

AGRICULTURAL OUTLOOK



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Publishing 10 times in 2002 by the Economic Research Service, U.S. Department of Agriculture. Materials may be reprinted without permission. Current and back issues available at www.ers.usda.gov/epubs/pdf/agout/ao.htm.

Contents have been approved by the World Agricultural Outlook Board and the summary released September 23, 2002. Price and quantity forecasts are based on the September 12, 2002 *World Agricultural Supply and Demand Estimates*.

The next issue (AGO-296) is scheduled for mailing on November 5, 2002. If not delivered by November 25, call (202) 694-5116 (please have mailing label handy). The full text will also be distributed electronically; call (202) 694-5050.

Cover: Organic farmer in Minnesota. Photo by Bruce Fritz, Agricultural Research Service, USDA.

Organic foods. . . EU policy reform . . . Technology & agriculture . . . Farm numbers . . . Frozen potato trade . . . NAFTA's impacts

Organic Food Industry Taps Growing American Market

American consumer interest in organically grown foods has opened new market opportunities for U.S. producers, leading to a transformation in the organic foods industry. Organic food is currently sold in a wide variety of venues, including farmers' markets, natural foods supermarkets, conventional supermarkets, and club stores. Since the early 1990s, certified organic acreage in the U.S. has increased as producers strive to meet growing demand for organic food. New national organic standards will facilitate the marketing of organic products as more U.S. growers move into organic production and more processors and distributors add organic selections to their product lines.

French Fries Driving Globalization Of Frozen Potato Industry

Driven largely by growing global popularity of Western-style cuisine, frozen french fries and other frozen potato products are generating billions of dollars in sales worldwide each year. Global frozen potato production capacity is estimated to be at least 9.6 million metric tons a year. Worldwide exports of frozen potato products in 2000 (over 90 percent of which is frozen french fries) were valued at \$1.9 billion. Rapid expansion of quick-service (fast food) restaurants is key to the tremendous growth in worldwide consumption and trade of frozen potato products.

U.S. Agricultural Exports To Rise \$4 Billion in 2003

Sharply higher prices for grains and soybeans, reflecting drought-reduced U.S. production, are expected to boost the value of U.S. agricultural exports to \$57.5 billion in fiscal year 2003, a 7.5-percent gain over 2002. Bulk commodity exports are likely to lead the gains, although high-value product (HVP) exports also are expected to increase. In contrast to the higher export value, bulk export volume will be down in 2002, mainly from lower soybean volume.



EU Revisits Ag Reform With Bold New Proposals

The Commission of the European Union (EU) is proposing bold changes to its Common Agricultural Policy (CAP). The core proposal is a single annual whole-farm payment, not requiring production by farmers, in contrast to the current payments linked to production of specific commodities. Farmers would have greater flexibility in choosing what to produce, and support for large farms would be cut for the first time. Greater emphasis would be placed on rural development, food safety, animal welfare, and environmental regulations. The proposals have implications for WTO negotiations and EU enlargement. But for many commodities, traditional CAP price support and stabilization mechanisms are maintained.

Food Price Inflation to Moderate In 2002 & 2003

The U.S. Consumer Price Index (CPI) for all food is forecast to increase 2.1 percent in 2002 and 2-2.5 percent in 2003, compared with 3.1 percent in 2001. In 2002, record beef, pork, and poultry supplies, plus dampening of consumer demand by a lackluster domestic economy, are holding down meat prices. Small-

er potato supplies should push up the fresh vegetable CPI in 2002. Adequate supplies of fresh fruits, dairy products, nonalcoholic beverages, and other processed foods will likely keep the food-at-home price increase below 2 percent.

Farm Numbers: Largest Growing Fastest

Declining farm numbers, increasing farm size, and concentration of production have interested the media, the general public, and lawmakers for decades. Average farm size has grown as farms consolidated. A smaller share of farms accounts for a growing proportion of production, but the proportion of very small farms is also growing. Acreage and sales-class data show a trend toward large operations with at least 500 acres or with annual sales of at least \$250,000 in farm products.

A Role for Technology In 21st Century Global Agriculture

Technological advances have the potential to enhance agricultural productivity, incomes, and quality of life in all countries. However, some regions of the world have gained little from discoveries and innovations in agriculture, partly because private research investment tends to be directed toward meeting the market demands of developed-country consumers. One way the agricultural community and public sector could meet the needs of less developed countries is to strengthen their technological infrastructure and facilitate the transfer of appropriate technologies.

NAFTA's Impacts on U.S. Agriculture: Trade & Beyond

NAFTA, the North American Free Trade Agreement, has generally benefited U.S. agriculture and related industries. U.S. agricultural trade with Canada and Mexico more than doubled during the 1990s, a development to which NAFTA contributed. Beyond its direct trade impacts, NAFTA established rules and institutions that mitigate potential trade frictions, promote foreign direct investment, and facilitate discourse on environmental issues.

Briefs

Specialty Crops**Poor Weather Reduces 2002 Apple Crop
Higher Prices Likely**

This year's U.S. apple crop will be smaller for the third consecutive year. Apple production in 2002 is forecast to decline to 9.2 billion pounds, down 4 percent from 2001 and the smallest crop since 1988. With production down significantly in both the Eastern and Central states (16 percent and 30 percent, respectively), even a 5-percent increase in production in the Western region, which accounts for over 60 percent of total U.S. production, will not offset overall declines.

Weather-related factors during the growing season are behind this year's production decline in most apple-producing states. Most of the Eastern and Central states encountered problems with heavy frost damage in the spring, in addition to hail and drought. The only states expecting increased production are Georgia, South Carolina, North Carolina, Rhode Island, and Maine in the Eastern region, and Kansas and Arkansas in the Central region.

While production is expected up overall for the Western states, a late frost, combined with a cool, late spring, poor pollination conditions, and a dry summer, have combined to reduce crop size in all apple-producing states in this region except Washington, Colorado, and Arizona.

Weather conditions throughout the harvest season could also directly impact final crop size. A windstorm that moved through north-central Washington in mid-August caused some fruit to drop onto the ground and damaged some that remained on trees as well. Depending on the severity of these losses, the effects of this storm could eventually reduce the size of Washington's apple crop. Prior to this event, USDA forecast Washington's apple production at 5.5 billion pounds in 2002, up 8 percent from a year ago.

Fresh-market apples. Figures on total quantity of fresh-market apples produced from this year's new apple crop will not

be released until July 2003. The number will be determined primarily by the size of the crop in Washington, where over three-quarters of the nation's fresh-market apples are grown.

Last year, the Washington crop was smaller due to weather problems and to continued decline in bearing acreage—a response to poor economic conditions in the industry. Overall fresh-market apple production declined 11 percent in 2001 from the previous year, and the season-average price for fresh-market apples increased 29 percent to 22.9 cents per pound.

Based on the consumer price index for apples, retail prices during 2001/02 mirrored the pattern in grower prices, averaging 5 percent higher than the previous year. If the forecast for Washington's 2002 production is lowered, 2002/03 fresh-market apple prices may average higher than last year.

The overall slump in U.S. apple production this year, coinciding with below-average carryover stocks of 2001 crop apples and a smaller U.S. pear crop this year, should also help boost apple prices this season. In addition, the U.S. Apple Association has reported that the nation's new apple crop, especially in Washington, is of high quality, which should boost demand in both domestic and export markets.

As of July 1, 2002, the U.S. Apple Association reported U.S. apple holdings at 15.2 million bushels, down 28 percent from the same time last year and 18 percent below the 5-year average. Holdings of most apple varieties, including the most common (such as Red and Golden Delicious, Granny Smith, Fuji, Gala, and McIntosh) were all down significantly from last year. Holdings of the more common varieties were also down from the 5-year average, except for Fuji, Rome, and Jonathan apples. Fresh apple holdings (mostly Washington apples in controlled-atmosphere storage) were down 34 per-

cent, while total processing holdings were 10 percent lower.

Processing apples. Although Washington is the largest producer of processing apples, more than half of production comes from other large producers such as California, Michigan, New York, Pennsylvania, Virginia, and West Virginia. Crops are expected to be smaller this year in all these states. U.S. production of apples for the processing sector in 2002 will therefore likely be limited. Reduced supplies and lower stocks of processing apples will help boost grower prices. Production of processing apples was also down in 2001 from the year before, and although imports (mainly of apple juice) were higher, returns to growers were 4 percent higher, averaging \$106 per ton.

With the U.S. market open to most Chilean fruit, aided in part by counterseasonal production schedules in the two countries, the U.S. has become Chile's largest apple export market. Over a third of last season's U.S. fresh apple imports were from Chile, with New Zealand and Canada following closely in share.

Early reports of a likely smaller European apple crop this year will provide export opportunities to Chilean apple growers. Chile's exports to the U.S. may be curtailed if apple production declines in marketing year 2002 (marketed January–December 2003). As yet, there are still no indications on the size and condition of the new apple crop in Chile.

Sweet/sour varieties, particularly Granny Smith apples, are gaining in share of Chile's fresh apple exports, mostly to Europe and the U.S. Meanwhile, the export shares of traditional red varieties, destined mostly for the European and Middle Eastern markets, are declining. Like the U.S., also a major player in the global apple market, apple growers in Chile are rapidly expanding their production and exports of new varieties, such as the Fuji apple, to remain competitive. Both countries, however, have cut back on acreage in recent years due to financial difficulties faced by apple growers. In the U.S., total bearing acreage of apples declined in each of the last 4 years.

Last year's smaller U.S. apple crop, compared with the previous year, limited exports during 2001/02. U.S. fresh apple exports from August 2001 through June 2002 were 19 percent lower than shipments made during the same period of the previous season. Shipments were down to most major export markets, with the largest declines posted in Mexico, Hong Kong, Indonesia, and Taiwan. In recent years, U.S. exporters have faced stiffer competition in Southeast Asian markets from increased volumes of lower priced apple exports from China.

The expected smaller European apple crop and recent shipments of U.S. apples to Cuba (first shipments arrived in Cuba the week of July 8, 2002) could provide increased opportunities for U.S. exporters this season. Mexico is the market for about one-third of U.S. apple exports. However, reduced domestic supplies and a sharp increase in tariffs imposed on Washington apples (the outcome of an antidumping investigation in 1997) will limit exports during 2002/03.

Reduced production in the fall of 2001 increased U.S. imports of fresh apples

during the 2001/02 marketing season. Imports from August 2001 through June 2002 totaled 309.7 million pounds, up 3 percent from the same period the year before. Increases came from nearly all major foreign suppliers, including Chile (up 9 percent), New Zealand (up 7 percent), and Canada (up less than 1 percent). Reduced production this year will likely lead to further increases in imports during the 2002/03 marketing season.

U.S. imports of apple juice and cider from August 2001 through June 2002 were 12 percent higher than the volume imported during the same period a year earlier. The top three suppliers—Argentina, China, and Chile—all posted significant increases in shipments to the U.S. However, imports from Italy, also a major supplier, declined by more than half. U.S. exports of apple juice and cider remained unchanged from the previous year. Lower shipments to many overseas markets, including leading markets such as Japan and Taiwan, offset the sharp increase in exports to Canada and Mexico. **AO**

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Forthcoming topics in Agricultural Outlook

- Profiling the sweet potato industry
- Domestic market for pulses
- China as a player in fruit and vegetable trade
- Briefs on grapes and citrus

October Releases—National Agricultural Statistics Service

The following reports are issued electronically at 3 p.m. (ET) unless otherwise indicated.

www.ers.usda.gov/nass/pubs/pubs.htm

October

- 1 Weather - Crop Summary (noon)
- 2 Agricultural Chemical Usage - Restricted Use Summary
- Broiler Hatchery
- 3 Egg Products
- 4 Dairy Products Prices (8:30 a.m.)
Dairy Products
Poultry Slaughter
Vegetables
- 7 Crop Progress (4 p.m.)
- 8 Weather - Crop Summary (noon)
- 9 Broiler Hatchery
- 11 Cotton Ginnings (8:30 a.m.)
Crop Production (8:30 a.m.)
Dairy Products Prices (8:30 a.m.)
Milkfat Prices (8:30 a.m.)
Turkey Hatchery
- 15 Crop Progress (4 p.m.)
- 16 Weather - Crop Summary (noon)
Broiler Hatchery
- 17 Milk Production
- 18 Dairy Products Prices (8:30 a.m.)
Cattle on Feed
Cold Storage
- 21 Crop Progress (4 p.m.)
- 22 Weather - Crop Summary (noon)
Catfish Processing (8:30 a.m.)
Chickens and Eggs (8:30 a.m.)
- 23 Broiler Hatchery
- 25 Cotton Ginnings (8:30 a.m.)
Dairy Products Prices (8:30 a.m.)
Milkfat Prices (8:30 a.m.)
Livestock Slaughter
Monthly Hogs and Pigs
Monthly Agnews
- 28 Crop Progress (4 p.m.)
- 29 Weather - Crop Summary (noon)
- 30 Rice Stocks (8:30 a.m.)
Broiler Hatchery
Peanut Stocks and Processing
- 30 Agricultural Prices

Commodity Spotlight



Scott Bauer, Agricultural Research Service, USDA

Organic Food Industry Taps Growing American Market

American consumer interest in organically grown foods has opened new market opportunities for U.S. producers, leading to a transformation in the organic foods industry. Once a niche product sold in a limited number of retail outlets, organic food is currently sold in a wide variety of venues, including farmers markets, natural foods supermarkets, conventional supermarkets, and club stores. Since the early 1990s, certified organic acreage in the U.S. has increased as producers strive to meet growing demand for organic agricultural and food products. The dramatic growth of the industry spurred Federal policy to facilitate organic marketing.

Supermarkets Expand Organic Offerings

The U.S. organic food industry crossed a threshold in 2000: For the first time, more organic food was purchased in conventional supermarkets than in any other type of venue. Packaged Facts, a market research firm, indicates that of the \$7.8 billion spent on organic food in 2000, consumers purchased 49 percent in conventional supermarkets, exceeding the 48 percent sold in natural foods stores. This contrasts sharply with the early 1990s, when an estimated 7 percent of all organic

products was sold in conventional supermarkets and 68 percent in natural foods stores. Organic products are now sold in 73 percent of all conventional supermarkets, along with nearly 20,000 natural foods stores.

Certified organic acreage is increasing to meet growing consumer demand, doubling between 1992 and 1997 to 1.3 million acres. Preliminary estimates for 2001 indicate a similarly high rate of growth between 1997 and 2001. New organic products are also rapidly entering the market—over 800 in the first half of 2000. Desserts made up the majority of new products in 2000, while most new products introduced in 1999 were beverages.

New USDA standards for organic food, slated to be fully implemented by October 21, 2002, are expected to facilitate further growth in the organic foods industry. The national organic standards address the methods, practices, and substances used in producing and handling crops, livestock, and processed agricultural products that are sold, labeled, or represented as organic. The standards define organic production as a system that is managed “to respond to site-specific conditions by integrating cultural, biological, and

mechanical practices that foster cycling of resources, promote ecological balance, and conserve biodiversity.”

Organic food is sold to consumers through three main venues in the U.S.—natural foods stores (including natural foods supermarkets, health food shops and coops), conventional grocery stores, and direct-to-consumer markets. Industry sources indicate that a small amount of organic products is also exported to foreign markets, but this is difficult to track because the trade monitoring system does not yet include codes for organic products.

Various industry sources have reported retail sales of organic food for over a decade. A trade publication, the *Natural Foods Merchandiser* (NFM), estimated total organic sales through all marketing outlets rose steadily from about \$1 billion in 1990 to \$3.3 billion in 1996. Packaged Facts reported organic food sales totaling \$6.5 billion in 1999 and \$7.8 billion in 2000. According to these sources, industry sales have grown by 20 percent or more annually since 1990.

Fresh produce is the top-selling organic category by sales value, followed by nondairy beverages (including juice and soymilk), breads and grains, packaged foods (such as frozen and dried foods, baby food, soups, and desserts), and dairy products. Organic dairy was the most rapidly growing market segment during the 1990s.

Consumer Interest Varies

At least three industry groups—Walnut Acres, Food Marketing Institute, Hartman Group—as well as *The Packer*, a produce business publication, have conducted nationwide surveys of American consumers about their preferences and buying habits for organic food. These surveys posed different questions to consumers, and several focused exclusively on the fresh produce segment of the organic market. Consequently, caution must be used in comparing results and generalizing.

The Hartman Group’s 2000 survey found that approximately one-third of the U.S. population was currently buying organically grown food products, with “light

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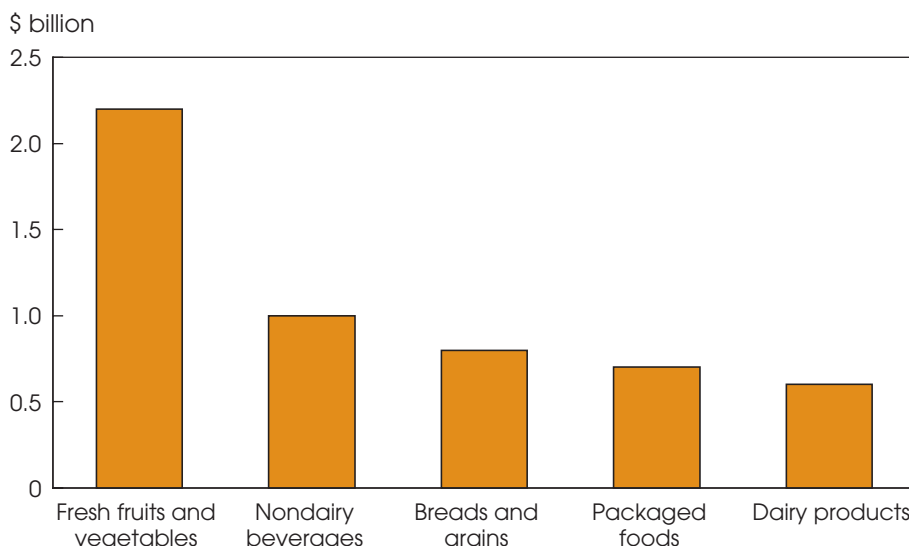
organic buyers” (those who buy some organic food) accounting for 29 percent of the U.S. population and “heavy buyers” (those who buy many organic food products) accounting for 3 percent. The Walnut Acres Survey in 2001 found that 63 percent of respondents purchased organic food at least sometimes, and 57 percent of the purchasers had been doing so for at least 3 years. The Food Marketing Institute’s survey in 2001 found that 66 percent of surveyed shoppers bought organically grown foods.

According to the Food Marketing Institute survey, 37 percent of those who bought organically grown food did so to maintain their health. Consumers surveyed by the Hartman Group reported multiple reasons for purchasing organic food: health and nutrition (66 percent), taste (38 percent), environmental concerns (26 percent), and availability (16 percent). *The Packer’s* Fresh Trends survey in 2001 revealed that for 12 percent of the surveyed shoppers, the “organic” label was a primary factor in their purchasing decision. Sixty-three percent of the respondents of the Walnut Acres survey believed that organic food and beverages were more healthful than their conventional counterparts.

The Packer’s Fresh Trends survey found that of the shoppers who had purchased organic produce in the previous 6 months, more purchased vegetables than fruit. According to the Hartman Group survey, the top 10 organic products were strawberries, lettuce, carrots, “other fresh fruit,” broccoli, apples, “other fresh vegetables,” grapes, bananas, and potatoes. The Hartman survey also found that fruits and vegetables were gateway or entrance categories into organic foods. In the Walnut Acres Survey, 64 percent of surveyed consumers who did not purchase organic food every time they shop cited price as the main reason.

Universities are also starting to examine consumer behavior toward organic food and agriculture. Academic studies so far are limited in scope and geographic coverage. Some preliminary findings are that consumers consider the following factors when purchasing fresh produce: appearance (the fewer defects the better), price, size and packaging, whether the item is on sale, and whether the item is organic.

Fresh Fruits and Vegetables Are the Top-Selling Organic Foods



Source: *Nutrition Business Journal*, 2000.

Economic Research Service, USDA

Also, some studies have found the most likely purchasers of organic produce to be younger households in which females do the shopping, smaller sized and higher income households, households knowledgeable about organic agriculture, and those with children under 18.

The Organic Marketing Chain

As food moves from farm to consumer, it passes through many hands. Some foods are fresh when delivered (apples and eggs), while others are processed before delivery (pasta and bread). Each commodity, depending in large part on whether it is fresh or processed, follows an individualized path from farm to market. Regardless of whether they are fresh or processed, higher quality products and products with unique attributes (such as organic foods) generally have a higher selling price. As a result, farmers have a strong incentive to produce and sell commodities with quality and other price-enhancing attributes intact.

Since most foods pass through a number of intermediaries as they move from the farm to the consumer, maintaining premium product integrity along the marketing chain is a challenge. Each agent along the chain must begin by moving the product to the next agent quickly. Farmers need to

sell their perishable commodities immediately after harvesting, while distributors, brokers, and wholesalers need to move fresh products to retailers as quickly as possible.

National organic production standards are tailored for different categories of crops and livestock, and the organic integrity of certified products must be maintained throughout the production and marketing chain.

Fresh Produce—Highest in Organic Food Sales. Fresh fruits and vegetables were the first organic products marketed half a century ago, and are still the top organic food category. Sales of organically grown fresh produce grew by over 50 percent between 1999 and 2000, according to industry sources.

In accord with the new national standards, organic fruit and vegetable producers must rely on ecologically based practices, such as biological pest management and composting, and produce crops 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

Commodity Spotlight

How Were the Consumer Surveys Conducted?

Survey	Year published	Methodology
Walnut Acres Survey	2001	Telephone interviews with nationally representative sample of 1,000 adults. Sample collected March 1-March 5, 2001.
Food Marketing Institute Survey	2001	Telephone interviews with nationally representative sample of 1,200 adults.
Hartman Group, the Organic Consumer Profile	2000	Mail questionnaire sent to 40,000 households nationwide, of which 26,434 responded. Sample conformed to a cross-section of the population based on the 2000 Census.
<i>The Packer's</i> Fresh Trends Surveys	2001	Two separate surveys: 1) A telephone survey of 1,000 nationally representative households. Average phone conversation was 10 minutes. 2) In-store interviews with 5,000 consumers in June 2001 and August 2001.

crop waste material and permitted synthetic substances. Crop pests, weeds, and diseases are controlled through cultural, biological, and mechanical management methods. Organic fruits and vegetables must be stored and shipped separately from conventionally grown produce. Organic produce is shipped or packed in containers free from synthetic fungicides, preservatives, or fumigants.

The first stage in the organic fresh fruit and vegetable marketing chain—production and preparation of produce for shipment—involves growers, packers, and shippers working together in a number of possible combinations. In some cases, one firm grows, packs, and ships the produce, while in other cases one firm grows and another packs and ships. Organic produce can either be sold to retailers by a broker or delivered to a terminal market, where it is sold by wholesalers to retailers. In practice, most organic produce is sold through a specialty broker rather than in a terminal market. In some instances, when a specific variety, quality, or quantity is desired, larger retailers may buy fresh fruits and vegetables directly from the produce shipper.

Organic produce is also sold directly to consumers through farmers' markets, "community supported agriculture" subscriptions, and roadside stands. A larger proportion of organic sales than of conventional sales is made through direct markets, which have been gaining popularity over the last decade. According to USDA's Agricultural Marketing Service, the number of farmers' markets in the U.S. jumped from 1,755 in 1994 to 2,863 in 2000. The number of farmers and consumers using these markets approximately tripled during this period, to 66,700 farmers serving 2.7 million consumers.

Organic Processed Food—Abundant and Varied. Organic processed foods include frozen vegetables and entrees, pasta, canned vegetables, baby food, sauces in jars, and shelf-stable entrees. New product offerings continue to appear in every supermarket aisle.

In accord with the new standards, a certified organic processed product, such as pasta or frozen pizza, is first prepared using at least 95 percent organic ingredients. For products that contain 70-95 percent organic ingredients, processors may

label the product "made with organic ingredients." Organic and conventionally grown ingredients must be kept separate, and the organic ingredients must be stored in containers that do not compromise the organic nature of the food. Neither organic nor conventional ingredients in organic products can be treated with ionizing radiation or synthetic solvents, or arise from excluded processes (such as genetic engineering).

There are several basic marketing channels for processed organic foods, once farmers produce the organic raw commodities. In one channel, farmers send the commodities to the manufacturer, who converts them into a processed product. A distributor then moves processed products from manufacturers to retailers. In another channel, a shipper procures the raw commodities from farmers, ensures that the commodities meet the manufacturer's organic standards, and delivers them to manufacturers. After creating the processed good, the manufacturer moves the products to retailers.

Organic farmers also produce a large array of value-added products—foods processed on their farm or in farm-owned plants or farm-based cooperatives—and sell many of these products directly to consumers. According to a survey of organic producers by the Organic Farming Research Foundation, 31 percent produced value-added products in 1997. These products included salsa, syrup, cider, pickles, preserves, vinegar, dried and canned fruits and vegetables, butter, yogurt, cheese, milled flours, sausages and other processed meats, baked goods, and wine.

Organic Dairy Products—the Fastest Growing Segment. Organic dairy was the most rapidly growing organic market segment during the 1990s, with sales up over 500 percent between 1994 and 1999. Sales of most organic dairy products—including milk, cheese, butter, yogurt, and ice cream—have been rising in both conventional and natural foods supermarkets.

Organic dairy products, as defined by the USDA, are made from the milk of animals raised under organic management. The cows are raised in a herd separate from conventional dairy cows, receive

Commodity Spotlight

preventive medical care such as vaccines and dietary supplements of vitamins and minerals, but are not given growth hormones or antibiotics. Based on stage of production, the climate, and the environment, all organically raised dairy cows must have suitable access to pasture, the outdoors, shade, shelter, exercise areas, fresh air, and direct sunlight.

Organic dairy products must make use of milk from animals raised organically for at least 1 year prior to milking, or from cows converted from conventional to organic production. To convert cows to organic production, the cows must be fed a diet consisting of at least 80 percent organic feed for 9 months, and then 100-percent organic feed for 3 additional months, or must be grazed on land that is managed under a certified organic plan.

The process used to bottle milk and to make and pack cheese, ice cream, yogurt, and other dairy products must also be certified. The processor is required to keep organic and nonorganic products separate, and to prevent organic products from having any contact with prohibited substances.

Regionally distributed organic dairy products are bottled and processed in a small local dairy, and may contain milk from one or more farms. In contrast, organic dairy products that are distributed nationally are marketed in two different ways. In the first, milk from several farms is processed and then distributed nationwide through a marketing cooperative. In the second option, many farms produce milk under contract for a dairy, which pasteurizes and bottles milk, or processes it into cheese or ice cream. In both cases, the organic dairy products are distributed under a brand name.

Future Prospects

Many industry analysts expect demand for organically grown foods to continue growing at a rapid pace, as more U.S. growers move into organic production and more processors and distributors expand or add organic selections in their product lines. In addition to organic foods that have already been growing at a fast pace—including dairy products, juices, soy milk, frozen pizza, and dinner entrees—expanded organic beef and other

USDA Organic Marketing System Support

Agricultural Marketing Service (AMS) is home to the National Organic Program (NOP), which developed, implemented, and currently administers national production, handling, and labeling standards for organic agricultural products. The NOP also accredits the certifying agents (foreign and domestic) who inspect organic production and handling operations to ensure that they meet USDA standards.

To facilitate the export of U.S. organic agricultural products, the NOP is working to establish formal recognition agreements with foreign governments (www.ams.usda.gov/nop). The AMS *Fruit and Vegetable Market News* has provided price data for some organically grown fruits and vegetables at the Boston wholesale market for a number of years, and has occasionally provided data on a few other markets (www.ams.usda.gov/fv/mktnews.html). AMS is also involved in several areas of organic marketing research, working either independently or in cooperation with major universities.

Economic Research Service (ERS) conducts economic research and develops and distributes a broad range of economic and other social science information and analysis on organic agriculture. ERS' briefing room on organic agriculture describes characteristics of the U.S. organic farm sector, including estimates of certified organic farmland acreage and livestock, by commodity and by state. The briefing room also features data depicting industry growth and sales and highlights ERS publications on organic agriculture and current organic-related activities of ERS researchers (www.ers.usda.gov/briefing/Organic/).

Foreign Agricultural Service (FAS) assists the organic industry with U.S. export programs and services. FAS, in conjunction with AMS, has developed protocols for working with foreign nations to keep organic trade moving as more countries develop organic standards, including labeling, certification, and market access. FAS has helped fund the promotion of U.S. organic products in Canada, Europe, and Japan. FAS publishes *Organic Perspectives*, a newsletter containing reports from around the world as well as items on the U.S. national organic program and the domestic organic industry (www.fas.usda.gov/agx/organics/organics.html).

meat selections, new processed products, and new types of health-promoting foods are likely to appear on the market. Some new organic products are aimed at mainstream markets—Heinz, for example, has just launched an organic catsup—while others may target Spanish-speaking and other groups. Products like kefir, a health-promoting cultured-milk beverage, are gaining popularity among health-conscious consumers.

Demand for organically grown food in local markets is also likely to rise as the renaissance in farmers' markets continues and more local communities—in both high- and low-income areas—pay greater attention to increasing consumer access to fresh, healthy food. **AO**

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For more information see:

ERS Organic Agriculture briefing room
www.usda.gov/briefing/organic

Recent Growth Patterns in the U.S. Organic Foods Market
www.ers.usda.gov/publications/aib777/

National Organic Program
USDA's Agricultural Marketing Service
www.ams.usda.gov/nop/

Commodity Spotlight



French Fries Driving Globalization of Frozen Potato Industry

Driven largely by growing popularity of Western-style cuisine, particularly fast food via quick-service restaurants (QSRs), frozen french fries and other frozen potato products are generating billions of dollars in sales worldwide each year. Although precise worldwide production and sales figures for frozen fries are not available, global frozen potato production capacity is estimated to be at least 9.6 million metric tons (mmt) a year.

Worldwide exports of frozen potato products in 2000 (over 90 percent of which is frozen french fries) were valued at \$1.9 billion. This export value does not account for the billions of dollars of frozen potato products produced and sold domestically in countries around the world.

The rapid global expansion of QSRs is key to the tremendous growth in worldwide consumption and trade of frozen potato products. Beginning in the U.S. in the 1950s, the QSR chains of McDonald's and Burger King expanded rapidly. Expansion through the 1960s occurred primarily in the U.S., but these restaurants

began to open franchises around the world in the 1970s. Early expansion was concentrated in Canada, Western Europe, Japan, Hong Kong, Australia, and New Zealand.

Additionally, new firms such as Wendy's emerged and began expanding. In the 1980s and 1990s, QSR growth was occurring worldwide, surging in many Asian countries as well as in Latin America, while continuing to grow in the original markets. By 2001, McDonald's had over 29,000 outlets in 121 countries, Burger King had over 11,000 in 57 countries, and Wendy's over 5,000 in 34 countries.

Growth of an Industry

Rapid, continuing growth in the fast-food industry over the years has spawned growth in the frozen potato industry, first in the U.S. and then worldwide. Commercial production of french fries began in the U.S. on a small scale in the mid-1940s, but did not develop into a major industry until after the inception of QSRs in the 1950s. As QSRs expanded, so did the frozen potato products industry, with U.S. output increasing from 129 million

pounds in 1955 to 3.9 billion pounds in 1980, and to an estimated 9.3 billion pounds in 2000.

Despite the industry's dramatic growth, ever-increasing domestic and international demand for frozen french fries far exceeded U.S. processing capacity. By the 1970s, processors in Canada and Western Europe were producing fries to meet the growing demand. Today, the U.S. still ranks as the largest producer of frozen french fries in the world, turning out an estimated 3.6 mmt of fries in 2000. The Netherlands ranked second in 2000, producing 1.2 mmt, while Canada was third with 1.1 mmt.

Without frozen fry production statistics from every country, assessing shares of global production is difficult, but it is likely that the U.S., the Netherlands, and Canada collectively produce 60-80 percent of the world total. The bulk of the remaining fry production occurs in other European Union (EU) nations (particularly Belgium, France, Germany, and the United Kingdom) and, to a lesser extent, Australia and New Zealand. French fries are also produced in Eastern Europe, Asia, Africa, and South America. As french fry consumption rises in these areas, local production is likely to increase as well.

Major & Potential Markets

While frozen potato products are clearly global commodities today, the predominant markets are still the U.S., the EU, Canada, and Japan. However, as these markets mature, their growth potential is likely to be limited. This is most evident in the U.S., the oldest and largest single-country market for frozen potato products, where demand seems to have leveled off in recent years. Per capita utilization of frozen potato products in the U.S. is estimated at 29.4 pounds per person in 2001, 2.4 percent below the record set in 1996.

Further evidence of market maturity is the somewhat slower expansion of traditional burger and fry outlets in the U.S. compared with the rest of the world. In 2001, for example, the number of McDonald's outlets in the U.S. increased by only 2.3 percent from the previous year compared with 4.8 percent worldwide. With over

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13,000 outlets in the U.S. in 2001, there was one McDonald's for approximately every 22,000 people. Canada ranks second with one McDonald's outlet for approximately every 25,000 people.

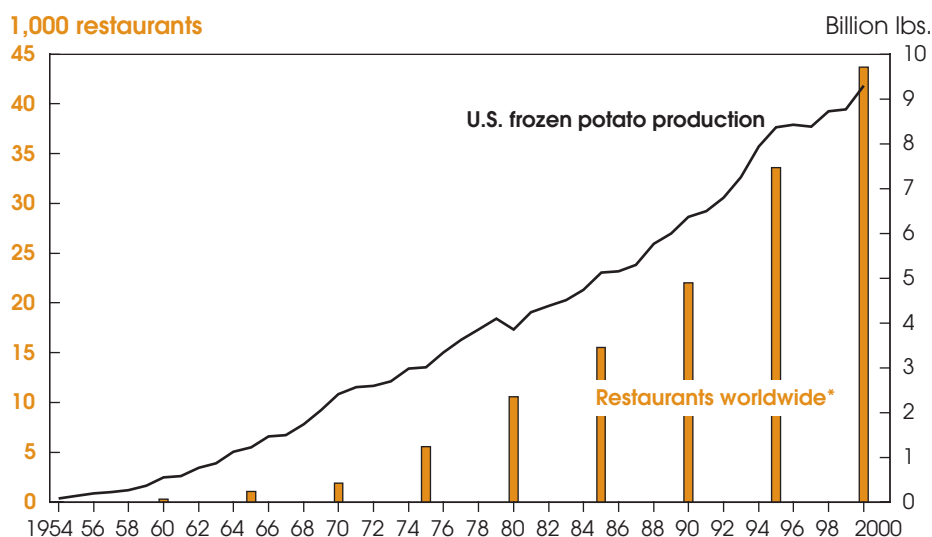
Japan is also showing signs of market maturity for frozen potato products, with consumption leveling off recently after years of rapid growth. Per capita consumption of frozen potato products in Japan reached 5.3 pounds in 1999, and has hovered at around the same level since then. Most of this consumption occurs through the food service industry, with McDonald's by far the leading retailer. After the U.S. and Canada, Japan ranks third in the number of McDonald's outlets per capita, with one outlet for approximately every 33,000 people.

However, other indicators seem to show that the Japanese market may not be quite as mature for frozen potatoes as the U.S. market. McDonald's added 224 new outlets in Japan in 2001 (up 6.2 percent from 2000—a higher growth rate than U.S. and world averages). Also, “ready-to-eat” french fries, sold through convenience stores, are a relatively new product gaining popularity in Japan. Although still less than 10 percent of the market, this product could help boost Japanese french fry consumption in coming years.

QSRs have operated in most EU countries since the 1970s, and in 2001 there was one McDonald's restaurant for every 125,000 people (including Eastern Europe). European per capita utilization of frozen potato products in 2000, although based on limited data from only 13 countries, is estimated at about 13.7 pounds per person, about half the U.S. level. However, per capita utilization in the United Kingdom (UK), the largest European market for frozen potato products, was an estimated 34.6 pounds per person in 2000, 15 percent higher than the 1999 level, due largely to surging demand in the catering sector.

Countries with the most growth potential for frozen potato products in coming years are likely to be those that are still largely untapped by the QSRs, particularly in Asia and Latin America. As these regions continue to develop economically, QSR outlets will likely expand, increasing demand

U.S. Production of Frozen Potatoes Rises Rapidly With Expansion Of Quick Service Restaurants



*Approximate number of McDonald's, Burger King, and Wendy's in operation worldwide.
Source: Production data from American Frozen Food Institute; restaurant data are ERS estimates.

Economic Research Service, USDA

for frozen potato products. In Latin America, there is currently only one McDonald's for every 332,000 people, and in the Asia/Pacific region, there is only one outlet for every half million people.

Two countries with perhaps the most potential for QSR growth and potential demand for frozen potato products are China and India. The QSR industry in China has developed rapidly in recent years (e.g. McDonald's expanded the number of outlets from 326 in 2000 to 430 in 2001—a 32-percent increase), but is still in relative infancy. As of 2001, there was only one McDonald's for approximately every 3 million people in China. And in India, with a population of nearly a billion, the QSR industry has not even begun to develop, with only 34 McDonald's outlets in the entire country in 2001.

World Trade Dominated by a Handful of Countries

The Netherlands, Canada, and the U.S. accounted for 67 percent of total world export volume in frozen potato products in 2000, down from 86 percent in 1980. Half the loss in export-market share of these three countries has occurred since

the mid-1990s. During this time, many other countries producing frozen potatoes—e.g., France, the UK, and New Zealand—expanded production capacity and increased exports. Meanwhile, several new countries—e.g., Poland, Argentina, China, and India—entered the frozen potato production and trade arena. Output, capacity, and exports from the Netherlands, Canada, and the U.S. continued to rise, but increasing competition caused their overall export market share to fall. In 2000, Belgium edged out the U.S. to become the third-largest exporter of frozen potato products by volume, but still ranked fourth in value.

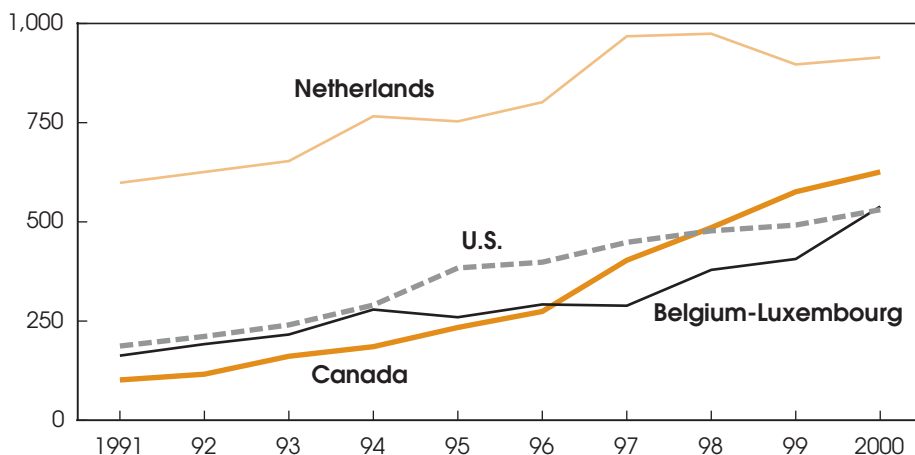
The world's largest exporter of frozen potato products is the Netherlands. In 2000, it exported just over 1 mmt (valued at \$567 million) of frozen potato products, nearly 90 percent going to other EU nations. Other markets for Dutch frozen potatoes include the Middle East, South America, and Eastern Europe. With EU markets beginning to mature, future Dutch export growth may focus on Eastern Europe, Russia, and South America.

The second-largest exporter of frozen potato products in the world is Canada, which in 2000 exported 624,399 metric

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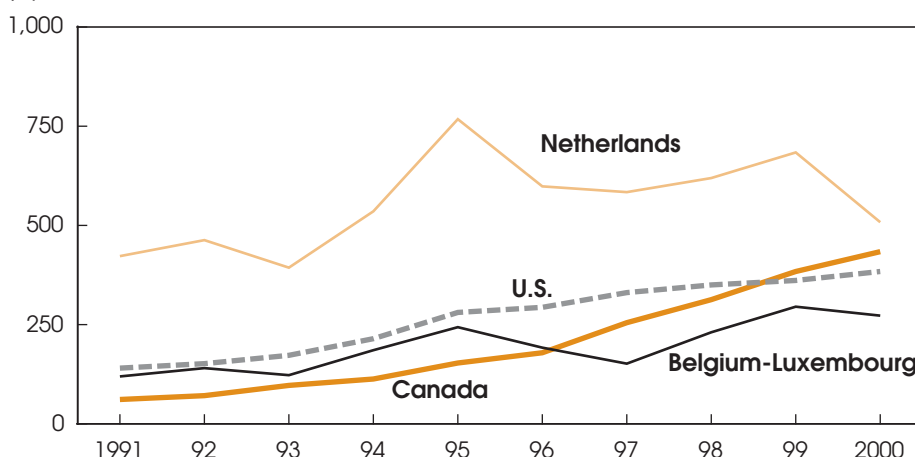
Canada Is a Rising Star in the Frozen Potato Export Market: In Volume. . .

1,000 metric tons



. . .and in Value

\$1,000



Source: United Nations Food and Agriculture Organization.

Economic Research Service, USDA

tons (mt), valued at \$423 million. Nearly 90 percent went to the U.S. Between 1989 and 2000, Canadian exports of french fries to the U.S. rose an average of 25 percent per year. In 2000, Canadian fries accounted for about 13 percent of all fries consumed in the U.S., up from only 2 percent in 1989.

Much of Canada's fry processing capacity is located in the central and eastern portions of the country. This creates a comparative advantage over Western U.S. producers when shipping to the Midwest and

Eastern U.S. In addition, the relative weakness of the Canadian dollar (compared with the U.S. dollar) in recent years has given Canadian fry producers an advantage in shipping to the U.S. Exports of frozen potato products to Japan have risen in recent years, accounting for about 13 percent of the Japanese import market in 2000 (the U.S. accounted for 85 percent). With Canadian processing capacity continuing to expand, Canadian exports are expected to continue increasing as well.

The U.S. is the third largest exporter of frozen potato products in value. In 2000, the U.S. exported 511,922 mt of frozen potato products, valued at \$370 million. The largest foreign markets for U.S. frozen potato products are in Asia and the Pacific Rim, accounting for 84 percent of U.S. export volume in 2000.

The largest single export market for U.S. french fries is Japan, accounting for 46 percent of U.S. fry export volume in 2000. U.S. fry exports to Japan rose an average of 20 percent a year in the 1980s and 9 percent a year in the 1990s. The U.S. share of the Japanese frozen potato product import market rose from 84 percent in 1990 to a high of 90 percent in 1998, before falling to 85 percent in 2000. The recent decline in market share in Japan is the result of increased competition (particularly from Canada) and increased U.S. exports to other Asian and Latin American countries.

Other major markets for U.S. frozen potato products in Asia include China (11 percent of U.S. export volume, including Hong Kong), South Korea (7 percent), Taiwan (6 percent), and the Philippines (4 percent). In the Western Hemisphere, Canada and Mexico are the major markets for U.S. frozen potatoes with export shares of 3 and 6 percent, respectively.

Globalized Production & Foreign Direct Investment

Although output of U.S. frozen potato products has continued to expand and benefit from globalization of the QSR industry, increased worldwide demand has also led to globalization in the production sector. As worldwide demand for frozen potato products increases, a natural progression for the processing industry has been to invest directly in major markets abroad, building and expanding processing plants worldwide. This reduces transportation costs by minimizing shipping distances, and helps stabilize the overall market by limiting the effects of local crop disasters and shortages.

The motivation for foreign direct investment (FDI) in frozen potatoes is no different from related sectors such as wineries or beverages. FDI is motivated primarily by pressures to reduce transaction costs,

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to access and develop foreign markets, and to jump trade barriers. FDI in frozen potatoes is also driven by a need for a cost-effective, stable, and adequate supply of frozen potatoes to meet the demands of a growing worldwide QSR sector.

Decisions about where and how much to invest also depend on factors specific to host countries. First, a host country must have large markets for frozen potato products, or markets with excellent growth potential. Second, a host country must have the ability to produce ample supplies of processing potato varieties at a competitive cost, along with the infrastructure necessary to support the movement and storage of both raw potatoes and finished products to and from processing locations. Finally, factors such as a host country's economic and political stability are likely to affect investment decisions. Expansion of processing plants around the world in recent years is testimony to increasing FDI in the frozen potato industry.

FDI & Exports

As FDI and globalization of production increase, they are likely to affect global trade in frozen potato products. The relationship between exports and FDI is influ-

enced by factor productivity and cost, as well as monetary and fiscal policies in the home country and host countries. Additionally, the relationship between exports and FDI depends on characteristics of the host country (e.g., gross domestic product and resource endowments, per capita income, infrastructure, and markets), industry or product (e.g., size, structure, concentration, and inputs), and the risks associated with trade and/or investments.

Analysis of the relationship between FDI and exports in the U.S. processed food industry provides mixed conclusions. One study found evidence that exports may serve as a precursor to FDI. Another study, which explored the relationship between exports and FDI for six food manufacturing firms, found three disparate patterns among firms, suggesting that the export-FDI relationship is ambiguous. A third study, using processed food industry data from the countries of the Organization for Economic Cooperation and Development, showed substitutability between FDI and exports.

Although lack of data on FDI in the frozen potato industry inhibits strong conclusions about the nature of the relation-


ship between exports and FDI, the relationship appears ambiguous and may change over time and across countries. In the short run, FDI may complement home-country exports because foreign production may enable companies to lower transaction costs and open even more new markets for their products. Producing frozen potato products locally in foreign countries may initially stimulate demand in those countries by helping to introduce the product to consumers. If demand for the product increases beyond what can be produced locally, it could boost exports from the parent companies' home country.

In the long run, however, FDI may replace home-country exports if local production increases sufficiently to satisfy local demand. This may occur as worldwide markets mature and worldwide production capabilities improve. **AO**

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U.S. Agricultural Exports To Rise \$4 Billion in 2003

Sharply higher prices for grains and soybeans, reflecting drought-reduced U.S. production, are expected to boost the value of U.S. agricultural exports to \$57.5 billion in fiscal year 2003, a 7.5-percent gain over 2002. Bulk commodity exports are likely to lead the gains, although high-value product (HVP) exports also are expected to increase. Higher corn export volume is more than offset by lower soybean volume, pulling bulk export volume down from 2002.

U.S. agricultural imports also are projected up in 2003, but with a smaller gain than for exports. Forecast at \$42 billion, imports will be \$1.5 billion (4 percent) above estimates for 2002. This rate of growth over the previous year is higher than in some recent years that were plagued by financial crises, but is still well below the strong average annual rates of growth of U.S. imports in the mid-1990s.

Most of the projected increase in import value is in horticultural products, such as fruits and juices, and wine and malt beverages. These products are likely to show gains in both volume and value. Most U.S. horticultural product imports come from Canada and Mexico.

The 2003 U.S. agricultural export surplus is forecast at \$15.5 billion, 19 percent or \$2.5 billion above the surplus estimated for 2002. This would be the largest export surplus since fiscal year 1998.

Bulk Product Export Gains Exceed High-Value Products

Bulk exports include wheat, rice, coarse grains, soybeans, cotton, and tobacco. Projected at \$21 billion, bulk commodities lead the gains in value, increasing 14 percent over 2002 compared with only an estimated 4-percent increase in value for HVP exports in 2003. Higher prices from drought-induced production drops are largely responsible. Average export unit values for corn, soybeans, and wheat are projected sharply higher.

Volume of bulk commodity exports is expected to decline to 110.3 million tons in 2003 from 114.9 million tons in 2002, due to an expected sharp drop in soybean exports. Corn volume is anticipated to rise by 2.5 million tons, taking advantage of less foreign competition, and stronger imports by Canada and Mexico. U.S. soybean export volume is projected down by 6.5 million tons, reflecting reduced prospects for the U.S. crop, as well as the likelihood of greater foreign competition

from larger South American supplies. Wheat volume will slip 500,000 tons.

As prices rise, bulk commodities' share of total U.S. agricultural export value is projected at 36.5 percent in 2003, a gain from the 34.4-percent share estimated for 2002. This would be the first increase in share for bulk commodities since fiscal years 1995 and 1996, when exports reached record levels and bulk exports rose sharply.

HVP exports include products such as meat, vegetable oils and meals, fruits, vegetables, and packaged, frozen, and canned foods. While still larger in total value than bulk exports, HVP exports, at \$36.5 billion, are expected to contract to a 63.5-percent share from the 65.6 percent estimated for 2002. Shipment of higher valued goods tends to be more dependent on global income growth and demand for luxury goods than do staple bulk commodities.

Global Economic Recovery To Be Uneven

Global income growth is fueled by economic growth. In 2003, the world's gross domestic product (GDP) is expected to show modest recovery from the slowdown that began in 2001 and continued in 2002. But the distribution of growth is expected to be uneven from region to region. Global GDP growth is projected at 3 percent for 2003, compared with less than 2 percent in 2002.

Some of the modest economic gain will occur in developed countries, such as the U.S. and the European Union (EU). The U.S. economy has already begun to rebound this year, and growth is expected to increase to about 3 percent next year. Growth in the EU also is projected to be approximately 3 percent in 2003.

However, growth in other developed economies, such as Japan, is projected to remain very slow. Japan's GDP growth in 2003 is projected at 1 percent or less. Some analysts even expect Japan to remain in recession in 2003, as doubt about the depth of its financial system's structural problems continues to weaken business expectations. Consequently, developed-country GDP growth is fore-

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cast up only modestly in 2003 to 1.5 percent, from 1.1 percent in 2002. And, since global economic recovery is largely dependent on growth in the developed economies, recovery elsewhere also is likely to be uneven in 2003.

Developing countries as a group are forecast to show stronger gains than developed countries, with GDP increasing about 5 percent in 2003. While stronger economic growth is projected in some developing countries, others continue to experience financial crises. Asia's growth will be buoyed by continued annual growth of 5-8 percent in China and India, which are largely unaffected by slow world growth. Other Asian countries, such as South Korea, Taiwan, Malaysia, the Philippines, and Thailand, are likely to be dependent on growth in the U.S. and Europe.

In Latin America, the large markets—Mexico, Brazil, and Argentina—are cause for concern. Mexico's projected growth for 2003 is likely to be more favorable than in 2002, as its growth is closely tied with that of the U.S. But Argentina and other South American economies such as Brazil continue to suffer serious economic and financial problems, which may reduce growth potential as well as hamper their competitiveness in global agricultural markets.

The U.S. dollar has depreciated slightly from its strong position of recent years. Against the euro and other developed-

This is USDA's initial forecast of agricultural exports for fiscal year 2003 (released August 29, 2002). It reflects USDA forecasts in the August 12, 2002 *World Agricultural Supply and Demand Estimates* report. Bulk commodities include wheat, rice, feed grains, soybeans, cotton, and tobacco. High-value products (HVPs) comprise total exports minus bulk commodities. HVPs include semi-processed and processed grains and oilseeds (e.g., soybean meal and oil), animals and animal products, horticultural products, and sugar and tropical products. A breakout of U.S. agricultural exports and imports by major commodity group—both volume and value—for 2000-03 is included in appendix table 27.

economy currencies this depreciation may be insufficient to help promote exports. The continued relative strength of the dollar, and appreciation against the yen, may temper expected gains in U.S. agricultural exports and continue to encourage import growth in 2003.

Drought Affects Corn & Soybean Exports

Drought in the U.S., and reduced export competition, will be major factors reducing soybean exports in 2003. U.S. production is forecast down to 71.5 million tons from 78.7 million in 2002. Export volume is expected to plummet to just 22.3 million tons, down 23 percent from 2002,

and the lowest level of soybean exports since 1994. Brazil, in contrast, is expected to increase production and exports significantly in 2003. Argentina, faced with a financial crisis, will help boost export competition by switching some acreage from corn (higher production costs) to soybeans (lower production costs), reducing costs and raising export value. Forecast U.S. soybean export value remains unchanged at \$5.4 billion, despite the drop in volume, as the drought pushes prices to a 5-year high.

U.S. corn exports are projected up 5 percent to 51 million tons in 2003. Exports of other coarse grains, however, are projected the same to slightly less in volume. Corn export value is projected up 32 percent to \$6.2 billion. Drought will reduce the U.S. corn crop, and with the U.S. accounting for about two-thirds of global corn exports, U.S. corn prices determine global prices, which rise significantly. Despite the lower production, U.S. supplies are expected to be sufficient to replace reduced exports from Argentina, where the financial crisis and high input costs are reducing corn area and production.

The smallest U.S. wheat crop in 30 years, coupled with drought-reduced crops in Canada and Australia, will raise wheat prices. U.S. wheat and flour exports are projected at 25 million tons, which rises to \$4 billion. While large, lower priced supplies will be available from the Black Sea region and a near-record crop is expected in the EU, the sharply lower pro-

U.S. Agricultural Exports: Forecast and Recent Performance

Commodity	1997	1998	1999	2000	2001	2002	2003
\$ billion							
Grains and feeds ¹	16.5	14.1	14.4	13.9	13.9	14.1	16.5
Oilseeds and products	11.5	11.1	8.7	8.6	8.8	9.6	9.8
Livestock products	7.6	7.5	7.1	8.5	8.8	8.7	8.9
Poultry and products	2.9	2.7	2.1	2.2	2.5	2.4	2.6
Dairy products	0.8	0.9	0.9	1.0	1.1	1.0	1.1
Tobacco, unmanufactured	1.6	1.4	1.4	1.4	1.2	1.2	1.3
Cotton and linters	2.7	2.5	1.3	1.8	2.1	2.3	2.7
Seeds	0.8	0.8	0.8	0.8	0.7	0.8	0.8
Horticultural products	10.6	10.3	10.3	10.5	11.1	11.2	11.5
Sugar and tropical products	2.1	2.1	2.1	2.3	2.6	2.3	2.4
Total value ²	57.3	53.6	49.1	50.7	52.7	53.5	57.5

Fiscal years: 2002 estimated; 2003 forecast. Reflects forecasts in the August 12, 2002 *World Agricultural Supply and Demand Estimates*.

1. Includes pulses and processed grain products. 2. Includes a small amount of miscellaneous products not elsewhere classified.

Sources: U.S. Department of Agriculture and Census Bureau, U.S. Department of Commerce.

Economic Research Service, USDA

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duction in Australia and Canada means many importers will turn to the U.S. for needed supplies, despite the sharply higher prices.

U.S. rice exports in 2003 are projected up 100,000 tons to 3.4 million tons, as some food aid shipments delayed from 2002 occur. The value of U.S. rice exports is expected to remain virtually unchanged from 2002. A slight gain in global prices is anticipated, reflecting small growth in global consumption coupled with a small reduction in global supplies.

Unusually high exports are projected for U.S. cotton in 2003. Large U.S. exportable supplies, as well as expected larger imports by China, contribute to the gains. Volume in 2003 rises 4 percent from the already high estimate for 2002. At 2.5 million tons in 2003, projected volume of U.S. cotton exports approaches record levels last seen in the 1920s. A new trend of sharply reduced U.S. consumption is adding to export expansion. Cotton export value is projected up \$400 million, or 17 percent, to \$2.7 billion, reflecting both volume gains and recent improvements in cotton prices.

Growth Slows for HVP Exports

Although 2003 U.S. HVP exports are projected up \$1.4 billion to \$36.5 billion, the expected growth rate in HVP exports is much more modest than bulk exports' 14-

percent climb. The 4-percent HVP growth over 2002 is slightly slower than 2002's growth over 2001.

Horticultural products account for much of the growth in 2003 HVP exports. Horticultural exports are projected at \$11.5 billion, up \$300 million from 2002. Exports of soybean oil and broiler meats are expected to show gains of \$200 million each. Livestock exports gain \$100 million over 2002, propelled by expected increases in beef, pork, and variety meats.

Horticultural product gains include increases of \$100 million each in exports of fruits, vegetables, and tree nuts. Canada, Mexico, and Asia continue to be the main markets for these exports, and their demand continues to grow, promoting trade expansion. The volume of fruit, vegetable, and tree nut exports also is projected to rise 4 percent, or 300,000 tons. Apple exports will be boosted by a large crop in Washington State, the main U.S. exporter. Almond, walnut, and pistachio crops are expected to remain near record levels, also promoting exports.

Expected U.S. soybean oil exports are driven by ample U.S. supplies. In addition, foreign production of competing oilseeds and vegetable oils is expected to slow while foreign demand growth continues. Prices are expected to be pulled up by reduced 2003 production both abroad and in the U.S. Supplies of competing

vegetable oils as a group will likely decline in 2003, boosting prices further. Global consumption of vegetable oils rises as well, so ending stocks are expected to be drawn down somewhat to meet demand.

Broiler exports, which lead gains in livestock and livestock products, are expected to increase by \$200 million and 300,000 tons in 2003. The U.S. and Russia recently reached an agreement on veterinary certificates, which should allow poultry exports to Russia to resume in 2003. But export growth is expected to be moderate as Russia tries to expand its own poultry industry. Russia's imports of U.S. poultry meat rose sharply in fiscal year 2001 over fiscal year 2000, but imports so far in 2002, during the veterinary dispute, are smaller in quantity.

Slight expansion is expected in 2003 U.S. beef exports, as both volume and value increase. Sales to Asia and in North America are expected to remain strong. Japan's imports of U.S. beef are expected to be closer to normal in 2003 as concerns about bovine spongiform encephalopathy abate. Higher prices also are likely to boost pork export value, but drought and higher feed costs make the outlook very uncertain. **AO**

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More to come on trade

- ◆ Gains from trade liberalization: developed and developing countries
- ◆ The European Union and commodity policy
- ◆ Potential enlargement of the EU
- ◆ Global markets for processed foods

. . .in upcoming issues of *Agricultural Outlook*

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EU Revisits Ag Reform With Bold New Proposals

The Commission of the European Union (EU) is proposing bold changes to its Common Agricultural Policy (CAP). The core proposal is a single annual whole-farm payment, not requiring production by farmers, in contrast to the current payments that are linked to production of specific commodities. Based on historical direct payments, this single payment would reduce the link between farm subsidies and production. Farmers would have greater flexibility in choosing what to produce.

Also, the proposals would cut support for large farms for the first time. Greater emphasis would be placed on rural development, food safety, animal welfare, and environmental regulations. Nonetheless, for many commodities, traditional CAP price support and stabilization mechanisms would be maintained.

These proposals are contained in the Commission's Mid-Term Review (MTR) of "Agenda 2000," a 6-year (2000-06) budget and agricultural policy reform package to facilitate enlargement of the EU to include Central and Eastern European (CEE) countries during the coming decade. The EU legislative process requires a formal proposal from the Com-

mission and approval by the Council of Agricultural Ministers. The MTR proposals are not yet formal legislative proposals, and many important details are not specified, making assessment of impacts difficult. The Commission intends to produce a detailed legislative proposal by the end of the year.

As part of the ongoing EU agricultural policy debate, these proposals are prompted by structural market imbalances, World Trade Organization (WTO) negotiations, the prospect of enlargement, and growing demands of consumers and environmentalists. The Commission alleges that these proposals would create a more market-oriented farming environment, facilitate enlargement, and provide a major WTO advantage because most EU direct payments would become less trade distorting.

Pressures for CAP Reforms Past & Present

The proposed reforms would be the latest of many CAP reforms. Since its inception, the CAP has relied principally on high prices protected by high tariffs to support farmers. Sugar quotas were established in 1968.

During the 1980s, consumption and export subsidies to dispose of surpluses led to soaring budget costs. These internal pressures led to reduction of effective support prices and introduction of dairy production quotas. Despite many reforms, most EU agricultural prices and trade are still managed by policy. Threats of future surpluses for many commodities, as well as recent accumulation of stocks of rye, rice, and beef, are an important underlying motivation for the MTR proposals.

Subsidized exports have depressed world prices, prompting other countries to press for reduction of trade-distorting EU policies in the Uruguay Round (UR) of multilateral trade negotiations, beginning in 1986. The UR agreement, implemented during 1995-2000, included significant reductions in domestic agricultural support and export subsidies.

The "MacSharry" reforms (named for the agricultural commissioner at the time), implemented from 1993 to 1995, addressed CAP budget problems and provided for expected UR commitments. Support prices were reduced and farmers were fully compensated with direct income payments, a significant CAP change. Larger farms were required to idle some cropland. Payments to beef producers were also associated with production limitations.

The prospect of EU enlargement places additional pressure on the CAP because of the potential cost for support of millions of CEE farmers. Agenda 2000 addressed enlargement budget issues, and extended MacSharry reforms, further reducing grain support prices and effective support for beef. EU grain support prices have been reduced by 45 percent since 1992, and payments for oilseeds were reduced to the same level as payments for grain.

Anticipation of further restrictions on trade-distorting policies in the current Doha Round of multilateral trade negotiations has become an important source of pressure on EU policymakers, in part because of the impact of EU enlargement on WTO commitments.

Nontraditional issues, beyond market and farm income support, are increasingly

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EU Agricultural Policy

Current

- Mandatory land set-aside determined annually by EU Council. Annual rotation of set-aside land is required. All land eventually is set aside in turn.
- Multiple, commodity-specific direct payments for arable crops, rice, beef, and sheep.
- Large farms receive direct payments at the same rate as small farms.
- Payments unlimited.
- Voluntary enforcement of regulations by member states.
- No further cuts in single grain intervention price (for bread wheat, barley, and corn) or rice. Rye intervention maintained. Cuts under Agenda 2000 already implemented.
- Rural development funding maintained at 4.5 billion euros.

Proposed

- Mandatory set-aside of 10 percent of land for 10 years. Annual rotation not required.
- A single whole-farm payment based on historical payments for arable crops, rice, beef, and sheep, adjusted for full implementation of Agenda 2000.
- Whole-farm payment above a minimum amount (that increases with each farm employee) to be reduced by 3 percent annually, reaching 20 percent over 7 years.
- Total payments, including whole-farm payment and other direct payments, limited to 300,000 euros per farm. At AO press time, exchange rate was about 1 euro to US\$1.
- Payments conditional upon mandatory compliance with environmental, food safety, and other measures.
- Single grain intervention price cut by 5 percent. Rice intervention price cut by 60 percent. Rye intervention abolished.
- Spending on rural development nearly doubled over 7 years, financed by payment reductions for large farms.

influential. Increasingly, agriculture is seen as part of the rural economy, shifting the orientation of policy towards rural development. Animal disease and food contamination incidents have directed attention to food safety and quality issues. There is a growing perception that CAP support has led to intensive agricultural production, resulting in significant environmental degradation. Finally, animal welfare advocates are calling for changes

in production systems. The EU refers to measures addressing these emerging issues as the CAP's "Second Pillar," the first being market and income support.

MTR Proposals: Some Details

The MTR proposals would alter the regimes for grains, oilseeds, protein crops, rice, legumes, dried fodder, nuts, beef, and sheep. Other regimes, including fruits and vegetables, potatoes, dairy, and sugar,

would remain unchanged. Instead of a specific dairy proposal, several dairy options are presented, ranging from maintenance of the current regime to a dramatic elimination of production quotas combined with large price reductions.

The Whole-Farm Payment. The Commission's most innovative proposal is the whole-farm payment. Current payments require production of specific products. Historical payments for arable crops, rice, beef, and sheep, adjusted for implementation of Agenda 2000, would be combined into a single annual farm payment. The whole-farm payment would be largely decoupled because production would not be required.

The payment would be attached to the land, conveying with transfer of the land. If part of a farm were sold or leased, an equivalent part of the whole-farm payment would be transferred. Farm support would be simplified, another Commission goal.

Before 1993, the EU supported most agricultural product prices directly through intervention purchasing at established prices. The MacSharry reforms converted that support to product support through direct income payments. A whole-farm payment not requiring production would be a final evolutionary shift to support for producers rather than products. Nonetheless, high CAP support prices for milk, beef, and sugar would continue to provide powerful production incentives.

Set-Aside Requirements. Since 1992, larger farms have been required to set aside some land. The Council fixed the set-aside percentage annually. Set-aside is rotational—i.e., all land must be set aside in turn, quality land as well as the poorest land. The MTR proposals would require larger farms to set aside at least 10 percent of their land for 10 years on a non-rotational basis, allowing farmers to idle their poorest land on a continued basis.

Grain Support Price Reductions. The single grain intervention price for bread wheat, barley, and corn would be reduced by 5 percent, and current monthly increases in grain storage subsidies would be eliminated. Otherwise, the grain intervention system would remain unchanged. The

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whole-farm payment would be adjusted to provide compensation for half of the price reduction.

Intervention support for rye would be eliminated, leaving rye to find a price in the market given its feed value relative to feed wheat and barley. Large rye price and production reductions would be likely. Germany and Poland (an EU applicant) are large producers of rye.

The MTR proposals would dramatically decrease support for rice. By 2004, "safety net" intervention would occur at 120 euros per metric ton (mt), a 60-percent reduction from current support. Below 150 euros per mt, private storage subsidies would be provided. Producers would be compensated by an adjustment in the whole-farm payment, equivalent to the overall compensation provided other grain producers for cumulative price reductions since 1992. The EU rice intervention price would be reduced to near world price levels, necessary to accommodate trade levels likely under the EU's Everything But Arms (EBA) policy. The EBA policy provides duty- and quota-free access to EU markets for the least developed countries by 2010 (AO September 2002).

Nontraditional issues, beyond market and farm income support, are increasingly influential.

Grain Import Regimes. The MTR calls for conversion of the EU system of varying import duties for grains and rice to a simplified system. Outside the MTR proposals, the Commission has proposed to implement tariff-rate quotas to limit large EU imports of grain that recently have resulted from the tariff regime agreed to in the UR. The EU currently is engaged in preliminary consultations with WTO members to determine appropriate compensation. U.S. grain exports to the EU, 2 million mt valued at \$340 million in 2001/02, could be affected. Recent EU imports have come mainly from Russia and Ukraine, however, which are not WTO members.

Reduced Payments for Large Farms.

The MTR proposals provide for "dynamic modulation," the reduction of payments and limits on total support for large farms, a significant departure for the CAP. The reductions would occur on payments above minimum amounts that increase with each farm employee. Farm payments for about one-fourth of EU farms, accounting for 80 percent of production, would be reduced by 3 percent annually up to 20 percent after 7 years. Following reductions, total annual payments would be limited to 300,000 euros.

Allocations for Second Pillar Programs.

Budgetary savings from payment cuts to larger farms would be allocated to rural development, environmental programs, food safety and quality, and animal welfare programs. Funding would be nearly double the 4.5 billion euros for these programs under Agenda 2000. All farm payments would require cross-compliance with Second Pillar regulations.

The "Carbon Credit." CAP provisions allowing production of nonfood crops, including energy crops, on set-aside land, would be eliminated. Support for energy crops would be provided by a payment of 45 euros per hectare.

Durum Wheat Regime. The payment for durum wheat in traditional production areas of 344.5 euros per hectare would be reduced by 27 percent. The 138.6-euros-per-hectare aid in other designated areas would be abolished over 3 years. A premium of 15 euros per mt would be provided for some prescribed standard of high quality.

Implications of the MTR Proposals

Farm Production, Budget Costs, and

Farm Incomes. The Commission forecasts that the MTR proposals would have little impact on the EU budget, but they could significantly affect product selection, overall production, and incomes of individual farmers.

Farmers would have greater flexibility in production choices among arable crops, rice, beef, and sheep, but production choices still would be influenced by high EU prices for beef and sheep. Production

incentives for dairy, sugar, fruit, and vegetables would be unaffected.

Decoupling direct payments from commodities would reduce incentives to produce arable crops, beef, and sheep. Returns to dairy operations also would be reduced, since much beef production is associated with milk production. Reduced output of beef and sheep is likely, particularly if pasture can be converted to arable land. The MTR proposals would leave that issue to national governments. Reduction in beef production would be limited because of its association with milk production, which would not be reduced because current incentives are very high; production is limited by quotas.

The MTR proposals would reduce production of rice and rye, but the implications of the MTR proposals for other grain and oilseed production are unclear. Producers would likely reduce output in response to support price cuts and abolition of rye intervention. Reduced incentives for arable crops would encourage the idling of land, which would tend to reduce production. However, as farmers would be free to idle their marginal land (land on which production costs exceed market returns), average crop yields would likely rise. Conversion of pasture land to arable crops in response to reduced support for beef and sheep would also tend to increase arable crop production.

Cross-compliance with environmental, animal welfare, and other requirements could potentially raise costs significantly for EU farmers, making them less competitive in world markets. The MTR proposals include temporary direct payments to assist farmers in meeting demanding standards and additional payments for achievement of standards beyond mandatory requirements.

Farm income impacts are also ambiguous. Reduced payments would tend to lower incomes of larger farms, but greater flexibility in product selection could improve efficiency and raise net returns. Taking marginal land out of production would also raise net farm income. Increased spending on rural development would aid some farmers.

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An analysis of the MTR proposals by a German research group (reported in *AgraEurope* in August 2002) concludes that German farmers would increase set-aside by 66 percent to 13 percent of arable land, reducing grain production by 7 percent, probably mostly of rye. Net German farm income would be unchanged because reduced costs from lower production offset reduced returns. Income per farm worker would be increased because employment was reduced. Results cannot be generalized to other countries.

WTO Commitments and Negotiations.

Support for agriculture remains high among developed countries, but EU agricultural policy has been a major target of international criticism because the CAP has employed trade-distorting policies on a substantial scale. EU export subsidies accounted for 93 percent of total global agricultural export subsidies in 1999. According to the Organization for Economic Cooperation and Development (OECD), overall support for EU agriculture is high—\$94 billion in 2001, or 35 percent of the value of production. U.S. support was \$49 billion, or 21 percent of production. The MTR proposals could affect EU fulfillment of its Uruguay Round commitments, and may affect the EU's ability to comply with new disciplines in the Doha Round

The impact the MTR proposals would have on export subsidies is unclear. Large export subsidies for dairy products and sugar would be unaffected. EU grain support prices have been near the long-term trend in world prices in recent years, allowing the EU to export without subsidies. However, low world prices or a strong euro relative to the dollar would again require the EU to export grains with subsidies.

The 5-percent reduction in grain intervention prices would slightly improve the likelihood that export subsidies would not be required. Slightly lower production and exports would decrease the cost of subsidies if they are necessary. The rice support price reduction is large and probably would eliminate the need for export subsidies in most years, but rice is a minor product. Reduced intervention prices for grains and rice would reduce EU tariffs,

but overall EU import barriers would not be significantly affected unless the EU is successful in revising its grain import regime outside of the MTR proposals.

The MTR proposals would principally affect WTO commitments for domestic support. The Commission asserts that an important portion of EU domestic support would be converted to policies much less likely to be reduced in future agreements.

The UR established three classifications of domestic support—amber, blue, and green boxes. Amber policies are the most trade-distorting because they are linked to production, such as price supports or direct payments requiring production. The UR reduced support under these policies. For 1999, the EU notified 47.9 billion euros in amber policies to the WTO. The MTR proposals would little affect these policies.

Policies associated with production limitations, even trade-distorting policies, were classified as blue box policies, and were not subjected to reductions. The EU notified 19.8 billion euros to the WTO in blue box policies for 1999/2000, including the current EU compensatory payments for arable crops, beef, and sheep that would be converted to a whole-farm payment under the MTR proposals.

The impact the MTR proposals would have on export subsidies is unclear.

Green box policies are minimally trade-distorting. They are not subject to reductions. These policies could include payments that do not require production and are not linked to prices. The EU notified 19.9 billion euros in green box policies to the WTO in 1999.

WTO challenges were rare before 1995 because of ineffective GATT dispute resolution procedures. Since 1995, agricultural challenges have been curtailed by a UR "peace clause," which protects policies subject to UR Agreement on Agriculture commitments from challenge under other WTO provisions. The peace clause expires at the end of 2003, at which time

all policies will no longer be protected from challenges.

The Commission asserts that the whole-farm payments would be green and would be less susceptible either to challenges after expiration of the peace clause or to required reductions in future WTO agreements. Although there is general consensus that minimally trade-distorting policies should be considered green—i.e., exempt from reductions—classification of specific policies as green, particularly direct payments, may be challenged in the WTO.

EU Enlargement. Preparation for EU enlargement was a major focus of Agenda 2000. Although enlargement is not explicitly addressed in the MTR proposals, the proposals have significant implications. Direct payments for CEE producers in an enlarged EU are extremely important for the EU and candidate members. The MTR proposals signal that CEE farmers will receive whole-farm payments, but the amount and timing would have to be negotiated because CEE's have had no historical payments.

Lower support prices and the elimination of commodity-specific payments under the MTR proposals would result in lower CEE production of arable crops, beef, and sheep compared with production resulting under Agenda 2000. Rye production could be greatly reduced. The more market-oriented environment also would be expected to reduce or eliminate market imbalances.

Cross-compliance with environmental, food safety and quality, and animal welfare regulations could create significant problems for CEE countries, requiring considerable investment to meet those standards. On the other hand, enhanced funding for rural development would aid CEE farmers.

What's Ahead

CAP reform proposals always have been more ambitious than the reforms finally enacted. Reform has occurred when the political cost of not reforming exceeded the political cost of reform. The MTR proposals have received support from the United Kingdom, the Netherlands, Germany, and Sweden, while provoking

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strong opposition from France and Spain. The remaining member states are cautiously critical of various proposals.

The current political and economic impetus for CAP reform is more complex than during previous reforms. While the proposals have limited budget implications, the traditional pressures of market imbalances and large stocks of rye, rice, and beef are central motivations for these proposals. The proposals also have important implications for EU enlargement and WTO negotiations.

The proposals also reveal a continuing evolution in what is considered important for EU agriculture—a much greater emphasis on food quality and safety, protection of the environment, animal welfare, and rural development to meet the growing demands of consumers and envi-

ronmentalists. Reduced support for large farms also reflects a growing desire to target programs to those farms in need rather than a general commitment that overcompensates relatively wealthy farms.

The whole-farm payment represents an impressive conversion of agricultural support towards less trade-distorting policies. Combined with large past reductions in support prices for grains and effective support for beef, adoption of the MTR proposals would amount to a remarkable increase in market orientation of the CAP since 1992. The whole-farm payment could enhance the EU's bargaining position in the WTO with respect to the U.S. and other more market-oriented exporting countries.

Nonetheless, there remains much room for reform in the CAP beyond the MTR

proposals. The EU dairy regime is due for review in 2005 and the sugar regime in 2006. For both these commodities, high and stabilized prices are maintained through quotas, high tariffs, direct intervention, and export subsidies.

According to the OECD, EU market price support in 2001 (i.e., domestic prices above world prices) was almost twice as large as the combined payments the MTR would convert to a whole-farm payment. For most important products other than oilseeds and meals, the CAP would continue to manage prices and trade, restricting competition from imports.

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www.ers.usda.gov/publications/AgOutlook/Jan2001/AO278H.pdf

Agricultural Policy Reform in the WTO—The Road Ahead
www.ers.usda.gov/publications/aer802/

Commission of the European Union: Communication from the Commission to the Council and the European Parliament: Mid-Term Review of the Common Agricultural Policy
http://europa.eu.int/comm/agriculture/mtr/comdoc_en.pdf

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Food Price Inflation To Moderate in 2002 & 2003

The U.S. Consumer Price Index (CPI) for all food is forecast to increase 2.1 percent in 2002 and 2 to 2.5 percent in 2003, compared with a 3.1-percent increase in 2001. With 8 months of CPI data already collected in 2002, the annual average food CPI is 2.3 percent above the first 8 months of 2001. The inflation rate for the all-items CPI, which was 2.8 percent in 2001, is forecast to be 1.6 percent in 2002 and 2 percent in 2003.

In 2002, record beef, pork, and poultry supplies, along with dampened consumer demand, are holding down meat prices. Higher feed costs and eroding pasture conditions from widespread drought mean more animals moving to slaughter in the short term. This, along with slumping poultry exports and a lackluster domestic economy, are pressuring livestock and meat prices down this year. Smaller potato supplies should push the fresh vegetable CPI up over 7 percent in 2002, but adequate supplies of fresh fruits, dairy products, nonalcoholic beverages, and other processed foods will likely keep the food-at-home price increase below 2 percent.

Total food purchased by consumers is expected to increase 3.6 percent in 2002 to an estimated \$832 billion, up from

\$803 billion in 2001. In 2002, at-home-food sales are forecast to increase 1.2 percent, while food-away-from-home sales (in restaurants and fast-food establishments) are expected to increase 5.5 percent. Consumer spending on food away from home continues to increase faster than food-at-home sales, although slow economic growth has encouraged people to eat more at fast-food establishments and less at expensive restaurants. Retail prices for meals eaten away from home are expected to increase less in 2002 than in 2001.

The CPI, which measures changes in prices only, is forecast to increase 2.5 percent for full-service meals and snacks (restaurants) in 2002, while the CPI for limited-service meals and snacks (fast-food establishments) is expected to increase 3 percent. In 2001, the increases were higher, with restaurants increasing 3.2 percent and fast-food establishments increasing 3.1 percent. Restaurants and fast-food establishments continue to compete vigorously with the take-home meals offered by supermarkets. The three main sources of takeout food are fast-food (33 percent), restaurants (23 percent), and supermarkets (20 percent).

Total food expenditures (sales plus home production, donations, and supplied foods) are forecast to increase to \$875 billion dollars, up 3.6 percent from \$844 billion in 2001. Food price changes are key determinants of the proportion of income consumers spend for food. In 2001, 10 percent of household disposable personal income went for all food, with consumers expected to spend the same or smaller share of their income on food in 2002 and 2003. The proportion of household disposable personal income spent on food generally has trended downward, from 11.6 percent in 1990 and 13.2 percent in 1980.

Beef and veal. Widespread drought is pushing up feed costs and eroding pasture conditions, which means more beef production in the short term as more heifers and cows are slaughtered. However, this will lower beef production over the next 2-3 years as a greater proportion of females are held for breeding. Declining 2002 crop yield prospects will likely result in higher grain prices. Although the mid-year cattle inventory report indicated a slightly larger calf crop in 2002, drought and worsening forage conditions and rising grain prices are likely to end any prospects for herd expansion this year. Beef supplies over the next few years partially depend on when producers begin to retain heifers for expanding the breeding herd. Once retention begins, beef production will decline. Output should rise a few years later as the number of calves increases, but from a relatively low level as inventories are already down. During this transition, market prices could move sharply higher before cattle supplies for slaughter rebound.

Beef supplies are forecast to reach record levels in 2002, but are expected to tighten later this fall and into 2003. Retail prices are expected to average \$3.31 per pound in 2002, before rising to record levels in late 2003, as supplies decrease. Smaller beef supplies and rising U.S. beef prices make the U.S. beef market more attractive for world beef exporters. Although the economy continues to expand, the rate of expansion has slowed and expectations for future growth are uncertain. Dampened consumer demand and record supplies of pork and poultry expected in late 2002 and into 2003 will temper beef retail

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Fruits and Vegetables Likely to Have Highest Price Increases

Item	Relative weights*	2001	Expected 2002	Forecast 2003
Consumer price indexes	Percent		Percent change	
All items		2.8	1.6	2.2
All food	100.0	3.1	2.1	2 to 2.5
Food away from home	42.3	2.9	2.6	2 to 2.5
Food at home	57.7	3.3	1.7	2 to 2.5
Meats, poultry, and fish	14.8	4.5	0.7	1 to 2
Meats	9.9	5.7	0.8	1 to 2
Beef and Veal	4.7	8.4	0.5	1 to 2
Pork	3.2	3.8	-0.6	-1 to -2
Other meats	2.0	2.9	3.4	2 to 3
Poultry	2.8	3.2	1.7	1 to 2
Fish and seafood	2.1	0.5	-1.7	1 to 2
Eggs	0.6	3.4	1.1	0 to -1
Dairy products	6.2	4.0	1.0	1 to 2
Fats and oils	1.8	5.6	-0.4	1 to 2
Fruits and vegetables	8.2	3.7	4.2	3 to 4
Fresh fruits and vegetables	6.3	3.8	4.4	3 to 4
Fresh fruits	3.2	2.6	1.7	1 to 2
Fresh vegetables	3.1	5.1	7.1	4 to 6
Processed fruits and vegetables	1.9	3.2	4.0	3 to 4
Sugar and sweets	2.1	1.2	2.2	2 to 3
Cereals and bakery products	8.8	3.0	2.1	2 to 3
Nonalcoholic beverages	6.6	1.0	-0.7	0 to -1
Other foods	8.4	2.2	0.5	1 to 2
Food expenditures			\$ billion	
All food		844.2	875.0	926.0
Food at home		443.9	453.0	484.0
Food away from home		400.3	422.0	442.0

*Bureau of Labor Statistics estimated weights as share of all food, December 2001.

Sources: Historical data, Bureau of Labor Statistics; forecasts, Economic Research Service.

For CPI revisions and statistics, see:

www.ers.usda.gov/briefing/CPIFoodAndExpenditures/Data/cpiforecasts.html

Economic Research Service, USDA

price increases. The CPI for beef is expected to be up about 0.5 percent in 2002, increasing 1-2 percent in 2003. With continued heavy cattle weights, per capita consumption is expected to average 67.9 pounds in 2002 before declining to 63.8 pounds in 2003.

Pork. Pork production is forecast to reach record levels of 19.8 billion pounds in 2002 and remain at about this level in 2003. Producers are expected to respond to higher feed costs by reducing the number of sows that farrow in 2003, but pigs per litter are expected to increase slightly as less productive sows are culled from the breeding herd. U.S. pork imports are expected to top 1 billion pounds in 2002 and 2003, as pork products from Canada increased more than 17 percent in the first 6 months of 2002. The U.S. and Canadian pork industries are becoming more integrated. American appetites for pork ribs

also support Danish exports to the U.S. Lower export demand for U.S. pork products can be attributed to slower-than-anticipated economic growth in important foreign markets. Exports to Japan and Mexico, the 2 largest markets for U.S. pork, have been down slightly in 2002. U.S. pork exports in the first half of 2002 were down 5 percent from last year, and are expected to be down 2 percent for the entire year.

U.S. retail demand for pork remains strong. Retail pork prices are expected to average \$2.67 per pound in 2002, with the CPI for pork forecast to decline less than 1 percent from 2001. With large supplies continuing in 2003, the CPI for pork will likely be below 2002. Per capita consumption is expected to average 51.8 pounds in 2002, up from 50.2 pounds in 2001. With pork production down slightly in 2003 and the export market forecast to

increase to 1.6 billion pounds, domestic per capita consumption is expected to average 51.1 pounds next year.

Poultry. The CPI for poultry is forecast to increase 1.7 percent in 2002, with a further increase of 1-2 percent expected in 2003. Competing supplies of red meat and an uncertain broiler export market led to large supplies of poultry in the U.S. market. Broiler meat production in 2002 is expected to be 32.3 billion pounds and to increase 1 percent in 2003 to 33 billion pounds. Turkey production, expected to be 5.66 billion pounds in 2002, is forecast to increase slightly in 2003.

While domestic broiler production was up 3.8 percent the first half of 2002, production is expected to slow somewhat in the second half of 2002 due to large supplies of competing meats, uncertainty of the broiler export market, and expected higher feed costs. In the first 6 months of 2002, broiler meat shipments were down 18 percent from the same period in 2001.

Exports to Russia were 30 percent lower, while exports to Hong Kong (the second largest market) were 12 percent lower and shipments to Japan were down 59 percent. Partially offsetting these declines were higher exports to Mexico (up 8 percent) and to Korea (up 57 percent). Overall poultry exports during the first half of 2002 fell 15 percent over a year ago.

Fish and seafood. The CPI for fish and seafood is expected to be down 1.7 percent in 2002, but up 1-2 percent in 2003. A strong domestic economy boosted seafood sales in the restaurant and food-service sectors in 2000 and 2001. With a weaker economy in 2002 and fewer people eating in restaurants, the demand for seafood was down, and competition from beef and pork was stronger than the previous 2 years. A large percentage of total seafood sales are in the away-from-home market. More than 50 percent of the fish and seafood consumed in the U.S. is imported, with another 20 to 25 percent from U.S. farm-raised production.

Eggs. The CPI for eggs is forecast to increase 1.1 percent in 2002 and to hold steady or decrease slightly in 2003. Egg production is forecast to increase 1 percent in 2002 and is expected to remain steady in 2003. While egg production has

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changed little, eggs used in the breaking egg market (by restaurants and food manufacturers) continue to expand. Exports to the four largest traditional markets were mixed during the first half of 2002. Shipments to Canada, Mexico, and Japan were down while shipments to Hong Kong and the European Union were up. U.S. per capita consumption is expected to average 252 eggs in 2002 and 249 eggs in 2003, down from 253 eggs in 2001.

Dairy products. Retail prices and the CPI for dairy products are forecast to increase 1 percent in 2002, with an increase of 1-2 percent projected for 2003. Milk production is expected to grow almost 1 percent, from 169.8 billion pounds in 2002 to 171.4 billion pounds in 2003, due to partial recovery in milk per cow and a small increase in milk cow numbers. Demand for cheese and other dairy products should gradually resume growth following a stagnant first half of 2002.

Fats and oils. The fats and oils CPI is forecast to fall 0.4 percent in 2002, but to increase 1-2 percent in 2003. Lower retail prices for butter, which accounts for 31 percent of the fats and oils index, led to the index forecast to be unchanged in 2002. The remaining items contained in the fats and oils index are highly processed food items, with their price changes influenced by the general inflation rate and U.S. and world vegetable oil supplies.

Fresh fruits. The major fresh fruits consumed in the U.S. continue to be bananas (19 percent of the fresh fruit index), apples (18 percent), citrus (17 percent), and other fresh fruits including grapes, peaches, pears, and strawberries (46 percent). For 2002, higher retail price expectations for apples (up 7.2 percent) and citrus fruits (up 2.1 percent) are partially offset by lower prices for bananas (down 0.3 percent), peaches, strawberries, Thompson seedless grapes, and selected fall fruits. A CPI increase of 1.7 percent is expected for 2002 and a 1-2 percent increase for 2003.

In the first half of 2002, adequate supplies of California stone fruit (peaches, nectarines, and plums) held retail prices down. Import volume of bananas and papayas were lower in 2002 compared

with 2001, while imports of pineapples and mangoes were higher. Domestic consumption of fresh apples is expected to average 17 pounds per person, pear consumption averages 3 pounds per person, and grape consumption averages 7 pounds per person. Imports provide most of the tropical fruit supplies in the U.S., with bananas, mangoes, pineapples, and papayas the most popular. Demand for fresh tropical fruit in the U.S. has been on the rise, a trend influenced by the nation's growing immigrant population. Bananas are the most popular imported tropical fruit, accounting for over 85 percent of total import volume.

Fresh vegetables. The major fresh vegetables consumed in the U.S. continue to be potatoes (17 percent of the total fresh vegetable index), lettuce (13 percent), tomatoes (20 percent), and other fresh vegetables (50 percent). In 2002, the CPI for fresh vegetables is expected to increase 7.1 percent, with a projected growth of 4-6 percent for 2003. Reduced potato acreage (down 9 percent) and lower production (down 15.5 percent) in 2001 contributed to an expected 23-percent increase in retail prices in 2002. Lettuce prices are forecast to be 11 percent higher in 2002, largely due to cool, damp weather in California, which delayed harvesting of lettuce in March. Tomato prices are expected unchanged from 2001 to 2002, with shipments to the retail market up 9 percent in 2002, providing adequate supplies of fresh market tomatoes. Retail prices for other fresh-market vegetables (including snap beans, broccoli, cabbage, carrots, cauliflower, celery, sweet corn, cucumbers, peppers, and squash) are expected to increase an average of 4 percent in 2002.

The Farm Security and Rural Investment Act of 2002, which governs Federal farm programs for the next 6 years, features programs that will have a direct bearing on the fruit and vegetable industry. Two specific programs that may affect future retail pricing of fresh fruits and vegetables include: (1) Country of origin labeling for perishable agricultural commodities, including fruits and vegetables after a 2-year voluntary program; and (2) Government purchase of fresh fruits and vegetables for distribution to schools and service institutions. Additional funds will be used

to increase fruit and vegetable consumption and publicize related health promotion messages.

Processed fruits and vegetables. Contract production of the five major processing vegetables (tomatoes, sweet corn, snap beans, cucumbers, and green peas) was down 10 percent in 2001 but is forecast to be up 3 percent in 2002 to 1.26 million acres. Responding to burdensome inventories and weak wholesale prices, processors contracted for fewer acres of the five leading processing vegetables in 2001, but contract area was greater in 2002 for tomatoes (up 10 percent), green peas (up 3 percent), cucumbers for pickles (up 22 percent), and snap beans (up 2 percent). Although production area was up in 2002, the drought situation may lower yields of some of the vegetables for processing.

With reduced supplies of fruits and vegetables for processing in 2000 and 2001, the CPI for canned fruits and vegetables is forecast up 3.9 percent in 2002 and the CPI for frozen fruits and vegetables is expected to be 3.8 percent higher. The CPI for all processed fruits and vegetables is expected to increase 4 percent in 2002 and an additional 3-4 percent in 2003. Since frozen fruit and vegetable demand has been shown to be price and income sensitive, retailers will be reluctant to raise prices more than a modest amount in the coming year.

Sugar and sweets. Domestic sugar production for 2002/03 is projected at 8.75 million tons, with cane sugar estimated at 4.25 million tons and beet sugar estimated at 4.5 million tons. Total production was estimated to be 8.017 million tons in 2001/02. The area planted to sugar beets in 2002 was up 3 percent, while sugarcane acreage harvested during the 2002 crop year was down slightly from the year before. Most of the sugar beet acreage increase occurred in North Dakota and Idaho, while harvested sugarcane acreage was up in Hawaii and Texas.

The CPI for sugar and sweets is forecast to increase 2.2 percent in 2002 and another 2-3 percent in 2003. The sugar and sweets index has 3 sub-categories: sugar and artificial sweeteners (17.8 percent of the index), candy and chewing gum (63.5

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percent), and other sweets (jellies, jams, preserves, and syrups, 18.7 percent). The sugar and artificial sweeteners category is forecast to increase 1.8 percent in both 2002 and 2003, candy and chewing gum, 2.2 percent and 2.9 percent, and other sweets, 3.4 percent and 3.3 percent.

Cereal and bakery products account for over 15 percent of the at-home food CPI. Breakfast cereals and bread are the two largest components, each accounting for 19 percent of the index. Breakfast cereal prices are expected to increase 2 percent in 2002, and bread, 2.2 percent. With lower grain prices earlier this year and modest inflation-related processing cost increases, the CPI for cereals and bakery products is forecast to increase 2.1 percent in 2002 and another 2-3 percent in 2003. Most of the costs required to produce cereal and bread products are for processing and marketing (more than 90 percent in most cases), leaving the farm-grown ingredients a minor cost consideration.

Nonalcoholic beverages. The CPI for nonalcoholic beverages is forecast to fall 0.7 percent in 2002 and an additional 1 percent in 2003. Prices of carbonated drinks, nonfrozen noncarbonated juices and drinks, and coffee are the three major components, accounting for 38, 32, and 10 percent of the nonalcoholic beverage index, respectively. In 2002, retail prices are forecast lower for carbonated drinks (down 0.1 percent), and significantly lower for coffee (down 3 percent). World production of coffee in 2001/02 and 2000/01 set records of almost 110 million 60-kilogram bags. Near-record production in Brazil, which is the largest producer of *arabica* beans, and other Central and South American countries contributed to lower consumer coffee prices in 2002. In the U.S., the leading coffee consuming country, consumers prefer the smoother, premium, *arabica* beans produced in South America. More recently, coffee production has increased in Asia, making world coffee supplies more plentiful. For carbonated drinks, competition among

leading manufacturers has held down retail prices. In 2003, the CPI for carbonated drinks is forecast to fall slightly.

Other foods. The CPI for other foods is forecast up 0.5 percent in 2002, and 1-2 percent in 2003. Products in this category and their expected price changes for 2002 include soups (up 2.4 percent); frozen and freeze-dried prepared foods (up 0.4 percent); snacks (down 0.7 percent); spices and seasonings (up 2 percent); olives, pickles, and relishes (up 0.1 percent); sauces and gravies (up 0.7 percent); and baby foods (up 2 percent). These highly processed foods are heavily affected by changes in the all-items CPI. Competition among these products and from the away-from-home market should continue to dampen retail price increases for items in this category in 2003. **AO**

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Keep up with food prices and spending

ERS Food CPI, Prices, and Expenditures briefing room
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Impacts of the 2002 Farm Act
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Farm & Rural Communities

Farm Numbers Largest Growing Fastest

Declining farm numbers, increasing farm size, and concentration of production have captured the attention of the media, the general public, and policymakers for decades. While the number of farms peaked in 1935, then began declining, average farm size grew as consolidation occurred. A smaller share of farms accounts for a growing proportion of agricultural production, but the proportion of the smallest farms (sales less than \$10,000) is also growing.

Estimates of the number of farms and total farm acreage are available back to the 1850 Census of Agriculture, and the distribution of farms by acreage class is available back to 1880. But farm acreage measures land use, with no indication of the value of what is produced. The level of sales of farm products is arguably a better measure of farm size, since it unambiguously

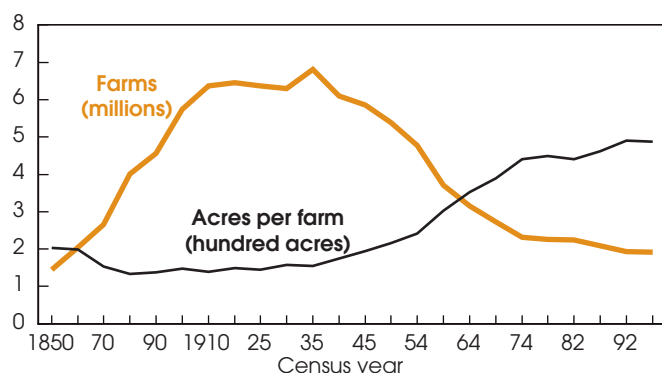
measures economic activity in dollars. Sales class as well as acreage should be considered when analyzing trends in farm size.

Changes in the distribution of farms by sales class in the last four agricultural Censuses (1982, 1987, 1992, and 1997) can be compared across time by using the producer price index for farm products to adjust for price changes. Unfortunately, constant-dollar sales class cannot be prepared before 1982, as Census records for individual farms are incomplete before then.

Counts of farms by constant-dollar sales class—available from 1982 onward—are consistent with conclusions about farm size based on acreage classes. Acreage and sales-class data show a trend toward large farm operations with at least 500 acres or with annual sales of at least \$250,000 in farm products.

Longrun Trends: Numbers by Acreage Class

Fall in Farm Numbers Has Slowed Since the 1970s



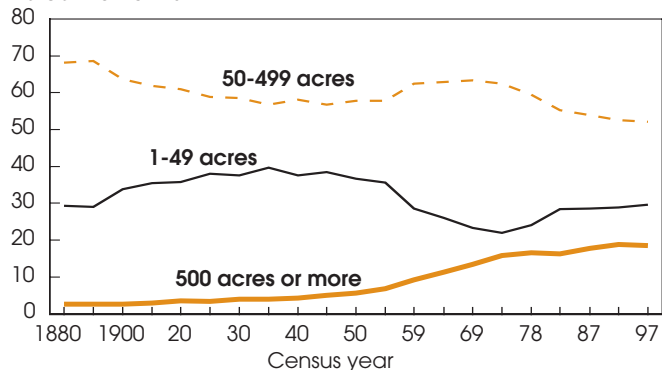
Source: Compiled by ERS from Census of Agriculture data.
Economic Research Service, USDA

After peaking at nearly 7 million in 1935, the number of farms dropped dramatically and the decline has continued.

- Most of the decline occurred during the 1940s, 1950s, and 1960s. This drop in farm numbers continues, but at a slower pace.
- By 1997, 1.9 million farms remained.
- Because the amount of farmland decreased to a lesser extent than the number of farms, average acres per farm is larger.

Largest and Smallest Farms Are Increasing as Share of U.S. Farms

Percent of farms



Source: Compiled by ERS from Census of Agriculture data.
Economic Research Service, USDA

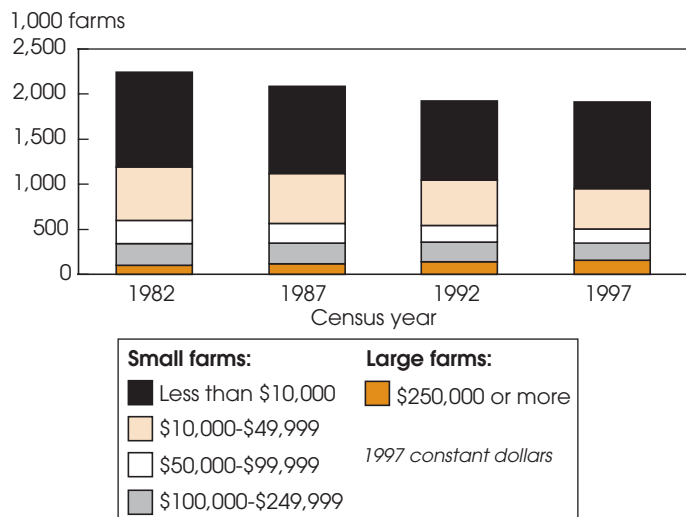
Farms with fewer than 50 acres and farms with more than 500 acres have both increased their share of total farms since 1974, but mid-sized farms' share has declined. These changes reflect different trends by acreage class.

- The number of farms with at least 500 acres increased steadily from 1880 through the 1960s, before stabilizing at 350,000-370,000 farms.
- Farms with 1-49 acres declined from a maximum of 2.7 million in 1935 to about half a million in 1974, but since 1974 the count has ranged from 540,000 to 640,000.
- The number of farms with 50-499 acres declined continuously from 3.9 million in 1935 to about 1 million farms in 1997. Nevertheless, mid-sized farms still accounted for about half (52 percent) of all farms in 1997.

Farm & Rural Communities

Counting Farms by Sales Class

Number of Farms With Sales of \$250,000 or More Increased Between Each Census Since 1982



Source: Compiled by ERS from Census of Agriculture data.
Economic Research Service, USDA

Between 1982 and 1997, large farms (those with sales of at least \$250,000) steadily increased their numbers.

- Large farms grew from 104,000 in 1982 to 157,000 by 1997.
- The *share* of large farms also grew, from 5 to 8 percent of all farms.
- Most farms in the large farm group had sales of \$250,000-\$499,999, but the number grew more rapidly among those with sales of \$500,000 or more.
- The number of farms in all other sales classes declined in each inter-Census period, with the exception of farms in the sub-group selling less than \$10,000 in farm products annually.
- Farms in the under-\$10,000 sales class declined in number from 1982 to 1992 but rose by 9 percent from 1992 to 1997—and account for half of all U.S. farms.

Number of Large Farms Has Increased Consistently

	Census year				Change		
	1982	1987	1992	1997	1982 to 1987	1987 to 1992	1992 to 1997
	<i>Number of farms</i>				<i>Percent change</i>		
Total farms	2,240,976	2,087,759	1,925,300	1,911,859	-6.8	-7.8	-0.7
Sales less than \$10,000 (very small)	1,051,510	966,743	879,842	962,966	-8.1	-9.0	9.4
Point farms	253,147	235,562	212,580	277,248	-6.9	-9.8	30.4
Other farms	798,363	731,181	667,262	685,718	-8.4	-8.7	2.8
Sales of \$10,000 to \$249,999 (other small farms)	1,085,320	1,002,999	905,500	792,322	-7.6	-9.7	-12.5
\$10,000-\$49,999	592,328	557,006	502,229	444,745	-6.0	-9.8	-11.4
\$50,000-\$99,999	253,069	217,479	186,937	158,160	-14.1	-14.0	-15.4
\$100,000-\$249,999	239,923	228,514	216,334	189,417	-4.8	-5.3	-12.4
Sales of \$250,000 or more (large farms)	104,146	118,014	139,958	156,571	13.3	18.6	11.9
\$250,000-\$499,999	70,173	76,764	86,968	87,777	9.4	13.3	0.9
\$500,000-\$999,999	22,914	27,151	34,911	42,860	18.5	28.6	22.8
\$1 million-\$2.49 million	8,090	10,250	13,139	19,069	26.7	28.2	45.1
\$2.5 million-\$4.9 million	1,724	2,213	2,919	4,066	28.4	31.9	39.3
\$5 million or more	1,245	1,636	2,021	2,799	31.4	23.5	38.5

1997 constant dollars

Source: Compiled by ERS from Census of Agriculture data.

Economic Research Service, USDA

Most of the 1992-97 increase in farms with sales less than \$10,000 occurred among “point farms”—those with sales under \$1,000 that might normally have annual sales high enough to meet the \$1,000 threshold for being considered a farm. Because of this increase in the last inter-Census period, farms with sales of less than \$10,000 now account for half of all U.S. farms.

The increase in point farms is due mainly to a change in how some farms were classified. In 1992, operations that placed all of their cropland in the Conservation Reserve Program (CRP) or Wetlands Reserve Program (WRP) were excluded from the Census farm tabulations if they did not otherwise meet the farm definition based upon sales, livestock, inventories, planted crops, or other criteria.

The farm count in 1997 was expanded to include operations that had placed all their cropland in the CRP or WRP. In the 1997 Census, CRP/WRP operations were counted as point farms. There were 66,716 of these CRP/WRP establishments in 1992. When these farms are added to the 1992 count of point farms in order to be consistent with the 1997 Census, the 1992-97 change in number of point farms shifts from a gain of 30 percent to a loss of 1 percent. In addition, the 9-percent increase in number of farms with sales less than \$10,000 becomes 2 percent.

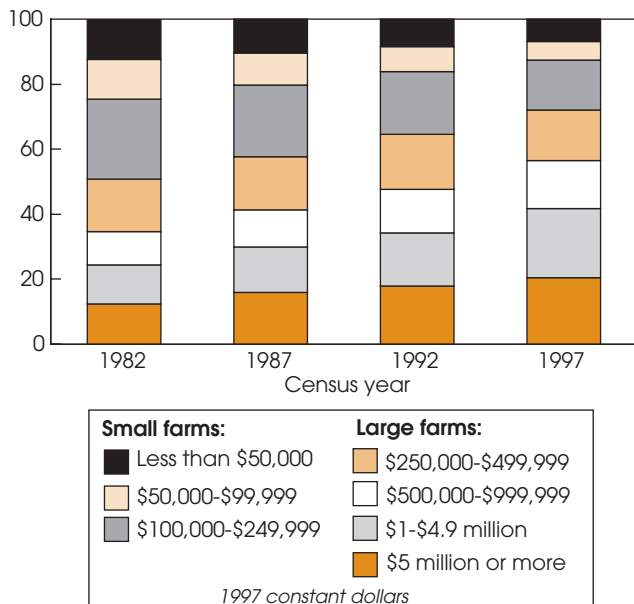
Regardless of how CRP/WRP farms are handled, farms with sales of less than \$10,000 constitute a large proportion of the total. These very small farms amounted to over two-fifths of all U.S. farms in Censuses before 1997, when CRP/WRP farms were not counted.

Farm & Rural Communities

Measuring Sales in the Farm Sales Classes

Large Farms' Share of Total Sales Rose to 72 Percent in 1997

Percent of total sales



Source: Compiled by ERS from Census of Agriculture data.
Economic Research Service, USDA

In addition to the shift in number of farms in the various sales classes, marked shifts occurred in the distribution of total sales among farm sales classes.

- The share of all sales accounted for by large farms increased steadily from 51 percent in 1982 to 72 percent in 1997.
- The largest gains in share occurred in the classes with sales of \$1 million-\$4.9 million (1.2 percent of farms in 1997), and \$5 million or more (0.1 percent of farms); each of these two highest sales categories now accounts for about one-fifth of agricultural sales.
- Farms with sales of at least \$5 million specialized in relatively few commodities in 1997:
 - high-value crops (vegetables and melons, fruits and tree nuts, and horticultural specialties), 34 percent;
 - cattle feedlots, 20 percent;
 - poultry and eggs, 16 percent; and
 - dairy, 9 percent.
- Farms with sales of \$1 million-\$4.9 million tended to specialize in a wider variety of commodities in 1997:
 - high-value crops, 21 percent;
 - poultry and eggs, 20 percent;
 - dairy, 12 percent;
 - hogs, 11 percent;
 - cash grains, 10 percent; and
 - field crops other than cash grains, 11 percent.

Defining Farms & Point Farms

The official Census definition of a farm is “any place from which \$1,000 or more of agricultural products were produced and sold or normally would have been sold during the census year.” If an operation does not have \$1,000 in sales, a “point system” assigns values for acres of various crops and head of livestock to estimate a normal level of sales. “Point farms” are farms with fewer than \$1,000 in sales with points worth at least \$1,000. Point farms tend to be very small. Some, however, may normally have large sales but experience low sales in a particular year due to bad weather, disease, or other factors. Farms and point farms are determined for each Census, based on current dollars.

Although the official farm definition has not changed since the 1974 Census of Agriculture, minor differences existed between Census and USDA definitions. The Census Bureau excluded Christmas tree farms and farms with all their cropland enrolled in the Conservation or Wetlands Reserve Program (CRP and WRP). The Bureau, however, included farms having five or more horses and sales of no other farm products; USDA’s National Agricultural Statistics Service (NASS) excluded these in its surveys. After responsibility for the Census of Agriculture was transferred to NASS from the Census Bureau by the 1997 Appropriations Act, the NASS and Census farm definitions merged. The 1997 Census included Christmas tree and CRP/WRP farms, and NASS surveys began to include horse farms in 1995.

Two new types of farms—operations specializing in maple syrup or “short rotation wood crops” (other than Christmas trees)—were added to both counts starting in 1997, with implementation of the new North American Industry Classification System. Short rotation wood crops have a harvest cycle of less than 10 years and include trees grown for pulp or tree stock in addition to Christmas trees.

The addition of these new farm types, however, had far less effect on the farm count than the addition of CRP/WRP farms, simply because there were fewer of them. Farms specializing in maple syrup or short rotation wood crops totaled 14,400 in 1997. About 8,800 of these farms had sales less than \$10,000, including 1,500 point farms.

Farm & Rural Communities

The Issue of Concentration

Acreage-class and sales-class data show a trend toward bigger farms—operating at least 500 acres or selling at least \$250,000 in farm products. Compared with acreage-class data, the sales-class data capture less of an increase in smaller farms, after making the adjustment in 1992 to include CRP/WRP point farms.

Changes in the distribution of sales volume by size of farm, however, were actually more dramatic than changes in the distribution of farm numbers. In discussions of farm structure, the growing share of production on fewer farms and fewer acres is referred to as concentration.

Concentration has been in progress for at least a century. In 1900, 17 percent of U.S. farms accounted for 50 percent of farm sales. By 1997, 2 percent of farms generated half of the agricultural sales. This 2 percent includes all farms with sales above \$1 million, plus nearly half (47 percent) of farms with sales of

\$500,000-\$999,999. On the other hand, the 17-percent figure for 1900 also indicates that some concentration existed a century ago, since production was not evenly distributed across all farms.

In most industries, concentration is not considered a policy issue until a very small number of firms—such as two to four—dominates the industry. The 2 percent of U.S. farms accounting for half of agricultural sales includes 46,100 farm operations, far too many for any individual farmer to hold much market power. Although for some commodities the level of concentration is far higher than for farms overall, agriculture as a sector is not highly concentrated compared with other industries. **AO**

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For More Information

How does the change in farm numbers vary by farm size?
www.ers.usda.gov/briefing/FarmStructure/Questions/farmnumbers.htm

How concentrated is U.S. agricultural production?
www.ers.usda.gov/briefing/FarmStructure/Questions/concentration.htm

1997 Census of Agriculture, U.S. Department of Agriculture, National Agricultural Statistics Service. *Vol. 1: Geographic Area Series*, Part 51: United States Summary and State Data, AC97-A-51, March 1999.

Research & Technology



Scott Bauer, Agricultural Research Service, USDA

A Role for Technology In 21st-Century Agriculture

Globalization—in the form of expanded trade, investment, and economic integration—could expand market opportunities for both developed and developing economies. Technological advances can be spread around the world, with the potential to enhance agricultural productivity, incomes, and the quality of life in all countries. However, some regions of the world have gained little from the discoveries and innovations made in agriculture and from global agricultural markets. This is partly because private research investment tends to be directed toward meeting the market demands of developed-country consumers rather than the needs of less developed countries.

At recent meetings attended by the leaders of the major industrial countries, a commitment was made to increase the possibilities for less developed countries to participate in the global economy. One way that the agricultural community and public sector could contribute to this effort is to strengthen the technological infrastructure in developing countries and facilitate the transfer of technologies appropriate to developing countries' needs.

R&D Increases Productivity In the Developed World

New technologies and innovative practices have been key factors in the economic development of high-income countries. Investment in agricultural research and development (R&D) by both the private and public sectors in the U.S. has resulted in a high level of productivity. Recent breakthroughs in information technology and life sciences have expanded opportunities to increase production efficiency and to provide consumers with the products they demand.

U.S. agricultural productivity, measured as the ratio of output to inputs, has increased two-and-one-half times since 1948. Canada and many European countries also have seen high rates of agricultural productivity growth over this period—averaging nearly 2 percent per year. The production of more agricultural goods using fewer inputs frees resources to be invested in other parts of a country's economy, thus increasing affluence. In the U.S., less than 10 percent of disposable income is spent on food, and this share includes the purchase of high-quality and convenience attributes that consumers now demand. In many developing economies, more than 50 percent of dis-

posable income goes toward providing food.

The development of new machines, chemicals, and biological improvements was the result of substantial investment in R&D. Both public and private investment in U.S. agricultural R&D has grown over the last four decades, contributing to productivity growth. Private investment, however, has grown faster and now surpasses the R&D expenditures of the public sector. The public and private sectors often have different investment objectives. In general, public research has supported the development of basic scientific knowledge and applications that are beneficial to the general public, while private R&D has tended to focus on marketable applications.

The focus of technology development in agriculture in the last half of the 20th century was to increase production efficiency on the farm. These changes were driven by innovations in machinery, pesticides, fertilizers, information technologies, and plant breeding. While this was a supply-driven focus, consumers also benefited from increased production of basic commodities at low prices.

Increased efficiency altered the structure of U.S. agriculture. As agricultural productivity increased by a factor of two-and-one-half, the total number of U.S. farms decreased by nearly two-thirds since the 1940s. Fewer farms are now involved in agriculture, but the total amount of land being farmed has changed little since the 1940s, and the average farm size has grown from under 200 acres to almost 500 acres.

The Promise of New Technologies

Developments in the biological sciences have always been major contributors to agricultural productivity. Innovations in plant breeding after World War II produced the "Green Revolution" in many parts of the world. At the end of the 20th century, breakthroughs in molecular biology led to the development of crops that are disease- and pest-resistant or herbicide-tolerant. Current farm-level biotechnology research is focused on developing crops that will tolerate a wider range of drought, acidity, salinity, heat,

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As Income Grows. . .

Low Income → **Middle Income** → **High Income**

. . . Consumer Demands Change. . .

Basic calories,
mostly
carbohydrates

Diversification of diet,
including meat and dairy
products

Food quality, variety,
convenience, and
other characteristics

. . . And So Do Research Priorities

Public research:
productivity of
subsistence products

Private and public research:
high nutrition and increased
production efficiency

Private research: convenience
and processed (luxury) foods
Public research: food safety
and environmental quality

and flooding. These crop characteristics could contribute to productivity increases in resource-poor countries.

In addition, biotechnology research is responding to consumer demand for more nutritious food with improved post-harvest quality. Transgenic plants and animals are being developed as sources of edible vaccines, medicines, and vitamins. Biotechnology techniques are also being used to develop sources of biomass to substitute for fossil fuels; biopolymers and enzymes for industrial uses; and bioremediation to remove toxic substances from the environment.

At the end of the 20th century, innovations in many nonagricultural fields contributed to new technologies in agriculture. For example, satellite technology, computers, and robotics allow a farmer to manage the use of pesticides, fertilizers, and water more efficiently by tailoring input amounts to the specific characteristics of the site. The use of these precision farming technologies may reduce both input costs to the farmer and chemical runoff to the environment.

Many have described the beginning of the 21st century as the “information age.” Precision farming and biotechnology resulted from the increased ability to analyze information. Innovations in computing capabilities and low-cost access to computers have dramatically enhanced the ability to store and analyze data. In addition, today’s communication networks

have facilitated the rapid exchange of information. Firms can assess consumer demands throughout the world, farmers can produce value-added crops for specific markets, and scientists can collaborate with researchers around the world in data gathering and analysis.

A World of Difference In Trade Opportunities

In May 2001, Neal Lane, former director of the National Science Foundation and former director of the White House Office of Science and Technology Policy, expressed optimism about the value of new biological and information technologies. “The swift globalization of knowledge,” he noted, “has created a web with the potential to draw nations and cultures together and to share benefits in a more equitable manner.” Global trade, Lane said, has the potential to benefit all nations (making the pie bigger), but he cautioned that not all countries had the capacity to take advantage of these promising developments.

With continued technology-induced productivity growth will come opportunities to develop new markets for agricultural products throughout the world. Export revenues accounted for 20-30 percent of U.S. farm income over the last 30 years. But expanding demand for agricultural products will depend on the income and agricultural productivity of the importing countries. Despite optimistic predictions about the benefits of globalization, there

are still major differences in incomes and opportunities between countries.

In developed economies, where incomes are relatively high, consumers demand high-quality and varied agricultural products. They demand value-added processed products that offer convenience, enhanced nutritional characteristics, and assurances of food safety. Further, they increasingly are concerned with the potential environmental impacts of agricultural production systems.

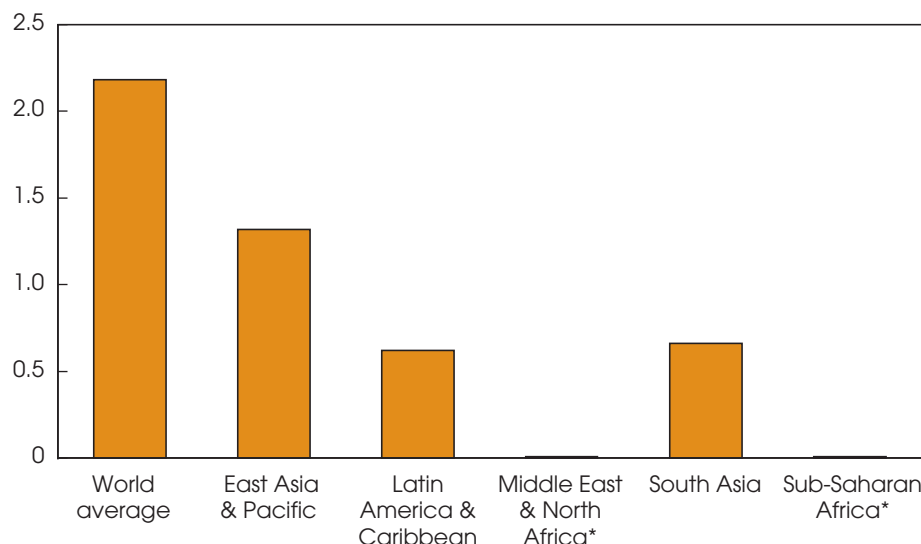
In middle-income countries (e.g., Poland, Mexico, and South Africa), the basic calorie needs have been met for the majority of the population. Consumers demand a wider range of agricultural commodities and sources of protein, but import demands are primarily for basic agricultural commodities and meats rather than for value-added processed products.

Developing countries offer the largest potential for expanding global markets, but major obstacles remain before incomes in these areas are sufficient to increase participation in international trade. Many of these countries have neither the income nor the productive capacity to consistently meet the basic nutritional needs of the population. Agricultural output makes up a large share of the national economy in many less developed countries. Per capita income is quite low in some of these regions, and there are wide gaps in income between and within

Research & Technology

Expenditures for Research and Development Differ Among Regions

% of Gross National Income



* Negligible

Source: World Bank.

Economic Research Service, USDA

regions. These countries currently offer little opportunity for profitable trade.

Meeting Consumer Demand: The Role of Technology

Consumer demands depend in part on income level, and public and private research priorities change to meet those demands. To supply the products demanded in high-income countries, the private sector invests in research to develop value-added products that can be profitably traded. Public-sector agricultural research can develop technologies and practices used to ensure food safety and to lessen potential environmental impacts of production. If consumer demand is strong for products that meet food safety or environmental quality criteria, the private sector can provide these products profitably as well.

To meet demands in middle-income countries, both public and private agricultural research programs focus on providing increased quantities of affordable sources of nutrition. There is less demand for value-added and processed products than in high-income countries.

In less-developed countries, demand for imported products is low. R&D efforts within many of these countries are not sufficient to substantially increase agricultural productivity, and opportunities for profitable private research investment are limited. The success of public research depends on financial resources and educational levels (human capital), as well as natural resource endowments, adequate infrastructure, and political stability among many factors. Due to constraints on many of these factors, less developed countries often do not have the strong public research capacity needed to develop technologies suited for their needs.

The need for increased productivity growth is great in many developing countries. Population growth rates in lower income countries are generally higher than in developed regions. If current trends continue, the world's population is expected to increase by 737 million persons by 2011, and most of the growth will be in developing countries. Unfortunately, crop yields are often substantially lower in these developing regions. Even though world food production has been increasing faster than population growth (*AO* June-July 2002), many people are undernourished in less developed regions. In Sub-Saharan Africa, 43 percent of the

population is chronically undernourished, consuming less than the minimum recommended nutritional requirements. However, the greatest numbers of undernourished people live in Asia.

With high population and low productivity levels, many low-income countries are not able to produce enough food domestically to meet basic nutrition needs. Nor do they have adequate income to import enough to eliminate these food gaps. Agricultural productivity in developing countries must grow more rapidly than it has in the past decade, both to increase domestic food production and to raise incomes—which, in turn, will lead to increased agricultural trade. Development and adoption of new technologies will be necessary to improve both food availability and access to food. The projected yield growth that would be needed to achieve food security is highest in Sub-Saharan Africa.

Most low-income countries do not have large financial resources to invest in the training of scientists, maintenance of research facilities, or many other components of a strong agricultural R&D program. Asian countries have been able to invest more than most countries in Africa, but the average level of expenditure in Asia is still below the world average. Since internal investment may not be adequate, there is a need to transfer technologies from developed to less developed countries to increase agricultural productivity and income. But technology transfer entails more than just shipping machines, seeds, or blueprints. Often, existing innovations developed for one region are not suitable to the unique circumstances that exist elsewhere.

Removing Barriers to Technology Transfer

Problems can arise in transferring agricultural technologies, methods, and ideas between developed and less developed countries. While each situation is different, three barriers often have been encountered within developing countries:

- lack of investment incentives;
- weak or nonexistent intellectual property rights; and

Research & Technology

- insufficient research capacity.

Within a developing country, financial resources and incentives for private research investment may be lacking. In order for a company to develop improved agricultural inputs or enhanced outputs, there must be a large and growing demand for its products. To ensure strong demand, farmers must have access to financial resources to purchase inputs, and the country's infrastructure must support the deliveries of inputs and crops in a timely fashion. Increases in on-farm efficiencies have little benefit if the product cannot reach the market. Lack of roads, transportation and communication networks, or storage facilities can impede effective productivity growth.

Legal, political, and financial institutions must also support market development. Private investment from foreign sources will not be forthcoming without a strong demand by farmers and a well-functioning infrastructure. Direct financial aid may be needed in some cases to improve the infrastructure and institutions that currently act as barriers to internal and foreign private investment.

Inconsistencies in intellectual property rights (IPR) protection between countries have also been a barrier to technology transfer. IPRs for agricultural innovations generally are granted in several ways: patents, copyrights, and Plant Variety Protection Certificates. These rights encourage private investment in R&D by giving firms a way to retain a greater share of research benefits than if the rights were not protected. IPRs can offer substantial incentives for development of technologies to increase agricultural productivity.

However, strong IPRs held outside the less developed country may inhibit the flow of new knowledge. Many in less developed countries have expressed concerns that firms in developed countries control so many intellectual property rights that innovations targeted for agricultural development may be impeded. The strength of IPRs also can affect incentives for investment by public research sectors in developed countries. In multilateral trading agreements, the U.S. has stressed the need for more consistent IPR protection between developed and

developing countries. To overcome the concern that access to innovations will be impeded, international public and private partnerships that share, pool, or license rights could offer incentives for research while encouraging innovation that serves the public good. Strong IPRs in developing countries could then help these countries gain access to needed technology from the private sector.

The third barrier to technology transfer is the lack of a strong technology research capacity within many developing countries. Development of new technologies and practices is a complex process. Each innovation must be adapted to the specific characteristics of an application. Geographic, climatic, and cultural factors differ substantially between countries, so technologies can seldom be directly transferred without adaptation. Local scientific expertise is needed to take advantage of the knowledge found throughout the world, and to establish environmental and food safety safeguards to ensure that both the positive and negative potential impacts of a new technology are adequately assessed.

Basic research findings made in one application spill over and can be used to enhance productivity in both developed and developing agricultural economies. Site-specific adaptations are often required, however, and a locally based research capacity is needed to reap the benefits of the technology transfer. Developed economies can help poorer countries build research and development capacity and facilitate the transfer of productive and appropriate technologies.

Improving research infrastructures in the poorest regions can be accomplished through direct investment in facilities and education in the developing country, and through support of organizations like the World Bank and the Consultative Group on International Agricultural Research. International collaboration in public agricultural research has been very successful in transferring basic knowledge throughout the world.

Public investment in research to increase the agricultural productivity of the poorest nations could have many benefits. Better nutrition and higher incomes would

improve lives, and incentives for private investment would increase as regions gain the economic resources to participate more actively in the global marketplace. With less developed and developed countries active in the market, there is potential to increase the benefits of globalization in terms of equity, prosperity, and global food security for more of the world's population. **AO**

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For further information:

"Does Land Degradation Threaten Global Agricultural Productivity & Food Security?" *Agricultural Outlook*, AGO-292, June-July 2002.

"Talking Turkey: Science, the Economy, and the Community," *Science and Technology Policy Yearbook: 2002*, American Association for the Advancement of Science, 2002.

"Coming to Grips with Globalization," *Choices*, Winter 2001-2002.

Upcoming Reports—USDA's Economic Research Service

The following reports are issued electronically at 4 p.m. (ET) unless otherwise indicated.

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October

- 3** *Sugar and Sweeteners Outlook***
- 7** *Agricultural Income and Finance Situation and Outlook***
- 10** *Aquaculture Outlook***
- 11** *World Agricultural Supply and Demand Estimates (8:30 a.m.)*
- 15** *Cotton and Wool Outlook***
- 16** *Feed Outlook (9 a.m.)***
- 16** *Wheat Outlook (9 a.m.)***
- 17** *Fruit and Tree Nuts Yearbook* Livestock, Dairy, and Poultry Situation and Outlook***
- 21** *U.S. Agricultural Trade Update***
- 22** *Agricultural Outlook (3 p.m.)**
- 23** *Oil Crops Yearbook**
- 24** *Vegetables and Melons Outlook***

*Release of summary.

**Electronic newsletter.

Special Article

NAFTA's Impacts on U.S. Agriculture: Trade & Beyond



Jack Harrison

NAFTA, the North American Free Trade Agreement, has generally benefited U.S. agriculture and related industries. U.S. agricultural trade with Canada and Mexico more than doubled during the 1990s, a development to which NAFTA contributed. Moreover, the agreement has established rules and institutions that mitigate potential trade frictions, promote foreign direct investment, and facilitate public discourse about environmental issues. Thus, NAFTA's effects on agriculture should be assessed not only in terms of trade impacts, but also for the trade, investment, and institutional reforms resulting from its implementation.

The adjustment to freer trade in North America has been relatively smooth. Most U.S. barriers to Canadian and Mexican exports were low prior to NAFTA, and dismantling of tariffs under the agreement is in general proceeding gradually. However, the U.S. dollar has tended to appreciate in real terms against the Canadian dollar since 1992. While this development is not the result of NAFTA, it has made U.S. farm exports more expensive to Canadian customers while making imports more affordable to U.S. consumers. In contrast, the real value of the U.S. dollar in Mexican *pesos* has tended to decline in recent years, gradually reversing the precipitous drop in the *peso's* value that occurred in late 1994 and early 1995. This increase in value of the *peso* has worked to the advantage of U.S. exports to Mexico.

NAFTA Has Increased Trade of Some Products

NAFTA, which took effect January 1, 1994, provides for the progressive dismantling of most barriers to trade and investment among Canada, Mexico, and the U.S. over the 14-year period ending January 1, 2008. The agreement incorporates the Canada-U.S. Free Trade Agreement (CFTA), whose implementation was

completed on January 1, 1998. Although NAFTA's transition is still in progress, tariff elimination for agricultural products is nearly complete. For this reason, NAFTA's influence on U.S. agriculture to date should provide a good indication of the agreement's long-term impacts.

U.S. agricultural trade with Canada and Mexico has continued on an upward trend since NAFTA's implementation. While only a portion of this increase can be attributed solely to the agreement, NAFTA has allowed competitive market forces to play a more dominant role in determining agricultural trade flows among the three countries. The agreement has facilitated a reorientation of U.S. agricultural trade in which U.S. exporters and importers put greater focus on the NAFTA region. In 2001, 29 percent of U.S. agricultural exports were destined for either Canada or Mexico, and the two countries supplied 38 percent of U.S. agricultural imports. In 1990, these shares were 17 percent and 25 percent, respectively.

To examine NAFTA's trade impact, USDA's Economic Research Service estimated the trade changes resulting from CFTA and NAFTA for 38 commodities or commodity groupings, isolating the agreements' influence from population growth, changes in macroeconomic performance and exchange rates, unusual weather patterns, and other factors. For commodities subject to quotas or other quantitative restrictions before CFTA and NAFTA, the volume of trade during 1994-2000 was compared with previously allowed quantities. This assumed no over-quota trading except where analysts determined that previous limits were not enforced. For commodities subject to tariffs prior to CFTA and NAFTA, economic models and assessments by commodity trade specialists were used to estimate the impact of tariff changes.

This article is based on a recently released ERS Report, "Effects of North American Free Trade Agreement on Agriculture and the Rural Economy" (WRS-02-1, July 2002, www.ers.usda.gov/publications/wrs0201/). The report provides a commodity-level assessment of NAFTA's impact on U.S. agricultural trade with Canada and Mexico, and it evaluates the agreement's influence on investment and employment in agriculture and related industries. Other topics addressed by the report include the relationship between trade liberalization and the environment and recent developments in U.S.-Mexico transportation.

The report is prepared in accordance with the North American Free Trade Agreement Implementation Act, which requires the Secretary of Agriculture to submit a biennial report on this subject to the U.S. Congress, starting in 1997 and ending in 2011. The current edition of the report reflects the research team's understanding of economic and policy developments through early 2001.

For most commodities, NAFTA's trade effect has been relatively minor, generating a small increase in U.S. exports to or imports from Canada or Mexico over what would have occurred without the agreement. For a handful of commodities, NAFTA's impact has been larger, with an increase of 15 percent or more in trade attributable to the agreement. This increase is particularly noticeable for products whose trade was severely restricted prior to CFTA and NAFTA.

U.S.-Canada **beef** trade has expanded substantially from the elimination of quantitative restrictions formerly imposed by both countries. In fact, U.S. beef exports to Canada may be twice as high as without CFTA and NAFTA. In addition, NAFTA tariff reductions have provided a moderate boost to U.S. beef exports to Mexico. Continued economic growth in Mexico should strengthen demand for this high-value product.

Because of animal health considerations, North American **hog** trade consists almost entirely of Canadian exports to the U.S. and U.S. exports to Mexico. Canadian hog exports to the U.S. increased from about 900,000 head in 1994 to 5.3 million head in 2001, due largely to Canada's elimination of grain transport and other agricultural subsidies, rather than to CFTA or NAFTA. Removal of subsidy assistance to grain and hog producers, in particular, provided a strong incentive for the local use of grain in livestock production, and it helped bring about an end to U.S. countervailing duties on Canadian hogs. U.S. hog exports to Mexico currently face a duty of 35.1 cents per kilogram, the result of a Mexican antidumping investigation in 1998 and 1999.

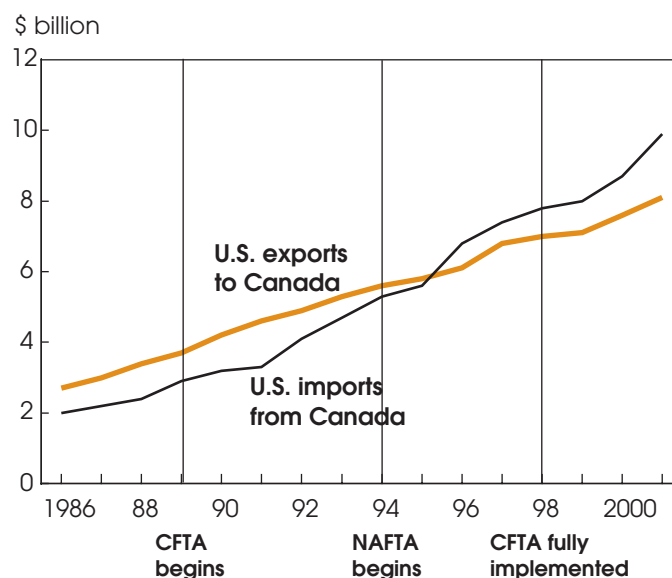
CFTA and NAFTA have had a small, positive impact on U.S. **pork** and **poultry** meat exports to Canada and Mexico, but the influence of other factors has been more powerful. Sustained economic growth in Mexico during the late 1990s boosted demand for U.S. pork and poultry, and both Canada and Mexico have shown flexibility in their application of quantitative restrictions on U.S. poultry.

Mexico's import policy toward U.S. **corn** is more open than required by NAFTA, and a series of droughts limited Mexican corn production in past years. U.S. corn exports to Mexico in 2001 were more than three times their average volume during 1990-93. Although Mexico eliminated its seasonal tariff on U.S. **sorghum** as part of NAFTA, some Mexican livestock producers switched from sorghum to corn feed due to increased availability of U.S. corn. Still, sorghum is one of the major U.S. agricultural exports to Mexico.

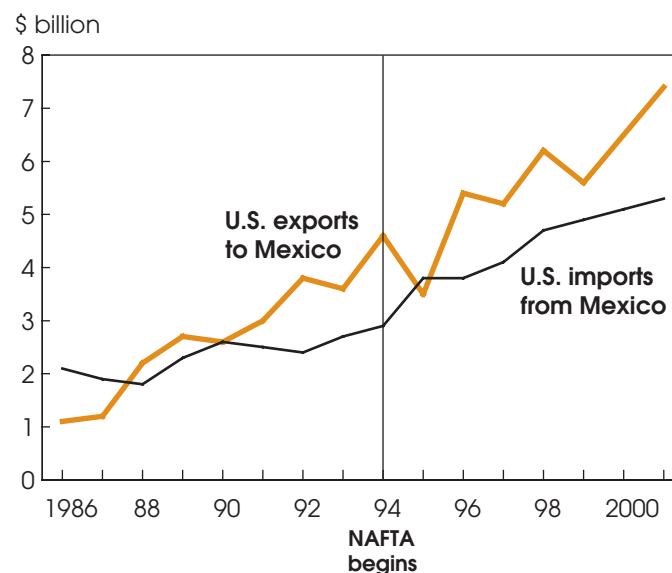
The gradual elimination of tariffs on U.S.-Canada corn trade has facilitated increased volumes of trade in years when bad weather severely damaged the crop in one country but not the other. A prominent example of this occurred in 2001, when a drought in Canada led to the importation of 3 million metric tons (mt) of U.S. corn, compared with an annual average of just 890,000 mt during 1990-2000.

CFTA and NAFTA also gradually did away with tariffs on U.S.-Canada **wheat** trade. Although this reform has increased U.S.

U.S. Ag Trade With Canada Has Continued to Climb Since NAFTA. . .



. . .As Has U.S. Ag Trade With Mexico



CFTA = Canada-U.S. Free Trade Agreement. NAFTA = North American Free Trade Agreement.

Economic Research Service, USDA

wheat *imports* from Canada by a large amount, its impact on U.S. wheat *exports* to Canada is negligible, reflecting both Canada's historic strength in wheat production and the long-term impact of Canada's various regulatory actions.

Canada and the U.S. continue to spar over the activities of the Canadian Wheat Board (CWB), and in February 2002, the Office of the U.S. Trade Representative (USTR) completed a Section 301 investigation of this subject, in which it concluded that the

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CWB had “taken sales” from U.S. wheat farmers. In its finding, USTR outlined several measures that it would take to “level the playing field” for U.S. farmers, including the exploration of a possible dispute settlement case against the CWB in the World Trade Organization. Section 301 of the Trade Act of 1974, as amended, authorizes the Federal government to impose trade sanctions against foreign countries under certain conditions, including the violation of a trade agreement with the U.S. and the maintenance of “unjustifiable, unreasonable, or discriminatory” policies that restrict U.S. commerce. Section 301 investigations are conducted by USTR and may be initiated in response to a petition from an interested party or self-initiated by USTR.

The U.S. is currently the predominant foreign supplier of **rice** to Mexico, due largely to Mexico’s strict phytosanitary standards which the U.S. meets but other major exporters do not. Should Asian rice exporters satisfactorily meet these standards, the U.S. tariff advantage under NAFTA would become extremely important to U.S. rice exporters. Rough rice accounts for the bulk of Mexico’s rice imports. Currently, no major Asian rice producer allows this product to be exported, in an effort to preserve jobs associated with rice processing. Long grain milled rice from the U.S. has been subject to Mexican antidumping duties of up to 10.18 percent since June 2002. Shipments of this product make up about 10 percent of U.S. rice exports to Mexico.

NAFTA’s impact on U.S.-Canada **oilseed** trade differs substantially from its impact on U.S.-Mexico trade in oilseeds. CFTA and NAFTA have increased two-way trade between Canada and the U.S. in processed oilseed products, particularly **vegetable oil**. In contrast, NAFTA has boosted U.S. **soybean** exports to Mexico, as expansion of the Mexican livestock industry has increased the demand for vegetable meal, which Mexico satisfies by crushing imported oilseeds.

The stock of U.S. direct investment in the Mexican food processing industry has increased by about two-thirds since NAFTA’s implementation.

Creation of a tariff-rate quota (TRQ) for raw **peanuts** from Mexico has enabled that country to export substantial quantities of this product to the U.S. for the first time. In the last several years, Mexico also has begun to export **peanut butter and paste** to the U.S., but these products make up only a small proportion of U.S. consumption. U.S. imports of Canadian peanut butter are restricted by a TRQ, one of the few remaining tariff barriers between the U.S. and Canada.

To qualify for NAFTA tariff reductions, **textiles and apparel** traded among the NAFTA countries must be made from yarn and fiber produced by a NAFTA member. These provisions have enabled the U.S. textile and apparel industries to integrate more closely with their Canadian and Mexican counterparts. As part of this process, U.S. **cotton** exports to Canada and Mexico more than doubled in volume between 1993 and 2000, while apparel imports from Mexico and other countries increased.

NAFTA is gradually expanding duty-free quotas for U.S.-Mexico **sugar** trade, as the two countries move toward free trade in this commodity starting in fiscal year (FY) 2008. The formula for the quota on Mexican shipments to the U.S. is based on the difference between Mexico’s projected production and projected domestic consumption, including an allowance for consumption of high-fructose corn syrup. As the quotas have expanded, Mexico’s access to the U.S. sugar market has climbed from 7,258 mt prior to NAFTA to 116,000 mt in FY 2001. These imports, along with low world prices for sugar, pose challenges for the U.S. sugar support program.

CFTA and NAFTA have affected some aspects of North American **tomato** trade, but other factors have played a more prominent role. A price-floor agreement among principal Mexican and U.S. growers secured the suspension of U.S. antidumping duties on **fresh tomatoes** from Mexico from 1996 to 2002. The price-floor agreement ended in August 2002, after Mexican growers submitted written notice of their withdrawal, and the antidumping duties, which were based on a preliminary U.S. investigation, have since been imposed.

Increasing U.S. demand for high-quality tomatoes and the relative strength of the U.S. dollar have fostered the emergence of sizable Canadian exports of hydroponic tomatoes to the U.S. Between 1990 and 2000, Canadian exports of fresh or chilled tomatoes to the U.S. expanded from about 3,000 mt to more than 101,000 mt. In 2001, U.S. tomato growers initiated an antidumping case against Canadian producers of greenhouse tomatoes, and a Canadian trade organization filed a similar suit concerning fresh tomatoes from the U.S. Neither case resulted in the imposition of antidumping duties.

U.S. imports of **processed tomatoes** from Mexico have shifted in recent years from primarily tomato paste to increasing quantities of tomato juice and sauce, a change that is partially due to NAFTA tariff changes. As part of NAFTA, the U.S. immediately eliminated its tariff on Mexican tomato juice and ketchup in 1994, and is gradually phasing out its tariffs on other processed tomato products from Mexico. Tariff elimination under CFTA and NAFTA also has boosted U.S. tomato sauce exports to Canada.

CFTA and NAFTA also have influenced North American **potato** trade. Elimination of U.S. tariffs on fresh potatoes from Canada has provided a moderate boost to Canadian fresh potato exports to the U.S. But an expansion in Canadian potato production and processing and the strong U.S. dollar have played even greater roles in the growth of Canadian exports of frozen french fries to the U.S. Through Mexico’s establishment of a transitional TRQ with a low preferential tariff for processed potatoes from the U.S., NAFTA has had a large, positive impact on U.S. processed potato exports to Mexico, particularly frozen french fries (see related story on page 8).

North American **fruit** trade provides many examples of NAFTA’s impacts. U.S. grape and pear exports to Mexico expanded with the end of Mexican import licensing on grapes and the elimination of Mexico’s tariff on U.S. pears, both the

NAFTA Has Substantially Affected Trade of Some Commodities

Selected commodities	Annual average of actual trade					Estimated change in trade volume due solely to NAFTA ¹
	Value (US\$ million)		Volume (1,000 units)			
	1990-93	1994-2000	1990-93	1994-2000	Units	
U.S. exports to Canada						
Beef and veal	349	317	82	92	Mt	Increase—High
Wheat products ²	22	48	27	66	Mt	Increase—High
Cotton (including linters)	62	91	42	60	Mt	Increase—Medium
Processed tomatoes	71	109	NA	NA	NA	Increase—Medium
U.S. exports to Mexico						
Rice	41	87	161	386	Mt	Increase—High
Dairy products	151	160	NA	NA	NA	Increase—High
Cotton (including linters)	102	341	80	234	Mt	Increase—High
Processed potatoes	10	37	12	40	Mt	Increase—High
Fresh apples	28	61	54	112	Mt	Increase—High
Fresh pears	16	26	31	51	Mt	Increase—High
Corn	178	521	1,557	4,322	Mt	Increase—Medium
Oilseeds	401	739	1,662	2,953	Mt	Increase—Medium
Beef and veal	149	306	50	106	Mt	Increase—Medium
Sorghum	402	336	3,687	3,073	Mt	Decrease—High
U.S. imports from Canada						
Wheat (excluding seed)	136	268	1,109	1,920	Mt	Increase—High
Wheat products ²	38	98	72	185	Mt	Increase—High
Beef and veal	260	638	111	264	Mt	Increase—High
Corn	21	31	218	268	Mt	Increase—Medium
Fresh and seed potatoes	51	77	274	380	Mt	Increase—Medium
Processed potatoes	51	209	92	322	Mt	Increase—Medium
Cattle and calves	741	857	1,063	1,185	Hd	Decrease—High
U.S. imports from Mexico						
Wheat products ²	4	14	6	22	Mt	Increase—High
Cattle and calves	388	300	1,144	965	Hd	Increase—High
Peanuts (shelled and in shell)	*	3	*	4	Mt	Increase—High
Sugar (cane and beet)	1	17	2	49	Mt	Increase—High
Fresh tomatoes	264	470	322	608	Mt	Increase—Medium
Processed tomatoes	15	16	NA	NA	NA	Increase—Medium
Cantaloupe	40	47	120	136	Mt	Increase—Medium

1. Estimates reflect changes in trade volume during 1994-2000 due solely to CFTA and NAFTA and are based on assessments of ERS analysts. High = change of more than 15 percent; Medium = change of 6 to 15 percent, compared with absence of CFTA and NAFTA. 2. Includes flour, bulgur wheat, starch, gluten, and uncooked pasta.

*Negligible. Mt = Metric tons. Hd = Head. NA = Not available

Source: Based on *Foreign Agricultural Trade of the United States* data for August 2002, USDA.

Economic Research Service, USDA

result of NAFTA. Mexico's transitional TRQ for fresh apples from the U.S. has had a large, positive impact on U.S. apple exports to Mexico, but a minimum-price arrangement forged by the Mexican government and the U.S. apple industry in order to suspend Mexican antidumping duties has worked to limit this trade. On the U.S. import side, NAFTA tariff reductions have provided a moderate stimulus to Mexican shipments of cantaloupes to the U.S. These shipments had decreased during the mid-1990s due to weather-related damage in some producing areas in Mexico.

NAFTA Has Facilitated Investment & Aggregate Employment

NAFTA's rules concerning foreign direct investment (FDI) strengthen the rights of foreign investors to retain profits and returns from their initial capital investments. The combination of trade liberalization and investment reform has stimulated FDI in the North American food processing industry, with firms in each NAFTA country providing substantial investment capital.

The stock of U.S. direct investment in the Mexican food processing industry has increased by about two-thirds since NAFTA's implementation, reaching \$3.8 billion in 1999. Much of this

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investment is concentrated in highly processed products such as pasta, confectionery items, and canned and frozen meats. Similarly, under CFTA and NAFTA, U.S. FDI in the Canadian food processing industry expanded from \$1.8 billion in 1989 to \$5.8 billion in 1999. But unlike FDI in Mexico, U.S. FDI in Canada is geared more towards the handling and processing of grains.

Mexican firms also increased their investments in U.S. food companies. In 1999, Mexican FDI in the U.S. processed food industry equaled \$1 billion, compared with just \$306 million in 1997. Mexican companies own U.S.-based firms engaged in bread baking, tortilla making, corn milling, and the manufacture of Mexican-style food products, just to name a few examples.

In contrast, the stock of Canadian direct investment in the U.S. processed food industry dropped from \$6.7 billion in 1998 to about \$1.0 billion in 1999, following the liquidation of a major company's assets. This reduction is a sharp departure from the first several years of NAFTA, when Canadian FDI in the U.S. processed food industry grew from \$5.1 billion in 1993 to \$7.6 billion in 1997, exceeding the U.S. presence in Canada.

By increasing opportunities for U.S. exports and encouraging a more efficient allocation of economic resources, NAFTA has likely had a small, positive influence on the overall level of U.S. agricultural employment. But this impact is difficult to detect, in part because many aspects of U.S. agricultural production are capital intensive, and in part because factors other than NAFTA have driven many of the employment changes. Employment in crop production has changed very little overall since NAFTA's implementation, while employment in livestock production has decreased, reflecting technological change and consolidation in the hog industry and drought and poor range conditions in the cattle industry.

Two manufacturing sectors related to agriculture—textiles and apparel—have experienced a definite decline in employment since implementation of NAFTA. The reduction began in the 1970s and most likely would have continued in NAFTA's absence. By encouraging the development of a more integrated textile and apparel industry within North America, the agreement has expanded textile and apparel trade among the NAFTA countries and increased productivity in the U.S. textile and apparel sectors. But this development has been accompanied by further reductions in U.S. textile and apparel employment.

Resolving Trade Frictions In the NAFTA Era

Sanitary and phytosanitary measures. By "locking in" key trade and investment reforms, the agricultural sectors and governments of NAFTA partners have been able to devote greater attention to resolving conflicts related to sanitary and phytosanitary (SPS) measures. Some initiatives on these measures have taken place within the trilateral NAFTA Committee on SPS Measures. In addition, producers in each NAFTA country have worked to formulate and meet higher quality standards.

Inspection and approval of product quality at the regional level, and in some instances at the level of individual producers, have opened the door to new markets across international borders. Resulting developments include:

- imports of avocados to the U.S. from certain approved growers in the Mexican state of Michoacán;
- U.S. recognition of the Mexican states of Sonora and Yucatan as having a low risk of transmitting hog cholera;
- Mexico's lifting of its ban on citrus from Arizona and certain producing areas in Texas that are not regulated for fruit fly; and
- continuing efforts to design and implement a satisfactory inspection process for U.S. apple exports to Mexico.

With continuing integration of U.S. and Mexican railway systems, intermodal rail (truck-rail-truck) may handle increased traffic in containerized grains.

Trade remedies. Trade growth and liberalization can generate conflicts. Agricultural producers in each NAFTA country have been involved in a number of disputes, many of which concern antidumping and countervailing-duty measures against imports regarded as harmful to domestic industry. NAFTA arbitration panels currently are looking at two agricultural cases concerning Final Antidumping Duty Determinations by Mexico. One panel is addressing U.S. exports to Mexico of high-fructose corn syrup; the other is dealing with U.S. exports of bovine carcasses. Previous NAFTA panels have issued rulings in cases involving U.S. exports of refined sugar to Canada, Canadian exports of live swine to the U.S., and Mexican exports of fresh cut flowers to the U.S.

Transportation issues. Mexico successfully brought a case before a NAFTA arbitration panel concerning U.S. delays in implementing the agreement's provisions for cross-border trucking. In response, the U.S. is establishing a safety inspection and certification system for Mexican trucks entering the U.S. to be administered by the U.S. Department of Transportation's Federal Motor Carrier Safety Administration. This will allow Mexican trucks to continue to U.S. destinations without reloading their goods to U.S. trucks, which has been a bottleneck hampering trade and causing congestion. Several studies have quantified total delay costs along the entire U.S.-Mexico border, with the most recent comprehensive study placing these costs at \$77.4 million in 1999. This estimate would have been even higher if increases in air pollution associated with traffic congestion at the borders had been taken into account.

Further development of the Mexican transportation system will influence the modes of transportation that are used in U.S.-Mexico agricultural trade. With continuing integration of U.S. and Mexican railway systems, intermodal rail (truck-rail-truck) may handle increased traffic in containerized grains. Improvements in the Mexican Port of Veracruz should increase the competitiveness of ocean grain shipping from U.S. ports along the Gulf Coast. But improvements in Mexican ports may also lower transportation costs for U.S. competitors.

Environmental concerns. NAFTA appears to have a combination of positive and negative environmental effects, as producers select alternative techniques of production, increase or decrease the scale of production, and modify the crop and animal composition of their activities in response to changing economic incentives. The notion that NAFTA has encouraged a general weakening of environmental quality and protection has been refuted by a comparative study in 2000 of the environmental regulations of border and nonborder states.

Among NAFTA's innovations was the creation of the North American Commission for Environmental Cooperation (CEC), which promotes environmental objectives and provides opportunities for environmental organizations and other stakeholders to voice their concerns. Several public symposia have been held under the auspices of the CEC. By bringing environmental concerns before policymakers, these gatherings have facilitated

coordination of trade and environmental policies and lessened potential conflicts.

Formal NAFTA mechanisms represent only a small part of the dispute resolution process. Most disputes are addressed in earlier stages through governmental consultations and negotiations. The private sector also has begun to play a larger role in dispute resolution. For example, in two disputes over grapes and cattle, producer groups in Mexico and the U.S. worked jointly to resolve regulatory incompatibilities that were at the root of the disagreement.

By facilitating increased trade and investment among Canada, Mexico, and the U.S., NAFTA is enabling agricultural producers throughout North America to benefit more fully from their relative strengths and to respond more efficiently to changing economic conditions. Each NAFTA country has participated in the expanded agricultural trade and FDI fostered by the agreement. Moreover, the agreement has been accompanied by substantial improvements in the North American transportation system and in the institutional capacity of the NAFTA governments to facilitate agricultural trade, resolve trade disputes, and cooperate on environmental issues. Together, these developments can lead to a more prosperous, more integrated North American economy.



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For more information

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Food Farms Rural communities Environment Trade



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Questions? Comments?

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Recent Growth Patterns in the U.S. Organic Foods Market



A new report from USDA's Economic Research Service

Once they were relegated to a niche market and sold in a limited number of retail outlets. Today, organic foods are turning up in conventional supermarkets, farmers' markets, and club stores, as well as in natural product retail outlets. A new ERS report summarizes growth patterns in the U.S. organic sector in recent years and traces the market channels for major commodity groups. Also addressed: research, regulatory, and other USDA programs on organic agriculture.

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Statistical Indicators

Summary Data

Table 1—Key Statistical Indicators of the Food & Fiber Sector

	Annual			2001		2002				2003
	2001	2002	2003	III	IV	I	II	III	IV	I
Prices received by farmers (1990-92=100)	102	99	--	108	94	100	97	--	--	--
Livestock & products	106	93	--	111	100	96	90	--	--	--
Crops	99	105	--	105	90	104	104	--	--	--
Prices paid by farmers (1990-92=100)										
Production items	120	118	--	120	118	118	118	--	--	--
Commodities and services, interest, taxes, and wage rates (PPITW)	124	123	--	124	123	123	123	--	--	--
Cash receipts (\$ bil.)	203	196	--	51	61	46	42	48	60	--
Livestock	106	97	--	27	28	25	23	23	27	--
Crops	96	99	--	24	33	21	19	26	33	--
Market basket (1982-84=100)										
Retail cost	177	--	--	178	179	181	--	--	--	--
Farm value	106	--	--	110	108	107	--	--	--	--
Spread	215	--	--	215	217	220	--	--	--	--
Farm value/retail cost (%)	21	--	--	22	21	21	--	--	--	--
Retail prices (1982-84=100)										
All food	173	177	180	174	175	176	176	177	177	179
At home	173	177	179	174	175	176	176	176	177	179
Away from home	174	178	182	175	176	177	178	179	180	181
Agricultural exports (\$ bil.) ¹	52.8	54.5	--	12.3	15.2	13.8	12.2	12.4	--	--
Agricultural imports (\$ bil.) ¹	39.0	40.0	--	9.4	10.0	10.1	10.9	9.5	--	--
Commercial production										
Red meat (mil. lb.)	45,663	47,222	45,595	11,371	12,048	11,259	11,733	12,087	12,143	11,249
Poultry (mil. lb.)	37,343	38,492	39,175	9,406	9,444	9,372	9,835	9,685	9,600	9,550
Eggs (mil. doz.)	7,152	7,206	7,210	1,788	1,829	1,767	1,789	1,810	1,840	1,770
Milk (bil. lb.)	165.3	169.7	171.4	40.6	40.8	42.3	44.0	41.7	41.8	43.0
Consumption, per capita										
Red meat and poultry (lb.)	213.3	220.2	215.5	53.7	54.9	52.2	55.6	56.4	56.1	52.7
Corn beginning stocks (mil. bu.) ²	1,899.1	--	--	3,924.0	1,899.1	1,899.1	8,264.7	--	--	--
Corn use (mil. bu.) ²	9,780.0	--	--	2,026.3	3,143.7	3,143.7	2,471.1	--	--	--
Prices ³										
Choice steers--Neb. Direct (\$/cwt)	72.71	67-68	72-78	70.19	65.13	70.19	65.58	63-64	68-72	69-75
Barrows and gilts--IA, So. MN (\$/cwt)	45.81	33-34	33-36	51.05	37.30	39.43	35.03	34-35	26-28	32-34
Broilers--12-city (cents/lb.)	59.10	55-56	57-61	61.10	58.50	56.00	56.10	56-57	54-56	55-59
Eggs--NY gr. A large (cents/doz.)	67.20	66-67	64-69	61.40	68.20	69.10	58.40	65-66	71-75	67-73
Milk--all at plant (\$/cwt)	14.97	12.05-12.25	11.95-12.95	16.60	14.50	13.07	12.10	11.20-11.40	11.80-12.30	11.65-12.45
Wheat--KC HRW ordinary (\$/bu.)	3.33	--	--	3.18	3.30	3.26	3.33	--	--	--
Corn--Chicago (\$/bu.)	2.03	--	--	2.10	2.01	2.06	2.09	--	--	--
Soybeans--Chicago (\$/bu.)	4.58	--	--	4.89	4.45	4.42	4.86	--	--	--
Cotton--avg. spot 41-34 (cents/lb)	39.68	--	--	35.58	30.62	32.32	33.12	--	--	--
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Farm real estate values ⁴										
Nominal (\$ per acre)	740	798	844	887	926	974	1,020	1,080	1,150	1,210
Real (1996 \$)	806	848	879	904	926	955	988	1,032	1,074	1,106
U.S. civilian employment (mil.) ⁵	129.2	131.1	132.3	133.9	136.3	137.7	139.4	140.9	--	--
Food and fiber (mil.)	23.5	24.1	24.5	24.2	24.1	24.2	24.4	24.1	--	--
Farm sector (mil.)	1.8	1.9	2.0	2.0	1.9	1.8	1.8	1.7	--	--
U.S. gross domestic product (\$ bil.)	6,642.3	7,054.3	7,400.5	7,813.2	8,318.4	8,781.5	9,268.6	9,872.9	--	--
Food and fiber--net value added (\$ bil.)	957.6	1,026.6	1,048.2	1,078.9	1,101.9	1,132.7	1,180.6	1,264.5	--	--
Farm sector--net value added (\$ bil.) ⁶	70.2	77.8	73.5	85.7	82.6	74.0	66.9	82.0	--	--

-- = Not available. Annual and quarterly data for the most recent year contain forecasts. 1. Annual data based on Oct.-Sep. fiscal years ending with year indicated. 2. Sep.-Nov. first quarter; Dec.-Feb. second quarter; Mar.-May third quarter; Jun.-Aug. fourth quarter; Sep.-Aug. annual. Use includes exports and domestic disappearance. 3. Simple averages, Jan.-Dec. 4. As of January 1. 5. Civilian labor force taken from "Monthly Labor Review," Table 18--Annual Data: Employment Status of the Population, Bureau of Labor Statistics, U.S. Department of Labor. 6. The value-added data presented here are consistent with accounting conventions of the National Income and Product Accounts, U.S. Department of Commerce.

U.S. & Foreign Economic Data

Table 2—U.S. Gross Domestic Product & Related Data

	Annual			2000		2001				2002	
	1999	2000	2001	IV	I	II	III	IV	I	II	
Billions of current dollars (quarterly data seasonally adjusted at annual rates)											
Gross Domestic Product	9,274.3	9,824.6	10,082.2	9,953.6	10,028.1	10,049.9	10,097.7	10,152.9	10,313.1	10,371.0	
Gross National Product	9,297.1	9,848.0	10,104.1	9,982.8	10,038.0	10,081.0	10,109.3	10,188.1	10,314.9	10,356.7	
Personal consumption expenditures	6,246.5	6,683.7	6,987.0	6,808.0	6,904.7	6,959.8	6,983.7	7,099.9	7,174.2	7,252.2	
Durable goods	755.9	803.9	835.9	797.2	816.8	820.3	824.0	882.6	859.0	857.4	
Nondurable goods	1,830.1	1,972.9	2,041.3	2,011.1	2,031.5	2,044.8	2,044.3	2,044.4	2,085.1	2,109.3	
Food	898.9	955.0	992.4	968.8	984.2	988.7	993.8	1,002.8	1,025.0	1,025.2	
Clothing and shoes	301.0	313.7	315.3	318.7	317.9	313.6	312.1	317.4	325.8	324.5	
Services	3,660.5	3,906.9	4,109.9	3,999.7	4,056.4	4,094.7	4,115.4	4,172.9	4,230.1	4,285.5	
Gross private domestic investment	1,636.7	1,755.4	1,586.0	1,757.4	1,671.1	1,597.2	1,574.9	1,500.7	1,559.4	1,589.7	
Fixed investment	1,577.2	1,691.8	1,646.3	1,700.4	1,698.3	1,654.3	1,635.5	1,597.2	1,589.4	1,583.8	
Change in private inventories	59.5	63.6	-60.3	57.1	-27.2	-57.1	-60.6	-96.5	-29.9	5.9	
Net exports of goods and services	-249.9	-365.5	-348.9	-393.2	-372.7	-365.7	-312.6	-344.5	-360.1	-431.3	
Government consumption expenditures and gross investment	1,641.0	1,751.0	1,858.0	1,781.4	1,825.0	1,858.5	1,851.7	1,896.8	1,939.5	1,960.4	
Billions of 1996 dollars (quarterly data seasonally adjusted at annual rates) ¹											
Gross Domestic Product	8,859.0	9,191.4	9,214.5	9,243.8	9,229.9	9,193.1	9,186.4	9,248.8	9,363.2	9,389.6	
Gross National Product	8,883.7	9,216.2	9,237.3	9,274.0	9,241.7	9,224.3	9,199.8	9,283.5	9,367.5	9,379.0	
Personal consumption expenditures	5,964.5	6,223.9	6,377.2	6,288.8	6,326.0	6,348.0	6,370.9	6,464.0	6,513.8	6,543.8	
Durable goods	812.5	878.9	931.9	876.5	900.6	912.4	922.6	992.0	975.9	981.2	
Nondurable goods	1,765.1	1,833.8	1,869.8	1,853.1	1,863.7	1,862.3	1,868.3	1,885.0	1,921.4	1,921.9	
Food	846.8	879.0	887.0	883.9	889.1	887.4	884.3	887.1	901.4	900.3	
Clothing and shoes	312.1	329.4	337.7	335.1	334.3	334.7	337.1	344.8	355.8	355.7	
Services	3,395.4	3,524.5	3,594.9	3,570.6	3,576.3	3,589.3	3,597.5	3,616.6	3,642.2	3,666.1	
Gross private domestic investment	1,660.5	1,762.9	1,574.6	1,755.2	1,661.8	1,583.5	1,562.7	1,490.3	1,554.0	1,585.4	
Fixed investment	1,595.2	1,691.9	1,627.4	1,691.3	1,682.1	1,633.5	1,615.7	1,578.4	1,576.4	1,571.8	
Change in private inventories	62.8	65.0	-61.4	59.9	-26.9	-58.3	-61.8	-98.4	-28.9	7.3	
Net exports of goods and services	-320.5	-398.8	-415.9	-418.5	-404.5	-414.8	-419.0	-425.3	-446.6	-494.1	
Government consumption expenditures and gross investment	1,540.6	1,582.5	1,640.4	1,593.4	1,615.7	1,638.0	1,633.3	1,674.5	1,697.3	1,703.4	
GDP implicit price deflator (% change)	1.4	2.1	2.4	2.1	3.7	2.5	2.2	-0.5	1.3	1.1	
Disposable personal income (\$ bil.)	6,627.4	7,120.2	7,393.2	7,259.8	7,317.5	7,340.0	7,524.2	7,391.2	7,668.3	7,787.2	
Disposable pers. income (1996 \$ bil.)	6,328.4	6,630.3	6,748.0	6,706.2	6,704.3	6,694.8	6,864.0	6,729.1	6,962.5	7,026.6	
Per capita disposable pers. income (\$)	23,742	25,205	25,859	25,577	25,713	25,717	26,275	25,729	26,621	26,955	
Per capita disp. pers. income (1996 \$)	22,671	23,471	23,602	23,627	23,558	23,456	23,970	23,424	24,171	24,322	
U.S. resident population plus Armed Forces overseas (mil.) ²	272.9	275.4	--	276.3	--	--	--	--	--	--	
Civilian population (mil.) ²	271.5	273.9	--	274.9	--	--	--	--	--	--	
	Annual			2001	2002						
	1999	2000	2001	Jul	Feb	Mar	Apr	May	Jun	Jul	
Monthly data seasonally adjusted											
Total industrial production (1992=100)	144.7	151.6	144.8	145.2	142.9	143.4	143.4	144.2	145.1	145.2	
Leading economic indicators (1996=100)	108.8	109.9	109.5	109.8	111.9	111.9	111.6	112.1	112.0	111.8	
Civilian employment (mil. persons)	133.5	135.2	135.1	135.1	134.3	133.9	134.0	134.4	134.1	134.0	
Civilian unemployment rate (%)	4.2	4.0	4.8	4.6	5.5	5.7	6.0	5.8	5.9	5.9	
Personal income (\$ bil. annual rate)	7,786.5	8,406.6	8,685.3	8,710.1	8,815.6	8,840.8	8,875.7	8,911.7	8,970.3	8,972.7	
Money stock-M2 (daily avg.) (\$ bil.) ³	4,650.3	4,936.0	5,454.8	5,223.8	5,500.7	5,497.4	5,480.8	5,545.1	5,579.3	5,638.8	
Three-month Treasury bill rate (%)	4.66	5.85	3.45	3.54	1.73	1.81	1.72	1.74	1.71	1.68	
AAA corporate bond yield (Moody's) (%)	7.04	7.62	7.08	7.13	6.51	6.81	6.76	6.75	6.63	6.53	
Total housing starts (1,000) ⁴	1,640.9	1,568.7	1,602.7	1,664	1,788	1,675	1,566	1,742	1,695	1,649	
Business inventory/sales ratio ^{5,6}	1.41	1.42	1.43	1.43	1.39	1.38	1.35	1.36	1.36	--	
Retail & food services sales (\$ bil.) ^{6,7}	3,149.2	3,388.8	3,504.2	290.0	296.5	296.2	299.6	296.6	300.6	303.9	
Food and beverage stores (\$ bil.)	441.4	465.3	481.1	39.4	40.2	40.1	39.9	40.0	40.0	40.1	
Clothing & accessory stores (\$ bil.)	159.7	168.5	169.7	14.3	14.7	14.7	14.6	14.3	14.6	14.5	
Food services & drinking places (\$ bil.)	286.3	306.1	321.0	26.9	28.1	28.0	28.1	28.1	28.3	28.0	

-- = Not available. 1. In October 1999, 1996 dollars replaced 1992 dollars. 2. Population estimates based on 1990 census. 3. Annual data as of December of year listed. 4. Private, including farm. 5. Manufacturing and trade. 6. In July 2001, all numbers were revised due to a changeover from the Standard Industrial Classification System to the North American Industry Classification System. 7. Annual total.

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Table 3—World Economic Growth

	Calendar year									
	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003
	Real GDP, annual percent change									
World	3.1	2.8	3.5	3.4	1.9	2.9	3.9	1.1	1.6	2.8
less U.S.	2.7	2.8	3.4	3.0	1.0	2.4	3.9	1.4	1.3	2.8
Developed economies	2.8	2.3	3.1	3.0	2.1	2.7	3.3	0.7	1.2	2.2
less U.S.	2.1	2.2	2.8	2.3	1.0	2.0	3.1	1.0	0.6	2.0
United States	4.0	2.7	3.6	4.4	4.3	4.1	3.8	0.3	2.4	2.7
Canada	4.7	2.7	1.5	4.4	3.3	4.6	4.6	1.5	3.4	3.1
Japan	0.6	1.5	5.1	1.6	-2.5	0.2	2.4	-0.3	-0.9	1.1
Australia	4.5	4.5	3.8	4.7	4.5	4.4	1.8	2.7	3.9	3.5
European Union	2.8	2.4	1.6	2.5	2.8	2.7	3.6	1.5	1.0	2.3
Transition economies	-8.1	-1.3	-0.8	1.4	-1.4	3.5	6.7	4.5	3.5	4.1
Eastern Europe	3.9	5.6	4.0	2.7	2.7	2.5	3.9	2.6	2.5	3.8
Poland	5.2	7.0	6.0	6.8	4.8	4.1	4.2	1.1	1.3	3.0
Former Soviet Union	-14.1	-5.4	-4.0	0.5	-4.4	4.2	8.8	5.9	4.2	4.3
Russia	-12.6	-4.1	-3.4	0.9	-4.9	5.0	9.1	5.1	3.9	4.2
Developing economies	6.3	5.3	5.8	5.3	1.2	3.4	5.8	2.3	3.1	4.8
Asia	8.8	8.3	7.4	5.8	0.4	6.4	7.2	3.7	5.6	5.9
East Asia	9.7	8.7	7.7	7.0	1.9	7.4	8.3	4.1	6.2	6.1
China	12.8	10.5	9.6	8.8	7.8	7.1	8.0	7.4	7.8	7.2
Taiwan	7.1	6.4	6.1	6.7	4.6	5.4	5.9	-2.2	3.3	4.0
Korea	8.2	8.9	6.8	5.0	-6.7	10.7	9.5	3.0	6.1	5.5
Southeast Asia	8.3	8.3	7.3	4.0	-7.5	3.6	6.1	1.8	4.3	5.5
Indonesia	7.5	8.2	7.8	4.7	-13.2	0.7	4.8	3.4	4.0	5.1
Malaysia	9.2	9.8	10.0	7.3	-7.4	5.8	8.4	0.5	4.3	6.2
Philippines	4.4	4.7	5.8	5.2	-0.8	3.2	4.4	3.2	4.2	4.4
Thailand	9.0	8.9	5.9	-1.7	-10.2	4.2	4.7	1.8	4.6	5.4
South Asia	6.6	7.1	6.3	4.2	6.1	6.1	4.9	4.6	5.0	5.7
India	7.3	7.7	7.0	4.6	6.8	6.5	4.9	4.7	5.3	5.9
Pakistan	3.9	5.1	3.9	1.0	2.5	4.0	3.9	3.4	3.7	5.0
Latin America	5.3	1.4	3.7	5.2	1.8	0.0	3.7	0.3	-1.4	2.9
Mexico	4.4	-6.2	5.2	6.8	4.9	3.5	6.7	-0.3	1.5	4.3
Caribbean/Central	4.1	3.8	3.6	6.4	6.8	6.9	4.9	1.5	2.4	5.2
South America	5.6	3.1	3.3	4.8	1.0	-1.1	2.9	0.4	-2.2	2.4
Argentina	5.8	-2.8	5.5	8.1	3.9	-3.2	-0.8	-4.4	-13.8	1.9
Brazil	5.9	4.2	2.8	3.2	-0.1	0.8	4.4	1.6	0.8	2.8
Colombia	5.8	5.2	2.1	3.4	0.5	-4.3	2.2	1.6	0.5	1.8
Venezuela	-2.3	3.7	-0.5	6.5	-0.7	-6.1	3.2	3.2	-4.1	-1.5
Middle East	-0.3	4.4	4.7	4.4	2.7	-0.8	5.6	-0.9	2.1	4.0
Israel	6.9	7.0	5.1	3.2	2.6	2.2	5.9	-0.6	-2.3	1.4
Saudi Arabia	0.5	0.5	1.4	1.9	2.3	-0.8	4.5	2.2	-0.5	3.2
Turkey	-5.5	7.2	7.0	7.5	3.1	-4.7	7.2	-7.1	4.5	5.4
Africa	3.2	2.9	5.2	2.8	3.1	2.6	3.5	3.4	2.4	3.7
North Africa	3.9	1.5	6.5	2.6	5.6	3.8	3.5	4.2	2.6	3.9
Egypt	3.9	4.7	5.0	5.5	5.6	6.0	5.2	3.3	1.7	3.5
Sub-Sahara	2.6	3.9	4.3	3.0	1.3	1.7	3.6	2.8	2.2	3.6
South Africa	3.2	3.1	4.2	2.5	0.6	1.2	3.4	2.2	2.4	3.4
	Consumer prices, annual percent change									
Developed economies	3.1	2.6	2.6	2.4	2.1	1.5	1.4	2.3	2.4	1.7
Transition economies	635.8	274.2	133.8	42.5	27.3	21.8	43.9	20.0	16.4	10.7
Developing economies	49.2	55.3	23.2	15.4	9.9	10.5	6.8	6.0	5.9	5.1
Asia	10.8	16.0	13.2	8.3	4.8	7.7	2.5	1.9	2.8	3.3
Latin America	194.6	200.3	36.0	21.2	12.9	9.9	8.8	8.1	6.2	4.9
Middle East	29.4	37.3	39.1	29.6	27.7	27.6	23.2	19.2	18.9	14.5
Africa	39.0	54.7	35.3	30.2	14.2	10.8	11.5	13.6	12.6	8.0

The last 3 years are either estimates or forecasts. Sources: Oxford Economic Forecasting; International Financial Statistics, IMF.

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Farm Prices

Table 4—Indexes of Prices Received & Paid by Farmers, U.S. Average

	Annual			2001			2002			
	2000	2001	2002	Aug	Mar	Apr	May	Jun	Jul	Aug
1990-92=100										
Prices received										
All farm products	96	102	99	110	105	95	97	98	100	101
All crops	96	99	105	109	117	100	106	106	111	116
Food grains	85	91	90	90	85	84	86	95	105	113
Feed grains and hay	86	91	94	96	91	92	94	97	102	112
Cotton	82	65	50	59	49	48	47	58	62	52
Tobacco	107	107	109	104	95	--	--	--	107	105
Oil-bearing crops	85	80	83	87	79	80	83	88	96	101
Fruit and nuts, all	101	108	101	130	92	85	106	119	129	134
Commercial vegetables	121	126	158	145	271	125	124	115	117	125
Potatoes and dry beans	93	98	152	125	145	147	173	166	175	144
Livestock and products	97	106	93	111	95	90	90	91	89	87
Meat animals	94	97	88	100	92	87	85	85	87	85
Dairy products	94	115	95	126	97	96	93	89	86	86
Poultry and eggs	106	116	99	120	101	91	96	102	97	94
Prices paid										
Commodities and services, interest, taxes, and wage rates (PPITW)	120	124	123	124	123	123	123	123	124	124
Production items	116	120	118	120	118	119	118	118	119	120
Feed	102	109	109	111	109	110	109	110	115	121
Livestock and poultry	110	111	102	113	106	102	98	95	96	97
Seeds	124	132	140	134	134	144	144	144	144	144
Fertilizer	110	123	107	115	107	107	108	109	109	109
Agricultural chemicals	120	120	119	120	119	119	118	118	118	118
Fuels	134	121	105	119	112	114	110	107	111	111
Supplies and repairs	124	128	129	128	129	129	130	130	131	131
Autos and trucks	119	118	116	117	116	116	116	115	115	115
Farm machinery	139	144	147	145	147	147	147	147	147	147
Building material	121	121	121	122	121	122	122	122	122	122
Farm services	119	121	120	122	120	119	120	121	121	121
Rent	110	117	120	117	120	120	120	120	120	120
Interest payable per acre on farm real estate debt	113	114	109	114	109	109	109	109	109	109
Taxes payable per acre on farm real estate	123	124	126	124	126	126	126	126	126	126
Wage rates (seasonally adjusted)	140	146	153	143	155	153	153	153	149	149
Prod. items, interest, taxes & wage rates (PITW)	118	122	121	122	121	121	121	121	121	122
Ratio, prices received to prices paid (%)*	81	82	80	89	85	77	79	80	81	81
Prices received (1910-14=100)	612	649	626	699	670	601	619	622	634	643
Prices paid, etc. (1910-14=100)	1,594	1,646	1,638	1,647	1,641	1,643	1,638	1,639	1,645	1,656
Parity ratio (1910-14=100) (%)*	39	39	38	42	41	37	38	38	39	39

Values for the two most recent months are revised or preliminary. *Ratio of index of prices received for all farm products to index of prices paid for commodities and services, interest, taxes, and wage rates. Ratio uses the most recent prices paid index.

Data for this table are taken from the publication *Agricultural Prices*, which is produced monthly by USDA's National Agricultural Statistics Service (NASS) and is available at <http://usda.mannlib.cornell.edu/reports/nassr/price/pap-bb/>. For historical data or for categories not listed here, call the NASS Information Hotline at 1-800-727-9540, or access the NASS Home Page at <http://www.usda.gov/nass>.

Table 5—Prices Received by Farmers, U.S. Average

	Annual ¹			2001	2002					
	1999	2000	2001	Aug	Mar	Apr	May	Jun	Jul	Aug
Crops										
All wheat (\$/bu.)	2.48	2.62	2.80	2.74	2.87	2.84	2.81	2.93	3.21	3.60
Rice, rough (\$/cwt)	5.93	5.61	4.25	5.10	3.97	3.88	3.96	3.86	3.77	3.74
Corn (\$/bu.)	1.82	1.85	2.00	1.90	1.94	1.91	1.93	1.97	2.13	2.48
Sorghum (\$/cwt)	2.80	3.37	3.50	3.49	3.22	3.14	3.17	3.83	4.06	4.43
All hay, baled (\$/ton)	76.90	85.00	97.30	97.40	91.40	99.90	102.00	95.80	93.60	93.70
Soybeans (\$/bu.)	4.63	4.54	4.30	4.85	4.38	4.47	4.64	4.88	5.35	5.65
Cotton, upland (¢/lb.)	45.00	49.80	32.40	36.00	29.90	29.30	28.60	34.90	37.60	31.50
Potatoes (\$/cwt)	5.77	5.08	6.60	7.61	8.50	8.63	10.40	9.95	10.80	8.64
Lettuce (\$/cwt) ²	13.30	17.40	17.60	26.90	86.40	13.70	9.97	10.50	11.30	14.70
Tomatoes, fresh (\$/cwt) ²	25.90	30.80	30.20	27.60	38.50	32.30	30.00	28.40	26.70	25.30
Onions (\$/cwt)	9.78	11.30	11.40	12.30	6.92	19.00	21.80	20.70	17.60	15.90
Beans, dry edible (\$/cwt)	16.40	15.50	19.40	17.40	26.60	27.20	27.50	26.70	24.50	22.10
Apples for fresh use (¢/lb.)	21.30	17.80	22.90	17.30	21.00	21.50	21.80	22.00	20.60	24.50
Pears for fresh use (\$/ton)	294.00	264.00	282.00	394.00	267.00	267.00	267.00	337.00	312.00	460.00
Oranges, all uses (\$/box) ³	5.47	3.58	3.56	5.57	4.88	4.30	4.82	4.13	3.90	5.18
Grapefruit, all uses (\$/box) ³	3.17	3.89	2.24	3.69	1.23	1.02	1.05	4.16	6.36	5.60
Livestock										
Cattle, all beef (\$/cwt)	63.40	68.60	71.30	70.60	70.70	67.20	65.20	64.10	63.80	63.60
Calves (\$/cwt)	87.70	104.00	106.00	106.00	104.00	100.00	98.50	94.80	94.90	94.70
Hogs, all (\$/cwt)	30.30	42.30	44.30	50.80	36.00	31.80	33.10	35.80	39.20	34.20
Lambs (\$/cwt)	74.50	79.80	66.90	54.80	66.30	64.30	64.30	72.80	75.70	--
All milk, sold to plants (\$/cwt)	14.38	12.40	15.05	16.50	12.70	12.50	12.20	11.60	11.20	11.20
Milk, manuf. grade (\$/cwt)	12.84	10.52	13.44	15.20	11.30	11.30	11.10	10.30	9.50	9.80
Broilers, live (¢/lb.)	37.10	33.60	39.30	42.00	32.00	30.00	32.00	33.00	31.00	29.00
Eggs, all (¢/doz.) ⁴	62.20	61.80	62.20	56.60	68.50	51.90	50.50	63.20	57.60	62.20
Turkeys (¢/lb.)	40.80	40.70	39.00	38.70	32.90	32.60	35.50	36.90	38.30	37.90

-- = Not available.

Values for the two most recent months are revised or preliminary. 1. Season-average price by crop year for crops. Calendar year average of monthly prices for livestock. 2. Excludes Hawaii. 3. Equivalent on-tree returns. 4. Average of all eggs sold by producers including hatching eggs and eggs sold at retail.

Data for this table are taken from the publication *Agricultural Prices*, which is produced monthly by USDA's National Agricultural Statistics Service (NASS) and is available at <http://usda.mannlib.cornell.edu/reports/nassr/price/pap-bb/>. For historical data or for categories not listed here, call the NASS Information Hotline at 1-800-727-9540, or access the NASS Home Page at <http://www.usda.gov/nass>.

Producer & Consumer Prices

Table 6—Consumer Price Indexes for All Urban Consumers, U.S. Average (not seasonally adjusted)

	Annual		2001		2002					
	1999	2000	2001	Aug	Mar	Apr	May	Jun	Jul	Aug
	1982-84=100									
Consumer Price Index, all items	166.6	172.1	177.1	177.5	178.8	179.8	179.8	179.9	180.1	180.7
CPI, all items less food	167.0	172.9	177.8	178.2	179.2	180.4	180.4	180.6	180.8	181.5
All food	164.1	167.8	173.1	173.9	176.1	176.2	175.8	175.8	176.0	176.0
Food away from home	165.1	169.0	173.9	174.7	177.1	177.2	177.6	178.2	178.5	178.8
Food at home	164.2	167.9	173.4	174.2	176.3	176.4	175.5	175.0	175.2	174.9
Meats ¹	142.3	150.7	159.3	160.7	161.3	160.6	160.6	160.5	160.2	160.7
Beef and veal	139.2	148.1	160.5	161.0	161.8	162.3	162.1	160.2	159.7	160.0
Pork	145.9	156.5	162.4	166.3	163.2	161.3	161.7	162.7	162.5	163.8
Poultry	157.9	159.8	164.9	167.5	168.0	166.9	167.0	165.6	167.2	166.1
Fish and seafood	185.3	190.4	191.1	189.7	185.6	189.2	191.0	188.1	191.2	187.2
Eggs	128.1	131.9	136.4	133.0	141.0	138.4	131.8	136.0	134.8	138.5
Dairy and related products ²	159.6	160.7	167.1	168.9	169.4	168.7	169.0	168.0	167.6	167.2
Fats and oils ³	148.3	147.4	155.7	158.5	156.4	156.5	155.9	154.6	154.9	154.1
Fresh fruits	266.3	258.3	265.1	258.9	265.5	266.9	278.1	266.7	261.6	263.3
Fresh vegetables	209.3	219.4	230.6	224.9	265.3	255.9	238.6	239.3	241.8	238.9
Potatoes	193.1	196.3	202.3	224.5	230.2	244.1	248.0	253.4	260.7	263.8
Cereals and bakery products	185.0	188.3	193.8	195.9	197.0	198.1	198.2	198.7	198.7	198.6
Sugar and sweets	152.3	154.0	155.7	156.1	157.2	159.6	157.9	158.7	160.2	159.9
Nonalcoholic beverages ⁴	134.3	137.8	139.2	140.0	140.1	140.0	138.0	137.5	138.3	137.6
Apparel										
Footwear	125.7	123.8	123.0	121.9	123.5	124.6	124.5	121.2	118.5	119.7
Tobacco and smoking products	355.8	394.9	425.2	424.6	433.4	461.4	449.0	467.4	467.2	478.2
Alcoholic beverages	169.7	174.7	179.3	180.0	182.5	182.9	183.3	183.5	183.8	184.2

1. Beef, veal, lamb, pork, and processed meat. 2. Included butter through December 1997. 3. Includes butter as of January 1998.

4. Includes fruit juices as of January 1998.

This table is compiled with data provided by the Bureau of Labor Statistics (BLS). BLS operates a website at <http://www.bls.gov> and a Consumer Prices Information Hotline at (202) 691-7000.

Table 7—Producer Price Indexes, U.S. Average (not seasonally adjusted)

	Annual			2001		2002				
	1999	2000	2001	Aug	Mar	Apr	May	Jun	Jul	Aug
	1982=100									
All commodities	125.5	132.7	134.2	133.4	129.8	130.8	131.0	131.1	131.2	131.5
Finished goods ¹	133.0	138.0	140.7	140.9	138.7	138.8	138.8	139.2	138.9	138.7
All foods ²	132.2	133.0	137.3	139.0	138.9	134.2	134.5	134.8	135.0	134.7
Consumer foods	135.1	137.2	141.3	142.6	143.4	139.2	139.4	139.6	139.6	139.2
Fresh fruits and melons	103.6	91.4	97.7	87.4	91.3	85.6	101.8	89.6	84.6	90.9
Fresh and dry vegetables	118.0	126.7	124.7	122.2	216.8	116.1	118.1	131.9	138.4	127.0
Dried and dehydrated fruits	121.2	122.9	118.5	118.5	118.9	118.9	118.9	119.0	119.0	119.0
Canned fruits and juices	137.8	140.0	143.6	144.2	143.3	143.3	143.4	137.4	138.9	138.9
Frozen fruits, juices and ades	123.0	120.9	114.1	111.7	114.9	114.8	115.0	115.0	119.0	119.2
Fresh vegetables except potatoes	117.7	135.0	135.2	127.2	242.5	101.7	107.2	123.2	127.1	125.4
Canned vegetables and juices	120.9	121.2	123.8	124.9	128.0	128.2	128.4	127.8	127.5	127.3
Frozen vegetables	126.1	126.0	128.6	128.8	130.1	131.2	130.8	130.0	131.5	131.0
Potatoes	126.9	100.5	128.9	171.7	181.8	218.6	203.6	222.0	244.2	177.3
Eggs for fresh use (1991=100)	77.9	84.9	81.8	75.9	92.6	71.2	66.2	85.5	76.8	86.4
Bakery products	178.0	182.3	187.7	188.8	189.1	189.6	189.5	189.4	189.4	189.6
Meats	104.6	114.3	120.3	123.6	118.3	115.2	112.9	113.6	114.3	111.8
Beef and veal	106.3	113.7	120.6	119.4	120.8	117.5	114.4	116.1	114.5	111.1
Pork	96.0	113.4	120.3	132.1	115.1	109.7	107.9	108.5	112.4	108.6
Processed poultry	114.0	112.9	116.8	118.8	112.4	110.5	113.0	112.5	112.0	109.7
Unprocessed and packaged fish	190.9	198.1	190.8	185.5	185.2	187.6	193.1	183.2	190.7	189.0
Dairy products	139.2	133.7	145.2	152.1	138.1	137.7	136.2	135.2	134.0	134.5
Processed fruits and vegetables	128.1	128.6	129.6	129.9	132.1	132.5	132.1	130.4	131.4	131.3
Shortening and cooking oil	140.4	132.4	132.9	142.2	131.9	133.3	135.8	138.7	140.5	143.7
Soft drinks	137.9	144.1	148.2	147.9	151.1	151.7	151.4	151.7	150.9	150.8
Finished consumer goods less foods	130.5	138.4	141.4	141.3	136.9	138.9	138.8	139.6	139.3	139.3
Alcoholic beverages	136.7	140.6	145.4	145.5	146.4	146.5	147.4	147.4	146.4	146.6
Apparel	127.1	127.4	126.8	126.9	125.3	125.0	124.5	125.1	124.5	124.7
Footwear	144.5	144.9	145.8	145.6	145.8	145.7	145.7	146.0	146.1	146.0
Tobacco products	374.0	397.2	441.9	447.4	448.7	465.9	466.1	466.4	466.9	466.9
Intermediate materials ³	123.2	129.2	129.7	129.7	126.1	127.2	127.2	127.9	128.1	128.5
Materials for food manufacturing	120.8	119.2	124.3	128.1	122.9	121.8	121.4	122.1	122.8	123.1
Flour	104.3	103.8	109.9	109.4	113.3	109.1	110.1	111.4	114.4	119.8
Refined sugar ⁴	121.0	110.6	109.9	110.7	117.3	118.4	117.3	118.1	117.4	117.3
Crude vegetable oils	90.2	73.6	70.1	82.5	71.2	72.3	73.8	84.3	84.5	93.5
Crude materials ⁵	98.2	120.6	121.0	113.0	103.7	108.3	110.5	106.4	106.7	108.3
Foodstuffs and feedstuffs	98.7	100.2	106.1	109.1	102.8	96.5	98.4	97.1	97.8	99.6
Fruits and vegetables and nuts ⁶	117.4	111.1	114.4	107.6	149.6	104.0	113.7	112.8	112.8	111.5
Grains	80.1	78.3	81.2	83.1	81.2	79.3	82.8	82.1	89.9	104.6
Slaughter livestock	86.4	96.5	99.6	100.1	98.4	90.1	90.3	86.6	86.4	84.9
Slaughter poultry, live	129.9	124.7	130.7	132.6	118.8	112.7	120.8	128.8	125.7	121.1
Plant and animal fibers	86.5	93.9	67.2	59.4	55.2	54.3	52.2	58.2	67.2	67.0
Fluid milk	106.3	92.0	111.8	123.4	94.9	94.2	92.7	89.0	83.7	84.4
Oilseeds	90.8	93.8	89.7	98.6	88.0	90.1	91.7	96.9	106.8	112.6
Leaf tobacco	101.6	--	105.2	106.7	96.7	--	--	--	--	107.9
Raw cane sugar	113.7	101.8	111.4	111.0	106.6	106.1	105.1	105.6	109.9	110.3

-- = Not available. 1. Commodities ready for sale to ultimate consumer. 2. Includes all raw, intermediate, and processed foods (excludes soft drinks, alcoholic beverages, and manufactured animal feeds). 3. Commodities requiring further processing to become finished goods. 4. All types and sizes of refined sugar. 5. Products entering market for the first time that have not been manufactured at that point. 6. Fresh and dried. This table is compiled with data provided by the Bureau of Labor Statistics (BLS). BLS operates a website at <http://www.bls.gov> and a Producer Prices Information Hotline at (202) 691-7705.

Farm-Retail Price Spreads

Table 8—Farm-Retail Price Spreads

	Annual			2001		2002				
	1999	2000	2001	Aug	Mar	Apr	May	Jun	Jul	Aug
Market basket										
Retail cost (1982-84=100)	167.3	170.6	177.2	177.9	181.0	180.9	180.2	179.6	179.5	179.8
Farm value (1982-84=100)	98.3	96.9	106.2	110.3	108.7	102.6	102.8	102.9	101.7	103.0
Farm-retail spread (1982-84=100)	204.5	210.3	215.4	214.3	220.0	223.0	221.9	220.9	221.5	221.2
Farm value-retail cost (%)	20.6	19.9	21.0	21.7	21.0	19.9	20.0	20.1	19.8	20.1
Meat products										
Retail cost (1982-84=100)	142.3	150.4	159.3	160.7	161.3	160.6	160.6	160.5	160.2	160.7
Farm value (1982-84=100)	81.6	88.4	97.4	99.5	101.3	101.6	101.8	101.8	102.8	103.1
Farm-retail spread (1982-84=100)	204.7	214.0	222.8	223.5	222.9	221.2	221.0	220.7	219.1	219.8
Farm value-retail cost (%)	29.0	29.8	31.0	31.4	31.8	32.0	32.1	32.1	32.5	32.5
Dairy products										
Retail cost (1982-84=100)	159.6	160.7	167.1	168.9	169.4	168.7	169.0	168.0	167.6	167.2
Farm value (1982-84=100)	107.9	98.8	118.5	129.1	101.7	100.0	98.5	94.4	91.2	90.6
Farm-retail spread (1982-84=100)	207.2	217.7	211.8	205.6	231.9	232.0	234.0	235.9	238.0	237.8
Farm value-retail cost (%)	32.4	29.5	34.0	36.7	28.8	28.4	28.0	26.9	26.1	26.0
Poultry										
Retail cost (1982-84=100)	157.9	159.8	164.9	167.5	168.0	166.9	167.0	165.6	167.2	166.1
Farm value (1982-84=100)	119.0	117.4	126.2	132.6	102.7	97.1	103.9	107.3	102.6	96.9
Farm-retail spread (1982-84=100)	202.7	208.7	209.3	207.6	243.2	247.3	239.6	232.7	241.6	245.7
Farm value-retail cost (%)	40.3	39.3	41.0	42.4	32.7	31.1	33.3	34.7	32.8	31.2
Eggs										
Retail cost (1982-84=100)	128.1	131.9	136.4	133.0	141.0	138.4	131.8	136.0	134.8	138.5
Farm value (1982-84=100)	74.9	80.6	74.3	66.0	88.5	55.2	51.0	76.5	65.5	75.5
Farm-retail spread (1982-84=100)	223.7	223.9	248.0	253.4	235.3	287.9	276.9	242.9	259.3	251.8
Farm value-retail cost (%)	37.6	39.3	35.0	31.9	40.3	25.6	24.9	36.1	31.2	35.0
Cereal and bakery products										
Retail cost (1982-84=100)	185.0	188.3	193.8	195.9	197.0	198.1	198.2	198.7	198.7	198.6
Farm value (1982-84=100)	82.5	75.2	78.8	79.1	77.3	75.1	76.1	79.1	83.6	91.3
Farm-retail spread (1982-84=100)	199.2	204.0	209.9	212.2	213.7	215.3	215.2	215.4	214.8	213.6
Farm value-retail cost (%)	5.5	4.9	5.0	4.9	4.8	4.6	4.7	4.9	5.2	5.6
Fresh fruit										
Retail cost (1982-84=100)	294.3	284.3	291.7	283.7	291.5	294.0	306.9	293.4	287.1	290.1
Farm value (1982-84=100)	153.7	141.3	145.7	142.5	157.4	152.7	151.7	131.2	129.7	150.5
Farm-retail spread (1982-84=100)	359.3	350.3	359.1	348.9	353.4	359.2	378.5	368.3	359.8	354.6
Farm value-retail cost (%)	16.5	15.7	15.8	15.9	17.1	16.4	15.6	14.1	14.3	16.4
Fresh vegetables										
Retail cost (1982-84=100)	209.3	219.4	230.6	224.9	265.3	255.9	238.6	239.3	241.8	238.9
Farm value (1982-84=100)	118.1	121.4	129.9	144.0	214.2	147.8	142.9	149.8	146.6	146.2
Farm-retail spread (1982-84=100)	256.2	269.8	282.4	266.5	291.6	311.5	287.8	285.3	290.7	286.5
Farm value-retail cost (%)	19.2	18.8	19.1	21.7	27.4	19.6	20.3	21.3	20.6	20.8
Processed fruits and vegetables										
Retail cost (1982-84=100)	154.8	153.6	159.3	161.1	162.9	164.5	165.7	164.4	166.5	170.0
Farm value (1982-84=100)	113.5	106.4	107.9	107.7	112.8	113.7	114.4	113.1	111.1	110.4
Farm-retail spread (1982-84=100)	167.7	168.3	175.3	177.8	178.5	180.3	181.7	180.4	183.8	188.6
Farm value-retail cost (%)	17.4	16.5	16.1	15.9	16.5	16.4	16.4	16.4	15.9	15.4
Fats and oils										
Retail cost (1982-84=100)	148.3	147.4	155.7	156.1	156.4	156.5	155.9	154.6	154.9	154.1
Farm value (1982-84=100)	89.0	80.9	76.9	91.9	79.6	79.0	82.7	90.6	96.0	101.2
Farm-retail spread (1982-84=100)	170.0	171.9	184.7	191.2	184.7	185.0	182.8	178.1	176.6	173.6
Farm value-retail cost (%)	16.2	14.8	13.3	20.8	13.7	13.6	14.3	15.8	16.7	17.7

See footnotes at end of table, next page.

Table 8—Farm-Retail Price Spreads (continued)

	Annual			2001			2002			
	1999	2000	2001	Aug	Mar	Apr	May	Jun	Jul	Aug
Beef, all fresh retail value (cents/lb.)	260.5	275.3	300.5	301.7	306.3	306.5	309.0	302.0	302.2	304.7
Beef, Choice										
Retail value (cents/lb.) ²	287.8	306.4	337.7	339.3	329.8	333.5	333.5	330.0	328.9	334.5
Wholesale value (cents/lb.) ³	171.6	182.3	192.1	188.1	188.6	182.8	180.7	178.7	172.4	174.0
Net farm value (cents/lb.) ⁴	141.1	149.0	154.5	148.7	155.6	145.6	141.4	138.6	135.4	134.9
Farm-retail spread (cents/lb.)	146.7	157.4	183.2	190.6	174.2	187.9	192.1	191.4	193.5	199.6
Wholesale-retail (cents/lb.) ⁵	116.2	124.1	145.6	151.2	141.2	150.7	152.8	151.3	156.5	160.5
Farm-wholesale (cents/lb.) ⁶	30.5	33.3	37.6	39.4	33.0	37.2	39.3	40.1	37.0	39.1
Farm value-retail value (%)	49.0	48.6	45.8	43.8	47.2	43.7	42.4	42.0	41.2	40.3
Pork										
Retail value (cents/lb.) ²	241.5	258.2	269.4	276.3	270.3	266.7	269.9	266.6	264.2	267.9
Wholesale value (cents/lb.) ³	99.0	114.5	117.8	129.2	104.6	98.2	99.3	102.6	104.0	96.8
Net farm value (cents/lb.) ⁴	60.4	79.4	81.2	92.6	66.7	58.6	61.6	66.2	71.8	59.2
Farm-retail spread (cents/lb.)	181.1	178.8	188.2	183.7	203.6	208.1	208.3	200.4	192.4	208.7
Wholesale-retail (cents/lb.) ⁵	142.5	143.7	151.6	147.1	165.7	168.5	170.6	164.0	160.2	171.1
Farm-wholesale (cents/lb.) ⁶	38.6	35.1	36.6	36.6	37.9	39.6	37.7	36.4	32.2	37.6
Farm value-retail value (%)	25.0	30.8	30.1	33.5	24.7	22.0	22.8	24.8	27.2	22.1

1. Retail costs are based on CPI-U of retail prices for domestically produced farm foods, published monthly by the Bureau of Labor Statistics (BLS).

Farm value is the payment for the quantity of farm equivalent to the retail unit, less allowance for by-product. Farm values are based on prices at first point of sale, and may include marketing charges such as grading and packing for some commodities. The farm-retail spread, the difference between the retail value and farm value, represents charges for assembling, processing, transporting, and distributing. 2. Weighted-average value of retail cuts from pork and Choice yield grade 3 beef. Prices from BLS. 3. Value of wholesale (boxed beef) and wholesale cuts (pork) equivalent to 1 pound of retail cuts adjusted for transportation costs and by-product values. 4. Market value to producer for live animal equivalent to 1 lb. of retail cuts, minus value of by-products. 5. Charges for retailing and other marketing services such as wholesaling and in-city transportation.

6. Charges for livestock marketing, processing, and transportation. *Information contacts: Veronica Jones (202) 694-5387, William F. Hahn (202) 694-5175*

Table 9—Price Indexes of Food Marketing Costs

	Annual			2000	2001				2002	
	1999	2000	2001	IV	I	II	III	IV	I	II
	1987=100*									
Labor—hourly earnings and benefits	503.3	514.0	533.8	521.7	527.5	531.8	534.4	541.5	548.2	551.6
Processing	511.4	525.0	544.8	531.3	536.4	542.7	546.5	553.4	554.6	560.6
Wholesaling	564.6	589.4	615.4	601.0	606.4	611.3	618.7	625.5	625.8	625.8
Retailing	465.8	469.9	486.9	477.2	483.8	485.8	485.2	492.7	507.5	509.7
Packaging and containers	399.4	412.0	415.9	413.7	414.2	417.8	416.6	414.9	415.6	416.1
Paperboard boxes and containers	373.0	407.7	411.7	413.5	412.0	413.1	412.1	409.7	406.9	403.7
Metal cans	486.6	452.5	444.4	440.1	441.5	444.3	446.0	445.7	451.6	454.2
Paper bags and related products	440.9	470.4	475.7	474.5	474.2	481.3	474.6	472.6	473.8	474.0
Plastic films and bottles	324.2	336.7	344.2	344.3	344.0	345.8	344.4	342.6	340.2	339.7
Glass containers	447.1	450.8	469.7	450.8	460.2	471.7	473.7	473.0	480.8	494.6
Metal foil	227.3	232.4	241.4	234.8	235.5	246.1	242.7	241.4	241.6	243.1
Transportation services	394.0	394.3	404.0	396.9	401.0	403.1	406.3	405.9	405.3	405.3
Advertising	623.7	635.7	646.6	638.6	644.3	645.6	646.0	649.3	660.0	662.9
Fuel and power	651.5	841.1	803.5	859.6	830.3	826.6	826.4	730.7	699.3	748.5
Electric	489.4	498.2	532.3	504.9	514.3	526.1	559.9	529.1	516.8	526.0
Petroleum	565.9	1,135.8	912.7	1,166.4	998.5	974.7	937.2	740.4	678.2	808.6
Natural gas	1,235.6	1,275.4	1,354.3	1,305.7	1,403.3	1,391.5	1,363.3	1,259.1	1,226.6	1,247.8
Communications, water and sewage	309.3	309.1	313.7	309.5	312.6	312.5	314.2	315.5	317.1	315.9
Rent	256.9	258.2	257.5	259.0	259.2	257.7	257.1	256.0	254.8	254.7
Maintenance and repair	541.6	561.2	582.3	569.7	574.8	578.8	585.2	590.3	595.4	599.6
Business services	531.9	544.6	559.3	548.8	555.3	558.0	560.4	563.1	566.4	568.3
Supplies	327.7	348.5	344.8	345.8	349.2	347.0	342.8	339.1	339.1	344.5
Property taxes and insurance	619.7	654.6	691.9	672.6	680.9	687.5	695.1	704.3	711.6	716.9
Interest, short-term	103.7	115.4	61.0	116.0	91.0	64.1	55.0	33.8	32.5	32.6
Total marketing cost index	472.2	491.5	501.9	497.1	499.5	502.1	503.6	502.2	504.7	509.2

Last two quarters preliminary. * Indexes measure changes in employee earnings and benefits and in prices of supplies used in processing, wholesaling, and retailing U.S. farm foods purchased for at-home consumption. *Information contact: Veronica Jones (202) 694-5387*

Livestock & Products

Table 10—U.S. Meat Supply & Use

	Beg. stocks	Produc- tion ¹	Imports	Total supply	Exports	Ending stocks	Consumption		Conversion factor ³	Primary market price ⁴
							Total	Per capita ²		
	Million lbs. ⁵						Lbs.			\$/cwt
Beef										
1999	393	26,493	2,873	29,759	2,412	411	26,936	68	0.700	65.56
2000	411	26,888	3,032	30,332	2,468	525	27,338	68	0.700	69.65
2001	525	26,212	3,164	29,901	2,269	606	27,026	66	0.700	72.71
2002	606	27,114	3,306	31,026	2,403	575	28,048	68	0.700	67.32
2003	575	25,555	3,305	29,435	2,480	350	26,605	64	0.700	75.00
Pork										
1999	584	19,308	827	20,720	1,277	489	18,954	53	0.776	34.00
2000	489	18,952	967	20,407	1,287	478	18,643	51	0.776	44.70
2001	478	19,160	951	20,588	1,560	536	18,492	50	0.776	45.81
2002	536	19,831	1,027	21,394	1,528	575	19,291	52	0.776	33.99
2003	575	19,772	1,020	21,367	1,550	600	19,217	51	0.776	34.75
Veal ⁶										
1999	5	235	0	240	0	5	235	1	0.83	89.62
2000	5	225	0	230	0	5	225	1	0.83	105.75
2001	5	205	0	210	0	6	204	1	0.83	106.70
2002	6	198	0	204	0	5	199	1	0.83	97.04
2003	5	195	0	200	0	5	195	1	0.83	106.13
Lamb and mutton										
1999	12	248	112	372	5	9	358	1	0.89	75.97
2000	9	234	130	372	5	13	354	1	0.89	79.40
2001	13	227	146	386	7	12	368	1	0.89	72.04
2002	12	219	178	409	5	13	391	1	0.89	70.66
2003	13	213	192	418	5	13	400	1	0.89	71.00
Total red meat										
1999	994	46,284	3,813	51,091	3,694	914	46,483	122	--	--
2000	914	46,299	4,128	51,341	3,760	1,021	46,560	121	--	--
2001	1,021	45,804	4,260	51,085	3,836	1,160	46,089	118	--	--
2002	1,160	47,362	4,511	53,033	3,936	1,168	47,929	121	--	--
2003	1,168	45,735	4,517	51,420	4,035	968	46,417	117	--	--
Broilers										
										¢/lb
1999	711	29,468	4	30,184	4,585	796	24,803	76	0.859	58
2000	796	30,209	6	31,011	4,918	798	25,295	77	0.859	56
2001	798	30,938	14	31,749	5,557	712	25,480	76	0.859	59
2002	712	31,958	11	32,681	4,868	825	26,988	80	0.859	56
2003	825	32,647	12	33,484	5,450	775	27,259	80	0.859	59
Mature chickens										
1999	6	554	0	562	393	8	162	1	1	--
2000	8	531	0	540	220	9	311	1	1	--
2001	9	515	0	528	182	8	337	1	1	--
2002	8	530	0	540	168	8	364	1	1	--
2003	8	500	0	509	160	8	341	1	1	--
Turkeys										
1999	304	5,230	1	5,535	378	254	4,902	18	1	69
2000	254	5,333	1	5,589	445	241	4,902	17	1	71
2001	241	5,489	1	5,732	487	241	5,003	18	1	66
2002	241	5,584	1	5,826	496	325	5,004	17	1	65
2003	325	5,601	1	5,927	490	325	5,111	18	1	67
Total poultry										
1999	1,022	35,252	7	36,281	5,356	1,058	29,867	94	--	--
2000	1,058	36,073	9	37,140	5,584	1,048	30,508	95	--	--
2001	1,048	36,942	18	38,008	6,226	961	30,820	95	--	--
2002	961	38,072	15	39,048	5,532	1,158	32,357	99	--	--
2003	1,158	38,747	15	39,920	6,100	1,108	32,711	99	--	--
Red meat and poultry										
1999	2,016	81,537	3,820	87,372	9,050	1,971	76,351	216	--	--
2000	1,971	82,372	4,137	88,481	9,344	2,069	77,069	216	--	--
2001	2,069	82,746	4,278	89,093	10,062	2,121	76,910	213	--	--
2002	2,121	85,434	4,526	92,081	9,468	2,326	80,286	220	--	--
2003	2,326	84,482	4,532	91,340	10,135	2,076	79,128	215	--	--

-- = Not available. Values for the last 2 years are forecasts. 1. Total including farm production for red meat and federally inspected plus nonfederally inspected for poultry. 2. Retail-weight basis. 3. Red meat, carcass to retail conversion; poultry, ready-to-cook production to retail weight. 4. Beef: Medium #1, Nebraska Direct 1,100-1,300 lb.; pork: barrows and gilts, Iowa, Southern Minnesota; veal: farm price of calves; lamb and mutton: choice slaughter lambs, San Angelo; broilers: wholesale 12-city average; turkeys: wholesale NY 8-16 lb. young hens. 5. Carcass weight for red meats and certified ready-to-cook for poultry. 6. Beginning in 1989, veal trade is no longer reported separately. *Information contact: LaVerne Williams (202) 694-5190*

Table 11—U.S. Egg Supply & Use

	Beg. stocks	Production	Imports	Total supply	Exports	Hatching use	Ending stocks	Consumption		Primary market price*
								Total	Per capita	
				Million doz.					No.	¢/doz.
1996	11.2	6,350.7	5.4	6,367.3	253.1	863.8	8.5	5,241.8	234.6	88.2
1997	8.5	6,473.1	6.9	6,488.5	227.8	894.7	7.4	5,358.6	235.8	81.2
1998	7.4	6,657.9	5.8	6,671.2	218.8	921.8	8.4	5,522.2	240.1	75.8
1999	8.4	6,912.0	7.4	6,927.8	161.9	941.7	7.6	5,816.6	250.0	65.6
2000	7.6	7,033.5	8.4	7,049.5	171.1	940.2	11.4	5,926.8	251.8	68.9
2001	11.4	7,152.0	8.9	7,172.2	190.0	953.0	10.4	6,018.8	252.6	67.2
2002	10.4	7,206.0	11.8	7,228.2	182.5	968.5	12.0	6,065.2	251.8	66.5
2003	12.0	7,210.0	8.0	7,230.0	168.0	1,000.0	12.0	6,050.0	248.7	66.8

Values for the last year are forecasts. Values for previous year are preliminary. * Cartoned grade A large eggs, New York.

Information contact: LaVerne Williams (202) 694-5190

Table 12—U.S. Milk Supply & Use

	Production	Farm use	Commercial		Imports	Total commercial supply	CCC net removals	Ending stocks	Commercial		CCC net removals	
			Farm market-ings	Beg. stocks					Disappearance	All milk price ¹	Skim solids basis	Total solids basis ²
	Million lbs. (milkfat basis)									\$/cwt	Billion lbs.	
1995	155.3	1.6	153.7	4.3	2.9	160.9	2.1	4.1	154.9	12.74	4.4	3.5
1996	154.0	1.5	153.5	4.1	2.9	159.5	0.1	4.7	154.7	14.74	0.7	0.5
1997	156.1	1.4	154.7	4.7	2.7	162.1	1.1	4.9	156.1	13.34	3.7	2.7
1998	157.4	1.4	156.1	4.9	4.6	165.5	0.4	5.3	159.9	15.42	4.0	2.6
1999	162.7	1.4	161.3	5.3	4.7	171.4	0.3	6.1	164.9	14.36	6.5	4.0
2000	167.6	1.3	166.2	6.1	4.4	176.8	0.8	6.9	169.1	12.40	8.6	5.5
2001	165.3	1.3	164.1	6.8	5.7	176.6	0.2	7.0	169.4	14.93	5.8	3.5
2002	169.8	1.2	168.5	7.0	5.0	180.6	0.4	8.0	172.2	12.20	9.7	6.0
2003	171.4	1.2	170.3	8.0	4.8	183.1	0.7	6.6	175.7	12.40	6.2	4.0

Values for latest year are forecasts. Values for the preceding year are preliminary. 1. Delivered to plants and dealers; does not reflect deductions.

2. Arbitrarily weighted average of milkfat basis (40 percent) and solids basis (60 percent). Information contact: Jim Miller (202) 694-5184

Table 13—Poultry & Eggs

	Annual			2001		2002					
	1999	2000	2001	Jul	Feb	Mar	Apr	May	Jun	Jul	
Broilers											
Federally inspected slaughter certified (mil. lb.)	29,741.4	30,495.2	31,265.8	2,592.8	2,475.1	2,593.6	2,764.9	2,899.1	2,585.2	2,827.2	
Wholesale price, 12-city (cents/lb.)	58.1	56.2	59.1	60.4	55.9	55.2	53.5	56.4	58.4	57.5	
Price of grower feed (\$/ton) ¹	103.1	104.7	101.3	106.3	98.6	101.6	101.7	104.9	110.0	119.2	
Broiler-feed price ratio ²	7.2	6.6	7.8	7.9	6.9	6.3	5.9	6.1	6.0	5.2	
Stocks beginning of period (mil. lb.)	711.1	795.6	797.6	681.2	711.3	721.0	802.6	847.1	829.0	848.3	
Broiler-type chicks hatched (mil.)	8,715.4	8,846.2	9,006.6	769.4	702.6	790.3	765.0	798.3	776.4	781.4	
Turkeys											
Federally inspected slaughter certified (mil. lb.)	5,296.5	5,402.2	5,561.7	470.1	451.6	449.9	494.1	499.7	453.7	478.4	
Wholesale price, Eastern U.S. 8-16 lb. young hens (cents/lb.)	69.0	70.5	66.3	66.1	60.0	59.0	59.5	63.5	65.7	66.5	
Price of turkey grower feed (\$/ton) ¹	95.0	95.9	95.8	97.5	94.7	96.8	95.9	98.6	102.5	111.0	
Turkey-feed price ratio ²	8.6	8.7	8.2	7.9	7.2	6.8	6.8	7.2	7.2	6.9	
Stocks beginning of period (mil. lb.)	304.3	254.3	241.3	506.7	325.2	409.9	456.3	516.0	578.9	644.1	
Poults placed in U.S. (mil.)	296.1	297.3	301.6	27.1	24.3	25.7	26.2	25.6	24.4	25.7	
Eggs											
Farm production (mil.)	82,944.0	84,393.0	85,819.0	7,195.0	6,561.0	7,395.0	7,081.0	7,274.0	7,116.0	7,341.0	
Average number of layers (mil.)	322.9	328.3	335.4	332.2	337.0	336.6	335.7	334.9	335.0	335.3	
Rate of lay (eggs per layer on farms)	256.8	257.1	255.8	21.7	19.5	22.0	21.1	21.7	21.2	21.9	
Cartoned price, New York, grade A large (cents/doz.) ³	65.6	68.9	67.1	59.8	60.7	76.9	55.8	53.3	66.1	64.6	
Price of laying feed (\$/ton) ¹	124.6	123.6	123.4	136.7	133.1	118.1	142.2	153.0	133.1	153.6	
Egg-feed price ratio ²	9.8	10.6	9.9	7.9	8.4	11.6	7.3	6.6	9.5	7.5	
Stocks, first of month											
Frozen (mil. doz.)	8.4	7.6	11.4	12.0	10.0	10.6	8.9	7.8	8.4	9.7	
Replacement chicks hatched (mil.)	451.7	430.4	451.8	40.8	34.3	36.7	38.2	38.9	35.3	35.2	

1. Calculated from price ratios that were revised February 1995. 2. Pounds of feed equal in value to 1 dozen eggs or 1 lb. of broiler or turkey liveweight (revised February 1995). 3. Price of cartoned eggs to volume buyers for delivery to retailers.

Information contact: LaVerne Williams (202) 694-5190

Table 14—Dairy

	Annual			2001			2002			
	1999	2000	2001	Jul	Feb	Mar	Apr	May	Jun	Jul
Class III (BFP before 2000) 3.5% fat (\$/cwt.)	12.43	9.74	13.10	15.46	11.63	10.65	10.85	10.82	10.09	9.33
Wholesale prices										
Butter, Central States (cents/lb.) ¹	125.2	118.5	167.7	192.4	126.9	126.4	120.8	109.7	106.3	104.5
Am. cheese, Wis. assembly pt. (cents/lb.)	142.3	116.2	144.9	168.4	123.2	122.2	125.8	122.1	115.1	109.7
Nonfat dry milk (cents/lb.) ²	103.5	101.6	100.8	100.3	93.6	92.2	90.6	91.7	92.1	92.7
USDA net removals										
Total (mil. lb.) ³	343.5	841.4	151.3	15.6	26.0	18.6	21.6	25.8	20.3	24.9
Butter (mil. lb.)	3.7	8.9	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Am. cheese (mil. lb.)	4.6	28.0	4.6	0.8	0.8	0.0	0.0	0.0	0.0	0.7
Nonfat dry milk (mil. lb.)	540.6	692.6	498.4	39.2	82.7	84.5	98.0	117.3	92.4	84.6
Milk										
Milk prod. 20 states (mil. lb.)	140,062	144,535	142,817	12,025	11,365	12,771	12,555	13,021	12,315	12,306
Milk per cow (lb.)	18,109	18,533	18,438	1,552	1,468	1,649	1,619	1,677	1,583	1,581
Number of milk cows (1,000)	7,734	7,799	7,746	7,746	7,744	7,744	7,754	7,764	7,779	7,783
U.S. milk production (mil. lb.) ⁴	162,716	167,559	165,336	13,882	13,190	14,818	14,577	15,112	14,288	14,147
Stocks, beginning ⁵										
Total (mil. lb.)	5,302	6,186	7,010	10,283	8,446	9,393	9,866	11,255	12,141	12,636
Commercial (mil. lb.)	5,274	6,142	6,871	10,018	8,229	9,148	9,609	10,968	11,837	12,317
Government (mil. lb.)	28	44	139	265	216	245	257	287	304	319
Imports, total (mil. lb.) ³	4,772	4,445	5,716	604	361	421	386	412	457	504
Commercial disappearance (mil. lb.) ³	164,947	169,132	169,467	14,299	12,512	14,655	13,481	14,526	14,137	14,112
Butter										
Production (mil. lb.)	1,277.1	1,256.0	1,236.8	84.2	125.4	129.0	132.4	126.5	96.9	93.9
Stocks, beginning (mil. lb.)	25.9	24.9	24.0	152.7	99.9	129.4	144.4	197.1	224.6	241.0
Commercial disappearance (mil. lb.)	1,310.7	1,280.0	1,280.8	99.1	100.0	117.9	82.3	101.0	83.6	94.6
American cheese										
Production (mil. lb.)	3,532.6	3,641.6	3,519.2	293.4	287.4	318.2	316.8	326.2	310.3	302.3
Stocks, beginning (mil. lb.)	407.6	458.0	521.1	519.8	452.9	484.3	497.4	507.6	530.5	544.9
Commercial disappearance (mil. lb.)	3,542.2	3,595.8	3,656.0	290.0	257.5	308.9	309.1	309.4	312.2	290.0
Other cheese										
Production (mil. lb.)	4,361.5	4,616.4	4,609.9	382.6	359.7	401.3	382.5	397.9	378.7	368.2
Stocks, beginning (mil. lb.)	109.5	163.3	185.2	217.6	234.2	230.6	232.5	246.4	252.1	246.8
Commercial disappearance (mil. lb.)	4,672.1	4,959.1	4,952.3	411.2	391.9	429.5	405.8	425.8	410.9	392.1
Nonfat dry milk										
Production (mil. lb.)	1,359.7	1,451.8	1,413.8	117.5	125.8	147.8	158.3	158.1	147.6	124.4
Stocks, beginning (mil. lb.)	56.9	150.9	146.3	166.7	120.0	142.5	157.8	160.8	165.8	173.7
Commercial disappearance (mil. lb.)	737.2	770.6	943.9	98.3	21.7	48.2	57.8	38.5	48.9	79.4
Frozen dessert										
Production (mil. gal.) ⁵	1,301.0	1,304.9	1,325.4	128.6	100.1	113.1	121.4	121.3	126.4	127.5

-- = Not available. Quarterly values for latest year are preliminary. 1. Grade AA Chicago before June 1998. 2. Prices paid f.o.b. Central States production area. 3. Milk equivalent, fat basis. 4. Monthly data ERS estimates. 5. Hard ice cream, ice milk, and hard sherbet.

Information contact: LaVerne Williams (202) 694-5190

Table 15—Wool

	Annual			2000			2001				2002	
	1999	2000	2001	IV	I	II	III	IV	I	II		
U.S. wool price (¢/lb.) ¹	110	108	121	96	101	130	125	126	190	151		
Imported wool price (¢/lb.) ²	136	137	160	136	151	155	167	168	233	247		
U.S. mill consumption, scoured												
Apparel wool (1,000 lb.)	63,535	62,041	52,969	13,914	17,003	13,519	11,584	10,863	10,969	10,471		
Carpet wool (1,000 lb.)	13,950	15,205	13,010	3,886	4,280	3,791	2,919	2,320	1,856	1,860		

-- = Not available. 1. Wool price delivered at U.S. mills, clean basis, Graded Territory 64's (20.60-22.04 microns) staple 2-3/4" and up.

2. Wool price, Charleston, SC warehouse, clean basis, Australian 60/62's, type 64A (24 micron). Duty since 1982 has been 10 cents.

Information contact: Wilma L. Davis (202) 694-5304

Table 16—Meat Animals

	Annual			2001		2002				
	1999	2000	2001	Aug	Mar	Apr	May	Jun	Jul	Aug
Cattle on feed (7 states, 1000+ head capacity)										
Number on feed (1,000 head) ¹	9,021	9,752	10,076	9,387	9,905	9,934	9,389	9,449	9,056	8,750
Placed on feed (1,000 head)	21,446	21,875	21,145	1,906	1,654	1,235	1,990	1,422	1,619	1,936
Marketings (1,000 head)	20,124	20,674	19,955	1,864	1,565	1,709	1,864	1,773	1,889	1,806
Other disappearance (1,000 head)	676	702	774	46	60	71	66	42	36	35
Market prices (\$/cwt)										
Slaughter cattle										
Choice steers, 1,100-1,300 lb.										
Texas	65.89	69.86	71.98	69.07	71.97	67.63	65.49	63.85	63.57	63.41
Neb. direct	65.56	69.65	72.43	70.38	72.59	67.79	65.32	63.64	62.49	62.96
Boning utility cows, Sioux Falls	38.40	41.71	44.49	46.95	44.06	42.88	42.45	41.50	37.63	37.50
Feeder steers										
Medium no. 1, Oklahoma City										
600-650 lb.	82.64	94.31	95.29	95.38	91.45	92.00	88.53	80.89	82.36	83.99
750-800 lb.	76.39	86.14	88.20	90.43	80.03	77.32	76.74	77.42	77.52	76.68
Slaughter hogs										
Barrows and gilts, 51-52 percent lean										
National Base converted to live equal.	34.00	44.70	45.81	52.47	37.47	32.97	34.64	37.32	40.53	33.50
Sows, Iowa, S.MN 1-2 300-400 lb.	19.26	29.79	33.98	40.75	29.50	24.39	25.41	21.11	21.04	20.87
Slaughter sheep and lambs										
Lambs, Choice, San Angelo	75.96	79.40	72.04	54.47	64.00	65.15	64.06	68.75	75.83	74.35
Ewes, Good, San Angelo	42.45	46.23	45.66	40.25	36.00	40.10	38.00	34.83	35.42	36.55
Feeder lambs										
Choice, San Angelo	80.74	95.86	89.38	73.19	78.00	85.00	78.83	74.75	79.33	77.30
Wholesale meat prices, Midwest										
Boxed beef cut-out value										
Choice, 700-800 lb.	110.90	117.45	122.17	119.40	120.02	116.31	115.60	114.53	109.35	109.91
Select, 700-800 lb.	101.91	108.83	114.42	113.62	117.13	109.77	106.16	107.22	105.14	102.94
Canner and cutter cow beef	66.51	72.57	--	--	--	--	--	--	--	--
Pork cutout	53.45	64.07	66.83	75.14	56.12	50.55	51.90	54.40	58.48	52.61
Pork loins, bone-in, 1/4" trim, 14-19 lb.	100.38	117.13	116.97	121.22	100.08	94.13	101.71	104.80	108.64	97.85
Pork bellies, 12-14 lb.	57.12	77.46	78.61	98.39	72.55	63.48	58.85	65.90	81.06	67.98
Hams, bone-in, trimmed, 20-23 lb.	45.18	52.02	56.86	67.54	51.56	35.15	33.10	34.36	42.09	35.93
All fresh beef retail price	260.50	275.30	275.30	301.70	306.30	306.50	309.00	302.00	302.20	304.70
Commercial slaughter (1,000 head) ²										
Cattle	36,150	36,246	35,370	3,259	2,737	2,948	3,147	3,063	3,187	3,213
Steers	17,932	18,063	17,386	1,680	1,329	1,476	1,640	1,620	1,681	1,692
Heifers	11,868	12,039	11,576	1,061	921	964	988	943	976	980
Cows	5,710	5,520	5,774	459	438	255	464	446	479	485
Bull and stags	639	624	632	59	49	53	54	54	51	56
Calves	1,282	1,132	1,007	100	78	82	78	76	96	96
Sheep and lambs	3,701	3,460	3,222	284	325	278	284	230	258	265
Hogs	101,544	97,976	97,962	8,623	7,981	8,428	8,326	7,536	8,068	8,544
Barrows and gilts	97,732	94,604	94,588	8,310	7,705	8,144	8,027	7,251	7,750	8,215
Commercial production (mil. lb.)										
Beef	26,385	26,776	26,108	2,437	2,059	2,194	2,336	2,303	2,426	2,470
Veal	224	215	194	17	15	16	15	15	17	17
Lamb and mutton	243	232	224	18	22	19	20	15	16	17
Pork	19,278	18,929	19,139	1,643	1,581	1,673	1,647	1,480	1,557	1,637
	Annual			2001				2002		
	1999	2000	2001	I	II	III	IV	I	II	III
Hogs and pigs (U.S.) ³										
Inventory (1,000 head) ¹	62,206	59,342	59,138	59,138	57,524	58,603	59,777	59,804	58,898	59,837
Breeding (1,000 head) ¹	6,682	6,234	6,270	6,270	6,232	6,186	6,158	6,209	6,236	6,209
Market (1,000 head) ¹	55,523	53,109	52,868	52,868	51,292	52,417	53,619	53,594	52,661	53,627
Farrowings (1,000 head)	11,641	11,462	11,303	2,748	2,870	2,878	2,889	2,832	2,933	2,930
Pig crop (1,000 head)	102,354	101,354	99,473	23,963	25,509	25,539	25,492	24,711	25,851	--
Cattle on Feed, 7 states (1,000 head) ^{1, 4}										
Steers and steer calves	5,432	5,768	5,936	5,936	5,885	5,521	5,690	6,077	6,180	5,541
Heifers and heifer calves	3,552	3,942	4,081	4,081	3,913	3,894	3,882	3,769	3,718	3,474
Cows and bulls	37	42	59	59	61	51	41	64	36	41

-- = Not available. 1. Beginning of period. 2. Classes estimated. 3. Quarters are Dec. of preceding year to Feb. (I), Mar.-May (II), June-Aug. (III), and Sept.-Nov. (IV). 4. The 7 states include AZ, CA, CO, IA, KS, NE, and TX. Information contact: Leland Southard (202) 694-5187

Crops & Products

Table 17—Supply & Utilization^{1,2}

	Area		Yield	Production	Total supply ⁴	Feed & residual	Other domestic use	Exports	Total use	Ending stocks	Farm price ⁵
	Planted	Harvested									
	Mil. acres		Bu./acre				Mil. bu.				\$/bu.
Wheat											
1998/99	65.8	59.0	43.2	2,547	3,373	391	990	1,046	2,427	946	2.65
1999/00	62.7	53.8	42.7	2,299	3,339	288	1,013	1,089	2,390	950	2.48
2000/01	62.6	53.1	42.0	2,232	3,272	304	1,029	1,062	2,396	876	2.62
2001/02*	59.6	48.7	40.2	1,958	2,941	199	1,009	961	2,169	772	2.78
2002/03*	60.1	47.6	35.4	1,686	2,543	175	1,011	950	2,136	407	3.45-4.05
Rice ⁶											
	Mil. acres		Lb./acre				Mil. cwt (rough equiv)				\$/cwt
1998/99	3.3	3.3	5,663	184.4	223.0	--	6/ 114.0	86.8	200.9	22.1	8.89
1999/00	3.5	3.5	5,866	206.0	238.2	--	6/ 121.9	88.8	210.7	27.5	5.93
2000/01	3.1	3.0	6,281	190.9	229.2	--	6/ 117.5	83.2	200.7	28.5	5.61
2001/02*	3.3	3.3	6,429	213.0	254.8	--	6/ 120.8	95.0	215.8	39.0	4.17
2002/03*	3.2	3.2	6,432	206.3	258.5	--	6/ 126.0	95.0	221.0	37.5	3.85-4.35
Corn											
	Mil. acres		Bu./acre				Mil. bu.				\$/bu.
1998/99	80.2	72.6	134.4	9,759	11,085	5,468	1,846	1,984	9,298	1,787	1.94
1999/00	77.4	70.5	133.8	9,431	11,232	5,665	1,913	1,937	9,515	1,718	1.82
2000/01	79.6	72.4	136.9	9,915	11,639	5,842	1,957	1,941	9,740	1,899	1.85
2001/02*	75.8	68.8	138.2	9,507	11,416	5,825	2,055	1,900	9,780	1,636	1.97
2002/03*	78.8	70.5	125.4	8,849	10,499	5,600	2,170	2,000	9,770	729	2.35-2.75
Sorghum											
	Mil. acres		Bu./acre				Mil. bu.				\$/bu.
1998/99	9.6	7.7	67.3	520	569	262	45	197	504	65	1.66
1999/00	9.3	8.5	69.7	595	660	285	55	255	595	65	1.57
2000/01	9.2	7.7	60.9	471	536	222	35	237	494	42	1.89
2001/02*	10.3	8.6	59.9	515	556	215	45	240	500	56	1.95
2002/03*	9.3	7.5	51.0	384	441	135	45	220	400	41	2.35-2.75
Barley											
	Mil. acres		Bu./acre				Mil. bu.				\$/bu.
1998/99	6.3	5.9	60.0	352	501	161	170	29	360	142	1.98
1999/00	5.2	4.7	59.2	280	450	138	172	28	338	111	2.13
2000/01	5.9	5.2	61.1	319	459	123	172	58	353	106	2.11
2001/02*	5.0	4.3	58.2	250	380	88	172	27	287	93	2.22
2002/03*	5.0	4.5	55.9	252	370	100	172	20	292	78	2.40-2.80
Oats											
	Mil. acres		Bu./acre				Mil. bu.				\$/bu.
1998/99	4.9	2.8	60.2	166	348	196	69	2	266	81	1.10
1999/00	4.7	2.5	59.6	146	326	180	68	2	250	76	1.12
2000/01	4.5	2.3	64.2	150	332	189	68	2	259	73	1.10
2001/02*	4.4	1.9	61.3	117	286	148	72	3	222	63	1.59
2002/03*	5.1	2.6	54.2	143	306	175	72	2	249	57	1.60-2.00
Soybeans ⁷											
	Mil. acres		Bu./acre				Mil. bu.				\$/bu.
1998/99	72.0	70.4	38.9	2,741	2,944	201	1,590	805	2,595	348	4.93
1999/00	73.7	72.4	36.6	2,654	3,006	164	1,578	975	2,716	290	4.63
2000/01	74.3	72.4	38.1	2,758	3,052	167	1,641	996	2,804	248	4.54
2001/02*	74.1	73.0	39.6	2,891	3,141	181	1,705	1,060	2,946	195	4.35
2002/03*	73.0	71.8	37.0	2,656	2,856	171	1,675	850	2,696	160	5.15-6.05
Soybean oil											
							Mil. lbs.				¢/lb.
1998/99	--	--	--	18,081	19,546	--	15,655	2,372	18,027	1,520	19.90
1999/00	--	--	--	17,825	19,426	--	16,056	1,375	17,431	1,995	15.60
2000/01	--	--	--	18,420	20,488	--	16,210	1,401	17,611	2,877	14.15
2001/02*	--	--	--	18,865	21,785	--	16,850	2,500	19,350	2,435	16.50
2002/03*	--	--	--	18,930	21,430	--	17,200	2,500	19,700	1,730	19.00-22.00
Soybean meal											
							1,000 tons				\$/ton ⁸
1998/99	--	--	--	37,792	38,109	--	30,657	7,122	37,779	330	138.5
1999/00	--	--	--	37,591	37,970	--	30,345	7,332	37,678	293	167.7
2000/01	--	--	--	39,385	39,729	--	31,643	7,703	39,346	383	173.6
2001/02*	--	--	--	40,452	40,975	--	33,100	7,650	40,750	225	168.0
2002/03*	--	--	--	39,885	40,350	--	33,350	6,750	40,100	250	170-200

See footnotes at end of table, next page

Table 17—Supply & Utilization (continued)

	Area		Yield	Production	Total supply ³	Feed & residual	Other domestic use	Exports	Total use	Ending stocks	Farm price ⁴
	Planted	Harvested									
	Mil. acres		Lb./acre				Mil. bales				¢/lb.
Cotton ⁸											
1998/99	13.4	10.7	625	13.9	18.2	--	10.4	4.3	14.7	3.9	60.2
1999/00	14.9	13.4	607	17.0	21.0	--	10.2	6.8	16.9	3.9	45.0
2000/01	15.5	13.1	632	17.2	21.1	--	8.9	6.8	15.6	6.0	49.8
2001/02*	15.8	13.8	705	20.3	26.3	--	7.7	11.0	18.7	7.6	31.5
2002/03*	14.4	12.9	675	18.1	25.8	--	7.9	11.2	19.1	6.7	--

-- = Not available/applicable. *September 12, 2002 Supply and Demand Estimates. 1. Marketing year beginning June 1 for wheat, barley and oats; August 1 for cotton and rice; September 1 for soybeans, corn, and sorghum; October 1 for soybean meal and soybean oil. 2. Conversion factors: hectare (ha.) = 2.471 acres, 1 metric ton = 2,204.622 pounds, 36.7437 bushels of wheat or soybeans, 39.3679 bushels of corn or sorghum, 45.9296 bushels of barley, 68.8944 bushels of oats, 22.046 cwt of rice, and 4.59 480-pound bales of cotton. 3. Includes imports. 4. Marketing-year weighted average price received by farmers. Does not include an allowance for loans outstanding and government purchases. 5. Residual included in domestic use. 6. Includes seed. 7. Simple average of 48 percent protein, Decatur. 8. Upland and extra-long staple. Stocks estimates based on Census Bureau data, resulting in an unaccounted difference between supply and use estimates. For 2001/02, cotton price is the average for August 2001-July 2002. USDA is prohibited by law from publishing cotton price projections. *Information contact: Wilma Davis (202) 694-5304*

Table 18—Cash Prices, Selected U.S. Commodities

	Marketing year ¹			2001	2002					
	1998/99	1999/2000	2000/01	Aug	Mar	Apr	May	Jun	Jul	Aug
Wheat, no. 1 HRW, Kansas City (\$/bu.) ²	2.67	2.87	3.30	3.15	3.23	3.24	3.21	3.55	3.92	4.29
Wheat, DNS, Minneapolis (\$/bu.) ³	3.83	3.65	3.62	3.54	3.51	3.55	3.59	3.64	4.03	4.37
Rice, S.W. La. (\$/cwt) ⁴	16.79	12.99	12.46	12.19	9.81	9.25	9.15	9.13	9.13	9.13
Corn, no. 2 yellow, 30-day, Chicago (\$/bu.)	2.06	1.97	1.99	2.13	2.05	2.03	2.08	2.15	2.33	2.63
Sorghum, no. 2 yellow, Kansas City (\$/cwt)	3.29	3.10	3.41	3.65	3.58	3.47	3.44	3.57	3.97	4.60
Barley, feed, Duluth (\$/bu.)	--	--	--	1.49	1.55	1.55	1.55	1.55	1.55	1.74
Barley, malting Minneapolis (\$/bu.)	--	--	--	2.35	2.48	2.47	2.45	2.48	2.56	2.69
U.S. cotton price, SLM, 1-1/16 in. (¢/lb.) ⁵	60.12	52.36	51.56	36.05	33.23	31.86	31.14	36.36	39.78	39.20
Northern Europe prices cotton index (¢/lb.) ⁶	72.11	52.85	57.25	43.31	42.01	41.61	40.01	43.43	46.75	49.46
U.S. M 1-3/32 in. (¢/lb.) ⁷	74.08	59.64	62.54	51.25	46.00	45.00	42.55	46.25	49.81	50.90
Soybeans, no. 1 yellow, 15-day ⁸ Chicago (\$/bu)	4.88	4.82	4.67	4.87	4.57	4.66	4.82	5.09	5.70	5.67
Soybean oil, crude, Decatur (¢/lb.)	19.80	15.59	14.10	17.08	14.75	15.31	15.99	17.69	19.12	20.61
Soybean meal, high protein, Decatur (\$/ton)	138.55	167.62	173.62	178.46	160.50	161.60	164.30	170.35	187.50	186.25

-- = Not available. 1. Beginning June 1 for wheat and barley; Aug. 1 for rice and cotton; Sept. 1 for corn, sorghum, and soybeans; Oct. 1 for soybean meal and oil. 2. Ordinary protein. 3. 14 percent protein. 4. Long grain, milled basis. 5. Average spot market. 6. Liverpool Cotton "A" Index; average of 5 lowest priced growth. 7. Cotton, Memphis territory growth. 8. Soybean 30-day price discontinued. *Information contact: Wilma Davis (202) 694-5304*

Table 19—Farm Programs, Price Supports, Participation, & Payment Rates

	Marketing assistance loan rate	Marketing loan benefit ¹	Flexibility contract payment rate	Acres under contract	Contract payment yields
				<i>Mil. acres</i>	<i>Bu./acre</i>
Wheat		<i>\$/bu.</i>			
1997/98	2.58	0.01	0.631	76.7	34.70
1998/99	2.58	0.19	0.663	78.9	34.50
1999/2000	2.58	0.41	0.637	79.0	34.50
2000/2001	2.58	--	0.588	78.9	34.50
2001/2002 ²	2.58	--	0.474	78.2	34.60
					<i>Cwt/acre</i>
Rice		<i>\$/cwt</i>			
1997/98	6.50	0.00	2.710	4.2	48.17
1998/99	6.50	0.08	2.921	4.2	48.17
1999/2000	6.50	1.94	2.820	4.2	48.15
2000/2001	6.50	--	2.600	4.1	48.15
2001/2002 ²	6.50	--	2.100	4.1	48.15
					<i>Bu./acre</i>
Corn		<i>\$/bu.</i>			
1997/98	1.89	0.01	0.486	80.9	102.80
1998/99	1.89	0.14	0.377	82.0	102.60
1999/2000	1.89	0.26	0.363	81.9	102.60
2000/2001	1.89	--	0.334	81.9	102.60
2001/2002 ²	1.89	--	0.269	81.5	102.70
					<i>Bu./acre</i>
Sorghum		<i>\$/bu.</i>			
1997/98	1.76	0.00	0.544	13.1	57.30
1998/99	1.74	0.12	0.452	13.6	56.90
1999/2000	1.74	0.26	0.435	13.7	56.90
2000/2001	1.71	--	0.400	13.6	57.00
2001/2002 ²	1.71	--	0.324	13.5	57.00
					<i>Bu./acre</i>
Barley		<i>\$/bu.</i>			
1997/98	1.57	0.01	0.277	10.5	47.20
1998/99	1.56	0.23	0.284	11.2	46.70
1999/2000	1.59	0.14	0.271	11.2	46.60
2000/2001	1.62	--	0.251	11.2	46.60
2001/2002 ²	1.65	--	0.206	11.0	46.60
					<i>Bu./acre</i>
Oats		<i>\$/bu.</i>			
1997/98	1.11	0.00	0.031	6.2	50.80
1998/99	1.11	0.18	0.031	6.5	50.70
1999/2000	1.13	0.19	0.030	6.5	50.60
2000/2001	1.16	--	0.028	6.5	50.60
2001/2002 ²	1.21	--	0.022	6.5	50.60
					<i>Bu./acre</i>
Soybeans ³		<i>\$/bu.</i>			
1997/98	5.26	0.01	--	--	--
1998/99	5.26	0.45	--	--	--
1999/2000	5.26	0.88	--	--	--
2000/2001	5.26	--	--	--	--
2001/2002	5.26	--	--	--	--
					<i>Lb./acre</i>
Upland cotton		<i>¢/lb.</i>			
1997/98	51.92	0.00	7.625	16.2	608.00
1998/99	51.92	0.09	8.173	16.4	604.00
1999/2000	51.92	0.20	7.880	16.4	604.00
2000/2001	51.92	--	7.330	16.3	604.00
2001/2002 ²	51.92	--	5.990	16.2	605.80

-- = Not available. 1. Weighted average, based on portions of crop receiving marketing loan gains, loan deficiency payments, and no benefits (calculated by Economic Research Service). 2. Estimated payment rates and acres under contract. 3. There are no flexibility contract payments for soybeans.

Information contact: Brenda Chewning, Farm Service Agency (202) 720-8838

Table 20—Fruit

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Citrus¹										
Production (1,000 tons)	15,274	14,561	15,799	15,712	17,271	17,770	13,633	17,276	16,216	16,392
Per capita consumpt. (lb.) ²	26.0	25.0	24.1	25.2	27.5	27.3	21.0	24.5	25.1	--
Noncitrus³										
Production (1,000 tons)	16,554	17,339	16,348	16,103	18,363	16,545	17,331	18,923	16,822	--
Per capita consumpt. (lb.) ²	73.8	75.6	73.6	73.9	76.1	76.5	81.6	78.7	--	--
	2001		2002							
	Aug	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Grower prices										
Apples (¢/pound) ⁴	17.30	23.10	22.10	21.60	22.00	21.80	21.50	22.00	20.60	24.50
Pears (¢/pound) ⁴	19.70	18.15	14.10	13.80	13.35	13.35	13.35	16.85	15.60	23.00
Oranges (\$/box) ⁵	5.57	3.44	3.89	4.42	4.88	4.30	4.82	4.13	3.90	5.18
Grapefruit (\$/box) ⁵	3.69	2.30	1.98	1.70	1.23	1.02	1.05	4.16	6.36	5.60
Stocks, ending										
Fresh apples (mil. lb.)	143	4,355	3,629	2,958	2,221	1,550	1,043	644	316	89
Fresh pears (mil. lb.)	93	322	239	188	136	80	43	13	30	129
Frozen fruits (mil. lb.)	1,142	1,106	1,012	947	862	788	784	895	1,016	1,049
Frozen conc. orange juice (mil. single-strength gallons)	690	641	704	724	734	768	809	789	764	684

-- = Not available. 1. Year shown is when harvest concluded. 2. Fresh per capita consumption. 3. Calendar year. 4. Fresh use.

5. U.S. equivalent on-tree returns. *Information contact: Susan Pollack (202) 694-5251*

Table 21—Vegetables

	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
Production¹										
Total vegetables (1,000 cwt)	692,022	785,798	751,715	765,645	763,532	732,803	833,622	822,475	780,134	--
Fresh (1,000 cwt) ^{2,4}	390,528	416,173	397,125	412,010	436,459	420,012	449,683	479,223	477,212	--
Processed (tons) ^{3,4}	15,074,707	18,481,238	17,729,497	17,681,732	16,353,639	15,639,548	19,196,942	17,162,580	15,146,100	--
Mushrooms (1,000 lbs) ⁵	750,799	782,340	777,870	776,677	808,678	847,760	854,394	846,209	837,866	--
Potatoes (1,000 cwt)	430,349	469,425	445,099	499,254	467,091	475,771	478,216	513,621	444,766	--
Sweet potatoes (1,000 cwt)	11,027	13,380	12,821	13,216	13,327	12,382	12,234	13,794	14,565	--
Dry edible beans (1,000 cwt)	21,862	28,950	30,689	27,912	29,370	30,418	33,085	26,409	19,541	27,207
	2001		2002							
	Aug	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug
Shipments (1,000 cwt)										
Fresh	22,571	20,997	24,508	20,758	21,353	25,061	37,589	31,401	28,311	19,370
Iceberg lettuce	3,510	2,842	3,381	2,546	2,467	3,642	4,190	3,378	4,054	3,180
Tomatoes, all	3,094	3,831	4,992	4,130	3,743	3,946	4,417	3,047	3,695	2,781
Dry-bulb onions	4,219	3,891	4,291	3,419	3,167	3,529	4,623	3,189	4,283	3,678
Others ⁶	11,748	10,433	11,844	10,663	11,976	13,944	24,359	21,787	16,279	9,731
Potatoes, all	10,875	14,294	13,870	11,368	13,965	18,128	18,881	12,152	10,830	9,957
Sweet potatoes	191	426	287	276	399	227	308	221	263	240

-- = Not available. 1. Calendar year except mushrooms. 2. Includes fresh production of asparagus, broccoli, carrots, cauliflower, celery, sweet corn, lettuce, honeydews, onions, & tomatoes through 1999. In 2000, greens, okra, chile peppers, pumpkins, radishes, and squash were added.

3. Includes processing production of snap beans, sweet corn, green peas, tomatoes, cucumbers (for pickles), asparagus, broccoli, carrots, and cauliflower. 4. Data after 1991 not comparable to previous years because commodity estimates reinstated in 1992 are included. 5. Fresh and processing agaricus mushrooms only. Excludes specialty varieties. Crop year July 1 - June 30. 6. Includes snap beans, broccoli, cabbage, cauliflower, celery, sweet corn, cucumbers, eggplant, bell peppers, honeydews, and watermelons. *Information contact: Gary Lucier (202) 694-5253*

Table 22—Other Commodities

	Annual		1999		2000				2001	
	1998	1999	2000	IV	I	II	III	IV	I	II
Sugar										
Production ¹	7,891	9,083	8,912	4,667	2,681	922	772	4,537	2,660	827
Deliveries ¹	9,851	10,167	10,091	2,609	2,348	2,513	2,641	2,589	2,399	2,524
Stocks, ending ¹	3,423	3,855	4,338	3,855	4,551	3,498	2,219	4,338	5,122	3,720
Coffee										
Composite green price ² N.Y. (¢/lb.)	114.43	88.49	71.94	91.79	85.66	75.78	66.73	59.63	54.95	51.97
	Annual		2001		2002					
	1999	2000	2001	Mar	Oct	Nov	Dec	Jan	Feb	Mar
Tobacco										
Avg. price to grower ³										
Flue-cured (\$/lb.)	1.74	1.79	1.86	--	1.91	1.85	--	--	--	--
Burley (\$/lb.)	1.90	1.96	1.97	--	--	1.98	1.98	1.98	1.97	1.97
Domestic taxable removals										
Cigarettes (bil.)	423.3	406.0	--	35.3	--	--	--	--	--	--
Large cigars (mil.) ⁴	3,844	3,833	--	368	--	--	--	--	--	--

-- = Not available. 1. 1,000 short tons, raw value. Quarterly data shown at end of each quarter. 2. Net imports of green and processed coffee.

3. Crop year July-June for flue-cured, October-September for burley. Includes contract sales from 2001 on. 4. Includes imports of large cigars.

Information contacts: sugar and coffee, Fannye Jolly (202) 694-5249; tobacco, Tom Capehart (202) 694-5311

World Agriculture

Table 23—World Supply & Utilization of Major Crops, Livestock, & Products

	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01	2001/02 F	2002/03 F
<i>Million units</i>										
Wheat										
Area (hectares)	221.9	214.5	218.7	230.0	228.0	225.1	216.6	219.5	215.3	217.2
Production (metric tons)	558.6	524.0	538.4	582.0	610.2	589.7	586.2	583.9	579.6	580.7
Exports (metric tons) ¹	101.6	101.5	99.1	100.2	104.3	102.0	112.8	103.5	107.5	103.9
Consumption (metric tons) ²	556.2	546.9	548.4	573.9	583.2	582.9	589.1	590.6	587.6	594.3
Ending stocks (metric tons) ³	172.4	149.4	139.5	144.5	171.5	178.3	175.4	168.7	160.6	147.1
Coarse grains										
Area (hectares)	318.7	324.0	313.9	322.7	311.1	307.2	299.6	295.2	299.6	302.0
Production (metric tons)	798.9	871.3	802.9	908.5	883.8	888.9	876.1	858.1	882.8	902.7
Exports (metric tons) ¹	86.3	98.4	87.9	94.1	85.6	96.5	104.5	103.7	101.8	100.4
Consumption (metric tons) ²	838.6	859.6	841.8	875.1	873.2	869.3	881.8	880.8	899.5	913.2
Ending stocks (metric tons) ³	179.0	190.6	151.8	185.2	195.7	215.4	209.7	187.0	170.3	159.8
Rice, milled										
Area (hectares)	144.8	147.4	148.0	149.8	151.1	152.4	155.0	151.4	150.8	146.5
Production (metric tons)	355.3	364.5	371.4	380.3	386.8	394.1	409.3	397.5	396.3	380.9
Exports (metric tons) ¹	16.5	20.7	19.7	18.9	27.6	24.9	22.8	24.5	25.2	25.7
Consumption (metric tons) ²	359.2	366.0	372.0	379.0	379.5	387.3	398.4	396.4	410.2	407.2
Ending stocks (metric tons) ³	120.0	118.5	117.9	119.2	126.5	133.3	145.3	145.3	131.4	105.1
Total grains										
Area (hectares)	685.4	685.9	680.6	702.5	690.2	684.7	671.2	666.1	665.7	665.7
Production (metric tons)	1,712.8	1,759.8	1,712.7	1,870.8	1,880.8	1,872.7	1,871.6	1,839.5	1,858.7	1,864.3
Exports (metric tons) ¹	204.4	220.6	206.7	213.2	217.5	223.4	240.1	231.7	234.5	230.0
Consumption (metric tons) ²	1,754.0	1,772.5	1,762.2	1,828.0	1,835.9	1,839.5	1,869.3	1,867.8	1,897.3	1,914.7
Ending stocks (metric tons) ³	471.4	458.5	409.2	448.9	493.7	527.0	530.4	501.0	462.3	412.0
Oilseeds										
Crush (metric tons)	190.1	208.1	217.5	216.7	226.4	240.5	247.8	254.3	264.8	267.0
Production (metric tons)	229.4	261.9	258.9	261.4	286.6	294.7	303.4	313.4	323.3	319.1
Exports (metric tons)	38.7	44.1	44.3	49.6	54.0	55.1	64.6	71.0	68.9	71.7
Ending stocks (metric tons)	20.3	27.2	22.2	19.1	28.6	32.4	35.0	35.9	34.8	28.6
Meals										
Production (metric tons)	131.7	142.1	147.3	147.8	153.8	164.6	169.0	175.2	182.5	185.6
Exports (metric tons)	44.9	46.7	49.8	50.7	51.8	54.4	56.1	56.8	60.0	60.9
Oils										
Production (metric tons)	63.7	69.6	73.1	73.7	75.2	80.6	86.0	89.0	91.1	91.9
Exports (metric tons)	24.3	27.1	26.0	28.3	29.8	31.3	33.0	35.0	36.7	37.6
Cotton										
Area (hectares)	30.7	32.2	36.0	33.8	33.8	33.0	32.3	32.4	34.1	31.7
Production (bales)	77.5	85.9	93.2	89.8	91.9	85.3	87.5	88.7	98.1	88.6
Exports (bales)	26.8	28.5	27.5	26.8	26.7	23.7	27.3	26.6	29.2	30.6
Consumption (bales)	85.4	84.4	85.6	87.6	87.1	84.7	91.0	92.0	94.4	96.7
Ending stocks (bales)	26.4	29.8	37.2	41.4	45.5	47.8	45.3	42.7	46.6	39.2
	1993	1994	1995	1996	1997	1998	1999	2000	2001 E	2002 F
Beef and Pork⁴										
Production (metric tons)	111.6	116.7	122.1	116.6	122.1	127.1	130.3	131.1	138.9	134.9
Consumption (metric tons)	110.6	115.7	120.7	114.1	120.5	125.5	129.2	129.9	131.4	133.9
Exports (metric tons) ¹	6.6	7.2	7.4	7.7	8.4	8.1	9.0	9.2	9.3	9.7
Poultry⁴										
Production (metric tons)	40.5	43.2	47.5	50.4	53.7	54.6	57.7	59.7	61.9	62.9
Consumption (metric tons)	39.4	42.0	47.0	49.6	53.1	53.7	56.8	58.8	60.4	61.3
Exports (metric tons) ¹	2.8	3.6	4.5	5.1	5.1	5.2	5.5	5.9	6.8	7.1
Dairy										
Milk production (metric tons) ⁵	--	--	--	--	370.1	373.7	378.1	382.4	384.4	389.8

-- = Not available. E = Estimated, F = forecast. 1. Excludes intra-EU trade but includes intra-FSU trade. 2. Where stocks data are not available, consumption includes stock changes. 3. Stocks data are based on differing marketing years and do not represent levels at a given date. Data not available for all countries. 4. Calendar year, selected countries. 5. Data prior to 1989 no longer comparable.

Information contacts: Crops, Ed Allen (202) 694-5288; red meat and poultry, Leland Southard (202) 694-5187; dairy, LaVerne Williams (202) 694-5190

U.S. Agricultural Trade

Table 24—Prices of Principal U.S. Agricultural Trade Products

	Annual			2001		2002				
	1999	2000	2001	Aug	Mar	Apr	May	Jun	Jul	Aug
Export commodities										
Wheat, f.o.b. vessel, Gulf ports (\$/bu.)	3.04	3.17	3.50	3.40	3.40	3.39	3.31	3.63	4.10	4.45
Corn, f.o.b. vessel, Gulf ports (\$/bu.)	2.29	2.24	2.28	2.36	2.28	2.21	2.29	2.37	2.53	2.80
Grain sorghum, f.o.b. vessel, Gulf ports (\$/bu.)	2.14	2.23	2.42	2.44	2.34	2.26	2.30	2.35	2.56	2.92
Soybeans, f.o.b. vessel, Gulf ports (\$/bu.)	5.02	5.26	4.93	5.35	4.85	4.92	5.11	5.39	6.03	6.02
Soybean oil, Decatur (¢/lb.)	17.51	15.01	14.49	17.08	14.75	15.31	15.99	17.69	19.12	20.61
Soybean meal, Decatur (\$/ton)	141.52	174.69	168.49	178.46	160.49	161.57	164.28	170.33	187.41	186.25
Cotton, 7-market avg. spot (¢/lb.)	52.30	57.47	39.68	36.05	33.23	31.86	31.14	36.37	39.78	39.20
Tobacco, avg. price at auction (¢/lb.)	177.82	182.73	186.21	181.47	164.45	--	--	--	185.96	183.54
Rice, f.o.b., mill, Houston (\$/cwt)	16.99	14.83	14.55	14.81	11.79	12.33	12.30	11.74	11.93	11.93
Inedible tallow, Chicago (¢/lb.)	12.99	9.92	12.50	16.25	11.28	11.75	11.00	15.00	14.20	13.48
Import commodities										
Coffee, N.Y. spot (\$/lb.)	1.05	0.92	0.55	0.47	0.48	0.50	0.45	0.43	0.44	0.41
Rubber, N.Y. spot (¢/lb.)	36.66	37.72	33.88	34.48	36.66	36.38	36.93	43.53	44.26	45.20
Cocoa beans, N.Y. (\$/lb.)	0.47	0.36	0.47	0.45	0.69	0.70	0.70	0.70	0.80	0.84

-- = Not available. Information contact: Wilma Davis (202) 694-5304

Table 25—Trade Balance

	Fiscal year			2001		2002				
	2001	2002 E	2003 F	July	Feb	Mar	Apr	May	June	July
Exports										
Agricultural	52,699	53,500	57,500	4,154	4,658	4,436	4,035	4,097	4,078	4,105
Nonagricultural	637,935	--	--	54,923	44,111	50,973	48,812	50,523	50,797	45,951
Total ¹	690,634	--	--	59,077	48,769	55,409	52,847	54,620	54,875	50,055
Imports										
Agricultural	39,027	40,500	42,000	3,348	3,169	3,530	3,726	3,614	3,359	3,526
Nonagricultural	1,113,615	--	--	92,518	80,227	87,319	91,856	93,416	93,536	96,479
Total ²	1,152,642	--	--	95,866	83,396	90,849	95,582	97,030	96,894	100,004
Trade balance										
Agricultural	13,672	13,000	15,500	806	1,489	906	309	483	719	579
Nonagricultural	-475,680	--	--	-37,595	-36,116	-36,346	-43,044	-42,893	-42,739	-50,528
Total ³	-462,008	--	--	-36,789	-34,627	-35,440	-42,735	-42,410	-42,019	-49,949

E = Estimate. F = Forecast. -- = Not available. Fiscal year (Oct. 1-Sep. 30). 1. Domestic exports including Department of Defense shipments (f.a.s. value). 2. Imports for consumption (customs value). 3. Preliminary. Information contact: Mary Fant (202) 694-5272.

Table 26—Indexes of Real Trade-Weighted Dollar Exchange Rates¹

	Annual			2002						
	1999	2000	2001	Jan	Feb	Mar	Apr	May	Jun	Jul
<i>2000 is base year</i>										
Total U.S. Trade	95.8	98.7	105.0	106.6	108.7	108.1	106.8	105.6	104.6	104.7
U.S. markets										
All agricultural trade	96.5	98.6	106.1	108.2	110.3	109.8	108.3	107.0	105.7	105.4
Bulk commodities	95.9	98.6	106.6	109.0	110.7	110.0	108.7	107.6	106.4	105.7
Corn	98.8	98.6	107.6	110.3	113.8	113.2	111.5	110.3	109.1	108.6
Cotton	95.1	98.8	106.6	107.9	108.2	107.3	106.2	105.2	104.8	105.1
Rice	95.2	98.8	105.7	107.7	108.4	107.4	105.7	105.2	105.1	105.1
Soybeans	93.9	98.3	105.6	108.5	108.8	108.1	106.9	105.2	103.1	101.3
Tobacco, raw	91.2	97.9	106.5	110.2	109.7	108.9	107.0	105.0	102.5	101.2
Wheat	94.1	98.7	106.6	108.3	111.5	110.7	109.6	109.2	108.9	108.7
High-value products	97.1	98.7	105.6	107.5	110.0	109.5	107.9	106.5	105.1	105.1
Processed intermediates	95.2	98.6	105.3	107.3	108.7	108.0	106.6	105.4	104.2	103.6
Soymeal	93.7	98.7	102.7	103.4	105.0	103.1	102.2	102.9	103.7	104.5
Soyoil	91.3	99.3	102.5	103.9	104.0	104.0	104.0	104.2	104.2	104.4
Produce and horticulture	95.9	98.5	105.7	107.6	110.5	109.9	108.1	106.2	104.3	104.8
Fruits	98.2	98.7	106.6	108.5	112.1	111.5	109.8	108.1	106.6	107.6
Vegetables	99.8	99.0	105.2	105.6	110.7	110.1	107.9	105.6	104.3	107.0
High-value processed	99.1	98.8	105.8	107.6	111.0	110.7	108.9	107.6	106.1	106.5
Fruit juices	97.0	98.5	106.3	108.3	112.3	111.9	109.7	107.3	105.1	105.8
Poultry	99.1	100.1	99.1	98.1	98.2	98.1	97.6	97.3	96.8	96.3
Red meats	102.1	98.3	110.1	113.8	119.7	119.5	116.4	114.0	111.0	111.5
U.S. competitors										
All agricultural trade	88.3	98.1	104.4	106.9	107.4	106.9	105.8	104.0	102.1	100.8
Bulk commodities	91.7	98.5	104.7	105.7	108.5	108.5	107.8	107.2	106.9	107.2
Corn	88.5	98.1	104.4	106.7	123.0	126.6	126.9	126.7	126.0	122.1
Cotton	90.5	98.3	106.6	109.3	116.4	117.7	118.1	118.9	119.3	118.2
Rice	90.7	98.1	107.4	109.7	109.7	109.7	109.5	108.4	107.4	108.1
Soybeans	94.6	99.4	110.9	115.9	134.0	137.4	138.9	147.5	156.5	158.8
Tobacco, raw	101.6	99.2	107.7	111.0	105.7	104.2	102.9	104.0	105.7	106.0
Wheat	90.4	98.0	105.0	106.8	111.8	112.0	111.1	108.9	107.1	106.8
High-value products	87.6	98.0	104.1	106.8	107.1	106.6	105.5	103.4	101.4	99.8
Processed intermediates	89.2	98.2	104.9	107.3	109.5	109.4	108.6	107.2	106.1	105.3
Soymeal	93.3	99.1	110.1	114.5	129.1	132.2	133.5	139.8	145.7	147.3
Soyoil	92.5	98.9	108.2	111.9	130.2	134.3	135.3	140.3	144.0	143.4
Produce and horticulture	88.0	98.3	102.7	105.1	104.7	104.1	103.1	101.1	99.2	97.5
Fruits	89.9	98.3	105.2	107.5	105.8	105.1	104.2	102.6	101.1	100.6
Vegetables	88.4	98.4	102.8	105.3	103.9	103.5	103.1	101.4	99.4	97.5
High-value processed	86.5	97.8	104.1	107.1	106.4	105.7	104.5	102.0	99.3	97.4
Fruit juices	87.8	98.0	104.1	106.7	107.2	106.6	105.1	103.0	101.3	99.4
Poultry	88.0	98.2	105.8	109.1	107.3	106.5	105.2	104.1	102.8	102.0
Red meats	87.4	97.7	105.4	108.2	111.0	111.0	110.2	108.1	106.4	105.5
U.S. suppliers										
All agricultural trade	93.8	98.8	103.6	104.4	104.7	103.8	103.0	102.3	102.3	102.9
High-value products	93.6	98.8	103.1	104.2	105.0	104.3	103.6	102.6	102.4	102.6
Processed intermediates	93.5	98.6	103.8	104.9	106.2	105.4	104.4	102.9	102.2	103.0
Grains and feeds	95.9	98.8	104.3	105.0	107.3	106.5	105.0	102.8	101.5	103.1
Vegetable oils	92.4	98.3	105.4	107.1	106.6	105.8	104.8	102.8	101.9	102.0
Produce and horticulture	97.0	99.9	99.9	100.0	98.3	97.4	97.7	98.6	100.2	100.3
Fruits	99.0	99.7	103.5	105.7	105.2	104.1	104.0	105.3	108.7	108.2
Vegetables	104.9	100.2	98.0	97.0	94.9	94.3	95.8	97.5	99.6	97.7
High-value processed	92.1	98.4	104.2	105.9	107.5	106.9	106.0	104.4	103.5	103.5
Cocoa and products	89.1	98.6	101.7	101.3	101.2	99.8	98.1	96.4	95.0	96.2
Coffee and products	94.7	99.6	102.3	102.7	99.8	98.0	97.8	99.5	101.9	104.1
Dairy products	86.6	97.7	103.9	106.4	105.5	104.3	102.6	99.4	96.2	95.3
Fruit juices	93.5	99.0	107.5	111.0	119.9	121.6	122.0	125.3	129.0	129.3
Meats	93.4	98.4	104.5	105.5	107.8	107.0	105.8	103.5	102.5	104.1

Real indexes adjust nominal exchange rates for relative rates of inflation among countries. A higher value means the dollar has appreciated.

The weights used for "total U.S. trade" index are based on U.S. total merchandise exports to the largest 85 trading partners. Weights are based on relative importance of major U.S. customers, competitors in world markets, and suppliers to the U.S. Indexes are subject to revision for up to 1 year due to delayed reporting by some countries. High-value products are total agricultural products minus bulk commodities.

Source: Nominal exchange rates are obtained from the IMF International Financial Statistics. Exchange rates for the EU-12 are obtained from the Board of Governors of the Federal Reserve System. Full historical series are available back to January 1970 at <http://www.ers.usda.gov/data/exchangerates/>

1. A major revision to the weighting scheme and commodity definitions was completed in May 2000. This significantly altered the series from previous versions. Beginning in August 2002, the base of the series has been changed from 1995 to 2000.

Information contact: Mathew Shane (202) 694-5282 or email: mshane@ers.usda.gov.

Table 27—U.S. Agricultural Exports & Imports

	Fiscal year			July		Fiscal year			July	
	2001	2002 E	2003 F	2001	2002	2001	2002 E	2003 F	2001	2002
	1,000 units					\$ million				
Exports										
Animals, live	--	--	--	--	--	727	--	--	50	31
Meats and preps., excl. poultry (mt) ¹	2,442	2,000	2,000	198	224	5,193	4,800	4,900	418	434
Dairy products	--	--	--	--	--	1,121	1,000	1,100	87	73
Poultry meats (mt)	2,810	2,100	2,400	226	206	2,084	1,500	1,700	178	140
Fats, oils, and greases (mt)	1,049	1,300	1,200	82	124	320	--	--	27	41
Hides and skins, incl. furskins	--	--	--	--	--	1,933	1,800	1,800	175	152
Cattle hides, whole	--	--	--	--	--	1,437	--	--	129	95
Mink pelts (no.)	4,277	--	--	330	258	122	--	--	11	9
Grains and feeds (mt) ²	98,895	--	--	8,052	8,351	13,818	14,100	16,500	1,075	1,166
Wheat (mt) ³	25,275	25,000	24,500	1,794	2,122	3,248	3,500	4,000	235	298
Wheat flour (mt)	496	500	500	14	18	107	--	--	3	3
Rice (mt)	3,058	3,300	3,400	154	251	754	700	700	42	50
Feed grains, incl. products (mt) ⁴	55,878	55,200	57,400	5,011	4,851	5,470	5,400	7,000	467	501
Feeds and fodders (mt)	12,720	13,000	12,600	960	982	2,768	2,600	2,900	208	196
Other grain products (mt)	1,468	--	--	120	128	1,470	--	--	120	118
Fruits, nuts, and preps. (mt)	3,970	--	--	305	318	4,101	4,800	5,000	339	340
Fruit juices, incl. froz. (1,000 hectoliters)	10,781	--	--	995	691	680	--	--	61	50
Vegetables and preps.	--	--	--	--	--	4,511	3,000	3,100	351	380
Tobacco, unmanufactured (mt)	177	200	200	10	7	1,181	1,200	1,300	63	46
Cotton, excl. linters (mt) ⁵	1,654	2,400	2,500	151	142	2,079	2,300	2,700	179	129
Seeds (mt)	703	--	--	44	29	727	800	800	41	43
Sugar, cane or beet (mt)	97	--	--	9	11	38	--	--	3	5
Oilseeds and products (mt)	37,037	40,200	32,600	1,592	2,334	8,699	9,600	9,800	427	653
Oilseeds (mt)	27,748	--	--	958	1,615	6,097	--	--	245	417
Soybeans (mt)	26,569	28,800	22,300	901	1,515	5,089	5,400	5,400	177	327
Protein meal (mt)	7,223	--	--	476	491	1,427	--	--	90	94
Vegetable oils (mt)	2,066	--	--	158	228	1,175	--	--	92	141
Essential oils (mt)	55	--	--	4	6	675	--	--	53	75
Other	--	--	--	--	--	4,811	--	--	402	347
Total	--	--	--	--	--	52,699	53,500	57,500	3,928	4,105
Imports										
Animals, live	--	--	--	--	--	2,198	2,000	2,100	146	117
Meats and preps., excl. poultry (mt)	1,600	1,700	1,700	149	162	4,091	4,300	4,400	396	394
Beef and veal (mt)	1,056	--	--	100	110	2,645	--	--	256	266
Pork (mt)	399	--	--	36	40	1,039	--	--	104	90
Dairy products	--	--	--	--	--	1,728	1,800	1,700	154	164
Poultry and products	--	--	--	--	--	258	--	--	22	31
Fats, oils, and greases (mt)	106	--	--	11	10	62	--	--	6	6
Hides and skins, incl. furskins (mt)	--	--	--	--	--	162	--	--	11	8
Wool, unmanufactured (mt)	21	--	--	2	1	53	--	--	5	2
Grains and feeds	--	--	--	--	--	3,189	3,600	3,800	271	301
Fruits, nuts, and preps., excl. juices (mt) ⁶	8,119	8,600	8,700	610	660	4,610	5,600	5,900	341	344
Bananas and plantains (mt)	4,093	4,100	4,100	349	382	1,156	1,200	1,200	103	107
Fruit juices (1,000 hectoliters)	29,293	29,000	29,300	2,450	2,205	649	--	--	51	53
Vegetables and preps.	--	--	--	--	--	5,183	5,400	5,500	372	431
Tobacco, unmanufactured (mt)	211	300	300	17	25	648	700	700	46	79
Cotton, unmanufactured (mt)	50	--	--	2	2	27	--	--	1	2
Seeds (mt)	316	--	--	15	14	443	--	--	25	23
Nursery stock and cut flowers	--	--	--	--	--	1,156	1,100	1,200	57	61
Sugar, cane or beet (mt)	1,378	--	--	125	170	524	--	--	52	67
Oilseeds and products (mt)	4,082	3,600	3,200	420	372	1,680	1,700	1,900	159	168
Oilseeds (mt)	987	--	--	168	135	266	--	--	30	28
Protein meal (mt)	1,150	--	--	70	67	152	--	--	10	10
Vegetable oils (mt)	1,945	--	--	182	170	1,261	--	--	118	130
Beverages, excl. fruit juices (1,000 hectoliters)	--	--	--	--	--	4,991	--	--	461	557
Coffee, tea, cocoa, spices (mt)	2,491	--	--	225	232	3,981	--	--	349	385
Coffee, incl. products (mt)	1,214	1,200	1,200	112	108	1,761	1,500	1,600	155	157
Cocoa beans and products (mt)	898	1,000	1,000	80	87	1,391	1,700	1,800	122	157
Rubber and allied gums (mt)	1,059	1,100	1,100	103	110	668	600	700	60	73
Other	--	--	--	--	--	2,725	--	--	238	257
Total	--	--	--	--	--	39,027	40,500	42,000	3,224	3,526

E = Estimate. F = Forecast. -- = Not available. Projections are fiscal years (Dec.1 through Sep. 30) and are from *Outlook for U.S. Agricultural Exports*. 2000 and 2001 data are from *Foreign Agricultural Trade of the U.S.* 1. Projection includes beef, pork, and variety meat.

2. Projection includes pulses. 3. Value projection includes wheat flour. 4. Projection excludes grain products. 5. Projection includes linters. 6. Value projection includes juice.

Information contact: Mary Fant (202) 694-5272.

Table 28—U.S. Agricultural Exports by Region

	Fiscal year			2001			2002			
	2000	2001	2002 F	July	Feb	Mar	Apr	May	June	July
	\$ million									
Region and country										
Western Europe	6,532	6,761	7,300	417	814	555	465	449	448	379
European Union ¹	6,193	6,249	6,500	387	710	494	422	404	384	325
Belgium-Luxembourg	514	625	--	40	78	40	52	35	33	29
France	348	352	--	36	36	32	26	28	25	15
Germany	910	907	--	69	91	80	54	55	52	63
Italy	559	509	--	28	92	37	42	31	31	20
Netherlands	1,388	1,398	--	54	156	131	92	98	78	57
United Kingdom	1,028	1,048	--	87	92	77	75	73	76	73
Portugal	134	126	--	6	21	10	8	4	8	4
Spain, incl. Canary Islands	641	590	--	18	88	31	34	38	40	18
Other Western Europe	340	512	800	29	105	60	42	44	64	54
Switzerland	250	422	--	23	99	54	36	39	57	44
Eastern Europe	168	201	200	17	22	14	16	16	15	17
Poland	47	83	--	8	4	3	4	8	7	7
Former Yugoslavia	67	44	--	5	6	2	2	2	2	2
Romania	12	24	--	1	7	2	3	2	3	4
Former Soviet Union	921	1,029	900	83	80	65	21	58	55	52
Russia	659	823	700	73	68	51	14	38	50	43
Asia	21,917	22,271	21,900	1,603	1,947	1,867	1,665	1,682	1,636	1,740
West Asia (Mideast)	2,364	2,190	2,600	160	264	205	217	167	194	176
Turkey	701	564	800	43	81	73	97	72	42	49
Iraq	8	8	--	--	--	--	--	--	--	--
Israel, incl. Gaza and W. Bank	459	435	--	20	47	33	40	32	52	38
Saudi Arabia	481	470	400	43	52	28	26	25	36	33
South Asia	415	570	900	68	66	68	70	35	55	39
Bangladesh	82	104	--	8	22	28	10	5	14	6
India	185	294	--	36	24	19	39	19	30	16
Pakistan	93	97	--	9	19	13	20	11	10	17
China	1,465	1,875	1,700	69	220	77	76	92	111	97
Japan	9,301	8,942	8,100	613	666	688	670	717	621	700
Southeast Asia	2,580	2,907	2,800	218	283	274	208	211	206	236
Indonesia	675	877	800	71	96	60	71	72	61	73
Philippines	866	836	800	55	61	85	49	50	45	57
Other East Asia	5,791	5,786	5,700	477	448	555	424	461	449	493
Korea, Rep.	2,531	2,541	2,800	220	238	245	208	209	223	227
Hong Kong	1,249	1,252	1,100	93	83	101	86	93	85	85
Taiwan	2,002	1,986	1,900	163	127	208	129	159	140	171
Africa	2,236	2,126	2,500	171	218	220	210	200	181	190
North Africa	1,522	1,464	1,700	121	159	166	127	139	103	110
Morocco	139	120	--	4	13	11	3	3	13	10
Algeria	254	211	--	11	23	37	10	35	19	15
Egypt	1,056	1,004	1,100	97	111	103	111	97	59	59
Sub-Saharan	715	662	800	50	59	54	83	62	78	80
Nigeria	160	233	--	24	28	17	34	22	25	33
S. Africa	165	108	--	10	11	14	17	15	18	11
Latin America and Caribbean	10,614	11,561	11,700	--	885	981	913	895	--	--
Brazil	253	219	300	21	19	24	16	18	34	31
Caribbean Islands	1,463	1,398	1,500	103	121	133	129	119	120	125
Central America	1,132	1,191	1,200	94	86	111	89	95	98	99
Colombia	427	442	500	40	35	49	38	32	41	44
Mexico	6,307	7,277	7,100	583	544	613	584	548	563	537
Peru	200	182	--	21	19	11	10	30	15	22
Venezuela	405	416	300	44	24	16	16	31	23	31
Canada	7,512	7,994	8,500	647	647	702	703	759	756	760
Oceania	487	472	500	32	43	33	33	35	46	46
Total	50,744	52,699	53,500	3,928	4,658	4,436	4,035	4,097	4,078	4,105

E = Estimate. F = Forecast. -- = Not available. Based on fiscal year beginning Oct. 1 and ending Sep. 30. 1. Austria, Finland, and Sweden are included in the European Union. Note: Adjusted for transshipments through Canada for 1998 and 1999 through December 1999, transshipments are not distributed by country for 2001 and 2002, but are only included in total. *Information contact: Mary Fant (202) 694-5272.*

Farm Income

Table 29—Value Added to the U.S. Economy by the Agricultural Sector

	1998	1999	2000	2001	09/20/02 2002F	1992-2001 average
	\$ billion					
Final crop output	101.7	92.4	95.0	93.9	96.6	97.8
Food grains	8.8	7.0	6.8	6.6	6.6	8.7
Feed crops	22.6	19.6	20.8	23.2	25.0	22.6
Cotton	6.1	4.6	3.8	5.0	3.9	5.7
Oil crops	17.4	13.4	13.8	14.3	15.2	15.2
Tobacco	2.8	2.3	2.3	1.9	1.8	2.6
Fruits and tree nuts	11.8	12.0	12.6	11.7	12.0	11.5
Vegetables	15.2	15.1	15.6	15.5	16.3	14.5
All other crops	17.2	18.0	18.4	18.2	18.4	16.2
Home consumption	0.1	0.1	0.1	0.1	0.1	0.1
Value of inventory adjustment ¹	-0.3	0.4	0.8	-2.7	-2.6	0.8
Final animal output	94.2	95.3	99.3	106.3	96.8	94.1
Meat animals	43.3	45.6	53.0	53.3	50.2	47.9
Dairy products	24.1	23.2	20.6	24.7	20.8	21.5
Poultry and eggs	22.9	22.9	21.8	24.6	22.6	20.7
Miscellaneous livestock	3.7	3.9	4.2	3.9	3.9	3.5
Home consumption	0.3	0.4	0.4	0.4	0.4	0.4
Value of inventory adjustment ¹	-0.3	-0.6	-0.6	-0.5	-1.0	0.0
Services and forestry	23.8	25.2	24.4	25.5	26.5	21.2
Machine hire and customwork	2.2	2.0	2.2	2.0	1.9	2.1
Forest products sold	3.1	2.8	2.9	2.8	2.6	2.7
Other farm income	8.7	10.2	8.7	10.1	11.2	7.0
Gross imputed rental value of farm dwellings	9.9	10.2	10.7	10.6	10.8	9.4
Final agricultural sector output ²	219.7	212.9	218.8	225.8	219.9	213.1
<i>Minus</i> Intermediate consumption outlays:	117.6	118.6	121.9	127.5	126.0	112.7
Farm origin	44.8	45.6	48.1	49.2	49.4	44.0
Feed purchased	25.0	24.5	24.5	25.2	26.5	23.9
Livestock and poultry purchased	12.6	13.8	16.1	15.7	13.9	13.7
Seed purchased	7.2	7.2	7.5	8.3	9.0	6.4
Manufactured inputs	28.1	27.1	28.7	29.7	28.2	26.8
Fertilizers and lime	10.6	9.9	10.0	10.3	9.2	9.9
Pesticides	9.0	8.6	8.5	8.6	8.7	8.0
Petroleum fuel and oils	5.6	5.6	7.2	7.2	6.9	5.9
Electricity	2.9	3.0	3.0	3.5	3.5	3.0
Other intermediate expenses	44.6	45.9	45.1	48.6	48.3	41.9
Repair and maintenance of capital items	10.4	10.5	10.8	11.2	11.4	10.0
Machine hire and customwork	4.9	4.8	4.5	4.3	4.3	4.5
Marketing, storage, and transportation	6.9	7.3	7.5	7.8	7.3	6.8
Contract labor	2.4	2.5	2.7	3.2	3.4	2.3
Miscellaneous expenses	20.2	20.9	19.6	22.2	21.9	18.4
<i>Plus</i> Net government transactions:	4.9	14.3	15.5	13.2	9.3	5.9
+ Direct government payments	12.4	21.5	22.9	20.7	17.0	13.0
- Motor vehicle registration and licensing fees	0.5	0.4	0.5	0.5	0.5	0.4
- Property taxes	7.0	6.8	6.9	7.0	7.1	6.7
Gross value added	107.0	108.6	112.4	111.4	103.3	106.2
<i>Minus</i> Capital consumption	19.9	20.1	20.3	20.6	20.9	19.4
Net value added ²	87.2	88.4	92.1	90.9	82.4	86.8
<i>Minus</i> Factor payments:	41.6	42.2	44.0	45.2	46.3	39.9
Employee compensation (total hired labor)	16.8	17.4	17.9	19.0	19.7	15.6
Net rent received by nonoperator landlords	11.4	11.3	11.8	12.0	12.8	11.6
Real estate and non-real estate interest	13.4	13.6	14.3	14.1	13.7	12.7
Net farm income ²	45.6	46.2	48.0	45.7	36.2	46.9

F = forecast. P = preliminary. -- = not available. Numbers may not add due to rounding. 1. A positive value of inventory change represents current-year production not sold by December 31. A negative value is an offset to production from prior years included in current-year sales. 2. Final sector output is the gross value of commodities and services produced within a year. Net value added is the sector's contribution to the National economy. Net farm income is farm operators' share of income from the sector's production activities. The concepts presented are consistent with those employed by the Organization for Economic Cooperation and Development (OECD). Information contact: Roger Strickland (202) 694-5592, e-mail rogers@ers.usda.gov.

To confirm that this table contains the current forecast, go to <http://www.ers.usda.gov/data/farmincome/finfidmu.htm>

Table 30—Farm Income Statistics

	1998	1999	2000	2001	2002F	average
<i>\$ billion</i>						
Cash income statement						
1. Cash receipts	196.0	187.5	193.7	202.8	196.5	190.6
Crops ¹	101.9	91.9	94.1	96.4	99.1	96.9
Livestock	94.1	95.6	99.6	106.4	97.4	93.7
2. Direct Government payments ²	12.4	21.5	22.9	20.7	17.0	13.0
3. Farm-related income ³	13.9	15.0	13.8	14.9	15.7	11.7
4. Gross cash income (1+2+3)	222.3	224.0	230.4	238.5	229.2	215.3
5. Cash expenses ⁴	165.5	166.9	172.0	178.8	178.4	158.6
6. Net cash income ⁵ (4-5)	56.8	57.1	58.4	59.7	50.8	56.8
Farm income statement						
7. Gross cash income (1+2+3)	222.3	224.0	230.4	238.5	229.2	215.3
8. Noncash income ⁶	10.3	10.7	11.2	11.2	11.3	10.0
9. Value of inventory adjustment	-0.6	-0.3	0.1	-3.2	-3.6	--
10. Gross farm income (7+8+9)	232.1	234.5	241.7	246.5	236.9	226.1
11. Total production expenses	186.5	188.3	193.7	200.8	200.7	179.2
12. Net farm income (10-11)	45.6	46.2	48.0	45.7	36.2	46.9

F = forecast. -- = not available. Numbers may not add due to rounding. 1. Includes commodities placed under CCC loans and profits made on loans redeemed. 2. Direct government payments include only payments made directly to farmers, including realized marketing loan gains. In publications prior to May of 2001, marketing loan gains were included in cash receipts rather than in government payments. 3. Income from custom labor, machine hire, recreational activities, forest product sales, and other farm sources. 4. Excludes depreciation and perquisites to hired labor. 5. Excludes farm operator dwellings. 6. Value of farm products consumed on farms where produced plus the imputed rental value of farm dwellings. 6. Value of farm products consumed on farms where produced plus the imputed rental value of farm dwellings.

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The current farm income forecast and historical statistics can always be found at <http://www.ers.usda.gov/Briefing/FarmIncome/>. To confirm that this table contains the current forecast, go to <http://www.ers.usda.gov/data/farmincome/finfidmu.htm>

Table 31—Average Income to Farm Operator Households¹

	1998	1999	2000 ²	2001P	2002F
<i>Dollars per farm</i>					
Net cash farm business income ³	14,357	13,194	11,175	14,311	11,137
Less depreciation ⁴	7,409	7,027	7,357	7,609	--
Less wages paid to operator ⁵	637	499	608	932	--
Less farmland rental income ⁶	543	802	757	477	--
Less adjusted farm business income due to other household(s) ⁷	1,332	1,262	801	1,083	--
<i>Dollars per farm operator household</i>					
Equals adjusted farm business income	4,436	3,603	*1652	4,211	--
Plus wages paid to operator	637	499	608	932	--
Plus net income from farmland rental ⁸	868	1,312	--	--	--
Equals farm self-employment income	5,941	5,415	*2260	5,143	--
Plus other farm-related earnings ⁹	1,165	944	339	396	--
Equals earnings of the operator household from farming activities	7,106	6,359	2,598	5,539	2,622
Plus earnings of the operator household from off-farm sources ¹⁰	52,628	57,988	59,349	58,578	59,235
Equals average farm operator household income comparable to U.S. average household income, as measured by the CPS	59,734	64,347	61,947	64,117	61,858
<i>Dollars per U.S. household</i>					
U.S. average household income ¹¹	51,855	54,842	57,045	--	--
<i>Percent</i>					
Average farm operator household income as percent of U.S. average household income	115.2	117.3	108.6	--	--
Average operator household earnings from farming activities as percent of average operator household income	11.9	9.9	4.2	8.6	4.2

P=preliminary. F = forecast. -- = Not available. * = The relative standard error exceeds 25 percent, but is no more than 50 percent.

1. This table derives farm operator household income estimates from the Agricultural Resource Management Study (ARMS) that are consistent with Current Population Survey (CPS) methodology. The CPS, conducted by the Census Bureau, is the source of official U.S. household income statistics. The CPS defines income to include any income received as cash. The CPS definition departs from a strictly cash concept by including depreciation as an expense that farm operators and other self-employed people subtract from gross receipts when reporting net cash income. 2. Prior to 2000, net cash income from operating another farm and net cash income from farm land rental were included in earnings from farming activities. However, because of a change in the ARMS survey design, net cash income from a farm other than the one being surveyed and net cash income from farm land rental are not separable from total off-farm income. Although there is no effect upon estimates of farm operator household income in 2000, estimates of farm self-employment, other farm related earnings, earnings of the household from farming activities, and earnings of the farm from off-farm sources are not strictly comparable to those from previous years. 3. A component of farm sector income. Excludes incomes of contractors and landlords as well as the income of farms organized as nonfamily corporations or cooperatives and farms run by a hired manager. Includes the income of farms organized as proprietorships, partnerships, and family corporations. 4. Consistent with the CPS definition of self-employment income, reported depreciation expenses are subtracted from net cash income. The ARMS collects farm business depreciation used for tax purposes. 5. Wages paid to the operator are subtracted here because they are not shared among other households that have claims on farm business income. These wages are added to the operator household's adjusted farm business income to obtain farm self-employment income. 6. Gross rental income is subtracted here because net rental income from the farm operation is added below to income received by the household. 7. More than one household may have a claim on the income of a farm business. On average, 1.1 households share the income of a farm business. 8. Includes net rental income from the business. Also includes net rental income from farmland held by household members that is not part of the farm business. Beginning in 2000, net income from farmland rental is considered as part of off-farm income. (See footnote 2.) 9. Wages paid to other operator household members by the farm business and net income from a farm business other than the one being surveyed. In 2000, however, net income from a farm business other than the one being surveyed is included in off-farm earnings. (See footnote 2.) Beginning in 1996, also includes the value of commodities provided to household members for farm work. 10. Wages, salaries, net income from nonfarm businesses, interest, dividends, transfer payments, etc. Beginning in 2000, also includes net cash income from another farm and net cash income from farm rental. (See footnote 2.) 11. From the CPS. Sources: U.S. Dept. of Agriculture, Economic Research Service, 1998, 1999, and 2000 Agricultural Resource Management Study (ARMS) for farm operator household data. U.S. Dept. of Commerce, Bureau of the Census, Current Population Survey (CPS), for U.S. average household income. Information contact: Bob Hoppe (202) 694-5572 or rhoppe@ers.usda.gov

Table 32—Balance Sheet of the U.S. Farming Sector

	1998	1999	2000	2001F	2002F
<i>\$ billion</i>					
Farm assets	1,085.3	1,140.8	1,188.3	1,230.4	1,239.5
Real estate	840.4	886.4	929.5	971.3	981.0
Livestock and poultry ¹	63.4	73.2	76.8	76.3	75.9
Machinery and motor vehicles	91.7	92.3	92.0	92.5	93.6
Crops stored ^{2,3}	29.9	28.3	27.9	28.5	28.4
Purchased inputs	5.0	4.0	4.9	4.6	4.6
Financial assets	54.8	56.6	57.1	57.1	56.0
Total farm debt	172.9	176.4	184.0	192.8	196.5
Real estate debt ³	89.6	94.2	97.5	103.1	104.6
Non-real estate debt ⁴	83.2	82.2	86.5	89.8	91.9
Total farm equity	912.4	964.4	1,004.3	1,037.5	1,042.9
<i>Percent</i>					
Selected ratios					
Debt to equity	18.9	18.3	18.3	18.6	18.8
Debt to assets	15.9	15.5	15.5	15.7	15.9

F = forecast. P = preliminary. Numbers may not add due to rounding. 1. As of December 31. 2. Non-CCC crops held on farms plus value above loan rates for crops held under CCC. 3. Includes CCC storage and drying facilities loans, but excludes debt on operator dwellings.

4. Excludes debt for nonfarm purposes.

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Note: The current farm income and balance sheet forecasts can always be found at <http://www.ers.usda.gov/Briefing/FarmIncome/>

Table 33—Cash Receipts from Farming

	Annual			2001	2002					
	1999	2000	2001	Jun	Jan	Feb	Mar	Apr	May	Jun
<i>\$ million</i>										
Commodity cash receipts¹	187,481	193,695	202,849	14,984	17,276	12,626	13,875	14,091	13,926	13,722
Livestock and products	95,611	99,559	106,431	8,480	8,599	7,502	7,776	7,766	7,551	7,171
Meat animals	45,614	52,981	53,289	4,078	4,409	4,035	3,841	4,065	3,670	3,429
Dairy products	23,207	20,608	24,695	2,083	1,914	1,780	1,920	1,814	1,848	1,680
Poultry and eggs	22,896	21,816	24,577	2,035	1,985	1,456	1,767	1,660	1,796	1,779
Other	3,893	4,155	3,870	283	292	230	248	227	237	283
Crops	91,870	94,136	96,418	6,505	8,677	5,124	6,099	6,325	6,375	6,551
Food grains	6,969	6,758	6,595	852	563	233	285	254	217	642
Feed crops	19,555	20,775	23,245	1,321	2,868	1,161	1,233	923	919	1,259
Cotton (lint and seed)	4,630	3,840	4,954	134	665	221	204	54	146	181
Tobacco	2,273	2,315	1,880	0	213	39	6	2	0	0
Oil-bearing crops	13,355	13,826	14,317	580	1,617	713	718	584	753	675
Vegetables and melons	15,127	15,600	15,512	1,527	1,061	1,157	1,382	1,674	1,810	1,652
Fruits and tree nuts	11,953	12,626	11,742	1,096	545	477	620	697	920	1,147
Other	18,007	18,396	18,172	995	1,145	1,122	1,651	2,137	1,610	994
Government payments	21,513	22,896	20,727	--	--	--	--	--	--	--
Total	208,994	216,592	223,577	14,984	17,276	12,626	13,875	14,091	13,926	13,722

-- = Not available. Annual values for the most recent year and monthly values for current year are preliminary and were estimated as of the 20th of the month prior to publication. 1. Sales of farm products include receipts from commodities placed under nonrecourse CCC loans, plus additional gains realized on redemptions during the period.

Information contact: Larry Traub (202) 694-5593 or ltraub@ers.usda.gov. To receive current monthly cash receipts via e-mail, contact Larry Traub.

Table 34—Cash Receipts from Farm Marketings, by State

Region and State	Livestock and products				Crops ¹				Total ¹			
	2000	2001P	May 2002	June 2002	2000	2001P	May 2002	June 2002	2000	2001P	May 2002	June 2002
\$ million												
North Atlantic												
Maine	260	274	20	23	242	211	20	8	502	485	40	31
New Hampshire	60	66	6	6	91	90	8	4	151	155	13	10
Vermont	432	490	35	33	69	67	6	3	500	557	41	36
Massachusetts	93	94	8	8	295	273	16	25	388	367	24	33
Rhode Island	8	8	1	1	38	40	4	2	46	47	4	3
Connecticut	168	177	13	14	328	299	24	14	496	476	37	28
New York	1,931	2,221	167	157	1,191	1,199	55	62	3,122	3,420	222	218
New Jersey	192	204	8	8	635	617	46	48	826	821	55	56
Pennsylvania	2,766	3,146	206	212	1,297	1,309	93	79	4,063	4,455	299	292
North Central												
Ohio	1,754	1,864	129	125	2,616	2,818	143	143	4,370	4,682	272	267
Indiana	1,701	1,870	116	119	2,883	3,235	164	151	4,584	5,105	280	271
Illinois	1,711	1,843	126	118	5,416	5,704	391	321	7,127	7,547	516	439
Michigan	1,334	1,489	108	99	1,988	1,980	125	95	3,322	3,469	232	194
Wisconsin	3,866	4,464	328	302	1,498	1,432	67	79	5,364	5,896	395	381
Minnesota	3,883	4,288	283	292	3,580	3,813	151	154	7,463	8,102	434	446
Iowa	5,757	5,936	353	418	5,047	5,615	251	283	10,804	11,550	604	701
Missouri	2,680	2,679	132	148	1,933	2,145	84	97	4,614	4,824	216	244
North Dakota	629	720	29	24	2,077	2,259	88	141	2,706	2,979	117	164
South Dakota	2,037	2,255	146	140	1,769	1,852	56	106	3,806	4,108	202	246
Nebraska	5,917	6,086	479	404	3,076	3,402	147	173	8,993	9,489	627	578
Kansas	5,500	5,536	427	362	2,519	2,585	90	123	8,019	8,121	517	485
Southern												
Delaware	558	662	45	47	179	186	7	12	736	848	52	59
Maryland	836	949	76	69	615	647	43	39	1,451	1,596	119	108
Virginia	1,549	1,673	115	106	735	771	37	52	2,285	2,444	151	158
West Virginia	339	348	28	27	58	59	2	7	397	408	30	34
North Carolina	4,300	4,644	327	322	3,040	3,087	195	193	7,340	7,731	523	515
South Carolina	793	882	68	73	728	764	44	92	1,521	1,646	112	165
Georgia	3,107	3,540	242	240	1,991	1,975	133	204	5,099	5,515	375	444
Florida	1,375	1,458	89	100	5,402	4,958	694	314	6,777	6,416	783	414
Kentucky	2,372	2,268	118	114	1,277	1,281	32	55	3,649	3,548	151	168
Tennessee	990	1,127	87	77	1,007	1,034	43	69	1,997	2,161	130	146
Alabama	2,646	2,815	205	196	560	705	40	33	3,205	3,520	245	230
Mississippi	2,036	2,276	157	161	691	871	34	49	2,727	3,147	192	210
Arkansas	3,255	3,507	234	240	1,483	1,625	46	156	4,738	5,132	281	396
Louisiana	652	701	56	58	1,135	1,116	31	35	1,787	1,817	87	94
Oklahoma	3,441	3,153	228	187	853	874	38	95	4,293	4,027	266	282
Texas	9,159	9,339	716	627	4,211	4,456	311	304	13,370	13,796	1,027	931
Western												
Montana	1,106	1,128	55	42	737	657	19	23	1,844	1,785	74	64
Idaho	1,628	2,060	155	141	1,744	1,788	151	124	3,372	3,848	306	265
Wyoming	800	837	36	54	157	145	3	3	957	983	39	57
Colorado	3,330	3,374	303	276	1,281	1,354	79	83	4,612	4,729	382	359
New Mexico	1,613	1,670	112	103	500	545	44	67	2,114	2,215	156	169
Arizona	1,070	1,166	106	81	1,217	1,409	116	158	2,287	2,575	222	239
Utah	772	853	65	69	248	263	13	15	1,020	1,116	78	85
Nevada	237	271	24	23	150	153	6	7	387	425	30	30
Washington	1,709	1,728	135	137	3,408	3,464	197	284	5,117	5,192	332	422
Oregon	829	825	59	58	2,264	2,298	122	126	3,093	3,123	181	184
California	6,252	7,346	579	522	19,431	18,546	1,833	1,800	25,683	25,892	2,412	2,322
Alaska	32	28	2	2	20	24	1	2	52	52	4	5
Hawaii	92	91	8	8	430	419	34	36	522	511	42	44
U.S.	99,559	106,431	7,551	7,171	94,136	96,418	6,375	6,551	193,695	202,849	13,926	13,722

Annual values for the most recent year are preliminary and were estimated as of the 20th of the month prior to publication. Totals may not add because of rounding. 1. Sales of farm products include receipts from commodities placed under nonrecourse CCC loans, plus additional gains realized on redemptions during the period.

Information contact: Larry Traub (202) 694-5593 or ltraub@ers.usda.gov. To receive current monthly cash receipts via e-mail, contact Larry Traub.

Table 35—CCC Net Outlays by Commodity & Function

	Fiscal year									
	1994	1995	1996	1997	1998	1999	2000	2001	2002 ¹	2003 ¹
	\$ million									
Commodity/Program										
Feed grains:										
Corn	625	2,090	2,021	2,587	2,873	5,402	10,136	6,297	3,237	4,807
Grain sorghum	130	153	261	284	296	502	979	478	237	324
Barley	202	129	114	109	168	224	397	217	165	190
Oats	5	19	8	8	17	41	61	36	61	60
Corn and oat products	10	1	0	0	0	0	6	8	13	0
Total feed grains	972	2,392	2,404	2,988	3,354	6,169	11,579	7,036	3,713	5,381
Wheat and products	1,729	803	1,491	1,332	2,187	3,435	5,321	2,922	1,944	2,864
Rice	836	814	499	459	491	911	1,774	1,423	1,056	1,209
Upland cotton	1,539	99	685	561	1,132	1,882	3,809	1,868	3,685	3,245
Tobacco	693	-298	-496	-156	376	113	657	386	-25	-66
Dairy	158	4	-98	67	291	480	684	1,140	580	2,255
Soybeans	-183	77	-65	5	139	1,289	2,840	3,281	3,600	3,730
Peanuts	37	120	100	6	-11	21	35	136	220	1,239
Sugar	-24	-3	-63	-34	-30	-51	465	31	-154	-118
Honey	0	-9	-14	-2	0	2	7	23	6	0
Wool and mohair	211	108	55	0	0	10	-2	38	26	23
Operating expense ²	6	6	6	6	5	4	60	5	60	6
Interest expenditure	-17	-1	140	-111	76	210	736	428	240	366
Export programs ³	1,950	1,361	-422	125	212	165	216	-2,047	185	20
1988-2000 Disaster/tree/ livestock assistance	2,566	660	95	130	3	2,241	1,452	2,326	284	0
Conservation Reserve Program	0	0	2	1,671	1,693	1,462	1,511	1,658	1,821	1,854
Other conservation programs	0	0	7	105	197	292	263	288	286	212
Other	-137	-103	320	104	28	588	858	1,163	1,156	744
Total	10,336	6,030	4,646	7,256	10,143	19,223	32,265	22,105	18,683	22,964
Function										
Price support loans (net)	527	-119	-951	110	1,128	1,455	3,369	3,189	5,220	3,615
Cash direct payments: ⁴										
Production flexibility contract	0	0	5,141	6,320	5,672	5,476	5,057	4,105	3,962	0
Direct payment	0	0	0	0	0	0	0	0	0	3,844
Counter-cyclical payment	0	0	0	0	0	0	0	0	0	5,828
Market loss assistance	0	0	0	0	0	3,011	11,046	5,455	221	1,819
Deficiency	4,391	4,008	567	-1,118	-7	-3	1	-1	0	0
Loan deficiency	495	29	0	0	478	3,360	6,419	5,293	6,311	5,178
Oilseed	0	0	0	0	0	0	460	921	0	0
Cotton user marketing	149	88	34	6	416	280	446	237	204	184
Other	22	9	61	1	0	1	461	820	20	906
Conservation Reserve Program	0	0	2	1,671	1,693	1,435	1,476	1,625	1,804	1,854
Other conservation programs	0	0	0	85	156	247	215	229	248	211
Noninsured Assistance (NAP)	0	0	2	52	23	54	38	64	174	192
Total direct payments	5,057	4,134	5,807	7,017	8,431	13,861	25,619	18,748	12,944	20,016
1988-2000 crop disaster	2,461	577	14	2	-2	1,913	1,251	1,848	240	0
Emergency livestock/tree/DRAP livestock indemn./forage assist.	105	83	81	128	5	328	201	478	43	0
Purchases (net)	293	-51	-249	-60	207	668	120	-1,310	-1,031	-1,807
Producer storage payments	12	23	0	0	0	0	0	0	0	0
Processing, storage, and transportation	112	72	51	33	38	62	81	122	134	148
Export donations ocean transportation	156	50	69	34	40	323	370	362	362	17
Operating expense ²	6	6	6	6	5	4	60	5	60	6
Interest expenditure	-17	-1	140	-111	76	210	736	428	240	366
Export programs ³	1,950	1,361	-422	125	212	165	216	-2,047	185	20
Other	-326	-105	100	-28	3	234	242	282	286	583
Total	10,336	6,030	4,646	7,256	10,143	19,223	32,265	22,105	18,683	22,964

1. Estimated in FY 2003 Mid Session Review Budget which was released on July 15, 2002 based on May 2002 supply & demand estimates. The CCC outlays shown for 2002-2003 include the impact of the Farm Security and Rural Investment Act of 2002 which was enacted on May 13, 2002.

2. Does not include CCC Transfers to General Sales Manager. 3. Includes Export Guarantee Program, Direct Export Credit Program, CCC Transfers to the General Sales Manager, Market Access (Promotion) Program, starting in FY 1991 and starting in FY 1992 the Export Guarantee Program - Credit Reform, Export Enhancement Program, Dairy Export Incentive Program, and Technical Assistance to Emerging Markets, and starting in FY 2000, Foreign Market Development Cooperative Program and Quality Samples Program. 4. Includes cash payments only. Excludes generic certificates in FY 1986-96. Minus (-) indicates a net receipt (excess of repayments or other receipts over gross outlays of funds).

Information contact: Richard Pazdalski, Farm Service Agency-Budget at (202) 720-3675 or Richard_Pazdalski@wdc.fsa.usda.gov

Food Expenditures

Table 36—Food Sales

	Annual			2002			Year-to-date cumulative		
	1999	2000	2001	Jun	Jul	Aug	Jun	Jul	Aug
	\$ billion								
Sales ¹									
At home ²	409.2	424.2	437.0	38.1	38.9	38.7	224.1	263.0	301.7
Away from home ³	331.0	348.8	366.0	33.5	33.4	34.3	189.9	223.3	257.6
	2001 \$ billion								
Sales ¹									
At home ²	432.1	438.1	437.0	37.8	38.5	38.2	221.0	259.5	297.7
Away from home ³	348.6	358.9	366.0	32.7	32.5	33.3	186.3	218.8	252.1
	Percent change from year earlier (\$ billion)								
Sales ¹									
At home ²	6.4	3.7	3.0	0.9	3.1	0.1	1.5	1.7	1.5
Away from home ³	5.0	5.4	4.9	4.0	4.5	4.9	5.2	5.1	5.0
	Percent change from year earlier (2001 \$ billion)								
Sales ¹									
At home ²	4.4	1.4	-0.3	-0.1	2.1	-1.1	0.1	0.4	0.2
Away from home ³	2.4	3.0	2.0	1.5	1.8	1.8	3.2	3.0	2.8

-- = Not available. 1. Food only (excludes alcoholic beverages). Not seasonally adjusted. 2. Excludes donations and home production.

3. Excludes donations, child nutrition subsidies, and meals furnished to employees, patients, and inmates.

Information contact: Annette Clauson (202) 694-5389

Note: This table differs from Personal Consumption Expenditures (PCE), table 2, for several reasons: (1) this series includes only food, excluding alcoholic beverages and pet food which are included in PCE; (2) this series is not seasonally adjusted, whereas PCE is seasonally adjusted at annual rates; (3) this series reports sales only, but PCE includes food produced and consumed on farms and food furnished to employees; (4) this series includes all sales of meals and snacks, while PCE includes only purchases using personal funds, excluding business travel and entertainment. For a more complete discussion of the differences, see "Developing an Integrated Information System for the Food Sector," ERS Ag. Econ. Rpt. No. 575, Aug. 1987, available at <http://www.ers.usda.gov/publications/aer575/>

Transportation

Table 37—Rail Rates; Grain & Fruit-Vegetable Shipments

	Annual			2001	2002					
	1999	2000	2001	Aug	Mar	Apr	May	Jun	Jul	Aug
Rail freight rate index ¹ (Dec. 1984=100)										
All products	113.0	114.5	116.6	116.3	118.6	118.4	118.5	119.0	119.1	118.8
Farm products	121.7	123.1	124.5	124.5	124.9	124.2	124.2	124.9	125.0	124.6
Grain food products	99.7	100.4	102.8	103.5	103.2	103.1	103.1	103.5	103.6	103.3
Grain shipments										
Rail carloadings (1,000 cars) ²	24.2	21.8	21.6	21.4	20.5	19.7	18.3	20.1	21.1	21.2
Barge shipments (mil. ton) ³	3.5	3.1	2.9	4.3	2.9	3.6	3.4	4.4	4.4	3.5
Fresh fruit and vegetable shipments ⁴										
Piggy back (mil. cwt)	0.7	0.8	0.8	0.9	0.7	0.9	1.1	1.0	1.6	10.5
Rail (mil. cwt)	1.1	1.4	1.4	0.7	1.5	1.2	1.7	2.3	1.0	0.9
Truck (mil. cwt)	45.2	45.0	44.0	42.5	45.0	48.1	57.0	55.0	45.3	43.8

-- = Not available. 1. Department of Labor, Bureau of Labor Statistics. 2. Weekly average; from Association of American Railroads. 3. Shipments on Illinois and Mississippi waterways, U.S. Corps of Engineers. 4. Annual data are monthly average. Agricultural Marketing Service, USDA.

Information contact: Allen Baker (202) 694-5290

Indicators of Farm Productivity

Table 38—Indexes of Farm Production, Input Use, & Productivity¹

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
<i>1992 = 100</i>										
Farm output	88	83	89	94	94	100	94	107	101	106
All livestock products	92	93	94	95	98	100	100	108	110	109
Meat animals	95	97	97	96	99	100	100	102	103	100
Dairy products	94	96	95	98	98	100	99	114	115	115
Poultry and eggs	81	83	86	92	96	100	104	110	114	119
All crops	86	75	86	92	92	100	90	106	96	103
Feed crops	84	62	85	88	86	100	76	102	83	98
Food crops	84	76	83	107	82	100	96	97	90	93
Oil crops	88	72	88	87	94	100	85	115	99	107
Sugar	95	91	91	92	96	100	95	106	98	94
Cotton and cottonseed	92	96	75	96	109	100	100	122	110	117
Vegetables and melons	90	81	85	93	97	100	97	113	108	112
Fruit and nuts	95	102	98	97	96	100	107	111	102	102
Farm input ¹	101	100	100	101	102	100	101	102	101	100
Farm labor	101	103	104	102	106	100	96	96	92	100
Farm real estate	100	100	102	101	100	100	98	99	98	99
Durable equipment	120	113	108	105	103	100	97	94	92	89
Energy	102	102	101	100	101	100	100	103	109	104
Fertilizer	106	97	94	97	98	100	111	109	85	89
Pesticides	92	79	93	90	100	100	97	103	94	106
Feed, seed, and purchased livestock	97	96	91	99	99	100	101	102	109	95
Inventories	102	98	93	97	100	100	104	99	108	104
Farm output per unit of input	87	83	90	93	92	100	94	105	100	106
Output per unit of labor										
Farm ²	87	81	86	92	89	100	98	111	110	106
Nonfarm ³	95	95	96	96	97	100	100	101	--	--

-- = Not available. Values for latest year preliminary. 1. Includes miscellaneous items not shown separately. 2. Source: Economic Research Service.

3. Source: Bureau of Labor Statistics. *Information contact: John Jones (202) 694-5614*

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Food Supply & Use

Table 39—Per Capita Consumption of Major Food Commodities¹

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
	<i>Lbs.</i>									
Red meats ^{2,3,4}	111.6	113.5	111.3	113.6	113.6	111.1	109.1	113.3	115.1	113.5
Beef	62.9	62.5	61.0	63.0	63.6	64.1	62.7	63.6	64.4	64.4
Veal	0.8	0.8	0.8	0.8	0.8	1.0	0.8	0.7	0.6	0.5
Lamb & mutton	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.9	0.8	0.8
Pork	46.8	49.2	48.5	49.0	48.4	45.2	44.8	48.2	49.4	47.7
Poultry ^{2,3,4}	58.2	60.5	62.0	62.7	62.1	63.1	63.1	63.7	66.8	66.5
Chicken	44.1	46.5	48.2	48.8	48.2	48.8	49.5	49.8	52.9	52.9
Turkey	14.0	14.0	13.9	13.9	13.9	14.3	13.6	13.9	13.8	13.6
Fish and shellfish ³	14.8	14.6	14.8	15.0	14.8	14.5	14.3	14.5	14.9	15.2
Eggs ⁴	30.0	30.1	30.1	30.3	29.9	29.9	30.2	30.8	32.1	32.2
Dairy products										
Cheese (excluding cottage) ^{2,5}	25.0	25.9	26.1	26.6	26.9	27.3	27.5	27.8	29.0	29.8
American	11.0	11.3	11.3	11.4	11.7	11.8	11.8	11.9	12.6	--
Italian	9.3	9.9	9.8	10.2	10.3	10.6	10.8	11.1	11.5	--
Other cheeses ⁶	4.6	4.7	5.0	5.0	5.0	4.9	4.9	4.7	4.9	--
Cottage cheese	3.3	3.1	2.9	2.8	2.7	2.6	2.6	2.7	2.6	2.6
Beverage milks ²	220.5	217.2	211.8	211.4	207.2	206.8	203.2	200.5	199.2	194.9
Fluid whole milk ⁷	87.1	83.5	79.5	78.0	74.4	73.5	71.4	70.2	70.7	69.8
Fluid lower fat milk ⁸	109.6	108.8	105.8	104.9	101.3	100.1	98.1	96.6	96.0	95.1
Fluid skim milk	23.8	24.9	26.5	28.5	31.5	33.2	33.7	33.7	32.5	30.0
Fluid cream products ⁹	7.7	8.0	8.0	8.0	8.3	8.6	8.9	9.0	9.5	9.9
Yogurt (excluding frozen)	4.2	4.2	4.2	4.6	5.0	4.8	5.1	5.0	4.9	5.4
Ice cream	16.2	16.2	16.0	16.0	15.5	15.6	16.1	16.3	16.7	16.5
Lowfat ice cream ¹⁰	7.4	7.0	6.9	7.5	7.4	7.5	7.8	8.1	7.5	7.5
Frozen yogurt	3.5	3.1	3.5	3.4	3.4	2.5	2.0	2.1	1.9	1.8
All dairy products, milk equivalent, milkfat basis ¹¹	564.1	563.0	569.8	580.1	576.6	566.6	567.5	572.8	584.9	593.0
Fats and oils--total fat content	64.6	66.5	69.2	67.3	65.4	64.2	63.7	64.3	67.0	74.5
Butter and margarine (product weight)	14.8	15.2	15.6	14.7	13.6	13.3	12.5	12.6	12.6	12.8
Shortening	22.3	22.3	25.0	23.9	22.2	21.9	20.5	20.5	21.1	23.1
Lard and edible tallow (direct use)	1.8	3.5	3.4	4.2	4.3	4.6	4.0	5.1	5.6	5.9
Salad and cooking oils	26.3	27.1	26.6	25.9	26.5	25.7	28.1	27.3	28.8	33.7
Fruits and vegetables ¹²	651.9	677.9	690.1	702.3	690.5	698.1	708.0	699.2	705.4	707.7
Fruit	254.2	282.0	280.8	287.7	282.0	279.0	289.6	284.1	289.8	279.4
Fresh fruits	112.5	122.9	123.6	125.0	122.6	126.1	129.5	128.9	129.5	126.8
Canned fruit	19.7	22.8	20.6	20.7	17.3	18.4	20.1	17.0	19.2	17.4
Dried fruit	12.2	10.7	12.5	12.7	12.7	11.1	10.6	12.1	10.2	10.5
Frozen fruit	3.8	3.9	3.7	3.7	4.2	3.9	3.6	4.1	3.7	3.7
Selected fruit juices	105.5	121.1	120.2	125.1	125.0	119.2	125.2	121.6	126.8	120.6
Vegetables	397.7	395.9	409.3	414.6	408.5	419.1	418.4	415.1	415.6	428.3
Fresh	170.8	174.2	180.8	186.8	180.9	186.0	190.2	186.4	191.9	201.7
Canning	114.0	111.7	112.0	111.2	109.4	107.8	106.0	107.1	103.3	104.7
Freezing	72.4	70.5	75.4	77.6	78.9	83.4	81.6	80.5	81.0	79.7
Dehydrated and chips	32.7	31.4	33.4	30.7	31.0	33.9	32.7	32.5	30.6	33.7
Pulses	7.8	8.1	7.7	8.3	8.3	7.9	7.9	8.7	8.8	8.6
Peanuts (shelled)	6.5	6.2	6.0	5.7	5.6	5.6	5.8	5.8	6.0	5.7
Tree nuts (shelled)	2.2	2.2	2.3	2.3	1.9	1.9	2.1	2.2	2.5	2.5
Flour and cereal products ¹³	182.3	184.7	189.3	192.0	190.3	196.3	197.3	196.1	196.9	199.9
Wheat flour	136.6	138.1	142.2	143.0	140.1	146.5	146.9	144.9	144.0	146.3
Rice (milled basis)	16.2	16.7	16.6	18.0	18.7	17.6	18.1	18.3	19.5	19.7
Caloric sweeteners ¹⁴	137.5	140.5	143.4	145.9	148.0	148.5	151.3	152.6	155.0	152.4
Coffee (green bean equiv.)	10.3	10.0	9.0	8.1	7.9	8.7	9.1	9.3	9.8	10.3
Cocoa (chocolate liquor equiv.)	4.6	4.5	4.3	3.8	3.6	4.2	4.0	4.3	4.5	4.7

-- = Not available. 1. In pounds, retail weight unless otherwise stated. Consumption normally represents total supply minus exports, nonfood use, and ending stocks. Calendar-year data, except fresh citrus fruits, peanuts, tree nuts, and rice, which are on crop-year basis. 2. Totals may not add due to rounding. 3. Boneless, trimmed weight. Chicken series revised to exclude amount of ready-to-cook chicken going to pet food as well as some water leakage that occurs when chicken is cut up before packaging. 4. Excludes shipments to the U.S. territories. 5. Whole and part-skim milk cheese. Natural equivalent of cheese and cheese products. 6. Includes Swiss, Brick, Muenster, cream, Neufchatel, Blue, Gorgonzola, Edam, and Gouda. 7. Plain and flavored. 8. Plain and flavored, and buttermilk. 9. Heavy cream, light cream, half and half, eggnog, sour cream, and dip. 10. Formerly known as ice milk. 11. Includes condensed and evaporated milk and dry milk products. 12. Farm weight. 13. Includes rye, corn, oats, and barley products. Excludes quantities used in alcoholic beverages, corn sweeteners, and fuel. 14. Dry weight equivalent.

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