

# AGRICULTURAL OUTLOOK



**Economics Editors**  
Dennis A. Shields  
(202) 694-5331  
dshields@ers.usda.gov  
Lewrene K. Glaser  
(202) 694-5637  
lkglaser@ers.usda.gov

**Associate Editors**  
Nora Brooks  
(202) 694-5322  
Richard Magleby  
(202) 694-5615

**Managing Editor**  
Mary Reardon  
(202) 694-5136

**Assistant Editor**  
Lindsay Mann  
(202) 694-5127

**Art Director**  
Cynthia Ray

**Statistics Coordinator**  
David Johnson  
(202) 694-5324

**Photo Researcher**  
Shashunga Clayton

## Briefs

- 2 *Ag Economy: New Tax Law Includes Savings for Farmers*
- 3 *Livestock, Dairy, & Poultry: Financial Prospects for Hog Producers Generally Favorable*
- 5 *Livestock, Dairy, & Poultry: Mandatory Price Reporting for Livestock Industry*

## Commodity Spotlight

- 7 *Strong U.S. Soybean Demand Keeps Pace with Record Supply*  
*Mark Ash*

## World Agriculture & Trade

- 11 *Economic Reforms Remain Critical for Argentina & Brazil*  
*Randy Schnepf & Dave Torgerson*
- 14 *China's Grain Policy at a Crossroads*  
*Fred Gale, Hsin-Hui Hsu, Bryan Lohmar, & Francis Tuan*

## Research & Technology

- 18 *Livestock Drugs: More Questions Than Answers?*  
*Kenneth H. Mathews, Jr., Jean C. Buzby, Linda R. Tollefson, & David A. Dargatz*

## Resources & Environment

- 22 *USDA Conservation Programs: A Look at the Record*  
*LeRoy Hansen & Roger Claassen*
- 26 *EQIP: Conserving While Farming*  
*Andrea Cattaneo*

## Special Article

- 28 *Argentina & Brazil Sharpen Their Competitive Edge*  
*Randy Schnepf, Erik Dohlman, & Chris Bolling*

## Statistical Indicators

- |    |                              |    |                                 |
|----|------------------------------|----|---------------------------------|
| 44 | Summary                      | 51 | World Agriculture               |
| 35 | U.S. & Foreign Economic Data | 52 | U.S. Agricultural Trade         |
| 37 | Farm Prices                  | 56 | Farm Income                     |
| 39 | Producer & Consumer Prices   | 61 | Food Expenditures               |
| 41 | Farm-Retail Price Spreads    | 61 | Transportation                  |
| 43 | Livestock & Products         | 62 | Indicators of Farm Productivity |
| 47 | Crops & Products             | 63 | Food Supply & Use               |

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## Soybean market outlook. . . Trade competition & economic reform in Argentina & Brazil. . . Ag conservation programs . . . China grain policy

### Strong U.S. Soybean Demand Keeps Pace with Record Supply

**Strong soybean demand** is warding off burdensome surpluses, despite the large potential harvest this fall. U.S. soybean production is forecast at nearly 2.9 billion bushels, almost 100 million bushels above last year's record. Domestic levels of soybean crushing will be supported in 2001/02 by good prospects for soy product exports and favorable hog values that should expand domestic soymeal consumption. Robust soybean imports by China and the European Union have continued to support U.S. export demand. But record U.S. supplies and large foreign stocks (particularly in China and Brazil) are expected to limit price increases.

### Argentina & Brazil Sharpen Their Competitive Edge

**Argentina and Brazil have** become increasingly strong competitors with the U.S. in grain and soybean trade. U.S. market share of global soybean and soybean product exports shrank from 80 percent during the 1960s to just 35 percent in 1998-2000. The combined Argentina-Brazil share grew from less than 10 to nearly 50 percent. With abundant land and favorable climates, Argentina and Brazil are naturally low-cost producers of soybeans. A primary catalyst in the surge in their agricultural production and exports in the past decade was the economic and political reform undertaken by both countries. These reforms opened the door to more open trade, strengthened market signals, expanded foreign investment, and increased utilization of ag inputs and technology.

### Economic Reforms Remain Critical For Argentina & Brazil

**Argentina's reforms** in the early 1990s, despite initial successes, left many significant problems untouched. Excessive regulation and labor market problems still burden the economy, and the country is now in the midst of a 3-year recession. Argentina's government recently announced a package of policy measures, including a dual exchange-rate system that continues the one-*peso*-to-one-dollar arrangement



while providing an indirect devaluation for exporters. The plan could mean potential gains in Argentina's share of trade in global commodity markets, by lowering export prices. Of greater concern is the risk of a deeper recession and the possibility of a regional spillover of economic difficulties into Brazil and beyond.

### New Tax Law Includes Savings For Farmers

**The Economic Growth** and Tax Relief Reconciliation Act of 2001, signed into law on June 7, 2001, reduces both income and estate taxes for most taxpayers, including most farmers. For farm sole proprietors, savings over the 10-year phase-in period total \$19 billion in Federal income taxes and \$3 billion in estate taxes.

### China's Grain Policy at a Crossroads

**China's grain sector** and policymakers are adjusting to internal and external pressures that could reshape the industry. As consumers diversify their diets, they are demanding less grain but of higher quality. Government policymakers and the grain marketing system have been slow to respond to changing consumer preferences. As a result, large stocks of low-quality grain accumulated in the 1990s. Govern-

ment policy emphasis is now shifting from grain quantity to quality. China's accession to the World Trade Organization may introduce external competition for both farmers and grain traders that will hasten the shift.

### Mandatory Price Reporting For the Livestock Industry

**Livestock packers and importers** whose operations exceed certain levels must now report frequent and detailed information to USDA on price, quantity, and characteristics of livestock they buy and sell. The purpose of USDA's Mandatory Price Reporting system is twofold: to provide all livestock producers with timely market information that will enable them to operate successfully in a changing marketing environment, while also meeting consumer demand for meat and meat products.

### USDA Conservation Programs: A Look at the Record

**Government spending** on agricultural conservation programs has nearly tripled since the mid-1980s, responding to public demand that farm programs offset some of agriculture's environmental impacts. The greatest portion of spending has gone to support land retirement through the Conservation Reserve Program (CRP). This program has significantly reduced erosion and enlarged wildlife habitat. Recent USDA studies examine the CRP and other major conservation programs of the past 15 years and point to significant benefits.

**Policymakers' interest** in the Environmental Quality Incentives Program (EQIP) is linked to recognition that many environmental problems call for improved performance on working farmland rather than land retirement. EQIP provides technical, financial, and educational assistance to farmers who improve soil, land, water, and nutrient management on farmland. Applications to participate in the program have exceeded annual funding, but some farmers, after signing contracts, have opted to cancel out entirely or withdraw some of the practices specified in their conservation plans. This could have implications for program design and funding.

## Briefs

## Ag Economy

## New Tax Law Includes Savings for Farmers

The Economic Growth and Tax Relief Reconciliation Act of 2001, signed into law on June 7, 2001, makes significant changes to U.S. tax law. Most of the law's provisions apply to farmers as general taxpayers.

The law reduces Federal income taxes in several ways, with the largest cut being an across-the-board reduction in marginal income tax rates. It increases income tax benefits for families with children, primarily by expanding the child tax credit. It also addresses the "marriage penalty" that has resulted in some couples paying more tax than if they were single. It increases education incentives and allows higher contributions and greater flexibility for individual retirement accounts and pensions. Federal estate taxes will be reduced and eventually repealed, a cut advocated to help farmers and small businesses.

The law creates a new 10-percent income tax bracket for the first \$12,000 of taxable income on a joint return (\$6,000 for singles). Marginal tax rates also are reduced for the 28-, 31-, 36- and 39.6-percent income tax brackets (the 15-percent bracket rate remains unchanged). The reductions are gradual and become fully effective in 2006 when the rates will be 25, 28, 33 and 35 percent, respectively.

The new 10-percent bracket for a portion of taxpayers' income is the basis for the special refund checks currently being mailed by the Internal Revenue Service between July and the end of September. The checks are a one-time advance payment of some of the 2001 tax savings. Nearly two-thirds of farmers are expected to receive the maximum refund, which for a joint return is \$600.

About 85 percent of farmers will benefit from the income tax reductions specified in the new law. Prior to passage, farmers were expected to pay a total of \$26 billion in Federal income taxes in 2001 on farm and nonfarm income. Under the new law, farmers are likely to save \$1.2 billion in

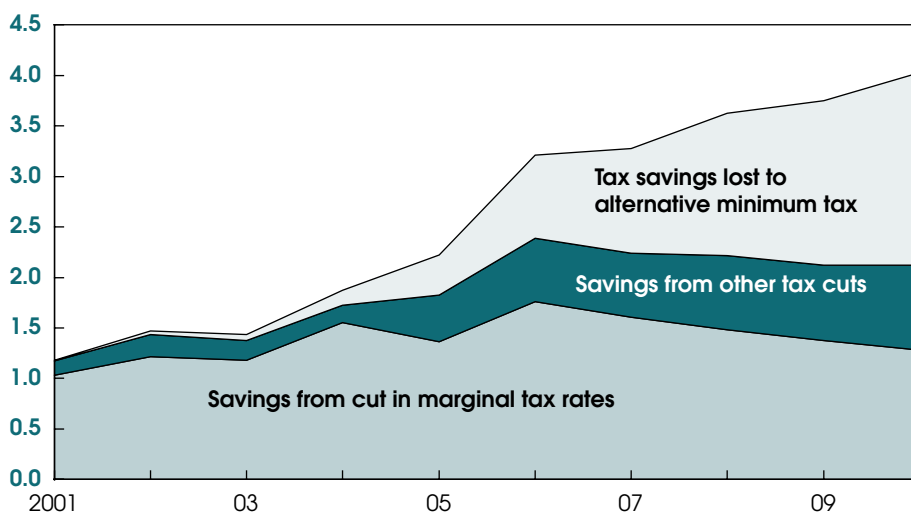
income taxes during 2001. The present value—the value of money received in the future, discounted for inflation into

today's dollars—of projected tax savings for farmers in the year 2010, when all provisions will be in force, is \$2.1 billion.

The present value of Federal income tax savings over the entire 10-year phase-in period is expected to be about \$19 billion for all farmers. The savings would be even greater without the offsetting effect

### Tax Act to Provide Savings for Farm Sole Proprietors. . .

\$ billion

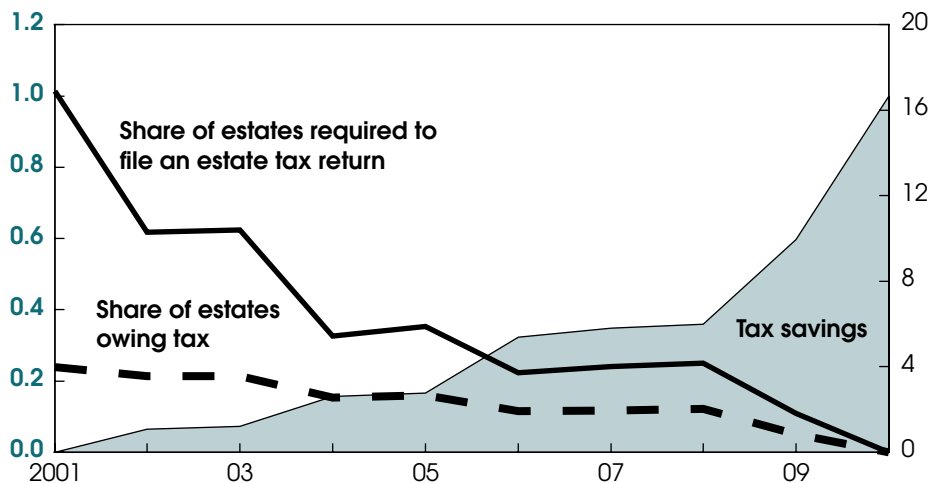


Annual income tax cut for farm sole proprietors in present value (the value of money received in the future, discounted for inflation into today's dollars).

Source: ERS simulation using Internal Revenue Service data.

### . . .and for Farm Estates

\$ billion



Amounts in present value.

Source: ERS simulation using data from the USDA Agricultural Resource Management Study.

Economic Research Service, USDA

of the alternative minimum tax (AMT). AMT was designed to reduce the ability of higher income individuals to escape taxes by using certain deductions. It applies a parallel tax system on a broader base of income, and taxpayers pay the greater amount of their regular tax or the AMT. The AMT already was expected to rise significantly prior to the law's passage, primarily because its exemption is not indexed for inflation.

Income tax rate reductions accelerate the growth in the total amount paid under AMT since AMT rates remain unchanged, although the new law temporarily increases the amount of income not subject to AMT through 2004. Currently only 2 percent of farmers pay AMT, but that number is expected to rise to 33 percent by 2010 without further AMT relief. If AMT were held at 2001 levels, the 10-year sum of the income tax cut for farmers would be \$26 billion. Therefore, the rising incidence of AMT reduces farmers' income tax cut by more than one-fourth over the decade to \$19 billion.

The law also makes changes that will greatly reduce the number of farm estates affected by the Federal estate tax. Before repeal of the estate tax in 2010, the most significant change is to increase the dollar amount of property exempted from tax from the current \$675,000 to \$3.5 million by raising the unified credit. The unified credit allows each estate to transfer a certain lifetime amount of property free of estate and gift taxes. The new law also gradually reduces the maximum estate tax rates from 55 to 45 percent and expands the availability of deductions for donating conservation easements. The law repeals the family business deduction when exemption from the unified credit reaches \$1.5 million, exceeding the \$1.3 million currently allowed under the family business deduction and unified credit.

While these changes will reduce the amount of Federal estate taxes owed, the most dramatic effect will be a sharp drop in the number of farm estates required to file an estate tax return. By 2004, when the amount exempted by the unified credit reaches \$1.5 million, only about a third of those farm estates that currently are

required to file would need to file an estate tax return. This represents large cost savings for farm estates that are no longer required to file. However, because of the extended phase-in, larger estates may still face considerable complexity, since they may still owe tax and be required to file, depending on date of death of the property owner.

The number of estates owing taxes and the amount of estate taxes owed will decline more gradually, with both falling about 10 percent in 2002. Over the next decade, farmers are expected to save about \$3 billion in Federal estate taxes.

The new law reduces both income and estate taxes for most taxpayers, including most farmers. While savings begin in 2001, many reductions are implemented gradually. Without future action, however, the law expires in 2011, and provisions revert to pre-reform levels. **AO**

*James Monke (202) 694-5358 and Ron Durst (202) 694-5347  
jmonke@ers.usda.gov  
rdurst@ers.usda.gov*

## Livestock, Dairy, & Poultry

### Financial Prospects for Hog Producers Generally Favorable

The national hog inventory this year has remained at 59.1 million head, about the same as last year, despite relatively favorable returns. Over the last 18 months, hog prices have averaged in the mid-\$40s per cwt, topping producers' mid-\$30s breakeven (cash) costs. Producers have signaled intentions to increase the number of sows farrowing over the next 6 months, according to the USDA's June *Hogs and Pigs* report. Producers plan to have 1 percent more sows farrow in June-August and 2 percent more in September-November than actual farrowings in these periods a year earlier.

The changing structure of hog production and the industry's financial problems in late 1998 and most of 1999 have muted hog producers' response to prospects of favorable returns. Many smaller producers

exited the industry in the late 1990s. Smaller producers that remain may still be recovering from financial problems. Lenders are also likely to be more cautious about financing hog operations.

If producers follow through with their farrowing intentions, and if only a small increase in pigs per litter occurs as expected, the June-August pig crop should be up about 1 percent from a year ago and the September-November number up 2 percent. These projections imply a January-March 2002 hog slaughter of nearly 25 million head and second-quarter slaughter of nearly 24 million head. With dressed weights increasing slightly, first-half 2002 pork production is expected to be 2-3 percent higher than a year earlier.

With expectations of continued positive returns for hog producers in the coming months, the December 2001-May 2002 pig crop should increase nearly 3 percent over a year earlier. Feed costs are expected to remain unchanged into 2002 as a large corn crop and record soybean crop move to market. Although hog prices are expected to moderate in the coming months, producers' returns should remain positive. The larger expected pig crop and slightly heavier dressed weights should boost pork production in the second half of 2002 by 3-4 percent.

Hog prices climbed into the mid-\$50s per cwt in late spring and early summer as slaughter rates declined seasonally. Also contributing to the rise were strong exports, brisk demand for bacon, especially in the fastfood industry, record retail beef prices (which make pork more attractive to consumers), and a slight decline in broiler supplies. As slaughter increases seasonally in late summer, prices are expected to moderate. In the late fall, when slaughter reaches a seasonal peak, hog prices are expected to drop into the



## Briefs

## Structural Changes in the Hog Industry

The structure of hog production has changed dramatically in recent years, affecting the national average of pigs per litter as well as the production cycle (contraction and expansion). Large producers—those with inventories of 5,000 head and over—now account for nearly 75 percent of the nation's hogs, compared with 27 percent in 1994.

As the proportion of the industry consisting of larger producers has increased, gains from economies of size have largely been realized, and the overall rate of increase in pigs per litter has slowed. During 1996-97, pigs per litter rose over 2 percent per year but has since moderated to less than 1 percent per year. Future increases in pigs per litter could slow even more because the hog production industry is already dominated by large operations.

Pigs per litter in larger operations was 8.96 in 2000, compared with 8.74 in 1994, less than a 3 percent increase. The rate for operations with less than 5,000 head increased from 8 pigs in 1994 to 8.48 pigs in 2000, a 6 percent increase. The greater increase for smaller operations was likely because less efficient operations were going out of business and a larger proportion of the pig crop was coming from operations with 1,000 to 5,000 head. The U.S. average for pigs per litter is now only 0.13 less than for larger producers, compared with 0.55 in 1994.

Production expansion for larger and mid-sized producers is more complicated than in the recent past. The expansion process now includes securing financing, obtaining building and waste management permits from state and local authorities, and hiring and training staff. Also, vertical coordination through either marketing or production contracts is now prevalent, rather than spot-market sales. These factors likely mute the peaks and valleys of the hog cycle.

In contrast, many producers 15 to 20 years ago maintained multi-use buildings for rapid repopulation of a hog herd when returns turned favorable. Necessary construction was accomplished without administrative procedures for securing waste permits. Thus, producer responses to positive or negative returns tended to be more rapid and often sharper in the aggregate.

low-\$40s. Prices are expected to average \$46-\$47 per cwt in 2001, compared with \$44.70 in 2000.

With only modest changes in pork production and trade in 2002, hog prices are expected to average in the mid-\$40s next year. However, some uncertainty exists about how the imposition of Japan's import safeguard will affect U.S. exports to that market. (The safeguard is a World Trade Organization-sanctioned mechanism for protecting Japanese pork producers from import surges.) Exports to other markets are expected to remain strong.

Retail demand continues to be strong as composite retail pork prices averaged 4 percent higher in second quarter 2001 than a year ago. Average retail pork prices are expected to rise 3-4 percent in calendar 2001 and to be unchanged in calendar 2002.

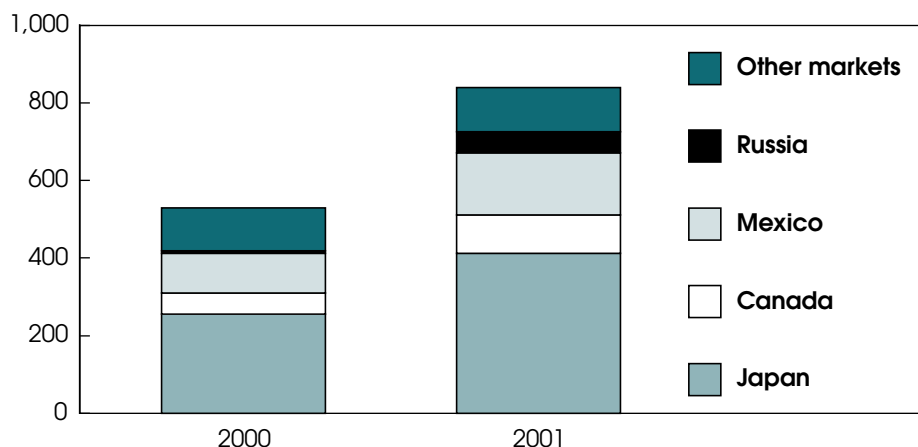
U.S. pork exports are forecast at a record 1.54 billion pounds this year and slightly less in 2002 (1.42 billion pounds). U.S. pork exports in the first half of 2001 ran 33 percent ahead of last year, due primarily to very large shipments of fresh and frozen pork cuts to Japan. For a variety of reasons—high U.S. beef prices, foot-and-mouth disease outbreaks in Europe, lower domestic hog slaughter—Japanese importers contracted for such large quantities of pork from the U.S., Denmark, and Canada that the safeguard threshold of 183,850 metric tons (product-weight equivalent) was exceeded in June. On August 1, the Japanese Government imposed the safeguard, which increased the minimum price of all pork cuts imported into Japan by 24.6 percent. The safeguard will remain in place until March 31, 2002, the end of the Japanese fiscal year.

The last time the safeguard was in place—July 1996 through June 1997—Japanese imports slowed dramatically, particularly frozen pork cuts. This time, however, its effect on Japan's pork imports is uncertain.

U.S. pork imports are forecast at 916 million pounds in 2001 and 960 million in 2002, compared with 967 in 2000. Imports in the first 6 months of 2001 dropped 12 percent from a year ago

## U.S. Pork Exports Up Sharply in First-Half 2001

Million lbs.



January-June data. Carcass-weight equivalent.

Economic Research Service, USDA

because Canada and Denmark appear to have diverted pork products to Japan that were originally destined for the U.S. The extent to which Japanese pork imports slow as a result of the safeguard will strongly influence the amount these countries ship to the U.S. in the second half of 2001.

Live hog imports into the U.S. are forecast at 5.3 million head for both 2001 and 2002, compared with 4.36 million head in 2000. The rapid evolution of both a feeder-pig export sector in Canada and a hog-finishing sector in the Corn Belt states that was traditionally run as farrow-to-finish operations, is stimulating imports.

Continued expectations for low feed prices are also contributing to higher imports. Live hog imports from Canada during the first half of 2001 were almost 2.5 million head. **AO**

*Leland Southard (202) 694-5687*

*Mildred Haley (202) 694-5176*

*southard@ers.usda.gov*

## **Livestock, Dairy, & Poultry**

# **Mandatory Price Reporting for Livestock Industry**

**L**ivestock packers and importers whose operations exceed certain levels must now report detailed information to USDA on price, quantity, and characteristics of livestock they buy and sell. April 2, 2001 marked the first day of implementation of USDA's Mandatory Price Reporting (MPR) system, mandated by the Livestock Mandatory Price Reporting Act of 1999.

The law was a government response to demand by livestock producers for more information on meat industry prices. The purpose of MPR is twofold: to provide all livestock producers with timely market information to enable them to operate successfully in a recently changed economic environment, while also meeting consumer demand for meat and meat products.

MPR applies to packer purchases of cattle, hogs, and sheep, as well as to prices of boxed beef, boxed lamb, and carcass lamb. USDA requires federally inspected processing facilities to comply with the MPR reporting schedule if average annual slaughter over the preceding 5 years reached 125,000 head for cattle, 100,000 head for hogs, or 75,000 head for lambs. The MPR system requires cattle packers to report specific price and quantity information twice daily. Hog packers must report three times per day; lamb processors report once daily. All livestock packers supply a weekly summary.

USDA had been reporting market price information through its Market News system, but MPR differs in several important ways. Participation in the Market News system was voluntary; MPR is not. MPR

also requires reporting of price and quantity information in much greater detail. Under MPR, packers must report the terms of sales made through markets other than traditional public markets. In keeping with recent structural changes in the U.S. meat/livestock industry, MPR focuses on negotiated private purchases and formula and contract sales. Packers must report specific terms of formula and contract purchases, thereby revealing information previously treated as proprietary.

Livestock marketing has evolved from pricing on the basis of live animals to a basis of quality incentives assigned to the characteristics of carcasses, as well as to specific carcass measurements. MPR takes account of this evolution, and requires packers to report full schedules of quality premiums and discounts paid for carcasses according to their quality characteristics, such as age, fat content, and marbling.

The meat/livestock industry itself has evolved over the past 20 years and is characterized by fewer, larger packers and fewer, larger producers. Vertically coordinated/integrated production by contractual arrangements enables steady supplies of uniform animals. This, in turn, facilitates the supply of meat products bearing specific characteristics desired by consumers.

Many small independent livestock producers, who continue to market small numbers of animals through spot markets, point to the restructured industry as a justification for MPR. In fact, the Mandatory Price Reporting Act of 1999 was con-

ceived when small producers successfully argued that proprietary price information contained in production and marketing contracts was not publicly available and therefore did not fully provide transparency in the market place.

After several startup delays, USDA implemented a schedule of 56 daily and 35 weekly livestock and meat reports covering national and regional prices and quantities. Six weeks after startup, an understating of cutout values for beef carcasses and primals (the major components of carcasses) became apparent. The cause of the underpricing was identified as a software programming error, and has been rectified.

Frequent interruptions have also occurred in the MPR reporting schedule, reflecting the difficulty of protecting respondent confidentiality in an industry dominated by a few large firms. The Livestock Mandatory Reporting Act requires that information obtained by the MPR program be released to the public only if the identity of a respondent is not disclosed and the information conforms to aggregation guidelines established by the Secretary of Agriculture. In implementing the new law, USDA first adopted a set of standards used widely by government data collection agencies to ensure respondent confidentiality. The guideline, often termed the "3/60 Rule," states:

"Submitted information will only be published by USDA if: (1) It is obtained from no fewer than 3 packers... representing a minimum of three companies; (2) the information from any one packer... represents not more than 60 percent of the information to be published...."

Because the structure of the U.S. livestock/meat industry has evolved toward fewer, larger packing firms, and data are

## Briefs

collected for transactions conducted during a very short time period, the provisions of the 3/60 Rule are frequently not met. A finding of the USDA review of the MPR system was that the confidentiality rule constrained the amount of information released.

To replace the 3/60 Rule, the Agricultural Marketing Service (AMS) developed a "3/70/20" confidentiality guideline that focuses on reporting patterns over time rather than at a single point in time.

The 3/70/20 guideline specifies that:

- for each type of report (national or regional), at least three companies would have to submit data 50 percent of the time or more over a 60-day period;
- no one company can account for 70 percent or more of the cumulative market volume for any individual report over a 60-day period; and
- in cases where only one company submits data for individual reports, this company can not be the sole reporting entity more than 20 percent of the time during a 60-day period.

AMS compared the two rules and determined that, under the 3/60 Rule, 30 percent of all scheduled daily cattle and swine reports were withheld from publication. In contrast, fewer than 2 percent of these same reports would have been withheld from publication using the 3/70/20 guidelines.

The Livestock Mandatory Price Reporting Act of 1999 also contains requirements for enhanced reporting of U.S. retail prices, and monthly rather than quarterly releases of the USDA *Hogs and Pigs* report. As a package, the law aims to increase the quantity and quality of timely public market information to help all producers make better production and marketing decisions in order to meet consumer demand for quality meat products.



Mildred Haley (202) 694-5176  
mhaley@ers.usda.gov

### Upcoming Reports—USDA's Economic Research Service

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

#### September

- 6 *Fruit and Tree Nuts Outlook\**
- 12 *World Agricultural 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 *Tobacco Outlook*  
*Agricultural Outlook\**
- 24 *Fruit and Tree Nuts Outlook\*\**
- 25 *Foreign Agricultural Trade of the United States (FATUS)/U.S. Agricultural Trade Update*  
*Agricultural Income and Finance Situation and Outlook\**
- 26 *Livestock, Dairy, and Poultry Situation and Outlook (4 p.m.)*
- 27 *Sugar and Sweetener Situation and Outlook\**

\*Release of summary, 3 p.m.

\*\*Available electronically only

### In upcoming issues of *Agricultural Outlook*

- ◆ Outlook for the cattle industry
- ◆ Farmers and e-commerce
- ◆ Agricultural exports in 2002

## Commodity Spotlight



USDA Photo

## Strong U.S. Soybean Demand Keeps Pace with Record Supply

U.S. farmers planted an estimated 75.2 million acres of soybeans in 2001, surpassing last year's record of 74.5 million. The momentum for increased soybean acreage this year stems largely from changes in relative crop production costs. Expenses for anhydrous ammonia, the most commonly used nitrogen fertilizer for corn, increased sharply last spring. Soybean plants can fix most of their own nitrogen requirements from the atmosphere, so the crop needs comparatively little application of this input. Planting delays for corn in the upper Midwest and favorable marketing loan benefits also added more soybean area.

The national average yield for soybeans is forecast at 38.7 bushels per acre. This yield would be a recovery from last year's below-trend yield of 38.1 bushels, when a severe late summer drought hurt yields across the western Corn Belt. U.S. soybean production is forecast at nearly 2.9 billion bushels. A crop this size would exceed last year's record by 97 million bushels.

Despite the large potential harvest, strong soybean demand is warding off even more burdensome surpluses. Carryover stocks are expected to drop from 290 million bushels last year to 250 million bushels this fall. Domestic soybean crushing will

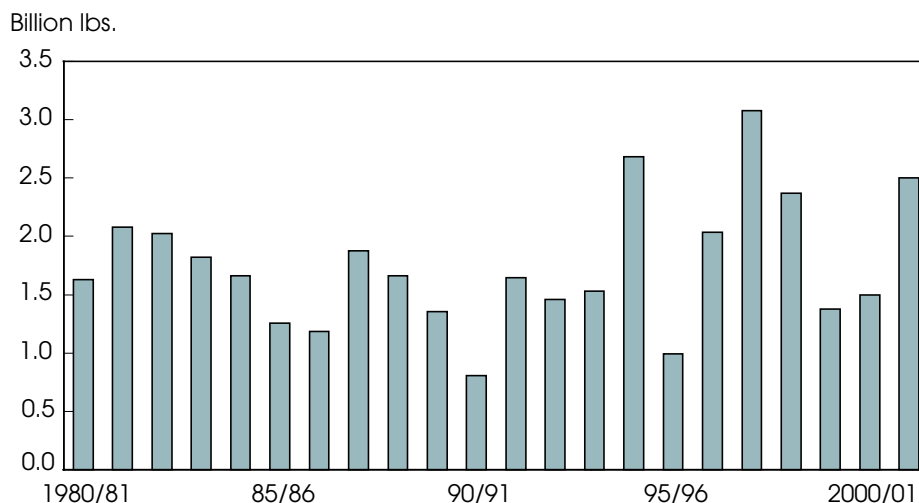
be supported in 2001/02 by good prospects for soybean product exports. Soybean processors are expected to crush an all-time high of 1.66 billion bushels in 2001/02, up 25 million from the previous crop year. However, with ample South American soybean stocks left over this fall, 2001/02 U.S. soybean exports are

projected to only match the record 2000/01 estimate of 995 million. Robust soybean imports by China and the European Union have continued to support foreign demand for U.S. exports.

Combined with a stronger demand outlook, 2001/02 ending stocks of soybeans are forecast at 300 million bushels. Record U.S. supplies and large foreign stocks (particularly in China and Brazil) are expected to limit price increases. USDA forecasts the 2001/02 average farm price for soybeans at \$4.35-\$5.35 per bushel, compared with \$4.55 in 2000/01. If the forecast were realized, it would be the fourth consecutive year with farm prices below the U.S. soybean loan rate of \$5.26 per bushel. Marketing loan gains and loan deficiency payments (which help U.S. farmers cover the difference between market prices and the loan rate) may total about \$2.5 billion for the 2000 soybean crop but may decline as market prices rise this crop year.

After several years of very low prices, demand growth in the soybean oil market should strengthen prices in the coming year. Very large U.S. stocks weighed on soybean oil prices last season, but much larger foreign imports are expected in 2001/02. Shrinkage of other vegetable oil supplies throughout the world is expected

### U.S. Soybean Oil Exports Up Sharply in 2001/02



Marketing years beginning October 1. 2001/02 forecast.

Economic Research Service, USDA



## Commodity Spotlight

to swell U.S. soybean oil exports by two-thirds in 2001/02 to 2.5 billion pounds. Domestic disappearance of soybean oil should rise moderately and the large stock carryover would be trimmed somewhat. The season-average price would rise to 16.5-19.5 cents per pound, from 14.25 cents in 2000/01. Soybean oil prices at this level would still be comparatively low, in historical terms.

A stronger world market for soybean oil would begin to favor crushing more soybeans for their oil value, which sank near historic lows in 2000/01. The corresponding growth of soybean meal supplies will maintain pressure on the 2001/02 average meal price, which is forecast at \$155-\$180 per ton, compared with \$175 in 2000/01.

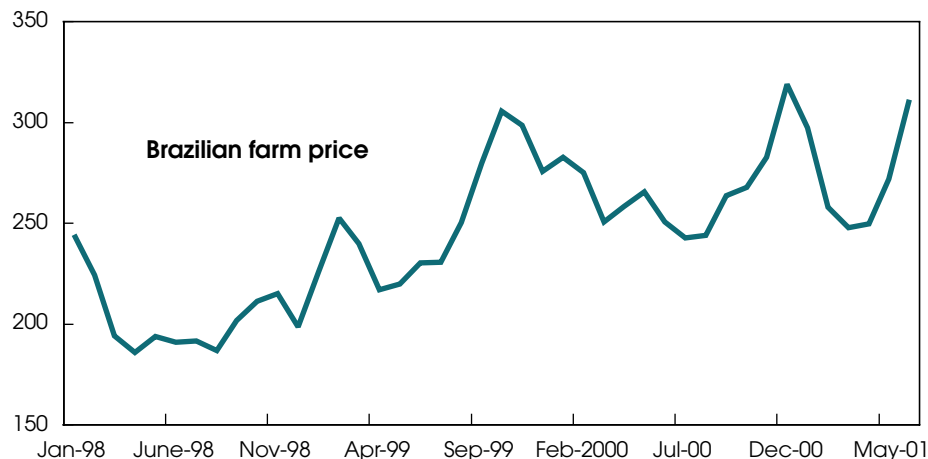
An expected recovery in South American soybean crushing will make gains in U.S. meal exports more difficult in 2001/02. However, affordable prices are anticipated to keep U.S. soybean meal exports competitive into next year, slipping only from 7.75 million tons in 2000/01 to 7.6 million tons in 2001/02.

U.S. soybean meal exports were larger last season because Indonesia banned imports from South America temporarily. The ban was imposed because of fear that soybean meal from the region could transmit foot and mouth disease. U.S. soybean meal exports to Indonesia surged more than 0.5 million tons in 2000/01 partly in response to the ban and availability of the U.S. export credit program.

Favorable hog values should promote a steady expansion of domestic soybean meal consumption over the next year. Domestic feed consumption by hogs rose last season partly because an outbreak of foot-and-mouth disease in Europe benefited U.S. pork exports. The profitability of broiler production has also improved and the flock size is gradually expanding. U.S. disappearance of soybean meal is forecast rising nearly 2 percent to 32.1 million short tons in 2001/02.

### Brazilian Farm Price for Soybeans Has Been Rising, Due to Currency Devaluation. . .

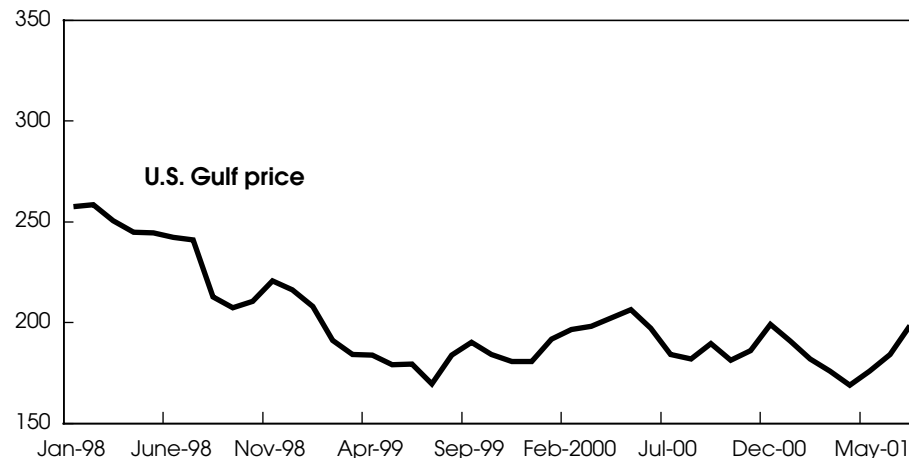
Brazilian *real*/metric ton



Source: Getúlio Vargas Foundation (Brazil).

### . . . While U.S. Soybean Export Price Has Declined

US\$/metric ton



US\$1=2.56 *real* as of August 28, 2001.

Source: Agricultural Marketing Service, USDA.

Economic Research Service, USDA

### Foreign Soybean Consumption Remains Brisk

The bumper soybean crops produced in the U.S. and South America have depressed prices, making large purchases quite affordable for the world's major importers.

European Union (EU) consumption of soybean meal increased 3 percent in 2000/01 based on its continued substitu-

tion for meat and bone meal, which has been indefinitely banned from all livestock feeds following the fall 2000 BSE outbreak in the region. Prior to the ban, soybean imports had been expected to increase only marginally in 2000/01, but they increased 8 percent following the prohibition. Growth in Eastern Europe soybean meal demand, which is also affected by the loss of meat and bone meal supplies, has been just as strong. EU demand growth for soybean meal is

## Commodity Spotlight

forecast up 4 percent for 2001/02 to 27.8 million metric tons. Tighter domestic oilseed supplies should improve crush margins and slightly favor EU soybean imports, which are forecast up 4 percent to 17.7 million tons. EU soybean meal imports may increase 4 percent to 21.1 million tons.

In China, corn prices were comparatively attractive last spring, which is estimated to have reduced China's 2001 soybean area 7 percent. Rains have also been deficient in the top soybean-producing region. Soybean production by China is forecast to decline to 15 million tons from 15.4 million in 2000.

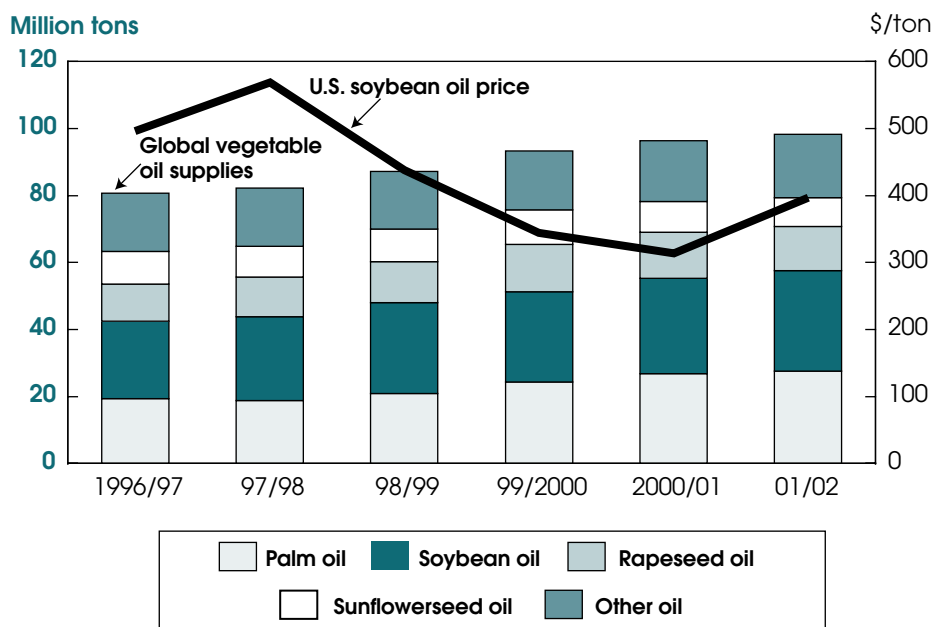
In recent years, China has preferred to import soybeans for crushing rather than to import soybean meal. Soybean imports by China swelled 31 percent in 2000/01 to 13.2 million tons, encouraged by a robust 18-percent increase in soybean meal consumption. The lower expected domestic soybean output would require another increase in China's already massive imports, which are forecast rising to 14.5 million tons in 2001/02. With a comparable expansion of livestock feed use next year, China would account for more than 40 percent of the world's expected growth in soybean meal consumption.

### Competition Increases For Soybean Exports

Record area and nearly ideal weather swelled the South American soybean harvest 15 percent last season, while U.S. output increased just 4 percent. In 2001/02, global soybean production is forecast to rise only 3 percent to 176.8 million tons. The U.S. could account for most of the world's projected output gain, although about half of that would add to U.S. soybean stocks. Despite smaller prospective increases in Argentine and Brazilian output, both countries should accrue much of the gains in world soybean and soybean meal trade next season.

For Brazilian farmers, soybeans have been a very good hedge against currency fluctuations. Despite relatively low soybean prices in dollar terms, Brazil's exchange rate (which has depreciated by one-fourth against the dollar this year) is boosting internal soybean prices and expected

### U.S. Soybean Oil Price to Rebound As Global Vegetable Oil Supplies Level Out



2001/02 forecast.

Economic Research Service, USDA

plantings in 2001. Firmer U.S. prices will also encourage an expanded soybean area, while corn prices in Brazil are not as attractive as they were a year ago because of a bumper crop. Although a repeat of this year's record soybean yields in Brazil is not expected, an 8-percent expansion of area may push next year's harvest to a record 39 million tons.

Larger soybean supplies and an easing of the country's electrical power shortage by next year should spark an upswing in Brazilian crushing. Low reservoir levels are reducing hydroelectric power generation in Brazil this year, so the government has imposed nationwide rationing. Better crush margins would help revive Brazil's soybean meal exports next year. Yet, value-added taxes between Brazilian states are still handicapping domestic processors relative to foreign buyers. So, a bigger-than-usual soybean carryover should promote an even greater expansion of Brazilian soybean exports in 2001/02.

Foreign exchange rates are also affecting production incentives in Argentina. Because of weak exports, Argentina's government implemented a package of policy

measures that alters the effective exchange rates for traders (see *World Agriculture & Trade*, page 11). Although the effective depreciation in Argentina has been less acute than what Brazil has experienced with its floating exchange rate, agricultural commodity prices have increased.

Stronger prices would help Argentine soybean area edge higher but slightly lower forecast yields would flatten projected 2001/02 soybean output around 26 million tons. Yet, supplies from the last harvest are quite large. Argentine soybean crush and exports should increase to 18.6 million and 7.5 million tons, respectively. Solid growth in soybean meal exports, from 13.7 million to 14.5 million tons, would follow.

### Tightening World Veg-Oil Market Enhances Soy-Oil Trade

Counter to soybean output, slowing output of the high-oil oilseeds will weaken gains in global vegetable oil output next year. World sunflowerseed production in 2001/02 is expected to decline slightly to 22.8 million tons, which would make it the smallest since 1993/94. A negligible

## Commodity Spotlight

increase in world rapeseed output in 2001/02 to 36.7 million tons is also expected to firm vegetable oil and oilseed prices.

Palm oil is the world's most traded vegetable oil and production trends often determine market direction for all oils. Last year, very low prices prompted Malaysia and Indonesia (the world's top palm oil producers and exporters) to try boosting prices by replanting older trees (thereby curtailing production) and encouraging greater domestic use. Based on slower area expansion and lower yields, world palm oil production in 2001/02 is projected up just 4 percent to 24.7 million tons. By comparison, palm oil output in 2000/01 grew an estimated 9 percent.

International trade in soybean oil is the most likely beneficiary from tighter supplies of competing oils, and is projected to rise 8 percent to 8.1 million tons in 2001/02. Price premiums for sunflowerseed and rapeseed oils over soybean oil have widened in the last year and should get even larger. Huge existing stocks of soybean oil will help the U.S. capture the majority of the trade expansion, although Argentine and Brazilian exports will also gain. Crop threats that develop in any of these countries could rally soybean oil prices well above levels seen the last 2 years.

Importer trade policies are likely to improve opportunities for soybean oil imports, also. India is the world's largest vegetable oil importer and fluctuations in its foreign trade have a great impact on market prices. In recent years, insufficient domestic vegetable oil production and robust consumption growth have created a vast import demand by India. Total Indian vegetable oil imports surged 29 percent last season. However, Indian imports are expected to moderate in 2001/02 because of better domestic oilseed harvests.

The Indian government has attempted to support oilseed prices for domestic farmers by raising tariffs on imported vegetable oils. However, India's import duty for soybean oil is currently at its World Trade Organization (WTO)-established maximum and all quantity barriers were eliminated in 1994. Soybean oil has now secured a price advantage in India over other vegetable oils that have much higher

tariffs. If duties on these competing oils are not reduced, the preferential access should support another record volume of Indian soybean oil imports in 2001/02. India typically imports soybean oil between May and September, so Argentina and Brazil usually provide most of what India needs from their more recent harvests. While U.S. soybean oil exporters will get a small share of this trade, they should benefit competitively in other foreign markets as India siphons off more supplies from South America.

China trails only India in the quantity of vegetable oil imported. In the coming year, domestic production and imports of oilseeds will limit China's soybean oil imports. China's trade policies also favor imports of oilseeds over vegetable oils. However, the date of China's accession to the WTO (which may be as soon as late 2001/early 2002) could make a major difference to this outlook. In the first year of accession, the terms would expand access to China's domestic market for soybean oil by replacing absolute quotas with a tariff rate quota (TRQ) of up to 1.72 million tons. By comparison, minimal soybean oil quotas limited imports to just 80,000 tons in 2000/01. The within-quota duty would be lowered from 13 percent to 9 percent.

When China's TRQ is implemented, it could substantially increase soybean oil imports. China's domestic vegetable oil prices, which are about double world levels because of the quota, could fall sharply. The corresponding reduction in oilseed processing margins would stall the recent expansion in crushing and revive China's imports of soybean meal, as well. Yet, China has added quite a lot of modern oilseed crushing capacity in the last 2 years, so fewer oil imports may be needed than if the TRQ had been implemented earlier. Per capita consumption of vegetable oils in both China and India is well below levels of Western nations. Therefore, just as lower prices have inspired Indian consumption, liberalization of the Chinese market could substantially accelerate world vegetable oil demand. **AO**

Mark Ash (202) 694-5289  
mash@ers.usda.gov

### September Releases—USDA's Agricultural Statistics Board

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

#### September

- 4 Dairy Products  
Crop Progress (4 p.m.)
- 5 Weather - Crop Summary  
(12 noon)  
Broiler Hatchery  
Egg Products
- 7 Dairy Product Prices  
(8:30 a.m.)  
Poultry Slaughter  
Vegetables
- 10 Crop Progress (4 p.m.)
- 11 Weather - Crop Summary  
(12 noon)
- 12 Cotton Ginnings (8:30 a.m.)  
Crop Production (8:30 a.m.)  
Broiler Hatchery
- 13 Turkey Hatchery
- 14 Dairy Products Prices  
(8:30 a.m.)  
Milkfat Prices (8:30 a.m.)
- 17 Milk Production  
Crop Progress (4 p.m.)
- 18 Weather - Crop Summary  
(12 noon)
- 19 Broiler Hatchery  
Hop Stocks
- 20 Citrus Fruits  
Potatoes
- 21 Dairy Products Prices  
(8:30 a.m.)  
Catfish Processing  
Cattle on Feed  
Chickens and Eggs  
Cold Storage  
Livestock Slaughter
- 24 Crop Progress (4 p.m.)  
Monthly Agnews
- 25 Cotton Ginnings (8:30 a.m.)  
Weather - Crop Summary  
(12 noon)
- 26 Broiler Hatchery
- 27 Agricultural Prices  
Peanut Stocks and Processing
- 28 Dairy Products Prices  
(8:30 a.m.)  
Grain Stocks (8:30 a.m.)  
Milkfat Prices (8:30 a.m.)  
Small Grains Summary  
(8:30 a.m.)  
Quarterly Hogs and Pigs



## World Agriculture & Trade



# Economic Reforms Remain Critical for Argentina & Brazil

The agricultural sectors of Argentina and Brazil have traditionally suffered from economic instability and a high degree of government intervention in their economies. Both countries enacted major economic reforms in the early 1990s. The initial plan was to eliminate the suffocating hyperinflation of the late 1980s and early 1990s by stabilizing currency values. In Argentina, the *peso* was pegged one-to-one with the U.S. dollar. Brazil's *real* was also closely linked to the U.S. dollar.

These currency linkages held through much of the 1990s. Unfortunately for both Argentina and Brazil, timing of the pegging coincided with a 5-year rally in the U.S. dollar in the late 1990s. As a result, *peso*- and *real*-priced commodities were uncompetitive in international markets. By late 1998, problems had magnified for the *real*, creating fears among international investors of a spillover effect following the Russian financial crisis of August 1998. In January 1999, Brazil's government removed the *real*'s link to the U.S. dollar and allowed it to float freely. The *real* depreciated 32 percent in the first month.

Depreciation of the *real* helped the country's export sectors by effectively lowering the price of Brazil's export products in

world markets. For Brazil's soybean producers, depreciation raised farm prices and continued to boost soybean plantings. However, depreciation also raised costs of imported agricultural inputs—e.g., fertilizer, herbicides, and machinery. Producers and input suppliers have at least temporarily sidestepped this problem by creating a barter-type market for many agricultural inputs that prices most inputs in terms of bags of soybeans.

Brazil's export sector continues to benefit from the currency depreciation. Since January 1999, the *real* has lost over 50 percent of its value relative to the U.S. dollar. Continual currency depreciation has partially cushioned Brazilian soybean producers from the drop in international commodity prices of the past 4 years. Brazil's export competitiveness during the next decade will depend, in part, on the value of the *real* relative to the currencies of its major trading partners and competitors.

Many burdensome costs and policy distortions are still in effect in Brazil. These include inefficient transportation and marketing systems which raise marketing costs, high interest rates which discourage investment, and state-level taxes on the movement of goods and services. Nevertheless, the Brazilian economy continues

to improve, with strong gross domestic product (GDP) growth in 2000 and a slight decline in the current government debt. A recent International Monetary Fund (IMF) report concluded that Brazil is now better placed than in the early 1990s to withstand external economic shocks and that strong money management by the government should help the Brazilian economy to continue growing by encouraging growth in the private sector.

The interdependence of trade between Brazil and Argentina connects the countries' economic fortunes and makes each country vulnerable to the others' economic problems.

### *Argentina's Post-Reform Economy...Losing Stability?*

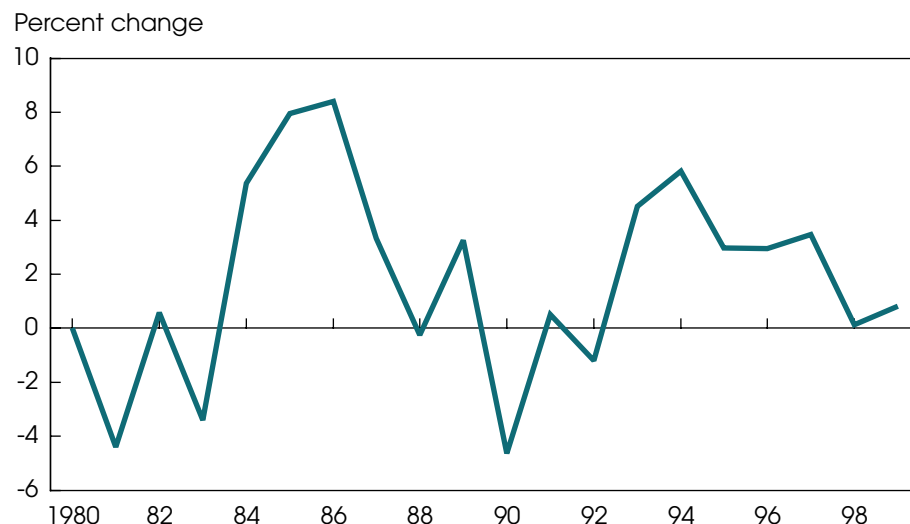
Argentina's reform programs of the 1990s laid the groundwork for a stable investment climate for agriculture by controlling inflation and establishing confidence in the *peso*. Reduction of export taxes, import tariffs, and quotas allowed farmers to capture a larger share of international market prices, and allowed for more of Argentina's surplus agricultural production to flow into export markets. Argentina's economy performed well throughout much of the 1990s—annual GDP growth averaged 8 percent during 1991-98, and inflation has hovered near zero since 1996. Despite three major international financial crises—the 1995 Mexican *peso* crisis, the 1997 Asian crisis, and the 1999 Brazilian crisis—Argentina has managed to maintain its currency peg to the U.S. dollar.

Despite initial successes, the reforms of the early 1990s left many significant problems untouched, and Argentina is now in the midst of a 3-year recession. The economy is still burdened by excessive regulation and labor market problems. Employers have little flexibility in firing employees, lowering wages, or hiring part-time labor. As a result, high payroll costs make many Argentine goods too expensive to compete in international markets. Although many sectors of the Argentine economy changed from public to private control under the reforms, in many cases it simply resulted in substituting a privately owned monopoly for a government monopoly with little improvement in competition or efficiency.



## World Agriculture & Trade

### Brazil's GDP Growth Has Varied Widely



1999 estimated.  
Source: Oxford Economics, July 2001.

Economic Research Service, USDA

The Government of Argentina (GOA) employs nearly one-third of the Argentine labor force. Despite some initial cuts, government payrolls remain large in 2001, and government expenditures have exceeded revenues since 1995. Rather than cutting expenditures, the GOA has raised taxes in an attempt to close the gap, which has raised business costs. The mounting public debt—\$130 billion in June 2001—undermines investor confidence in the country's ability to manage its economy and poses a serious threat to economic stability as much of the debt is financed through short-term credit from international financial markets.

These economic problems are finally catching up with Argentina. The economy has been mired in recession since 1998 with no sign of recovery in the near future, and unemployment has been running at about 15 percent. Significant currency depreciation in Brazil and currency weakness in the European Union (both major trading partners) suggest that the value of the *peso* has become too high. The U.S. dollar's trade-weighted value—weighting the exchange rates of major U.S. trading partners by their share of trade with the U.S.—is at near-record levels.

The current economic outlook in Argentina favors another round of inflation. After negligible inflation during the 1996-2000 period, private forecasters project inflation will rise by 6 to 10 percent during 2002-03. As inflation in Argentina outpaces that in the U.S., the *peso* becomes even more overvalued. The Argentine government has been under pressure both politically and economically to consider changing back to a pegged-float or possibly a free-float exchange rate. Although the likelihood of such an event is difficult to predict, devaluation of the *peso* would clearly improve Argentina's competitiveness in international markets.

### Partial Devaluation Of the Peso?

On June 15, 2001, Argentina's economy minister, Domingo Cavallo, announced a package of policy measures referred to as the "convergence factor." This package included a dual exchange-rate system with an indirect devaluation for exporters through implementation of a set of trade-policy tools. Cavallo's plan also includes an austerity program designed to eliminate the government debt. The overall package of measures is intended to boost international competitiveness and revive growth, while avoiding a potentially disastrous default on government debt.

Currency devaluation has always been an obvious remedy for Argentina, but has been avoided due to the enormous government debt. As long as the *peso* is pegged one-to-one with the dollar, the \$130-billion debt can be repaid with 130 billion *pesos*. A 10-percent devaluation would raise that price to 143 billion *pesos*. Cavallo's "enhanced convertibility law" tries to have it both ways by cutting the impact of currency overvaluation on exporters while retaining the ability to repay international debt with the overvalued *peso*.

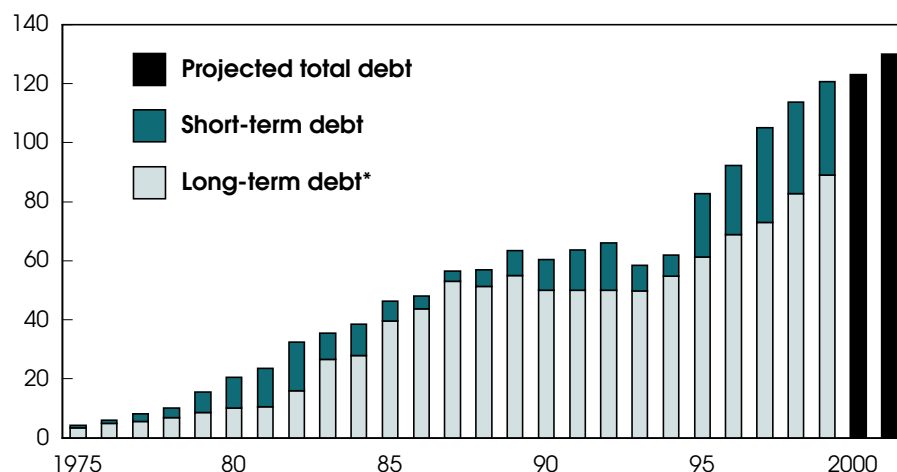
Under the new plan, international finance operates under the usual one-*peso*-to-one-dollar arrangement, but exporters receive an adjustable reimbursement by the GOA in amounts equal to the difference between the current *peso*-dollar peg and a *peso* exchange rate based on a 50-50 mix of the euro and the dollar. For example, during July, the euro traded at about 14 percent below the dollar (1 euro = US\$0.86), which is roughly equivalent to a 7-percent devaluation for exporters. On the other hand, importers face what amounts to an implicit tariff of equal magnitude under the new system. The devaluation-induced export gains are to be partially offset by elimination of export tax rebates, while the devaluation-induced higher import costs are to be partially offset by lower tariffs on imports.

If successful, Cavallo's exchange-rate adjustment plan could mean potential gains in Argentina's share of trade in international commodity markets, due to lower priced exports. However, of greater concern is the risk of causing a deeper recession and the possibility of a regional spillover of economic difficulties into Brazil and beyond.

MERCOSUR—a regional customs union between Argentina, Brazil, Paraguay, and Uruguay—has increased economic ties among member countries by establishing essentially duty-free trade within the union. The interdependence of trade among members has made each country vulnerable to each others' economic problems. For example, depreciation of Brazil's currency has made many of Argentina's commodity exports relatively less competitive. In addition, high common external tariffs have sheltered inefficient industries from competition abroad.

## Argentina's Debt Has Grown Steadily

\$ billion



Data for 1999-2001 are projections based on information from various sources. Data for 1975-98 are from World Development Indicators 2001 CD-ROM, World Bank.

\*Long-term debt includes outstanding International Monetary Fund loans.

Economic Research Service, USDA

Argentina's farmers are less optimistic about the new policies even though there are some positive aspects for agriculture. For example, taxes on interest payments on credit are to be eliminated, payment of a banking transaction tax and fuel transfer tax are to be deductible against farmers' value-added tax liabilities, and the government announced an up-to-60-percent lowering of costly highway road tolls.

However, diesel fuel prices are to be raised by over 15 percent. According to Argentine sources, every centavo (1/100 peso) increase in the price of diesel fuel costs the country's farmers an additional US\$45 million. In addition, farmers are dependent on imports of many critical agricultural inputs such as farm chemicals and machinery. Import costs would increase under the dual exchange-rate system. In the end, the proposed exchange rate could simply accelerate the process of squeezing out less efficient or less well-financed operators which has been

underway in Argentina for most of the past decade.

The bottom line for international commodity markets is that Argentina's wheat, corn, soybeans, soymeal, and soyoil could potentially cost less relative to competitors under the new exchange-rate mechanism. This could mean potential market share gains for Argentina and greater pressure on international commodity prices in general. If the GOA decided to let the *peso* float freely (as in Brazil), there would likely be a drop of 25 to 30 percent, perhaps temporarily overshooting to as much as 50 percent in the beginning.

### What's Ahead for Argentina's Economy?

Some commodity markets are still recovering from the last global crisis—the 1997 Asian crisis. Argentina's continuing ability to finance its debt is an important issue for global financial stability because more than 20 percent of all tradable emerging

debt has its origins in Argentina. However, the ties between Argentina and the other emerging countries are not tight, except for Brazil. Although the possibility of impacts in Latin America exists, the overall risk of spillover is relatively low. If there were spillover, Asia appears to be far more vulnerable than Latin America, in large part because most of the Asian countries affected by the 1997 crisis have failed to make necessary economic reforms.

Concerns have been raised in international money markets that Cavallo's announcement merely signals the possibility of even larger currency devaluation and further enlargement of Argentina's debt crisis. Much of Argentina's government debt is short-term credit that will need to be repaid or refinanced soon. Cavallo's policy package is only part of a recent series of measures taken to avoid economic crisis similar to the 1980s, which was due to the inability of the government to repay or refinance its debt. In December 2000, the GOA received a \$40-billion rescue package from the IMF and other sources to temporarily hold off its mounting debt crisis. In May 2001, the GOA traded \$30 billion in short-term credit for long-term bonds to defer repayment and ease the immediate burden.

Argentina's debt problems will not disappear anytime soon. The country will need to raise about \$12 billion in 2002 to repay or refinance more short-term debt coming due. This dilemma is compounded by the likelihood of deepening the current recession. However, if Cavallo's austerity plan with labor market reforms were rigidly followed by the provincial governors, it would go a long way toward restoring investor confidence and building the foundation for future economic growth. **AO**

Randy Schnepf (202) 694-5293 and Dave Torgerson (202) 694-5334  
[rschnepf@ers.usda.gov](mailto:rschnepf@ers.usda.gov)  
[dtorg@ers.usda.gov](mailto:dtorg@ers.usda.gov)

## Argentina and Brazil

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## World Agriculture & Trade



### China's Grain Policy At a Crossroads

China's grain sector and its policy-makers are adjusting to internal and external pressures that could reshape the industry. As consumers diversify their diets, they are demanding less grain but of higher quality. Government policymakers and the grain marketing system have been slow to adjust to changing consumer preferences. As a result, large stocks of low-quality grain accumulated in the 1990s. Government policy emphasis is now shifting from grain quantity to quality. China's pending accession to the World Trade Organization (WTO) may introduce external competition for both farmers and grain traders that will hasten the shift.

USDA estimates that China's production of wheat, corn, and rice fell by a combined 44 million tons in 2000/01. Grain production is likely to be lower again in 2001/02, as sown area in grain fell further and a second straight year of drought cut into corn and wheat yields.

With apparent tightening of domestic supplies, many observers have been puzzled by China's apparent lack of interest in grain imports. China has historically been a major importer of wheat, with annual imports of 4-15 million metric tons earlier in the 1990s. But over the past several

years, wheat imports have been at minimal levels of 1 million tons or less, and are projected to remain near that level in 2001/02. China also clamped down on corn imports and exported corn at near-record rates during calendar year 2000. Corn exports in the first half of 2001 continued, although at a reduced pace.

#### *Mid-1990s Policy Boosted Grain Production*

China's grain sector is emerging from a huge burst of grain production in the mid-1990s, arising from the government's historical approach to food policy that emphasized massive grain production. After five decades of grain policy had focused on ensuring adequate domestic supply, China is now learning to cope with a new problem: too much grain. What's more, the grain on hand often lacks the quality attributes sought by increasingly affluent and discriminating Chinese consumers. With China's accession to the WTO expected in late 2001 or early 2002, the Chinese grain sector faces pressure from both external competition and internal shifts in consumer preferences which could reshape the industry.

Historically, the problem of producing enough grain to feed China's massive

population was a high national priority. Seed technologies, expansion of irrigated areas, adoption of chemical and other modern inputs, and rural reforms such as the household production responsibility system begun in the late 1970s, combined to keep grain production on an upward trend over the past four decades. Combined production of corn, wheat, and rice (the three most important grains in China) grew from about 100 million tons after the disastrous famine of the early 1960s to 200 million tons in the late 1970s, due mostly to devoting ever-greater quantities of labor and land to grain production. After the introduction of market-oriented reforms in 1978, total grain production grew even more rapidly to 390 million tons in the late 1990s, an increase of 90 percent in 20 years.

After years of growth, China's policy makers became concerned when grain production hit a plateau in the early 1990s. Food prices rose, and localized grain shortages occurred, as land was taken out of grain production in areas surrounding booming coastal cities. To ease the mounting pressure of food security concerns, the government initiated the "Governor's Grain Bag" policy in 1994-95 to boost grain production. The government increased procurement prices and mandated that minimum grain production and reserve levels be met by provincial governments. In response, combined wheat, rice, and corn production rose from 322 million tons in 1994/95 to 375 million tons in 1996/97. Production remained at high levels through 1999.

The "grain bag" policy reflected the government's traditional approach to food policy of setting quotas and targets and marshalling inputs to ensure that grain production is sufficient to feed the population. This retrenchment from market-oriented policies in the early 1990s achieved an increase in grain output by inducing farmers to shift land and other agricultural inputs to grain. By contrast, gains in the 1970s and 1980s resulted from rising productivity and efficiency as market signals brought about a more efficient allocation of resources.

The "grain bag" policy, aided by favorable weather and imports, yielded more grain than China could handle. Imports in

## World Agriculture &amp; Trade

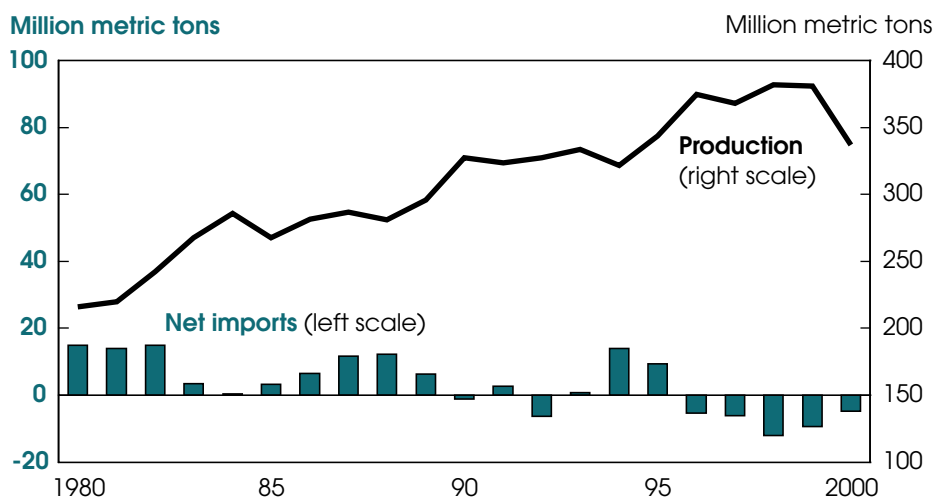
1994 and 1995 added to the flood of grain. By all accounts, grain storage facilities were filled beyond capacity in the late 1990s. The actual size of China's grain stocks is unknown, since it is considered a state secret, but estimates were as high as 500 million tons (including both commercial and onfarm stocks) at the end of calendar year 2000.

The surge in grain production in the mid-1990s occurred at the same time grain consumption growth was slowing. Demand for food grains stagnated in the 1990s, as rising incomes allowed more consumers to diversify their diets to include more meat, fish, fruits, vegetables, and edible oils—and less grain. Chinese statistics indicate that at-home per capita food grain consumption (rice and wheat) fell 13 percent between 1990 and 2000. Population grew by about 11 percent over the same period, but not enough to offset the decline in per capita consumption. Rising use of grain in processed foods and restaurant meals may have offset the decline in at-home consumption to some degree, but the overall trend in food-grain consumption appears to have been flat or declining in the 1990s.

On a per capita basis, China's production of rice and wheat dipped to 186 kilograms in 1994 (prior to the "grain bag" policy) before rising sharply to 213 kilograms in 1997. At the same time, per capita home consumption was falling as measured by China's household expenditure surveys. This suggests a widening gap between production and consumption during the mid-1990s. (These figures are not precise measures of supply and demand since they do not account for trade, feed, industrial use, or food away from home). In this context, the drop in production in 2000 appears to be a needed correction to align production with consumption. Per capita production of rice and wheat dropped from 200 to 183 kilograms between 1999 and 2000, narrowing the difference between per capita production and at-home consumption from 32 to 15 kilograms.

Large grain supplies pushed down prices in 1999 and 2000, discouraging farmers from planting grain. Many diverted acreage to cotton, oilseeds, vegetables, fruits, and fish ponds. Elimination of pro-

### China's Net Grain Imports Remain Negative in 2000 Despite Drop in Production

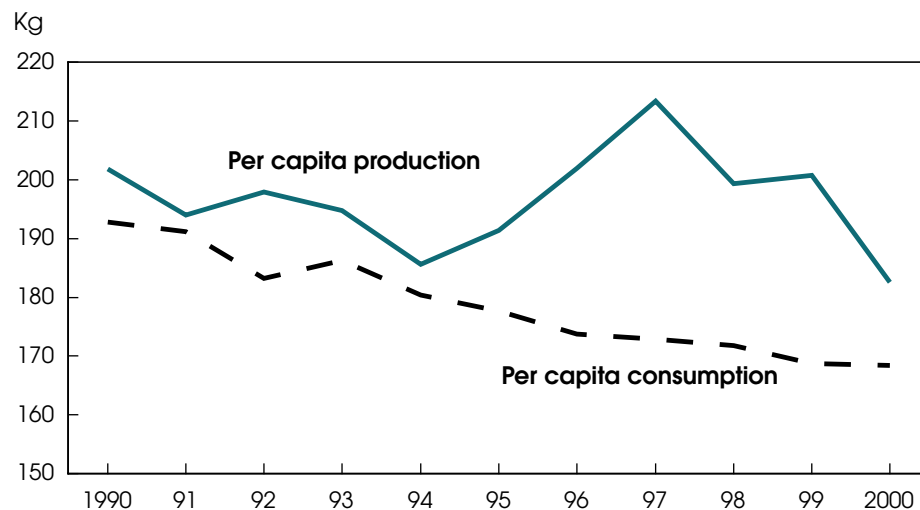


Corn, wheat, and rice.

Source: ERS analysis of USDA Production, Supply, and Distribution data.

Economic Research Service, USDA

### Per Capita Consumption of Wheat and Rice in China Continues Long-Term Decline



Per capita consumption is a weighted average of rural and urban averages. Excludes food consumed away from home, and feed or industrial use. Per capita production is China's rice and wheat production divided by total population.

Source: ERS analysis of data from USDA and from China National Bureau of Statistics.

Economic Research Service, USDA

curement quotas for several kinds of low-quality wheat and rice also contributed. Reports of grain being rejected by procurement stations for failing to meet quality standards may also have discouraged

the planting of some types of grains in recent years.

From 1999 to 2001, the government has focused on reducing its huge stocks of grain. That is why, for example, China



## World Agriculture & Trade

had record corn exports (aided by government subsidies) of nearly 10 million tons during 1999/2000, a year of severe drought in corn growing areas. In the past year, both USDA and the United Nations Food and Agriculture Organization revised their estimates of Chinese grain stocks upward by a substantial amount to more accurately reflect the situation. In 2001, indications are that while stocks have come down quite a bit, they are still substantial.

### *Emphasis Shifting from Quantity to Quality*

China's millers and bakers are now seeking grain with specific attributes sought by increasingly affluent Chinese consumers. Wheat must be suitable for breads, baked goods, and instant noodles. Bread makers demand high-protein and high-gluten wheat, while makers of cakes and crackers demand low-protein wheat. Most of China's wheat is between these two extremes. Rice must be high in quality, with a precise taste, texture, and stickiness when cooked.

Demand for high-quality wheat and rice is often met by imports. While China has been a net exporter of rice in recent years, southern residents have developed a taste for imported quality fragrant rice, mostly from Thailand. Millers are reportedly willing to pay premium prices for quality imported wheat to supply China's booming baking industry. Some types of imported wheat have been unavailable at any price in recent years as the government maintained very low import quotas in order to draw down its excessive grain stocks. China restricts imports of grain through unannounced quotas and administrative decisions (AO June-July 1999). Millers have had to make do with domestic wheat, the price of which is significantly above world levels.

China's goal is to supply high-quality grain from domestic sources, but reliance on administrative methods rather than market-based price signals has failed to adequately transmit changing consumer preferences to producers. New national grading standards for rice were introduced in 1999, but many farmers do not know how to interpret the standards.

### More Detailed Report in Progress

Information in this article is drawn from the annual China International Agriculture and Trade Report, which USDA's Economic Research Service will publish in late 2001. The report explains China's grain reserve policies and provides background information on how USDA produced its new grain reserve estimates in May 2001.

Among the conclusions in the broader report are the following:

- China's huge appetite for soybeans to feed its emerging livestock and edible oils industries continues to grow, with soybean imports expected to reach a record 13.2 million tons in 2000/01.
- Surging textile and apparel exports boosted demand for cotton and encouraged farmers to increase cotton acreage in 2001, but China remained a net exporter of cotton in 2000/01 as imports were restrained at minimal levels.
- China's livestock sector is internationally competitive in terms of production costs, but sanitary issues limit export potential. Meanwhile, the grain sector's competitiveness has eroded.
- In the long run, continued rapid growth and openness to trade in China will stimulate demand for food and fiber, but stagnant rural incomes and growing regional inequality temper optimism.
- Entrenched rural policies and institutions impede efficient resource allocation in rural China, dampening agricultural productivity and income growth.
- Following China's WTO accession, imports of wheat, cotton, soybeans, edible oils, and soy meal are likely to rise. China's rice exports are expected to rise, and its corn exports will likely fall.

Three new premium rice grades were established in 2000. New wheat grades were established with specific end uses in mind. "Quality" wheat includes both high-gluten varieties that are suitable for western-style bread and bakery products and low-gluten/low-protein varieties for cookies, cake mixes, and crackers. High-gluten wheat is further classified into two grades based on gluten and protein content. "Regular" wheat is classified into five grades on the basis of weight, percentage of imperfect grains, and foreign materials. There are also minimum standards for foreign materials, moisture, color, and smell that all wheat grades must meet.

The government has identified areas that produce "high-quality" wheat, and pays an apparently arbitrary 10-percent premium for this wheat. According to grain bureau analysts, "high-quality-special use" wheat constituted 16 percent of wheat area in 2000/01, up from less than 5 percent in 1998. The Ministry of Agriculture set a target of 20 million tons of "high-quality" wheat production by 2005. It is not clear,

however, whether these statistics accurately reflect the pace of improvement in China's wheat quality. The statistics indicate the quantity of wheat grown in areas declared as "high quality," but they do not necessarily reflect the actual quality of the output. A common complaint of millers is the lack of homogeneity in wheat delivered to them.

The lack of adequate price incentives offered by the government-sponsored grain bureau has slowed the response of producers to changing consumer preferences. The government sets prices for grain purchased to fulfill mandatory quotas, and for sales above the quota. These prices only dimly reflect market forces. Until 1999, the government made little distinction between prices it paid for *indica* and *japonica* rice varieties, even though low-quality early *indica* rice commanded a lower market price. The government also procured large quantities of low-quality spring wheat from northeastern provinces. As a result, grain bureaus accumulated large stocks of low-quality grain for which there is almost no demand.

## World Agriculture &amp; Trade

Reportedly, a rising proportion of food grains has been sold or exported to neighboring countries such as South Korea as animal feed or lost to spoilage as prospects for marketing these low-quality grains have dimmed. Carrying costs of these mounting surpluses have been a financial burden to the grain bureau system.

The grain bureau is slowly responding to the changing market. In 2000, procurement prices were eliminated for low-quality spring wheat grown in China's northeast, all wheat grown south of the Yangtze River, and low-quality *indica* rice grown in southeastern coastal provinces. Without the incentive of the procurement price, spring wheat production in the northeast (including Jilin, Liaoning, Heilongjiang, and Inner Mongolia) dropped by 59 percent in 2000, according to estimates from within China. Some local grain procurement stations have also reportedly rejected grain that failed to meet quality standards. While this is a step toward meeting consumer preferences, better transmission of market-based price signals to producers and greater attention to grading standards will be needed to ensure that the type of wheat grown by producers is in line with consumer demand.

Increased competition in grain marketing may improve the economy's ability to transmit market signals from the changing consumer market to the producer. A substantial private trade already exists, and contracting with mills and processors is also emerging, but the government grain bureau system remains dominant. A major grain marketing reform in 1998 aimed to separate the grain bureau's previously

intertwined food policy and commercial functions.

The government intends to spin off entities from the grain bureau system that would become commercial grain trading operations to promote competition in grain marketing. Remaining government entities would focus on maintaining policy-oriented grain reserves. The separation of policy and commercial operations and the increase in competition is likely to give commercial grain traders incentives to pay prices that more closely reflect final consumer demand.

### **WTO Accession Will Increase Competition**

China's long-anticipated WTO accession, now expected in late 2001/early 2002, will also introduce more competition. Currently, foreign trade in grains is dominated by state entities and is carefully controlled by the central government. After entering the WTO, China will establish tariff-rate quotas for wheat, corn, and rice. Imports up to the annual quota amount for each commodity will be allowed at low tariff rates of 1 percent, and imports above the quota will be assessed high tariffs of 80 percent for rice and corn and 77 percent for wheat. Over the 5 years following accession (beginning probably in 2002), the quotas will increase and above-quota tariffs will decline yearly.

WTO accession is expected to weaken the monopoly of state trading entities in China's grain trade. A share of each year's tariff-rate quota will be reserved for non-

state trade entities in order to encourage private-sector participation. Half of the long grain rice quota will be reserved for private traders, and for corn the private share will be set initially at 25 percent, rising to 40 percent over 5 years. Wheat and short grain rice trade will still be dominated by government entities, as private shares are set at just 10 percent. The greater role of nonstate traders following WTO accession has considerable potential to increase competition in China's grain trade, though the licensing procedure and quota allocation process are largely unknown to traders.

It is widely recognized that WTO accession will increase competition for Chinese farmers by allowing more wheat imports and reducing corn exports (corn export subsidies will end after WTO accession). China's rice, which is more competitive internationally, will not feel much direct effect. As China's meat and dairy consumption rise, derived demand for corn to feed growing livestock herds will shift grain area away from food grains to corn and other feed grains. China is expected to become a net importer of corn within the next decade, a trend that may be hastened by WTO accession. **AO**

*Fred Gale (202) 694-5215,  
Hsin-Hui Hsu (202) 694-5224,  
Bryan Lohmar (202) 694-5214,  
and Francis Tuan (202) 694-5238  
fgale@ers.usda.gov  
hhsu@ers.usda.gov  
blohmar@ers.usda.gov*

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## Research & Technology



USDA Photo

# Livestock Drugs: More Questions Than Answers?

Use of antimicrobial (antibiotics and other) drugs in livestock production has been surrounded by controversy since the practice began in the 1940s. Antimicrobial drugs are designed to weaken or kill pathogens, which are disease-causing microorganisms such as bacteria and fungi. At high levels, these drugs are used to cure or contain livestock diseases. At low levels, antimicrobial drugs are used in livestock production to enhance feed efficiency and promote growth, fight infections not usually detectable without clinical examination, and prevent diseases. The selection of effective and reliable antimicrobial drugs is limited, and the same or related drugs are often used for both animals and humans. It is this dual human-livestock use that has generated concern.

It is primarily the low-level use of these drugs for livestock that comes under fire, particularly those used to promote growth. Administering low levels of antimicrobial drugs to food-producing animals has been postulated to threaten human health in two ways.

First, some fear that livestock drug residues may remain in final food products and cause human illness. According to the joint Committee on Drug Use in

Food Animals, with members from the National Research Council and from the Institute of Medicine, the generally rapid breakdown of active ingredients in drugs, combined with Food and Drug Administration (FDA)-specified periods between last administration of the drug and slaughter, have limited this threat in the U.S.

Second, scientists have found that some microorganisms (particularly bacteria) are becoming resistant to antimicrobial drugs. This raises concerns about the role of livestock drug use in the emergence of drug-resistant bacteria and the ability of health-care practitioners to cope with them. Some microorganisms are naturally resistant to some antimicrobial drugs. Others become resistant by mutation or by incorporating genetic material for resistance from other microorganisms, by ingestion or by cellular contact.

### *Scientific Understanding of Resistance Falls Short*

There is considerable uncertainty about many aspects of antimicrobial resistance. The U.S. General Accounting Office (GAO) has confirmed that the data on the public health threat of antimicrobial resistant bacteria are limited. Furthermore, they have confirmed that within the govern-

ment there are differences of opinion among various branches about the risk to public health posed by antimicrobial use in animals and the best course of action. The GAO has encouraged various branches of the government to work together to address these critical information gaps and develop science-based decisions.

Any use of antimicrobial drugs in humans or animals can result in the appearance of drug resistance in some bacteria. The Committee on Drug Use in Food Animals estimated that as few as 10 percent of the incidences of antimicrobial resistance originate with livestock health practices, and concluded that not all instances of such resistance are clinically significant, involve resistance in disease-causing microorganisms, or cause an actual illness. Other instances of resistance stem from human use.

Farm animals carry many species of microorganisms, including some food-borne pathogens, like *Salmonella* and *Campylobacter*. Some microorganisms may contaminate carcasses and food products during processing, and, if this food is inadequately cooked or improperly handled, the pathogens can make people ill. If drug-resistant strains of these microorganisms cause human illnesses that require medical care, doctors may be limited in the antibiotics available for an effective cure.

In 1969, the first formal statement of the hypothesis that drug-resistant bacteria may be transmitted to humans through food and cause human illness was issued in London in the "Report of Joint Committee on the Use of Antibiotics in Animal Husbandry and Veterinary Medicine." In a later report, scientists at the U.S. Centers for Disease Control and Prevention (CDC) state that the actual transmission of antimicrobial-resistant diseases between animals and humans is difficult to establish and involves documenting each of the following steps:

- the selection for and persistence of resistant bacteria in animals from low-level doses of antimicrobial drugs,
- the presence of resistant pathogens in animal products,

## Research &amp; Technology

## Major Classes of FDA-Approved Antimicrobial Drugs—Status in European Union

## Allowed in EU

Antibiotic class (selected)	Species	Administered to food animals			Administered to humans
		Disease treatment	Disease prevention	Growth promotion	
Aminoglycosides <sup>1</sup> (gentamicin, neomycin, streptomycin)	Beef cattle, goats, poultry, <sup>2</sup> sheep, swine	X	X		X
Ionophores (monensin, salinomycin, semduramicin, lasalocid)	Beef cattle, fowl, goats, poultry, rabbits, sheep		X	X	
Quinolones (fluoroquinolones, sarafloxacin, enrofloxacin)	Beef cattle, poultry	X	X		X
Sulfonamides (sulfadimethoxine, sulfamethazine, sulfisoxazole)	Beef cattle, dairy cows, fowl, poultry, swine, catfish, trout, salmon	X		X	X
Bambermycin	Beef cattle, poultry, swine		X	X	
Carbadox	Swine		X	X	X
Novobiocin	Fowl, poultry	X	X		X
Spectinomycin	Poultry, swine		X		X

1. Streptomycin has been approved for use on food plants. 2. Includes at least one of the following: broiler chickens, laying hens, and turkeys. 3. Fowl includes at least one of the following: ducks, pheasants, and quail.

## Banned in EU

Antibiotic class (selected)	Species	Administered to food animals			Administered to humans
		Disease treatment	Disease prevention	Growth promotion	
Beta-Lactams (penicillins: amoxicillin, Ampicillin)	Beef cattle, dairy cattle, fowl, <sup>1</sup> poultry, <sup>2</sup> sheep, swine	X	X	X	X
Cephalosporins: (Cefadroxil) (Cefuroxime) (Ceftiofur)	Beef cattle, dairy cows, poultry, sheep, swine	X	X		X X X
Lincosamides (lincomycin)	Poultry, swine	X	X		X
Macrolides (erythromycin, tilmicosin, tylosin)	Beef cattle, poultry, swine	X	X	X	X
Polypeptides (bacitracin)	Fowl, poultry, swine	X	X	X	X
Streptogramins (virginiamycin, synercid)	Beef cattle, poultry, swine	X	X	X	X
Tetracyclines (chlortetracycline, oxytetracycline, <sup>3</sup> tetracycline)	Beef cattle, dairy cows, fowl, honey bees, poultry, sheep, swine, catfish, trout, salmon, lobster	X	X	X	X

1. Fowl includes at least one of the following: ducks, pheasants, and quail. 2. Includes at least one of the following: broiler chickens, laying hens, and turkeys. 3. Oxytetracycline has been approved for use on food plants.

Source: "The Agricultural Use of Antibiotics and Its Implications for Human Health," Appendix II, GAO/RCED-99-74, U.S. General Accounting Office, April 1999.

Economic Research Service, USDA



## Research & Technology

- transmission of these pathogens to humans, and
- diagnosis of human diseases caused by these pathogens.

Studies that positively trace drug-resistant, foodborne human illnesses back through the food chain to a resistant livestock source are not common. Much of the other evidence is circumstantial, but enough evidence has accumulated that CDC and FDA scientists are concerned that drug-resistant varieties of *Salmonella* and *Campylobacter* have passed from livestock to humans and caused human illnesses.

Advances in medical technology, such as DNA fingerprinting, are helping to make these connections, and data to address these issues are becoming available. In 1996, the FDA, the CDC, and the USDA established the National Antimicrobial Resistance Monitoring System: Enteric Bacteria (NARMS). NARMS monitors changes in antimicrobial susceptibilities of intestinal pathogens that affect both humans and animals from human and animal clinical specimens, from healthy farm animals, from retail food, and from carcasses of food-producing animals at slaughter. Animal-isolate testing is conducted at the USDA Agricultural Research Service Russell Research Center. Human-isolate testing is conducted at the CDC National Center for Infectious Diseases Foodborne Disease Laboratory. Retail food testing is conducted at the FDA Center for Veterinary Medicine Office of Research Laboratories. All laboratories use comparable isolation, identification, and susceptibility testing procedures.

There is also uncertainty about drug levels needed to cause resistance. Studies by the CDC have found relatively high correlations between feeding of low levels of antimicrobial drugs to livestock and the presence of drug-resistant bacteria in animals. However, in a 1986 paper, a member of the University of Liverpool's veterinary faculty suggested that some critical threshold or level of antibiotics is needed to cause microorganisms to become resistant and that this threshold may not be reached by low levels of livestock drug use.

Another difficulty with establishing the extent of livestock-sourced, resistant foodborne illness is that only about ten percent of people who become ill from a foodborne pathogen seek medical care. This results in uncertainty about how many of the estimated 76 million annual foodborne illnesses in humans involve an organism that is resistant to antimicrobials and where that resistance has impacted the health care or the outcome for the patient. Furthermore, the contribution of antimicrobial drug use in livestock cases is unknown.

### *The Effect of Human Use Of Antimicrobial Drugs*

The development of antimicrobial drug resistance in bacteria and fungi also occurs through the use of these drugs by people, particularly any long-term use of these drugs. Microbial resistance to antimicrobial drugs in humans is believed to stem largely from over-reliance on antimicrobial drugs in human medicine, failure to adhere to prescriptions for the full duration of treatment, and increased clustering of people in institutions such as hospitals and day care centers. The U.S. Congress, Office of Technology Assessment, and the Committee on Drug Use in Food Animals found that the two greatest sources of drug-resistant pathogens observed in humans are misuse of antibiotics by both doctors and patients, and the emergence of drug-resistant pathogens in hospitals.

Nearly 2 million people each year have hospital-acquired infections, many of which are difficult to treat because they are caused by pathogens which are resistant to the drugs commonly used to treat them. The Committee on Drug Use in Food Animals stated in a 1998 report that the risk of these hospital-acquired infections might more likely be considered life threatening than illnesses potentially caused by antimicrobial resistance originating in animals, because hospital-acquired infections occur in patients who are already medically stressed.

Bans against using antimicrobial drugs in livestock are often discussed as a precaution to protect the effectiveness of antimicrobial drugs in human health care. The question then becomes: "Would the devel-

opment of bacterial resistance actually decline in livestock if low-level use of these drugs was stopped?"

Studies that compare use versus nonuse of livestock antimicrobial drugs as growth promotants are inconclusive—some find reduced resistance in pathogens in livestock when drugs are withdrawn, while others find no change or increased resistance. Studies from Europe since the ban on antimicrobial growth promoters have demonstrated lower percentages of resistant bacteria from livestock where use of antimicrobial drugs for growth promotion was stopped.

### *Economic Effects Difficult to Measure*

The economic consequences of resistance to antimicrobial and other drugs are difficult to measure precisely. Issues include changes in costs of production, effects of drug bans on trade, losses associated with resistant foodborne illness including medical expenses, productivity losses, and deaths.

There are very little data on the economic costs associated with human illness caused by antimicrobial-resistant microorganisms, much less illness involving resistant pathogens directly related to livestock drug use. According to CDC, one study estimated that drug-resistance to *Staphylococcus aureus* (a pathogen associated with hospitals rather than livestock) had an annual cost of \$122 million.

Effects on livestock from resistant microbes and their associated costs can range from virtually none (no impact on animal health) to costs that exceed the value of an animal. Economic analyses based on limited data generally demonstrate short-run increases in production costs and prices for livestock and livestock products in the U.S. in the aggregate.

For producers who currently use low levels of antimicrobial drugs in livestock feed, it is possible that costs of treating livestock diseases could increase if pathogens were resistant and if producers had to resort to more expensive or less effective drugs to cure or contain the disease. There are currently no data to suggest this is occurring. On the other hand,

## Research &amp; Technology

producers not currently feeding antimicrobial drugs may be able to use less expensive antimicrobial drugs to treat disease outbreaks caused by susceptible pathogens.

One effect from using antimicrobial drugs in livestock is a change in the balance of the intestinal microbes in livestock. Currently there are no data to suggest that such shifts result in increased carriage or shedding of potential foodborne pathogens.

In the 1970s and 1980s, studies were conducted on bans or limits on using low levels of antimicrobial drugs in livestock feeds. Estimated annual net losses to producers and/or consumers ranged from just under \$1 billion to about \$12 billion. More recent studies are needed. Further, the perceived benefits from a livestock drug ban might not offset the higher food costs to consumers.

### Research Needs & Implications

There are voids in basic data about many aspects of antimicrobial drug use in U.S. livestock production. The probabilities of humans becoming ill due to drug-resistant bacteria are thought to be quite low, although they remain unknown. Precise estimates of these probabilities are needed to evaluate risks of resistant foodborne illnesses in humans associated with livestock drug use.

In addition, production practices in the U.S. differ from those in Europe, so data

and research specific to the U.S. are needed to estimate the biological and economic effects of bans against antimicrobial drugs used in U.S. livestock production. Long-term effects of livestock drug bans have not been adequately demonstrated or studied. Some European studies suggest that long-term benefits might outweigh short-term costs to producers and consumers. Much of the livestock research in the U.S. is geared toward demonstrating the benefits of antimicrobial drugs in terms of improved productive performance in livestock, with little focus on pathogen characteristics, such as resistance, or economic considerations such as associated drug and feed costs.

The possibility of resistant livestock pathogens affecting humans has heightened concerns about livestock drug use and motivated regulatory actions in the U.S. and abroad. In early 1999, the Center for Science in the Public Interest, representing 37 health and consumer groups, petitioned the FDA to ban the use of seven antimicrobial drugs in livestock production (bacitracin, erythromycin, lincomycin, penicillin, tetracycline, tylosin, and virginiamycin). A bill banning low-level feeding of these seven antimicrobials (unless the sponsors could demonstrate no adverse effects within two years) was introduced into the House of Representatives in November 1999 (H.R. 3266). FDA has also proposed a framework for evaluating and assuring the human safety of new antimicrobial drugs intended for use in food animals. The proposed guidelines classify antimicrobial drugs according to the extent to which they are useful in human health care, the propensity for

resistance to develop, and effects on pathogen load in animal products. The new guidelines also propose setting predetermined thresholds for when actions should be taken to stem the emergence of resistant pathogens.

Many European countries have already banned low-level feeding of specific antimicrobial drugs used to enhance livestock growth or feed efficiency. In May 1999, the Scientific Steering Committee of the European Commission concluded that action should be taken promptly to reduce overall use of antimicrobial drugs used in livestock production.

On the basis of ongoing work of this committee and other available information, the Agriculture Ministers in the European Union (EU) in 1999 banned four antimicrobial drugs widely used at low levels to promote animal growth (bacitracin zinc, spiramycin, tylosin, and virginiamycin). In June 2001, the Agriculture Ministers banned the remaining growth-promoting livestock drugs that are also used for humans. A ban against low-level use of antimicrobial drugs in U.S. livestock production would likely raise costs to producers and consumers in the short run; long-term impacts are still unknown. **AO**

*Kenneth H. Mathews, Jr. (202) 694-5183 and Jean C. Buzby (202) 694-5370, ERS; Linda R. Tollefson, Food and Drug Administration, and David A. Dargatz, Animal and Plant Health Inspection Service.  
kmathews@ers.usda.gov  
jbuzby@ers.usda.gov*

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#### *Antimicrobial Drug Use and Veterinary Costs in U.S. Livestock Production*

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## Resources & Environment



USDA Photo by Bill Tarpenning

# USDA Conservation Programs: A Look at the Record

As the public has become more conscious of agriculture's impacts on environmental ecosystems, they have come to demand that farm programs offset more of those impacts.

Policymakers have responded in three ways.

- Conservation spending for agriculture has nearly tripled since the mid-1980s. The greatest portion of this spending has gone to support land retirement through the Conservation Reserve Program (CRP).
- Conservation compliance—which requires farmers to meet specific conservation standards or face potential loss of a range of farm program benefits—has helped increase conservation practices on highly erodible land (HEL) in production and reduced conversion of wetlands for agricultural purposes.
- Programs such as the Environmental Quality Incentive Program (EQIP) are addressing new environmental problems. Half of the EQIP budget has been allocated to reduce livestock impacts on ecosystems, a growing concern. (See following article on EQIP.)

In the current farm bill discussions, policymakers are debating the future structure of USDA agri-environmental programs and the role of conservation programs in addressing emerging environmental concerns, such as unwanted nutrients in surface water and excess animal waste. Recent USDA studies examine major conservation programs of the past 15 years. These studies, in general, point to significant environmental benefits from soil conservation and wildlife restoration.

### *Soil Erosion Is Down . . .*

Between 1982 and 1997, soil erosion on U.S. cropland fell nearly 40 percent to 1.89 billion tons per year. Federal programs—largely conservation compliance and CRP—can be credited with much of the decline. Other likely contributors are farmers' greater awareness of conservation practices, increased regulation by states, and technological advances in farm machinery, such as better and lower cost no-till seeders.

Highly erodible cropland subject to conservation compliance requirements makes up a quarter of all cropland. In 1997 approved conservation systems were in effect for more than 95 percent of this

land. Conservation compliance has contributed significantly to the estimated reduction in soil erosion between 1982 and 1997 of 323 million-tons-per-year on highly erodible cropland.

While farmers learned conservation skills and invested in conservation-friendly equipment to meet conservation compliance requirements on HEL, they also may have used these practices on their cropland not designated as highly erodible (about three-quarters of U.S. cropland). Although the extent of this side effect is uncertain, soil erosion on cropland not considered highly erodible dropped an estimated 319 million tons per year between 1982 and 1997. Annual average per-acre erosion reductions on non-highly erodible cropland were only one-fourth of the average erosion reduction on HEL.

On land with planted crops in 1982 but enrolled in CRP in 1997, erosion was reduced by approximately 384 million tons per year. Many acres enrolled in CRP are highly erodible and program enrollment led to significant per-acre reductions.

The CRP also has motivated changes in two other land-use and management practices, which, in turn, have affected erosion. First, cropland retirement through CRP may have caused farmers to intensify production on other acreage. This expanded production, or 'slippage,' increased erosion and, therefore, offset some of CRP's erosion reduction.

Second, conservation compliance and better conservation technologies helped lower cropland erosion rates between 1982 and 1997. Thus, the 1982 erosion rates of CRP land would likely have been lower in 1997 even if the land had continued in crop production.

Recent research suggests that public benefits from erosion reduction attributable to conservation compliance are conservatively estimated at about \$1.4 billion annually and \$694 million for reductions attributable to the CRP.



## Resources &amp; Environment

### Many Environmental Benefits from Ag Conservation Have Not Been Estimated

Benefits from erosion and sediment reduction		Benefits from wildlife habitat restoration and expansion	
Estimated for	Not estimated for*	Estimated for	Not estimated for*
Stream and lake fishing Picnicking, hiking, and other recreation along streams/lakes Water storage capacity Navigation Soil productivity changes Flood damage reduction Water conveyance upkeep Water treatment Power generation Irrigation ditch upkeep Dust effects on humans Roadside ditch upkeep	Picnicking, hiking, and other recreation around bays/estuaries Commercial and recreational fishing Preservation of endangered fish, shell, and other species Swimming and diving around coral reefs Dust reduction benefits to households, industry, viewing scenery	Bird watching Pheasant hunting	Duck hunting (nesting cover) Indigenous small game hunting Big game hunting Viewing of mammals and reptiles Preservation of endangered species Healthy ecosystems for common wildlife
Benefits from wetland preservation and restoration		Other environmental benefits	
Estimated	Not estimated for*	Estimated	Not estimated for*
	Waterfowl hunting Endangered species protection Existence of healthy wetland ecosystems Wildlife viewing Big game hunting Small game hunting Water quality improvement Flood damage control Ground water recharge Commercial and recreational fishing Boating/canoeing		Carbon sequestration Preservation of indigenous plant and animal species Commercial and recreational fishing (reduced nutrient and pesticide loadings to surface water) Health impacts of lower nutrient and pesticide loadings to ground and surface water

\* Not a comprehensive list.

Economic Research Service, USDA

### ... & Wildlife Habitat Has Improved

Wildlife habitat has improved substantially in some parts of the country, due primarily to enrollment of approximately 34 million acres of land in CRP. With this land retirement program, many wildlife species gain a year-round food source as well as cover for raising young and winter protection. The Wetlands Reserve Program and Swampbuster—see sidebar—also contribute significantly to wildlife gains. Wetlands and their surrounding areas provide habitat to a wide variety of fish, birds, mammals, reptiles, insects, and plants.

Public benefits delivered by the effects of these programs on wildlife vary. Local recreational activities—such as bird watching, fishing, and hunting—are perhaps most apparent. However, the programs can affect similar activities in areas far from the protected acres. For example, many bird species that nest in CRP and wetland acres of northern states migrate throughout the country, and downstream fish habitat is improved by distant reductions in upstream erosion.

Because of the extensive and diverse nature of CRP's impacts on ecosystems, a full assessment is difficult. However, available case studies do provide some perspective on the program's accomplish-

ments. Duck populations of the prairie pothole region were estimated to have increased 30 percent, thanks to CRP habitat. Populations of various grassland bird species in North Dakota were estimated to be nearly 18 percent higher with current CRP enrollment. Nest density in Midwest CRP land was estimated to be nearly 15 times higher than in row-crop acreage.

Economic analyses provide some perspective of the value of wildlife impacts. Recent studies have estimated in monetary terms CRP's benefits to bird watchers and pheasant hunters. The findings suggest that these two groups combined would be willing to pay a total of \$704 million per year for additional wildlife they see due to CRP.

Estimated environmental benefits from both programs described here—conservation compliance (benefits estimated from soil erosion reduction) and CRP (benefits estimated from soil erosion reduction and additional wildlife)—are \$2.8 billion per year. This estimate is very conservative for two reasons.

First, while many of the benefits from erosion reduction and improved wildlife habitat are included—such as recreational fishing, bird watching, and cost savings due to less dredging—many other benefits are not included, such as better waterfowl hunting and improved commercial fishing.

Second, each included benefit may be underestimated. For example, in measuring navigation benefits, the savings in dredging costs associated with reduced erosion are counted, but not the cost savings from fewer ships running aground, fewer shipping delays, and less need for smaller vessels.

### Wetlands Are Protected, Restored

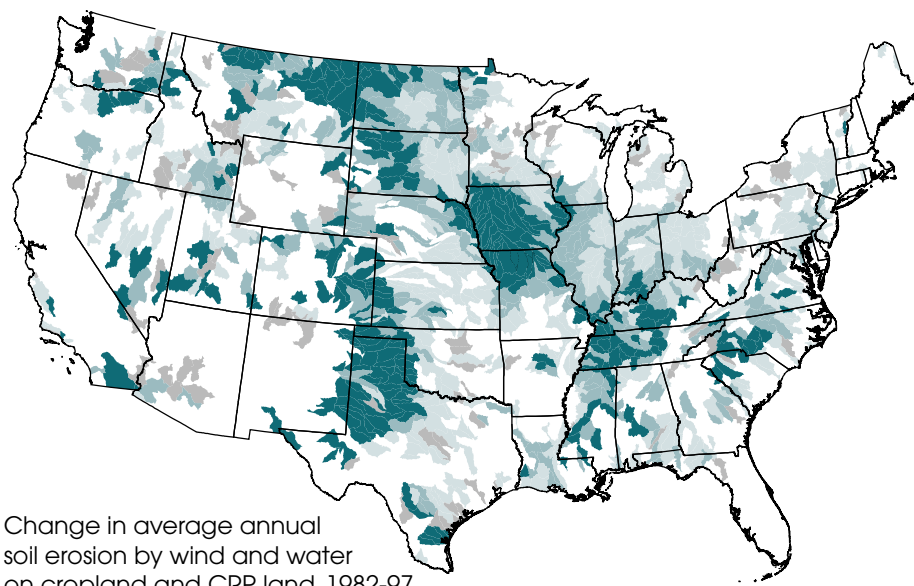
Wetland programs are currently assessed in relation to the goal of “no net loss.” Agriculture has contributed significantly to achieving that goal through both wetland preservation and restoration.

Average annual wetland conversion for agricultural use dropped from 235,000 acres in 1974-82, and 31,000 acres in



## Resources & Environment

### Soil Erosion Has Declined Over a Wide Range of U.S. Farmland



Tons/acre/year

- Increased > 0.5
- Little change
- Decreased 0.5 to 2
- Decreased 2.1 to 4
- Decreased > 4

Source: Natural Resources Conservation Service, USDA  
Economic Research Service, USDA

1982-92 to less than 27,000 in 1992-97. The decline in the rate of agricultural wetland conversion is attributed to several factors.

First, since roughly half of all wetlands in the U.S. have been drained, the remaining wetlands may be more difficult and expensive to convert to crop production.

Second, long-term declines in agricultural commodity prices may have reduced farmers' desire to convert wetlands to agricultural production.

Finally, policy changes have reduced wetland conversion incentives and introduced wetland conversion penalties. For agriculture, the key changes have been the elimination of lucrative tax breaks for wetland conversion (Tax Reform Act of 1986), and introduction of the Swampbuster provision (Food Security Act of 1985). The lat-

ter provision denies farm program payments to producers who drain wetlands for crop production.

Evidence is mixed on whether or not these wetland policy changes have reduced wetland conversion. Some analysts have concluded that wetland conversion for crop production is no longer profitable. However, recent research using more detailed data indicates that Swampbuster provisions could be preserving between 1.5 million and 3.3 million acres of wetland, depending on commodity prices.

Wetland restoration under the Wetlands Reserve Program (WRP), including its emergency counterparts, has been significant with approximately 1.05 million acres enrolled through 5,774 contracts with landowners. In most cases, the Federal government purchases a long-term (30-year) or permanent easement and provides cost-sharing and technical assis-

tance for wetland restoration. Permanent easements are particularly popular, accounting for roughly 70 percent of recently enrolled acres.

Landowners also may opt for a 10-year cost-share agreement in which USDA shares restoration costs and provides the landowner with technical assistance, but with no easement purchase involved. Nearly 20 percent of recently enrolled acres came in under 10-year agreements. In both easement and cost-share agreements, landowners retain land ownership and the rights to hunting, fishing, and other recreational activities.

The WRP easements may be particularly important in wetland restoration because ecosystem recovery generally requires 15 to 20 years. Hardwood wetland forests can require decades for substantial recovery. Conversely, cattail swamps tend to regenerate more quickly. Recovery is considered "very rapid" if significant gains are made in 5 years. Even wetlands within the same region improve at varying rates due to factors such as size of the wetland, the method by which the wetland was drained, and the abundance of surrounding wetlands.

Current WRP authority, specified in the Food Security Act of 1985 as amended, caps enrollment at 1.075 million acres, a limit that will be reached by October 1, 2001. However, program demand is strong. At present, USDA has WRP applications on hand from 3,150 landowners proposing to restore more than 560,000 acres beyond the current acreage cap.

### Challenges to Address

Despite environmental gains the public has seen, past agri-environmental problems remain. In addition, changes in agricultural technologies, practices, and structure continue to increase the significance and number of agri-environmental impacts. Recent studies provide some perspective on the impacts of today's agriculture.

Suspended sediment, due in part to agriculture, is still the largest contaminant of waterways by weight and by volume.

Dissolved nitrogen in waters continues to cause significant problems. Recent

## Resources &amp; Environment

## Agriculture's Major Conservation Tools

The *Conservation Reserve Program* (CRP) relies on annual government rental payments and cost-sharing as incentive tools. Farmland owners sign contracts of 10-15 years to retire agricultural land from production and establish a long term or permanent cover on the soil (e.g., trees or grass) in return for annual rental payments. When enacted through the Food Security Act of 1985, the CRP set erosion reduction as its primary goal. However, the Food, Agriculture, Conservation, and Trade Act of 1990 expanded the program's environmental goals to include water quality and wildlife. Annual program expenditures, over the last decade, averaging around \$1.5 billion, have amounted to more than twice that of all other Federal conservation programs combined. Enrollment, at 33.6 million acres as of July 2001, has ranged between 30 and 36 million acres since 1999, and has a cap of 36.4 million-acres.

The *Wetlands Reserve Program* (WRP) relies on government cost-sharing and easement payments as incentive tools. The WRP currently offers landowners the opportunity to sell permanent or 30-year easements, or to enter into a 10-year cost-share agreement. In return, farmland owners maintain land ownership and hunting, fishing, and similar rights. The WRP is primarily a habitat restoration program but also helps improve water quality, recharges groundwater, and provides environmental benefits. Since authorization under the Food, Agriculture, Conservation, and Trade Act of 1990, WRP has enrolled mostly marginal high-risk flood-prone agricultural lands. Projects with easements or contracts are located in all states, except Alaska. The average project is approximately 185 acres, and the average Federal cost per acre is approximately \$1,175. Current WRP authority caps enrollment at 1.075 million acres.

*Conservation compliance*, *Sodbuster*, and *Swampbuster* rely on the threat of losing eligibility for other farm programs, such as production flexibility contract payments, CRP payments, farm-storage-facility and operating loans, and disaster payments.

- Conservation compliance requires those who farm highly erodible land to implement an approved soil conservation plan.
- Sodbuster requires that any highly erodible pasture, range, or hayland converted to cropland meet the soil loss tolerance level, which is a higher standard than conservation compliance.
- Swampbuster compliance requires that a farmer not convert a wetland for crop production.

Enacted through the Food Security Act of 1985, all three programs provide water quality benefits. Conservation compliance and Sodbuster also increase soil productivity and improve air quality, while Swampbuster preserves the many benefits delivered by wetlands.

research found that 40 percent of major U.S. estuaries exhibited highly eutrophic conditions—where water is rich in plant nutrients but often deficient in oxygen—due to nitrogen loadings. Eutrophication and hypoxia—where low oxygen levels threaten aquatic life—in the northern Gulf of Mexico are due to nitrogen inflows from the Mississippi River.

Animal wastes, primarily from confined feeding operations but also from animal grazing areas along streams, may be responsible for outbreaks of waterborne

pathogens, including *Pfiesteria piscicida*, *Cryptosporidium*, and *E. coli*. The protozoan parasites *Cryptosporidium* and *Giardia* may cause gastrointestinal illness, and *Cryptosporidium* may lead to death in persons with weak immune systems. Both these parasites have been found in beef herds, and *Cryptosporidium* in dairy operations. Blooms of the microorganism *Pfiesteria piscicida* have killed fish in certain Maryland and Virginia tributaries to the Chesapeake Bay and in the Neuse River in North Carolina. There is evidence that *Pfiesteria* can also affect human health.

Excessive levels of nutrients are believed to be among the conditions for these blooms to occur, and animal agriculture is a major source of nutrients in these regions.

On the plus side, agriculture has demonstrated an ability to reduce carbon dioxide loadings, and thus may help reduce mankind's impact on global climate change. For example, 1 CRP acre in the Great Plains is estimated to sequester (i.e., retrieve and store) 0.85 metric tons of carbon per year. Soil conservation efforts such as conservation tillage systems and winter cover are also credited with reducing atmospheric carbon loads. However, the sequestered carbon is released with termination of conservation activity, such as if the land returns to production after the contract term ends.

While future agri-environmental policy will need to address a broad array of environmental impacts, the soil erosion reductions and wildlife gains of major agri-environmental programs to date have been significant. As the scope of agri-environmental problems broadens, a wide array of policies may be needed. In an increasingly diverse farm sector, addressing agri-environmental concerns will require programs that meet the needs of many different farm types. Significant effort may also be required to sustain environmental gains in soil erosion, wetlands, and wildlife habitat. In short, a portfolio of policy mechanisms may be needed, including land retirement, incentives for improving conservation on land in production, and ongoing use of compliance mechanisms.



LeRoy Hansen (202) 694-5612 and Roger Claassen (202) 694-5473  
lhansen@ers.usda.gov  
claassen@ers.usda.gov

### Related Publications

**Agri-Environmental Policy at the Crossroads: Guideposts on a Changing Landscape**

[www.ers.usda.gov/publications/aer794](http://www.ers.usda.gov/publications/aer794)

**Economic Valuation of Environmental Benefits and the Targeting of Conservation Programs: The Case of the CRP**

[www.ers.usda.gov/publications/aer778](http://www.ers.usda.gov/publications/aer778)

## Resources & Environment

### EQIP: Conserving While Farming

Incentive payments to farmers for natural resource conservation have received growing attention in the debate surrounding the upcoming farm bill. The Environmental Quality Incentives Program (EQIP), which provides technical, financial, and educational assistance for a wide range of agri-environmental activities, has attracted particular interest. Conservation practices implemented under the program have improved soil, land, water, and nutrient management on working farmland.

Farmers' applications each year for participation in EQIP have exceeded available funding. However, some farmers signing multi-practice participation contracts have subsequently withdrawn from the program or have chosen not to implement some of the planned practices. This is among the issues that have implications for program design and funding.

Interest in EQIP by policymakers is linked to increasing recognition that many agri-environmental problems can be addressed only through improved performance on working farmland (rather than through land retirement). Another consideration is that financial support under EQIP is not constrained by World Trade Organization rules regarding production subsidies, since payments are not linked to production or price of a commodity.

Established in the 1996 Farm Act, EQIP provides a voluntary conservation program for farmers and ranchers facing threats to their natural resource base or whose production activities contribute to environmental degradation. EQIP is attractive to producers given the program's flexibility in addressing natural resource concerns while maintaining land in productive agricultural use. The program, administered by USDA's Natural Resources Conservation Service, provides technical, financial, and educational assistance to farmers adopting conservation practices, primarily in designated priority areas. The objective of the program is to maximize the environmental benefits per dollar of program expenditure.

*Priority areas* are areas of special environmental sensitivity or significant natural resource concerns as identified through a State level conservation process. At least 65 percent of EQIP funds are to be used in these designated priority areas. Remaining funds may be allocated to agricultural producers not located in priority areas if their conservation plan addresses statewide environmental concerns. Overall, half of all EQIP funds is earmarked for practices or systems relating to livestock production.

All EQIP-funded activities must be carried out according to an approved conservation plan for each participating farm, specifying the conservation practices to be implemented and how these practices address primary natural resource concerns in the area. An "offer index" is calculated for each proposal that is a ratio of the environmental benefits and the total cost-share request. Conservation plans with the most favorable offer index are approved up to the point where the funds are exhausted for a priority area or for statewide concerns.

In the 1997-2000 period, farmers submitted nearly 250,000 applications for EQIP contracts. Of these applications, only about one-third were accepted and EQIP contracts signed by the end of the period. However, the contracts covered nearly 35 million acres of farmland, already close to the 37.5-million-acre anticipated coverage of the 7-year funded program. And this near-achievement of the anticipated acreage tied up about \$600 million in contracts, less than half the \$1.3 billion authorized for the initial 7 years. The remaining authorized funds will allow additional EQIP applications to be approved.

Water management and soil and land management have predominated among the practices contracted under EQIP, making up 56 percent of planned practices and accounting for a slightly higher percentage of the allocated funds. Livestock nutrient management, with 6 percent of the practices,

#### Habitat-Related EQIP Practices Have the Highest Incidence of Withdrawal

Environmental concern (example of practice)	Allocated funds		EQIP practices			
			Planned		Withdrawn	
	\$ million	Percent	Number	Percent of total	Number	Percent
Wildlife habitat (riparian buffers)	36.60	6.2	15,813	7.3	2,380	15
Crop nutrients (soil testing)	26.63	4.5	28,805	13.3	2,446	8
Livestock manure nutrients (waste facility)	109.09	18.4	13,955	6.4	1,458	1
Soil and land conservation (crop rotations)	150.21	25.4	68,696	31.6	7,602	11
Water quality and conservation (irrigation sprinkler)	192.47	32.6	53,718	24.7	6,577	12
Other (planned grazing system)	76.17	12.9	36,168	16.7	3,836	1
Total	591.17	100.0	217,155	100.0	24,299	11

Source: Derived from data provided by the Natural Resources Conservation Service, USDA

Economic Research Service, USDA

## Resources &amp; Environment

### Multiple-Practice EQIP Contracts Are More Prone to Withdrawal of Practices

Percent of practices withdrawn



Among the EQIP contracts signed in 1997-2000, farmers opted not to implement one or more practices on about 8 percent.

Source: Calculated from program data provided by Natural Resources Conservation Service, USDA

Economic Research Service, USDA

required 18 percent of the allocated funds because of the higher cost structural measures undertaken. Just over 7 percent of the contracts included wildlife habitat improvement, with 6 percent of the funds allocated to this measure.

Most farmers entering into EQIP contracts have fully implemented the practices specified in their conservation plans, or are expected to do so. However, some farmers withdrew entirely from the signed contracts or chose not to implement certain practices. By so doing they forgo cost-share payments for practices not implemented and risk payment of penalties stipulated in the contract. However, USDA allows farmers to substitute among practices and not be penalized if no reduction occurs in the contract's offer index.

During the 1997-2000 period, farmers withdrew 3,697 or about 5 percent of the contracts in their entirety. On 6,800 other contracts, about 8 percent of the total signed, farmers opted not to implement one or more practices. On over half these latter contracts, farmers canceled only one practice. The few farmers withdrawing four or more practices accounted for about half of the practices not implemented. Among the contracted practices, the highest withdrawal rate, 15 percent, occurred for wildlife habitat improvement and the lowest, 8 percent, for crop nutrient management.

Farmers with greater numbers of practices in their contracts withdrew relatively more practices than did farmers with fewer practices in their contracts. A possible explanation is that farmers with more practices in their contracts may feel less pressure to implement all of them than do farmers with few contracted practices. Also in larger contracts, some producers may be including practices with no perceived private benefit, in order to increase the probability of approval of their conservation plan. Certain types of practices that do not provide direct benefits to producers, such as wildlife and habitat related practices, are logically the ones most frequently withdrawn. Also part of the withdrawals may be a transitory effect linked to learning the innovative aspects of the program.

The withdrawals may be lowering the benefits expected from the program, but likely not enough to reverse the positive net benefits. Even so, the difference between the expected social benefits as approved in the conservation plans and those arising from the practices actually being implemented needs to be assessed and considered in the overall evaluation of EQIP. Increasing the enforcement of penalties for withdrawals may reduce applications and participation in areas of real conservation need and could reduce net social benefits more than what occurs from the withdrawals.

Reducing withdrawals is important when considering that the funds allocated to withdrawn contracts are often lost to the program if they can't be reallocated before the end of the fiscal year. An alternative program design that would maintain the flexibility of EQIP's approach to conservation might consider the introduction of incentives for smaller contracts and a mechanism for the reutilization of funds allocated to withdrawn contracts and practices. Furthermore, the differences in withdrawal rates among different types of conservation practices suggest that some of the program's goals may be achieved through other programs targeted to specific natural resource concerns. For example, habitat and wildlife conservation practices may be better addressed by the Wildlife and Habitat Incentives Program (WHIP) that is tailored exclusively to that end, rather than being included as part of a single EQIP contract. **AO**

Andrea Cattaneo (202) 694-5474  
cattaneo@ers.usda.gov



## Special Article

## Argentina & Brazil Sharpen Their Competitive Edge

The U.S. has been the world's leading exporter of corn, soybeans, and wheat for the past 40 years, but Argentina and Brazil have become increasingly strong competitors with the U.S. in field crop production and trade. U.S. market share of global soybean and soybean product exports shrank from 80 percent during the 1960s to only 35 percent in 1998-2000. Over that same period, the combined share for Argentina and Brazil has grown from less than 10 to nearly 50 percent. A less dramatic U.S. trade share decline in the global corn market has also coincided with gains by Argentina. The continued decline of the U.S. share of soybean trade since the mid-1990s is particularly remarkable since the U.S. had record-large soybean plantings in every year since 1998.

Both Argentina and Brazil have yet to fully develop their tremendous agricultural resources, despite great strides to date. With improvement of their transportation systems and with a more stable economic environment (see accompanying article on Argentina's and Brazil's economic situations), the two countries could see further production and market share gains for a number of commodities.

Since the early 1990s, grain and oilseed producers in Argentina and Brazil have made impressive gains in agricultural output. Brazil's soybean production doubled from an average of 18.5 million metric tons during 1989-91 to 37.5 million tons in 2000, while Argentina's production grew from 11.1 million tons to 26 million tons over the same period. Similarly, Argentina's corn and wheat production were up 151 and 58 percent, rebounding from a severe decline in the late 1980s. In contrast, U.S. soybean and corn production expanded by 40 and 39 percent, while wheat production was up only 11 percent.

The resulting trade gains are equally impressive. Since 1990, Argentina's shares of global trade for corn and wheat have nearly doubled to 13 and 8 percent. Brazil, traditionally a net importer of wheat, corn, cotton, and rice, has been expanding its capacity to produce field crops other than soybeans. Brazil has been the world's third-leading corn producer for the past 40 years, and has expanded its production by over 60 percent since 1990. Brazil's corn trade is projected to switch from average net imports of almost 1 million tons per year during the 1990s to projected net exports of nearly 3.3 million tons in 2000/01.

However, it appears that Brazil's recent corn export surge is just a temporary phenomenon. The feasibility of future corn production and trade growth will likely hinge on the development of economically viable tropical corn varieties, and on the pace of development of Brazil's rapidly growing pork and poultry sectors.

In contrast to soybeans, corn, and more recently cotton, Brazil's predominantly tropical setting has prevented the expansion of



Embassy of the Argentine Republic

most small grain production beyond the southern-most states. Brazil's wheat industry has been in steady decline since government production subsidies and import protection were removed in the early 1990s. Continued population and gross domestic product (GDP) growth have bolstered demand for wheat products. As a result, Brazil is projected to be the world's leading importer of wheat in 2000/01 at 7.3 million tons.

### *Resources in Argentina & Brazil*

The combined total land area of 1.1 billion hectares for Argentina and Brazil is 22 percent larger than U.S. area. Yet they are almost identical to the U.S. in area involved in agricultural activities—about 419 million hectares in 1998 (one hectare equals 2.47 acres). A major difference is that only 78 million hectares are involved in field crop production in these two countries compared with 177 million in the U.S. Both Brazil and Argentina instead have huge areas under permanent pasture, supporting large, predominantly grass-fed, cattle sectors.

Pasture is an important component of crop rotations in Argentina and Brazil, and significant portions of the pasture lie within their major field-crop regions. In contrast, cattle in the U.S. are fed primarily concentrated cereal rations once they go to feedlots, and permanent pasture is limited to highly marginal land not easily converted to crops. As a result, Brazil and Argentina may have more scope to convert pasture to field crop production than the U.S. Most significantly, Brazil's vast *Cerrado* savanna, an area of over 200 million hectares in the interior Center-West region, has enormous potential for further agricultural development. Much of the *Cerrado* savanna is still scrubland covered with brush and small trees, but is easily converted to agricultural use.

Argentina is the world's top exporter of soyoil and soymeal, and ranks third as both producer and exporter of soybeans, trailing the U.S. and Brazil. Argentina also produces many of the other field crops grown in the U.S., and ranks among the world's leading exporters of corn, wheat, sorghum, sunflower, and peanuts. With an historic lack of government support, crop and livestock decisions are based principally on relative returns, rotational considerations, and longer run investment plans. As a result, market conditions and weather have strongly influenced the evolution of field cropping patterns in Argentina.

Nearly all field crop production and most livestock production occur in the northeastern third of Argentina. This is a humid, warm temperate zone similar in climate to the U.S. Southeast, but with more fertile soils. A secondary pocket of crop production has also been developing in Argentina's northwestern provinces. This development is being spurred by improvements in transportation and better access to export markets.

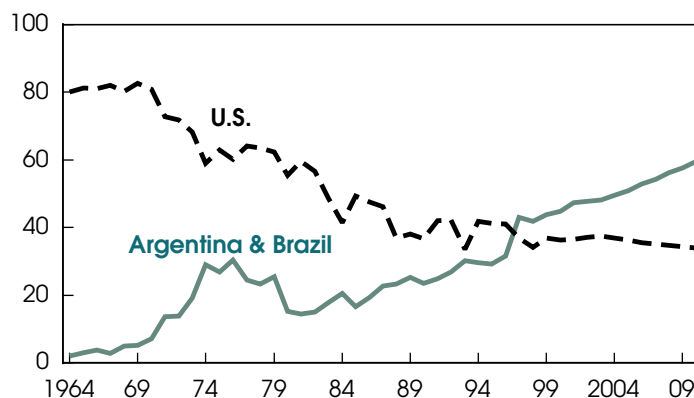
In Brazil, agricultural production is focused in the South and the Center-West. Brazil's South lies principally within the same humid, warm temperate latitudes as the northern portions of Argentina's agricultural region, and these two regions produce many of the same livestock and crops (such as rice, corn, soybeans, and wheat). Field crop production has traditionally been centered in the South's densely populated coastal states. Close proximity to major urban centers, as well as to the country's three major ports, give producers in this region easy access to both domestic and export markets.

Today, the Center-West rivals the South as the principal region of agricultural production within Brazil. The most distinguishing features between Brazil's South and Center-West are the temperate versus tropical setting and the tremendous potential for continued growth of cultivated land area onto the *Cerrado* soils. In 1990, the Brazilian institute for agricultural research, EMBRAPA, estimated that 136 million hectares of the *Cerrado* savanna were suitable for large-scale mechanized agriculture based on a rotation system of improved pasture, grains, and oilseeds. About 47 million hectares were in production agriculture in 1990, leaving nearly 90 million hectares available for development as farmland since. Unfortunately, the pace of conversion has been difficult to judge and ranges from conservative official Brazilian government estimates, to sensational reports from U.S. travelers to the region.

Most newly cleared land is initially converted to rangeland. Cropping alternatives become viable with infrastructure development. As passable roads become available and the decision is made to convert pastureland to crops, one or two years of upland rice cultivation are usually undertaken before soybeans or other crops are planted. Not all *Cerrado* is converted to agriculture. State and Federal regulations require landowners to permanently conserve a portion of their property, ranging from 20 percent in the drier southern *Cerrado*, up to 80 percent toward the Amazon rainforests near the northern *Cerrado*. Much of the *Cerrado* cropland is planted to soybeans, but cotton area has been on the rise the past 5 years. In addition, most farms keep some pasture, and rotate corn every fourth or fifth year. Occasionally coffee,

## Argentina and Brazil Have Surpassed U.S. in Exports of Soybeans and Soy Products

Million metric tons



Sources: USDA historical data base for 1964-2000; USDA Agricultural Baseline Projections to 2010 (February 2001) for 2001-10.

Economic Research Service, USDA

rubber, and other perennial crops along with sugar cane, rice, and food crops are grown in various parts of the *Cerrado*.

Soybean area in Brazil is nearly evenly divided between the two regions. However, the Center-West's soybean area is expanding, while the South's area has stagnated. Farms in the Center-West are much larger, in part because *Cerrado* land is capable of supporting the full suite of modern production technology. Two-thirds of *Cerrado* land is in farms that are larger than 1,000 hectares. The combination of rapid technology adoption and significant economies of scale in field crop production have pushed crop yields in the Center-West to near parity with the U.S.

## Argentina & Brazil Have Natural Advantages Over the U.S.

Several important differences distinguish agriculture in Argentina and Brazil from the U.S. First, the southern hemisphere location means that their crop production cycles are nearly counter-seasonal to the U.S.—the primary field-crop growing period in Argentina and Brazil's South extends from October through March, compared with a May-September growing period in the U.S. Corn Belt. U.S. and international prices generally reach their lows at U.S. harvest time (September-October) when supplies are most plentiful. Prices then gradually rise into the spring with carrying charges and accumulating demand. Argentine and Brazilian producers and exporters benefit from this price recovery during February to April, their traditional harvest period.

Second, the production zones of Argentina and Brazil all lie at lower latitudes and, therefore, these countries have significantly longer frost-free growing seasons and more double-cropping opportunities. Brazil's Center-West lies entirely within the frost-free tropics and can technically produce three crops per year.

## Special Article

**Argentina and Brazil Have Lower Soybean Production Costs Than U.S.,  
But Transport and Marketing Costs Are Higher than U.S.**

Cost item	U.S. Heartland	Brazil		Argentine average N. Buenos Aires/S. Santa Fe
		Parana	Mato Grosso	
		US\$ per bu		
<b>Production costs<sup>1</sup></b>				
Variable costs	1.71	2.78	3.17	1.90
Fixed costs	3.40	1.38	0.72	2.02
<b>Total costs</b>	5.11	4.16	3.89	3.93
Internal transport and marketing	0.43	0.85	1.34	0.81
<b>Border price</b>	5.54	5.01	5.23	4.74
Freight costs to Rotterdam	0.38	0.57	0.57	0.49
<b>Price at Rotterdam</b>	5.92	5.58	5.80	5.23

<sup>1</sup> Based on local marketing year costs in 1998/99.

Source: ERS calculations based on data available from various sources. Adjustments were made to the data to enhance comparability.

Economic Research Service, USDA.

Third, while Argentina's growing-season temperature and precipitation levels are similar to U.S. Corn Belt averages, Brazil's agricultural regions are generally milder and wetter.

Fourth, the U.S. Corn Belt is famous for its deep, rich soils, but Argentina's *Pampas* soils are equally as fertile and have produced bountiful grain and oilseed crops for decades with relatively low fertilizer-use rates. However, most of Argentina's cereal yield gains of the 1990s have resulted from increased use of chemical inputs and improved seeds. While highly fertile soils also allow for a wide range of intensive crop and livestock activities in Brazil's South, soils in Brazil's Center-West are not naturally fertile. However, proper soil management techniques have helped them become very productive.

On the other hand, U.S. transportation and marketing systems are vastly more developed. Despite considerably shorter average distances to ports from the Argentine *Pampas* and Brazil's South, transportation and marketing costs for bulk agricultural product exports have historically been much higher than in the U.S. The higher transportation costs for Argentina and Brazil are due to inefficient or underdeveloped barge and railroad transportation systems, and heavy reliance on more expensive truck hauling operations.

### ***Economic Policy Reforms Spur Growth***

A primary catalyst in Brazil and Argentina's surge in agricultural production in the past decade were the economic and political reforms undertaken by Argentina in the early 1990s and by Brazil in the mid-1990s. The reforms in the two countries shared many common elements, including deregulation and privatization of domestic marketing systems, restraining inflation, and easing of trade rules—i.e., decreasing and/or removing export taxes, import tariffs, and restrictive quotas and licenses.

These reforms opened the door to rapidly expanding foreign investment, leading to increased competition and efficiency in the agricultural sectors of both countries. Argentina, where reforms occurred first, has undergone significant modernization following heavy domestic and foreign investment in the agricultural sector and the storage and transportation systems that support it. Similar developments are underway in Brazil, helping to lower production and marketing costs, to raise farm-gate prices, and to help producers respond to international market signals.

With more open trade and strengthened market signals, imports and utilization of agricultural inputs and technology have increased markedly through the 1990s. For example, the combined value of Brazilian and Argentine imports of agricultural machinery rose from less than \$40 million per year in the early 1990s, to \$140 million in Argentina and over \$200 million in Brazil by 1998. Production and marketing processes are now applying cutting-edge technologies as strong international commodity prices in the mid-1990s provided a powerful incentive to invest in agriculture and expand production.

Argentine soybean growers have rapidly adopted herbicide-tolerant soybeans to reduce costs, raise yields, and remain competitive in the face of lower international prices. Expanded plantings of biotech soybeans in Argentina, an estimated 90 percent of plantings in 2000/01, have helped lower costs and increase yields by boosting weed control in rotations. In addition, varietal improvements and gradually increasing fertilizer-usage rates helped raise Argentina's corn yields recently. Brazil has not approved commercial planting of biotech varieties. Development and adoption of improved non-biotech soybean varieties and cultural practices suitable to the Center-West's poor natural soil fertility and tropical conditions were also critical to the expansion of large-scale mechanized agriculture into the vast interior regions.

## ***Soybean Cost Structure Favors Argentina & Brazil***

Combining abundant land and favorable climates, Argentina and Brazil are naturally low-cost producers of soybeans. Lower production costs have provided a competitive edge in international markets for Argentine and Brazilian soybeans. Comparison of 1998 farm-level soybean production costs indicates that total per-bushel costs are about one-quarter lower in Argentina and Brazil's Mato Grosso, and about 20 percent lower in Brazil's Parana than in the U.S. Heartland. Variable input costs per acre are lowest in the U.S., but yearly land costs are as much as \$80 per acre higher in the U.S. Heartland than in Brazil's Mato Grosso and about \$25 per acre higher than for prime land in Argentina. In fact, land costs in Mato Grosso are less than one-tenth of those in the U.S.

Also favoring soybean farms in Argentina and Brazil's Mato Grosso is their much larger size (averaging over 1,000 hectares) relative to soybean farms in the U.S. Heartland (120-150 hectares) or in Brazil's Parana (about 30 hectares). Large farm size permits economies of scale by spreading overhead costs over more acres, resulting in much lower per-unit costs. As a result, average machinery costs are relatively low in Mato Grosso and Argentina.

On the other hand, internal marketing and transportation costs are sharply higher for producers in Argentina and Brazil than in the U.S. The average U.S. soybean producer-to-f.o.b. port price spread (an indication of internal marketing and transportation costs) has remained relatively constant since the mid-1980s at about \$17 per ton (\$0.46 per bushel), or about one-half to one-third the current costs in Brazil and Argentina. As a result, differences in port prices for soybeans from the U.S., Argentina, and Brazil are substantially smaller than cost-of-production differences. Port price differences narrow even further when compared at Rotterdam (the major destination).

In Argentina, reduced export taxes and the improvement of port facilities has narrowed the margin between the terminal cash price at Rosario and the f.o.b. price of soybeans at Argentine ports from an average of \$68 per metric ton during the 1980-91 period, to just \$11 per ton since 1991. Significant improvements have also been made to Argentina's principal internal waterway, the Parana-Paraguay River system. But average per-kilometer transportation costs still remain high due to continued heavy reliance on trucks to move crops to market.

In Brazil, similar cost reductions have resulted from improvements to the transportation system and elimination of a value-added tax on soybean exports in 1996. For producers in Mato Grosso, whose soybeans must travel roughly 1,500 kilometers to port, the producer-to-f.o.b. price spread averaged \$76 per ton from 1983 to 1997. Since 1997 they have averaged an estimated \$47 per ton. Compared with Brazil's Mato Grosso, Argentina's relatively low average transport costs are due to the fact that most soybean production takes place within 250-300 kilometers of ports. In Brazil's Parana, where soybeans have a much shorter

## **Major Agricultural Areas in Argentina and Brazil**



Economic Research Service, USDA

distance to port, the producer-f.o.b. price spread has fallen from a \$52-per-ton average during 1983 to 1997, to \$29 since 1997.

Lower transportation costs for the U.S. reflect, in part, its efficient barge system, which can transport grain long distances at low cost. Thus, while Brazil and Argentina have an edge over the U.S. in farm-level costs of production, their advantage is somewhat offset by the higher marketing and transportation costs.

In Brazil, significant potential remains to lower commodity export prices through improvements of road, rail, and waterway. Development of transportation on the Amazon River and its many tributaries is just beginning to open Brazil's Center-West growing areas to this ocean portal, but offers tremendous potential.

## ***What Will Drive Future Growth?***

In the future, the pace of agricultural growth in Brazil and Argentina will likely hinge primarily on improvement in the marketing and transportation systems, livestock sector dynamics, and economic stability.



## Special Article

### Producer Adoption of Biotech Crops Could Have Market Implications

Biotechnology, specifically genetic engineering, has launched speculation about the effects of the new technology on producer and consumer demand for genetically-modified crops. Some biotech crops possess traits (e.g., insect resistance or herbicide tolerance) that can significantly reduce costs and risks for producers. However, consumer acceptance remains uncertain, particularly in some major importing markets—e.g., the European Union (EU), Japan, and Korea—where consumer and political groups have called for greater scrutiny over the use of biotech crops in the food chain.

While Argentine producers are aware of the restrictions on biotech products in some importing markets, such concerns have not deterred them from adopting biotech varieties. Approximately 90 percent of Argentina's soybean production is from biotech varieties, and producers are clearly motivated by the savings generated by herbicide-tolerant soybean varieties as well as environmental benefits from using less-damaging chemicals. Cost savings attributable to biotech soybeans are estimated at about \$40 per metric ton, significantly larger than the \$8-per-ton premium received by producers for non-biotech soybeans in Argentine markets.

In contrast to the U.S., herbicide-tolerant soybeans have not been patented in Argentina. As a result, Argentine producers are not charged technology fees to use the seed, and farmers are allowed to save seeds from one year to the next. Consequently, seed costs for biotech soybeans are significantly lower in Argentina than in the U.S.

Argentine farmers have been slower to adopt biotech corn hybrids. An estimated 20 percent of the 2001 corn crop is planted to insect resistant (Bt) corn hybrids, all of which are approved by the EU. Since 1998, Argentina has approved only new corn hybrids that are accepted in major export markets.

Given Argentina's present adoption rates of both corn and soybean biotech varieties, and a lack of sufficient storage capacity under the identity preservation (IP) system, the additional costs incurred in implementing an IP system would limit the potential for Argentina to capture a market niche for non-biotech corn or soybeans. However, the situation is quite different in Brazil, with respect to soybeans, where the isolated Center-West region can make a much stronger claim to biotech-free status.

In Brazil, the government currently prohibits commercial planting of genetically modified crops. However, the strong incentive to benefit from the cost savings available to biotech soybeans likely contributes to a significant "illicit" flow of biotech seeds from Argentina into Brazil's South, where climatic conditions are fairly similar. The share of biotech soybean plantings in the South has been estimated by various trade sources at between 20 to 40 percent. Although Brazil's corn crop appears to be predominantly non-biotech, other non-biotech producers such as South Africa and Eastern Europe would likely provide stiff competition for any future market niche.

Although Brazilian agricultural producers and exporters have benefited from the 50-percent depreciation of the Brazilian *real* since January 1999, the low international soybean prices of the past 3 years have likely slowed the pace of land conversion in the Center-West. Nevertheless, several factors suggest that investment in land expansion for soybean production in the Center-West will continue.

- First, the costs associated with bringing new land under production are very low.
- Second, the promise of an improved marketing and transportation system in the Center-West suggests higher land prices in the future, making land investment appear profitable.
- Third, investment in land remains a useful hedge against the threat of inflation which, although greatly reduced from past levels, has not entirely disappeared.
- Finally, strong internal demand for soymeal and feed grains looms as Brazil's large poultry and pork industries respond to surging domestic and international demand.

Marketing and transportation system development will remain a critical determinant of the pace at which Brazil's land resources

move into productive use. Most agricultural land in the interior states is far removed from markets, and compared with the U.S., transportation costs still represent a very large portion of the export price. Several major development projects are currently underway or planned that are designed to connect Brazil's Center-West with major ports on the Amazon and the east coast. Their completion will likely continue to lower transportation and input costs and raise farm-gate prices for Brazilian farmers. However, completion hinges on continued strong inflow of foreign and domestic investment and a stable economy.

Continued cropland expansion in Brazil's Center-West is also expected to raise national average yields. Large farm sizes, large-scale mechanization, and innovative management practices have helped generate rapid adoption of new technologies in the region, and have helped produce acceptable returns even in the face of low international commodity prices. Crop yields for soybeans and cotton in the Center-West are already at or above average U.S. yields, and research is underway to improve corn and rice yields. In Argentina, crop area growth is less likely, but yield-growth potential for several field crops, particularly corn, appears to be significant. Although Argentina's corn yields rose 46 percent between 1990/91 and 2000/01 they are still only two-thirds of average U.S. yields. Future corn yield growth depends strongly on further increases in fertilizer usage rates.

The tradeoff between livestock and field crops is likely to drive developments in Argentina's agricultural sector. Nearly 90 percent of Argentina's beef production is entirely grass fed. While Argentina leads the world in per capita consumption of beef, the rate has been declining over the past 15 years. This may shift the focus to international markets which, in turn, may eventually encourage greater investment in feedlots and grain feeding in Argentina to produce high-valued beef demanded by international markets. Greater use of feedlots would free some pasture for increased field crop production. Feeding of concentrates could also increase domestic use of grains and high-protein meals. However, the April 2001 confirmation of a widespread outbreak of foot-and-mouth disease in Argentina will limit most unprocessed meat exports in the immediate future.

Many growth bottlenecks in Argentina and Brazil remain. Lack of domestic credit institutions limits the farm sector's ability to acquire new capital directly. Both countries are vulnerable to energy price fluctuations as they continue to rely heavily on diesel-powered vehicles for both crop production and transportation to

market. In Brazil, interstate value-added taxes continue to distort prices throughout the production and marketing systems. In Argentina, high usage tolls on privately owned highways keep domestic transportation costs high. Large government debt in both countries could quickly undermine economic progress. Currency valuation and government deficit levels remain critical to economic stability and foreign investment in both countries, and will likely play a major role in future agricultural export competitiveness.

Clearly, the potential for further growth of South American field crop output, if realized, could have profound implications for global trade and U.S. farm exports, prices, and incomes. The effect on future U.S. payments under current farm programs and on policy could also be profound. **AO**

*Randy Schnepf (202) 694-5293, Erik Dohlman (202) 694-5308, and Chris Bolling (202) 694-5212*  
*rschnepf@ers.usda.gov*  
*edohlman@ers.usda.gov*  
*hboling@ers.usda.gov*

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# Statistical Indicators

## Summary Data

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

	Annual			2000		2001				2002
	2000	2001	2002	III	IV	I	II	III	IV	I
Prices received by farmers (1990-92=100)	96	103	--	96	97	99	--	--	--	--
Livestock & products	97	107	--	98	99	103	--	--	--	--
Crops	96	100	--	96	95	96	--	--	--	--
Prices paid by farmers (1990-92=100)										
Production items	116	120	--	116	118	121	--	--	--	--
Commodities and services, interest, taxes, and wage rates (PPITW)	120	124	--	120	122	124	--	--	--	--
Cash receipts (\$ bil.)	194	205	--	42	50	57	49	45	51	--
Livestock	99	109	--	25	25	27	27	28	27	--
Crops	94	96	--	24	32	22	18	23	32	--
Market basket (1982-84=100)										
Retail cost	171	--	--	172	173	175	--	--	--	--
Farm value	97	--	--	97	100	102	--	--	--	--
Spread	210	--	--	211	212	215	--	--	--	--
Farm value/retail cost (%)	20	--	--	20	20	20	--	--	--	--
Retail prices (1982-84=100)										
All food	168	174	178	169	170	172	173	174	175	177
At home	168	174	178	169	170	172	173	174	175	177
Away from home	169	174	179	170	171	172	173	175	176	177
Agricultural exports (\$ bil.) <sup>1</sup>	50.9	53.5	--	12.2	14.4	13.8	12.5	12.8	14.2	14.2
Agricultural imports (\$ bil.) <sup>1</sup>	38.9	39.0	--	9.1	9.7	9.9	10.0	9.4	9.3	10.0
Commercial production										
Red meat (mil. lb.)	46,150	45,423	45,008	11,623	11,634	11,096	11,144	11,658	11,525	11,101
Poultry (mil. lb.)	36,427	36,950	37,800	9,070	9,050	9,007	9,418	9,255	9,270	9,175
Eggs (mil. doz.)	7,035	7,145	7,270	1,751	1,786	1,756	1,774	1,780	1,835	1,800
Milk (bil. lb.)	167.7	165.7	170.2	41.2	40.7	41.3	42.6	40.7	41.1	42.5
Consumption, per capita										
Red meat and poultry (lb.)	219.5	261.6	215.5	55.2	55.5	53.1	53.4	54.5	55.5	52.5
Corn beginning stocks (mil. bu.) <sup>2</sup>	1,787.0	1,717.5	--	5,601.9	3,585.9	1,717.5	8,522.2	6,043.0	3,924.2	--
Corn use (mil. bu.) <sup>2</sup>	9,514.8	9,745.0	--	2,021.5	1,870.7	3,165.0	2,480.1	2,122.3	--	--
Prices <sup>3</sup>										
Choice steers--Neb. Direct (\$/cwt)	69.65	73-75	76-83	65.43	72.26	79.11	75.13	69-71	70-74	73-79
Barrows and gilts--IA, So. MN (\$/cwt)	44.70	46-47	42-45	46.43	40.78	42.83	52.05	48-50	40-42	40-44
Broilers--12-city (cents/lb.)	56.20	58-59	59-64	56.80	57.60	57.80	59.20	59-61	56-60	57-61
Eggs--NY gr. A large (cents/doz.)	68.90	69-71	65-71	67.10	83.10	75.80	63.30	64-66	75-79	67-73
Milk--all at plant (\$/cwt)	12.33	15.25-15.45	13.00	12.67	12.70	13.37	15.33	16.25-16.55	15.95-16.55	13.45-14.35
Wheat--KC HRW ordinary (\$/bu.)	3.08	--	--	3.00	3.44	3.45	3.41	--	--	--
Corn--Chicago (\$/bu.)	1.97	--	--	1.64	2.01	2.03	1.96	--	--	--
Soybeans--Chicago (\$/bu.)	4.86	--	--	4.60	4.70	4.48	4.48	--	--	--
Cotton--avg. spot 41-34 (cents/lb)	57.47	--	--	58.36	61.24	52.66	39.86	--	--	--
	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
Farm real estate values <sup>4</sup>										
Nominal (\$ per acre)	713	740	798	844	887	926	974	1,020	1,080	1,130
Real (1996 \$)	795	806	848	879	904	926	955	988	1,031	1,057
U.S. civilian employment (mil.) <sup>5</sup>	128.1	129.2	131.1	132.3	133.9	136.3	137.7	139.4	--	--
Food and fiber (mil.)	23.1	23.6	24.2	24.5	24.2	24.1	24.0	24.3	--	--
Farm sector (mil.)	1.9	1.8	1.9	2.0	2.0	1.9	1.8	1.7	--	--
U.S. gross domestic product (\$ bil.)	6,318.9	6,642.3	7,054.3	7,400.5	7,813.2	8,318.4	8,790.2	9,299.2	--	--
Food and fiber--net value added (\$ bil.)	924.8	965.7	1,066.2	1,126.5	1,210.4	1,317.1	1,446.4	1,521.4	--	--
Farm sector--net value added (\$ bil.) <sup>6</sup>	75.5	73.1	78.3	75.3	86.7	83.5	74.8	69.8	--	--

-- = Not available. Annual and quarterly data for the most recent year contain forecasts. 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 are consistent with accounting conventions of the National Income and Product Accounts, U.S. Department of Commerce.



## U.S. & Foreign Economic Data

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

	Annual			1999	2000				2001	
	1998	1999	2000	IV	I	II	III	IV	I	II
<i>Billions of current dollars (quarterly data seasonally adjusted at annual rates)</i>										
Gross Domestic Product	8,781.5	9,268.6	9,872.9	9,522.5	9,668.7	9,857.6	9,937.5	10,027.9	10,141.7	10,217.6
Gross National Product	8,778.1	9,261.8	9,860.8	9,517.0	9,650.7	9,841.0	9,919.4	10,032.1	10,131.3	--
Personal consumption expenditures	5,856.0	6,250.2	6,728.4	6,424.7	6,581.9	6,674.9	6,785.5	6,871.4	6,977.6	7,044.9
Durable goods	693.2	760.9	819.6	789.4	820.7	813.8	825.4	818.7	838.1	842.7
Nondurable goods	1,708.5	1,831.3	1,989.6	1,892.9	1,942.5	1,978.3	2,012.4	2,025.1	2,047.1	2,063.1
Food	852.6	899.8	957.5	925.7	937.8	953.5	967.2	971.4	982.0	989.4
Clothing and shoes	284.8	300.9	319.1	304.1	314.4	317.0	321.6	323.5	325.7	322.0
Services	3,454.3	3,658.0	3,919.2	3,742.4	3,818.7	3,882.8	3,947.7	4,027.5	4,092.4	4,139.1
Gross private domestic investment	1,538.7	1,636.7	1,767.5	1,698.1	1,709.0	1,792.4	1,788.4	1,780.3	1,722.8	1,684.4
Fixed investment	1,465.6	1,578.2	1,718.1	1,613.2	1,678.1	1,717.0	1,735.9	1,741.6	1,748.3	1,710.3
Change in private inventories	73.1	58.6	49.4	84.9	30.9	75.4	85.5	38.7	-25.5	-25.9
Net exports of goods and services	-151.7	-250.9	-364.0	-288.7	-333.9	-350.8	-380.6	-390.6	-363.8	-349.1
Government consumption expenditures and gross investment	1,538.5	1,632.5	1,741.0	1,688.3	1,711.8	1,741.1	1,744.2	1,766.8	1,805.2	1,837.4
<i>Billions of 1996 dollars (quarterly data seasonally adjusted at annual rates)<sup>1</sup></i>										
Gross Domestic Product	8,508.9	8,856.5	9,224.0	9,049.9	9,102.5	9,229.4	9,260.1	9,303.9	9,334.5	9,351.6
Gross National Product	8,508.4	8,853.0	9,216.4	9,047.9	9,089.1	9,217.7	9,247.2	9,311.7	9,329.1	--
Personal consumption expenditures	5,683.7	5,968.4	6,257.8	6,083.6	6,171.7	6,226.3	6,292.1	6,341.1	6,388.5	6,422.5
Durable goods	726.7	817.8	895.5	854.2	892.1	886.5	904.1	899.4	922.4	935.9
Nondurable goods	1,686.4	1,766.4	1,849.9	1,801.1	1,823.8	1,844.9	1,864.1	1,866.8	1,878.0	1,880.1
Food	819.4	847.8	881.3	865.9	871.2	881.5	886.2	886.4	887.3	888.3
Clothing and shoes	290.4	312.1	335.3	314.6	328.2	333.3	339.8	339.9	342.7	343.7
Services	3,273.4	3,393.2	3,527.7	3,440.5	3,472.2	3,509.6	3,540.2	3,588.8	3,605.1	3,625.2
Gross private domestic investment	1,558.0	1,660.1	1,772.9	1,725.4	1,722.9	1,801.6	1,788.8	1,778.3	1,721.0	1,681.6
Fixed investment	1,480.0	1,595.4	1,716.2	1,629.7	1,683.4	1,719.2	1,730.1	1,732.1	1,740.3	1,701.3
Change in private inventories	76.7	62.1	50.6	92.7	28.9	78.9	51.7	42.8	-27.1	-26.9
Net exports of goods and services	-221.1	-316.9	-399.1	-337.8	-371.1	-392.8	-411.2	-421.1	-404.5	-407.4
Government consumption expenditures and gross investment	1,483.3	1,531.8	1,572.6	1,564.8	1,560.4	1,577.2	1,570.0	1,582.8	1,603.4	1,625.0
GDP implicit price deflator (% change)	1.2	1.4	2.3	1.6	3.9	2.2	1.9	1.8	3.3	2.3
Disposable personal income (\$ bil.)	6,355.6	6,618.0	7,031.0	6,736.8	6,859.1	6,993.7	7,081.3	7,189.8	7,295.0	7,371.0
Disposable pers. income (1996 \$ bil.)	6,168.6	6,320.0	6,539.2	6,379.2	6,431.6	6,523.7	6,566.5	6,634.9	6,679.0	6,719.8
Per capita disposable pers. income (\$)	23,491	24,242	25,528	24,589	24,987	25,426	25,682	26,013	26,335	26,548
Per capita disp. pers. income (1996 \$)	22,800	23,150	23,742	23,283	23,430	23,717	23,814	24,006	24,111	24,202
U.S. resident population plus Armed Forces overseas (mil.) <sup>2</sup>	270.5	272.9	275.4	273.9	274.4	275.0	275.6	276.3	--	--
Civilian population (mil.) <sup>2</sup>	269.0	271.5	273.9	272.4	273.0	273.5	274.2	274.9	--	--
	Annual			2000	2001					
	1998	1999	2000	Jun	Jan	Feb	Mar	Apr	May	Jun
<i>Monthly data seasonally adjusted</i>										
Total industrial production (1992=100)	138.2	144.8	153.6	153.8	151.3	150.7	150.0	149.3	148.6	147.4
Leading economic indicators (1996=100)	105.4	108.8	109.9	--	109.0	108.8	108.5	108.7	--	--
Civilian employment (mil. persons)	131.5	133.5	135.2	135.1	136.0	135.8	135.8	135.4	135.1	134.9
Civilian unemployment rate (%)	4.5	4.2	4.0	4.0	4.2	4.2	4.3	4.5	4.4	4.5
Personal income (\$ bil. annual rate)	7,426.0	7,777.3	8,319.2	8,317.9	8,604.0	8,640.2	8,676.2	8,701.0	8,717.7	8,745.3
Money stock-M2 (daily avg.) (\$ bil.) <sup>3</sup>	4,385.9	4,653.3	4,945.1	4,787.8	4,995.2	5,040.6	5,101.1	5,145.5	5,167.6	5,209.0
Three-month Treasury bill rate (%)	4.81	4.66	5.85	5.74	5.27	4.93	4.50	3.92	3.67	3.48
AAA corporate bond yield (Moody's) (%)	6.53	7.04	7.62	7.67	7.15	7.10	6.98	7.20	7.29	7.18
Total housing starts (1,000) <sup>4</sup>	1,616.9	1,640.9	1,568.7	1,560	1,666	1,623	1,592	1,626	1,610	1,658
Business inventory/sales ratio <sup>5,6</sup>	1.44	1.41	1.40	1.39	1.43	1.43	1.43	1.44	1.42	--
Retail & food services sales (\$ bil.) <sup>6,7</sup>	2,906.7	3,149.2	3,388.82	281.7	288.1	288.2	287.1	291.1	291.7	291.6
Food and beverage stores (\$bil.)	421.6	441.4	465.29	39.0	39.6	39.8	39.7	39.7	40.0	40.0
Clothing & accessory stores (\$ bil.)	149.4	159.7	168.48	13.9	14.5	14.6	14.3	14.3	14.2	14.1
Food services & drinking places (\$ bil.)	272.6	286.3	306.07	25.4	26.5	26.3	26.4	26.4	26.7	26.9

-- = Not available. 1. In October 1999, 1996 dollars replaced 1992 dollars. 2. Population estimates based on 1990 census. 3. Annual data as of December of year listed. 4. Private, including farm. 5. Manufacturing and trade. 6. In July 2001 all numbers were revised due to a changeover from the Standard Industrial Classification System to the North American Industry Classification System. 7. Annual total. *Information contact: David Johnson (202) 694-5324*

Table 3—World Economic Growth

	Calendar year									
	1993	1994	1995	1996	1997	1998	1999	2000	2001	2002
<i>Real GDP, annual percent change</i>										
<b>World</b>	1.5	3.1	2.7	3.1	3.4	2.1	2.8	3.8	1.7	2.8
less U.S.	1.1	2.7	2.7	3.0	3.1	1.3	2.4	3.7	1.8	2.9
<b>Developed economies</b>	0.9	2.8	2.3	2.7	3.1	2.4	2.7	3.3	1.3	2.2
less U.S.	0.1	2.2	2.1	2.3	2.4	1.5	2.0	2.9	1.1	2.1
United States	2.7	4.0	2.7	3.6	4.4	4.3	4.1	4.1	1.7	2.5
Canada	2.4	4.7	2.8	1.6	4.3	3.9	5.1	4.4	2.4	2.7
Japan	0.5	1.0	1.6	3.3	1.9	-1.1	0.8	1.5	-0.7	0.8
Australia	3.7	5.2	3.8	4.1	4.0	5.3	4.7	3.8	2.5	3.7
European Union	-0.4	2.7	2.4	1.6	2.5	2.8	2.5	3.4	1.9	2.7
<b>Transition economies</b>	-6.8	-9.1	-1.8	-1.3	1.4	-1.5	3.3	6.2	3.9	3.8
Eastern Europe	1.1	4.0	5.8	3.9	3.3	2.6	2.5	3.6	3.0	3.8
Poland	3.8	5.2	7.0	6.1	6.9	4.8	4.0	4.2	2.2	3.1
Former Soviet Union	-10.0	-14.9	-5.9	-4.6	0.1	-4.4	4.0	8.0	4.6	3.8
Russia	-8.7	-12.6	-4.1	-3.5	0.8	-4.9	5.0	8.3	4.7	3.9
<b>Developing economies</b>	5.8	6.3	5.2	5.8	5.3	1.2	3.1	5.7	3.3	5.0
<b>Asia</b>	7.9	8.8	8.3	7.4	5.8	0.3	6.4	7.2	4.4	6.2
East Asia	9.0	9.7	8.7	7.7	7.0	1.8	7.6	8.1	5.1	6.6
China	13.5	12.6	10.5	9.6	8.8	7.8	7.1	8.0	7.9	8.5
Taiwan	7.0	7.1	6.4	6.1	6.7	4.6	5.4	6.0	1.4	4.7
Korea	5.5	8.2	8.9	6.7	5.0	-6.7	10.9	8.8	3.4	4.8
Southeast Asia	7.9	8.3	8.3	7.3	4.0	-7.5	3.5	5.9	2.2	5.0
Indonesia	7.3	7.5	8.2	7.8	4.7	-13.2	0.7	4.8	3.3	5.0
Malaysia	9.9	9.2	9.8	10.0	7.3	-7.4	5.8	8.4	1.5	5.7
Philippines	2.1	4.4	4.7	5.8	5.2	-0.8	3.2	4.0	2.1	3.7
Thailand	8.4	9.0	8.9	5.9	-1.7	-10.2	4.2	4.4	2.4	5.3
South Asia	4.5	6.6	7.1	6.3	4.2	6.1	6.1	5.5	4.4	6.3
India	5.0	7.3	7.7	7.0	4.6	6.8	6.5	6.1	4.6	6.7
Pakistan	1.9	3.9	5.1	3.9	1.0	2.5	4.0	3.4	2.7	3.7
<b>Latin America</b>	4.3	5.3	1.3	3.6	5.1	1.9	0.1	3.8	2.0	3.5
Mexico	1.9	4.5	-6.2	5.1	6.8	4.9	3.8	6.9	1.9	4.2
Caribbean/Central	4.7	4.0	3.2	3.6	5.9	6.1	7.1	6.0	2.8	3.8
South America	4.9	5.6	3.1	3.3	4.8	1.1	-1.0	2.9	2.0	3.4
Argentina	5.9	5.8	-2.8	5.5	8.1	3.9	-3.1	-0.4	-0.9	2.9
Brazil	4.9	5.9	4.2	2.8	3.2	0.1	0.8	4.1	2.3	3.3
Colombia	5.4	5.8	5.2	2.0	2.8	0.6	-4.3	2.8	4.5	4.0
Venezuela	0.3	-2.3	3.7	-0.5	6.5	-0.7	-6.1	3.2	4.9	2.7
<b>Middle East</b>	3.9	-0.1	3.9	4.4	4.8	2.8	-4.8	4.8	0.2	3.3
Israel	5.6	6.9	7.0	5.1	3.2	2.6	2.2	5.4	0.9	3.3
Saudi Arabia	-0.6	0.5	0.5	1.4	1.9	2.3	-1.1	3.5	3.0	2.5
Turkey	8.7	-5.2	7.8	7.0	7.5	2.8	-4.7	7.0	-4.7	4.1
<b>Africa</b>	1.0	3.2	2.9	5.2	2.8	3.2	2.6	3.7	3.9	3.7
North Africa	0.5	3.9	1.5	6.5	2.6	5.7	3.8	4.0	4.5	4.0
Egypt	2.9	3.9	4.7	5.0	5.5	5.6	6.0	5.2	4.5	4.2
Sub-Sahara	1.4	2.6	3.9	4.3	3.0	1.3	1.7	3.4	3.3	3.5
South Africa	1.2	3.2	3.1	4.2	2.5	0.6	1.2	3.1	2.8	3.2
<i>Consumer prices, annual percent change</i>										
Developed economies	3.1	2.6	2.6	2.4	2.1	1.5	1.4	2.3	2.1	1.8
Transition economies	634.3	274.2	133.5	42.4	27.4	21.8	43.9	20.1	15.3	10.0
Developing economies	43.2	55.3	23.2	15.4	9.9	10.4	6.7	6.1	5.7	4.8
Asia	10.8	16.0	13.2	8.3	4.8	7.7	2.5	1.9	2.8	3.3
Latin America	152.1	200.3	36.0	21.2	12.9	9.8	8.8	8.1	6.3	4.8
Middle East	29.4	37.3	39.1	29.6	27.7	27.6	23.2	20.7	18.4	13.5
Africa	39.0	54.8	35.1	30.1	14.4	9.1	11.5	13.5	9.6	5.7

-- = Not available. The last 3 years are either estimates or forecasts. Sources: Oxford Economic Forecasting; International Financial Statistics, IMF.

Information contact: Andy Jerardo (202) 694-5323, [ajerardo@ers.usda.gov](mailto:ajerardo@ers.usda.gov)

## Farm Prices

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

	Annual			2000			2001			
	1999	2000	2001	Jul	Feb	Mar	Apr	May	Jun	Jul
<i>1990-92=100</i>										
<b>Prices received</b>										
All farm products	96	96	103	96	100	103	106	108	107	106
All crops	96	96	100	94	98	98	102	105	101	101
Food grains	90	86	92	78	91	92	92	95	91	91
Feed grains and hay	86	86	91	82	90	90	89	91	91	95
Cotton	85	82	73	81	81	71	72	70	67	64
Tobacco	102	107	103	--	118	97	82	--	--	--
Oil-bearing crops	83	85	80	81	80	78	75	77	80	88
Fruit and nuts, all	112	99	100	108	92	96	105	96	117	121
Commercial vegetables	110	123	132	119	144	138	142	146	119	113
Potatoes and dry beans	100	93	97	110	85	93	96	105	107	117
Livestock and products	95	97	107	99	102	108	108	110	112	111
Meat animals	83	94	101	96	98	103	104	103	104	100
Dairy products	110	94	112	96	100	106	110	118	123	125
Poultry and eggs	110	107	115	106	112	119	116	115	117	119
<b>Prices paid</b>										
Commodities and services, interest, taxes, and wage rates (PPITW)	115	120	124	120	124	123	123	123	124	124
Production items	111	116	120	116	120	119	120	120	120	120
Feed	100	102	108	100	106	105	105	106	107	110
Livestock and poultry	95	110	111	111	108	109	112	110	113	114
Seeds	121	124	130	125	124	125	134	134	134	134
Fertilizer	105	110	133	110	139	135	135	131	125	120
Agricultural chemicals	121	120	121	120	126	121	121	121	120	119
Fuels	93	134	131	134	143	128	127	133	133	124
Supplies and repairs	121	124	126	124	125	126	126	127	127	127
Autos and trucks	119	119	119	119	119	119	119	118	118	117
Farm machinery	135	140	143	140	137	142	143	143	143	143
Building material	120	121	121	121	121	121	121	122	122	122
Farm services	116	119	120	120	119	119	119	119	121	121
Rent	113	110	116	110	114	114	114	114	116	116
Interest payable per acre on farm real estate debt	106	112	116	112	116	116	116	116	116	116
Taxes payable per acre on farm real estate	120	123	123	123	123	123	123	123	123	123
Wage rates (seasonally adjusted)	135	140	147	137	149	149	144	144	144	144
Prod. items, interest, taxes & wage rates (PITW)	113	118	122	118	122	122	122	122	122	122
Ratio, prices received to prices paid (%)*	83	80	83	80	81	84	86	88	86	85
Prices received (1910-14=100)	606	611	658	612	634	656	671	684	677	675
Prices paid, etc. (1910-14=100)	1,531	1,595	1,650	1,594	1,647	1,640	1,643	1,644	1,650	1,648
Parity ratio (1910-14=100) (%)*	40	38	40	38	38	40	41	42	41	41

-- = 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 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 <sup>1</sup>			2000			2001			
	1998	1999	2000	Jul	Feb	Mar	Apr	May	Jun	Jul
<b>Crops</b>										
All wheat (\$/bu.)	2.65	2.48	2.65	2.32	2.83	2.87	2.86	2.99	2.74	2.72
Rice, rough (\$/cwt)	8.89	5.93	5.75	5.65	5.72	5.55	5.59	5.15	5.01	5.01
Corn (\$/bu.)	1.94	1.82	1.85	1.64	1.96	1.95	1.89	1.82	1.77	1.88
Sorghum (\$/cwt)	2.97	2.80	3.15	2.82	3.48	3.29	3.06	3.21	3.63	3.58
All hay, baled (\$/ton)	84.60	76.90	83.00	80.20	86.80	87.20	94.80	106.00	95.80	96.30
Soybeans (\$/bu.)	4.93	4.63	4.75	4.53	4.46	4.39	4.22	4.32	4.46	4.92
Cotton, upland (¢/lb.)	60.20	45.00	56.00	48.80	49.10	43.20	43.50	42.20	40.40	38.70
Potatoes (\$/cwt)	5.56	5.77	4.95	6.93	5.02	5.56	5.71	6.31	6.47	7.23
Lettuce (\$/cwt) <sup>2</sup>	16.10	13.30	17.50	15.00	23.20	15.00	21.60	18.50	12.00	11.30
Tomatoes, fresh (\$/cwt) <sup>2</sup>	35.20	25.80	31.40	24.70	28.70	56.50	22.90	37.50	27.00	24.10
Onions (\$/cwt)	13.80	9.78	11.40	13.30	14.10	15.60	21.00	19.00	17.60	18.40
Beans, dry edible (\$/cwt)	19.00	16.40	15.30	14.20	15.20	15.00	16.20	16.60	16.30	16.30
Apples for fresh use (¢/lb.)	17.30	21.30	17.90	16.20	15.20	14.20	15.80	15.40	15.30	14.40
Pears for fresh use (\$/ton)	291.00	294.00	264.00	230.00	251.00	274.00	304.00	364.00	399.00	570.00
Oranges, all uses (\$/box) <sup>3</sup>	4.29	5.54	--	3.35	3.29	4.13	5.02	4.80	4.30	6.23
Grapefruit, all uses (\$/box) <sup>3</sup>	2.00	3.27	--	6.02	2.07	1.53	1.36	1.94	5.27	8.81
<b>Livestock</b>										
Cattle, all beef (\$/cwt)	59.60	63.40	68.60	67.50	74.80	76.30	75.60	73.60	73.50	70.80
Calves (\$/cwt)	78.80	87.70	104.00	106.00	109.00	112.00	111.00	111.00	109.00	108.00
Hogs, all (\$/cwt)	34.40	30.30	42.30	48.30	39.10	46.00	47.80	50.40	52.20	51.40
Lambs (\$/cwt)	72.30	74.50	79.40	87.00	80.10	84.40	85.20	79.00	71.60	--
All milk, sold to plants (\$/cwt)	15.46	14.38	12.40	12.60	13.00	13.90	14.40	15.40	16.10	16.30
Milk, manuf. grade (\$/cwt)	14.24	12.84	10.54	10.80	11.10	12.20	12.90	14.30	15.10	15.40
Broilers, live (¢/lb.)	39.30	37.10	33.60	35.00	37.00	40.00	39.00	40.00	41.00	42.00
Eggs, all (¢/doz.) <sup>4</sup>	66.80	62.20	61.80	56.40	68.20	69.10	66.50	55.30	55.80	55.10
Turkeys (¢/lb.)	38.00	40.80	40.70	42.20	36.30	37.10	37.80	38.30	38.50	38.60

-- = Not available. Values for the two most recent months are revised or preliminary. 1. Season-average price by crop year for crops. Calendar year average of monthly prices for livestock. 2. Excludes Hawaii. 3. Equivalent on-tree returns. 4. Average of all eggs sold by producers including hatching eggs and eggs sold at retail. Data for this table are taken from the publication *Agricultural Prices*, which is produced monthly by USDA's National Agricultural Statistics Service (NASS) and is available at <http://usda.mannlib.cornell.edu/reports/nassr/price/pap-bb/>. For historical data or for categories not listed here, call the NASS Information Hotline at 1-800-727-9540, or access the NASS Home Page at <http://www.usda.gov/nass>.



## Producer & Consumer Prices

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

	Annual			2000			2001			
	1998	1999	2000	Jul	Feb	Mar	Apr	May	Jun	Jul
<i>1982-84=100</i>										
Consumer Price Index, all items	163.0	166.6	172.1	172.6	175.8	176.2	176.9	177.7	178.0	177.5
CPI, all items less food	163.6	167.0	172.9	173.5	176.6	177.1	177.8	178.6	179.0	178.2
All food	160.7	164.1	167.8	168.1	171.3	171.7	171.9	172.5	173.0	173.5
Food away from home	161.1	165.1	169.0	169.1	171.8	172.3	172.7	173.1	173.6	174.1
Food at home	161.1	164.2	167.9	168.3	171.8	172.0	172.2	172.8	173.3	173.9
Meats <sup>1</sup>	141.6	142.3	150.7	152.7	156.5	157.9	158.0	158.9	160.2	160.8
Beef and veal	136.5	139.2	148.1	149.5	158.6	160.1	161.5	161.7	162.5	162.1
Pork	148.5	145.9	156.5	159.9	157.9	159.4	157.9	160.4	162.6	164.8
Poultry	157.1	157.9	159.8	161.8	161.8	162.6	163.1	162.3	164.5	166.6
Fish and seafood	181.7	185.3	190.4	189.7	193.0	190.7	192.4	194.6	191.5	191.0
Eggs	135.4	128.1	131.9	125.5	142.9	139.2	144.7	131.1	130.8	129.6
Dairy and related products <sup>2</sup>	150.8	159.6	160.7	160.5	163.6	163.2	163.4	164.7	166.9	168.3
Fats and oils <sup>3</sup>	146.9	148.3	147.4	148.1	152.6	153.1	151.5	154.7	156.7	157.8
Fresh fruits	246.5	266.3	258.3	248.9	253.5	257.3	269.4	274.0	268.3	263.8
Fresh vegetables	215.8	209.3	219.4	216.7	240.6	238.2	232.6	226.2	226.4	226.3
Potatoes	185.2	193.1	196.3	208.3	186.8	189.3	187.0	192.2	205.0	213.4
Cereals and bakery products	181.1	185.0	188.3	189.6	191.9	191.9	192.5	193.2	194.2	194.9
Sugar and sweets	150.2	152.3	154.0	154.1	155.8	155.7	154.0	155.8	155.7	156.1
Nonalcoholic beverages <sup>4</sup>	133.0	134.3	137.8	138.5	139.9	139.5	138.9	138.1	138.6	138.9
Apparel										
Footwear	128.0	125.7	123.8	120.3	122.6	125.2	124.9	124.4	122.1	121.3
Tobacco and smoking products	274.8	355.8	394.9	400.7	408.5	407.7	424.2	418.7	421.0	441.2
Alcoholic beverages	165.7	169.7	174.7	175.2	177.7	177.8	178.1	178.5	179.1	179.7

1. Beef, veal, lamb, pork, and processed meat. 2. Included butter through December 1997. 3. Includes butter as of January 1998. 4. Includes fruit juices as of January 1998. This table is compiled with data provided by the Bureau of Labor Statistics (BLS). BLS operates a website at <http://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		2000		2001					
	1998	1999	2000	Jul	Feb	Mar	Apr	May	Jun	Jul
	<i>1982=100</i>									
All commodities	124.4	125.5	132.7	133.7	137.4	135.9	136.3	136.6	135.7	133.9
Finished goods <sup>1</sup>	130.6	133.0	138.0	138.6	141.4	140.9	141.7	142.5	142.1	140.7
All foods <sup>2</sup>	132.4	132.2	133.0	133.3	135.6	136.8	137.5	137.8	137.9	137.4
Consumer foods	134.3	135.1	137.2	137.5	140.0	141.1	141.6	141.8	141.9	141.2
Fresh fruits and melons	90.0	103.6	91.4	84.6	91.8	92.6	94.3	100.0	98.3	84.9
Fresh and dry vegetables	139.5	118.0	126.7	119.7	143.9	152.7	129.0	129.9	120.5	105.4
Dried and dehydrated fruits	124.4	121.2	122.9	122.5	116.4	117.3	121.0	115.1	115.1	119.4
Canned fruits and juices	134.4	137.8	140.0	139.9	142.6	142.7	143.8	143.7	143.6	144.5
Frozen fruits, juices and ades	116.1	123.0	120.9	121.5	116.7	116.2	115.2	114.6	115.1	113.9
Fresh vegetables except potatoes	137.9	117.7	135.0	127.2	168.6	178.7	145.6	144.9	129.4	109.7
Canned vegetables and juices	121.5	120.9	121.2	121.1	121.4	121.3	121.3	121.4	121.9	122.6
Frozen vegetables	125.4	126.1	126.0	125.9	128.5	127.7	127.9	127.8	128.0	128.7
Potatoes	122.5	126.9	100.5	112.8	86.6	98.5	100.5	131.8	147.6	140.0
Eggs for fresh use (1991=100)	90.1	77.9	84.9	70.3	89.6	88.2	104.2	72.1	71.8	69.9
Bakery products	175.8	178.0	182.3	182.5	185.4	186.5	187.2	187.4	188.2	188.7
Meats	101.4	104.6	114.3	118.6	118.8	121.5	123.0	124.1	123.5	123.2
Beef and veal	99.5	106.3	113.7	115.7	125.7	125.9	125.7	123.8	123.4	119.0
Pork	96.6	96.0	113.4	123.4	109.3	117.3	120.6	125.5	124.1	130.7
Processed poultry	120.7	114.0	112.9	111.8	112.3	114.1	115.7	115.3	116.7	116.3
Unprocessed and packaged fish	183.0	190.9	198.1	196.8	210.5	200.9	207.8	194.7	183.1	185.8
Dairy products	138.1	139.2	133.7	135.8	135.9	138.7	141.3	146.4	150.1	150.9
Processed fruits and vegetables	125.8	128.1	128.6	128.7	128.4	128.2	128.3	127.9	128.2	128.8
Shortening and cooking oil	143.4	140.4	132.4	131.1	129.3	131.4	130.7	130.6	131.0	132.5
Soft drinks	134.8	137.9	144.1	144.7	148.6	148.8	147.8	147.4	147.9	147.2
Finished consumer goods less foods	126.4	130.5	138.4	139.5	143.3	141.9	142.9	144.5	143.7	141.4
Alcoholic beverages	135.2	136.7	140.6	141.2	143.9	145.0	145.2	145.6	145.4	145.3
Apparel	126.6	127.1	127.4	127.6	127.4	127.0	126.4	126.5	126.2	126.4
Footwear	144.7	144.5	144.9	145.0	145.9	145.8	147.3	146.3	146.7	146.6
Tobacco products	283.4	374.0	397.2	393.4	426.9	426.8	426.6	447.3	447.8	447.4
Intermediate materials <sup>3</sup>	123.0	123.2	129.2	130.3	131.3	130.7	130.6	131.2	131.4	130.3
Materials for food manufacturing	123.1	120.8	119.2	120.5	120.7	122.4	123.3	124.6	125.7	126.1
Flour	109.2	104.3	103.8	102.7	107.6	108.8	107.9	109.6	110.7	110.3
Refined sugar <sup>4</sup>	119.8	121.0	110.6	111.4	109.9	109.2	108.2	108.8	109.6	108.6
Crude vegetable oils	131.1	90.2	73.6	72.7	59.1	65.8	66.8	68.6	70.9	73.0
Crude materials <sup>5</sup>	96.7	98.2	120.6	122.7	141.2	132.2	132.9	130.9	122.8	116.1
Foodstuffs and feedstuffs	103.8	98.7	100.2	99.3	104.3	109.1	109.1	110.3	109.7	109.6
Fruits and vegetables and nuts <sup>6</sup>	117.2	117.4	111.1	104.1	118.8	122.7	114.3	118.0	113.3	99.4
Grains	93.4	80.1	78.3	71.0	80.1	84.0	80.4	79.7	77.6	81.0
Slaughter livestock	82.3	86.4	96.5	97.9	102.3	107.9	108.4	107.2	106.0	102.9
Slaughter poultry, live	141.4	129.9	124.7	126.5	123.6	129.3	128.0	132.0	131.9	133.8
Plant and animal fibers	110.4	86.5	93.9	86.9	92.1	80.5	71.9	69.6	63.4	62.7
Fluid milk	112.6	106.3	92.0	94.5	97.5	103.6	107.4	115.0	121.1	122.0
Oilseeds	114.4	90.8	93.8	90.8	86.5	86.9	84.1	88.2	91.1	97.3
Leaf tobacco	104.6	101.6	--	--	121.4	107.0	81.1	--	--	--
Raw cane sugar	117.2	113.7	101.8	97.0	111.9	111.8	113.3	112.2	109.7	110.9

-- = 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/bls/home.html> and a Producer Prices Information Hotline at (202) 606-7705.

## Farm-Retail Price Spreads

Table 8—Farm-Retail Price Spreads

	Annual			2000		2001				
	1998	1999	2000	Jun	Jan	Feb	Mar	Apr	May	Jun
<b>Market basket<sup>1</sup></b>										
Retail cost (1982-84=100)	163.1	167.3	170.6	169.7	174.7	175.1	175.4	176.0	176.6	177.2
Farm value (1982-84=100)	103.3	98.3	97.0	96.3	100.6	100.3	104.4	103.8	107.1	107.7
Farm-retail spread (1982-84=100)	195.4	204.5	210.2	209.2	214.6	215.4	213.7	214.8	214.0	214.6
Farm value-retail cost (%)	22.2	20.6	19.9	19.9	20.2	20.1	20.8	20.7	21.2	21.3
<b>Meat products</b>										
Retail cost (1982-84=100)	141.6	142.3	150.4	151.7	154.1	156.5	157.9	158.0	158.9	160.2
Farm value (1982-84=100)	84.8	81.6	88.4	87.5	91.8	92.0	93.2	93.4	98.2	98.8
Farm-retail spread (1982-84=100)	200.0	204.7	214.0	217.6	218.0	222.6	224.3	224.3	221.2	223.2
Farm value-retail cost (%)	30.3	29	29.8	29.2	30.2	29.8	29.9	29.9	31.3	31.2
<b>Dairy products</b>										
Retail cost (1982-84=100)	150.8	159.6	160.7	159.5	163.6	163.6	163.2	163.4	164.7	166.9
Farm value (1982-84=100)	113.0	107.9	98.8	97.1	106.9	105.4	110.8	115.7	121.4	127.4
Farm-retail spread (1982-84=100)	185.6	207.2	217.7	217.0	215.9	217.2	211.5	207.4	204.6	203.3
Farm value-retail cost (%)	36.0	32.4	29.5	29.2	31.3	30.9	32.6	34.0	35.4	36.6
<b>Poultry</b>										
Retail cost (1982-84=100)	157.1	157.9	159.8	159.3	160.8	161.8	162.6	163.1	162.3	164.5
Farm value (1982-84=100)	126.1	119	117.4	120.4	109.9	117.9	126.4	124.0	127.0	129.8
Farm-retail spread (1982-84=100)	192.9	202.7	208.7	204.1	219.4	212.4	204.3	208.1	203.0	204.5
Farm value-retail cost (%)	42.9	40.3	39.3	40.5	36.6	39.0	41.6	40.7	41.9	42.2
<b>Eggs</b>										
Retail cost (1982-84=100)	137.1	128.1	131.9	125.9	150.4	142.9	139.2	144.7	131.1	130.8
Farm value (1982-84=100)	89.6	74.9	80.6	75.8	86.5	87.5	89.0	84.6	61.5	61.5
Farm-retail spread (1982-84=100)	222.5	223.7	223.9	215.9	265.3	242.4	229.3	252.7	256.1	255.2
Farm value-retail cost (%)	42.0	37.6	39.3	38.7	36.9	39.3	41.1	37.5	30.2	30.2
<b>Cereal and bakery products</b>										
Retail cost (1982-84=100)	181.1	185.0	188.3	187.7	191.1	191.9	191.9	192.5	193.2	194.2
Farm value (1982-84=100)	94.4	82.5	75.2	74.7	77.9	79.1	81.3	80.0	81.5	77.7
Farm-retail spread (1982-84=100)	193.2	199.2	204.0	203.5	206.9	207.6	207.3	208.2	208.8	210.5
Farm value-retail cost (%)	6.4	5.5	4.9	4.9	5.0	5.0	5.2	5.1	5.2	4.9
<b>Fresh fruit</b>										
Retail cost (1982-84=100)	258.2	294.3	284.3	267.8	287.7	278.4	282.1	297.7	302.2	295.4
Farm value (1982-84=100)	141.3	153.7	141.3	135.8	147.2	139.0	139.0	141.6	134.6	128.7
Farm-retail spread (1982-84=100)	312.2	359.3	350.3	328.7	352.6	342.8	348.2	369.7	379.6	372.4
Farm value-retail cost (%)	17.3	16.5	15.7	16.0	16.2	15.8	15.6	15.0	14.1	13.8
<b>Fresh vegetables</b>										
Retail cost (1982-84=100)	215.8	209.3	219.4	217.7	235.9	240.6	238.2	232.6	226.4	226.3
Farm value (1982-84=100)	124.5	118.1	121.4	125.7	131.3	120.6	148.3	129.2	151.0	138.3
Farm-retail spread (1982-84=100)	262.7	256.2	269.8	265.0	289.7	302.3	284.4	285.7	265.2	271.6
Farm value-retail cost (%)	19.6	19.2	18.8	19.6	18.9	17.0	21.1	18.9	22.6	20.7
<b>Processed fruits and vegetables</b>										
Retail cost (1982-84=100)	150.6	154.8	153.6	154.0	158.0	157.5	156.6	156.3	158.2	159.5
Farm value (1982-84=100)	115.1	113.5	111.0	110.4	110.4	110.6	110.8	110.3	110.8	111.2
Farm-retail spread (1982-84=100)	161.7	167.7	166.9	167.6	172.9	172.1	170.9	170.7	173.0	174.6
Farm value-retail cost (%)	18.2	17.4	17.2	17.0	16.6	16.7	16.8	16.8	16.7	16.6
<b>Fats and oils</b>										
Retail cost (1982-84=100)	146.9	148.3	147.4	146.6	153.0	152.6	153.1	151.5	154.7	156.7
Farm value (1982-84=100)	118.9	89	80.9	84.5	70.4	69.8	75.3	72.1	73.1	74.4
Farm-retail spread (1982-84=100)	157.2	170	171.9	169.4	183.4	183.1	181.7	180.7	184.7	187.0
Farm value-retail cost (%)	21.8	16.2	14.8	15.5	12.4	12.3	13.2	12.8	12.7	12.8

See footnotes at end of table, next page.

**Table 8—Farm-Retail Price Spreads (continued)**

	Annual			2000			2001			
	1998	1999	2000	Jul	Feb	Mar	Apr	May	Jun	Jul
<b>Beef, all fresh retail value (cents/lb.)</b>	253.3	260.5	275.3	279.5	296.2	298.5	299.4	301.4	304.9	304.1
<b>Beef, Choice</b>										
Retail value (cents/lb.) <sup>2</sup>	277.1	287.8	306.4	310.0	334.2	334.3	343.2	343.8	347.6	345.4
Wholesale value (cents/lb.) <sup>3</sup>	153.8	171.6	182.3	179.6	201.5	202.7	201.7	204.3	198.3	185.9
Net farm value (cents/lb.) <sup>4</sup>	130.8	141.1	149.0	144.7	171.0	170.0	164.1	160.1	156.2	150.5
Farm-retail spread (cents/lb.)	146.3	146.7	157.4	165.3	163.2	164.3	179.1	183.7	191.4	194.9
Wholesale-retail (cents/lb.) <sup>5</sup>	123.3	116.2	124.1	130.4	132.7	131.6	141.5	139.5	149.3	159.5
Farm-wholesale (cents/lb.) <sup>6</sup>	23.0	30.5	33.3	34.9	30.5	32.7	37.6	44.2	42.1	35.4
Farm value-retail value (%)	47.2	49.0	48.6	46.7	51.2	50.9	47.8	46.6	44.9	43.6
<b>Pork</b>										
Retail value (cents/lb.) <sup>2</sup>	242.7	241.5	258.2	262.3	261.5	265.4	263.3	266.9	270.9	270.5
Wholesale value (cents/lb.) <sup>3</sup>	97.3	99.0	114.5	123.1	107.7	117.3	120.5	126.0	128.4	126.2
Net farm value (cents/lb.) <sup>4</sup>	61.2	60.4	79.4	90.0	73.7	86.0	87.2	93.0	97.0	95.2
Farm-retail spread (cents/lb.)	181.5	181.1	178.8	172.3	187.8	179.4	176.1	173.9	173.9	175.3
Wholesale-retail (cents/lb.) <sup>5</sup>	145.4	142.5	143.7	139.2	153.8	148.1	142.8	140.9	142.5	144.3
Farm-wholesale (cents/lb.) <sup>6</sup>	36.1	38.6	35.1	33.1	34.0	31.3	33.3	33.0	31.4	31.0
Farm value-retail value (%)	25.2	25.0	30.8	34.3	28.2	32.4	33.1	34.8	35.8	35.2

1. Retail costs are based on CPI-U of retail prices for domestically produced farm foods, published monthly by the Bureau of Labor Statistics (BLS). Farm value is the payment for the quantity of farm equivalent to the retail unit, less allowance for by-product. Farm values are based on prices at first point of sale, and may include marketing charges such as grading and packing for some commodities. The farm-retail spread, the difference between the retail value and farm value, represents charges for assembling, processing, transporting, and distributing. 2. Weighted-average value of retail cuts from pork and Choice yield grade 3 beef. Prices from BLS. 3. Value of wholesale (boxed beef) and wholesale cuts (pork) equivalent to 1 pound of retail cuts adjusted for transportation costs and by-product values. 4. Market value to producer for live animal equivalent to 1 lb. of retail cuts, minus value of by-products. 5. Charges for retailing and other marketing services such as wholesaling and in-city transportation. 6. Charges for livestock marketing, processing, and transportation. *Information contact: Veronica Jones (202) 694-5387, William F. Hahn (202) 694-5175*

**Table 9—Price Indexes of Food Marketing Costs**

	Annual			1999	2000				2001	
	1998	1999	2000	IV	I	II	III	IV	I	II
	1987=100*									
Labor—hourly earnings and benefits	490.4	503.3	514.0	506.7	508.2	512.0	514.1	521.7	527.5	531.6
Processing	499.3	511.4	525.0	515.6	518.1	523.4	526.9	531.3	536.4	542.9
Wholesaling	552.5	564.6	589.4	580.0	578.9	586.4	587.3	601.0	606.4	610.2
Retailing	454.1	465.8	469.9	465.4	467.1	467.8	465.2	477.2	483.8	485.7
Packaging and containers	395.5	399.4	412.0	407.7	410.3	410.6	413.5	413.7	414.2	417.8
Paperboard boxes and containers	365.2	373.0	407.7	387.8	391.9	413.0	412.4	413.5	412.0	413.1
Metal cans	487.9	486.6	452.5	486.6	489.5	440.1	440.1	440.1	441.5	444.3
Paper bags and related products	432.9	440.9	470.4	455.8	457.3	472.4	477.6	474.5	474.2	481.3
Plastic films and bottles	322.8	324.2	336.7	329.6	329.4	330.6	342.4	344.3	344.0	345.8
Glass containers	446.8	447.1	450.8	445.8	450.1	451.1	451.1	450.8	460.2	471.7
Metal foil	232.0	227.3	232.4	228.0	229.8	231.3	233.8	234.8	235.5	246.1
Transportation services	428.3	394.0	394.3	394.2	392.3	393.3	394.6	396.9	401.0	403.1
Advertising	624.5	623.7	635.7	625.6	633.6	635.0	635.7	638.6	644.3	648.7
Fuel and power	619.7	651.5	841.1	711.9	816.5	822.2	866.1	859.6	830.3	826.4
Electric	492.1	489.4	498.2	488.5	477.2	487.0	523.8	504.9	514.3	526.1
Petroleum	457.0	565.9	1,135.8	758.1	1,114.0	1,102.2	1,160.6	1,166.4	998.5	974.7
Natural gas	1,239.4	1,235.6	1,275.4	1,240.4	1,235.3	1,259.8	1,300.7	1,305.7	1,403.3	1,391.5
Communications, water and sewage	307.6	309.3	309.1	310.6	310.3	307.8	308.7	309.5	312.6	312.5
Rent	260.5	256.9	258.2	256.4	256.8	258.0	259.1	259.0	259.2	259.2
Maintenance and repair	529.3	541.6	561.2	545.3	552.2	558.3	564.7	569.7	574.8	578.8
Business services	522.9	531.9	544.6	536.1	540.3	543.2	545.9	548.8	555.3	556.6
Supplies	332.3	327.7	348.5	331.7	365.6	338.2	344.5	345.8	349.2	347.0
Property taxes and insurance	598.3	619.7	654.6	631.3	639.8	647.4	658.6	672.6	680.9	687.5
Interest, short-term	103.7	103.7	115.4	115.2	111.3	116.6	117.7	116.0	91.0	64.1
Total marketing cost index	467.2	472.2	491.5	479.1	486.7	488.8	493.1	497.1	499.5	502.2

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



## Livestock & Products

**Table 10—U.S. Meat Supply & Use**

	Beg. stocks	Produc- tion <sup>1</sup>	Imports	Total supply	Exports	Ending stocks	Consumption		Conversion factor <sup>3</sup>	Primary market price <sup>4</sup>
							Total	Per capita <sup>2</sup>		
	Million lbs. <sup>5</sup>						Lbs.			\$/cwt
Beef										
1998	465	25,760	2,643	28,868	2,171	393	26,305	68	0.700	61.48
1999	393	26,493	2,874	29,760	2,417	411	26,932	69	0.700	65.56
2000	411	26,888	3,032	30,331	2,516	525	27,290	69	0.700	69.65
2001	525	26,089	3,055	29,669	2,369	425	26,875	68	0.700	74.06
2002	425	25,106	3,075	28,606	2,500	385	25,721	64	0.700	79.50
Pork										
1998	408	19,011	705	20,124	1,230	584	18,309	53	0.776	34.72
1999	584	19,308	827	20,720	1,278	489	18,952	54	0.776	34.00
2000	489	18,952	967	20,408	1,305	477	18,626	52	0.776	44.70
2001	477	19,064	916	20,457	1,543	450	18,464	52	0.776	46.22
2002	450	19,655	960	21,065	1,415	500	19,150	53	0.776	43.50
Veal <sup>6</sup>										
1998	8	262	0	270	0	5	265	1	0.83	82.29
1999	5	235	0	240	0	5	235	1	0.83	89.62
2000	5	225	0	230	0	5	225	1	0.83	105.67
2001	5	205	0	210	0	5	205	1	0.83	108.02
2002	5	200	0	205	0	5	200	1	0.83	111.27
Lamb and mutton										
1998	14	251	112	377	6	12	360	1	0.89	74.20
1999	12	248	113	372	5	9	358	1	0.89	75.97
2000	9	234	129	372	6	13	353	1	0.89	79.40
2001	13	214	150	377	5	14	358	1	0.89	79.53
2002	14	196	151	361	4	14	343	1	0.89	83.00
Total red meat										
1998	894	45,284	3,461	49,639	3,407	994	45,239	123	--	--
1999	994	46,284	3,813	51,092	3,700	914	46,477	125	--	--
2000	914	46,299	4,128	51,341	3,827	1,020	46,494	124	--	--
2001	1,020	45,572	4,121	50,713	3,917	894	45,902	121	--	--
2002	894	45,157	4,186	50,237	3,919	904	45,414	119	--	--
¢/lb										
Broilers										
1998	607	27,612	5	28,225	4,673	711	22,841	73	0.859	63
1999	711	29,468	4	30,183	4,920	796	24,468	77	0.859	58
2000	796	30,209	6	31,011	5,548	798	24,665	77	0.859	56
2001	798	30,582	9	31,388	6,060	700	24,628	76	0.859	59
2002	700	31,262	8	31,970	6,200	740	25,030	77	0.859	61
Mature chickens										
1998	7	525	0	533	426	6	101	1	1.0	--
1999	6	554	0	562	393	8	162	1	1.0	--
2000	8	531	0	541	223	9	308	1	1.0	--
2001	9	508	0	519	95	8	415	1	1.0	--
2002	8	500	0	510	80	10	419	1	1.0	--
Turkeys										
1998	415	5,215	0	5,630	446	304	4,880	18	1.0	62
1999	304	5,230	1	5,535	379	254	4,902	18	1.0	69
2000	254	5,333	1	5,589	458	241	4,889	18	1.0	71
2001	241	5,463	1	5,706	491	250	4,964	18	1.0	67
2002	250	5,625	1	5,876	495	275	5,105	18	1.0	68
Total poultry										
1998	1,029	33,352	6	34,387	5,545	1,022	27,821	91	--	--
1999	1,022	35,252	7	36,281	5,692	1,058	29,531	96	--	--
2000	1,058	36,073	9	37,140	6,229	1,048	29,863	96	--	--
2001	1,048	36,553	12	37,612	6,645	958	30,008	96	--	--
2002	958	37,387	11	38,356	6,775	1,025	30,554	96	--	--
Red meat and poultry										
1998	1,923	78,637	3,467	84,027	8,951	2,016	73,060	214	--	--
1999	2,016	81,537	3,820	87,372	9,392	1,972	76,008	220	--	--
2000	1,972	82,372	4,137	88,481	10,056	2,068	76,357	219	--	--
2001	2,068	82,125	4,133	88,325	10,562	1,852	75,910	217	--	--
2002	1,852	82,544	4,197	88,593	10,694	1,929	75,968	215	--	--

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

**Table 11—U.S. Egg Supply & Use**

	Beg. stocks	Production	Imports	Total supply	Exports	Hatching use	Ending stocks	Consumption		Primary market price*
								Total	Per capita	
Million doz.								No.	¢/doz.	
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	240.1	81.2
1998	7.4	6,657.9	5.8	6,671.2	218.8	921.8	8.4	5,522.2	244.9	75.8
1999	8.4	6,912.0	7.4	6,927.8	161.7	941.7	7.6	5,816.7	255.7	65.6
2000	7.6	7,034.9	8.4	7,051.0	171.8	940.2	11.4	5,927.5	258.3	68.9
2001	11.4	7,144.6	7.9	7,163.8	172.4	947.0	10.0	6,034.4	260.6	70.3
2002	10.0	7,270.0	8.0	7,288.0	165.0	970.0	10.0	6,143.0	263.2	68.0

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

Information Contact: LaVerne Williams (202) 694-5190

**Table 12—U.S. Milk Supply & Use**

Production	Farm use	Commercial		Imports	Total commercial supply	Commercial				CCC net removals		
		Farm marketings	Beg. stocks			CCC net removals	Ending stocks	Disappearance	All milk price <sup>1</sup>	Skim solids basis	Total solids basis <sup>2</sup>	
		Million lbs. (milkfat basis)							\$/cwt	Billion lbs.		
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	4.6	165.5	0.4	5.3	159.9	15.42	4.0	2.6
1999	162.7	1.4	161.3	5.3	4.7	171.4	0.3	6.1	164.9	14.36	6.5	4.0
2000	167.7	1.3	166.3	6.1	4.4	176.9	0.8	6.9	169.2	12.40	8.6	5.5
2001	165.7	1.3	164.4	6.8	5.3	176.5	0.2	6.2	170.2	15.35	5.7	3.5
2002	170.2	1.2	169.0	6.2	4.7	179.9	0.2	6.4	173.2	13.50	1.9	1.2

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			2000		2001					
	1998	1999	2000	Jun	Jan	Feb	Mar	Apr	May	Jun	
<b>Broilers</b>											
Federally inspected slaughter certified (mil. lb.)	27,862.7	29,741.4	30,495.2	2,741.7	2,621.1	2,322.2	2,604.2	2,498.1	2,809.5	2,601.1	
Wholesale price, 12-city (cents/lb.)	63.0	58.1	56.2	55.7	56.9	57.5	59.0	58.5	59.4	59.9	
Price of grower feed (\$/ton) <sup>1</sup>	128.6	103.1	104.7	117.2	106.3	102.8	101.3	98.7	98.8	98.8	
Broiler-feed price ratio <sup>2</sup>	6.3	7.2	6.6	5.8	6.4	7.2	7.9	7.9	8.1	8.3	
Stocks beginning of period (mil. lb.)	606.8	711.1	795.6	847.0	797.6	773.2	676.6	636.5	647.0	660.8	
Broiler-type chicks hatched (mil.)	8,491.9	8,715.4	8,792.1	775.0	733.9	670.5	763.5	745.3	775.7	756.6	
<b>Turkeys</b>											
Federally inspected slaughter certified (mil. lb.)	5,280.6	5,296.5	5,402.2	492.3	458.2	407.8	466.5	425.7	488.9	463.4	
Wholesale price, Eastern U.S. 8-16 lb. young hens (cents/lb.)	62.2	69.0	70.5	69.2	61.5	61.2	62.4	63.5	65.7	66.0	
Price of turkey grower feed (\$/ton) <sup>1</sup>	115.6	95.0	95.9	104.6	100.3	96.8	96.4	93.3	94.6	92.8	
Turkey-feed price ratio <sup>2</sup>	6.7	8.6	8.7	7.8	7.3	7.5	7.7	8.1	8.1	8.3	
Stocks beginning of period (mil. lb.)	415.1	304.3	254.3	416.9	241.3	289.1	333.5	355.4	392.6	454.6	
Poultz placed in U.S. (mil.)	297.8	296.1	297.3	25.8	25.6	23.7	26.1	25.9	26.7	26.0	
<b>Eggs</b>											
Farm production (mil.)	79,927.0	82,943.0	84,412.0	7,104.0	7,217.0	6,519.0	7,331.0	7,090.0	7,231.0	6,973.0	
Average number of layers (mil.)	313.0	322.9	328.2	326.3	333.3	335.5	336.6	336.8	334.8	332.2	
Rate of lay (eggs per layer on farms)	255.3	256.8	257.2	21.8	21.7	19.4	21.8	21.1	21.6	21.0	
Cartoned price, New York, grade A large (cents/doz.) <sup>3</sup>	75.8	65.6	68.9	53.5	76.2	71.5	79.6	74.4	58.1	57.3	
Price of laying feed (\$/ton) <sup>1</sup>	137.7	124.5	123.9	162.5	123.3	119.6	118.1	115.7	131.7	131.3	
Egg-feed price ratio <sup>2</sup>	9.8	9.8	10.6	6.4	10.9	11.4	11.7	11.5	8.4	8.5	
Stocks, first of month											
Frozen (mil. doz.)	7.4	8.4	7.6	9.7	11.4	12.9	11.7	11.1	12.1	12.0	
Replacement chicks hatched (mil.)	438.3	451.7	429.7	41.2	38.0	38.2	40.1	41.7	42.6	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			2000	2001					
	1998	1999	2000	Jun	Jan	Feb	Mar	Apr	May	Jun
Class III (BFP before 2000) 3.5% fat (\$/cwt.)	14.20	12.43	9.74	9.46	9.99	10.27	11.42	12.06	13.83	15.02
Wholesale prices										
Butter, Central States (cents/lb.) <sup>1</sup>	177.6	125.2	118.5	128.6	122.2	138.1	154.9	174.7	190.4	197.4
Am. cheese, Wis. assembly pt. (cents/lb.)	158.1	142.3	116.2	120.0	110.2	120.0	131.9	140.5	160.3	166.8
Nonfat dry milk (cents/lb.) <sup>2</sup>	106.9	103.5	101.6	101.2	103.6	103.2	103.1	104.3	104.0	102.5
USDA net removals										
Total (mil. lb.) <sup>3</sup>	365.6	343.5	841.4	77.6	30.6	22.6	14.3	10.7	11.3	7.7
Butter (mil. lb.)	6.3	3.7	8.9	0.7	0.0	0.0	0.0	0.0	0.0	0.0
Am. cheese (mil. lb.)	8.2	4.6	28.0	1.9	1.6	1.2	0.0	0.0	0.0	0.0
Nonfat dry milk (mil. lb.)	326.4	540.6	692.6	61.9	70.6	50.9	66.9	48.5	51.2	34.8
Milk										
Milk prod. 20 states (mil. lb.)	134,900	140,062	144,528	12,082	12,062	11,112	12,401	12,158	12,638	12,057
Milk per cow (lb.)	17,502	18,109	18,532	1,547	1,550	1,431	1,599	1,570	1,632	1,556
Number of milk cows (1,000)	7,708	7,734	7,799	7,808	7,783	7,767	7,756	7,744	7,745	7,749
U.S. milk production (mil. lb.) <sup>4</sup>	157,348	162,716	167,658	14,003	14,010	12,902	14,394	14,079	14,630	13,952
Stocks, beginning <sup>3</sup>										
Total (mil. lb.)	4,907	5,301	6,186	10,456	7,010	7,887	8,375	8,571	9,004	9,553
Commercial (mil. lb.)	4,889	5,274	6,142	10,356	6,871	7,706	8,167	8,325	8,749	9,299
Government (mil. lb.)	18	27	44	100	139	181	208	246	255	254
Imports, total (mil. lb.) <sup>3</sup>	4,588	4,772	4,445	439	433	337	354	493	420	--
Commercial disappearance (mil. lb.) <sup>3</sup>	159,779	164,947	169,222	13,922	13,438	12,656	14,468	14,032	14,393	--
Butter										
Production (mil. lb.)	1,168.0	1,277.1	1,273.6	89.1	129.4	110.2	101.9	106.0	109.1	88.1
Stocks, beginning (mil. lb.)	20.5	25.9	24.9	137.7	24.0	63.3	81.0	89.7	106.9	131.7
Commercial disappearance (mil. lb.)	1,222.5	1,310.7	1,297.6	87.3	92.1	95.7	97.8	96.0	90.1	--
American cheese										
Production (mil. lb.)	3,314.7	3,532.6	3,633.9	308.6	301.1	274.8	299.5	294.3	309.8	307.8
Stocks, beginning (mil. lb.)	410.3	407.6	458.0	578.3	521.1	508.1	503.1	503.3	509.1	503.8
Commercial disappearance (mil. lb.)	3,338.6	3,542.2	3,588.1	315.7	321.1	282.4	302.6	294.3	318.7	--
Other cheese										
Production (mil. lb.)	4,177.5	4,361.5	4,620.6	387.2	385.5	357.4	414.6	380.7	399.0	375.8
Stocks, beginning (mil. lb.)	70.0	109.5	163.3	233.1	185.2	202.9	218.1	211.1	208.8	214.7
Commercial disappearance (mil. lb.)	4,452.0	4,672.1	4,963.3	417.7	385.4	363.0	447.9	413.1	420.2	--
Nonfat dry milk										
Production (mil. lb.)	1,135.4	1,359.7	1,451.6	127.0	116.7	132.4	121.0	131.3	139.9	131.1
Stocks, beginning (mil. lb.)	103.3	56.9	150.9	226.0	146.3	145.5	137.7	123.4	126.9	134.2
Commercial disappearance (mil. lb.)	866.9	737.2	770.4	87.6	46.9	89.3	68.4	79.5	79.3	--
Frozen dessert										
Production (mil. gal.) <sup>5</sup>	1,324.3	1,301.0	1,312.2	134.9	90.7	97.3	115.4	119.2	124.8	131.8
	Annual			1999	2000			2001		
	1998	1999	2000	IV	I	II	III	IV	I	II
Milk production (mil. lb.)	157,348	162,716	167,658	40,440	42,630	43,189	41,161	40,678	41,306	42,661
Milk per cow (lb.)	17,189	17,772	18,204	4,410	4,640	4,688	4,460	4,416	4,511	4,675
No. of milk cows (1,000)	9,154	9,156	9,210	9,171	9,188	9,213	9,229	9,211	9,157	9,126
Milk-feed price ratio	1.97	2.03	1.75	1.99	1.68	1.67	1.84	1.81	--	--
Returns over concentrate costs (\$/cwt milk)	12.15	11.40	9.40	10.95	8.95	9.05	9.85	9.80	--	--

-- = Not available. Quarterly values for latest year are preliminary. 1. Grade AA Chicago before June 1998. 2. Prices paid f.o.b. Central States production area. 3. Milk equivalent, fat basis. 4. Monthly data ERS estimates. 5. Hard ice cream, ice milk, and hard sherbet. *Information contact: LaVerne Williams (202) 694-5190*

Table 15—Wool

	Annual			1999		2000				2001	
	1998	1999	2000	IV	I	II	III	IV	I	II	
U.S. wool price (¢/lb.) <sup>1</sup>	162	110	107	98	97	120	117	96	101	130	
Imported wool price (¢/lb.) <sup>2</sup>	164	136	137	125	133	139	139	136	151	155	
U.S. mill consumption, scoured											
Apparel wool (1,000 lb.)	98,373	65,468	60,294	13,633	17,142	15,655	14,184	13,914	16,590	--	
Carpet wool (1,000 lb.)	16,331	15,017	14,514	2,966	3,784	3,327	3,650	3,886	4,278	--	

-- = 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			2000		2001				
	1998	1999	2000	Jul	Feb	Mar	Apr	May	Jun	Jul
Cattle on feed (7 states, 1000+ head capacity)										
Number on feed (1,000 head) <sup>1</sup>	9,455	9,021	9,752	8,969	10,222	10,012	9,859	9,563	9,660	9,466
Placed on feed (1,000 head)	19,697	21,446	21,875	1,664	1,331	1,530	1,324	2,060	1,690	1,730
Marketings (1,000 head)	19,440	20,124	20,644	1,784	1,477	1,603	1,546	1,875	1,824	1,758
Other disappearance (1,000 head)	691	676	907	37	64	80	74	88	60	51
Market prices (\$/cwt)										
Slaughter cattle										
Choice steers, 1,100-1,300 lb.										
Texas	61.75	65.89	69.86	67.22	79.40	79.44	76.50	74.93	72.64	70.71
Neb. direct	61.47	65.56	69.65	66.46	79.71	79.80	75.92	75.39	72.81	71.60
Boning utility cows, Sioux Falls	36.20	38.40	41.71	43.25	43.34	46.10	45.56	44.90	50.00	43.25
Feeder steers										
Medium no. 1, Oklahoma City										
600-650 lb.	78.13	82.64	94.36	97.94	97.67	99.14	103.93	97.02	98.87	97.80
750-800 lb.	71.79	76.39	88.58	89.25	86.05	87.19	89.29	88.00	91.12	91.32
Slaughter hogs										
Barrows and gilts, 51-52 percent lean										
National Base converted to live equal.	34.72	34.00	34.02	50.45	41.47	48.41	49.28	52.34	54.53	53.75
Sows, Iowa, S.MN 1-2 300-400 lb.	20.29	19.26	29.79	32.31	29.48	34.37	39.38	38.44	41.88	40.75
Slaughter sheep and lambs										
Lambs, Choice, San Angelo	74.20	75.96	79.40	84.17	87.00	82.63	83.30	86.07	75.21	69.82
Ewes, Good, San Angelo	40.86	42.45	46.23	48.00	56.75	56.94	47.15	47.00	43.89	44.07
Feeder lambs										
Choice, San Angelo	79.86	80.74	95.86	92.33	117.00	115.44	112.90	99.43	81.29	78.50
Wholesale meat prices, Midwest										
Boxed beef cut-out value										
Choice, 700-800 lb.	98.60	110.90	117.45	115.60	129.53	130.92	127.08	130.13	127.85	118.96
Select, 700-800 lb.	92.19	101.99	101.99	106.87	125.01	127.44	120.62	114.90	113.42	112.77
Canner and cutter cow beef	61.49	66.51	72.57	75.33	--	--	--	--	--	--
Pork cutout	53.08	53.45	64.07	70.45	61.47	70.98	70.39	71.86	75.33	74.47
Pork loins, bone-in, 1/4 " trim, 14-19 lb.	101.63	100.38	117.13	131.73	114.32	128.53	117.98	130.72	132.51	126.41
Pork bellies, 12-14 lb.	52.38	57.12	77.46	90.38	66.68	78.04	85.80	77.91	91.45	102.42
Hams, bone-in, trimmed, 20-23 lb.	45.85	45.18	52.02	59.28	54.38	59.94	54.59	57.28	60.96	64.39
All fresh beef retail price	253.28	260.50	275.30	279.50	296.20	298.50	299.40	301.40	304.90	304.10
Commercial slaughter (1,000 head) <sup>2</sup>										
Cattle	35,465	36,150	36,247	2,962	2,580	2,918	2,714	3,199	3,120	--
Steers	17,428	17,932	18,060	1,600	1,210	1,417	1,340	1,630	1,585	--
Heifers	11,448	11,868	12,041	917	870	953	885	1,026	1,036	--
Cows	5,983	5,710	5,522	396	454	494	440	486	445	--
Bull and stags	606	639	624	49	46	54	49	58	54	--
Calves	1,458	1,282	1,132	99	79	84	74	79	77	--
Sheep and lambs	3,804	3,701	3,455	243	245	326	290	239	233	--
Hogs	101,029	101,544	97,955	7,357	7,604	8,327	7,832	7,958	7,483	--
Barrows and gilts	97,025	97,732	94,585	7,084	7,352	8,026	7,554	7,668	7,211	--
Commercial production (mil. lb.)										
Beef	25,653	26,386	26,776	2,202	1,883	2,116	1,939	2,293	2,269	--
Veal	252	226	216	18	16	16	15	16	16	--
Lamb and mutton	248	244	230	16	17	23	20	17	16	--
Pork	18,981	19,278	18,905	1,409	1,486	1,626	1,532	1,555	1,457	--
	Annual			2000				2001		
	1998	1999	2000	I	II	III	IV	I	II	III
Hogs and pigs (U.S.) <sup>3</sup>										
Inventory (1,000 head) <sup>1</sup>	61,158	62,206	59,342	59,342	57,782	59,117	59,495	59,138	58,524	59,081
Breeding (1,000 head) <sup>1</sup>	6,957	6,682	6,234	6,234	6,190	6,234	6,246	6,270	6,244	6,198
Market (1,000 head) <sup>1</sup>	54,200	55,523	53,109	53,109	51,593	52,884	53,250	52,868	52,280	52,883
Farrowings (1,000 head)	12,061	11,641	11,462	2,798	2,885	2,889	2,848	2,825	2,878	2,924
Pig crop (1,000 head)	105,004	102,354	101,354	24,522	25,565	25,548	25,208	24,776	25,544	--
Cattle on Feed, 7 states (1,000 head) <sup>1 4</sup>										
Steers and steer calves	5,803	5,432	5,432	5,768	5,746	5,326	5,584	5,936	5,885	5,521
Heifers and heifer calves	3,615	3,552	3,552	3,942	3,810	3,602	3,877	4,081	3,913	3,894
Cows and bulls	59	37	37	42	37	31	41	59	61	51

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



# Crops & Products

## Table 17—Supply & Utilization<sup>1,2</sup>

	Area			Yield	Production	Total supply <sup>4</sup>	Feed & residual	Other domestic use	Exports	Total use	Ending stocks	Farm price <sup>5</sup>
	Set-aside <sup>3</sup>	Planted	Harvested									
	<i>Mil. acres</i>		<i>Bu./acre</i>									
								<i>Mil. bu.</i>				<i>\$/bu.</i>
Wheat												
1997/98	--	70.4	62.8	39.5	2,481	3,020	251	1,007	1,040	2,298	722	3.38
1998/99	--	65.8	59.0	43.2	2,547	3,373	394	990	1,042	2,427	946	2.65
1999/00	--	62.7	53.8	42.7	2,299	3,339	280	1,021	1,090	2,390	950	2.48
2000/01*	--	62.5	53.0	41.9	2,223	3,263	289	1,040	1,061	2,390	873	2.62
2001/02*	--	59.6	49.3	40.2	1,985	2,948	225	1,057	1,050	2,332	616	2.70-3.30
Rice <sup>6</sup>												
		<i>Mil. acres</i>		<i>Lb./acre</i>				<i>Mil. cwt (rough equiv)</i>				<i>\$/cwt</i>
1997/98	--	3.1	3.1	5,897.0	183.0	219.5	--	6/ 103.9	87.7	191.6	27.9	9.70
1998/99	--	3.3	3.3	5,663.0	184.4	223.0	--	6/ 114.0	86.8	200.9	22.1	8.89
1999/00	--	3.5	3.5	5,866.0	206.0	238.2	--	6/ 121.9	88.9	210.7	27.5	5.93
2000/01*	--	3.1	3.0	6,281.0	190.9	228.8	--	6/ 121.5	84.0	205.5	23.3	5.55
2001/02*	--	3.3	3.2	6,151.0	198.2	232.3	--	6/ 124.0	84.0	208.0	24.3	4.85-5.35
Corn												
		<i>Mil. acres</i>		<i>Bu./acre</i>				<i>Mil. bu.</i>				<i>\$/bu.</i>
1997/98	--	79.5	72.7	126.7	9,207	10,099	5,482	1,805	1,504	8,791	1,308	2.43
1998/99	--	80.2	72.6	134.4	9,759	11,085	5,471	1,846	1,981	9,298	1,787	1.94
1999/00	--	77.4	70.5	133.8	9,431	11,232	5,664	1,913	1,937	9,515	1,718	1.82
2000/01*	--	79.5	72.7	137.1	9,968	11,693	5,850	1,965	1,875	9,690	2,003	1.85
2001/02*	--	76.0	69.2	133.9	9,266	11,284	5,775	2,050	2,000	9,825	1,459	1.90-2.30
Sorghum												
		<i>Mil. acres</i>		<i>Bu./acre</i>				<i>Mil. bu.</i>				<i>\$/bu.</i>
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	262	45	197	504	65	1.66
1999/00	--	9.3	8.5	69.7	595	660	284	55	256	595	65	1.57
2000/01*	--	9.2	7.7	60.9	470	535	235	35	245	515	20	1.85
2001/02*	--	10.0	8.8	62.0	544	565	225	45	250	520	45	1.85-2.25
Barley												
		<i>Mil. acres</i>		<i>Bu./acre</i>				<i>Mil. bu.</i>				<i>\$/bu.</i>
1997/98	--	6.7	6.2	58.1	360	510	144	172	74	390	119	2.38
1998/99	--	6.3	5.9	60.0	352	501	161	170	28	360	142	1.98
1999/00	--	5.2	4.7	59.2	280	450	136	172	30	338	111	2.13
2000/01*	--	5.8	5.2	61.1	318	458	123	172	58	352	106	2.15
2001/02*	--	5.1	4.5	58.8	266	402	100	172	30	302	100	2.05-2.45
Oats												
		<i>Mil. acres</i>		<i>Bu./acre</i>				<i>Mil. bu.</i>				<i>\$/bu.</i>
1997/98	--	5.1	2.8	59.5	167	332	185	72	2	258	74	1.60
1998/99	--	4.9	2.8	60.2	166	348	196	69	2	266	81	1.10
1999/00	--	4.7	2.5	59.6	146	326	180	68	2	250	76	1.12
2000/01*	--	4.5	2.3	64.2	149	331	189	68	2	259	73	1.10
2001/02*	--	4.4	2.2	62.0	135	308	165	68	2	235	73	1.05-1.45
Soybeans <sup>7</sup>												
		<i>Mil. acres</i>		<i>Bu./acre</i>				<i>Mil. bu.</i>				<i>\$/bu.</i>
1997/98	--	70.0	69.1	38.9	2,689	2,826	156	1,597	873	2,626	200	6.47
1998/99	--	72.0	70.4	38.9	2,741	2,944	201	1,590	805	2,595	348	4.93
1999/00	--	73.7	72.4	36.6	2,654	3,006	165	1,578	973	2,716	290	4.63
2000/01*	--	74.5	72.7	38.1	2,770	3,063	188	1,630	995	2,813	250	4.55
2001/02*	--	75.2	74.1	38.7	2,867	3,121	171	1,655	995	2,821	300	4.35-5.35
Soybean oil												
								<i>Mil. lbs.</i>				<i>¢/lb.</i>
1997/98	--	--	--	--	18,143	19,723	--	15,262	3,079	18,341	1,382	25.84
1998/99	--	--	--	--	18,081	19,546	--	15,655	2,372	18,027	1,520	19.90
1999/00	--	--	--	--	17,825	19,427	--	16,056	1,376	17,432	1,995	15.60
2000/01*	--	--	--	--	18,315	20,395	--	16,450	1,500	17,950	2,445	14.25
2001/02*	--	--	--	--	18,675	21,205	--	16,800	2,500	19,300	1,905	16.50-19.50
Soybean meal												
								<i>1,000 tons</i>				<i>\$/ton<sup>8</sup></i>
1997/98	--	--	--	--	38,176	38,443	--	28,895	9,329	38,225	218	185.5
1998/99	--	--	--	--	37,792	38,109	--	30,657	7,122	37,779	330	138.5
1999/00	--	--	--	--	37,591	37,970	--	30,346	7,331	37,678	293	167.7
2000/01*	--	--	--	--	39,142	39,475	--	31,450	7,750	39,200	275	175.0
2001/02*	--	--	--	--	39,650	39,975	--	32,100	7,600	39,700	275	155-180

See footnotes at end of table, next page

**Table 17—Supply & Utilization (continued)**

	Area			Yield	Production	Total supply <sup>4</sup>	Feed & residual	Other domestic use	Exports	Total use	Ending stocks	Farm price <sup>5</sup>
	Set-aside <sup>3</sup>	Planted	Harvested									
	<i>Mil. acres</i>		<i>Lb./acre</i>									
Cotton <sup>9</sup>												
1997/98	1.7	14.7	12.9	705	18.9	22.0	--	11.1	6.9	18.0	4.0	69.3
1998/99	0.3	13.9	13.4	673	18.8	22.8	--	11.3	7.5	18.8	3.9	65.2
1999/00	--	13.4	10.7	625	13.9	18.2	--	10.4	4.3	14.7	3.9	60.2
2000/01*	--	14.9	13.4	607	17.0	21.0	--	10.2	6.7	17.0	3.9	45.0
2001/02*	--	16.2	14.3	670	20.0	25.6	--	9.3	9.0	18.3	5.0	

-- = Not available or not applicable. \*August 10, 2001 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, 0/92 & 50/92 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. Average for August 2000-February 2001. USDA is prohibited by law from publishing cotton price projections. *Information contact: Mae Dean Johnson (202) 694-5299*

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

	Marketing year <sup>1</sup>			2000		2001				
	1998/99	1999/00	2000/01	Jul	Feb	Mar	Apr	May	Jun	Jul
Wheat, no. 1 HRW, Kansas City (\$/bu.) <sup>2</sup>	3.08	2.87	3.30	2.97	3.35	3.45	3.41	3.49	3.32	3.20
Wheat, DNS, Minneapolis (\$/bu.) <sup>3</sup>	3.83	3.65	3.62	3.50	3.68	3.63	3.73	3.88	3.81	3.72
Rice, S.W. La. (\$/cwt) <sup>4</sup>	16.79	12.99	12.46	11.53	12.75	12.72	12.60	12.47	12.38	12.38
Corn, no. 2 yellow, 30-day, Chicago (\$/bu.)	2.06	1.97	--	1.65	1.99	2.07	2.04	1.96	1.89	2.07
Sorghum, no. 2 yellow, Kansas City (\$/cwt)	3.29	3.10	--	2.71	3.63	3.56	3.56	3.56	3.56	3.59
Barley, feed, Duluth (\$/bu.)	--	--	1.47	--	1.51	1.50	1.50	1.50	1.50	1.49
Barley, malting Minneapolis (\$/bu.)	--	--	2.37	--	2.40	2.37	2.35	2.41	--	--
U.S. cotton price, SLM, 1-1/16 in. (¢/lb.) <sup>5</sup>	60.12	60.20	--	55.13	54.10	47.22	42.19	40.02	37.38	37.48
Northern Europe prices cotton index (¢/lb.) <sup>6</sup>	58.97	52.85	--	58.40	60.88	54.75	51.24	49.76	47.33	45.55
U.S. M 1-3/32 in. (¢/lb.) <sup>7</sup>	74.08	59.64	--	--	68.63	61.25	55.50	52.90	51.44	50.56
Soybeans, no. 1 yellow, 15-day <sup>8</sup> Central Illinois (\$/bu)	4.85	4.76	--	4.65	4.49	4.42	4.29	4.47	4.69	5.09
Soybean oil, crude, Decatur (¢/lb.)	19.90	20.50	--	14.69	12.38	13.90	12.38	13.53	12.38	16.49
Soybean meal, 48% protein, Decatur (\$/ton)	138.50	165.45	--	168.45	165.35	162.53	166.08	171.48	183.35	184.52

-- = Not available. 1. Beginning June 1 for wheat and barley; Aug. 1 for rice and cotton; Sept. 1 for corn, sorghum, and soybeans; Oct. 1 for soybean meal and oil. 2. Ordinary protein. 3. 14 percent protein. 4. Long grain, milled basis. 5. Average spot market. 6. Liverpool Cotlook "A" Index; average of 5 lowest prices of 13 selected growths. 7. Cotton, Memphis territory growths. 8. Soybean 30-day price discontinued. *Information contact: Mae Dean Johnson (202) 694-5299*

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

	Marketing assistance loan rate	Marketing loan benefit <sup>1</sup>	Flexibility contract payment rate	Acres under contract	Contract payment yields	Participation rate <sup>2</sup>
	<i>\$/bu.</i>			<i>Mill. acres</i>	<i>Bu./acre</i>	<i>Percent</i>
Wheat						
1996/97	2.58	--	0.874	76.7	34.70	99
1997/98	2.58	0.01	0.631	76.7	34.70	--
1998/99	2.58	0.19	0.663	78.9	34.50	--
1999/2000	2.58	0.41	0.637	79.0	34.50	--
2000/2001 <sup>3</sup>	2.58	--	0.588	78.9	34.50	--
	<i>\$/cwt</i>				<i>Cwt/acre</i>	
Rice						
1996/97	6.50	--	2.766	4.2	48.27	99
1997/98	6.50	0.00	2.710	4.2	48.17	--
1998/99	6.50	0.08	2.921	4.2	48.17	--
1999/2000	6.50	1.94	2.820	4.2	48.15	--
2000/2001 <sup>3</sup>	6.50	--	2.600	4.1	48.15	--
	<i>\$/bu.</i>				<i>Bu./acre</i>	
Corn						
1996/97	1.89	--	0.251	80.7	102.90	98
1997/98	1.89	0.01	0.486	80.9	102.80	--
1998/99	1.89	0.14	0.377	82.0	102.60	--
1999/2000	1.89	0.26	0.363	81.9	102.60	--
2000/2001 <sup>3</sup>	1.89	--	0.334	81.9	102.60	--
	<i>\$/bu.</i>				<i>Bu./acre</i>	
Sorghum						
1996/97	1.81	--	0.323	13.1	57.30	99
1997/98	1.76	0.00	0.544	13.1	57.30	--
1998/99	1.74	0.12	0.452	13.6	56.90	--
1999/2000	1.74	0.26	0.435	13.7	56.90	--
2000/2001 <sup>3</sup>	1.71	--	0.400	13.6	57.00	--
	<i>\$/bu.</i>				<i>Bu./acre</i>	
Barley						
1996/97	1.55	--	0.332	10.5	47.30	99
1997/98	1.57	0.01	0.277	10.5	47.20	--
1998/99	1.56	0.23	0.284	11.2	46.70	--
1999/2000	1.59	0.14	0.271	11.2	46.60	--
2000/2001 <sup>3</sup>	1.62	--	0.251	11.2	46.60	--
	<i>\$/bu.</i>				<i>Bu./acre</i>	
Oats						
1996/97	1.03	--	0.033	6.2	50.80	97
1997/98	1.11	0.00	0.031	6.2	50.80	--
1998/99	1.11	0.18	0.031	6.5	50.70	--
1999/2000	1.13	0.19	0.030	6.5	50.60	--
2000/2001 <sup>3</sup>	1.16	--	0.028	6.5	50.60	--
	<i>\$/bu.</i>				<i>Bu./acre</i>	
Soybeans <sup>4</sup>						
1996/97	4.97	--	--	--	--	--
1997/98	5.26	0.01	--	--	--	--
1998/99	5.26	0.45	--	--	--	--
1999/2000	5.26	0.88	--	--	--	--
2000/2001 <sup>3</sup>	5.26	--	--	--	--	--
	<i>¢/lb.</i>				<i>Lb./acre</i>	
Upland cotton						
1996/97	51.92	--	8.882	16.2	610.00	99
1997/98	51.92	0.00	7.625	16.2	608.00	--
1998/99	51.92	0.09	8.173	16.4	604.00	--
1999/2000	51.92	0.20	7.880	16.4	604.00	--
2000/2001 <sup>3</sup>	51.92	--	7.330	16.3	604.00	--

-- = Not available. 1. Weighted average, based on portions of crop receiving marketing loan gains, loan deficiency payments, and no benefits (calculated by Economic Research Service). 2. Participation rate is the percent of eligible acres that entered production flexibility contracts. 3. Estimated payment rates and acres under contract. 4. There are no flexibility contract payments for soybeans.

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

**Table 20—Fruit**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001
<b>Citrus</b> <sup>1</sup>										
Production (1,000 tons)	12,452	15,274	14,561	15,799	15,712	17,270	17,770	13,633	17,288	16,300
Per capita consumpt. (lb.) <sup>2</sup>	24.4	26.0	25.0	24.1	25.0	27.0	27.1	20.7	25.6	--
<b>Noncitrus</b> <sup>3</sup>										
Production (1,000 tons)	17,124	16,554	17,339	16,348	16,103	18,382	16,545	17,316	18,818	--
Per capita consumpt. (lb.) <sup>2</sup>	73.7	73.8	75.6	73.6	73.9	73.1	76.4	81.3	79.0	--
	2000			2001						
	Jul	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
<b>Grower prices</b>										
Apples (¢/pound) <sup>4</sup>	16.2	18.5	18.1	16.1	15.2	14.2	15.8	15.4	15.3	14.4
Pears (¢/pound) <sup>4</sup>	11.50	16.15	15.05	17.00	12.55	13.70	15.20	18.20	19.95	28.5
Oranges (\$/box) <sup>5</sup>	3.35	3.16	2.94	2.82	3.29	4.13	5.02	4.80	4.30	6.2
Grapefruit (\$/box) <sup>5</sup>	6.02	3.09	2.20	1.87	2.07	1.53	1.36	1.94	5.27	8.8
<b>Stocks, ending</b>										
Fresh apples (mil. lb.)	412	5,633	5,003	4,102	3,408	2,603	1,891	1,330	898	490
Fresh pears (mil. lb.)	40	426	339	250	181	113	55	18	0	19
Frozen fruits (mil. lb.)	1,300	1,602	1,569	1,471	1,372	1,270	1,122	1,000	1,046	1,229
Frozen conc. orange juice (mil. single-strength gallons)	752	491	564	657	745	708	768	842	831	782

-- = 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**

	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
<b>Production</b> <sup>1</sup>										
Total vegetables (1,000 cwt)	565,754	689,070	692,022	785,798	751,715	765,645	763,532	732,803	834,654	798,773
Fresh (1,000 cwt) <sup>2,4</sup>	242,733	389,597	390,528	416,173	397,125	412,010	436,459	420,012	450,715	454,990
Processed (tons) <sup>3,4</sup>	16,151,030	14,973,630	15,074,707	18,481,238	17,729,497	17,681,732	16,353,639	15,639,548	19,196,942	17,189,152
Mushrooms (1,000 lbs) <sup>5</sup>	746,832	776,357	750,799	782,340	777,870	776,677	808,678	847,760	854,394	--
Potatoes (1,000 cwt)	417,622	425,367	430,349	469,425	445,099	499,254	467,091	475,771	478,216	516,083
Sweet potatoes (1,000 cwt)	11,203	12,005	11,027	13,380	12,821	13,216	13,327	12,382	12,234	13,794
Dry edible beans (1,000 cwt)	33,765	22,615	21,862	28,950	30,689	27,912	29,370	30,418	33,085	26,440
	2000			2001						
	Jul	Nov	Dec	Jan	Feb	Mar	Apr	May	Jun	Jul
<b>Shipments (1,000 cwt)</b>										
Fresh	20,816	21,417	19,925	14,775	23,799	20,494	23,645	37,308	30,270	20,761
Iceberg lettuce	3,518	3,193	3,150	2,168	3,517	3,270	3,017	4,626	3,436	3,060
Tomatoes, all	3,422	3,195	3,699	2,602	4,892	3,495	4,294	4,189	3,240	2,271
Dry-bulb onions	3,424	4,023	3,716	2,628	3,774	2,983	3,819	4,563	3,212	3,448
Others <sup>6</sup>	10,452	11,006	9,360	7,377	11,616	10,746	12,515	23,930	20,382	11,982
Potatoes, all	11,543	14,159	14,897	10,001	15,572	14,624	18,926	21,139	12,947	9,646
Sweet potatoes	178	815	437	183	327	242	310	239	189	161

-- = 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		1999		2000				2001	
	1998	1999	2000	IV	I	II	III	IV	I	II
<b>Sugar</b>										
Production <sup>1</sup>	7,891	9,083	8,912	4,667	2,681	922	772	4,537	2,660	--
Deliveries <sup>1</sup>	9,851	10,167	10,091	2,609	2,348	2,513	2,641	2,589	2,399	--
Stocks, ending <sup>1</sup>	3,423	3,855	4,338	3,855	4,551	3,498	2,219	4,338	5,122	--
<b>Coffee</b>										
Composite green price <sup>2</sup>										
N.Y. (¢/lb.)	114.43	88.49	71.94	91.79	85.66	75.78	66.73	59.63	54.95	51.97
	Annual		2000							
	1997	1998	1999	Mar	Apr	May	Jun	Jul	Aug	Sep
<b>Tobacco</b>										
Avg. price to grower <sup>3</sup>										
Flue-cured (\$/lb.)	1.73	1.76	1.74	--	--	--	--	--	1.69	1.82
Burley (\$/lb.)	1.91	1.90	1.90	1.77	--	--	--	--	--	--
Domestic taxable removals										
Cigarettes (bil.)	471.4	457.9	432.6	38.8	29.3	40.8	39.6	34.2	40.8	33.1
Large cigars (mil.) <sup>4</sup>	3,552	3,721	3,844	333.9	314.0	345.7	365.8	319.6	352.7	314.4

-- = 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 and coffee, Fannye Jolly (202) 694-5249; tobacco, Tom Capehart (202) 694-5245



## World Agriculture

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

	1992/93	1993/94	1994/95	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01 F	2001/02 F
<i>Million units</i>										
<b>Wheat</b>										
Area (hectares)	222.9	221.9	214.5	218.7	230.0	228.0	224.7	216.9	217.5	215.0
Production (metric tons)	562.1	558.6	524.0	538.4	581.9	609.2	588.8	586.8	578.8	567.6
Exports (metric tons) <sup>1</sup>	113.1	101.6	101.5	99.1	100.1	104.0	101.9	112.4	102.8	106.2
Consumption (metric tons) <sup>2</sup>	549.8	556.2	546.9	548.4	575.8	583.7	585.2	593.5	589.0	594.5
Ending stocks (metric tons) <sup>3</sup>	170.0	172.4	149.4	139.5	145.6	171.1	174.6	167.9	157.7	130.9
<b>Coarse grains</b>										
Area (hectares)	325.9	318.7	324.0	313.9	322.7	311.2	307.3	301.1	296.2	300.6
Production (metric tons)	871.6	798.9	871.3	802.9	908.5	884.1	889.7	877.4	857.2	858.1
Exports (metric tons) <sup>1</sup>	93.4	86.3	98.4	87.9	91.2	85.6	96.4	104.2	100.7	98.5
Consumption (metric tons) <sup>2</sup>	844.9	838.6	859.6	841.8	875.0	873.5	870.5	882.7	873.2	891.6
Ending stocks (metric tons) <sup>3</sup>	218.7	179.0	190.6	151.8	185.3	195.9	215.1	209.8	193.8	160.2
<b>Rice, milled</b>										
Area (hectares)	146.4	144.9	147.4	148.1	149.7	151.3	152.4	155.0	151.8	151.6
Production (metric tons)	355.7	355.4	364.5	371.4	380.2	386.8	394.0	408.4	395.6	395.7
Exports (metric tons) <sup>1</sup>	14.9	16.5	21.0	19.7	18.9	27.7	24.9	22.9	22.3	22.1
Consumption (metric tons) <sup>2</sup>	358.7	359.3	366.1	372.1	379.0	379.5	387.3	398.5	401.0	405.9
Ending stocks (metric tons) <sup>3</sup>	123.9	120.0	118.4	117.8	119.0	126.3	133.0	142.9	137.6	127.4
<b>Total grains</b>										
Area (hectares)	695.2	685.5	685.9	680.7	702.4	690.5	684.4	673.0	665.5	667.2
Production (metric tons)	1,789.4	1,712.9	1,759.8	1,712.7	1,870.6	1,880.1	1,872.5	1,872.6	1,831.6	1,821.4
Exports (metric tons) <sup>1</sup>	221.4	204.4	220.9	206.7	210.2	217.3	223.2	239.5	225.8	226.8
Consumption (metric tons) <sup>2</sup>	1,753.4	1,754.1	1,772.6	1,762.3	1,829.8	1,836.7	1,843.0	1,874.7	1,863.2	1,892.0
Ending stocks (metric tons) <sup>3</sup>	512.6	471.4	458.4	409.1	449.9	493.3	522.7	520.6	489.1	418.5
<b>Oilseeds</b>										
Crush (metric tons)	184.4	190.1	208.1	217.5	216.7	226.3	240.6	247.6	251.8	260.8
Production (metric tons)	227.5	229.4	261.9	258.9	261.4	286.5	294.7	303.0	309.7	318.8
Exports (metric tons)	38.2	38.7	44.1	44.3	49.6	54.0	54.9	64.2	68.2	68.9
Ending stocks (metric tons)	23.6	20.3	27.2	22.2	19.1	28.6	31.8	33.8	32.9	32.1
<b>Meals</b>										
Production (metric tons)	125.2	131.7	142.1	147.3	147.8	153.8	164.5	168.8	173.8	180.1
Exports (metric tons)	40.8	44.9	46.7	49.8	50.7	52.1	54.0	56.2	55.6	56.6
<b>Oils</b>										
Production (metric tons)	61.1	63.7	69.6	73.1	73.7	75.1	80.6	85.8	88.3	90.3
Exports (metric tons)	21.3	24.3	27.1	26.0	28.3	29.7	31.5	32.8	34.5	34.9
<b>Cotton</b>										
Area (hectares)	32.6	30.7	32.2	35.9	33.8	33.7	33.0	32.3	31.9	34.1
Production (bales)	82.5	77.1	86.0	93.1	89.6	91.8	85.0	87.3	88.0	94.6
Exports (bales)	25.5	26.8	28.4	27.3	28.8	26.7	23.7	27.3	26.2	28.5
Consumption (bales)	85.9	85.4	84.7	86.0	88.0	87.2	85.4	91.9	91.7	92.7
Ending stocks (bales)	34.7	26.8	29.8	36.7	40.1	43.8	44.9	41.2	37.8	40.0
	1992	1993	1994	1995	1996	1997	1998	1999	2000 E	2001 F
<b>Beef and Pork<sup>4</sup></b>										
Production (metric tons)	111.6	111.6	116.7	122.1	116.6	122.1	127.1	130.4	131.8	133.1
Consumption (metric tons)	109.9	110.6	115.7	120.7	114.1	119.7	124.6	128.4	129.8	131.3
Exports (metric tons) <sup>1</sup>	6.6	6.6	7.2	7.4	7.7	8.2	8.0	9.2	9.1	8.8
<b>Poultry<sup>4</sup></b>										
Production (metric tons)	38.0	40.5	43.2	47.5	50.4	52.7	53.5	56.5	58.0	59.6
Consumption (metric tons)	37.0	39.4	42.0	47.0	49.6	51.8	52.6	55.3	56.8	58.5
Exports (metric tons) <sup>1</sup>	2.4	2.8	3.6	4.5	5.1	5.6	5.7	6.0	6.6	6.8
<b>Dairy</b>										
Milk production (metric tons) <sup>5</sup>	--	--	--	--	364.4	365.6	368.4	372.0	375.9	376.3

-- = Not available. E = Estimated, F = forecast. 1. Excludes intra-EU trade but includes intra-FSU trade. 2. Where stocks data are not available, consumption includes stock changes. 3. Stocks data are based on differing marketing years and do not represent levels at a given date. Data not available for all countries.

4. Calendar year, selected countries. 5. Data prior to 1989 no longer comparable.

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

## U.S. Agricultural Trade

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

	Annual		2000		2001					
	1998	1999	2000	Jul	Feb	Mar	Apr	May	Jun	Jul
<b>Export commodities</b>										
Wheat, f.o.b. vessel, Gulf ports (\$/bu.)	3.44	3.04	3.17	3.12	3.55	3.59	3.58	3.69	3.50	3.40
Corn, f.o.b. vessel, Gulf ports (\$/bu.)	2.58	2.29	2.24	1.91	2.35	2.32	2.22	2.14	1.91	2.30
Grain sorghum, f.o.b. vessel, Gulf ports (\$/bu.)	2.49	2.14	2.23	1.72	2.52	2.47	2.39	2.44	2.36	2.39
Soybeans, f.o.b. vessel, Gulf ports (\$/bu.)	6.37	5.02	5.26	5.02	4.96	4.81	4.60	4.81	4.97	5.39
Soybean oil, Decatur (¢/lb.)	25.78	17.51	15.01	14.70	12.38	13.91	13.53	13.53	14.21	16.49
Soybean meal, Decatur (\$/ton)	162.74	141.52	174.69	163.38	166.08	156.31	158.48	165.14	172.60	184.43
Cotton, 7-market avg. spot (¢/lb.)	67.04	52.30	57.47	55.12	54.10	47.22	42.19	40.02	37.38	37.48
Tobacco, avg. price at auction (¢/lb.)	179.77	177.82	182.73	--	205.97	169.51	142.03	--	--	--
Rice, f.o.b., mill, Houston (\$/cwt)	18.95	16.99	14.84	14.53	15.00	15.00	15.00	15.00	15.00	15.00
Inedible tallow, Chicago (¢/lb.)	17.67	12.99	9.92	9.00	8.59	8.90	9.00	9.50	10.00	15.00
<b>Import commodities</b>										
Coffee, N.Y. spot (\$/lb.)	1.39	1.05	0.92	0.93	0.65	0.68	0.71	0.76	0.54	0.47
Rubber, N.Y. spot (¢/lb.)	40.57	36.66	37.72	36.65	35.66	34.78	34.50	34.80	35.00	34.80
Cocoa beans, N.Y. (\$/lb.)	0.72	0.47	0.36	0.38	0.49	0.48	0.46	0.47	0.42	0.42

-- = Not available. Information contact: Mae Dean Johnson (202) 694-5299.

**Table 25—Trade Balance**

	Fiscal Year			2000		2001				
	1999	2000 <sup>3</sup>	2001 P	Jun	Jan	Feb	Mar	Apr	May	Jun
\$ million										
<b>Exports</b>										
Agricultural	49,148	50,911	53,500	4,056	4,373	4,536	4,871	4,285	4,143	4,092
Nonagricultural	586,606	647,384	--	57,924	52,345	53,115	59,467	52,529	54,773	53,755
Total <sup>1</sup>	635,754	698,295	--	61,980	56,718	57,651	64,338	56,814	58,916	57,847
<b>Imports</b>										
Agricultural	37,310	38,923	39,000	3,299	3,407	3,063	3,453	3,417	3,346	3,245
Nonagricultural	938,948	1,132,257	--	100,106	97,096	87,820	99,049	92,292	92,832	92,103
Total <sup>2</sup>	976,258	1,171,180	--	103,405	100,503	90,883	102,502	95,709	96,178	95,348
<b>Trade balance</b>										
Agricultural	11,838	11,988	14,500	757	966	1,473	1,418	868	797	847
Nonagricultural	-352,342	-484,873	--	-42,182	-44,751	-34,705	-39,582	-39,763	-38,059	-38,348
Total	-340,504	-472,885	--	-41,425	-43,785	-33,232	-38,164	-38,895	-37,262	-37,501

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

**Table 26—Indexes of Real Trade-Weighted Dollar Exchange Rates<sup>1</sup>**

	Annual			2000			2001			
	1998	1999	2000	Jun	Jan	Feb	Mar	Apr	May	Jun
<i>1995 = 100</i>										
Total U.S. Trade	114.0	114.2	119.0	121.9	121.2	122.8	125.7	124.9	124.9	126.0
<b>U.S. markets</b>										
All agricultural trade	119.2	117.5	120.2	123.2	123.6	124.9	128.3	128.0	127.3	129.2
Bulk commodities	118.3	116.6	121.2	125.6	125.0	126.2	129.3	129.7	129.0	131.3
Corn	122.1	116.3	119.2	125.4	124.0	124.6	128.6	128.4	127.0	129.5
Cotton	113.6	112.4	118.3	122.2	122.2	123.8	126.7	128.2	127.0	128.7
Rice	111.5	112.5	117.8	121.5	119.3	122.6	125.1	125.1	125.2	126.3
Soybeans	121.8	119.4	127.3	129.3	129.5	130.8	133.5	134.3	134.1	137.2
Tobacco, raw	108.1	112.8	134.3	131.7	137.5	141.1	145.5	146.5	146.8	150.4
Wheat	125.6	124.6	120.2	129.9	123.9	124.2	126.3	126.9	126.9	128.3
High-value products	119.9	118.3	119.4	121.2	122.5	123.9	127.4	126.6	125.9	127.5
Processed intermediates	115.9	115.1	120.2	124.3	122.4	124.1	127.1	126.8	126.5	128.2
Soymeal	106.6	107.2	117.0	143.0	114.1	115.2	117.1	116.8	116.6	117.1
Soyoil	89.1	98.1	105.2	105.9	106.8	108.1	109.1	109.3	110.1	110.4
Produce and horticulture	118.4	117.3	122.0	121.9	125.1	126.8	130.5	129.5	129.4	130.8
Fruits	120.4	116.8	119.2	119.7	123.5	124.9	128.9	127.8	127.0	128.5
Vegetables	115.9	113.6	114.4	114.0	117.5	119.3	123.6	120.8	120.3	119.8
High-value processed	123.9	121.4	117.8	118.5	121.6	122.8	126.7	125.5	124.2	125.8
Fruit juices	122.9	120.1	123.4	122.0	127.6	129.1	133.7	132.3	131.7	133.1
Poultry	139.2	155.0	116.9	117.4	115.1	115.7	116.2	114.9	114.3	114.0
Red meats	135.4	124.0	121.7	119.9	129.9	131.0	138.2	136.8	133.7	137.4
<b>U.S. competitors</b>										
All agricultural trade	115.7	122.1	135.5	133.6	136.2	138.4	140.5	141.7	143.4	145.7
Bulk commodities	122.2	130.4	134.0	133.0	135.7	137.7	139.7	140.8	141.6	142.6
Corn	113.1	120.5	134.0	132.2	135.1	136.5	137.7	138.7	140.2	142.0
Cotton	128.1	130.7	133.4	119.8	125.2	128.2	130.1	129.4	130.3	131.1
Rice	118.9	120.5	131.1	130.7	136.0	137.7	140.9	142.5	143.4	145.0
Soybeans	106.4	132.1	134.6	134.7	138.3	143.6	143.7	146.4	150.1	153.1
Tobacco, raw	115.3	127.3	121.8	118.7	119.7	124.8	124.7	125.5	126.1	126.3
Wheat	115.6	118.5	129.8	127.0	131.5	134.2	137.9	136.6	137.6	138.5
High-value products	118.4	125.2	139.1	136.6	139.1	141.4	143.5	144.9	146.8	149.5
Processed intermediates	119.9	127.1	138.2	136.3	139.3	141.7	144.1	145.4	147.0	149.3
Soymeal	107.8	132.0	136.9	136.2	140.6	145.6	145.8	149.1	153.1	156.3
Soyoil	107.1	123.3	130.0	129.4	133.5	137.0	137.7	139.6	142.3	144.7
Produce and horticulture	114.2	120.0	133.3	131.4	132.6	134.1	135.5	136.9	138.6	140.7
Fruits	121.0	123.5	135.9	136.0	137.9	139.5	142.4	144.0	144.9	146.3
Vegetables	102.4	109.2	121.7	120.2	121.7	123.3	124.4	125.3	126.6	128.6
High-value processed	118.7	125.7	141.3	138.4	140.9	143.4	145.6	147.1	149.2	152.3
Fruit juices	116.6	122.1	137.0	136.0	136.7	139.0	141.5	142.6	144.5	146.4
Poultry	109.5	121.6	134.9	133.4	136.3	139.0	140.8	142.7	145.0	147.2
Red meats	116.3	122.3	137.8	134.4	138.9	141.9	145.1	145.4	147.3	150.2
<b>U.S. suppliers</b>										
All agricultural trade	111.4	113.5	120.0	120.8	121.1	123.1	125.1	125.2	125.4	126.0
High-value products	108.8	111.6	118.2	118.3	119.1	120.7	122.7	122.2	122.7	123.2
Processed intermediates	112.3	114.8	121.4	120.7	123.2	124.9	127.4	126.9	127.4	127.9
Grains and feeds	112.5	113.0	117.9	117.6	119.7	121.7	125.0	123.2	123.6	123.1
Vegetable oils	123.1	120.9	130.1	129.0	132.5	134.4	137.2	138.5	138.7	140.3
Produce and horticulture	98.4	101.1	103.7	106.2	103.2	103.6	103.8	103.3	103.2	102.9
Fruits	96.5	97.2	98.0	100.7	99.3	100.2	101.1	100.4	101.8	100.9
Vegetables	88.7	84.1	81.3	84.2	81.1	81.6	81.1	79.2	78.2	77.6
High-value processed	111.8	114.9	123.7	123.0	124.8	126.9	129.5	129.0	129.9	130.9
Cocoa and products	120.3	126.1	137.6	138.1	137.3	139.3	141.8	143.2	144.1	144.7
Coffee and products	101.6	111.6	116.4	123.1	116.1	117.4	117.5	118.6	118.7	119.0
Dairy products	117.2	122.5	137.9	134.5	137.6	140.0	143.3	143.7	145.1	147.9
Fruit juices	109.2	122.3	127.8	128.0	130.3	133.8	135.1	136.8	139.3	140.7
Meats	102.1	105.6	115.4	120.1	123.3	125.7	129.4	127.5	127.9	128.2

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

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

Source: Nominal exchange rates are obtained from the IMF International Financial Statistics. Exchange rates for the EU-11 are obtained from the Board of Governors of the Federal Reserve System. Full historical series are available back to January 1970 at

<http://usda.mannlib.cornell.edu/data-sets/international/88021/>

1. A major revision to the weighting scheme and commodity definitions was completed in May 2000. This significantly altered the series from previous versions.

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

Table 27—U.S. Agricultural Exports &amp; Imports

	Fiscal Year			Jun		Fiscal Year			Jun	
	1999	2000	2001 F	2000	2001	1999	2000	2001 F	2000	2001
	1,000 units					\$ million				
Exports										
Animals, live	--	--	--	--	--	476	608	--	20	22
Meats and preps., excl. poultry (mt)	2,089	2,457	1,800	201	206	4,500	5,454	4,900	458	435
Dairy products	--	--	--	--	--	914	996	1,000	79	93
Poultry meats (mt)	2,402	2,845	3,000	273	272	1,750	1,961	2,100	185	216
Fats, oils, and greases (mt)	1,387	1,206	1,100	94	77	544	421	--	31	24
Hides and skins, incl. furskins	--	--	--	--	--	1,108	1,479	1,900	154	200
Cattle hides, whole (no.)	17,845	21,837	--	2,229	2,168	844	1,166	--	118	153
Mink pelts (no.)	4,172	4,352	--	624	585	98	111	--	17	17
Grains and feeds (mt) <sup>2</sup>	104,576	104,009	--	8,250	7,512	14,272	13,788	14,200	1,085	1,037
Wheat (mt) <sup>3</sup>	28,806	27,779	27,800	2,405	1,587	3,648	3,378	3,800	298	214
Wheat flour (mt)	958	825	700	72	28	177	132	--	14	9
Rice (mt)	3,076	3,299	3,000	251	168	1,010	903	700	51	44
Feed grains, incl. products (mt) <sup>4</sup>	58,398	57,195	53,800	3,994	4,508	5,821	5,483	5,200	408	423
Feeds and fodders (mt)	11,800	13,386	13,700	1,395	1,107	2,252	2,496	2,800	199	226
Other grain products (mt)	1,538	1,525	--	134	114	1,363	1,397	--	115	121
Fruits, nuts, and preps. (mt)	3,439	3,736	--	332	302	3,805	3,871	4,900	367	347
Fruit juices, incl. froz. (1,000 hectoliters)	12,317	11,902	--	1,092	976	735	716	--	67	61
Vegetables and preps.	--	--	--	--	--	4,245	4,443	3,100	384	387
Tobacco, unmanufactured (mt)	205	180	200	13	11	1,376	1,229	1,100	88	72
Cotton, excl. linters (mt) <sup>5</sup>	884	1,474	1,500	111	170	1,309	1,809	2,000	148	202
Seeds (mt)	579	730	--	36	62	800	787	800	36	38
Sugar, cane or beet (mt)	158	115	--	6	14	56	40	--	3	4
Oilseeds and products (mt)	33,597	36,055	36,800	1,940	1,802	8,638	8,386	8,800	495	460
Oilseeds (mt)	--	--	--	--	--	--	--	--	--	--
Soybeans (mt)	22,974	26,038	26,800	1,251	1,076	4,748	5,070	5,100	256	207
Protein meal (mt)	6,726	6,870	--	454	498	1,101	1,259	--	88	93
Vegetable oils (mt)	2,669	2,130	--	166	161	1,846	1,346	--	103	92
Essential oils (mt)	47	53	--	5	5	507	593	--	57	92
Other	--	--	--	--	--	4,112	4,330	--	398	402
Total	--	--	--	--	--	49,148	50,911	53,500	4,056	4,092
Imports										
Animals, live	--	--	--	--	--	1,411	1,737	2,100	123	146
Meats and preps., excl. poultry	1,403	1,555	1,600	140	143	3,108	3,724	4,100	346	387
Beef and veal (mt)	943	1,027	--	96	98	2,047	2,405	--	233	259
Pork (mt)	337	402	--	33	32	721	958	--	83	90
Dairy products	--	--	--	--	--	1,572	1,635	1,600	149	179
Poultry and products	--	--	--	--	--	201	288	--	36	26
Fats, oils, and greases (mt)	85	107	--	8	10	56	71	--	5	5
Hides and skins, incl. furskins (mt)	--	--	--	--	--	146	160	--	12	12
Wool, unmanufactured (mt)	29	25	--	1	1	75	66	--	4	4
Grains and feeds	--	--	--	--	--	2,943	3,058	3,200	261	252
Fruits, nuts, and preps., excl. juices (mt) <sup>6</sup>	8,171	8,366	8,200	627	628	4,619	4,546	5,200	372	424
Bananas and plantains (mt)	4,418	4,396	4,100	344	337	1,212	1,128	1,200	103	99
Fruit juices (1,000 hectoliters)	31,655	32,199	27,100	2,546	2,648	772	783	--	69	58
Vegetables and preps.	--	--	--	--	--	4,527	4,657	5,100	357	381
Tobacco, unmanufactured (mt)	217	220	200	34	20	742	651	700	99	68
Cotton, unmanufactured (mt)	144	34	--	3	4	150	28	--	2	3
Seeds (mt)	357	448	--	13	14	457	493	--	28	24
Nursery stock and cut flowers	--	--	--	--	--	1,076	1,165	1,200	69	64
Sugar, cane or beet (mt)	1,692	1,379	--	101	61	606	493	--	30	25
Oilseeds and products (mt)	3,767	4,069	4,100	397	376	1,899	1,873	1,800	177	136
Oilseeds (mt)	1,000	1,103	--	139	138	326	310	--	42	26
Protein meal (mt)	1,131	1,194	--	109	81	147	150	--	14	11
Vegetable oils (mt)	1,637	1,772	--	148	157	1,427	1,413	--	121	98
Beverages, excl. fruit juices (1,000 hectoliters)	--	--	--	--	--	4,258	4,702	--	440	466
Coffee, tea, cocoa, spices (mt)	2,520	2,841	--	224	199	5,306	5,218	--	416	320
Coffee, incl. products (mt)	1,294	1,411	1,200	119	101	2,967	2,905	1,800	247	152
Cocoa beans and products (mt)	865	1,046	900	67	61	1,531	1,466	1,400	98	95
Rubber and allied gums (mt)	1,148	1,249	1,100	122	66	739	841	800	85	41
Other	--	--	--	--	--	2,646	2,735	--	220	222
Total	--	--	--	--	--	37,310	38,923	39,000	3,299	3,245

F = Forecast. -- = Not available. Projections are fiscal years (Oct.1 through Sept. 30) and are from Outlook for U.S. Agricultural Exports. 1999 and 2000 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			2000		2001				
	1999	2000	2001 F	Jun	Jan	Feb	Mar	Apr	May	Jun
	\$ million									
<b>Region &amp; country</b>										
<b>Western Europe</b>	7,528	6,712	6,600	424	626	718	574	546	460	413
European Union <sup>1</sup>	6,958	6,373	6,200	409	605	665	528	470	397	395
Belgium-Luxembourg	602	538	--	37	65	46	63	52	40	32
France	377	348	--	18	26	49	29	24	20	25
Germany	1,057	947	--	40	91	97	73	76	72	49
Italy	574	560	--	53	37	68	42	46	27	31
Netherlands	1,587	1,459	--	68	163	162	113	98	75	98
United Kingdom	1,122	1,033	--	75	84	80	87	84	84	76
Portugal	131	145	--	4	22	18	8	7	11	5
Spain, incl. Canary Islands	784	664	--	42	55	82	49	24	26	21
Other Western Europe	570	340	400	15	21	53	46	76	63	28
Switzerland	455	250	--	9	15	47	41	67	54	22
<b>Eastern Europe</b>	190	167	200	17	16	21	24	23	13	11
Poland	73	47	--	5	6	8	12	13	5	4
Former Yugoslavia	47	67	--	8	4	6	5	1	1	2
Romania	18	12	--	1	1	3	1	3	3	1
<b>Newly Independent States</b>	881	937	800	56	85	61	47	82	113	113
Russia	532	674	600	45	67	45	40	69	90	86
<b>Asia</b>	20,441	22,051	23,100	1,856	1,905	1,967	2,297	1,790	1,735	1,721
West Asia (Mideast)	1,978	2,363	2,300	184	156	187	177	156	140	180
Turkey	448	701	600	51	34	30	55	49	39	70
Iraq	9	8	--	--	--	3	2	2	--	--
Israel, incl. Gaza and W. Bank	417	458	--	47	43	36	40	38	28	24
Saudi Arabia	468	482	500	38	40	40	33	12	37	36
South Asia	499	416	400	34	28	32	25	36	62	68
Bangladesh	165	82	--	4	6	13	7	7	12	11
India	189	186	--	19	18	9	13	17	32	35
Pakistan	89	93	--	5	2	2	5	5	11	19
China	1,011	1,474	2,300	141	177	252	396	119	73	86
Japan	8,933	9,353	9,100	816	840	737	843	771	812	723
Southeast Asia	2,218	2,602	3,100	194	274	291	296	212	227	224
Indonesia	499	681	900	44	92	89	89	54	86	88
Philippines	735	866	1,000	73	85	72	79	62	54	50
Other East Asia	5,803	5,844	5,900	487	430	468	559	496	422	439
Korea, Rep.	2,482	2,569	2,600	203	205	209	247	208	180	203
Hong Kong	1,264	1,255	1,300	117	84	95	115	100	91	92
Taiwan	2,047	2,011	2,000	167	141	163	197	189	151	144
<b>Africa</b>	2,160	2,272	2,500	206	166	208	167	142	89	160
North Africa	1,468	1,565	1,700	136	123	161	112	95	49	83
Morocco	162	141	--	11	7	6	8	6	2	8
Algeria	223	255	--	27	27	31	13	16	11	13
Egypt	1,002	1,094	1,100	97	74	112	82	69	34	52
Sub-Saharan	693	707	800	70	43	47	55	48	40	77
Nigeria	176	160	--	12	14	12	20	15	16	36
S. Africa	165	164	--	12	9	7	10	7	8	11
<b>Latin America and Caribbean</b>	10,495	10,639	11,500	770	889	919	1,037	987	961	904
Brazil	366	253	200	18	17	11	16	20	17	18
Caribbean Islands	1,453	1,457	--	121	105	110	124	125	111	111
Central America	1,209	1,129	--	80	84	93	106	113	92	93
Colombia	468	427	--	42	31	32	36	51	33	44
Mexico	5,672	6,329	7,400	439	574	599	681	587	618	551
Peru	347	201	--	13	9	16	11	19	19	16
Venezuela	458	404	400	27	30	24	23	33	38	45
<b>Canada</b>	6,951	7,520	8,000	671	656	599	680	669	723	724
<b>Oceania</b>	502	490	500	39	31	43	42	38	39	36
<b>Total</b>	49,148	50,911	53,500	4,056	4,373	4,536	4,871	4,285	4,143	4,092

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. NOTE: Adjusted for transshipments through Canada for 1998 and 1999 through December 1999, but transshipments are not distributed by country as previously for 2000 and 2001, but are only included in total. Information contact: Mary Fant (202) 694-5272

## Farm Income

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

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001F
	\$ billion									
Final crop output	89.0	82.6	100.3	95.7	115.5	112.3	101.5	93.2	95.3	96.9
Food grains	8.5	8.3	9.5	10.4	10.8	10.4	8.8	7.0	6.6	6.8
Feed crops	20.1	20.2	20.3	24.5	27.3	27.1	22.7	19.6	20.0	20.9
Cotton	5.2	5.3	6.7	6.9	7.0	6.3	6.1	4.7	4.6	4.4
Oil crops	13.3	13.2	14.7	15.5	16.3	19.7	17.4	13.6	13.9	14.5
Tobacco	3.0	2.9	2.7	2.5	2.8	2.9	2.8	2.3	2.3	1.8
Fruits and tree nuts	10.2	10.3	10.3	11.1	11.9	13.1	11.6	12.3	12.7	13.4
Vegetables	11.8	13.7	14.1	15.0	14.5	14.7	15.2	15.2	15.9	15.9
All other crops	13.7	13.7	14.7	15.0	15.8	16.9	17.2	17.9	18.2	18.6
Home consumption	0.1	0.2	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
Value of inventory adjustment <sup>1</sup>	3.2	-5.3	7.2	-5.3	9.0	1.0	-0.3	0.4	1.0	0.4
Final animal output	87.2	92.1	89.8	87.8	92.1	96.5	94.2	95.3	99.3	109.0
Meat animals	47.7	51.0	46.7	44.9	44.2	49.7	43.3	45.6	53.0	55.6
Dairy products	19.7	19.3	20.0	19.9	22.8	20.9	24.1	23.2	20.6	25.3
Poultry and eggs	15.5	17.4	18.5	19.1	22.5	22.3	22.9	22.9	21.8	23.6
Miscellaneous livestock	2.7	3.0	3.2	3.4	3.6	3.6	3.7	3.8	4.1	4.1
Home consumption	0.5	0.4	0.4	0.4	0.3	0.4	0.3	0.4	0.4	0.4
Value of inventory adjustment <sup>1</sup>	1.0	1.1	1.1	0.2	-1.1	-0.4	-0.3	-0.6	-0.6	0.0
Services and forestry	15.2	17.0	18.1	19.9	20.8	22.2	23.7	25.4	24.0	24.2
Machine hire and customwork	1.8	1.9	2.1	1.9	2.2	2.4	2.2	2.0	2.2	2.3
Forest products sold	2.2	2.5	2.6	2.8	2.7	2.9	3.1	2.7	2.8	2.8
Other farm income	4.1	4.6	4.3	5.8	6.2	6.9	8.7	10.2	8.7	8.6
Gross imputed rental value of farm dwellings	7.2	8.1	9.0	9.4	9.8	10.1	9.8	10.4	10.4	10.5
<b>Final agricultural sector output<sup>2</sup></b>	<b>191.4</b>	<b>191.6</b>	<b>208.2</b>	<b>203.5</b>	<b>228.4</b>	<b>231.0</b>	<b>219.5</b>	<b>213.8</b>	<b>218.6</b>	<b>230.0</b>
<i>Minus</i> Intermediate consumption outlays:	93.4	100.7	104.9	109.7	113.2	121.0	118.6	119.6	122.4	127.0
Farm origin	38.6	41.3	41.3	41.8	42.7	46.9	44.8	45.6	47.7	47.5
Feed purchased	20.1	21.4	22.6	23.8	25.2	26.3	25.0	24.5	24.5	25.1
Livestock and poultry purchased	13.6	14.7	13.3	12.5	11.3	13.8	12.6	13.8	15.8	15.0
Seed purchased	4.9	5.2	5.4	5.5	6.2	6.7	7.2	7.2	7.3	7.4
Manufactured inputs	22.7	23.1	24.4	26.1	28.6	29.2	28.2	27.1	28.7	31.6
Fertilizers and lime	8.3	8.4	9.2	10.0	10.9	10.9	10.6	9.9	10.0	11.7
Pesticides	6.5	6.7	7.2	7.7	8.5	9.0	9.0	8.6	8.5	8.8
Petroleum fuel and oils	5.3	5.4	5.3	5.4	6.0	6.2	5.6	5.6	7.2	7.9
Electricity	2.6	2.7	2.7	3.0	3.2	3.0	2.9	3.0	3.0	3.2
Other intermediate expenses	32.1	36.2	39.2	41.7	41.9	44.9	45.6	46.9	46.0	47.9
Repair and maintenance of capital items	8.5	9.2	9.1	9.5	10.3	10.4	10.4	10.5	10.8	11.2
Machine hire and customwork	3.8	4.4	4.8	4.8	4.7	4.9	5.4	5.3	5.0	5.2
Marketing, storage, and transportation	4.5	5.6	6.8	7.2	6.9	7.1	6.9	7.3	7.5	8.0
Contract labor	1.7	1.8	1.8	2.0	2.1	2.5	2.4	2.5	2.7	2.8
Miscellaneous expenses	13.6	15.2	16.7	18.3	17.9	19.9	20.6	21.4	20.0	20.7
<i>Plus</i> Net government transactions:	2.7	6.9	1.0	0.1	0.1	0.1	4.9	14.2	15.5	12.9
+ Direct government payments	9.2	13.4	7.9	7.3	7.3	7.5	12.4	21.5	22.9	20.4
- Motor vehicle registration and licensing fees	0.4	0.4	0.4	0.5	0.4	0.5	0.5	0.4	0.5	0.5
- Property taxes	6.1	6.2	6.5	6.7	6.8	7.0	7.0	6.8	6.9	7.0
<b>Gross value added</b>	<b>100.7</b>	<b>97.8</b>	<b>104.3</b>	<b>93.9</b>	<b>115.3</b>	<b>110.1</b>	<b>105.7</b>	<b>108.4</b>	<b>111.7</b>	<b>115.9</b>
<i>Minus</i> Capital consumption	18.3	18.3	18.6	19.2	19.4	19.6	20.0	20.3	20.6	20.1
<b>Net value added<sup>2</sup></b>	<b>82.4</b>	<b>79.5</b>	<b>85.7</b>	<b>74.8</b>	<b>95.9</b>	<b>90.5</b>	<b>85.8</b>	<b>88.1</b>	<b>91.1</b>	<b>95.8</b>
<i>Minus</i> Factor payments:	34.6	34.8	36.8	37.8	41.1	42.0	42.9	43.8	44.7	45.4
Employee compensation (total hired labor)	12.3	13.2	13.5	14.3	15.2	16.0	16.9	17.5	17.3	18.0
Net rent received by nonoperator landlords	11.2	10.9	11.8	10.9	13.0	12.9	12.7	12.8	13.2	13.1
Real estate and non-real estate interest	11.0	10.7	11.6	12.6	13.0	13.1	13.4	13.6	14.1	14.2
<b>Net farm income<sup>2</sup></b>	<b>47.8</b>	<b>44.7</b>	<b>48.9</b>	<b>36.9</b>	<b>54.8</b>	<b>48.5</b>	<b>42.9</b>	<b>44.3</b>	<b>46.4</b>	<b>50.4</b>

Values in last two columns are preliminary or forecast. 1. A positive value of inventory change represents current-year production not sold by December 31. A negative value is an offset to production from prior years included in current-year sales. 2. Final sector output is the gross value of commodities and services produced within a year. Net value added is the sector's contribution to the National economy 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: rogers@ers.usda.gov*

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

**Table 30—Farm Income Statistics**

	1992	1993	1994	1995	1996	1997	1998	1999	2000	2001F
	\$ billion									
<b>Cash income statement</b>										
1. Cash receipts	171.4	178.2	181.3	188.0	199.3	207.6	195.8	188.1	193.6	204.9
Crops <sup>1</sup>	85.7	87.7	93.0	100.8	106.3	111.2	101.7	92.6	94.1	96.3
Livestock	85.8	90.5	88.3	87.2	92.9	96.5	94.1	95.5	99.5	108.6
2. Direct Government payments	9.2	13.4	7.9	7.3	7.3	7.5	12.4	21.5	22.9	20.4
3. Farm-related income <sup>2</sup>	8.0	9.0	9.0	10.5	11.0	12.1	13.9	15.0	13.6	13.7
4. Gross cash income (1+2+3)	188.6	200.6	198.2	205.9	217.7	227.3	222.1	224.6	230.1	238.9
5. Cash expenses <sup>3</sup>	133.5	141.2	147.5	153.3	159.9	168.7	167.4	168.9	172.6	177.9
6. Net cash income (4-5)	55.1	59.4	50.7	52.5	57.7	58.5	54.8	55.7	57.5	61.0
<b>Farm income statement</b>										
7. Gross cash income (4)	188.6	200.6	198.2	205.9	217.7	227.3	222.1	224.6	230.1	238.9
8. Noncash income <sup>4</sup>	7.8	8.7	9.6	9.9	10.2	10.6	10.3	10.9	11.0	11.1
9. Value of inventory adjustment	4.2	-4.2	8.3	-5.0	7.9	0.6	-0.6	-0.2	0.5	0.4
10. Gross farm income (7+8+9)	200.6	205.0	216.0	210.8	235.8	238.5	231.8	235.3	241.5	250.4
11. Total production expenses	152.8	160.4	167.2	173.8	181.0	190.0	189.0	191.0	195.1	200.1
12. Net farm income (10-11)	47.8	44.7	48.9	36.9	54.8	48.5	42.9	44.3	46.4	50.4

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.

Information Contact: Roger Strickland: [rogers@ers.usda.gov](mailto:rogers@ers.usda.gov)

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

**Table 31—Average Income to Farm Operator Households<sup>1</sup>**

	1993	1994	1995	1996	1997	1998	1999	2000P	2001F
	\$ per farm								
Net cash farm business income <sup>2</sup>	11,248	11,389	11,218	13,502	12,676	14,357	13,194	12,981	11,177
Less depreciation <sup>3</sup>	6,219	6,466	6,795	6,906	6,578	7,409	7,027	--	--
Less wages paid to operator <sup>4</sup>	454	425	522	531	513	637	499	--	--
Less farmland rental income <sup>5</sup>	534	701	769	672	568	543	802	--	--
Less adjusted farm business income due to other household(s) <sup>6</sup>	872	815	649	1,094	*1,505	1,332	1,262	--	--
	\$ per farm operator household								
Equals adjusted farm business income	3,168	2,981	2,484	4,300	3,513	4,436	3,603	--	--
Plus wages paid to operator	454	425	522	531	513	637	499	--	--
Plus net income from farmland rental <sup>7</sup>	--	--	1,053	1,178	945	868	1,312	--	--
Equals farm self-employment income	3,623	3,407	4,059	6,009	4,971	5,941	5,415	--	--
Plus other farm-related earnings <sup>8</sup>	1,192	970	661	1,898	1,234	1,165	944	--	--
Equals earnings of the operator household from farming activities	4,815	4,376	4,720	7,906	6,205	7,106	6,359	4,640	2,839
Plus earnings of the operator household from off-farm sources <sup>9</sup>	35,408	38,092	39,671	42,455	46,358	52,628	57,988	60,058	62,178
Equals average farm operator household income	40,223	42,469	44,392	50,361	52,562	59,734	64,347	64,698	65,017
	\$ per U.S. household								
U.S. average household income <sup>10</sup>	41,428	43,133	44,938	47,123	49,692	51,855	54,842	--	--
	Percent								
Average farm operator household income as percent of U.S. average household income	97.1	98.5	98.8	106.9	105.8	115.2	117.3	--	--
Average operator household earnings from farming activities as percent of average operator household income	12.0	10.3	10.6	15.7	11.8	11.9	9.9	--	--

-- = Not available. Values in last two columns are preliminary or 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 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. Information contact: Bob Hoppe (202) 694-5572 or [hoppe@ers.usda.gov](mailto:hoppe@ers.usda.gov)

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

	1992	1993	1994	1995	1996	1997	1998	1999	2000P	2001F
	\$ billion									
<b>Farm assets</b>	868.3	910.2	936.1	967.6	1,004.8	1,053.1	1,085.5	1,116.6	1,156.2	1,189.1
Real estate	640.8	677.6	704.1	740.5	769.5	808.2	841.8	870.0	905.8	932.9
Livestock and poultry <sup>1</sup>	71.0	72.8	67.9	57.8	60.3	67.1	63.4	70.6	73.5	77.7
Machinery and motor vehicles	85.4	86.4	88.1	89.4	89.8	90.1	90.2	89.0	89.3	89.9
Crops stored <sup>2,3</sup>	24.2	23.3	23.3	27.4	31.7	32.9	30.1	26.9	28.1	28.0
Purchased inputs	3.9	3.8	5.0	3.4	4.4	5.1	5.3	4.2	4.5	4.6
Financial assets	43.1	46.3	47.6	49.1	49.0	49.7	54.8	55.8	55.0	56.0
<b>Total farm debt</b>	139.1	142.0	146.8	150.8	156.1	165.4	172.9	176.4	183.6	185.2
Real estate debt <sup>3</sup>	75.4	76.0	77.7	79.3	81.7	85.4	89.6	94.2	97.6	98.9
Non-real estate debt <sup>4</sup>	63.6	65.9	69.1	71.5	74.4	80.1	83.2	82.2	86.0	86.3
<b>Total farm equity</b>	729.3	768.2	789.3	816.8	848.7	887.7	912.7	940.2	972.6	1,003.9
<b>Selected ratios</b>										
Debt to equity	19.1	18.5	18.6	18.5	18.4	18.6	18.9	18.8	18.9	18.4
Debt to assets	16.0	15.6	15.7	15.6	15.5	15.7	15.9	15.8	15.9	15.6

Values in the last two columns are preliminary or 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@ers.usda.gov](mailto:erickson@ers.usda.gov)*

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

**Table 33—Cash Receipts from Farming**

	Annual			2000		2001				
	1998	1999	2000	May	Dec	Jan	Feb	Mar	Apr	May
	\$ million									
<b>Commodity cash receipts<sup>1</sup></b>	195,816	188,132	193,586	14,184	16,859	18,351	12,908	14,545	14,273	14,784
Livestock and products	94,121	95,547	99,473	8,543	8,173	8,620	7,321	8,185	8,102	8,978
Meat animals	43,339	45,614	52,994	4,684	4,425	4,724	3,779	4,156	4,113	4,887
Dairy products	24,114	23,207	20,622	1,820	1,700	1,816	1,683	1,976	1,970	2,129
Poultry and eggs	22,947	22,898	21,789	1,797	1,805	1,794	1,631	1,808	1,795	1,730
Other	3,720	3,828	4,067	243	243	285	227	245	224	232
Crops	101,695	92,585	94,113	5,641	8,685	9,731	5,587	6,360	6,171	5,806
Food grains	8,822	6,965	6,639	312	505	681	407	372	294	366
Feed crops	22,655	19,622	19,960	921	1,977	3,408	1,402	1,497	1,018	885
Cotton (lint and seed)	6,073	4,698	4,555	62	1,059	772	387	134	83	83
Tobacco	2,803	2,273	2,315	0	178	239	92	19	1	0
Oil-bearing crops	17,377	13,608	13,857	510	987	1,946	724	841	547	449
Vegetables and melons	15,160	15,236	15,889	1,489	872	849	800	1,138	1,377	1,679
Fruits and tree nuts	11,649	12,287	12,692	764	1,222	755	719	821	870	852
Other	17,156	17,894	18,206	1,582	1,885	1,083	1,056	1,538	1,982	1,493
<b>Government payments</b>	12,380	21,513	22,896	330	1,399	1,711	1,192	454	317	--
<b>Total</b>	208,196	209,645	216,482	14,514	18,258	20,061	14,100	15,000	14,590	--

-- = Not available. Annual values for the most recent year and monthly values for current year are preliminary. 1. Sales of farm products include receipts from commodities placed under nonrecourse CCC loans, plus additional gains realized on redemptions during the period. *Information contact: Larry Traub (202) 694-5593 or [ltraub@ers.usda.gov](mailto:ltraub@ers.usda.gov). To receive current monthly cash receipts via e-mail contact Larry Traub.*



**Table 34—Cash Receipts from Farm Marketings, by State**

Region and State	Livestock and products				Crops <sup>1</sup>				Total <sup>1</sup>			
	1999	2000	Apr 2001	May 2001	1999	2000	Apr 2001	May 2001	1999	2000	Apr 2001	May 2001
\$ million												
<b>North Atlantic</b>												
Maine	286	262	23	23	208	242	25	14	494	504	48	37
New Hampshire	63	60	5	6	92	94	10	7	155	154	15	13
Vermont	472	441	38	40	69	67	11	6	541	508	49	46
Massachusetts	101	91	9	9	279	301	13	13	380	392	22	22
Rhode Island	8	8	1	1	39	40	5	3	47	48	5	4
Connecticut	180	165	14	14	303	337	26	20	483	503	41	34
New York	2,049	1,934	172	192	1,098	1,189	77	54	3,148	3,123	249	246
New Jersey	193	193	11	12	536	619	50	45	729	812	61	57
Pennsylvania	2,890	2,781	280	271	1,189	1,252	104	91	4,079	4,033	384	362
<b>North Central</b>												
Ohio	1,777	1,751	149	167	2,695	2,654	175	127	4,472	4,405	324	295
Indiana	1,583	1,695	152	156	2,814	2,886	94	103	4,397	4,581	246	259
Illinois	1,525	1,710	150	174	5,086	5,312	398	228	6,611	7,022	548	402
Michigan	1,328	1,335	113	130	2,139	2,140	164	96	3,467	3,475	277	226
Wisconsin	4,136	3,804	348	394	1,362	1,416	62	59	5,498	5,221	410	453
Minnesota	3,550	3,875	331	364	3,543	3,647	155	154	7,093	7,522	486	518
Iowa	4,713	5,747	488	439	5,036	5,027	255	231	9,749	10,774	743	671
Missouri	2,480	2,677	233	251	1,796	1,890	79	80	4,276	4,567	312	331
North Dakota	633	639	52	62	2,091	2,050	93	78	2,724	2,689	145	140
South Dakota	1,830	2,035	157	203	1,743	1,755	109	92	3,573	3,790	267	295
Nebraska	5,426	5,923	438	540	2,996	3,029	117	110	8,422	8,952	555	650
Kansas	5,012	5,488	434	528	2,464	2,417	66	89	7,477	7,905	500	617
<b>Southern</b>												
Delaware	566	557	47	46	159	184	9	7	725	741	56	53
Maryland	937	848	78	79	559	625	52	44	1,496	1,473	130	123
Virginia	1,579	1,549	131	135	702	732	38	35	2,281	2,281	169	169
West Virginia	334	339	29	27	53	51	2	2	387	391	32	29
North Carolina	3,840	4,275	342	354	2,861	3,135	185	170	6,700	7,410	526	524
South Carolina	774	792	62	61	638	752	40	36	1,412	1,544	102	98
Georgia	3,329	3,105	269	261	1,901	1,945	102	158	5,230	5,050	371	419
Florida	1,361	1,378	98	102	5,495	5,573	860	526	6,856	6,951	958	627
Kentucky	2,254	2,335	121	138	1,301	1,271	29	24	3,554	3,605	150	162
Tennessee	1,002	990	74	88	956	1,030	45	39	1,958	2,020	118	127
Alabama	2,746	2,684	211	201	658	588	43	36	3,404	3,272	254	237
Mississippi	2,145	2,037	170	166	1,012	886	37	32	3,156	2,922	208	199
Arkansas	3,397	3,248	277	265	1,816	1,639	39	41	5,213	4,887	316	306
Louisiana	622	653	56	55	1,197	1,167	28	30	1,819	1,820	85	85
Oklahoma	3,136	3,441	287	337	842	779	45	46	3,978	4,220	332	383
Texas	8,484	9,162	727	919	4,588	4,181	281	273	13,071	13,344	1,008	1,192
<b>Western</b>												
Montana	932	1,102	85	93	787	704	38	40	1,719	1,806	123	133
Idaho	1,616	1,628	131	159	1,666	1,761	179	148	3,282	3,389	310	307
Wyoming	679	795	45	35	171	160	4	4	850	954	49	38
Colorado	3,016	3,332	221	311	1,305	1,229	81	77	4,321	4,561	302	387
New Mexico	1,441	1,613	119	143	529	473	17	51	1,969	2,086	135	195
Arizona	991	1,063	79	98	1,233	1,226	74	92	2,224	2,290	153	190
Utah	713	770	53	54	244	240	26	12	957	1,010	78	66
Nevada	212	237	19	21	126	149	10	6	338	386	28	27
Washington	1,648	1,710	135	132	3,201	3,339	229	233	4,849	5,050	364	365
Oregon	793	826	54	74	2,195	2,223	143	139	2,988	3,049	198	213
California	6,651	6,269	577	638	18,346	19,241	1,412	1,768	24,997	25,510	1,989	2,406
Alaska	29	32	2	2	21	20	1	1	50	52	3	3
Hawaii	88	87	7	8	444	444	34	34	532	530	41	41
<b>U.S.</b>	<b>95,547</b>	<b>99,473</b>	<b>8,102</b>	<b>8,978</b>	<b>92,585</b>	<b>94,113</b>	<b>6,171</b>	<b>5,806</b>	<b>188,132</b>	<b>193,586</b>	<b>14,273</b>	<b>14,784</b>

Annual values for the most recent year are preliminary. 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 contact: Larry Traub (202) 694-5593 or ltraub@ers.usda.gov. To receive current monthly cash receipts via e-mail, contact Larry Traub.

**Table 35—CCC Net Outlays by Commodity & Function**

	Fiscal year									
	1993	1994	1995	1996	1997	1998	1999	2000	2001 <sup>4</sup>	2002 <sup>4</sup>
	\$ million									
<b>Commodity/Program</b>										
Feed grains:										
Corn	5,143	625	2,090	2,021	2,587	2,873	5,402	10,135	4,355	3,434
Grain sorghum	410	130	153	261	284	296	502	979	268	313
Barley	186	202	129	114	109	168	224	397	147	104
Oats	16	5	19	8	8	17	41	61	60	24
Corn and oat products	10	10	1	0	0	0	0	5	14	8
Total feed grains	5,765	972	2,392	2,404	2,988	3,354	6,169	11,577	4,844	3,883
Wheat and products	2,185	1,729	803	1,491	1,332	2,187	3,435	5,320	1,645	1,225
Rice	887	836	814	499	459	491	911	1,774	950	1,026
Upland cotton	2,239	1,539	99	685	561	1,132	1,882	3,808	1,095	1,871
Tobacco	235	693	-298	-496	-156	376	113	634	24	-97
Dairy	253	158	4	-98	67	291	480	684	1,232	100
Soybeans	109	-183	77	-65	5	139	1,289	2,839	3,029	2,765
Peanuts	-13	37	120	100	6	-11	21	35	65	0
Sugar	-35	-24	-3	-63	-34	-30	-51	465	-45	-37
Honey	22	0	-9	-14	-2	0	2	7	31	-10
Wool and mohair	179	211	108	55	0	0	10	-2	23	-1
Operating expense <sup>1</sup>	6	6	6	6	6	5	4	60	5	5
Interest expenditure	129	-17	-1	140	-111	76	210	736	319	546
Export programs <sup>2</sup>	2,193	1,950	1,361	-422	125	212	165	216	171	641
1988-2000 Disaster/tree/ livestock assistance	944	2,566	660	95	130	3	2,241	1,452	2,799	0
Conservation Reserve Program	0	0	0	2	1,671	1,693	1,462	1,511	1,700	1,796
Other conservation programs	0	0	0	7	105	197	292	263	366	283
Other	949	-137	-103	320	104	28	588	886	1,820	1,287
Total	16,047	10,336	6,030	4,646	7,256	10,143	19,223	32,265	20,073	15,283
<b>Function</b>										
Price support loans (net)	2,065	527	-119	-951	110	1,128	1,455	3,369	3,125	3,813
Cash direct payments: <sup>3</sup>										
Production flexibility contract	0	0	0	5,141	6,320	5,672	5,476	5,057	4,074	3,949
Market loss assistance	0	0	0	0	0	0	3,011	11,046	853	0
Deficiency	8,607	4,391	4,008	567	-1,118	-7	-3	1	0	0
Loan deficiency	387	495	29	0	0	478	3,360	6,419	5,565	4,908
Oilseed	0	0	0	0	0	0	0	460	496	0
Cotton user marketing	114	149	88	34	6	416	280	446	203	85
Other	35	22	9	61	1	0	1	460	553	14
Conservation Reserve Program	0	0	0	2	1,671	1,693	1,435	1,476	1,672	1,796
Other conservation programs	0	0	0	0	85	156	247	215	306	233
Noninsured Assistance (NAP)	0	0	0	2	52	23	54	38	169	159
Total direct payments	9,143	5,057	4,134	5,807	7,017	8,431	13,861	25,618	13,891	11,144
1988-00 crop disaster	872	2,461	577	14	2	-2	1,913	1,251	2,250	0
Emergency livestock/tree/DRAP										
livestock indemn/forage assist.	72	105	83	81	128	5	328	201	549	0
Purchases (net)	525	293	-51	-249	-60	207	668	120	-1,334	-1,792
Producer storage payments	9	12	23	0	0	0	0	0	0	0
Processing, storage, and transportation	136	112	72	51	33	38	62	81	109	86
Export donations ocean transportation	352	156	50	69	34	40	323	370	448	335
Operating expense <sup>1</sup>	6	6	6	6	6	5	4	60	5	5
Interest expenditure	129	-17	-1	140	-111	76	210	736	319	546
Export programs <sup>2</sup>	2,193	1,950	1,361	-422	125	212	165	216	171	641
Other	545	-326	-105	100	-28	3	234	243	540	505
Total	16,047	10,336	6,030	4,646	7,256	10,143	19,223	32,265	20,073	15,283

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, and starting in FY 2000 Foreign Market Development Cooperative Program and Quality Samples Program. 3. Includes cash payments only. Excludes generic certificates in FY 86-96.

4. Estimated in FY 2002 Mid-Session Review Budget which was released on August 22, 2001 based on May 2001 supply & demand estimates. The CCC outlays shown for 1996-2002 include the impact of the Federal Agriculture Improvement and Reform Act of 1996, which was enacted on April 4, 1996, and FY 2000-FY 2002 outlays include the impact of the Agricultural Risk Protection Act of 2000, which was enacted on June 20, 2000. FY 2001 outlays do not include the impact of the \$5.5 billion of payments mandated by P.L. 107-25.

Minus (-) indicates a net receipt (excess of repayments or other receipts over gross outlays of funds).

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

## Food Expenditures

**Table 36—Food Expenditures**

	Annual			2001			Year-to-date cumulative		
	1998	1999	2000	May	Jun	Jul	May	Jun	Jul
	\$ billion								
Sales <sup>1</sup>									
At home <sup>2</sup>	390.1	407.6	442.4	34.0	33.9	34.9	173.0	206.9	241.8
Away from home <sup>3</sup>	310.4	332.7	359.9	30.6	31.4	34.7	154.4	185.8	220.5
	1998 \$ billion								
Sales <sup>1</sup>									
At home <sup>2</sup>	390.1	400.0	424.4	31.7	31.5	32.3	162.1	193.6	226.0
Away from home <sup>3</sup>	310.4	324.3	341.7	28.4	29.2	32.1	144.4	173.6	205.7
	Percent change from year earlier (\$ billion)								
Sales <sup>1</sup>									
At home <sup>2</sup>	3.9	4.5	8.5	-7.6	-7.4	-5.7	0.0	-1.3	-2.0
Away from home <sup>3</sup>	4.4	7.2	8.2	-5.1	-2.7	5.6	1.9	1.1	1.8
	Percent change from year earlier (1998 \$ billion)								
Sales <sup>1</sup>									
At home <sup>2</sup>	1.6	2.5	6.1	-10.5	-10.6	-8.7	-3.1	-4.4	-5.0
Away from home <sup>3</sup>	1.7	4.5	5.4	-7.7	-5.5	2.6	-0.7	-1.5	-0.9

-- = 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) 694-5389*  
 Note: This table differs from Personal Consumption Expenditures (PCE), table 2, for several reasons: (1) this series includes only food, excluding alcoholic beverages and pet food which are included in PCE; (2) this series is not seasonally adjusted, whereas PCE is seasonally adjusted at annual rates; (3) this series reports sales only, but PCE includes food produced and consumed on farms and food furnished to employees; (4) this series includes all sales of meals and snacks, while PCE includes only purchases using personal funds, excluding business travel and entertainment. For a more complete discussion of the differences, see "Developing an Integrated Information System for the Food Sector," ERS Agr. Econ. Rpt. No. 575, Aug. 1987.

## Transportation

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

	Annual			2000			2001			
	1998	1999	2000	Jul	Feb	Mar	Apr	May	Jun	Jul
Rail freight rate index <sup>1</sup> (Dec. 1984=100)										
All products	113.4	113.0	114.5	114.5	115.8	116.0	115.5	115.7	116.1	116.3
Farm products	123.9	121.7	123.1	122.0	124.4	124.6	123.8	123.8	124.0	125.6
Grain food products	107.4	99.7	100.4	100.6	102.2	102.2	101.9	102.6	102.9	102.9
Grain shipments										
Rail carloadings (1,000 cars) <sup>2</sup>	22.8	24.2	23.2	20.2	23.0	23.2	20.6	18.0	20.1	20.2
Barge shipments (mil. ton) <sup>3</sup>	3.0	3.5	3.1	4.3	1.9	2.6	2.5	2.1	4.2	4.2
Fresh fruit and vegetable shipments <sup>4</sup>										
Piggy back (mil. cwt)	0.9	0.7	0.8	0.8	0.6	0.9	0.7	1.1	1.0	1.0
Rail (mil. cwt)	1.2	1.1	1.4	1.3	1.3	1.5	1.1	1.7	2.2	1.2
Truck (mil. cwt)	42.2	45.2	45.0	44.4	36.3	46.4	48.2	57.4	56.8	43.5

-- = Not available. 1. Department of Labor, Bureau of Labor Statistics. 2. Weekly average; from Association of American Railroads. 3. Shipments on Illinois and Mississippi waterways, U.S. Corps of Engineers. 4. Annual data are monthly average. Agricultural Marketing Service, USDA.  
*Information contact: Gary Vocke (202) 694-5285*

## Indicators of Farm Productivity

**Table 38—Indexes of Farm Production, Input Use, & Productivity<sup>1</sup>**

	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
	1992 = 100									
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 <sup>1</sup>	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 <sup>2</sup>	87	81	86	92	89	100	98	111	110	106
Nonfarm <sup>3</sup>	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 Commodities<sup>1</sup>**

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999
	Lbs.									
Red meats <sup>2,3,4</sup>	112.3	111.9	114.0	112.1	114.7	115.1	112.8	111.0	115.6	117.7
Beef	63.9	63.1	62.8	61.5	63.6	64.4	65.0	63.8	64.9	65.8
Veal	0.9	0.8	0.8	0.8	0.8	0.8	1.0	0.9	0.7	0.6
Lamb & mutton	1.0	1.0	1.0	1.0	0.9	0.9	0.8	0.8	0.9	0.9
Pork	46.4	46.9	49.4	48.9	49.5	49.0	45.9	45.5	49.2	50.5
Poultry <sup>2,3,4</sup>	56.3	58.3	60.8	62.5	63.3	62.9	64.1	64.2	65.0	68.3
Chicken	42.4	44.2	46.7	48.5	49.3	48.8	49.5	50.3	50.8	54.2
Turkey	13.8	14.1	14.1	14.0	14.1	14.1	14.6	13.9	14.2	14.1
Fish and shellfish <sup>3</sup>	15.0	14.8	14.7	14.9	15.1	14.9	14.7	14.5	14.8	15.2
Eggs <sup>4</sup>	30.2	30.1	30.3	30.4	30.6	30.2	30.4	30.7	31.8	32.8
Dairy products										
Cheese (excluding cottage) <sup>2,5</sup>	24.6	25.0	26.0	26.2	26.8	27.3	27.7	28.0	28.3	29.8
American	11.1	11.1	11.3	11.4	11.5	11.8	12.0	12.0	12.2	13.0
Italian	9.0	9.4	10.0	9.8	10.3	10.4	10.8	11.0	11.3	11.8
Other cheeses <sup>6</sup>	4.5	4.6	4.7	5.0	5.0	5.0	5.0	5.0	4.8	5.0
Cottage cheese	3.4	3.3	3.1	2.9	2.8	2.7	2.6	2.7	2.7	2.7
Beverage milks <sup>2</sup>	221.8	221.1	218.2	213.4	213.6	209.8	210.0	206.8	204.6	203.8
Fluid whole milk <sup>7</sup>	90.4	87.3	84.0	80.1	78.8	75.3	74.6	72.7	71.6	72.4
Fluid lower fat milk <sup>8</sup>	108.5	109.9	109.2	106.6	106.0	102.6	101.7	99.8	98.6	98.2
Fluid skim milk	22.9	23.9	25.0	26.7	28.8	31.9	33.7	34.3	34.4	33.2
Fluid cream products <sup>9</sup>	7.6	7.7	8.0	8.0	8.1	8.4	8.7	9.0	9.2	9.7
Yogurt (excluding frozen)	4.0	4.2	4.2	4.3	4.7	5.1	4.8	5.1	5.1	4.9
Ice cream	15.8	16.3	16.3	16.1	16.1	15.7	15.9	16.4	16.6	16.8
Lowfat ice cream <sup>10</sup>	7.7	7.4	7.1	6.9	7.6	7.5	7.6	7.9	8.3	7.9
Frozen yogurt	2.8	3.5	3.1	3.5	3.5	3.5	2.6	2.1	2.2	2.1
All dairy products, milk equivalent, milkfat basis <sup>11</sup>	568.3	565.6	565.8	574.1	585.9	583.8	574.6	577.6	581.7	597.9
Fats and oils--total fat content	63.0	64.8	66.8	69.7	68.0	66.3	65.3	64.9	65.6	68.5
Butter and margarine (product weight)	15.3	15.0	15.4	15.8	14.7	13.7	13.5	12.8	12.8	12.9
Shortening	22.2	22.4	22.4	25.1	24.1	22.5	22.3	20.9	21.0	21.6
Lard and edible tallow (direct use)	2.2	1.8	3.5	3.4	4.2	4.3	4.8	4.1	5.2	5.7
Salad and cooking oils	25.3	26.4	27.2	26.9	26.2	26.9	26.1	28.6	27.9	29.4
Fruits and vegetables <sup>12</sup>	656.0	650.2	677.5	691.4	705.6	694.3	710.8	717.9	702.4	719.0
Fruit	272.6	255.3	283.7	283.2	290.9	284.9	290.2	296.9	284.4	297.9
Fresh fruits	116.3	113.0	123.5	124.5	126.3	124.1	128.1	131.9	131.3	132.5
Canned fruit	21.0	19.8	22.9	20.7	21.0	17.5	18.8	20.4	17.4	19.6
Dried fruit	12.1	12.3	10.8	12.6	12.8	12.8	11.3	10.8	12.4	10.5
Frozen fruit	3.8	3.8	3.9	3.7	3.8	4.2	4.0	3.7	4.2	3.7
Selected fruit juices	119.0	106.0	121.9	121.3	126.6	125.9	127.8	129.3	118.8	131.0
Vegetables	383.5	394.9	393.9	408.2	414.6	409.4	420.6	421.0	418.0	421.2
Fresh	167.1	167.4	171.1	178.1	184.5	179.1	184.1	188.9	185.5	192.1
Canning	111.5	114.3	112.2	112.8	112.3	110.8	109.5	107.8	109.3	105.7
Freezing	66.8	72.6	70.9	76.0	78.4	79.9	84.6	83.0	81.8	82.5
Dehydrated and chips	31.0	32.8	31.5	33.6	31.0	31.3	34.5	33.3	33.4	32.3
Pulses	7.1	7.8	8.1	7.7	8.4	8.4	8.0	8.1	7.9	8.6
Peanuts (shelled)	6.0	6.5	6.2	6.1	5.8	5.7	5.7	5.9	5.9	6.4
Tree nuts (shelled)	2.4	2.2	2.2	2.4	2.3	1.9	2.0	2.1	2.3	2.7
Flour and cereal products <sup>13</sup>	181.0	182.7	185.7	190.7	194.0	192.8	199.2	200.9	198.4	201.9
Wheat flour	136.0	137.0	138.9	143.3	144.5	141.8	148.7	149.5	146.0	148.4
Rice (milled basis)	15.8	16.2	16.7	16.7	18.1	18.9	17.8	18.4	18.9	19.4
Caloric sweeteners <sup>14</sup>	136.9	137.9	141.2	144.5	147.4	149.8	150.7	154.0	155.1	158.4
Coffee (green bean equiv.)	10.3	10.3	10.0	9.1	8.2	8.0	8.9	9.3	9.5	10.0
Cocoa (chocolate liquor equiv.)	4.3	4.6	4.6	4.3	3.9	3.6	4.2	4.1	4.4	4.6

-- = 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.