successfully eliminated about 10 million acres, or one-fourth of the growing crop. Growers received cash payments for their participation in the program. However, before the 1933 crop could be harvested, the deteriorating financial condition of cotton farmers led them to demand price supports. In response, a nonrecourse loan of 10 cents a pound was authorized on the 1933 crop. The term "nonrecourse" means that the producer may pay back the full dollar amount of the loan, or alternatively, deliver the stored cotton to the Commodity Credit Corporation (CCC). Such delivery constitutes payment of the price support loan in full, regardless of the current market value of cotton.

Marketing quotas were legislated in 1934 to prevent nonparticipants in the acreage control program from sharing in its financial benefits. The quotas restricted the quantity of cotton that each producer could sell without paying a penalty tax. Marketing quotas were a longstanding provision of subsequent cotton programs, ending in 1970.

The production control and financing features of the 1933 Act were declared unconstitutional by the Supreme Court in 1936. This action was followed by enactment of the Soil Conservation and Domestic Allotment Act in 1936, which provided for payments to farmers who agreed to adopt soil-building practices and shift

Table 7--Cotton sector costs and returns, 1975-87 1/

Crop year	Farm value 2/	Direct payments 3/	Total income	Total cash 4/ expenses	Total economic costs 5/	Returns above total economic costs: Farm value	Total income: Total	Total income: Nominal	Total income: Real 6/
	Million dollars							Cents per pound	
1975	3,375	118	2,493	1,677	2,206	168	286	7.31	12.27
1976	3,776	98	3,874	2,109	2,974	801	899	17.84	28.27
1977	4,273	69	4,342	2,732	3,765	508	576	8.39	12.47
1978	3,488	228	3,716	2,626	3,681	-193	35	.68	.94
1979	5,083	108	5,191	3,194	4,562	520	628	9.01	11.46
1980	4,538	302	4,840	3,490	4,890	-352	-51	-.96	-1.12
1981	4,646	550	5,196	4,281	5,134	-487	62	.83	.88
1982	3,996	654	4,650	3,652	4,436	-441	216	3.43	3.43
1983	2,965	1,528	4,493	2,455	3,042	-77	1,451	39.26	37.79
1984	4,041	665	4,706	3,483	4,427	-386	279	4.39	4.08
1985	3,857	1,056	4,913	3,425	4,288	-430	625	9.86	8.89
1986	2,614	1,482	4,096	2,683	3,396	-782	700	15.43	13.55
1987	4,998	951	5,949	3,593	4,418	580	1,531	21.93	18.63

1/ Costs are from ERS Cost of Production series. Acreage and payments from Commodity Fact Sheets, published by the Agricultural Stabilization and Conservation Service, USDA.
2/ Total gross value (including cotton seed) per planted acre times planted acres. 3/ The sum of deficiency, diversion, and disaster payments to producers. Loan value of payment-in-kind (4.3 mil. bales @ $0.53 per lb.) is included for 1983.
4/ Includes variable cash expenses, general farm overhead, taxes and insurance, interest on operating loan, and interest on real estate.
5/ Includes variable cash expenses, general farm overhead, taxes and insurance, capital replacement, and allocated returns to operating capital, nonland capital, land, and unpaid labor.
6/ Based on GNP implicit price deflator (1982 = 100).

land from "soil-depleting" surplus crops such as cotton and wheat to "soil-conserving" crops such as legumes and grasses. The soil-conserving payments in the 1936 Act failed to bring the desired cotton crop reduction. Harvested acreage in 1937 climbed to 33.6 million acres, compared with an average of about 28 million acres each year from 1933 through 1936.

Mounting crop surpluses and declining farm prices led to the Agricultural Adjustment Act of 1938. This act provided for mandatory price support loans and marketing quotas keyed to acreage allotments. The latter provision was intended to keep production in balance with market needs. Acreage allotments and marketing quotas were used for cotton from 1938 to 1942. The acreage planted to cotton declined to less than 25 million acres under this program, but there was not a comparable decline in production because of increasing yields.

Cotton acreage allotments were not in effect during 1943-49 because of the need to expand production during and following World War II. However, cotton price supports ranged up to 95 percent of parity during these years. Cotton acreage declined during the war and then expanded slowly, reaching 28.3 million acres by 1949, which was over 17 percent above the 1938-42 average. The anticipation of a return to acreage allotments in 1950 may have accounted for part of the large acreage in 1949.

The Agricultural Act of 1948 provided for mandatory price support for cotton, at 90 percent of parity if producers approved marketing quotas. Subsequent legislation extended this level of support through the 1954 crop.

Cotton acreage dropped about 35 percent in 1950 with the return of acreage allotments and marketing quotas. Production restrictions were again removed during 1951-53 because of the Korean War, and both acreage and production increased substantially. Production reached 16.5 million bales in 1953, a level not exceeded since then (fig. 7).

Increased production and stocks during 1950-53 prompted the renewal of allotments and marketing quotas under the Agricultural Act of 1954. Cotton was under marketing quotas continuously from 1954 through 1970. Under the 1954 Act and subsequent programs, cotton acreage declined from the 1951-53 average of 25.7 million acres to 18.1 million acres in 1954-55 and 13.7 million acres during the soil bank years in 1956-58. The soil bank was established by the Agricultural Act of 1956 to (1) reduce the amount of land planted to allotment crops and (2) provide for long-term retirement of cropland to conservation uses. The soil bank program idled acreage, but in relative terms, the reduction in capacity to produce was small. A major objection to the program was that communities were disrupted when many farmers placed whole farms in the conservation reserve. Yields continued to increase. Over the next 7 years (1959-65), cotton acreage averaged 14.8 million acres, and the accumulation of cotton stocks was substantial. With the exception of a few years, cotton prices received by farmers remained close to the loan

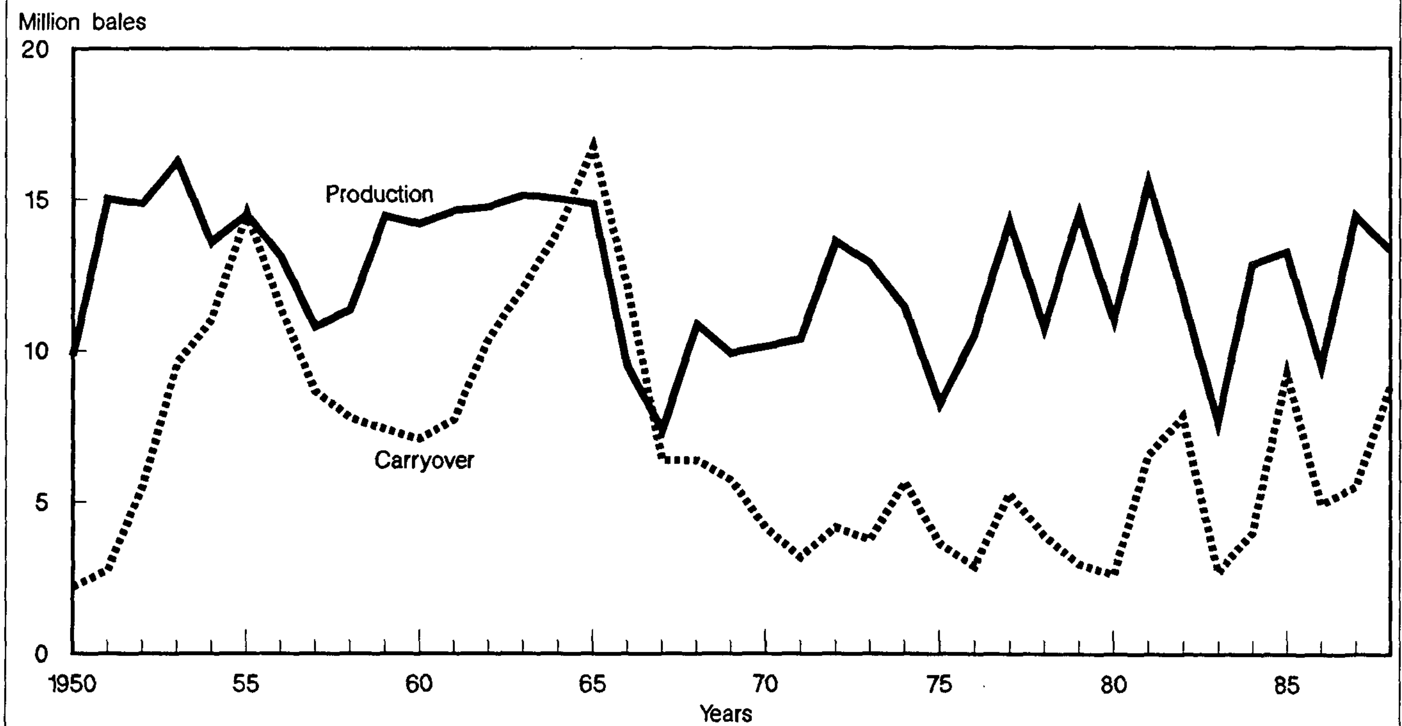
level (table 8). Despite marketing quotas, supplies continued to increase because the allotment level had been reduced to the minimum allowed by legislation, leaving program administrators with no further allotment reduction discretion.

Cotton Programs in the 1960's

In the late 1950's and early 1960's, policymakers realized that surpluses were mounting and existing legislation provided no effective provision to deal with them. Stocks peaked at nearly 17 million bales at the end of the 1965 crop year (see fig. 7), which exceeded total use that year by 4.5 million bales. Legislated minimum support prices and allotments, particularly for wheat and cotton, in conjunction with increasing yields insulated producers from the market. Even so, individual producers were dissatisfied because the allotment rigidities were preventing desired production shifts among crops in which they had a comparative advantage.

The Cotton-Wheat Act of 1964 authorized the Secretary of Agriculture to make payments to domestic handlers or textile mills in order to bring the price of cotton used in the United States down to the export price. This essentially ended the two-

Figure 7
U.S. cotton production and carryover



price system that had been in effect since 1956. Also, a domestic cotton allotment, smaller than the regular allotment, was authorized for 1964 and 1965. Producers who planted within

Table 8--Average price support levels and average prices received by farmers for upland cotton under early agricultural programs, 1940-63

Year	Level of support		Season-average price received by farmers (gross weight)
	Percentage of parity 1/	Price support loan 2/	
	Percent	-------- Cents per pound	-------
1940	571	9.40	9.83
1941	85	14.42	16.95
1942	90	17.42	18.90
1943	90	19.51	19.76
1944	95	21.33	20.72
1945	92.5	21.39	22.51
1946	92.5	24.68	32.63
1947	92.5	28.19	31.92
1948	92.5	31.49	30.38
1949	90	30.03	28.57
1950	90	30.25	39.90
1951	90	32.36	37.69
1952	90	32.41	34.17
1953	90	33.50	32.10
1954	90	34.03	33.52
1955	90	34.55	32.27
1956	78	32.74	31.63
1957	81	32.31	29.46
1958	80	35.08	33.09
1959 3/	80	34.10	31.56
	65	28.40	
1960 3/	75	32.42	30.08
	60	26.63	
1961	82	33.04	32.80
1962	79	32.47	31.74
1963	79	32.47	32.02

1/ Reflects average level. In 1944 and 1945, the CCC purchased cotton at 100 percent of parity.

2/ Prior to 1961, support was based on 7/8-inch Middling cotton, but all support prices have been converted to Middling 1-inch to make them comparable. Reported on gross weight basis.

3/ In 1959 and 1960, producers could elect to (a) plant within their regular allotment and receive support at not less than 80 percent of parity for 1959 and 75 percent of parity for 1960, or (b) increase their acreage by as much as 40 percent over their allotment and receive support at a level of 15 percent of parity less than that of choice (a).

the domestic allotment received a higher support through a direct price support payment. This act had two elements common to attempts to deal with surpluses: demand enhancement and voluntary acreage reduction. The 1964 Act was the beginning of voluntary program for reducing cotton production.

The Food and Agriculture Act of 1965 was a major piece of farm program legislation that included dairy, wheat, feed grains, and cotton. The act also established a cropland adjustment program. The legislation covered 4 years, 1966-69, and was later extended to 1970. This act was more market oriented, with price supports for all of the covered commodities except dairy set below world market prices. The market price of cotton was supported at 90 percent of estimated world price levels. Incomes of cotton farmers were maintained through payments based on the extent of participation in an acreage reduction program. A minimum acreage reduction of 12.5 percent of the cotton acreage allotment was required of participants. Small farms had special provisions. For the first time, sale and lease of allotments within a State were permitted. Planted cotton acreage dropped from 14.1 million acres in 1965 to 10.3 million in 1966. The price support loan dropped from 29 to 21 cents. However, that reduction was offset by a price support payment (table 9). Starting in 1966, cotton producers joined wheat and feed grain producers in diverting cropland acreage to approved conserving uses. Cotton production was substantially reduced during 1966-68 as a result of attractive diversion payments and low yields in 1966 and 1967.

By the end of the 1970 season, the huge CCC inventory of cotton was gone. The voluntary programs to reduce acreage had met the objective of reducing or eliminating surpluses, but they had raised a new issue: the direct Treasury cost of programs and the amount of payments going to large producers. Large cotton producers, particularly, were singled out as recipients of large annual payments.

Cotton Programs in the 1970's

The Agricultural Act of 1970 established a voluntary program for cotton, as marketing quotas were suspended for 3 years. The act also provided for a cropland set-aside program in which diversion of cropland to conserving uses could not exceed 28 percent of the farm's base acreage allotment. The set-aside payment to participating farmers was specified as the difference between the higher of 65 percent of parity or 35 cents a pound, and the average market price for the first 5 months of the marketing year. This payment, however, could not be less than 15 cents per pound. The 1970 Act put a separate $55,000 annual limit on Government payments to producers of upland cotton, wheat, and feed grains. The limit applied to all direct payments but did not include CCC loans or purchases. The loan rate was established at 90 percent of the average world price for the previous 2 years.

The provisions of the 1970 Act continued to recognize the importance of the world market price through the way the loan

rate was set. The set-aside concept gave producers a wider latitude in crop selection and mix because there was no restriction on the crop mix on remaining planted acres. However, cotton producers would lose some allotment if less than 90 percent of their farm allotment were planted to cotton.

The issue of large payments was addressed by the $55,000 payment limitation. The limit had little impact on total payments because large producers often divided ownership of their units, which allowed a unit to have multiple recipients.

A set-aside program was in effect in 1971 and 1972. The 2-million-acre set-aside was half of the acreage diverted in the 1966-68 period. Planted acreage reached 14 million acres in 1972 for the first time since 1965. The increase in acreage was a

Table 9--Average price support levels and average prices received by farmers for upland cotton, 1964-73

Year	Level of support			
	Price support loan 1/	Price support payment 2/	Total support or guarantee 3/	Season-average price received by farmers 4/
	Cents per pound			
1964	30.00	3.50	33.50	29.62
1965	29.00	4.35	33.35	28.03
1966	5/ 21.00	9.42	30.42	20.64
1967	20.25	11.53	31.78	25.39
1968	20.25	12.24	32.49	22.02
1969	20.25	14.73	34.98	20.94
1970	20.25	16.80	37.05	21.86
1971	19.50	15.00	35.00	28.07
1972	19.50	15.00	35.85	27.20
1973	19.50	15.00	41.25	44.40

1/ For Middling 1-inch cotton. Gross weight basis through 1970; net weight thereafter.

2/ Available on domestic allotment for 1964-70 crops; for 1971-73, represents minimum payment rate on full base acreage allotment.

3/ For 1964-70 crops, represents total support on domestic allotment; for 1971-73 crops, the final payment, together with the national average market price, had to equal the higher of 35 cents or 65 percent of parity, but not be less than 15 cents a pound.

4/ Price supports and prices received were based on gross weight of cotton and wrapping prior to 1971; all quotations from 1971 to date are net weight.

5/ For 1966 and subsequent years, loan rate set at 90 percent of average price of U.S. cotton in world markets during a specified period.

result of higher price expectations at planting time and the elimination of planting restrictions. Unlike previous programs, the farm cotton allotment in 1971-73 did not limit the acreage of cotton that a participant could plant. However, set-aside payments were based on production from acreage planted within the base acreage allotment rather than the total acreage planted.

By 1973, the worldwide demand for American farm products was at a high level due to world crop shortages, devaluation of the dollar, and generally favorable worldwide economic growth. Stocks that had built to surplus levels in the 1950's and 1960's were greatly reduced. The Agriculture and Consumer Protection Act of 1973 was debated and passed in a far different setting than the acts since 1954. Many agricultural interests felt the setting had changed from a situation of chronic surpluses and income problems to a situation where the Government could minimize its role and the attendant cost for crops.

A major feature of the 1973 Act was the target price concept. Target prices were provided in recognition that agriculture faces weather and market extremes which can result in low incomes, and that income support should not affect the market price. Direct payments would be made only if market prices fell below target price levels. The payment rate would vary by the actual amount the market price was below the target price during a specified period of the marketing year. Payment rates could not exceed the difference between target prices and the loan rate. The loan rate for upland cotton was established to reflect 90 percent of the average price of American cotton in world markets for the preceding 3-year period. The act specified target price levels for 1974 and 1975 and provided a specific adjustment formula based on the index of prices paid for farm inputs and changes in productivity measured by yields for 1976 and 1977. The use of set-aside was authorized but not required during the period covered by the 1973 Act. The payment limit was lowered to $20,000 per person and applied to payments for wheat, feed grains, and cotton combined.

Another new concept introduced in the 1973 Act was disaster payments. Participating producers in the wheat, feed grain, and cotton programs who were prevented from planting any portion of allotments or who suffered low yields due to natural disaster received a payment based on a percentage of the target level of support. Disaster payments were made for each of the 1974-82 crop years (shown by crop year in table 12 and by fiscal year in app. table 4).

The target price, set-aside, and disaster programs applied to national base acreage allotments that were determined and apportioned by the Secretary of Agriculture. Additional plantings were not eligible for support, but no penalties were imposed.

The increase in 1974 acreage over 1973 resulted largely from attractive prices for cotton (table 10). However, a significant drop occurred in 1975 cotton acreage, chiefly due to a strong

cost-price squeeze and significant shifts from cotton to soybeans in the Delta and Southeast. No deficiency payments were made through 1977, as the average market price received exceeded the target price.

Falling farm income dominated discussions on whether to extend or replace 1973 farm legislation. Stocks were far below those of the early 1960's, but commodity prices had not kept pace with production costs, which resulted in a cost-price squeeze. The farm income issue focused on the price and income support structure. The basic rationale of the 1973 Act had been to protect farm income, yet farm income had fallen in 1976 and 1977 without triggering any large-scale support. No deficiency payments had been paid for cotton, but there had been some disaster payments. Export markets continued strong, so there was still optimism about demand.

The response as embodied in the Food and Agriculture Act of 1977 was to set target prices on the basis of cost of production. Cost of production was used as a guideline in setting the target price levels specified in the 1977 Act, and a formula using cost estimates was defined for subsequent adjustments.

Table 10--Average price support levels and season-average prices received by farmers for upland cotton, 1974-88

Year	Loan rate 1/	Target price	Season-average price received by farmers (net weight basis)
		Cents per pound	
1974	27.06	38.00	42.7
1975	36.12	38.00	51.1
1976	38.92	43.20	63.8
1977	44.63	47.80	52.1
1978	48.00	52.00	58.1
1979	50.23	57.70	62.3
1980	48.00	58.40	74.4
1981	52.46	70.87	54.0
1982	57.08	71.00	59.1
1983	55.00	76.00	66.0
1984	55.00	81.00	57.5
1985	57.30	81.00	56.1
1986	55.00	81.00	51.5
1987	52.25	79.40	63.7
1988	51.80	75.40	2/

1/ Base loan rates for SLM 1-1/16-inch cotton (micronaire 3.5-4.9) at average location, net weight.
2/ USDA is prohibited by law from publishing cotton price forecasts.

The loan rate continued to be based on a percentage of past market prices. The formula was expanded to use the lower of 85 percent of a preceding 3-year average of prices at domestic locations or 90 percent of the average price of specified classes of cotton in northern Europe during the 15-week period beginning July 1 of the year in which the loan level was announced. A minimum loan rate of 48 cents a pound was specified.

Another significant change was to base the target price payment calculation on acreage actually planted rather than on an historical allotment. The payment could be reduced by a national allocation factor if producers in the aggregate exceeded an announced national program acreage. Overall, the 1977 Act was the second attempt at establishing a price and income safety net for producers that would be effective without impinging on the desired market orientation. No deficiency payments were made through 1980, as market prices exceeded target prices.

The Food and Agriculture Act of 1977 facilitated a shift of cotton production to the lower cost regions of the West and Southwest since benefits were based on recent plantings rather than on an historically based allotment. This encouraged the movement of acreage to more efficient producers and to regions where cotton held a comparative advantage. Cotton acreage and production increased significantly during 1978-81. The 1978-81 average acreage planted to cotton increased to 14.1 million acres from the 12.1-million average for 1974-77.

Cotton Programs in the Early 1980's

The Agriculture and Food Act of 1981 was also debated and developed under a situation of falling farm income. Net farm income had increased in 1978 and 1979, the first 2 years under the 1977 Act, but then began to decline again. The focus of the 1981 debate was on the price and income supports and the provisions or mechanisms affecting their adjustment. The cost-of-production adjustment formula for target prices had not worked satisfactorily. It was based on an historical moving average of per acre costs and actual yields in estimating unit costs. The formula was applied during a period of increasing inflation with the result that adjustments lagged behind actual conditions. Production costs reflect changes in production inputs and their prices and do not accurately track changing market conditions.

There was general optimism during the legislation development period that export demand would remain strong. The 1981 Act specified minimum target prices at successively higher levels for all 4 years of the legislation. The Secretary was given authority to adjust target prices based on a number of factors, including changes in the cost of production. A crop-specific acreage reduction program was established. The payment limit for deficiency and diversion payments remained at $50,000 per person during 1982-85. No limits were applied to loans and purchases.

The 1977 Act had removed the vestiges of the historical allotments and bases that traced back to the 1950's and 1960's.

The 1981 Act provided for establishment of a crop acreage upon which acreage reductions were to be based. Acreage reduction programs were in effect during 1982-84. The act specified that acreage taken from production was to be devoted to conserving uses.

The cotton loan rate formula followed the same general specifications as in the 1977 Act, based on either domestic or world prices, whichever was lower. However, the minimum loan was raised from 48 cents a pound to 55 cents a pound. The 1981 Act allowed the Secretary of Agriculture to make disaster payments to producers only if emergency conditions exist or if Federal crop insurance is not available. Although Federal crop insurance was available in all cotton-producing counties in 1982, disaster payments were authorized in the Texas Plains where adverse weather caused widespread abandonment of cotton acreage. Disaster payments could not exceed $100,000 per person.

The third attempt to set a price and income safety net in conjunction with a market-oriented program again conflicted with emerging conditions. The 1981 Act established the 1982-85 target prices at successively higher levels. A worldwide recession reduced both domestic and export demand, inflation rates declined, and yields hit record high levels. Surpluses quickly accumulated, despite acreage reduction programs. Supplies of cotton greatly exceeded use during 1981 and 1982. Cotton acreage in 1982 dropped 20 percent from 1981 and production fell almost 25 percent. Widespread compliance with the acreage reduction program under the 1981 Act and low cotton prices explain most of the decline. Even after the substantial drop in production, stocks remained considerably above desired levels. Deficiency payments to cotton producers in 1982 totaled over $520 million.

Increased stocks, depressed commodity prices, and lower farm income led to the implementation of the payment-in-kind program for the 1983 crop. Payment-in-kind was added to the existing acreage reduction and cash-paid diversion programs in order to idle substantially larger acreage. The 1983 loan rate for program participants was 55 cents per pound and the target price was 76 cents. Eligibility for program benefits and payment-in-kind program participation required growers to participate in the 20-percent acreage reduction program. Producers could idle up to an additional 5 percent of their base acreage in return for a cash diversion payment rate of 25 cents per pound of lint. Farmers participating in the 20-percent acreage reduction program had an option of idling an additional 10-30 percent of their base acreage and receiving a payment-in-kind equal to 80 percent of the farm program yield. They also had the option of submitting sealed bids indicating the percentage of their farm program yield for which an in-kind payment would be accepted for idling their entire base acreage.

Under the payment-in-kind program, 4.1 million cotton acres were diverted to conserving uses, for which producers received payment in surplus cotton from CCC stocks or from cotton under loan. An additional 2.5 million acres were diverted under the regular

acreage reduction program. Acreage planted to upland cotton dropped to 7.9 million acres in 1983. Production dropped by 4.2 million bales due to the payment-in-kind program and the drought, and stocks dropped from the 7.8 million bales on hand on August 1, 1983, to 2.7 million bales on August 1, 1984. If there had been no Government acreage control program in 1983, an estimated 13.5 to 14.5 million acres would have been planted and ending stocks might have remained near 8 million bales, with farm prices near the loan level. However, even with the payment-in-kind program and relatively high exports in 1983/84, farm prices remained below the target price. Thus, deficiency payments totaling $430 million were required by law. The estimated value of payment-in-kind entitlement was about $1.1 billion.

An acreage reduction program was in effect for cotton in 1984. In order to be eligible for nonrecourse loans and target price protection, producers had to limit their upland cotton acreage to no more than 75 percent of their cotton acreage base (average of the 1982 and 1983 acreage planted and considered planted) and restrict the diverted acreage to approved conserving uses. There was no paid land diversion. The target price was 81 cents per pound as specified by law and the loan rate was at the legislated minimum of 55 cents per pound. About 11 million acres were planted in 1984 and 2.5 million acres were devoted to conserving uses.

The record-high 1984 yield, combined with reduced mill use and lower exports in 1984/85, resulted in ending stocks of about 4.1 million bales, up about 1.3 million bales from a year earlier. Deficiency payments to cotton producers in 1984 totaled about $650 million, based on the difference between the target price of 81 cents per pound and the calendar year average price received by farmers of 62.4 cents.

The Agricultural Program Adjustment Act of 1984 froze the 1985 target price at 81 cents per pound rather than the 86-cent level specified by the 1981 Act. The average loan rate, however, rose from 55 cents per pound to 57.3 cents per pound for SLM 1-1/16 inch cotton. To be eligible for target price and loan rate protection, farmers could plant no more than 70 percent of their upland cotton base acreage and were required to devote the reduced acres to conserving uses. The reduced acreage was comprised of a 20-percent acreage reduction program and a 10-percent paid land diversion program. The land diversion payment was based on 30 cents per pound times the farm yield times 10 percent of the farm's base acreage. No payment was made for the regular 20-percent acreage reduction. Producers who participated in the 1985 upland cotton acreage reduction program were eligible to receive deficiency payments on the number of pounds equal to their cotton-planted acres times their farm program yields. Advance payments equal to half of the diversion payment and half of the expected 1985 deficiency payment could be requested by producers when they signed up to participate. For advance payment purposes, the USDA announced an estimated deficiency payment for 1985 of 19.8 cents per pound.

About 82 percent of the upland cotton base of 15.8 million acres was enrolled in the 1985 program. About 10.6 million acres of cotton were planted in 1985, and yields exceeded the record-high level of 1984. Production totaled about 13.3 million bales, based on an average yield of 628 pounds per harvested acre. Production at this level greatly exceeded the estimated 1985/86 disappearance (mill use plus exports) of 8.2 million bales, thus adding about 5 million bales to ending stocks. Deficiency payments totaled about $860 million in addition to diversion payments of about $200 million. The 1985 deficiency payment rate was 23.7 cents a pound, which is the difference between the 81-cent target price and the national average loan rate of 57.3 cents a pound. The national average price received by farmers for upland cotton lint in calendar year 1985 was 54.7 cents. Because the average farm price was lower than the loan rate, the deficiency payments were based on the difference between the target price and the loan rate.

The Food Security Act of 1985

Development of farm legislation in 1985 took place when the cotton market was characterized by falling mill use, sharply lower exports, rising stocks, growing textile imports, and low farm prices. Contributing to the sluggish market for U.S. cotton was the record 1984/85 world crop of nearly 88 million bales that exceeded consumption by about 18 million bales. For the first time since 1974, foreign production in 1984/85 exceeded foreign consumption. World ending stocks in 1984/85 reached a record 42 million bales, resulting in a sharp drop in world market prices. Although world production dropped to about 79 million bales in 1985/86, ending stocks rose to about 48 million bales.

The Food Security Act of 1985 established farm policy for 5 crop years, 1986-90. Some major features of past farm acts were retained, including acreage limitations, nonrecourse loans, and target prices, but the act vested the Secretary of Agriculture with more discretionary authority for administering annual commodity programs. The act provided for greater market orientation and more flexibility to promote market competitiveness. The act also specified declining target price minimums through 1990. Loan rates are tied to an average of past market prices with provisions for allowing loans to be repaid at levels below the loan rate if market competitiveness might be hampered by the formula-determined rate.

The basic loan rate for upland cotton in 1986 was set at 55 cents per pound for SLM 1-1/16 inch cotton. For 1987-90, the loan rates are based on essentially the same formula as that used in the 1981 Act: the smaller of (1) 85 percent of the average spot market price during 3 of the preceding 5 market years, excluding highest and lowest, or (2) 90 percent of the average of the 5 lowest priced growths among the growths quoted for Middling 1-3/32 inch cotton, c.i.f. northern Europe, adjusted downward by the average difference between the northern European prices and U.S. spot market prices of SLM 1-1/16 cotton.

Notwithstanding the above loan formula, the loan rate for 1987-90 crops may not be reduced by more than 5 percent per year from the rate of the preceding crop, and the minimum loan rate through 1990 is 50 cents per pound. In October 1986, the Secretary announced a loan level of 52.25 cents per pound for the base quality of 1987 upland cotton, a 5-percent reduction from a year earlier.

A major new provision of the 1985 Act, the marketing loan, provided a loan repayment plan if the basic loan rate is not competitive on world markets. If the world price of cotton, as determined by the Secretary, is below the loan rate, a loan repayment plan must be implemented. The Secretary would choose one of two alternative "market enhancement" plans for repayment of loans. Under Plan A, the Secretary could lower the producer repayment rate by up to 20 percent, thus allowing farmers to redeem their crops and sell them at a more competitive price. Under Plan A, the repayment level must be announced at the same time the Secretary announces the loan rate (by November 1) and cannot thereafter be changed. Under Plan B, repayment rates would vary periodically during the year to keep pace with world markets. For the 1987-90 crops, if the world price, adjusted to U.S. quality and location (adjusted world price), is below 80 percent of the basic loan rate, a loan repayment level may be set at any level between the adjusted world price and 80 percent of the loan rate. Plan A was chosen for the 1986 crop, with a loan repayment rate equal to 80 percent of the basic loan rate for each quality of cotton. Plan B was subsequently selected for the 1987-89 crops.

The concept of the marketing loan was an attempt to retain the basic cotton loan program, but yet keep U.S. cotton competitive in world markets. Under this program, the USDA each week calculates and publishes an adjusted world price (AWP). The AWP is the prevailing world market price of cotton adjusted to U.S. base quality and location. The procedure for establishing the weekly AWP is based on a specified formula developed by the USDA. Congress gave the Secretary of Agriculture discretionary authority to develop and modify this formula as deemed necessary to keep U.S. cotton competitive.

Target prices for upland cotton were frozen for the 1986 crop at the 1985 level of 81 cents per pound. Subsequent minimum target price levels per pound are 79.4 cents in 1987, 75.9 cents in 1988, 73.4 cents in 1989, and 72.9 cents in 1990 but the Agricultural Reconciliation Act of 1987 reduced the minimum to 75.9 cents in 1988 and 73.4 cents in 1989.

If the Secretary determines that the supply of cotton is excessive, an acreage limitation program or paid diversion program, or both, is authorized. The act specifies that, to the extent practicable, an acreage limitation program should create a carryover of 4 million bales of upland cotton.

Deficiency payments are made available to eligible producers in an amount computed by multiplying the payment rate by the

individual farm program acreage times the farm program payment yield. The payment rate is equal to the target price minus the higher of the national average market price received by producers during the calendar year that includes the first 5 months (August-December) of the marketing year or the basic loan rate determined for the crop. If an acreage limitation program is in effect, and if producers plant cotton for harvest on at least 50 percent but not more than 92 percent of the permitted acreage (base acreage less required reduction), and if the remaining permitted acreage is placed in conservation uses or certain approved nonprogram crops, then deficiency payments will be made on 92 percent of the permitted acreage. This requirement is commonly known as the "50/92" provision. If producers plant less than 50 percent of their permitted acreage, or plant 92 percent or more of their permitted acres, then deficiency payments are made on the acreage planted for harvest. If no acreage limitation program is in effect, payments may be subject to an allocation factor which allocates acres on which deficiency payments are made based on national program acres.

The act specified that the total combined deficiency and diversion payments that a producer may receive annually during 1986-90 under one or more programs for wheat, feed grains, upland cotton, ELS cotton, and rice may not exceed $50,000. Disaster payments were limited to $100,000 per person. Exempted from the payment limits were loans or purchases, gains realized from repayment of loans under the marketing loan provisions of the act, loan deficiency payments received by participating producers who forego obtaining loans in return for such payments, and inventory reduction (payment-in-kind) payments received by producers who forego loan and deficiency payments and reduce acreage by half the announced acreage reduction.

In October 1986, Congress established a new ceiling of $250,000 on total farm payments, effective with all 1987 commodity programs. The new ceiling will include the $50,000 payment limit for regular deficiency payments and land diversion payments, as well as all other Government payments except crop support loans, grain reserve storage payments, upland cotton first handler marketing certificate payments, and rice marketing certificate payments.

Current Program Situation

The primary objective of the cotton provisions of the Food Security Act of 1985 was to make U.S. cotton competitive in the world market. Prior to the 1985 Act, the upland cotton loan rate placed an artificial floor under U.S. prices. This encouraged foreign production. When world supplies were excessive, world cotton prices would drop below the U.S. loan rate. The United States would become a residual supplier, and exports would decline. Also, because of the relatively high fixed loan rate, foreign competitors were often able to set prices below the loan rate and erode U.S. world market share.

A prime example of these conditions was the 1985/86 marketing year. The U.S. loan rate was well above world prices, and U.S. exports dropped sharply to less than 2 million bales from the preceding 5-year average of 6.1 million bales. This, in addition to a relatively large 1985 crop, resulted in stocks increasing from 4 million bales at the beginning of the season to 9.3 million bales by the end of 1985/86. This was the situation at the beginning of the 1986/87 season, the first under the Food Security Act of 1985 which utilized the marketing loan concept.

The program provisions initially functioned as intended. World prices declined sharply in the months following enactment of the 1985 Act, as many major foreign competitors lowered their prices in an effort to sell their cotton prior to implementation of the new U.S. program on August 1, 1986. Foreign acreage was lowered about 3.5 percent in 1986 from 1985. U.S. cotton was once again competitive in the world marketplace. Exports of upland cotton rebounded to 6.6 million bales in 1986/87, while U.S. textile mills were running at near capacity. Domestic cotton use grew by 1 million bales in 1986/87. Stocks were reduced sharply from the 9.3 million bales at the beginning of the 1986 season to 4.9 million on July 31, 1987, almost at the level (4 million bales) targeted under the 1985 Act. Stronger demand and falling stocks caused cotton prices, both domestic and foreign, to increase throughout the 1986/87 season, more than doubling during the period. The adjusted world price (AWP) went above the loan rate in April 1987 and stayed above until mid-July 1988, eliminating the marketing loan for more than 15 months.

At the beginning of the 1987/88 season, U.S. cotton prospects were very encouraging. But, higher cotton prices caused both foreign and U.S. cotton acreage to expand by about 5 percent and 3 percent, respectively. Prospects for continued strong demand, however, were expected to absorb the additional volume of global production.

Major provisions of the 1988 U.S. cotton program had to be announced by November 1, 1987. The prospects at that time indicated a need to lower the acreage reduction requirement for the 1988 crop from the 25-percent level in effect for the 1987 crop. Although many in the industry recommended the acreage reduction program be cut to 10 percent, USDA selected a 12.5-percent reduction.

Although domestic use increased during 1987/88, higher prices and larger foreign supplies caused U.S. exports to decline. U.S. production in 1987/88 increased nearly 5 million bales from a year earlier because of record yields, and foreign production grew by over 5 million bales. Foreign prices declined more sharply than U.S. prices because of the equity (premium above loan) demanded by producers. U.S. export sales dropped and by February 1988, U.S. cotton was no longer competitive in world markets. U.S. stocks grew by 800,000 bales during the season.

It was generally believed that the noncompetitive prices were caused primarily by the following factors:

(1) The transportation adjustment in the adjusted world price formula was not reflecting true transportation costs.

(2) The accumulating storage and interest costs on outstanding loans. In 1986/87, CCC did not charge interest and paid storage costs during the initial 10-month loan period. Producers were required to pay these costs for the 1987 crop.

(3) The equities above loan value that farmers wanted. During 1986/87 and the early part of 1987/88, many farmers received 10-20 cents per pound above loan. When prices dropped, the equity offers dropped to 5-7 cents and farmers were unwilling to sell at these levels.

A number of changes aimed at improving the effectiveness of the program were made by the USDA at the recommendation of the cotton industry on August 19 and on August 22, 1988. Additional changes were also made effective February 3, 1989. These changes, which were at the discretion of the Secretary of Agriculture, primarily affected the way in which the adjusted world price was calculated, the payment of storage and interest, and several other adjustments which attempted to fine tune the program.

Despite all the changes made, U.S. cotton remained uncompetitive throughout much of the 1988/89 season. U.S. exports are projected to decline by about 600,000 bales, and domestic use is projected to fall by about 200,000 bales compared with the 1987 season. In addition, the 1988 crop totaled 15.1 million bales, the highest since 1981. The increased production and lower total use are resulting in a further substantial buildup in stocks. Stocks on August 1, 1989, were projected at 7.9 million bales, approximately 2.1 million above stocks at the beginning of the season.

All these factors resulted in calls for additional changes in program provisions, including allowing the Secretary of Agriculture discretionary authority to adjust the adjusted world price to whatever level he considers necessary in order to allow U.S. cotton to be priced competitively in domestic and export markets. Beginning with the 1989 crop, the proposal would reinstate payment of interest and warehouse charges on outstanding loans during the 8-month loan extension and require prepayment of storage charges on outstanding loans during the 8-month loan extension. As of late June 1989 the proposals are under consideration by USDA.

For the 1989 crop, the Secretary of Agriculture imposed the maximum acreage reduction allowed by law because of accumulating cotton stocks and growing program costs. The acreage reduction program for 1989 at 25 percent was announced on October 31, 1988. There were also proposals to further reduce production by offering a paid land diversion for the 1989 crop. It was determined by the Secretary, however, that this would send the wrong signals to our foreign competitors that the United States, once again, is unilaterally reducing production and is content to

be a passive, residual supplier rather than an aggressive exporter as intended by the marketing loan concept of the 1985 Act.

The loan rate for the 1989 crop was set at the statutory minimum of 50 cents per pound for the base quality, while the target price has also been lowered to 73.4 cents per pound. Other cotton program provisions for 1989 remained virtually unchanged from 1988, including the program changes which were made during the 1988/89 season.

Program Effects

Producers

Cotton producers have benefited from farm programs. Each of these programs provides small changes which effectively alter the producers' participation and payments received under these programs. Just as the program provisions have varied, so have the effects, both in the short run and the longer term.

Program Participation

Potential net revenue is the bottom line in whether a producer decides to participate or not in Government programs. Depending on the various program provisions and cropping alternatives, the decision can be complex. Program provisions important to this decision by producers include price support and target price levels, the payment base, acreage reduction or diversion requirements, cross- and offsetting-compliance requirements, and payment limitations. Other important decision variables include expected market prices and expected yields of cotton and alternative crops.

The loan program is used by many growers. The program enables cash expenses to be met until the crop can be marketed and can eliminate a portion of price and weather risk. The availability of loans undoubtedly promotes participation of some producers, but the guiding philosophy since the mid-1960's has been that the loan rate should not attract additional resources into cotton production if the market is not calling for those resources.

While participation in recent cotton programs has been voluntary, only program participants have been eligible for price support loans, target price protection, and other direct program benefits. Participation has been relatively high because of these attractive benefits.

During the 1982-88 period, national program participation rates included a high of 94 percent in 1983 and a low of 70 percent in the following year, with the 7-year period averaging 85 percent (table 11). However, there was a greater variation among participation rates for the four major cotton-producing regions, due to the unique situations each region faces. The Southwest had the highest level of acreage compliance during 1982-88 crop

years, except in 1986 when program participation was above 90 percent for each region. The Southeast and Delta had similar participation rates throughout this period, while the West provided the lowest acreage compliance during the 7-year period, primarily due to large producers facing payment limitations.

Direct Payments to Producers

Direct payments to cotton producers during 1978-88 averaged $778 million with a low of $108 million for the 1979 crop and a high of $1.5 billion in 1983, including payment-in-kind entitlement (table 12). No deficiency payments were made to cotton producers from 1974 through 1980 since market prices received were higher than target prices. During the 1981-84 crop years, deficiency payments averaged $519 million; in contrast, the 1985-88 period averaged about $1.1 billion. Payments for voluntary diversion of cotton acreage were made during only 3 years since 1968: 1978, 1983, and 1985. Also, loan deficiency payments were made in the 1986 and 1988 crop years. These payments are made to producers eligible to participate in the loan program, but who agree to sell their cotton and forego the CCC loans.

During 1970-88, direct payments to producers as a share of total income from cotton varied greatly (table 13). During the 1970-73 period, the average was 33 percent, with a high of 45 percent in 1970. In the 1974-80 period, the share of total income directly from payments was less than 10 percent. Since 1981, however, the percent of total income received through direct

Table 11--Upland cotton program participation rates, by region, 1982-88

Crop year	Region				U.S. average
	Southeast 1/	Delta 2/	Southwest 3/	West 4/	
			Percent		
1982	73	73	85	58	78
1983	94	95	96	85	94
1984	70	70	77	41	70
1985	87	85	87	58	82
1986	93	95	91	90	92
1987	93	96	98	73	93
1988	87	93	93	72	89
Average	85	87	90	68	85

1/ Alabama, Florida, Georgia, North Carolina, South Carolina, and Virginia.
2/ Arkansas, Louisiana, Mississippi, Missouri, and Tennessee.
3/ Kansas, Oklahoma, and Texas.
4/ Arizona, California, and New Mexico.

payments varied between 12 and 23 percent, except for 1983 and 1986 when the share was 39 percent and 37 percent.

Neither direct payments nor market prices showed a distinct trend during 1970-88 (table 14). On a per-pound-of-production basis, direct program payments averaged 12 cents on a nominal basis and 15.5 cents on a real basis since 1970. During this period, the nominal low was 1 cent per pound in 1977, and the nominal high was 41.5 cents per pound (including payment-in-kind entitlement) in 1983. On both a nominal and real basis, payments from 1974 through 1981 were substantially below those of the 1970-1973 and 1981-88 periods. In nominal terms, the 1983 payment per pound produced exceeded any other year since 1969, while in real terms it equaled that of 1970.

On a per-pound-of-production basis, market prices averaged 52.1 cents on a nominal basis and 67.6 cents on a real basis during 1970-88. In this period, nominal and real market prices have fluctuated; the nominal low was 22.8 cents per pound in 1970, with a high of 74.4 cents per pound in 1980. In contrast, real market prices were at their lowest in 1986 at 45.2 cents per pound, and the high was over $1 per pound in 1976.

Acreage, Production, and Prices

While there have been year-to-year changes in the acreage planted to cotton due to Government programs, plantings since 1966 have

Table 12--Direct payments to cotton producers, 1978-88

Crop year	Payments				
	Deficiency	Diversion	Disaster	Other	Total
			Million dollars		
1978	0	40	188	0	228
1979	0	0	108	0	108
1980	0	0	302	0	302
1981	469	0	81	0	550
1982	523	0	131	0	654
1983	431	3	0	1/ 1,094	1,528
1984	654	0	0	0	654
1985	858	196	0	0	1,054
1986	1,258	0	0	2/ 125	1,383
1987	951	0	0	0	951
1988	1,133	0	0	2/ 14	1,147

1/ Payment-in-kind entitlement; 4.3 million bales valued at average loan redemption rate of $0.53 per pound.
2/ Loan deficiency payment.

averaged 11.7 million acres per year. Acreage planted to cotton dropped from the 1948-53 average of almost 26 million acres to an average of about 11 million acres in 1986-88 (table 15). The decline in production during these years has been much less than the decline in acreage because of substantial increases in yields. While planted acreage has been cut by more than 50 percent, yields have more than doubled from a weighted average of 286 pounds per harvested acre in 1948-53 to a record average of 625 pounds in 1986-88. Although some of the increase in yield can be attributed to a higher proportion of the crop being produced on land well adapted to cotton production, most of the increase is due to improved technology and information, and a higher percentage of the crop being produced on irrigated land.

Debate has often centered on the effects of price supports and other program provisions on cotton production, prices, and exports. Since 1981, except for 1983 and 1986, production has exceeded total use by wide margins, thus requiring acreage reduction programs to limit production. Substantial deficiency payments have been made since 1981, because target prices have greatly exceeded average market prices. And, in the absence of

Table 13--U.S. farm value of cotton lint produced and Government payments, 1970-87

Crop Year	Farm value	Direct payments 1/	Total income	Share of total: Lint value	Share of total: Payments
	Million dollars			Percent	
1970	1,110	915	2,025	55	45
1971	1,398	818	2,216	63	37
1972	1,778	807	2,585	69	31
1973	2,747	795	3,452	80	20
1974	2,346	128	2,474	95	5
1975	2,023	118	2,141	94	6
1976	3,223	98	3,321	97	3
1977	3,568	69	3,637	98	2
1978	3,004	228	3,232	93	7
1979	4,344	108	4,452	98	2
1980	3,933	302	4,235	93	7
1981	4,038	550	4,588	88	12
1982	3,363	654	4,018	84	16
1983	2,430	1,528	3,965	61	39
1984	3,546	654	4,200	84	16
1985	3,578	1,056	4,634	77	23
1986	2,353	1,482	3,853	61	39
1987	4,335	861	5,196	83	17

1/ The sum of deficiency, diversion, disaster, and other payments to producers, as noted in table 12.