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Economic Impacts of the GATT Agreement  
on the U.S. Dairy Industry

by

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**ECONOMIC IMPACTS OF THE GATT AGREEMENT ON THE  
U.S. DAIRY INDUSTRY**

W.D. Dobson and Robert Cropp \*

The U.S. House of Representatives approved the Uruguay Round of the General Agreement on Tariffs and Trade (GATT) on November 29, 1994. The U.S. Senate gave approval to the agreement on December 1, 1994, and President Clinton signed the trade pact on December 8, 1994. After other major trading nations formally approve the GATT agreement, it will initiate world trade reforms that begin in 1995 and extend to 2000 and beyond. Under the Uruguay Round GATT agreement, new trading rules will apply in many areas, including industrial products, services, intellectual property, and agriculture. The Uruguay Round agreement is unique because it brings agriculture under the trading rules of the GATT in important ways. While many parts of the U.S. agricultural economy expect to gain from the more open world markets produced by the GATT agreement, the dairy industry and the sugar industries represent exceptions. These industries will lose part of the price protection they enjoyed under import quotas. Export subsidies employed under the USDA's Dairy Export Incentive Program (DEIP) also will be reduced by the GATT agreement.

This Marketing and Policy Briefing paper assesses the economic impact of the GATT agreement on the U.S. dairy industry. Specifically, the briefing paper:

- Describes the impact of key provisions of the Uruguay Round GATT agreement on the U.S. and world dairy industries,
- Analyzes the effects of the new GATT agreement on U.S. milk prices and international prices for dairy products, and
- Discusses the longer-term economic impacts of the new GATT agreement and possible successor agreements to the Uruguay Round agreement.

The impetus for developing the Briefing Paper came from questions raised by Wisconsin dairy farmers some of whom plan to expand their dairy operations and need to gauge the possible impact of the GATT agreement on milk prices and dairy markets both in the short-run and longer-run.

**Impact of Key GATT Provisions on the U.S. and World Dairy Industries**

The Uruguay Round GATT agreement contains the following major provisions that affect the U.S. dairy industry and world agriculture [10]:

1. Countries must reduce internal support for agriculture (price supports, input subsidies, etc.) by 20% from 1986-88 base levels.
2. All non-tariff import barriers (quotas, import licenses, etc.) will be converted to tariffs and reduced by an average of 36% over six years with a minimum reduction for individual products of at least 15% from 1986-88 base levels.

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3. Countries are required to ensure that current access opportunities for imports are maintained, and they must open up minimum access opportunities in cases where there has been little or no trade. Where current access is less than 3% of each market for each product (based on estimated consumption during a 1986-90 base period), countries are required to open up a minimum amount of access. This access is to be increased to 5% by 2000.
4. The amount of agricultural products exported with subsidy and budget outlays for export subsidies must be reduced by 21% and 36%, respectively, from base period (1986-90) amounts.
5. Sanitary measures will be revised to ensure they are imposed only to the extent necessary to protect human, animal or plant health, according to scientific criteria.

### **Impact of Provision Requiring Lower Internal Support**

Lowering internal support for agriculture will have little impact on the U.S. dairy industry or other parts of U.S. agriculture. Because of reductions in agricultural support programs under the last two farm bills and under budget legislation, the U.S. already has reduced internal support for agriculture by more than 20% since 1986-88. As a result no further reduction in support for U.S. agriculture will be required under the Uruguay Round GATT agreement.

### **Impact of Tariffication and Minimum Access Requirements**

The tariffication and minimum access requirements promise to have noteworthy impacts on U.S. dairy markets and prices. Currently, U.S. dairy markets are protected by Section 22 of the Agricultural Adjustment Act of 1933, as amended, which prevents dairy imports from interfering with the USDA's dairy price support program. As shown in Figure 1, the Section 22 import quotas have contributed to keeping U.S. dairy product prices substantially above world prices. For example, during 1992 and 1993 U.S. prices for nonfat dry milk (NFDM), cheese, and butter averaged 50%, 51%, and 21% higher, respectively, than world prices for these products. The relationship was similar during the first half of 1994 when U.S. NFDM, cheese, and butter prices exceeded world prices by 69%, 64%, and 18%, respectively. Much of the margin by which U.S. NFDM and cheese prices have exceeded world prices for these products must be attributed to the price protection provided by import quotas since USDA price support purchases of NFDM and cheese have been small in recent years.

The Section 22 quotas will be converted to tariff-rate quotas under the new GATT agreement. Tariffs employed under the new scheme will be gradually lowered. A tariff-rate quota is a two-tiered tariff system that establishes one duty for imports within the quota and another higher duty for imports over that import level (out-of-quota). Duties on imports within the quota are sometimes low enough to encourage commercial trade in the product. The tariffs for the out-of-quota amount, on average, will be quite high under the new GATT agreement and initially will provide about the same level of protection for out-of-quota imports as the Section 22 and other quotas they replaced.

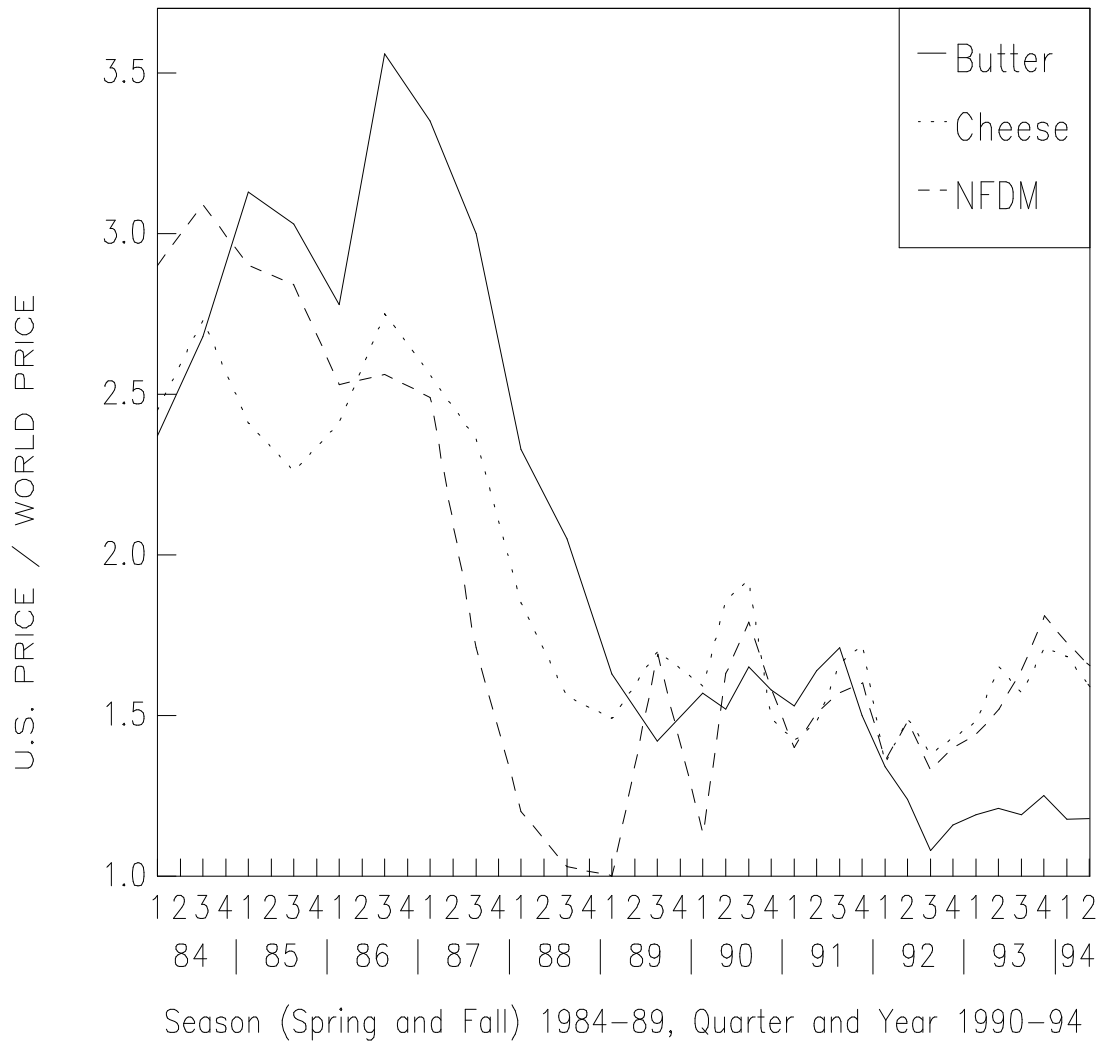
For 1995 the out-of quota tariffs on U.S. imports of NFDM, butter, and cheese and the out-of quota tariffs for 2000, which reflect the required minimum 15% reductions, are as follows [11]:

<u>Product</u>	<u>1995 Out-of Quota Tariff</u>	<u>2000 Out-of Quota Tariff</u>
NFDM	46.2 cents/lb.	39.2 cents/lb.
Butter	82.2 cents/lb.	69.9 cents/lb.
Cheese	65.4 cents/lb.	55.6 cents/lb.

Figure 1. U.S. Prices Divided by World Price for Dairy Products.\*

Source: U.S. Department of Agriculture, "Dairy: World Markets and Trade," "World Dairy Situation," and "Dairy Situation and Outlook," Various Issues, 1985-1994.

\* World prices equal midpoint of high and low prices for Northern European Ports (F.O.B.). U.S. prices for butter are Chicago Grade A prices. U.S. prices for cheese are prices for 40-pound blocks of cheddar at Wisconsin Assembly Points. U.S. prices for NFDM are Central States prices.



To comply with market access and tariffication requirements of the GATT agreement, the U.S. will convert its present 110,999 ton import quota for cheese into a tariff rate quota and increase the within quota access to 141,991 tons by 2000. The 141,991 ton figure for 2000 is 30,992 tons (28%) larger than the present quota. These quota amounts will be allocated by country.

The U.S. has established tariff rate quotas for other dairy products that will account for 13,700 tons of milkfat and 16,100 tons of non-fat solids in 1995 [11]. These totals will grow to 22,785 tons (66% increase from 1995) and 26,825 tons (67% increase from 1995), respectively, in 2000.

It is difficult to meaningfully assess the impact of the tariff rate quotas for products other than cheese. In particular, it is unclear how much U.S. net imports of dairy products will expand as a result of creation of this tariff rate quota. This question arises partly because there appears to be little incentive for additional imports of butter and NFDM at the within-quota tariffs that would exist for these products during 1995-2000. Thus, most of the impact of new tariff rate quotas for dairy products is likely to come from added cheese imports.

Under the GATT agreement, other countries will be required to make similar concessions which can offset part of the impact of changes in market access and tariffication provisions affecting the U.S. dairy industry. Noteworthy concessions made by other nations that will permit additional U.S. dairy exports appear below [11]:

- The EU will establish a within quota duty for 15,000 metric tons of cheddar cheese at 210 ECU/ton and establish a 5,000 metric ton mozzarella cheese quota with a 130 ECU/ton within quota tariff. Expressed in U.S. dollars (using December 1994 exchange rates), the EU tariffs for cheddar cheese and mozzarella cheese equal \$.116 per lb. and \$.072/lb., respectively. These are relatively lower tariffs compared to those imposed by the U.S. for within quota imports of cheese.
- Korea will establish a 23,000 metric ton quota for whey products in 1995 that will increase by 10% annually over 10 years, with an in-quota tariff of 20%.
- Japan will establish a 3,000 metric ton quota for whey powder that will grow to 4,500 metric tons by 2000 and a 2,200 metric ton quota for ice cream mix powder that will grow to 3,700 metric tons in 2000.
- Other countries including Malaysia, Thailand, South Africa, Sweden, Norway, Finland, Austria and Costa Rica have opened their markets by generally smaller amounts and have reduced import tariffs.

The EU, Japanese and Korean concessions, in particular, have the potential to expand export markets for Upper Midwestern dairy firms.

### **Impact of Provision Requiring Lower Export Subsidies**

Lower export subsidies will curtail the amount of exports that can be made with subsidy under the USDA's DEIP program. This is noteworthy since beginning in 1992 the DEIP program became an important supplement to the USDA's dairy price support program. Export subsidies for bid acceptances under the DEIP totaled \$140 million and \$143 million for calendar 1992 and 1993, respectively. Budget outlays for the export subsidies under the DEIP were 55% to 60% as large as those for the price support program during 1992-93. The DEIP represents a cost effective way of disposing of dairy surpluses since a ton of dairy products can be offloaded onto foreign markets for about one-third to one-half the cost of purchasing the product under the price support program. In addition, the program also has given a few U.S. firms including Land O'Lakes, Inc., Vincent Commodities, Shreiber Cheese, F.F.M. Inc., P.S. International, AMPI and Luxor of California, valuable exporting experience.

However, dairy export subsidies have been strongly opposed by nonsubsidizing exporters—mainly the New Zealand Dairy Board—because the export subsidies depress world dairy product prices and create other trade distortions.

The Uruguay Round GATT agreement attempts to reduce such trade distortions by requiring countries to reduce export subsidies which it defines to include direct government or producer subsidies on exports, transportation and freight subsidies, marketing subsidies and the sale or disposal of government stocks below domestic prices. Moreover, export subsidies cannot be extended to any new products that were not subsidized during the 1986-90 base period.

To comply with the GATT agreement subsidized exports under the DEIP program will be curtailed as shown in Table 1. Exports of NFDM—the major export item under the DEIP—will be reduced most by the GATT agreement. The amount of NFDM that can be exported with subsidy will decline by about 40% in 2000 as compared to average exports under the DEIP in 1992-93 (Table 1). U.S. subsidized cheese exports—which were small under the DEIP—will not be affected much by the GATT agreement.

Table 1. Quantity of U.S. Dairy Products Exported with Subsidies under Various Programs and Maximum Allowable Exports with Subsidy Under the GATT Agreement.

Year and Program	Quantity Exported with Subsidy Under Various Programs		
	Butter/Butteroil	NFDM	Cheese
	(1,000 metric tons)		
Average of Subsidized U.S. Dairy Exports Under All Programs, 1986-90	26.7	86.3	3.8
DEIP Program			
1992	23.4	113.1	3.2
1993	20.4	117.2	3.1
GATT Agreement			
1995	43.0	108.2	3.8
1996	38.6	100.2	3.7
1997	34.2	92.2	3.5
1998	29.9	84.2	3.4
1999	25.5	76.2	3.2
2000	21.1	68.2	3.0
Subsidized Exports in 2000 as % of 1986-90 Average	79.0	79.0	78.9
Subsidized Exports in 2000 as % of 1992-93 Average under DEIP	96.3%	59.2%	95.2%

**Source:** U.S. Department of Agriculture, Foreign Agricultural Service, "Dairy" World Markets and Trade," FD 1-94, March 1994 and Australian Dairy Corporation, *1994 Dairy Compendium*.



The negative impacts of reduced DEIP export subsidies on U.S. milk prices might be reduced by three initiatives. First, Congressman Gunderson, Chairman of the Livestock, Dairy, and Poultry Subcommittee of the House Agriculture Committee, will seek approval of measures to fund DEIP export subsidies to the full extent permitted by the GATT agreement. Secondly, the GATT implementation legislation has identified the DEIP as a mechanism that will be used for market development purposes as well as to offset the export subsidies of the EU and other dairy exporters. Jim Barr, the CEO of the National Milk Producers Federation, indicates that this development has changed the minds of some officials involved in the interagency approval process which identifies countries eligible for DEIP subsidies [3]. These changes of mind, he suggests, increase the chances that DEIP export subsidies will be approved for use in Asia-Pacific markets. Those markets have been largely off limits to DEIP exports since they represent important markets for the New Zealand Dairy Board, a nonsubsidizing exporter. Finally, dairy products shipped as aid to other countries will be permitted under the GATT agreement. We expect aid shipments of dairy products to increase under the new GATT agreement.

The expansion of DEIP subsidies into Asia-Pacific markets mentioned by Barr has materialized. The USDA announced on January 20, 1995 that DEIP export subsidies will be available for 1995 for 15,000 metric tons of NFDM for 11 Asia-Pacific countries (including China, Hong Kong, Indonesia, Malaysia, and the Philippines), 7,000 metric tons of butterfat for many of the same Asia-Pacific countries and India, and 300 metric tons of cheese for 7 Asia-Pacific countries. This means that exporters of U.S. NFDM, butter and cheese can bid for DEIP subsidies to help them compete for sales in these countries in 1995.

Table 2. EU Dairy Exports with Subsidies and Maximum Allowable Exports with Subsidies under the GATT Agreement.

Year	<u>Quantity Exported with Subsidy Under Various Programs</u>		
	Butter/Butteroil	NFDM	Cheese
	(1,000 metric tons)		
1986-90 Average	463.4	308.0	386.2
1992-93 Average	202.0	334.0	465.0
GATT Agreement			
1995	447.2	297.2	406.7
2000	366.1	243.3	305.0
Subsidized Exports in 2000 as % of 1986-90 Average	79.0	79.0	79.0
Subsidized Exports in 2000 as % of 1992-93 Average	181.0	72.8	65.6

**Source:** U.S. Department of Agriculture, Foreign Agricultural Service, "Dairy, World Markets and Trade," FD 1-94, March 1994 and Australian Dairy Corporation, *1994 Dairy Compendium*.

The European Union (EU) will be required to reduce subsidized exports of dairy products by the amounts shown in Table 2. The EU will remain a much larger exporter of subsidized dairy products under the GATT agreement than the U.S. The EU can satisfy requirements of the GATT agreement for 2000 while still exporting with subsidies about 3.5 times as much NFDM and 100 times as much cheese as the U.S. However, the increase in subsidized exports of EU butter sanctioned under the GATT may not be of much significance. EU butter production has fallen in recent years from about 2.0 million metric tons per year in 1989-90 to 1.6 million metric tons per year in 1992-93 (20% decline). Annual average EU butter exports declined by about 45% from 1989-90 to 1992-93. If these trends continue, the EU's ability to export additional butter with subsidy will have little value to the Union, except as a "safety valve" for offloading onto international markets occasional large butter surpluses.

While the EU will remain the world's dominant exporter of dairy products under the new GATT agreement, the reduction in subsidized cheese exports and the increased access to the European cheese market agreed to by the EU promise to have a substantial effect on world dairy markets. Gardner, writing in *Dairy Industries International*, summarizes the effect this way [7, p. 17]:

"Under the Uruguay Round, the EU is committed to cutting subsidized cheese exports from the 1986-90 average of 386,000 tons to 305,000 tons by 2000, while at the same time opening up 5% of the market to imports by the last year of implementation. This increases the availability on the EU market by an extra 105,000 mt of cheese."

Lower EU exports of subsidized dairy products will increase world dairy product prices partly because EU firms collectively are leaders in dairy exporting and tend to set world prices for dairy products. The Australian Dairy Corporation describes the EU's role in dairy product pricing as follows [1, p. 71]:

"Owing to its dominant position in terms of the supply of most major products, the EU tends to set traded prices in those international markets which are not subject to quota restrictions. Typically export prices in non-quota markets tend to equate to the internal supported price in the EU less the available export refund (export subsidy)."

As the year 2000 approaches and EU exports of subsidized cheese decline, the effect on cheese prices in "thin" international markets could be substantial. The GATT-mandated 81 thousand metric ton reduction in EU subsidized cheese exports by 2000 (from the 1986-90 base) represents a quantity equivalent to 16% of total EU exports of cheese in 1994 and an amount equivalent to about 9% of exports of all leading cheese exporters in 1994. This reduction in subsidized cheese exports plus additional market access in the EU, U.S. and Japan should enhance world cheese prices significantly by 2000. The effects could be large enough to cause world bulk cheese prices to depart from the internal supported price in the EU less the export subsidy with greater frequency.

### **Impact of Sanitary and Phytosanitary Measures**

The impact of this provision is difficult to gauge. Sanitary and Phytosanitary measures have been used by many countries as nontariff barriers to trade. While most trade participants might agree that these measures should be imposed only to the extent necessary to protect human, animal or plant health, their use is likely to remain somewhat arbitrary. Different countries will likely use different scientific criteria to decide when a product is safe as an imported product.

## **Impact of the GATT Agreement on U.S. Farm Milk Prices and International Dairy Product Prices**

### **Impact On U.S. Farm Milk Prices**

The estimates of the impact of the GATT agreement on U.S. farm milk prices range from plus \$.10 per hundredweight to price reductions of \$.55 to \$.60 per hundredweight. The differences can be explained by several factors, including different assumptions made by analysts about dairy imports and exports under the agreement and use of different elasticities for measuring the price impact of changes in dairy imports.

The USDA's forecast of a \$.10 per hundredweight increase in milk prices by 2000 hinges on an increase in the dairy support price to offset increased imports of about one billion pounds of milk equivalent (Table 3). While such an increase in dairy price supports is possible, it might not happen given the budget constraints that will face the Congress when the 1995 Farm Bill is developed. Moreover, net imports could be larger than the one billion pounds of milk equivalent that the USDA employed for making the forecast. However, the USDA forecast correctly points out that dairy farmers' feed costs would increase as a result of the higher grain prices produced by the GATT agreement. Whether the small increase in milk prices would offset the effects of feed price increases is unclear.

The FAPRI forecast is a 1992 estimate based on the proposal offered by GATT Secretary General, Arthur Dunkel, rather than the actual GATT agreement. While the Dunkel proposal closely approximates the changes incorporated in the GATT agreement, the Dunkel text is not identical to the GATT agreement. For example, the Dunkel proposal called for a 24% reduction in the quantity of subsidized agricultural exports while the GATT agreement includes a smaller 21% reduction in such exports. The small increase in U.S. farm prices forecast by the FAPRI modeling group for the later years of the GATT agreement reflects, in part, the effects of tighter world dairy supplies caused by lower quantities of subsidized EU dairy exports.

Vitaliano's forecast of the effects of the new GATT agreement on U.S. farm milk prices is similar to the FAPRI forecast. Vitaliano's forecast of a "wash" assumes that U.S. dairy exporters would capture market share in the EU and increase other dairy exports during 1995-2000. Bjornson assumed that the U.S. will experience a substantially larger net loss of market due to added dairy imports and other GATT-related developments than Vitaliano.

The authors' base scenario, which describes the possible impact of the GATT agreement on U.S. farm milk prices in 2000, reflects use of the following assumptions, coefficients and calculations:

1. In the absence of the GATT agreement the total supply of milk for the U.S. and U.S. commercial disappearance of dairy products (in milk equivalent terms) would both increase by about 2% per year from 1995 to 2000. Under the assumptions of the analysis, aggregate commercial disappearance of U.S. dairy product (in milk equivalent terms) would be 169.7 billion pounds in 2000.
2. U.S. cheese imports increase from 110,999 tons (amount permitted entry under 1994 quota) to 141,991 (amount permitted entry in 2000 under the GATT agreement).
3. DEIP exports of butter, cheese and NFDM decline from 1992-93 average levels to the maximum amounts permitted for the year 2000 under the GATT agreement.
4. The expanded cheese imports and reduced DEIP exports add about 1.4 billion pounds of milk equivalent to aggregate domestic milk supplies.
5. The impact of the GATT-related increase in milk supplies on U.S. average farm milk prices is estimated using a -.22 price elasticity of demand [5].

Table 3. Predictions about the Impact of the GATT Agreement on U.S. Farm Milk Prices and International Dairy Product Prices.

Source and Type of Price Prediction	Prediction
<u>Farm Milk Prices</u>	
Bjornson of AMPI [4]	U.S. farm milk prices will fall by about \$0.55 per hundredweight by the time the GATT agreement is fully implemented in 2000.
Dobson and Cropp	Reduction of \$.49/hundredweight (about 3.8%) under base scenario for 2000.
FAPRI [6, p. 46]	Small (0.5%) initial price reductions will be replaced by small (0.5%) price increases in later years of the GATT agreement.
USDA [12]	In 2000, the USDA's support price for milk is expected to increase above baseline levels by about 20 cents per hundredweight, raising the average milk price by 10 cents per hundredweight. CCC net removals are projected to increase by about one billion pounds, milk equivalent, essentially the increase in imports. Impacts of higher feed costs caused by the GATT agreement will be offset by higher milk prices.
Vitaliano [13]	The impact of the GATT agreement on U.S. farm milk prices will be a "wash."
<u>International Dairy Product Prices</u>	
Australian Dairy Corporation [2, p. 36]	It is unlikely that the Uruguay Round will have a dramatic effect on international dairy prices and trade in the short term. The main effects will not be felt for three or four years.
FAPRI [6, p. 40]	In 1998, the world butter price, world cheese price, and world NFDm price increase by 10%, 28%, and 12%, respectively, from baseline levels.
New Zealand Ministry of Foreign Affairs and Trade [8, p. 32]	There will be significant increases in world prices for cheese, milk powders and perhaps beef resulting from the Uruguay Round agreement. However, sustained price increases in excess of 20% are unlikely.
Umhoefer [9]	The GATT agreement will make imported cheese more expensive and U.S. cheese more competitive. This development will help to foster growth in U.S. specialty cheese businesses.

6. Estimating the GATT-induced decline in prices involves solving for milk price changes as the milk supply curve shifts along a demand curve to reflect the effects of a net increase in domestic dairy product supplies (in milk equivalents) that result from increased net dairy imports.

These calculations were made assuming that other developments affecting milk prices remained unchanged.

Base Scenario: The GATT-related reduction in U.S. farm milk prices that occurs as a result of the assumptions and figures appearing above is \$.49 per hundredweight (about 3.8%). This estimate is sensitive to the demand elasticity used in the calculations. For example, if a -.4 elasticity is substituted for the -.22 estimate, the change in net dairy imports described under the base scenario produces a smaller \$.27 (2.1%) reduction in farm milk prices. While any elasticity is an approximation, the -.22 estimate is likely to be nearer the actual elasticity than -.4. Hence, the \$.49 per hundredweight (3.8%) farm milk price reduction is employed as the base scenario result.

Alternative Scenario No. 1: Under alternative scenario No. 1, all the assumptions and figures are the same as described in the base scenario with one exception. The exception is that an estimate of the milk equivalent of the increase in tariff rate quotas for dairy products other than cheese for 1995 to 2000 is added to the supply increase described in the base scenario. This change reduces U.S. all milk prices by about \$.62 per hundredweight (4.8%). However, it is uncertain whether the additional dairy product imports associated with alternative scenario No. 1 would actually occur. In particular, the within quota tariffs on such imports might be sufficiently high to discourage such imports. Moreover, it is not clear what products would be represented in the added imports. Hence, estimates of the milk equivalent of the added imports represent gross approximations and results for this scenario should be interpreted with caution.

Alternative Scenario No. 2: All assumptions for scenario No. 2 are the same as for the base scenario except that U.S. exporters are assumed to obtain sales in the EU equal to one-half of the 15,000 metric ton within quota cheese quota made available by the EU under the GATT agreement. The GATT-related reduction in U.S. farm milk prices declines to \$.43 per hundredweight (3.3%) under this scenario. If U.S. exports accounted for 10,000 metric tons of the sales associated with the 15,000 metric ton EU quota the milk price decline would be a slightly smaller \$.41 per hundredweight (3.2%). The 7,500 and 10,000 metric ton figures are arbitrary and are used only to show the sensitivity of the estimates to expanded U.S. dairy exports which offset part of the effect of additional imports.

How does one reconcile figures in these scenarios with estimates showing that the GATT agreement would have little or no effect on U.S. farm milk prices? An important explanation for the differences lies with assumptions about U.S. dairy exports. If tighter world market conditions materialize as a result of the GATT agreement, results similar to those described by FAPRI and Vitaliano could occur. For example, such scenarios could materialize if market conditions similar to those which appeared in 1989-90 reemerge. In 1989-90, lower milk production in the EU caused the Union to reduce subsidized exports of NFD. This action increased world NFD prices to levels at or near U.S. prices and caused large commercial exports of U.S. NFD. These developments raised U.S. milk prices.

Clearly many uncertainties exist about the impact of the GATT agreement on U.S. farm milk prices. About all that is certain is that interjecting international developments more fully into market price determination in the U.S. will make farm milk prices more volatile and uncertain.

## **Impact on International Dairy Product Prices**

Estimates of the amount, timing and effects of increases in world market prices for dairy products appear in Table 3. The largest increases are forecast for world cheese prices, reflecting lower subsidized exports of the product by the EU. FAPRI forecasts a 28% increase in world cheese prices for 1998. In a more recent forecast, the New Zealand Ministry of Foreign Affairs and Trade forecasts a modestly lower—but still substantial—increase for cheese prices in world markets. FAPRI forecasts a 10% increase in international butter prices. Spot prices for butter in international markets recently have increased sharply from year-earlier levels, partly because of strong demand in Russia. However, the existence of generally large international surpluses of butter may prevent a sustained increase of 10% in international butter prices from materializing.

## **Longer-Term Impacts of the GATT Agreement**

The Uruguay Round GATT agreement signals a gradual opening of domestic and international markets for dairy products. Expect an additional round of trade negotiations to be launched under the new World Trade Organization (WTO)—the successor to the GATT—some time after 2000 which will reduce tariffs on dairy imports still more and allow additional imports of dairy products into the U.S., EU, Japan and other large commercial markets. The experience with industrial tariffs suggests the nature of the likely long-run trend. Tariffs on manufactured products in industrial countries averaged about 40% in 1947. Reflecting reductions made during several GATT rounds, those tariffs now average only about 5%. The new WTO also promises to be more effective for settling disputes among trading nations. New WTO rules should prevent countries from dragging out the dispute settlement process indefinitely or blocking judgments they do not like, as has often happened in the past [10].

New Zealand and Australia stand to be big gainers in the more open world dairy markets over the longer-run. Production costs under their pasture-based farming systems are the lowest in the world. However, efficient U.S. dairy farmers also could gain market share in the more open world dairy markets.

The extent to which the U.S. dairy industry will prosper under more open world markets depends partly on the effectiveness of U.S. firms as exporters. Some promising initiatives are underway including the export promotion work of the National Dairy Board, the expansion of private dairy exports to Mexico in the aftermath of the NAFTA agreement, and the expansion of whey product exports to several major foreign markets by Upper Midwestern firms. However, the limited use made by U.S. firms of the DEIP cautions one against being excessively optimistic about exporting prospects. Most DEIP exports of U.S. dairy products have been made by EU-based firms.

Firms concluding that they can increase profits by exporting might gain early mover advantages by getting into exporting sooner rather than later. Even early movers will face the difficult task of catching up to sophisticated exporters such as the New Zealand Dairy Board, Nestle (Switzerland-based), Kraft, M.E. Franks (owned by Ecoval of Belgium) and the Borden Company. However, the discipline of learning to export dairy products may carry an important side benefit. It may help U.S. firms to produce the quality and variety of products needed to defend their dairy sales in the North American market, which is being eyed by expansion-minded foreign firms.

## Summary

The new Uruguay Round GATT agreement brings agriculture under the trading rules of the GATT in important ways. Changes affecting the U.S. dairy industry that will result from the GATT agreement include the following:

- Section 22 dairy import quotas will be replaced with tariffs which will be gradually lowered during 1995-2000.
- Within quota cheese imports under for the U.S. under the tariff rate quotas included under the GATT agreement will total 141,990 metric tons in 2000. This figure is 28% larger than licensed cheese imports under the Section 22 quotas that existed in 1994.
- Export subsidies under the USDA's DEIP program will be reduced during 1995-2000. In 2000 as a result of the GATT-mandated change in the DEIP, subsidized exports of U.S. NFDM must be reduced by 40% from the 115 thousand metric ton average of subsidized exports recorded under the program in 1992-93. U.S. exports of dairy products in the form of aid will not be limited by the GATT agreement. Hence, we expect aid exports to increase in the next few years.
- Estimated effects of the GATT agreement on U.S. farm prices range from small increases to reductions of about \$.40 to \$.60 per hundredweight by 2000. Analysts differ on the price impacts of the GATT agreement partly because of different assumptions made about U.S. dairy imports and exports under the GATT agreement.
- Changes produced by the GATT agreement promise to make U.S. milk prices more uncertain and volatile. Most of the negative impact of the GATT agreement on U.S. farm milk prices seems likely to originate with increases in cheese imports and smaller NFDM exports.
- The EU will be required to reduce subsidized exports of cheese by about one-third from 1992-93 levels by 2000. This change is expected to increase cheese prices in international markets by 20% or more by 2000.
- Over the longer-run (after 2000), tariffs on dairy products are likely to be reduced still more and access to markets in the U.S., Europe, Japan, and other major commercial markets will increase. These changes would be produced by subsequent negotiating rounds under the auspices of the new World Trade Organization which will replace the GATT.
- New Zealand and Australia promise to be big gainers under the more open world markets that will exist over the longer-run. Production costs for their pasture-based systems are the lowest in the world. However, efficient U.S. farmers also could gain market share in more open world markets.
- U.S. firms that believe they can profit by exporting can gain early mover advantages by getting into exporting soon rather than later. Even early movers will face the difficult task of catching up to sophisticated exporters such as the New Zealand Dairy Board, Nestle, Kraft, M.E. Franks, and the Borden Company.

## References

1. Australian Dairy Corporation, *Dairy Compendium*, 1992, p. 71.
2. Australian Dairy Corporation, *Dairy Compendium*, 1994.
3. Barr, Jim, Memo to NMPF Executive Committee and General Managers on "1995 DEIP and U.S. Dairy Import Situation," December 21, 1994.
4. Bjornson, N., Comments appearing in "Co-op Economists Disagree on GATT," *Agri-View*, March 24, 1994, Section 3, p. 2.
5. Cox, Thomas, Private communication regarding estimate of price elasticity of demand for U.S. dairy products at farm and wholesale levels, January 1995.

6. Food and Agricultural Policy Research Institute (FAPRI), "Implications of a GATT Agreement for World Commodity Markets, 1993-98: An Analysis of the Dunkel Text on Agriculture," *FAPRI Staff Report #3-92*, April 1992.
7. Gardner, B., "Dairy Quota Cut Needed if Europe is to Meet GATT Limit," *Dairy Industries International—The European Business Journal for Dairy Processing*, July 1994, p. 17.
8. New Zealand Ministry of Foreign Affairs and Trade, "Trading Ahead—The GATT Uruguay Round: Results for New Zealand," April 1994.
9. Umhoefer, J., Comments appearing in "Bright Spots in Cheese Market," *Wisconsin State Journal*, December 26, 1993 p. 2g.
10. U.S. Department of Agriculture, Foreign Agricultural Service, *Ag Exporter*, June 1994.
11. U.S. Department of Agriculture, Foreign Agricultural Service, "GATT/Uruguay Round USDA Factsheet," February 1994.
12. U.S. Department of Agriculture, Office of Economics and Economic Research Service, "Effects of the Uruguay Round Agreement on U.S. Agricultural Commodities," March 1994, 48 pages.
13. Vitaliano, P., Comments appearing in "Co-op Economists Disagree on GATT," *Agri-View*, March 24, 1994, Section 3, p. 2.