Title

Making “Cents” of Milk Prices

Objective(s)

The objective of this paper is to give a short overview of how milk prices are determined in the United States and the programs that were created to regulate these prices. Additionally, this paper will address the policies that go into regulating milk prices and how they affect the interests of producers and consumers.

Summary of Findings

Methods of Pricing Milk

Milk was originally measured by volume before the development of the commercial dairy industry, and then was quantified by weight. The Babcock test, which measured the milkfat content of milk, was used to determine a pricing method: “dollars per 100 pounds, adjusted for milkfat content with a butterfat differential” (Manchester 5). As a result, pricing efficiency improved as well as reduced the incentive to add water to milk because the butterfat differential represented the difference in value between milkfat and an equal weight of skim milk. The following is an example of how milk prices are decided using the above Babcock method:

Prices often are quoted at a standard of 3.5-percent milkfat. The standard is largely arbitrary but is approximately the seasonal low for the average fat test of all milk. If the 3.5-percent fat price is $12.00 per hundred-weight (cwt) and the butterfat differential is 13.5 cents, a producer delivering milk testing 3.70-percent fat would receive a price of $12.00 plus 2 times $0.135—or $12.27 per cwt (Manchester 5).

The Key to Pricing in the Future

The objective of pricing milk is to balance the supply of milk with the demand for it while also taking into account the unique physical properties of milk. A complex set of programs has arisen to address this balancing act. To create a better balance between the supply
and demand for milk, three ideas have to be considered. First, producer prices need to remain high enough to maintain production without encouraging surplus production. Second, consumers must be willing and have the ability to purchase milk and dairy products. Lastly, the interests of producers, handlers, and public need to allow for the orderly flow of milk and dairy products from producers to consumers (Manchester 16).

**Milk as a Commodity**

Unlike other commodities such as wheat, sugar, rice, and soybeans, milk is unique in that it is produced every day with little variation in the amount produced. Milk is considered a flow commodity since it has to go to market at least every other day. While the quantity of milk produced daily stays relatively the same, fluid milk sales vary substantially from day to day as a result of consumer buying patterns. Seasonal variation accounts for some of the changes in consumer patterns. For example, throughout the fall/winter, there is a higher demand for cheese and butter. Meanwhile, milk production is higher in the spring/summer when it is the flush season, and lowers in the fall/winter during the short-supply season (Manchester 2). Because of fluctuations in consumption as well as the continuation of a consistent amount of milk being produced, programs were needed to address this relationship between supply and demand.

**Commodity Programs**

Major commodity programs arose during the 1930’s as a result of the Great Depression. The programs and policies that were implemented mainly intended to influence producer milk prices, but ended up influencing consumer prices as well (Manchester 3). Three components of dairy policies that went into shaping these programs include: “(i) border measures that create import barriers for most dairy products and export subsidies for a few manufactured dairy products; (ii) federal and state marketing orders that regulate raw milk prices; and (iii) government purchases of manufactured dairy products to support the farm price of milk” (Sumner 1). Examples of programs that address these polices consist of marketing orders, import barriers, the Price Support Program, the Milk Income Loss Contract Program, and the Dairy Export Incentive Program (DEIP).

Currently, along with the above commodity programs, subsidies and prices are regulated to stimulate additional milk production, raise the price of beverage milk, and shift the income from taxpayers and consumers to the dairy industry. “Economic research has documented that costs to taxpayers and consumers are significantly larger than gains to producers as a group, but of course, any individual producer gains much more than the system costs a typical dairy consumer or taxpayer” (Sumner 8).

Below is an overview of each of the current programs by the federal government.
Marketing Orders

Marketing orders were introduced in 1937 to set minimum prices for milk products. There are currently 11 federal marketing orders that control the price of milk in the US (Figure 1; Sumner 12). The minimum prices used for milk in manufactured dairy products such as cheese, butter, and nonfat dry milk remains the same across orders, but fluid differentials for the minimum price of milk meant for fluid use varies between orders. This limits the ability of milk producers in lower cost regions (i.e. the Midwest) from gaining market shares in higher-cost regions (i.e. the Southeast) (Figure 2; Edwards 1). In order to discourage transport of milk across regions, regulations are in place to maintain the minimum price of fluid milk in each region so as to not undermine the maintenance of separate fluid markets in the various orders (Sumner 5). These regulations also prohibit entrepreneurs from supplying milk at less than government prices, guaranteeing that all farmers receive the same price for their milk while food processors pay for milk based on how it will be processed (Edwards 1).

Milk prices are determined monthly based on milk’s end-use. The end-use “classes” of milk are fluid products, soft and frozen products, cheese, butter, and dry milk powder. “Federal and California milk marketing orders use price discrimination to raise the average price received by producers, setting minimum prices that processors must pay for Grade A milk according [to] its end-use (classified pricing)” (Sumner 3). When high prices are set for milk used in fluid products, marketing orders reduce fluid milk sales, which result in a higher production of manufactured dairy products (Sumner 4).

Currently, the Farm Bill is being reformed so that the U.S. agricultural sector will move from a regulated industry to a more market-oriented one. For the dairy industry, this means “federal marketing order reform and gradual elimination of dairy price supports” (Sumner 7). The USDA says that the purpose of federal regulations, such as milk marketing orders, is to “promote orderly milk marketing relationships to ensure adequate supplies of milk and dairy products to meet consumers’ demands at reasonable prices” (Edwards 2). Therefore, as long as the supply of milk meets consumer’s demands, the dairy industry can have a more market-oriented focus.

Import Barriers

Import barriers allow the domestic price of milk and dairy products to remain above the price for traded products in world markets. This means that these barriers keep the domestic price of milk artificially high. Without these barriers in place, U.S. consumers would be able to purchase foreign dairy products at lower prices (Edwards 2). “By insulating the domestic dairy economy from foreign supplies of dairy products, the import barriers also make possible the key domestic elements of the dairy program—milk marketing order pricing rules and the price support program” (Sumner 1).
Imports of fluid milk and cream, butter, cheese, milk powders, and other dairy products are subject to tariff-rate quotas (TRQs) (Sumner 2). The quotas protect domestically produced commodities, like milk, from competitive import markets. Only less than six percent of products subject to TRQs accounted for the domestic consumption of imports in 2002 (Sumner 1).

*Milk Price Support Program*

The Milk Price Support Program (created in 1949) keeps market prices artificially high because the U.S. government will buy any amount of cheese, butter, and nonfat dry milk at a set minimum price from dairy producers. This helps guarantee a steady demand and higher prices for dairy products (Edwards 1).

An aspect of the Price Support Program is the USDA’s Commodity Credit Corporation (CCC), which buys as much butter, nonfat dry milk, and cheddar cheese as manufacturers want to sell at specified support purchase price so that farmers receive at least the amount of the support price (Manchester 6). The CCC was “created to stabilize, support, and protect farm income and prices… [and to] maintain balanced and adequate supplies of agricultural commodities and aids in their orderly distribution” (USDA 2008). It is also responsible for helping producers through purchases, payments, loans, and other operations, as well as make materials and facilities required for the production and marketing of milk along with other agricultural commodities that are available (USDA 2008).

*Milk Income Loss Contract Program*

The Milk Income Loss Contract Program (enacted in 2002) provides cash subsidies to milk producers when market prices fall below target levels (Edwards 1). The current target level is at $16.94 per hundredweight. “Dairy producers are affected by the market price for milk and the price of feed to sustain their herds” (Benemelis), so this program ensures that farmers will not lose money by having the government pay the difference between their production costs and the selling price of milk.

*Dairy Export Incentive Program*

The Dairy Export Incentive Program (DEIP) was introduced in 1985 and provides cash subsidies to dairy farmers who sell in foreign markets. This incentivizes farmers to sell their products in foreign markets because without these subsidies, they would have no interest abroad since domestic prices are above world prices. Exporting some dairy products reduces surpluses from over production in the U.S. market (Edwards 1) and provides another commercial outlet for U.S. dairy products (Sumner 2). Products eligible to export include: milk powder, butterfat, cheddar, mozzarella, Gouda, feta, cream, and processed American cheeses. In 1999, the USDA
paid U.S. dairy exporters a total of $145 million and $77 million in 2000 to export their dairy products abroad (Sumner 3).

**Concluding Remarks**

The federal government is highly involved in regulating the complex system of programs that go into determining milk prices. The common goal of these programs is to encourage milk production while meeting the demands of consumers. The future of milk pricing looks to be less regulated and more market-oriented.
Sources


Appendix

Figure 1: Current 11 federal milk marketing order areas. These 11 areas have not changed since 2000. (Sumner)

Figure 2: 2002 average annual milk prices per cwt for fluid milk by state (CITEC).