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International Agricultural Trade and Policy Center

**A DESCRIPTIVE ANALYSIS OF CHILE, COLOMBIA, AND
VENEZUELA WHO IMPORT UNITED STATES DAIRY
PRODUCTS**

By

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MGTC 03-5

October 2003

MONOGRAPH SERIES



**UNIVERSITY OF
FLORIDA**

Institute of Food and Agricultural Sciences

INTERNATIONAL AGRICULTURAL TRADE AND POLICY CENTER

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A DESCRIPTIVE ANALYSIS OF CHILE, COLOMBIA, AND VENEZUELA WHO IMPORT UNITED STATES DAIRY PRODUCTS

By

Xumin Zhang, Richard L. Kilmer and Andrew Muhammad¹

INTRODUCTION

World dairy production and trade have experienced increases during the last decade. World trade liberalization, elimination of non-tariff trade barriers, and reduction in dairy export subsidies have increased the United States (US) interest in world dairy markets. The US is in a good position to gain greater access to international dairy markets.

Information by country, which is considered to be a potential importer of U.S. dairy products, and by individual dairy products in the international markets is needed. The information is useful to individuals interested in developing export dairy markets and direct foreign investment in dairy industries in those countries. In the study, 25 dairy import countries were selected from around the world (Table 1). Three countries in South America, Chile, Colombia, and Venezuela, are covered in this paper.

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Table 1. Major importers of U.S. dairy products.

Canada Mexico	Central America	South America	Caribbean	European Union	East Asia	Southeast Asia	North Africa & Middle East
Canada	Guatemala	Chile	Bahamas	Netherlands	Hong Kong	Indonesia	Egypt
Mexico	Honduras	Colombia	Bermuda	United Kingdom	Japan	Malaysia	Saudi Arabia
	Panama	Venezuela	Dominican Republic		South Korea	Philippines	
			Jamaica			Thailand	
			Trinidad & Tobago			Vietnam	

The following paper covers an descriptive analysis for each individual country about the macroeconomic conditions, milk and dairy production, consumption, imports, the US share of the dairy imports, dairy trade policies, and how these factors have changed overtime. The information in this report can provide a starting point for individuals interested in exploring exports to and direct investment opportunities in Chile, Colombia, and Venezuela.

OVERVIEW

World Dairy Production

World production of cow milk increased in the period 1991 to 2001 at an average annual rate of 0.5 percent. In the period 1991 to 1993, world production of milk trended downward from 469,969,290 metric tons in 1991 to 460,185,174 metric tons in 1993 (Table 1). Since then, world production of fresh milk has experienced continuous increases through 2001. In 2001, the world production of cow milk totaled 494,074,772 metric tons, a 1.4 percent increase, compared to 2000 (487,216,313 metric tons) (Table 1). Milk production in Chile, Colombia, and Venezuela totaled 9,332,005 metric tons in 2001 (Table 2), or 1.9 percent of the total world production (Table 1).

Overall, in the period 1991 to 2001, world butter production increased at an average annual rate of 0.6 percent. Significant decreases occurred in the period 1991 to 1994 when world butter production decreased from 7,230,211 metric tons in 1991 to 6,626,853 metric tons in 1994, for an average annual decrease of -2.9 percent. Since then, world butter production trended upward through 2001, increasing at an average annual rate of 2.1 percent. World butter production in 2001 was about 7,639,830 metric tons, which was up 3.8 percent from butter production in 2000 (7,361,928 metric tons) (Table 1). Butter production in Chile, Colombia, and Venezuela totaled 32,121 metric tons (Table 2), which was 0.4 percent of the world butter production in 2001 (Table 1).

Table 1. World milk and selected dairy products production, 1991 through 2001.

Year	Cow Milk, Whole, Fresh	Butter and Ghee	Cheese (All Kinds)	Whole Milk, Dry	Skim Milk, Dry	Dry Whey
Metric Tons						
1991	469,969,290	7,230,211	14,273,176	2,278,421	3,790,059	1,591,469
1992	460,815,550	7,069,007	13,924,948	2,223,634	3,383,613	1,719,527
1993	460,185,174	6,949,108	14,092,319	2,190,812	3,435,523	1,704,052
1994	461,308,188	6,626,853	14,413,909	2,299,879	3,469,588	1,721,392
1995	463,742,780	6,654,099	14,534,298	2,297,568	3,471,565	1,808,545
1996	465,750,719	6,728,324	14,895,164	2,256,240	3,359,823	1,825,342
1997	468,198,514	6,824,872	15,182,338	2,347,216	3,390,716	1,797,683
1998	475,397,193	6,931,101	15,531,190	2,424,612	3,260,097	1,875,487
1999	480,762,511	7,140,653	15,874,743	2,425,512	3,400,623	1,876,269
2000	487,216,313	7,361,928	16,451,548	2,509,210	3,401,153	1,927,189
2001	494,074,772	7,639,830	16,821,541	2,633,776	3,374,176	1,960,928
Average Annual Growth(%)						
1991-2001	0.5	0.6	1.7	1.5	-1.1	2.2

Source: FAO Statistical Databases, 2002

In the period 1991 to 2001, world cheese production increased at an average annual rate of 1.7 percent (Table 1). Particularly in the period 1992 to 2001, world cheese production experienced a continuous increase through 2001, from 13,924,948 metric tons in 1992 to 16,821,541 metric tons in 2001, for an average annual increase rate of 2.1 percent (Table 1). Cheese production in Chile, Colombia, and Venezuela totaled 206,884

metric tons in 2001 (Table 2), accounting for 1.2 percent of the world total cheese production in 2001 (Table 1).

Table 2. Chile, Colombia, and Venezuela milk and dairy products production in 2001.

	Cow Milk, Whole, Fresh	Butter and Ghee	Cheese (All Kinds)	Whole Milk, Dry	Skim Milk, Dry	Dry Whey ^a
Metric Tons						
SOUTH AMERICA						
Chile	2,190,000	11,836	57,184	71,500	10,500	---
Colombia	5,742,005	18,800	52,500	39,000	---	---
Venezuela	1,400,000	1,485	97,200	35,500	2,770	---
TOTAL	9,332,005	32,121	206,884	146,000	13,270	---

^a Whey production in milk equivalent metric tons was not available.

Source: FAO Statistical Databases, 2002.

World production of dry whole milk increased in the period 1991 to 2001 at an average annual rate of 1.5 percent (Table 1). World dry whole milk production fluctuated in the period 1991 to 1996, ranging from a high of 2,299,879 metric tons in 1994 to a low of 2,190,812 metric tons in 1993 (Table 1). Since then, world dry whole milk production has trended upward through 2001. In the period 1996 to 2001, world dry whole milk production increased at an average annual rate of 3.2 percent. In 2001, world dry whole milk production totaled 2,633,776 metric tons, which was up 5.0 percent from 2000 (Table 1). Dry whole milk production in Chile, Colombia, and Venezuela totaled 146,000 metric tons in 2001 (Table 2). Chile, Colombia, and Venezuela's dry whole milk production was 5.5 percent of the world total dry whole milk production (Table 1).

World dry skim milk production (nonfat dry milk or skim milk powder) has exceeded dry whole milk production during the period 1991 through 2001 (Table 1). However, in the period 1991 to 2001, world dry skim milk production trended downward, for an average annual decrease rate of -1.1 percent (Table 1). World dry skim milk production experienced fluctuations in the period 1991 to 2001, ranging from a high of 3,790,059 metric tons in 1991 to a low of 3,260,097 metric tons in 1998 (Table 1). Overall, between 1991 and 2001, world dry skim milk production decreased 415,883 metric tons. In 2001, world dry skim milk production totaled 3,374,176 metric tons, which was down 0.8 percent from 2000 (Table 1). Chile, Colombia, and Venezuela totally produced 13,270 metric tons of dry skim milk (Table 2), accounting for 0.4 percent of the world total dry skim milk production in 2001.

The most growth in the production of milk and its products has occurred in the dry whey market. From 1991 to 2001, the average annual growth in world dry whey production has been 2.2 percent, with periods of increases and decreases (Table 1). World dry whey production trended upward through 2001, from 1,591,469 metric tons in 1991 to 1,960,928 metric tons in 2001, for an overall increase of 369,459 metric tons (Table 1). However, there was no dry whey production in Chile, Colombia, and Venezuela.

World Imports of Dairy Products

World imports of dairy products in milk equivalent metric tons increased at an average annual growth rate about 2.6 percent in the period 1991 to 2001. In the period 1991 to 1995, world imports of dairy products increased continuously from 52,405,310

metric tons in 1991 to 62,616,493 metric tons in 1995 (Table 3). Although decreases occurred in 1996, 1998, and 2001, world imports of dairy products trended upward through 2001, peaking at 68,138,509 metric tons in 2000 (Table 3). Between 1991 and 2001, world imports of dairy products increased 14,715,220 metric tons, from 52,405,310 metric tons in 1991 to 67,120,530 metric tons in 2001, for an overall increase of 28.1 percent. Total dairy imports (in milk equivalent metric tons) into Chile, Colombia, and Venezuela were 886,315 metric tons (Table 4), which was 1.3 percent of the world total dairy imports in 2001.

In the period 1991 to 2001, world butter imports decreased at an average annual rate of -0.1 percent. Between 1991 and 2001, world butter imports decreased 52,311 metric tons, reaching a low in 1996 of 1,203,892 metric tons (Table 3). A significant decrease occurred in 1994 when world butter imports decreased from 1,454,129 metric tons in 1993 to 1,288,247 metric tons in 1994, for an annual decrease of -11.4 percent. Since then, world butter imports fluctuated through 2001, ranging from a high of 1,368,933 metric tons in 1995 to a low of 1,203,892 metric tons in 1996 (Table 3). World butter imports in 2001 were 1,280,750 metric tons, which was up 1.5 percent from total world butter imports in 2000 (1,261,586 metric tons) (Table 3). Butter imports into Chile, Colombia, and Venezuela totaled 2,814 metric tons (Table 4), or 0.2 percent of world total butter imports in 2001.

Table 3. World dairy imports, 1991 through 2000.

Year	Milk Equivalent	Butter	Cheese	Dry Whole Milk	Dry Skim Milk	Dry Whey
	Metric Tons					
1991	52,405,310	1,333,061	2,127,089	1,115,052	1,664,905	627,884
1992	55,385,703	1,376,590	2,230,616	1,073,993	1,821,565	657,822
1993	55,463,235	1,454,129	2,222,401	1,059,341	1,843,592	645,911
1994	57,759,324	1,288,247	2,461,275	1,161,280	1,773,160	713,385
1995	62,616,493	1,368,933	2,468,786	1,525,707	1,890,674	783,249
1996	59,844,367	1,203,892	2,688,552	1,281,604	1,716,935	838,526
1997	62,626,024	1,321,235	2,843,580	1,357,158	1,727,457	862,943
1998	62,478,356	1,213,138	2,786,286	1,401,542	1,607,154	915,807
1999	66,593,229	1,217,796	2,887,650	1,439,868	1,879,505	998,073
2000	68,138,509	1,261,586	3,093,644	1,418,968	1,805,896	1,067,210
2001	67,120,530	1,280,750	3,354,503	1,351,083	1,577,319	1,165,912
Average Annual Growth (%)						
1991-2001	2.6	-0.1	4.7	2.6	-0.2	6.5

Source: FAO Statistical Databases, 2002.

In the period 1991 to 2001, world cheese imports increased at an average annual rate of 4.7 percent (Table 3). Except for 1993 and 1998, world cheese imports experienced continuous increases, from 2,127,089 metric tons in 1991 to 3,354,503 metric tons in 2001 (Table 3), for an overall increase of 57.9 percent from 1991. In 2001, world cheese imports were up 8.4 percent from 2000 (Table 3). Chile, Colombia, and Venezuela

imported 15,293 metric tons of cheese in 2001 (Table 4), which were 0.5 percent of the world total cheese imports in 2001 (Table 3).

Table 4. Chile, Colombia, and Venezuela dairy imports in 2001.

	Milk Equivalent	Butter	Cheese	Dry Whole Milk	Dry Skim Milk	Dry Whey
	Metric Tons					
SOUTH AMERICA						
Chile	104,558	862	2,615	4,429	5,390	1,461
Colombia	205,364	435	152	15,987	3,884	6,314
Venezuela	576,393	1,517	12,526	54,568	3,466	5,495
TOTAL	886,315	2,814	15,293	74,984	12,740	13,270

Source: FAO Statistical Databases, 2002.

World imports of dry whole milk increased in the period 1991 to 2001 at an average annual rate of 2.6 percent. World dry whole milk imports fluctuated in the period 1991 to 2001, ranging from a high of 1,525,707 metric tons in 1995 to a low of 1,059,341 metric tons in 1993 (Table 3). World dry whole milk imports trended downward in the period 1995 to 2001, for an average annual rate of -1.7 percent. In 2001, world dry whole milk imports totaled 1,351,083 metric tons, down from 1,418,968 metric tons in 2000 (Table 3). Dry whole milk imports into Chile, Colombia, and Venezuela totaled 74,984 metric tons in 2001 (Table 4), accounting for 5.5 percent of the world total dry whole milk imports (1,351,083 metric tons, Table 3).

World dry skim milk imports (nonfat dry milk or skim milk powder) have exceeded dry whole milk imports in the last decade (Table 3). However, in the period 1991 to

2001, world dry skim milk imports trended downward, for an average annual decrease rate of -0.2 percent (Table 3). World dry skim milk imports fluctuated, ranging from a high of 1,890,674 metric tons in 1995 to a low of 1,577,319 metric tons in 2001 (Table 3). Overall, between 1991 and 2001, world dry skim milk imports decreased 87,586 metric tons. In 2001, world dry skim milk imports totaled 1,577,319 metric tons, which was down 12.7 percent from 2000 (Table 3). Dry skim milk imports into Chile, Colombia, and Venezuela totaled 12,740 metric tons (Table 4), accounting for about 0.8 percent of the world total dry skim milk imports in 2001.

The most growth in world dairy imports has occurred in the dry whey market. From 1991 to 2001, average annual growth in world dry whey imports was 6.5 percent (Table 3). Except for 1993, world dry whey imports increased continuously from 627,884 metric tons in 1991 to 1,165,912 metric tons in 2001 (Table 3). Dry whey imports into Chile, Colombia, and Venezuela totaled 13,270 metric tons (Table 4), accounting for about 1.1 percent of the world total dry whey imports in 2001.

The rest of this paper covers the following information for Chile, Colombia, and Venezuela: macroeconomic conditions, milk and dairy production, consumption, imports, the US share of the dairy imports, dairy trade policies, and how these factors have changed overtime.

CHILE

Overview of Chile

Chile is located in the southern part of South America between Argentina and Peru, bordering the South Atlantic Ocean and the South Pacific Ocean. The total area of Chile is 756,950 square kilometers, slightly smaller than twice the size of Montana. In 2001, the population was about 15.5 million, with a 1.09 percent growth rate (CIA World Factbook, 2002).

Chile has a market-oriented economy, characterized by a high level of foreign trade. Chile's economy increased in the period 1991 to 1997. Growth in real gross domestic product (GDP) has averaged eight percent every year (CIA World Factbook, 2002). Due to its lower export earnings and tight monetary policies, Chile's economy growth rate fell to about four percent in 1998. A severe drought in 1999 hit Chile quite hard. As a result, Chile experienced negative economic growth for the first time in 15 years (CIA World Factbook, 2002). Chile's financial institutions were in good condition and helped the economy to recovery by the end of 1999, and its economic growth recovered to more than five percent in 2000 (CIA World Factbook, 2002). In 2001, Chile's GDP was \$153 billion (purchasing power parity), with a growth rate of 3.1 percent. Per-capita purchasing power parity was about \$10,000, and agriculture accounted for eight percent of the total GDP (CIA World Factbook, 2002).

Chile's emphasis is on macroeconomic stability and the economy's export orientation. As a result, Chile has few trade barriers, particularly for US exports. It became a World Trade Organization (WTO) member in 1995. Chile's total exports in 2001 were \$18.5 billion, of which the US received 17 percent. Its total imports in 2001 were \$18 billion, of

which the US composed 19 percent. The main trading partners are the US, Argentina, Brazil, China, and Japan (CIA World Factbook, 2002). Chile and the US concluded a comprehensive Free Trade Agreement (FTA) in December 2002. The FTA is the first comprehensive trade agreement between the United States and a South American country, and is expected to increase US market access for goods and services and provide strong protections for US investors in Chile (USTR, 2003).

Dairy Industry in Chile

Production of Dairy Products

Dairy farming is not new to Chile. Historically, most dairy farms were small- or medium-sized, with few cattle for dual purpose. Dual-purpose cattle offer the option of selling either milk or beef, depending on market conditions. In Chile, milk and dairy producers did not receive domestic price supports or subsidies from the government (USDA-FAS, 1995). However, a continuous decline in economic returns for most crops in irrigated land has convinced more farmers to switch from crop and fruit planting to milk production (US Department of Commerce, 1998).

In 1993, the New Zealand Dairy Board purchased Soprole, the leading dairy processor in Chile. Since then, the dairy industry in Chile has developed rapidly. One of the main characteristics of the developing process was the growth in dairy imports and large dairy companies buying out smaller plants (USDA-FAS, 1995). The dairy industry became highly concentrated and competitive. In 2002, the five biggest processors were Soprole, Nestle Chile, Loncoleche, Colun, and Parmalat, which accounted for about 90

percent of Chile's dairy processing production (USDA-FAS, 2002). Economies of scale of these dairy producers reduced production costs, and provided more negotiating power for both purchasing raw material and distributing their products.

The largest expansion in raw milk production occurred in the Metropolitan and Sixth Regions, which have been traditional fruit production areas. Milk production expansion has also occurred in Region IX (Temuco), the largest grain production area in the past (US Department of Commerce, 1998). As the dairy industry developed throughout the last decade, large and commercial dairy farms were established. The stockbreeding and dairy farming activities centered in the south zone were directed toward satisfying the domestic consumption of meat as well as milk. Milking cows in Chile have traditionally been dual-purpose breeds, mainly black and white, or red and white Dutch Friesians.

Increased crossbreeding with Holstein-Friesian semen was a key factor in the expansion in milk production in the 1990s (USDA-FAS, 1995). Most of the large, progressive dairy farms had a relatively large percentage of Holstein-Friesian in their herds. To increase milk production, large commercial herds raised the percentage of Holstein Friesian blood (USDA-FAS, 1996). As a result, the average milk production per cow increased in the 1990s. In 2000, there were a total of 608,000 head dairy cows and 49,000 milk producers in the country; milk production per cow was about 3,388 kilograms (USDA-FAS, 2002).

Milk production in Chile grew at an annual average rate of five percent during the period 1991 to 1998 (FAO Statistics, 2002). Milk production peaked in 1998 at 2,080,000 metric tons (Table 1). In 2000, Chile's milk production totaled 1,990,000 metric tons, a decrease of three percent from the previous year. The decrease of milk production in

1999 to 2000 was mainly due to decreases in milk prices and drought conditions in the country. During that period, the prices of milk decreased over four percent (USDA-FAS, 2000). Prices paid to Chilean milk farmers fell for a number of reasons. For example, increased competition reduced prices for milk products. In addition, milk prices paid to farmers in Chile were linked to international prices for dry milk powder. During 1999, prices of imports of dry milk fell over 15 percent (USDA-FAS, 2000).

Table 1. Chile milk and selected dairy products production, 1991 through 2000.

Year	Cow Milk, Whole, Fresh	Butter and Ghee	Cheese (All Kinds) Metric Tons	Skim Milk, Dry	Whey ^a
1991	1,450,000	7,279	34,878	4,744	152,140
1992	1,540,000	7,305	39,073	4,146	178,115
1993	1,650,000	7,728	42,535	4,721	195,425
1994	1,750,000	6,995	45,269	6,077	209,095
1995	1,890,000	6,651	47,516	6,000	220,330
1996	1,924,000	6,452	48,877	6,000	227,135
1997	2,050,000	9,582	50,412	7,725	234,810
1998	2,080,000	11,159	53,228	8,192	248,890
1999	2,050,000	11,007	51,486	10,218	240,159
2000	1,990,000	9,855	50,622	10,000	237,935

^a Whey production in milk equivalent pounds.
Source: FAO Statistical Databases, 2002.

It has been estimated that by 2003, Chile will produce enough milk to meet its domestic demand, and it has a chance to become an important player in the international dairy market. Cheese production increased during the 1990s, except for the period 1999 to 2000. In 2000, Chile's cheese production totaled 50,622 metric tons (Table 1). Between 1991 and 2000, cheese production increased 15,744 metric tons. In 2000, Chile's butter production totaled 9,855 metric tons, an overall increase of 2,576 metric

tons from the 1991 level (Table 1). Butter production peaked in 1998 at 11,159 metric tons and declined through 2000.

Chile's skim dry milk production increased significantly from 4,744 metric tons in 1991 to 10,000 metric tons in 2000, peaking at 10,218 metric tons in 1999 (Table 1). Production in 2000 remained steady, given the steady prices in the international markets (USDA-FAS, 2000). Chile's whey production increased steadily in the 1990s until 1998 and declined through 2000, the early increase was mainly due to a steady increase in domestic demand, particularly from its feed industry. In 2000, whey production (in milk equivalent pounds) totaled 237,935 metric tons, down from a high of 248,890 metric tons in 1998 (Table 1).

Demand for Dairy Products

Except for the period 1998 to 1999, Chile's economy has experienced rapid growth. This growth has caused a rapid increase in incomes and living standards among Chileans. Per-capita purchasing power parity increased rapidly from about \$4,000 in 1990 to over \$10,000 in 2001 (CIA World Factbook, 2002).

Chile's economic growth and higher incomes have led to a vigorous expansion in consumer spending, including increases of expenditures on dairy products. The consumption pattern has changed in Chile, with a greater percentage of consumption going to higher-value food products. According to Chile's Ministry of Agriculture (Ministerio de Agricultura), there has been a dramatic decline in consumption of potatoes and wheat since 1980 and a simultaneous increase in consumption of dairy and meat products (USDA-FAS, 1996).

Increased demand of dairy products is the result of improved economic conditions, low unemployment, and increased real income in the country. In addition, higher incomes and living standards have increased the purchasing of refrigerators and microwave ovens. Refrigeration now can be found in the majority of Chilean households. Storage improvements have increased the proportion of expenditures on milk and dairy products in Chile (USDA-FAS, 1996). For Chileans, the most important factor influencing buying decisions is income; increasing disposable income has been the principal element for expanded sales of dairy products in recent years (USDA-FAS, 1996).

Increases in dairy consumption in the 1990s were also supported by government feeding programs and other food programs. Joint public and private promotional campaigns encouraged the dairy consumption in the 1990s (USDA-FAS, 1995). Dairy producers agreed to form and finance an association (Promolac) to promote domestic milk consumption. This program, started in 2001, will last approximately five years with a total budget of 1,000 million Chilean pesos (US\$1.3 million) annually. The promotion of fresh milk consumption will be mainly through TV and printed media (USDA-FAS, 2002). In addition, Chile's fast-developing dairy processing technology has also caused the diversification of dairy products. Fresh milk in plastic bags; ultra high temperature (UHT) milk; and a vast variety of yogurts, cheeses and powdered, condensed, and skim milks offered in large quantities can be easily bought from supermarkets and other small grocery stores (USDA-FAS, 1995).

Milk consumption in Chile increased during the 1990s. The growth rate was 1.9 percent, on average, per year (Table 2). However, per-capita consumption was still low compared to developed countries. In 2000, per-capita consumption of all milk (in milk

equivalent pounds) totaled 138.99 kilograms, about 50 percent of the US consumption (FAO Statistics, 2002). The demand for all milk products (excluding butter) in Chile in 2000 was reported to be 2,114,129 metric tons. Chile's dairy self-sufficiency was about 95 percent that year (FAO Statistics, 2002). As farm production increases, it is expected that Chile will achieve self-sufficiency by 2003 (USDA-FAS, 2002).

Table 2. Per capita consumption of dairy products in Chile, 1991 through 2000.

Year	All Milk ^a	Butter	Cheese	Skim Milk ^a	Whole Milk ^a	Whey ^a
	Kilograms					
1991	118.37	0.69	2.62	19.12	114.52	12.76
1992	128.80	0.83	2.89	22.59	121.06	14.90
1993	137.25	0.79	3.28	23.45	127.74	16.34
1994	135.57	0.69	3.53	20.14	127.38	16.20
1995	143.83	0.62	3.69	20.08	134.18	17.27
1996	148.23	0.65	3.77	21.39	136.71	16.65
1997	146.42	0.73	3.89	24.13	137.57	16.62
1998	148.86	0.82	3.90	28.19	139.06	17.13
1999	139.58	0.76	3.60	27.40	131.39	16.46
2000	138.99	0.76	3.66	24.94	129.23	15.87
Average Annual Growth (%)						
1991-2000	1.9	1.7	4.0	3.6	1.4	2.7

^a Included food and other uses, such as cattle feed.

Source: FAO Statistical Databases, 2002.

In the 1990s, per-capita consumption of butter and cheese increased 1.7 percent and 4.0 percent, respectively (Table 2). In 2000, per-capita butter consumption was about 0.76 kilogram, and per-capita cheese consumption was about 3.66 kilograms (Table 2). In 1999, a severe drought caused Chile's economy to fall into recession and farm dairy production to decrease. Consumption of most dairy products fell, including butter and cheese. Per-capita butter consumption decreased from 0.82 kilogram in 1998 to 0.76

kilogram in 1999, or an eight percent decrease. Per-capita cheese consumption fell from 3.90 kilograms in 1998 to 3.60 kilograms in 1999, or an annual decrease of eight percent (FAO Statistics, 2002).

Chileans prefer whole milk to skim milk because there is a general perception that full-fat milk is more nutritious. As a result, the demand for skim milk was a small fraction of the total amount of milk consumed in the 1990s. However, compared to the growth of whole milk consumption (1.4 percent) in the 1990s, skim milk consumption showed a greater increase of 3.6 percent on average in the 1990s, mainly due to increasing concerns about reducing fat intake among middle- and high-income consumers. Between 1991 and 2000, per-capita skim milk consumption increased 5.82 kilograms. In 2000, per-capita skim milk consumption was 24.94 kilograms, down from 28.19 kilograms in 1998 (Table 2). Between 1991 and 2000, per-capita whole milk consumption increased 14.71 kilograms. In 2000, Chile's whole milk consumption was about 129.23 kilograms, down from 139.06 kilograms in 1998 (Table 2).

In Chile, some families without refrigeration prefer to purchase dry milk, rather than fluid milk. Government food programs accounted for an important proportion of dry milk consumption in Chile during the 1990s (USDA-FAS, 2000). Lower dairy consumption in 1999 and 2000 reflected the economic slowdown. However, dairy consumption has recovered in recent years due to the economic recovery (USDA-FAS, 2002). Dry milk has a constant demand throughout the year.

Chile's food industry utilizes a large proportion of dry skim milk and whey (USDA-FAS, 2000). Products made from dry skim milk and whey include chocolate, ice cream (Nestle and Unilever), and yogurt. The consumption rate of these products increased

during the last decade along with the economic growth, but slowed in 1999 and 2000. In the 1990s, the growth rate of per-capita whey consumption was about 2.7 percent, on average, per year (Table 2). In 2000, per-capita whey consumption was reported to be 15.87 kilograms (Table 2); utilization is expected to continue increasing, but at a slower rate over the next few years (USDA-FAS, 2002).

Imports of Dairy Products

As dairy production increased over the recent years, Chile has achieved a self-sufficiency level of over 95 percent (FAO Statistics, 2002), and is expected to achieve 100 percent in the near future (USDA-FAS, 2002). Therefore, although it was traditionally a net importer of dairy products, volume has never been high. In 2000, Chile ranked 48th among all countries in total dairy products imported (in milk equivalent pounds), and its share of total world dairy imports was 0.3 percent (FAO Statistics, 2002).

For individual dairy products, Chile ranked out of the top 40 countries in imports of butter and cheese in 2000. Chile imported 1,961 metric tons butter and 6,631 metric tons cheese in 2000 (Table 3), and its share of world imports of butter and cheese was well below one percent (FAO Statistics, 2002). In 2000, Chile ranked 34th and 37th in imports of dry skim milk and whey, respectively (Tables 4 and 5). Its share of world imports was about 0.5 and 0.2 percent, respectively (FAO Statistics, 2002).

Table 3. Chile dairy imports, 1991 through 2000.

Year	Milk Equivalent	Butter	Cheese	Dry Skim Milk	Whey
	Metric Tons				
1991	140,161	1,970	116	5,176	1,360
1992	220,846	3,917	248	9,662	1,853
1993	258,545	3,199	2,891	10,020	2,311
1994	181,043	2,698	4,544	6,958	1,348
1995	193,045	2,249	5,284	8,419	1,859
1996	236,325	2,874	5,902	10,304	1,515
1997	133,433	1,718	7,048	6,078	1,164
1998	165,233	1,185	4,984	9,357	1,426
1999	125,389	529	3,606	9,228	1,288
2000	186,907	1,961	6,631	9,135	2,370
Average Annual Growth (%) 1991-2000	8.8	24.5	145.7	12.6	12.5

Source: FAO Statistical Databases, 2002.

Table 4. Selected countries' total dry skim milk imports and ranking, 1996 through 2000.

	1996		1997		1998		1999		2000	
	Mt	Rank	Mt	Rank	Mt	Rank	Mt	Rank	Mt	Rank
Algeria	58,468	9	78,893	5	87,040	4	71,272	8	91,339	5
Belgium	51,781	12	43,521	11	43,155	13	45,150	15	71,900	9
Chile	10,304	30	6,078	41	9,357	32	9,228	35	9,135	34
China	37,975	15	40,945	13	44,813	12	51,150	13	56,862	10
France	33,446	18	28,453	20	42,636	14	63,791	9	84,735	6
Indonesia	45,916	14	41,034	12	33,133	18	98,348	5	82,574	7
Italy	126,614	3	127,504	3	126,494	2	121,779	3	109,008	4
Malaysia	78,151	5	75,000	6	59,596	6	71,879	7	74,721	8
Mexico	126,700	2	132,849	2	102,600	3	125,137	2	129,078	2
Netherlands	216,085	1	224,214	1	162,459	1	230,438	1	205,379	1
Philippines	83,704	4	98,050	4	77,637	5	86,729	6	111,455	3
Total	869,144	---	896,541	---	788,920	---	974,901	---	1,026,186	---
World	1,716,935	---	1,727,457	---	1,607,154	---	1,879,505	---	1,805,896	---

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

Table 5. Selected countries' total whey imports and ranking, 1996 through 2000.

	1996		1997		1998		1999		2000	
	Mt	Rank	Mt	Rank	Mt	Rank	Mt	Rank	Mt	Rank
Belgium	52,959	4	55,759	3	58,099	3	54,842	4	56,299	5
Canada	43,224	6	36,554	10	37,996	9	48,375	6	62,441	3
Chile	1,515	35	1,164	41	1,426	40	1,288	43	2,370	37
China	72,882	2	89,359	2	78,819	2	97,717	2	140,057	2
France	29,238	10	40,931	7	50,588	5	49,463	5	59,048	4
Germany	66,975	3	45,070	5	48,759	6	46,114	7	40,077	9
Italy	40,845	7	37,598	8	42,637	8	37,584	10	42,029	8
Japan	32,343	9	37,481	9	37,351	10	41,157	9	39,522	10
Mexico	48,636	5	49,174	4	56,642	4	55,947	3	55,031	6
Netherlands	251,310	1	217,543	1	248,474	1	292,637	1	252,099	1
Spain	37,147	8	43,362	6	44,869	7	44,225	8	49,109	7
Total	677,074	----	653,995	----	705,660	----	769,349	----	798,082	----
World	886,132	----	902,409	----	973,881	----	1,054,173	----	1,124,090	----

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

Although Chile's dairy imports were not high during the 1990s, its growth in dairy imports was notable. Growth in dairy imports was mainly due to higher incomes and living standards, which caused an increasing demand for dairy products. In addition, open trade policy also encouraged exports of dairy products. While dairy products are normally imported by private traders, government school feeding programs or other entities may import dairy products as well. Some non-private traders and non-governmental organizations (NGOs) are involved in dairy product donation programs from other countries (USDA-FAS, 1995).

For the period 1991 to 2000, total imports of milk and dairy products (in milk equivalent pounds) increased at an average annual rate of 8.8 percent (Table 3). A significant increase occurred in 1992 when imports increased from 140,161 metric tons in 1991 to 220,846 metric tons in 1992, or an annual increase of 58 percent. A significant decrease occurred in 1997 when imports decreased from 236,325 metric tons to 133,433 metric tons in 1997 (Table 3), or an annual decrease of 44 percent. Because of an expected increase in international milk prices, dairy traders imported larger than normal volumes of dairy products in 1996, mainly in the form of milk powder. This created larger than normal carry-over stocks and lower imports during 1997. The 1998 to 1999 drought caused an economic slowdown and decreased Chile's dairy imports. In 2000, Chile imported 186,907 metric tons dairy products (Table 3).

Chile imported 1,961 metric tons of butter and 6,631 metric tons of cheese in 2000 (Table 3). Growth in cheese imports was notable in the 1990s due to Chile's increasing domestic demand and export market. Chile re-exports part of its dairy imports to other countries in the region. The annual growth rate was about 145.7 percent for cheese, despite a downward trend after 1997 (Table 3). The annual growth rate for butter was about 24.5 percent during the 1990s, which is somewhat misleading. Butter imports trended downward after peaking in 1992 at 3,917 metric tons (Table 3). All dairy imports, including butter and cheese, decreased in 1999, due to severe drought and economic slowdown. Butter imports fluctuated in the 1990s. Between 1991 and 2000, butter imports decreased nine metric tons, peaking in 1992 at 3,917 metric tons (Table 3). Between 1991 and 2000, cheese imports increased 6,515 metric tons, peaking in 1997 at 7,048 metric tons (Table 3).

Dry milk imports, including whole milk powder and skim milk powder, fell significantly in 1999 as a result of weaker domestic demand due to a slowdown in the economy. However, decreases in dry skim milk was not significant, which decreased from 9,357 metric tons in 1998 to 9,228 metric tons in 1999 (Table 3), for an annual decrease of 1.4 percent. In addition, increased domestic production of dry milk relative to reduced domestic demand resulted in fewer imports in 2000 and 2001. Further declines in these imports are expected given the trends (USDA-FAS, 2002). Chile's whey imports increased during the 1990s at an average annual rate of 12.5 percent (Table 3). Between

1991 and 2000, Chile's whey imports increased 1,010 metric tons. In 2000, Chile imported 2,370 metric tons dry whey to satisfy its domestic demand, mainly from the food industry (Table 3).

Chile also exports dairy products, with its main export markets in Latin America. Fluid and other milk is mainly exported to Peru, Bolivia and Argentina. Since a trade balance is expected in the coming years, Chile's objective will be more economical efficiency to develop its export market of dairy products (USDA-FAS, 2002).

Exports of Dairy Products from the U.S.

In the 1990s, Chile imported very little butter from the US (Table 6). In 2000, Chile's total butter imports were 1,961 metric tons, with only 6.3 metric tons coming from the United States (Table 6). US cheese imports to Chile increased during the 1990s from 4.1 metric tons in 1992 to 529.8 metric tons in 2000 (Table 6). In 2000, the market share of US cheeses was about eight percent (Table 6).

The major suppliers of Chile's dry milk imports are New Zealand, the EU, and other Latin American countries, such as Argentina and Uruguay. Because of price competition, US dry skim milk exports to Chile has experienced fluctuations. However, the US was one of the biggest dry skim milk suppliers in 1992 and 1998, with a market share of 30.1 percent and 21.3 percent, respectively (Table 6). In 2000, Chile's total nonfat dry milk imports were 9,135 metric tons with the US exporting 20.3 metric tons nonfat dry milk to Chile, for a share of only 0.2 percent (Table 6). Also in 2000, Argentina exported over

3,200 metric tons, and Uruguay exported over 2,300 metric tons, and New Zealand exported over 1,300 metric tons to Chile (USDA-FAS, 2002).

Table 6. Selected dairy products the US exported to Chile, 1991 through 2000.

Year	Butter ^a	% of All Butter Imports ^b	Cheese ^a	% of All Cheese Imports ^b	Non-Fat Dry Milk ^a	% of All NFDM Imports ^b	Whey ^a	% of All Whey Imports ^b
	Mt	%	Mt	%	Mt	%	Mt	%
1991	0.0	0.0	7.2	6.2	49.8	1.0	0.0	0.0
1992	0.0	0.0	4.1	1.7	2,905.3	30.1	244.8	13.2
1993	0.0	0.0	26.2	0.9	678.9	6.8	340.5	14.7
1994	0.0	0.0	72.6	1.6	153.8	2.2	276.0	20.5
1995	8.3	0.4	146.8	2.8	980.8	11.6	250.1	13.5
1996	16.4	0.6	175.6	3.0	7.2	0.1	374.7	24.7
1997	22.5	1.3	381.6	5.4	764.2	12.6	309.1	26.6
1998	75.8	6.4	533.5	10.7	1,994.0	21.3	344.1	24.1
1999	7.5	1.4	509.2	14.1	474.4	5.1	230.6	17.9
2000	6.3	0.3	529.8	8.0	20.3	0.2	76.7	3.2

^a Source: United States Department of Agriculture Foreign Agricultural Service, 2003.

^b Data from Table 3.

The US was one of the major suppliers of whey to Chile. Although imports of US whey in 2000 were 76.7 metric tons, the market share of US whey imports ranged from 0.0 percent in 1991 to 26.6 percent in 1997 (Table 6). However, in recent years, price competition has been from New Zealand, the EU countries, and other Latin American countries.

Trade Policy and Tariff

Chile's open trade regime and its unilateral reforms resulted in a strong economic growth and lower inflation over the last two decades. In the 1990s, the Chilean economy grew at about six percent in real terms every year (USTR, 2003). Chile has been a WTO member since 1995. Since 1990, Chile's trade relations switched from unilateral reforms to bilateral trade agreements. For example, Chile has bilateral trade agreements with Canada, Mexico, Colombia, Ecuador, and Venezuela. Chile is a member of Mercosur, which is a trade agreement that was established in 1992 between Argentina, Brazil, Paraguay, and Uruguay. In addition, Chile is also active in the Asian Pacific Economic Cooperation forum (APEC), and is currently negotiating an agreement with the European Union (WTO, 2002).

Chile's main trade policy instrument is the uniform tariff. Under the Uruguay Round commitment, Chile's bound rate is 25 percent (31.5 for some agricultural goods) and its export subsidies are to be eliminated. However, the actual level is well below Chile's WTO ceiling binding rate of 25 percent. Chile's low and uniform tariff and its commitments in the WTO demonstrate its determination to pursue liberal trade policies on a MFN (Most Favored Nation) basis. For dairy products in 2002, although Chile's bound rate for dairy products was 31.5 percent, a uniform import tariff of seven percent was applied on most of the dairy products imported. Since January 2003, this applied rate has been reduced to six percent. In addition, a value added tax (VAT) of 18 percent has been charged on all products, domestic or imported (USDA-FAS, 2002). Since its dairy industry has already been developed, high tariff protection is less important; the

government eliminated all safeguard measures, except for a 12 percent safeguard duty on dry milk (USDA-FAS, 2002).

It is worth noting that the US and Chile established a comprehensive Free Trade Agreement (FTA) in December 2002. The agreement is designed to strip away barriers and to facilitate trade and investment between both countries. The agreement will phase out tariffs on US dairy exports by 2007 (USDEC, 2003). The agreement stipulated that other countries cannot benefit from concessions between the US and Chile. For example, the agreement bans any transshipment of foreign-produced dairy products through Chile to the United States, which means that countries such as Australia cannot export dairy products to Chile for further processing and then re-export them to the United States under reduced tariffs. Chile has also agreed to eliminate regulations for all US dairy manufacturing plants exporting to Chile (USDEC, 2003).

COLOMBIA

Overview of Colombia

Colombia is located in the northern part of South America, bounded by Panama and the North Pacific Ocean to the west, the Caribbean Sea to the northeast, Venezuela to the east, and Ecuador to the south. The total area of Colombia is 1,138,910 square kilometers, slightly less than three times the size of Montana. In 2001, the population was estimated to be 41 million, with a 1.6 percent growth rate (CIA World Factbook, 2002).

Colombia has enjoyed a fairly stable economy for the last 50 years. Colombia's market-opening measures and sound macro-economic management have shown good economic results and accelerated Colombia's integration into the world economy. The real gross domestic product (GDP) growth rate was above four percent in the 1990s. However, Colombia's economy also suffered from weak domestic demand, austere government budgets, and a difficult security situation over the past decade (CIA World Factbook, 2002).

Colombia is well-endowed with minerals and energy resources. It has the largest coal reserves in Latin America, and has become a net oil exporter since 1986 (US Department of State, 2000). Colombia's major exports include petroleum; coffee; coal; nickel; gold and non-traditional exports, such as cut flowers, semi-precious stones, sugar, and tropical fruits. In recent years, two of Colombia's leading exports, oil and coffee, have faced an uncertain future; new exploration is needed to offset declining oil production, coffee harvests, and prices. In 2001, Colombia's real GDP was \$225 billion (purchasing power

parity), with a per-capita purchasing power parity of \$6,300. Its economy's growth rate in 2001 was about two percent, and agriculture accounted for 19 percent of its total GDP (CIA World Factbook, 2002).

Colombia's total exports in 2001 were \$12.3 billion, of which the US received 43 percent. Its total imports in 2001 were \$12.7 billion, of which the US composed 35 percent. The main trading partners include the US, the European Union (EU), and other Andean Community members (CIA World Factbook, 2002).

Dairy Industry in Colombia

Production of Dairy Products

Dairy farming is not new to Colombia. Historically, most dairy farms are small- or medium-sized, with few cattle for dual purposes. Dual-purpose cattle offer the option of selling either milk or beef, depending on market conditions.

Cooperatives have become an organizational solution for small farmers to improve production and become part of a well-organized commercial chain (USDA-FAS, 2002). Since 1980, dairy production in Colombia has increased as a result of the development of dairy cooperatives. The Colombian government has actively supported the establishment of new cooperatives among small- and medium-sized dairy farms through FINAGRO (Le damos todo el credito al campo), an agricultural financing corporation, by improving the availability of credit and increasing investments in the dairy sector. Cooperatives also

applied these financial resources to develop a program to expand the use of cold storage tanks for milk at the farm level. The growth of these refrigeration facilities enhanced the milk production in Colombia throughout the 1990s (USDA-FAS, 2002).

Growth in the dairy sector was achieved under the dairy chain agreement, which is an instrument to improve competitiveness, reduce price volatility, and stabilize domestic dairy supplies through the whole-sector chain (USDA-FAS, 1995; USDA-FAS, 2002). Under the dairy chain agreement, milk producers, dairy processors, and the government are jointly seeking gains in efficiency and productivity. The dairy chain agreement established a buying price system to encourage milk producers to stabilize milk production throughout the year. According to the agreement, processors set a price for quota purchase levels that is the daily average price for the six lowest sales months during the previous year. Over-quota milk production is purchased at a lower price than the quota price. There is a Minimum Reference Quota Price (MRQP) for buying milk within quota and a Minimum Reference Surplus Price (MRSP) for buying milk over the quota. In addition, dairy farmers may obtain a premium price based on milk quality. However, in recent years, because the price scheme has not worked out properly, there is a trend to set prices by individual agreements between dairy producers and processors (USDA-FAS, 1995; USDA-FAS, 2002).

The growth of dairy production in the 1990s was due to several other factors. For example, the National Cattle Development Fund (NCDF), established in 1993 by the government, and the government, authorized a production tax of 0.5 percent of the farm

price per liter on Colombian beef and milk producers to finance the fund. This fund has launched campaigns that promote beef and milk consumption (USDA-FAS, 2002).

Because of declining income for other crops, such as coffee and sugar, more land was transferred to cattle production. Due to dual-purpose operations, dairy production increased as well. In addition, because of the operation of the guerrillas in rural areas, dairy farmers continued to move their operations closer to the cities for security. Higher costs for land and operations have forced the dairy farms to increase efficiency and production significantly since 1980 (USDA-FAS, 1995). Important dairy zones, such as Bogota, Medellin, and Cali, are all large urban areas at present (USDA-FAS, 2002).

Fluid milk production has significantly increased since 1980. Between 1980 and 2000, milk output grew 130 percent, from about 2.16 million metric tons in 1980 (FAO Statistics, 2002) to about 5,629,025 metric tons in 2000 (Table 1). An estimated 40 percent of Colombia's milk comes from the Atlantic coastal region (USDA-FAS, 2002). In 2000, Colombia's butter and ghee production totaled 18,400 metric tons (Table 1), and its cheese production totaled 51,000 metric tons, accounting for 0.3 percent of the world cheese production in 2000, which totaled 16,416,935 metric tons (FAO Statistics, 2002).

Colombia's whole dry milk production in 2000 totaled 39,000 metric tons (Table 1), slightly above that for 1999. The industry continued adding plant capacity to improve the efficiency of handling the oversupply of fluid milk in June and July and to attend the rising demand of exporting markets. Skim dry milk production was about 4,000 metric tons every year in the late 1990s (USDA-FAS, 2000). In addition to powdered milk

production, Colombia produced whey merely as a by-product of cheese. In the 1990s, the average whey production (in milk equivalent pounds) was 187,000 metric tons (Table 1).

Table 1. Colombia milk and selected dairy products production, 1991 through 2000.

Year	Cow Milk, Whole, Fresh	Butter and Ghee ^c	Cheese ^c (All Kinds)	Whole Milk, Dry	Skim Milk, Dry ^b	Whey ^{a,c}
Metric Tons						
1991	4,259,370	14,780	51,000	14,500	---	187,000
1992	4,344,530	14,800	51,000	14,500	---	187,000
1993	4,561,760	14,800	51,000	13,500	---	187,000
1994	4,768,170	14,800	51,000	13,500	---	187,000
1995	5,078,080	14,800	51,000	12,000	---	187,000
1996	5,332,030	14,800	51,000	30,000	---	187,000
1997	5,492,034	17,440	51,000	35,000	---	187,000
1998	5,711,637	18,160	51,000	37,900	---	187,000
1999	5,733,840	18,360	51,000	38,600	---	187,000
2000	5,629,025	18,400	51,000 ^c	39,000	---	187,000 ^c

^a Whey production in milk equivalent pounds.

^b Dry skim milk production was not available.

^c Reasons for identical numbers repeated from year to year are unknown.

Source: FAO Statistical Databases, 2002.

It is worth noting that the El Niño phenomenon, which would bring drought, occurred in Colombia during 1997 and 1998. Drought conditions were the main reason for the milk production slowdown in 1999 and 2000. Too much rain, which is called La Niña, also occurred in Colombia. La Niña resulted in very strong pasture growth from 1995 through 1996, so the country had to deal with an excess supply of milk (FAO, 1998).

Demand for Dairy Products

Colombia is the third largest Latin American country in population and the fourth largest in total area. Given Colombia's proximity to the Equator and elevated topography, a wide range of agricultural commodities can be produced year-round. Colombia has the raw materials and processing capacity to satisfy most of its demand for consumer-ready food products. In addition, approximately 80 percent of Colombians live in urban areas (USDA-FAS, 1996). Colombian real per capita income grew about three percent annually in the 1990s (CIA World Factbook, 2002). Higher income and urbanization in Colombia caused dairy consumption to increase in the 1990s (USDA-FAS, 2001).

The Government of Colombia (GOC) has sponsored a supplementary lunch program for low-income elementary students since the late 1990s. This program is known as a school food program, which also provides milk for school students. As the number of students and support from the government increased, this program provided important support for milk producers in the late 1990s. In addition, producers have developed long-term campaigns to increase awareness of the nutritional value of drinking milk. With the relative lower prices of sodas and juices, these activities have helped increase milk and dairy consumption (USDA-FAS, 2001).

Colombia almost achieved self-sufficiency in dairy products in recent years. In 2000, self-sufficiency in all milk products was over 95 percent (FAO Statistics, 2002). Dairy products, mainly in the form of milk powder, are imported every year because of the Andean Pact trade agreement, and milk can circulate import duty-free among the Andean countries, which include Colombia, Bolivia, Ecuador, Peru, and Venezuela (USDA-FAS,

1995).

Per-capita milk consumption has increased at a rate of 1.9 percent on average since 1991, peaking in 1998 at 144.74 kilograms (Table 2). In 2000, per-capita milk consumption totaled 142.23 kilograms (Table 2). A decline of four percent occurred in 1999, when per-capita milk consumption decreased from 144.74 kilograms in 1998 to 139.13 kilograms in 1999 (Table 2).

Table 2. Per-capita consumption of dairy products in Colombia, 1991 through 2000.

Year	All Milk ^a	Butter	Cheese	Skim Milk ^a	Whole Milk ^a	Whey ^a
Kilograms						
1991	120.60	0.41	1.43	10.87	119.63	5.62
1992	120.84	0.41	1.41	10.30	120.24	5.77
1993	124.59	0.40	1.38	9.95	124.13	5.62
1994	127.08	0.39	1.36	10.05	126.35	5.46
1995	133.53	0.39	1.33	9.92	132.75	5.73
1996	137.82	0.38	1.32	9.81	136.87	5.65
1997	141.97	0.45	1.29	12.02	140.24	5.88
1998	144.74	0.45	1.25	11.95	143.43	6.14
1999	139.13	0.45	1.23	11.72	137.99	5.84
2000	142.23	0.44	1.19	11.27	141.54	5.89
Average Annual Growth (%)						
1991-2000	1.9	1.0	-2.0	0.7	1.9	0.6

^a Included food and other uses, such as cattle feed.

Source: FAO Statistical Databases, 2002.

Per-capita butter consumption increased one percent on average in the 1990s (Table 2). However, per-capita cheese consumption decreased at an average annual rate of -2.0 percent in the 1990s, mainly due to the higher prices of cheese in the middle 1990s.

Colombian consumers consider whole milk more nutritious than skim milk (USDA-

FAS, 2002). During the 1990s, per-capita whole milk consumption increased at an average annual rate of 1.9 percent. Between 1991 and 2000, per-capita whole milk consumption increased 21.91 kilograms, peaking in 1998 at 143.43 kilograms (Table 2). Nevertheless, in the 1990s, per-capita consumption of skim milk improved somewhat as higher income consumers expressed concern about fat intake. In the 1990s, per-capita skim milk consumption increased 0.7 percent annually, peaking in 1997 at 12.02 kilograms and tapering off through 2000 (Table 2).

Unlike most Asian countries, per-capita whey consumption increased only at an average annual rate of 0.6 percent in the 1990s, peaking in 1998 at 6.14 kilograms (Table 2).

In Colombia, milk powder is used to make fluid milk and to produce other dairy products. Milk powder for household use is primarily used as a substitute for fluid milk. In addition, ultra high temperature (UHT) milk first entered the Colombian market in 1993, when it was imported from Ecuador. Since then, Colombia has initiated production, and consumption has increased. At present, ultra high temperature (UHT) milk is sold as whole and skim milk (USDA-FAS, 2002).

Imports of Dairy Products

Colombia is not a big importer of dairy products. It has achieved self-sufficiency of over 95 percent in recent years. Dairy products, mainly in the form of milk powder, are imported every year to trade under the Andean Pact trade agreement. Milk can circulate

duty free among the Andean Pact countries of Colombia, Bolivia, Ecuador, Peru, and Venezuela (USDA-FAS, 1995). Colombia has actively increased its dairy production and exporting markets in Latin America (USDA-FAS, 2002). In 2000, Colombia ranked out of the top 40 countries in total dairy products imported (in milk equivalent metric tons). In addition, Colombia also ranked out of the top 40 in imports of butter, cheese, and dry skim milk in the 1990s. In 2000, Colombia's total butter and cheese imports totaled 49 metric tons and 188 metric tons, respectively (Table 3). Dry skim milk imports totaled 3,403 metric tons in 2000 (Table 3), accounting for 0.19 percent of the world imports of dry skim milk, which totaled 1,805,896 metric tons (FAO Statistics, 2002). In 2000, Colombia ranked 28th in imports of whey (Table 4). Its share of world whey imports was 0.42 percent (FAO Statistics, 2002).

Table 3. Colombia dairy imports, 1991 through 2000.

Year	Milk Equivalent	Butter	Cheese	Dry Whole Milk	Dry Skim Milk	Whey
	Metric Tons					
1991	40,306	12	71	842	3,204	1,009
1992	53,303	23	359	2,875	1,722	1,771
1993	60,273	14	488	4,467	1,361	1,594
1994	43,226	21	393	1,299	2,365	1,554
1995	75,494	68	486	4,117	2,652	2,507
1996	90,634	36	1,010	5,119	2,851	2,582
1997	195,396	661	857	14,513	6,105	3,558
1998	207,666	253	603	16,845	4,916	4,636
1999	104,181	68	399	4,516	4,399	4,055
2000	132,937	49	188	8,614	3,403	4,708
Average Annual Growth (%) 1991-2000	23.5	205.9	47.0	76.0	9.7	22.1

Source: FAO Statistical Databases, 2002.

Table 4. Selected countries' total whey imports and ranking, 1996 through 2000.

	1996		1997		1998		1999		2000	
	Mt	Rank	Mt	Rank	Mt	Rank	Mt	Rank	Mt	Rank
Belgium	52,959	4	55,759	3	58,099	3	54,842	4	56,299	5
Canada	43,224	6	36,554	10	37,996	9	48,375	6	62,441	3
China	72,882	2	89,359	2	78,819	2	97,717	2	140,057	2
Colombia	2,582	28	3,558	26	4,636	25	4,055	28	4,708	28
France	29,238	10	40,931	7	50,588	5	49,463	5	59,048	4
Germany	66,975	3	45,070	5	48,759	6	46,114	7	40,077	9
Italy	40,845	7	37,598	8	42,637	8	37,584	10	42,029	8
Japan	32,343	9	37,481	9	37,351	10	41,157	9	39,522	10
Mexico	48,636	5	49,174	4	56,642	4	55,947	3	55,031	6
Netherlands	251,310	1	217,543	1	248,474	1	292,637	1	252,099	1
Spain	37,147	8	43,362	6	44,869	7	44,225	8	49,109	7
Total	678,141	----	656,389	----	708,870	----	772,116	----	800,420	----
World	886,132	----	902,409	----	973,881	----	1,054,173	----	1,124,090	----

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

Although Colombia is not a big importer of dairy products, the growth in dairy imports into Colombia was remarkable in the 1990s. For the period 1991 to 2000, total imports of dairy products (in milk equivalent metric tons) increased, on average, 23.5 percent per year, peaking in 1998 at 207,666 metric tons (Table 3). The growth of dairy imports in 1990s was partly due to the trade liberalization policy started at the beginning of the 1990s. In 1994, under pressure from the Colombian dairy producers, the government found that there was an oversupply of milk in Colombia and banned imports of all dairy products for about four months of the year. As a result, dairy imports decreased to 43,226 metric tons in 1994 down from 60,273 metric tons in 1993. Milk imports in 1999 totaled 104,181 metric tons, down 50 percent from 1998. This was mainly due to the devaluation of the Colombian peso, which made imported milk less competitive (USDA-FAS, 1999). In 2000, Colombia's total dairy imports (in milk equivalent metric tons) totaled 132,937 metric tons (Table 3).

In the 1990s, Colombia did not import much butter and cheese. Although the growth rate on average was as high as 205.9 and 47 percent, respectively (Table 3), the total amount was quite small. Butter imports peaked at 661 metric tons in 1997 and trended downward through 2000. Cheese imports peaked in 1996 at 1,010 metric tons and trended downward through 2000. In 2000, Colombia's total butter and cheese imports totaled 49 metric tons and 188 metric tons, respectively (Table 4).

Colombia's dry skim milk imports in 1992 totaled 1,722 metric tons (Table 3), down 44 percent from 1991. Since then, imports dropped again in 1993 and then grew to 6,105 metric tons in 1997, and then trended downward through 2000. This trade expansion was fostered by the government's trade liberalization policy called 'Apertura', implemented in 1991 (USDA-FAS, 2002). Due to the devaluation of its currency and growth in domestic production in the late 1990s (Table 1), imports of skim milk powder became less competitive. As a result, Colombia's imports of dry skim milk decreased to 3,403 metric tons in 2000. On average, the growth rate of dry skim milk imports was 9.7 percent per year in the 1990s (Table 3). About 85 percent of its milk powder imports, both whole and skim milk powder were used by processors to make fluid milk. Ten percent was processed as other dairy products, such as cheese and yogurt and the remainder went to retail sales. Milk powder imports are forecasted to continue growing at about three percent annually over the next three to five years, and whole milk powder will account for over 70 percent of all milk powder imports (USDA-FAS, 2002).

Colombia's dry whole milk imports increased at an average annual rate of 76.0 percent during the 1990s, ranging from a low of 842 metric tons in 1991 to a high of 16,845 metric tons in 1998 (Table 3). Between 1991 and 2000, dry whole milk imports increased 7,772 metric tons to 8,614 metric tons in 2000 (Table 3).

The growth of whey imports was remarkable in the 1990s. Whey is an important dairy product import to Colombia. Whey imports increased in the 1990s by 22.1 percent per year (Table 3). In 2000, Colombia's whey imports peaked at 4,708 metric tons (Table 3).

Exports of Dairy Products from the U.S.

In 2000, US butter exported to Colombia accounted for only 1.0 percent of Colombia's total butter imports, about 0.5 metric tons (Table 5). This was down from 34.5 metric tons in 1997 (Table 5). Although Colombia imported a small amount of cheese in the 1990s, the US dominated the market in the 1990s, mainly due to the high quality of US products and less competition from other countries. The quantity of imported US cheese trended upward from 45.2 metric tons in 1991 to 527.9 metric tons in 2000 (Table 5).

Table 5. Selected dairy products imported from the US into Colombia, 1991 through 2000.

Year	Butter ^a	% of All Butter Imports ^b	Cheese ^a	% of All Cheese Imports ^b	Non-Fat Dry Milk ^a	% of All NFDM Imports ^b	Whey ^a	% of All Whey Imports ^b
	Mt	%	Mt	%	Mt	%	Mt	%
1991	0.0	0.0	45.2	63.7	0.0	0.0	368.4	36.5
1992	0.0	0.0	128.4	35.8	1,880.1	109.2 ^c	476.4	26.9
1993	3.2	22.9	101.5	20.8	1,005.4	73.9	576.2	36.1
1994	0.0	0.0	227.2	57.8	0.9	0.0	623.5	40.1
1995	0.0	0.0	207.7	42.7	19.2	0.7	1,135.6	45.3
1996	10.0	27.8	284.2	28.1	305.9	10.7	733.1	28.4
1997	34.5	5.2	287.9	33.6	1,730.7	28.3	1,157.3	32.5
1998	13.3	5.3	351.5	58.3	1,494.7	30.4	1,434.1	30.9
1999	9.2	13.5	383.4	96.1	194.5	4.4	1,000.2	24.7
2000	0.5	1.0	527.9	280.8 ^c	816.9	24.0	1,209.8	25.7

^a Source: United States Department of Agriculture Foreign Agricultural Service, 2003.

^b Data from Table 3.

^c The reason for this discrepancy is unknown and needs further analysis.

The US and New Zealand are Colombia's main suppliers of milk powder. As a member of the Andean Community, Colombia allows duty-free milk imports from Ecuador, Peru, Bolivia, and Venezuela. However, due to the transportation costs, only Venezuela and Ecuador export milk to Colombia. These two countries account for about 20 percent of all Colombian milk imports in recent years (USDA-FAS, 2002). In 2000, the US share of nonfat dry milk was 24 percent (Table 5).

Given price and transportation advantages, the US might dominate Colombia's whey imports for the next several years. In the 1990s, as Colombia's total whey imports increased, the US share increased as well. In 2000, the US exported 1,209.8 metric tons of whey into Colombia, accounting for 25.7 percent of the total whey imports, down from a high of 45.3 percent in 1995 (Table 5).

Colombia also exports dairy products to its neighbors. Colombia, Venezuela, and Ecuador exchange milk powder, depending on the price. Consequently, Colombia both imports from and exports milk to Ecuador and Venezuela. In recent years, Colombia has expanded its milk exports due to its growing milk production and competitive domestic prices (USDA-FAS, 2002).

Trade Policy and Tariff

Until 1990, Colombia's trade policy objective was to rationalize the pattern of protection and the incentives for non-traditional exports (WTO, 1996). However, the Colombian government modified its trade policy significantly in the 1990s. A trade

liberalization program was initiated in 1990, which reduced import duties and expedited the import licensing process for most imports. Colombia's current trade policy objectives are to increase competitiveness, diversify production, and promote its integration into the world economy (WTO, 1996).

Colombia became a WTO member in 1995, and was an active participant in the Uruguay Round negotiation, with specific objectives in a number of areas, including agriculture, tropical products, tariffs, trade-related intellectual property rights, and services (WTO, 1996). However, specific protection or support has also been made on domestic agricultural products. Milk and dairy product import restrictions continued in the 1990s. These restrictions were inconsistent with the GATT framework and the principles of the Uruguay Round (USDA-FAS, 2002).

The government considers regional and bilateral agreements important in its trade policy framework, and Colombia tried to expand regional integration within Latin America, the Caribbean, and the Pacific Rim, and access to the North American Free Trade Area (NAFTA). In the 1990s, Colombia's regional commitments expanded to include bilateral trade agreements with Chile and Panama, participation in the Group of Three, CARICOM, and the Association of Caribbean States. In recent years, merchandise trade with Latin American partners, particularly those of the Andean Group, has grown rapidly (WTO, 1996). Colombia was also playing an active role in the negotiations on the Free Trade Area for the Americas (WTO, 1996).

The main restriction on dairy product imports from countries outside the Andean Group is the application of the variable duty under the Andean Community Price Band System. Since April 1995, the Andean Price Band System has affected imports of agricultural items, including dairy products from countries outside the Andean Group. A common automotive policy applies between Colombia, Ecuador, and Venezuela (USDA-FAS, 2002). At present, milk product imports from countries outside the Andean Group, including the US, are subject to a 20 percent duty plus an additional import tax under the Andean Community's price band and reference price system. For example, in 2002, the total duty on milk powder ranged from 40 percent to 57 percent (USDA-FAS, 2002).

In addition to those tariffs, all retail food items, including milk products, must be registered and approved by the National Institute for the Surveillance of Food and Medicine (INVIMA) of the Ministry of Health. There are also strict sanitary and labeling requirements. The Ministry of Health requires that all imported food items without a Spanish label have a sticker affixed to the product that specifies in Spanish the product name, INVIMA registration number, recommended method of storage of product, and product expiration date (USDA-FAS, 2002). The labeling requirements apply to all dairy product imports that enter retail sales.

VENEZUELA

Overview of Venezuela

Venezuela is located in the northern part of South America, bordering the Caribbean Sea and the North Atlantic Ocean, between Colombia and Guyana. The total area of Venezuela is 912,050 square kilometers, slightly larger than twice the size of California. The population of Venezuela in 2001 was about 24.3 million, with a 1.52 percent growth rate. More than 30 percent of its population is under 14 years old (CIA World Factbook, 2002).

Venezuela is the fourth largest economy in Latin America. The petroleum industry has a dominant position in Venezuela's economy, accounting for roughly a third of its gross domestic product (GDP), around 80 percent of its export earnings, and more than half of its government's operating revenues (CIA World Factbook, 2002). Venezuela began its trade and economic reform program in 1989. These economic reforms showed success from 1990 to 1992, helped by the recovery of world oil prices in 1990 (WTO, 1996). However, due to serious economic problems, including continuous inflation and a major bank crisis in 1994, the economy suffered a series of setbacks. The real GDP was at -0.5 percent in 1994 and -4.0 percent in 1995. Inflation reached about six percent in 1995 (WTO, 1996). In 1996, Venezuela decided to follow a free market path and abandoned the two-year experiment with foreign exchange and price controls. Following a deep recession in Asia and a fall in oil prices, an economic downturn occurred again in

the period 1998 to 1999. The GDP fell six percent in 1999 (US Department of State, 1999).

The economic downturn did not derail the reform program, and privatization continued. A strong rebound in international oil prices fueled the recovery from the steep recession in 1999. Venezuelan's GDP grew by 2.7 percent in 2001. In 2001, Venezuela's GDP was \$164.2 billion (purchasing power parity), with per-capita purchasing power parity of \$6,100. Agriculture accounted for five percent of the total GDP. Nevertheless, Venezuela's weak non-oil sector; capital flight; a temporary fall in oil prices; political instability, which included a coup and counter-coup in April 2002; a strike at the state oil company; and several general strikes and protests, undercut its recovery (CIA World Factbook, 2002).

Venezuela's total exports in 2001 were \$29.56 billion, of which the US received 60 percent. Its total imports in 2001 were \$18.4 billion, of which the US composed 35.8 percent. The main trading partners of Venezuela are the United States, the European Union (EU), and the members of the Andean Community of Nations (CIA World Factbook, 2002).

Dairy Industry in Venezuela

Production of Dairy Products

Although dairy farming is not new to Venezuela, milk production in Venezuela is not highly specialized (USDA-FAS, 1995). Since 1995, more than 95 percent of the total milk produced in Venezuela has come from dual-purpose cattle (USDA-FAS, 2002). The dual-purpose cattle, consisting of a mix of zebu, criollo, and European breeds, are used for the production of both milk and beef (Leonard, 2002). The dual-purpose system uses local and low-cost inputs as an alternative to the more expensive purebred cow system. However, the system is inefficient due to its low productivity (Leonard, 2002).

There was little technical support in Venezuela to teach dairy farmers the technology of how to raise purebred cows in a subtropical climate in the early 1990s (USDA-FAS, 1995). In addition, most dairy farmers lacked experience with purebred cows. As a result, purebred cow milk yields were low and disease rates were high. The dual-purpose cattle system has become the main supply of domestic milk requirements. In Venezuela, this dual-purpose cattle system was considered more efficient than a system based on purebred dairy cows (Leonard, 2002). Purebred dairy cows, such as Holstein, have been disappearing in recent years. The result is discouraging further investment in expensive genetics. Under the dual-purpose cattle system, when profits from milk production decreased, producers would sell their purebred cows for slaughter (USDA-FAS, 2002).

The Venezuelan government, through its agricultural research centers, has focused on improving the efficiency of the dual-purpose cattle system to promote the production of milk and beef in recent years. Other goals to develop the system include increasing the income for producers and reducing the loss of foreign currency due to dairy product

imports (Leonard, 2002). Despite these efforts, productivity continues to be low. Farmers seldom adopt a complete technological package, or even individual practices. In Venezuela, farmers were paid a premium for refrigerated milk and for milk from cows that received certified, regular veterinary checkups; however, most farmers cannot afford the refrigeration equipment or veterinarians (USDA-FAS, 1995).

The total number of milk cows in 2000 was approximately 0.735 million head, down from 0.74 million in 1999. Average annual production was about 1.8 metric tons per cow (USDA-FAS, 2003). Most milk production was concentrated in the western states where grasslands for grazing were plentiful. Zulia state, which was composed mainly of the dual-purpose cattle farms, provided more than 60 percent of the milk production in the 1990s. The other 20 percent was produced in the Lara and Yaracuy regions and Barinas, south of Tachira and east of the Falcon States (USDA-FAS, 1998). Another milk producing area was based in Monagas in the eastern half of the country (USDA-FAS, 1995).

In 2000, Venezuela's fresh milk production was 1,414,605 metric tons (Table 1). Although there was a five percent increase from the previous year, milk production was lower than the early 1990s' level when milk production in Venezuela totaled 1,602,840 metric tons in 1992 and 1,713,440 metric tons in 1993 (Table 1). A significant decrease occurred in 1994 when milk production decreased from 1,713,440 metric tons in 1993 to 1,385,720 metric tons in 1994, for an annual decrease of 24 percent. The decrease was mainly due to the difficult economic situation in 1994, including high inflation and a

severe bank crisis. The 1998 to 1999 economic downturn caused Venezuela's milk production to decrease again (Table 1). In 2000, about 20 percent of the milk produced was used to produce powdered milk, and over 50 percent for cheese (USDA-FAS, 2000).

Table 1. Venezuela milk and selected dairy products production, 1991 through 2000.

Year	Cow Milk, Whole, Fresh	Butter and Ghee	Cheese (All Kinds)	Whole Milk, Dry	Skim Milk, Dry	Whey ^a
Metric Tons						
1991	1,506,730	2,156	69,511	68,395	2,029	373,671
1992	1,602,840	1,233	88,420	61,530	2,617	475,674
1993	1,713,440	425	96,836	66,041	2,588	520,938
1994	1,385,720	210	81,492	43,952	2,673	438,636
1995	1,370,932	517	97,141	32,765	2,274	523,351
1996	1,405,205	3,410	97,760	37,637	1,627	526,492
1997	1,431,072	1,442	93,658	44,428	1,523	503,636
1998	1,484,877	1,682	99,825	40,775	2,142	537,013
1999	1,351,851	1,580	88,678	38,301	279	477,313
2000	1,414,605	1,446	97,104	35,177	2,780	522,499

^a Whey production in milk equivalent pounds.

Source: FAO Statistical Databases, 2002.

Venezuela produced small amounts of butter in the 1990s. In 2000, butter production was 1,446 metric tons, down from a high of 3,410 metric tons in 1996 (Table 1). Cheese production increased in the 1990s, although the 1994 economic crisis and the 1998 to 1999 economic downturn caused a decrease in cheese production. In 1994, the Venezuelan government established laws to control milk prices. As a result, profits for milk producers declined. Because producers cut back on production of fluid milk, some farmers diverted raw milk into cheese production. As a result, cheese production increased rapidly from 1994 to 1995 (USDA-FAS, 1995). Cheese production in 2000 was 97,104 metric tons, down from a high of 99,825 metric tons in 1998 (Table 1).

Venezuela mainly produces whole milk powder because of consumers' preferences. The recovery cost for butterfat would be very expensive for the local consumer if sold as butter or used to produce ice cream (USDA-FAS, 2000). Production of whole dry milk in 2000 was about 35,177 metric tons, down from a high of 68,395 metric tons in 1991 (Table 1). Production of skim dry milk decreased to about 279 metric tons in 1999, from a high of 2,673 metric tons in 1994 (Table 1). In 2000, skim dry milk production recovered to 2,780 metric tons, reaching a peak in the 1990s (Table 1). The increase in demand for both whole and non-fat dry milk is mainly covered by imports (USDA-FAS, 2002). Venezuela's whey production increased in the 1990s, although the 1998 to 1999 economic downturn caused the production to decrease. In 2000, whey production (in milk equivalent metric tons) in Venezuela totaled 522,499 metric tons, down from a high of 537,013 metric tons in 1998 (Table 1).

Demand for Dairy Products

Venezuela is the fourth largest economy in Latin America. Venezuela's total population was 24.3 million in 2001, which included a small upper class and middle class. A large and growing population of people lives below the poverty line (USDA-FAS, 1995). The upper and middle classes can easily afford milk and dairy products, but consumption among the lower classes is very limited.

Venezuela has a youthful population, with over 30 percent of its population below age 15, and two-thirds of the population age 30 years and under (CIA World Factbook,

2002). This situation will continue due to Venezuela's high birth rate, which was 1.52 percent in 2001 (CIA World Factbook, 2002). In addition, Venezuela can be described as a modern, urbanized country. In 1996, more than 85 percent of Venezuelans lived in major metropolitan areas, and most households had refrigerators (USDA-FAS, 1995). As most consumer ready food products, dairy consumption in Venezuela shows good potential, but will not really take off until the poverty level can be controlled (USDA-FAS, 1996).

Since 1989, the Venezuelan government has subsidized milk consumption for low income groups through social programs, including programs for school-aged children, for mothers of infant children such as the "Programa Alimenticio Materno Infantil" or "Mothers and Infants Food Program" (USDA-FAS, 1995; USDA-FAS, 2002). However, despite government support, per-capita milk consumption decreased, mainly due to the decline in the standard of living of many Venezuelans. Per-capita milk consumption decreased at a rate of 1.9 percent, on average, every year in the 1990s (Table 2). In 2000, all milk consumption per capita was 87.78 kilograms (107.54 kilograms in 1991), or was about one-third of the US per-capita consumption (Table 2). Due to the lack of on-farm refrigeration, most fluid milk sold in grocery stores has a very short shelf life. Therefore, Venezuelan consumers prefer to purchase milk frequently and in small-sized cartons. Ultra high temperature (UHT) milk is not very popular in Venezuela (USDA-FAS, 2002).

Although growth in per-capita butter consumption was strong in the 1990s (48.4 percent), this is somewhat misleading. During the 1990s, per-capita butter consumption

was very low. In 2000, per-capita butter consumption was only 0.1 kilogram, about one-twentieth of the US experienced consumption (FAO Statistics, 2002). This was down from a high of 0.19 kilograms in 1996 (Table 2).

Table 2. Per-capita consumption of dairy products in Venezuela, 1991 through 2000.

Year	All Milk ^a	Butter	Cheese	Skim Milk ^{a,b}	Whole Milk ^{a,b}	Whey ^a
	Kilograms					
1991	107.54	0.10	3.54	1.98	107.36	19.40
1992	105.80	0.10	4.61	2.24	102.43	24.82
1993	103.92	0.06	4.91	3.33	98.59	25.93
1994	89.91	0.02	3.92	2.51	86.67	21.70
1995	89.64	0.03	4.53	1.75	88.25	25.47
1996	86.38	0.19	4.43	4.47	85.03	25.12
1997	85.86	0.10	4.22	3.99	82.59	23.25
1998	98.90	0.12	4.73	4.21	93.02	24.39
1999	83.38	0.09	4.15	3.83	77.99	20.96
2000	87.78	0.10	4.25	3.99	81.46	23.95
Average Annual Growth (%) 1991-2000	-1.9	48.4	3.1	17.0	-2.7	3.3

^a Included food and other uses, such as cattle feed.

^b 90 percent was made from powder.

Source: FAO Statistical Databases, 2002.

Cheese consumption showed increasing trends from 1991 through 1993 and started to decrease in 1994. The growth rate was about 3.1 percent on average in the 1990s, which is somewhat misleading (Table 2). Consumption of white and soft cheeses increased compared to aged cheeses because they were considerably cheaper and a good source of animal protein (USDA-FAS, 1998). In 2000, per-capita cheese consumption totaled 4.25 kilograms, down from a high of 4.91 kilograms in 1993 (Table 2).

Venezuelans prefer whole milk to skim milk because there is a general perception that full-fat milk is more nutritious (USDA-FAS, 2000). As a result, demand for non-fat dry milk was only a small fraction of the total amount of milk consumed in the 1990s (Table 2). In addition, per-capita powdered milk consumption in Venezuela has traditionally been greater than that for fluid milk (USDA-FAS, 1998). In the 1990s, more than 90 percent of milk consumption was in the form of whole milk powder, which was processed locally or imported and distributed by a small number of companies (USDA-FAS, 1998). Skim milk consumption showed a strong increase of 17 percent annually, on average, in the 1990s, mainly due to the increasing concerns among higher income consumers about reducing fat intake; however, a severe recession, the devaluation of currency, and the rapidly increasing cost of living in Venezuela forced consumers to cut back on total milk consumption in the 1990s. Whole milk consumption decreased annually at a rate of approximately 2.7 percent since 1991 (Table 2). Per-capita consumption of whole milk was at 81.46 kilograms in 2000, down from 107.36 kilograms in 1991 (Table 2), which was low for a country with about 50 percent of its population under the age of 18 (USDA-FAS, 2000).

Whey consumption increased in the 1990s. The average increase was 3.3 percent annually in the 1990s, which is somewhat misleading (Table 2). Per-capita consumption reached a peak of 25.93 kilograms in 1993 and trended downward through 2000. The increase was mainly due to the increasing demand for dairy ingredients in the feed industry, not human consumption. In 2000, about 67 percent of the total consumption of

all dairy products was from domestic sources and 33 percent from imported sources (FAO Statistics, 2002).

Imports of Dairy Products

Venezuela is a dairy-deficit country. To satisfy its domestic consumption of milk and dairy products, Venezuela has to import approximately one-third of its total dairy products. In 2000, Venezuela's self-sufficiency was about 67 percent (FAO Statistics, 2002). In 2000, it ranked 24th among all countries in total dairy products imported in milk equivalent metric tons (Table 3). Its share of world imports of dairy products was about one percent (FAO Statistics, 2002). For individual dairy products, Venezuela did not import much butter and skim dry milk in the 1990s, ranking out of the top 40 countries in butter and skim dry milk imports (FAO Statistics, 2002). Venezuela ranked fifth in imports of dry whole milk in 2000, and its share of world imports of dry whole milk was about 4.6 percent (Table 5). Venezuela ranked 32nd and 23rd in imports of cheese and whey, respectively, in 2000 (Tables 4 and 6). Its share of world imports of cheese was about 0.4 percent, and its share of world imports of whey was about 0.6 percent (FAO Statistics, 2002).

Table 3. Selected countries' total dairy imports (in milk equivalent) and ranking, 1996 through 2000.

	1996		1997		1998		1999		2000	
	Mt	Rank	Mt	Rank	Mt	Rank	Mt	Rank	Mt	Rank
Belgium	3,709,566	4	3,661,389	4	3,936,039	5	4,054,076	5	4,434,830	5
China	1,285,203	13	1,584,260	10	1,531,064	14	1,909,979	10	2,243,373	8
France	3,158,352	5	3,582,977	5	3,966,796	4	4,313,597	4	4,685,094	4
Germany	4,673,712	3	4,796,523	3	4,669,373	3	4,554,466	3	5,024,699	3
Italy	5,210,317	2	5,430,128	2	5,543,997	2	5,509,023	2	5,467,815	2
Mexico	1,912,993	8	2,121,080	8	2,021,171	7	2,217,376	7	2,310,820	7
Netherlands	6,385,562	1	6,061,069	1	5,633,207	1	7,113,321	1	6,297,773	1
Spain	1,450,968	11	1,583,212	11	1,652,153	11	1,661,739	12	1,918,970	10
UK	2,393,522	6	2,476,914	7	2,537,039	6	2,667,275	6	2,710,840	6
USA	1,380,531	12	1,466,204	12	1,873,207	8	1,953,107	9	1,953,940	9
Venezuela	557,720	25	476,835	25	752,507	22	492,183	26	648,905	24
Total	32,118,446	----	33,240,591	----	34,116,553	----	36,446,142	----	37,697,059	----
World	59,844,367	----	62,626,024	----	62,478,356	----	66,593,229	----	68,138,509	----

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

Table 4. Selected countries' total cheese imports and ranking, 1996 through 2000.

	1996		1997		1998		1999		2000	
	Mt	Rank	Mt	Rank	Mt	Rank	Mt	Rank	Mt	Rank
Belgium	176,745	4	186,681	5	197,185	4	199,602	5	208,949	5
France	151,238	7	153,718	7	167,326	7	188,472	6	213,138	4
Germany	458,261	1	476,361	1	441,518	1	417,503	1	424,721	1
Greece	50,747	12	68,059	11	94,838	9	67,341	11	76,944	10
Italy	294,875	2	305,861	2	305,419	2	318,681	2	347,233	5
Japan	164,164	5	171,407	6	183,448	5	186,905	7	205,123	6
Netherlands	92,067	9	84,895	9	100,869	8	116,845	8	122,438	8
Spain	81,511	10	81,046	10	86,363	10	94,223	9	104,688	9
UK	258,704	3	261,775	3	249,191	3	272,312	3	268,613	3
USA	154,764	6	142,793	8	170,557	6	203,042	4	192,342	7
Venezuela	2,995	---	4,936	---	10,894	32	9,749	32	11,823	32
Total	1,886,071	---	1,937,532	---	2,007,608	---	2,074,675	---	2,176,012	---
World	2,688,552	---	2,843,580	---	2,786,286	---	2,887,650	---	3,093,644	---

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

Table 5. Selected countries' total dry whole milk imports and ranking, 1996 through 2000.

	1996		1997		1998		1999		2000	
	Mt	Rank	Mt	Rank	Mt	Rank	Mt	Rank	Mt	Rank
Algeria	67,865	3	88,882	2	103,724	2	105,507	2	96,340	2
Belgium	66,029	5	53,781	9	54,362	7	46,786	10	57,289	7
Brazil	115,586	1	101,169	1	133,742	1	145,983	1	108,609	1
China	58,981	7	68,234	5	62,598	5	83,985	4	83,011	4
Malaysia	53,152	9	66,000	6	44,857	12	54,203	6	57,696	6
Netherlands	94,413	2	77,736	3	71,376	4	101,713	3	89,672	3
Philippines	36,476	11	39,656	12	40,511	13	36,958	12	56,072	8
Sri Lanka	35,027	12	37,364	13	48,788	10	48,308	9	49,070	9
Thailand	50,430	10	69,180	4	50,237	8	49,791	8	48,249	10
Venezuela	66,321	4	51,842	10	84,115	3	52,042	7	64,759	5
Total	644,280	---	653,844	---	694,310	---	725,276	---	710,767	---
World	1,281,604	---	1,357,158	---	1,401,542	---	1,439,868	---	1,418,968	---

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

Table 6. Selected countries' total whey imports and ranking, 1996 through 2000.

	1996		1997		1998		1999		2000	
	Mt	Rank	Mt	Rank	Mt	Rank	Mt	Rank	Mt	Rank
Belgium	52,959	4	55,759	3	58,099	3	54,842	4	56,299	5
Canada	43,224	6	36,554	10	37,996	9	48,375	6	62,441	3
China	72,882	2	89,359	2	78,819	2	97,717	2	140,057	2
France	29,238	10	40,931	7	50,588	5	49,463	5	59,048	4
Germany	66,975	3	45,070	5	48,759	6	46,114	7	40,077	9
Italy	40,845	7	37,598	8	42,637	8	37,584	10	42,029	8
Japan	32,343	9	37,481	9	37,351	10	41,157	9	39,522	10
Mexico	48,636	5	49,174	4	56,642	4	55,947	3	55,031	6
Netherlands	251,310	1	217,543	1	248,474	1	292,637	1	252,099	1
Spain	37,147	8	43,362	6	44,869	7	44,225	8	49,109	7
Venezuela	2,514	29	1,915	32	2,218	31	1,475	38	6,635	23
Total	678,073	----	654,746	----	706,452	----	769,536	----	802,347	----
World	886,132	----	902,409	----	973,881	----	1,054,173	----	1,124,090	----

Source: Food and Agricultural Organization of the United Nations Statistical Databases, 2002.

Domestic milk production trended downward in the 1990s (Table 1), and Venezuela had to import dairy products to fill the gap. For the period 1991 to 2000, total imports of milk and dairy products (in milk equivalent metric tons) increased, on average, 4.5 percent per year, reaching a peak of 752,507 metric tons in 1998 (Table 7). Venezuela did not import or export fluid milk in the 1990s. However, because the largest producing area in Venezuela is located very close to the Colombian border, small amounts of milk crossed the border into Colombia. Small amounts of Colombian fluid milk have been coming across the Venezuelan border for further processing since the late 1990s (USDA-FAS, 1998).

Most dairy imports were in the form of skim milk and whole milk powders. Milk powder imports provide almost 50 percent of Venezuela's total milk consumption needs (USDA-FAS, 2000). In 2000, among the total milk powder imports, whole milk powder accounted for over 90 percent, with the rest as skim dry milk (USDA-FAS, 2000). Dry milk imports are vital to Venezuela, and have increased significantly since 1991. The growth of dry skim milk imports was the most impressive among dairy product imports. The growth rate was 211.4 percent on average in the 1990s (Table 7). The main reasons were the increasing concerns about reducing fat intake among higher income people and the decreasing domestic production of skim dry milk in the 1990s. In 2000, Venezuela imported 4,536 metric tons of skim dry milk, up from 59 metric tons in 1991 (Table 7).

During the 1990s, whole milk powder imports increased at an average annual rate of 3.3 percent (Table 7). However, this was somewhat misleading. Between 1991 and 2000,

whole milk powder imports decreased 17,300 metric tons, peaking in 1998 at 84,115 metric tons (Table 7). Whole milk powder imports are estimated to decrease due to Venezuela's high inflation, loss of purchasing power, and problems getting import permits in recent years (USDA-FAS, 2002).

Table 7. Venezuela dairy imports, 1991 through 2000.

Year	Milk Equivalent	Butter	Cheese	Dry Whole Milk	Dry Skim Milk	Dry Whey
			Metric Tons			
1991	641,662	292	1,342	82,059	59	1,079
1992	467,119	639	6,004	53,773	966	2,423
1993	355,864	808	6,209	37,313	2,872	1,586
1994	468,529	519	2,542	54,953	1,807	1,871
1995	556,209	601	4,187	66,232	1,013	2,446
1996	557,720	790	2,995	66,321	1,543	2,514
1997	476,835	784	4,936	51,842	4,509	1,915
1998	752,507	1,128	10,894	84,115	4,195	2,218
1999	492,183	644	9,749	52,042	3,677	1,475
2000	648,905	870	11,823	64,759	4,536	6,635
Average Annual Growth (%) 1991-2000	4.5	21.3	58.3	3.3	211.4	50.0

Source: FAO Statistical Databases, 2002.

Venezuelans do not consume much butter (Table 2). As a result, butter imports were low in the 1990s. Although the growth rate was as high as 21.3 percent in the 1990s, butter imports totaled only 870 metric tons in 2000, down from a high of 1,128 metric tons in 1998 (Table 7). About 50 percent of Venezuelan processed cheese was made from domestically produced raw milk, and the remaining 50 percent was made from imported

bulk cheese. As a result, bulk cheese imports are important for the country (USDA-FAS, 1998). Cheese imports grew at an average annual rate of 58.3 percent in the 1990s (Table 7). In 2000, Venezuela's cheese imports totaled 11,823 metric tons, up from 1,342, metric tons in 1991 (Table 7).

Whey imports also experienced growth in the 1990s. The annual growth rate was about 50 percent in the 1990s. A significant increase occurred in 2000 when whey imports increased from 1,475 metric tons in 1999 to 6,635 metric tons in 2000, for an annual increase of 350 percent (FAO Statistics, 2002).

Exports of Dairy Products from the U.S.

In the 1990s, most of Venezuela's dairy imports came from New Zealand, the US, and the countries of the European Union (USDA-FAS, 1998). Although Venezuela did not import much butter in the 1990s, the US has not dominated its butter market. Most of the butter imports came from New Zealand and the Andean Community. In 2000, the US exported 36 metric tons of butter to Venezuela, accounting for 4.1 percent of its total butter imports, down from a high of 30.5 percent in 1997 (Table 8). The US began to dominate the Venezuelan cheese import market in the middle 1990s, with a market share of 46.3 percent in 1999 (Table 8). In 2000, the US exported 3,533 metric tons cheese into Venezuela, accounting for 29.9 percent of Venezuela's total cheese imports in that year (Table 8). It is worth noting that cheese imports from Uruguay increased in the late 1990s because of competitive prices and quality (USDA-FAS, 1998).

Table 8. Selected dairy products the US exported to Venezuela, 1991 through 2000.

Year	Butter ^a	% of All Butter Imports ^b	Cheese ^a	% of All Cheese Imports ^b	Whole Dry Milk ^a	% of All WDM Imports ^b	Non-Fat Dry Milk ^a	% of All NFDM Imports ^b	Whey ^a	% of All Whey Imports ^b
	Mt	%	Mt	%	Mt	%	Mt	%	Mt	%
1991	0	0.0	102	7.6	14	0.0	72	122.0 ^c	743	68.9
1992	0	0.0	285	4.7	12	0.0	2,202	228.0 ^c	302	12.5
1993	3	0.4	495	8.0	1,967	5.3	1,680	58.5	1,302	82.1
1994	13	2.5	361	14.2	166	0.3	186	10.3	865	46.2
1995	45	7.5	987	23.6	1,020	1.5	77	7.6	1,537	62.8
1996	106	13.4	1,038	34.7	5	0.0	0	0.0	1,198	47.7
1997	239	30.5	1,845	37.4	27	0.1	1,244	27.6	945	49.3
1998	104	9.2	4,750	43.6	0	0.0	2,228	53.1	1,797	81.0
1999	4	0.6	4,513	46.3	128	0.2	1,609	43.8	1,121	76.0
2000	36	4.1	3,533	29.9	957	1.5	4,462	98.4	1,898	28.6

^a Source: United States Department of Agriculture Foreign Agricultural Service, 2003.

^b Data from Table 7.

^c The reason for this discrepancy is unknown and needs further analysis.

Milk powder imports are very important to Venezuela. As a result, numerous world suppliers have competed for the Venezuelan market. Competition was strong and diverse (USDA-FAS, 2002). In 2000, Venezuela totally imported 64,759 metric tons of whole milk powder and 4,536 metric tons of skim milk powder (Table 7). New Zealand was the biggest supplier of milk powder imports, accounting for almost half of the imports in 2000, followed by the European Union at about 25 percent, the Southern Cone at 18 percent, the Andean Community at 4 percent, and the US at three percent (USDA-FAS, 2000). In terms of dry skim milk, the US share fluctuated in the 1990s (Table 8). By the late 1990s, the US dominated Venezuela's nonfat dry milk market. In 2000, the US exported 4,462 metric tons of nonfat dry milk to Venezuela, accounting for 98.4 percent of its total nonfat dry milk imports (Table 8).

Colombia benefits from preferential access to Venezuela as a member of the Andean Community. It began exporting milk powder to Venezuela in 2001. However, Venezuela is trying to restrict imports of dairy products from Colombia. The Venezuelan Ministry of Agriculture affirms that Colombia is transshipping milk products coming from New Zealand, the Netherlands, and Uruguay into Venezuela, and is considering placing a safeguard commercial measure before the Andean Community (USDA-FAS, 2002).

The US has dominated the Venezuelan whey market in the 1990s, due mainly to the cost advantages of the US whey industry in transportation and production. In 2000, the US exported 1,898 metric tons of whey to Venezuela. The share of US whey was 28.6 percent, a decrease from 76 percent in 1999 (Table 8).

Trade Policy and Tariff

Venezuela began its trade and economic reform program in 1989. Economic liberalization was accompanied by a significant opening of the trade regime (WTO, 1996). Venezuela's process was complemented by access security and improved transparency resulting from Venezuela's accession to the GATT in 1990 and by its subsequent membership in the WTO (WTO, 1996).

Venezuela also has trade commitments with other countries in Latin America and the Caribbean. For example, Venezuela extended preferential tariffs on some products to members of the Latin American Integration Association (ALADI) [USTR, 1999]. Venezuela also signed a Free Trade Agreement with Mexico and Colombia (the G-3 agreement) in 1995. Under the G-3 agreement, these three countries will eliminate most of the tariffs with each other by 2004. In addition, Venezuela has a preferential agreement with the Caribbean Common Market (CARICOM) [USTR, 1999], and is a member of the Andean Community (WTO, 1996).

Since April 1995, imports of agricultural items, including dairy products and meat, from countries outside the Andean Group, have been subject to the Andean Price Band System. At present, the main restriction on dairy product imports from countries outside the Andean Group is the application of the variable duty under the Andean Community Price Band System (USDA-FAS, 2002), a system of variable ad valorem tariffs applied

to certain agricultural imports where floor and ceiling prices are linked to the moving average and spread over the previous five years of world prices (WTO, 1996).

The Venezuelan government has tied the tariffs for most dairy products to the Andean Price Band Tariff System since 1995. The government wanted to assure price stability in domestic markets and to protect domestic producers when the world market prices were low and consumers when the prices were high. At present, milk imports from non-Andean countries are subject to a 20 percent common duty plus a variable duty determined by the Andean Price Band System (USDA-FAS, 2000). Variable duties are modified every 15 days, depending on the deviation of international market prices (reference prices) with respect to floor and ceiling prices (USDA-FAS, 1998). In addition to these tariff barriers on dairy imports, import permits are also barriers to dairy imports. Venezuela has failed to establish an open and predictable system for issuing import licenses. Import practices are inconsistent with numerous WTO obligations (USTR, 2002). The US requested dispute settlement consultations with Venezuela at the WTO to discuss its import licensing practices in November 2002 (USTR, 2002).

SUMMARY

Over the last decade, the world total dairy imports increased. Since the establishment of the UR GATT in 1995, the share of EU dairy exports has declined, due in part to the impact of export subsidy limitations. As trade barriers and export subsidy levels are further phased down and world demand increases, the US is in a good position to gain greater access to the international markets. Although Australia and New Zealand are expected to be the primary gainers from the new trade environment, the US has the production capacity to be a major world supplier (Washington, 2000).

The quantity of dairy imports into South America has been low, but there has been a trend to increase dairy imports. Strong marketing efforts to gain external markets in South America have become a trigger for dairy imports. New Zealand, the EU, and the US share the dairy import markets in South America.

It is worth mentioning that market opportunities for US dairy products have increased since the US seeks to conclude a free trade agreement with five Central American countries and the US and Chile Free Trade Agreement went into force in December 2002. Although the volumes of Chile's dairy imports were not high in the 1990s, there has been growth since then. As with most of Latin American, Chileans prefer US dairy products because US dairy products enjoy a good reputation of quality. Higher incomes and living standards have also introduced Chileans to more dairy products. Opportunities for US exporters are in cheese, nonfat dry milk, and dry whey. Chile's open trade regime and increasing export markets are also propelling elements for the demand of US dairy products.

Although its dairy imports were low in the 1990s, in recent years, there has been a trend to increase dairy imports to Colombia, especially in the form of milk powder. In addition, there is an increasing domestic demand for imported cheese and ice cream in Colombia (USDA-FAS, 1995). Higher income consumers are willing to pay for quality imported dairy products, so opportunities exist for US dairy products, especially in cheese and ice cream, which are regarded as high quality and could compete with the lower-quality domestic products. Most of dairy products from the US have a year-round market in Colombia since the US dominates several importing dairy product markets in Colombia.

Venezuela's dairy imports increased in the 1990s. Although New Zealand and the EU became bigger suppliers than the US, opportunities still exist for US dairy products, particularly cheese, dry skim milk, and whey. Although Venezuelans have demonstrated a preference for European style cheeses or local-style semi-soft or fresh cheeses, the main determinant is the price of imports. In addition, there are American companies located in Venezuela that produce and market some types of cheeses similar to those produced in the US. As a result, Venezuelans have become more familiar with US cheese products (USDA-FAS, 1998). It is expected that further eliminating Venezuela's trade restrictive practices will benefit US dairy exporters.

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