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# Globalization and Northeast Agriculture: Implications of the Upcoming Round of World Trade Negotiations

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The signing of the Uruguay Round agreement on agriculture (URAA) in 1994 was a significant step towards the liberalization of world agricultural trade. A new round of negotiations on agriculture is scheduled to begin under the auspices of the World Trade Organization (WTO) at the end of 1999. This paper discusses the likely agenda of those negotiations and their implications for agriculture in the northeastern United States.

## The Uruguay Round Agreement on Agriculture

The Uruguay Round negotiations under the General Agreement on Tariffs and Trade (GATT) were launched in Punta del Este, Uruguay in September 1986. They ended more than seven years later with the signing of the Final Act in Marrakesh, Morocco in April 1994. The Uruguay Round, the eighth in a series of tariff-cutting negotiations stretching back to 1947, was particularly significant since it was the first time that a serious attempt was made to address agricultural trade barriers. Despite the fact that limited progress was actually achieved in reducing barriers to agricultural trade, the URAA provides a framework within which these barriers can be reduced in the future.

The Agreement is quite complicated, and there are a number of special provisions and exceptions (Josling et al.). However, the major elements are:

1. Market access—non-tariff barriers were converted into tariffs and bound (set at fixed rates); the bound tariffs are being reduced over the life of the Agreement (1995–2000) for a total reduction of 36% on average (and a minimum of 15% per tariff line); countries agreed to provide a minimum level of access for imports (i.e. volume of imports subject to tariffs below the bound rates) equivalent to

3% of domestic consumption, rising to 5% over the life of the agreement (there are safeguards—additional duties can be imposed if there are sudden surges of imports or drops in import prices).

2. Export subsidies—outlays on export subsidies are being reduced by 36% and the volume of subsidized exports by 21%.
3. Domestic support—expenditures estimated under the aggregate measure of support (AMS) are to be reduced by 20%, with the exception of “green box” measures, i.e. those judged to be minimally trade distorting.

The base period used in calculating the minimum access level and other components is 1986–88, with the exception of the export subsidy commitments for which it is 1986–90.

The two major achievements of the Agreement were “tariffication”—the conversion of non-tariff barriers into tariff barriers—and the limitations placed on export subsidies. The pervasive use of non-tariff barriers and the use of export subsidies, particularly by the European Union and the United States, were undoubtedly the two leading causes of distortion in international agricultural markets and a major source of conflict between countries in the years prior to the signing of the URAA. However, the bound tariffs that were agreed in the URAA were often very high, leading to allegations of “dirty tariffication,” i.e. that tariffs had been set at levels in excess of the tariff equivalent of the trade barriers they replaced. Furthermore the introduction of a quantitative trade control element through the market access provision was a mixed blessing.

On the one hand it provided the opportunity for countries to gain entry to markets from which they would otherwise been excluded given the high tariff bindings. On the other hand, it set up a system of regulated trade that has stimulated rent-seeking behavior on the part of exporters and importers. A characteristically guarded assessment by the OECD Secretariat summed up the results of the URAA as follows: "while the Agreement incorporates a number of highly significant and beneficial systemic changes to the trading system for agricultural products, actual impacts on trade and policy over the implementation period, particularly in the early years, may prove to be modest." (OECD 1995 p. 58).

### The Agenda for the Upcoming Round

The URAA calls for talks to be initiated one year prior to the end of the implementation period. The launching point for the talks is likely to be the ministerial meeting of the WTO in Seattle (November 30–December 3, 1999), which may mean that the next round of negotiations will be called the "Seattle Round."

The prospect of a new round is being met with varying degrees of enthusiasm among the members of the WTO. Countries that have traditionally taken a protectionist stance are fearful that they may have to make concessions that will actually expose their agricultural sectors to international competition. As a result, they are searching for new ways to justify special treatment for agriculture. At a minimum this would allow the use of government subsidies to achieve a variety of aims. These include preserving agriculture and rural areas, protecting employment or promoting the supply of environmental goods by agriculture (although there is a marked reluctance to tax agriculture for the negative externalities, such as water pollution, that it can generate). A term has been coined to justify such treatment—"multifunctionality." Although the meaning of this term is subject to various interpretations, broadly it connotes that agriculture produces more than just food and fiber and that its other outputs should be taken into account in determining how the sector should be treated. Some countries would like to use the multifunctionality argument to justify the continued protection of agriculture behind high tariffs. Such tariffs impose substantial implicit taxes on consumers and they are an inefficient way to support farm income—a key aim in most countries (Blandford and Dewbre).

There is also a resistance to further agricultural

trade liberalization on a number of other grounds, for example:

1. it undermines the safety of the food supply because foreign food production standards are not as high as domestic standards or because foreigners use dangerous new technologies, such as herbicide resistant plants or synthetic hormones in meat production;
2. it puts food security at risk since relying on international markets for supplies of food is not as dependable as relying on domestic sources, even if these are very expensive;
3. production of food for export is associated with environmental degradation, exploitation of labor or other socially undesirable outcomes so it is better not to encourage these by importing food;
4. trade liberalization undermines some of the things that we value about our food system, like the way farm animals are raised (animal welfare), national or regional specialty products, or organic production;
5. only the strong benefit from trade liberalization, poorer and economically weaker producers and countries will probably lose out; furthermore trade liberalization primarily benefits large multinational companies.

Countries and pressure groups that hold these views are not looking forward to significant progress in liberalizing agricultural trade in the upcoming negotiations.

Those who do not hold these views tend to believe that their agriculture can compete internationally if trade barriers were lowered. Such countries will be looking for a number of things in the negotiations. These include a substantial reduction in the bound tariffs for agricultural products. If the reduction is not sufficient to make the tariff-quota system irrelevant, then they will want to see a substantial increase in the market access level under the tariff-quota system. They will also want to see a further substantial reduction in the permitted use of export subsidies (preferably their elimination). They will want to ensure that trade-distorting domestic subsidies are eliminated and that mechanisms such as technical standards or health and sanitary standards are not used to create new barriers to trade. Finally, some countries, particularly the United States, would like to see restrictions placed on the international activities of state trading entities, such as marketing boards. It is argued that these lead to unfair competition.

On the surface it might appear that the differences in views are irreconcilable and that it will be extremely difficult to make any significant prog-

ress in the negotiations. While the validity of many of the arguments made for the special treatment of agriculture is open to debate, this would likely be endless since it involves fundamental differences in values and beliefs. In order to move forward, we must be willing to accept that countries have the right to pursue public policies that preserve those attributes of their food and agricultural systems that they value highly. The issue is then one of whether barriers to trade are the preferred way to achieve the desired policy outcome.

Economic analysis suggests that trade barriers are not the first-best policy choice to address the concerns identified above. For example, if the aim is one of ensuring a sufficient supply of an environmental good associated with farming, such as landscape amenity, the least costly solution in terms of global economic welfare is to reward farmers directly for producing the environmental good. It is distinctly inferior to try to induce them to supply the amenity by using trade barriers to increase the price of something that is produced jointly but loosely (e.g. milk) with the amenity. Similarly, if the aim is to preserve or promote a particular production system, for example on animal welfare grounds, trade barriers are unlikely to be an efficient means of achieving that objective. As has been argued recently with respect to animal welfare, a variety of other alternatives exist that are both viable and less costly (Blandford and Fulponi).

Achieving progress in the upcoming trade negotiations will require that countries are able to satisfy key domestic concerns relating to agriculture. Negotiators must be able to assure their constituents that freer trade will not undermine domestic policy aims. From the perspective of those who wish to see progress in the negotiations, the search for viable policy approaches that do not rely on trade barriers should be a major priority.

### **Northeast Agriculture and the Negotiations**

There is a lot more at stake for the northeastern United States than agriculture in the search for freer trade. As a major and highly diverse part of the U.S. economy, globalization has broad implications for the region. However, I shall focus narrowly on the agricultural issues, leaving aside even closely related industries such as forestry for which there is likely to be much at stake from freer trade.

Agriculture in the Northeast is relatively diversified (table 1). However, developments in international trade have had an important impact on a number of our key commodities in recent years.

Two examples from opposite sides of the spectrum are poultry and apple juice. Since 1987, the volume of U.S. exports of poultry and poultry products has grown by an average of more than 45% per year. In 1998, the value of U.S. exports amounted to \$2.5 billion; 70% of these exports went to four countries—Canada, Mexico (our NAFTA partners), Russia and Hong Kong. Exports of fresh or frozen chicken were equivalent to roughly 11% of the value of U.S. production in 1998. The value of exports (\$1.7 billion) exceeded the value of broilers produced in the Northeast (\$1.6 billion). Broilers are the third most important agricultural commodity produced in the region (figure 1). The growth in foreign demand for poultry products has been important for the industry and has provided additional market opportunities for producers.

By contrast, rapid increases in imports of apple juice concentrate, particularly from China, have put severe pressure on U.S. apple producers. Imports from China in 1997 were more than nine times as large as in 1995 and the price for Chinese concentrate fell by 53% over the same period. U.S. growers saw a decline in the price received for juice apples of 39% between 1995 and 1997. Apples are a significant product in several Northeast states, and local producers have been affected by low-price competition from China.

These are just two commodities that have stood out in recent years as being particularly affected by foreign trade. However, we have seen an increase in export opportunities for several other commodities produced in the region (e.g. beef, pork and wine) as well as greater import competition for some (e.g. mushrooms).

Given the importance of dairying in the region, a key issue for the Northeast will be what happens to dairy products in the upcoming round of trade negotiations. Dairy products, plus sugar and rice are likely to be three commodity groups that will receive particular scrutiny in the negotiations. Trade barriers for these three commodities are high and it will be necessary to achieve significant progress in reducing these barriers if the round is to be a success.

As an illustration of the challenge ahead, table 2 contains data for bound tariffs for butter and cheese in selected countries. These demonstrate the complexity in tariff structures that resulted from the Uruguay Round negotiations—a mixture of specific and ad valorem tariffs, the use of various trigger points, discrimination across commodities sometimes in order to benefit particular trading partners. In addition, the tariffs applied to dairy products are often extremely high. In most cases, the bound tariffs are at prohibitively high levels. It

**Table 1. Total Cash Receipts by State and Shares of Leading Commodities in the Northeastern United States (1997)**

Maine \$486 Million		New Hampshire \$166 Million		Vermont \$81.4 Million	
Potatoes	21%	Dairy products	28%	Dairy products	72%
Dairy products	20%	Green products	25%	Cattle/calves	7%
Chicken eggs	17%	Apples	5%	Green products	6%
Aquaculture	10%	Cattle/calves	4%	Hay	3%
Blueberries	8%	Christmas trees	4%	Christmas trees	2%
Massachusetts \$532 Million		Connecticut \$496 Million		Rhode Island \$82 Million	
Cranberries	28%	Green products	26%	Green products	62%
Green products	28%	Dairy products	15%	Dairy products	6%
Dairy products	12%	Other Aquaculture	12%	Corn, sweet	3%
Apples	3%	Chicken eggs	9%	Potatoes	2%
Corn, sweet	2%	Tobacco	3%	Chicken eggs	1%
Pennsylvania \$4,128 Million		New Jersey \$776 Million		New York \$2,396 Million	
Dairy products	37%	Green products	32%	Dairy products	53%
Green products	9%	Dairy products	5%	Green products	9%
Cattle/calves	9%	Cranberries	5%	Apples	4%
Chicken eggs	8%	Peppers, green	4%	Cattle/calves	4%
Mushrooms	6%	Blueberries	4%	Corn	3%
Delaware \$748 Million		Maryland \$1,338 Million		West Virginia \$829 Million	
Broilers	71%	Broilers	35%	Broilers	35%
Soybeans	6%	Green products	15%	Cattle/calves	8%
Green products	4%	Dairy products	12%	Dairy products	9%
Corn	3%	Soybean	7%	Turkeys	9%
Dairy products	3%	Cattle/calves	4%	Chicken eggs	6%

Percentages denote share of total farm cash receipts.

Due to disclosure problems, minor quantities in some states are excluded.

Source: USDA Economics and Statistics System Web.

<http://usda.mannlib.cornell.edu/usda/usda.html>

is only possible to export consistently to the countries concerned within the minimum market access levels established under the URAA to which lower tariffs apply.

### The Northeast and Dairy Trade Liberalization

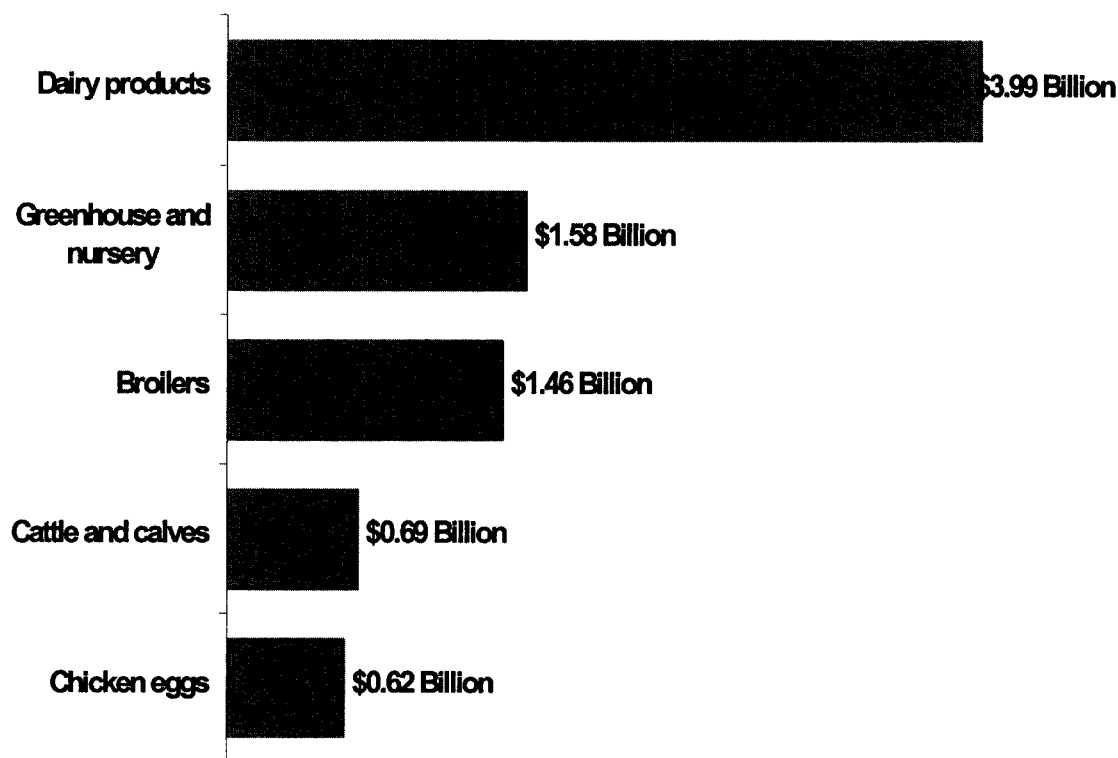
Dairy products represented over 30% of the total value of farm marketings in the Northeast in 1997. There were more than 26 thousand dairy farms in the region and they produced almost one fifth of the nation's milk supply (table 3). The dairy industry is an important part of the agricultural economy in most of the states in the region. Dairy products rank in the top three in terms of farm cash receipts in 11 of the 12 states (table 1). The likely position of the region's dairy industry under trade liberalization is therefore of considerable interest.

Currently, the United States dairy industry, in common with many of the other dairying nations in the world, operates behind a wall of protective tariffs. Typically U.S. dairy exports have been modest, and have been subsidized under government

programs. Imports on a milk equivalent basis in recent years have been equivalent to less than 2% of total commercial disappearance.

Would the region's dairy industry be able to compete if trade barriers were reduced? In order to provide a definitive answer to this question, we would need to use a quantitative economic model that would allow us to determine how international prices would change with trade liberalization, and to translate this into dairy farm profitability in the region. Since I do not have access to such a model, I shall use a far simpler and more speculative approach (table 4).

In a recent paper, Griffen (1999) has estimated that in order to be a competitive exporter of dairy products at current international prices, a country must be able to produce milk for around 20 cents per kilogram or roughly \$9 per hundred pounds (cwt). This compares to an average U.S. producer price for 1997 (mailbox milk price under federal orders) of roughly \$13 and a Northeast price of roughly \$12.90 (USDA/AMS). I shall use 1997 price comparisons as being rather more typical than the high prices in 1998. Under 1997 prices,



**Figure 1. Top 5 Commodities in the Northeast Region.\***

\*Percentages denote share of total farm cash sales.

Source: Computed from USDA Economics and Statistics Web.

this comparison would suggest that producers in the Northeast would have a difficult time competing under free trade.

If trade were liberalized, however, international prices would most likely increase. Prices are depressed because trade barriers reduce imports and some countries subsidize exports. The last time I reviewed a number of estimates of the potential increase in world dairy prices that would result from free trade, the median estimate was 44% (Blandford 1990). Admittedly that estimate related to conditions in the 1980s, when the volume of subsidized exports was high and there have been changes in dairy policies that have reduced such exports. In the light of this, I shall use 40% as a high estimate of the potential increase in international prices under free trade and 30% as a low estimate. The latter is close to the lowest estimate of the increase in world prices of the studies reviewed. Applying these percentages yields a range for the estimated U.S. farm price for milk of roughly \$11.80–\$12.70 per cwt.

That is not the end of the story, since an allowance must be made for the fact that a portion of

domestic milk production is used for fluid consumption. Milk for fluid use is always likely to command a price premium (this is the case in major dairy exporting countries such as Australia and New Zealand). In recent years, roughly 40% of the milk marketed in the United States has been used for fluid purposes. Again, it is difficult without an economic model to estimate how this proportion might change, but let us use that figure as a high estimate of the fluid proportion under free trade and 30% as a low estimate. In terms of the premium itself, I shall employ \$2 per cwt as a high estimate and \$1 per cwt as the low estimate. If we apply these premia and proportions, the resulting range for the equivalent farm price for milk under free trade would be roughly \$12.10 to \$13.50. The mid-point estimate is roughly \$12.80.

I am not pretending that these are particularly robust estimates of what would happen to prices if countries were to liberalize trade as part of the upcoming round of international trade negotiations, but I think that they represent “ballpark” figures. The estimates raise the possibility that we would not see a major decline in U.S. milk prices

**Table 2. Bound Tariffs for Butter and Cheese in Selected Countries**

	Butter	Cheese
Canada	298.7 percent ad valorem (but not less than 400.1 cents per kg)	254.6 percent ad valorem (with minimum tariffs ranging from 352.7 cents per kg to 578.4 cents per kg)
European Union	1,896 ECU per tonne (1) 2,313 ECU per tonne (2)	Ranging from 1,391 to 2,212 ECU per tonne (lower tariffs for certain uniquely Swiss cheeses)
Japan	29.8 percent ad valorem plus 985 yen per kg (1) or 1,159 yen per kg (2)	22.4 percent to 40 percent ad valorem
Mexico	37.5 percent ad valorem	45 percent or \$1,044 per tonne and not less than 125.1 percent ad valorem
United States	\$1.541 per kg	\$1.128 to \$2.269 per kg depending on type

(1) Fat content not exceeding 85%

(2) Other

Source: WTO tariff schedules supplied by the Foreign Agricultural Service of the U.S. Department of Agriculture.

under freer trade, providing that other countries lower their tariffs and subsidies as we reduce ours, which is what should happen under a new WTO agreement. Indeed there is the possibility that the United States and the Northeast might well be in a

**Table 3. Dairy Industry in the Northeastern United States**

	Milk cows (thousand)	Milk per cow (pounds)	Production (million pounds)	Number of dairy farms
Connecticut	30	16,967	509	350
Delaware	10	15,149	153	130
Maine	40	16,525	661	700
Maryland	86	15,488	1,332	1,100
Massachusetts	26	16,731	435	450
New Hampshire	19	17,263	328	300
New Jersey	20	15,000	300	350
New York	699	16,519	11,547	9,000
Pennsylvania	639	16,811	10,742	11,300
Rhode Island	2	16,000	32	40
Vermont	157	16,567	2,601	2,000
West Virginia	18	14,778	266	800
Northeast	1,746	16,556	28,906	26,520
United States	9,258	16,916	156,603	123,700

Source: U.S. Department of Agriculture, Agricultural Marketing Service, Dairy Market Statistics, Annual Summary 1997.

**Table 4. Estimates of a Range of U.S. Producer Prices for Milk under Free Trade**

	Low	High
Increase in world dairy price with free trade	30%	40%
Farm price of milk for manufacturing use (per cwt)	\$11.79	\$12.70
Share of U.S. milk production sold for fluid use	30%	40%
Premium per cwt for milk for fluid use	\$1	\$2
Blended U.S. farm price for milk (fluid and manufacturing uses)	\$12.09	\$13.50

Note: Based on a current competitive export price of milk for manufacturing purposes of \$9.07 per cwt.

position to take advantage of export opportunities if trade barriers were lowered at home and abroad.

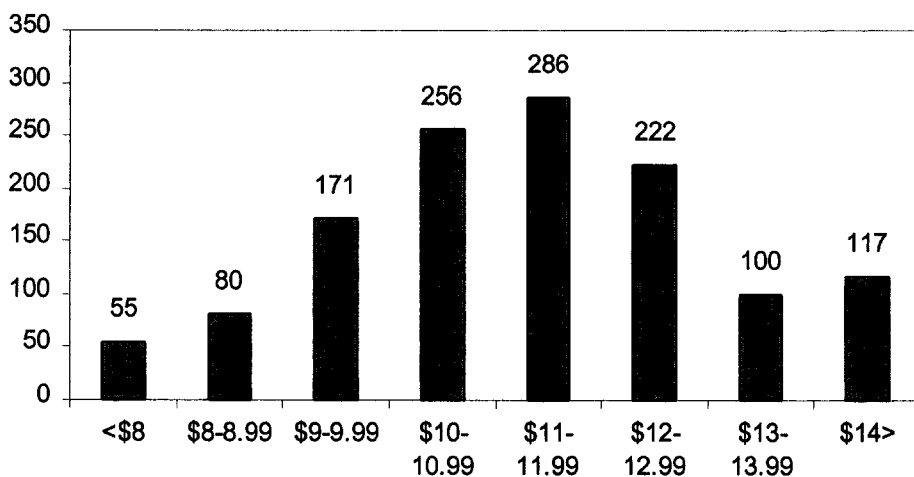
In this context, it is interesting to compare the estimates derived in table 4 to some financial data for 1,287 dairy farms in Pennsylvania in 1997 (table 5). These data are provided to the Department of Agricultural Economics and Rural Sociology at Penn State by the Members' Services Corporation of the Pennsylvania Farm Bureau and are summarized annually in a publication entitled "Pennsylvania Dairy Farm Business Analysis." The data are not derived from a random sample of dairy farms. A comparison to the figures in table 3 would suggest that the dairy farms involved are larger on average (80 cows, compared to roughly 60 cows in table 3), and produce roughly 5% more milk per cow on average (17,750 lbs compared to

**Table 5. Financial Characteristics of a Sample of Pennsylvania Dairy Farms by Herd Size and Average Production per Cow**

Size class (cows per farm)	Average cows per farm	Lbs of milk sold per cow	Accrual net dairy income per cow	Accrual net farm income
<50	38	17,458	\$466	\$9,518
50-74	61	17,322	\$215	\$18,273
75-99	85	18,099	\$254	\$29,100
100-149	120	18,333	\$211	\$29,018
150-249	183	18,838	\$219	\$62,495
250>	337	18,707	\$159	\$97,464
Range of production per cow				
<14,000	62	—	\$184	\$564
14,000-16,999	77	—	\$353	\$18,310
17,000-19,999	87	—	\$249	\$29,591
20,000-22,999	95	—	\$286	\$33,712
23,000>	75	—	\$506	\$48,816
All herds	80	17,750	\$291	\$23,271

— = not computed

Source: 1997 Pennsylvania Dairy Farm Business Analysis.



Source: 1997 Pennsylvania Dairy Farm Business Analysis.

**Figure 2. Distribution of a Sample of Pennsylvania Dairy Farms by Cash Costs of Production per cwt of Milk, 1997.**

16,916 lbs in table 3). Also no single state's dairy farming can be considered typical in a region with such a diverse dairy industry as that depicted in table 3, so it is difficult to draw regional conclusions from the data.

Despite these limitations, it is interesting to see what can be determined from the Pennsylvania dairy data about adjustment under freer trade. Figure 2 graphs the distribution of farms by cash costs of production per cwt of milk. The average cash cost of production for all the farms in the sample was \$11.43 per cwt. Two thirds of the farms had cash production costs below the lower bound estimate of the free trade milk price in 1997 in table 4. More than four fifths of the farms had costs below the higher bound estimate.<sup>1</sup>

In terms of actual financial performance in 1997, we reach the unsurprising conclusion that total net farm income tends to increase with herd size. Farms with 150 cows or more did far better than smaller farms in terms of total income (although not necessarily in the average income generated per cow). What is rather more interesting is that while income tended to rise in line with higher productivity (output of milk per cow) there was no consistent relationship between net income per cow and herd size. Thus for example, farms with the highest herd average (more than 23,000 lbs)

had fewer animals than those with smaller herd averages. Similarly, farms with a herd average of 20,000–22,999 lbs, while larger than those with an average of 14,000–16,999 lbs (95 cows versus 77 cows), generated less net income per cow (\$286 versus \$353). These figures seem to suggest that there is considerable potential for increasing the economic efficiency of dairy farming in Pennsylvania at various sizes of farm. Improved managerial efficiency, coupled with growth in herd size, could yield significant gains in income for individual dairy farms.

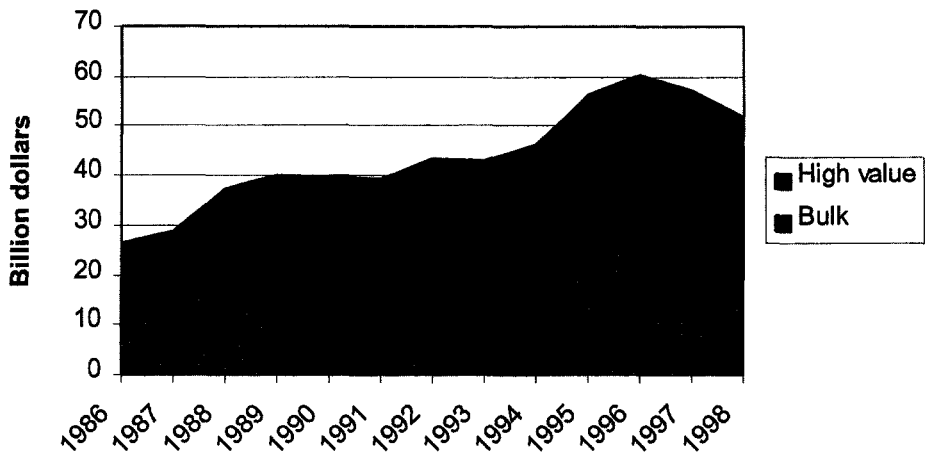
These tentative conclusions certainly merit more in-depth analysis, but if sustained they would seem to suggest that many Pennsylvania dairy farmers would be in a position to adapt to a change in milk prices brought about by freer agricultural trade, and could be in a good position to compete internationally. Increasing technical efficiency by raising milk production per cow, and economic efficiency by reducing the costs per cwt of milk produced would be important elements of success. These will be key to the future of the industry even if no progress is made in liberalizing international trade.

#### **Further Implications of Trade Liberalization for the Region**

A few final comments can be made on the potential implications of trade liberalization for the region. The United States and the Northeast are mature economies that can expect modest growth in food

<sup>1</sup> Data from 253 New York dairy farms for 1997 (Knoblauch and Putnam) show that the total operating costs were \$11.76 per cwt and were \$10.85 for the top 10% of farms (those with the highest rate of return to capital). These figures are below the range of estimates given in table 4.





Source: USDA/ERS, <http://www.econ.ag.gov/briefing/AgTrade/#Data>.

**Figure 3. U.S. Exports of Bulk and High-Value Commodities, 1986–98.**

consumption. Some commodities are likely to benefit from additional demand created by demographic changes, particularly the aging of the population, changes in lifestyles and consumer attitudes, such as those reflected in the demand for “healthy” foods. Similarly, greenhouse and nursery (“green”) products are an important part of northeastern agriculture and the demand for these products is likely to rise as incomes increase. This being said, the prospects for growth in demand for most northeastern products in regional and national markets are likely to be limited. The real growth prospects are in international markets.

As population, and more particularly per capita income, has increased overseas the United States has benefited from an increase in the demand for its products. While U.S. exports of bulk commodities such as grain and animal feed have been relatively flat in recent years, the demand for high value agricultural products has been extremely robust (figure 3). High value agricultural products currently account for more than 60% of total U.S. agricultural exports, roughly twice the proportion in the mid-1970s. Despite recent downturns due to financial crises in various countries, the long-term prospects for market growth continue to be good. In its latest assessment of the outlook for world agricultural markets, the OECD Secretariat foresees the return of a trend towards higher and more stable prices early in the new millennium, particularly for high valued commodities such as meat and dairy products (OECD 1999). As a region whose agriculture is dominated by such high-valued commodities, there is greater potential for Northeast agriculture to profit from renewed inter-

national market growth. It should also be noted that the Uruguay Round did relatively little to reduce the escalation of tariffs by the level of processing (OECD 1997). Countries tend to protect most heavily their high-valued products and this makes it particularly difficult for exporters to compete in those products. Reducing the barriers to trade in high value products would seem to be a priority for a region which seems to be well-placed to benefit from the future growth in the demand for these products.

### Concluding Remarks

It seems likely that agriculture in the Northeast would benefit if further progress was made in liberalizing world agricultural trade. Although more comprehensive and exhaustive analysis is needed, initial estimates suggests that much of the region’s important dairy industry would be in a position to compete internationally. For producers of these and other commodities improving technical and economic efficiency will be a key element in future competitiveness.

In order to take advantage of opportunities created by more open markets in other countries, producers and agribusiness firms in the region will need to become more global in their outlook and operations. The Northeast has tended to lag behind other parts of the country in foreign market development and the development of international marketing skills in its food and agricultural sector. These deficiencies would need to be corrected if trade were liberalized.

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