



United States
Department
of Agriculture

LDP-M-155-01
May 2007



A Report from the Economic Research Service

www.ers.usda.gov

Retail and Consumer Aspects of the Organic Milk Market

Carolyn Dimitri and Kathryn M. Venezia

Abstract

Consumer interest in organic milk has burgeoned, resulting in rapid growth in retail sales of organic milk. New analysis of scanner data from 2004 finds that most purchasers of organic milk are White, high income, and well educated. The data indicate that organic milk carries the USDA organic seal about 60 percent of the time, most organic milk is sold in supermarkets, organic price premiums are large and vary by region, and most organic milk is branded.

Keywords: Organic milk, organic dairy, retailing, private label, scanner data, price premiums, organic consumers.

Acknowledgments

We thank Lydia Oberholtzer, University of Georgia; Dawn Thilmany, Colorado State University; Gary Thompson, University of Arizona; Linda Hatcher, Barry Krissoff, Ephraim Leibtag, Daniel Pick, and Janet Perry, USDA, Economic Research Service, for their insightful reviews; and John Weber and Cynthia A. Ray, USDA, Economic Research Service, for editorial and design assistance.

About the Authors

Carolyn Dimitri is an economist with USDA's Economic Research Service. Kathryn M. Venezia is with the University of Maryland, College Park.

Contents

| | |
|--|----|
| Introduction | 2 |
| Retailing Organic Milk Has Many Dimensions | 6 |
| Characteristics of Organic Milk Households | 10 |
| Few Factors Influence Organic Milk's Average Share of the Milk Budget | 13 |
| Old and New Wisdom About Organic Consumers: Competing or Consistent Ideas? | 15 |
| References | 17 |

Approved by USDA's
World Agricultural
Outlook Board

Introduction

U.S. retail sales of organic milk have been growing since the mid-1990s, with sales of organic milk and cream edging over \$1 billion in 2005, up 25 percent from 2004. At the same time, overall sales of milk have remained constant since the mid-1980s (Miller and Blayney, 2006), and organic milk and cream now make up an estimated 6 percent of retail milk sales.¹ The boost in organic milk sales is part of a wider growing interest in organic products, which resulted in an average annual growth rate of retail sales of organic food of nearly 18 percent between 1998 and 2005. Rising consumer interest in organic milk has been accompanied by a newfound widespread availability of the product, and organic milk is now available in nearly all food retail venues, including conventional supermarkets and big-box stores, such as Costco or Wal-Mart (see box, “Retail Venues”).

USDA implemented national organic standards and an accompanying organic logo in October 2002, clearing the way for further growth in the sector under one Federal production and handling rule. The USDA organic standards specify the production process for processing, distributing, and growing organic food, while the logo provides an easy way for consumers to recognize organic products (see box, “National Organic Standards”). The regulations were implemented in part to provide consumers with confidence that organic products have consistent, uniform standards (USDA, 2002b).

Media reports indicate that supermarkets experienced significant shortages of organic milk during 2005 and 2006 (Oliver, 2006; Weinraub and Nicholls, 2005), suggesting that consumer demand is unmet at current market prices. Wal-Mart’s announcement in 2006 of its intention to increase its offerings of organic food is likely to introduce new pressures in the organic dairy sector, which is already struggling to meet market demands. As of May 2007, two main suppliers provide approximately 75 percent of the Nation’s branded organic milk: Organic Valley, an independent cooperative in business since 1988; and Horizon Organic, which has produced organic milk since 1992. Horizon merged with a conventional agribusiness firm in 2004. In 2003, independent firm Aurora Dairy entered the sector and began operating as a processor of private-label organic milk. As a result of this venture, by 2006, many major conventional supermarket chains had introduced private-label organic milk. Anecdotal evidence suggests that the three main organic dairies (of branded and private-label milk) are actively working to increase the supply of organic milk by recruiting and assisting conventional milk producers with the transition to organic production.²

To date, most characterizations of consumers who purchase organic products result from industry studies and offer conflicting views. The studies have focused on consumers of organic foods in general, not just consumers of organic milk. These market analyses use consumer surveys to gather information and have focused on trends in consumer purchases of organic foods (Whole Foods Market, 2005) and demographic characteristics of organic consumers (Hartman Group, 2004, 2002, 2000). The Whole Foods 2005 survey indicates that 65 percent of consumers have tried organic foods, 27 percent bought more organic food in 2005 than in 2004, and 10 percent consume organic food several times a week. The most recent Hartman study

¹The 6-percent estimate is based on 2005 total milk retail sales of approximately \$17 billion, as estimated by ERS. The *Nutrition Business Journal* reports retail sales of organic milk/cream, not just organic milk; the share of organic milk is less than 6 percent.

²Supply responses necessarily lag behind increases in consumer demand because it takes 3 years to convert farmland to meet organic standards so that they can provide organic feed. The cows have to be managed organically and fed organic feed for 1 year. But under a special provision passed into law in 2006, dairies that are converting to organic can convert their farmland and pastures for 2 years and then use the feed and pasture raised during the last year of conversion to the converting cows. That way, the farm and the cows all finish conversion together.

Retail Venues

Natural products channel—Consists of natural products supermarket chains, independent stores, and health food stores. Natural food supermarkets offer less-processed foods and more foods free of preservatives, hormones, and artificial ingredients.

Conventional supermarket—A format offering a full line of groceries, meat, and produce with at least \$2 million in annual sales. These stores typically carry approximately 15,000 items and frequently offer a service deli and a bakery.

Superstore—A larger version of the conventional supermarket with at least 40,000 square feet in total selling area and 25,000 items. Superstores offer an expanded selection of nonfood items, including health and beauty products and general merchandise.

Supercenters—A large food-drug combination store and mass merchandiser under a single roof. Supercenters offer a wide variety of food, as well as nonfood merchandise, average more than 170,000 square feet, and typically devote as much as 40 percent of their space to grocery items.

Wholesale club—A membership retail/wholesale hybrid with a limited variety of products presented in a warehouse-type environment. These 120,000-square-foot stores usually have 30 to 40 percent grocery sales and sell mostly large sizes and bulk sales.

Mass merchandiser—A store that primarily sells household items, electronic goods, and apparel but also offers packaged food products.

(2006) develops two indicators: an ethnic purchase index and a core consumer purchase index. The ethnicity analysis indicates that Asians and Hispanics are the ethnic groups (when considering Asians, Hispanics, Whites, and Blacks) most likely to have purchased organic products in the previous 3 months. The core consumer index, however, indicates that core consumers (defined by the Hartman Group as consumers committed to an organic lifestyle) are most likely to be Hispanic and Black (Baxter, 2006.) Earlier consumer surveys (administered in 2004 by the Hartman group) found that half of those who frequently buy organic food have incomes below \$50,000 per year, and that Blacks, Asians and Hispanics use more organic products than the general population (Howie, 2004.) In 2004, 42 percent of organic consumers had annual incomes below \$40,000 (Barry, 2004.)

In contrast to the Hartman 2006 and 2004 results, earlier studies characterize organic consumers as White, affluent, well-educated, and concerned about health and product quality (Lohr, 2001; Richter et al., 2000; ITC, 1999; Thompson, 1998). These studies also cluster the average age of organic consumers in two age groups: 18-29 years and 45-49 years (Thompson, 1998; Lohr and Semali, 2000). One element that has remained generally accepted through the years is that parents of young children or infants are more likely than those without children to purchase organic food.

National Organic Standards



Organic production relies on ecologically based practices, such as biological pest management and composting, and crops are produced on land that has had no prohibited substances applied to it for at least 3 years prior to harvest. Soil fertility and crop nutrients are managed through tillage and cultivation practices, crop rotations, and cover crops, supplemented with manure and crop waste material and allowed synthetic substances. Crop pests, weeds, and diseases are controlled through physical, mechanical, and biological control management methods. Organic farming systems virtually exclude the use of synthetic chemicals, antibiotics, and hormones in crop production; and prohibit the use of antibiotics and hormones in livestock production. Organic food cannot be produced using genetic engineering and other excluded methods, sewage sludge, or ionizing radiation.

Standards for handlers require that organic and conventionally grown ingredients be kept separate, and that organic ingredients be stored in containers that do not compromise the organic nature of the food. Both organic and conventional ingredients must not be treated with ionizing radiation, excluded methods, and synthetic solvents. When being stored and shipped, organic products cannot be shipped or packed in containers containing synthetic fungicide, preservative, or fumigant.

USDA implemented national organic standards in October 2002. These regulations require that organic growers and handlers (including food processors and distributors) be certified by a State or private agency accredited under the uniform standards developed by USDA, unless the farmers or handlers sell less than \$5,000 a year in organic agricultural products. Retail food establishments that sell organically produced agricultural products but do not process them are also exempt from certification.

The national organic standards address the methods, practices, and substances used in producing and handling crops, livestock, and processed agricultural products. Although specific practices and materials used by organic operations may vary, the standards require every aspect of organic production and handling to comply with the provisions of the Organic Foods Production Act (OFPA). These standards include a national list of approved synthetic and prohibited nonsynthetic substances for use in organic production and handling. USDA organic standards for food handlers require that all nonagricultural ingredients, whether synthetic or nonsynthetic, be included on the national list.

Along with the national organic standards, USDA has strict labeling rules to help consumers know the exact organic content of the food they buy. The USDA organic seal also tells consumers that a product is at least 95 percent organic; use of the seal is voluntary, so not all foods with at least 95 percent organic ingredients will display the logo.

For further information, visit USDA's Agricultural Marketing Service/National Organic Program website at www.ams.usda.gov/nop/.

Consumer surveys provide insight into consumer behavior, and to date, most of the information and research on the organic industry is based on surveys. However, more reliable information about preferences can be obtained by examining scanner data on actual consumer purchases. This report relies on Nielsen Homescan data, which has demographic information and food purchase information for a national panel of households (see box, “Nielsen Homescan Panel Data”). The analysis uses data from 2004, which includes 38,375 households that purchased milk.

Organic milk is the focus of this analysis for two main reasons. First, the shortages of organic milk at the retail level are notable. Second, dairy—along with fresh produce and soymilk—is one of the first organic products consumers try; thus, it is likely to be purchased by a wide variety of people and may indicate future consumer interest in other organic products (Demeritt, 2004).

Nielsen Homescan Panel Data

This report uses the Nielsen Homescan panel, a nationwide panel of households that scanned their food purchases (from all retail outlets) at home. Data included detailed product characteristics, quantity, and expenditures for each food item purchased by each household. The data are unique in that they include detailed purchase information as well as demographic information about the households in the panel.

We used the full panel of 41,000 households. Households in the subset scanned only fixed-weight products (products with a universal product code, or UPC). From this set, we drew data from households that bought milk during 2004—38,375 households. Our sample is projectable to the U.S. universe of product purchases.

The data set is a stratified random sample. The sample was selected based on both demographic and geographic targets. Stratification was done to ensure that the sample matches the U.S. Census. The household was the primary sampling unit, and there was no intentional clustering. The weight assigned to each household reflects the demographic distribution within strata. All analysis relies on both the projection factor and strata to estimate proportions, means, and standard errors.

The analysis is conducted on a household level, where we aggregated purchase information for each household for 2004. We also created a new category “head of household,” using the notion that most food shopping is done by women, making use of the demographic information Nielsen reports for both the female and male head of the household. We used the information about educational level, age, and race/ethnicity for the female as the head of household except for the households without a female head. In that case, we used the information for the male. We also reclassified income; Nielsen reports income in categories, which we recalculated into four categories: “low” contains households with income of \$24,999 or less; “middle” has households with incomes above \$24,999 and less than or equal to \$44,999; “upper” has income above \$44,999 and less than or equal to \$69,999; “high” is for income greater than \$70,000.

Retailing Organic Milk Has Many Dimensions

Retailing of organic milk has changed since the early 1990s, when most organic food was sold in specialty shops. Since then, organic food products have become available in a wide range of venues, with trends in retailing organic milk following those of conventionally produced food, including a growing reliance on private-label products. Two other features are unique aspects of retailing organic milk and other organic products: the USDA organic logo and price premiums. Marketing organic products is facilitated through the use of the USDA organic standards, which establish rules for the use of the label “organic” and the accompanying logo (see box, “National Organic Standards” on page 4). Organic milk, like most organic products, receives a price premium over conventional products.

Distribution Channels Differ for Organic and Conventional Milk

The wide availability of organic food in 2005³ is in marked contrast to 1991, when 68 percent of organic food was sold in natural foods stores and 7 percent was sold through conventional channels, such as grocery stores, mass merchandisers, and club stores (table 1). In 2005, the share of organic food sold in natural foods stores had decreased to 48 percent, while the share sold through conventional channels increased to 46 percent. Conventional channels now sell the majority of organic milk, half and half, and cream products (76 percent) (Budgar, 2006).

Data on organic and conventional milk purchases by distribution channel indicate that nearly all organic milk is purchased in grocery stores (table 2), with about 9 percent of sales attributed to the natural products channel, which is defined here as the two major national natural products chains (Whole Foods and Wild Oats) and health food stores.⁴ In contrast, conventional milk is purchased in a wider variety of venues, with 75 percent purchased in grocery stores, 10 percent purchased in supercenters, and 4 percent in club stores.

Table 1

Distribution of organic food sales by channel, 2005 and 1991

| Channel | Organic sales, 2005 | Share of total organic sales, 2005 | Share of total organic sales, 1991 |
|---------------------------------|---------------------|------------------------------------|------------------------------------|
| | <i>\$ millions</i> | <i>Percent</i> | |
| Natural foods independent store | 3,274 | 24 | 68 |
| Natural foods grocery chain | 3,253 | 24 | NA |
| Conventional grocery | 4,935 | 36 | 7 |
| Mass merchandiser | 689 | 5 | NA |
| Club store | 638 | 5 | NA |
| Other | 101 | 1 | 25 |
| Farmers' market | 486 | 4 | NA |
| Food service | 453 | 3 | NA |

Note: In 1991, farmers' market is included in the “other” category. NA = not available.

Source: Calculated by USDA, ERS from OTA, 2006.

³Distribution of organic food by market channel is only available for 2003 and 2005. We chose to use the most recent data in table 1 (2005).

⁴The Nielsen data report the name of the store where each purchase was made; the most easily identifiable natural products grocery venues are Whole Foods, Wild Oats, and health food stores labeled “Other—health food store.”

Table 2

Percent of milk purchases and average retail prices by channel, 2004

| Type of store | Organic milk | | Conventional milk | | Organic price premium |
|--------------------|--------------------|----------------|--------------------|----------------|-----------------------|
| | Share of all sales | Average price | Share of all sales | Average price | |
| | <i>Percent</i> | <i>Dollars</i> | <i>Percent</i> | <i>Dollars</i> | |
| Grocery stores | 87 | 3.98 | 75 | 2.06 | 93 |
| Drug stores | 0 | NA | 3 | 1.83 | NA |
| Mass merchandisers | 0 | 3.63 | 2 | 1.80 | 101 |
| Supercenters | 7 | 4.08 | 10 | 1.84 | 122 |
| Club stores | 0 | 2.20 | 4 | 1.99 | 10 |
| Other | 5 | 4.98 | 3 | 2.19 | 127 |

Notes: The Nielsen dataset does not identify the natural products channel, which consists of natural products supermarkets (both chains and independents) and health food stores; thus, the grocery channel includes both conventional and natural products supermarkets and the "other" category includes health food stores and small independent stores. Percents do not sum to 100 because of rounding. Milk prices per half gallon were calculated by first calculating the average price per fluid ounce based on all sizes of milk purchased and multiplying this average by 64 ounces. NA = not available.

Source: Calculated by USDA, ERS from Nielsen data, using the Nielsen projection factor to weight the sample.

Private Label Used Less Often for Organic Milk, and Brand Names More Common

Private labeling for milk occurs at a much lower rate in the organic sector than in the conventional sector. In 2003, approximately 8 percent of all organic foods were sold under a private label (NBJ, 2004); in comparison, 16 percent of all food products were sold under a private label in the United States (ACNielsen, 2005). By 2005 (for the 12-month period ending the first quarter of 2005), it was estimated that the share of sales of private label organic products sales had risen to 16 percent in the United States (ACNielsen, 2005). The Nielsen Homescan data indicate that private-label organic milk made up 10 percent of organic milk purchases in 2004, while the two major brands of organic milk made up 80 percent. The two major brands—Organic Valley and Horizon Organic—belong to the first two companies to produce and distribute organic milk on a large scale. In contrast, private labeling of conventional milk dominates the dairy case, accounting for 64 percent of purchases. The conventional sector includes over 100 brands of milk, with no individual brand capturing more than approximately 1 percent of the market. With the entrance of Aurora Dairy into the organic milk market, and the consequent growth in private-label organic milk sold in conventional supermarkets, the share of sales of organic milk attributed to branded products may decrease in the coming years. In 2004, ERS calculations of the Nielsen Homescan data indicate that the national average price of conventional private-label milk was \$1.88 per half gallon, compared with \$3.65 for organic private-label milk, a price premium of \$1.77. The organic price premiums for branded and private-label milk were similar, at 98 percent of the conventional price for branded and 94 percent for private label.

USDA Organic Logo Used More Often in Conventional Channels

Organic products may either display the word “organic” on the label or use the USDA organic logo, but in either case, the product has to satisfy the USDA requirements for use of the label organic (see box, “National Organic Standards” on page 4 for more information). Over time, consumers are gaining greater awareness of the USDA logo. In 2005, 40 percent of U.S. consumers noticed the logo, up from only 19 percent in 2003 (Whole Foods, 2005). In 2005, about 60 percent of organic food manufacturers displayed the USDA logo on their products, and over half of those who did not currently use the logo planned to use it in the future (OTA, 2006).

The Nielsen data reveal that the USDA organic logo was used on 54 percent of organic milk purchases in 2004 (table 3). The logo was used in conventional channels more often than in natural product channels. The difference in usage may arise because consumers who shop in natural products stores are more aware of organic food than consumers who shop in conventional supermarkets, and, thus, less reliant on the USDA organic logo to provide information about organic food. In conventional channels, 56 percent of organic milk purchases displayed the USDA organic logo, while just 39 percent of organic milk purchases carried the logo in the natural products channels. Private-label organic milk sported the USDA organic logo 51 percent of the time, while the top two brands of organic milk displayed the USDA organic logo 54 percent of the time. The usage of the organic label has most likely increased since 2004; after the implementation of the organic standards in October 2002, organic firms were given 18 months to revise package labels.

Organic Prices and Price Premiums Vary by Region

Prices of both organic and conventional milk vary by channel (see table 2), as does the price premium. Organic milk, like most organic products, receives a premium over conventional products. Organic consumers perceive that organic food provides environmental and health benefits, and thus are

Table 3

Use of USDA organic seal by major channels, 2004

| Type of store | Organic milk purchases | |
|---------------------------|------------------------|--------------------|
| | USDA organic logo | Organic label only |
| <i>Percent</i> | | |
| Grocery stores | 56 | 44 |
| Supercenters | 38 | 62 |
| Other | 36 | 64 |
| Natural products | 39 | 61 |
| Total across all channels | 54 | 46 |

Note: Organic labeled milk does not have the USDA organic logo but displays the word *organic* on the label and satisfies USDA regulations for use of the word *organic*. The stores in the natural products channel are also included in “grocery stores” and “other” (health food stores).

Source: Calculated by USDA, ERS from Nielsen data, using the Nielsen projection factor.

willing to pay a higher price (Onozaka et al., 2006). Price premiums persist over time when demand grows faster than supply; in the organic milk sector, demand for organic milk has been growing faster than supply since at least 2004. In 2004, the price premium for organic milk ranged from 10 percent to 127 percent of the conventional price. Most of the price premiums were closer to 100 percent, with only the few sales of organic milk in club stores receiving the 10-percent premium.

Analysis of the Nielsen data indicates that milk prices vary by U.S. region. For conventional milk, the lowest average price per half gallon⁵ is in the Central region (\$1.85) and the highest is in the West (\$2.27) (table 4); this regional variation in retail milk prices is consistent with previous work (see Leibtag, 2005). The lowest average price for organic milk is in the South (\$2.80), and the highest is in the East (\$4.52), with the national average price totaling \$4.01. The price premium that organic milk commands over conventional milk is lowest in the West, at \$1.63, or 72 percent of the conventional price. The organic premium is highest in the East, at \$2.52, or 126 percent of the conventional price. The national average price premium for organic milk is \$1.99, or 98 percent of the conventional price. Given that U.S. supermarkets are out of stock for organic milk from time to time, the high organic price premiums are not surprising (Weinraub and Nicholls, 2005; Oliver, 2006).

⁵Most organic milk is sold by the half gallon, while most conventional milk is sold by the quart or the gallon. Because of the presence of the measure in the organic market, we decided to use the half-gallon price as the basis for this analysis.

Table 4

Organic and conventional milk prices and organic premium⁵ by region, 2004

| Region | Milk price per half gallon | | Organic premium | |
|------------------|----------------------------|--------------|-----------------|---------|
| | Organic | Conventional | Dollars | Percent |
| | <i>Dollars</i> | | | |
| East | 4.52 | 2.01 | 2.52 | 126 |
| Central | 3.81 | 1.85 | 1.96 | 106 |
| South | 2.80 | 2.01 | 1.79 | 89 |
| West | 3.90 | 2.27 | 1.63 | 72 |
| National average | 4.01 | 2.02 | 1.99 | 98 |

Note: Conventional and organic prices are averages of individual household purchases as reflected in the Nielsen Homescan data, using the Nielsen projection factor to appropriately weight the sample; price premiums and average prices are calculated by ERS. Price premiums in dollar terms are the difference between the price for organic and conventional milk; price premiums in percentage terms equal the premium divided by the conventional price.

Source: Calculated by USDA, ERS from Nielsen data, using the Nielsen projection factor.

Characteristics of Organic Milk Households

During 2004, 38,375 of the 41,000 households in the Nielsen panel purchased milk; 4 percent, or 1,489 of these households, purchased organic milk. Of these households, 45 percent spent less than 10 percent of their milk budget on organic milk; 17 percent spent between 10 and 30 percent on organic milk; 10 percent spent between 31 and 50 percent; 25 percent spent between 51 and 99 percent; and 4 percent bought only organic milk. In this analysis, the households that purchased some organic milk are referred to as “organic households” while the households that never purchased organic milk are “conventional households.” The organic household category does not take into account systematic differences between frequent and infrequent buyers of organic milk.

Several demographic characteristics were found to be associated with the distribution of organic milk households relative to the distribution of conventional milk households, such as region, household income, education, and age of the head of household. Other factors, such as presence of children under 18 in the household and household size, had little relationship with the relative distribution of the two groups of consumers.

The distribution of organic households and of conventional households by demographic characteristics as shown in figures 1-6 is calculated by dividing the number of organic (or conventional) households in each region by the total number of organic (or conventional) households in the sample. This information is useful in that it provides insight into the characteristics that differentiate the typical organic household from the typical conventional household, plus it allows for a comparison of these results with those published by industry groups.

The data indicate that the share of organic households in the East and West exceeds each region’s share of conventional milk households, while the opposite is true in the Central and South regions (fig. 1). This finding may reflect the fact that consumers in the East and West have had access to organic food for a longer period of time, since natural products supermarkets (initially the major purveyor of organic food) have operated on the two coasts since the early 1990s and are just now moving into the Central and Southern regions. Distribution data by the age of households suggest that households headed by someone age 54 and younger are more likely to purchase organic milk (fig. 2).

Household income and education of the head of the household seem to be associated with the likelihood that a household will buy organic or conventional milk. The data indicate that the share of organic households across income categories rises as income increases, and the high-income group is the only category where the proportion of households purchasing organic milk exceeds the proportion purchasing conventional milk (fig. 3). Most (80 percent) organic milk consumers have at least attended some college, and those who have graduated from college or completed some post-graduate education make up 51 percent of organic milk consumers. The share of

organic households with the highest two levels of education (graduated from college or completed some post-graduate studies) is greater than the share of conventional households with the same level of education (fig. 4). What accounts for the association between income and education and purchasing organic milk? Household income and education are correlated, so income could be the factor driving the association with purchasing organic milk. Alternatively, education could be the driving factor, in that greater education may enhance one's understanding of the relationship between organic production techniques and environmental impacts.⁶

Reasonable explanations are lacking as to the association (or lack thereof) between some demographic factors and the distribution of organic milk households. For example, it is not clear why the share of organic households is less than the share of conventional households for Black and White households (fig. 5). Similarly, while one might expect that larger households would buy much less organic milk than smaller households, particularly since smaller households have greater disposable income, household size appears to have little relationship with the propensity to purchase organic milk (fig. 6).

In sum, the demographic data indicate that organic households are most likely to live in the West or East, be headed by someone age 54 or younger, have a college degree, and have annual household incomes of at least \$70,000. They are less likely than conventional households to be Black. Conventional households are more likely to live in the South or Central regions, have annual household income less than \$70,000, have not graduated from college, and be headed by a household head age 55 or older. Household size has little bearing on whether a household purchases only conventional milk, and the presence of children under age 18 has no bearing on the likelihood of a household to purchase organic or conventional milk.

Possible explanations for this characterization of the organic household is that "region" captures some other aspect that impacts the decision to buy organic milk, either an economic factor, such as price, or a noneconomic factor, such as interest in environmental issues. The importance of other factors—high income and a college degree—together suggest that organic households have higher discretionary income than conventional households and, thus, are able to afford and are willing to purchase higher priced organic milk.

⁶According to the National Organic Program, organic food is produced by farmers who emphasize the use of renewable resources and the conservation of soil and water to enhance environmental quality for future generations (USDA, 2002b).

Figure 1
Distribution of organic and conventional milk households by region, 2004

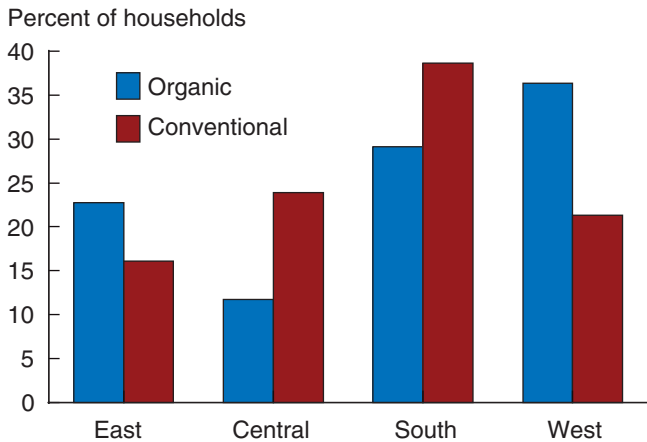


Figure 4
Distribution of organic and conventional milk households by education, 2004

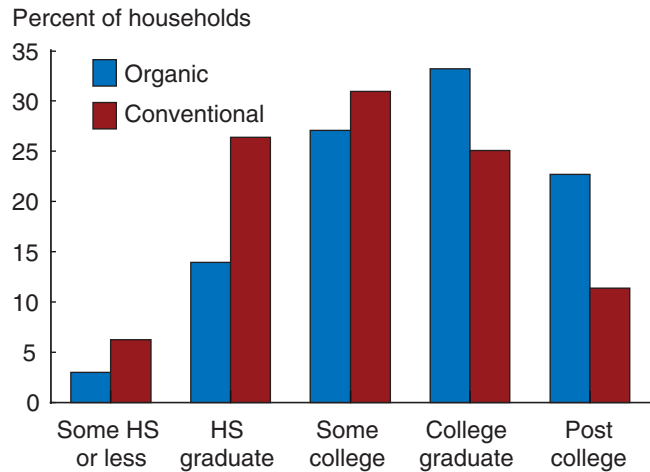


Figure 2
Distribution of organic and conventional milk households by age of head of household, 2004

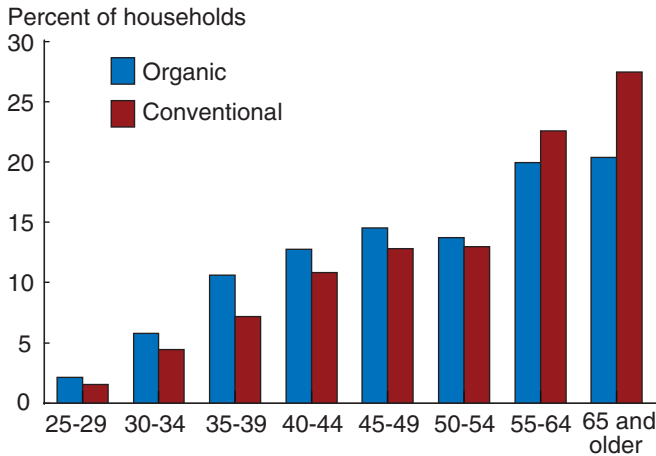


Figure 5
Distribution of organic and conventional milk households by ethnicity,* 2004

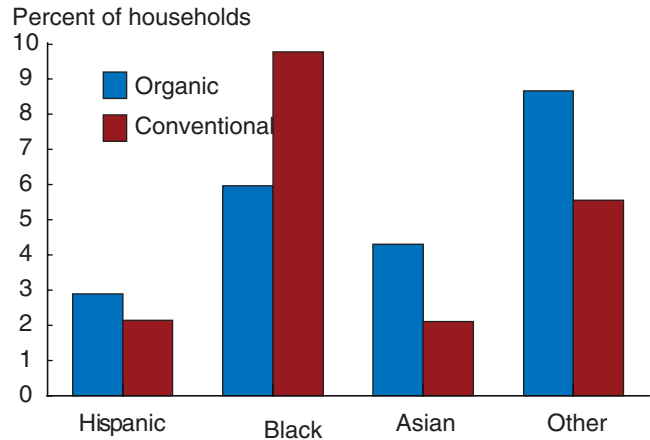


Figure 3
Distribution of organic and conventional milk households by income, 2004**

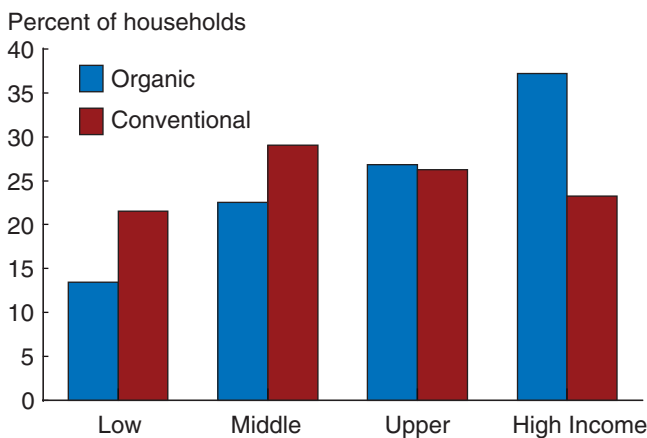
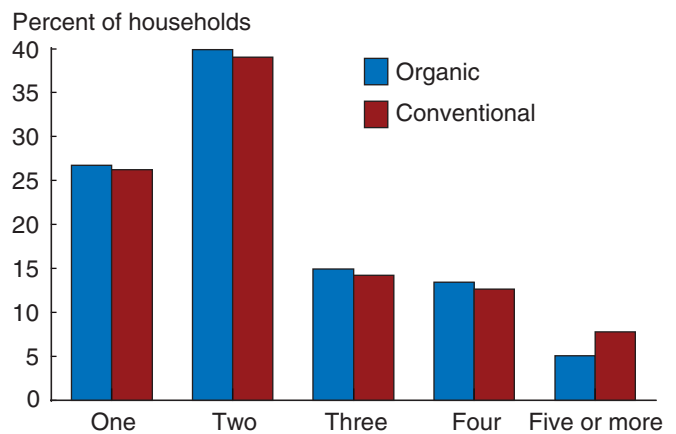


Figure 6
Distribution of organic and conventional milk households by household size, 2004



*White households comprise 71 percent of the organic milk households and 74 percent of the conventional milk households and were omitted from figure 5 because their presence overwhelmed the chart.

**See box on page 5 for information on income categories.

Source: Calculated by USDA, ERS from Nielsen data, using the Nielsen projection factor.

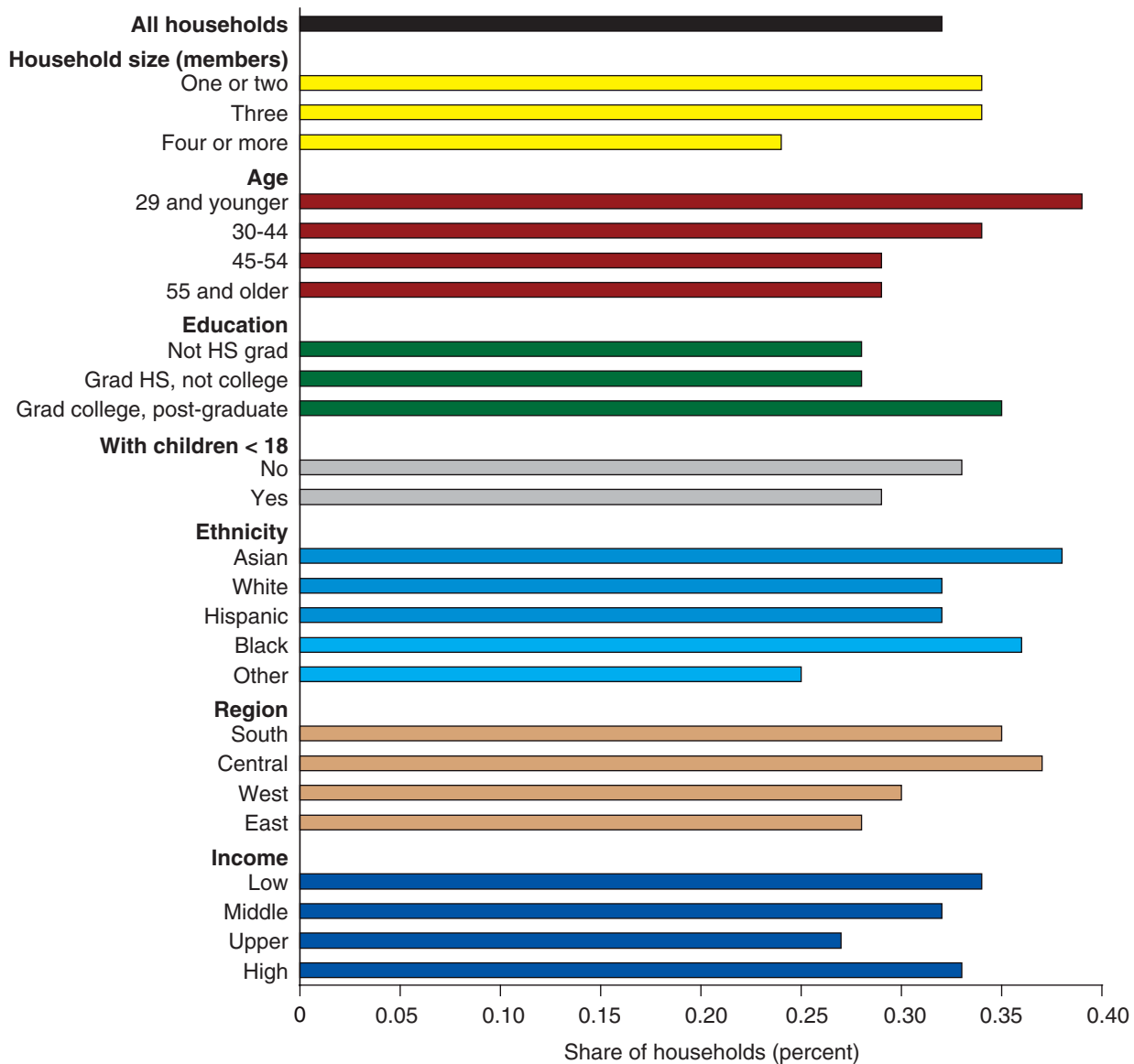
Few Factors Influence Organic Milk's Average Share of the Milk Budget

Of the households that purchase organic milk, the mean share of milk expenditures devoted to organic milk purchases is 32 percent and the median share is 13 percent. The disparity between the mean and the median indicates that some households buy a lot of organic milk and that many households buy a small amount, relative to the total amount of milk purchased. Shares vary less among the households who devote one-third or more of their milk budget toward organic milk: these households are frequent purchasers of organic milk, and 36 percent of the organic households are in this category, with an average expenditure share of 73 percent and a median share of 75 percent.

Once a household has made the decision to purchase organic milk, few demographic factors appear to have a large influence on the average share of milk expenditures allotted to organic milk, or the frequency of organic milk purchases (fig. 7). Households with four or more members have a smaller expenditure share than the average household, as do upper income households (those with income between \$44,999 and \$69,999; see box, “Nielsen Homescan Panel Data” on page 5). Households headed by younger people, those with the highest level of education, Asian and Black households, and households living in the South and Central regions have a higher average expenditure share than the typical organic household. The remaining demographic factors have little if any influence on the average expenditure share.

Figure 7

Share of milk expenditures that are for organic milk, by demographic factor, 2004



Note: Chart reports average share of expenditures on organic milk (i.e., average of organic share of expenditures, or expenditures on organic milk divided by total milk expenditures) over all organic households in each category.

Source: Calculated by USDA, ERS from Nielsen data, using the Nielsen projection factor.

Old and New Wisdom About Organic Consumers: Competing or Consistent Ideas?

There are several accepted beliefs about the organic sector and the organic consumer. The industry is in a state of transition, as suggested by recent Hartman studies, and is moving or has moved from the old vision of White, well educated, high-income consumers with young children as the main purchasers of organic food to one where lower income people purchase a large share of organic food. Part of the transition focuses on broader ethnic groups as organic food consumers. Simultaneously, conventional supermarkets are selling a large share of organic food, especially for such products as cow milk and soy milk. Some in the industry are concerned that the supply needs of Wal-Mart and other large companies may trigger a shift toward larger organic farms and firms, pressure to weaken the USDA organic standards (see box, “National Organic Standards”), and downward pressure on prices that will reduce domestic producers’ profits (Gogoi, 2006; *New York Times*, 2006).

The data in this report provide a snapshot of the organic milk market in 2004 and, thus, cannot validate trends in the organic industry or for organic milk specifically (a long enough time series on organic purchases is not yet available to make such a study possible). Yet, the data do provide insight into the market. First, nearly all organic milk is sold in conventional channels, thus indirectly supporting the notion that organic products have been integrated into more traditional market channels as products shift from health food stores to conventional supermarkets. Most organic milk is purchased in conventional supermarkets; in fact, a larger share of organic milk (relative to conventional milk) is purchased in this traditional venue. Compared with conventional milk sales, a far smaller share of organic milk sales takes place in supercenters and mass merchandisers. Second, the 2004 price premiums for organic milk are high, suggesting that increasing presence in the conventional supermarkets has not eliminated price premiums. One factor contributing to these large premiums is the relative scarcity of organic milk. Whether large price premiums continue into the future depends on the interplay among the major retailers, supply from organic dairies, and consumer demand for organic milk.

The demographic characteristics of the organic milk consumer in 2004, as revealed by the Nielsen Homescan data, support some—but not all—of the notions about the sector. Data show that the typical consumer of organic milk is White, well educated, and living in a household headed by someone younger than age 50. Households of all income levels purchase organic milk, although 61 percent of the households buying organic milk have annual incomes of at least \$50,000. Across ethnic groups or race, a higher share of Asian, Hispanic, and “Other” consumers purchased organic milk rather than conventional milk. Education influences purchases of organic milk: those with higher education were more likely to buy organic milk than those with less education. Lastly, organic consumers are more likely to live on the country’s east or west coast. In sum, the portrait of the typical consumer seems to hold, based on these data, with the exception of two

factors: households with children under age 18 are not more likely to purchase organic milk,⁷ and organic consumers are not clustered into two age groups.

The much-talked-about changing face of the organic consumer seems more apparent when examining the share of milk expenditures devoted to organic across different groups. Households headed by a person age 45 or younger, those with the highest level of education, Asian and Black households, and households living in the South and Central U.S. regions devote a higher portion of their milk expenditures toward organic milk. With the exception of the role of education, these characteristics of consumers with large organic milk expenditure shares are consistent with recent industry studies of the “new” organic consumer.

While the descriptive statistics provide a snapshot of a group of consumers about which there is little knowledge, the reliance on 1 year of data leaves other important questions unanswered, such as whether the USDA organic logo has increased consumer confidence and retail organic sales, whether private labeling is on the rise, and whether the characteristics of the organic consumer are changing.

The data indicate that consumers devoting the highest share of their milk expenditures toward organic milk in 2004 were relatively younger, of diverse ethnicity, and highly educated, in contrast to the organic consumer of the previous decade. Further, households of all income categories and across all ethnic groups are buying organic milk. The variety in the types of consumers buying organic milk suggests that the market continues to expand. The noted supply shortages suggest that there may still be untapped consumer segments for organic milk, and if commercial dairies are successful in producing organic milk at lower prices, new consumers are likely to begin purchasing organic milk. Clearly, opportunities exist for organic dairy producers and conventional producers considering converting their operations to organic production.

⁷The accepted notion is that households with young children buy more organic food. This analysis used children under age 18 rather than young children, and so does not exactly examine the accepted wisdom.

References

- ACNielsen. 2005. *The Power of Private Label 2005: A Review of Growth Trends Around the World*. September. Accessed April 2006 at: http://www2.acnielsen.com/reports/documents/2005_privatelabel.pdf
- Barry, M. 2004. "The New World Order: Organic Consumer Lifestyle Segmentation." *[N]sight*. Volume VI, Number 2.
- Baxter, Brent. 2006. "who's buying organic?: demographics 2006," *hartbeat* taking the pulse of the marketplace, May 17. Accessed at http://www.hartman-group.com/products/HB/2006_05_17.html; August 3, 2006
- Budgar, Laurie. 2006. "Convenience and Health Drive Natural Food Sales." *The Natural Foods Merchandiser*. June.
- Demeritt, L. 2004. "Organic Pathways." *[N]Sight*. Hartman Group, Inc. Bellevue, WA.
- Glaser, Lewrene K., and Gary Thompson. 2000. "The Demand for Organic and Conventional Milk." Presented at the Western Agricultural Economics Association meeting, Vancouver, British Columbia.
- Gogoi, P. 2006. "Wal-Mart's Organic Offensive." *Business Week*. March 29.
- Hartman Group. 2000. *The Organic Consumer Profile*. Bellevue, WA.
- Hartman Group. 2002. *Hartman Organic Research Review: A Compilation of National Organic Research Conducted by the Hartman Group*. Bellevue, Washington.
- Hartman Group. 2004. *Organic Food and Beverage Trends*. Bellevue, Washington.
- Howie, M. 2004. "Research Roots Out Myths Behind Buying Organic Foods." *Feedstuffs*. March 29.
- International Trade Centre (ITC). 1999. *Organic Food and Beverages: World Supply and Major European Markets*. ITC/UNCTAD/WTO, Geneva.
- Leibtag, Ephraim. 2005. "Where You Shop Matters: Store Formats Drive Variation in Retail Prices." *Amber Waves*. Vol. 3. Issue 5. November. www.ers.usda.gov/amberwaves/november05/features/whereyoushop.htm
- Lohr, L., 2001. "Factors Affecting International Demand and Trade in Organic Food Products." In *Changing Structure of Global Food Consumption and Trade*, A. Regmi (ed.). Agriculture and Trade Report No. WRS01-1. U.S. Department of Agriculture, Economic Research Service. pp. 67-79. www.ers.usda.gov/publications/wrs011/
- Lohr, L., and A. Semali. 2000. "Retailer Decision Making in Organic Produce Marketing." In W.J. Florkowski, S.E. Prussia, and R.L. Shewfelt (eds.). *Integrated View of Fruit and Vegetable Quality*. Technomic Pub. Co., Inc., Lancaster, PA. pp. 201-208.

- Miller, James J., and Don P. Blayney. 2006. *Dairy Backgrounder*. Outlook Report No. LDP-M-145-01. U.S. Department of Agriculture, Economic Research Service. July. www.ers.usda.gov/publications/ldp/2006/07jul/ldpm14501/
- New York Times*. 2006. "When Wal-Mart Goes Organic." Editorial, May 14.
- Nutrition Business Journal (NBJ). 2006. *U.S. Organic Food Sales (\$Mil) 1997-2010e-Chart 22*. Penton Media, Inc.
- Nutrition Business Journal (NBJ). 2004. *NBJ's Organic Foods Report 2004*, Penton Media, Inc.
- Oliver, Hilary. 2006. "Organic Dairy Demand Exceeds Supply." *Natural Foods Merchandiser*. August.
- Onazaka, Yuko, David Bunch, and Douglas Larson. 2006. "What Exactly Are They Paying For? Explaining the Price Premium for Organic Produce." *Agricultural and Resource Economics Update*. Vol. 9, No. 6. University of California Giannini Foundation. July/August.
- Organic Trade Association (OTA). 2006. *Organic Trade Association's 2006 Manufacturer's Survey*. Produced by the Nutrition Business Journal. Greenfield, MA.
- Richter, T., O. Schmid, B. Freyer, D. Halpin, and R. Vetter. 2000. "Organic Consumer in Supermarkets – New Consumer Group With Different Buying Behavior and Demands!" In *Proceedings 13th IFOAM Scientific Conference*, T. Alfödi, W. Lockeretz, U. Niggli (eds.). vdf Hochschulverlag AG and der ETH Zürich. pp. 542-545.
- Thompson, G.D. 1998. "Consumer Demand for Organic Foods: What We Know and What We Need to Know." *American Journal of Agricultural Economics*, 80: 1113-1118.
- U.S. Department of Agriculture. 2002a. *Organic Food Standards and Their Labels: The Facts*. National Organic Program, April 2002, updated January 2007. Accessed February 7, 2007, at <http://www.ams.usda.gov/nop/consumers/brochure.html>
- U.S. Department of Agriculture. 2002b. *Background Information*. National Organic Program, October 2002, updated January 2007. Accessed April 30, 2007, at <http://www.ams.usda.gov/nop/FactSheets/Backgrounder.html>
- Wal-Mart. 2006. "Organics for Everyone." Accessed August 2006 at <http://walmart.triaddigital.com/OrganicsContent.aspx?c=Organics+For+Everyone&s=Wal-mart>
- Weinraub, J., and W. Nicholls. 2005. "Organic Milk Supply Falls Short." *Washington Post*. June 1. pg. F01.
- Whole Foods Market. 2005. "Nearly Two-Thirds of Americans Have Tried Organic Foods and Beverages." Accessed August 2006 at http://www.wholefoodsmarket.com/company/pr_11-18-05.html