

Maryland's Dairy Industry: 2007

**A Report
To
Governor Martin O'Malley**

From

The Maryland Dairy Industry Oversight and Advisory Council



October 1, 2007

Executive Summary

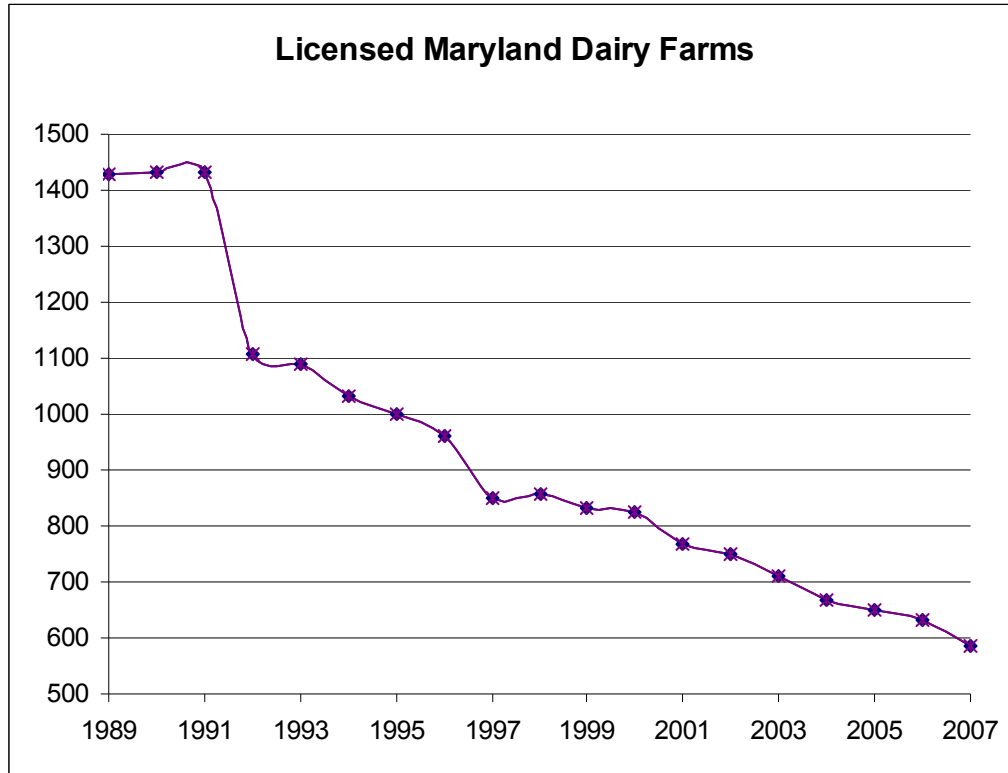
Maryland's dairy industry is at a critical juncture

The Maryland Dairy Industry Oversight and Advisory Council is charged with reporting annually to the Governor on strategies to support Maryland's dairy industry. Created in July 2006, this is the first report from the Council. This Council has focused its work in monthly meetings beginning in February 2007 and continuing through September on the significant economic challenges facing Maryland's approximately 600 dairy farms and its fluid milk processors.

Maryland's dairy industry is a vital part of agriculture in the state. Ranked third in farm income behind the poultry and nursery sectors, dairy farmers maintain approximately 250,000 acres of farmland. Dairy is particularly important to the farm economies of Maryland's central and northern counties where farmers have the option of selling their land to developers at ever increasing prices. The economic impact of these farms in their communities is significant – an estimated \$879 million in Maryland. Their social impact is vital as well, with dairy farmers and their families taking active roles in the fiber that sustains many rural Maryland communities. With very few exceptions dairy farms are full time family farms; a rarity in the rapidly changing Maryland landscape.

Despite recent increases in the price of milk, which supports the continuance of Maryland dairy farms, there is compelling evidence that the state's producers are at a critical juncture, with their future viability at stake. The number of farms licensed to produce milk declined by 35 percent from 1,009 in 1995 to 655 in 2005. From December 2005 to August of 2007, a period of low farm milk prices, the state lost 82 dairy farms and is now down to slightly less than 600. Dairy farmer representatives on the Council attribute the decline largely to the insufficient financial returns resulting from extreme price volatility and extended periods of depressed milk prices. The decline of dairy farms is projected to continue based on current trends, with Maryland losing from 100 to 220 dairy farms in

the coming decade, according to Dr. Howard Leathers, University of Maryland agricultural economist.

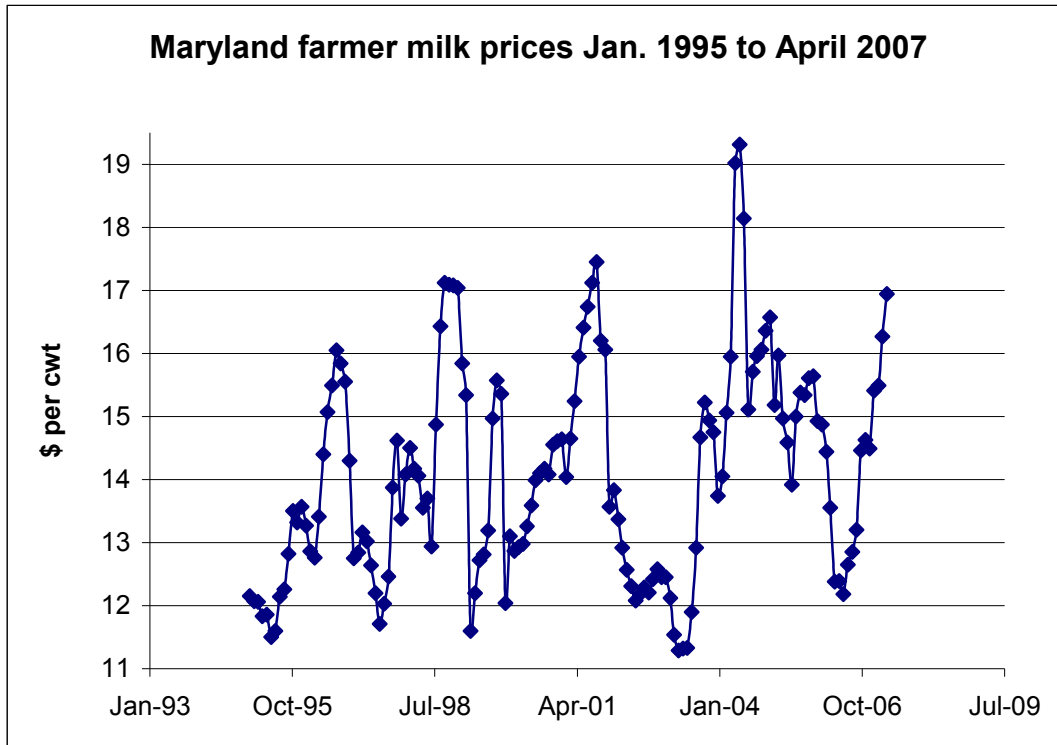


- Source, Department of Health and Mental Hygiene

Fluid milk processors in Maryland are faced with economic challenges of their own. And, like dairy farms, the processors are an important component of Maryland's economy. The state's nine major milk processors -- fluid, cheese and ice cream -- regulated by the Maryland Department of Health and Mental Hygiene, employ 2,078 with an annual payroll of \$104 million and produce 1.3 billion pounds of dairy products. Owners of these facilities face aggressive competition from Pennsylvania processors who enjoy a competitive advantage by virtue of being located in a state that guarantees them a minimum wholesale price.

Maryland processors described to the Council how some Pennsylvania processors use this advantage to offer unrealistically low milk prices in Maryland in order to capture market share. The unlevelled competitive playing field is putting financial stress on the major fluid milk plants remaining in Maryland. This issue was addressed in 1996 in a

paper by the University of Maryland College of Agriculture and Natural Resources. The Dairy Advisory Council believes that this issue still exists and that it threatens the future of Maryland owned and operated milk processing plants. The loss of the fluid milk processing sector would cost thousands of plant jobs and cause many Maryland farmers to have to ship their milk farther at additional cost.



Source – Dr. Howard Leathers, University of Maryland

(Note: cwt refers to hundredweight, the industry standard measurement for milk. A hundredweight is 11.6 gallons of milk.)

Other states on the East Coast have initiated a variety of methods to support dairy farmers, from ad hoc income support payments, to price-setting structures, to an innovative tax credit in South Carolina. After considering these various state programs, the Council concluded that, while the approaches of other states may not fit Maryland exactly, the fact that the current federal milk programs are not succeeding in establishing a stable supply of locally produced milk makes it imperative that Maryland embark on a path of state support for the industry.

The Advisory Council developed the following two recommendations to address the problems of farm milk price volatility and disparities in the Mid-Atlantic wholesale milk market:

- In light of the ongoing economic challenges facing Maryland dairy farmers, the Dairy Advisory Council recommends the establishment of a Maryland Dairy Emergency Fund at the Maryland Department of Agriculture to provide farmers with financial assistance during periods of economic hardship due to depressed milk prices. To provide the necessary funds for this State function, we recommend \$5 million be appropriated annually to a non-reverting fund and be allowed to build up to, and be maintained, at \$15 million. The Secretary of Agriculture should be authorized to develop a plan to distribute payments from the fund to assist dairy farmers during periods of economic crisis.
- To support the continued viability of Maryland's fluid milk processors, the Dairy Advisory Council recommends the creation of a law prohibiting the sale of fluid milk products in Maryland at below cost. The Secretary of Agriculture should be provided with the necessary authority and resources to determine the industry cost to process and distribute fluid milk products and the powers to enforce compliance with the law. The cost of administering the program should be paid through assessments on fluid milk processors and distributors doing business in Maryland.

The Dairy Advisory Council strongly believes that Maryland's dairy industry has reached a point at which a more active and progressive involvement from the state is vital in establishing a clear future for Maryland's dairy farmers. These recommendations are the first step in a long process towards addressing the issues and concerns of an industry vital to the economy, the environment and the health of Maryland citizens in need of fresh, local milk supplies.

Members of the Dairy Advisory Council

Robin Breeding – *Chairman*, Dairy Farmers of America Cooperative
Don Breiner – Land ‘O Lakes Dairy Cooperative
Bob Cooksey - Maryland & Virginia Milk Producers Cooperative
Ralph Kemp – Cloverland-Greenspring Dairy, Baltimore
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Walter S. Auman – Marva Maid Dairy, Landover
Kenneth J. Bowman – Milk hauler, Accident
Kunle Aladeselu – Milk lab, Upper Marlboro
Harold K. Keller, Jr. – Consumer, Frederick County Schools
Mary Kay Patterson – Consumer, Anne Arundel Medical Center
Jane E. Libby – Consumer, Annapolis
Chuck Fry – Dairy farmer, Tuscarora
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Non-voting members

Delegate Paul Stull, Frederick
Senator David R. Brinkley, Frederick
S. Patrick McMillan, Assistant Secretary, Maryland Department of Agriculture
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Findings

Maryland's dairy industry is an essential part of Maryland's farm economy that effects every region of the state and millions of citizens -- from the youth who show dairy cattle at the State Fair in Timonium, to the dairy farmers who ship milk every day of the year, to the processors and their employees who produce the healthy, nutritious dietary staple that Maryland consumers seek every day.

The Maryland Dairy Industry Oversight and Advisory Council began meeting in February 2007 and quickly focused on an economic crisis facing the dairy industry at that time. Since then, the price of milk has risen and some of the economic pressures have declined. However, the price of milk is volatile and is fully expected to decline again. When this happens, once again dairy farmers who maintain 250,000 acres of Maryland's farmland will be faced with their economic survival.

Discussions included a number of other state programs to support the dairy industry, including Virginia's Milk Commission and Pennsylvania's Milk Marketing Board, both of which regulate farm, wholesale, and retail milk prices. Dairy farmers on the Council were interested in pursuing a similar milk commission structure for Maryland. However, a consensus evolved to other methods to address the industry's concerns.

To fully evaluate the state of Maryland's dairy industry, you must look at both its production and processing components. For the sake of this report, the production side includes the dairy farmers, their farms and production of raw milk. The processing side

includes the plants that receive raw milk and process it into high quality dairy products for consumers. Each of these components is vital to a home-grown supply of milk.

Dairy is a vital contributor to Maryland's economy. With approximately 600 dairy farms and more than \$169 million in sales, the dairy industry is the third highest agricultural commodity in the state. Ensuring that Maryland's dairy industry remains profitable and sustainable is vital to retaining this important sector of Maryland's farm economy.

The Pennsylvania Center for Dairy Excellence estimates that each dairy cow benefits the local economy \$13,737 annually. Using this number, the Council calculates that Maryland's 63,000 dairy cows contribute about \$879 million to the local economy. The dairy sector also makes a major contribution to the state's goal of preserving open space with an estimated 250,000 acres under management by dairy farmers.

For years Maryland dairy farmers have been facing significant and increasing pressures. The state's milking cow numbers have been in steady decline and overall milk production continues to fall. During this same timeframe, the East Coast population has increased, creating a demanding marketplace for wholesome dairy products. This decline can be traced to several factors. Farmers primarily face these issues:

1. The lack of a readily available labor force and the cost of maintaining that labor;
2. Environmental regulations with significant and expensive constraints;
3. Expensive farmland and the pressures of development and growth;

4. Increases in general input costs such as feed, fertilizer, fuel, machinery parts and maintenance; and
5. Volatile prices received for milk.

Arguably, many, if not all of these items are felt by dairy farmers throughout the Northeast. However, Maryland dairy farmers have experienced these challenges at an increased pace and with greater pressure similar to those experienced in other milk-deficit states, particularly in the South. For many years, Maryland dairy farmers were able to supplement their income by meeting the needs of processors in the milk-starved Southeast. Today, that's simply not the case. Maryland dairy farmers do not produce enough milk for the state's consumers. In fact, Maryland has become a milk deficit state and must import milk from the North and West to meet the needs and demands of our consumers.

Federal dairy pricing policies

Maryland dairy farmers' profitability is affected to a great extent by policy decisions made on a national level. Dairy pricing policies are established, enforced and monitored by the Federal Milk Marketing Order (FMMO) of the United States Department of Agriculture (USDA). They are complex and this report does not allow the time nor space necessary to fully describe these policies. However, a few points are germane.

The milk price received by the dairy farmer is largely determined by a multi-faceted national pricing system based on the sale price of several manufactured dairy products.

This national pricing system attempts to recognize regional differences. However, the system is cumbersome, slow to respond and consequently does not address unique geographic differences. Thus, the prices received by Maryland dairy farmers may reflect conditions in the West or in international markets, without consideration to the costs of producing and supplying fresh, fluid milk to the local market.

State programs to support the dairy industry

Over several meetings of the Dairy Advisory Council, members participated in discussions on programs to support dairy farmers in other states in response to threats to the economic viability of the dairy industry. Representatives of the Pennsylvania Department of Agriculture as well as the South Carolina Department of Agriculture provided presentations on those states' initiatives. A core discussion in the Council revolved around the issue of establishing a Maryland Milk Commission similar to those in Pennsylvania and Virginia. The dairy farmers strongly supported this approach, but a consensus could not be reached by the Council.

Other programs examined by the Council are provided below.

Connecticut

In July 2006, the Governor announced the Dairy Farm Reinforcement Program which included the following:

- Grants—payout of \$2 million from Connecticut Department of Agriculture to the state's 165 dairy farmers based on production during first 6 months of 2006. The lump sum payment was issued in October 2006 and equaled approximately \$1.00 per hundredweight.
- Low Interest Loans—Department of Economic and Community Development provided \$2 million for energy conservation, machinery and equipment, and farm diversification.

- Loan Guarantees—Connecticut Development Authority offered \$2 million to lenders to enable them to provide \$7–10 million in financing to dairy farmers in need. None used so far.

A bill passed in the Senate in March 2007 to establish a Connecticut Milk Commission to regulate milk pricing in the state but has since died. It would have required the Commission to pay dairy farmers the difference between the federally set price (Class I) and the target price of \$17 per hundredweight. In addition, the bill allowed the Commission to set a system of premiums for particular types or quality of milk; for milk marketed as a specialty or value-added product; and to offset unusual market or economic conditions that reduce milk producer profitability.

Maine

Maine has a state program that pays Maine dairy farmers when milk prices derived from the Northeast Federal Order, cooperative and/or handler premiums, and any federal MILC (Milk Income Loss Contract) payments are below the calculated cost of production for Maine dairy farmers.

The state of Maine is located outside of the marketing area of the Northeast order; however, its fluid milk plants have majority sales within the Northeast Order area and, therefore, are regulated. Only a handful of farms are not pooled on the Northeast Order.

The Maine Dairy Stabilization Program pays the monthly difference between a Cost of Production and the Northeast Order statistical uniform price at Boston plus other payments to producers, such as cooperative over-order premiums, a 75-cent per cwt rBST free premium, and any federal MILC payment. Money to pay the premium comes from a state mandated milk handling fee assessed on Class I handlers depending upon the level of the Class I price at Suffolk County, Mass. (Boston).

The fee can range from “0” if the Class I price is higher than \$24 per cwt to more than 40 cents per cwt if the Class I price is below \$15 per cwt. Any shortage between the amount of money generated by the handling fee assessment and the amount to be returned to producers is covered by an appropriation from the state’s general fund. In

2006, the state of Maine paid about \$7 million from the general treasury to fund this program.

The Maine Milk Commission administers a minimum wholesale and retail price program as well as administering the payment to producers and calculating the cost of production. The handling fee assessment is built into the commission's minimum wholesale and retail price services, which is passed onto the consumer in the form of higher retail milk prices.

Massachusetts

Massachusetts' governor approved a \$3.6 million emergency assistance fund for the dairy industry as part of the fiscal year 2007 supplemental budget signed May 18, 2007. Eligible farmers applied for grants from the fund by June 22, 2007.

- Farmers are eligible for grants if they produced milk during 2006, held a certificate of registration for at least one month during the calendar year 2006, and hold an unexpired certificate eligible for renewal July 1, 2007.
- The \$3.6 million represents the difference between the average farm price of milk and the operating costs of Massachusetts dairy farmers, based on a variety of sources including USDA data during 6 months of 2006 when prices were at their lowest.
- \$3.6 million will be divided by the total number of pounds produced by state producers to determine a per cwt payment rate. Each farmer will then receive a payment according to the amount of milk they brought to market in 2006.

New Hampshire

A bill established the emergency dairy assistance program for FY 2008 to provide \$2.1 million of general funds. Dairy farmers were to be paid for milk produced in November 2006, December 2006, January 2007, and February 2007. Payment is calculated based on the difference between the Suffolk County (Boston) statistical

uniform price and the base price of \$16.94 per hundredweight times the amount produced.

New York

Some \$30 million in cash grants were to be given to dairy farmers in the 2007-08 Executive Budget through the New York State Dairy Assistance Program. The stated purpose of the fund, approved by the legislature and governor, was to “make up” for the record low dairy prices during the 2006 calendar year.

- Producers had to have been in production for all of 2006 and during April 2007 to receive payment. Payment was 35 cents per cwt multiplied by the producer’s 2006 milk production. The average payment was \$5,156; the maximum payment was \$16,800 equaling an annual production cap of 4.8 million pounds. Nine percent of the applicants received the maximum amount.
- Producers received the money from the Empire State Development Corporation in May 2007, within 30 days of the Executive Budget being approved.

New Jersey

New Jersey Department of Agriculture administers a fuel adjustment surcharge payable to all New Jersey dairy farmers. Payments began in February at a rate of 39 cents per hundredweight, followed by 36 cents per cwt in March and April, and 27 cents per cwt in May. The program was conceived following two public hearings held by the department in the summer of 2006 at the request of cooperatives and producer organizations in New Jersey to determine if emergency relief should be implemented to help the state’s dairy producers. Energy related input costs were identified as causing an economic crisis on New Jersey’s 110 remaining dairy farms. The adopted regulation was intended to provide assistance to dairy farmers in New Jersey in covering their cost of production. New Jersey’s program compares current price of diesel fuel -- as posted by the Energy Information Administrator of the U.S. Department of Energy -- to 2002 base price of \$1.403 per gallon. The premium paid to the producer will move at the rate of 3 cents up or down with each 10 cent change in the diesel fuel price up or down from the

base. (One cent of this increase is attributable to increase in hauling cost and the other two attributable to fuel and lubricant costs on the farm.)

New Jersey fluid milk processors are assessed the premium rate multiplied by the Class I utilization of their plant; this money is paid to the department who returns the payment to cooperatives or directly to producers at an equal rate. The premium is “new money” and cannot offset other existing premiums.

New Jersey also gathered testimony on establishing an rBST (recombinant bovine somatotropin) free premium to all New Jersey producers at a rate of 76 cents per hundredweight. (rBST is a commercial product designed to increase the production of milk.) Regulations were promulgated by the State Department of Agriculture to institute this program, however it was challenged by the New York State Dairy Foods Association and eventually blocked by a New Jersey district court who implied they were okay with the concept, but could not accept the 76 cents rate as indicative of the appropriate value for rBST free milk in New Jersey.

Pennsylvania

The Milk Control Commission was established as a permanent agency in state government in 1937. It was renamed the Pennsylvania Milk Marketing Board in 1968. On September 1, 1988, the Board put into effect the first over-order premium of \$1.05 per cwt of Class I milk produced, processed, and sold in the state. The Board meets regularly to hear testimony pertaining to the level of the current over-order premium. The Pennsylvania Milk Marketing Board (PMMB) has issued official general order stating it will consider a premium for Pennsylvania milk produced and processed in Pennsylvania, but sold in and utilized as Class I in another state with a Class I over-order price. Whether the PMMB establishes such an over-order price shall be based on evidence presented at a public hearing. The PMMB found that such a hearing will allow all parties and segments of the dairy industry to provide evidence regarding the specific effects related to the specific circumstances of establishing such over-order pricing. The PMMB will not establish over-order price for milk produced in Pennsylvania and processed outside of Pennsylvania.

Vermont

Two payments to dairy farmers under Vermont Target Price Program totaling \$11.6 million have been appropriated from the general fund.

- 1st payment: Producers were paid for milk produced during June through October 2006, with a cap of 4.8 million pounds. A target price of \$14 per hundredweight was used. From this, the blend price (at Middlebury, Vt.) plus the federal MILC payment was subtracted to get the monthly payment. The total payout was \$8.6 million (about 70 cents per hundredweight) paid out by November 2006.
- 2nd payment: Producers were paid for milk produced in October. Payment was approximately 73 cents per hundredweight for a total of \$3 million paid out in March 2007.

The governor signed into law in May 2007 a bill that would allow the Vermont Milk Commission to establish an over order premium and a minimum producer price. The law only takes effect if, by rule or legislation, New York and Pennsylvania have enacted substantially comparable provisions for their dairy farmers or by January 15, 2009, whichever come first. The milk commission has met, but there is no concrete course of action yet.

Virginia

The Milk Commission was created in 1934 to supervise the producer price, supply, and sale of fluid milk in Virginia. In 1974, the Milk Act was amended to provide for a Commission that is comprised of four consumer members, two milk producers, one milk processor-distributor, and an administrator, who is an ex officio non-voting consumer member. The Commission presently employs eight full-time employees. The Virginia Milk Commission' purpose is to assure Virginia consumers with a constant supply of fresh and wholesome Grade "A" milk at a fair and reasonable price. It establishes monthly producer prices at competitive levels with adjacent markets and it preserves market stability. On July 1, 2003, the Commission was merged within the Virginia Department of Agriculture and Consumer Services.

What does the Milk Commission do?

- Assures Virginians a constant supply of fresh and wholesome Grade "A" milk at fair and reasonable prices.
- Maintains an allotment (base) system sufficient to satisfy the demand for fluid milk in Virginia.
- Licenses all milk processors and distributors that sell fluid milk products in Virginia.
- Assigns milk allotments (bases) to all licensed processing distributors entitling them to an equitable share of the milk supply to satisfy their requirements for fluid milk sales in Virginia.

What does the Milk Commission NOT do?

- Control retail and wholesale pricing. Rather, the Commission does not permit any type of distributor from selling at less than cost. This is accomplished by conducting detailed audits of fluid milk processors' financial records. From this information, the Commission calculates the weighted average cost of purchasing, processing, and distributing fluid milk products. Processors and distributors are prohibited from selling below this "presumed cost".
- Establish pricing that guarantees a producer or distributor a profit. Producer prices are derived through a formula which includes six economic factors that result in a producer price that should allow for producers to make a reasonable return on their investments in an efficient dairy operation.
- Regulate health and nutritional requirements of fluid milk. These functions are performed by the State Department of Health, Division of Food and General Environmental Services, and the Department of Agriculture and Consumer Services, Dairy Services.
- Receive any form of general fund revenues. The activities of the Commission are funded by funds received from dairy producers, processors and distributors through levied assessments.
- Regulate, control or supervise in any manner non-fluid milk products such as cheese, cream, ice cream, etc.

In Virginia, many farmers own Virginia Milk Commission Base (VMCB), which is an intangible asset that is owned by the farm business. VMCB gives the farm the right to sell quantities of milk at Class I prices equal to their VMCB. The pounds of VMCB owned by a farm must be met for the farm to retain this price advantage. Farmers who do not ship milk during a specific period (30 days) face the possibility of losing their base. VMCB can be bought and sold within Virginia; therefore, it has value to the owner.

Arkansas

In April 2007, the governor signed a bill establishing the Arkansas Milk Stabilization Board Act. The purpose of the Board is to assure the viability of dairy farming in the state by encouraging increased milk production and to assure consumers of an adequate supply of milk. This is still in the initial stages. Some of the duties of the Board are to research other states to determine how those states support their dairy industry and to investigate methods of milk production and dairy pricing.

Kentucky

The Kentucky Dairy Development Council (KDDC) started in 2005 through funding by the Kentucky Agricultural Development Board. The Board serves to distribute 50 percent of the state monies received from the Master Tobacco Settlement Agreement for the general purpose of agricultural development in the Commonwealth. Among KDDC objectives is to foster growth of the Kentucky dairy industry and increase profitability of Kentucky dairy producers.

A program initiated by KDDC is the MILK Program, a two year program focused on milk quality, increased production and management practices involving Dairy Herd Improvement Association (DHIA) production records and the Kentucky Farm Business Management (KFBM) Program.

North Carolina

During 2006, the North Carolina General Assembly passed the North Carolina Dairy Stabilization and Growth Act. The North Carolina Department of Agriculture initiated

the effort to obtain funding for a Dairy Industry Strategic Plan and received partial funding from the Golden Leaf Foundation. Additional funds were obtained from the North Carolina Dairy and Ag Foundations, as well as the NCDPA. Once a strategic plan is developed (target date for completion is mid -2008), the implementation process will begin.

The new law requires the North Carolina Board of Agriculture to set a milk support baseline price and provides that if an announced federal price mover is lower than the baseline price established by the Board, dairy farmers are eligible for a quarterly distribution equal to the difference multiplied by the amount of milk each farmer sold. Distributions are subject to the availability of funds. The General Assembly did not make an appropriation to the fund for 2006–2007. To receive assistance under the program, milk producers must demonstrate compliance with applicable federal or state regulations. The act requires the commissioner of agriculture to file an annual report with General Assembly committees regarding the North Carolina dairy industry and the new program.

South Carolina

In 2005, South Carolina enacted the South Carolina Dairy Tax Credit program. This program offers South Carolina's dairy farmers a tax credit (or tax rebate if no state income tax is due) of up to \$10,000 on their first 500,000 pounds of milk produced during the year and up to \$5,000 on each additional 500,000 pound increment. This credit is available when the Appalachian Federal Milk Marketing Order price for milk falls below South Carolina's 3-year average cost of production plus the average cost of transporting milk into the state.

If for any month the Class I Uniform Production Price falls below the Production Price established by the South Carolina Department of Agriculture (SCDA), the producer will qualify for a payment or credit that quarter to be issued at the end of the year. The amount of the payment is based upon the total amount of milk the farmer produced and sold during the taxable year. The dairy producer is responsible for certifying annual milk sales on a form issued by the SCDA and for filing for the Milk Producers Tax Credit on the South Carolina income tax return. The SCDA is responsible for establishing the Production Price, which will be announced quarterly.

The South Carolina Production Price is based upon three factors:

- average price of milk in the top five states where milk is imported to South Carolina;
- average transportation cost of importing milk from those five states; and
- the cost of production in South Carolina.

The SCDA will also certify to the South Carolina Department of Revenue (SCDOR) the amount of milk produced and sold in the taxable year by each producer filing for the milk producer tax credit.

The SCDOR is responsible for receiving Producer Certification of annual milk production and sales, receiving a list of qualifying quarters from the SCDA based on the published Production Price and Uniform Class I price, and issuing a tax credit or refund to the dairy farmer.

Council recommendations

The majority of the dairy farmers in Maryland market their milk through marketing cooperatives. These cooperatives work together with processors to negotiate what are commonly referred to as Over-Order Premiums, which are added to the announced Federal Milk Marketing Order prices for fluid milk products. Approximately 45 to 50% of the milk marketed in the Northeast is for fluid products. While the Federal Milk Marketing Order prices vary monthly depending on supply and demand, these Over-Order Premiums are traditionally more stable. They are, however, subject to competitive pressures from milk produced outside Maryland. When milk from outside Maryland comes into our marketplace and places competitive pressure on Maryland processors, Over-Order Premiums are sacrificed so that Maryland processors can maintain their customer base. Maryland producers and processors alike lose out in such situations.

Maryland's dairy processors have faced their own set of pressures, some similar to producers and some unique to the processing industry. For the purposes of this report, when we reference processors we are specifically referring to fluid milk processors, who package fresh milk for fluid consumption as Class I product. Like dairy farmers, there has also been a decline in the number of fluid milk processors in the Free State.

Processors too have encountered pressures beyond their control, which have resulted in conditions that have negatively influenced their businesses.

Consolidation and the need to maximize efficiencies have driven much of the increased pressure felt by processors. These factors have increased the competitive landscape, which we fear will contribute to the further demise of Maryland's fluid milk processors and force Maryland consumers to purchase their fresh milk from more distant locations.

Milk processors must pay producers a price determined through the Federal Milk Marketing Order system. In addition, many processors voluntarily agree to pay the negotiated Over-Order Premiums described previously to the cooperative marketing the milk produced by the dairy farmers. When a state has a similar system in place, that state system supersedes the federal system. Maryland happens to be sandwiched between two states that do just that.

To the south is the Virginia State Milk Commission, a branch of the Virginia Department of Agriculture and Consumer Services (VDACS). The Milk Commission regulates and prices milk that is sold in the geographic portion of Virginia covered by its regulations.

While this does not necessarily negatively impact Maryland's industry, it allows Virginia processors through the Milk Commission regulation to draw milk from Maryland into Virginia and leaves Maryland processors in a milk deficit.

To the north, the Pennsylvania Milk Marketing Board (PMMB) regulates the price of packaged milk sold within the borders of Pennsylvania at the farm, wholesale, and retail levels. The wholesale minimum price is based on cost plus profit. Maryland fluid milk processors described to the Council how Pennsylvania competitors have captured market share in Maryland by offering milk to wholesale customers at prices well below the minimum required in Pennsylvania. Maryland processors are not able to compete for Pennsylvania market on the basis of price because of the PMMB minimum price regulations. It is believed that Pennsylvania processors are in a position to lower their price in Maryland below levels that would be sustainable but for the fact that they can average their Maryland sales with their Pennsylvania sales. The competitive advantage enjoyed by the Pennsylvania plants is pressuring wholesale milk prices in Maryland down to a level at which Maryland milk processors believe their future viability is at stake.

A report prepared by University of Maryland agricultural economists Dr. Wesley Musser, Kevin McNew, Dr. John Curtis and Dr. Bruce Gardner in 1996 described the plausibility of this concern. *"Because of state milk price controls it is theoretically possible that Virginia or Pennsylvania dairies may have an economic incentive to sell milk in Maryland below their average cost of production. With milk price controls in place, there*

is a limit on the amount of milk for sale in these states. As such, Pennsylvania and Virginia dairies may be able to lower average production costs by selling milk in Maryland. Albeit potentially below cost, the expanded production may lower average costs enough to earn higher returns in their regulated markets, thereby offsetting the loss in Maryland.”

The Dairy Advisory Council emphasizes that it does not seek to evaluate or criticize the implementation of neighboring states regulatory systems. Instead, the Council’s goal in examining this issue is to form recommendations that address the health and sustainability of Maryland’s dairy industry. It is the Council’s belief that the presence of state regulatory systems contiguous to Maryland creates an uneven playing field for our processors. Maryland’s processors are forced to unrealistically trim their margins in order to keep customers. As a result, many have lost a large amount of business from competition outside of Maryland.

These Virginia and Pennsylvania programs are good for Maryland dairy farmers and for the dairy farmers in those states by raising the price of milk through the region. The State of Maryland, however, should develop a mechanism that will allow Maryland milk processors to compete evenly and fairly with processors in those states.

As noted earlier, the dairy industry is segregated into two distinct pieces – farmers and processors. These groups, though unique, are co-dependent. In other words, we need to bolster both producers and processors in order to sustain a viable and thriving dairy

industry in Maryland. The Council has therefore chosen to recommend an avenue of correction that addresses each individually, though the group feels strongly they should be addressed jointly.

The Council's recommendations would address the issues faced by our dairy farmers through establishing a Maryland Dairy Emergency Fund to provide farmers with financial assistance during periods of economic hardship due to depressed milk prices. To provide the necessary funds for this State function, the Council recommends \$5 million be appropriated annually to a non-reverting fund and be allowed to build up to, and be maintained, at a maximum of \$15 million which would be available for distribution in a period of economic crisis for dairy farmers.

To support the continued viability of Maryland's fluid milk processors, the Dairy Advisory Council recommends the creation of a law prohibiting the sale of fluid milk products to any retailer, distributor, broker or state or local governmental agency in Maryland at below cost. The Council further recommends that the Secretary of Agriculture be authorized to oversee and enforce a program to prevent fluid milk processors and distributors from selling below cost as determined by the Secretary. To effectively conduct such a program, it will be necessary for the Secretary to have access to the financial records of licensed processors and distributors in order to calculate the industry costs associated with purchasing raw milk, ingredients, labor, and other variables associated with processing and distributing fluid milk products in order to accurately determine a presumed cost. Processors and distributors should be prohibited from selling

below the presumed cost unless they can demonstrate that their costs are in fact less according to an accounting methodology developed by the Secretary. The Council recommends that the cost of the program be paid by assessments on processors and distributors doing business in Maryland pro-rated based on volume of milk sales.

The Dairy Farm Emergency Fund would serve as a significant State commitment to a future for Maryland's dairy farmers. Payments from this Fund would be triggered through a formula tied to the costs of production for Maryland farmers and the price of milk. This formula will be created by the Maryland Department of Agriculture in consultation with the Dairy Advisory Board and agricultural economists. Payouts would cease when the Fund is depleted and/or the price of milk and costs of production change.

Maryland Sale Below Cost of Fluid Milk Products Law, after enactment, would prohibit the sales of milk below a cost determined by the Maryland Department of Agriculture in consultation with the Dairy Advisory Council and agricultural economists. Proposed legislation is attached to this report. This law would protect Maryland's processors from the current situation where finished consumer packaged fluid milk from Pennsylvania floods into Maryland and undercuts Maryland processors.

Attachments

1. Dr. Howard Leathers report to the Advisory Council
2. Proposed sell below cost legislation

Attachment 1

Long term Outlook for the Maryland Dairy Farm Sector

Howard Leathers, Dale Johnson, and Bob Peters¹
University of Maryland Cooperative Extension

Our purpose here is to identify some of the important forces that will shape the Maryland dairy industry over the next decade. The paper is organized as follows. First we present some information about historical trends to explain the economy-wide forces affecting the dairy industry. These forces will continue to long nationwide trend to fewer and fewer dairy farms. Second, we consider some things that will particularly influence the decline in the number of Maryland dairy farmers. Third, we consider some possible types of policies that may appear to counteract or blunt the forces.

Four fundamental economy-wide forces converge to create a tendency towards fewer and fewer dairy farms in Maryland:

1. The demand for Maryland milk used as fluid milk is expected to grow slowly.
2. Maryland milk used to produce manufactured dairy products must compete with milk from low-cost producing areas such as the upper Midwest and the west coast.
3. Improvements in breeding and feeding lead to increased output per cow.
4. Changes in milking technology have made the optimal size of a dairy herd larger and larger.

Forces 1 and 2 above imply that the demand for Maryland milk is not likely to grow very fast. To put this differently (and a little imprecisely): the quantity of milk purchased by customers for Maryland milk is likely to grow by only a modest amount over the next 10-20 years. With this in mind, Force 3 (increased output per cow) implies that the demand for milk will be met by fewer and fewer cows. This implies that there will either be fewer dairy farms, or that the dairy farms that exist will be smaller. Force 4 above implies that this second option (maintaining farm numbers with reduced herd size) is not feasible. Not only will the herd size of the efficient dairy farm not be smaller in the future, it is likely to be quite a bit larger.

The unavoidable conclusion is that it is highly probable that there will be fewer and fewer dairy farms in Maryland as we move into the future. Maryland faces some conditions that are unique to Maryland. Circumstances in Maryland may make it difficult (relative to other states) to expand farm size to take advantage of size economies.

¹ Authors acknowledge the helpful comments of Prof. Bruce Gardner. The 2006 Maryland Dairy Producer Needs Assessment Survey was developed by faculty in the Department of Animal and Avian Sciences and Maryland Cooperative Extension, University of Maryland, College Park. The team of faculty members are: R.R. Peters, K.M. Wilson, M.R. Bell, R.A. Erdman, S.W. Fultz, J.E. Hall, R.A. Kohn, W.D. Lantz, J.W. Semler, and M.A. Varner

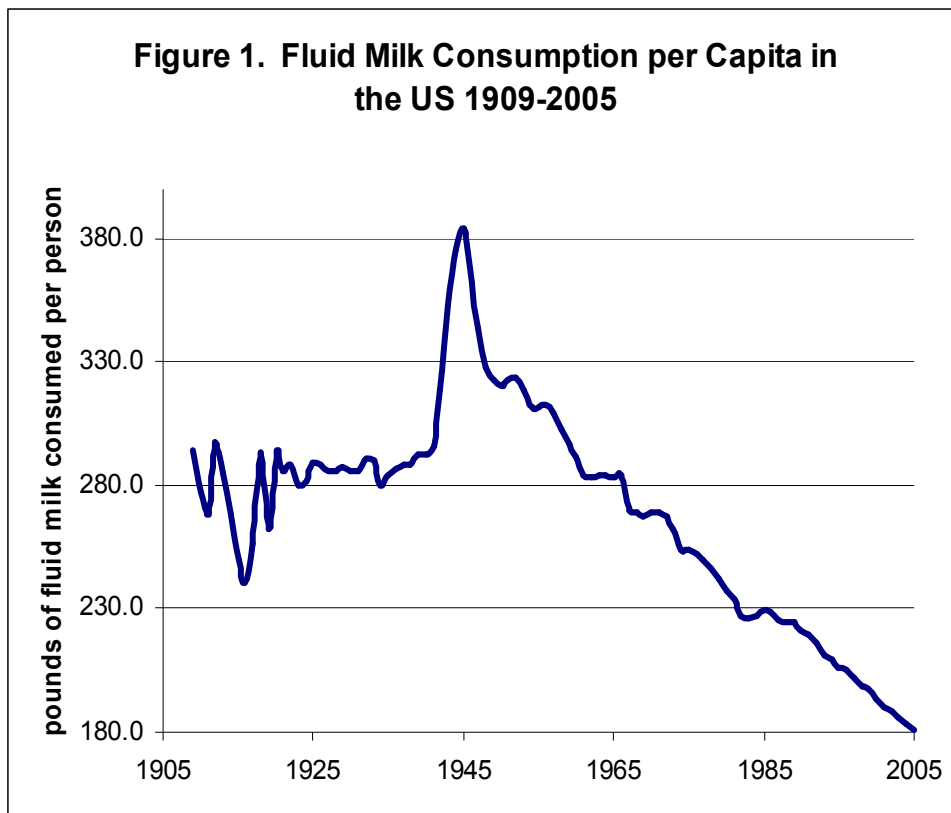
On the other hand, the climate conditions in parts of Maryland may give farmers an advantage over farmers in other areas in their ability to adapt to rapidly rising corn and fuel costs.

In the final section we examine ways it may be possible to slow down the trend toward fewer and fewer dairy farms in Maryland. Actions by an individual farmer may improve his probability of survival in the industry without actually doing much about the state-wide trend. Maryland programs to improve information flow and coordination within the dairy industry could help Maryland farmers relative to farmers in surrounding states. National programs are unlikely to alter the fundamental forces that create this trend. Statewide subsidy programs could be successful in giving Maryland farmers an advantage over other farmers in the neighboring states in the fight to survive; however such programs are likely to be expensive and may face tough political opposition.

Economywide Forces influencing the Maryland Dairy Sector.

Force 1: Growth in Fluid Milk Demand.

Two elements go into the projection of future fluid milk demand: population growth and changes in consumption of fluid milk per capita. In reverse order, per capita milk consumption has been on the decline for decades, as shown in figure 1.



This decline is expected to continue over the next decades. Schmit and Kaiser (2006) project that per capita milk consumption nationally will fall from the 181 pounds per

person in 2005 to 176.5 pounds per person in 2015,. A USDA study by Lin, et al., (2003) projects that per capita milk consumption will be at 178 pounds per person in 2015, and will remain at about that level in 2020 (the last year of their projection). (This is a percentage decline of between 1.5% and 2.5%.)

While per capita consumption is expected to decline, population is expected to grow. The US Census makes projections about future populations state by state. Nationally, the population is expected to grow 8.45% between 2005 and 2015, 17.16% between 2005 and 2025. (Reflecting growth in population nationally, total fluid milk sales in the US show modest growth between 2005 and 2006. See USDA, AMS) However, the fluid milk market is a regional market², so the relevant question here is: What will happen to population in the mid-Atlantic area?

As table 1 shows, population in Maryland and surrounding states is expected grow more slowly than the national average.

Table 1. Population growth in the US compared to population growth in Maryland and surrounding states.

	Population 2005 (thousands)	Population 2015 (thousands)	% growth 2005-2015
United States total	285,980	310,133	8.45
6-State total	28,250	29,509	4.45

6-State total is the sum of Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia.

If we assume that the national per capita consumption projections apply to the Maryland fluid milk market, the growth in total fluid milk sales would be in the 1.8%-2.7% range. (In other words, total fluid milk sales would increase by between 1.8% and 2.7% between 2005 and 2015.)

If anything, however, even this modest projected growth is likely to overstate the actual growth. Growth in per capita consumption of fluid milk in Maryland and surrounding states is likely to be less than the national average growth rate for the following reason: children’s fluid milk consumption is higher than the national average, and the number of children in the 6-state area is expected to decline between 2005 and 2015, as shown in table 2. Therefore, if the national average per capita consumption declines from 181 to 176.5, the decline in the 6-state area is likely to be greater.

Table 2. Growth of population age 17 and under, US compared to Maryland and surrounding areas.

	Population 2005 (thousands)	Population 2015 (thousands)	% growth 2005-2015

² A small amount of milk from Maryland is shipped to Florida. However, rising gasoline prices make it unlikely that a strong growth in sales from Maryland to the southeast will be a major factor.

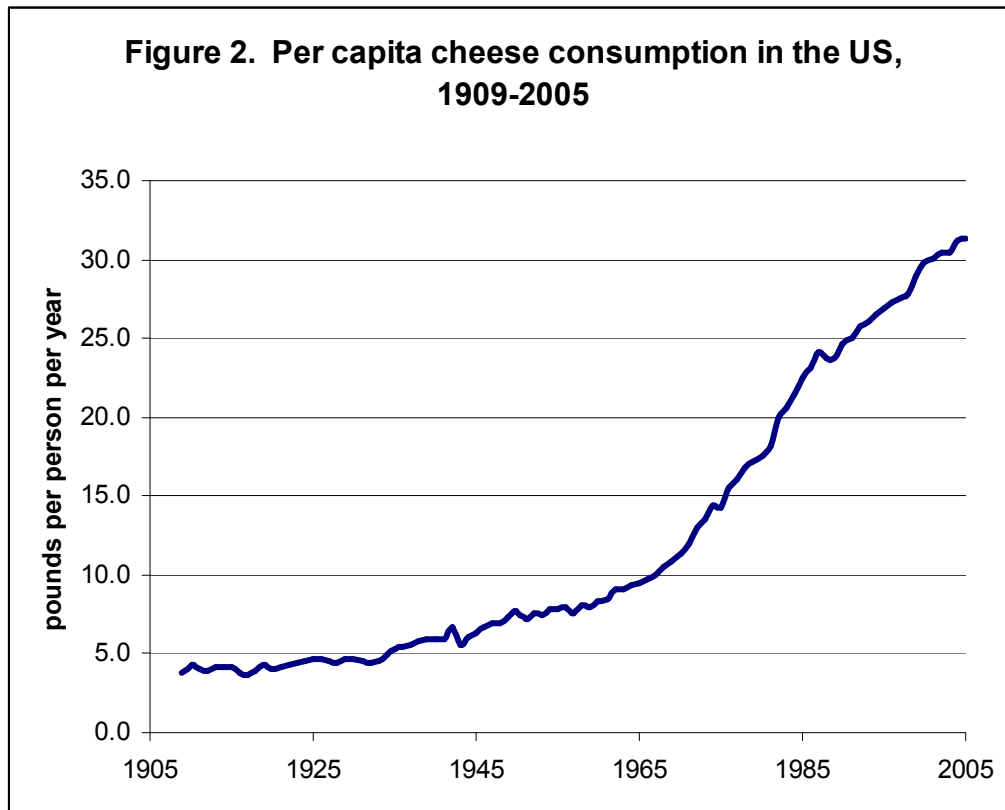
United States (age 17 and younger)	71,960	74,5231	3.56
6-State total (age 17 and younger)	6,621	6,544	-1.16%

6-State total is the sum of Delaware, District of Columbia, Maryland, Pennsylvania, Virginia, and West Virginia.

One additional factor may also cause the per capita milk consumption projections to be overstated. In making these projections, USDA attempts to use a consistent set of projections about what will happen to consumer prices. Recent months have seen a fairly sharp increase in corn and fuel prices, and the factors causing this increase (world oil prices and increased demand for corn in ethanol production) appear to be long-lasting. Systematically higher milk production costs (including high labor costs) would ultimately result in higher average prices paid to farmers, and higher prices paid by consumers. Therefore, the consumer price assumptions underlying the USDA projections of per capita milk demand may be too low, and the per capita demand numbers may be too high. Because fluid milk demand is highly inelastic, however, this impact is likely to be small.

Force 2: Competing in a National Market for Manufactured Milk.

Nationally, the downward trend in per capita consumption of fluid milk has been mirrored by an upward trend in per capita cheese consumption, as shown in figure 2.



Schmit and Kaiser expect per capita consumption of cheese to continue to grow, but Lin, et al., expect per capita consumption to remain level. In either case, with population growth total demand for cheese is expected to increase over the next decade.

The question is: To what extent will Maryland dairy farmers share in that increase in cheese demand? The answer is: Maryland farmers are likely to play an extremely limited role in meeting the growing demand for cheese (and other non-fluid dairy products). Unlike the fluid milk markets (where high transport costs and milk order regulations limit the incentives to ship milk long distances), the cheese market is essentially a national market. And the growing demand for cheese has been, and likely will continue to be, met by increased production in low cost milk production areas of the far west.

The production cost advantage of dairy farms in the upper Midwest and the far west is illustrated in Table 3, which shows costs per cwt for four states. (USDA does not report data for Maryland; Virginia and Pennsylvania costs are shown for purposes of comparison.).

Table 3. Regional differences in costs. Average of monthly costs for 2006.

	Virginia	Pennsylvania	California	Wisconsin	NY
Feed costs	8.42	9.01	8.56	6.78	6.41
Nonfeed Cash costs	7.52	5.49	4.02	5.14	5.66
Land cost	0.06	0.07	0.01	0.08	0.06
General overhead	0.84	0.54	0.33	0.65	0.83
Capital recovery machinery & equipment	3.58	5.13	2.40	5.16	4.25
Sub-total	20.42	20.24	15.32	17.81	17.20

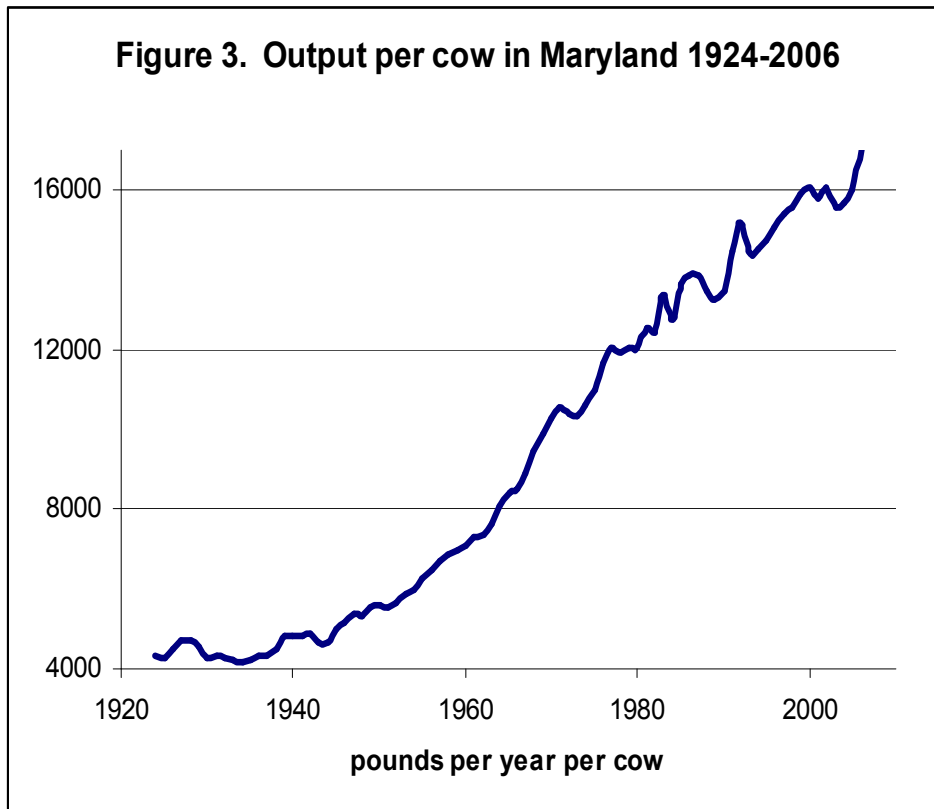
Cash costs include operating costs (feed, veterinary, custom services, energy costs, interest, etc.), hired labor, and taxes and insurance. Opportunity costs of land measure the revenue that was given up by using the land for milk production rather than renting it out for another use. Costs reported here exclude opportunity cost of unpaid labor.

Some economists (Ladue, et al.) believe that USDA's cost figures overstate the cost advantages of the west and upper Midwest. They claim that costs in the Northeast (New York, Vermont) are within 25 cents of the Wisconsin costs and within \$1.00 of the California costs. But Maryland's cost disadvantage is larger than that of these Northeast states as a comparison of Virginia and Pennsylvania to New York demonstrates.

Future changes in corn prices may make pasture-intensive production more profitable; the implications of this are described below. However, it is unlikely that changes in relative production costs will change so much that Maryland becomes a low-cost producing region in the national context.

Force 3 Increasing Output per Cow

Milk output per cow has increased steadily over the years as shown in figure 3 (for Maryland).



USDA projects that nationally milk per cow will increase by 13.78% between 2006 and 2015. Applying this amount of growth to the actual 2006 output per cow for Maryland of 17,078, we conclude that output per cow in Maryland in 2015 will be 19,432.

The historical reasons for growth in output per cow include improved management and breeding. Cloning and other biotechnology hold the potential to have a substantial impact on output per cow. It is unclear whether these new technologies will have wide application in the next decade; much of the uncertainty has to do with whether regulations permit the adoption of these new technologies; but if they do, the projected output per cow increase could be higher.

Force 4. Increases in Optimal Size of a Dairy Herd.

The issue of “optimal” herd size is a little tricky.

USDA (Short, table 5) shows that nationwide, per cwt production costs decline as herd size increases. (see table 5)

Table 5. As herd size increases, costs decline.

	< 50 cows	50-200	200-500	> 500
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		cows	cows	cows
Total operating costs	\$11.92	\$10.76	\$9.94	\$10.03
Total operating plus ownership costs	\$17.98	\$15.16	\$13.32	\$11.60

(Short, table 5)

However, a study by Loren Tauer of Cornell found that an efficiently run 50 cow farm had about the same costs per cow as 500 cow farm. Cost differences such as those shown in table 5, argues Tauer, are attributable to the fact that (compared to farmers with large herds) farmers with small herds (on average) tend to make more management mistakes that end up increasing their costs.

USDA’s nationwide data give us different way of analyzing this issue. Looking at their data in a little different way, USDA also split their sample up into three groups: the 25% of farmers with the lowest costs (“low cost farms”); the 25% of farmers with the highest costs (“high cost farms”); and the middle 50% (“mid-cost farms”). Table 6 shows some of the differences between those groups.

Table 6. Differences between low-cost and high-cost producers.

	Low-cost farms	Mid-cost farms	High cost farms
Total operating and ownership costs	\$10.89	\$15.70	\$33.18
Herd size	181	104	57
Output per cow	17,777	16,830	11,739
Cows/cropland acre	1.274	0.57	0.32
Output per worker (cwt/hour)	4.35	2.86	1.33
Output per unit of feed (cwt of milk/cwt of feed)	0.70	0.41	0.18

(Short, table 7)

The fact that output per cow, output per worker, and output per unit of feed are so much lower on the high cost farms is consistent with Tauer’s explanation that high costs are driven by inefficient management. Likewise, a breakdown of cost-components shown in Table 7 shows that differences in feed costs account for over half of the total cost differences between low and high cost producers. However, an important component of the “better management” that typifies low cost farms is increased output per cow, and larger farms in Maryland have higher output per cow as shown in table 7.

Table 7. Output per cow by herd size category, Maryland, 1993-2006.

	< 30 cows	30-49 cows	50-100 cows	100-200 cows	> 200 cows
1993	11,546.39	13,470.79	14,152.35	14,945.13	15,154.64
1994	16,929.35	13,704.71	14,118.68	14,510.87	15,236.41
1995	12,271.06	10,123.63	14,725.27	16,024.56	14,725.27
1996	12,287.78	9,915.92	15,524.00	15,942.20	15,080.46
1997	13,568.37	9,867.91	14,978.07	16,779.07	16,152.82
1998	12,465.12	13,549.04	15,148.58	16,039.67	16,640.33
1999	13,801.82	14,213.81	14,938.44	16,353.07	17,194.77
2000	13,402.78	14,267.47	15,580.73	17,088.54	16,083.33
2001	10,520.33	12,138.84	15,236.33	16,244.62	16,868.80
2002	10,707.82	13,590.69	14,914.46	16,294.51	17,695.12
2003	10,384.62	12,980.77	14,695.21	15,576.92	17,084.37
2004	11,777.03	12,337.84	15,098.75	16,164.55	16,715.78
2005	11,989.44	12,560.36	15,393.84	16,470.34	17,017.26
2006	12,808.59	14,231.77	16,129.34	17,078.13	18,679.20

Source: NASS, Maryland Agricultural Statistics

http://www.nass.usda.gov/Statistics_by_State/Maryland/index.asp#.html

In addition to the fact that large farms are better managed (on average), obtaining higher output per cow, table 8 also shows that capital costs per unit of output account for over one-third of the cost differences. And lower capital costs per unit of output are the kinds of cost advantages we would expect to be associated with economies of herd size.

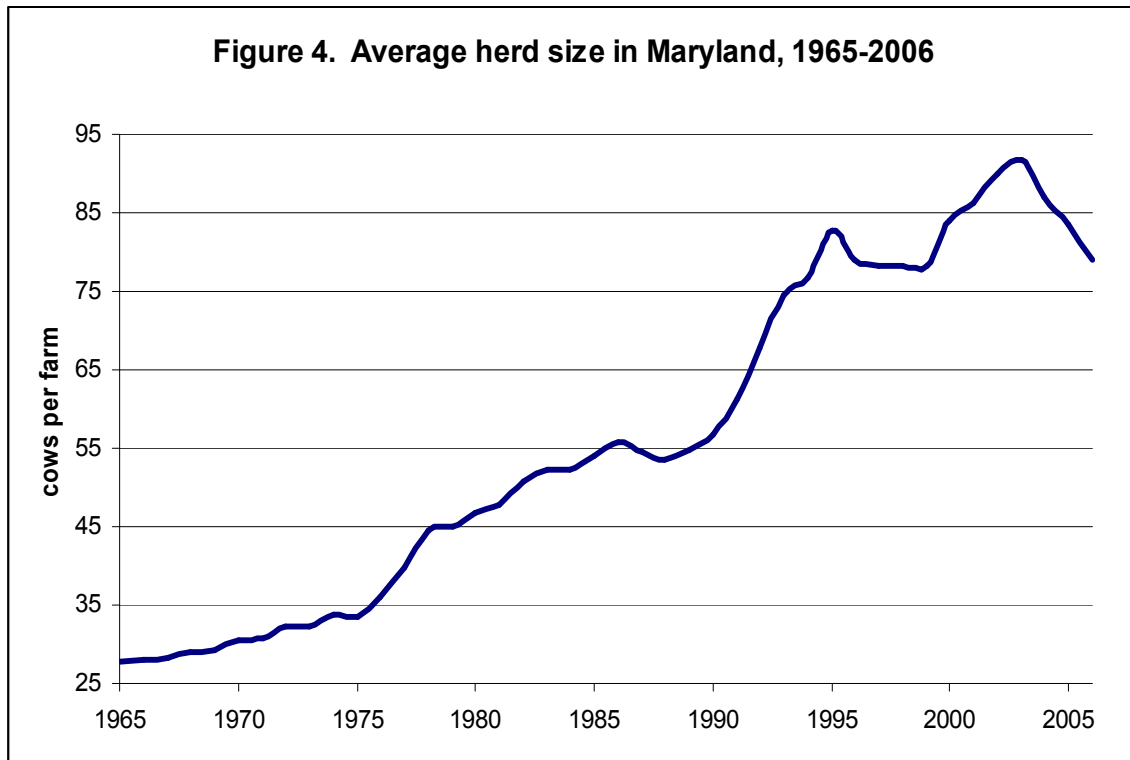
Table 8. Itemized cost differences between low-cost and high-cost producers.

	Low-cost farms	Mid-cost farms	High cost farms	Difference Between High cost and low cost
Total operating and ownership costs	\$10.89	\$15.70	\$33.18	\$22.29
Total Feed costs	\$5.12	\$6.86	\$17.25	\$12.13
Other operating costs	\$3.62	\$4.20	\$5.98	\$2.36
Capital recovery	\$2.01	\$4.23	\$9.62	\$7.61
Other ownership costs	\$0.14	\$0.21	\$0.33	\$0.19

(source: Short, table 8. Capital recovery is the allocated annual cost of housing facilities for the herd, milking facilities, feed storage facilities, manure handling facilities, machinery, and breeding stock.)

Regardless of the cause, the historical trend toward larger and larger herds is clear, as shown in figure 4. In recent years, average herd size has been in the 80-90 cow range. (The decline since 2003 is notable. It is a fairly consistent decline of 10-18% in average herd size in each farm size category, except for herds of under 30, for which

average herd size increased slightly between 2003 and 2006. It is too early to say if this is a trend, or just a temporary phenomenon.)

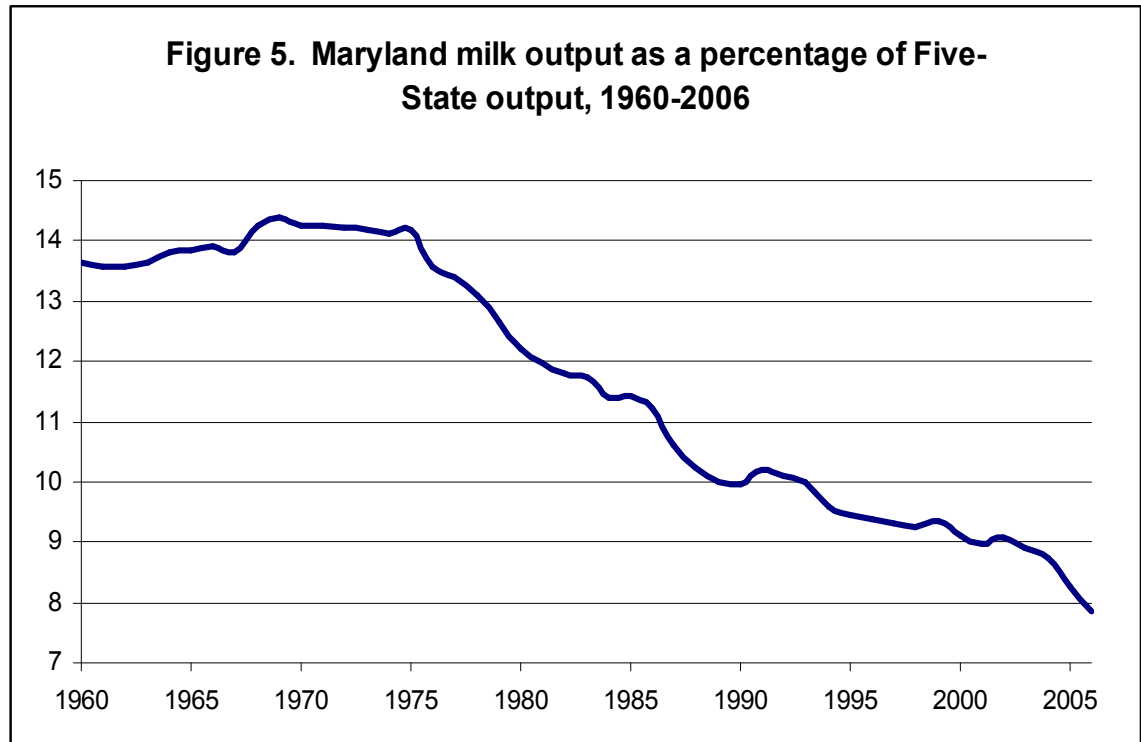


Implications of the Four Forces.

To summarize the above:

1. Fluid milk demand in the mid-Atlantic is likely to grow by 1-2% at the most over the next decade.
2. Growth in demand for cheese is likely to be met by dairy production in the mid-west and far west.
3. Since fluid (class I) use is less than half of total use, total growth in demand for milk in the Mid-Atlantic region is 1-2% at most.
4. Output per cow is likely to grow by about 14% over the next decade.
5. Points 3 and 4 imply that cow numbers will drop 12% or more over the next decade.
6. If herd sizes resume their upward trend, farm numbers will decline by more than 12% -- perhaps in the 15-20% range.

The points above apply to the Mid-Atlantic region generally. One additional fact is relevant: Maryland has a declining role in Mid-Atlantic region milk production.



Five state output is the aggregate milk output of Delaware, Maryland, Pennsylvania, Virginia, and West Virginia.

7. If Mid-Atlantic dairy farm numbers decline by 15-20%, as suggested in point 6 above, and if Maryland's share of regional output continues to decline, Maryland dairy farm numbers will decline by more than 15-20%. In fact, Maryland dairy farms have declined by about 35% over the last decade. The Census of Agriculture shows a 38% decline from 1329 in 1992 to 825 in 2002. The number of farms licensed to produce milk declined by 35% from 1009 in 1995 to 655 in 2005.

In 2006, Maryland had about 630 licensed dairy farmers; a 15-35% decline in farm numbers over the next decade would mean that 100-220 farmers would exit the dairy industry over that period.

Factors Influencing Maryland in Particular.

The above discussion focused on economy-wide factors. But obviously something is happening that makes Maryland different. Figure 5 illustrates that Maryland is a declining force within the five-state area including Maryland and surrounding states. Maryland's decline within the mid-Atlantic area has been associated with a similar decline in output per cow in Maryland relative to the mid-Atlantic region as a whole. In the mid-1970s, Maryland milk per cow was 7-8% above the regional average; in recent years Maryland milk per cow is about 10% below the regional average.

Figure 4 and Table 9 show that Maryland dairy herds are shrinking (to fewer cows per farm) and that this is taking place for all farm sizes. Relating this to the cost data and the output per cow data presented above, shrinking herd sizes are another cause for concern and another possible indicator that Maryland dairy industry is not on a path to expansion.

Table 9: Percentage growth in average herd size by size category between 2003 and 2006. (A negative number means average herd size declined during the period.)

All farms	< 30 cows	30-49 cows	50-99 cows	100-199 cows	200+ cows
-13.90	9.40	-17.95	-13.41	-9.74	-15.30

One difficulty for the future of Maryland dairy farms relative to other farms in the northeast is that in parts of the state, farmers have trouble expanding their operations to take advantage of economies of size. The source of the trouble is lack of large continuous tracts of land suitable for dairy farming, development pressures, environmental concerns. In a survey by the Maryland Cooperative Extension service (described in more detail in the next section) about “what limits your ability to improve and/or grow your dairy operation?,” “land costs” was the item most mentioned (55% of respondents), “development” (33%) was the third most mentioned, and government regulations (25%) and nutrient management laws (16%) were fifth and sixth. (“Low profitability” was the second most mentioned – by 48% of respondents—and “labor availability” was the fourth most mentioned – by 30% of respondents.)

One potential bright spot for Maryland dairy farms is that the climate (especially in central Maryland) is conducive to more extensive use of “management intensive grazing”. Dale Johnson, of Maryland Cooperative Extension Service has studied financial records of 30 Maryland Dairy Farms. He finds that compared to confinement dairy farms, grazing dairy farms have higher profits per cwt, per cow, and per farm, even though the grazing dairy farms have smaller average herd sizes. A similar study in Wisconsin (Kreigl) showed the highest performing grazing farms had smaller herd sizes than the lowest performing grazing farms. This raises the possibility that a shift to more widespread use of grazing could simultaneously reduce average costs of production on Maryland farms, and reduce the optimal size of operation, allowing more farms to survive, even without increasing aggregate output.

The recent trends in higher corn price (resulting from increased demand for corn by ethanol producers) may further strengthen the advantage that grazing farms have over confinement farms. It is difficult to evaluate with any precision the possible future impact on Maryland dairy farm numbers of a more widespread adoption of management intensive grazing, but the best guess is that it could moderate, but by no means halt the projected decline.

Who Will Leave the Maryland Dairy Industry?

Recently, Maryland Cooperative Extension service surveyed Maryland dairy farmers about their perceptions of current and future situation and unmet needs. Of the

600-800 dairy farmers in the state, 255 responded to the survey. In the analysis here, some responses were excluded because of incomplete information on milk output or cow numbers. The 165 farms with complete response records are slightly larger than the average: they account for 20% of the farms (according to the census measure), 25% of the cows, and 36% of the milk.

Farmers were asked: “Do you plan to be in the dairy business five years from now?” Every single respondent answered, “yes.”

However, we know the kinds of characteristics that are associated with exit from dairy farming: age of operator and lack of plans to expand.

- 22.5% of survey respondents were over 60 years of age, and they accounted for 26% of the dairy cows, and 25% of total output of survey respondents.
- 40% of survey respondents said that they had no plans to increase herd size in the next five years. This 40% of farms accounted for 33% of dairy cows and 35% of total output.
- 9% of respondents were in both categories: they were over 60 years of age, and they had no plans to expand. This 9% accounted for 11% of cows and 10% of output.

If these farmers (over 60 and with no plans to expand) were to exit from farming (along with their dairy herds) this would be about half of the total exit number projected in the last section. The other half of the exiting farmers will be younger farmers, and those who had expansion plans. Of course, as noted above, in some areas of Maryland the decision to leave dairy farming is strongly influenced by encroaching suburban development.

But some farmers are likely to be caught in the cost-price squeeze and forced to make a decision to exit dairy farming.

Actions to Slow the Decline of the Maryland Dairy Sector

For an individual farmer, the most pressing question may be: “What can I do to move myself out of the ‘endangered’ category into the ‘surviving’ category?” There is no one set of recommendations that will apply to every dairy farmer, though the above discussion of characteristics of high and low cost farmers is suggestive. However, without addressing the fundamental economy wide forces dictating fewer and fewer farms, an action that moves one farmer into the “surviving” category moves some other farmer into the “endangered” category.

There may be management changes (see the discussion of management intensive grazing above) that would give Maryland dairy farmers some systematic advantage over (say) Pennsylvania dairy farmers, shifting the overall regional decline so that less of the decline occurs in Maryland and more of it occurs in Pennsylvania. The identification

and communication of these management changes could be facilitated by a state program. Pennsylvania's Center of Dairy Excellence is an example of a program designed to develop and communicate management plans that improve a farm's chances of survival. Other examples of effective state programs include:

- Pennsylvania's Dairy Alliance and New York's PRO-DAIRY education programs run by dairy specialists in the states' extension systems.
- "Dairy Management Teams" developed at the University of Minnesota and Penn State, in which groups of farmers meet regularly with herd management advisors.

If Maryland instituted a similar program it might promote management decisions which kept Maryland farmers more competitive with Pennsylvania farmers, and thus might slightly retard the rate of exit of Maryland dairy farms.

Farmstead cheese production or production of organic milk may also increase the survival chances of some individual farmers. These may be good options for some farmers; however it is unlikely that aggregate demand for these products will be large enough to have a substantial impact on the statewide dairy economy; furthermore, there is no obvious reason to think that Maryland farmers have any particular advantage in these products compared to farmers from other states.

National policies are unlikely to change the underlying economy-wide forces. However, national policies could increase demand for milk by expanding dairy exports, or could change the size distribution of national herd sizes through size limitations on subsidy payments.

Some observers hold out hope that national policy to increase dairy exports would ease the pressure on farm numbers. However, only two policy approaches are possible here: (1) export subsidies, or (2) technological change that makes US milk production more competitive on the world market. Export subsidies are limited under the Uruguay round agreement of GATT; thus potential for expanding the size of this program is limited. For technological change to make US production more competitive, the new technology has to be one that reduces the cost of US milk production, but which cannot be used to reduce production costs in other countries. Conceivably, the US could gain such an advantage through early approval of biotechnologies such as cloning or transgenic biotechnology, that other countries will be slow to approve for their farmers.

Theoretically, a national dairy subsidy program that puts severe limits on farm size could offset the trend toward fewer and larger farms. The MILC subsidy instituted in the 2002 farm bill contains a payment limitation: payments can be received only on 2.4 million pounds – approximately the output of 140 cow herd. One might be tempted to draw a connection between the decline in Maryland herd size since 2003 to this limitation. However, nationwide – and in a great majority of states -- average herd size has continued to increase since 2003. And, as shown above, herd size decline in Maryland has not been limited to 100+ cow herds. Conceivably a MILC type subsidy program that created much higher per cwt payments, but capped the payments at much lower herd sizes, could have the effect of modifying the trend to larger and larger herd

sizes. (And finally, in light of the last paragraph, a policy that deliberately favors smaller, but less efficient, farms will have the effect of reducing US competitiveness on world markets.)

Finally, national programs intended to assist the national dairy industry are most likely to have the biggest impact on the low-cost production areas.

If national programs are of limited effectiveness, what about Maryland state programs that might reduce the rate of exit from the Maryland dairy sector? The state program (and related county programs) to encourage farmland preservation are an example of existing programs that reduce the rate of exit from dairy farming. Farmland preservation programs pay farmers to keep their land in agriculture; they are not specifically aimed at dairy farms, but they undoubtedly do have the impact of keeping land in dairying that might otherwise go to non-agricultural use.

In designing such a state subsidy system, three critical decisions must be made:

- Should the subsidy be based on current production decisions, or should it be a “lump sum” payment ?
- Should the subsidy be based on (a) output; (b) cow numbers; or (c) simply being a dairy farm?
- Should the subsidy have limits to give lower subsidies: (a) to large farms; (b) to small farms?

National crop subsidies have evolved to put more and more emphasis on “lump sum” subsidies. With a lump sum subsidy, the size of the subsidy received by the farmer do not depend on the farmer’s current production decisions. So, for example, a farmer who receives direct payments and countercyclical payments based on qualifying corn acreage receives the same payment, no matter whether he increases or decreases his corn yields, and no matter whether he produces corn or other crops on those acres. A lump sum payment creates no incentive for the farmer to increase production. Therefore lump sum payments are more efficient in delivering aid to farmers: subsidies based on current production create an incentive for farmers to increase production, and the increased production drives down market prices, partially counteracting the subsidy.

For purposes of illustration, let us consider three state subsidy payments payment programs with an annual budget of \$10,000,000.

- A program that paid a fixed amount to all farmers (approximately 630) who were licensed to produce milk in 2006 would mean each farmer gets a state check in the amount of \$15,873.
- A program that paid a fixed amount to farmers based on their historical milk production in 2006 would pay \$0.91 per hundredweight. Farmers with fewer than 30 cows would receive a state check in the average amount of \$938; farmers with more than 200 cows would receive a state check in the average amount of \$58,333. If the program payments were based on a five year average of output per farm, the \$10,000,000 budget would mean a payment of \$0.85 per cwt. Small herd farmers would

receive an average state check of \$773 and large herd farmers would receive an average state check of \$55,776.

- A program that paid a fixed amount to farmers based on historical cow numbers in 2006 would pay \$156 per cow. For small herd (less than 30 head) farmers, the average payment would be \$1250; for larger herd farmers (greater than 200 head), the average payment would be \$53,333.33. If the payment were to be based on five year average cow numbers (2002-2006), the payment per cow would be \$136. Average small herd payment would be \$1073, and average large-herd payment would be \$51,406.

The \$10,000,000 budget was chosen deliberately to make it easy for the reader to see the program parameters for other budget amounts. For example a \$1 million per year program would pay \$1,587 per farm, \$0.091 per cwt, or \$15.60 per cow.

The total budget amount could also be reduced by payment limitations. National commodity subsidy programs have been criticized for the distribution of payments in two ways:

- Large payments go to large farms that do not “need” the government assistance.
- Payments go to part-time hobby farms that do not rely on agricultural income for survival.

By making some educated guesses about the distributions of farm size (as measured by herd size, or by total output), we can estimate the impact of some limitations on payment size.

The most extreme type of payment limitation eliminates payments for farms that are too small or too large. Suppose the above subsidies only applied to farms with herd sizes between 30 and 140. Farms with herd sizes under 30 account for 20% of farms 1% of cows and less than 1% of output. Farms with herd sizes above 140 account for 13% of farms, about 35% of cows, and about 60% of output (herds of 100+ head account for 68% of output).

So the immediate impact of instituting a per farm subsidy of \$15,870 per farm, but disqualifying farms of less than 30 cows and farms of more than 140 cows, would be to reduce budgetary cost by 43% or \$4.3 million. If a similar limitation (no payment to farms with fewer than 30 or more than 140 cows) were applied to a \$156 per cow subsidy, the immediate impact would be to reduce budget costs by about 36%. If a similar limitation were applied to a \$0.91/cwt subsidy, budgetary costs would be reduced by about 60%.

But unless the limitation were based on historical herd sizes (for example herd size in 2006) this “immediate” reduction would be eroded over time, as farmers made adjustments in their herd sizes: farmers with herd sizes just short of the 30 cow limit would have a great incentive to add a few cows in order to qualify, and farmers with herd

sizes just greater than 140 cows would have a great incentive to cull a few cows in order to qualify. As discussed above, establishing a subsidy, and a subsidy limit, based on historical output rather than current output creates no incentive for farmers to change production decisions in order to qualify for the subsidy.

A second type of payment limitation is a cap on payments. For example a per cow subsidy payment of \$156 that was capped at 140 cows would have a maximum subsidy of \$21,840. This would reduce the budgetary cost by about 12%, or \$1.2 million. A per cwt subsidy of \$0.91 that was capped at 2.4 million pounds (the same cap as the MILC program uses) would also have a maximum payment of \$21,840. (This is because the 140 cow limit was chosen to be equivalent to the 2.4 million pound limit.) The budgetary costs would be reduced by 42% or about \$4.2 million. Cow numbers and output per farm are relatively low for small farms; thus putting limitations on payments at the small farm end will not have significant budgetary savings, unless the subsidy payment is on a per farm basis, as discussed above.

It is difficult to evaluate the effectiveness of the above subsidy programs. The subsidy rates discussed (\$16,000 per farm, \$1.00 per cwt., \$150 per cow) are not so small as to be inconsequential, but are not so large as to be enough clearly to halt farm exit. We make no judgment about the political feasibility of a state program costing \$4-10 million and making payments to a few hundred Maryland residents, with many of those payments being in the range of \$20,000 +.

References.

Bailey, K. 2002. "Opportunities for Success on Small Dairy Farms Revisited," 35th Annual Conference of the American Association of Bovine Practitioners, Madison Wisconsin, September 26-28.

Kriegl, T. (2005). Dairy Grazing Farms Financial Summary. Center for Dairy Profitability, University of Wisconsin. On line at <http://cdp.wisc.edu/pdf/GLGN%20USDA%202004%20ReportF.pdf>

LaDue, E., B. Gloy, and C. Cuykendall. 2003. "Future Structure of the Dairy Industry: Historical Trends, Projections, and Issues." R.B. 2003-01 Cornell University Department of Applied Economics and Management. Ithaca NY.

Lin, B. et al. 2003. Food and Agricultural Commodity consumption in the United States: Looking Ahead to 2020, USDA, ERS, AER No. 820, February 2003.

Schmit, T. and H. Kaiser. 2006. "Forecasting Fluid Milk and Cheese Demands for the Next Decade," Journal of Dairy Science, 89, 4924-4936.

Short, S. 2004. <http://www.ers.usda.gov/publications/sb974-6/sb974-6.pdf>

Tauer, L. 2001. "Efficiency and Competitiveness of the Small New York Dairy Farm," Journal of Dairy Science, 84, 2573-2576.

US Census. State Population. <http://www.census.gov/popest/states/asrh/SC-EST2006-02.html>

USDA, AMS. Estimated Total U.S. Sales of Fluid Milk products. January-December 2006, with comparisons. On line at http://www.ams.usda.gov/dyfmos/mib/inareasls_ytd06.pdf

USDA, ERS, Long Term Projection Tables. (2007)
<http://usda.mannlib.cornell.edu/MannUsda/viewStaticPage.do?url=http://usda.mannlib.cornell.edu/usda/ers/94005/./2007/>

USDA, ERS, Milk Costs of Production.
<http://www.ers.usda.gov/Data/CostsAndReturns/testpick.htm#milkproduction>

Attachment 2

SALES BELOW COST OF FLUID MILK PRODUCTS

Definitions. In this subtitle, the following words and phrases have the meanings indicated.

“Basic cost of raw milk” means the certified average per gallon price paid by the dealer for all raw milk received during the just-completed calendar month at the dealer’s plant in which the fluid milk product was produced.

“Certified” means presented under oath by a dealer to the Secretary, in a form and at a time designated by regulation promulgated by the Secretary, as particular costs actually incurred by the dealer during the just-completed calendar month . Except for the purposes of enforcement, the Secretary shall treat all dealer-certified information as confidential.

“Class I fluid milk” means processed milk suitable for use as beverages and defined by the United States Department of Agriculture as “Class I milk” at 7 C.F.R. § 1000.40(a), as amended from time to time.

“Dealer” means any processor, distributor, or broker who sells processed milk to a retailer or governmental customer.

“Dealer’s cost” means, as apportioned to each fluid milk product sold or offered for sale to a retailer or governmental customer, the sum of the dealer’s

- (a) basic cost of raw milk;
- (b) ingredient costs;
- (c) package costs;
- (d) either (i) a markup of _____% on the combined basic cost of raw milk, ingredient costs, and package costs, to cover, in part, the dealer’s presumptive processing and doing-business costs, or (ii) if the dealer can demonstrate that his actual such costs, direct and indirect, are less than the foregoing mark-up, then such actual costs ; and
- (e) transportation costs to deliver the fluid milk product to the dealer’s customer.
- (f) if the dealer is not a processor, the dealer’s cost shall be the purchase price paid for his processed fluid milk products (but in no event less than the processor’s own costs) plus such other actual costs, including but not limited to marketing and transportation, as are actually incurred by the dealer.

“Fluid milk product” means any Class I fluid milk product processed by a dealer that, at the time of its sale to a retailer, distributor, broker or governmental customer is packaged for resale to, and/or consumption by, consumers..

“Ingredient costs” mean the certified average per ounce costs incurred by the dealer during the just-completed calendar month for each ingredient added by the dealer to class I fluid milk in processing fluid milk products.

“Package costs” mean the certified unit costs of cartons, bottles, and other containers in which the dealer packages fluid milk products for resale by retailers to consumers, incurred by the dealer during the just-completed calendar quarter.

“Person” means any individual, corporation, or other legal or commercial entity.

“Processor” means any person possessing a license to purchase raw milk for processing into Class I fluid milk.

“Raw milk” means milk that has not been pasteurized.

“Retailer” means any person located in Maryland that sells or offers for sale any fluid milk product for consumption and not for resale. To the extent that a person may be both a dealer and a retailer, this subtitle shall apply only to that person’s sales as a dealer there being no intent in this subtitle to regulate or limit in any way the price at which a retailer may resell fluid milk products to consumers.

“Secretary” means the Maryland Secretary of Agriculture or his or her designee.

Prohibition. No dealer may sell or offer to sell any fluid milk product to any retailer, distributor, broker, or state or local governmental agency in Maryland at less than the dealer’s cost as defined herein. In addition, no dealer may sell fluid milk products in combination with any other item of merchandise if the other item is given free of charge or sold below its cost.

Enforcement. The Secretary shall enforce this subtitle and investigate suspected violations reported by interested persons or observed by the Secretary. In investigating suspected violations, the Secretary shall have the authority to compel the production of such books and records and testimony as may be pertinent to the performance of the Secretary’s duties hereunder, including but not limited to information provided by any dealer to any other federal or state regulatory authority. The Secretary shall also adopt reasonable rules and regulations necessary to effectuate and enforce this subtitle. Nothing in this subtitle is intended to, or shall be construed to, authorize either the Secretary or any other government official to prescribe or regulate the pricing of sales of raw milk.

Staffing. The Secretary shall have the authority to employ such inspectors and other personnel, and to determine their compensation, as may be necessary for the enforcement of this subtitle.

Remedies. On complaint by the Secretary or any person affected, a circuit court has jurisdiction to:

- (1) Enjoin a dealer from any act prohibited by this subtitle;
- (2) Award damages, costs, and reasonable attorney's fees.

In an action for injunctive relief, the complainant need not allege or prove that an adequate remedy at law does not exist or that the complainant has suffered actual damages.

Complementary Amendment to Md. Code Ann., Com. Law II § 11-402

Md. Code Ann., Com. Law II § 11-402 is amended by adding the following subsection:

“(10) Is a fluid milk product as defined by subtitle _____ of this title.”