

AGRICULTURAL OUTLOOK



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Cover photo: Continental Grain Westwego, La. facility, sold to Cargill, Inc. Courtesy ContiGroup Companies, Inc.

Farm aid legislation . . . Cargill-Continental merger . . . Lower soybean prices . . . NAFTA update . . . Mexico's pork industry

Farm Aid Package Would Offset Low Crop Prices

The \$7.4-billion farm aid package passed by the U.S. Senate on August 4, 1999, was a response to this year's low field crop prices. The House of Representatives is expected to consider a similar measure after the August congressional recess, and if the aid is delivered before calendar yearend, the legislation would raise 1999 total net farm income well above last year's level and the average level of the 1990's. Drought relief is not part of the current Senate legislation, despite extremely dry weather affecting parts of the country, particularly the eastern U.S. The drought's impact on commodity receipts in 14 states is estimated at \$975 million, while the combination of shrinking receipts and higher expenses (e.g., additional feed purchases) could be as much as \$1.1 billion, according to a preliminary assessment by USDA's Economic Research Service.

Soybean Prices Plummet To Lowest in 27 Years

Farm prices for U.S. soybeans are expected to plummet to their lowest level since the 1972/73 marketing-year average as farmers confront the third consecutive year of record soybean crops. As supplies mount, prices are expected to fall to \$4.10-\$4.90 per bushel in 1999/2000 from \$5 per bushel last season. Compounding the impact of a bumper crop is the uncommon concurrence of weak prices and weak exports in 1998/99, nearly doubling U.S. ending stocks from a year earlier. Until world demand can work down large global stocks of soybeans and soybean products, U.S. producers will rely on government marketing assistance loan benefits to support their incomes.

Anatomy of a Merger: Cargill & Continental Grain

An agreement in October 1998 to combine two of the nation's largest grain trading businesses appeared to many observers to illustrate a disturbing trend: increasing concentration in agribusiness



leading to fewer marketing choices and lower prices for farmers. The Department of Justice, which decided a review of the merger was warranted, concluded after an investigation that the merger could proceed under certain conditions. Cargill and Continental were required to divest themselves of 10 elevators in 7 states, and the firms agreed to comply over the next few months. A review of the economic issues helps explain the outcome of the case.

NAFTA: The Record to Date

The North American Free Trade Agreement (NAFTA) has generally contributed to the expansion of U.S. agricultural trade with Canada and Mexico. Agricultural *exports* to these two countries have risen from an annual average of \$7.4 billion during 1989-93 to \$11.3 billion during 1994-98. For several U.S. agricultural exports, NAFTA has had a relatively large proportional impact, including beef and processed tomatoes destined for Canada, as well as cattle, dairy products, apples, and pears destined for Mexico. Agricultural *imports* from Canada and Mexico have also increased—climbing from an average \$6.2 billion during 1989-93 to \$10.5 billion during 1994-98. NAFTA has boosted U.S. imports of Canadian beef and Mexican peanuts more

than 15 percent. More general gains from the agreement include reorientation of trade in which regional, cross-border exchanges may replace less economical within-country exchanges.

U.S.-Mexico Sweetener Trade Mired in Dispute

Disagreement persists among the Mexican and U.S. sugar industries and the U.S. high-fructose corn syrup (HFCS) industry over interpretation of the North American Free Trade Agreement (NAFTA). While trade in sweeteners between Mexico and the U.S. was addressed directly by provisions of NAFTA, pressure on trade agreements has increased as these industries have grown, leaving the future of U.S.-Mexico sweetener trade uncertain.

1999 Apple Forecast: Smaller Crop, Higher Prices

USDA's August forecast for 1999 U.S. apple production is 10.6 billion pounds, down 7 percent from 1998 and 3 percent below the 5-year average. Reduced production is expected to lift apple prices for the 1999/2000 marketing season, but may also limit exports of fresh-market apples. Higher ending stocks of processing apples in 1998/99, and increased production in areas where processing apples account for a large share of output, raise prospects for U.S. apple juice and cider exports in 1999/2000.

The Changing Structure Of Mexico's Pork Industry

Rapidly changing swine production technology, intensified disease control measures, increased foreign trade activity, and economic and policy shocks over the past quarter of a century have combined to produce marked change in the Mexican pork industry. A joint study by USDA's Economic Research Service and Mexico's agriculture ministry examines developments in hog farm structure, slaughter infrastructure, vertical integration, and market efficiency, and their implications for the future of the industry in Mexico.

Briefs

Ag Policy

Potential Impacts of an Agricultural Aid Package

The \$7.4-billion farm aid package passed by the U.S. Senate on August 4, 1999, was a response to this year's low field crop prices. The House of Representatives is expected to consider a similar measure after the August congressional recess. Drought relief is not part of the current Senate legislation, despite the extremely dry weather affecting parts of the country, particularly the eastern U.S. and Pacific Northwest. Legislation incorporating disaster and related relief may be forthcoming once the full impacts are known.

What are the impacts of the \$7.4-billion package, if enacted, and how is the agricultural sector faring during the current market downturn?

Farm income under the aid package would increase by about \$6.7 billion—spread over calendar years 1999 and 2000. Not all of the proposed aid is in the form of direct payments to farmers and landowners. The package includes other items (e.g., additional crop insurance and cotton marketing payments) that benefit the farm sector but do not directly boost income. If the aid is delivered before the calendar yearend, the legislation would raise 1999 total net farm income well above last year's level and the average level of the 1990's. However, the effect of aid on farm income will vary by region and enterprise.

The current USDA forecast for net farm income is \$43.8 billion for 1999 (excluding any subsidies from potential 1999 legislation), down just \$300 million from 1998 and \$1.7 billion below the 1990's average. In addition to government payments under the 1996 Farm Act, farm income in 1999 is already bolstered by government support provided under the 1999 Appropriations Act (passed in October 1998). Under existing legislation, total direct payments are forecast at \$16.6 billion for calendar year 1999, up from \$12.2 billion in 1998 and second only to the 1987 record of \$16.7 billion. More

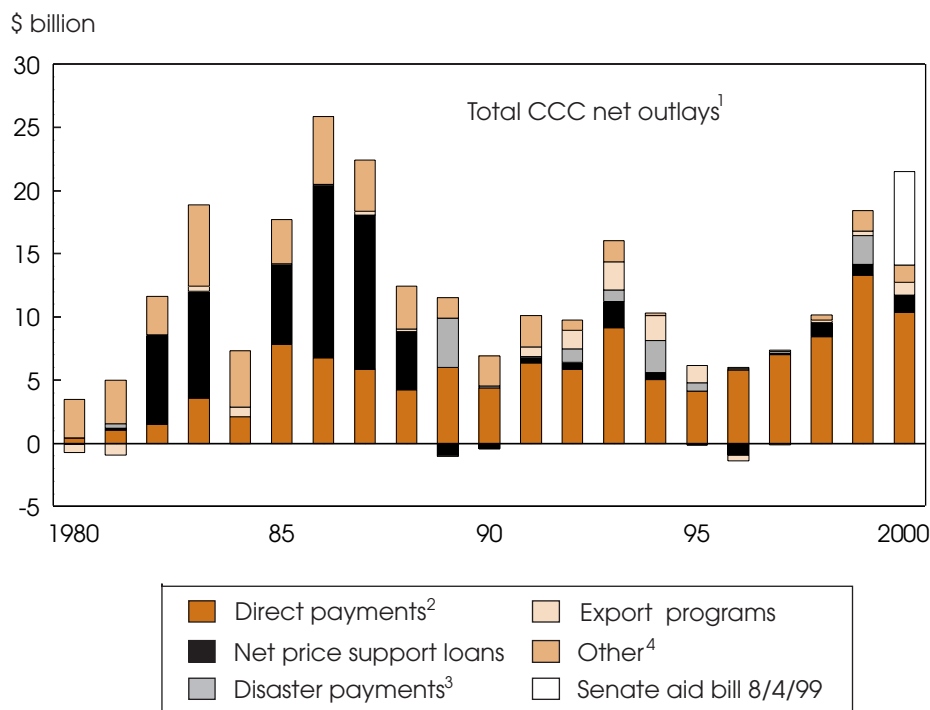
than \$6 billion of direct payments in 1999 are forecast to be loan deficiency payments (LDP's), which are available to producers when farm prices drop below government loan rates for marketing assistance loan crops. This is well above 1998, when LDP's amounted to nearly \$2 billion.

Stable production expenses and stronger receipts for some commodities (notably beef, fruit, and nursery and greenhouse products) have mitigated the impact of low grain prices on sector-wide farm income in 1999. In contrast to field crops, livestock receipts are expected to remain

the third highest in the 1990's, although they are forecast to decline slightly in 1999 from 1998 levels.

Financial problems currently faced by producers are primarily related to cash-flow. In the 1980's, by comparison, a number of other factors led to a widespread financial crisis in the agricultural sector—including high interest rates, sharp declines in asset values, and excessive debt, combined with a weak, inflationary nonfarm economy. Direct payments under an aid package would ease current cash-flow problems, particularly for producers of program crops in the Midwest and southern regions of the U.S. where net income is declining the most, and in the Great Plains where farm businesses are experiencing persistent debt repayment problems.

U.S. Farm Program Spending Could Reach Highest Level Since 1980's



Fiscal years beginning October 1. 1999 and 2000 forecasts as of June 1999.

1. USDA's Commodity Credit Corporation (CCC) handles all money transactions for agricultural price and income support and related programs. 2. Includes production flexibility contract payments, loan deficiency payments, and regular deficiency payments (under previous legislation). 3. Crop disaster and emergency assistance. 4. Includes items such as net commodity purchases and producer storage payments. See table 35 on page 56 for data.

Economic Research Service, USDA

Drought Is Reducing Farm Income Prospects in Eastern U.S.

Farm income is expected to be hard hit in some states as drought and excessive heat hamper agricultural production in the Mid-Atlantic, New England, and parts of the eastern Corn Belt. Fourteen states have at least two counties with extreme rainfall deficits. The drought combined with the heat wave has slashed crop yields, reduced livestock productivity, and raised death rates for some livestock.

The impact on commodity receipts in the affected states is estimated at \$975 million, according to a preliminary assessment by USDA's Economic Research Service based on information as of August 16. The potential reduction in farm income in drought states could be as much as \$1.1 billion, reflecting both shrinking farm receipts and higher expenses for feed and utilities (e.g., electricity for irrigation). However, expectations of higher yields and production for unaffected commodities may offset the negative impacts of drought on overall financial prospects in 1999.

The potential reduction in farm income represents a 55-percent decline from 1998 in Pennsylvania and a 42-percent drop in New York. For the region, commodity receipts decline 3 percent while the combination of shrinking receipts and higher expenses leads to a 19-percent reduction in farm income.

In addition to the eastern states, the Secretary of Agriculture has designated parts of several western states (e.g., Arizona, New Mexico, Nevada, and Montana) as drought disaster areas. Information on impacts there was unavailable at the time of this analysis.

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State/leading commodities	Drought-induced declines from 1998			
	Commodity receipts		Net income	
	\$ million	Percent	\$ million	Percent
Pennsylvania				
Dairy, greenhouse, cattle, eggs	240	6	366	55
New York				
Dairy, greenhouse, apple, cattle	154	5	186	42
Ohio				
Soybeans, corn, dairy, greenhouse	159	3	93	7
Maryland				
Broilers, greenhouse, dairy, soybeans	60	4	86	28
Virginia				
Broilers, dairy, cattle, turkeys	45	2	83	17
Other*	317	3	306	11
Total—14 states, all commodities	975	3	1,120	19

States with largest absolute drop in income.

*Includes Delaware, Connecticut, Indiana, Kentucky, Massachusetts, New Jersey, Rhode Island, Vermont, and West Virginia.

Economic Research Service, USDA

Aside from farm income and cash-flow impacts, legislation to inject more money into the agricultural sector has implications for land values and for Federal budget outlays.

Land markets take into account current and future income from government payments. The steady stream of farm payments under the 1996 Farm Act, for example, is "bid into" land prices. This in turn can result in higher rental rates for farmers who lease land. Any additional payments provided under "emergency" spending such as the 1999 Senate bill would have a similar effect on land values if frequent emergency assistance packages lead to an expectation of government support during market downturns.

Producer planting decisions could also be affected if these payments increase farmer expectations of future emergency spending legislation. In the near term, plantings could also be influenced by marketing assistance loan benefits if market prices are below loan rates.

If the Senate version of legislation for supplemental spending is enacted, total Federal outlays on agricultural programs (net outlays paid through the Commodity Credit Corporation) could rise above \$20 billion in fiscal 2000 (including direct payments, export programs, and net commodity purchases). This would be the third-highest Federal agricultural spending level ever and more than four times this decade's lowest level. **AO**

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For more information on current farm income forecasts

Visit the **Farm Business Economics Briefing Room** on the Economic Research Service website

www.econ.ag.gov

Briefs

Livestock, Dairy, & Poultry**Hog Prices to Strengthen in 2000**

U.S. pork production is expected to set another record in 1999, pressuring prices down from the already relatively low 1998 average. Expectations are based on slaughter in first-half 1999 and on the June 1 market inventory of all hogs and pigs weighing under 180 pounds. While producers' returns improved dramatically in first-half 1999 over fourth-quarter 1998, when hog prices were the lowest in half a century, returns remain generally unfavorable.

The year-over-year decline in prices will likely encourage producers to reduce herds in 1999, leading to a modest pork production decline in 2000. With the decline in pork production and tighter competing beef supplies expected in 2000, hog prices should register a moderate gain.

USDA's *Hogs and Pigs* report released in June indicates that producers continue to reduce herds. However, the reduction is less than previously expected, as low feed costs have partially mitigated the impact of low hog prices. While producers reported intentions in March to have 7 percent fewer sows farrow during March-May than a year earlier, actual farrowings during the period were only 3 percent lower. The June 1 inventory totaled 60.5 million head, 3 percent below a year ago but 1 percent above March 1, 1999. Breeding hog numbers totaled 6.5 million head, down 6 percent from a year ago but virtually unchanged from March 1.

The June 1 market hog inventory suggests about a 3-percent decline in second-half 1999 hog slaughter compared with a year earlier. However, with expected heavier average dressed weights (based on weights this year and on trend weights), pork production in second-half 1999 will likely decline only about 1 percent.

As lower farrowing intentions offset a continuing rise in pigs per litter, pork production in first-half 2000 will decline about 3 percent from a year earlier. Average dressed weights are expected to be virtually unchanged. Expected low feed prices and continued expansion of large, lower cost operations will likely moderate the decline in production as smaller and higher cost operations exit the industry.

In Mexico's pork industry, technologically advanced production systems now account for about half of the country's pork output.

See Special Article, page 26

With hog slaughter quite high in June and July, hog prices dropped from the high \$30's per cwt in May to near \$30 in late July. Other factors in this year's steep price slide include abundant supplies of competing meats, large cold-storage stocks of pork, and the market's realization that the hog production cutback was less than indicated in March. Prices rallied in August, but they are expected to decline in September as slaughter rates rise seasonally.

In the fourth quarter, prices are expected to slip into the \$20's per cwt at times due to heavy weekly slaughter. Hog prices for this year are expected to average \$30-\$32 per cwt, the lowest since 1972 and about \$3 below last year's average. However, prices are unlikely to drop to the extreme low of near \$10 per cwt reached late last year.

In 2000, declining per capita pork supplies and less competition from beef may

boost average hog prices into the mid-\$30's per cwt. Pork stocks should decline, and commercial pork exports are expected to be about the same as this year.

Composite retail pork prices are expected to average 1-2 percent lower this year than in 1998, due to record supplies of pork and competing meats. As these supplies moderate, retail pork prices are expected to return to 1997-98 levels.

Retail pork prices have remained relatively steady despite the volatility of hog prices. Retailers have found that they can move pork off the shelf without large price discounts. Consumer incomes are strong, increasing the demand for meat. Over time, pork demand appears to have increased in response to higher quality, greater consistency, and larger cut size offered by the industry. Growing pork supplies have not yet outpaced rising retail demand at current prices. **AO**

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Upcoming Reports—USDA's Economic Research Service

The following reports will be issued electronically on dates and at times (ET) indicated.

September

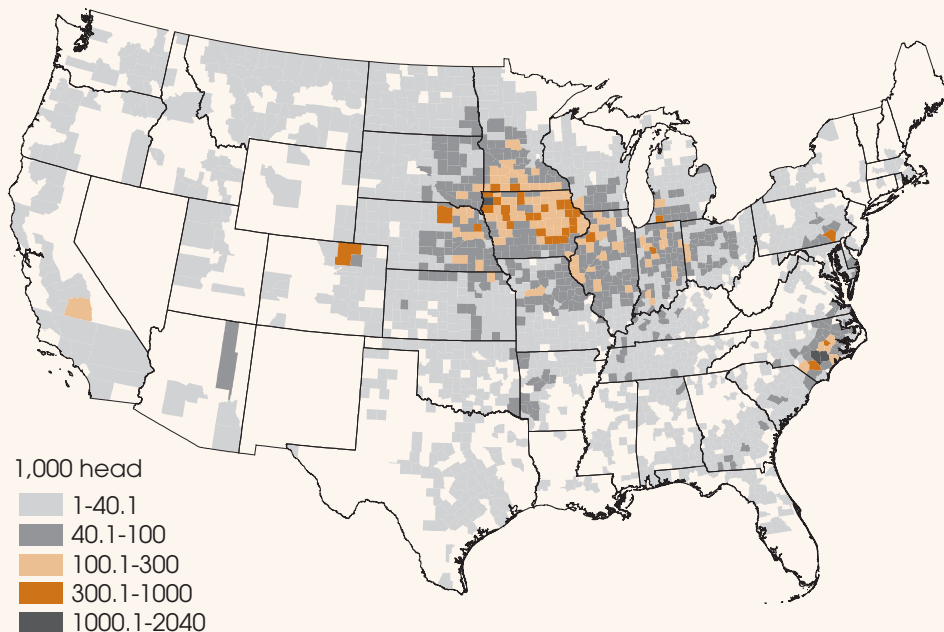
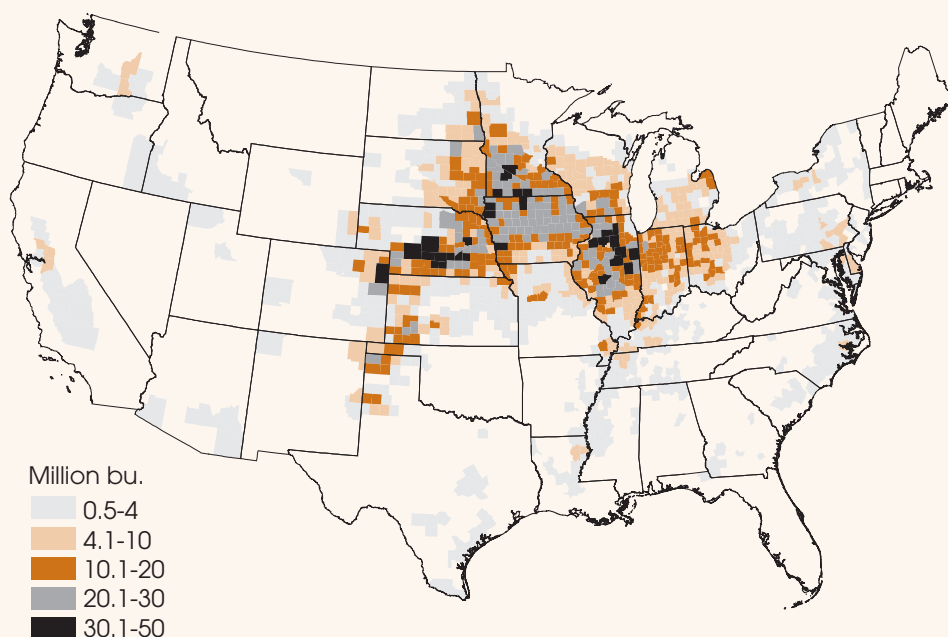
- 8 *Fruit and Tree Nuts**
- 10 *World Agriculture Supply and Demand Estimates (8:30 a.m.)*
- 13 *Cotton and Wool Outlook (4 p.m.)***
*Oil Crops Outlook (4 p.m.)***
*Rice Outlook (4 p.m.)***
- 14 *Feed Outlook (9 a.m.)***
*Wheat Outlook (9 a.m.)***
- 20 *Agricultural Outlook**
- 21 *Sugar and Sweeteners**
- 23 *Agricultural Income and Finance**
- 24 *U.S. Agriculture and Trade Update (3 p.m.)*
- 27 *Tobacco**
- 28 *Livestock, Dairy, and Poultry (4 p.m.)***

*Release of summary, 3 p.m.

**Available electronically only

Ag Industry Snapshot**Geographic Concentration of U.S. Hog Production**

- **The bulk** of U.S. hog production is located in the Midwest, taking advantage of proximity to abundant feed supplies. With substantial corn output in Iowa, Illinois, Indiana, and other north central states, feed costs are relatively low.
- **Hog production** has expanded in less traditional areas since the 1970's, particularly in North Carolina and Arkansas, despite the disadvantage of higher feed costs (although higher-volume shipments lower grain transport costs).
- **In less traditional** hog production states like North Carolina and Arkansas, industry growth reflects improved production methods similar to those pioneered in the areas' poultry operations. The result is less labor per unit of production, more pigs per litter, and lower death losses. In addition, proximity to large population centers reduces transport costs of pork.

U.S. Hog Production Is Concentrated in Midwestern and Eastern U.S. . . .**. . . Generally Near Corn Producing Regions**

Hog production in 1997; corn production in 1998.
 Source: National Agricultural Statistics Service, USDA.
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Economic Research Service, USDA

Briefs

Specialty Crops

Smaller Apple Crop Could Lift Prices In 1999/2000

USDA's August forecast for 1999 U.S. apple production is 10.6 billion pounds, down 7 percent from 1998 and 3 percent below the 5-year average. Lower production expected in much of the Western States region will likely offset anticipated increases in the Central States and Eastern States regions. The smaller crop may lift apple prices for the 1999/2000 marketing season from 1998/99—when season-average prices fell 20 percent to 12.3 cents per pound. Expected reduced production of pears, a competitor crop, may place additional upward pressure on apple prices this fall.

Apple production in the Western States region is expected to be 6.3 billion pounds in 1999, down 18 percent from a year ago. Smaller crops are expected in all states in the region except California.

The Washington apple crop is forecast at 5.2 billion pounds, down 19 percent from last year's record, and is expected to mature about 2 weeks late. Apple orchards in the state bloomed variably, with lighter (sparser) blooms for Red Delicious and Fuji apples. A relatively cooler spring, some frost damage, and a likely reduction in crop acreage also reduced potential crop size. Similar weather conditions prevailed in Oregon, where the crop is expected to be down 11 percent from a year ago. While the California crop is also developing behind normal due to relatively cooler spring temperatures, adequate dormancy and dry weather have provided conditions for a better crop this year. Production there is forecast to rise 1 percent to 825 million pounds.

With higher production expected in nearly all the apple producing states in the Central States region, the regional forecast is up 12 percent in 1999, to 1.5 billion pounds. Throughout Michigan, which accounts for 71 percent of the Central States' total, orchard blooms were generally good, and weather, especially during pollination, was mostly favorable. Although harvest in

Michigan is also expected to be delayed, production is forecast up 8 percent from a year earlier.

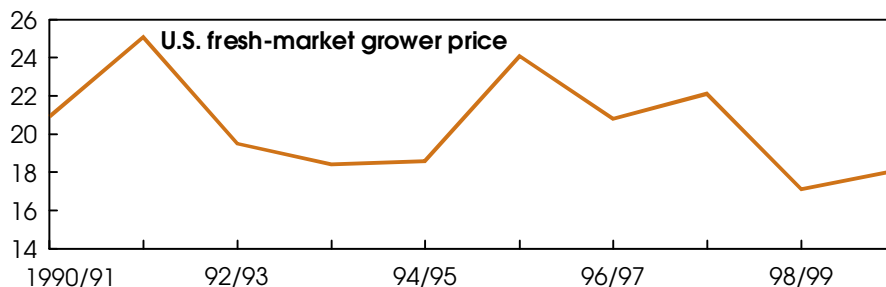
Apple crops in the Eastern States region are also expected to increase—by 18 percent overall, to 2.7 billion pounds. For most of the region, weather conditions have generally been favorable, especially during the bloom stage, with only minimal frost damage reported. Despite low moisture conditions, 1999 production is expected to be up 13 percent in New York and 27 percent in Pennsylvania. Production is also expected to be up in Virginia, North Carolina, and West Virginia.

The U.S. Apple Association reports that as of July 1, 1999, U.S. apple holdings totaled 17.3 million bushels, with fresh-apple holdings accounting for 13.1 million bushels, up 18 percent from the same time last year. However, because of the late start of the 1999 fall apple crop, fresh-apple holdings from the 1998 crop will be drawn down during an extended marketing period before the new 1999 crop reaches the market. The expected smaller crop in Washington—the largest supplier to the domestic fresh apple market—will likely push fresh-market supplies down from last year. Reduced supplies, coupled with lower holdings from the 1998 crop because of the extended marketing period, will help boost this year's grower prices for the new crop of fresh-market apples.

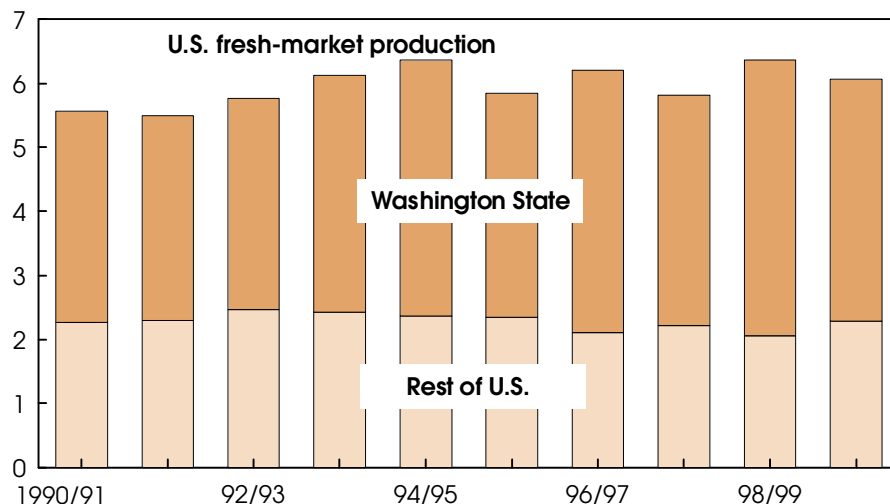
During August 1998-May 1999, U.S. exports of fresh apples increased 24

Grower Price for Fresh-Market Apples to Rise in 1999/2000

¢ per lb.



Billion lbs.



Average grower price for August-July season. 1999/2000 price is midpoint of forecast range.
Economic Research Service, USDA

percent, to 1.3 billion pounds, assisted in part by record-large supplies of relatively good-quality fruit, particularly from the Pacific Northwest. Exports averaged 23 percent of U.S. fresh-market production in 1994/95-1998/99. Shipments to key Asian markets have shown marked improvement, with shipment volumes to Taiwan up 5 percent, to Hong Kong up 2 percent, to the Philippines up 61 percent, to Malaysia up 21 percent, to Singapore up 83 percent, and to Japan up 189 percent. Exports to Mexico rose 117 percent, reflecting the reduced harvest there last year and the March 1998 lifting of the 101-percent antidumping duty imposed on U.S. Red and Golden Delicious apples by Mexico in September 1997. Meanwhile, exports to Canada fell 6 percent, due in part to increased production there. Export prospects for the 1999/2000 season may be limited by reduced production, particularly in Washington where the crop is heavily oriented toward the fresh market.

U.S. imports of fresh-market apples totaled 227.6 million pounds from August 1998 through May 1999, 14 percent lower than the same period a year earlier. Imports accounted for an average 5 percent of the U.S. fresh-market supply in 1994/95-1998/99. Apple imports from Canada and New Zealand—each providing about a third of U.S. apple imports—were down sharply, but imports from Chile—about a quarter of total apple imports—rose 19 percent following record production there.

U.S. apple juice and cider exports in 1998/99 (August-May) declined 17 percent from the same period in 1997/98, to 281,154 hectoliters. While exports to Japan rose 30 percent, exports to Canada fell 41 percent. These two countries account for nearly three-fourths of total U.S. juice and cider exports. Despite the smaller 1999 crop in Washington, prospects for U.S. apple-juice and cider exports in 1999/2000 have improved. Ending stocks of processing apples in 1998/99 are higher compared with the previous season, and production is up in the central and eastern regions, where a larger share of output is for the processing sector.

U.S. imports of apple juice and cider from August 1998 through May 1999 totaled 9.1 million hectoliters, up 28 percent from the same period in 1997/98. While U.S. fresh apple imports are fairly insignificant compared with total U.S. supplies, apple juice imports provided 50-60 percent of supplies during the 1990's. Argentina and Germany have been major sources of apple juice, providing about a third, and about 11-25 percent of U.S. apple juice imports throughout most of the 1990's. Imports from China have increased substantially during the same period, rising from 3,504 hectoliters in 1989/90 to 1.3 million in 1997/98. In 1997/98 China surpassed Germany as the second-largest source of apple juice, supplying about 13 percent of total U.S. imports.

During the 1999/2000 marketing season, U.S. apple juice imports from China, mostly in concentrate form, may be limited by possible antidumping duties. On June 28, the U.S. Department of Commerce began a dumping investigation of apple-juice-concentrate imports from the People's Republic of China. The investigation results from allegations that China is selling this product in the U.S. at unfairly low prices, causing economic injury to the U.S. domestic industry. On the same day, the U.S. International Trade Commission (ITC) in Washington D.C. also conducted a preliminary hearing to gather evidence of economic injury to domestic concentrate producers. On July 22, the ITC announced its determination citing reasonable indication that U.S. apple juice producers are materially injured, or threatened with material injury, by imports of certain nonfrozen concentrated apple juice from China sold in the U.S. below cost.

Given the ITC determination, the U.S. Department of Commerce will continue to pursue the dumping investigation. If the Department decides that the domestic apple industry's complaint is valid, it will impose a tariff on Chinese concentrate imports as of the day of the decision. (U.S. apple juice producers are requesting a 91 percent duty on Chinese concentrate imports.) In addition, if the Department finds that large amounts of juice concen-

trate were imported from China during the period of the investigation, the tariff may be imposed retroactively up to a maximum of 90 days prior to the decision. The Department is scheduled to announce its preliminary dumping decision by November 15. **AO**

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September Releases—USDA's Agricultural Statistics Board

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

September

- 1 Broiler Hatchery
- 3 Dairy Products Prices (8:30 a.m.)
Dairy Products
Egg Products
Poultry Slaughter
Basic Formula Milk Price (Wisconsin State Report)
- 7 Crop Progress (4 p.m.)
- 8 Broiler Hatchery
- 9 Vegetables
- 10 Cotton Ginnings (8:30 a.m.)
Crop Production (8:30 a.m.)
Dairy Products Prices (8:30 a.m.)
- 13 Crop Progress (4 p.m.)
- 15 Broiler Hatchery
Milk Production
- 16 Turkey Hatchery
- 17 Dairy Products Prices (8:30 a.m.)
Cattle on Feed
Hop Stocks
- 20 Cold Storage
Crop Progress (4 p.m.)
- 21 Chicken and Eggs
- 22 Broiler Hatchery
Potatoes
- 23 Catfish Processing
Citrus Fruit
NASS Facts Newsletter (4 p.m.)
- 24 Dairy Products Prices (8:30 a.m.)
Cotton Ginnings (8:30 a.m.)
Hogs and Pigs
Livestock Slaughter
- 27 Crop Progress (4 p.m.)
- 28 Peanuts Stocks and Processing
- 29 Agricultural Prices
Broiler Hatchery
Trout Production
- 30 Grain Stocks (8:30 a.m.)
Small Grains Summary (8:30 a.m.)

Briefs

Field Crops

U.S. Durum Stocks to Expand Sharply Despite Smaller Crop

U.S. harvested area of durum wheat—used mainly for pasta production—is projected at 3.9 million acres in 1999, up 5 percent from 1998 and the largest acreage since 1982. This increase comes despite lower price prospects for the 1999/2000 marketing year. Apparently, producers responded to an attractive federally backed insurance policy (Crop Revenue Coverage insurance or CRC) rather than to market conditions.

In North Dakota, acreage intended for harvest is up 350,000 acres, 12 percent above last year. North Dakota will account for 85 percent of U.S. harvested durum acreage in 1999, 6 percentage points above its 1998 share. In contrast, acreage intended for harvest is down in Arizona and California, where CRC insurance was offered for the fall/winter planted crop but was not well publicized.

USDA's August 1 forecast indicates that farmers will harvest 114 million bushels in 1999, down 27 million from the large crop of 1998. Lower forecast yield—at 29.2 bushels per harvested acre in 1999, down from 37.8 bushels last year—will more than offset the expansion in acreage.

The Northern Plains region, particularly North Dakota, was plagued by excessive rainfall during the planting season, delaying planting in many locations. The late plantings, combined with wet conditions in parts of North Dakota, have hindered crop progress and lowered yield prospects in 1999. In August, USDA's National Agricultural Statistics Service reduced North Dakota's planted area and intended area for harvest each by 150,000 acres from the June forecast. The crop's slow progress during the growing season may limit yield potential and increase the crop's vulnerability to early frost.

Although production is projected lower, larger beginning stocks (up 40 percent from the 1998/99 level) will increase total supplies to 204 million bushels in 1999/2000, 4 million above last year.

With few high-value alternative uses for durum, continued large supplies will reduce the price premium producers have received in recent years for durum relative to other spring wheat. In 1998/99, the average premium for durum relative to hard red spring wheat was 35 cents per bushel, compared with an average 81 cents during the 5 previous marketing years. Durum prices do not necessarily fluctuate in unison with other classes of wheat, because there is very little substitution between durum and the lower protein wheat classes—e.g., hard red winter, soft red winter, and white wheats, which are not well suited for pasta production.

The large supply and a projected slowdown in use will put downward pressure on U.S. durum prices throughout the 1999/2000 marketing year. Domestic use of durum is projected at 87 million bushels in 1999/2000, just above the 5-year average but 14 million below the 1998/99 level. U.S. exports are projected

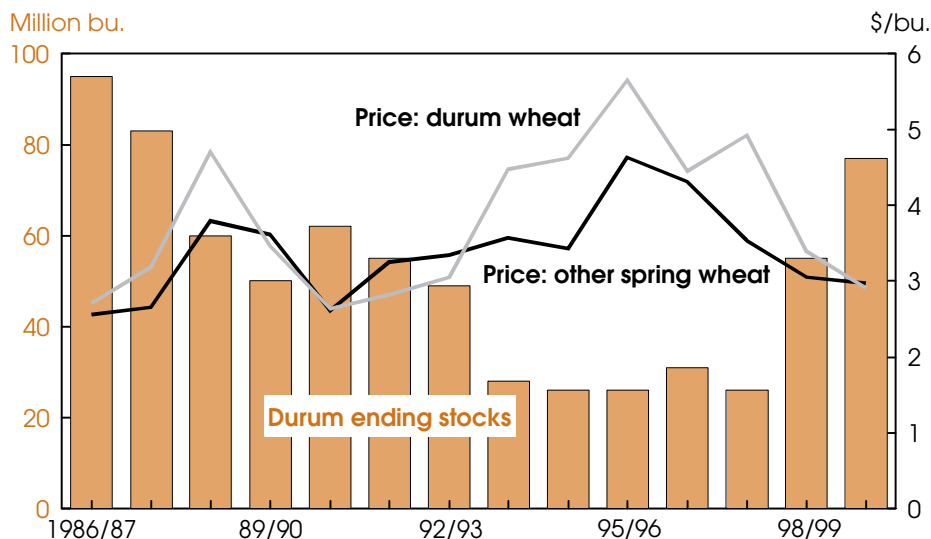
at 40 million bushels, down 11 percent from last season as exportable supplies remain large in foreign competitor countries (primarily in the European Union and Canada). U.S. ending stocks are projected to increase sharply to 77 million bushels, 44 million bushels above the 5-year average.

Export sales of durum in 1999/2000 are moving at the same pace as last year. As of August 5, accumulated export shipments plus outstanding export sales for 1999/2000 totaled 13 million bushels.

U.S. price prospects would be dampened even further in 1999/2000 without projected smaller crops in the European Union, Morocco, and Turkey. According to USDA's *Foreign Agriculture Circular* released in August, world durum production in selected durum-producing countries is estimated at 24.6 million metric tons in 1999/2000, down 21 percent from last year's record level. Despite a lower U.S. export projection for the marketing year, the U.S. will maintain its status as the world's second-largest exporter, behind Canada. **AO**

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Durum Price Premium Vanishes in 1999/2000 as U.S. Stocks Soar



Season-average farm prices. 1999/2000 prices are averages for June and July.
Economic Research Service, USDA

Commodity Spotlight



Thomas C. Capehart, Jr.

Soybean Prices Plummet To Lowest in 27 Years

Farm prices for U.S. soybeans are expected to plummet to their lowest level since the 1972/73 marketing-year average as farmers confront the third consecutive year of record soybean crops. As supplies mount, prices are expected to fall to \$4.10-\$4.90 per bushel in 1999/2000 from \$5 per bushel last season.

Compounding the impact of a bumper crop is the uncommon concurrence in 1998/99 of lower export demand and weaker prices. U.S. soybean exports lagged behind the brisk rate of a year earlier, falling from 870 million bushels to 790 million in 1998/99.

With many Asian importers still recovering from serious economic crises, only western Europe and China advanced soybean imports in 1998/99. In addition, no U.S. soybeans were shipped in calendar 1998 to Brazil and Argentina, which collectively imported 48 million bushels in late 1997 to bridge the gap between tight old-crop supplies and new-crop production. Russia received more U.S. shipments of soybeans and soybean meal in 1998/99, which were mainly donations under the P.L. 480 program. Exports of U.S. soybean meal and oil also dropped, creating much narrower crush margins that curtailed domestic soybean crushing. U.S. ending

stocks of soybeans are forecast to swell to about 385 million bushels in 1998/99, nearly twice as high as a year earlier.

Slow U.S. sales have stemmed in part from large global carryin stocks and record soybean production that increased world supplies in 1998/99 and contributed to a highly competitive world market. Brazil's very large 1999 harvest followed last year's record crop and swelled its soybean exports to an all-time high. The country's currency devaluation last January raised internal soybean prices and accelerated marketing and export of both its 1998 stocks and the new crop harvested in April-May.

Brazilian soybean meal production and exports cooled considerably after the devaluation, but Argentine crushers have more than compensated for the Brazilian slowdown. Although adverse weather prevented Argentine yields from surpassing the previous season's high, farmers planted record soybean area for 1999 harvest, and Argentine exports of soybean meal have been soaring since early this year. India also produced a record soybean crop and exported its inexpensive meal throughout Asia.

Loan Rates Factor into 1999 Soybean Plantings

U.S. soybean acreage has increased each year since 1992. U.S. farmers planted 74.1 million acres of soybeans in 1999, up from last year's record 72.4 million. Ten of the top 12 soybean producing states (those with the highest average yields) planted record acreage in 1999, absorbing acres previously planted to corn and wheat. Only a few southern states planted fewer soybeans than last year, where farmers shifted more land into cotton and rice. Favorable weather conditions are leading to expected bumper yields, pushing the 1999 soybean crop estimate to 2,870 million bushels, 113 million bushels greater than the 1998 record.

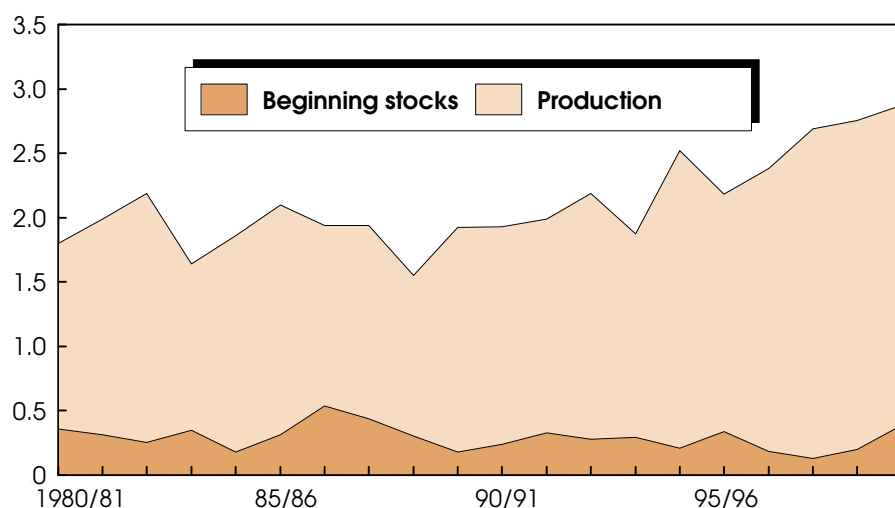
While total demand is expected to increase, the forecast increase in 1999 production is larger. However large the 1998/99 carryover inventory may seem, it could pale in comparison to the prospective record 1999/2000 carryout of 540 million bushels. In combination with large wheat and corn supplies, such stockpiles of soybeans would seriously strain existing U.S. storage capacity this fall and further pressure prices down. Under these circumstances, it may seem unusual that U.S. farmers would plant so many soybeans in the first place. This can be partially explained by the increase in cropland available for soybeans last spring when U.S. winter wheat acreage declined 3 million acres from a year ago.

The other major factor for greater U.S. soybean planting is the marketing loan program, which supports farm incomes when local prices drop below local loan rates. Rather than sell program crops at low harvest-time prices, eligible farmers may use a Commodity Credit Corporation (CCC) marketing assistance loan to pay production expenses, using their crop as collateral. When prices rise later, they can repay the loan and sell the crop. However, if prices do not rise, producers may repay the loan at less than the announced loan rate plus accrued interest whenever the posted county price (PCP) is lower than the county loan rate (rather than simply forfeiting the collateral, which was the only option provided under legislation prior to the 1990 Farm Act). Alternatively, farmers may forego putting their crop

Commodity Spotlight

U.S. Soybean Supplies Continue to Expand

Billion bu.



Season beginning September 1. Excludes small amounts of imports. 1998/99 and 1999/2000 forecast.

Economic Research Service, USDA

under loan by receiving a loan deficiency payment (LDP) on eligible production, a particularly attractive option if farm storage is limited. The LDP rate is the amount by which the loan rate exceeds the PCP on a specific date.

Unlike years prior to the 1990 Farm Act, the loan rate does not prop up cash prices, which can adversely affect international competitiveness. The absence of a market price floor also prevents accumulation of costly, hard-to-dispose-of stocks through forfeiture to the CCC.

According to the statutory loan formula, national average marketing assistance loan rates for wheat, corn, and oilseeds are required to be no less than 85 percent of the simple average of prices received by producers during the preceding 5 years (excluding the high and low years), subject to specified maximums and a \$4.92-per-bushel minimum for soybeans. In March, USDA announced that the 1999 national average loan rates for soybeans, corn, and wheat would be \$5.26, \$1.89, and \$2.58 per bushel, respectively, the same as last year. Under the 1996 farm legislation, these loan rates were the maximum allowed.

At planting time last spring, soybean cash prices for 1999/2000 were expected to be

well below the loan rate. But given relative production costs and expected yields, farmers favored soybeans over corn. The ratio of the soybean marketing loan rate and December corn futures, at 2.7-2.8, was above breakeven level for most farmers. In addition, risk-averse farmers can better stretch their operating loans by planting more soybeans, because the U.S. average variable cost of soybean produc-

tion is approximately half the cost of corn production (soybean cost is about \$81 per acre or \$2 per bushel), and soybean yields tend to suffer less under the stress of dry weather. So, even with weakening soybean cash prices last spring, farmers were still assured of a better return by planting soybeans than planting corn.

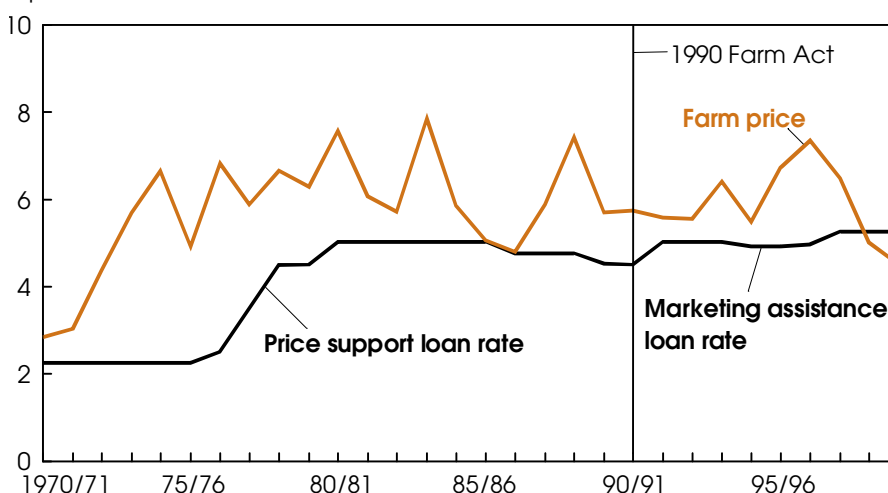
What would raise prices? Based on the loan rate formula, the U.S. soybean loan rate should decline only slightly in coming years. This would continue to encourage a high level of soybean planting in the U.S. next year, despite very low market prices. On the other hand, the low price environment will likely dampen competitors' acreage and stimulate world demand. Foreign yields could slip as costs rise for imported inputs such as fertilizer, chemicals, farm equipment, and improved seeds, while the returns from investing in those inputs fall. Yields have been remarkably good for all the major producers in the last few years, but there is always potential for drought to cause crop failure and shrink supplies.

Weak Vegetable Oil Sector Likely To Prolong Low Soybean Prices

World soybean production will edge higher again in 1999/2000, to 157.2 million metric tons. The increase is based almost entirely on greater U.S. output, which

Prices for Soybeans to Remain Below Loan Rate

\$ per bu.



U.S. season-average farm price (September-August). 1998/99 and 1999/2000 forecast.

Economic Research Service, USDA

Commodity Spotlight

should expand not only the volume but also the world market share of U.S. exports. When planting begins later this year in South America, weaker soybean prices relative to corn and wheat will drive South American producers to reduce soybean area.

The weakened financial situation of Brazilian farmers, inflated production costs, and intense U.S. competition will offset the price-enhancing effects of the January currency devaluation. Brazil's soybean harvested area is expected to decline 3 percent, causing a modest drop in production from 31 million metric tons to 30.5 million. Consequently, Brazil's exports of soybeans and soybean meal would slip slightly.

Likewise, Argentine farmers are anticipated to shift more area from soybeans to wheat and corn. Argentine soybean crushing should remain stable in 1999/2000, allowing a slight increase in soybean meal exports. However, the reduction in available supplies would cut soybean exports from 3.3 million tons to 2.2 million. Similarly, Paraguay's 1999/2000 soybean production is projected down to 2.85 million tons from 3.1 million this year, resulting in an equivalent reduction in exports. Offsetting lower soybean meal exports from Latin America are higher exports of fish meal—another high-protein feed—which will continue recovering from the harmful impact of El Niño on 1998 South American fish harvests.

Cheaper imported soybean meal is supporting global consumption, particularly within the European Union (EU), the world's largest import market. However, high rates of crushing in the major soybean producing countries and high EU supplies of competing oils will also weaken crush margins in the EU. Thus, EU nations are importing more soybean meal than soybeans. In 1999/2000, EU soybean meal imports are projected higher to 20 million tons, compared with 16.8 million in 1997/98.

Next year, the EU will begin its agricultural policy reform, known as Agenda 2000. The incremental reduction in oilseed subsidies and low world prices are likely to reduce EU oilseed plantings. A proposed EU ban on use of animal pro-

Chinese Policy Alters World Trade in Oilseeds & Products

In China, soybeans, soybean meal, and soybean oil are subject to import duties set at 3, 5, and 13 percent, respectively. In addition, China levies a value-added tax (VAT) of 13 percent. In 1995, the Chinese government relaxed import quotas and waived the VAT on soybean meal as a means of providing support for the domestic livestock sector. The VAT exemption for soybean meal succeeded in boosting imported supplies for an expanding livestock sector, pushing imports from a negligible amount in 1994/95 to 4.2 million metric tons in 1997/98.

The wave of meal imports undermined domestic prices and left processors with excessive stocks that they could not sell at a profit. In addition, chronically large differentials between domestic and foreign vegetable oil prices enticed refiners to circumvent taxes and quotas on imports of crude soybean oil by not re-exporting the refined oil as required. Large supplies of oil and meal suppressed crushing margins and led to a great deal of idle crushing capacity. Yet, surplus domestic oilseed stocks increased, as access to supplies was discouraged by restrictions on interprovincial movement. Oilseed crushing plants (mostly state-owned enterprises) incurred massive losses.

These events sparked a reform program to make crushing facilities profitable. In 1998, Chinese authorities were able to strengthen enforcement of import quotas for vegetable oils. China also recently redefined the list of VAT-exempt feed products to exclude soybean meal and other oilseed meals. Reducing tax evasion and ending soybean meal's VAT-exempt status provided a greater incentive to import oilseeds for domestic processors to turn into protein meal and vegetable oil. As a consequence, U.S. exports of soybean meal to China fell about 700,000 metric tons in 1998/99 (more than 80 percent) from the previous year. Imports of soybean meal from all sources are forecast to stabilize near 1.85 million tons in 1999/2000.

teins in all livestock feed would also encourage replacement with oilseed meal. As a consequence, EU imports of oilseeds and oilseed meal should be bolstered.

Weaker prices have diminished the incentive for soybean sowing in China, reducing projected 1999 output to 13 million tons from 13.8 million in 1998. Recent policy changes will shift the composition of China's imports further toward soybeans rather than soybean meal and soybean oil. It is likely that the prospective decline in domestic supplies would boost China's 1999/2000 soybean imports to near 4.4 million tons from 3.6 million this season. However, a comparatively modest increase in Chinese soybean meal consumption will continue to limit soybean meal imports.

Elsewhere in Asia, economic growth appears to be on the upswing again, and lower food prices will help this recovery. As in 1998/99, foreign food aid and export credits for soybeans and soybean products will be used as needed to counter problem areas, such as Russia.

For 1999/2000, U.S. soybean crushing is forecast at a record 1,655 million bushels. While an imminent return to the very profitable crush margins of 2-3 years ago is not anticipated, lower soybean prices and firming values for soybean meal as foreign competition lessens should ease the difficulties faced by domestic processors. Meal prices, likely stabilizing in 1999/2000 at around \$130-\$155 per ton, were twice that level only 3 years ago. Large global meat supplies have sharply cut hog prices, which will lead to decreased pig production and limit U.S. soybean meal consumption in 1999/2000. Low prices have already promoted inclusion of soybean meal in livestock rations at liberal rates, so domestic disappearance can rise only modestly, due mostly to gains in poultry consumption.

U.S. export prospects are bright for soybeans and soybean meal. The U.S. dollar has been relatively strong, but exports could benefit from recent weakening. U.S. soybean exports are forecast to climb to a near record 915 million bushels, up 16 percent from 1998/99. Foreign soybean meal consumption is forecast up 2.3

Commodity Spotlight

million metric tons in 1999/2000 while foreign production is projected to increase only 0.7 million. U.S. soybean meal exports will benefit from this gap, and are projected to rise from 6.95 million short tons this season to 8 million in 1999/2000.

On the other hand, abundant world vegetable oil supplies and fewer Chinese imports will make exporting U.S. soybean oil a real challenge. A worldwide boom in planting competing high-oil oilseeds is projected to lift 1999 global oilseed production. The world's major rapeseed producing countries (including the EU, China, Canada, and India) all increased crop area, and sunflowerseed planting rose in Russia and Eastern Europe. During the last 2 years, world palm oil output sagged from a severe drought in Malaysia and Indonesia, which caused an atypical price premium versus soybean oil. But now, a strong recovery in palm oil production is developing, which should recapture markets throughout Asia and the Middle East that were lost to soybean oil. And, based on greater Philippine output, world coconut oil supplies will rebound above the pre-drought level.

China has recently emphasized greater domestic production and imports of high oil-content rapeseed and palm oil imports to satisfy oil needs, which are in greater deficit than protein meal requirements. Consequently, China is expected to import only 1.3 million tons of soybean oil in 1999/2000, down from 1.65 million 2 years earlier.

Shipments to India are expected to account for a large portion of the gains in world vegetable oil trade. In India, even small price shifts can cause a substantial change in consumption. Lower world prices and India's reduction in oil import tariffs last year have favored vegetable oil consumption. While India's domestic output of soybean oil was robust, total consumption of all vegetable oils grew faster—28 percent in 1998/99—causing vegetable oil imports to soar. Imports in 1999/2000 should moderate, with palm oil accounting for a larger share.

Even at bargain prices, U.S. soybean oil exports in 1999/2000 are forecast to decline to 2 billion pounds from 2.35 billion this year. Intense international com-

petition is expected to depress the national average price to 15-18 cents per pound, down from 20 cents in 1998/99 and the lowest since 1986/87. Despite steady growth in domestic soybean oil demand, record production is expected to swell ending stocks to an all-time high of 2,470 million pounds.

Until world demand can work down large global stocks of soybeans and soybean products, U.S. producers will rely on government loan deficiency payments and loan benefits to support their incomes. Farmers received loan deficiency payments on three-fourths of the 1998 soybean harvest, totaling \$875 million. With LDP rates around 75 cents per bushel, payments could exceed \$2 billion on soybeans in 1999/2000. While 1999/2000 soybean farm income will not approach the profitable 1997/98 level, LDP's should allow the majority of producers to more than cover variable costs of production.



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More about soybeans

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Oil Crops Yearbook

Covering the market for soybeans, other oilseeds, and their products. Presents the outlook for production, supply, demand, trade, and prices.

Summary release date: October 22. Full text and .pdf versions available within 2 weeks of summary release.

Oil Crops Outlook updates are released monthly

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World Agriculture & Trade



Jack Harrison

NAFTA: The Record to Date

The North American Free Trade Agreement (NAFTA) has generally contributed to the expansion of U.S. agricultural trade with Canada and Mexico, according to a report submitted to the U.S. Congress by the Secretary of Agriculture in mid-August. Implemented on January 1, 1994, NAFTA is having a dramatic impact on U.S. trade of some agricultural commodities—boosting exports and/or imports substantially above levels that would have occurred without the agreement—while generating a subtle positive effect on most of the others.

Under NAFTA, U.S. agricultural trade with Canada and Mexico has grown substantially. Agricultural exports to these two countries have risen from an annual average of \$7.4 billion during 1989-93 to an average \$11.3 billion during 1994-98. Agricultural imports from Canada and Mexico have also increased—climbing from an average \$6.2 billion during 1989-93 to \$10.5 billion during 1994-98.

Preliminary evidence suggests that U.S. agricultural trade with Mexico is expanding at an increased pace. Agricultural exports to Mexico grew at an average annual rate of 14.4 percent during NAFTA's first 5 years (1994-98), compared with 11 percent during 1989-93. Agricultural imports from Mexico are also growing at a faster rate, gaining an aver-

age 12.1 percent during 1994-98 compared with 9 percent during 1989-93.

Available information suggests similar growth in U.S.-Canada trade following implementation of the U.S.-Canada Free Trade Agreement (CFTA) on January 1, 1989. NAFTA subsumes CFTA, incorporating its provisions within the expanded agreement. Although statistics for U.S.-Canada trade before 1989 are not strictly comparable with subsequent data, growth in agricultural exports to Canada appears to have jumped from an average annual 6 percent during 1984-88 to 9.6 percent during 1989-93 under CFTA. Agricultural imports from Canada also grew—by 14.1 percent per annum during 1989-93, much faster than the 10.4-percent rate during 1984-88. After this early spurt of trade growth from the agreement, trade has continued to expand under NAFTA but at a slower pace, with agricultural exports to Canada increasing 5.7 percent on average and agricultural imports from Canada increasing 11 percent.

Besides facilitating growth between parties to the agreement, NAFTA has also fostered a reorientation of agricultural trade, resulting in U.S. exporters and importers devoting greater attention to the North American market. During 1994-98, Canada and Mexico were the destination for 21 percent of total U.S. agricultural

exports compared with 18 percent during 1989-93, and the origin of about 32 percent of total U.S. agricultural imports compared with 26 percent during the earlier period.

A sizable portion of North American agricultural trade consists of intra-industry or “two-way” trade. This is particularly true for Canada and the U.S. Each counts the other as an important export market for a wide range of common products—including grains and feed, livestock and animal products, and oilseeds and oilseed products. Given the geographic size and topography of the three NAFTA members, transportation costs may make cross-border exchanges between two proximate points less costly than within-country trades between two distant points. Unfortunately, previous trade barriers often discouraged such beneficial cross-border exchanges.

NAFTA facilitates exploration of cross-border opportunities, thereby reducing transportation costs. As a result, existing regional patterns of trade have intensified, and new patterns have been established. For instance, pork producers in western Canada tend to export to the U.S. west coast, while U.S. producers tend to export to eastern Canada. Similarly, Mexican ranchers, when confronted with drought in 1995, marketed many of their cattle for slaughter in the U.S.

Obviously, not all changes occurring in U.S.-Canada and U.S.-Mexico agricultural trade since NAFTA's implementation are attributable to the agreement. Weather conditions, exchange rate movements, changes in macroeconomic performance, evolving consumer preferences, population growth, and technological change are among the factors that have been particularly influential.

USDA's Economic Research Service (ERS) estimated trade changes from NAFTA, isolating the NAFTA impact from other factors. For commodities that were subject to *quotas* or other quantitative restrictions before NAFTA, the volume of trade during 1994-98 was compared with previously allowed quantities. This assumes no over-quota trading except where analysts determined that pre-NAFTA limits were not enforced. For

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U.S. Ag Trade with Canada and Mexico Expanded Following Trade Agreements

	Average annual growth in U.S. agricultural trade					
	Exports to:			Imports from:		
	Canada	Mexico	Rest of world	Canada	Mexico	Rest of world
	Percent					
1984-88	6.0	9.4	1.8	10.4	8.8	4.2
1989-93	9.6	11.0	2.5	14.1	9.0	1.3
1994-98	5.7	14.4	0.2	11.0	12.1	6.8

U.S.-Canada Free Trade Agreement (CFTA) implemented in 1989. North American Free Trade Agreement (NAFTA) implemented in 1994.

Sources: Foreign Agricultural Trade of the U.S. (FATUS), USDA, for all data except U.S. exports to Canada; UN Comtrade imports reported by Canada and aggregated according to FATUS classifications for U.S. exports to Canada.

Economic Research Service, USDA

commodities that were subject to *tariffs* before NAFTA, an economic model was used to estimate the impact of tariff changes.

NAFTA Impact Varies By Commodity & Country

For several U.S. agricultural exports, NAFTA has had a relatively large proportional impact—i.e., an estimated increase exceeding 15 percent relative to trade without the agreement. These exports include beef and processed tomatoes destined for Canada, as well as cattle, dairy products, apples, and pears destined for Mexico. The agreement has spurred growth greater than 15 percent in several U.S. imports as well, including Canadian beef and Mexican peanuts. NAFTA is estimated to have depressed U.S. trade for only one commodity-trade partner combination—U.S. imports of Canadian cattle—but these imports still experienced an overall increase during the first 5 years of the agreement.

Among livestock products, *beef* and *pork* commerce has benefited appreciably from NAFTA. U.S. beef exports to Canada are perhaps twice as high as they would have been without an agreement. Moreover, NAFTA tariff changes are estimated to have increased U.S. pork exports to Mexico by some 5 to 10 percent above the level that would have been expected otherwise. NAFTA may also have offset some of the decrease in U.S. hog exports to Mexico during the country's economic crisis in 1995.

U.S. *cattle* exports to Mexico are estimated to have grown by some 15 to 25 per-

cent because of NAFTA tariff changes. However, increased cattle trade with Canada has been influenced more by the exemption of Canadian beef from the 1979 U.S. Meat Import Law than by NAFTA.

U.S. *corn* exports to Mexico are somewhat higher due to NAFTA than they would have been otherwise, but strong growth in corn exports in recent years is due primarily to other developments within Mexico. These include not only a series of severe droughts, but also the implementation of domestic policy reforms—for example, the government reduced its very high price supports for corn to be more in line with U.S. and world prices, and ended its official prohibition against feeding corn to livestock.

The surge in *wheat* imports from Canada in 1994 was due primarily to weather-related events, although some increase is attributable to tariff reductions that began under CFTA and continued under NAFTA. Disease and wet weather damaged Canada's wheat crop, resulting in an unusually large supply of lower grade wheat suitable for feed, while flooding in the Midwest dramatically reduced the U.S. corn crop. U.S. wheat exports to Canada have been insignificant despite CFTA/NAFTA tariff reductions. In 1998, the U.S. and Canada negotiated an agreement on wheat trade regulations that should improve U.S. access to Canadian markets.

NAFTA's impact on U.S.-Canada trade in *oilseeds* and *oilseed products* illustrates the expansion of "two-way" trade oppor-

tunities, fostering additional trade in processed products such as vegetable oil and soybean meal. In contrast, the change in U.S.-Mexico oilseed trade has been limited mainly to a rise in U.S. exports of both primary and processed goods—particularly soybeans, and vegetable oil from soybeans and sunflowers.

NAFTA has significantly influenced U.S. *cotton* trade. Through reduction of U.S. and Mexican tariffs and rules of origin that favor textiles and apparel manufactured by NAFTA members from yarn and fiber produced by NAFTA members, the agreement has stimulated exports to Canada and Mexico. These reforms coincided with other developments that diminished the competitiveness of Asian textile and apparel producers during much of the 1990's—including difficulties in the Chinese cotton sector and rising wages in South Korea (prior to its economic crisis).

The U.S. and Mexico are also moving toward liberalized trade in *sugar*. NAFTA specifies a formula, based on the difference between Mexico's projected production and projected domestic consumption, that gradually expands the duty-free quota for this trade (see page 17). U.S. imports of Mexican sugar have jumped from \$64,000 in 1993 to \$23 million in 1998. The annual average volume of sugar imports from Mexico during 1994-98 was 328 percent greater than its standard, pre-NAFTA allocation of the U.S. sugar quota.

U.S. exports of *vegetables* and *fruits and juices* to Canada and Mexico have grown during the NAFTA era, rising from an annual average of \$1.9 billion during 1989-93 to \$2.7 billion during 1994-98. Imports have also climbed, from an average \$1.6 billion in 1989-93 to \$2.7 billion in 1994-98. Although North American trade in fruits and vegetables has generally flourished since NAFTA, it is primarily because of other factors, such as changing consumer preferences, strong consumer demand in the U.S., adverse weather conditions, and peso devaluation and subsequent recession in Mexico during late 1994 and 1995.

NAFTA was expected to raise U.S. *tomato* imports from Mexico by about 8 to 15 percent above what would have occurred

World Agriculture & Trade

NAFTA Impacts Are Reflected in Growth of North American Trade

	Annual average trade				Estimated trade effect due solely to NAFTA		
	Value		Volume				
	1989-93	1994-98	1989-93	1994-98			
	----US\$ million----		-----1,000-----		Unit	Direction	Strength
Selected U.S. exports to Canada:							
Beef and veal	304	329	73	95	Met. ton	Increase	High
Processed tomatoes [†]	58	107	64	127	Met. ton	Increase	High
Vegetable oils	71	166	83	201	Met. ton	Increase	Moderate
Cotton	61	94	42	62	Met. ton	Increase	Moderate
Fresh tomatoes	94	103	122	128	Met. ton	Increase	Moderate
Selected U.S. exports to Mexico:							
Cattle and calves	95	77	145	131	No.	Increase*	High
Dairy products	162	155	NA	NA		Increase*	High
Apples	23	50	45	93	Met. ton	Increase	High
Pears	14	21	29	42	Met. ton	Increase	High
Sorghum	377	308	3,416	2,567	Met. ton	Increase*	Moderate
Vegetable oils	73	218	124	338	Met. ton	Increase	Moderate
Beef and veal	135	236	46	82	Met. ton	Increase	Moderate
Pork	59	69	27	35	Met. ton	Increase	Moderate
Cotton (including linters)	85	326	67	214	Met. ton	Increase	Moderate
Selected U.S. imports from Canada:							
Beef and veal	246	509	107	234	Met. ton	Increase	High
Fresh and processed potatoes	98	221	360	618	Met. ton	Increase	Moderate
Fresh tomatoes	5	45	4	28	Met. ton	Increase	Moderate
Cattle and calves	668	908	968	1,268	No.	Decrease**	High
Selected U.S. imports from Mexico:							
Peanuts (shelled and in-shell)	--	3	--	4	Met. ton	Increase	High
Sugar	8	12	30	31	Met. ton	Increase	High
Fresh tomatoes	256	477	335	610	Met. ton	Increase	Moderate
Processed tomatoes [†]	16	12	21	14	Met. ton	Increase*	Moderate
Melons	80	108	287	359	Met. ton	Increase	Moderate

NA = Not applicable. -- = Negligible.

*Without NAFTA, trade would have decreased more. **Without NAFTA, trade would have increased more.

[†]Trade data for processed tomatoes exclude tomato juice.

Estimates reflect changes in trade due solely to NAFTA and are based on assessments by ERS analysts. Increase-high = Trade is more than 15 percent higher during 1994-98 than it would have been without NAFTA. Increase-moderate = Trade is 6 to 15 percent higher than without NAFTA. Decrease-high = Trade is more than 15 percent lower than without NAFTA.

Economic Research Service, USDA

without the agreement. But the positive influence of tariff reductions on U.S.-Mexico tomato trade has been tempered by a price-floor agreement between principal Mexican and U.S. growers. U.S. potato imports from Canada are estimated to be about 5 to 10 percent larger under CFTA/NAFTA tariff reductions than they would have been otherwise.

NAFTA has had a positive influence on many aspects of U.S. fruit trade. For example, *grape* exports have benefited from the end of Mexican import licensing, and exports of fresh *pears* to Mexico have expanded, due in part to tariff reductions that are proportionately larger in relation to price than reductions for other fruits such as *apples*. ERS estimates that U.S.

imports of Mexican *cantaloupe* are some 17 to 25 percent larger than they would be without the tariff cuts of NAFTA and the Uruguay Round agreement.

Occasionally, NAFTA has worked to offset decreases in trade. NAFTA tariff reductions, for instance, tempered the decline of U.S. *sorghum* exports to Mexico during 1995-97, when many Mexican livestock producers switched from sorghum to corn feeding of cattle. This dampening effect was particularly important in 1995, when the Mexican economy experienced severe recession and U.S. agricultural exports to Mexico dropped more than \$1 billion between 1994 and 1995. Lower trade barriers made U.S. and Canadian exports more

affordable to Mexican consumers, while offering Mexican producers a greater opportunity to market their output outside Mexico.

Effects Extend Beyond Trade

NAFTA's influence extends well beyond changes in trade flows. In conjunction with NAFTA, efforts to resolve conflicts related to sanitary and phytosanitary (SPS) regulations have been given renewed emphasis through the trilateral NAFTA Committee on SPS Measures. In addition, producers in the three NAFTA countries have worked to fine tune quality standards and to participate actively in the formulation of new standards and inspection procedures. One major innovation is

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inspection and approval of produce at a regional level, or sometimes even at the individual producer level. For example, the U.S. now permits avocado imports from approved growers in the Mexican state of Michoacán, and recognizes the state of Sonora as being free of hog cholera, paving the way for hog imports.

Similarly, Mexico has lifted its ban on citrus imports from Arizona, as well as from citrus areas of Texas that are not regulated for fruit fly. When such initiatives are successful, they open the door to new international markets. However, when SPS efforts stumble, trade tends to suffer. This was the case with the inspection process originally established for U.S. apple exports to Mexico, which was so costly to shippers that it was substantially revised.

NAFTA has likely had a positive, though small, effect on U.S. agricultural employment. Employment in crop and livestock production increased slightly (1.3 percent annually, on average) between 1989-93 and 1994-98. At the same time, however, employment opportunities are narrowing in some agriculture-related industries, such as textiles and apparel, in which the U.S. is less competitive. While these structural changes generally predate NAFTA, the accord appears to have reinforced long-term trends.

The NAFTA Transitional Adjustment Assistance (NAFTA-TAA) Program was established to provide job training, career counseling, and financial allowances to workers who lose jobs or whose hours or wages are reduced as a result of changing trade with Canada and Mexico. Petitions for assistance may be filed by labor unions, company officials, community-based organizations, or groups of three or

more workers. Of the 1,794 petitions approved between 1994 and 1998, only 19 were in agriculture.

Despite concern that capital investment in the U. S. farm sector might decline once the agreement was adopted, nominal capital expenditures in U.S. agriculture grew from \$13.9 billion to \$16.2 billion between 1993 and 1997. In real terms (constant dollars), capital expenditures increased in 1996 and 1997, reversing declines in 1994 and 1995.

NAFTA has also facilitated the flow of inter-country investments in North American agricultural production and food processing industries. U.S. investment in Mexican agricultural production totaled \$45 million during 1994-97, and U.S. investment in Mexican food processing has grown from \$2.3 billion in 1993 to \$5 billion in 1997. Similarly, U.S. investment in the Canadian food processing industry has more than doubled since 1990. Preliminary evidence indicates that increased U.S. direct investment in the Mexican food sector complements agricultural trade.

Integration of the North American market under NAFTA has spurred changes outside production agriculture. For example, Mexico's food distribution system is in the midst of a major structural change, with supermarket chains rapidly gaining market share (AO August 1998). Moreover, as the distribution systems of North America become more closely integrated, additional strategic alliances are likely to be formed between retail food chains in Canada, Mexico, and the U.S., accompanied by harmonization of standards, contracts, and processes of dispute resolution, and facilitating greater complementary trade.

Improvement in infrastructure, another important facilitator of trade, is an additional outcome of the agreement. The Mexican government appears to be committed to such improvement, already proceeding with significant investments in road construction, embarking on the final phase of railway privatization, and making substantial advances in the privatization of sea and air transportation. These activities should provide significant dividends to agricultural trade during the next decade.

Although only one-third of the NAFTA transition period has elapsed, many of the agreement's provisions are already in place. The changes that have occurred during the first 5 years of NAFTA offer a hint of the accord's long-term impact. Gains that are already apparent include expansion of agricultural trade that better utilizes the relative strengths of the three NAFTA economies; reorientation of trade in which regional, cross-border exchanges may replace less economical within-country exchanges; and continued advances in various institutions that facilitate trade.

Through elimination of numerous trade barriers, Canada, Mexico, and the U.S. are enabling economic agents throughout North America to respond more efficiently to changing conditions and to benefit more fully from their relative strengths. Ultimately, these developments should lead to a more integrated and prosperous North American economy. **AO**

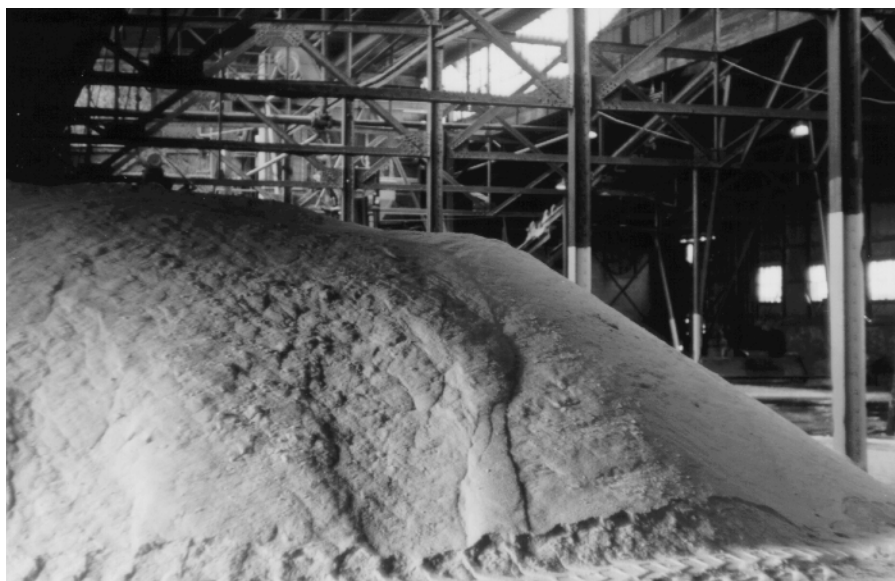
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Forthcoming reports by USDA's Economic Research Service contain further information on the impact of NAFTA. Text of the first of these reports is on the Internet at

<http://usda.mannlib.cornell.edu/reports/erssor/international/wrs-bb/1999/>.

Watch for these reports in text and .pdf format on the ERS website at www.econ.ag.gov.

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Stephen Haley

U.S.-Mexico Sweetener Trade Mired in Dispute

Disagreement persists among the U.S. and Mexican sugar industries and the U.S. high-fructose corn syrup (HFCS) industry over interpretation of the North American Free Trade Agreement (NAFTA). Trade in sweeteners between Mexico and the U.S. is addressed directly by provisions of NAFTA, as well as other trade agreements, but as these industries have grown, pressure on trade agreements has increased, leaving the future of U.S.-Mexico sweetener trade uncertain.

The Changing Mexican Sugar & U.S. HFCS Industries

Behind the Mexican sugar industry's interest in this dispute is the remarkable rebound in Mexican sugar production since implementation of NAFTA. As recently as the November-October marketing year 1994, Mexico produced only 3.8 million MTRV (metric tons, raw value) of sugar. By marketing-year 1998, Mexico produced a record of nearly 5.5 million. Although USDA forecasts a decrease to 5.04 million for marketing-year 1999, the year's production would still be the second highest on record. USDA projections for marketing-year 2000 put production at 5.15 million MTRV.

A combination of increased sugarcane area harvested and recently instituted technological and producer incentive measures is behind growth in Mexican sugar production. Harvested area had reached a low in 1992 of under 482,000 hectares, about 18 percent lower than 1987. By 1997, producers increased harvested hectares to the 1987 level, but sugar production was 22 percent higher than the 1987 level. New technologies have increased sugar recovery rates—the percent of cane recovered as sugar—from 9.08 percent in 1992 to 10.77 percent in 1997, and the effective milling season expanded from 130 to 175 days. Competition arising from increased efficiencies in the sector has apparently led to severe financial problems for some sugar companies, but many have been able to adapt their production processes to more modern methods.

The Mexican government, by providing several different forms of support, enables the domestic sugar industry to maintain both high domestic prices and high production levels. A government-controlled development bank for the sugar industry, the Financiera Nacional Azucarera SA (FINASA), is estimated to hold over US\$1.3 billion of the Mexican sugar

industry's debt. FINASA has provided extensive restructuring assistance to troubled sugar companies with high debt loads.

Since 1997 the government has coordinated the amount of sugar that can be marketed domestically, which effectively establishes the quantity of sugar that must be exported or held in stocks. The export total is divided among sugar companies on a pro rata basis. A penalty system discourages companies from selling their assigned exports on the domestic market. In addition, the government has subsidized domestic stockholding, helping to keep 600,000 MTRV out of the domestic market.

The government also provides support to the industry by controlling sugar imports. It currently maintains tariff rates of 39.586 cents per kg, high enough to prevent imports of world-price sugar that would undercut domestic prices. Under NAFTA, however, Mexico is required by the sixth year, 2000, to adapt a tariff-rate quota (TRQ) system with rates applied to third countries that match the tariff levels maintained by the U.S.

Despite government assistance, Mexican sugar companies face an uncertain future. In addition to the high debt loads of many companies, productivity gains have not been shared among all 61 sugar mills, and marketing expertise is also unevenly distributed. Although domestic sale prices are high at about 20 cents per pound in June and July, exports are currently being sold at much lower world prices of 5-7 cents per pound.

NAFTA has allowed for some duty-free access to higher priced U.S. markets in recent years. Under NAFTA, Mexico's projected net surplus production of sugar for fiscal year 1997 gave it a duty-free quota of 25,000 MTRV to be shipped as either raw or refined sugar. Since then, Mexico has qualified as a net surplus producer in both FY1998 and FY1999 and thus has qualified each year for NAFTA duty-free exports up to 25,000 MTRV.

The U.S. HFCS industry's interest in the sweetener dispute stems from expectations that the NAFTA provisions regarding HFCS might provide another market

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for U.S.-produced HFCS. The U.S. industry has been plagued with excess capacity—the larger HFCS companies have added significant production capacity, and several new plants have opened. Some experts have estimated that HFCS annual production capacity may have grown by 3.5 million tons (dry basis) between 1994 and 1997.

Although domestic HFCS sales have increased by more than 13 percent during this period, the increases have not been sufficient to absorb increases in capacity. Prices have declined as supply outstrips demand. The ratio of the HFCS-42 spot price to the beet-sugar wholesale price began to fall below 0.60 in the fourth quarter of 1995, averaged 0.40 for both 1997 and 1998, then rose to 0.42 in the first quarter of 1999. HFCS-42 (42 percent fructose) is used mostly in confections and other processed foods and in beverages. The Bureau of Labor Statistics producer price index for the HFCS industry (June 1985=100) fell from 117.6 in the last 3 months of 1995 to an average of 77.6 in 1998, a 34-percent reduction. As a result, the sector faced tough adjustments, with some smaller operations leaving the business and others selling to or attracting investors from among larger companies.

Increased HFCS-55 exports to Mexico raised expectations during this period. HFCS-55 (55 percent fructose) is used primarily in soft drinks. Estimates place sugar use by the Mexican soft drink industry in the neighborhood of 1.4 million tons in the late 1990's, offering a close natural outlet for excess U.S. HFCS productive capacity. The U.S. Customs Service reports that HFCS-55 syrup and solids exports to Mexico rose from nearly 52,000 metric tons in 1995 to over 179,000 mt in 1997 and over 207,000 metric tons in 1998. The Mexican government reports substantially higher levels of U.S. exports—338,500 metric tons for 1997 and 285,500 for 1998.

NAFTA Sugar Provisions Remain in Dispute . . .

U.S. sugar producers closely monitor the potential impacts of the sweetener trade disagreements under NAFTA. The original NAFTA document, in effect since January 1994, contained provisions related to trade in sugar that were opposed by many U.S. sugar producers. They feared NAFTA provisions allowing increased HFCS exports to Mexico would lead to the substitution of HFCS for sugar in Mexico, which in turn would lead to a Mexican sugar surplus that could be

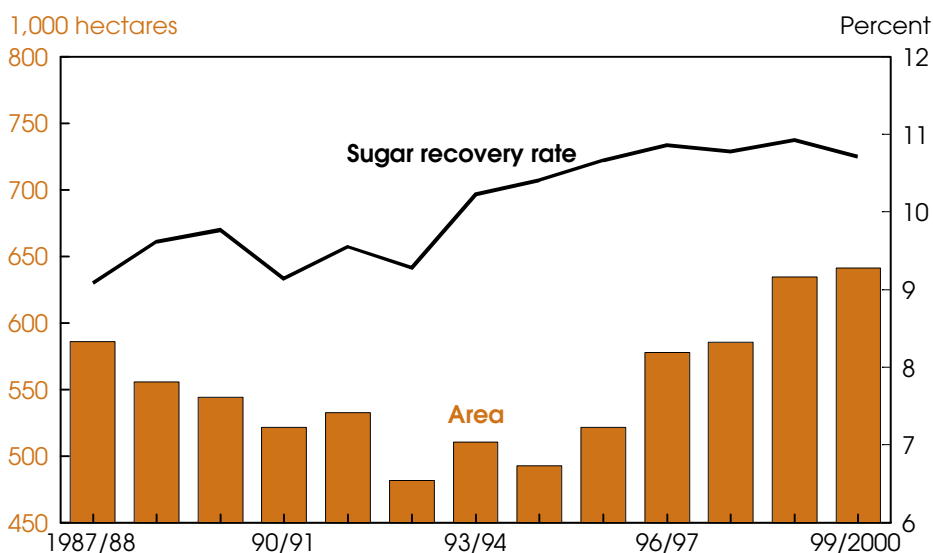
exported to the U.S. In order to secure support for NAFTA in Congress, the U.S. and Mexican governments exchanged side-letters that altered the sugar provisions of the original NAFTA text. Since implementation of NAFTA, however, there has been a trade dispute between Mexico and the U.S. centering on interpretation of the content and validity of the side-letter agreement.

The original provisions of NAFTA subjected Mexican sugar exports to the U.S. to several conditions. During the 15-year NAFTA transition period, Mexican exports were to be limited to no more than Mexico's projected net production surplus of sugar—sugar production less domestic sugar consumption—but at minimum, Mexico was allowed to ship 7,258 metric tons of raw sugar duty-free. For the first 6 years of NAFTA, duty-free access was limited to no more than 25,000 MTRV. In year 7, the maximum duty-free access quantity was to become 150,000 MTRV, and in each subsequent year, the maximum duty-free quantity was to increase by 10 percent. These maximums could be exceeded, however, if Mexico had achieved net production surplus status for 2 consecutive marketing years.

But the side-letter agreement changed key NAFTA sugar provisions. Under the side agreement, projected Mexican sugar production will have to exceed Mexican consumption of both sugar and HFCS for Mexico to be considered a net surplus producer, making it less likely that Mexican sugar would qualify for duty-free access. In addition, the side letter provided for an annual limit on duty-free access of 250,000 metric tons from 2001 to 2007, eliminating the possibility of unlimited duty-free access should Mexico become a net surplus producer for 2 consecutive years.

The Mexican government has disputed the validity of the side letter. Moreover, Mexico maintains that its version of the side letter does not count HFCS consumption in the formula that defines net surplus producer status, nor limit exports to 250,000 metric tons per annum during 2001-07. Based on its interpretation of the NAFTA agreement, Mexico is entitled to export total net surplus production to the

Mexico's Sugarcane Area and Sugar Recovery Rate Are Up



Sugar recovery rate = Ratio of raw sugar tonnage to sugarcane tonnage.

Harvested area. 1 hectare = 2.471 acres. Marketing year beginning in November. 2000 forecast.

Source: Fideicomiso Para El Mercado de Azúcar FORMA.

Economic Research Service, USDA

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U.S. on a duty-free basis beginning in October 2000.

On March 12, 1998, the Mexican Secretariat of Commerce and Industrial Development (SECOFI) asked for consultations with the U.S. on the validity of the disputed side letter under NAFTA. No agreement was forthcoming, so on November 15, 1998, Mexico formally requested a NAFTA Commission to resolve the issue, although no Commission meeting has yet been held, by agreement with Mexico. The Commission has several options for resolution, none of which are binding unless both parties agree. If the Commission cannot resolve the dispute within 30 days after it has convened (or another time period agreed to by both parties), either party may request an arbitration panel to adjudicate the issue. Some observers expect a negotiated settlement will be reached, but it is difficult to project the outcome of the dispute.

... And HFCS Provisions Fare No Better

A series of investigations and counter-investigations has also developed from the surge in Mexican imports of U.S.-produced HFCS. NAFTA provides for duty reductions on Mexican HFCS imports from the U.S. The base tariff was 15 percent and is scheduled to reach zero by 2004, with 1.5-percent yearly reductions over a 10-year adjustment period. In December 1996, however, the Mexican government announced increases in import duties on HFCS-42, HFCS-55, and crystalline fructose to 12.5 percent, above the then-current scheduled rate of 10.5 percent, to compensate for damage to Mexico when the U.S. raised tariffs on Mexican broomcorn brooms. In December 1998, the U.S. dropped the tariff increase, and as a result, Mexico dropped its retaliatory duties on U.S. HFCS imports. The 12.5-percent *ad-valorem* duty was reduced to the NAFTA-specified rate—6 percent by the end of 1998.

In January 1997, at about the same time that HFCS import duties were being increased in the broomcorn broom dispute, Mexico's National Chamber of Sugar and Alcohol Industries, the association of Mexico's sugar producers, charged

Tariffs on U.S. Sugar Imports from Mexico Are Being Phased Out

	High-tier tariff*			
	Most countries		Mexico	
	Raw cane	Refined	Raw cane	Refined
	¢ per lb.			
Base	18.08	19.08	16.00	16.95
1995	17.62	18.60	15.20	16.11
1996	17.17	18.12	14.80	15.69
1997	16.72	17.65	14.40	15.26
1998	16.27	17.17	14.00	14.84
1999	15.82	16.69	13.60	14.42
2000	15.36	16.21	12.09	12.81
2001	15.36	16.21	10.58	11.21
2002	15.36	16.21	9.07	9.61
2003	15.36	16.21	7.56	8.01
2004	15.36	16.21	6.04	6.41
2005	15.36	16.21	4.53	4.81
2006	15.36	16.21	3.02	3.20
2007	15.36	16.21	1.51	1.60
2008	15.36	16.21	0.00	0.00

*Mexican sugar imports exceeding a predetermined volume are subject to a high-tier tariff. The low-tier tariff rate is zero.

Economic Research Service, USDA

that U.S. corn wet millers were exporting HFCS to Mexico at less than fair value. Mexico's SECOFI initiated an anti-dumping investigation in February, then imposed temporary tariffs on two grades of U.S. HFCS in June. The temporary tariffs applied to shipments from Cargill Inc., A. E. Staley Manufacturing Company, CPC International Inc., and Archer Daniels Midland Company. After further investigation, SECOFI made the duties permanent in January 1998, between \$63.75 and \$100.60 per ton for HFCS-42 and between \$55.37 and \$175.50 per ton for HFCS-55 (AO March 1998).

Also during 1998, SECOFI investigated a charge made by the Mexican sugar industry that HFCS-90 was being imported in order to avoid anti-dumping duties that had been imposed on HFCS-55. After a 7-month investigation, SECOFI imposed compensatory duties, effective September 8, 1998. Imports from A.E. Staley Manufacturing Company are charged \$90.26 per metric ton, and imports from Archer Daniels Midland Company are charged \$55.37 per metric ton.

In February 1998, the U.S. Corn Refiners' Association (CRA) asked for review of proceedings of Mexico's anti-dumping actions under Chapter 19 of NAFTA. A panel is being formed.

Parallel to these actions taken under NAFTA, the U.S. Trade Representative (USTR) announced its intention on May 8, 1998 to invoke a World Trade Organization (WTO) dispute proceeding to challenge Mexico's actions. The USTR made two formal requests for formation of a WTO panel (the first was blocked by Mexico). A preliminary ruling is expected by January 2000.

In May 1998, the USTR also initiated an investigation under section 302 of the U.S. Trade Act of 1974, as amended, in response to a petition by the CRA alleging that the government of Mexico had denied fair and equitable market opportunities to U.S. HFCS exporters. The CRA argued that the Mexican government had encouraged and supported an agreement between representatives of the Mexican sugar industry and the Mexican soft drink bottling industry to limit purchases of HFCS by the soft drink bottling industry to 350,000 tons per year in exchange for a 20-percent discount on sugar for soft drinks.

On May 15, 1999, the USTR concluded its formal investigation phase without determining that the Mexican government's alleged practices were actionable. However, the USTR noted that its investigation had raised enough questions about

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the actions of the Mexican government to warrant further examination and continued consultation with the government on issues related to trade in HFCS.

Falling World Sugar Prices May Increase U.S. High-Tier Imports

While ongoing disputes make liberalized sweetener trade between Mexico and the U.S. uncertain in the near future, recent effects of the falling world sugar price on the profitability of exporting Mexican sugar into the U.S. under high-tier tariffs have the potential to substantially increase the amount of Mexican sugar entering the U.S.

NAFTA established a declining tariff schedule for high-tier raw and refined sugar imported into the U.S. from Mexico. During the NAFTA adjustment period through 2008, the maximum world price at which it becomes profitable to ship Mexican sugar into the U.S. market

increases annually. When the declining tariff schedule for raw sugar is compared to the world price level at which Mexican sugar is competitive with U.S. sugar (assuming marketing costs of 1.1 cents per pound for bringing Mexican sugar into the U.S., and a U.S. sugar price of 22 cents per pound), a world price below 7.3 cents per pound in 1999 would introduce the probability of high-tier imports from Mexico.

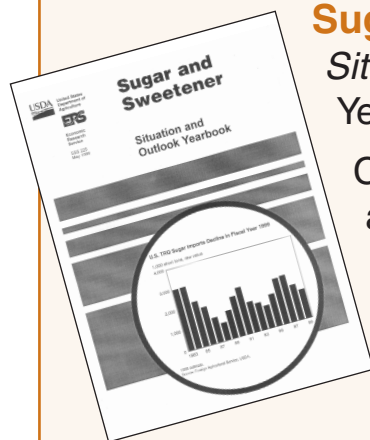
The world price (No. 14 New York contract) averaged 7.05 cents per pound in February 1999 and dropped to the 5.5-cents-per-pound range in April and May. Although U.S. raw sugar prices have been higher than 22 cents per pound through the first half of the year, they dropped to about 21.50 cents per pound recently.

Through April, USDA had not been forecasting significant high-tier Mexican sugar imports; only 184 STRV (short

tons, raw value) had entered up to that point in the year. (A short ton, 2,000 pounds, is 0.91 metric ton.) During the first week of May, however, 15,432 STRV of Mexican high-tier raw sugar entered the U.S. At that point, the data became available to USDA indicating additional tonnage was awaiting entry that would bring the total to 120,000 STRV. USDA's projection from that data depended on whether the sugar would enter before the end of the fiscal year or be held in bond until the new calendar year, when the NAFTA high-tier tariff is scheduled to decrease from 13.6 to 12.09 cents per pound. The August 1999 projection for high-tier Mexican sugar imports stands at 70,000 STRV and is projected at 125,000 STRV for fiscal year 2000. **AO**

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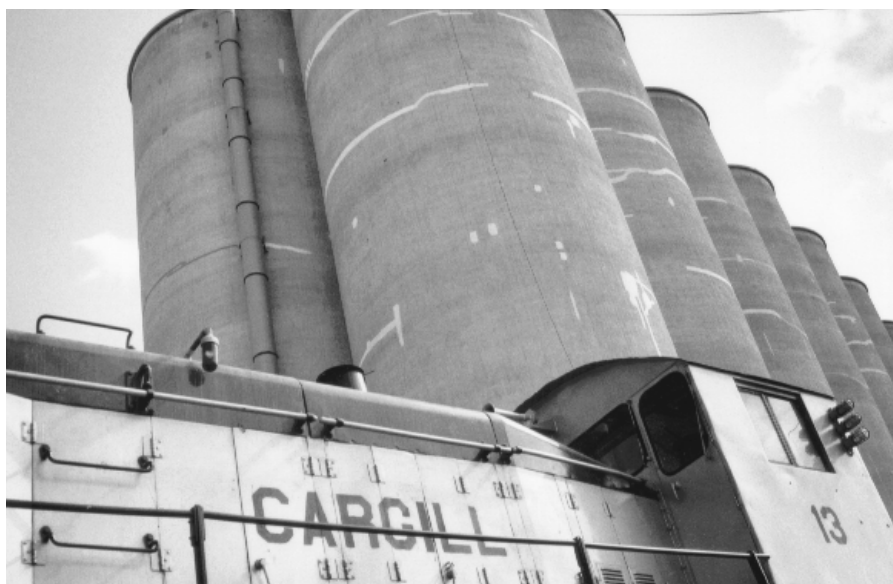
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Food & Marketing



Courtesy of Cargill Incorporated

Cargill's Acquisition of Continental Grain: Anatomy of a Merger

An agreement in October 1998 to combine two of the nation's largest grain trading businesses appeared to many observers to illustrate a disturbing trend: increasing concentration in agribusiness leading to fewer marketing choices and lower prices for farmers. U.S. antitrust laws prohibit mergers that are likely to substantially lessen competition in an industry, and in the case of the proposed acquisition of Continental Grain's commodity marketing operations by Cargill, Inc., the Antitrust Division of the U.S. Department of Justice decided a review was warranted. Such a review can result in halting or allowing a merger, or in attaching certain conditions before merger is allowed. An overview of the economic issues in the case may be helpful in understanding concerns about the merger and the outcome of the Department's review.

The Grain Marketing Business

Grain traders such as Cargill and Continental operate extensive, independent grain distribution networks that move grain from farms to domestic processors and foreign markets. The first stage of the system is usually a *country elevator*,

which offloads truck deliveries of grain from farmers, then samples, grades, and stores the grain. Country elevators may also provide drying and conditioning services and may offer a variety of transport and payment terms to their suppliers. Cargill operates an extensive network of country elevators, nearly 140; Continental owns only 16.

Country elevators, especially those in wheat regions, increasingly ship grain directly to ports, often using large shuttle trains. But they also ship by truck or rail to processors, feedlots, and to larger river and rail-terminal elevators.

River elevators usually ship grain by barge to port elevators, although their grain may also move to processors. *Rail-terminal elevators* ship to processors and port elevators in large shipments of 3 to 100 rail cars. River- and rail-terminal elevators receive grain both from country elevators and directly from farmers, and may provide drying and conditioning services as well as a variety of transport and payment terms. Both Cargill and Continental operate extensive networks of these elevators—Cargill owns 30 river

elevators and 63 rail terminals, while Continental owns 27 river elevators and 14 rail terminals.

All elevators may ship to domestic buyers—typically feedlots or processors. Grain bound for export usually moves through a network of *port elevators*, where it is transferred to oceangoing vessels. Port elevators sometimes buy directly from local producers, but more often they purchase grain from river, rail-terminal, and country elevators. Port elevators usually combine grains of different grades, protein levels, and other characteristics to meet buyer specifications, and they may also clean, dry, or condition the grain to meet those specifications. Cargill operates 16 port elevators, while Continental operates 6.

Cargill is the largest and Continental the third-largest U.S. grain exporter; together they account for 40 percent of all U.S. grain exports. The two firms operate large overseas networks of elevators and trading offices, through which the companies attempt to arbitrage differences in grain prices, buying grain at times and locations where prices are low, and selling at times and locations where prices, net of transport and storage costs, are high.

Key Considerations In the Merger Investigation

There are two parties in this merger transaction, and thus two questions: why would Continental sell and why would Cargill buy? In general, Continental's grain trading business must appear more profitable to Cargill, if run by Cargill, than to Continental. Continental's expanding operations in livestock feeding and in financial services were requiring increasing amounts of managerial attention and investment funds within Continental, making it more difficult to focus attention effectively on grain trading.

Cargill, in contrast, hopes to reduce Continental's costs by operating the combined businesses more efficiently. To reach those efficiencies, Cargill proposes closing some duplicative facilities and reducing Continental's headquarters staff. In principle, operating costs could also be reduced. Some elevators could be closed

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Four Firms Accounted for a Large Share of U.S. Grain Exports in 1998

	Corn	Wheat	Soybeans
	<i>Percent of exports</i>		
All port regions	70	47	62
New Orleans	75	72	71
Texas Gulf	80	79	100
Atlantic Coast	100	100	100
Great Lakes	86	81	67
Pacific Northwest	100	86	100

Estimated shares based on USDA export inspections data.

Source: Office of the Chief Economist, USDA, statement before the U.S. Senate Committee on Agriculture, Nutrition, and Forestry, January 1999.

Economic Research Service, USDA

on a seasonal basis, allowing open facilities to run closer to full capacity. With multiple facilities at ports, an exporter could assign different facilities to specific grain cleaning and loading tasks, thereby perhaps operating more efficiently. Finally, with larger volumes flowing to ports, the exporter might be able to realize greater scale economies in transporting grain to ports.

But another advantage of the merger is at the heart of the antitrust investigation. Cargill's acquisition of Continental grain operations has the potential to make the combined businesses more profitable by removing a competitor in the grain trade, lowering costs through reduced grain acquisition prices. If the merger does lead to reduced competition, it would also make Continental worth more to Cargill than to a buyer for whom Continental was not a competitor (e.g., in a management buyout or acquisition by a firm not already in grain trading).

The government must decide whether the merger is likely to reduce competition, whether the claimed efficiencies are likely to lead to cost savings that offset the effects of increased market power, and whether the efficiencies can be realized only by the merger. Operating cost efficiencies frequently can be achieved through other contractual means. For example, if there are scale economies in transportation, a firm could reach agreements with barge firms and other independent grain traders to combine port-bound grain movements into shipments large enough to realize transportation scale economies.

Two agencies, the Federal Trade Commission and the Antitrust Division of the Department of Justice, share responsibility for antitrust enforcement. In the Cargill/Continental case, the Antitrust Division took on the investigation because of its previous experience reviewing mergers in transportation and distribution industries.

The Department's investigation focused on three issues. First, would the merger lead to an increase in grain prices paid by Cargill's buyers, such as feedlots, food processors, and international clients? Second, would the merger lead to reduction in grain prices paid to sellers, such as independent country elevators, and ultimately farmers? Third, because the merger would lead to a reduction of independently owned elevators on the Illinois River, which provide authorized delivery capacity for the settlement of Chicago Board of Trade futures contracts, would the merger make it more likely that futures market prices could be manipulated by exporters?

The first issue was disposed of quickly. Because grain is traded in worldwide markets with many players, it is unlikely that Cargill's acquisition of Continental would allow it to increase world grain prices. Should prices be raised by one supplier, the buyers, foreign and domestic, have many alternative suppliers of grain. Consequently, the investigation emphasized the latter two issues, the increased possibilities for futures market manipulation and, most important, the impact of concentration in the market for purchasing grain from farmers.

Could the Merger Diminish Competition in Grain Buying?

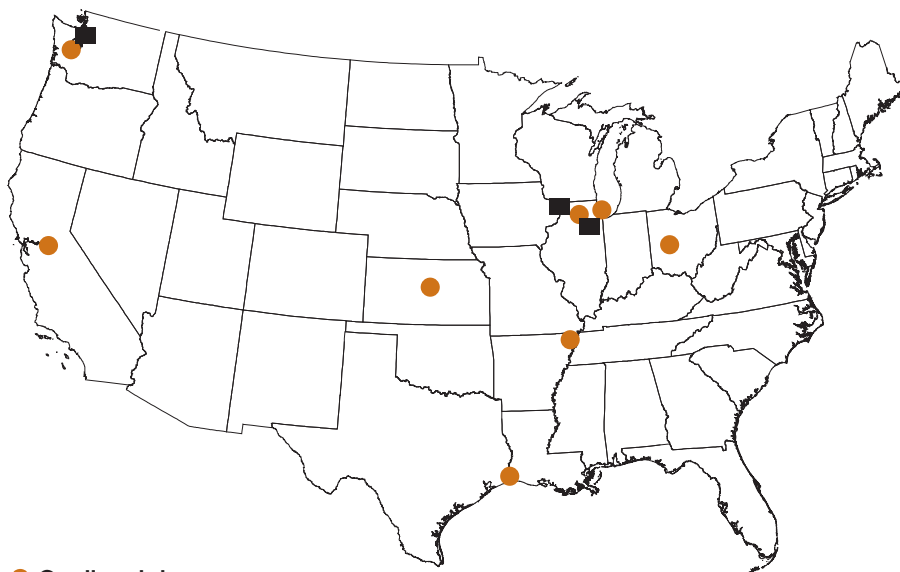
The merger would noticeably increase concentration in port elevator facilities for corn and soybean exports. To make this determination, the Department of Justice relied on USDA export inspections data. Because the data were not designed for use in the analysis of concentration, they are not ideal. For example, they may miss some intra-company shipments. They also may not always capture grain ownership accurately, if an exporter has a marketing agreement to handle grain on behalf of another exporter. But while approximate, the data nevertheless were accurate enough to identify merger-induced changes in the number of major exporters at particular port regions and to measure the broad magnitude of changes in concentration.

Concentration in grain exports is already high; in 1998, four firms accounted for 70 percent of all U.S. corn exports and 62 percent of all soybean exports. Moreover concentration numbers are substantially higher in specific port regions—the four largest firms handled over 80 percent of export grain flows at important Texas Gulf and Pacific Northwest ports.

USDA inspection statistics also show that Continental and Cargill were the second- and third-largest exporters of corn, behind Archer Daniels Midland; with the merger, two firms would account for nearly two-thirds of all U.S. corn exports, and the concentration level of the top four would rise to 90 percent. The two firms were also the second- and fourth-largest soybean exporters, and with the merger, concentration among the top four firms would rise to almost 80 percent of all U.S. soybean exports.

These effects would be stronger in some locations and markets than in others. In particular, the merger would reduce the number of major competing exporters in Pacific Northwest and Texas Gulf ports to two, and in the small Central California export market to one. The merger's effects on concentration would be much smaller in export wheat markets, which have considerably more competing elevator operators than do corn or soybean markets. The effects would also be smaller for corn and

Cargill-Continental Merger Agreement Requires Both Parties to Sell Several Grain Facilities



Continental

Stockton, CA; Beaumont, TX; Chicago, IL; Salina, KS; Lockport, IL; Caruthersville, MO; Troy, OH; Tacoma, WA.

Cargill

East Dubuque, IL; Morris, IL; Seattle, WA.

Under the agreement, Cargill has the choice of selling its Seattle port elevator or declining to purchase Continental's Tacoma port elevator.

Economic Research Service, USDA

soybean shipments through Louisiana Gulf locations; while Cargill and Continental were the second- and third-largest exporters there, four smaller firms also had a significant presence.

The important question for the Department of Justice on the issue of concentration was whether increases in port concentration mattered—that is, whether higher concentration would provide grain traders with the opportunity and the incentive to reduce grain prices paid to country elevators and ultimately to farmers. In order to decide whether changes in port concentration would affect prices, the Department would have to address three related issues.

First, suppose that the combined firm could reduce prices for export grain. Did producers have viable alternatives? In particular, could farmers respond to falling export prices by simply redirecting grain

to domestic buyers without affecting domestic prices?

Second, if the combined firm could reduce prices for export grain, and if farmers had no viable alternatives, then exporters would enjoy higher profits. But in many markets, higher profits will attract entry by new competitors, who would force prices back up as they competed to get grain supplies. In short, for concentrated exporters to be able to maintain lower prices on grain exports, they need some barriers to the entry of new export competitors. Did such barriers exist in the grain business?

Finally, suppose there were no possibility of new entry and no viable alternatives for farmers. Would small changes in the number of competitors be likely to affect competition and prices where there are few competitors to start with? In other words, should we expect prices to fall when the

number of buyers falls from four to three? From three to two? From two to one?

On the issue of viable alternatives for farmers, there appear at first glance to be many. Domestic corn and soybean consumption exceeds exports, so very large volumes already flow to feedlots, commercial feed mills, processors and the like. But the key question is whether export flows could be redirected to *expanded domestic use* without driving grain prices down. The actual domestic demand and supply relationships are such that redirection would likely lead to noticeable reductions in domestic grain prices. Moreover, the major grain traders are also major domestic grain processors and livestock feeders, who consequently stand to gain from any domestic price reduction induced by concentration in export markets.

Other alternatives appear equally unappealing. In principle, producers of export-bound grain could, when faced with a price reduction, *shift to other crops*. But existing cropping patterns suggest that this is not really a viable alternative in the face of modest cuts in grain prices. That is, Nebraska corn producers couldn't simply switch to cotton or lettuce production in response to small reductions in corn prices—climate and soil conditions would make it unfeasible. Producers could also in principle *reroute export flows* through other, less concentrated, ports, but the additional transport costs incurred in rerouting limit the effectiveness of that strategy. In short, the Department's analysis suggests that producers do not have sufficient alternatives to escape the effects of small cuts in grain prices brought about by increased port concentration.

Regarding entry barriers, what would prevent new rivals from entering and competing if traders could substantially increase profits by exploiting concentration in port facilities? Entry into the operation of country elevators is easy, and plenty of firms enter and exit that distribution stage each year. Good sites near rail lines and highways are widely available, and the facilities are neither expensive nor unusually difficult to operate.

But port elevators are a different story. These are very large and expensive struc-

Food & Marketing

tures. Good sites, at deepwater loading spots without environmental risks but with room to construct barge- and rail-unloading facilities, are limited. Since there are only a few of the very large structures at any port, entry will itself sharply increase port capacity, leading to sharp near-term pressure on grain and elevator prices—in other words, entry is risky. In the last two decades, there have been very few instances of new construction of port elevator facilities, suggesting that barriers to the entry of port elevators are real.

The third issue to consider is the link between number of competitors and price. There are really no relevant direct studies of the effects of changes in the number of grain trading competitors on commodity prices. Several studies in related food and agricultural sectors, however, suggest that numbers matter—i.e., grain prices will fall if the number of competing buyers fall from three to two or from two to one. Based on evidence in those studies, on economic theory, on existing evidence on price relations in the grain trade, and on the alternatives available to farmers, Department of Justice investigators decided that prices probably would fall by small amounts as a result of the merger, in the range of 1-3-percent declines in cash prices received by grain producers. Because trading margins (differences between buying and selling prices) are narrow, even these small price changes imply large increases in grain trading profits. Because producer profit margins are also narrow, small price reductions would lead to noticeable declines in farmer incomes.

In sum, the investigation led the Department of Justice to conclude that although the merger was not likely to reduce competition in grain selling, it would likely reduce competition in grain buying. Moreover, on the question of whether the merger would raise the likelihood of manipulation of futures market prices, the Department was concerned that by concentrating operations along the Illinois River, the merger would leave about 80 percent of the authorized delivery capacity for Chicago Board of Trade corn and soybeans futures contracts in the hands of just two firms. The next decision was what to do about these concerns.

Conditions for Approval Of the Merger

Current law sets a well-defined framework for an investigation. Parties to a merger must, under certain conditions, notify government antitrust agencies of the merger. An agency then has a specified amount of time to decide whether it will investigate the merger. If the agency does decide to investigate, it is allotted a specified amount of time after it obtains needed information from the parties to decide whether to file suit to stop the merger. If a suit goes forward, the agency usually asks a Federal judge for a temporary restraining order (TRO) against the merger.

Filing for a TRO sends a strong message to the firms that the agency is serious about trying to stop the merger. At this point, merging companies usually take one of three courses of action: they drop the merger, they prepare to go to court to fight the lawsuit, or they negotiate with the agency in an attempt to restructure the merger to alleviate the government's concerns. Negotiation is often in the interests of all parties, because going to court is expensive, time-consuming, and risky. In the Cargill-Continental merger, Cargill and the government opted for negotiation.

The Department of Justice had specific concerns about the merger's effects on concentration in export flows of corn and soybeans, and it was particularly concerned about increases in concentration in the Pacific Northwest, Central California, and Gulf ports. The anticipated effects appeared to be larger at Texas Gulf sites than at Louisiana Gulf ports, so the government was more concerned about Texas ports, as well as more sure of winning in court over these sites.

The Department was also concerned about the effects of the merger at several river ports and at some rail terminals, where competing river or rail-terminal elevators were some distance away and where price effects were therefore possible. Those included locations along the Illinois River from Chicago to Morris, Illinois, along the Mississippi River from Dubuque, Iowa to New Madrid, Missouri, and around rail terminals near Salina, Kansas and Troy, Ohio. The Illinois River points were also important for futures

markets, since the merger would have concentrated the delivery capacity for Chicago Board of Trade corn and soybean futures contracts.

The parties reached an agreement in July 1999. The Department of Justice announced that Cargill and Continental are required to divest themselves of 10 elevators in 7 states in order to proceed with the acquisition, and the firms agreed. Continental agreed to sell its port elevators at Beaumont, Texas, Stockton, California, and Chicago to independent firms. Cargill was given the choice of selling its Seattle port elevator or declining to purchase Continental's Tacoma port elevator. Cargill is allowed to retain the Continental and Cargill elevators at Louisiana Gulf sites.

Continental is also required to sell its river elevators at Lockport, Illinois and Caruthersville, Missouri, and its rail-terminal elevators at Troy, Ohio and Salina, Kansas. Cargill is required to sell river elevators at East Dubuque and Morris, Illinois, and to make one-third of the daily loading capacity at its Havana, Illinois river elevator available under contract to an independent grain company. The Illinois river elevators are all points at which Cargill and Continental elevators are adjacent to one another. In all instances of divestiture, the acquirer is subject to approval by the Department of Justice, and the divestitures are to take place within 5, or in some cases 6 months.

In the end, the merger will allow Cargill to expand its network for grain origination, particularly in the Plains and along the Mississippi River system. The divestitures will limit the merger's effects on concentration at key port and river locations, where it is likely that increased concentration would lead to small reductions in grain prices received by farmers. And for observers of the process, the review has served to illustrate the general principles that guide assessment of the effects of concentration in a market: the role of viable alternatives, the importance of entry barriers, and the question of how many competitors are necessary for competition. **AO**

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Special Article

Mexico's Pork Industry Structure Shifting to Large Operations in the 1990's

As part of a technical assistance project for emerging markets, USDA's Economic Research Service cooperated with Mexico's agriculture ministry, SAGAR, to develop a background study and outlook report on the Mexican pork industry. The study describes historical developments in technology use, farm structure, and slaughter infrastructure, and the outlook report examines critical factors such as disease control and market efficiency for the future of the industry in Mexico. Some of the information contained in the final project report, Situacion Actual y Perspectiva de la Produccion de Carne de Porcino en Mexico 1990-1998, are presented in this article.

Rapidly changing swine production technology, intensified disease control measures, increased foreign trade activity, and economic and policy shocks over the past quarter of a century have combined to produce marked change in the Mexican pork industry. As in the U.S. hog industry, swine production in Mexico began to change dramatically in the 1970's with development of technologically advanced farms that rapidly increased productivity. High productivity and growing demand vaulted pork to the lead in the Mexican meat supply, accounting for nearly half the meat produced in Mexico in 1983 and 1984.

Rapid growth in the early 1980's had been supported by government subsidizing of the cost of sorghum for feed use. Withdrawal of this support in 1984 led to a sharp rise in production costs. Combined with currency devaluation that contracted consumers' purchasing power, this led to a dramatic fall in demand for pork, sending the industry into a depression that lasted until the 1990's.

During this period, the hog industry underwent a second radical structural readjustment, which consolidated part of the industry and increased productivity beyond levels achieved in the early 1980's. Higher productivity and the capacity to utilize improved infrastructure built up in the 1980's enabled the industry to resume growth in the 1990's. Despite substantial progress, however, the industry's efficiency continues to be hampered by a complicated structure of multiple levels of marketing intermediaries and related commercial interests.



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Mexico's Pork Industry In the 1990's

Despite growth through increased productivity in the 1990's, pork production now accounts for only about a quarter of Mexico's meat production. A series of crises in the Mexican economy that led to currency devaluations during the 1980's and 1990's caused the purchasing power of Mexican consumers to deteriorate. Pork demand dropped as lower priced meat and non-meat products were substituted for fresh pork and for processed pork in cold cuts and sausages. Substitution of poultry meat in processed meat products is due not only to price considerations but also to a growing preference among Mexican consumers for products with lower fat content.

Mexico's markets opened to imported hogs, pork products, and poultry products in the 1990's, increasing competition for domestic pork producers, but the Mexican pork-packing industry was still able to grow more than 6 percent per year. When increased production led to extremely low prices in the U.S. in 1998 and 1999, liberalized import markets and increased packing capacity developed earlier in the decade in Mexico allowed U.S. pork producers to find alternative markets for their products through increased exports of live hogs and pork products to Mexico. Currently, Mexico is the largest foreign market for U.S. live hogs and the second largest for U.S. pork products.

In response to increased pork imports and weakening demand that have combined to press the Mexican pork industry, the

sector is experiencing structural change. As of the early 1990's, 99 percent of Mexico's 1.9 million hog farms had fewer than 20 animals. But these small operations accounted for only 52 percent of the country's swine inventory. Larger operations, accounting for only 1 percent of hog farms, held the remaining 48 percent of Mexico's hogs.

Although pork is produced throughout Mexico, five states—Jalisco, Sonora, Chiapas, Veracruz, and Yucatan—account for nearly half of Mexico's swine inventory. Easy access to large domestic and export markets has led to a concentration of the largest operations in a few states. Six states—Jalisco, Sonora, Guanajuato, Puebla, Yucatan, and Michoacan—now account for nearly 75 percent of domestic pork production. Chiapas and Veracruz, though among the top states in swine inventory, are not among the top states in pork production because of the predominance of low-productivity production systems among their producers.

As has happened in the U.S., swine production is becoming established in some nontraditional areas. In Mexico, the movement has been to Tamaulipas, Nuevo Leon, Quintana Roo, and Hidalgo, primarily because disease control has been improved enough in those areas to allow pork production.

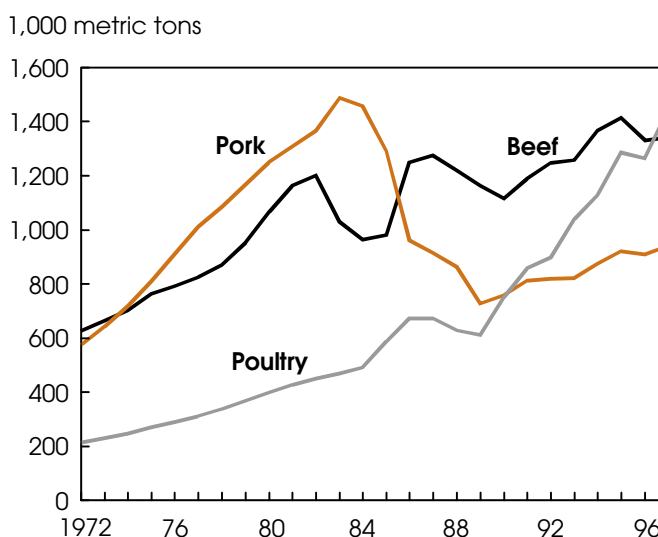
Because hog production is generally located far from population centers, about 54 percent of hogs must be shipped across state lines for slaughter. The biggest markets are municipalities in the Mexico City area in the state of Mexico—2.3 million head, or 53 percent of the swine shipped across state lines in 1996, were slaughtered in the Mexico City area. The largest number of hogs shipped for slaughter, 1.6 million, came from Jalisco; Sonora, Guanajuato, and Michoacan shipped just under 600,000 head each. Together these four states accounted for 78 percent of interstate swine movements in 1996.

A Three-Tiered Industry

The Mexican pork industry operates under three basic production systems, separated by technological advancement and level of vertical integration and associated with distinct geographic locations. These systems may be identified as technologically advanced production, small commercial production, and traditional backyard production. Both technologically advanced operations and small commercial producers have developed in well-defined geographic locations, while traditional backyard production is found throughout the country.

Technologically advanced production systems are state-of-the-art operations with a high level of vertical and horizontal coordination, similar to most advanced hog producing systems in the world today. Technologically advanced operations now account for about half of Mexico's pork production. These operations are concentrated in the Mexican states of Sonora and Sinaloa, but large hog companies have also acquired or begun operations in areas that have not traditionally produced swine. Thus, technologically advanced operations can also be found in the states of Mexico, Nuevo Leon, Queretaro, Puebla, Tamaulipas, Veracruz,

Mexican Pork Production Rises in the 1990's, But Trails Beef and Poultry



Source: Mexican Agricultural Secretariat (SAGAR).
Economic Research Service, USDA

and Yucatan, as well as a few in the Laguna Region in the states of Durango and Coahuila.

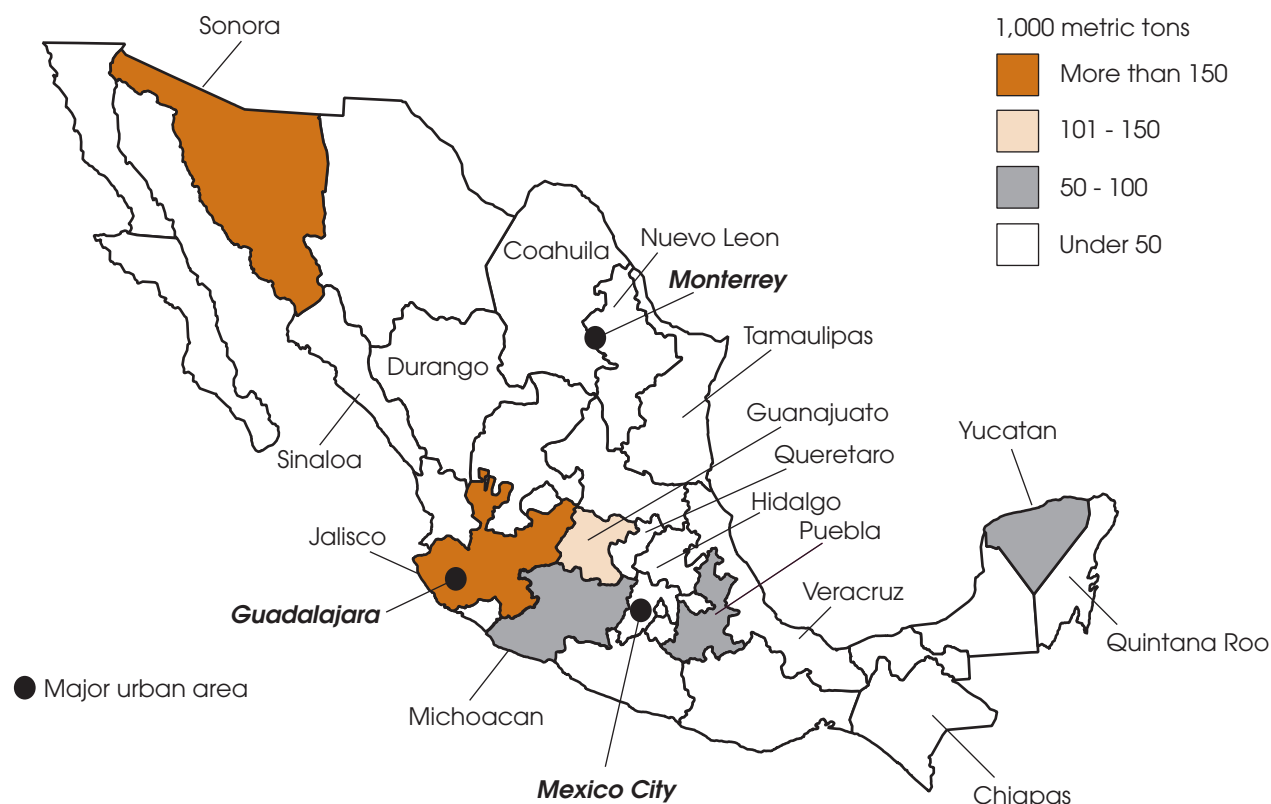
Coordination of production from breeding through finishing ensures a standardized quality of animals for slaughter. These operations manufacture their own feed in order to customize rations for the genetic characteristics and production stage of the animals. Technologically advanced production systems also increase productivity through meticulous sanitation and biosecurity measures to control potentially costly disease problems by preventing the introduction of disease into production facilities. The Mexican states that are being declared free of classical swine fever and other damaging illnesses tend to be the states where these technologically advanced operations predominate.

Technologically advanced operations may own their own slaughterhouses, or may share ownership with an association of similar operations. Vertically integrated slaughter plants are likely to be Federal Inspection Model (TIF—*Tipo Inspección Federal*) plants, which are state of the art. TIF slaughter plants were created in 1947 to allow continued exports to the U.S. after an outbreak of foot-and-mouth disease in Mexico. Currently, only pork slaughtered in TIF plants can be exported, and then only after certification by the importing country. Mexico's 33 TIF plants slaughtered 3.7 million head in 1997, 31 percent of total hog slaughter in Mexico. The government has set up temporary assistance programs in the past to channel resources to producers who have their hogs slaughtered in TIF plants.

Further vertical integration is targeting cutting rooms and lard rendering operations, which bring the whole processing operation under company or association control and thereby capture all of the value-added profits. Thus technologically advanced producers can provide consistent, high-quality products

Special Article

Mexico's Pork Production Is Concentrated in Six States



1997 production.

Source: Agricultural Statistics Center, Mexican Agricultural Secretariat (SAGAR).

Economic Research Service, USDA

demand by consumers while earning the higher profits generated by additional processing steps. These operations serve markets in large urban centers, either through supermarkets or butcher shops.

Small commercial production systems produce fewer hogs than the technologically advanced operations, not only because they are smaller but also because their lower technological level keeps productivity lower. Operations of this type occur throughout the country but are more concentrated in central and southern Mexico. Their share of the Mexican pork industry has been decreasing in favor of the growing number of technologically advanced farms.

Although most small commercial operations use breeding stock similar to that used by technologically advanced producers, their sanitary measures and marketing and slaughter outlets do not meet the standards of the more advanced farms. Because of their smaller size, rather than manufacturing their own feed they use commercial feed, which does not always meet the nutritional requirements of their hogs through the various production

phases. These mismatches decrease feed efficiency, raising feed costs as farmers purchase additional quantities to achieve adequate slaughter weights.

Small commercial operations also cannot guarantee the consistently high-quality hogs required by the slaughterhouses serving technologically advanced producers, so they must send their hogs for slaughter to municipal and/or local private slaughterhouses. Municipal slaughterhouses, managed by local government authorities, are located throughout the country, although their exact number and slaughter capacity is not known. In 1997, the Mexican agriculture ministry, SAGAR, estimated that these facilities slaughtered 4 million head, about a third of total slaughter that year. Generally these establishments fall short of modern standards for equipment and hygiene. As a result, and because of their smaller size, they sell their product in regional and local markets and in small urban centers, keeping these small commercial producers from receiving the higher hog prices available to technologically advanced producers whose hogs will be slaughtered for sale in the large urban and export markets.

Traditional backyard production systems are characterized by breeding stock of low genetic quality, a prolonged fattening period reflecting minimally nutritious feed or forage, and virtually nonexistent sanitary management. Traditional backyard production is practiced throughout rural Mexico and accounts for about 30 percent of Mexican pork production. Pork produced under these conditions provides a supply of meat in places where formal commercial channels cannot operate, but this meat is also considered a human health risk because pork from foraging pigs can carry teniasis (tapeworm) eggs. Campaigns are underway to control transmission of this parasite.

Traditional backyard producers view pigs as an extra source of income. The hogs are slaughtered on site or in local abattoirs for home use or for sale in nearby market centers. Little information is available to quantify the number of animals slaughtered under these conditions, but estimates for 1997 placed farm and local abattoir slaughter at 4.3 million head, about 36 percent of all swine slaughtered.

Production Costs Favor Large Operations

Recent data on Mexican pork production costs and returns (January 1994-January 1998) are available from SAGAR only for the technologically advanced and small commercial producers. Difficulty in quantifying feed supply, labor utilization, expenses, and revenue received in informal commercial channels precludes determining costs and returns for traditional backyard production systems.

Feed cost is the largest expense for both the technologically advanced and the small commercial production systems, accounting for approximately 62 percent of costs for technologically advanced operations and 75 percent for small commercial operations. The higher cost for small commercial producers comes largely from purchasing commercial feed at a higher unit price than technologically advanced producers who can benefit from economies of scale in purchasing feed or from vertical integration of feed production as part of their own operations. Expenses for veterinary medicine and supplies, the second-highest category of cost, account for nearly the same proportion of total expenses in both production systems, but technologically advanced producers suffer lower losses from disease and mortality because of strict sanitary and biosecurity measures.

Financial expenses—i.e., principal and interest payments on loans—are dramatically different for the technologically advanced and small commercial production systems. Financial expenses account for about 19 percent of total production costs for technologically advanced producers compared with only 4 percent for small commercial producers. But this difference is not necessarily to the advantage of small commercial producers since it reflects the fact that these producers have little access to credit and cannot afford to maintain feed stocks that incur financial costs.

Analysis of pork production profitability data from the January 1994-January 1998 study period, in fact, indicates the highest net returns have been earned by technologically advanced producers. These producers showed negative returns only from April 1995 to July 1996, while small commercial operations showed losses from October 1994 to January 1997, beginning 6 months before the technologically advanced producers and lasting 6 months longer.

The high production costs facing small commercial operations because of their small scale and low level of technology use, combined with the low prices they receive in smaller markets, have squeezed the small commercial producers economically, making them the group most negatively affected by structural changes. Their share of the Mexican pork market has fallen to around 20 percent in 1998.

As operations using technologically advanced production systems continue to gain market share through the use of modern distribution channels and greater territorial coverage, small commercial production will continue to decline. The Mexican government has encouraged small producers to contract with technologically advanced companies or to adopt more advanced technology and form groups with other small commercial producers, which might ensure their survival. Such groups could achieve the economies of scale needed by small producers to lower production costs and provide access to more profitable markets. **AO**

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In forthcoming issues of *Agricultural Outlook*

- * food prices in the year 2000
- * outlook for the beef industry
- * the public-sector role in agricultural research and development

Statistical Indicators

Summary Data

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

	1998					1999				2000
	1998	1999 F	2000 F	III	IV	I	II	III F	IV F	I F
Prices received by farmers (1990-92=100)	101	--	--	101	99	96	--	--	--	--
Livestock & products	97	--	--	98	97	95	--	--	--	--
Crops	106	--	--	104	101	98	--	--	--	--
Prices paid by farmers (1990-92=100)										
Production items	115	--	--	114	113	113	--	--	--	--
Commodities and services, interest, taxes, and wage rates (PPITW)	117	--	--	116	116	116	--	--	--	--
Cash receipts (\$ bil.)	197	190	--	49	59	45	41	46	--	--
Livestock	95	94	--	24	24	24	22	24	--	--
Crops	102	96	--	25	35	21	19	22	--	--
Market basket (1982-84=100)										
Retail cost	163	--	--	163	165	167	167	--	--	--
Farm value	103	--	--	103	104	101	97	--	--	--
Spread	195	--	--	195	198	203	204	--	--	--
Farm value/retail cost (%)	22	--	--	22	22	21	21	--	--	--
Retail prices (1982-84=100)										
All food	161	164	167	161	162	163	164	164	165	166
At home	161	164	166	161	163	164	164	164	164	165
Away from home	161	165	169	162	163	164	165	166	167	168
Agricultural exports (\$ bil.) ¹	53.6	49.0	--	12.1	11.1	14.4	12.7	11.2	10.7	--
Agricultural imports (\$ bil.) ¹	37.0	38.0	--	9.4	8.7	9.2	9.4	9.4	10.0	--
Commercial production										
Red meat (mil. lb.)	45,134	45,742	43,472	11,380	11,702	11,384	11,368	11,629	11,361	10,912
Poultry (mil. lb.)	33,667	35,495	36,965	8,375	8,580	8,637	9,043	8,910	8,905	9,165
Eggs (mil. doz.)	6,659	6,873	7,030	1,658	1,712	1,691	1,702	1,715	1,765	1,735
Milk (bil. lb.)	157.4	162.2	165.4	38.5	38.9	40.5	42.0	39.8	39.9	41.7
Consumption, per capita										
Red meat and poultry (lb.)	213.7	219.5	216.8	53.8	56.4	54.1	54.7	55.2	55.5	54.1
Corn beginning stocks (mil. bu.) ²	883.2	1,307.8	--	4,939.9	3,039.8	1,307.8	8,051.9	5,698.4	3,616.0	--
Corn use (mil. bu.) ²	8,791.0	9,370.0	--	1,903.7	1,734.0	3,021.0	2,359.2	2,090.6	--	--
Prices ³										
Choice steers--Neb. Direct (\$/cwt)	61.48	64-65	66-72	58.97	61.06	62.43	65.04	63-65	65-69	65-71
Barrows and gilts--IA, So. MN (\$/cwt)	34.72	31-32	34-37	36.61	22.06	28.83	35.18	32-34	28-30	31-33
Broilers--12-city (cents/lb.)	63.10	58-59	54-58	70.40	64.50	58.10	58.60	58-60	55-59	52-56
Eggs--NY gr. A large (cents/doz.)	75.80	68.70	63-68	76.00	81.70	75.00	58.10	66-68	73-77	67-73
Milk--all at plant (\$/cwt)	15.42	14.90-15.10	12.80-13.80	15.47	17.83	15.97	12.83	15.15-15.45	15.65-16.25	12.90-13.80
Wheat--KC HRW ordinary (\$/bu.)	3.29	--	--	2.86	3.34	3.16	2.92	--	--	--
Corn--Chicago (\$/bu.)	2.34	--	--	2.03	2.11	2.16	2.13	--	--	--
Soybeans--Chicago (\$/bu.)	6.01	--	--	5.53	5.44	4.95	4.58	--	--	--
Cotton--avg. spot 41-34 (cents/lb)	67.02	--	--	72.60	64.15	56.61	55.43	--	--	--
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Farm real estate values ⁴										
Nominal (\$ per acre)	683	703	713	740	798	844	887	926	974	992
Real (1982 \$)	528	521	507	514	540	558	572	586	604	609
U.S. civilian employment (mil.) ⁵	125.8	126.3	128.1	129.2	131.1	132.3	133.9	136.3	--	--
Food and fiber (mil.)	24.9	24.4	23.7	24.0	24.5	24.8	24.7	24.3	--	--
Farm sector (mil.)	2.0	2.0	1.9	1.8	1.9	1.9	1.9	1.8	--	--
U.S. gross domestic product (\$ bil.)	5,743.8	5,916.7	6,244.4	6,558.1	6,947.0	7,269.6	7,661.6	8,110.9	--	--
Food and fiber--net value added (\$ bil.)	891.7	903.2	937.3	956.7	1,006.1	1,025.8	1,055.8	1,078.1	--	--
Farm sector--net value added (\$ bil.) ⁶	60.6	56.5	61.7	52.8	57.0	53.9	66.1	60.6	--	--

F = Forecast. -- = Not available. 1. Annual data based on Oct.-Sept. fiscal years ending with year indicated. 2. Sept.-Nov. first quarter; Dec.-Feb. second quarter; Mar.-May third quarter; Jun.-Aug. fourth quarter; Sept.-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 is 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

	1997				1998				1999	
	1996	1997	1998	IV	I	II	III	IV	I	II
<i>Billions of current dollars (quarterly data seasonally adjusted at annual rates)</i>										
Gross Domestic Product	7,636.0	8,110.9	8,511.0	8,254.5	8,384.2	8,440.6	8,537.9	8,681.2	8,808.7	8,893.3
Gross National Product	7,674.0	8,102.9	8,490.5	8,234.9	8,369.4	8,421.8	8,510.9	8,660.0	8,788.4	--
Personal consumption expenditures	5,207.6	5,493.7	5,807.9	5,593.2	5,676.5	5,773.7	5,846.7	5,934.8	6,050.6	6,148.3
Durable goods	634.5	673.0	724.7	682.2	705.1	720.1	718.9	754.5	771.2	777.6
Nondurable goods	1,534.7	1,600.6	1,662.4	1,613.2	1,633.1	1,655.2	1,670.0	1,691.3	1,736.0	1,771.3
Food	756.1	780.9	815.3	787.1	796.9	810.2	818.7	835.6	844.1	851.6
Clothing and shoes	264.3	278.0	293.8	280.7	291.0	295.3	293.7	295.1	308.1	313.0
Services	3,038.4	3,220.1	3,420.8	3,297.8	3,338.2	3,398.4	3,457.7	3,488.9	3,543.4	3,599.4
Gross private domestic investment	1,116.5	1,256.0	1,367.1	1,292.0	1,366.6	1,345.0	1,364.4	1,392.4	1,417.4	1,426.7
Fixed investment	1,090.7	1,188.6	1,307.8	1,220.1	1,271.1	1,305.8	1,307.5	1,346.7	1,377.9	1,407.1
Change in business inventories	25.9	67.4	59.3	71.9	95.5	39.2	57.0	45.7	39.5	19.6
Net exports of goods and services	-94.8	-93.4	-151.2	-98.8	-123.7	-159.3	-165.5	-156.2	-196.9	-225.7
Government consumption expenditures and gross investment	1,406.7	1,454.6	1,487.1	1,468.1	1,464.9	1,481.2	1,492.3	1,510.2	1,537.5	1,544.1
<i>Billions of 1992 dollars (quarterly data seasonally adjusted at annual rates)¹</i>										
Gross Domestic Product	6,928.4	7,269.8	7,551.9	7,364.6	7,464.7	7,498.6	7,566.5	7,677.7	7,759.6	7,803.6
Gross National Product	7,008.4	7,266.2	7,537.8	7,350.7	7,455.2	7,485.9	7,546.7	7,663.3	7,746.3	--
Personal consumption expenditures	4,714.1	4,913.5	5,153.3	4,981.0	5,055.1	5,130.2	5,181.8	5,246.0	5,331.9	5,384.7
Durable goods	611.1	668.6	737.1	684.8	710.3	729.4	733.7	775.0	798.9	809.8
Nondurable goods	1,432.3	1,486.3	1,544.1	1,494.3	1,521.2	1,540.9	1,549.1	1,565.1	1,600.9	1,612.7
Food	689.7	699.3	718.0	699.9	706.8	716.3	718.9	730.1	734.3	738.5
Clothing and shoes	267.7	288.4	310.3	292.3	307.4	311.4	309.8	312.5	333.1	335.2
Services	2,671.0	2,761.5	2,879.5	2,804.8	2,829.3	2,866.8	2,904.8	2,917.2	2,946.8	2,977.2
Gross private domestic investment	1,069.1	1,206.4	1,330.1	1,241.9	1,321.8	1,306.5	1,331.6	1,360.6	1,388.5	1,399.5
Fixed investment	1,041.7	1,138.0	1,267.8	1,169.5	1,224.9	1,264.1	1,270.9	1,311.0	1,344.0	1,373.6
Change in business inventories	25.0	63.2	57.4	66.5	91.4	38.2	55.7	44.2	38.7	19.4
Net exports of goods and services	-114.4	-136.1	-238.2	-149.0	-198.5	-245.2	-259.0	-250.0	-303.6	-323.0
Government consumption expenditures and gross investment	1,257.9	1,285.0	1,296.9	1,289.2	1,283.0	1,294.8	1,299.6	1,310.3	1,323.9	1,320.0
GDP implicit price deflator (% change)	1.9	1.9	1.0	1.2	0.8	0.9	1.0	0.8	1.6	1.6
Disposable personal income (\$ bil.)	5,534.7	5,795.1	6,027.9	5,879.4	5,937.1	5,988.9	6,052.4	6,133.1	6,205.2	6,280.4
Disposable pers. income (1992 \$ bil.)	5,043.0	5,183.1	5,348.5	5,235.8	5,287.1	5,321.5	5,364.1	5,421.2	5,468.2	5,500.4
Per capita disposable pers. income (\$)	20,840	21,633	22,304	21,871	22,046	22,192	22,373	22,604	22,811	23,034
Per capita disp. pers. income (1992 \$)	18,989	19,349	19,790	19,478	19,632	19,719	19,829	19,980	20,101	20,173
U.S. resident population plus Armed Forces overseas (mil.) ²	265.5	268.0	270.6	269.0	269.5	270.1	270.8	271.5	272.0	272.7
Civilian population (mil.) ²	263.9	266.5	269.1	267.5	268.0	268.6	269.3	270.1	270.6	271.2
<i>Monthly data seasonally adjusted</i>										
	1996	1997	1998	Jun	Jan	Feb	Mar	Apr	May	Jun
Total industrial production (1992=100)	121.4	129.7	135.1	133.7	136.4	136.9	137.5	138.0	138.4	138.6
Leading economic indicators (1992=100)	102.1	103.9	105.5	105.2	106.9	107.1	107.2	107.1	107.4	107.7
Civilian employment (mil. persons) ³	126.7	129.6	131.5	131.3	133.4	133.1	133.0	133.1	133.2	133.4
Civilian unemployment rate (%) ³	5.4	4.9	4.5	4.5	4.3	4.4	4.2	4.3	4.2	4.3
Personal income (\$ bil. annual rate)	6,425.2	6,784.0	7,126.1	7,104.4	7,320.2	7,352.9	7,374.9	7,408.4	7,433.5	7,485.5
Money stock-M2 (daily avg.) (\$ bil.) ⁴	3,823.9	4,046.6	4,402.0	4,198.6	4,426.1	4,447.0	4,457.2	4,490.0	4,507.4	4,523.4
Three-month Treasury bill rate (%)	5.02	5.07	4.81	4.99	4.34	4.45	4.48	4.28	4.51	4.59
AAA corporate bond yield (Moody's) (%)	7.37	7.26	6.53	6.53	6.24	6.40	6.62	6.64	6.93	7.23
Total housing starts (1,000) ⁵	1,476.8	1,474.0	1,616.9	1,626	1,820	1,752	1,746	1,577	1,665	1,571
Business inventory/sales ratio ⁶	1.41	1.38	1.39	1.39	1.38	1.37	1.36	1.36	1.35	--
Sales of all retail stores (\$ bil.) ⁷	2,465.1	2,546.3	2,696.5	229.9	235.0	239.0	239.0	240.2	247.2	246.8
Nondurable goods stores (\$ bil.)	1,457.8	1,505.4	1,563.8	133.8	135.1	136.5	137.4	138.7	143.3	143.9
Food stores (\$ bil.)	424.2	432.1	443.0	36.5	37.8	38.3	38.3	38.3	38.3	38.2
Apparel and accessory stores (\$ bil.)	113.0	116.8	124.2	10.6	10.9	10.9	10.9	11.1	11.5	11.4
Eating and drinking places (\$ bil.)	238.4	244.1	247.1	22.2	21.3	21.6	21.6	21.8	23.6	23.6

-- = Not available. 1. In April 1996, 1992 dollars replaced 1987 dollars. 2. Population estimates based on 1990 census. 3. Data beginning January 1994 are not directly comparable with data for earlier periods because of a major redesign of the household survey questionnaire. 4. Annual data as of December of year listed. 5. Private, including farm. 6. Manufacturing and trade. 7. Annual total. *Information contact: David Johnson (202) 694-5324*

Table 3—World Economic Growth

	Calendar year									
	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
<i>Real GDP, annual percent change</i>										
World	1.9	1.9	1.6	3.1	2.8	3.6	3.4	2.0	2.6	2.7
less U.S.	3.0	1.6	1.3	2.9	3.0	3.6	3.2	1.3	2.2	2.9
Developed Economies	1.8	1.6	0.8	2.7	2.2	3.0	2.9	2.0	2.4	2.2
less U.S.	3.2	1.0	0.1	2.3	2.1	2.8	2.3	1.0	1.6	2.1
United States	-0.9	2.7	2.3	3.5	2.3	3.4	3.9	3.9	3.8	2.3
Canada	-1.9	0.9	2.3	4.7	2.8	1.7	4.0	3.1	3.7	2.9
Japan	3.8	1.0	0.3	0.7	1.4	5.2	1.4	-2.9	0.7	1.1
Australia	-1.1	2.3	3.7	5.4	3.8	3.9	3.8	4.8	4.0	3.1
European Union	3.7	1.0	-0.5	2.8	2.4	1.6	2.5	2.6	1.8	2.5
Transition Economies	-6.9	-11.2	-6.5	-8.8	-1.5	-2.2	0.9	-1.8	-2.6	-0.5
Eastern Europe	-10.6	-4.0	0.8	3.5	5.5	3.1	1.5	1.9	1.2	4.4
Poland	-6.3	2.0	3.8	4.2	7.1	5.9	6.9	4.6	2.5	4.9
Former Soviet Union	-5.5	-13.7	-9.3	-13.9	-5.1	-5.1	0.5	-4.0	-5.1	-4.0
Russia	-5.0	-14.5	-8.7	-12.6	-4.1	-4.9	0.8	-4.3	-5.3	-4.6
Developing Economies	4.8	6.3	6.2	6.6	5.8	6.3	5.8	2.3	3.9	5.0
Asia	6.5	8.8	8.7	9.4	8.6	7.9	6.7	2.5	5.8	6.0
East Asia	8.6	10.8	10.5	10.6	9.3	8.3	7.7	4.6	6.6	6.8
China	9.3	14.2	13.5	12.6	10.5	9.6	8.8	7.8	7.4	7.7
Taiwan	7.5	6.8	6.3	6.6	6.0	5.7	6.8	4.8	5.1	4.6
Korea	8.4	4.7	5.3	8.3	8.9	6.8	5.0	-5.8	6.4	5.4
Southeast Asia	6.8	6.9	7.4	8.1	8.5	7.5	4.8	-6.2	2.5	4.3
Indonesia	8.9	7.2	7.2	7.5	8.2	8.0	4.7	-13.6	0.9	5.0
Malaysia	8.8	7.8	8.4	9.4	9.5	8.0	7.8	-7.4	2.0	3.7
Philippines	-0.2	0.3	2.1	4.4	4.8	5.7	5.1	-0.5	1.7	2.6
Thailand	8.0	8.1	8.3	8.8	9.2	6.4	-0.4	-9.4	3.0	4.3
South Asia	1.3	5.3	4.7	7.0	6.9	6.7	5.2	4.4	5.9	4.9
India	0.5	5.4	4.9	7.5	7.3	7.3	5.5	4.5	6.5	5.2
Pakistan	6.7	4.8	2.9	4.5	4.9	2.1	2.4	3.4	1.5	2.5
Latin America	3.8	3.0	3.9	4.9	0.5	3.6	5.3	2.1	-0.5	2.9
Mexico	4.2	3.6	2.0	4.5	-6.2	5.2	7.0	4.6	2.4	3.3
Caribbean/Central	4.2	7.9	4.9	3.8	3.1	3.3	0.7	4.0	3.1	2.3
South America	3.6	2.7	4.5	5.0	2.4	3.2	5.0	1.4	-1.4	2.8
Argentina	8.9	8.6	5.7	5.9	-2.7	5.4	8.1	3.9	-3.5	2.4
Brazil	0.5	-1.2	4.5	5.8	3.0	2.9	3.5	0.2	-1.6	2.3
Colombia	2.3	4.0	5.5	5.9	5.3	2.0	3.0	2.3	1.3	3.5
Venezuela	9.7	6.1	0.3	-2.9	3.4	-1.6	6.4	-0.7	-1.0	4.0
Middle East	2.9	5.5	3.5	0.3	3.5	4.5	4.0	1.0	1.5	3.5
Israel	7.7	5.6	5.6	6.9	7.0	4.7	2.6	2.0	1.7	2.8
Saudi Arabia	8.4	2.8	-0.6	0.5	0.5	2.4	0.9	-1.0	1.5	2.0
Turkey	0.9	6.0	8.0	-5.5	7.0	7.0	7.6	2.9	1.0	5.5
Africa	0.7	1.2	1.3	2.7	2.8	4.7	3.1	3.4	3.4	4.4
North Africa	1.0	2.2	0.1	2.8	2.4	5.6	2.4	4.9	4.4	4.6
Egypt	1.1	4.4	2.9	3.9	4.6	5.0	5.0	5.0	4.9	5.5
Sub-Sahara	0.5	0.3	2.5	2.6	3.2	4.0	3.7	2.1	2.4	4.2
South Africa	-1.0	-2.6	1.5	2.8	3.1	3.3	1.8	0.5	0.9	3.7
<i>Consumer Prices, annual percent change</i>										
Developed Economies	4.7	3.5	3.1	2.6	2.5	2.4	2.1	1.6	1.4	1.7
Transition Economies	94.1	646.4	602.0	266.9	126.9	40.6	28.2	20.8	40.9	12.4
Developing Economies	36.5	38.9	47.2	51.8	22.2	14.3	9.4	10.4	8.8	7.5
Asia	8.3	7.6	10.7	15.9	12.8	8.3	4.8	8.0	4.7	4.5
Latin America	128.6	151.0	209.0	208.9	35.9	20.8	13.9	10.5	14.6	9.9
Middle East	27.5	25.5	24.7	31.9	36.0	24.7	23.1	23.8	19.7	19.4
Africa	24.6	32.5	30.6	37.2	33.2	25.9	11.1	8.6	8.6	6.6

-- = Not available. The last three years are either estimates or forecasts. Sources: Oxford Economic Forecasting; International Financial Statistics, IMF.

Information contact: Andy Jerardo (202) 694-5323

Farm Prices

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

	Annual		1998		1999					
	1996	1997	1998	Jul	Feb	Mar	Apr	May	Jun	Jul
<i>1990-92=100</i>										
Prices received										
All farm products	112	107	101	102	96	97	96	99	98	94
All crops	127	116	107	107	99	99	103	105	100	93
Food grains	157	128	103	89	101	98	96	91	87	75
Feed grains and hay	146	117	100	101	91	92	92	93	91	80
Cotton	122	112	107	112	92	91	94	93	92	91
Tobacco	105	104	104	94	112	113	86	--	--	--
Oil-bearing crops	128	131	107	111	88	83	83	81	80	73
Fruit and nuts, all	118	108	114	129	101	105	109	123	130	133
Commercial vegetables	111	122	120	119	115	116	128	122	111	101
Potatoes and dry beans	114	90	98	105	96	98	103	108	111	124
Livestock and products	99	98	96	96	94	95	90	93	95	94
Meat animals	87	92	79	80	77	79	81	83	84	81
Dairy products	114	102	118	109	119	115	96	98	100	104
Poultry and eggs	120	113	117	123	109	109	104	110	113	113
Prices paid										
Commodities and services,										
interest, taxes, and wage rates (PPITW)	114	117	115	116	115	116	116	116	117	116
Production items	114	117	112	115	111	113	113	113	113	113
Feed	129	123	105	111	96	101	102	102	100	97
Livestock and poultry	75	94	88	83	94	92	92	89	93	92
Seeds	115	119	122	123	123	123	121	121	121	121
Fertilizer	125	121	112	113	107	108	107	106	105	104
Agricultural chemicals	119	120	122	122	118	121	121	116	120	125
Fuels	102	108	87	87	71	87	88	91	92	97
Supplies and repairs	115	118	119	119	120	121	121	121	121	121
Autos and trucks	118	119	119	118	119	119	119	119	119	119
Farm machinery	125	129	132	133	133	134	135	135	135	135
Building material	115	118	118	118	118	119	119	119	120	121
Farm services	116	117	116	118	116	116	116	116	118	118
Rent	119	121	124	134	130	130	130	130	130	130
Interest payable per acre on farm real estate debt	105	107	108	109	111	110	110	110	110	110
Taxes payable per acre on farm real estate	112	115	119	119	122	120	120	120	120	120
Wage rates (seasonally adjusted)	117	123	129	125	136	136	135	135	135	135
Prod. items, interest, taxes & wage rates (PITW)	114	117	114	115	114	115	115	115	115	115
Ratio, prices received to prices paid (%)*	98	91	88	88	83	84	83	85	84	81
Prices received (1910-14=100)	712	679	643	645	612	614	610	628	620	595
Prices paid, etc. (parity index) (1910-14=100)	1,520	1,558	1,532	1,550	1,534	1,549	1,551	1,546	1,552	1,551
Parity ratio (1910-14=100) (%)*	47	44	42	42	40	40	39	41	40	38

-- = Not available. 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 National Agricultural Statistics Service (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			1998	1999					
	1996	1997	1998	Jul	Feb	Mar	Apr	May	Jun	Jul
Crops										
All wheat (\$/bu.)	4.30	3.38	2.70	2.56	2.74	2.65	2.62	2.53	2.50	2.15
Rice, rough (\$/cwt)	9.96	9.70	8.50	9.58	8.97	8.86	8.54	8.16	8.20	8.16
Corn (\$/bu.)	2.71	2.43	1.95	2.19	2.05	2.06	2.05	2.00	1.97	1.65
Sorghum (\$/cwt)	4.17	3.95	3.10	3.81	3.16	3.17	3.09	2.93	2.87	2.60
All hay, baled (\$/ton)	95.80	100.00	87.00	88.60	79.00	78.50	81.90	91.60	81.70	78.40
Soybeans (\$/bu.)	7.35	6.47	5.35	6.14	4.80	4.61	4.63	4.51	4.44	4.04
Cotton, upland (¢/lb.)	69.30	65.20	64.20	68.00	56.00	55.30	56.70	56.10	55.50	54.90
Potatoes (\$/cwt)	4.93	5.62	5.24	6.03	5.61	5.81	6.14	6.30	6.58	7.51
Lettuce (\$/cwt) ²	14.70	17.60	15.20	15.50	15.40	14.50	20.60	14.00	11.40	11.30
Tomatoes, fresh (\$/cwt) ²	28.10	31.70	35.00	40.60	35.20	24.80	23.40	25.30	33.70	24.90
Onions (\$/cwt)	10.50	12.60	13.80	19.10	13.80	11.20	16.90	17.80	17.60	18.50
Beans, dry edible (\$/cwt)	23.50	19.30	19.80	21.30	18.40	17.20	16.80	20.10	19.50	19.70
Apples for fresh use (¢/lb.)	20.80	22.10	17.10	12.70	15.00	15.70	14.70	14.00	12.70	12.40
Pears for fresh use (\$/ton)	376.00	276.00	291.00	360.00	362.00	331.00	337.00	340.00	356.00	469.00
Oranges, all uses (\$/box) ³	4.79	4.22	4.29	6.71	5.60	6.02	5.82	6.46	8.78	10.10
Grapefruit, all uses (\$/box) ³	2.30	1.91	1.41	5.95	1.60	1.67	2.23	3.66	8.78	10.67
Livestock										
Cattle, all beef (\$/cwt)	58.70	63.10	59.60	58.40	60.60	62.40	62.70	62.10	63.70	62.10
Calves (\$/cwt)	58.40	78.90	78.80	76.60	86.90	87.30	88.20	87.60	89.00	88.50
Hogs, all (\$/cwt)	51.90	52.90	34.40	36.90	27.60	27.80	30.20	36.40	34.20	31.20
Lambs (\$/cwt)	88.20	90.30	72.30	81.30	67.20	67.40	67.40	82.80	81.30	--
All milk, sold to plants (\$/cwt)	14.75	13.36	15.41	14.20	15.50	15.00	12.60	12.80	13.10	13.60
Milk, manuf. grade (\$/cwt)	13.43	12.17	14.33	14.10	12.30	15.10	11.90	11.50	11.90	13.00
Broilers, live (¢/lb.)	38.10	37.70	39.30	44.00	36.60	35.80	34.30	37.80	38.50	38.10
Eggs, all (¢/doz.) ⁴	74.90	70.30	65.50	58.20	65.20	67.90	59.60	52.90	55.30	57.30
Turkeys (¢/lb.)	43.30	39.90	38.00	37.50	35.70	37.00	38.70	39.70	41.50	41.80

-- = 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 National Agricultural Statistics Service (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			1998		1999				
	1996	1997	1998	Jul	Feb	Mar	Apr	May	Jun	Jul
	<i>1982-84=100</i>									
Consumer Price Index, all items	156.9	160.5	163.0	163.2	164.5	165.0	166.2	166.2	166.2	166.7
CPI, all items less food	157.5	161.1	163.6	163.6	164.7	165.3	166.7	166.6	166.7	167.2
All food	153.3	157.3	160.7	160.5	163.3	163.3	163.4	163.7	163.6	163.8
Food away from home	152.7	157.0	161.1	161.1	163.8	164.2	164.5	164.6	164.6	165.1
Food at home	154.3	158.1	161.1	160.8	163.8	163.4	163.5	163.9	163.7	163.7
Meats ¹	140.2	144.4	141.6	141.8	140.6	140.3	140.5	141.4	141.8	142.2
Beef and veal	134.5	136.8	136.5	136.1	137.3	137.0	137.9	137.9	139.4	138.9
Pork	148.2	155.9	148.5	149.7	143.5	143.1	141.8	144.7	145.4	146.9
Poultry	152.4	156.6	157.1	156.6	157.4	158.3	157.6	155.7	156.8	157.3
Fish and seafood	173.1	177.1	181.7	181.4	184.3	183.5	185.3	185.9	184.6	184.4
Eggs	142.1	140.0	135.4	127.5	138.2	134.2	129.6	121.4	125.1	119.5
Dairy and related products ²	142.1	145.5	150.8	148.2	162.3	161.5	156.1	156.2	156.1	155.7
Fats and oils ³	140.5	141.7	146.9	147.6	150.9	149.4	149.0	147.2	147.5	148.1
Fresh fruits	234.4	236.3	246.5	247.4	257.8	257.4	271.9	280.6	273.4	264.9
Fresh vegetables	189.2	194.6	215.8	214.0	209.8	209.2	206.2	207.7	203.1	206.0
Potatoes	180.6	174.2	185.2	196.5	184.0	185.9	183.3	191.5	194.7	194.7
Cereals and bakery products	174.0	177.6	181.1	181.8	183.8	183.5	184.8	185.1	185.7	186.3
Sugar and sweets	143.7	147.8	150.2	149.9	151.3	151.0	151.7	153.0	152.4	152.4
Nonalcoholic beverages ⁴	128.6	133.4	133.0	132.3	134.5	134.5	134.3	134.2	134.3	134.3
Apparel										
Footwear	126.6	127.6	128.0	127.0	124.8	126.4	129.2	127.4	125.4	125.2
Tobacco and smoking products	232.8	243.7	274.8	273.2	348.7	335.9	349.9	345.5	343.2	356.0
Alcoholic beverages	158.5	162.8	165.7	165.6	168.6	168.4	168.8	169.3	169.5	169.9

1. Beef, veal, lamb, pork, and processed meat. 2. Included butter through Dec. '97. 3. Includes butter as of Jan. '98. 4. Includes fruit juices as of Jan. '98.

This table is compiled with data provided by the Bureau of Labor Statistics (BLS). BLS operates a website at <http://stats.bls.gov/bls/home.html> and a Consumer Prices Information Hotline at (202) 606-7828.

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

	Annual			1998			1999			
	1996	1997	1998	Jul	Feb	Mar	Apr	May	Jun	Jul
	<i>1982=100</i>									
All commodities	127.7	127.6	124.4	124.9	122.3	122.6	123.5	124.5	125.1	125.5
Finished goods ¹	131.3	131.8	130.6	131.0	130.8	131.1	131.8	132.4	132.7	132.9
All foods ²	132.5	132.8	132.4	132.6	131.6	132.1	130.0	131.4	132.5	131.3
Consumer foods	133.6	134.5	134.3	134.7	134.1	134.7	133.2	134.4	135.3	134.3
Fresh fruits and melons	100.8	99.4	90.0	90.2	108.0	102.2	101.4	113.6	103.2	99.9
Fresh and dry vegetables	135.0	123.1	139.5	146.6	95.2	114.4	132.5	111.5	127.7	117.3
Dried and dehydrated fruits	124.2	124.9	124.4	125.6	122.6	122.6	122.6	120.5	120.5	120.6
Canned fruits and juices	137.5	137.6	134.4	134.5	136.7	138.0	137.9	138.1	138.4	138.6
Frozen fruits, juices and ades	123.9	117.2	116.1	117.1	124.6	124.8	124.1	122.3	122.4	120.4
Fresh veg. except potatoes	120.9	121.3	137.9	153.7	93.1	117.4	144.4	111.3	125.8	103.4
Canned vegetables and juices	121.2	120.1	121.5	122.0	120.6	120.9	120.9	120.9	121.0	121.0
Frozen vegetables	125.4	125.8	125.4	125.5	126.6	125.6	126.7	125.9	126.0	127.3
Potatoes	133.9	106.1	122.5	116.0	124.8	121.7	106.4	131.0	146.8	164.3
Eggs for fresh use (1991=100)	105.1	97.1	90.1	80.8	83.5	89.5	74.8	66.8	70.1	75.2
Bakery products	169.8	173.9	175.8	175.6	177.5	177.4	177.6	178.0	177.7	177.8
Meats	109.0	111.6	101.4	103.0	98.6	100.2	99.4	104.8	107.5	104.2
Beef and veal	100.2	102.8	99.5	99.3	99.3	102.8	102.2	104.3	110.9	107.0
Pork	120.9	123.1	96.6	101.3	88.3	87.9	86.0	100.2	96.7	92.8
Processed poultry	119.8	117.4	120.7	125.4	113.6	113.6	111.4	113.2	115.3	114.7
Unprocessed and packaged fish	165.9	178.1	183.0	179.1	186.9	200.9	184.9	187.3	188.4	189.9
Dairy products	130.4	128.1	138.1	135.6	144.0	141.8	132.1	132.9	135.5	136.4
Processed fruits and vegetables	127.6	126.4	125.8	126.1	128.1	128.4	128.1	127.6	127.8	127.8
Shortening and cooking oil	138.5	137.8	143.4	143.7	--	--	--	--	--	--
Soft drinks	134.0	133.2	134.8	134.6	137.0	137.2	137.6	137.3	136.7	136.6
Finished consumer goods less foods	127.6	128.2	126.4	127.0	126.6	127.0	129.1	129.5	129.9	130.8
Alcoholic beverages	132.8	135.1	135.2	134.9	137.2	135.9	137.2	137.3	137.4	137.9
Apparel	125.1	125.7	126.6	126.6	127.2	127.1	126.3	126.8	126.5	126.4
Footwear	141.6	143.7	144.7	144.5	144.6	144.6	144.6	144.4	144.5	144.5
Tobacco products	237.4	248.9	283.4	278.7	363.9	363.5	363.4	363.6	363.6	363.5
Intermediate materials ³	125.8	125.6	123.0	123.5	120.4	120.7	121.6	122.1	122.9	123.6
Materials for food manufacturing	125.3	123.2	123.1	122.9	122.2	121.4	117.8	119.1	120.1	118.6
Flour	136.8	118.7	109.2	108.0	105.2	107.5	103.0	104.7	105.3	103.2
Refined sugar ⁴	123.7	123.6	119.8	118.6	120.1	122.1	122.6	123.6	122.7	122.9
Crude vegetable oils	118.1	116.6	131.1	130.8	107.7	94.9	98.0	94.9	86.8	77.7
Crude materials ⁵	113.8	111.1	96.7	98.1	88.2	89.0	90.4	96.1	97.2	97.4
Foodstuffs and feedstuffs	121.5	112.2	103.8	103.7	98.2	98.8	95.8	99.7	99.6	95.9
Fruits and vegetables and nuts ⁶	122.5	115.5	117.2	119.9	111.5	115.8	122.5	121.3	121.6	115.6
Grains	151.1	111.2	93.4	92.0	86.4	84.9	83.1	84.6	82.2	71.7
Slaughter livestock	95.2	96.3	82.3	81.8	81.0	83.6	83.8	87.9	88.6	85.0
Slaughter poultry, live	140.5	131.0	141.4	156.7	126.4	124.8	118.7	136.6	135.6	137.6
Plant and animal fibers	129.4	117.0	110.4	120.9	90.8	96.3	94.4	93.8	89.6	79.4
Fluid milk	107.9	97.5	112.6	105.9	113.4	110.1	96.2	95.6	98.1	101.9
Oilseeds	139.4	140.8	114.4	120.7	93.0	91.3	93.5	93.3	91.5	82.2
Leaf tobacco	89.4	--	104.6	95.8	112.6	115.5	95.8	--	--	95.8
Raw cane sugar	118.6	116.8	117.2	119.7	118.5	118.1	119.6	118.3	119.5	120.6

-- = 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://stats.bls.gov/blshome.html> and a Producer Prices Information Hotline at (202) 606-7705.

Farm-Retail Price Spreads

Table 8—Farm-Retail Price Spreads

	Annual			1998			1999			
	1996	1997	1998	Jun	Jan	Feb	Mar	Apr	May	Jun
Market basket¹										
Retail cost (1982-84=100)	155.9	159.7	163.1	162.2	167.7	166.7	166.3	166.4	167.1	166.7
Farm value (1982-84=100)	111.1	106.2	103.3	102.9	101.1	100.6	99.9	96.2	97.2	98.8
Farm-retail spread (1982-84=100)	180.1	188.6	195.4	194.2	203.6	202.3	202.0	204.3	204.8	203.3
Farm value-retail cost (%)	24.9	23.3	22.2	22.2	21.1	21.1	21.0	20.2	20.4	20.7
Meat products										
Retail cost (1982-84=100)	140.1	144.4	141.6	141.5	139.4	140.6	140.3	140.5	141.4	141.8
Farm value (1982-84=100)	100.4	101.2	84.8	93.4	72.0	73.4	77.4	83.8	82.2	82.4
Farm-retail spread (1982-84=100)	180.9	188.6	200.0	190.9	208.6	209.5	204.8	198.7	202.2	202.7
Farm value-retail cost (%)	36.3	35.5	30.3	33.4	26.1	26.4	28.0	30.2	29.4	29.4
Dairy products										
Retail cost (1982-84=100)	142.1	145.5	150.8	148.1	161.2	162.3	161.5	156.1	156.2	156.1
Farm value (1982-84=100)	107.2	98.0	113.0	103.4	123.8	126.9	116.7	89.8	97.0	102.8
Farm-retail spread (1982-84=100)	174.3	189.3	185.6	189.3	195.7	194.9	202.8	217.2	210.8	205.3
Farm value-retail cost (%)	36.2	32.3	36.0	33.5	36.8	37.5	34.7	27.6	29.8	31.6
Poultry										
Retail cost (1982-84=100)	152.4	156.6	157.1	155.5	158.5	157.4	158.3	157.6	155.7	156.8
Farm value (1982-84=100)	126.2	120.6	126.1	126.6	119.6	116.5	114.9	111.7	121.7	124.4
Farm-retail spread (1982-84=100)	182.6	198.1	192.9	188.8	203.3	204.5	208.2	210.5	194.9	194.1
Farm value-retail cost (%)	44.3	41.2	42.9	43.6	40.4	39.6	38.9	37.9	41.8	42.5
Eggs										
Retail cost (1982-84=100)	142.1	140.0	137.1	126.3	137.8	138.2	134.2	129.6	121.4	125.1
Farm value (1982-84=100)	114.7	99.3	89.6	77.2	100.0	86.1	91.3	74.2	60.2	64.6
Farm-retail spread (1982-84=100)	191.4	213.0	222.5	214.6	205.6	231.8	211.3	229.1	231.4	233.8
Farm value-retail cost (%)	51.9	45.6	42.0	39.2	46.6	40.0	43.7	36.8	31.8	33.2
Cereal and bakery products										
Retail cost (1982-84=100)	174.0	177.6	181.1	181.6	184.2	183.8	183.5	184.8	185.1	185.7
Farm value (1982-84=100)	125.6	107.7	94.4	92.5	92.4	89.0	86.8	85.7	84.0	81.8
Farm-retail spread (1982-84=100)	180.7	187.4	193.2	194.0	197.0	197.0	197.0	198.6	199.2	200.2
Farm value-retail cost (%)	7.2	7.4	6.4	6.2	6.1	5.9	5.8	5.7	5.6	5.4
Fresh fruit										
Retail cost (1982-84=100)	243.0	245.1	258.2	256.6	295.3	283.0	282.9	301.7	311.8	302.7
Farm value (1982-84=100)	151.7	137.0	141.3	135.7	157.5	155.9	155.5	155.4	162.1	157.2
Farm-retail spread (1982-84=100)	285.2	295.0	312.2	312.4	358.9	341.7	341.7	369.2	380.9	369.9
Farm value-retail cost (%)	19.7	17.7	17.3	16.7	16.8	17.4	17.4	16.3	16.4	16.4
Fresh vegetables										
Retail cost (1982-84=100)	189.2	194.6	215.8	214.7	224.5	209.8	209.2	206.2	207.7	203.1
Farm value (1982-84=100)	113.3	118.7	124.5	105.5	124.5	121.5	122.9	135.0	126.9	130.6
Farm-retail spread (1982-84=100)	228.3	233.6	262.7	270.9	275.9	255.2	253.6	242.8	249.2	240.3
Farm value-retail cost (%)	20.3	20.7	19.6	16.7	18.8	19.7	19.9	22.2	20.7	21.8
Processed fruits and vegetables										
Retail cost (1982-84=100)	144.4	147.9	150.6	150.8	153.4	153.8	153.5	153.3	155.4	154.8
Farm value (1982-84=100)	121.5	115.9	115.1	120.6	114.3	113.6	113.6	113.2	114.6	114.6
Farm-retail spread (1982-84=100)	151.6	157.9	161.7	160.2	165.6	166.3	165.9	165.8	168.1	167.3
Farm value-retail cost (%)	20.0	18.6	18.2	19.0	17.7	17.6	17.6	17.6	17.5	17.6
Fats and oils										
Retail cost (1982-84=100)	140.5	141.7	146.9	143.3	150.5	150.9	149.4	149.0	147.2	147.5
Farm value (1982-84=100)	112.3	109.4	118.9	119.6	111.7	102.4	93.0	96.4	91.0	89.2
Farm-retail spread (1982-84=100)	150.9	153.6	157.2	152.0	164.8	168.7	170.1	168.4	167.9	168.9
Farm value-retail cost (%)	21.5	20.8	21.8	22.5	20.0	18.2	16.7	17.4	16.6	16.3

See footnotes at end of table, next page.

Table 8—Farm-Retail Price Spreads (continued)

	Annual			1999						
	1996	1997	1998	Jan	Feb	Mar	Apr	May	Jun	Jul
Beef, All Fresh Retail Price (cts/lb)	252.4	253.8	253.3	254.8	256.2	256.2	257.0	257.8	261.8	261.9
Beef, Choice										
Retail price (cents/lb.) ²	280.2	279.5	277.1	279.1	278.0	276.9	283.9	283.2	287.2	283.8
Wholesale value (cents) ³	158.1	158.2	153.8	156.3	153.7	160.3	166.1	171.3	178.1	173.3
Net farm value (cents) ⁴	134.9	137.2	130.8	130.1	132.8	139.9	141.1	139.6	142.1	138.7
Farm-retail spread (cents)	145.3	142.3	146.3	149.0	145.2	137.0	142.8	143.6	145.1	145.1
Wholesale-retail (cents) ⁵	122.1	121.3	123.3	122.8	124.3	116.6	117.8	111.9	109.1	110.5
Farm-wholesale (cents) ⁶	23.2	21.0	23.0	26.2	20.9	20.4	25.0	31.7	36.0	34.6
Farm value-retail price (%)	48	49	47	47	48	51	50	49	49	49
Pork										
Retail price (cents/lb.) ²	233.7	245.0	242.7	233.4	236.9	237.1	234.8	239.2	241.2	241.2
Wholesale value (cents) ³	123.2	123.1	97.3	95.6	91.0	89.2	95.0	105.3	100.5	97.0
Net farm value (cents) ⁴	99.4	95.3	61.2	50.7	52.6	50.2	56.4	68.5	63.0	58.4
Farm-retail spread (cents)	134.3	149.6	181.5	182.7	184.3	186.9	178.4	170.7	178.2	182.8
Wholesale-retail (cents) ⁵	110.5	121.9	145.4	137.8	145.9	147.9	139.8	133.9	140.7	144.2
Farm-wholesale (cents) ⁶	23.8	27.7	36.1	44.9	38.4	39	38.6	36.8	37.5	38.6
Farm value-retail price (%)	43	39	25	22	22	21	24	29	26	24

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 price and farm value, represents charges for assembling, processing, transporting and distributing. 2. Weighted-average price 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 lb. 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 contact: Veronica Jones (202) 694-5387, Larry Duewer (202) 694-5172*

Note: Pork price and spread procedures have been revised (January 1999) and historical data made consistent with the updated series. For the complete updated series call Larry Duewer.

Table 9—Price Indexes of Food Marketing Costs

	Annual			1997	1998				1999	
	1996	1997	1998	IV	I	II	III	IV	I	II
<i>1987=100*</i>										
Labor—hourly earnings and benefits	459.7	474.3	490.4	480.2	484.9	488.3	493.0	494.6	497.8	502.5
Processing	474.7	486.0	499.3	490.5	493.8	497.7	500.7	504.9	504.6	513
Wholesaling	516.0	536.2	552.5	545.4	546.8	552.5	555.4	555.1	556.9	562.3
Retailing	419.9	435.2	454.1	441.1	448.7	450.6	457.8	459.4	464.9	465.6
Packaging and containers	399.8	390.3	395.5	392.9	398.5	396.7	394.9	391.9	390.3	396.4
Paperboard boxes and containers	363.8	341.9	365.2	350.3	365.4	368.7	366.8	359.8	355.7	368.3
Metal cans	498.3	491.0	487.9	487.9	494.1	484.7	486.0	486.6	486.6	486.6
Paper bags and related products	437.8	441.9	432.9	442.5	438.8	434.0	430.2	428.5	425.6	435.7
Plastic films and bottles	326.5	326.6	322.8	327.5	326.7	325.0	321.0	318.5	319.7	321.4
Glass containers	460.5	447.4	446.8	446.6	446.9	446.9	446.1	447.3	447.8	447.8
Metal foil	235.7	233.4	232.0	236.4	231.8	232.6	232.6	230.9	228.2	226.1
Transportation services	429.8	430.0	428.3	429.4	429.9	431.8	426.3	425.0	403.9	393.7
Advertising	580.1	609.4	624.5	611.6	623.2	624.2	624.5	626.2	634.1	635.3
Fuel and power	670.7	668.5	619.7	669.0	625.1	622.9	629.2	601.6	586.6	627.3
Electric	501.3	499.2	492.1	491.5	482.2	489.3	511.8	485.0	479.0	484.0
Petroleum	666.8	616.7	457.0	609.6	495.5	470.0	439.2	423.3	388.4	504.0
Natural gas	1,136.7	1,214.0	1,239.4	1,249.4	1,229.4	1,242.1	1,268.5	1,217.7	1,206.3	1,222.8
Communications, water and sewage	296.8	302.8	307.6	304.2	305.5	308.0	308.5	308.5	309.3	308.5
Rent	268.2	265.6	260.5	265.1	262.5	260.4	260.4	258.8	257.5	257.5
Maintenance and repair	499.6	514.9	529.3	519.7	524.1	527.1	531.1	535.1	537.9	540.7
Business services	501.7	512.3	522.9	514.1	518.4	521.2	521.8	530.3	527.7	528.7
Supplies	338.3	337.8	332.3	337.9	335.6	332.4	331.4	329.5	326.6	326.4
Property taxes and insurance	564.3	580.1	598.3	587.3	591.1	595.4	600.7	606.1	609.6	615.2
Interest, short-term	103.9	108.9	103.7	110.1	106.5	106.7	105.6	96.0	93.2	96.7
Total marketing cost index	452.1	459.9	467.2	463.4	465.3	466.9	468.6	468.0	466.5	470.9

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		
				<i>Million lbs. ⁵</i>				<i>lbs.</i>		<i>\$/cwt</i>
Beef										
1996	519	25,525	2,073	28,117	1,877	377	25,863	68	0.700	65.06
1997	377	25,490	2,343	28,210	2,136	465	25,609	67	0.700	66.32
1998	465	25,760	2,642	28,867	2,171	393	26,303	68	0.700	61.48
1999	393	26,155	2,713	29,261	2,394	370	26,497	68	0.700	64-65
2000	370	24,531	2,800	27,701	2,290	365	25,046	64	0.700	66-72
Pork										
1996	396	17,117	618	18,131	970	366	16,795	49	0.776	56.53
1997	366	17,274	633	18,273	1,044	408	16,821	49	0.776	54.30
1998	408	19,011	704	20,123	1,229	586	18,308	53	0.776	34.72
1999	586	19,276	790	20,652	1,247	575	18,830	53	0.776	31-32
2000	575	18,655	775	20,005	1,200	525	18,280	51	0.776	34-37
Veal⁶										
1996	7	378	0	385	0	7	378	1	0.83	59
1997	7	334	0	341	0	8	333	1	0.83	82
1998	8	262	0	270	0	5	265	1	0.83	82
1999	5	229	0	234	0	6	228	1	0.83	87
2000	6	222	0	228	0	5	223	1	0.83	90
Lamb and mutton										
1996	8	268	73	349	6	9	334	1	0.89	85
1997	9	260	83	352	5	14	333	1	0.89	88
1998	14	251	112	377	6	12	359	1	0.89	74
1999	12	231	112	355	6	11	338	1	0.89	73
2000	11	213	114	338	6	10	322	1	0.89	71
Total red meat										
1996	930	43,288	2,764	46,982	2,853	759	43,370	120	--	--
1997	759	43,358	3,059	47,176	3,185	895	43,096	118	--	--
1998	895	45,284	3,458	49,637	3,406	996	45,235	123	--	--
1999	996	45,891	3,615	50,502	3,647	962	45,893	123	--	--
2000	962	43,621	3,689	48,272	3,496	905	43,871	117	--	--
Broilers										
1996	560	26,124	4	26,688	4,420	641	21,626	70	0.859	61
1997	641	27,041	5	27,687	4,664	607	22,416	72	0.859	59
1998	607	27,612	5	28,225	4,673	711	22,841	73	0.859	63
1999	711	29,389	4	30,104	4,612	800	24,692	78	0.859	58
2000	800	30,709	4	31,513	4,575	800	26,138	82	0.869	56
Mature chickens										
1996	7	491	0	498	265	6	228	1	1.0	--
1997	6	510	0	516	384	7	125	1	1.0	--
1998	7	525	0	533	426	6	101	1	1.0	--
1999	6	546	0	553	401	5	147	1	1.0	--
2000	5	567	0	572	415	5	152	1	1.0	--
Turkeys										
1996	271	5,401	1	5,673	438	328	4,906	19	1.0	66
1997	328	5,412	1	5,741	606	415	4,720	18	1.0	65
1998	415	5,215	0	5,630	446	304	4,880	18	1.0	62
1999	304	5,223	1	5,528	375	250	4,903	18	1.0	68
2000	250	5,332	0	5,582	390	300	4,892	18	1.0	64
Total poultry										
1996	839	32,015	5	32,859	5,123	975	26,760	90	--	--
1997	975	32,964	6	33,944	5,654	1,029	27,261	90	--	--
1998	1,029	33,352	6	34,387	5,545	1,022	27,821	91	--	--
1999	1,022	35,158	6	36,185	5,387	1,055	29,742	96	--	--
2000	1,055	36,607	4	37,666	5,380	1,105	31,181	100	--	--
Red meat and poultry										
1996	1,769	75,303	2,769	79,841	7,976	1,734	70,130	209	--	--
1997	1,734	76,322	3,065	81,120	8,839	1,924	70,357	208	--	--
1998	1,924	78,636	3,464	84,024	8,950	2,018	73,057	214	--	--
1999	2,018	81,049	3,621	86,687	9,034	2,017	75,635	219	--	--
2000	2,017	80,228	3,693	85,938	8,876	2,010	75,053	217	--	--

-- = 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.	
1993	13.5	6,005.8	4.7	6,023.9	158.9	769.6	10.7	5,084.6	236.4	72.5
1994	10.7	6,177.6	3.7	6,192.0	187.6	805.4	14.9	5,184.1	238.7	67.3
1995	14.9	6,215.6	4.1	6,234.6	208.9	847.2	11.2	5,167.3	235.6	72.9
1996	11.2	6,350.7	5.4	6,367.3	253.1	863.8	8.5	5,241.8	236.8	88.2
1997	8.5	6,473.1	6.9	6,488.5	227.8	894.7	7.4	5,358.6	240.0	81.2
1998	7.4	6,658.7	5.8	6,672.0	218.8	921.8	8.4	5,523.0	245.2	75.8
1999	8.4	6,872.8	5.0	6,886.2	161.8	959.8	5.0	5,759.6	253.3	68.8
2000	5.0	7,030.0	4.0	7,039.0	170.0	1,010.0	5.0	5,854.0	255.2	65.5

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 & Use¹

Table 12. U.S. milk supply, 1992-2000												
	Production	Commercial			Total commer- cial supply	CCC net re- movals	Commercial			CCC net removals		
		Farm use	Market- ings	Beg. stocks			Ending stocks	Disap- pear- ance	All milk price ¹	Skim solids basis	Total solid basis ²	
		Billion lbs. (milkfat basis)								\$/cwt	Billion lbs.	
1992	150.9	1.9	149.0	4.5	2.5	155.9	9.9	4.7	141.3	13.09	2.0	5.2
1993	150.6	1.8	148.8	4.7	2.8	156.3	6.6	4.5	145.1	12.80	3.9	5.0
1994	153.6	1.7	151.9	4.5	2.9	159.3	4.8	4.3	150.3	12.97	3.7	4.2
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	4.5	165.5	0.4	5.3	159.9	15.42	4.0	2.6
1999	162.2	1.3	160.9	5.3	3.9	170.1	0.3	5.8	164.0	15.05	6.0	3.7
2000	165.4	1.2	164.2	5.8	3.6	173.5	1.0	5.6	166.9	13.30	2.1	1.7

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			1998		1999					
	1996	1997	1998	Jun	Jan	Feb	Mar	Apr	May	Jun	
Broilers											
Federally inspected slaughter certified (mil. lb.)	26,336.3	27,270.7	27,862.7	2,347.3	2,425.1	2,263.3	2,606.6	2,520.3	2,468.9	2,573.7	
Wholesale price, 12-city (cents/lb.)	61.2	58.8	63.1	64.3	59.3	58.2	56.8	55.1	60.0	60.3	
Price of grower feed (\$/ton) ¹	175.1	157.7	129.1	133.1	116.6	109.3	106.9	107.2	106.0	102.7	
Broiler-feed price ratio ²	4.4	4.7	6.3	6.1	6.5	6.7	6.7	6.4	7.2	7.5	
Stocks beginning of period (mil. lb.)	560.1	641.3	606.8	674.7	711.1	709.4	713.9	777.0	800.1	805.4	
Broiler-type chicks hatched (mil.)	8,078.2	8,321.6	8,495.1	718.0	735.3	661.7	755.2	734.3	766.2	744.4	
Turkeys											
Federally inspected slaughter certified (mil. lb.)	5,465.6	5,477.9	5,280.6	457.9	410.9	363.8	431.7	439.3	440.8	454.4	
Wholesale price, Eastern U.S. 8-16 lb. young hens (cents/lb.)	66.5	64.9	62.2	60.6	57.7	58.8	61.7	63.0	65.6	68.9	
Price of turkey grower feed (\$/ton) ¹	165.8	142.7	115.6	117.7	107.1	102.0	98.7	99.2	95.7	94.3	
Turkey-feed price ratio ²	5.3	5.6	6.7	6.1	6.5	7.0	7.5	7.8	8.3	8.8	
Stocks beginning of period (mil. lb.)	271.3	328.0	415.1	614.1	304.3	363.9	375.9	370.7	455.5	493.3	
Poults placed in U.S. (mil.)	327.2	321.5	297.8	27.0	24.6	23.7	25.9	26.8	26.1	25.6	
Eggs											
Farm production (mil.)	76,532	77,677	79,905	6,456	6,971	6,282	7,043	6,769	6,925	6,724	
Average number of layers (mil.)	299	304	313	309	322	323	323	321	320	320	
Rate of lay (eggs per layer on farms)	256.2	255.3	255.4	20.9	21.6	19.5	21.8	21.1	21.6	21.0	
Cartoned price, New York, grade A large (cents/doz.) ³	88.2	81.2	75.8	67.3	79.9	69.6	75.5	60.2	59.2	54.9	
Price of laying feed (\$/ton) ¹	182.5	160.0	137.6	149.0	122.9	123.0	120.2	129.6	137.4	131.7	
Egg-feed price ratio ²	8.5	8.8	9.8	6.0	11.7	10.6	11.3	9.2	7.7	8.4	
Stocks, first of month											
Frozen (mil. doz.)	10.5	7.7	7.4	9.8	8.4	8.4	8.2	7.0	7.1	7.3	
Replacement chicks hatched (mil.)	401.6	424.5	438.4	39.3	35.7	35.6	41.3	42.0	40.6	40.6	

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			1998		1999					
	1996	1997	1998	Jun	Jan	Feb	Mar	Apr	May	Jun	
Milk--Basic Formula Price (\$/cwt) ¹	13.39	12.05	14.20	13.10	16.27	10.27	11.62	11.81	11.26	11.42	
Wholesale prices											
Butter, Central States (cents/lb.) ²	108.2	116.2	177.6	186.7	144.4	133.1	130.3	103.8	111.0	147.7	
Am. cheese, Wis. assembly pt. (cents/lb.)	149.1	132.4	158.1	151.3	162.3	131.5	134.0	133.6	124.8	138.1	
Nonfat dry milk (cents/lb.) ³	122.2	110.0	106.9	102.9	108.9	104.4	102.4	102.3	101.4	101.7	
USDA net removals											
Total (mil. lb.) ⁴	86.9	1,090.3	365.6	12.6	21.1	23.3	32.2	30.8	20.5	20.7	
Butter (mil. lb.)	0.1	38.4	6.3	0.0	0.0	0.0	0.4	0.4	0.0	0.0	
Am. cheese (mil. lb.)	4.6	11.3	8.2	0.6	0.7	0.5	0.4	0.3	0.3	0.1	
Nonfat dry milk (Mil. lb.)	57.2	298.0	326.4	29.1	23.4	35.9	37.3	48.9	53.9	62.5	
Milk											
Milk prod. 20 states (mil. lb.)	131,084	133,314	134,930	11,396	11,720	10,809	12,212	11,989	12,430	11,714	
Milk per cow (lb.)	16,726	17,180	17,501	1,477	1,521	1,403	1,584	1,554	1,609	1,515	
Number of milk cows (1,000)	7,837	7,760	7,710	7,730	7,704	7,702	7,708	7,714	7,725	7,730	
U.S. milk production (mil. lb.) ⁵	154,006	156,091	157,441	13,292	13,681	12,613	14,246	13,928	14,436	13,599	
Stocks, beginning ⁴											
Total (mil. lb.)	4,168	4,714	4,907	6,819	5,301	5,925	7,029	7,396	8,389	9,117	
Commercial (mil. lb.)	4,099	4,704	4,889	6,792	5,274	5,893	7,001	7,371	8,362	9,086	
Government (mil. lb.)	69	10	18	26	27	32	28	25	27	31	
Imports, total (mil. lb.) ⁴	2,911	2,698	4,591	369	362	278	348	327	305	--	
Commercial disappearance (mil. lb.) ⁴	154,745	156,120	159,920	13,680	13,293	11,660	14,082	13,126	13,886	--	
Butter											
Production (mil. lb.)	1,174.5	1,151.2	1,081.9	69.9	123.3	111.5	113.7	106.4	104.7	90.6	
Stocks, beginning (mil. lb.)	15.8	13.4	20.5	72.4	25.9	60.6	94.7	108.7	126.3	136.3	
Commercial disappearance (mil. lb.)	1,179.8	1,108.7	1,124.2	86.5	89.3	78.3	101.0	89.5	95.5	--	
American cheese											
Production (mil. lb.)	3,280.8	3,285.6	3,325.8	287.8	289.7	277.3	316.1	318.6	314.6	296.0	
Stocks, beginning (mil. lb.)	306.6	379.6	410.3	443.6	407.6	390.8	403.9	406.0	450.5	495.7	
Commercial disappearance (mil. lb.)	3,229.7	3,269.0	3,349.7	283.4	308.5	265.4	315.4	277.4	272.0	--	
Other cheese											
Production (mil. lb.)	3,936.7	4,044.9	4,176.1	354.2	349.0	323.0	375.6	354.4	361.6	374.9	
Stocks, beginning (mil. lb.)	105.3	107.3	70.0	124.8	109.5	108.9	139.8	146.1	172.9	181.0	
Commercial disappearance (mil. lb.)	4,242.9	4,366.6	4,450.6	369.2	372.5	316.2	400.0	354.7	380.5	--	
Nonfat dry milk											
Production (mil. lb.)	1,061.8	1,271.6	1,135.4	83.4	120.0	115.8	128.5	133.7	137.2	123.1	
Stocks, beginning (mil. lb.)	70.6	71.1	103.3	132.7	56.3	82.4	107.6	122.7	136.5	163.7	
Commercial disappearance (mil. lb.)	1,009.5	894.1	867.5	83.4	72.1	55.1	76.7	71.6	57.0	--	
Frozen dessert											
Production (mil. gal.) ⁶	1,240.9	1,290.0	1,325.9	139.6	80.9	90.6	111.0	117.6	119.8	135.8	
	Annual			1997		1998				1999	
	1996	1997	1998	IV	I	II	III	IV	I	II	
Milk production (mil. lb.)	154,006	156,091	157,441	38,031	39,164	40,821	38,519	38,937	40,540	41,963	
Milk per cow (lb.)	16,433	16,871	17,192	4,144	4,268	4,451	4,210	4,261	4,437	4,586	
No. of milk cows (1,000)	9,372	9,252	9,158	9,200	9,176	9,171	9,149	9,137	9,136	9,151	
Milk-feed price ratio	1.60	1.54	1.97	1.71	1.73	1.71	2.05	2.46	2.20	1.81	
Returns over concentrate costs (\$/cwt milk)	10.98	9.80	12.15	11.00	11.10	10.40	12.25	14.80	13.00	9.90	

-- = Not available. Quarterly values for latest year are preliminary. 1. Manufacturing grade milk. 2. Grade AA Chicago before June 1998. 3. Prices paid f.o.b. Central States production area. 4. Milk equivalent, fat basis. 5. Monthly data ERS estimates. 6. Hard ice cream, ice milk, and hard sherbet.

Information contact: LaVerne Williams (202) 694-5190

Table 15—Wool

	Annual			1997	1998				1999	
	1996	1997	1998	IV	I	II	III	IV	I	II
U.S. wool price (¢/lb.) ¹	193	238	162	258	209	178	142	115	115	116
Imported wool price (¢/lb.) ²	196	206	164	204	192	176	141	141	146	142
U.S. mill consumption, scoured										
Apparel wool (1,000 lb.)	129,525	130,386	98,373	32,794	29,318	29,577	21,948	17,530	17,767	17,385
Carpet wool (1,000 lb.)	12,311	13,576	16,331	3,420	3,871	4,052	4,020	4,388	4,538	3,855

-- = 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: Mae Dean Johnson (202) 694-5299

Table 16—Meat Animals

	Annual			1998			1999			
	1996	1997	1998	Jul	Feb	Mar	Apr	May	Jun	Jul
Cattle on feed (7 states, 1000+ head capacity)										
Number on feed (1,000 head) ¹	8,667	8,943	9,455	7,825	8,907	8,868	8,889	8,573	8,537	8,173
Placed on feed (1,000 head)	19,564	20,765	19,697	1,677	1,553	1,731	1,433	1,723	1,505	1,565
Marketings (1,000 head)	18,636	19,552	19,126	1,755	1,550	1,550	1,671	1,686	1,825	1,816
Other disappearance (1,000 head)	652	701	691	41	42	52	78	73	44	43
Market prices (\$/cwt)										
Slaughter cattle										
Choice steers, 1,100-1,300 lb.										
Texas	65.06	65.99	61.75	60.28	63.13	64.75	65.34	65.00	66.15	64.15
Neb. direct	65.05	66.32	61.48	59.97	62.01	64.63	65.19	64.41	63.20	64.05
Boning utility cows, Sioux Falls	30.33	34.27	36.20	38.14	35.93	37.36	36.80	39.50	40.00	42.50
Feeder steers										
Medium no. 1, Oklahoma City										
600-650 lb.	61.31	81.34	77.70	81.54	79.14	81.14	82.73	81.08	82.15	84.24
750-800 lb.	61.08	76.19	71.78	69.13	73.07	70.98	70.50	70.01	76.01	76.94
Slaughter hogs										
Barrows and gilts, 51-52 percent lean										
Iowa, S. Minn. converted to live equal.	56.53	54.30	34.72	39.85	29.65	28.25	31.69	38.45	35.39	32.84
Sows, Iowa, S. MN 1-2 300-400 lb.	--	40.24	20.29	23.20	15.43	18.41	19.49	25.28	24.29	16.22
Slaughter sheep and lambs										
Lambs, Choice, San Angelo	85.27	87.95	74.20	74.38	67.88	68.54	70.50	82.70	81.06	77.29
Ewes, Good, San Angelo	39.05	49.33	40.90	49.75	40.25	45.17	46.63	41.36	41.70	48.18
Feeder lambs										
Choice, San Angelo	94.88	104.43	79.59	95.31	82.00	81.75	81.81	84.71	80.60	77.29
Wholesale meat prices, Midwest										
Boxed beef cut-out value										
Choice, 700-800 lb.	102.01	102.75	98.60	99.16	97.98	103.88	107.42	111.07	116.01	111.14
Select, 700-800 lb.	95.34	96.15	92.19	96.76	95.22	102.01	102.11	101.95	104.76	101.45
Canner and cutter cow beef	58.18	64.50	61.49	63.98	63.00	66.18	63.51	67.52	68.20	70.33
Pork cutout	--	--	53.07	57.62	47.72	45.84	49.83	57.38	54.25	54.25
Pork loins, bone-in, 1/4 " trim, 14-19 lb.	138.73	128.75	102.04	104.08	92.35	83.47	99.35	107.44	97.62	105.72
Pork bellies, 12-14 lb.	69.96	73.91	52.38	48.39	50.76	46.51	49.23	53.76	53.41	47.78
Hams, bone-in, trimmed, 20-23 lb.	--	--	--	--	43.78	42.86	40.06	44.03	43.54	40.79
All fresh beef retail price	252.44	253.77	253.28	251.93	256.16	256.17	256.97	257.80	261.84	258.87
Commercial slaughter (1,000 head) ²										
Cattle	36,583	36,318	35,471	3,039	2,722	3,049	2,972	2,997	3,207	3,084
Steers	17,819	17,529	17,430	1,568	1,293	1,464	1,480	1,576	1,656	1,576
Heifers	10,756	11,528	11,450	929	945	1,031	978	922	1,047	922
Cows	7,274	6,564	5,985	490	440	499	460	446	448	446
Bull and stags	728	696	606	52	44	55	54	53	56	53
Calves	1,768	1,575	1,456	134	100	117	97	89	105	111
Sheep and lambs	4,184	3,911	3,911	281	299	423	310	270	270	265
Hogs	92,394	91,960	101,208	8,270	7,905	9,117	8,534	7,438	8,319	7,910
Barrows and gilts	88,224	88,409	97,026	7,906	7,600	8,769	8,217	7,154	7,154	7,154
Commercial production (mil. lb.)										
Beef	25,421	25,384	25,656	2,213	1,997	2,230	2,155	2,151	2,321	2,256
Veal	368	324	250	18	17	20	18	17	17	17
Lamb and mutton	265	257	247	21	20	29	21	18	19	19
Pork	17,084	17,244	18,981	1,529	1,501	1,737	1,630	1,418	1,583	1,489
	Annual			1998				1999		
	1996	1997	1998	I	II	III	IV	I	II	III
Hogs and pigs (U.S.) ³										
Inventory (1,000 head) ¹	58,201	56,124	61,158	61,158	60,163	62,213	63,488	62,206	59,851	60,536
Breeding (1,000 head) ¹	6,770	6,578	6,957	6,957	6,942	6,958	6,875	6,682	6,527	6,515
Market (1,000 head) ¹	51,431	49,546	54,200	54,200	53,220	55,254	56,612	55,523	53,323	54,020
Farrowings (1,000 head)	11,114	11,479	12,038	2,929	3,086	3,054	2,993	2,897	2,990	2,936
Pig crop (1,000 head)	94,459	99,584	104,980	25,480	26,989	26,634	25,902	25,293	26,301	--
Cattle on Feed, 7 states (1,000 head) ⁴										
Steers and Steer Calves	5,588	5,410	5,803	5,803	5,245	4,608	5,086	5,086	5,331	5,728
Heifers and Heifer Calves	3,005	3,455	3,615	3,615	3,325	3,191	3,268	3,268	3,527	3,783
Cows and Bulls	74	78	37	37	37	26	22	22	31	44

-- = 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. Beginning of period. 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
	Set-aside ³	Planted	Harvested									
	Mil. Acres			Bu./acre								\$/bu.
Wheat												
1995/96	6.1	69.0	61.0	35.8	2,183	2,757	154	986	1,241	2,381	376	4.55
1996/97	--	75.1	62.8	36.3	2,277	2,746	308	993	1,002	2,302	444	4.30
1997/98	--	70.4	62.8	39.5	2,481	3,020	250	1,007	1,040	2,298	722	3.38
1998/99*	--	65.9	59.0	43.2	2,550	3,376	404	986	1,042	2,431	945	2.65
1999/2000*	--	62.7	54.5	42.5	2,315	3,364	325	1,005	1,150	2,480	884	2.45-2.95
	Mil. acres			lb./acre				Mil. cwt (rough equiv)				\$/cwt
Rice⁶												
1995/96	0.5	3.1	3.1	5,621.0	173.9	212.6	--	6/ 104.6	83.0	187.6	25.0	9.15
1996/97	--	2.8	2.8	6,120.0	171.6	206.6	--	6/ 101.0	78.4	179.4	27.2	9.96
1997/98	--	3.1	3.1	5,897.0	183.0	219.4	--	6/ 106.5	85.2	191.7	27.7	9.70
1998/99*	--	3.3	3.3	5,669.0	188.1	226.0	--	6/ 109.8	85.0	194.8	31.2	8.80
1999/2000*	--	3.6	3.6	5,993.0	214.2	255.9	--	6/ 112.6	85.0	197.6	58.3	5.50-6.00
	Mil. acres			Bu./acre				Mil. bu.				\$/bu.
Corn												
1995/96	7.7	71.5	65.2	113.5	7,400	8,974	4,708	1,612	2,228	8,548	426	3.24
1996/97	--	79.2	72.6	127.1	9,233	9,672	5,299	1,692	1,797	8,789	883	2.71
1997/98	--	79.5	72.7	126.7	9,207	10,099	5,505	1,782	1,504	8,791	1,308	2.43
1998/99*	--	80.2	72.6	134.4	9,761	11,089	5,575	1,845	1,950	9,370	1,719	1.95
1999/2000*	--	77.6	71.0	134.7	9,561	11,290	5,575	1,910	1,925	9,410	1,880	1.70-2.10
	Mil. acres			Bu./acre				Mil. bu.				\$/bu.
Sorghum												
1995/96	1.7	9.4	8.3	55.6	459	530	295	19	198	512	18	3.19
1996/97	--	13.1	11.8	67.3	795	814	516	45	205	766	47	2.34
1997/98	--	10.1	9.2	69.2	634	681	365	55	212	632	49	2.21
1998/99*	--	9.6	7.7	67.3	520	569	270	45	190	505	64	1.70
1999/2000*	--	9.3	8.5	69.2	588	652	325	55	200	580	72	1.40-1.80
	Mil. acres			Bu./acre				Mil. bu.				\$/bu.
Barley												
1995/96	2.9	6.7	6.3	57.2	359	513	179	172	62	413	100	2.89
1996/97	--	7.1	6.7	58.5	392	529	217	172	31	419	109	2.74
1997/98	--	6.7	6.2	58.1	360	510	144	172	74	390	119	2.38
1998/99*	--	6.3	5.9	60.1	352	501	162	170	28	361	141	1.95
1999/2000*	--	5.2	4.8	58.2	281	457	120	172	30	322	135	1.70-2.10
	Mil. acres			Bu./acre				Mil. bu.				\$/bu.
Oats												
1995/96	0.8	6.2	3.0	54.6	161	342	182	92	2	276	66	1.67
1996/97	--	4.6	2.7	57.7	153	317	153	95	3	250	67	1.96
1997/98	--	5.1	2.8	59.5	167	332	161	95	2	258	74	1.60
1998/99*	--	4.9	2.8	60.4	167	349	171	95	2	267	81	1.15
1999/2000*	--	4.7	2.6	61.6	162	343	165	96	2	263	80	0.90-1.30
	Mil. acres			Bu./acre				Mil. bu.				\$/bu.
Soybeans⁷												
1995/96	--	62.6	61.6	35.3	2,177	2,516	112	1,370	851	2,333	183	6.72
1996/97	--	64.2	63.3	37.6	2,380	2,573	123	1,436	882	2,441	132	7.35
1997/98	--	70.0	69.1	38.9	2,689	2,826	158	1,597	870	2,626	200	6.47
1998/99*	--	72.4	70.8	38.9	2,757	2,961	201	1,585	790	2,576	385	5.00
1999/2000*	--	74.1	73.3	39.2	2,870	3,259	159	1,645	915	2,719	540	4.10-4.90
								Mil. lbs.				c/lb.
Soybean oil												
1995/96	--	--	--	--	15,240	16,472	--	13,465	992	14,457	2,015	24.75
1996/97	--	--	--	--	15,752	17,821	--	14,263	2,037	16,300	1,520	22.50
1997/98	--	--	--	--	18,143	19,724	--	15,264	3,077	18,341	1,382	25.84
1998/99*	--	--	--	--	17,945	19,400	--	15,350	2,350	17,700	1,700	19.75
1999/2000*	--	--	--	--	18,505	20,270	--	15,750	2,000	17,750	2,520	15.00-18.00
								1,000 tons				\$/ton ⁸
Soybean meal												
1995/96	--	--	--	--	32,527	32,826	--	26,611	6,002	32,613	212	236.0
1996/97	--	--	--	--	34,210	34,524	--	27,320	6,994	34,314	210	270.9
1997/98	--	--	--	--	38,171	38,437	--	28,889	9,330	38,219	218	185.5
1998/99*	--	--	--	--	37,537	37,800	--	30,600	6,950	37,550	250	137.5
1999/2000*	--	--	--	--	39,050	39,350	--	31,100	8,000	39,100	250	130-155

See footnotes at end of table, next page

Table 17—Supply & Utilization (continued)

	Area			Yield	Production	Total supply ⁴	Feed & residual	Other domestic use	Exports	Total use	Ending stocks	Farm price ⁵
	Set-aside ³	Planted	Harvested									
	<i>Mil. Acres</i>					<i>Lb./acre</i>	<i>Mil. Bales</i>					
Cotton ⁹												
1995/96	1.7	16.9	16.0	537	17.9	21.0	--	10.6	7.7	18.3	2.6	75.4
1996/97	0.3	14.7	12.9	705	18.9	22.0	--	11.1	6.9	18.0	4.0	69.3
1997/98	--	13.9	13.4	673	18.8	22.8	--	11.3	7.5	18.8	3.9	65.2
1998/99*	--	13.4	10.7	625	13.9	18.3	--	10.5	4.2	14.7	3.6	60.9
1999/2000*	--	13.9	13.0	665	18.0	21.7	--	10.6	5.5	16.1	5.5	--

-- = Not available or not applicable. *August 12, 1999 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 diversion, acreage reduction, 50-92, & 0-92 programs. 0/92 & 50/92 set-aside includes idled acreage and acreage planted to minor oilseeds, sesame, and crambe. 4. Includes imports. 5. Marketing-year weighted average price received by farmers. Does not include an allowance for loans outstanding and government purchases. 6. Residual included in domestic use. 7. Includes seed. 8. Simple average of 48 percent protein, Decatur. 9. Upland and extra-long staple. Stocks estimates based on Census Bureau data, resulting in an unaccounted difference between supply and use estimates and changes in ending stocks. *Information contacts: Wheat, rice, feed grains, Jenny Gonzales (202) 694-5296; soybeans, soybean products, and cotton, Mae Dean Johnson (202) 694-5299*

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

	Marketing year ¹			1998		1999				
	1996/97	1997/98	1998/99	Jun	Jan	Feb	Mar	Apr	May	Jun
Wheat, no. 1 HRW, Kansas City (\$/bu.) ²	4.88	3.71	--	3.16	3.27	3.05	3.02	2.94	2.89	2.93
Wheat, DNS, Minneapolis (\$/bu.) ³	4.96	4.31	--	4.01	3.92	3.78	3.79	3.65	3.61	3.73
Rice, S.W. La. (\$/cwt) ⁴	20.34	18.92	--	18.50	17.50	17.06	16.52	16.13	15.56	15.13
Corn, no. 2 yellow, 30-day, Chicago (\$/bu.) ⁵	2.84	2.56	--	2.44	2.16	2.15	2.20	2.13	2.16	2.11
Sorghum, no. 2 yellow, Kansas City (\$/cwt) ⁵	4.54	4.11	--	4.03	3.41	3.43	3.48	3.37	3.35	3.32
Barley, feed, Duluth (\$/bu.)	2.32	1.90	--	--	--	--	--	--	--	--
Barley, malting Minneapolis (\$/bu.)	3.18	2.50	--	--	--	--	--	--	--	--
U.S. cotton price, SLM, 1-1/16 in. (¢/lb.) ⁶	71.60	67.79	--	73.50	56.20	55.46	58.17	57.01	55.54	53.74
Northern Europe prices cotton index (¢/lb.) ⁷	78.66	72.11	--	68.06	55.78	56.26	56.74	57.86	59.85	58.68
U.S. M 1-3/32 in. (¢/lb.) ⁸	82.86	77.98	--	80.63	--	--	--	--	--	--
Soybeans, no. 1 yellow, 30-day Chicago (\$/bu)	7.38	6.51	--	6.31	5.29	4.86	4.69	4.70	4.59	4.45
Soybean oil, crude, Decatur (¢/lb.)	22.50	24.69	--	25.83	22.88	19.96	19.54	19.54	17.85	16.50
Soybean meal, 48% protein, Decatur (\$/ton)	270.90	276.78	--	168.60	138.80	132.30	133.00	134.50	133.20	139.10

-- = No quotes. 1. Beginning June 1 for wheat and barley; Aug. 1 for rice and cotton; September 1 for corn, sorghum, and soybeans; October 1 for soybean meal and oil. 2. Ordinary protein. 3. 14 percent protein. 4. Long grain, milled basis. 5. Marketing year 1997/98 data are preliminary. 6. Average spot market. 7. Liverpool Cotlook "A" Index; average of 5 lowest prices of 13 selected growths. 8. Cotton, Memphis territory growths. *Information contacts: Wheat, rice, and feed, Jenny Gonzales (202) 694-5296; soybeans, soybean products, and cotton, Mae Dean Johnson (202) 694-5299*

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

	Target price	Basic loan rate	Findley or announced loan rate ¹	Total deficiency payment rate	Effective base acres ²	Program ³	Flexibility contract payment rate	Acres under contract	Contract payment yields	Participation rate ⁴
					Mil. acres	Percent of base	\$/bu.	Mil. acres	Bu./cwt	Percent
	\$/bu.									
Wheat										
1994/95	4.00	2.72	2.58	0.61	78.10	0/0/0	--	--	--	87
1995/96	4.00	2.69	2.58	0.00	77.70	0/0/0	--	--	--	85
1996/97	--	--	2.58	--	--	--	0.874	76.7	34.70	99
1997/98	--	--	2.58	--	--	--	0.631	76.7	34.70	--
1998/99 ⁵	--	--	2.58	--	--	--	0.663	78.9	34.50	--
	\$/cwt									
Rice										
1994/95	10.71	6.50	5.88 ⁶	3.79	4.20	0/0/0	--	--	--	95
1995/96	10.71	6.50	6.50 ⁶	3.22 ⁷	4.20	5/0/0	--	--	--	95
1996/97	--	6.50	--	--	--	--	2.766	4.2	48.27	99
1997/98	--	6.50	--	--	--	--	2.710	4.2	48.17	--
1998/99 ⁵	--	6.50	--	--	--	--	2.921	4.2	48.17	--
	\$/bu.									
Corn										
1994/95	2.75	1.99	1.89	0.57	81.50	0/0/0	--	--	--	81
1995/96	2.75	1.94	1.89	0.00	81.80	7.5/0/0	--	--	--	82
1996/97	--	--	1.89	--	--	--	0.251	80.7	102.90	98
1997/98	--	--	1.89	--	--	--	0.486	80.9	102.80	--
1998/99 ⁵	--	--	1.89	--	--	--	0.377	82.0	102.60	--
	\$/bu.									
Sorghum										
1994/95	2.61	1.89	1.80	0.59	13.50	0/0/0	--	--	--	81
1995/96	2.61	1.84	1.80	0.00	13.30	0/0/0	--	--	--	77
1996/97	--	--	1.81	--	--	--	0.323	13.1	57.30	99
1997/98	--	--	1.76	--	--	--	0.544	13.1	57.30	--
1998/99 ⁵	--	--	1.74	--	--	--	0.452	13.6	56.90	--
	\$/bu.									
Barley										
1994/95	2.36	1.62	1.54	0.52	10.70	0/0/0	--	--	--	84
1995/96	2.36	1.58	1.54	0.00	10.70	0/0/0	--	--	--	82
1996/97	--	--	1.55	--	--	--	0.332	10.5	47.30	99
1997/98	--	--	1.57	--	--	--	0.277	10.5	47.20	--
1998/99 ⁵	--	--	1.56	--	--	--	0.284	11.2	46.70	--
	\$/bu.									
Oats										
1994/95	1.45	1.02	0.97	0.19	6.80	0/0/0	--	--	--	40
1995/96	1.45	1.00	0.97	0.00	6.50	0/0/0	--	--	--	44
1996/97	--	--	1.03	--	--	--	0.033	6.2	50.80	97
1997/98	--	--	1.11	--	--	--	0.031	6.2	50.80	--
1998/99 ⁵	--	--	1.11	--	--	--	0.031	6.5	50.70	--
	\$/bu.									
Soybeans ⁸										
1994/95	--	--	4.92	--	--	--	--	--	--	--
1995/96	--	--	4.92	--	--	--	--	--	--	--
1996/97	--	--	4.97	--	--	--	--	--	--	--
1997/98	--	--	5.26	--	--	--	--	--	--	--
1998/99	--	--	5.26	--	--	--	--	--	--	--
	¢/lb.									
Upland cotton										
1994/95	72.90	50.00	50.00 ⁹	4.60	15.30	11/0/0	--	--	--	89
1995/96	72.90	51.92	51.92 ⁹	0.00 ⁷	15.50	0/0/0	--	--	--	79
1996/97	--	51.92	--	--	--	--	8.882	16.2	610.00	99
1997/98	--	51.92	--	--	--	--	7.625	16.2	608.00	--
1998/99 ⁵	--	51.92	--	--	--	--	8.173	16.4	604.00	--

-- = Not available. 1. There are no Findley loan rates for rice or cotton. See footnotes 5 and 7. 2. Prior to 1996, national effective crop acreage base as determined by FSA. Net of CRP. 3. Program requirements for participating producers (mandatory acreage reduction program/mandatory paid land diversion/optional paid land diversion). Acres idled must be devoted to a conserving use to receive program benefits. 4. Percentage of effective base enrolled in acreage reduction programs. Starting in 1996, participation rate is the percent of eligible acres that entered production flexibility contracts. 5. Estimated payment rates and acres under contract. 6. A marketing loan program has been in effect for rice since 1985/86. Loans may be repaid at the lower of: a) the loan rate or b) the adjusted world market price (announced weekly). Loans cannot be repaid at less than a specified fraction of the loan rate. Data refer to marketing-year average loan repayment rates. Beginning with the 1996 crop, loans are repaid at the lower of the loan rate plus accumulated interest or the adjusted world price. 7. Guaranteed payment rates for producers in the 50/85/92 program were \$0.034/lb. for upland cotton and \$4.21/cwt. for rice. 8. There are no target prices, base acres, acreage reduction programs or deficiency payment rates for soybeans. 9. A marketing loan program has been in effect for cotton since 1986/87. In 1987/88 and after, loans may be repaid at the lower of: a) the loan rate or b) the adjusted world market price (announced weekly; Plan B). Starting in 1991/92, loans cannot be repaid at less than 70 percent of the loan rate. Data refer to annual average loan repayment rates. Beginning with the 1996 crop, loans are repaid at the lower of the loan rate plus accumulated interest or the adjusted world price. Note: The 1996 Farm Act replaced target prices and deficiency payments with fixed annual payments to producers. Information contact: Brenda Chewning, Farm Service Agency (202) 720-8838

Table 20—Fruit

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Citrus ¹										
Production (1,000 tons)	13,186	10,860	11,285	12,452	15,274	14,561	15,799	15,712	17,234	18,009
Per capita consumpt. (lb.) ²	23.6	21.4	19.1	24.4	26.0	25.0	24.1	25.0	26.8	--
Noncitrus ³										
Production (1,000 tons)	16,345	15,640	15,740	17,124	16,563	17,341	16,358	16,103	18,382	16,035
Per capita consumpt. (lb.) ²	72.8	70.4	70.6	73.8	73.9	75.6	73.7	74.0	76.0	--
	1998			1999						
	Jul	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Grower prices										
Apples (¢/pound) ⁴	12.7	17.5	14.9	15.8	15.0	15.3	14.1	13.3	12.7	12.4
Pears (¢/pound) ⁴	18.00	17.60	15.25	18.65	18.10	16.55	16.85	17.00	17.80	23.45
Oranges (\$/box) ⁵	6.71	5.87	4.74	5.15	5.60	6.02	5.82	6.46	8.78	10.10
Grapefruit (\$/box) ⁵	3.66	3.19	2.70	1.80	1.60	1.67	2.23	3.66	8.78	10.67
Stocks, ending										
Fresh apples (mil. lb.)	322	5,914	5,008	4,169	3,407	2,607	1,858	1,252	732	--
Fresh pears (mil. lb.)	0	384	311	237	177	120	69	39	10	--
Frozen fruits (mil. lb.)	1,040	1,353	1,209	1,103	1,022	911	789	801	878	--
Frozen conc. orange juice (mil. single-strength gallons)	918	629	731	825	907	894	1,035	878	793	--

-- = 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

	1989	1990	1991	1992	1993	1994	1995	1996	1997	1998
Production ¹										
Total vegetables (1,000 cwt)	543,435	562,938	565,754	689,070	688,824	782,505	747,988	762,952	760,951	732,259
Fresh (1,000 cwt) ^{2,4}	254,418	254,039	242,733	389,597	387,330	412,880	393,398	409,317	433,878	419,779
Processed (tons) ^{3,4}	14,450,860	15,444,970	16,151,030	14,973,630	15,074,707	18,481,238	17,729,497	17,681,732	16,353,639	15,624,011
Mushrooms (1,000 lbs) ⁵	714,992	749,151	746,832	776,357	750,799	782,340	777,870	776,677	808,678	--
Potatoes (1,000 cwt)	370,444	402,110	417,622	425,367	428,693	467,054	443,606	499,254	467,091	477,754
Sweet potatoes (1,000 cwt)	11,358	12,594	11,203	12,005	11,027	13,380	12,821	13,216	13,327	12,382
Dry edible beans (1,000 cwt)	23,729	32,379	33,765	22,615	21,862	28,950	30,689	27,912	29,370	30,828
	1998			1999						
	Jul	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
Shipments (1,000 cwt)										
Fresh	23,559	20,480	20,767	19,681	19,644	26,297	25,769	29,042	36,831	21,355
Iceberg lettuce	3,659	3,360	3,262	3,068	2,854	3,721	3,018	3,594	4,370	3,287
Tomatoes, all	2,984	3,198	3,309	3,496	3,373	4,588	3,874	3,596	4,053	2,766
Dry-bulb onions	2,967	3,430	3,487	2,896	2,845	3,825	3,630	3,626	3,759	3,029
Others ⁶	13,949	10,492	10,709	10,221	10,572	14,163	15,247	18,226	24,649	12,273
Potatoes, all	12,426	13,401	14,111	12,819	11,691	18,522	17,737	16,160	13,579	9,825
Sweet potatoes	148	736	415	263	227	462	208	184	196	155

-- = Not available. 1. Calendar year except mushrooms. 2. Includes fresh production of asparagus, broccoli, carrots, cauliflower, celery, sweet corn, lettuce, honeydews, onions, & tomatoes through 1991. 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			1997	1998				1999	
	1996	1997	1998	IV	I	II	III	IV	I	II
Sugar										
Production ¹	7,268	7,418	7,891	4,088	2,376	824	733	3,959	2,636	--
Deliveries ¹	9,633	9,755	9,851	2,469	2,261	2,465	2,616	2,508	2,271	--
Stocks, ending ¹	3,195	3,377	3,423	3,377	3,917	2,881	1,679	3,423	4,219	--
Coffee										
Composite green price ²										
N.Y. (¢/lb.)	109.35	146.49	114.43	134.89	143.58	117.73	98.57	97.83	94.37	90.41
	Annual			1998				1999		
	1996	1997	1998	Mar	Oct	Nov	Dec	Jan	Feb	Mar
Tobacco										
Avg. price to grower ³										
Flue-cured (\$/lb.)	1.83	1.73	1.75	--	1.87	1.81	--	--	--	--
Burley (\$/lb.)	1.92	1.86	1.91	1.76		1.92	1.92	1.90	1.85	1.74
Domestic taxable removals										
Cigarettes (bil.)	486.0	471.4	--	40.2	40.54	39.58	29.14	--	--	--
Large cigars (mil.) ⁴	3,166.4	3,552.9	--	325.6	316.67	288.39	299.40	--	--	--

-- = 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. 4. Includes imports of large cigars. *Information contacts: sugar, Fannye Jolly (202) 694-5249; tobacco, Tom Capehart (202) 694-5245*

World Agriculture

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

	1990/91	1991/92	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/2000
Wheat										
Area (hectares)	231.4	222.5	222.9	222.0	214.5	219.2	230.6	228.3	224.7	218.6
Production (metric tons)	588.0	542.9	562.4	558.8	524.0	538.5	583.6	609.9	587.8	575.9
Exports (metric tons) ¹	101.1	111.2	113.0	101.4	100.8	98.8	101.3	100.8	100.0	100.4
Consumption (metric tons) ²	561.9	555.5	550.3	561.7	547.3	550.1	576.4	584.6	590.3	587.5
Ending stocks (metric tons) ³	145.0	132.5	144.5	141.6	118.3	106.7	113.8	139.2	136.7	125.0
Coarse grains										
Area (hectares)	316.3	321.8	323.4	316.7	322.1	313.2	322.0	309.9	304.9	301.5
Production (metric tons)	828.8	810.4	871.5	798.8	871.2	802.8	908.2	880.5	877.1	872.5
Exports (metric tons) ¹	88.8	95.6	92.2	85.0	98.3	87.4	94.1	85.5	92.8	93.0
Consumption (metric tons) ²	817.2	809.8	843.6	838.5	857.3	842.4	877.9	873.3	869.9	873.4
Ending stocks (metric tons) ³	134.8	135.4	163.2	123.5	137.4	97.9	128.2	135.4	142.6	141.7
Rice, milled										
Area (hectares)	146.6	147.3	146.4	145.0	147.4	148.0	149.8	150.8	151.3	152.9
Production (metric tons)	352.0	354.7	355.6	355.4	364.6	371.3	380.4	385.8	384.0	391.2
Exports (metric tons) ¹	12.2	14.3	14.9	16.3	20.9	19.7	18.8	27.4	22.7	23.0
Consumption (metric tons) ²	347.4	356.7	357.7	358.1	366.6	371.4	379.6	383.3	387.2	393.4
Ending stocks (metric tons) ³	59.1	57.1	55.0	52.3	50.3	50.2	51.1	53.6	50.4	48.1
Total grains										
Area (hectares)	694.3	691.6	692.7	683.7	684.0	680.4	702.4	689.0	680.9	673.0
Production (metric tons)	1,768.8	1,708.0	1,789.5	1,713.0	1,759.8	1,712.6	1,872.2	1,876.2	1,848.9	1,839.6
Exports (metric tons) ¹	202.1	221.1	220.1	202.7	220.0	205.9	214.2	213.7	215.5	216.4
Consumption (metric tons) ²	1,726.5	1,722.0	1,751.6	1,758.3	1,771.2	1,763.9	1,833.9	1,841.2	1,847.4	1,854.3
Ending stocks (metric tons) ³	338.9	325.0	362.7	317.4	306.0	254.8	293.1	328.2	329.7	314.8
Oilseeds										
Crush (metric tons)	176.7	185.1	184.4	190.1	208.1	217.4	219.2	229.6	236.1	236.0
Production (metric tons)	215.7	224.3	227.5	229.4	261.9	258.4	262.1	286.0	293.2	292.1
Exports (metric tons)	33.4	37.6	38.2	38.7	44.1	44.4	49.5	53.8	53.7	54.1
Ending stocks (metric tons)	23.4	21.9	23.6	20.3	27.2	22.2	17.1	24.1	29.7	29.0
Meals										
Production (metric tons)	119.3	125.2	125.2	131.7	142.1	147.3	149.6	156.5	161.3	161.3
Exports (metric tons)	40.7	42.2	40.8	44.9	46.7	49.7	50.7	51.5	54.2	53.9
Oils										
Production (metric tons)	58.1	60.6	61.1	63.7	69.6	73.0	75.8	77.1	80.2	89.7
Exports (metric tons)	20.5	21.3	21.3	24.3	27.1	26.0	28.9	30.1	30.3	30.4
Cotton										
Area (hectares)	33.2	34.8	32.6	30.6	32.2	35.9	33.8	33.6	32.7	33.0
Production (bales)	87.1	95.7	82.5	77.1	85.9	93.0	89.6	91.6	84.1	87.0
Exports (bales)	29.6	28.5	25.5	26.8	28.4	27.8	26.8	26.6	23.7	25.0
Consumption (bales)	85.5	85.7	85.5	85.3	85.5	86.9	89.1	88.4	84.8	86.5
Ending stocks (bales)	27.8	37.6	35.4	27.6	29.9	35.7	38.2	41.2	41.2	40.9
	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
Red meat⁴										
Production (metric tons)	111.9	117.3	117.3	119.3	124.6	130.2	125.0	128.5	132.9	133.8
Consumption (metric tons)	118.3	115.7	115.7	118.3	123.6	128.8	122.5	126.1	130.2	131.6
Exports (metric tons) ¹	6.5	7.4	7.4	7.4	8.1	8.2	8.5	9.0	8.8	8.9
Poultry⁴										
Production (metric tons)	39.6	38.0	38.0	40.5	43.2	46.7	49.5	51.8	53.1	55.2
Consumption (metric tons)	38.4	37.0	37.0	39.4	42.0	45.3	47.7	49.9	51.1	53.0
Exports (metric tons) ¹	2.8	2.4	2.4	2.8	3.6	4.6	5.2	5.7	5.7	5.5
Dairy										
Milk production (metric tons) ⁵	377.6	378.4	378.4	377.6	378.4	380.8	379.9	381.5	384.9	387.5

-- = Not available. 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 data. 1990 data correspond with 1989/90, etc. 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			1998		1999				
	1996	1997	1998	Jul	Feb	Mar	Apr	May	Jun	Jul
Export commodities										
Wheat, f.o.b. vessel, Gulf ports (\$/bu.)	5.63	4.35	3.44	3.21	3.17	3.21	3.10	3.05	3.01	2.75
Corn, f.o.b. vessel, Gulf ports (\$/bu.)	4.17	2.98	2.59	2.56	2.40	2.46	2.38	2.36	2.36	2.12
Grain sorghum, f.o.b. vessel, Gulf ports (\$/bu.)	3.90	2.89	2.54	2.51	2.31	2.35	2.28	2.23	2.22	1.94
Soybeans, f.o.b. vessel, Gulf ports (\$/bu.)	7.88	7.94	6.37	6.57	5.19	5.02	5.00	4.88	4.87	4.61
Soybean oil, Decatur (¢/lb.)	23.75	23.33	25.78	24.88	19.96	18.54	18.78	17.85	16.50	15.29
Soybean meal, Decatur, (\$/ton)	246.67	266.70	162.74	183.45	132.32	133.00	134.50	133.20	139.07	132.73
Cotton, 7-market avg. spot (¢/lb.)	77.93	69.62	67.04	74.18	55.46	58.17	57.01	55.55	53.74	49.23
Tobacco, avg. price at auction (¢/lb.)	183.20	182.74	179.77	162.96	195.04	196.54	162.96	---	---	---
Rice, f.o.b., mill, Houston (\$/cwt)	19.64	20.88	18.95	19.00	18.22	18.08	17.75	17.31	17.05	17.00
Inedible tallow, Chicago (¢/lb.)	20.13	20.75	17.67	17.31	12.53	11.18	11.38	10.40	11.49	11.50
Import commodities										
Coffee, N.Y. spot (\$/lb.)	1.29	2.05	1.39	1.20	1.02	1.04	1.01	1.14	1.09	0.97
Rubber, N.Y. spot (¢/lb.)	72.88	55.40	40.57	40.03	38.58	36.34	34.98	35.75	34.64	33.60
Cocoa beans, N.Y. (\$/lb.)	0.62	0.69	0.72	0.73	0.59	0.55	0.48	0.43	0.48	0.46

Information contact: Jenny Gonzales (202) 694-5296, Mae Dean Johnson (202) 694-5299, Mary Teymourian (202) 694-5173 for coffee, rubber, cocoa beans, and tobacco.

Table 25—Trade Balance

	Fiscal Year			1998		1999				
	1997	1998	1999 P	Jun	Jan	Feb	Mar	Apr	May	Jun
<i>\$ million</i>										
Exports										
Agricultural	57,365	53,730	49,000	3,971	3,891	3,870	4,082	3,850	3,649	3,806
Nonagricultural	569,892	584,077	--	49,191	44,557	45,793	52,091	49,339	48,401	49,665
Total ¹	627,257	637,807	--	53,162	48,448	49,663	56,173	53,189	52,050	53,471
Imports										
Agricultural	35,798	37,007	37,500	3,099	3,098	3,006	3,458	3,380	3,225	3,285
Nonagricultural	829,548	859,737	--	73,577	68,193	70,988	79,776	76,473	76,927	84,204
Total ²	865,346	896,744	--	76,676	71,291	73,994	83,234	79,853	80,152	87,489
Trade Balance										
Agricultural	21,567	16,723	11,500	872	793	864	624	470	424	521
Nonagricultural	-259,656	-275,660	--	-24,386	-23,636	-25,195	-27,685	-27,134	-28,526	-34,539
Total	-238,089	-258,937	--	-23,514	-22,843	-24,331	-27,061	-26,664	-28,102	-34,018

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

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

	Annual			1998		1999				
	1996	1997	1998	May	Dec	Jan	Feb	Mar	Apr	May
	<i>1990=100</i>									
Total U.S. trade	100.8	111.9	115.1	115.6	110.6	109.6	109.4	109.3	109.1	108.9
Agricultural trade										
U.S. markets	101.0	109.6	115.5	115.1	111.9	110.4	110.9	111.7	111.2	110.9
U.S. competitors	98.7	109.1	113.9	114.8	110.7	111.4	111.6	111.0	110.5	109.7
High-value products										
U.S. markets	100.4	108.2	111.9	111.3	109.3	107.7	108.3	109.5	108.6	108.4
U.S. competitors	100.1	110.9	114.6	115.4	111.1	111.0	110.8	110.0	109.7	109.0
Corn										
U.S. markets	96.4	107.1	113.3	114.2	106.3	104.6	106.5	108.3	108.2	108.8
U.S. competitors	90.1	97.4	100.2	100.7	98.1	98.1	97.4	97.0	98.2	98.2
Soybeans										
U.S. markets	96.0	107.9	113.9	114.5	107.0	105.7	105.9	106.0	105.4	105.2
U.S. competitors	80.8	82.2	84.9	84.8	87.0	95.2	105.3	105.4	101.6	101.5
Wheat										
U.S. markets	100.7	105.4	112.2	111.6	109.8	111.5	112.5	113.9	115.6	116.5
U.S. competitors	102.1	109.8	116.0	117.5	117.8	116.7	115.8	115.9	115.1	113.7
Vegetables										
U.S. markets	105.6	112.4	117.8	116.7	117.4	115.7	115.8	116.9	115.6	114.7
U.S. competitors	100.5	112.0	114.1	114.4	109.4	108.9	107.9	106.9	106.9	106.5
Red meats										
U.S. markets	93.3	100.4	109.0	109.7	102.2	99.8	101.5	103.2	102.5	103.2
U.S. competitors	98.0	107.9	112.8	114.4	111.2	111.1	111.1	111.1	111.0	110.2
Fruits & fruit juices										
U.S. markets	101.3	111.3	114.1	113.6	112.0	110.4	110.9	112.2	111.4	111.1
U.S. competitors	98.2	107.2	111.7	111.7	108.8	109.8	111.6	111.1	110.2	109.8
Cotton										
U.S. markets	95.5	105.7	123.8	124.9	112.6	112.8	114.0	115.6	115.4	114.6
U.S. competitors	101.6	103.0	106.8	107.7	106.6	106.6	107.1	108.0	109.1	108.6
Poultry										
U.S. markets	102.8	111.9	109.2	104.6	116.8	116.9	117.0	117.6	117.7	116.2
U.S. competitors	95.7	107.3	109.9	109.6	106.0	108.2	110.7	110.1	109.2	108.8

1. Real indexes adjust nominal exchange rates to avoid the distortion caused by different levels of inflation among countries. A higher value means the dollar has appreciated. The "total U.S. trade" index uses the Federal Reserve Board index of trade-weighted value of the U.S. dollar against 10 major countries. Weights are based on relative importance of major U.S. customers and competitors in world markets. Indexes are subject to revision for up to one year due to delayed reporting by some countries. High-value products conform to FAS's definition for consumer-oriented agricultural products. Data are available at <http://mann77.mannlib.cornell.edu/data-sets/international/88021/>. Information contact: Andy Jerardo (202) 694-5323

Note: The indices have recently been revised to reflect a rebasing of the Russian ruble and to correct errors in the CPI data for Hong Kong and Taiwan. The complete corrected series is online at the Mann Library URL.

Table 27—U.S. Agricultural Exports & Imports

	Fiscal Year			Jun		Fiscal Year			Jun	
	1997	1998	1999 P	1998	1999	1997	1998	1999 P	1998	1999
	1,000 units					\$ million				
EXPORTS										
Animals, live	--	--	--	--	--	508	538	--	25	22
Meats and preps., excl. poultry (mt) ¹	1,823	2,064	1,700	174	177	4,438	4,507	4,200	366	392
Dairy products	--	--	--	--	--	869	925	800	70	77
Poultry meats (mt)	2,553	2,663	2,300	252	212	2,516	2,347	1,800	217	148
Fats, oils, and greases (mt)	1,056	1,365	1,500	127	95	543	655	--	59	35
Hides and skins, incl. furskins	--	--	--	--	--	1,693	1,358	1,100	119	94
Cattle hides, whole (no.)	20,761	18,992	--	1,626	1,517	1,232	969	--	79	69
Mink pelts (no.)	3,600	2,990	--	543	529	96	83	--	16	12
Grains and feeds (mt) ²	95,091	87,289	--	6,974	9,002	16,368	13,961	14,400	1,090	1,187
Wheat (mt) ³	24,526	25,791	28,800	1,830	2,453	4,117	3,759	4,000	265	307
Wheat flour (mt)	511	465	700	39	116	141	117	--	9	16
Rice (mt)	2,560	3,310	3,200	394	178	959	1,132	1,000	116	61
Feed grains, incl. products (mt) ⁴	53,796	44,564	51,800	3,531	5,386	7,166	5,187	5,200	392	532
Feeds and fodders (mt)	12,295	11,704	12,300	1,046	737	2,688	2,421	2,400	192	157
Other grain products (mt)	1,404	1,455	--	134	132	1,295	1,345	--	116	114
Fruits, nuts, and preps. (mt)	3,830	3,633	--	303	280	4,261	3,977	4,400	339	346
Fruit juices, incl.										
froz. (1,000 hectoliters)	10,455	10,658	--	1,370	1,257	658	653	--	75	70
Vegetables and preps.	--	--	--	--	--	4,081	4,168	2,900	372	360
Tobacco, unmanufactured (mt)	238	208	--	14	13	1,612	1,448	1,400	109	93
Cotton, excl. linters (mt) ⁵	1,566	1,552	900	125	57	2,711	2,517	1,400	193	82
Seeds (mt)	1,200	816	--	37	32	913	827	800	34	35
Sugar, cane or beat (mt)	139	123	--	6	7	60	48	--	2	3
Oilseeds and products (mt)	33,808	36,074	31,700	1,426	1,820	11,288	10,984	8,100	488	451
Oilseeds (mt)	24,735	24,358	--	715	1,073	7,875	6,818	--	221	246
Soybeans (mt)	24,027	23,394	21,200	631	978	6,950	6,117	4,500	163	193
Protein meal (mt)	6,671	8,666	--	468	566	1,795	1,975	--	87	87
Vegetable oils (mt)	2,402	3,049	--	243	181	1,618	2,191	--	181	118
Essential oils (mt)	46	46	--	5	6	619	533	--	51	41
Other	--	--	--	--	--	4,228	4,284	--	363	369
Total	--	--	--	--	--	57,365	53,730	49,000	3,971	3,806
IMPORTS										
Animals, live	--	--	--	--	--	1,525	1,670	1,600	120	109
Meats and preps., excl. poultry (mt)	1,140	1,230	1,300	125	131	2,583	2,718	2,900	265	295
Beef and veal (mt)	785	857	--	93	93	1,552	1,761	--	185	204
Pork (mt)	260	271	--	23	28	766	686	--	57	62
Dairy products	--	--	--	--	--	1,273	1,368	1,400	127	132
Poultry and products	--	--	--	--	--	186	207	--	17	19
Fats, oils, and greases (mt)	76	80	--	7	11	58	59	--	5	8
Hides and skins, incl. furskins (mt)	--	--	--	--	--	210	184	--	14	10
Wool, unmanufactured (mt)	38	45	--	3	2	131	151	--	9	4
Grains and feeds	--	--	--	--	--	2,941	2,919	3,000	235	263
Fruits, nuts, and preps.,										
excl. juices (mt) ⁶	7,121	7,581	7,800	669	759	3,773	3,982	5,300	388	455
Bananas and plantains (mt)	3,950	4,175	4,100	357	410	1,218	1,214	1,200	104	109
Fruit juices (1,000 hectoliters)	29,829	26,577	28,800	3,117	2,874	913	669	--	69	74
Vegetables and preps.	--	--	--	--	--	3,604	4,249	4,500	329	344
Tobacco, unmanufactured (mt)	337	241	200	11	47	1,179	822	700	18	129
Cotton, unmanufactured (mt)	27	10	--	--	21	34	11	--	--	23
Seeds (mt)	223	257	--	10	14	357	422	--	24	27
Nursery stock and cut flowers	--	--	--	--	--	974	1,082	1,000	64	66
Sugar, cane or beet (mt)	2,938	2,170	2,200	278	160	1,013	758	--	91	63
Oilseeds and products (mt)	3,780	4,314	4,000	368	362	2,248	2,243	2,200	192	174
Oilseeds (mt)	985	1,028	--	114	118	374	371	--	41	30
Protein meal (mt)	967	1,277	--	102	102	181	188	--	15	14
Vegetable oils (mt)	1,828	2,010	--	152	142	1,693	1,684	--	137	130
Beverages, excl. fruit										
juices (1,000 hectoliters)	--	--	--	--	--	3,247	3,705	--	351	402
Coffee, tea, cocoa, spices (mt)	2,305	2,369	--	186	206	5,778	6,056	--	458	417
Coffee, incl. products (mt)	1,212	1,155	1,300	90	107	3,698	3,587	3,000	269	244
Cocoa beans and products (mt)	767	875	800	65	60	1,414	1,701	1,600	118	98
Rubber and allied gums (mt)	1,075	1,162	1,200	95	82	1,315	1,027	800	80	48
Other	--	--	--	--	--	2,458	2,703	--	241	225
Total	--	--	--	--	--	35,798	37,007	37,500	3,099	3,285

P=Projection. -- = Not available. Projections are fiscal years (October 1 through September 30) and are from Outlook for U.S. Agricultural Exports. 1997 and 1998 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			1998			1999			
	1997	1998	1999F	Jun	Jan	Feb	Mar	Apr	May	Jun
	\$ million									
Region & country										
WESTERN EUROPE	9,617	8,859	7,500	519	748	623	615	487	526	453
European Union ¹	8,997	8,522	7,300	502	728	597	590	464	498	414
Belgium-Luxembourg	715	666	--	43	47	39	47	45	62	35
France	557	538	--	25	45	26	30	24	22	20
Germany	1,376	1,294	--	87	107	91	100	63	80	49
Italy	792	729	--	40	59	44	61	32	43	35
Netherlands	2,011	1,792	--	84	185	172	138	131	121	94
United Kingdom	1,289	1,300	--	89	97	78	91	77	88	89
Portugal	243	186	--	35	24	11	12	9	11	4
Spain, incl. Canary Islands	1,087	1,132	--	49	102	70	48	25	31	45
Other Western Europe	620	336	200	16	19	25	25	23	29	39
Switzerland	506	236	--	9	15	18	19	16	23	21
EASTERN EUROPE	317	320	200	31	18	15	16	14	13	17
Poland	164	139	--	18	8	7	4	9	6	5
Former Yugoslavia	72	97	--	6	6	2	1	1	1	4
Romania	37	31	--	4	--	1	6	1	2	1
NEWLY INDEPENDENT STATES	1,593	1,456	1,400	124	40	35	55	72	86	85
Russia	1,281	1,103	1,100	93	20	17	37	20	68	57
ASIA	26,436	21,992	² 17,200	1,583	1,632	1,620	1,713	1,680	1,446	1,659
West Asia (Mideast)	2,562	2,286	2,100	171	118	189	159	144	130	160
Turkey	742	658	600	60	22	53	21	35	36	50
Iraq	50	131	--	6	--	8	1	--	--	--
Israel, incl. Gaza and W. Bank	543	389	--	19	27	43	40	34	26	37
Saudi Arabia	630	535	500	35	25	39	39	34	26	46
South Asia	728	626	600	36	43	30	30	30	11	32
Bangladesh	123	114	--	6	22	6	6	3	2	9
India	152	163	--	20	13	15	17	12	5	18
Pakistan	418	275	--	6	7	3	4	4	4	3
China	1,774	1,514	1,100	63	59	60	35	52	42	34
Japan	10,713	9,469	8,400	715	789	779	820	794	695	730
Southeast Asia	3,136	2,288	2,000	163	197	168	176	163	169	180
Indonesia	768	529	400	45	39	27	39	35	40	59
Philippines	898	751	700	68	50	74	50	65	59	68
Other East Asia	7,523	5,808	5,100	436	427	393	492	497	398	524
Korea, Rep.	3,293	2,258	2,200	177	203	160	231	219	161	225
Hong Kong	1,640	1,568	1,300	128	86	92	101	87	87	104
Taiwan	2,588	1,975	1,600	131	138	141	161	191	150	194
AFRICA	2,265	2,174	2,000	145	169	189	184	161	142	180
North Africa	1,480	1,475	1,300	73	120	130	132	120	96	98
Morocco	166	139	--	7	4	23	16	19	10	9
Algeria	307	281	--	20	23	21	13	13	8	12
Egypt	928	939	900	44	90	82	92	78	70	73
Sub-Sahara	785	699	700	72	49	59	52	40	46	82
Nigeria	106	140	--	19	13	24	5	12	21	19
S. Africa	239	193	--	16	13	10	14	7	11	18
LATIN AMERICA and CARIBBEAN	9,984	11,362	1,100	878	726	841	869	794	753	743
Brazil	461	566	400	36	25	12	14	13	17	16
Caribbean Islands	1,473	1,487	--	99	130	124	120	129	115	110
Central America	1,029	1,137	--	98	83	110	96	90	79	83
Colombia	552	606	--	67	27	41	35	43	37	48
Mexico	5,077	5,956	6,200	486	351	416	512	427	421	393
Peru	178	314	--	16	22	35	13	30	25	30
Venezuela	552	516	500	29	37	41	52	33	28	33
CANADA	6,620	7,022	6,800	645	517	514	597	587	616	615
OCEANIA	534	545	500	46	42	33	34	42	39	43
TOTAL	57,365	53,730	49,000	3,971	3,891	3,870	4,082	3,850	3,649	3,806

F = Forecast. -- = Not available. Based on fiscal year beginning October 1 and ending September 30. 1. Austria, Finland, and Sweden are included in the European Union. 2. Asia forecasts exclude West Asia (Mideast). NOTE: Adjusted for transshipments through Canada for 1997 and 1998 through December 1998, but transshipments are not distributed by country as previously for 1999. Information contact: Mary Fant (202) 694-5272

Farm Income

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

	1990	1991	1992	1993	1994	1995	1996	1997	1998P	1999F
	\$ billion									
Final crop output	83.3	81.0	89.0	82.3	100.4	95.8	115.4	112.1	102.0	97.5
Food grains	7.5	7.3	8.5	8.2	9.5	10.4	10.7	10.1	8.7	7.7
Feed crops	18.7	19.3	20.1	20.2	20.3	24.5	27.2	27.1	22.9	20.6
Cotton	5.5	5.2	5.2	5.2	6.7	6.9	7.0	6.3	6.0	5.4
Oil crops	12.3	12.7	13.3	13.2	14.7	15.5	16.3	19.7	17.2	14.4
Tobacco	2.7	2.9	3.0	2.9	2.7	2.5	2.8	2.9	3.0	2.7
Fruits and tree nuts	9.4	9.9	10.2	10.3	10.3	11.1	11.9	13.1	11.7	12.6
Vegetables	11.5	11.6	11.8	13.7	14.2	15.0	14.4	15.0	15.3	15.7
All other crops	12.8	13.1	13.7	13.7	14.7	15.0	15.8	16.9	17.3	17.8
Home consumption	0.1	0.1	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1
Value of inventory adjustment ¹	2.8	-1.2	3.2	-5.3	7.2	-5.3	9.1	0.9	-0.4	0.5
Final animal output	90.2	87.3	87.1	92.0	89.7	87.7	92.1	96.5	94.3	93.4
Meat animals	51.2	50.1	47.7	51.0	46.7	44.9	44.2	49.7	43.6	44.2
Dairy products	20.2	18.0	19.7	19.3	20.0	19.9	22.8	20.9	24.3	23.4
Poultry and eggs	15.3	15.2	15.5	17.3	18.5	19.1	22.4	22.2	22.8	22.3
Miscellaneous livestock	2.5	2.5	2.6	2.9	3.1	3.3	3.6	3.7	3.8	3.8
Home consumption	0.5	0.5	0.5	0.4	0.4	0.4	0.3	0.4	0.3	0.3
Value of inventory adjustment ¹	0.4	1.0	1.0	1.1	1.1	0.2	-1.1	-0.4	-0.6	-0.7
Services and forestry	15.3	15.4	15.3	17.1	18.1	19.9	20.8	22.5	24.6	25.4
Machine hire and customwork	1.8	1.8	1.8	1.9	2.1	1.9	2.1	2.6	2.3	2.3
Forest products sold	1.8	1.8	2.2	2.5	2.7	2.8	2.6	2.9	2.8	2.9
Other farm income	4.5	4.7	4.1	4.6	4.3	5.8	6.2	6.9	8.7	8.8
Gross imputed rental value of farm dwellings	7.2	7.2	7.2	8.1	9.0	9.4	9.9	10.1	10.8	11.4
Final agricultural sector output²	188.7	183.7	191.4	191.4	208.2	203.5	228.4	231.2	220.8	216.3
<i>Minus</i> Intermediate consumption outlays:	92.9	94.6	93.4	100.7	104.9	109.7	113.2	120.9	118.7	117.8
Farm origin	39.5	38.6	38.6	41.3	41.3	41.8	42.7	46.9	44.9	44.4
Feed purchased	20.4	19.3	20.1	21.4	22.6	23.8	25.2	26.3	25.0	24.3
Livestock and poultry purchased	14.6	14.1	13.6	14.7	13.3	12.5	11.3	13.8	12.7	12.9
Seed purchased	4.5	5.1	4.9	5.2	5.4	5.5	6.2	6.7	7.2	7.1
Manufactured inputs	22.0	23.2	22.7	23.1	24.4	26.2	28.6	29.2	28.3	28.8
Fertilizers and lime	8.2	8.7	8.3	8.4	9.2	10.0	10.9	10.9	10.7	10.4
Pesticides	5.4	6.3	6.5	6.7	7.2	7.7	8.5	9.0	9.1	9.2
Petroleum fuel and oils	5.8	5.6	5.3	5.3	5.3	5.4	6.0	6.2	5.6	6.1
Electricity	2.6	2.6	2.6	2.7	2.7	3.0	3.2	3.0	2.9	3.1
Other intermediate expenses	31.4	32.8	32.1	36.2	39.2	41.7	41.8	44.9	45.5	44.5
Repair and maintenance of capital items	8.6	8.6	8.5	9.2	9.1	9.5	10.3	10.4	10.4	10.2
Machine hire and customwork	3.6	3.5	3.8	4.4	4.8	4.8	4.7	4.9	5.5	5.3
Marketing, storage, and transportation	4.2	4.7	4.5	5.6	6.8	7.2	6.9	7.1	6.7	6.9
Contract labor	1.6	1.6	1.7	1.8	1.8	2.0	2.1	2.6	2.4	2.4
Miscellaneous expenses	13.5	14.3	13.6	15.2	16.7	18.3	17.8	19.8	20.5	19.7
<i>Plus</i> Net government transactions:	3.1	2.1	2.7	6.9	1.1	0.2	0.2	0.2	4.6	8.8
+ Direct government payments	9.3	8.2	9.2	13.4	7.9	7.3	7.3	7.5	12.2	16.6
- Motor vehicle registration and licensing fees	0.4	0.3	0.4	0.4	0.4	0.5	0.4	0.5	0.5	0.5
- Property taxes	5.9	5.8	6.1	6.2	6.3	6.6	6.7	6.9	7.2	7.3
Gross value added	98.9	91.2	100.6	97.5	104.5	94.0	115.4	110.4	106.7	107.3
<i>Minus</i> Capital consumption	18.1	18.2	18.3	18.4	18.6	18.9	19.2	19.3	19.4	19.6
Net value added²	80.7	73.0	82.3	79.2	85.8	75.1	96.2	91.1	87.2	87.7
<i>Minus</i> Factor payments:	36.0	34.4	34.4	34.6	36.6	37.9	41.3	42.5	43.1	43.8
Employee compensation (total hired labor)	12.5	12.3	12.3	13.2	13.5	14.3	15.3	16.0	16.9	17.7
Net rent received by nonoperator landlords	10.0	9.9	11.1	10.7	11.5	11.0	13.0	12.9	12.0	12.0
Real estate and non-real estate interest	13.4	12.1	11.0	10.6	11.5	12.6	13.0	13.5	14.2	14.1
Net farm income²	44.7	38.7	47.9	44.5	49.2	37.2	54.9	48.6	44.1	43.8

Values in last two columns are preliminary or forecast. 1. A positive value of inventory change represents current-year production not sold by December 1. 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 and is the sum of income from production earned by all factors of production. Net farm income is farm operators' share of income from the sector's production activities. The concept presented is consistent with that employed by the Organization for Economic Cooperation and Development. *Information contact: Roger Strickland (202)694-5592 or rogers@econ.ag.gov*

Table 30—Farm Income Statistics

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	\$ billion									
Cash income statement:										
1. Cash receipts	169.5	167.9	171.3	177.9	181.3	188.1	199.1	207.6	196.8	190.6
Crops ¹	80.3	82.1	85.7	87.4	93.1	101.0	106.2	111.1	102.2	96.9
Livestock	89.2	85.8	85.6	90.4	88.2	87.1	93.0	96.5	94.5	93.7
2. Direct Government payments	9.3	8.2	9.2	13.4	7.9	7.3	7.3	7.5	12.2	16.6
3. Farm-related income ²	8.1	8.3	8.1	9.0	9.1	10.5	11.0	12.4	13.8	14.0
4. Gross cash income (1+2+3)	186.9	184.3	188.6	200.3	198.2	205.8	217.4	227.5	222.8	221.2
5. Cash expenses ³	134.1	134.0	133.3	141.0	147.1	153.2	159.9	169.0	167.8	167.5
6. Net cash income (4-5)	52.8	50.4	55.2	59.3	51.1	52.6	57.5	58.5	54.9	53.7
Farm income statement:										
7. Gross cash income (4)	186.9	184.3	188.6	200.3	198.2	205.8	217.4	227.5	222.8	221.2
8. Noncash income ⁴	7.9	7.8	7.8	8.7	9.6	9.9	10.3	10.6	11.3	11.8
9. Value of inventory adjustment	3.3	-0.2	4.2	-4.2	8.3	-5.0	8.0	0.5	-1.0	-0.2
10. Gross farm income (7+8+9)	198.0	191.9	200.5	204.8	216.1	210.7	235.7	238.7	233.1	232.9
11. Total production expenses	153.3	153.3	152.6	160.2	166.8	173.5	180.8	190.0	189.0	189.0
12. Net farm income (10-11)	44.7	38.7	47.9	44.5	49.2	37.2	54.9	48.6	44.1	43.8

Values for last 2 years are preliminary or forecast. Numbers in parentheses indicate the combination of items required to calculate an item. Totals may not add due to rounding. 1. Includes commodities placed under CCC loans and profits made on loans redeemed. 2. Income from custom labor, machine hire, recreational activities, forest product sales, and other farm sources. 3. Excludes depreciation and perquisites to hired labor. Excludes farm operator dwellings. 4. Value of farm products consumed on farms where produced plus the imputed rental value of farm dwellings.

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Table 31—Average Income to Farm Operator Households¹

	1992	1993	1994	1995	1996	1997	1998P	1999F
	\$ per farm							
Net cash farm business income ²	11,320	11,248	11,389	11,218	13,502	12,460	14,360	--
Less depreciation ³	5,187	6,219	6,466	6,795	6,906	6,578	7,358	--
Less wages paid to operator ⁴	216	454	425	522	531	513	637	--
Less farmland rental income ⁵	360	534	701	769	672	568	543	--
Less adjusted farm business income due to other household(s) ⁶	961	872	815	649	1,094	*1,429	1,350	--
	\$ per farm operator household							
Equals adjusted farm business income	4,596	3,168	2,981	2,484	4,300	3,373	4,472	--
Plus wages paid to operator	216	454	425	522	531	513	637	--
Plus net income from farmland rental ⁷	360	--	--	1,053	1,178	945	868	--
Equals farm self-employment income	5,172	3,623	3,407	4,059	6,009	4,831	5,977	--
Plus other farm-related earnings ⁸	2,008	1,192	970	661	1,898	1,158	1,045	--
Equals earnings of the operator household from farming activities	7,180	4,815	4,376	4,720	7,906	5,989	7,020	5,281
Plus earnings of the operator household from off-farm sources ⁹	35,731	35,408	38,092	39,671	42,455	46,358	52,628	54,443
Equals average farm operator household income	42,911	40,223	42,469	44,392	50,361	52,347	59,649	59,723
	\$ per U.S. household							
U.S. average household income ¹⁰	38,840	41,428	43,133	44,938	47,123	49,692	--	--
	Percent							
Average farm operator household income as percent of U.S. average household income	110.5	97.1	98.5	98.8	106.9	105.3	--	--
Average operator household earnings from farming activities as percent of average operator household income	16.7	12.0	10.3	10.6	15.7	11.4	11.8	--

-- = Not available. F = forecast. 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 Bureau of the Census, 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. A component of farm-sector income. Excludes income 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 income of farms organized as proprietorships, partnerships, and family corporations. 3. Consistent with the CPS definition of self-employed income, reported depreciation expenses are subtracted from net cash farm income. The ARMS collects data on farm business depreciation used for tax purposes. 4. Wages paid to the operator are excluded 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. 5. Gross rental income is excluded because net rental income from farm operation is added below to income received by the household. 6. 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. 7. Includes net rental income from the farm business. Also includes net rental income from farmland held by household members that is not part of the farm business. In 1991 and 1992, gross rental income from the farm business was used because net rental income data were not collected. In 1993 and 1994, net rental income data were collected as part of off-farm income. 8. Wages paid to other operator household members by the farm business, and net income from a farm business other than the one surveyed. In 1996, also includes the value of commodities provided to household members for farm work. 9. Wages, salaries, net income from nonfarm businesses, interest, dividends, transfer payments, etc. In 1993 and 1994, also includes net rental income from farmland. 10. From the CPS. Sources: U.S. Department of Agriculture, Economic Research Service, 1992, 1993, 1994, and 1995 Farm Costs and Returns Survey (FCRS), and 1996 and 1997 Agricultural Resource Management Study for farm operator household data. U.S. Department of Commerce, Bureau of the Census Current Population Survey (PCS), for average household income.

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

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
<i>\$ billion</i>										
Farm assets	841.5	834.8	861.9	891.5	915.3	945.8	980.7	1,022.7	1,027.4	1,035.5
Real estate	620.0	615.4	634.3	658.8	684.0	719.6	746.3	783.1	794.4	802.3
Livestock and poultry ¹	70.9	68.1	71.0	72.8	67.9	57.8	60.3	66.8	57.0	57.0
Machinery and motor vehicles	86.3	85.9	85.4	86.5	87.5	88.5	88.9	88.1	91.0	90.0
Crops stored ^{2,3}	23.2	22.2	24.2	23.3	23.3	27.4	31.7	29.9	30.0	30.0
Purchased inputs	2.8	2.6	3.9	3.8	5.0	3.4	4.4	5.1	5.0	5.2
Financial assets	38.3	40.5	43.1	46.3	47.6	49.1	49.1	49.7	50.0	51.0
Total farm debt	138.0	139.2	139.1	142.0	146.8	150.8	156.1	165.4	172.0	171.0
Real estate debt ³	74.7	74.9	75.4	76.0	77.7	79.3	81.7	85.4	88.8	87.7
Non-real estate debt ⁴	63.2	64.3	63.6	65.9	69.1	71.5	74.4	80.1	83.2	83.4
Total farm equity	703.5	695.6	722.8	749.5	768.5	795.0	824.6	857.3	855.4	864.5
<i>Percent</i>										
Selected ratios										
Debt to equity	19.6	20.0	19.2	18.9	19.1	19.0	18.9	19.3	20.1	19.8
Debt to assets	16.4	16.7	16.1	15.9	16.0	15.9	15.9	16.2	16.7	16.5

Values in the last two columns are forecast. 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. *Information contact: Ken Erickson (202) 694-5565 or erickson@econ.ag.gov*

Table 33—Cash Receipts from Farming

	Annual			1998		1999				
	1996	1997	1998	May	Dec	Jan	Feb	Mar	Apr	May
<i>\$ million</i>										
Commodity sales ¹	199,138	207,611	196,761	13,841	18,056	16,826	12,644	14,924	12,955	13,051
Livestock and products	92,956	96,535	94,539	7,330	7,487	7,916	7,011	8,696	6,854	7,224
Meat animals	44,154	49,682	43,604	3,635	2,895	3,339	3,391	4,595	3,141	3,480
Dairy products	22,785	20,940	24,312	1,844	2,453	2,403	1,957	2,148	1,772	1,860
Poultry and eggs	22,432	22,234	22,806	1,683	1,970	1,908	1,495	1,773	1,780	1,716
Other	3,585	3,679	3,816	168	168	266	168	179	161	167
Crops	106,182	111,076	102,222	6,511	10,570	8,910	5,633	6,228	6,101	5,828
Food grains	10,719	10,137	8,734	415	664	682	403	517	413	343
Feed crops	27,185	27,101	22,927	1,173	2,580	2,884	1,360	1,360	923	1,069
Cotton (lint and seed)	6,983	6,346	6,013	289	1,085	505	382	294	111	110
Tobacco	2,795	2,874	2,989	0	759	375	126	18	5	0
Oil-bearing crops	16,344	19,673	17,198	833	1,610	1,829	915	753	696	606
Vegetables and melons	14,439	14,961	15,337	1,554	901	959	879	1,182	1,337	1,573
Fruits and tree nuts	11,928	13,074	11,727	777	1,137	602	527	596	666	655
Other	15,789	16,909	17,297	1,470	1,834	1,075	1,042	1,508	1,949	1,472
Government payments	7,340	7,495	12,220	76	1,150	2,408	815	664	566	227
Total	206,478	215,107	208,981	13,917	19,207	19,234	13,459	15,588	13,521	13,279

Annual values for the most recent year are preliminary. 1. Sales of farm products include receipts from commodities placed under nonrecourse CCC CCC loans, plus additional gains realized on redemptions during the period. *Information contacts: Larry Traub (202) 694-5593 or ltraub@econ.ag.gov and Cheryl Steele (202) 694-5591 or cherylj@econ.ag.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			
	1997	1998	Apr 1999	May 1999	1997	1998	Apr 1999	May 1999	1997	1998	Apr 1999	May 1999
\$ million ²												
NORTH ATLANTIC												
Maine	276	282	22	22	213	224	29	15	489	506	50	37
New Hampshire	68	69	6	6	84	82	9	6	153	151	14	12
Vermont	414	472	37	40	85	84	11	7	500	557	48	47
Massachusetts	114	112	9	10	417	395	18	17	531	507	27	26
Rhode Island	9	9	1	1	54	56	7	5	63	65	7	6
Connecticut	223	228	16	16	278	281	25	21	501	509	41	37
New York	1,828	2,092	144	155	1,007	1,054	70	53	2,836	3,146	214	209
New Jersey	168	178	11	11	626	650	52	47	794	828	63	58
Pennsylvania	2,808	2,914	207	235	1,324	1,261	106	85	4,132	4,175	314	320
NORTH CENTRAL												
Ohio	1,875	1,848	129	144	3,361	3,124	199	146	5,237	4,973	329	290
Indiana	1,928	1,639	105	117	3,838	3,245	114	104	5,766	4,885	219	221
Illinois	1,928	1,575	89	135	7,055	6,167	315	346	8,984	7,742	404	481
Michigan	1,365	1,323	89	99	2,234	2,158	149	134	3,598	3,480	239	233
Wisconsin	4,066	4,492	276	291	1,721	1,701	73	65	5,787	6,193	349	356
Minnesota	3,992	3,755	243	275	4,006	3,925	137	169	7,998	7,680	379	444
Iowa	5,613	4,778	364	407	7,331	6,217	289	297	12,944	10,994	654	704
Missouri	2,771	2,420	167	179	2,631	2,262	90	92	5,402	4,682	257	272
North Dakota	598	549	43	49	2,668	2,455	138	104	3,267	3,004	181	153
South Dakota	1,781	1,557	110	135	2,401	1,951	120	91	4,182	3,508	230	226
Nebraska	5,508	5,124	413	411	4,295	3,725	162	134	9,803	8,848	575	546
Kansas	4,936	4,537	371	356	3,609	3,247	134	129	8,544	7,784	505	485
SOUTHERN												
Delaware	579	609	46	46	176	164	8	7	754	774	54	53
Maryland	928	949	71	75	607	571	52	40	1,535	1,520	123	115
Virginia	1,542	1,561	112	121	864	768	32	29	2,406	2,328	144	150
West Virginia	328	336	29	27	69	69	2	2	397	405	31	29
North Carolina	4,723	3,917	299	295	3,507	3,247	176	167	8,230	7,164	475	463
South Carolina	802	763	60	61	885	748	38	34	1,687	1,511	98	95
Georgia	3,402	3,408	254	265	2,350	2,047	104	135	5,752	5,454	358	400
Florida	1,400	1,407	88	86	5,116	5,355	667	612	6,516	6,762	755	697
Kentucky	1,972	2,134	81	98	1,571	1,787	42	34	3,543	3,920	123	132
Tennessee	1,028	1,038	66	73	1,245	1,177	48	38	2,273	2,216	114	111
Alabama	2,428	2,587	203	194	788	696	42	33	3,216	3,283	245	228
Mississippi	2,004	2,169	171	169	1,476	1,285	39	31	3,480	3,454	210	200
Arkansas	3,346	3,250	275	250	2,379	2,172	99	73	5,724	5,422	373	323
Louisiana	659	645	55	53	1,510	1,245	32	21	2,168	1,891	86	74
Oklahoma	3,036	2,838	172	200	1,138	1,062	43	38	4,174	3,900	214	238
Texas	8,147	8,220	633	654	5,060	4,986	267	263	13,208	13,206	900	917
WESTERN												
Montana	965	865	45	53	1,058	934	54	41	2,023	1,799	99	94
Idaho	1,405	1,585	105	125	1,878	1,735	119	98	3,283	3,320	225	223
Wyoming	686	681	36	38	191	170	4	3	876	850	41	41
Colorado	2,875	2,857	234	247	1,303	1,453	84	73	4,177	4,310	318	320
New Mexico	1,366	1,437	93	101	551	513	24	40	1,917	1,950	117	141
Arizona	906	943	82	80	1,276	1,425	69	118	2,183	2,368	151	198
Utah	706	736	53	55	256	245	21	10	962	981	73	65
Nevada	187	194	16	18	136	143	10	6	322	337	25	23
Washington	1,622	1,730	132	122	3,747	3,424	200	192	5,370	5,155	332	314
Oregon	803	762	50	58	2,427	2,330	130	107	3,229	3,092	180	164
California	6,310	6,845	533	551	19,827	17,771	1,415	1,482	26,137	24,616	1,948	2,033
Alaska	28	27	2	2	21	20	1	1	49	47	3	3
Hawaii	86	92	7	8	424	418	32	32	510	510	40	40
U.S.	96,535	94,539	6,854	7,224	111,076	102,222	6,101	5,828	207,611	196,761	12,955	13,051

Estimates as of end of current month. 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 contacts: Larry Traub (202) 694-5593 or ltraub@econ.ag.gov and Cheryl Steele (202) 694-5591 or cherylj@econ.ag.gov.* To receive current monthly cash receipts via e-mail contact Larry Traub.

Table 35—CCC Net Outlays by Commodity & Function

COMMODITY/PROGRAM	Fiscal year									
	1991	1992	1993	1994	1995	1996	1997	1998	1999 E	2000 E
	\$ million									
Feed grains:										
Corn	2,387	2,105	5,143	625	2,090	2,021	2,587	2,873	5,204	3,285
Grain sorghum	243	190	410	130	153	261	284	296	483	314
Barley	71	174	186	202	129	114	109	168	266	182
Oats	12	32	16	5	19	8	8	17	40	26
Corn and oat products	9	9	10	10	1	0	0	0	0	0
Total feed grains	2,722	2,510	5,765	972	2,392	2,404	2,988	3,354	5,993	3,807
Wheat and products	2,805	1,719	2,185	1,729	803	1,491	1,332	2,187	3,009	1,392
Rice	867	715	887	836	814	499	459	491	802	597
Upland cotton	382	1,443	2,239	1,539	99	685	561	1,132	1,740	1,236
Tobacco	-143	29	235	693	-298	-496	-156	376	69	-163
Dairy	839	232	253	158	4	-98	67	291	467	187
Soybeans	40	-29	109	-183	77	-65	5	139	1,023	2,907
Peanuts	48	41	-13	37	120	100	6	-11	16	-15
Sugar	-20	-19	-35	-24	-3	-63	-34	-30	-48	-42
Honey	19	17	22	0	-9	-14	-2	0	1	-1
Wool and mohair	172	191	179	211	108	55	0	0	6	-6
Operating expense ¹	625	6	6	6	6	6	6	5	5	4
Interest expenditure	745	532	129	-17	-1	140	-111	76	178	400
Export programs ²	733	1,459	2,193	1,950	1,361	-422	125	212	344	1,020
1988/99 Disaster/tree/ livestock assistance	121	1,054	944	2,566	660	95	130	3	2,278	5
Conservation Reserve Program	0	0	0	0	0	2	1,671	1,693	1,517	1,552
Other conservation programs	0	0	0	0	0	7	105	197	309	367
Other	155	-162	949	-137	-103	320	104	28	682	865
Total	10,110	9,738	16,047	10,336	6,030	4,646	7,256	10,143	18,391	14,112
Function										
Price support loans (net)	418	584	2,065	527	-119	-951	110	1,128	832	1,376
Cash direct payments: ³										
Production flexibility contract	0	0	0	0	0	5,141	6,320	5,672	5,544	5,042
Market loss assistance	0	0	0	0	0	0	0	0	3,011	0
Deficiency	6,224	5,491	8,607	4,391	4,008	567	-1,118	-7	0	0
Diversion	0	0	0	0	0	0	0	0	0	0
Dairy termination	96	2	0	0	0	0	0	0	0	0
Loan deficiency	21	214	387	495	29	0	0	478	2,653	3,383
Other	0	140	149	171	97	95	7	416	288	11
Conservation Reserve Program	0	0	0	0	0	2	1,671	1,693	1,489	1,517
Other conservation programs	0	0	0	0	0	0	85	156	260	310
Noninsured Assistance (NAP)	0	0	0	0	0	2	52	23	72	89
Total direct payments	6,341	5,847	9,143	5,057	4,134	5,807	7,017	8,431	13,317	10,352
1988-98 crop disaster	6	960	872	2,461	577	14	2	-2	1,945	0
Emergency livestock/tree/DRAP										
livestock indemn/forage assist.	115	94	72	105	83	81	128	5	333	5
Purchases (net)	646	321	525	293	-51	-249	-60	207	715	148
Producer storage payments	1	14	9	12	23	0	0	0	0	0
Processing, storage, and transportation	240	185	136	112	72	51	33	38	51	48
Export donations ocean transportation	50	139	352	156	50	69	34	40	441	346
Operating expense ¹	625	6	6	6	6	6	6	5	5	4
Interest expenditure	745	532	129	-17	-1	140	-111	76	178	400
Export programs ²	733	1,459	2,193	1,950	1,361	-422	125	212	344	1,020
Other	190	-403	545	-326	-105	100	-28	3	230	413
Total	10,110	9,738	16,047	10,336	6,030	4,646	7,256	10,143	18,391	14,112

1. Does not include CCC Transfers to General Sales Manager. 2. 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.

3. Includes cash payments only. Excludes generic certificates in FY 86-96. E=Estimated in the FY 2000 Mid-Session Review Budget which was released on June 28, 1999 based on May 1999 supply and demand estimates. The CCC outlays shown for 1996-2000 include the impact of the Federal Agricultural Improvement and Reform Act of 1996, which was enacted April 4, 1996. 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. Further detail can be found at www.fsa.usda.gov/dam/BUD/bud1.htm

Food Expenditures

Table 36—Food Expenditures

	Annual			1999			Year-to-date cumulative		
	1997	1998	1999	May	June	July	May	June	July
<i>\$ billion</i>									
Sales ¹									
At home ²	380.2	395.3	--	35.7	34.8	32.3	162.8	197.6	230.0
Away from home ³	297.9	301.7	--	30.7	30.0	31.4	134.5	164.5	196.3
<i>1995 \$ billion</i>									
Sales ¹									
At home ²	371.0	378.5	--	33.6	32.8	30.5	153.4	186.2	216.7
Away from home ³	289.7	286.0	--	28.5	27.9	29.4	125.1	153.0	182.3
<i>Percent change from year earlier (\$ billion)</i>									
Sales ¹									
At home ²	3.4	4.0	--	3.7	6.3	-5.7	2.9	3.5	2.1
Away from home ³	3.0	1.3	--	13.9	16.8	19.9	10.4	11.5	12.8
<i>Percent change from year earlier (1995 \$ billion)</i>									
Sales ¹									
At home ²	1.0	2.0	--	1.7	4.2	-7.4	0.8	1.4	0.1
Away from home ³	0.2	-1.3	--	11.1	14.0	17.0	7.6	8.7	9.9

-- = 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) 694-5373*

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 Agr. Econ. Rpt. No. 575, Aug. 1987.

Transportation

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

	Annual			1998			1999			
	1996	1997	1998 R	Jun	Jan	Feb	Mar	Apr	May	Jun
Rail freight rate index ¹ (Dec. 1984=100)										
All products	111.5	112.1	113.4	113.4	112.6	112.7	112.4	112.4	112.7	112.7
Farm products	115.9	120.3	123.9	124.7	121.6	121.6	121.6	121.1	121.1	121.1
Grain food products	108.8	107.6	107.4	106.5	99.2	99.2	99.2	99.3	99.3	99.3
Grain shipments										
Rail carloadings (1,000 cars) ²	25.2	23.2	22.8	20.7	23.4	24.8	23.3	22.6	22.6	21.4
Barge shipments (mil. ton) ^{3,4}	3.1	2.6	3.0	3.3	1.3	2.7	2.8	3.7	4.1	4.4
Fresh fruit and vegetable shipments ⁵										
Piggy back (mil. cwt)	1.1	1.1	0.9	1.1	0.6	0.6	0.7	0.6	0.9	1.0
Rail (mil. cwt)	1.6	1.7	1.2	1.8	1.4	0.9	1.1	0.9	1.0	1.5
Truck (mil. cwt)	35.7	42.6	42.2	52.2	40.9	35.1	44.0	49.0	54.2	52.7

P= Preliminary. R = Revised. -- = 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 1996 is 7-month average.

5. Agricultural Marketing Service, USDA. *Information contact: Jenny Gonzales (202) 694-5296*

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

Commodity	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997
	<i>Lbs.</i>									
Red meats ^{2,3,4}	119.5	115.9	112.3	111.9	114.1	112.2	114.8	115.1	112.8	111.0
Beef	68.6	65.4	63.9	63.1	62.8	61.5	63.6	64.4	65.0	63.8
Veal	1.1	1.0	0.9	0.8	0.8	0.8	0.8	0.8	1.0	0.9
Lamb & mutton	1.0	1.0	1.0	1.0	1.0	1.0	0.9	0.9	0.8	0.8
Pork	48.8	48.4	46.4	46.9	49.5	48.9	49.6	49.0	45.9	45.6
Poultry ^{2,3,4}	51.9	53.9	56.3	58.3	60.8	62.5	63.3	62.9	64.4	64.8
Chicken	39.6	40.9	42.4	44.2	46.7	48.5	49.3	48.8	49.8	50.9
Turkey	12.4	13.1	13.8	14.1	14.1	14.0	14.1	14.1	14.6	13.9
Fish and shellfish ³	15.1	15.6	15.0	14.8	14.7	14.9	15.1	14.9	14.7	14.5
Eggs ⁴	31.8	30.5	30.2	30.1	30.3	30.4	30.6	30.2	30.5	30.7
Dairy products										
Cheese (excluding cottage) ^{2,5}	23.7	23.8	24.6	25.0	26.0	26.2	26.8	27.3	27.7	28.0
American	11.5	11.0	11.1	11.1	11.3	11.4	11.5	11.8	12.0	12.0
Italian	8.1	8.5	9.0	9.4	10.0	9.8	10.3	10.4	10.8	11.0
Other cheeses ⁶	4.1	4.3	4.5	4.6	4.7	5.0	5.0	5.0	5.0	5.1
Cottage cheese	3.9	3.6	3.4	3.3	3.1	2.9	2.8	2.7	2.6	2.7
Beverage milks ²	222.3	224.2	221.8	221.1	218.3	213.4	213.6	209.8	210.0	206.9
Fluid whole milk ⁷	105.7	97.5	90.4	87.3	84.0	80.1	78.8	75.3	74.6	72.7
Fluid lower fat milk ⁸	100.5	106.5	108.5	109.9	109.3	106.6	106.1	102.6	101.7	99.8
Fluid skim milk	16.1	20.2	22.9	23.9	25.0	26.7	28.7	31.9	33.7	34.4
Fluid cream products ⁹	7.6	7.8	7.6	7.7	8.0	8.0	8.1	8.4	8.7	9.1
Yogurt (excluding frozen)	4.5	4.2	4.0	4.2	4.2	4.3	4.7	5.1	4.8	5.1
Ice cream	17.3	16.1	15.8	16.3	16.3	16.1	16.1	15.7	15.9	16.2
Lowfat ice cream ¹⁰	8.0	8.4	7.7	7.4	7.1	6.9	7.6	7.5	7.6	7.9
Frozen yogurt	--	2.0	2.8	3.5	3.1	3.5	3.5	3.5	2.6	2.1
All dairy products, milk equivalent, milkfat basis ¹¹	582.5	563.8	568.4	565.6	565.9	574.1	586.0	584.4	575.5	579.8
Fats and oils--total fat content	63.6	60.8	62.8	65.4	67.4	70.2	68.6	66.9	65.8	65.6
Butter and margarine (product weight)	14.8	14.6	15.3	15.0	15.4	15.8	14.7	13.7	13.5	12.8
Shortening	21.5	21.5	22.2	22.4	22.4	25.1	24.1	22.5	22.3	20.9
Lard and edible tallow (direct use)	2.6	2.1	2.4	3.1	4.1	3.9	4.7	4.9	5.3	4.7
Salad and cooking oils	26.3	24.4	24.8	26.7	27.2	26.8	26.3	26.9	26.1	28.7
Fruits and vegetables ¹²	635.9	657.3	656.3	660.5	661.1	685.1	689.1	690.4	706.1	710.8
Fruit	272.8	279.1	273.5	266.6	268.0	285.4	284.3	285.4	289.8	294.7
Fresh fruits	120.9	122.8	116.3	113.0	123.5	124.9	126.5	124.6	129.0	133.2
Canned fruit	21.1	21.3	21.0	19.8	22.9	20.7	21.0	17.5	18.8	20.5
Dried fruit	14.9	13.2	12.1	12.3	10.8	12.6	12.9	12.8	11.4	10.8
Frozen fruit	3.6	3.9	3.7	3.6	3.7	3.6	3.6	4.0	3.8	3.5
Selected fruit juices	112.0	117.6	120.1	117.6	106.4	123.3	119.9	126.2	126.6	126.1
Vegetables	363.1	378.2	382.8	393.9	393.2	399.8	404.8	405.0	416.2	416.0
Fresh	167.4	172.2	167.2	167.2	171.1	171.9	177.4	175.1	181.8	185.6
Canning	94.8	102.4	110.7	113.3	111.6	112.1	107.8	110.2	108.5	105.9
Freezing	64.2	67.6	66.8	72.7	70.8	75.1	79.5	79.9	83.9	81.5
Dehydrated and chips	29.2	29.8	31.0	32.8	31.5	32.9	31.7	31.3	34.0	34.5
Pulses	7.5	6.3	7.1	7.8	8.2	7.7	8.5	8.5	8.0	8.5
Peanuts (shelled)	6.9	7.0	6.0	6.5	6.2	6.0	5.8	5.7	5.7	5.8
Tree nuts (shelled)	2.3	2.2	2.4	2.2	2.2	2.2	2.3	1.9	2.0	2.2
Flour and cereal products ¹³	175.5	174.5	182.0	183.6	186.2	191.0	194.0	192.5	198.4	200.1
Wheat flour	131.7	129.6	136.0	136.9	138.8	143.3	144.5	141.8	148.8	149.7
Rice (milled basis)	14.3	15.2	16.2	16.8	17.5	17.6	19.2	20.1	18.9	19.5
Caloric sweeteners ¹⁴	132.7	133.1	137.0	137.9	141.2	144.4	147.4	149.9	150.7	154.1
Coffee (green bean equiv.)	9.8	10.1	10.3	10.3	10.0	9.1	8.2	8.0	8.9	9.3
Cocoa (chocolate liquor equiv.)	3.8	4.0	4.3	4.6	4.6	4.3	3.9	3.6	4.2	4.1

-- = 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. *Information contact: Jane E. Allshouse (202) 694-5449*