for an apple agency with supply management powers. These representatives have attended numerous meetings over the past two years to develop the proposal and to keep provincial agricultural departments aware of progress to date. All the travel, accomodations, simultaneous translation and data research costs have been met by the sponsoring organizations.

Polling of grower support for the Apple Agency will be undertaken at an appropriate time following public hearings.

There are approximately 4,500 Canadian families growing apples commercially across Canada. Apple production has been an important farm product in Canada for over 100 years. It was in the 1880's that the world famous McIntosh variety of apples was developed at Dundela, Ontario, south of Ottawa. The McIntosh variety became the cornerstone of the Canadian apple growing industry. In the early 1900's Canadian apple growers from Nova Scotia to British Columbia were growing, packing, shipping and exporting apples to world markets.

The commercial production of apples is a year-round business. It is the major crop for these 4,500 Canadian families.

Apple growers have been experiencing serious financial problems which threaten their livelihood. Many growers who were self-sufficient five years ago have been forced to take off-farm jobs to sustain their farming operations with resulting decline in care and attention of their orchards. These problems will be discussed in detail in this Request, but for the purpose of the introduction, they can be categorized as follows:

1. loss of marketshare to imported apples of 7 - 8% in the past five years has reached alarming proportions; and

2. a decline in the farm gate price from above to below the cost of production notwithstanding increased efficiency in the industry.

Canada has ideal production conditions for apples. The climate and soil produce a better McIntosh, Delicious, Cortland, Spartan, etc. than most other producing areas in the world, such as Chile, California, Australia and France. Therefore there is no reason why Canadian apple growers in Nova Scotia, New Brunswick, Quebec, Ontario and British Columbia should be forced out of apple growing. Canadian apple growers submit that the establishment of a national marketing agency for apples will improve the marketing arrangement for apples in Canada, yet will respect all the existing trading situations of inter-provincial, export and import trade. The national agency for apples will permit Canadian growers to compete for their fair share of the Canadian market for apples.

PRODUCTION OF APPLES IN CANADA

The production base for apples in Canada is controlled by tree plantings and tree removals. (Typically, newly planted trees begin bearing fruit in the fourth or fifth year and increase in productivity up to ten years). The density of tree plantings is variable from 70 to 800 trees per acre, depending on the type of tree planting method selected by individual growers. Current methods favour higher density plantings to accomplish increased fruit size, more intense fruit colour and easier harvest procedures. In any density of planting, the yield of apples in a mature orchard is reasonably constant, depending on annual variance in yield. Tree removal occurs on a continuous basis to eliminate trees that have been damaged by insects, disease or freezing injury or are of varieties which have limited market demand as consumer preferences change. Tree age alone may necessitate replanting at 15 - 20 years for the more densely planted orchard.

According to the 1986 census, there are 85,240 acres of apples being grown in Canada. Attached as Appendix 1 is the statistical summary sheet prepared from the 1986 census showing the number of farms producing apples on one acre or more, broken down by province and size of apple orchard, the number of acres in the five provinces producing apples, the number of apple bearing trees in each province, and the number of non-bearing apple trees, which are young trees that will be bearing fruit within the next three to four years.

The actual Canadian apple production, according to Statistics Canada, expressed in metric tonnes (2,204.6 pounds

per metric tonne and in bushels (a bushel is 42 pounds) is attached as Appendix 2. The average production over the past ten years (1979-1988) in Canada was 463,099 tonnes or 24,308,287 bushels. There is a wide range in the annual production per acre due to weather, disease, and winter damage to trees.

MARKETING OF THE FRESH MARKET APPLE CROP

The Canadian apple crop is normally harvested in September and October and placed immediately in short term or long term storage according to the schedule of marketing planned for the crop. The apples are removed from storage, graded and packaged as orders are filled over the marketing season which extends over twelve months, depending on varietal characteristics.

Canadian apples can be kept fresh year-round due to high technology developments in storage techniques. The technique of reducing the oxygen level in the storage to not less than 1.5% of the atmosphere, which combined with chilling, keeps the Canadian apples perfectly fresh for the whole year. It eliminates any need for imported apples to supply the off-season.

The normal marketing of apples from the farm gate is to either:

i) the packer/shipper (which in many instances is a Cooperative owned by the apple growers); or

ii) the shipper; or

iii the broker

A packer/shipper, shipper or broker sell to a wholesaler or direct to a retailer. Attached as Appendix 3 is a chart showing the current marketing channels for apples in Canada.

Attached as Appendix 4 is a statistical summary of the Canadian export of apples over the past 20 years.

CROP DISPOSITION AND CONSUMPTION PATTERN (Appendix 5)

The average production of apples in Canada over the 1983-87 five year period was 458,354 tonnes (24,052,672 bushels). Imports in the same period averaged 109,142 tonnes (5,728,916 bushels). Exports over the five year period averaged 57,640 tonnes (3,024,728 bushels).

After the removal of 198,790 tonnes (10,434,582 bushels) from the supply for processing, 311,046 tonnes (16,322,509 bushels) remain for fresh consumption.

This represents an annual per capita consumption of fresh apples in Canada of 26.7 pounds, well below per capita consumption levels of apples in Europe of 45-50 pounds.

LOSS OF MARKETSHARE TO OTHER COUNTRIES

The Canadian marketshare of fresh eating apples has declined about 7% in the past five years. The average marketshare for the Canadian apple growers between 1978 to 1982 was 66.4%. This marketshare has declined to an average of 59.5% over the five year period 1983 to 1987.

The volume of imports has substantially increased from approximately 23,000 tonnes in 1968 to 74,000 tonnes in 1978 to 133,000 tonnes in 1987.

Attached as Appendix 6 are the statistics for the Canadian marketshare of apples for the fresh eating market and the import statistics for the past 10 years.

This loss of marketshare to imports has been caused by a number of factors - none attributable to the Canadian apple growers.

OVERPRODUCTION AROUND THE WORLD

The main factor contributing to the loss of marketshare for Canadian apple growers due to an increase in imports is the overproduction of apples in Chile, the US and elsewhere around the world.

For example, Chile has expanded its production by 417% between 1975 and 1985, and The United States has been increasing production rapidly and their ten year average production from 1968 to 1978 was 2,989,690 tonnes and the ten year average from 1979 to 1988 was 3,857,970 tonnes. This is a dramatic increase of 29% in the U.S.

Attached as Appendix 7 are the statistics showing the average United States apple production over the past 20 years, and the world apple production for 1975 and 1985.

Canada used to enjoy a positive trade balance for apples. In 1968, Canada's exports of apples exceeded imports by 48,235 tonnes. By 1987 it had imported 56,087 tonnes more than it had exported. The last five years has seen an increase in the trade deficit by 125%. The apple growing industry is a proven industry which deserves and requires a marketing agency which will halt the decline in marketshare and freeze the current import penetration.

IMPORTS AFFECT PRICES OF CANADIAN APPLES

The price for Canadian apples is low, because the price of imports affects the Canadian market price for apples, whether they are imported or whether they are grown in Canada. A good example of this is the Canadian Import Trade Tribunal anti-dumping decision on the imports of Delicious apples from the U.S.

The wholesaler knows that he can buy an apple in Canada from anywhere in the world. If apples from the US, Chile or elsewhere are available at so many dollars a bushel, then the wholesaler will only pay that amount for Canadian apples.

PRICES FOR CANADIAN APPLES ARE BELOW THE CASH COST OF PRODUCTION

In each of the years 1980 - 1986 input costs for the crops exceeded output value with an extreme differential of 7.4 cents per kg. in 1984. Provincially, Nova Scotia costs exceeded value in five of those years. New Brunswick showed a margin of value over cost each year. Quebec costs exceeded value in six of the years. Ontario costs exceeded value in four of the years and British Columbia costs exceeded output value in every year since 1980. On average input costs exceed output value by 4.35 cents per kg. during this seven year period.

It should be noted that the input cost information is obtained from Statistics Canada and it represents in a rough way, the cost of production. The input costs only represent the cash costs of the total cost of production, so the cost of production in fact could be higher than the total input costs set out by Statistics Canada. Appendix 8 attached.

APPLES ARE INEXPENSIVELY PRICED

The farm gate price per pound for apples has not increased in the past ten years. In 1978, the average price across Canada at the farm gate was 9.4¢ per pound. For simplicity purposes, if there are 4 apples per pound, the price per apple would be 2.3¢ per apple. In 1987, the average price was 9.3¢ per pound. At the same time, the costs of production have substantially increased.

Attached as Appendix 9 is a table showing the farm value for apples in all five producing provinces and for Canada on average between 1978 to 1987.

Using the example above of four average apples per pound, and if the price per pound is 10¢, the average price per apple is 2.5¢ at the farm gate. The apple growers need a price increase of only 1¢ per apple at the farm gate to address the price problem facing the industry. At 3.5¢ per apple, apples are still inexpensively priced. The apple growers believe

that with the wide price spread between the farm gate and the retail selling price this 1¢ per apple increase could easily be absorbed without increasing the cost to the consumer.

In 1987, apples sold at the farm gate for 9.3¢ per pound, but were selling at retail for 81¢ . This is a spread of 71.7¢ per pound or $3.58 for a 5 pound bag. Appendix 10 attached.

While the price to the apple grower has not increased over the past five years, the retail price has increased from 68¢ to 81¢. The retail price has increased by 21.5% over the past five years, while the price to the apple grower has remained constant. The difference between the retail price and the price to the grower, over the same five year period has increased from 59¢ to 71.7¢ - an increase of 12.7¢ . Whatever the reason for the huge price spread, and the increase in the price spread over the past five years, the retailers ought to be able to either absorb a 1¢ per apple or a 4¢ per pound increase in the price, or pass it on to the consumer without any further markup.

HOW THE APPLE AGENCY WILL SOLVE PROBLEMS IN THE INDUSTRY

A National Marketing Agency for apples will solve the two major problems which threaten the apple growing industry, and are placing apple growers in an economic crisis.

The Agency will ask the Canadian Government to freeze the level of imports at the current level of approximately 40% of the Canadian market for fresh apples.

The volume of imports has been steadily increasing from: 23,000 tonnes in 1968 to 74,000 tonnes in 1978, to 133,000 tonnes in 1987.

If this trend is not stopped, Canadian apple growers will soon be out of business.

The Agency will enter into price setting at the interprovincial trading level at a minimum price to return cost of production and a fair rate of return. With imports frozen this will allow the price to rise about 1 cent an apple which is enough to achieve financial stability.

THE APPLE MARKETING AGENCY WOULD SAVE THE GOVERNMENT MONEY

In 1987, there was a price stabilization payment of 1.6¢ per pound for every pound of apples marketed in Canada. That represents a cost of over $16 million. Two thirds of those payments are by the Provincial and Federal Governments. The other third is paid by the producers.

Even after this payment, the apple grower is still not making a profit. He is barely breaking even.

The proposed National Marketing Agency would allow the apple growers to increase the price at the farm gate by 1¢ per apple which would eliminate the requirement for stabilization payments and would return the apple growers to a position where they are enjoying a reasonable return. This will save the governments millions of dollars.

ADVANTAGES TO THE CONSUMER

The advantages of the proposed National Marketing Agency for apples to the consumer are as follows:

1. The consumer would save tax dollars paid to the Provincial and Federal Governments in the order of millions of dollars;

2. The consumer would have stability of supply, price and quality from apple growers in Canada that were realizing a fair price; and

3. Apples would remain an inexpensive fruit with possibly no price increase at the retail level if the retailers absorb this increase. If the retailers do not absorb the 1¢ per apple increase, then the price of apples would not be significantly increased. By relative standards to other fruits and vegetables, apples will remain a good value for the consumer's food dollar.

APPLES FOR THE PROCESSING MARKET

Apples with specific processing uses are delivered to processors as required. Juice apples include windfalls collected at harvest time, apples which do not meet minimum grade requirements during packing of fresh market apples, and any other apples that cannot be marketed as a result of changes in market acceptance.

Apples for juice processing represent a salvage situation for apple growers. Apple growers do not make money on apples sold for juice to processors. These apples are windfalls and cullouts from the grading lines.

It is important to note that there is one exception with respect to processing apples grown for peeling and slicing market. These apples are not salvage apples - they are grown for the processor, and accordingly are priced at the prevailing market levels.

Apple growers do not expect or request that apples for processing be subject to price and interprovincial regulation under the marketing plan. Apple growers very genuinely do not want the apples for processing subject to any regulatory control. The processors provide them with a market for their rejects and provide the apple growers a very valuable service that this proposed agency ought not to interfere with.

A NEW MARKETING APPROACH FOR APPLES

The proposed National Apple Marketing Agency will undertake the promotion of apples to the consumer in the manner in which the milk producers have advertised and promoted the "goodness of milk".

COST OF PRODUCTION

The cost of production for apples will be fixed on a provincial basis at the fair and reasonable cost of production of an efficient producer. The proposed National Apple Marketing Agency will avoid the current problems experienced with other commodities where the cost of production is fixed at the average of all of the producers including the inefficient and mismanaged producers. That "common denominator approach" of fixing the C.O.P. at the lowest average will not be acceptable to the National Canadian Apple Marketing Agency. The Canadian Apple Growers undertake to work with the National Farm Products Marketing Council officials to develop a cost of production formula and mechanism which reflects the real cost of production of efficient apple growers.

MARKET RESPONSIVENESS

The National Canadian Apple Marketing Agency will respond to the demands of the market in a manner not herebefore seen with supply managed commodities. The present marketing patterns for apples is now very market responsive, as it has to be since it is working in a free market environment. The Canadian Apple Growers undertake to maintain this market responsiveness in the following manner:

If there is an increase in demand, the Supply Management Committee of the Canadian Apple Marketing Agency will respond in the next quarter by allocating more marketing quota. This will be accomplished by providing for adequate representation for distributors, wholesalers, packers and consumers, so that changing market demand will be brought to the attention of the agency in a timely manner, and marketing quotas adjusted forthwith. The Canadian Apple Growers recognize that shorting of production in relation to demand has been allegedly done with other supply managed commodities, and the apple growers undertake to ensure that this does not occur with apples.

GREEN PAPER

The Government of Canada Green Paper on Agricultural Policy recognizes that supply management must be more responsive to market demands and must be fair in the setting of costs of production. With such changes, supply management is an excellent means of marketing certain commodities. The apple growers are convinced that supply management is the best means for marketing apples, and will ensure that the changes in supply management which the Green Paper identified are implemented in the establishment of a supply management program for apples.

GATT - NO IMPORT RESTRICTIONS ON APPLE JUICE OR OTHER PROCESSED APPLE PRODUCTS

Canadian Apple Growers do not consider that the establishment of a supply management system for apples will present any problems for Canada under GATT. The problems experienced with a complaint against Canada under Article XI of GATT due to the import restrictions on ice cream and yogurt will not happen because of the Canadian Apple Marketing Agency.

The Canadian Apple Growers do not propose that there be any import restrictions on any processed apple products including apple juice, apple sauce, apple pie, or dried apples. None of these products will be restricted. The proposed Agency will only apply to fresh apples and the market for fresh apples.

Therefore, the Government of Canada ought not be concerned that the establishment of this supply management agency for apples will be cause for any legitimate complaint by Canada's trading partners under GATT.

THE MARKETING PLAN

OBJECTIVE OF THE PLAN

The objective of the proposed marketing plan is to ensure the maintenance of a viable apple industry in Canada. This can be achieved by establishing a more efficient and effective marketing system taking into consideration the interest of growers, consumers, processors, wholesalers, retailers exporters and importers.

PRODUCER (grower)

Any person or organization who owns one hectare or more of apple orchard.

REGULATED PRODUCT

The regulated product is apples in their natural state.

REGULATED AREA

The regulated area is the provinces of Nova Scotia, New Brunswick, Quebec, Ontario nd British Columbia.

APPLE MARKETING AGENCY PROPOSAL

It is recommended that the Government of Canada approve the establishment of a Canadian Apple Marketing Agency to provide the regulatory authority necessary for a marketing plan with powers and responsibilities consistent with Sections 23 and 24 of the Act including -

(1) The establishment of the size of national market which will be the target level of the total marketings of the regulated areas in intraprovincial, interprovincial and export and the marketings of the unregulated area in interprovincial trade and the adjustment of that target level from time to time.

(2) The allotment of provincial allocations of the total Canadian and export markets to each provincial producer Commodity Board or Association and the adjustment of the provincial allocation as required from time to time.

(3) The authority to purchase apples for export or import in situations of serious market aberrations such as shortages or over supply.

(4) The licensing of growers, packers, shippers and dealers in interprovincial and export trade.

(5) The authority to obtain disclosure of information pertaining to apples in their natural state from any persons engaged in the growing, processing, transporting and marketing of such apples.

(6) The Agency will undertake to consult with the appropriate authority in matters of import of the regulated product.

(7) The establishment of a cost of production formula that will fairly reflect the cost of growing apples including an allowance for a reasonable return to growers. The grower levy will be an element of the cost of production.

(8) The authority to acquire the regulated product for diversion from regular market channels or to arrange such diversion.

(9) Pricing in interprovincial trade will reflect intraprovincial pricing levels plus transportation costs. Product purchased for diversion will be priced at best market value obtainable.

COORDINATION OF PROVINCIAL AND FEDERAL AUTHORITY

In addition to the Federal/Provincial Government agreement for enabling authority the Apple Agency and the Commodity Boards will enter into agreements and contracts to administer cross delegations to dovetail federal and provincial jurisdictions.

(1) Provincial Commodity Boards & Associations

The Boards within the scope of their provincial marketing legislation will:

(a) Allocate quota to each grower.

(b) Price the regulated product within their provincial boundaries.

(c) Supply market information to the Agency for purposes of price coordination in interprovincial and export marketing.

(d) License growers and others within their area required to be licensed.

(e) Collect levies for financing as an agent of the National Agency.

(f) Arrange for diversion of apples from regular market channels as an agent of the National Agency.

(g) Enforce Agency regulations at the provincial level.

(2) Apple Marketing Agency

The Agency, when proclaimed, will:

(a) Determine the Canadian market volume for apples including the unregulated area and allocate market share to each province accordingly.

(b) Harmonize the pricing of the regulated product moving in interprovincial trade.

(c) Assist exporters in finding export markets and coordination of pricing consistent with international trading agreements.

(d) Conduct market and product research and promote the use of the regulated product in interprovincial and export trade.

(e) Purchase product for diversion from fresh market channels in situations of unusual product deterioration or market conditions inconsistent with established Agency pricing regulations and manage disposition of the diverted product.

(f) Collect and disseminate market information for the provincial boards.

(g) Enforce agency regulations at the national level.

(h) Participate as requested by federal government authorities in matters related to import volume control.

(i) Administer the marketing plan and funding of the Agency.

MARKETING CONTROL

The Canadian Apple Marketing Agency will manage the supply of apples destined for fresh market purposes in interporvincial and export trade. Control of apples for processing or other uses will be affected only as product diversion is required.

The supply of apples for juice processing will continue to be windfall apples and those apples which do not meet minimum grade requirements during packing of fresh market apples and any other apples that cannot be marketed as a result of changes in market acceptance.

(1) Management of Supply

Canadian production is grown on 85,240 acres of apple orchard as determined by Statistics Canada from Census data or special surveys. This acreage represents bearing and non-bearing trees as required to maintain production volume at the level of the market demand while taking into account tree mortality and changes in consumer preferences for specific varieties. Appendix 11 indicates the trend in acreage of bearing and non-bearing apple trees.

The marketing plan proposes to manage the supply of apples by limiting each producing province to the actual orchard measurement of trees immediately following the proclamation of the national agency.

(2) MARKETING QUOTA ALLOCATION FOR FRESH MARKET APPLES

The market demand for apples is established by adding to the annual production volume in Canada, the volume of apples imported during the marketing season of the Canadian crop. Market demand includes the needs for fresh market apples to satisfy the intraprovincial, interprovincial and export requirements for fresh apples. Appendix 5 illustrates the previous 5 year averages for Canadian production, exports, imports and processing.

The provincial allocation of marketing quota for fresh market apples shall be calculated on the basis of the production of fresh market apples from each province in relation to the total production in Canada of fresh market apples over the period of five years immediately preceding the effective date of the marketing plan. There will be an appropriate adjustment to take into account the loss of production due to Winter kill of trees.

(3) PRICING

The Agency and the Provincial Marketing Boards will strive to establish prices with the underlying principle of returning to growers an amount which covers cost of production and a reasonable return based on an efficient production operation.

Cost of production will be uniformly measured for all the regulated areas but will permit adjustments for regional differences in production costs.

The Provincial Commodity Boards will establish prices for intraprovincial trade and supply price information to the Agency for control of dumping in interprovincial and export trade.

(4) LICENSING

The Agency and the Provincial Commodity Board will implement a system of licensing growers and other persons engaged in the marketing of the regulated product, including market information sources, for the purposes of collecting fees or levies, and the enforcement of Agency responsibilities.

Provision will be made for the cancellation or suspension of licences for cause.

(5) LEVIES

Levies and/or fees will be collected from growers and other persons by the Provincial Commodity Board to cover costs of the Agency for administration, market research, product promotion information gathering and a product diversion program. Provincial pro rated shares of the proceeds of the levy will be submitted to the Agency on a timely basis to satisfy financial requirements. A levy may be collected from importers for product promotion.

(6) FINANCING

All financial requirements of the Agency will be met from fees or levies collected from licensees. Requirement for supplementary financing may include bank borrowing as necessary.

For initial funding it is proposed that the Agency be granted the full allowance provided under the Farm Products Marketing Agencies Act for spending in conformity with the Act.

(7) PRODUCT AND MARKET RESEARCH AND PROMOTION

The Agency will undertake generic promotion of the regulated product and do research into existing or new markets for increase of sales volume.

(8) DIVERSION

When the need arises the Agency is empowered to arrange diversion of the regulated product from regular market channels in situations when sales cannot otherwise be made and before the product becomes worthless for commerical uses. Purchase of product may be undertaken for other uses including export if necessary.

(9) ENFORCEMENT

A system of inspection and penalties will be put in place to ensure the positive functioning of the Marketing Plan.

(10) **COMMITTEES**

Special committees of the Agency may be structured for specific purposes as required. e.g. Market Advisory, Pricing, Import/Export advisory.

(11) **THE AGENCY BOARD OF DIRECTORS**

Each participating province will be represented in the Agency by one director and a designated alternate director. In addition, the Governor in Council will appoint two persons to the Board of Directors as representatives of other interest groups.

Each Commodity Board or Association will propose the name of their nominee for director to the Governor in Council.

The Chair and Vice Chair of the Agency will be elected from among their number.

(12) **VOTING**

(a) Each director to have one vote.

(b) A vote will be carried by simple majority of directors voting.

(13) **ATTENDANCE AT MEETINGS**

A quorum shall consist of not less than five (5) of the voting directors. Per diem, travel and living costs for directors will be paid out of Agency funds.

(14) **HEAD OFFICE**

National Capital Region.

NUMBER OF FARMS

	1-7	8-17	18-32	33-72	73-127	128+	TOTAL
				(acres)			
Nfld.	2						2
P.E.I.	16	1	1				18
N.S.	193	74	50	48	19	6	390
N.B.	87	20	10	11	1		131
Que.	566	231	213	173	36	6	1,225
Ont.	1,426	343	206	170	46	32	2,223
Man.	18						18
Sask.	13	1					14
Alta.	34						34
B.C.	1,273	514	192	70	11	4	2,064
Canada	3,628	1,184	672	472	115	48	6,119

ACRES

N.S.	579.3	902.1	1,199.5	2,505.9	1,841.0	3,286.4	10,314.2
N.B.	246.5	*	*	542.0	290.0	-	1,576.6
Que.	1,500.6	2,730.9	5,233.6	8,164.1	3,365.9	946.6	21,944.7
Ont.	3,316.3	3,847.3	5,071.0	8,164.1	4,375.1	7,317.6	32,108.9
B.C.	3,986.5	5,758.9	4,373.2	3,147.4	952.0	900.0	19,118.0
Other	130.3	*	*	17.5	0	3.0	178.3
Canada	9,759.5	13,490.6	16,172.0	22,541.0	10,824.0	12,453.6	85,240.7

BEARING TREES

N.S.	30,760	50,909	68,599	191,291	175,009	259,457	776,025
N.B.	11,999	*	*	52,260	14,218	-	110,601
Que.	82,167	128,617	291,366	474,138	217,463	34,009	1,227,760
Ont.	254,167	328,786	405,727	809,682	335,576	573,531	2,707,469
B.C.	468,324	728,974	564,679	410,577	121,821	90,490	2,384,865
Other	4,590	*	*	0	0	0	7,390
Canada	852,007	1,257,236	1,345,345	1,937,948	864,087	957,487	7,214,110

NON BEARING TREES

N.S.	12,761	20,938	21,528	50,467	44,998	31,130	181,824
N.B.	5,506	*	*	19,130	6,941	-	47,137
Que.	80,595	229,219	324,509	454,295	148,979	24,125	1,261,722
Ont.	100,667	161,033	194,150	258,244	175,385	295,347	1,184,826
B.C.	146,241	204,917	164,201	130,146	62,215	50,440	758,160
Other	8,909	*	*	2	0	0	10,369
Canada	354,679	626,211	711,304	912,284	438,518	401,042	3,444,038

* Confidential
Other: Covers other provinces, including data which is confidential.

CANADIAN APPLE PRODUCTION *

		Tonnes	Bus.
20 year average	1969-88	438,483	23,016,181
10 year average	1969-78	413,865	21,723,970
10 year average	1979-88	463,099	24,308,287
Highest Production	1980	552,584	29,005,397
Lowest Production	1973	374,689	19,667,604
Second Lowest Production	1986	388,175	20,375,490
Production increase 1979/88 / 1969/78		11.8%	

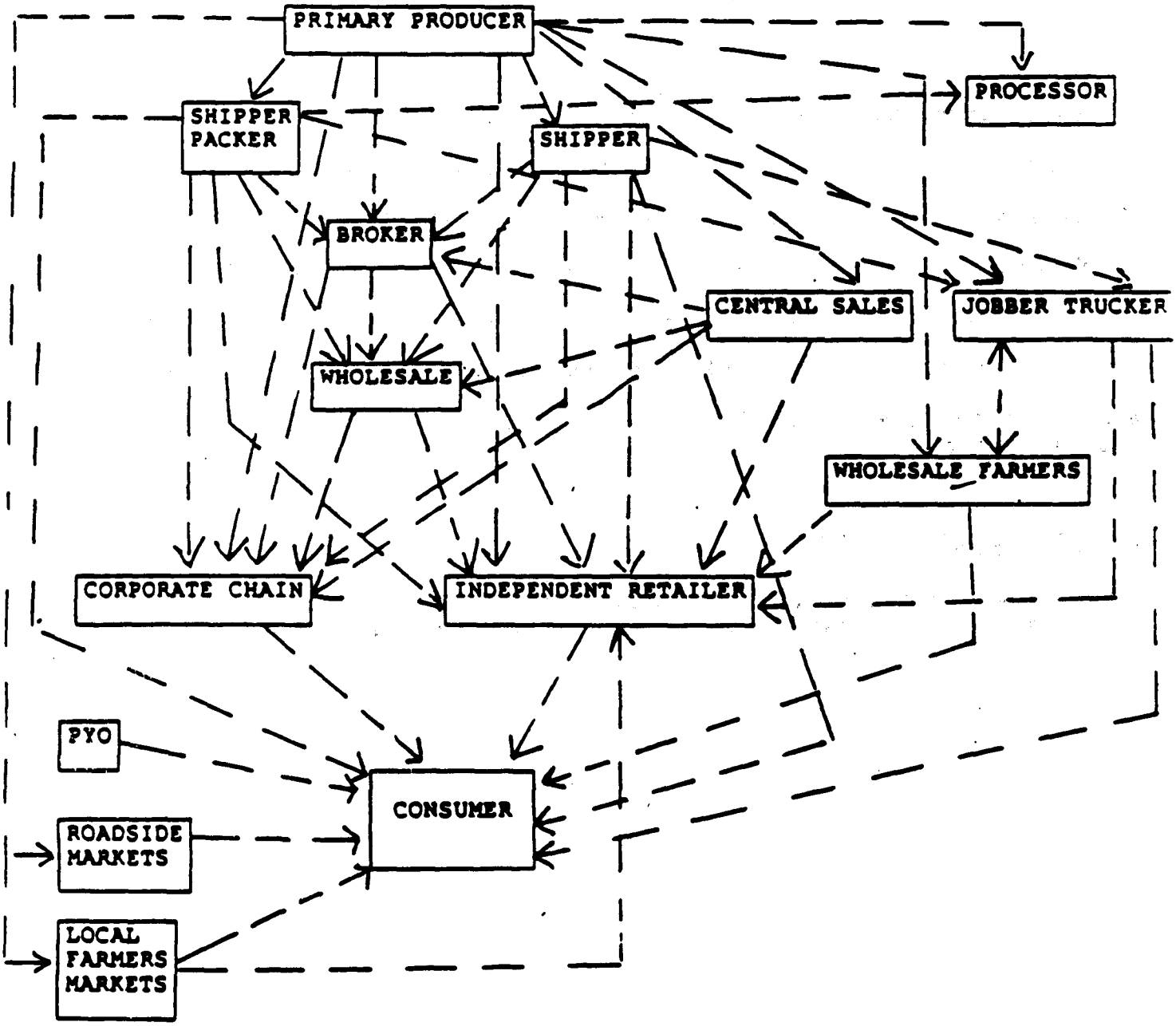
* Source: Statistics Canada

CANADIAN PRODUCTION OF APPLES BY PROVINCE FOR BOTH FRESH AND PROCESSING PURPOSES

Crop Year	Nova Scotia	New Bruns.	Quebec	Ontario	British Columbia	Canada
			(Tonnes)			
1969	58,797	10,218	104,137	139,060	123,028	435,240
1970	53,342	6,287	85,119	128,661	132,097	405,506
1971	48,580	8,287	119,201	128,794	86,275	391,137
1972	37,149	6,192	114,038	125,268	110,157	392,804
1973	41,912	5,715	89,424	92,048	145,590	374,689
1974	42,864	4,763	125,221	124,490	108,996	406,334
1975	49,532	5,906	108,589	130,180	166,212	460,419
1976	42,864	5,334	72,260	115,992	172,722	409,172
1977	41,912	4,763	94,187	127,854	142,704	411,420
1978	51,437	5,715	101,673	142,676	150,434	451,935
1979	46,103	5,906	91,215	140,432	151,240	434,896
1980	47,151	5,334	118,515	171,334	210,250	552,584
1981	54,485	4,953	45,303	115,575	202,062	422,378
1982	59,057	6,001	78,108	159,034	175,422	477,622
1983	53,342	6,287	65,078	165,191	194,953	484,851
1984	55,248	4,286	85,081	144,061	145,571	434,247
1985	58,105	7,620	91,825	182,697	138,358	478,605
1986	45,722	6,858	57,248	157,560	120,787	388,175
1987	53,343	6,858	76,203	171,097	198,391	505,893
1988	80,014	7,182	84,464	143,117	136,967	451,744

Source: "Fruit and Vegetable Production", Cat. 22-003
(Data retrieved from Cansim Division, Statistics Canada)
March 29, 1989

CURRENT SELLING OF FRUITS AND VEGETABLES IN CANADA



CROP DISPOSITION AND CONSUMPTION - CROP YEAR

	1983	1984	1985	1986	1987	Avg.
			(tonnes)			
Canadian production	484,851	434,247	478,605	388,175	505,893	458,354
Imports	91,288	89,687	102,644	128,861	133,229	109,142
Total supply	576,139	523,934	581,149	517,036	639,122	567,476
Export	66,315	39,244	56,208	49,290	77,142	57,640
Canadian supply	509,824	484,690	524,941	467,746	561,980	509,836
Volume processed	205,060	195,944	201,943	188,761	202,244*/	198,790
Available for fresh consumption	304,764	288,746	322,998	278,985	359,736	311,046

*/ Estimated

Note: Based on a population in Canada of 26,218,500 people in August 1989 per capita consumption is 26.15 pounds of fresh apples.

FRESH APPLES EXPORTS FROM CANADA, BY PROVINCE - CALENDAR YEAR

Crop Year	Nova Scotia	New Brunswick	Quebec	Ontario	British Columbia	Canada
			Metric tonnes			
1968	4,095	129	11,858	11,725	35,667	63,474
1969	4,322	70	11,064	9,091	24.537	49,084
1970	2,336	8	7,983	6,812	27,439	44,578
1971	2,994	110	9,044	7,982	15,129	35,259
1972	915	0	17,390	7,078	24,906	50,289
1973	3,189	626	3,128	3,853	30,573	41,369
1974	948	14	8,290	4,765	21,617	35,634
1975	2,294	19	1,891	6,643	31,232	42,079
1976	1,732	0	1,891	6,544	36,110	46,277
1977	2,299	284	3,725	7,635	32,097	46,040
1978	2,413	597	6,086	11,013	30,187	50,296
1979	2,965	405	4,875	10,328	35,915	54,488
1980	2,268	173	9,475	15,118	49,317	76,351
1981	1,969	324	143	10,584	47,434	60,454
1982	1,952	238	1,628	10,311	48,371	62,500
1983	2,014	10	475	11,811	52,005	66,315
1984	1,371	3	2,717	6,795	28,358	39,244
1985	1,596	7	5,629	19,654	29,322	56,208
1986	578	29	1,564	19,854	27,266	49,290
1987	1,247	75	3,744	23,365	52,879	81,310

Source: "Fruit, Vegetable, Honey Crop and Market Report", Agriculture Canada, Weekly

revised 24/11/88

CANADIAN MARKET SHARES OF DESSERT APPLES (tonnes)

	Domestic		Imported		Total Supply
	Volume	%	Volume	%	
1978	102,545	69.9	44,164	30.1	146,709
1979	100,200	65.1	53,640	34.9	153,840
1980	116,025	75.1	38,451	24.9	154,476
1981	99,176	59.8	66,659	40.2	165,835
1982	105,058	63.2	61,294	36.8	166,352
Average	104,600	66.4	52,841	33.6	157,442
1983	96,796	61.0	61,846	39.0	158,642
1984	91,413	56.5	70,369	43.5	161,782
985	100,312	58.0	72,734	42.0	173,046
986	99,070	59.6	67,059	40.4	166,129
1987	111,740	69.2	67,843	37.8	179,583
Average	99,866	59.5	67,970	40.5	167,836

Source: Apple Market Report - Agriculture Canada (basic unloads)

UNITED STATES APPLE PRODUCTION

		Tonnes	Bus. ('000)
20 year average	1969/88	3,423,830	179,714
10 year average	1969/78	2,989,690	156,930
10 year average	1979-88	3,857,970	202,498
Highest Production	1987	4,875,513	255,918
Lowest Production	1972	2,635,399	138,333
	1971	2,758,142	144,776

Production increase 1969/78 / 1979/88 - 29%

Source: International Apple Institute

WORLD APPLE PRODUCTION

- '000 TONNES -

	1975	1985
Argentine	577	594
Australia	275	290
Chile	127	530
China	1,583	3,800
France	1,992	1,793
Germany	2,035	1,410
Greece	250	257
Holland	530	300
Hungary	809	967
Italy	2,127	2,110
Japan	895	910
New Zealand	173	310
South Africa	381	516
Spain	1,012	988
Turkey	900	1,900
	13,666	16,685
% increase	22%	

Source: USDA - FAS. - 15 selected competing countries excluding Canada and U.S.

Comparison of Input Costs & Output Value for Apples by Province

	1978	1979	1980	1981	1982	1983	1984	1985	1986	1987
(Cents/Kg.)										
Canada										
Input Costs	16.92	18.86	17.28	24.27	23.27	23.12	26.43	24.99	30.73	25.44
Output Value	20.72	22.30	15.38	23.61	18.02	19.88	19.03	24.16	29.50	20.86
Ratio	1.22	1.18	0.89	0.97	0.77	0.86	0.72	0.97	0.96	0.82
Nova Scotia										
Input Costs	11.11	13.35	14.82	14.98	14.65	15.96	16.08	15.76	19.85	17.21
Output Value	13.23	16.27	14.70	19.36	10.25	16.52	15.59	15.73	19.82	17.40
Ratio	1.19	1.22	0.99	1.29	0.70	1.04	0.97	1.00	1.00	1.01
New Bruns.										
Input Costs	11.11	13.35	14.82	14.98	14.65	15.96	16.08	15.76	19.85	17.21
Output Value	15.49	17.59	18.11	29.92	16.91	26.99	31.45	36.08	44.71	30.00
Ratio	1.39	1.32	1.22	2.00	1.15	1.69	1.96	2.29	2.25	1.74
Quebec										
Input Costs	14.66	17.38	16.00	38.93	26.07	30.69	25.23	24.59	37.20	29.07
Output Value	18.50	22.52	15.63	26.77	23.99	24.51	21.65	26.20	30.71	23.55
Ratio	1.26	1.30	0.98	0.69	0.92	0.80	0.86	1.07	0.83	0.81
Ontario										
Input Costs	17.99	20.04	19.24	29.75	24.00	23.38	27.16	22.90	26.40	26.97
Output Value	23.77	23.87	17.59	31.25	22.78	22.44	23.32	24.22	31.55	27.72
Ratio	1.32	1.19	0.91	1.05	0.95	0.96	0.86	1.06	1.20	1.03
British Col.										
Input Costs	19.45	20.54	17.22	20.25	24.19	22.31	30.04	32.11	36.32	24.17
Output Value	22.03	22.74	13.52	19.53	13.71	16.85	14.18	25.59	29.07	14.73
Ratio	1.13	1.11	0.79	0.96	0.57	0.76	0.47	0.80	0.80	0.61

Source: "Cost of Production Study for Apples", Agriculture Canada
"Fruit and Vegetable Production", Cat. 22-003,
(Seasonal - Statistics Canada.)

revised 24/11/88

* FARM VALUE (¢ PER LB.)

	N.S.	N.B.	QUE.	ONT.	B.C.	CANADA
1978	6.0	7.0	8.4	10.8	10.0	9.4
1979	6.0	8.0	10.2	10.8	10.3	10.1
1980	6.7	8.2	7.1	8.0	6.1	7.0
1981	8.8	13.6	12.1	14.2	8.9	10.7
1982	4.6	7.7	10.9	10.3	6.2	8.2
1983	7.5	12.2	11.1	10.2	8.0	9.0
1984	7.1	14.2	9.8	10.6	7.1	8.6
1985	7.1	16.3	12.0	11.0	11.6	10.9
1986	9.0	20.2	13.9	14.3	13.2	13.4
1987	8.0	13.6	10.7	12.6	6.3	9.5

Source: Fruit and Vegetable Production #20-003,Statistics Canada, Seasonal.

* Farm value is a blend of prices for all uses as estimated by Statistics Canada.

APPENDIX 10

PRICE SPREADS - CANADA (¢ PER LB.)

	Grower(1)	Wholesale Selling(2) Toronto	Retail (3)	Spread
1983	9.0	27.0	68.0	59.0
1984	8.6	29.0	72.0	63.4
1985	10.9	25.0	78.0	67.1
1986	13.4	31.0	93.0	79.6
1987	9.5		81.0	71.5

(1) As indicated in appendix 9, this is a blended price. The cost of grading packing & transportation is added to the price for fresh market apples before delivery to wholesale.

(2) Wholesale selling price includes handling costs and mark-up.

(3) Source of retail price information is Retail Prices & Price Spreads Section -Agriculture Canada - The price includes transportation, handling & mark-up.

ACREAGE OF BEARING AND NON-BEARING APPLE TREES IN CANADA

	N.S.	N.B.	Que.	Ont.	B.C.	Canada
1986						
	10,314.2	1,576.6	21,944.7	32,108.9	19,118	85,240
1988						
Bearing	9,740	1,220	16,690	27,190	18,350	73,275
Non-bearing	240	360	3,125	3,200	1,000	7,955
TOTAL	9,980	1,580	19,815	30,390	19,350	81,230
1989						
Bearing	9,485	1,190	17,010	27,050	18,150	74,965
Non-bearing	175	360	2,810	3,140	1,070	5,595
TOTAL	9,660	1,550	19,820	30,190	19,220	80,560

APPENDIX D
LIST OF U.S. HARMONIZED TARIFF SCHEDULE NUMBERS COVERED BY THE INVESTIGATION

HTS	*Short description*	*HTS description*
		Apples
	Chapter 8: Edible Fruit and Nuts; Peel of Citrus Fruit or Melons	
0808.10.00	Fresh apples	Apples, pears and quinces, fresh: Apples
0811.90.80	Frozen Apples	Fruit and nuts, uncooked by steaming or boiling in water, frozen, whether or not con-taining added sugar or other sweetening matter: Other: Other: Other
0813.30.00	Dried Apples	Fruit, dried, other than that of headings 0801 to 0806; mixture of nuts or dried fruits of this chapter: Apples
	Chapter 20: Preparations of Vegetables, Fruit, Nuts or Other Parts of Plants	
2007.99.45	Apple jam	Jams, fruit jellies, marmalades, fruit or nut puree' and fruit or nut pastes, being cooked preparations, whether or not containing added sugar or other sweetening matter: Other: Other: Jams: Other
2007.99.48	Apple paste and puree	Jams, fruit jellies, marmalades, fruit or nut puree' and fruit or nut pastes, being cooked preparations, whether or not containing added sugar or other sweetening matter: Other: Other: Pastes and purees: Apple, quince, and pear
2007.99.75	Apple jelly	Jams, fruit jellies, marmalades, fruit or nut puree' and fruit or nut pastes, being cooked preparations, whether or not containing added sugar or other sweetening matter: Other: Other: Fruit jellies: Other
2008.99.05	Apple sauce	Fruit, nuts and other edible parts of plants, otherwise prepared or preserved, whether or not containing added sugar or other sweetening matter or spirit, not elsewhere specified or included: Other, including mixtures other than those of subheading 2008.19
2009.70.00	Apple juice	Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit, whether or not containing added sugar or other sweetening matter: Apple juice

APPENDIX E
LIST OF CANADIAN HARMONIZED TARIFF SCHEDULE NUMBERS COVERED BY THE INVESTIGATION

HTS	*Short description*	*HTS description*
		Apples
		Chapter 8: Edible Fruit and Nuts; Peel of Citrus Fruit or Melons
0808.10.10	Fresh apples	In their natural state:
	10	Empire
	20	Golden Delicious
	30	Granny Smith
	40	Ida Red
	50	McIntosh
	60	Red Delicious
	90	Other
0808.10.90		Other
0813.30.00	Dried apples	Fruit, dried, other than that of heading Nos. 08.01 to 08.06; mixtures of nuts or dried fruits of this Chapter: Apples
		Chapter 20: Preparations of Vegetables, Fruit, Nuts, or Other Parts of Plants
2007.99.90	Apple jam, paste,	Jams, fruit jellies, marmalades, fruit or nut and puree purees and fruit or nut pastes, cooked preparations, whether or not containing added sugar or other sweetening matter: Other:
	40	Jams, in air-tight containers
	50	Jellies, in air-tight containers
2008.99.11	Apple jelly	Fruit, nuts and other edible parts of plants, otherwise prepared or preserved, whether or not containing added sugar or other sweetening matter or spirit, not elsewhere specified or included: Other: Apples: Pulp
2008.99.19	Apple sauce	Other
	10	Applesauce in air-tight containers
	20	Other, in air-tight containers
	90	Other
2009.70	Apple juice	Fruit juices (including grape must) and vegetable juices, unfermented and not containing added spirit, whether or not containing added sugar or other sweetening matter: Apple juice
2009.70.10	Apple juice	Concentrated for use in the manufacture of apple juice
	10	Frozen
	21	In air-tight containers
	29	Other
2009.70.91	Apple juice	Concentrated or reconstituted
	10	Frozen, concentrated
	21	In airtight containers
	29	Other:
		Reconstituted
	31	In air-tight containers
	39	Other
2009.70.99	Apple juice	Other
	10	In air-tight containers
	90	Other