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Feed Grains: Background and Issues for Farm Legislation

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This report provides background information for addressing the policy issues facing the U.S. feed grain industry as Congress debates the provisions for new farm legislation. An examination of this sector, along with a description of the international feed grain market, provides a backdrop for discussion of the relevant policy issues. A description of the major features of current government policy is also provided. We conclude with a discussion of the different types of farm policies that have been proposed.

The United States produces a variety of feed grains, but corn dominates production. Because of this, the focus here is primarily on corn. Although there are important issues unique for each of the different feed grains, the overall program structure and most of the policy proposals are the same for all of the commodities. Therefore, much of the corn discussion provided below is relevant to the overall feed grain complex.

Corn for grain or seed, 1997



1 dot = 10,000 acres

Source: U.S. Census of Agriculture, 1997.

OVERVIEW OF THE U.S. FEED GRAIN SECTOR

U.S. Feed Grain Production

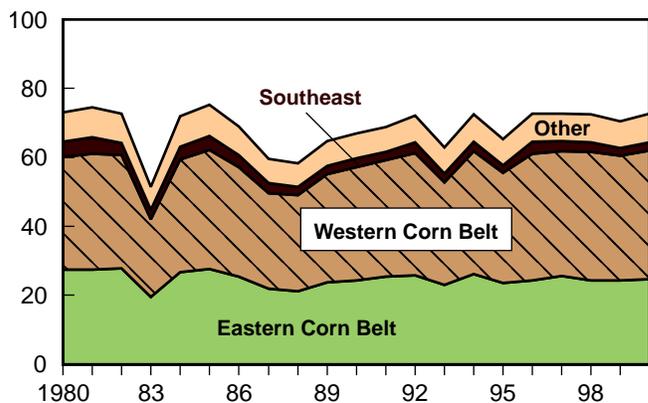
The major feed grains are corn, sorghum, barley, and oats. Corn is the dominant feed grain and accounts for more than 90 percent of total feed grain production. In 2000, the value of corn production was estimated at nearly \$19 billion, the highest of any single crop in the United States.

- Feed grains are grown throughout the United States, but there is regional variation in production.
- Acreage planted to sorghum, oats, and barley has declined in recent years. This has increased the importance of corn in terms of feed grain production and use.
- Corn is grown chiefly in the Midwest. The top two corn-producing States in 2000 were Iowa and Illinois, each accounting for about 17 percent of total U.S. production.
- Due to increased planting flexibility and better returns than some traditional crops, corn production is expanding into northern and western regions.
- Sorghum tolerates hot and dry conditions better than corn. Therefore, production is concentrated in the drier areas of the Southern Plains.
- Kansas is the largest sorghum-producing State, accounting for about 40 percent of the Nation's total.
- Barley production is concentrated in the northern and western part of the country.
- In 2000/01, North Dakota, the largest barley-producing State, accounted for 30 percent of total barley production (including malting and feed barley).
- Oats do well in cool climates and are grown in the upper third of the United States. Minnesota was the largest oats-producing State in 2000/01.

The number of corn farms has declined at a rate much faster than that of all farms. According to the Census of Agriculture, the number of farms that grew corn for grain in 1997 was 430,711, down 15 percent from 1992. While the number of farms has fallen, the acreage per farm has risen. Farms that grew corn averaged 162 acres of corn in 1997, up nearly 18 percent from the 1992 Census. In 1997, farms that had 500 or more acres of corn accounted for more than 39 percent of production, up from about 32 percent in 1992. In

Corn: Area harvested by region

Mil. acres



Eastern Corn Belt includes Illinois, Indiana, Ohio, Michigan, and Wisconsin.

Western Corn Belt includes Iowa, Nebraska, Kansas, North Dakota, South Dakota, Minnesota, and Missouri.

Southeast includes Mississippi, Louisiana, Arkansas, Georgia, Florida, South Carolina, and North Carolina.

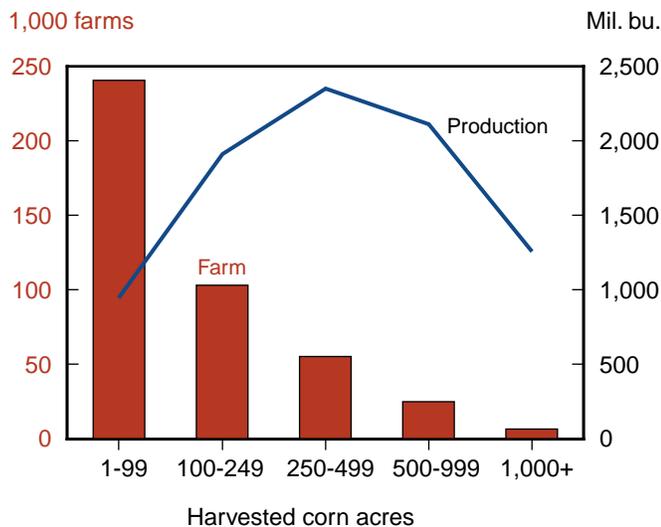
Source: National Agricultural Statistics Service, USDA.

contrast, farms with less than 250 acres of corn in 1997 accounted for 33 percent of production, down from more than 39 percent in 1992. Many factors have led to the decline in farm numbers; chief among those factors have been improvements in production technology, which have enabled fewer growers to farm more land.

A large proportion of farmers that grow corn own all or part of the land they operate. According to the 1997 Census of Agriculture, nearly 35 percent of corn farmers were classified as full owners, down from 37 percent in the 1992 Census. In 1997, 51 percent of corn farmers were classified as part owners, up from 48 percent in 1992. Only 14 percent of corn farmers were classified as tenants in 1997, down slightly from 1992.

The average age of corn farmers is increasing. According to the 1997 Census of Agriculture, corn growers under the age of 34 accounted for only 10 percent of all farmers that grew corn, down from 14 percent in 1992. Farmers in this age category operated 9 percent of all corn land, down from 14 percent in 1992. Corn growers between the ages of 35 and 54 and over the age of 55 account for a growing share of both farms and land planted to corn. In 1997, 47 percent of all corn producers were between the ages of 35

Farms growing corn and corn production, 1997



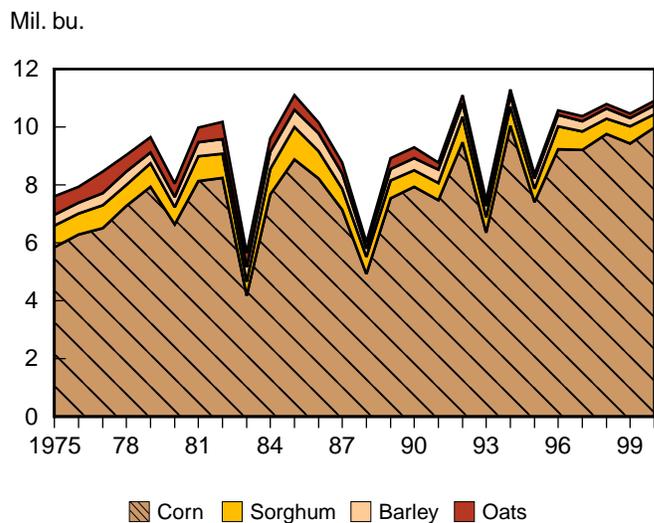
Source: U.S. Census of Agriculture, 1997.

and 54, up from 44 percent in 1992. Farms in this category accounted for 54 percent of corn land, up from 50 percent in 1992. Corn growers over the age of 55 accounted for 43 percent of all farmers that grew corn in 1997, up 1 percentage point from the 1992 census. Operators over the age of 55 accounted for 37 percent of all corn land, also up 1 point from 1992.

Corn production has increased dramatically over the past several decades. Increases in corn production in the 1990s reflect better returns for corn relative to those for other crops, especially sorghum and wheat. Corn planted area for the 2001/02 crop is estimated at more than 76 million acres, down 4 percent from 2000/01. Corn yields have increased dramatically over time jumping from 72.4 bushels per acre in 1970/71 to a high of 138.6 in 1994/95. Yield-improving innovations have stemmed from improved genetics, machinery, and other inputs. Another important innovation for corn is the emergence of crop biotechnology, although there are marketing challenges associated with this. Biotech corn is currently designed to be insect resistant and/or herbicide tolerant; some biotech corn hybrids in product development have specific end use characteristics desired by consumers. According to a USDA survey, biotech corn varieties are expected to account for 26 percent of total plantings in 2001/02, up slightly from the year before. Biotech varieties of sorghum, barley, or oats are not yet commercially available.

Production fluctuations are typically the result of weather and the producers' response to price as they

U.S. feed grain production



Source: National Agricultural Statistics Service, USDA.

seek the commodity mix that provides the highest net return. According to the 2001 USDA June *Acreage* report, corn and soybean plantings are at 76.1 million acres and 75.4 million acres, respectively. The fact that soybean plantings are almost as high as corn plantings reflects broad changes that have been occurring in cropping patterns for the past decade, especially since the 1996 Farm Act. With producer participation in farm programs no longer tied to base acreage, planting requirements, and acreage reduction restrictions, corn farmers are free to pursue soybean production in an attempt to increase their overall net returns. Soybeans and corn are commonly grown in a rotation that increases the yields of both crops. In the past, corn plantings were much higher than those for soybeans, but planting flexibility and the relatively high marketing loan benefits for soybeans over the past 3 years have changed this situation. Other factors that have led to greater soybean plantings include the high adoption rate of biotech herbicide-tolerant soybeans, short-season soybean varieties, and increased corn fertilizer costs for the 2001/02 crop year. Higher per-acre costs of nitrogen fertilizer provide an incentive for farmers to switch from corn (which requires significant fertilizer inputs) to soybeans (which typically need little or no nitrogen fertilizer). According to an ERS estimate, this factor alone may have led to a switch of 500,000 acres from corn to soybeans in 2001.

According to costs and returns information, the total average cost of growing corn in the United States was \$360 per acre in 1998. Operational costs (including seed, fertilizers, chemicals, and fuels) averaged \$155

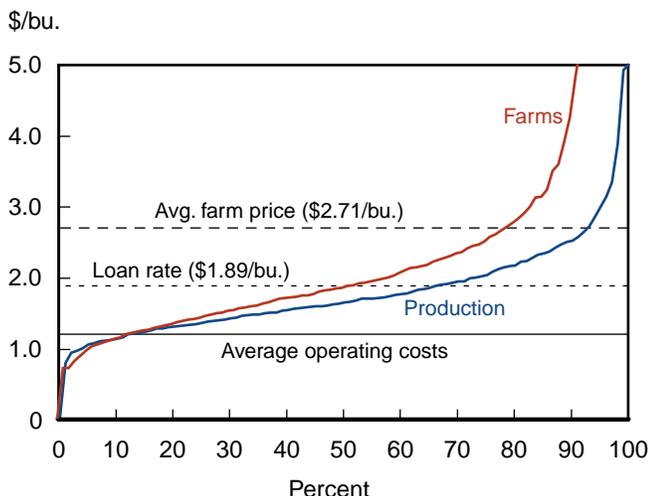
per acre; allocated overhead such as capital recovery of machinery, hired labor, taxes, and rental rates for land averaged \$205 per acre.

Prices and Farm Returns

In 1996 (the most recent year for which data are available), 78 percent of corn farms (accounting for 92 percent of production) received a price that exceeded average per-bushel cash production costs (both fixed and variable costs). About 52 percent of farms (66 percent of production) incurred per-bushel costs that were below the loan rate. For the current crop year, farm production costs will likely increase because of higher costs for fertilizer and energy-related inputs. Also, 1996 was considered to be an excellent year due to high commodity prices, but corn prices have fallen significantly since then. Because of this decline, corn farmers have relied more heavily on government programs to support their incomes. A growing share of producers are likely incurring total costs that exceed their prices received, although revenue may still exceed variable costs in many cases.

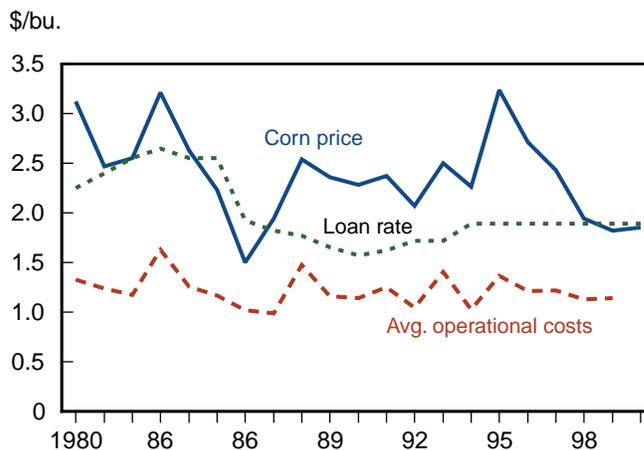
Prices for feed grains, as well as most other crop commodities, have fallen significantly since the 1995 crop year. The corn season average farm price was a record \$3.24/bu in 1995. Prices fell in 1996 and 1997 but were still relatively strong. However, due to abundant world supplies, the Asian financial crisis, and a general slowing of the world economy, corn prices continued to drop and were estimated at \$1.82 for 1999/2000, the lowest since 1986/87. As of July 2001, the 2000/01

Cumulative distribution of corn farms and corn production by per-bushel production costs in 1996



Source: Economic Research Service, USDA.

Price received by farmers and the loan rate for corn, 1980-2000



Source: Economic Research Service, USDA.

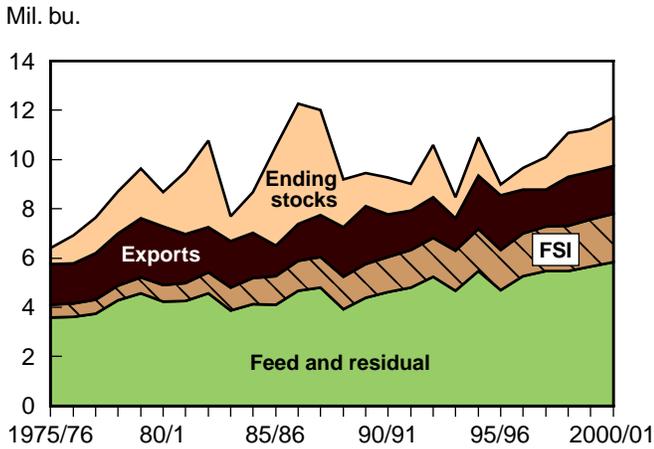
corn season average farm price is projected at \$1.85/bu, below the loan rate of \$1.89.

Total Disappearance

Corn disappearance (domestic use and exports combined) has trended upward over the past two decades. According to USDA's baseline projections, this trend is expected to continue with corn disappearance projected to reach more than 11.2 billion bushels by 2010/11. Livestock feed (including residual) is the major use of corn, typically accounting for about 60 percent of total corn use and about 75 percent of domestic corn use. Feed use is a derived demand that is closely related to the number of animals (primarily cattle, hogs, and poultry) on feed. The amount of corn used for feed also depends on the crop's supply and price, the amount of supplemental ingredients used in feed rations, and the supplies and prices of competing ingredients. Corn feed use has increased over the past decade because of an increase in domestically fed livestock as well as reductions in the feeding of other grains.

Corn is also processed for human consumption and industrial uses, and these uses increased significantly during the 1990s. Food, seed, and industrial (FSI) uses of corn comprise about 25 percent of total domestic utilization. Corn is either wet- or dry-milled. The wet-milling process tempers and soaks corn in steep water to soften and swell the kernels, which aids in the separation of starch, solubles, gluten, and hulls. Products from wet milling include high-fructose corn syrup (HFCS), glucose and dextrose, starch, corn oil, beverage alcohol, industrial alcohol, and fuel ethanol. Dry-

Corn disappearance



FSI denotes food, seed, and industrial.

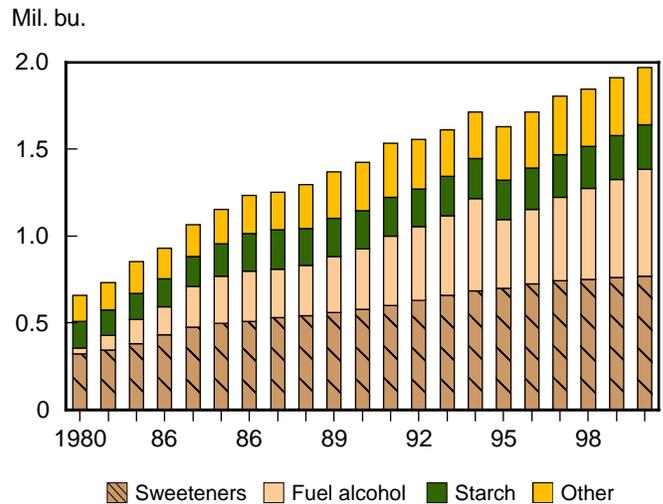
Sources: National Agricultural Statistics Service and Economic Research Service, USDA.

milling is essentially a grinding process. Dry-milled corn is used to produce breakfast cereal, tortilla shells, alcohol, and other food products. Corn FSI use in 2000/01 is expected to total 1.97 billion bushels, and is projected to rise over the next decade, reaching nearly 2.4 billion bushels by 2010/11.

The two largest components of FSI uses are corn sweeteners (HFCS, glucose, and dextrose) and fuel alcohol. The U.S. sugar program was largely responsible for the push to develop HFCS in the 1970s and 1980s. Tariff rate quotas with high over-tariff duties work to keep refined sugar prices artificially high, making HFCS and other corn sweeteners more attractive, especially to the soft drink industry. HFCS is now firmly established in the marketplace, and use is unlikely to change dramatically, even if sugar prices were to drop. Future growth in HFCS is highly contingent on exports to Mexico. In 2000/01, corn used for HFCS is projected to reach 550 million bushels.

Ethanol made from corn is used as a gasoline additive to make fuel burn cleaner and to increase octane. Corn alcohol helps to meet clean air standards by reducing carbon monoxide emissions, especially in winter. Government legislation and subsidies, as well as the cost and availability of substitute fuel additives (especially MTBE), in part, determine the demand for and the price of corn fuel alcohol. The Clean Air Act and its amendments have led to greater use of corn-based fuel, although it remains a fairly expensive alternative and

Corn: Food, seed, and industrial uses



Other includes cereals, beverage alcohol, and seed.

Source: Economic Research Service, USDA.

some question the efficacy of corn-based fuel additives. As of July 2001, corn used for fuel alcohol is projected to reach about 620 million bushels for 2000/01.

The products made from corn starch have expanded over the years, and growth is expected to continue. About 85 percent of corn starch is used for industrial purposes with the remaining 15 percent being used in food preparation. Currently, the most important use of corn starch is as a binding agent for the paper and construction industries. In the case of paper, corn starch is used as a coating as well as a binding agent, which is particularly important for recycled paper where the fibers are shorter. In construction, corn starch is used in the production of wall board. Corn starch is also used as a thickening agent in the food industry and as a binding agent by the pharmaceutical industry in the production of pills.

Exports comprise about 20 percent of total corn disappearance. Corn is the largest component of global coarse grain trade (including corn, sorghum, barley, oats, rye, millet, and mixed grains), generally accounting for about two-thirds of total volume over the past decade. U.S. corn exports have fluctuated over time due to changing import demand and foreign competition. With the advent of agri-biotechnology, the approval process for new hybrids in some countries has become important for corn trade, particularly with respect to food-related products.

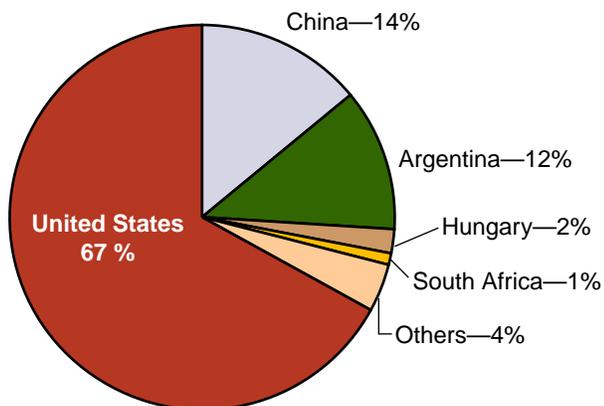
Trade and Trade Agreements

The United States is by far the world's largest corn exporter. In 1999/2000, the United States exported more than 49 million metric tons (mmt), which accounted for about 67 percent of the world total. As of June 2001, U.S. corn exports are projected to reach 46.5 mmt in the 2000/01 marketing year. In 1999/2000, China was the next largest corn exporter at nearly 10 million metric tons, or 14 percent of total trade. China is interesting because it can be either a net exporter or net importer, and its net trade position can fluctuate from year to year. Despite a drought-reduced crop, China's government continued to subsidize corn exports during the 2000/01 crop year. Government subsidies make China's corn trade highly dependent on government policies, particularly the level of stocks the country seeks to maintain. Export subsidies are an important issue with respect to China's entry into the World Trade Organization (WTO). Fluctuations in Chinese trade have had a significant impact on the world corn market and price volatility.

Argentina's production increased significantly in the 1990s due to greater use of high-yielding varieties, fertilizers, and other inputs. As a result, Argentina will remain a strong competitor. Other countries, such as South Africa, Hungary, and Romania, are also competitors with U.S. corn exports, particularly when weather conditions lead to large crops.

Major corn importers include Japan, South Korea, Taiwan, Mexico, and Egypt. The destinations of U.S. corn exports have changed dramatically over the past

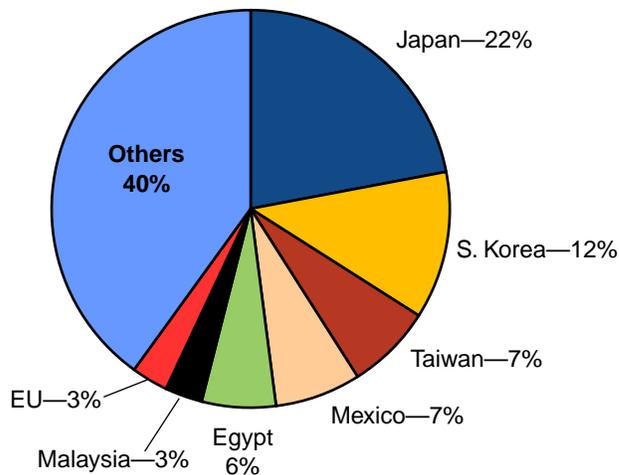
Share of trade for major corn exporters, 1999/2000



73,529 thousand metric tons

Source: Foreign Agricultural Service, USDA.

Share of trade for major corn importers, 1999/2000



73,279 thousand metric tons

Source: Foreign Agricultural Service, USDA.

two decades. Western Europe and transition economies (including Eastern Europe and the former Soviet Union) have reduced their coarse grain imports while growth has come from East Asia, Latin America, North Africa, and the Middle East. However, in 2000/01, combined outstanding sales and accumulated exports of U.S. corn to Japan (as of May 31, 2001) were down more than 14 percent from a year earlier. While some of this reduction has been due to increased competition from large back-to-back crops in Argentina, a record Brazilian corn crop, and the decision by China to subsidize exports, the StarLink issue also played a role. StarLink is a biotech corn variety that was approved in the United States for feed and non-food industrial uses but not for human consumption. However, some StarLink corn was found in shipments destined for domestic food uses and export markets where it had not been approved.

The Uruguay Round Agreement on Agriculture (URAA) was the first comprehensive multilateral effort to address agricultural trade issues. Under the URAA, WTO members are committed to eliminate or tariffify most non-tariff trade barriers, cut tariff levels on all agricultural products, lower the volume of and expenditures on subsidized exports, and reduce aggregate spending on certain trade-distorting domestic support programs.

Future trade agreements, particularly the WTO, could have a major impact on the domestic corn industry.

The WTO limits the types and amount of support that member countries can provide to their agricultural sectors. Although the WTO has not had a major overall impact on corn exports, it has increased U.S. meat exports, indirectly benefiting the domestic feed grain sector. China is expected to increase corn imports and eliminate corn export subsidies when it enters the WTO, although China's entry into the WTO does not guarantee large gains for U.S. feed grain exports.

There are three tariff levels that are applicable to the WTO: base tariffs, bound tariffs, and applied tariffs. In the Uruguay Round, the calculated base tariff levels reflected the overall level of protection for a given commodity during the 1986-1988 period. WTO members agreed to reduce this base level of protection by a certain percentage over the implementation period to a final bound level (which differs across commodities and countries). For developing countries in particular, the applied tariff rate is often below their bound rate. This introduces uncertainty in agricultural transactions because countries can raise or lower tariff rates as long as they are below the bound level.

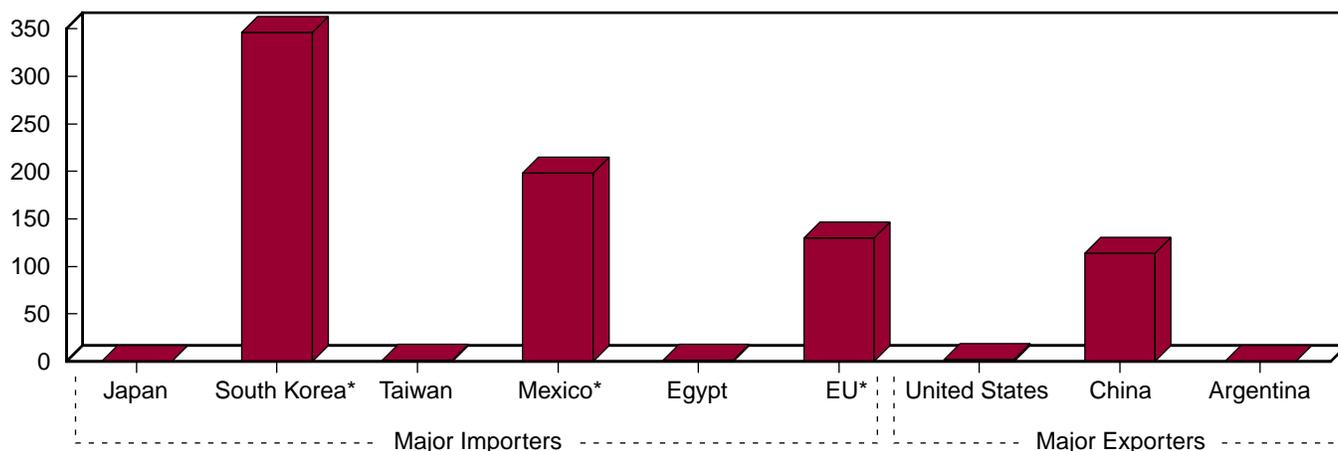
Tariff rate quotas (TRQ's) are also an important aspect of the WTO. The TRQ is a two-tiered tariff system of which in-quota import quantities are subject to lower tariffs, but over-quota quantities are charged at a higher (sometimes prohibitive) level. TRQ's also have base, bound, and applied rates for both in-quota and over-

quota quantities. WTO members are committed to reducing the tariff rates of TRQ's and increasing the quota levels over time. Often, in-quota tariff levels are very low, allowing relatively free access into the country up to the quota amount. Although several of the largest U.S. corn importers use TRQ's, very few were required to increase their quota level over the commitment period because they already met or exceeded minimum access requirements (used by the WTO to expand trade of agricultural goods). The URAA required minimum access quotas in cases where imports had been less than 5 percent of domestic consumption during the base period (1986-88), and required these quotas to rise to that percentage of consumption by the end of the implementation period. In cases where imports exceeded 5 percent of consumption, countries had to maintain existing access opportunities.

The North American Free Trade Agreement (NAFTA) is another trade agreement that is important to the feed grain industry. NAFTA was implemented in 1994, and Mexico, Canada, and the United States agreed to phase out almost all tariffs and non-tariff barriers among the three countries by 2008. NAFTA has had both direct and indirect benefits to domestic feed grain producers. Although corn exports to Mexico have been very strong in recent years, a series of severe droughts in Mexico and the implementation of domestic policy reforms in Mexico explain much of this growth. Still, U.S. corn exports to Mexico are somewhat higher

Applied corn tariff rates for selected countries

Percent



* = Over-quota tariffs.

South Korea has a TRQ with a quota of 6.1 million metric tons.

Mexico has a WTO TRQ of 2.5 million metric tons and a NAFTA TRQ of 3.2 million metric tons.

EU has a TRQ with a quota of 2 million metric tons.

Source: Foreign Agricultural Service, USDA.

under NAFTA than they would have been otherwise. The Canada-U.S. Free Trade Agreement (CFTA), incorporated into NAFTA, has also had a small positive impact on corn trade between the United States and Canada.

Increased meat and livestock trade, which has expanded greatly with NAFTA, is an indirect benefit for the

feed grain industry. U.S. beef exports to Canada may be twice as high as they would have been without tariff changes secured under the CFTA and incorporated into NAFTA. NAFTA tariff changes are also estimated to have boosted U.S. pork exports to Mexico by some 5-10 percent. Finally, U.S. cattle exports to Mexico are estimated to have grown by 15-25 percent because of NAFTA tariff changes.

GOVERNMENT PROGRAMS

Under the 1996 farm legislation, the primary government programs affecting feed grain producers are production flexibility contracts (PFCs) and the marketing assistance loan program. Feed grain farmers also benefit from subsidized crop and revenue insurance, trade promotion programs, P.L. 480 food aid, and export credit guarantees and, in recent years, emergency market loss assistance payments.

Planting flexibility, which enables farmers to plant almost any crop on their contract acreage without losing program benefits, is a key element of the 1996 legislation. The 1996 legislation provides decoupled income support payments over 7 years to farmers who entered into production flexibility contracts. Total payments for all of the feed grains are fixed and allocated to farmers based on historical production. For 2000, the payment rate for corn was 33.4 cents per bushel. Since PFC payments are not related to current market prices or most farm-level production decisions, they do not have a direct effect on a producer's cropping decisions (i.e., they are "decoupled"). In fact, a producer does not have to grow corn anymore to receive PFC payments. Price-sensitive payments using target prices (referred to as deficiency payments) were eliminated in the 1996 Act. Acreage reduction programs, which had been used to limit program costs, were not reauthorized. In 1996, 1.2 million corn farms (89 percent of those eligible) with 80.7 million acres of corn (98 percent of eligible acres) enrolled in the PFC payment program during a one-time signup period. Note that not all of these payments go to current producers of corn, and some corn farmers may be receiving payments from other program crops. For example, some corn farmers in the Dakotas are receiving wheat payments.

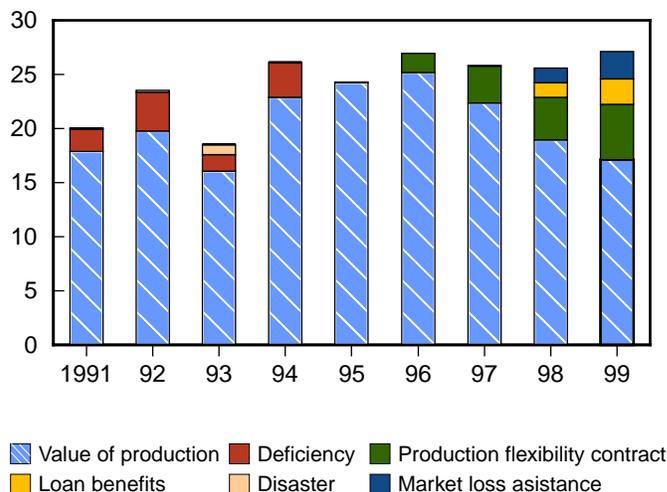
As a result of low commodity prices, Congress authorized supplemental payments made to producers who were eligible for PFC payments. These are referred to as "market loss assistance payments." The 1999 and 2000 Appropriations Acts and the Agricultural Risk Protection Act of 2000 authorized these payments, which are proportional to the PFC payments. In FY 1999 and FY 2000, market loss assistance payments of \$1.3 billion and \$5.1 billion, respectively, were made to corn contract holders. The payment made in FY 1999 was for the 1998 crop year. The FY 2000 payments were split evenly for the 1999 and 2000 crop years.

The marketing assistance loan program provides non-recourse loans to eligible producers with the program crop grown on the farm used as collateral. Producers may settle the loan by either forfeiting the collateral to the Commodity Credit Corporation (CCC) at maturity with no penalty or repay in full at the repayment rate (loan rate plus interest or the posted county price, whichever is lower). Marketing loan provisions take effect when commodity prices fall below local loan rates. The amount of this difference multiplied by the quantity repaid is called a marketing loan gain (MLG). Producers may also forgo taking out a loan and receive a loan deficiency payment (LDP) equal to the difference between the commodity price and local loan rate multiplied by the quantity eligible for loan.

For over a decade (1987 to 1998), the average corn price received by farmers was above the loan rate. Since 1999, however, the national corn price received by farmers has often been below the \$1.89 per-bushel loan rate. As of July 10, 2001, corn producers had received nearly \$2.5 billion in LDP's and MLG's for the 2000/01 crop.

U.S. corn sector: Sources of revenue, 1991/92-1999/2000

Bil. dol.



Sources: National Agricultural Statistics Service and Farm Service Agency, USDA.

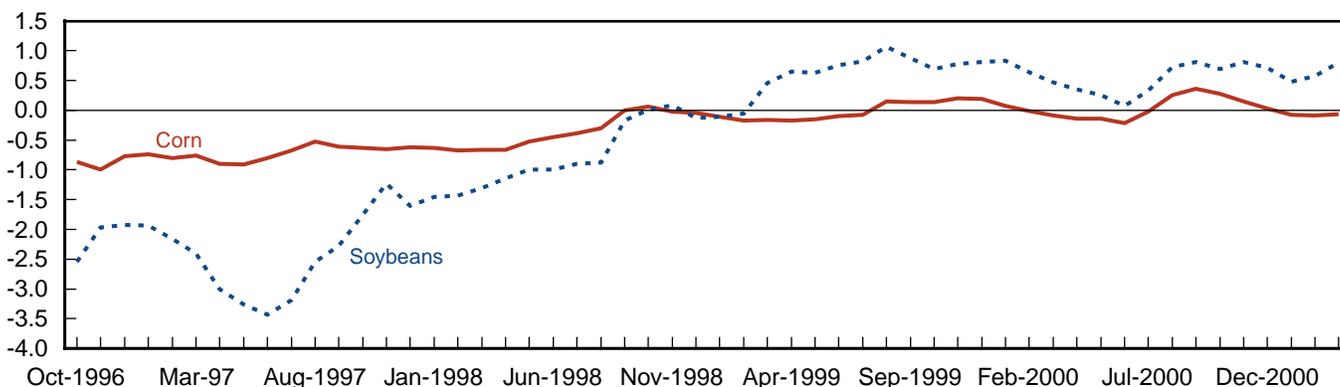
Even with government support programs, most of the revenue received by corn farmers is market-based. That is, producer income is determined primarily by market prices and quantity sold. However in recent years, government payments have contributed significantly to farm revenue. Government payments to the corn sector increased from \$1.7 billion in 1996 to almost \$10 billion in 1999 (these figures include PFC and market loss assistance payments).

Another important issue in the current farm bill debate is the relative support offered by the loan rates of other commodities, especially soybeans. The figure below tracks the monthly difference between national average prices received by farmers and the loan rates for corn and soybeans. A positive dollar value indicates that a given crop's market price was below the loan rate in the specified year. Since the 1998/99 market year, per-bushel loan deficiency rates for soybeans have exceeded those for corn.

Difference between loan rate and the monthly price received by farmers

Since 1999, farm prices for soybeans and corn have generally been below the loan rate

Dol./bu.



A negative number indicates farm price above the loan rate. A positive number indicates farm price below the loan rate.

Source: Economic Research Service, USDA.

POLICY CHOICES

The current farm bill is being debated in an environment of extremely low prices for most commodities including corn, rising costs, and fierce international competition. Still, according to USDA agricultural baseline projections through 2010, farmer net returns for corn (including estimates of marketing loan benefits) are expected to bottom out in 2001/02 and rise throughout the remainder of the baseline. Prices are projected to rise throughout the baseline and reach \$2.60/bu in 2010/11.

When the 1996 Farm Act was passed, feed grain prices were relatively strong. There was a sense among many experts that farm prices would remain high (due to strong import demand) and there would be a declining need for government payments in agriculture. Since then, feed prices have dropped significantly. Marketing loan benefits increased as market prices fell. Emergency ad hoc payments were made in recent years in addition to the payments already authorized under the 1996 Farm Act.

One plan for upcoming farm legislation is to replace the ad hoc nature of emergency farm payments with a more structured countercyclical program. The notion is to have a program that offers measured support when prices are low but less when they are high. There are many different ways that this can be accomplished. Payments could be triggered based on price or revenue shortfalls from either a fixed target or a moving average. A revenue-based approach would most likely be based on aggregate gross farm income, while a price-based approach would more likely be commodity-specific.

There are a wide variety of issues relevant to the current farm bill debate and a number of different viewpoints as to what should be enacted. Key factors that will be debated include developing a farm bill that is consistent with U.S. commitments to the WTO and future negotiations, rebalancing commodity loan rates, the use of conservation-based payments, and the degree of market orientation for program commodities. Historically, views on farm policy tend to fall into three general categories: (1) a combination of support programs with no supply controls, (2) supply controls, and (3) a more market-oriented policy.

Existing Support Programs. In the current debate, most commodity groups and farm organizations advocate the continuation of current farm policy with no

supply controls, but do recommend some adjustments. Proposals from these groups have recommended continuation of planting flexibility, PFC payments, some type of new countercyclical income support program, and extension of the commodity loan program. In general, commodity groups favor increasing the loan rate to rebalance the price relationship between feed grains and soybeans, although this could become very costly. The main differences between the different countercyclical income support proposals are trigger mechanisms and payment formulas. Proposals for triggers have included farm income, aggregate price, gross revenue, gross return per acre, gross cash receipts, or a percentage of production costs. About half of the farm groups want to increase PFC payments, and most recommend including additional crops, particularly oilseeds. All proponents of continuing current policy recommend eliminating payment limitations for the loan programs, and most advocate no means testing for participation in income support programs.

Supply Control Programs. A relatively small number of observers recommend adopting supply control measures to manage surpluses. These individuals believe that trade forecasts were too optimistic when the 1996 Farm Act was enacted. They propose including a voluntary supply control program that would provide higher marketing loan rates in return for fallowing land as well as reauthorizing the farmer-owned reserve program. Other proposals from this group suggest increasing humanitarian food aid donations and creating a farm storage program for government-owned surplus stocks designated for food aid and use as renewable fuels.

Market-Oriented Policy. The main view of those who want a more market-oriented policy is that the U.S. agricultural sector is diverse and thus requires a range of programs that will meet the needs of different groups. Some proponents of the market-oriented policy option suggest that income support programs are unnecessary because large farms generate adequate incomes, small farms rely on off-farm income, and mid-sized farms need assistance to transition to either a more profitable farming size or out of farming and into more profitable enterprises. Some in this group have recommended converting spending now dedicated to direct payments to two new sets of programs. For large commercial farms, they recommend efforts

focused on risk management, trade expansion, and a safety net for catastrophic weather or market-related risks. For smaller farms, they recommend rural development programs and technical assistance in adopting new technologies and developing greater economies of scale. Many in this group oppose countercyclical income support payments because they believe rising land values and rents absorb these payments. Most in the market-oriented policy group also recommend ending the decoupled PFC payments, particularly if a new countercyclical program is adopted. All proponents of market-oriented policy oppose acreage set-asides and on-farm storage programs because they tend to distort market prices.

Despite the wide range of differences on program direction, there is agreement on some issues. These include improved access to foreign markets and the exclusion of food from unilateral sanctions. In addition, proposals have been made for increased research in numerous areas, including biotechnology, food safety, disease prevention, and environmental quality. Also, there is a recognized need for programs to assist farmers in meeting conservation goals and environmental mandates. Recommendations include increased technical assistance, cost-share programs, and incentive payments for use of environmentally friendly practices.

World Trade Organization Obligations for U.S. Corn Policy

The form in which government payments and other benefits are provided to the corn sector is important because of the obligations of the United States under the URAA and potential future obligations. The total amount of support from all U.S. programs of certain types is limited to a specified maximum amount under the URAA (\$19.1 billion in 2000). The covered programs are those considered to have the most potential for production and trade distortions, and are called “amber box” payments.

Examples of amber box programs for corn producers include LDPs, MLGs, and other benefits related to the commodity loan program for corn. In these cases, the amount of benefits depend on the producer’s current

level of corn production and the current market price of corn relative to the announced commodity loan rate.

U.S. corn producers also benefit from crop and revenue insurance programs, both of which are considered to be production-distorting amber box programs under the URAA. However, these programs are reported using non-commodity-specific (generic) provisions, so they count toward the upper limit on U.S. agricultural support only if the total benefits from all non-commodity-specific amber programs exceed 5 percent of the total value of agricultural production in the United States (the *de minimis* provision), a situation that has not yet occurred.

Support to the corn sector also comes from programs considered to be least distorting to production and trade, called green box programs. Benefits from these programs do not count toward the limits on total U.S. support levels. Examples include environmental conservation and resource retirement program payments in which producers agree to use certain production or conservation practices. The Conservation Reserve Program is included in green box payments.

Production Flexibility Contract payments to corn producers are also considered to be green box because the payment method conforms to URAA criteria for decoupled payments. The amount of a producer’s PFC depends on past program participation and does not depend on the current level of market prices, production, or resources.

The United States has notified the WTO that market loss assistance payments (MLA) mandated by recent emergency legislation are non-product-specific amber box payments. As with the green box PFC, each producer’s share of the total amount of MLA available in a given year is determined by past program participation and not by current production or resource use. However, the PFC totals were predetermined by the 1996 Farm Act while the MLA payments were legislated annually in response to recent market price experiences. Consequently, the MLA payments may be assumed to be related to market prices after the PFC (or WTO) base period, making the MLA ineligible for the green box.