

livestock cycles) and the marketing of livestock at lighter weights. Consumers pay higher retail prices for those food items than they would otherwise. In addition, consumers pay higher prices for sweeteners, beverages, starch, and corn flour because of the higher corn price resulting from the programs.

Corn program effects on retail prices of red meat, poultry, milk, and eggs depend on farm-retail price spreads, the proportion of corn feed costs in livestock and poultry production, corn program effects on corn prices, and supply and demand elasticities for livestock products. In the Corn Belt, for example, corn feed cost accounted for about 16 percent of total expenses of cattle feeding in 1986. By the time cattle are marketed, the retail price effect of corn prices is even smaller. Since the farmer's share of the retail price of beef was \$1.36 (57 percent) out of \$2.38 per pound in 1983, the retail price of beef was nearly 1 percent higher as a result of the program, assuming the farm-retail price spread remained unchanged.

In the case of pork, the farmer's share of the retail price, although smaller than for beef, still amounted to 45 percent. In the Corn Belt where corn feed costs account for about 25 percent of total expenses of hog production, a 6-percent increase in corn prices due to the corn program meant hog production expenses rose by 1.9 percent. Retail prices of pork increased by almost 1 percent. The corn program also affects retail prices of poultry, milk, and eggs, since their production requires corn, other feed grains, and soybean meal. The corn program, through effects on retail prices of these food items, has caused consumers to pay more for corn-based products and consume less, although these costs may be offset by the gains due to increased price stability for consumer goods.

The programs have clearly provided a degree of stability to retail prices for these food items due to price supports, the operation of regular CCC loan programs, and the farmer-owned reserve. The relatively narrow farm-retail price spreads for beef, pork, and other livestock products suggest that less variability in corn prices means more stable retail prices for meat, poultry, milk, and eggs. Conversely, less stability of grain prices results in a more unstable livestock sector. During the early to mid-1970's, for example, livestock producers faced greatly fluctuating feed grain supplies and prices, making normal planning for short-term production decisions more difficult, and posing difficulties for long-term investment decisions. The dramatic growth in export demand essentially emptied the CCC stocks during 1972-77. Corn prices rose from \$1.16 per bushel in 1969 to \$1.33 in 1970 due to corn blight. Prices increased to \$3.02 in 1974 in response to the dramatic growth in exports, which stemmed from the shortfall of world grain production. This increase reduced feeding margins. Due to inelastic demand for meat and poultry products and biological constraints affecting livestock supply response, livestock producers experienced a great deal of instability and numerous adjustments in feeding volume during this period. Cattle-on-feed inventories, for example, began dropping in 1974 due to the narrowing feeding

margins after an upward trend from 1967. The livestock sector, in effect, serves as a buffer stock to smooth out grain price fluctuation during volatile periods.

Taxpayers

Corn programs affect taxpayers directly through the disbursement of deficiency, diversion, disaster, and storage payments. In addition, CCC loan programs are operated by borrowing from the U.S. Treasury. Total program costs, expressed as the sum of net price support (CCC) outlays plus related expenditures in appendix table 4, fluctuated from year to year and reached \$14.1 billion in fiscal year 1986 and \$17.5 billion in fiscal year 1987, up from \$299 million in 1955. At the \$5.2-billion total payments level in crop year 1982, each corn program participant (about 200,000 corn farmers) received an average of about \$25,000 in total program payments, or \$0.63 per bushel of U.S. corn produced. At the \$17.5-billion total price support outlays level in fiscal year 1987, net program expenditures amounted to about \$27,700 per program participant (totalling more than 600,000 corn farmers), or \$2.47 per bushel of corn produced.

The \$4.0-billion net CCC outlays for corn alone in fiscal year 1983 accounted for 30 percent of total CCC outlays for all crops. Corn program costs averaged over \$4.6 billion a year during the 1983-87 crop years or 30 percent of the \$15.6-billion corn crop value.

Indirect

Corn programs also have had some indirect effects on land value, resource use, other crops, and trade competition.

Program benefits, particularly those associated with a base or allotment, are capitalized into the value of land. Landowners, originally allocated a base or allotment, benefit from an increase in both current income and wealth. Renters or tenants, who account for 60 percent of farmers growing corn, receive a share of the current income, but they also face increased rents because of higher land values. Subsequent landowners have to pay a higher price for land. This dilutes the program benefits, particularly in the longer run, and also increases the subsequent cost of entry for new farmers. The above effect became less acute when program participation was no longer tied to historical allotment. Farmers with 2 years of corn production records essentially can now request ASCS to certify their base acreage for program participation. Nevertheless, loan rates above market-clearing levels kept land prices from falling more prior to the passage of the 1985 farm act.

Corn programs encourage irrigation of corn acreage partly because higher corn prices increase the demand for irrigation and partly because irrigation was a means of boosting program yields before such yields were frozen in 1986. The programs also were a factor contributing to the 80-percent increase in pesticide use and 35-percent increase in fertilizer use in the 1970's. Moreover,

35-percent increase in fertilizer use in the 1970's. Moreover, corn producers have expanded their base acreage in the past decade from about 61 million acres in 1973 to the present 83 million acres, anticipating the continuation of the programs. The bulk of expanded corn acreage was irrigated land, especially in Nebraska and Kansas.

Policy provisions for corn have particularly far-reaching effects because they affect not only the corn industry but also indirectly the soybean, wheat, and livestock sectors. Higher loan rates and target prices for corn have encouraged some farmers to switch from soybeans to corn. This has occurred primarily in the North Central and the South regions. In addition, higher corn prices resulting from the programs may have induced substitution of soybean meal for corn in the feed ration, further raising soybean prices. In 1978, for example, soybean prices were an estimated 2 percent higher as a result of the supply controls on the other crops, mainly corn. In the Northern Plains where irrigation expanded rapidly in recent years, corn programs have further attracted irrigated land for corn production away from wheat.

Issues for the 1990's

Debate about farm legislation for the 1990's will probably focus on many issues relevant to corn producers. Important among them are opportunities to establish loan rates to make producers more responsive to market conditions, to operate the reserve explicitly to either stabilize prices or enhance income, and to make the program flexible enough to permit Corn Belt farmers the option of planting other crops without penalty. Legislators will be in a position to make substantial changes in the agricultural sector by altering program structure or they could choose to continue present programs with only minor modifications.

Aside from potential program changes, other issues that may be dealt with could affect the corn industry. Chief among these are the GATT trade negotiations and environmental considerations. It is conceivable that significant reform could result by December 1990 in the GATT agricultural negotiating group, which could affect U.S. corn production and exports by reducing trade barriers and the scope of agricultural programs throughout the world. Similarly, pressure for preserving clean water and reducing soil erosion could succeed in expanding conservation provisions in farm legislation and remove additional marginal cropland from production. Finally, all farm legislation will be constrained by the need to reduce the Federal budget deficit.

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GLOSSARY

Acreage allotment -- An individual farm's share of the national acreage that the Secretary of Agriculture determines is needed to produce sufficient supplies of a particular crop. The farm's share is based on its previous production.

Acreage reduction program (ARP) -- A voluntary land retirement system in which farmers must idle a portion of their base acreage of wheat, feed grains, upland and extra long staple (ELS) cotton, or rice. The remaining base acreage must be planted in the base crop. Farmers must participate to be eligible for benefits like Commodity Credit Corporation loans and deficiency payments.

Advance deficiency payments -- The Secretary is required to make advance deficiency payments to producers of crops when an acreage limitation program is in effect and deficiency payments are expected to be paid. Advance deficiency payments can range from 30 to 50 percent of expected payments. If total deficiency payments are less than the advance amount, producers must refund the excess portion.

Basic commodities -- Six crops (corn, cotton, peanuts, rice, tobacco, and wheat) declared by legislation as price supported commodities.

Bilateral trade agreement -- A trade agreement between any two nations. The agreement may be either preferential (the obligations and benefits apply only to the two countries involved) or most-favored-nation (the benefits and obligations negotiated between the two countries are extended to all or most other countries). Also long-term agreement.

Carryover -- Existing supplies of a farm commodity at the beginning of a new harvest.

Cash grain farm -- A farm on which corn, grain sorghum, oats, barley, other small grains, soybeans, or field beans and peas account for at least 50 percent of the value of the products sold.

Cereals -- Generic name for certain grasses that produce edible seeds; includes wheat, oats, barley, rye, rice, millet, corn, and sorghum grain.

Coarse grains -- Includes corn, barley, oats, grain sorghum, and rye. Millet is also included in the statistics of some foreign nations.

Commodity Credit Corporation (CCC) -- A federally owned and operated corporation within the U.S. Department of Agriculture. The CCC was created to stabilize, support, and protect farm income and prices through loans, purchases, payments, and other operations. The CCC functions as the financial institution through which all money transactions are handled for agricultural price and income support and related programs. The CCC also

helps maintain balanced, adequate supplies of agricultural commodities and helps in their orderly distribution.

Common Agricultural Policy (CAP) -- A set of regulations by which member states of the European Community (EC) seek to merge their individual agricultural programs into a unified effort to promote regional agricultural development, fair and rising standards of living for the farm population, stable agricultural markets, increased agricultural productivity, and methods of dealing with food supply security. The variable levy and export subsidies (see definitions) are the two principal elements of the CAP.

Conservation reserve program (CRP) -- A major provision of the Food Security Act of 1985 designed to reduce erosion on 40-45 million acres of farmland. Under the program, producers who sign contracts agree to convert highly erodible cropland to approved conservation uses for 10 years. In exchange, participating producers receive annual rental payments and cash or in-kind payments to share up to 50 percent of the cost of establishing permanent vegetative cover.

Conserving uses -- Land idled from production and planted in annual, biennial, or perennial grasses, or other soil conserving crop.

Cost of production -- An amount, measured in dollars, of all purchased inputs, allowances for management, and rent, that is necessary to produce farm products.

Crop acreage base -- The average of the wheat, feed grains, upland and extra long staple (ELS) cotton, or rice acreage on a farm planted for harvest, plus land not planted because of acreage reduction or diversion programs or the conservation reserve during a period specified by law.

Cross compliance (full or strict) -- A requirement that a farmer participating in a program for one crop and meeting the qualifications for production adjustment payments and loans for that crop must also meet the program provisions for other major program crops which the farmer grows. Strict cross compliance provisions have not been enforced since the 1960s.

Cross compliance (limited) -- A producer participating in one commodity program must not plant in excess of the crop acreage base on that farm for any of the other program commodities for which an acreage reduction program is in effect. Limited cross compliance authority was implemented in the late 1970's and remains in effect under the Food Security Act of 1985.

Deficiency payment -- A Government payment made to farmers who participate in wheat, feed grain, rice, or cotton programs. The payment rate is per bushel, pound, or hundredweight, based on the difference between the price level established by law (target price) and the higher of the market price during a period specified by law or the price per unit at which the Government will provide loans to farmers to enable them to hold their crops

for later sale (loan rate). The payment is equal to the payment rate multiplied by the acreage planted for harvest and then by the program yield established for the particular farm.

Direct payments -- Payments in the form of cash or commodity certificates made directly to producers for such purposes as deficiency payments, annual land diversion, or conservation reserve payments.

Disaster payments -- Federal aid provided to farmers for feed grain, wheat, rice, and upland cotton who have crop insurance (when available), when either planting is prevented or crop yields are abnormally low because of adverse weather and related conditions. Payments also may be made under special legislation enacted after an extensive natural disaster.

Economies of size -- Increasing returns as use of factors is expanded in least-cost combinations. Once the size of an operation has reached a certain point, the marginal cost of producing additional output begins to decline.

European Community (EC) -- Established by the Treaty of Rome in 1957, also known as the European Economic Community and the Common Market. Originally composed of 6 European nations, it has expanded to 12. The EC attempts to unify and integrate member economies by establishing a customs union and common economic policies, including the Common Agricultural Policy (CAP).

Export enhancement program (EEP) -- Begun in May 1985 under a Commodity Credit Corporation charter to help U.S. exporters meet competitors' prices in subsidized markets. Under the EEP, exporters are awarded bonus certificates which are redeemable for CCC-owned commodities, enabling them to sell certain commodities to specified countries at prices below those of the U.S. market.

Farm act -- The omnibus agricultural legislation that expires every 4 or 5 years. The act's titles include program commodity titles, trade, conservation, credit, agricultural research, food stamps, and marketing.

Farm-to-retail price spread -- A measure of all processing, transportation, wholesaling, and retailing charges incurred after products leave the farm.

Farmer-owned reserve (FOR) -- A program designed to provide protection against wheat and feed grain production shortfalls and provide a buffer against unusually sharp price movements. Farmers can place eligible grain in storage and receive extended loans for 3 years with extensions as warranted by market conditions. The loans are nonrecourse in that farmers can forfeit the commodity held as collateral to the Government without penalty and without paying accumulated interest in full settlement of the loan.

Federal crop insurance -- A subsidized insurance program which provides farmers with a means for risk management and financial

stability against crop production loss. Currently provided by the Federal Crop Insurance Corporation (FCIC).

Feed grains -- Any of several grains most commonly used for livestock or poultry feed, including corn, grain sorghum, oats, and barley.

Food Security Act of 1985 (PL 99-198) -- The omnibus food and agriculture legislation signed into law on December 23, 1985, that provides a 5-year framework for the Secretary of Agriculture to administer various agriculture and food programs.

General Agreement on Tariffs and Trade (GATT) -- An agreement originally negotiated in Geneva, Switzerland, in 1947 among 23 countries, including the United States, to increase international trade by reducing tariffs and other trade barriers. The agreement provides a code of conduct for international commerce and a framework for periodic multilateral negotiations on trade liberalization and expansion.

Generic commodity certificates -- Negotiable certificates, which do not specify a certain commodity, that are issued by USDA in lieu of cash payments to commodity program participants and sellers of agricultural products. The certificates, frequently referred to as payment-in-kind (PIK) certificates, can be used to acquire stocks held as collateral on Government loans or owned by the Commodity Credit Corporation.

Grain consuming animal unit (GCAU) -- A term encompassing the utilization of grain by all livestock types. It is a measure estimated by the Department of Agriculture as the weighted average of the number of livestock and poultry fed during the year converted to milk-cow equivalents and weighted by grains consumed.

High fructose corn syrup (HFCS) -- A byproduct of corn wet-milling which serves as a substitute for sugar in food manufacturing.

Loan rate -- The price per unit (bushel, bale, or pound) at which the Government will provide loans to farmers to enable them to hold their crops for later sale.

Marketing board -- A major form of government involvement by other countries to control the marketing of a commodity. These boards generally handle all export sales for the commodity; they may administer provisions to guarantee farmers a minimum price each year. Canada and Australia use marketing boards for selected grains.

Marketing loan program -- Authorized by the Food Security Act of 1985, this program allows producers to repay nonrecourse price support loans at less than the announced loan rates. Under the act, the programs are mandatory for upland cotton and rice and discretionary for wheat, feed grains, and soybeans. To date, the discretionary programs have not been implemented.

Marketing quota -- Authorized by the Agricultural Adjustment Act of 1938, marketing quotas are used to regulate the marketing of some commodities when supplies are excessive. The quota represents, in general, the quantity USDA estimates to be required for domestic use and exports during the year. When marketing quotas are in effect, growers who produce more of a commodity than their farm acreage allotments should yield are subject to marketing penalties on the "excess" production and are ineligible for Government price-support loans.

National farm program acreage -- The number of harvested acres of feed grains, wheat, upland cotton, and rice needed nationally to meet domestic and export use and to accomplish any desired increase or decrease in carryover levels. Program acreage for an individual farm is based on that farm's share of the national farm program acreage.

Nonrecourse loans -- The major price support instrument used by the Commodity Credit Corporation (CCC) to support the price of feed grains, cotton, peanuts, and tobacco. Farmers who agree to comply with all commodity program provisions may pledge a quantity of a commodity as collateral and obtain a loan from the CCC. The borrower may elect either to repay the loan with interest within a specified period and regain control of the collateral commodity or default on the loan. In case of a default, the borrower forfeits without penalty the collateral commodity to the CCC.

Paid land diversion -- If the Secretary of Agriculture determines that planted acres for a program crop should be reduced, producers may be offered a paid voluntary land diversion. Farmers are given a specific payment per acre to idle a percentage of their crop acreage base. The idled acreage is in addition to an acreage reduction program.

Parity price -- Originally defined as the price which gives a unit of a commodity the same purchasing power today as it had in the 1910-14 base period. In 1948, the base prices used in the calculation were made dependent on the most recent 10-year average price for commodities. Except for wool, mohair, and certain minor tobaccos, parity is not currently used to set price-support levels for any program commodities.

Participation -- Also referred to as compliance. U.S. farmers wishing to receive program payments on their crops must satisfy certain requirements, such as retiring base acreage from production, before qualifying for those programs.

Payment-in-kind (PIK) -- A payment made to eligible producers in the form of an equivalent amount of commodities owned by the Commodity Credit Corporation. A PIK program in 1983 offered surplus agricultural commodities owned by the Government in exchange for agreements to reduce production by cutting crop acreage.

Price pooling - A policy tool used by state marketing boards to guarantee producers a certain price, then markets that grain and pools the revenue received. If the average price exceeds the minimum price established, producers are paid a pool bonus. Otherwise, the government assumes the cost of the differential.

Price support programs -- Government programs that aim to keep farm prices received by participating producers from falling below specific minimum prices. Price-support programs for major commodities are carried out by providing loans to farmers so that they can store their crops during periods of low prices.

Prices-paid index -- An indicator of changes in the prices farmers pay for goods and services (including interest, taxes, and farm wage rates) used for producing farm products and those needed for farm family living.

Production flexibility -- The ability of a farmer to vary the crops mixture in response to prevailing market conditions. This capacity is hampered to some extent by the need to maintain base acreage in the commodities for which program payments are profitable, which restricts shifts to nonprogram crops, such as soybeans.

Program crops -- Federal support programs are available to producers of wheat, corn, barley, grain sorghum, oats, rye, extra long staple and upland cotton, rice, soybeans, tobacco, peanuts, and sugar.

Program yield -- The farm commodity yield of record determined by averaging the yield for the 1981-85 crops, dropping the high and low years. Program yields are constant for the 1986-90 crops. The farm program yield applied to eligible acreage determines the level of production eligible for direct payments to producers.

Public Law 480 (PL 480) -- Common name for the Agricultural Trade Development and Assistance Act of 1954, which seeks to expand foreign markets for U.S. agricultural products, combat hunger, and encourage economic development in developing countries.

Set-aside -- A voluntary program to limit production by restricting the use of land. Such a program restricts a portion of a farmer's total cropland base used for production rather than a portion of the acres used to produce a specific crop (as is the case with acreage reduction programs). Introduced in 1970, set-asides may still be implemented at the discretion of the Secretary of Agriculture, but have not been offered since 1979. When offered, producers must participate to be eligible for Federal loans, purchases, and other payments. The EC also recently began to offer a voluntary set-aside program for cropland.

Soil bank -- Mandated by the Soil Bank Act of 1956, the program was an attempt to decrease the supply of agricultural products by reducing the amount of land used in crop production and to maintain other needed conservation practices. Land was retired

for 3, 5, or 10 years to a specified type of use, such as grass, trees, and water impoundments. This voluntary program was repealed by the Food and Agriculture Act of 1965.

Target price -- A price level established by law for wheat, feed grains, rice, and cotton. Farmers participating in the Federal commodity programs receive the difference between the target price and the higher of the market price during a period prescribed by law or the unit price at which the Government will provide loans to farmers to enable them to hold their crops for later sale (loan rate).

Variable levies -- The difference between the price of a foreign product at the port and the official price at which competitive imports can be sold; levies are effectively a variable tax on imports or a variable subsidy to exports.

0/92 -- An optional acreage diversion program that allows wheat and feed grain producers to devote all or a portion of their permitted acreage to conserving uses and receive deficiency payments on the acreage. The program will make deficiency payments for a maximum of 92 percent of a farm's permitted acreage.

Appendix table 1--Acreage, yield, and production of corn, 1955-88

Crop year	Planted	Harvested	Diverted	Yield	Production
	----- <u>Million acres</u> -----			<u>Bu./acre</u>	<u>Mil. bu.</u>
1955	80.9	68.5	--	42.0	2,873
1956	77.8	64.9	NA	47.4	3,075
1957	73.2	63.1	NA	48.3	3,045
1958	73.4	63.5	NA	52.8	3,356
1959	82.7	72.1	--	53.1	3,825
1960	81.4	71.4	--	54.7	3,907
1961	65.9	57.6	19.1	62.4	3,598
1962	65.0	55.7	20.3	64.7	3,606
1963	68.8	59.2	17.2	67.9	4,019
1964	65.8	55.4	22.2	62.9	3,484
1965	65.2	55.4	24.0	74.1	4,103
1966	66.3	57.0	23.7	73.1	4,167
1967	71.2	60.7	16.2	80.1	4,860
1968	65.1	56.0	25.4	79.5	4,450
1969	64.3	54.6	27.2	85.9	4,687
1970	66.9	57.4	26.1	72.4	4,152
1971	74.2	64.1	14.1	88.1	5,646
1972	67.1	57.5	24.4	97.0	5,580
1973	72.3	62.1	6.0	91.3	5,671
1974	77.9	65.4	--	71.9	4,701
1975	78.7	67.6	--	86.4	5,841
1976	84.6	71.5	--	88.0	6,289
1977	84.3	71.6	--	90.8	6,505
1978	81.7	71.9	6.1	101.0	7,268
1979	81.4	72.4	2.9	109.5	7,928
1980	84.0	73.0	--	91.0	6,639
1981	84.1	74.5	--	108.9	8,119
1982	81.9	72.7	3.7	113.2	8,235
1983	60.2	51.5	32.2	81.1	4,175
1984	80.5	71.9	4.0	106.7	7,674
1985	83.5	75.2	5.4	118.0	8,877
1986	76.7	69.2	13.6	119.3	8,250
1987	65.7	59.2	21.1	119.4	7,072
1988 ¹	67.6	58.2	23.6	84.6	4,921

NA = Not available.

-- = Not applicable (aspect of program not in effect).

¹ Estimate as of Aug. 12, 1989.

Source: Feed Situation and Outlook Report. U.S. Dept. Agr., Econ. Res. Serv., various issues.

Appendix table 2--Use and ending stocks for corn, 1957-88

Crop year	Feed and residual	Food, seed, and industrial	Exports	Total use ¹	Ending stocks	Stocks-to-use ratio
	-----Million bushels-----					Percent
1957	2,534	263	200	2,997	1,469	49.0
1958	2,783	289	230	3,302	1,524	46.2
1959	3,043	290	230	3,563	1,787	50.2
1960	3,092	295	292	3,679	2,016	54.8
1961	3,213	315	435	3,963	1,653	41.7
1962	3,156	323	416	3,895	1,365	35.0
1963	3,009	339	500	3,848	1,537	39.9
1964	2,956	349	570	3,875	1,147	29.6
1965	3,362	360	687	4,409	842	19.1
1966	3,333	364	487	4,184	826	19.7
1967	3,524	362	633	4,519	1,168	25.8
1968	3,607	359	535	4,501	1,118	24.8
1969	3,825	365	611	4,801	1,005	20.9
1970	3,593	385	517	4,495	666	14.8
1971	3,982	409	796	5,187	1,127	21.7
1972	4,292	450	1,258	6,000	708	11.8
1973	4,181	472	1,243	5,896	484	8.2
1974	3,180	497	1,149	4,826	361	7.5
1975	3,570	523	1,711	5,804	400	6.9
1976	3,590	542	1,657	5,789	1,136	19.6
1977	3,717	581	1,909	6,207	1,436	23.1
1978	4,264	608	2,124	6,996	1,710	24.4
1979	4,549	640	2,415	7,604	2,034	26.7
1980	4,157	718	2,408	7,283	1,392	19.1
1981	4,169	797	2,010	6,975	2,537	36.4
1982	4,521	895	1,834	7,250	3,523	48.6
1983	3,818	975	1,902	6,694	1,006	15.0
1984	4,079	1,091	1,865	7,036	1,648	23.4
1985	4,095	1,160	1,241	6,496	4,040	62.2
1986	4,717	1,191	1,504	7,412	4,882	65.9
1987	4,738	1,229	1,732	7,699	4,259	55.3
1988 ²	4,000	1,255	2,100	7,355	1,830	24.9

Note: Oct. 1 crop year 1957-75; Sept. 1 crop year 1976-88.

¹ Total may not add due to rounding.

² Estimate as of Aug. 12, 1989.

Source: Feed Situation and Outlook. U.S. Dept. Agr., Econ. Res. Serv., various issues.

Appendix table 3--Prices and ending stocks for corn, 1957-88

Crop year	Ending stocks				Price received ¹	Loan rate	Support level/target price ²	Direct payment ⁴
	CCC	FOR	Free	Total ³				
	-----Million bushels-----				-----Dollars per bushel-----			
1957	1,046	--	423	1,469	1.11	1.40	--	--
1958	1,118	--	407	1,524	1.12	1.36	--	--
1959	1,285	--	502	1,787	1.05	1.12	--	--
1960	1,315	--	702	2,017	1.00	1.06	--	--
1961	810	--	843	1,653	1.10	1.20	1.20	--
1962	567	--	798	1,365	1.12	1.20	1.20	--
1963	815	--	722	1,537	1.11	1.07	1.25	0.18
1964	521	--	626	1,147	1.17	1.10	1.25	.15
1965	249	--	593	842	1.16	1.05	1.25	.20
1966	139	--	687	826	1.24	1.00	1.30	.30
1967	182	--	987	1,169	1.03	1.05	1.35	.30
1968	295	--	823	1,118	1.08	1.05	1.35	.30
1969	255	--	750	1,005	1.16	1.05	1.35	.30
1970	105	--	562	667	1.33	1.05	1.35	.30
1971	160	--	967	1,127	1.08	1.05	1.35	.32
1972	79	--	629	708	1.57	1.05	1.41	.40
1973	7	--	477	484	2.55	1.05	1.64	.32
1974	0	--	361	361	3.02	1.10	1.38	0
1975	0	--	633	633	2.54	1.10	1.38	0
1976	0	--	1,135	1,136	2.15	1.50	1.57	0
1977	4	212	1,220	1,436	2.02	2.00	2.00	0
1978	101	585	1,024	1,710	2.25	2.00	2.10	.03
1979	260	670	1,104	2,034	2.52	2.10	2.20	0
1980	242	0	1,150	1,392	3.12	2.25	2.35	0
1981	280	1,276	981	2,537	2.47	2.40	2.40	0
1982	1,143	1,890	490	3,523	2.55	2.55	2.70	.15
1983	201	447	358	1,006	3.21	2.65	2.86	0
1984	225	384	1,039	1,648	2.63	2.55	3.03	.43
1985	546	564	2,930	4,040	2.23	2.55	3.03	.48
1986	1,443	1,321	2,118	4,882	1.50	1.92	3.03	1.11
1987	750	1,200	2,415	4,365	1.94	1.82	3.03	1.09
1988 ⁵	400	750	680	1,830	2.57	1.77	2.93	.33

-- = Not applicable (aspect of program not in effect).

Note: Oct. 1 crop year 1950-74; Sept. 1 crop year 1975-88.

¹ Total may not add due to rounding.

² Adjusted (Findley) loan rate after 1985.

³ Support level 1961-73; Target price 1974-88.

⁴ Price support 1963-71; Set-aside 1972-73 (1973: .32 for 10% set-aside; .15 for 0% set-aside); deficiency 1974-88.

⁵ Estimate as of Aug. 12, 1989.

Source: Agr. Stab. and Conserv. Serv., U.S. Dept. Agr.

Appendix table 4--Program costs for corn, 1961-88

Crop or fiscal year ¹	Direct or deficiency	Diversion	Disaster	Storage	CCC operations		
					Outlays	Redemp- tions	Net total
<u>Million dollars</u>							
1961	0	645	0	0	1,180	395	785
1962	0	684	0	0	1,666	1,113	553
1963	305	375	0	0	1,528	861	667
1964	224	703	0	0	1,478	448	1,030
1965	334	760	0	0	1,382	696	659
1966	449	579	0	0	1,405	647	758
1967	429	302	0	0	1,402	550	852
1968	514	652	0	0	1,245	186	1,059
1969	585	780	0	0	1,795	304	1,491
1970	583	645	0	0	1,561	549	1,112
1971	893	0	0	0	1,630	776	854
1972	1,144	325	0	0	1,945	518	1,427
1973	910	0	0	0	2,006	976	1,030
1974	0	0	244	0	1,179	731	448
1975	0	0	90	0	338	188	150
1976	0	0	181	0	264	152	112
1977	0	0	281	0	671	407	264
1978	88	558	37	153	2,795	1,098	1,697
1979	0	110	16	223	2,089	1,222	867
1980	0	0	280	-72	2,123	866	1,257 ³
1981	0	0	92	364	2,437	3,013	-666 ³
1982 ²	291	0	1	625	5,506	1,225	4,281
1983 ²	-70	904	0	23	7,477	3,454	4,023 ³
1984 ²	1,653	0	0	100	8,071	9,371	-1,299 ³
1985	2,479	0	9	165	3,317	1,608	1,709
1986	6,030	120	0	519	10,090	2,683	7,407
1987 ⁴	5,874	1,416	0	447	23,088	13,330	9,758
1988 ⁴	2,300	560	909	307	NA	NA	NA

NA = Not available.

¹ Crop year is used for program payments while fiscal year is used for CCC operations data.

² Includes PIK outlays.

³ Negative net CCC operations imply loans redeemed in that year exceeded loans taken out by farmers.

⁴ Estimate as of Aug. 12, 1989.

Source: Agr. Stab. and Conserv. Serv., U.S. Dept. Agr.

Appendix table 5--Value comparisons for corn, 1955-88

Crop year	Loan value per acre		Market value per acre		Gross value of production		GNP deflator 1982=100
	Nominal ¹	1982 dollars ²	Nominal ¹	1982 dollars ²	Nominal ³	1982 dollars ²	
	-----Dollars-----				Billion dollars		Percent
1955	63.00	231.62	56.70	208.46	3.88	14.26	27.2
1956	66.36	236.16	61.15	217.60	3.97	14.12	28.1
1957	65.69	225.73	53.61	184.24	3.38	11.61	29.1
1958	59.14	199.11	59.14	199.11	3.76	12.66	29.7
1959	56.29	185.15	55.76	183.40	4.02	13.21	30.4
1960	65.64	212.43	54.70	177.02	3.91	12.64	30.9
1961	74.88	240.00	68.64	220.00	4.35	13.95	31.2
1962	69.23	217.02	72.46	227.16	4.04	12.66	31.9
1963	74.69	230.52	75.37	232.62	4.46	13.77	32.4
1964	66.05	200.74	73.59	223.69	4.08	12.39	32.9
1965	74.10	219.23	86.96	254.31	4.76	14.08	33.8
1966	76.76	219.30	90.64	258.98	5.17	14.76	35.0
1967	84.11	234.28	82.50	229.81	5.01	13.94	35.9
1968	83.48	221.42	85.86	227.75	4.81	12.75	37.7
1969	90.20	226.62	99.64	250.36	5.44	13.66	39.8
1970	76.02	181.00	96.29	229.27	5.52	13.15	42.0
1971	92.51	208.34	95.15	214.30	6.10	13.73	44.4
1972	101.85	219.03	152.29	327.51	8.76	18.84	46.5
1973	95.87	193.67	232.81	470.33	14.46	29.21	49.5
1974	79.09	146.46	217.14	402.11	14.20	26.29	54.0
1975	95.04	160.27	219.46	370.08	14.84	25.02	59.3
1976	132.00	209.19	189.20	299.84	13.52	21.43	63.1
1977	181.60	269.84	183.42	272.53	13.14	19.52	67.3
1978	202.00	279.78	227.25	314.75	16.35	22.65	72.2
1979	229.95	292.56	275.94	351.07	19.98	25.42	78.6
1980	204.75	238.91	283.92	331.30	20.71	24.17	85.7
1981	261.36	278.04	268.98	286.15	20.05	21.33	94.0
1982	288.66	288.66	288.66	288.66	21.00	21.00	100.0
1983	214.91	206.85	260.33	250.56	13.40	12.90	103.9
1984	272.09	252.63	280.62	260.56	20.18	18.74	107.7
1985	300.90	270.59	263.14	236.64	19.80	17.80	111.2
1986	229.06	200.75	178.95	156.84	12.38	10.85	114.1
1987	217.31	184.94	208.95	177.83	13.23	11.26	117.5
1988 ⁴	149.74	123.04	215.73	177.26	12.14	9.97	121.7

¹ Loan rate or average farm price times yield per harvested acre.

² GNP implicit price deflator (1982 = 100) was used.

³ Production times average farm price.

⁴ Estimate as of Aug. 12, 1989.

Source: Econ. Res. Serv., U.S. Dept. Agr.

Appendix table 6--World production, consumption, exports, and ending stocks for corn, 1960-88

Crop year ¹	Production	Consumption	Exports ²	Ending stocks	Stocks-to-use ratio
	-----Million metric tons-----				Percent
1960	200.4	195.0	14.0	60.1	30.8
1961	208.5	209.8	20.1	55.8	26.6
1962	207.9	215.3	20.1	48.1	22.3
1963	217.3	213.2	21.9	52.6	24.7
1964	215.5	222.8	23.9	42.8	19.2
1965	225.8	232.5	28.1	33.5	14.4
1966	250.3	243.4	27.0	38.8	15.9
1967	262.4	252.9	29.2	47.0	18.6
1968	252.8	256.9	27.0	43.4	16.9
1969	270.2	269.4	31.2	41.3	15.3
1970	268.3	269.7	32.2	35.6	13.2
1971	308.7	293.1	35.8	48.4	16.5
1972	301.8	310.3	44.9	37.9	12.2
1973	330.7	327.0	54.1	38.3	11.7
1974	300.0	292.2	46.9	45.9	15.9
1975	339.5	330.7	60.0	52.1	15.8
1976	355.9	337.5	60.3	67.6	20.0
1977	365.1	353.5	65.6	76.5	21.6
1978	391.8	382.7	71.1	84.5	22.1
1979	425.1	413.1	78.1	97.5	23.6
1980	408.5	415.6	85.3	84.3	20.3
1981	441.2	421.7	73.2	108.2	25.7
1982	439.5	426.4	65.9	128.6	30.2
1983	347.5	407.9	67.6	65.5	16.1
1984	458.7	434.3	73.0	89.4	20.6
1985	479.8	425.2	62.2	144.1	33.9
1986	476.6	457.4	62.8	161.7	35.3
1987	442.7	466.0	63.8	140.2	30.1
1988 ³	390.2	461.6	71.4	74.4	16.1

¹ Based on aggregate of differing local marketing years.

² Includes intra-EC trade.

³ Estimate as of Aug. 12, 1989.

Source: For. Agr. Serv., U.S. Dept. Agr.

Appendix table 7--U.S. and world production, trade, and ending stocks of corn, 1965-88

Crop year ¹	Production			Exports ²			Ending stocks		
	World	United States	U.S. share	World	United States	U.S. share	World	United States	U.S. share
	--Million bushels--		Percent	---Million bushels---		Percent	---Million bushels---		
Percent									
1965	8,891.0	4,102.9	46.1	1,105.2	658.9	59.6	1,317.1	841.6	63.9
1966	9,851.9	4,167.6	42.3	1,063.7	477.8	44.9	1,526.3	826.3	54.1
1967	10,328.7	4,860.3	47.1	1,149.8	612.0	53.2	1,849.7	1,168.6	63.2
1968	9,953.3	4,449.5	44.7	1,061.0	523.6	49.4	1,707.6	1,118.3	65.5
1969	10,639.1	4,687.0	44.1	1,226.8	612.1	49.9	1,624.2	1,005.2	61.9
1970	10,563.6	4,152.2	39.3	1,265.9	506.0	40.0	1,402.6	663.0	47.3
1971	12,154.5	5,646.2	46.5	1,410.8	782.2	55.4	1,905.5	1,125.9	59.1
1972	11,882.0	5,579.8	47.0	1,768.2	1,241.5	70.2	1,490.4	707.9	47.5
1973	3,019.9	5,670.7	43.6	2,131.7	1,229.9	57.7	1,507.9	483.9	32.1
1974	1,811.6	4,701.4	39.8	1,847.3	1,149.0	62.2	1,805.1	558.0	30.9
1975	3,365.3	5,840.7	43.7	2,362.4	1,677.7	71.0	2,052.7	633.2	30.8
1976	4,010.7	6,289.1	44.9	2,375.4	1,656.7	69.7	2,660.4	1,135.6	42.7
1977	4,373.0	6,504.9	45.3	2,584.2	1,909.1	73.9	3,012.6	1,435.9	47.7
1978	5,425.4	7,267.8	47.1	2,798.4	2,123.7	75.9	3,325.7	1,709.5	51.4
1979	6,733.5	7,928.0	47.4	3,074.8	2,415.4	78.6	3,836.7	2,034.3	53.0
1980	6,083.2	6,639.3	41.3	3,357.2	2,407.9	71.7	3,318.6	1,392.1	41.9
1981	7,369.5	8,118.6	46.7	2,883.2	2,009.5	69.7	4,260.2	2,536.6	59.5
1982	7,303.0	8,235.1	47.6	2,594.3	1,833.8	70.7	5,062.3	3,523.3	69.6
1983	3,680.7	4,174.7	30.5	2,662.3	1,901.5	71.4	2,577.5	1,006.3	39.0
1984	8,059.9	7,674.0	42.5	2,873.4	1,865.4	64.9	3,520.5	1,648.2	46.8
1985	8,888.6	8,876.7	47.0	2,448.1	1,241.2	50.7	5,673.2	4,039.5	71.2
1986	8,764.2	8,249.8	44.0	2,470.7	1,504.0	60.9	6,363.9	4,881.7	76.7
1987	7,570.1	7,072.1	40.2	2,512.3	1,732.0	68.9	5,520.3	4,113.1	74.5
1988 ³	5,362.7	4,921.0	32.0	2,590.0	2,007.9	77.5	2,929.0	1,660.0	56.7

¹ Based on aggregate of differing local marketing years.

² Includes intra-EC trade.

³ Estimate as of Aug. 12, 1989.

Source: For. Agr. Serv., U.S. Dept. Agr.

Appendix table 8--World corn trade, stocks, and consumption, 1962-88

Crop year	World trade to world consumption	World stocks to world consumption	U.S. exports to foreign consumption
	<u>Percent</u>		
1962	9.3	22.3	8.0
1963	10.2	24.7	9.5
1964	10.7	19.2	10.3
1965	12.1	14.4	12.2
1966	11.1	15.9	8.1
1967	11.5	18.6	10.1
1968	10.5	16.9	8.5
1969	11.6	15.3	9.5
1970	11.9	13.2	7.6
1971	12.2	16.5	11.0
1972	14.5	12.2	16.6
1973	16.6	11.7	15.0
1974	16.1	15.7	14.3
1975	18.1	15.8	18.8
1976	17.9	20.0	18.1
1977	18.6	21.6	19.8
1978	18.6	22.1	20.8
1979	18.9	23.6	21.8
1980	20.5	20.3	21.0
1981	17.4	25.7	17.3
1982	15.5	30.2	16.1
1983	16.6	16.1	16.9
1984	16.8	20.6	15.6
1985	14.6	33.9	10.8
1986	13.7	35.3	12.4
1987	13.7	30.1	13.9
1988 ¹	16.2	17.2	16.3

¹ Estimate as of Aug. 12, 1989.

Source: For. Agr. Serv., U.S. Dept. Agr.

Appendix table 9--Corn production and exports, major foreign exporters and total foreign, 1962-88

Crop year	Argentina		South Africa		Thailand		Total foreign	
	Production	Exports	Production	Exports	Production	Exports	Production	Exports
<u>Million bushels</u>								
1962	171.6	102.9	240.1	108.9	26.2	28.4	4,578.2	394.0
1963	210.6	134.7	168.5	43.3	33.8	36.3	4,533.7	385.3
1964	202.4	105.0	180.4	18.9	36.8	35.3	5,000.1	382.1
1965	277.2	151.8	201.5	19.0	40.2	44.6	4,788.1	446.2
1966	314.9	162.1	384.3	114.1	44.2	46.5	5,684.3	585.9
1967	258.3	127.1	209.3	105.2	51.8	47.8	5,468.3	537.8
1968	270.1	148.2	210.2	31.3	59.3	50.7	5,503.8	537.4
1969	368.5	218.8	241.4	43.5	66.9	59.1	5,952.0	614.7
1970	390.9	253.6	338.6	100.6	76.3	65.5	6,411.4	759.9
1971	230.7	99.9	373.3	140.2	90.5	83.1	6,508.2	628.6
1972	354.3	185.1	163.8	6.2	51.8	40.9	6,302.2	526.7
1973	389.7	225.0	437.2	127.0	92.5	83.9	7,349.2	901.8
1974	303.1	137.2	358.2	126.2	98.4	77.9	7,110.3	698.3
1975	230.5	127.5	287.9	57.7	112.7	93.9	7,524.5	684.7
1976	326.8	205.9	382.9	99.4	105.3	83.3	7,721.6	718.7
1977	381.9	232.9	395.9	118.6	66.0	47.9	7,868.0	675.1
1978	354.3	234.8	328.0	91.5	109.9	81.8	8,157.7	674.8
1979	252.0	134.5	423.7	135.6	129.9	84.6	8,805.5	659.4
1980	507.8	358.2	577.0	195.1	126.0	84.3	9,443.9	949.3
1981	377.9	227.0	329.1	149.1	171.3	128.3	9,250.9	873.7
1982	354.3	238.4	160.7	9.4	135.8	84.1	9,067.9	760.5
1983	374.0	214.5	173.4	.4	155.5	112.0	9,506.0	760.8
1984	468.5	280.5	320.3	20.4	171.3	125.2	10,385.9	1,008.0
1985	488.2	290.0	318.0	114.1	210.6	144.6	10,012.0	1,206.9
1986	364.2	141.7	281.5	102.4	196.6	114.8	10,514.4	966.8
1987	354.3	165.3	295.3	23.6	107.7	27.5	10,363.1	484.2
1988 ¹	236.2	106.3	327.9	78.7	177.2	94.5	10,440.9	582.7

¹ Estimate as of Aug. 12, 1989.

Source: For. Agr. Serv., U.S. Dept. Agr.