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 end-

ing 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, 77.0 cents in 1988, 74.5 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 Se-curity 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

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.

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 $779 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 payments varied between 12 and 23 percent, except for 1983 and 1986 when the share was 39 percent and 37 percent.

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	1,119	0	0	[2]41	1,160

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

Table 13—U.S. farm value of cotton lint produced and Government payments, 1970-88

Crop Year	Farm value	Direct payments[1]	Total income	Share of total	
				Lint value	Payments
	Million dollars			*Percent*	
1970	1,110	915	2,025	55	45
1971	1,399	818	2,217	63	37
1972	1,778	807	2,585	69	31
1973	2,747	705	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	3,364	654	4,018	84	16
1983	2,430	1,528	3,958	61	39
1984	3,546	654	4,200	84	16
1985	3,560	1,054	4,614	77	23
1986	2,360	1,383	3,743	63	37
1987	4,413	951	5,364	82	18
1988	3,917	1,160	5,077	77	23

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

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

Table 14—Nominal and deflated cotton prices and payments per pound produced, 1970-88

Crop year	Market price		Average direct payments		Total	
	Nominal	Real[1]	Nominal	Real[1]	Nominal	Real[1]
			Cents per pound			
1970	22.8	54.3	18.8	44.8	41.6	99.1
1971	28.1	63.3	16.4	36.9	44.5	100.2
1972	27.2	58.5	12.4	26.7	39.6	85.2
1973	44.4	89.7	11.4	23.0	55.8	112.7
1974	42.7	79.1	2.3	4.3	45.0	83.4
1975	51.1	86.2	3.0	5.1	54.1	91.3
1976	63.8	101.1	1.9	3.0	65.7	104.1
1977	52.1	77.4	1.0	1.5	53.1	78.9
1978	58.1	80.5	4.4	6.1	62.5	86.6
1979	62.3	79.3	1.6	2.0	63.9	81.3
1980	74.4	86.8	5.7	6.7	80.1	93.5
1981	54.0	57.4	7.4	7.9	61.4	65.3
1982	59.1	59.1	11.5	11.5	70.6	70.6
1983	66.0	63.5	41.5	39.9	107.5	103.4
1984	57.5	53.4	10.6	9.8	68.1	63.2
1985	56.1	50.6	16.5	14.9	72.6	65.5
1986	51.5	45.2	30.2	26.5	81.7	71.7
1987	63.7	54.0	13.7	11.6	77.4	65.6
1988	55.6	46.0	16.0	13.2	71.6	59.2

[1]Nominal value divided by the gross national product price deflator (1982 = 100).

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 67.7 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 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 propor-

Table 15—Average cotton acreage, production, and yield per harvested acre, selected periods

Period	Planted	Harvested	Production	Weighted average yield
	1,000 acres		*1,000 bales*	*Pounds*
1948-53	25,772	24,172	14,412	286
1954-59	16,214	15,330	13,008	407
1960-65	15,373	14,643	14,687	481
1966-70	10,833	9,912	9,551	462
1971-73	12,850	12,048	12,294	490
1974-77	12,050	11,316	11,123	472
1978-81	13,980	12,998	12,969	479
1982-85	10,201	9,348	11,418	586
1986-88	10,841	10,003	13,026	625

tion 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 acreage reduction programs, target prices have the potential to encourage production on most of the cotton acreage base.

Prior to the 1964 Act, the U.S. loan rate in effect determined not only the U.S. farm price, but world market prices as well. Since 1966, the U.S. loan rate has had little direct effect on U.S. market prices or world prices. Because loan rates have been declining during the past several years, market prices have fluctuated on either side of the loan rate.

There is little doubt that most cotton producers benefited from participation in the acreage reduction programs during 1982-88. Large deficiency payments were made during those years and indirect benefits were received from the higher market prices induced by acreage reduction.

In addition to the level of the target price, the acreage base and production level on which the target price is applied also affect planting decisions. Providing target price protection to normal production from current plantings has caused the target price to become much more important in crop production decisions. The cotton program's effective acreage base averaged 14.5 million acres during 1986-88, exceeding average plantings of about 11 million acres for the same period. This difference, however, is largely attributable to the acreage reduction program and the conservation reserve program.

The cotton programs during the past 50 years have shifted some of the production and price risk from cotton producers to the taxpayer. During the first 30 years of farm programs, acreage allotments and marketing quotas, combined with high price supports, provided some price and income stability, but also provided an incentive for foreign production of cotton and some loss of markets to manmade fibers. Higher domestic prices encouraged overproduction in the United States, leading to excess stocks and subsequent production controls. Acreage controls were implemented during many of these years to prevent the accumulation of excessive stocks. During periods when marketing quotas were not in effect (1936-37, 1943-49, and 1951-53), production expanded and carryover increased. Cotton programs since the mid-1960's have placed more reliance on market signals to guide farmers' production decisions, with lower price supports combined with direct payments to support incomes of participating farmers. With the exception of 5 marketing years (1981/82, 1982/83, 1985/86, 1987/88, and 1988/89), stocks have been maintained at relatively low levels since 1970/71.

Consumers

The cotton program has had little effect on retail prices of cotton textile products because of the wide farm-to-retail price spread and the small amount of cotton consumed per item. In 1988, domestic consumption of cotton per capita was estimated at 21.4 pounds, down from 23.9 pounds in 1987. The farm value of this per capita quantity was only $16.15, compared with $18.15 a year earlier. The cotton programs of recent years have featured direct payments to support farm incomes. Thus, most of the program costs have been borne directly by the taxpayers rather than by high cost of textiles paid by consumers.

Price increases at the farm level may not be reflected as higher retail values in the short run because of the highly competitive nature of the cotton textile industry. The impact of raw cotton prices (cost to mills) on retail values depends partly on the quantity of cotton contained in the finished product and the type and amount of processing required. As an illustration, about 3/4 pound of raw cotton is required to produce a typical business shirt or a bath towel, compared with about 2 pounds in denim jeans. The cost of raw cotton as a share of the estimated 1987 retail value was only about 3 percent for a shirt, 12 percent for a bath towel, and about 9 percent for denim jeans. Thus, a 10-percent increase in farm price may increase the retail price of a shirt by only less than 1 percent and the price of bath towels and jeans about 1 percent.

Taxpayers

The cotton program's net expenditure for fiscal year 1988 was about $666 million or about 5.3 percent of

total public expenditures on all commodity price supports and related programs. Since 1980, cotton program costs have varied from a low of $64.3 million in 1980 to a high of $2.1 billion in 1986 (table 16). The 1986 program cost was a record high in nominal terms, whereas in real terms, 1970 was the most recent year when net expenditures surpassed those in 1986. These expenditures, or budget outlays, are borne by taxpayers and represent a direct transfer of income from taxpayers to the farming sector. Appendix table 4 provides program cost detail for each fiscal year since 1970.

The $666 million outlay in fiscal year 1988 represented a $5.71 cost to each taxpayer, while the $2.1 billion outlay in 1986 represented a $19.24 cost per taxpayer (table 16). In comparison, the farm value was estimated at about $3.9 billion and $2.4 billion for crop years 1988 and 1986. Cotton program costs were comparatively low during the 1975-81 years, but since 1982, costs have exceeded $1.1 billion, except in fiscal years 1984 and 1988.

Table 16—Farm-related program costs for upland cotton, 1970-88

Fiscal year	Total cost[1]		Cost per taxpayer[2]	
	Nominal	Real[3]	Nominal	Real[3]
	Million dollars		*Dollars*	
1970	891.4	2,122.4	11.03	26.26
1971	603.2	1,358.6	7.42	16.71
1972	760.4	1,635.3	9.06	19.48
1973	824.0	1,664,7	9.49	19.17
1974	724.6	1,341.9	8.19	15.17
1975	232.8	392.6	2.66	4.49
1976	-4.0	-6.3	-.04	-.06
1977	104.3	155.0	1.11	1.65
1978	223.8	310.0	2.29	3.17
1979	141.2	179.6	1.41	1.79
1980	64.3	75.0	.64	.75
1981	335.7	357.1	3.29	3.50
1982	1,189.7	1,189.7	11.76	11.76
1983	1,362.9	1,311.7	13.30	12.80
1984	244.0	226.6	2.29	2.13
1985	1,552.7	1,400.1	14.26	12.86
1986	2,141.9	1,880.5	19.24	16.89
1987	1,785.7	1,517.2	15.64	13.29
1988	665.8	550.2	5.71	4.72

[1]Based on net CCC outlays from appendix table 4. Negative indicates net receipts for that fiscal year.
[2]Net CCC outlays divided by total employment, including resident armed forces.
[3]Nominal values deflated by the gross national product price deflator (1982 = 100).

Issues

Cotton policy issues likely to be of concern during deliberations on the 1990 farm bill relate chiefly to excess supply, the high Government costs of the program, and ensuring competitively priced U.S. cotton. Recurring issues will concern the need for and the level of acreage and production controls, support prices and incomes, payment limitations, planting flexibility, and environmental issues. Cotton export subsidies and credit, import quotas and tariffs, and trade barriers will also be important issues.

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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 base is the average of the acreage planted for harvest and considered to be planted for harvest during a specified preceding period. The latter includes any acreage not planted because of acreage reduction and diversion programs during a period specified by law. Farmers are not given a direct payment for ARP participation, although they must participate to be eligible for benefits like Commodity Credit Corporation loans and deficiency payments. Participating producers are sometimes offered the option of idling additional land under a paid diversion program, which gives them a specific payment for each idled acre. See paid land diversion.

Adjusted world price (AWP). The result of using a formula that adjusts the world price of cotton to U.S. prices. See prices, raw cotton, and world price.

Agricultural Stabilization and Conservation Service (ASCS). The USDA agency that carries out several principal farm commodity programs from appropriated funds, including Commodity Credit Corporation (CCC) program activities.

Bale. A package of compressed cotton lint as it comes from the gin. Including bagging and ties, a bale weighs about 500 pounds, and its dimensions vary depending on the degree of compression, 12-32 pounds per cubic foot. A bale is the form in which cotton moves in domestic and international commerce. However, cotton is bought and sold on a net weight (pound or kilogram) basis. For statistical purposes, cotton is reported in terms of running bales, in 480-pound net weight bales, or in pounds. A running bale is any bale of varying lint weight as it comes from the gin. To maintain comparability, bale weights are commonly converted to 480-pound net weight equivalents.

Basic commodities. Agricultural products, including corn, cotton, peanuts, rice, tobacco, and wheat, that are designated by legislation as price-supported commodities.

Blending. The mixing of other fibers with cotton. The resulting textile product is a compromise of unique properties or characteristics of the fibers in the blend, often providing a superior end product in some uses.

Boll. The seed pod of the cotton plant.

Bonded warehouse. A warehouse owned by persons approved by the U.S. Treasury Department, and under bond or guarantee for the strict observance of the revenue laws; used for storing goods until duties are paid or goods are otherwise released.

Carding. A process in yarn manufacturing by which fibers are sorted, separated, partially aligned, and cleaned of foreign matter.

Cargo Preference Act. A U.S. law which provides that "whenever the United States contracts for, or otherwise obtains for its own account, or furnishes to or for the account of any foreign nation without provision for reimbursement, any equipment, materials or commodities," the United States shall ship in U.S. flag vessels, to the extent that they are available at fair and reasonable rates, at least 50 percent of the gross tonnage involved.

Carryover stocks. The quantity of a commodity which is available for marketing at the beginning of a marketing year or crop year. "Beginning stocks" of cotton are frequently reported for the marketing year beginning August 1. "Ending stocks" reflect supply less disappearance, adjusted for any unaccounted cotton, for the year ending July 31.

Cellulosic fibers. All fiber of plant or vegetable origin. These fibers include natural fibers such as cotton, linen, and jute, and manmade fibers of wood pulp origin, such as rayon and acetate.

Cloth. A textile product obtained by weaving, knitting, braiding, felting, bonding, or fusing of fibers. Cloth is synonymous with "fabric."

Commodity Credit Corporation (CCC). The USDA agency responsible for directing and financing major USDA "action programs," including price support, production stabilization, commodity distribution, and related programs. CCC also directs and finances certain agricultural export activities. CCC activities are implemented by the Agricultural Stabilization and Conservation Service.

Conserving use. An approved cultural practice or use of land authorized by the county Agricultural Stabilization and Conservation Service on cropland required to be diverted under production adjustment or conservation programs.

Corduroy. A pile-filling fabric with ridges of pile running lengthwise, creating a ribbed surface.

Cost, insurance, and freight (c.i.f.). A term usually used in reference to ocean shipping which defines the seller's price to include the cost of goods, marine insurance, and transportation (freight) charges to the point of destination.

Cotton. A soft, white vegetable (cellulosic) fiber obtained from the seed pod of the cotton plant, a member of mallow family (Gossypium). Cotton is produced in about 75 countries. The two principal types of cotton grown in the United States are upland cotton (Gossypium hirsutum) and American Pima cotton (Gossypium barbadense). Upland cotton is grown throughout the Cotton Belt, accounting for about 99 percent of U.S. cotton production. The types of cotton grown, or once grown, in the United States are as follows:

Upland cotton. The predominant type of cotton grown in the United States and in most major cotton producing countries of the world. The staple length of these fibers ranges from about 3/4 inch to 1-1/4 inch, averaging nearly 1-3/32 inches.

Extra-long staple cotton (ELS). Cottons having a staple length of 1-3/8 inches or more, according to the classification used by the International Cotton Advisory Committee. Also characterized by fineness and high fiber strength, contributing to finer and stronger yarns, needed for certain end-uses such as thread and higher valued fabrics. American growths include American Pima and, formerly, Sea Island cotton.

American-Pima cotton. An extra-long staple cotton formerly known as American-Egyptian cotton in the United States, grown chiefly in the irrigated valleys of Arizona, New Mexico, and west Texas. Represents only 2 percent of the U.S. cotton crop. Used chiefly for thread and high-valued fabrics and apparel. Came into existence as the Sea Island cotton was becoming extinct in the United States.

Sea Island cotton. An extra-long staple cotton first grown in the United States in about 1786 from seed received from the Bahamas Islands. Relatively unimportant as a commercial crop until the 19th century. Produced in the coastal areas of South Carolina, Georgia, and Florida until the early 1920's, when U.S. production virtually ceased because of increasing competition from foreign growths of ELS cotton, the growing American-Egyptian cotton industry in the Western States, and production problems associated with Sea Island cotton. Commonly about 1-1/2 inches in length but ranged up to 2 inches.

Cotton Board (CB). A quasi-governmental organization whose members are appointed by the Secretary of Agriculture from nominees of cotton producer organizations. Established in 1967 by the Cotton Research and Promotion Act, the board receives and disburses grower assessments to finance the Cotton Incorporated program.

Cotton compress. The equipment which forms the ginned raw cotton into a bale. The first compression, primarily to modified flat or universal bale dimensions, is performed at the gin. Further compression of flat or modified flat bales is performed at cotton warehouse locations.

Cotton Council. See National Cotton Council of America.

Cotton Council International (CCI). The overseas operations service of the National Cotton Council of America. Established in 1956, CCI's primary objective is to develop markets for U.S. exports. CCI programs are operated in close cooperation with the Foreign Agricultural Service, USDA, and trade groups in the United States and abroad. Headquartered in Washington, DC.

Cotton count. (1) For yarn, a numbering system based on the number of 840-yard lengths in a pound. The higher the number the finer the yarn. A single strand of #10 yarn is expressed as 10s or 10/1. A 10s yarn has 8,400 yards to the pound; a pound of 20s yarn is 16,800 yards long. (2) For woven cloth, the number of warp ends and filling picks per inch. If a cloth is 68x72, there are 68 ends and 72 picks per inch

in the fabric. An end is a warp yarn or thread that runs lengthwise or vertically in cloth. The ends interlace at right angles with filling yarn (picks) to make woven fabric. (3) For knitted fabric, count indicates the number of wales and courses per inch. A course is a crosswise row of loops or stitches, similar to the filling of woven fabric. A wale is a lengthwise series of loops in a knitted fabric.

Cotton exchange. A membership organization which provides facilities where cotton futures contracts are bought and sold. As of 1986, there were two such exchanges: the New York Cotton Exchange and the Chicago Rice and Cotton Exchange. The basis grade for the New York contract is Strict Low Middling 1-1/16-inch cotton; the basis grade for the Chicago contract is Strict Low Middling Light Spotted 31/32-inch cotton, largely produced in Texas and Oklahoma.

Cotton Incorporated (CI). A private corporation established in 1971 as the sales-oriented marketing and research organization representing U.S. cotton growers. CI's objectives are to increase producer's profits and to expand the sale of products containing cotton. Headquartered in New York City.

Cotton quality. Those characteristics of the cotton fiber that affect processing performance and/or the quality of the various end products. While there are numerous factors that affect quality, the seven most important are fiber length, length uniformity, strength, fineness, maturity, color, and trash content. Their relative importance depends upon the product that is to be made and the type of processing equipment that is to be used. The traditional classification system, which relies primarily on human sight and touch, assesses each of these factors except length uniformity and strength. USDA's new, instrument based classification system, which has been gradually introduced over the past decade is scheduled to entirely replace the traditional classification system in 1991, assesses all seven factors.

Cottonseed. The seed of cotton from which the lint has been removed. Cottonseed oil is extracted from the seed through a crushing process. Cottonseed meal and cottonseed hulls, coproducts from the seed-crushing operation, are used as livestock feed.

Cotton system. A process originally used to manufacture cotton fiber into yarn and now used extensively for producing spun yarns of manmade fibers, including blends. The major manufacturing steps in the cotton system include opening of the fiber bales, picking, carding, drawing, roving, and spinning. The combing step is included after carding when combing yarns are made.

Crop year. The year in which a crop is planted. Also the cotton marketing year, which is the year beginning August 1 and ending July 31.

Cross compliance. When a full cross-compliance program is in effect, a producer participating in one commodity program (wheat, feed grains, cotton, or rice) on a farm must also participate on that farm in any of the other commodity programs. When a limited cross-compliance program is in effect, 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.

Deficiency payment. A direct Government payment to participating producers if farm average prices fall below specified target price levels during the calendar year. Payment rates cannot exceed the difference between target prices and price support loan rate.

Delinting. The process of separating the very short fibers ("linters") remaining on the seed after the longer fiber has been removed in the ginning process.

Denier. A metric system method of measuring fibers. It is the weight in grams of 9,000 meters of the fiber.

Denim. A relatively heavy, yarn-dyed twill fabric traditionally made of cotton with colored warp yarns and undyed fill yarns. Most denim fabric is used to make trousers.

Disappearance. U.S. textile mill raw fiber consumption plus raw fiber exports.

Disaster payments. Government payments to participating producers who are prevented from planting any portion of their permitted acreage under a program, or who suffer low yields, due to weather and related conditions. Starting in 1982, disaster payments, as a rule, were available only to those producers who had no access to Federal crop insurance.

Diversion payments. Government payments made to farmers in some years for not planting a specified portion of crop-acreage base or permitted acreage. A specified acreage is usually diverted to soil conserving uses.

Domestic consumption. U.S. mill raw fiber consumption plus raw fiber equivalent of imported textiles, less raw fiber equivalent of exported textiles.

Durable press. Performance characteristics of treated textile products, mostly apparel. These features generally involve easy care: shape retention, machine washability, tumble-dry, little or no ironing, and the like. Often referred to as "permanent press" or "wash and wear."

End. A warp yarn or thread that runs lengthwise or vertically in the fabric. Ends interlace at right angles with filling yarn (picks) to make woven fabric.

End-use. The final product form in which fibers are consumed, including apparel, household products, and industrial items.

Extra-long staple. See cotton.

Fabric. See cloth.

Face. The side of a fabric which, by reason of weave, finish, or other characteristic, presents a better appearance than the other side, or back.

Fiber. A slender strand of natural or manmade material usually having a length at least 100 times its diameter and characterized by flexibility, cohesiveness, and strength. Several strands may be combined for spinning, weaving, and knitting purposes. Cotton fibers are known as staple fibers since their length varies within a relatively narrow range from about 7/8 inch to 1-3/4 inches. Manmade fiber filaments are often cut to blend or mix with cotton for further processing on the cotton system.

Filament. An individual strand of fiber indefinite in length. Manmade fibers are indefinite in length. Silk is the only natural fiber available in filament form. Silk may run several hundred yards in length.

Filling. An individual yarn which interlaces with warp yarn at right angles in woven fabric. Also known as pick or filling pick. Usually has less twist than warp yarn, which runs lengthwise in the fabric.

Finishing. Those processes through which a fabric passes after being taken from the loom, such as bleaching, dyeing, sizing, lacquering, waterproofing, and removing defects.

Fiscal year. The official Federal Government operating year which begins October 1. The fiscal year is used by program agencies in reporting much of their data on the cotton program.

Food Security Act of 1985 (FSA). The farm act covering the years 1986-90.

Forward contract. Sale of a commodity from a future crop for future delivery. The sale could involve all of the crop from a given contract acreage or, more commonly, a given quantity of specified quality.

Gin. A machine that separates cotton lint from seed and removes most of the trash and foreign matter from the lint. The lint is cleaned, dried, and compressed into bales weighing approximately 500 pounds, including wrapping and ties. There are about 2,000 gins located throughout the Cotton Belt.

Grade. See cotton quality.

Gray or greige fabric. Woven or knitted goods direct from the loom or knitting machine, before they have been given any kind of finishing treatment.

Group "B" mill price. See price, raw cotton.

Hand. A subjective measurement of the reaction obtained from the sense of touch created when handling a fabric, reflecting the many factors which lend individuality and character to a material.

Hard fibers. Comparatively stiff, elongated, woody fibers from the leaves or leaf stems of certain perennial plants. These fibers are generally too coarse and stiff to be woven and are used chiefly in twine, netting, and ropes. Examples are abaca, sisal, and henequen. See soft fibers.

Hedging. The practice of buying or selling futures contracts to offset an existing position in the cash or spot market, thus reducing the risks of unforeseen major price changes.

High density. The compression of a flat, modified flat, or gin standard bale of cotton to high density of about 32 pounds per cubic foot. Previously used for most exported cotton, but currently replaced by universal density compression of about 28 pounds per cubic foot.

HVI (high volume, instrument) testing. A process for determining cotton quality that utilizes instruments

rather than sight and touch methods to determine quality characteristics.

Import quota. The maximum amount of a commodity that can be imported in a specified time period. The United States imposes an annual import quota on raw cotton totaling 14.5 million pounds (about 30,000 bales) of short staple cotton having a length of less than 1-1/8 inches and a quota of 45.7 million pounds (about 95,000 bales) of long staple cotton having a length of 1-1/8 or more inches.

Industrial fabrics. A broad term for fabrics used for nonapparel and nondecorative uses. These uses fall into several classes: (1) a broad group of fabrics employed in industrial processes such as filtering, polishing, and absorption; (2) fabrics combined with other materials to produce a different type of product such as tires, hose, and electrical machinery parts; and (3) fabrics incorporated directly in a finished product such as tarpaulins, tents, and awnings.

International Cotton Advisory Committee (ICAC). A worldwide association of governments which assembles, analyzes, and publishes data on world production, consumption, stocks, and prices. ICAC closely monitors developments in the world cotton market and promotes intergovernmental cooperation in developing and maintaining a sound world cotton economy. Headquartered in Washington, DC.

International Institute for Cotton (IIC). A nonprofit organization of cotton producing countries founded in 1966. Its purpose is to increase world consumption of cotton and cotton products through utilization research, market research, sales promotion, education, and public relations. Headquartered in Brussels, Belgium.

Inventory (CCC). The quantity of a commodity owned by CCC at any specified time. For example, 8,610 bales of upland cotton were in CCC inventory (owned by CCC) on June 1, 1989.

Knitting. A method of constructing fabric by interlocking a series of loops of one or more yarns. The two major classes of knitting are warp knitting and weft knitting. In warp knitting, yarns run lengthwise in the fabric; in weft knitting, the thread runs back and forth crosswise in a fabric. Warp knit fabrics are flatter, closer, and less elastic than the weft knit. Tricot and milanese are typical warp knit fabrics, while jersey is a typical weft knit.

Lint. Raw cotton that has been separated from the cottonseed by ginning. Lint is the primary product of the cotton plant, while cottonseed and linters are byproducts.

Linters. The fuzz or short fibers which remain attached to the seed after ginning. Linters are usually less than 1/8 inch in length and are removed from the seed by a delinting process.

Long staple cotton. Refers to cotton fibers whose length ranges from 1-1/8 inches to 1-3/8 inches. Fibers whose length is 1-3/8 inches or more are known as extra-long staple (ELS).

Loom. A machine which weaves fabric by interlacing a series of lengthwise (vertical) parallel threads, called warp threads, with a series of crosswise (horizontal) parallel threads, called filling threads.

Manmade fibers. Industrially produced fibers, as contrasted with such natural fibers as cotton, wool, and silk. Examples are nylon, rayon, acetate, acrylics, polyester, and olefin.

Marketing loan. A major new provision of the 1985 Farm Security Act. It provides for a loan repayment plan if the basic loan rate is not competitive on world markets. Two plans have been used under the 1985 Act. Plan A, which applied in 1986, allowed farmers to repay their loans at a price below the loan rate, thereby encouraging them to redeem the loan and sell their cotton on the open market. Plan B was used in 1987-89. It allowed farmers to repay their loans at a rate tied to the adjusted world price (AWP).

Marketing year. The U.S. cotton marketing year begins August 1 each year and ends on July 31 of the following year.

Micronaire reading. The results of an airflow instrument used to measure cotton fiber fineness and maturity. See cotton quality.

Middling. The designation of a specific grade of cotton (see cotton quality). Grades are determined by the amount of leaf, color, and the ginning preparation of cotton, based on samples from each bale of cotton. Middling is a high-quality white cotton.

Mill (textile). A business concern or factory which manufactures textile products by spinning, weaving, or knitting.

Mill consumption. Quantity of a fiber processed in manufacturing establishments.

Moduled seed cotton. A mechanical module builder compresses cotton into large modules in the field after harvest so that cotton may be held temporarily on the farm or at the gin while awaiting ginning. About 40 percent of U.S. cotton is moduled. This practice is especially important in the Southwest and West.

Motes. Cotton waste material from the cotton ginning process, primarily resulting from the lint cleaning operation. Motes can be reclaimed and sold for use in padding and upholstery filling, nonwovens, and some open-end yarns.

Multifiber Arrangement (MFA). The MFA, negotiated under the auspices of the General Agreement on Tariffs and Trade (GATT), provides a set of complex rules to which signatory nations agree to abide when negotiating bilateral agreements to control trade in cotton, wool, and manmade fiber textiles and apparel. In 1985, the United States had bilateral textile agreements with 36 exporting countries, most of which were negotiated under the rules of the MFA.

Naps. Large tangled masses of fibers that often result from ginning wet cotton. Naps are not as detrimental to quality as neps.

National Cotton Council of America (NCC). The central organization representing all seven sectors, or interests, of the raw cotton industry of the United States: producers, ginners, warehouses, merchants, seed crushers, cooperatives, and manufacturers (spinners). NCC is a voluntary private industry association established in 1939. NCC programs include technical services, foreign operations, communication services, economic services, and Government liaison. Headquartered in Memphis, TN.

Natural fibers. Fibers of animal (such as wool, hair, or silk), vegetable (such as cotton, flax, or jute), or mineral origin (such as asbestos or glass).

Neps. Very small, snarled masses or clusters of fibers that look like dots or specks in the cotton lint and are difficult to remove. If not removed, they will appear as defects in the yarn and fabrics.

Noncellulosic fibers. Fibers made from petroleum-derived chemicals. The major types are polyester, nylon, acrylic, and polypropylene.

Nonrecourse loan. Delivery to the CCC of the pledged and eligible commodity, or warehouse receipts representing stocks acceptable as to quantity and quality, constitutes repayment of the price support loan in full, regardless of the current market value of the commodity.

Nonwoven fabrics. Material made primarily of randomly arranged textile fibers held together by an applied bonding agent or by fusion.

Offsetting compliance. When an offsetting compliance program is in effect, a producer participating in a diversion or acreage reduction program must not offset that reduction by overplanting the acreage base for that crop on another farm.

Oilseed crops. Major U.S. oilseed crops are soybeans, cottonseed, flaxseed, peanuts, sunflower seed, rapeseed, and sesame seed. Other oils include palm, olive, coconut, tung, and castor.

Open-end spinning. Processing fibers directly from a fiber supply, such as a roving sliver, to the finished yarn, in contrast to ring spinning. Three basic open-end methods are mechanical, electrostatic, and fluid or air. Advantages over ring-spun yarns include increased speed, less labor, and less floor space for equipment.

Operator (farm). The person who is in general control of the farming operation on the farm during the program year.

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.

Parity price. The price which will give agricultural commodities the same relative purchasing power in terms of goods and services farmers buy that prevailed in a specified base period. This concept was first defined by the Agricultural Adjustment Act of 1933. The parity price formula is not a comprehensive measure of the economic well-being of farmers, nor does it measure cost of production, standards of living, or income parity. The parity price formula is based on price relationships, and reflects only one component of cost of production and income.

Pick. A filling yarn or thread that runs crosswise in woven goods.

Pile. The cut or uncut loops which make the surface a pile fabric. Some common pile fabrics include velvet, corduroy, terry toweling, furniture covering, and rugs and carpets.

Ply. The number of single yarns twisted together to make a composite yarn. When applied to cloth, it means the number of layers of fabric combined to give the composite fabric.

Point. A term used in quoting the price of raw cotton. One point is equal to 1/100 of a cent.

Price, raw cotton. There are several different cotton price series, each of which represents a different time and space dimension in the market. All price series, ranging from U.S. farm prices to international prices, are linked by common fundamental demand and supply factors.

Farm price. The season-average price received by farmers for cotton is a sales-weighted average of prices received by farmers during the marketing season at the point of first sale, usually on the farm or at a local delivery point. This USDA series is available for both upland cotton by months and by State and for ELS cotton by marketing year and by State and is reported in Agricultural Prices, published by USDA's National Agricultural Statistics Service. An important use of upland cotton farm prices on a calendar year basis is to determine Government deficiency payments.

Futures price. The current price of cotton established at a futures exchange to be delivered at some future date. Futures contracts are primarily traded by merchants to hedge their price risks but are also used by growers, mills, and others to reduce risks of adverse price movements. The so-called No. 2 contract, covering SLM white 1-1/16-inch cotton, is traded daily on the New York Cotton Exchange. The Chicago Rice and Cotton Exchange's short staple cotton futures contract covers SLM Light Spotted 31/32-inch cotton.

International price. There is no statistically valid, single estimate of a world price. Two popular measures are reported by Cotlook, Ltd., Liverpool, England, publishers of Cotton Outlook. The Outlook "A" index is a simple arithmetic average of the five lowest priced growths of the 11 quoted for Middling 1-3/32-inch cotton delivered to northern Europe from various exporting countries. The "B" index is a simple average of the three lowest northern European prices of the six quoted for shorter staple coarse cotton varying in staple length from 1 inch to 1-3/32 inches. These prices are used to compare export competitiveness of American and foreign growths.

Mill price. The price for cotton delivered to mills in western North Carolina and South Carolina is commonly referred to as Group B mill price. These prices, including landing and brokerage costs, are quoted for cotton of given grades and staples from given regions. The SLM 1-1/16-inch price is often compared with polyester staple and rayon staple prices to indicate cotton's competitive position in the raw fiber market.

Spot price. A spot or cash market price represents the price for which cotton of various qualities was sold at warehouse locations in seven market areas designated by the Secretary of Agriculture. Spot market quotations are published daily by the Agricultural Marketing Service from price quotations furnished by cotton buyers. Spot prices are used to establish premiums and discounts for the Government's cotton loans to producers and for settling futures contracts. The spot market price also represents the market value of cotton in the early stages of the wholesale marketing chain.

Price support. Government price support programs for cotton and other farm commodities are administered by USDA's Agricultural Stabilization and Conservation Service. Various methods of supporting producers' price have been used over the years. Support has commonly been achieved through nonrecourse loans, purchases, and payments at announced levels. Recent legislation is designed to make export commodities more competitive in world markets through market price support at or near world price levels. At the same time, producers' incomes are enhanced through deficiency payments. Export competitiveness is further enhanced by issuing marketing certificates to first handlers if world prices fall below producers' loan repayment levels.

Producer. A person who, as owner, landlord, tenant, or sharecropper, is entitled to a share of the crops available for marketing from the farm or a share of the proceeds.

Program (agricultural). Government activities aimed at accomplishing a certain result. Such activities

include agricultural price support loans, purchases and payments, commodity storage, transportation, exports, and acreage reduction.

Program costs. No single definition is applicable to all uses. Program costs may be gross or net expenditures of the CCC on a commodity during a fiscal year or other period. Program costs may be the realized loss on disposition of a commodity, plus other related net costs during a fiscal year or other period. Program costs may be the net costs attributed to a particular year's crop of a commodity during the marketing year for that commodity.

Public Law 480 (PL 480). The principal legislative authority for channeling U.S. food and fiber to needy countries. First enacted in 1954, PL 480 was extended by the Food for Peace Act of 1966 and subsequent legislation.

Quality. See cotton quality.

Raw fibers. Textile fibers in their natural state before any manufacturing activity has taken place; for example, cotton as it comes from the bale.

Referendum. The referral of a question to voters to be resolved by balloting; for example, marketing quotas, acreage reduction, or marketing agreements.

Residual supplier. A country which furnishes supplies to another country only after the latter has obtained all it can from other preferred sources.

Roving. An intermediate stage of yarn making between sliver and yarn; the last operation before spinning into yarn.

Running bale. Any bale of varying lint weight as it comes from the gin.

Sea Island. See cotton.

Seed cotton. The raw product which has been harvested but not ginned, containing the lint, seed, and foreign matter.

Skip-row planting. The practice of planting one or more rows in uniform space, then skipping one or more rows, to conserve moisture in dryland areas or to increase yields on land actually planted, or both.

Sliver. A strand or rope of fibers without twist. In yarn manufacture, a sliver is formed by the carding machine and is of greater diameter than roving.

Soft fibers. Flexible fibers of soft texture obtained from the inner bark of dicotyledonous plants. Soft fibers are fine enough to be made into fabrics and cordage. Examples are flax, hemp, jute, kenaf, and ramie. See hard fibers.

Spinning. The process of drawing fibers that may be in roving or rope form, twisting the appropriate number of turns per inch, and winding the yarn on a bobbin or other suitable holder.

Spinning quality. The ease with which fibers lend themselves to yarn-manufacturing processes.

Spot price. See price, raw cotton.

Staple fibers. (1) Natural fibers whose length usually ranges from about 1 inch to 1-1/2 inches, such as cotton. (2) Manmade fibers which have been cut to the length of the various natural fibers to facilitate blending and further processing with other fibers.

Strict Low Middling 1-1/16-inch cotton. The grade and staple length used as the basis on which the CCC establishes its loan rates. Higher qualities receive loan premiums and generally higher market prices, while lower qualities receive lower loan rates and lower prices. See cotton quality.

Supima. Trademark of an ELS cotton, commonly referred to as American Pima cotton, produced in Arizona, New Mexico, and west Texas. Supima Association of America is a producer association headquartered in Phoenix, AZ.

Synthetic fibers. Fibers made from petroleum-derived chemicals that were never fibrous in form. They are categorized as noncellulosic fibers.

Tare. The weight of the ties (or bands) and wrapping materials that contain the bale of cotton. The quoted net weight of a bale excludes the tare, whereas the gross weight includes tare.

Tex. A system of yarn numbering that measures the weight in grams of 1,000 meters of yarn. A 30-tex yarn weighs 30 grams per 1,000 meters.

Texture. The number of warp threads (ends) and filling yarn (picks) per square inch in a woven fabric. For