Cheese Prices

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Cheese has become a much larger part of the nation's diet. Since 1970, per capital cheese consumption has increased 162 percent. Cheese production consumes the biggest share—44 percent—of the nation's milk production, and is the major factor in determining the value of milk in the United States.

The USDA used to use the Minnesota-Wisconsin (M-W) price series—a general survey price of Grade B manufacturing plants—to price cheese. In 1995 the USDA shifted to the Basic Formula Price (BFP) series for setting the Class III (cheese milk) price. The BFP relies on the prices paid by manufacturing plants, adjusted for changes in the cash cheese market price. This BFP price was the price used to determine other milk prices in Federal Orders. The 2000 Federal Order pricing changes mandated that producers be paid for milk components and that cheese be used to determine true protein prices to set a value on producer milk. Although cheese plays a most important role in the process of setting producer milk prices, there is no one definitive cheese price. The industry and government function with several price series.

There are three widely distributed cheese price series: 1) the Agricultural Marketing Service (USDA-AMS) *Dairy Market News;* 2) the National Agricultural Statistics Service (USDA-NASS); and 3) the Chicago Mercantile Exchange (CME). Each series is used in varying degrees by various segments of the industry for pricing cheese and milk, for researching and projecting prices, and as a source of cheese price information. All the prices published by the weekly industry press are collected from these three sources.

USDA-AMS Prices

AMS reports four cheese price series. AMS market reporters develop two of these series by contacting cheese manufacturers and wholesalers throughout the United States. The firms contacted by the reporters are not obligated to report, but provide the information to assist in efficient marketing.

AMS reports the CME prices resulting from daily block and barrel cheese trading on the exchange. AMS market reporters obtain the delivered wholesale prices from wholesalers who deal in less than full truckloads (LTL)—loads ranging from 1,000 to 5,000 pounds. These LTLs are priced at the delivery point because they most often go through at least three title changes. These prices are published as delivered dollars per pound (1,000- to 5,000-pound mixed lots) and these price quotes may be as much as 30 to 50 cents higher than the FOB prices. The difference is not just transportation costs but also buyer mark-up that occurs at each title transfer. AMS publishes these price ranges weekly in the *Dairy Market News* for the Northeast, Midwest and West.

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Reporters for *Dairy Market News* also contact manufacturing plants to obtain weekly market comments and FOB plant dock prices. These FOB plant dock quotes are for arm's length exchanges where the title to the product changes. Most of the FOB plant dock, car lot and truck lot prices collected are used in the market comments section of the newsletter. Despite the fact that plants across the country are contacted, the only FOB plant dock, car lot and truck lot prices published are the Midwest Commodity Cheddar prices. Cheese prices quoted by Western plants are generally lower than the prices quoted by Midwestern plants. Part of this difference is due to the CME differential (see the discussion of CME prices below). Also, the Western states, together, make up the largest cheese producing region of the United States and, thus, would have a lower price than other areas to which the cheese is shipped. There are other adjustments in cheese prices that reflect quality, moisture and containers.

The AMS publishes only price ranges and, at times, averages; although the plants reporting FOB plant dock prices may be miles apart the AMS does not adjust prices for distance. FOB dock prices imply some minimum container— either a steel barrel or a fiber container. Shippers often collect a refundable container deposit for steel barrels.

Cheese buyers and sellers use AMS Midwest Commodity Cheddar prices as formula prices for negotiating spot prices and contract prices. When using AMS prices for spot market prices, buyers and sellers usually use the prices published a week earlier.

NASS Prices

The NASS is mandated by law to survey dairy product manufacturing plants and then estimate the product pay prices that are used to determine Federal Milk Marketing Order component and Class prices. Title 7, Code of Federal Regulations: Chapter 38; Subtitle III; Section 1637b details the procedures of the mandatory dairy product information-reporting program. The federal regulations require each manufacturer surveyed to report price, moisture content and quantity of dairy products sold. The questionnaire asks for prices on completed sales after title has transferred. Respondents report FOB plant prices for naked cheese, aged 4 to 30 days, with minimum packaging (as required for 40-pound blocks). They also report CME sales and CCC purchases under the dairy price support program, but not intra-company sales, transportation charges, sales of aged block cheese, resold cheese, or forward pricing sales set 30 or more days before the transaction was completed. Manufacturers must give information only for the dairy products (butter, nonfat dry milk, dry whey powder and cheddar cheese) used to determine Federal Order prices. NASS prices are published weekly in *Dairy Products Prices.*

The AMS is responsible for calculating Federal Order prices from the NASS product price estimates and publishes the NASS prices in the weekly *Dairy Market News.* The formulas AMS uses are found in Title 7, Code of Federal Regulations: Chapter X; Part 1000.50; Subpart G.

CME Prices

CME prices are the major pricing guide for trading cheese in the U.S. The CME price influences regional cheese prices and AMS Midwest commodity prices. Cheese trading on the CME takes place for 15 minutes every business day. Bids and offers are posted on a chalkboard in the cash cheese-trading area of the commodity trading floor. All CME floor traders who trade in the futures pits are eligible to represent firms in the cash cheese-trading area. The rules governing the cash cheese market are contained in the Chicago Mercantile Exchange Rulebook, Chapter 53S, Cheese-Spot Call. The rules cover load sizes, varieties, styles, grades, age, moisture and markings. All cheese traded must be produced in plants approved by the USDA Grading Service.

The buyer of cheese traded in the spot cheese market has 7 days after the date on the invoice to pay for the cheese unless the seller demanded immediate payment or other arrangements were agreed to.

Hauling Rates

Cheese traded in the CME cash market may be delivered to any point within the continental U.S.; the price is quoted as a delivery point price. However, costs are imposed on deliveries to points outside a 300-mile radius of Green Bay, or between parties located farther apart than their distance from Green Bay. The distances used to determine this freight differential come from the current issue of the Household Goods Carriers Bureau Mileage Guide (HGCB) and are published in the CME Rulebook. The Rulebook must be consulted to determine the freight differential credit to the buyer (which the seller pays) in each situation in question. The freight differential is the amount by which the cost of shipping from the seller to Green Bay exceeds the cost of shipping 300 miles.

The freight differential can be thought of as a way to compensate the buyer for some of the cost of moving cheese from a distant plant to the exchange point in Green Bay. The CME pricing structure effectively treats cash cheese prices as if all transactions are to take place at Green Bay, even though the cheese doesn't actually move there. Therefore, the Green Bay price has to be high enough to encourage cheese to move from outlying plants to Green Bay. Although transportation cost usually is considered the responsibility of the buyer, it is subject to negotiation. Any applicable freight differential is credited to the buyer.

A price quoted as FOB plant dock implies that the buyer will pay for hauling. Cheese is moved in trucks controlled by either the buyer or the seller. If one or both parties to the transaction own or control trucks used in shipping, they will negotiate premiums or discounts to help cover transportation cost. If a seller is in an excess supply situation, he or she likely will discount the price. If a buyer is in an excess demand situation the opposite will occur. The hauling rates for cheese sold in interstate commerce are not regulated, but could be regulated in some intrastate transactions. Neither the AMS nor the NASS publish hauling rates for cheese and dairy products.

The CME Rulebook applies to cheese traded on the CME. Not every sale of cheese takes place on the CME. Much of the cheese in the U.S. is traded by private treaty between the buyer and seller. However, the parties to a private treaty sale may agree to use the CME Rulebook to govern the transaction. In that case the terms of the private treaty sale mimic the terms of a sale on the CME.

An Example of Differentials and Hauling Rates

The following example illustrates how CME differentials are applied and the effect of hauling rate.

Suppose a cheese plant in San Antonio, Texas sells all its output through the CME. Suppose a buyer for the cheese is a firm in San Antonio that uses the CME to buy all its cheese. The CME Rulebook likely would be used to determine what the buyer ultimately must pay for the cheese produced in San Antonio and sold on the CME.

According to the CME Rulebook, San Antonio is 1,367 miles from Green Bay. The seller-to-buyer mileage is less than 300 miles and is less than the seller to Green Bay mileage. Therefore, the seller pays $0.0 freight differential. If the closing daily block cheese price on the day of sale was $1.1575 the buyer would pay the full $1.1575. If the seller was in Green Bay and the buyer in San Antonio, the buyer would pay the Green Bay FOB price plus the freight to move the cheese to San Antonio.

If the product weighed 44,000 pounds and the hauling rate was $1.60 per pound per mile, the cost of moving the cheese 1,367 miles would be $0.0497 per pound, or $2,187.20 total transportation cost.

Even if the San Antonio cheese maker does not use the CME to sell all its cheese, in order to be competetive with other western cheese plants it might use the CME Rulebook as a guide in setting its dock (cash) price. The freight differential published in the Rulebook is $2.62 per cwt. ($0.0262 per pound). The published FOB (selling price) for a plant at San Antonio would be $1.1313, which is the $1.1575 price minus the $0.0262 freight differential. An actual cash price negotiated by buyer and seller might be different.

Conclusion

There are several sources of cheese price information. Each represents a different market and is used for different purposes. NASS data are used to calculate product prices for the Federal Milk Marketing Order Classified prices. The CME cash cheese trade reflects the spot market for cheese, with freight differentials codified to reflect delivery to Green Bay, Wisconsin. When the CME assumed the functions of the National Cheese Exchange in 1997, the spot cheese market became more transparent because spot prices are published daily. Parties to transactions also became anonymous, because member traders may represent several different buyers and sellers and usually do not divulge for whom they are trading. The frequency of trading and the publication of prices has made cash cheese prices more responsive to market changes.

Examples of calculations for freight differentials.

	Example 1	Example 2	Example 3	Example 4	Example 5
A. Seller location	Eau Clair, WI	Twin Falls, ID	Dallas, TX	Fresno, CA	Mankato, MN
B. Seller mileage to Green Bay	194	1,586	1,095	2,218	343
C. Seller deduction per cwt. gross wt. vs. Green Bay	$0.00	$3.09	$2.02	$4.49	$0.11
D. Buyer location	Milwaukee, WI	Ogden, UT	Springfield, MO	Mankato, MN	Atlantic City, NJ
E. Buyer mileage to seller	234	184	421	1,895	1,230
F. Seller deduction per cwt. gross wt. vs. buyer	$0.00	$0.00	$0.29	$3.72	$2.26
G. Net seller deduction per cwt. (lesser of C or F)	$0.00	$0.00	$0.29	$3.72	$0.11

Example 1:   The seller-to-buyer mileage (D) is greater than the seller-to-Green Bay mileage (B). Both are less than 300 miles. The seller pays $0 freight differential.

Example 2:   The seller-to-buyer mileage (E) is less than the seller-to-Green Bay mileage (B). The seller-to-buyer mileage is also less than 300 miles. The seller pays $0 freight differential.

Example 3:   The seller-to-buyer mileage (E) is less than the seller-to-Green Bay mileage (B). Both are greater than 300 miles. The seller-to-buyer mileage applies. The seller pays $0.20 freight differential.

Example 4:   The seller-to-buyer mileage (E) is less than the seller-to-Green Bay mileage (B). Both are greater than 300 miles. The seller-to-buyer mileage applies. The seller pays $3.72 freight differential.

Example 5:   The seller-to-buyer mileage (E) is greater than the seller-to-Green Bay mileage (B). Both are greater than 300 miles. The seller-to-Green Bay mileage applies. The seller pays $0.11 freight differential.

Information for this publication came from the following sources:

"Changes in Per Capita Consumption, 1970-99," Briefing Room, Food Consumption: Food Supply and Use. ERS, USDA, November 19, 2002.
http://www.ers.usda.gov/briefing/consumption/Supply.htm

Statistical Bulletin 979, Federal Market Order Statistics, 2001 Annual Summary. AMS, USDA, May 2002.
http://www.ams.usda.gov/dairy/mncs/weekly.htm

"Dairy Products Summary," Bulletin Da 2-1, April 2002. NASS, USDA.
http://usda.mannlib.cornell.edu/reports/nassr/price/dairy/2002/
http://www.cmerulebook.com/cmewg/wg.dll?page&file= c53s