United States
Department of
Agriculture

Economic
Research
Service

**Commodity
Economics
Division**

Cotton

Background for 1990 Farm Legislation

Harold Stults
Edward H. Glade, Jr.
Scott Sanford
Leslie A. Meyer

Want Another Copy? It's Easy.

Just dial 1-800-999-6779. Toll free.

Ask for *Cotton: Background for 1990 Farm Legislation* (AGES 89-42).

The cost is $8.00 per copy. For non-U.S. addresses, add 25 percent (includes Canada). Charge your purchase to your VISA or MasterCard, or we can bill you. Or send a check or purchase order (made payable to ERS-NASS) to:

ERS-NASS
P.O. Box 1608
Rockville, MD 20849-1608.

We'll fill your order via 1st class mail.

Can You Use an Electronic Database?

An electronic database containing data associated with this report is available. The database is in the form of Lotus 1-2-3 (Release 2) worksheet files on a MS-DOS and PC-DOS compatible, 5.25 inch DDSD diskette. The database costs $25.

Write to the above address and ask for *Cotton and Wool Yearbook* (order #89004). **Or use our toll-free number, 1-800-999-6779.**

For further information on this database, write Bob Skinner, Room 1037, 1301 New York Avenue, NW, Washington, DC 20005-4788 or phone 202-786-1840

Cotton: Background for 1990 Farm Legislation. By Harold Stults, Edward H. Glade Jr., Scott Sanford, and Leslie A. Meyer. Commodity Economics Division, Economic Research Service, U.S. Department of Agriculture. Staff Report No. AGES 89-42.

Abstract

Government programs since the 1930's have supported prices and attempted to adjust cotton acreage and production to meet market needs, with varying degrees of success. The Food Security Act of 1985 is generally considered successful in dealing with the cotton sector despite several problems. The marketing loan provisions of the act helped make cotton competitive in 1987 and some world market share was won back by U.S. cotton. However, in 1988-89 problems with the adjusted world price formula and with the storage terms resulted in owners of cotton holding stocks rather than releasing them to the market even though U.S. stocks were high.

Keywords: costs and returns, exports, cotton, cotton production, farm programs, policies, program benefits

Foreword

In 1990, Congress will consider new farm legislation to replace the expiring Food Security Act of 1985. In preparation for these deliberations, the Department of Agriculture and many groups throughout the Nation are studying preceding legislation to see what lessons can be learned that are applicable to the 1990's. This report updates **Cotton: Background for 1985 Farm Legislation,** (AIB-476) by Irving R. Starbird. It is one of a series of updated and new Economic Research Service background papers for farm legislation discussions. These reports summarize in a nontechnical form the experience with various farm programs and the key characteristics of the commodities and the farm industries which produce them. For more information, see the Additional Readings listed at the end of the text.

Washington, DC 20005-4788 September 1989

Contents

Summary

The health of the U.S. cotton industry depends on the world economy. U.S. exports vary greatly from year to year, depending on foreign cotton output and general economic conditions, which contribute to supply and price instability. However, the United States will likely continue to be the world's leading cotton exporter.

The world cotton industry experiences stiff competition from manmade fibers in all major end uses. Cotton was the single most important fiber used by the U.S. textile industry until the 1960's, when manmade fibers surpassed it in use. Factors that often favor manmade fibers over natural fibers include specialized and predictable qualities and relatively stable supplies and prices.

The influence on the U.S. cotton industry of the world economy and intense competition among world textile producers is particularly apparent in the U.S. textile trade pattern of the 1980's. The rapid expansion of the U.S. economy in the early-to-mid-1980's, accompanied by a rapidly appreciating trade value of the U.S. dollar up to early 1985, made the U.S. market particularly attractive to foreign textile producers. During this period, double-digit annual growth in textile imports was common. More recently, the depreciation of the dollar versus foreign currencies has ameliorated textile import growth and improved the competitive position of domestic textile output in world markets. The U.S. balance of trade in textiles will likely continue to be heavily influenced by foreign competition, the strength of the domestic economy, and the trade value of the U.S. dollar.

Since the turn of the century, U.S. cotton producers have frequently experienced excess production capacity, high stocks, and low product prices. Government programs since the early 1930's have attempted to support prices and adjust acreage and production to market needs. These programs may have stabilized and improved net incomes and slowed the transfer of resources out of cotton production. However, until recently, cotton farms continued to increase in size in response to economic and technological forces.

While there have been year-to-year changes in acreage planted to cotton, the long-term trend has been downward. On the other hand, production has remained relatively stable because of substantial increases in yields. Since 1980 the farm value of the cotton crop has not been enough to pay all costs of production. But Government payments have made cotton production profitable overall. Still, one in five cotton farms had negative net farm income in 1987, a very good year for cotton farmers. No deficiency payments were made to cotton producers from 1974 through 1980 since prices received were above target prices. However, large deficiency payments were made during 1981-88 when Government payments (except in 1983 and 1986) comprised between 12 percent and 23 percent of total income from cotton.

As with wheat and feed grains, Government programs for cotton to control production, stabilize prices, and support farm income have been in effect for 50 years. Acreage allotments, marketing quotas, and price supports based on parity were in effect during the early years, with the exception of 1943-49 and 1951-53 when allotments and quotas were temporarily removed. Allotments remained in effect at varying levels from 1954 through 1970. The 1965 Food and Agriculture Act was a turning point in cotton policy in that price supports and income supports were clearly separated. The market price of cotton was supported at 90 percent of the estimated world price level. This allowed domestic market prices to seek world price levels. Payments to farmers were based on their participation in an acreage reduction program. By the end of 1970, the huge surpluses of cotton were gone. The voluntary program to reduce acreage had met the objective of reducing stocks, but the direct payments in excess of $600 million during the late 1960's had resulted in relatively high U.S. Treasury costs.

The programs of the 1970's continued to recognize the importance of the world market price in setting the loan rate of cotton. The 1973 Act established target prices, which provided for direct payments to producers if market prices fell below target price levels. The 1977 Act set target prices on the basis of cost of production, but this adjustment was removed in the 1981 Act, which established the 1981-85 target prices at successively higher levels. The programs of the early 1980's continued the market oriented loan rate formula, combined with relatively high deficiency payments. However, substantial acreage reductions to reduce surpluses were required, culminating in the payment-in-kind program of 1983.

The Food Security Act of 1985 established cotton farm policy for the 1986-90 crop years. Some major features of past farm acts were retained, including acreage limitations, nonrecourse loans, and target prices. But, the act also gave the Secretary of Agriculture more discretionary authority for administering the program. In contrast to earlier programs, the 1985 Act specified declining target price minimums through 1990. A major new provision of the act, the marketing loan, provided a loan repayment plan allowing loans to be repaid at levels below the loan rate if world market prices (adjusted to U.S. quality and location) were below the loan rate. The program performed effectively during 1986/87 and part of the 1987/88 season as both exports and domestic cotton use increased and stocks fell. Since then, changing foreign conditions and problems with the mechanics of the program itself forced numerous adjustments in program provisions as U.S. cotton struggled to be competitive in world markets.

Cotton

Background for 1990 Farm Legislation

Harold Stults
Edward H. Glade, Jr.
Scott Sanford
Leslie A. Meyer

Introduction

Upland cotton comprises 98 percent of all cotton grown in the United States. Extra-long staple (ELS) cotton, which historically has been considered a unique crop for program purposes, is not covered in this report. Cotton is the single most important textile fiber in the world, accounting for about 67 percent of all fibers used. Cotton is grown in about 75 countries. China, the Soviet Union, and the United States account for about 60 percent of world production. During 1986-88, the United States produced about 20 percent of the world's cotton and used 10 percent.

Cotton has been a major cash crop and an important source of foreign exchange in the United States for nearly 200 years. Cotton was first grown in the United States at Jamestown in the early 17th century, but it remained a minor crop until 1793 when Eli Whitney invented the cotton gin to separate the seed from the lint. This development spurred production, with most of the lint being exported to textile mills in England. In 1850, for example, nearly 90 percent of lint production was exported, with the earnings offsetting the costs of about two-thirds of all goods imported into the United States. U.S. exports of raw cotton during 1980-82 accounted for about 30 percent of world cotton trade. Export earnings averaged about $2 billion, or about 5 percent of the total value of U.S. agricultural exports.

In 1982, cotton ranked fifth ($4.5 billion) among the major field crops in value of farm production, following corn ($12.1 billion), soybeans ($10.3 billion), wheat ($5.4 billion), and harvested hay ($9.1 billion).

Cotton lint is used chiefly in clothing and home furnishings, with lesser amounts used in industrial products. The seeds are crushed for oil and the remaining meal is fed to livestock as a protein meal. The short fuzz on the seed, called linters, has many uses, including padding materials, nonwoven fabric, and as a source of cellulose for making rayon, plastics, and other products.

Structure of the Cotton Industry

Production Characteristics

Cotton is currently produced in 17 States from California to Virginia, with major concentrations in the Delta areas of Mississippi, Arkansas, and Louisiana; the Texas High Plains and Rolling Plains; central Arizona; and the San Joaquin Valley of California. Forces influencing location of production are ultimately reflected in relative returns among products that can be grown in an area and costs of inputs, which determine comparative advantages of production among areas. Soils, topography, elevation, temperature, and water availability are important determinants of where and how well cotton can be produced. The northern limit in the United States is established by a need for at least 200 days between killing frosts and a minimum average summer temperature of 77 degrees.

The predominant type of cotton grown in the United States, Gossypium hirsutum, is better known as American upland cotton. It typically accounts for about 98 percent of the total U.S. cotton crop. It is grown throughout the Cotton Belt as well as in most of the major cotton producing countries. Another type of cotton grown in the United States, Gossypium barbadense, is commonly referred to as American-Pima, or extra-long staple (ELS) cotton. ELS cotton is grown chiefly in West Texas, New Mexico, and Arizona where it is particularly well adapted to environmental conditions. The production of ELS cotton is small relative to that of upland cotton because its production costs per pound are higher and its markets are chiefly high-value products such as sewing thread and expensive apparel items.

Trends in Acreage, Yield, and Production

Cotton acreage in the United States increased from less than 8 million acres at the end of the Civil War to more than 44 million acres in the mid-1920's. Production over that period ranged from about 2 million bales in 1866 to about 18 million bales in 1926. Cotton yields averaged about 180 pounds per harvested acre and rarely exceeded 200 pounds during the 1866-1930 period.

From 1930 to the mid-1960's, acreage trended down but yields moved upward (fig. 1). Yields increased from 269 pounds per harvested acre in 1950 to 527 pounds in 1965, about 4.5 percent per year. Since 1965, yields have shown considerable fluctuation but no obvious trend until the 1980's when average yield began to climb. While Government programs and prices of cotton and competing crops have influenced acreage, weather has been the chief determinant of year-to-year variability in yields. U.S. production has averaged more than 12 million bales a year during the past decade, fluctuating from a low of 7.8 million bales in 1983 to a high of 15.6 million bales in 1981.

The westward shift of U.S. cotton production seems to have ended. In 1980, the West (California, Arizona, and New Mexico) accounted for about 41 percent of U.S. output, up from 16 percent in 1970

(table 1). In contrast, the southeastern share had declined to about 5 percent of the total. The Southwest (Texas and Oklahoma) and the West accounted for nearly 74 percent of U.S. cotton production by 1980, compared with 51 percent in 1970. This regional shift was due chiefly to lower average farm production costs in the West and Southwest and to the elimination of marketing quotas and the restrictive acreage allotments that were tied to historical locations of production. Since 1980 the share of production in the Southeast and the Delta has increased. By 1987 the share of production in the West and Southwest had dropped to about 60 percent.

Cotton's primary competitors for land include soybeans and, to a lesser extent, corn in the Southeast and Delta, grain sorghum and wheat in the Southwest, and wheat, hay crops, and barley in the irrigated Far West. Competition from soybeans has resulted in significant fluctuation in cotton acreage in the Delta in recent years.

Number and Size of Farms

The trend to fewer and larger cotton farms appears to have ended (table 2). Like most other kinds of farms, there has been a long-term trend to fewer but larger cotton farms in response to economic and technological forces. In 1949 there were 1,110,000 farms growing cotton in the United States with an average of 24 acres of cotton per farm. By 1982 the number of farms dropped to 38,000 and average acreage increased to 256 acres. Cotton acreage

Figure 1
U.S. cotton acreage and yield

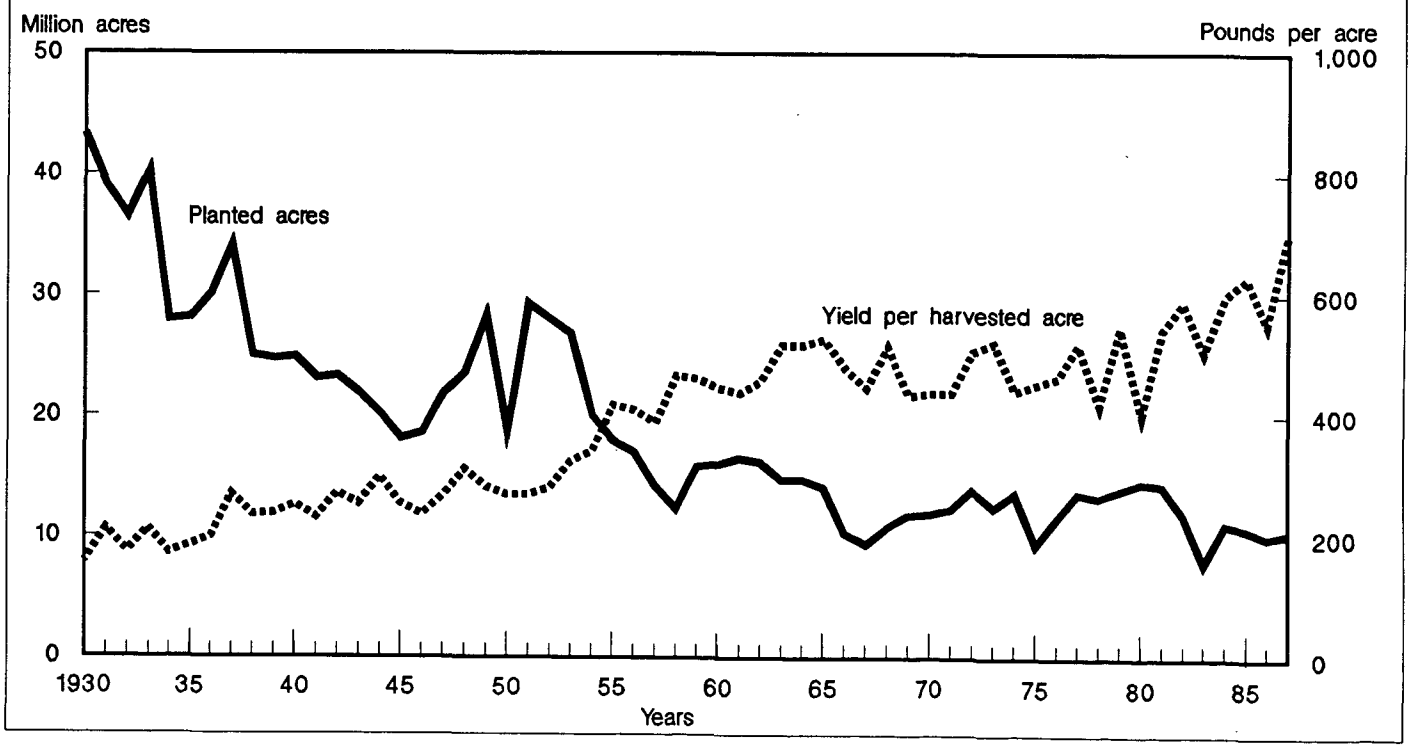


Table 1--Cotton acreage harvested, yield per harvested acre, and production, by region, 1965-87

Crop year 1/	Southeast 2/	Delta 3/	Southwest 4/	West 5/	United States 6/
			1,000 acres		
Acreage:					
1965	2,280	3,974	6,293	1,068	13,615
1970	1,375	3,355	5,487	938	11,155
1975	690	2,616	4,317	1,173	8,796
1976	898	3,611	4,913	1,492	10,914
1977	808	3,388	7,129	1,949	13,275
1978	574	2,862	6,936	2,028	12,400
1979	613	2,412	7,552	2,254	12,831
1980	672	2,846	7,565	2,132	13,215
1981	764	2,943	7,971	2,163	13,841
1982	623	2,381	4,847	1,882	9,734
1983	470	1,683	3,930	1,264	7,347
1984	697	2,629	5,095	1,058	10,379
1985	807	2,595	5,030	1,797	10,229
1986	722	2,545	3,801	1,289	8,357
1987	819	2,814	4,801	1,481	9,915
			Pounds per acre		
Yield:					
1965	453	610	401	1,112	527
1970	410	546	310	846	438
1975	422	457	293	1,050	453
1976	413	382	348	1,083	465
1977	313	542	411	967	520
1978	473	493	297	725	420
1979	501	609	392	1,013	547
1980	355	409	232	1,021	404
1981	541	554	376	1,142	542
1982	749	747	302	1,082	590
1983	415	564	323	1,042	508
1984	722	701	367	1,029	600
1985	741	689	404	1,131	630
1986	493	577	347	1,110	547
1987	581	788	495	1,262	700

See footnotes at end of table. Continued --

Table 1--Cotton acreage harvested, yield per harvested acre, and production, by region, 1965-87--Continued

Crop year 1/	Southeast 2/	Delta 3/	Southwest 4/	West 5/	United States 6/
			1,000 bales		
Production:					
1965	2,150	5,051	5,262	2,475	14,938
1970	1,175	3,819	3,545	1,653	10,192
1975	607	2,491	2,636	2,567	8,302
1976	733	2,874	3,565	3,368	10,580
1977	527	3,827	6,109	3,927	14,389
1978	566	2,939	4,288	3,063	10,856
1979	639	3,061	6,172	4,757	14,629
1980	498	2,424	3,664	4,536	11,122
1981	862	3,394	6,244	5,146	15,646
1982	972	3,707	3,049	4,235	11,963
1983	406	1,979	2,643	2,743	7,771
1984	1,049	3,842	3,992	4,098	12,982
1985	1,246	3,723	4,313	4,151	13,432
1986	740	3,057	2,746	2,982	9,525
1987	992	4,622	4,951	3,895	14,460
			Percent		
Regional shares of U.S. production:					
1965	14.4	33.8	35.2	16.6	100
1970	11.5	37.5	34.8	16.2	100
1975	7.3	30.0	31.7	30.9	100
1976	7.3	27.2	33.7	31.8	100
1977	3.7	26.6	42.5	27.3	100
1978	5.2	27.1	39.5	28.2	100
1979	4.4	20.9	42.2	32.5	100
1980	4.5	21.8	32.9	40.8	100
1981	5.5	21.7	39.9	32.9	100
1982	8.1	31.0	25.5	35.4	100
1983	5.2	25.5	34.0	35.3	100
1984	8.1	29.6	30.7	31.6	100
1985	9.3	27.7	32.1	30.9	100
1986	7.8	32.1	28.9	31.3	100
1987	6.9	32.0	34.2	26.9	100

1/ Year beginning August 1. 2/ Virginia, North Carolina, South Carolina, Georgia, Florida, and Alabama. 3/ Missouri, Arkansas, Tennessee, Mississippi, Louisiana, Illinois, and Kentucky. 4/ Texas, Oklahoma, and New Mexico. Includes a small quantity of ELS cotton. 5/ California, Arizona, and Nevada. Includes a small quantity of ELS cotton. 6/ Totals may not add due to rounding.

per farm increased 87 percent from 1974 to 1982 while the number of farms dropped by 43 percent. However, preliminary data from the 1987 Census of Agriculture indicate that the number of farms producing cotton is up about 10 percent since 1982 and the number of acres of cotton per farm is down about 10 percent.

Acres harvested in 1987 were slightly less than in 1982, so the increase in number of farms growing cotton was not due to increased area in production. A probable explanation for the change in the long-term trend toward fewer and larger cotton farms is a substantial restructuring of farm ownership and operation in response to economic conditions, tax laws and other regulations, and cotton programs.

The largest number of cotton farms in 1987 was in the class with sales between $100,000 and $250,000 (table 3). Gross, net, and family income went up as sales increased, but the largest sales class earned less off-farm income than the next smaller sales class. However, a larger proportion (28.9 percent) of farms

Table 2--Number of farms harvesting cotton and acres of cotton per farm, by region and State

Region/State	Number of farms			Cotton area per farm		
	1974	1982	1987	1974	1982	1987
	------- Number -------			------ Acres -----		
Southwest	16,020	3,265	4,297	82	181	162
Alabama	6,827	1,458	1,820	79	202	190
Georgia	4,279	770	1,733	87	171	134
North Carolina	2,405	620	1/	60	111	1/
South Carolina	2,509	417	744	102	229	156
Delta	34,228	10,921	13,138	123	214	210
Arkansas	7,585	2,109	2,479	147	201	214
Louisiana	4,486	2,371	2,675	130	237	221
Mississippi	1,277	3,710	4,225	150	264	243
Tennessee	8,119	1,850	2,545	61	131	162
Missouri	2,761	971	1,214	109	149	163
Southwest	33,918	19,839	20,167	152	253	237
Oklahoma	6,089	2,848	2,913	82	146	126
Texas	26,334	16,292	16,557	171	278	263
New Mexico	1,459	699	697	98	112	114
West	5,152	4,179	4,236	301	438	346
Arizona	1,143	1,177	1199	351	441	318
California	4,009	3,002	3037	287	437	357
United States	89,536	38,266	41,838	137	256	232

1/ Preliminary 1987 Census summary data did not include cotton for North Carolina.

with sales over $500,000 had negative net farm income than any other sales class. Net family income was calculated by subtracting $17,400 from net income from all sources.

Farms from the smallest sales class had the largest proportion of farms with negative family income (42.8 percent), but over 28 percent of the farms in the largest sales class also had negative net family income.

There is little vertical or horizontal integration in cotton production. The corporate form of organization, although increasing, is undertaken by farm operators chiefly to take advantage of tax policies, limited liability, or property transfer provisions. Cotton production has not attracted a substantial influx of capital investment by nonfarm corporations.

Tenure of Farm Operators

Share renting and cash renting of land for cotton production are common practices in all cotton production regions. According to the 1982 Census of Agriculture, about 45 percent of the farms harvesting cotton were operated by part-owners, 25 percent by tenants, and 30 percent by full owners.

Table 3--Income of cotton farms by sales class, 1987 1/

Sales class	Number of farms	Income				Farms with negative income	
		Gross farm	Net farm	Off-farm	Family 2/	Net farm	Net 3/ family
	Number	$1,000				Percent	
$39,999 or less	5,807	27.7	8.5	17.9	26.4	24.6	42.8
$40,000 to $99,999	5,903	81.6	23.1	15.2	38.2	15.9	28.8
$100,000 to $249,999	7,099	186.8	48.7	19.9	68.5	20.0	22.4
$250,000 to $499,999	2,033	392.0	115.6	28.3	143.9	14.5	14.2
$500,000 or over	1,783	978.3	141.4	27.8	169.2	28.9	28.7
All farms	22,611	199.2	44.9	19.5	64.5	20.3	29.1

1/ Farms for which cotton constitutes 50 percent or more of either sales or acres harvested.

2/ Net farm income plus off-farm income.

3/ Calculated after $17,400 is subtracted from family income for estimated family living expenses.

Over 80 percent of the farms harvesting cotton in 1978 were individual family operations, 13 percent were partnerships, and 4 percent were corporations. The proportion and number of corporations increased somewhat between 1978 and 1982. However, about 90 percent of the corporations were family-held in 1978. The proportion of individual or family operations decreased as the acres of cotton harvested per farm increased.

Trends in Domestic Cotton Use

Domestic cotton use reached an historic high in the United States in 1987 at 12.1 million bales. Domestic cotton use equals mill use plus the cotton in textile imports minus the cotton in textile exports. The previous record domestic use was in 1942 when 11.3 million bales were used. Domestic use reached a post-World War II peak of 10.4 million bales or 25.4 pounds per person in 1966. Competition with manmade fibers and slower real economic growth beginning in the 1970's caused domestic cotton use to decline to 6.5 million bales by 1982 when per capita consumption fell to only 13.5 pounds per person. Since 1982 there has been a steady and rapid growth in consumer demand for cotton. By 1987 per capita consumption had risen to 23.9 pounds.

Foreign textile producers seem to have a basic labor-cost advantage over U.S. textile producers, especially in the apparel sector, and cotton textile imports grew at an average compound rate of about 4.6 percent between 1965 and 1980. The average compound annual rate of growth of textile imports increased to about 16 percent during 1980-87, in part due to the increase in the value of the dollar since 1980 and the strength of the U.S. economy relative to foreign economies in 1983. The raw cotton equivalent of U.S. textile imports totaled a record 4.9 million bales in 1987. But, the growth of imports slowed down in 1988 and totaled about 4.4 million bale-equivalents, representing a 10-percent decrease in volume but a slight increase in value.

Additional imported products increase the supply of cotton textiles available to American consumers at the retail level. In 1987, 53 percent of the fibers in imported textiles were cotton, while cotton accounted for only 29 percent of the fibers used in U.S. mills. Also, apparel prices at the retail level are declining in real terms, and lower prices are encouraging increased domestic use. The consumer price index (CPI) for apparel products (1967=100) rose from 179 in 1980 to 208 in 1986. The overall CPI rose from 270 to 405 over that same period, implying about a 14-percent drop in real retail prices of apparel products.

Mill use of cotton reached 9.6 million bales in 1966 and declined to 5.3 million bales in 1981 before recovering to 7.6 million in 1987. During 1966-83, cotton mill use declined at a compound annual rate of 3.3 percent. The decline in mill use was caused primarily by two factors: the loss of market share to manmade fibers, mainly polyester, and the loss of market share to textile imports.

Cotton's share of mill consumption dropped from 90 percent in 1960 to 59 percent in 1980. From 1966 to 1983, cotton's share of total use in the cotton system (mills and spindles adapted to the use of cotton) declined from 81.5 percent to 60.3 percent. Manmade fiber's strength, uniformity, and ease of handling and care account for much of the decline in cotton's share of mill use. Costs to mills were higher for cotton than for polyester and rayon during most of the 1970's.

If cotton had maintained its 1966 share of cotton-system fiber use at 81.5 percent, the decline in cotton mill use would have been more than 2 million bales less than actually occurred between 1966 and 1980 when cotton's share of total mill consumption reached its lowest point. Since 1980 cotton's share of total mill consumption rose to 67.4 percent in 1987. However, the entire cotton system is becoming smaller. This is partly because manmade fibers have entirely supplanted cotton in some end uses such as tire cord and carpeting, but mostly because the cotton textile trade deficit (the excess of imports over exports of cotton textiles on a raw-fiber equivalent basis) grew from 668,000 bales in 1966 to 1.9 million bales in 1983. During 1966 to 1983, total fiber use in the cotton system declined from the equivalent of 12.1 million bales to 9.6 million bales, implying an additional 2-million-bale loss in cotton mill use.

In recent years consumer preference for cotton has led to both increased mill use of cotton and a greater share of total mill consumption. This was at the same time that textile imports were growing rapidly.

In 1980, the cotton textile trade deficit represented only 8.5 percent of domestic cotton use. That year, imports reached 1.7 million bale-equivalents while cotton textile exports equaled 1.1 million bales, for a trade deficit of 590,000 bales. In 1983, the United States imported 2.3 million bale-equivalents of cotton in the form of textile products, and exported 460,000 bale-equivalents. The resulting deficit of 1.9 million bale-equivalents represented about 25 percent of all the cotton used in the United States in 1983. In 1988 4.4 million bale-equivalents were imported as textiles and 688,000 bale-equivalents were exported.

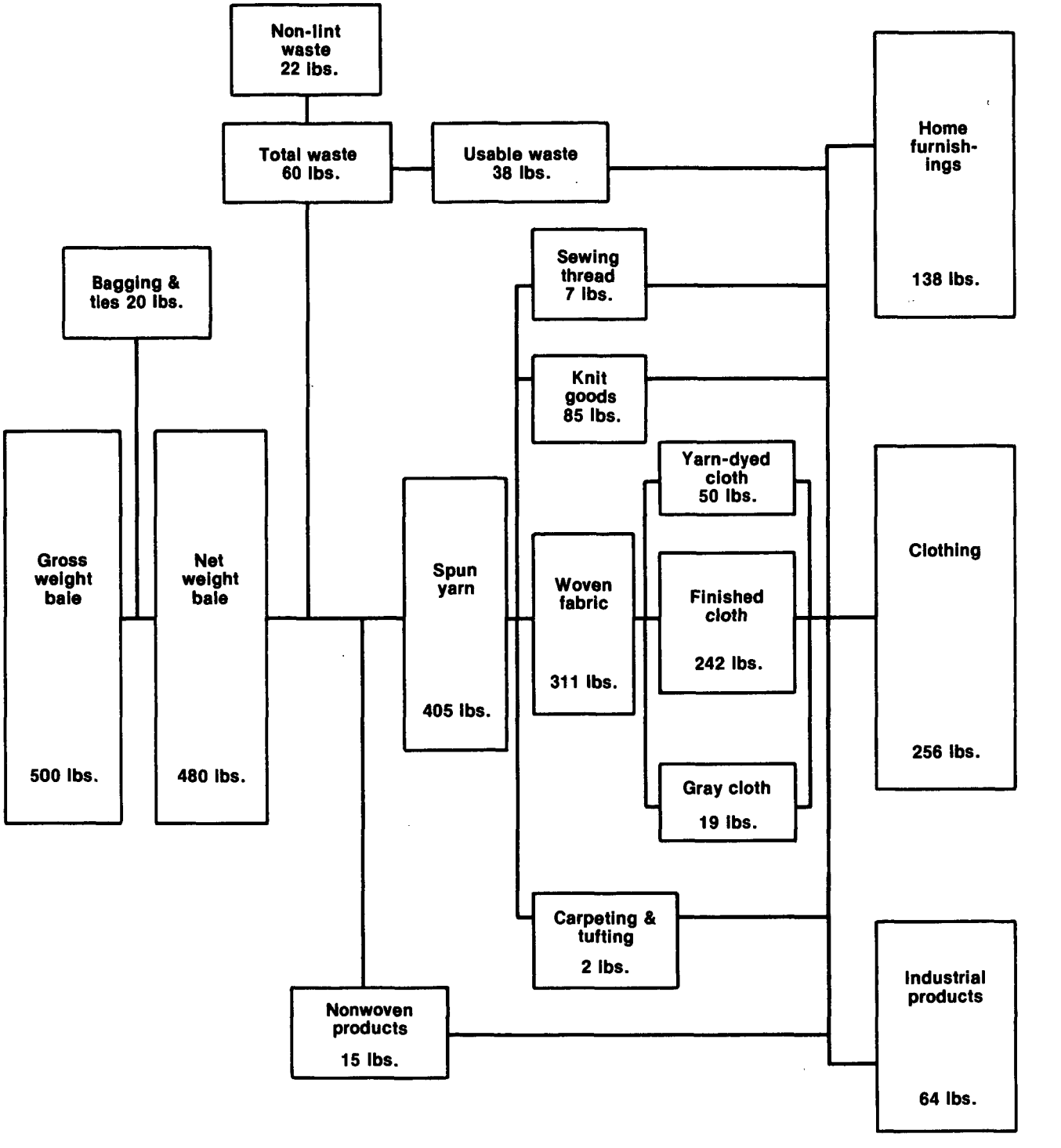
End uses of cotton include apparel, household, and industrial products. On average, clothing accounts for about 256 pounds of total end use of a 480-pound bale of cotton delivered to a textile mill (fig. 2). Home furnishings and industrial products account for 138 pounds and 64 pounds.

Trends in World Cotton Trade

Forces affecting world cotton trade are complex. Since cotton is an input for the production of clothing, it can be traded as raw cotton, yarn, fabric, or finished apparel. The United States is a competitive exporter of raw cotton, but other countries, many of them also cotton producers, are more competitive as exporters of finished products (tables 4 and 5). The demand for U.S. raw

Figure 2

Distribution of an average bale of U.S. cotton



cotton exports depends heavily on: (1) foreign cotton production, (2) U.S. cotton price relative to the cotton prices of competing exporters, (3) the price of cotton relative to other fibers, and (4) the rate of economic growth in importing nations. For example, it has been estimated that a 1-percent increase in real income of foreign importing countries is associated with about a 120,000-bale increase in U.S. cotton exports. If our major competitors increase their production by 1 million bales, U.S. exports might drop by about 600,000 bales in the short run.

World cotton production increased from an average of 54.5 million bales in 1964-68 to an estimated 80.5 million bales in 1984-88, an increase of 48 percent. Cotton trade, however, increased only 32 percent in the same period, from an average of 17.3 to 22.8 million bales. Hence, a larger share of world cotton production is now milled within producing countries.

Even though cotton production and trade have increased worldwide, cotton's share of world fiber production fell from 58 to 50 percent between 1967 and 1987. All natural fibers have lost markets to manmade fibers, especially during the past 20 years. The development of polyester in the 1950's brought intense competition with other cotton, rayon, and acetate and was instrumental in cotton's loss of market share. However, within the apparel and home furnishing markets, cotton and other natural fibers have enjoyed increased popularity during the 1980's. These and other developments mean that world producers in search of export growth will compete for a larger share of a slowly expanding market.

Table 4--World cotton exports and market shares, 1960-87

Year	World exports	U.S. exports	Market shares		
			United States	USSR	Other exporters
	--- Million bales ---		---------- Percent ----------		
1960	17.1	6.9	40.1	10.2	49.7
1965	16.9	3.0	17.0	13.2	68.9
1970	17.7	3.9	22.0	13.8	64.2
1975	19.1	3.3	7.4	20.5	62.1
1980	19.7	5.9	30.1	20.8	49.1
1981	20.2	6.6	32.6	21.3	46.1
1982	19.4	5.2	26.9	20.1	53.0
1983	19.2	6.8	35.8	18.5	45.7
1984	20.5	6.2	30.2	14.3	55.5
1985	20.5	2.0	9.6	15.5	74.9
1986	24.8	6.7	25.8	12.0	59.4
1987	24.1	6.9	28.6	2.0	59.4

Table 5--U.S. raw cotton exports of selected countries, August-July years 1983-88 1/

Destination	1983/84		1984/85		1985/86		1986/87		1987/87-	
	Exports	Market share	Exports	Market share	Exports	Market share	Exports	Market share	Exports	Market share
	1,000 bales	Percent	1,000 bales	Percent	1,000 bales	Percent	1,000 bales	Percent	1,000 bales	Percent
Japan	1,709	51	1,464	48	520	17	1,723	48	1,569	46
Korea	1,269	79	1,257	77	513	31	1,330	72	1,450	74
Taiwan	495	42	513	45	46	3	907	41	424	27
Hong Kong	583	28	125	13	1	0	52	4	88	8
Italy	252	22	301	26	91	8	263	19	406	28
France	154	20	132	17	8	1	114	15	67	9
Germany, Federal Republic of	195	20	195	19	85	9	263	21	376	33
Portugal	69	10	80	12	7	1	76	10	58	7
Indonesia	320	63	258	43	105	15	324	41	287	33
Thailand	244	44	139	25	17	3	239	23	248	16
Canada	227	93	195	87	98	34	70	30	153	73
China	12	5	6	6	0	0	0	0	0	0
Other	1,556		1,550		469		1,324		1,456	
World	6,786	35	6,215	31	1,960	10	6,685	26	6,582	28

1/ For each country, market share is the U.S. share of total cotton imports. For the world, market share is the U.S. percentage share of world exports.

Changes in Importing Countries

Eight countries account for about 60 percent of world cotton imports. Japan is by far the most important cotton importer with a 15-percent share of world imports in 1986-87. The Japanese share fell 2-3 percent during the 1970's as other East Asian textile producers--Taiwan, Hong Kong, and South Korea--expanded mill capacity and increased cotton imports. In 1986-87, South Korea purchased 8 percent of world cotton imports while Taiwan and Hong Kong had import market shares of 9 and 5 percent. The share of trade held by China increased from an average of less than 3 percent in 1960-64 to more than 17 percent in 1979 and 1980.

China's imports have tapered off sharply since 1980, however, as Chinese cotton production has expanded. In 1986 and 1987, Chinese cotton imports comprised less than 1 percent of world imports. In 1988, however, Chinese cotton imports were expected to account for about 6 percent of world imports. While China is a major net exporter of raw cotton, its increasing domestic consumption, limited arable land, and intense competition for land among crops, have placed it at a crossroads with respect to production and further highlighted its role in international cotton trade.

The major European cotton importers--France, Italy, and Germany--have declined in importance since the early 1960's as these countries have moved heavily into the use of manmade fibers. Each of these countries currently purchases 3-6 percent of world cotton imports.

Changes in Exporting Countries

The United States is the world's largest cotton exporter with a market share in 1986-87 of 27 percent. The U.S. share has varied substantially since 1960, ranging from 10 to 40 percent of world exports (see table 4). Much of the variation in market share is explained by relative prices for U.S. cotton and cotton from competing exporting countries. Abundant harvests in competing exporting countries cause a reduction in U.S. exports. Also, during the 1982/83 season, when U.S. prices fell to the loan rate, U.S. exports fell from 33 percent to 27 percent of world trade, even though U.S. ending stocks rose to 7.9 million bales.

The United States accounts for a high proportion of total imports of raw cotton by several countries, including Japan, Korea, Taiwan, Hong Kong, Indonesia, Thailand, and Canada (table 5). Japan was the largest single export market for the United States during 1984-87, followed closely by Korea. The United States holds the largest market shares of imports by Canada and Korea. During the 1950's and early 1960's, when U.S. price support rates were high relative to world prices, a payment-in-kind was used to promote exports, but it was discontinued in 1967. Such a program provides an indirect advantage to foreign textile manufacturers which compete with U.S. mills. During fiscal years 1985-87, about 950,000 bales a year were exported under a credit guarantee

program. Although PL 480 exports were important in some earlier years, only about 50,000 bales each year were exported through PL 480 during 1985-87.

The United States imposes an annual import quota on raw cotton totaling 14.5 million pounds (about 30,240 bales) of short-staple cotton having a length of less than 1-1/8 inches, and a quota of 45.7 million pounds (about 95,118 bales) of long-staple cotton having a length of 1-1/8 or more. Raw cotton imports have not approached these quota limits in recent years, having averaged about 2,500 bales in 1986-87.

The United States will likely continue as the world's leading exporter of raw cotton in the near future, though its position has slipped somewhat since the early-1980's. Chief competitors and their 1987-88 export market shares are the Soviet Union (14.4 percent), Pakistan (11.6 percent), and China (7.9 percent). Among these countries, Pakistan has garnered an increasing share of world exports in recent years.

Other cotton exporters with a significant 1987-88 share of the world market include Australia (4.3 percent), Paraguay (3.3 percent), Sudan (2.9 percent), Argentina (1.9 percent), Brazil and Mexico (1.8 percent each), and Egypt (1.5 percent). Among these countries, the role of exports varies considerably with the first three exporting nearly all of their production and the last three exporting an average of only 20-40 percent. Individual variation of exports as a percentage of production is greatest for Argentina, which exported about 20 and 75 percent of its outturn in 1987 and 1988.

World Textile Trade

Much of the growth in world and U.S. cotton trade in the 1960's and 1970's was associated with the development of textile industries in Japan, Taiwan, Hong Kong, and South Korea. These countries, with their low labor costs, gained a competitive advantage on a global basis in the manufacture of labor-intensive textile products. However, economic growth in these countries has increased wage rates. From 1983-87, wage rates in Japan, Taiwan, Hong Kong, and South Korea increased 81, 89, 48, and 54 percent, respectively. A second tier of textile exporters has recently emerged, including China, Brazil, Pakistan, and India. These countries, all raw cotton producers, have begun to compete for textile markets in an effort to increase revenue through sale of value-added textile products. In 1987, U.S. textile workers received an average of $9.11 per hour, while workers in Taiwan, Hong Kong, and South Korea received $2.19, $2.19, and $1.48 per hour, respectively. While differences do not account for labor productivity differences, variable exchange rates, or differences in purchasing power, they give an indication of the advantage that lower wage countries have over the United States and Western Europe in textile production.

The Multifiber Arrangement (MFA) is a factor influencing textile trade and, by extension, world cotton trade. The MFA, negotiated

under the auspices of the General Agreement on Tariffs and Trade (GATT) in 1974, is a set of complex export restrictions negotiated on a bilateral basis between developed-country textile importers and the major developing-country textile exporters. Import quotas negotiated under the MFA may have slowed the decline of textile and apparel mills in developed countries. In the U.S. textile industry, employment is estimated to decrease 1 percent for each 5 percent rise in the value of textile imports. The value of U.S. imports of textile products is estimated to have increased at about a 16-percent compound annual rate during 1978-86.

The quantity of U.S. cotton textile imports is highly influenced by domestic economic conditions and the international value of the U.S. dollar. For instance, a 1-percent improvement in the performance of the domestic economy is likely to raise cotton textile imports by 1.7 percent. Likewise, a 1-percent increase in the trade-weighted exchange value of the dollar is likely to result in a proportionate increase in cotton textile imports. Thus, as the U.S. economy strengthens (weakens), imports of cotton textile products will likely increase (decline).

The United States had bilateral trade agreements involving cotton textile imports with 40 countries in 1988, compared with 20 countries in 1983. In addition to the broader country coverage, the cotton category coverage is more comprehensive. In 1988, 14 of the 40 agreements covered all cotton imports, compared with 6 of the 20 agreements in 1983. Countries with comprehensive cotton category coverage accounted for 63 percent of cotton imports in 1987. Not all U.S. cotton textile imports in 1988 were charged against import quotas, while tariffs covered all textile imports. U.S. import tariffs on cotton yarn, woven cotton fabrics, and wearing apparel and accessories averaged 7.6, 9.2, and 20.3 percent, respectively, of customs value in 1988.

Trends in Prices, Costs, and Returns

Prices, costs, and returns for the cotton sector can be reported in various forms. With government programs, there is not just one price to consider but several prices. Likewise there are many ways to estimate costs and returns and different uses for each way. For example, estimates of marginal costs and returns are valuable for analysis of individual farms as well as certain industry analysis. Large cotton farms will usually have lower costs per acre than small cotton farms because fixed costs can be spread over more acres. Per acre costs of irrigated cotton are usually more than three times as high as nonirrigated cotton. And returns vary with yields, type of farm, and other factors. However, for this section, U.S. average prices, costs, and returns are used. Average costs and returns are the only national data available. Average costs are the most useful for most issues involving the overall condition of the industry and program effects.

Prices

Although U.S. cotton prices vary substantially from year to year, there was no significant upward trend in nominal prices from the mid-1940's through 1972 (table 6). Farm prices more than doubled in the 1970's, reaching a peak of 74.4 cents per pound in 1980. Prices then dropped below 60 cents per pound in 1981 and 1982 and again rose somewhat during the 1983 crop year due to the payment-in-kind program and drought. Prices fell to near 50 cents in 1986 as U.S. cotton became noncompetitive in world markets. The marketing loan provision of the 1985 Food Security Act restored U.S. cotton's competitiveness. Exports and domestic prices both rose.

Prices received by farmers from 1975-87 were above variable cash expenses but under total economic costs (fig. 3). Total economic

Table 6--Upland cotton farm prices, yields, and revenue, 1929-87

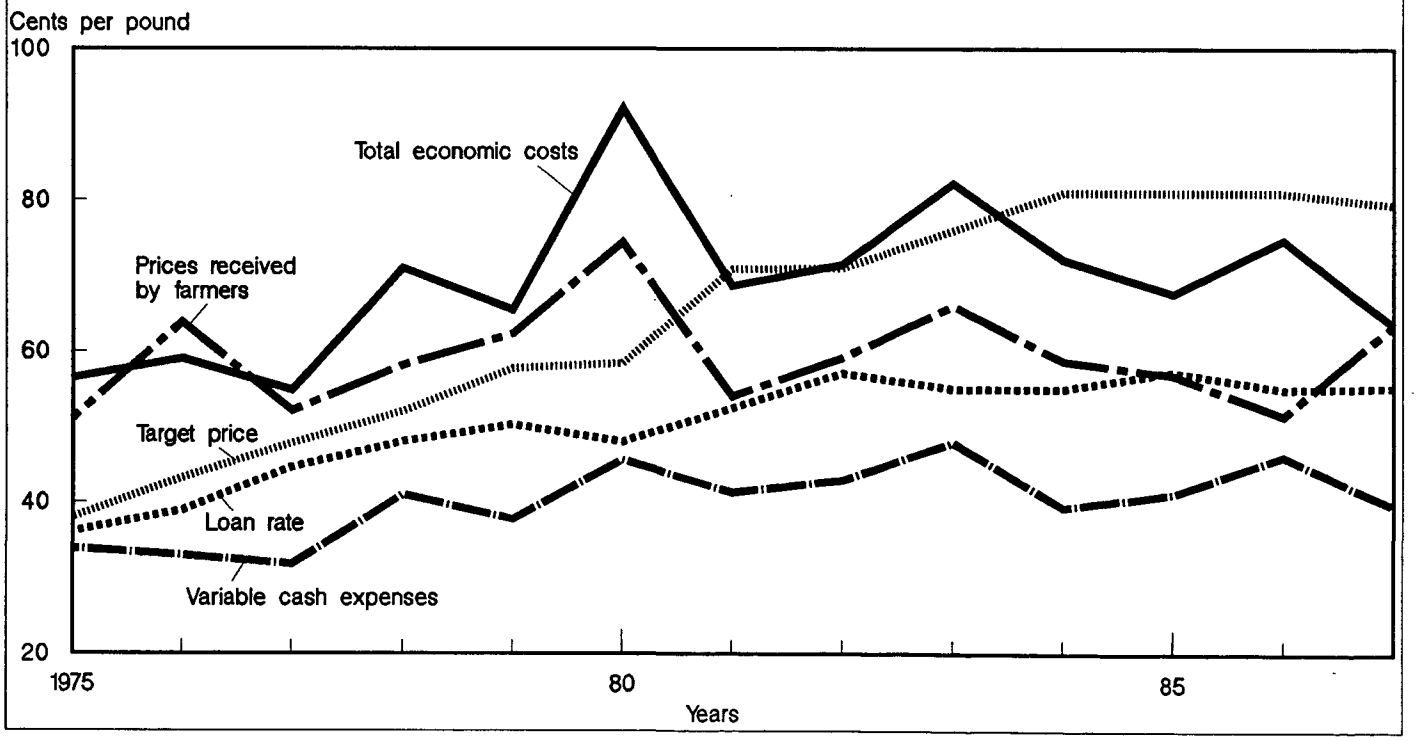
Crop year	Average farm price		Yield	Revenue per harvested acre
	Current dollars	1982 dollars		
	Cents per pound		Pounds	1982 dollars
1929	16.8	115.1	164	188.71
1933	10.2	91.1	213	193.98
1940	9.8	75.4	252	189.97
1945	22.5	143.3	254	364.01
1950	39.9	166.9	269	449.08
1955	33.6	123.5	417	515.12
1960	31.3	101.3	446	451.77
1965	29.2	86.4	527	455.28
1970	22.8	54.3	439	238.31
1971	28.1	63.3	438	277.20
1972	27.2	58.5	480	280.77
1973	44.4	89.7	521	467.32
1974	42.7	79.1	441	348.72
1975	51.1	86.2	453	390.36
1976	63.8	101.1	464	469.15
1977	52.1	77.4	519	401.78
1978	63.8	88.4	419	370.25
1979	62.1	79.0	547	432.17
1980	74.4	86.8	402	348.99
1981	54.0	57.4	542	311.36
1982	59.1	59.1	589	348.10
1983	66.1	63.6	504	320.64
1984	58.7	54.5	600	327.02
1985	56.8	51.2	630	322.67
1986	51.5	45.2	552	249.59
1987	63.7	74.5	706	525.97

cost is the breakeven longrun average price necessary to continue producing a crop. It includes returns to all factors of production including land. During the 1980's the target price was generally high enough to cover total economic costs. The loan rate generally stayed above variable cash expenses and below farm prices and well below total economic costs.

Cotton prices averaged 64 cents in 1987, but U.S. cotton again lost its competitiveness in world markets in 1988. This time it was due to procedures for calculating the adjusted world price (AWP) which reflect the true market differences in transportation costs. U.S. cotton prices in world markets were successfully undercut by competitors, causing U.S. exports to drop. In addition, the marketing loan was not sufficient to induce producers and merchants to sell cotton they were holding in storage because the cotton program allowed owners of cotton to hold stocks for up to 18 months with little or no storage or other holding costs and no downside price risk. The result was tight short-term supplies and rising prices even though stocks were growing and exports were down.

Cotton competes with manmade fibers for a share of the textile market. Through the 1970's, cotton's share of the market had been declining. Polyester, the major manmade fiber, was cheaper than cotton and offered mills a stronger fiber with consistent fiber qualities. When cotton prices fell in the early 1980's, cotton became cheaper than polyester (fig. 4) and the downward trend in the share of the market for cotton bottomed out. At the

Figure 3
U.S. cotton prices and costs



same time consumers began showing a preference for cotton clothing, helping to bring cotton's market share from a low of 29 percent to 34 percent in 1987, the highest level in more than a decade.

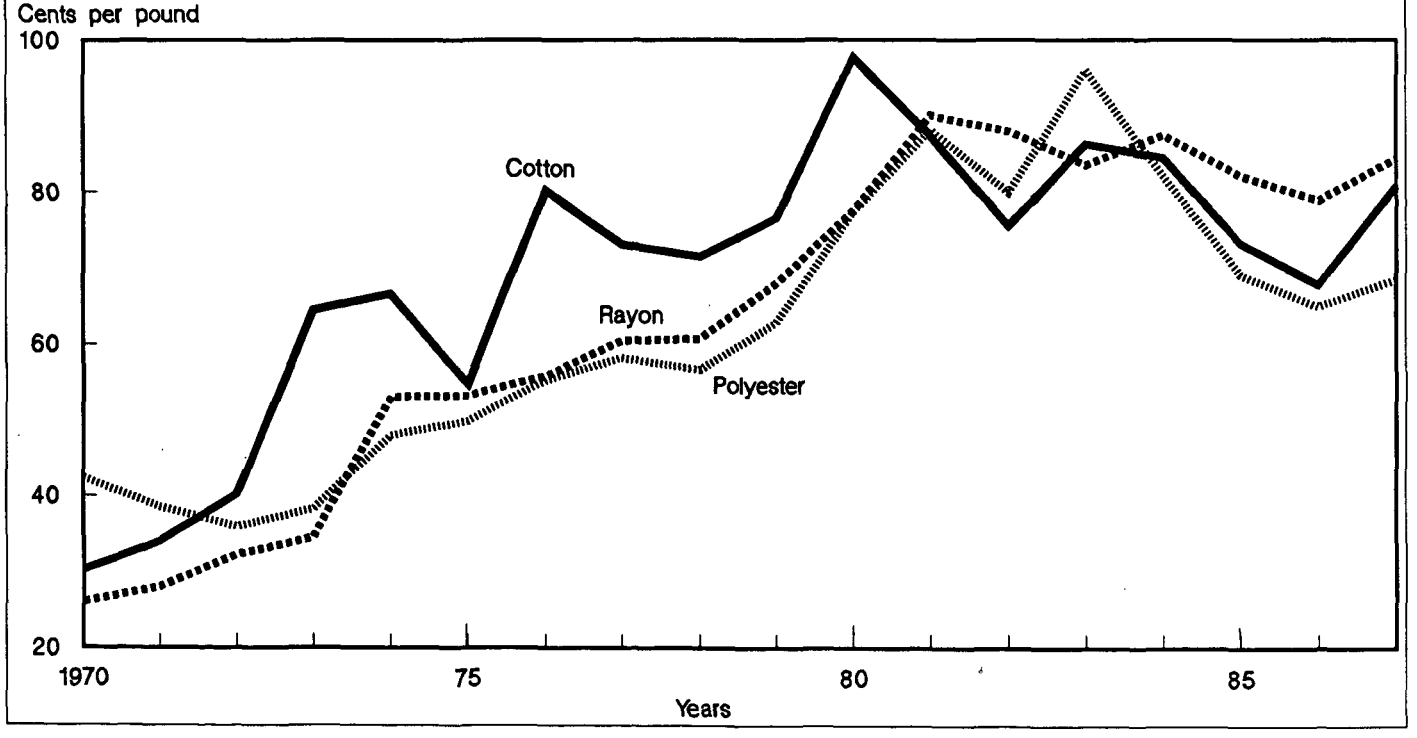
Cotton is the only agricultural commodity covered by specific legislation prohibiting price forecasting by the Federal Government. This restriction has existed since 1929.

Costs and Returns

From 1980-86 the farm value of cotton was not enough to cover all production costs (fig. 5). However, when Government payments were included, cotton producers were able to earn a profit after paying all costs, including returns to land, management, and unpaid family labor. Cotton producers had a good year in 1987 because prices increased enough so that all costs could be paid from the farm value of the crop and substantial Government payments added to producers' profits.

Yield changes are a key factor in unit costs of production. Yields in the mid-1960's were triple those of 1929-30. Productivity increases resulted in relatively high real (deflated) revenues per harvested acre from 1950 through 1965. Yields from 1965 to 1980 showed no obvious trend and real revenue per harvested acre generally declined as real prices weakened. Yields finally turned upward during the 1980's but stocks and supplies were high and real prices dropped, causing real revenue

Figure 4
U.S. raw-equivalent fiber prices



per harvested acre to decline even with higher per acre production (see table 6).

Compared with other types of farms, cotton farms were relatively profitable in 1987 (fig. 6). Cotton farms are defined as farms having at least 50 percent of harvested acreage or cash sales from cotton.

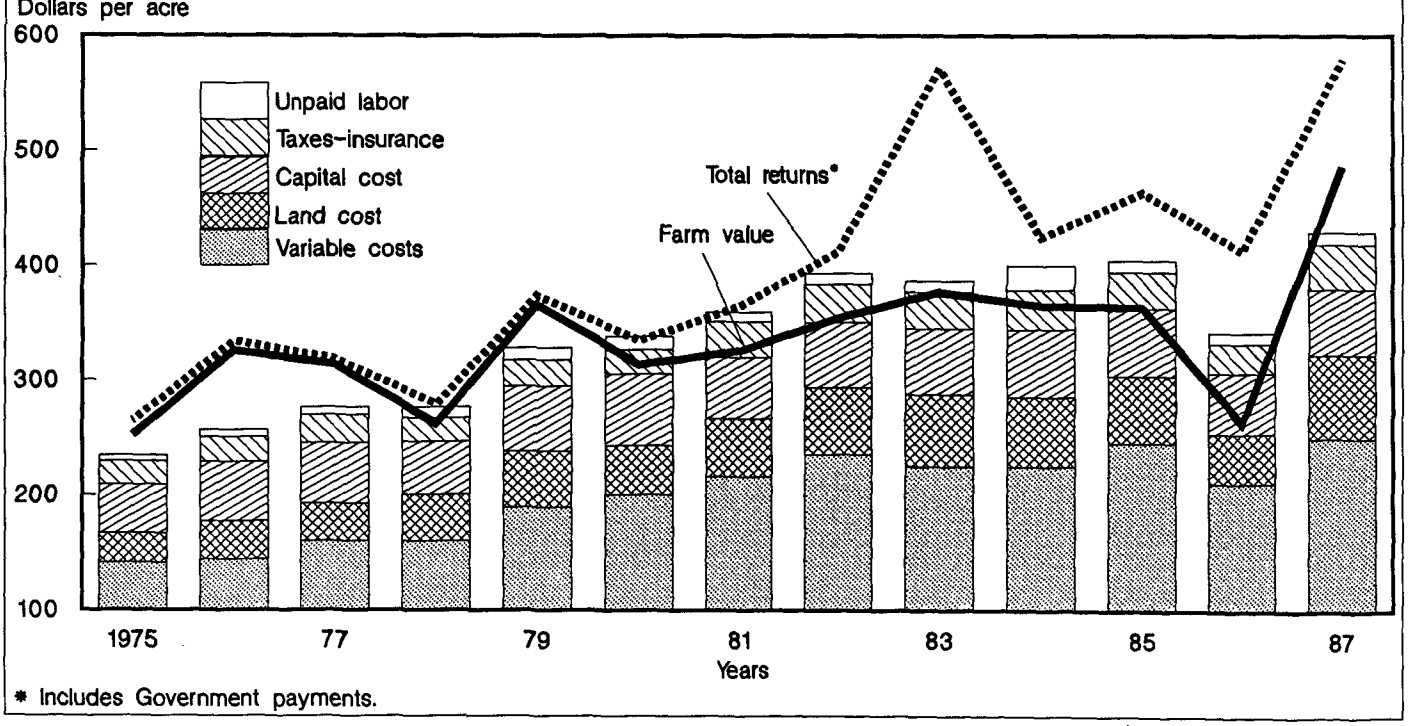
There has been an upward trend in the growth of the cotton sector as a whole (table 7). But total economic costs have also increased so that total income above economic costs shows little or no growth over time. Like most crops, real returns per unit of output show a downward trend. As a result, farm costs of cotton products continue to decline and consumer costs decline from what they would be otherwise.

History of Cotton Programs

Early Programs

The decline in the economic conditions of farmers, especially cotton farmers, after World War I led to public discussion of possible programs to stabilize commodity prices and increase farm income. Farm leaders had been advising farmers to control production on a voluntary basis as a means of stabilizing market prices.

Figure 5
U.S. cotton costs and returns

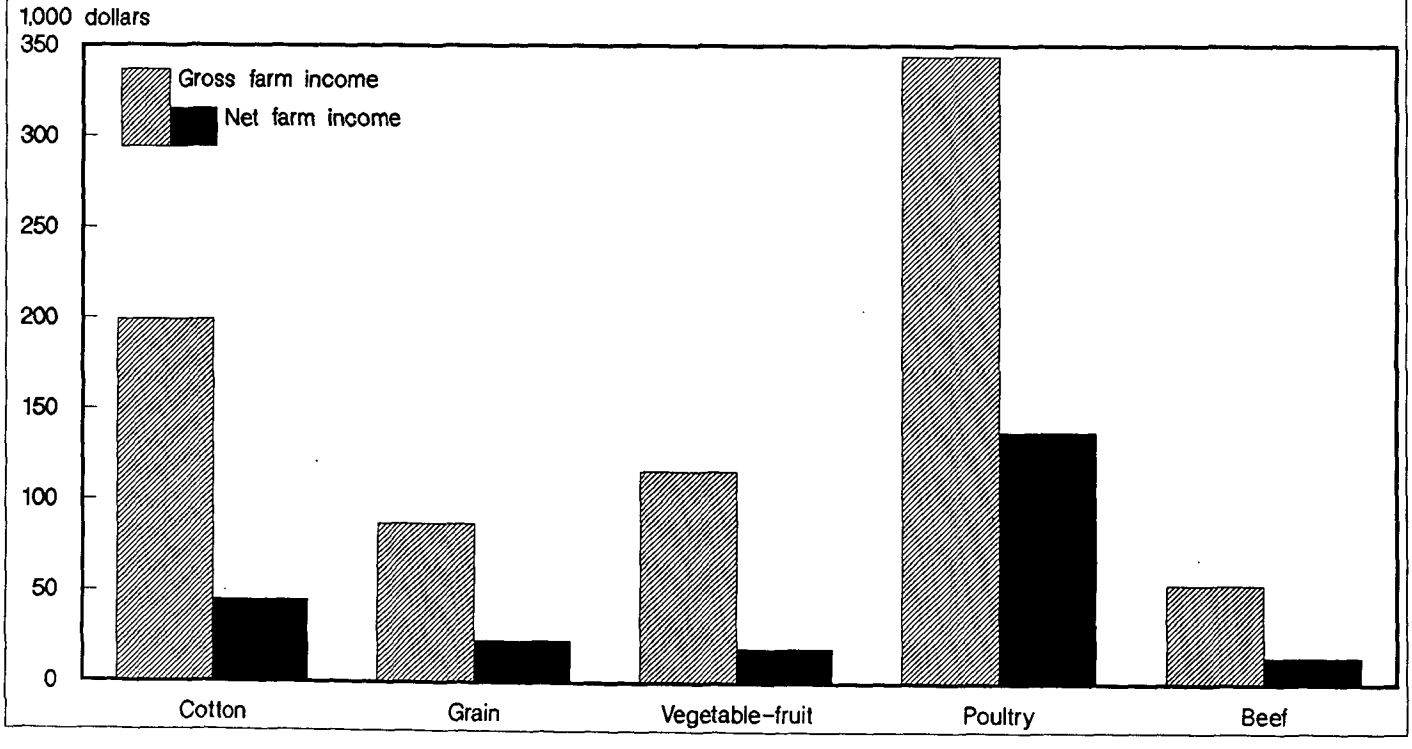


* Includes Government payments.

The failure of those efforts to affect the acreage of crops in oversupply and mounting pressure for legislation to cope with a depressed farm economy led to enactment of the Agricultural Marketing Act of 1929. This act created the Federal Farm Board, which made loans to marketing cooperatives for the purchase and storage of surplus commodities, including cotton. This program failed to achieve its objectives of stabilizing prices or increasing farm income. The failure was due in part to the absence of an effective program to control production, but more importantly to declining demand for cotton and other farm products during the depression. This experience led to the enactment of the Agricultural Adjustment Act of 1933, a comprehensive program aimed at controlling production and increasing prices of designated "basic" commodities, including cotton. One of the major goals of the act was to restore farm purchasing power of agricultural commodities to the 1910-14 average level. This concept later became known as "parity" which was translated into parity prices for each of the "basic" commodities. The concept was used to establish minimum levels of price support through the mid-1960's for cotton. Parity prices were based on a rigid historical formula and failed to reflect changing market conditions and technological advances.

Production control was a primary objective of the Agricultural Act of 1933 and subsequent legislation. Farmers could take land out of production in return for benefit payments. In response to very low cotton prices received by farmers in 1932 and an abnormally high carryover, a cotton plow-up campaign in 1933

Figure 6
U.S. farm income by farm type, 1987



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	Nominal	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

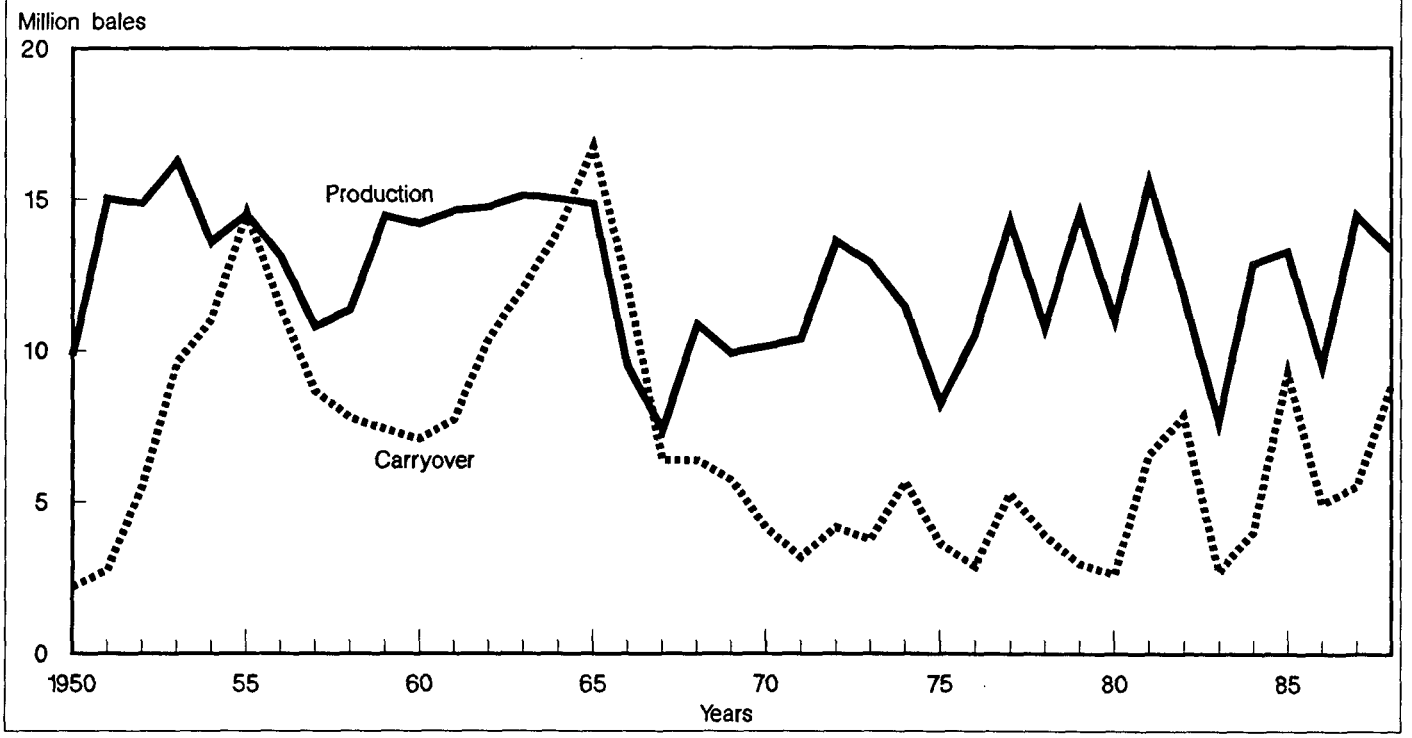
level (table 8). Despite marketing quotas, supplies continued to increase because the allotment level had been reduced to the minimum allowed by legislation, leaving program administrators with no further allotment reduction discretion.

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.

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

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	9.1	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 2/	54.8	45.3	15.9	13.1	70.7	58.4

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

2/ Average market price for Aug. 1-Mar. 31, 1989.

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

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

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 ayear 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.

Issues

Cotton policy issues likely to be of concern during deliberations on the 1990 farm bill relate chiefly to insuring competitively priced U.S. cotton, excess supply, and the high Government costs of the program. Recurring issues will concern the need for and the level of acreage and production controls, support prices and incomes, payment limitations, and environmental issues. Cotton

export subsidies and credit, import quotas and tariffs, and trade barriers will also be important issues.

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).

Additional Readings

Alipoe, Dovi-Akue, Sujit K. Roy, and Don E. Ethridge. "An Economic Analysis of Structural Relationships in U.S. Cotton Sector," 1985 Proceedings, Beltwide Cotton Production Research Conferences. Memphis, TN: National Cotton Council of America, 1985.

American Fabrics and Fashion Magazine. Encyclopedia of Textiles. 3d ed. Englewood Cliffs, NJ: Prentice-Hall, 1980.

Anderson, Carl G. "A Review and Evaluation of Cotton Futures Options Trading," 1985 Proceedings, Beltwide Cotton Production Research Conferences. Memphis, TN: National Cotton Council of America, 1985.

Blakley, Leo V., and Carl E. Shafer. "History of Farm Structure: Cotton," Farm Structure: A Historical Perspective on Changes in the Number and Size of Farms. Com. Print No. 56-2140. U.S. Senate Committee on Agriculture, Nutrition, and Forestry, Apr. 1980.

Brown, H. B., and J. O. Ware. Cotton. 3d ed. New York: McGraw-Hill Book Co., 1958.

Brown, Walter, and Terry Townsend. "Nature and Uses of Cotton Futures Options," Cotton and Wool Outlook and Situation Report. CWS-42. U.S. Dept. Agr., Econ. Res. Serv., Apr. 1985.

Cleveland, O. A., Jr., and Earl A. Stennis. Cotton Marketing and the Cotton Grower. R. R. #122. Mississippi State Univ. and Coop. Ext. Serv., July 1981.

Collins, Keith J. "Cotton Comparative Advantage and Policy in the 1980's," 1983 Proceedings, Beltwide Cotton Production Research Conferences. Memphis, TN: National Cotton Council of America, 1983.

_____. "Cotton Price Analysis,. Cotton and Wool Outlook and Situation. CWS-28. U.S. Dept. Agr., Econ. Res. Serv., Aug. 1981.

_____. "Farm Policy for 1985, Past Lessons and Current Problems," 1985 Proceedings, Beltwide Cotton Production Research Conferences. Memphis, TN: National Cotton Council of America, 1985.

_____. "The Effects of Selected Supply and Demand Factors on the U.S. Cotton Market," Cotton and Wool Outlook and Situation Report. CWS-23. U.S. Dept. Agr., Econ. Res. Serv., May 1980.

_____, Robert B. Evans, and Robert D. Barry. World Cotton Production and Use: Projections for 1985 and 1990. FAER-154. U.S. Dept. Agr., Econ., Stat., Coop. Serv., June 1979.

_____ and E. H. Glade, Jr. Cotton in the U.S. Economy: An Interindustry Analysis of International Trade in Cotton and Textiles. Staff Report AGES830119. U.S. Dept. Agr., Econ. Res. Serv., Feb. 1983.

Colwick, Rex R., William F. Lalor, and Lambert H. Wilkes. "Harvesting," Cotton. Agronomy Monograph No. 24 Madison, WI:

American Society of Agronomy, 1984, pp. 367-95.
Encyclopedia of Textiles. 3d ed. Englewood Cliffs, NJ: Prentice-Hall, Inc., 1980.

Ericksen, Milton H., and others. "Commodity Programs and Policies," Agricultural and Food Policy Review: Perspectives for the 1980's. AFPR-4. U.S. Dept. Agr., Econ. Stat. Serv., Apr. 1981.

Ethridge, M. Dean. "Trade Policy Issues," 1986 Proceedings, Beltwide Cotton Production Research Conferences. Memphis, TN: National Cotton Council of America, 1986.

Evans, Sam, and Keith J. Collins. "Measuring Farmers' Response to the Cotton Acreage Reduction Program," Cotton and Wool Outlook and Situation Report. CWS-30. U.S. Dept. Agr., Econ. Res. Serv., Mar. 1982.

Evans, Sam. "An Economic Analysis of the 1983 Upland Cotton Program," Cotton and Wool Outlook and Situation Report. CWS-34. U.S. Dept. Agr., Econ. Res. Serv., Mar. 1983.

_____. "Cotton Farm Program Issues," 1984 Proceedings, Beltwide Cotton Production Research Conferences. Memphis, TN: National Cotton Council of America, Jan. 1984.

Firch, Robert S. "Commodity Policy Options: Cotton." Paper presented at Alternative Agricultural and Food Policies and the 1985 Farm Bill Conference, Univ. of California, Berkeley, June 11-12, 1984.

Fox, Austin, Charles V. Moore, and Harold Stults. Production of Surplus Crops on Irrigated Land Served by the U.S. Bureau of Reclamation. Staff Report AGES831213. U.S. Dept. Agr., Econ. Res. Serv., Feb. 1984.

Glade, Edward H., Jr. "Cotton Marketing Costs Between the Farm and Mill, 1983/84," 1985 Proceedings, Beltwide Cotton Production Research Conferences. Memphis, TN: National Cotton Council of America, 1985.

_____. "Recent Trends in U.S. Cotton Textile Imports, by Country and Product Class," Cotton and Wool Outlook and Situation Report. CWS-42. U.S. Dept. Agr., Econ. Res. Serv., Apr. 1985.

Glade, Edward H., Jr., and John V. Lawler. "Raw Fiber Equivalent of U.S. Textile Imports by Country of Origin, 1985," Cotton and Wool Situation and Outlook Report. CWS-45. U.S. Dept. Agr., Econ. Res. Serv., May 1986.

Glade, Edward H., Jr., and Mae Dean Johnson. Cotton Ginning Charges, Harvesting Practices, and Selected Marketing Costs. U.S. Dept. Agr., Econ. Res. Serv., annual issues.

_____. U.S. Cotton Distribution Patterns, 1980/81. SB-696. U.S. Dept. Agr., Econ. Res. Serv., June 1983.

_____. U. S. Cotton Distribution Patterns, 1986/87. SB-769. U.S. Dept. Agr., Econ. Res. Serv., Nov. 1988

Glade, Edward H., Jr., Keith J. Collins, and Clarence D. Rogers. Cotton Quality Evaluation: Testing Methods and Use. ERS-668. U.S. Dept. Agr., Econ. Res. Serv., Nov. 1981.

Glaser, Lewrene K. Provisions of the Food Security Act of 1985. AIB-498. U.S. Dept. Agr., Econ. Res. Serv., Apr. 1986.

Hughes, Dean W. "The Financial Condition of Cotton Farmers," 1986 Proceedings, Beltwide Cotton Production Research Conferences. Memphis, TN: National Cotton Council of America, 1986.

International Cotton Advisory Committee. Government Regulations on Cotton, 1983. Doc. 11. Washington, DC, Oct. 1983.

Joseph, Marjory L. Essentials of Textiles. 3d ed. New York: Holt, Rinehart and Winston, 1984.

Kohel, R. J., and C. F. Lewis, ed. Cotton. Agronomy Monograph No. 24, Madison, WI: American Society of Agronomy, 1984, pp. 233-63.

Knutson, Ronald D. "Cotton Policy: Lessons from the Past and Options for the 1985 Farm Bill," 1984 Proceedings, Beltwide Cotton Production Research Conferences. Memphis, TN: National Cotton Council of America, 1984.

_____, and others. "International Trade in Cotton: Implications of the 1985 Farm Bill," 1986 Proceedings, Beltwide Cotton Production Research Conferences. Memphis, TN: National Cotton Council of America, 1986.

Lawler, John V. "The Methodology of USDA Textile Trade Data," Cotton and Wool Outlook and Situation Report. CWS-42. U.S. Dept. Agr., Econ. Res. Serv., Apr. 1985.

Lee, Joshua A. "Cotton as World Crop," Cotton. Agronomy Monograph No. 24. Madison, WI: American Society of Agronomy, 1984.

Lin, William, James Johnson, and Linda Calvin. Farm Commodity Programs: Who Participates and Who Benefits? AER-474. U.S. Dept. Agr., Econ. Res. Serv., Sept. 1981.

McArthur, W. C., and others. The Cotton Industry in the United States: Farm to Consumer. Pub. No. T-1-186. U.S. Dept. Agr., Econ., Stat., Coop. Serv., and Texas Tech Univ., Dept. Agr. Econ., Apr. 1980.

McArthur, W. C., and others. U.S. Cotton Production Practices and Costs. Staff Report AGES850422. U.S. Dept. Agr., Econ. Res. Serv., Aug. 1985.

McElroy, Robert G., and Cole Gustafson. Costs of Producing Major Crops, 1975-81. Staff Report AGES850329. U.S. Dept. Agr., Econ. Res. Serv., Apr. 1985.

McGowan, Joseph C. History of Extra-Long Staple Cottons. Master's thesis, Univ. of Arizona. Phoenix, AZ: Supima

Association of America and Arizona Cotton Growers Association, 1961.

National Cotton Council of America. Cotton Counts Its Customers. Memphis, TN, 1985.

Paarlberg, Phillip L., and others. Impacts of Policy on U.S. Agricultural Trade. Staff Report AGES840802. U.S. Dept. Agr., Econ. Res. Serv., Dec. 1984.

Penson, J. B., D. W. Hughes, and R. A. Babula. "Impact of Macroeconomic Policy on U.S. Cotton Producers," 1986 Proceedings, Beltwide Cotton Production Research Conferences. Memphis, TN: National Cotton Council of America, 1986.

Ramey, H. H., Jr. Ch. 2: "Fiber Crops," Crop Quality, Storage, and Utilization. Madison, WI: American Society of Agronomy, 1980, pp. 35-39.

Rasmussen, Wayne D., ed. A Documentary History of American Agriculture. New York: Random House, 1975.

Sharples, Jerry A., Alan Webb, and Forrest Holland. World Trade and U.S. Farm Policy. Staff Report AGES840521. U.S. Dept. Agr., Econ. Res. Serv., June 1984.

Skelly, Carol. "Review of the Upland Cotton Acreage Base," Cotton and Wool Outlook and Situation Report. CWS-40. U.S. Dept. Agr., Econ. Res. Serv., Sept. 1984.

Smith, E. G., J. W. Richardson, and R. D. Knutson. Cost and Pecuniary Economies in Cotton Production and Marketing: A Study of Texas Southern High Plains Cotton Producers. B-1475. Texas A&M Univ., Dept. Agr. Econ., Aug. 1984.

Starbird, Irving, and others. The U.S. Cotton Industry. AER-567. U.S. Dept. Agr., Econ. Res. Serv., June 1987.

Starbird, Irving, and Jorge Hazera. "Analysis of Factors Affecting Cotton Yields," Cotton and Wool Outlook and Situation Report. CWS-35. U.S. Dept. Agr., Econ. Res. Serv., June 1983.

Starbird, Irving R. "Competition Between Cotton and Other Crops," 1986 Proceedings, Beltwide Cotton Production Research Conferences. Memphis, TN: National Cotton Council of America, 1986.

_____. "The Cotton Program: History, Recent Changes, and Policy Issues," Cotton and Wool Outlook and Situation Report. CWS-42. U.S. Dept. Agr., Econ. Res. Serv., Apr. 1985.

Strickland, P. L. and others. Cotton Production and Farm Income Estimates Under Selected Alternative Farm Programs. AER-212. U.S. Dept. Agr., Econ. Res. Serv., Sept. 1971.

Stucker, Barbara C., and Keith J. Collins. The Food Security Act of 1985: Major Provisions Affecting Commodities. AIB-497. U.S. Dept. Agr., Econ. Res. Serv., Jan. 1986.

Stults, Harold and Eric Siverts. "Regional Effects of U.S. Cotton Imports," 1989 Proceedings, Beltwide Cotton Production Research Conferences. Memphis, TN: National Cotton Conference of America, Jan. 1989.

Tharp, W. H. The Cotton Plant: How It Grows and Why Its Growth Varies. AH-178. U.S. Dept. Agr., Agr. Res. Serv., June 1960.

Tubbs, E. Marty, Cary W. Herndon, Jr., and Earl A. Stennis. Factors Affecting U.S. Cotton Exports to Major Importers. Agr. Econ. Res. Rpt. No. 158. Mississippi State Univ., Dept. Agr. Econ., Aug. 1985.

Tutwiler, M. Ann, and Terry Townsend. "The Textile and Apparel Trade Enforcement Act of 1985: How Will It Affect Textile Imports?" Cotton and Wool Outlook and Situation Report. CWS-44. U.S. Dept. Agr., Econ. Res. Serv., Nov. 1985.

U.S. Department of Agriculture, Agricultural Stabilization and Conservation Service. Extra Long Staple Cotton: Summary of 1985 Support Program and Related Information. Commodity Fact Sheet. May 1985.

_____, Agricultural Stabilization and Conservation Service. History of Budgetary Expenditures of the Commodity Credit Corporation. Book 1: Fiscal years 1961-79; Book 2: Fiscal years 1980-84. Feb. 1985 (annual updates available).

_____, Economic Research Service. Agricultural and Food Policy Review: Commodity Program Perspectives. AER-530. July 1985.

_____, Economic Research Service. A Summary Report on the Financial Conditions of Family-size Commercial Farms. AIB-492. Mar. 1985.

_____, Economic Research Service. Cotton and Wool Outlook and Situation Yearbook. CWS-43. Aug. 1985.

_____, Economic Research Service. Cotton and Wool Situation and Outlook Yearbook. CWS-46. Aug. 1986.

_____, Economic Research Service. Cotton: Background for 1985 Farm Legislation. AIB-476. Sept. 1984.

_____, Economic Research Service. Economic Indicators of the Farm Sector: Costs of Production, 1983. ECIFS 3-1. July 1984.

_____, Economic Research Service. Economic Indicators of the Farm Sector: Costs of Production, 1985. ECIFS 5-1. Aug. 1986.

_____, Economic Research Service. History of Agricultural Price-Support and Adjustment Programs, 1933-84. AIB-485. Dec. 1984.

_____, Economic Research Service. Possible Economic Consequences of Reverting to Permanent Legislation or Eliminating Price and Income Supports. AER-526. Jan. 1985.

_____, Foreign Agricultural Service. Foreign Agriculture Circular: Cotton. FC-11-86. Nov. 1986.

_____, Statistical Reporting Service. Agricultural Prices: 1985 Summary. Pr 1-3(86). June 1986.

_____, Statistical Reporting Service. Agricultural Statistics. Annual issues.

U.S. Department of Commerce, Bureau of the Census. Census of Agriculture. Various issues.
_____, Bureau of the Census. Census of Manufactures. 1982.

Wagley, Henry. "China: An Emerging Force in World Cotton Picture," 1986 Proceedings, Beltwide Cotton Production Research Conferences. Memphis, TN: National Cotton Council of America, 1986.

Westcott, Paul C. Investigations of Changes in Farm Programs. Mandated report to Congress. U.S. Dept. Agr., Econ. Res. Serv., Feb. 1988.

Whitten, Carolyn L. "Export Policies of Major Cotton Competitors." 1988 Proceedings, Beltwide Cotton Production Research Conferences. Memphis, TN: National Cotton Council of America, Jan. 1988,

Wilson, Ewen M. Statement before the House of Representatives, Committee on Agriculture, Subcommittee on Cotton, Rice, and Sugar. Feb. 22, 1989.

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 FSA. 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 example, 88x72 means there are 88 ends and 72 picks per square inch in the fabric.

Textile. Any product made from fibers, including yarns, fabrics, and end-use products such as apparel, home furnishings, and industrial applications.

Twist. The number of turns per unit of length of the fiber, strand, roving, or yarn. In the United States, twist is measured in terms of the number of turns per inch.

Universal density bale. A bale of cotton compressed to a density of 28 pounds per cubic foot.

Upland cotton. See cotton.

Warp. The yarns that run lengthwise in a woven or warp-knit fabric.

Wash and wear. A term applied to any garment which can be washed, dried, and then worn again with little or no ironing. Also called "durable press" or "permanent press."

Weft. The filling yarns that run crosswise in woven fabric or weft-knit fabric.

Weight of fabric. Three methods are used to measure fabric weight: (1) linear yards per pound, (2) ounces per linear yard, and (3) ounces per square yard.

World price. Often refers to the c.i.f. price of an imported agricultural commodity at the principal port of importation of a major importing country or area. See prices, raw cotton.

Woven fabric. Fabric made by interlacing two sets of yarn at right angles. The warp yarns run lengthwise in the fabric; the filling (weft) yarns are passed over and under the warp yarns.

Yarn. A continuous strand of twisted (spun) fibers of any kind and of varying staple length, usually used in the weaving or knitting of fabric.

Yarn size. Yarns, or threads, are numbered according to weight. The higher numbers denote fiber fineness. A "1s" cotton yarn has 840 yards in a pound; a "30s" cotton yarn has 25,200 yards in a pound. A "30/2" is a two-ply yarn containing two strands of 30s. See cotton count.

Appendix Tables

Appendix table 1--Acreage, yield, and production of upland cotton, 1955-87

Year	Planted	Harvested	Diverted	Yield per harvested acre	Production
	Million acres			Pounds	1,000 bales 1/
1955	17.9	16.9	---	417	14,501
1956	17.0	15.6	2/ 1.1	408	13,102
1957	14.2	13.5	2/ 3.0	387	10,801
1958	12.3	11.8	2/ 4.9	465	11,353
1959	15.8	15.1	---	461	14,446
1960	16.0	15.2	---	446	14,199
1961	16.5	15.6	---	438	14,263
1962	16.2	15.5	---	456	14,754
1963	14.7	14.1	---	516	15,129
1964	14.7	13.9	.5	517	15,025
1965	14.1	13.51	.0	527	14,850
1966	10.3	9.54	.6	480	9,484
1967	9.4	7.94	.8	446	7,374
1968	10.8	10.13	.3	516	10,847
1969	11.8	11.0	---	433	9,913
1970	11.9	11.1	---	439	10,135
1971	12.3	11.42	.1	438	10,379
1972	13.9	12.92	.0	507	13,608
1973	12.4	11.9	---	521	12,896
1974	13.6	12.5	---	441	11,450
1975	9.4	8.7	---	453	8,247
1976	11.6	10.9	---	464	10,517
1977	13.6	13.2	---	519	14,277
1978	13.3	12.3	.3	419	10,762
1979	13.9	12.7	---	547	14,531
1980	14.5	13.1	---	402	11,018
1981	14.3	13.8	---	542	15,566
1982	11.3	9.7	3/ 1.6	589	11,864
1983	7.9	7.3	4/ 6.6	506	7,677
1984	11.1	10.3	3/ 2.5	599	12,852
1985	10.6	10.1	5/ 3.6	628	13,277
1986	9.9	8.4	6/ 4.3	547	9,520
1987	10.2	9.9	6/ 4.6	702	14,475

--- = Not applicable.

1/ 480-pound net-weight bales. 2/ Includes cotton acreage placed in acreage reserve program of the soil bank. 3/ Acreage reduction program. 4/ Includes 4.1 million acres in payment-in-kind program and 2.5 million acres in other acreage reduction programs. 5/ 2.3 million acres acreage reduction program and 1.3 million acres paid land diversion. 6/ Acreage reduction program, conservation reserve program, and 50/92-0/92 program.

Appendix table 2--Use and ending stocks for upland cotton, 1950-87

Crop year	Mill use	Exports	Total use	Ending stocks	Stocks-to-use ratio
	1,000 bales 1/				Percent
1950	10,355	4,108	14,443	2,196	15
1951	9,117	5,515	14,632	2,741	19
1952	9,358	3,048	12,406	5,511	44
1953	8,475	3,760	12,235	9,570	78
1954	8,730	3,445	12,175	11,028	91
1955	9,085	2,194	11,279	14,553	129
1956	8,459	7,856	16,314	11,388	70
1957	7,975	5,949	13,924	8,666	62
1958	8,683	2,870	11,553	7,776	76
1959	8,888	7,393	16,281	7,410	46
1960	8,122	6,850	14,972	7,073	47
1961	8,756	5,049	13,805	7,717	56
1962	8,322	3,426	11,748	10,390	93
1963	8,554	5,773	14,327	12,091	84
1964	9,107	4,174	12,281	13,980	105
1965	9,454	3,029	12,483	16,734	134
1966	9,438	4,819	14,257	12,081	85
1967	8,948	4,316	13,264	6,379	48
1968	8,204	2,816	11,020	6,377	58
1969	8,001	2,863	10,864	5,727	53
1970	8,105	3,885	11,990	4,134	34
1971	8,163	3,376	11,539	3,182	28
1972	7,670	5,306	12,976	4,153	32
1973	7,384	6,111	13,495	3,753	28
1974	5,797	3,914	9,711	5,649	58
1975	7,160	3,300	10,438	3,615	35
1976	6,595	4,779	11,375	2,879	25
1977	6,416	5,459	11,874	5,278	44
1978	6,286	6,150	12,435	3,905	31
1979	6,440	9,177	15,617	2,962	19
1980	5,828	5,893	11,721	2,614	22
1981	5,216	6,555	11,771	6,567	56
1982	5,457	5,194	10,651	7,844	74
1983	5,861	6,750	12,611	2,693	21
1984	5,491	6,125	11,616	4,024	35
1985	6,338	1,855	8,193	9,289	113
1986	7,385	6,570	13,955	4,942	36
1987	7,565	6,345	13,910	5,718	41

Appendix table 3--Prices and ending stocks for upland cotton, 1950-87

Crop year 1/	Ending stocks: CCC-owned	Ending stocks: Free 2/	Ending stocks: Total	Average price received 3/	Loan rate 4/	Target price	Direct payment
	1,000 bales			Cents per pound			
1950	76	2,120	2,196	39.90	30.25	---	---
1951	2	2,739	2,741	37.69	32.36	---	---
1952	236	5,275	5,511	34.17	32.41	---	---
1953	129	9,441	9,570	32.10	33.50	---	---
1954	1,661	9,367	11,028	33.52	34.03	---	---
1955	5,952	8,601	14,553	32.27	34.55	---	---
1956	4,829	6,559	11,388	31.63	32.74	---	---
1957	937	7,729	8,666	29.46	32.31	---	---
1958	984	7,792	8,776	33.09	35.08	---	---
1959	4,967	2,443	7,410	31.56	34.10	---	---
1960	1,678	5,395	7,073	30.08	32.42	---	---
1961	1,449	6,155	7,604	32.80	33.04	---	---
1962	3,750	6,640	10,390	31.74	32.47	---	---
1963	4,303	7,788	12,091	32.02	32.47	---	---
1964	6,557	7,423	13,980	29.62	30.00	---	5/ 3.50
1965	9,715	7,019	16,734	28.03	29.00	---	4.35
1966	6,677	5,404	12,081	20.64	21.00	---	9.42
1967	552	5,827	6,379	25.39	20.2	---	11.53
1968	24	6,353	6,377	22.02	20.25	---	12.24
1969	1,890	3,837	5,727	20.94	20.25	---	14.73
1970	262	3,872	4,134	21.86	20.25	---	16.80
1971	1	3,181	3,182	28.07	19.50	---	6/ 5.00
1972	0	4,153	4,153	27.20	19.50	---	15.00
1973	0	3,753	3,753	44.40	19.50	---	15.00
1974	0	5,649	5,649	42.70	27.06	38.00	7/
1975	0	3,615	3,615	51.10	36.12	38.00	0
1976	0	2,879	2,879	63.80	38.92	43.20	0
1977	8/	5,278	5,278	52.10	44.63	47.80	0
1978	8/	3,905	3,905	58.10	48.00	52.00	0
1979	8/	2,962	2,962	62.30	50.23	57.70	0
1980	8/	2,614	2,614	74.40	48.00	58.40	0
1981	1	6,566	6,567	54.00	52.46	70.87	7.67
1982	396	7,448	7,844	59.10	57.08	71.00	13.92
1983	158	2,535	2,693	66.00	55.00	76.00	12.10
1984	123	3,901	4,024	57.50	55.00	81.00	18.60
1985	767	8,552	9,289	56.80	57.30	81.00	23.50
1986	73	4,869	4,942	51.50	55.00	81.00	26.00
1987	3	5,715	5,718	63.70	52.25	79.40	17.30

See footnotes next page.

continued --

Footnotes Appendix table 3.
--- = Not applicable.
1/ Crop year beginning August 1.
2/ Includes ending stocks (July 31) of cotton in consuming establishments, public storage (including cotton under loan but excluding CCC-owned cotton), compresses, and cotton in transit.
3/ Season-average prices received by farmers for lint cotton, including an allowance for unredeemed loans.
4/ Loan rates shown for 1950-73 are basis Middling 1-inch, micronaire 3.5-4.9. Loan rates shown for 1974-85 are basis Strict Low Middling 1-1/16 inch, micronaire 3.5-4.9.
5/ From 1964-70, price support payments were available on the domestic allotment (67 percent of total allotment in 1964, 65 percent in 1965-70). Loans were available on the entire production within the allotment.
6/ From 1971-73, the direct payment represents the minimum payment rate available on the full base acreage allotment. Payments in 1971-72 were contingent on participation in the cropland set-aside program, while no set-aside requirement was imposed for 1973.
7/ From 1974-85, the direct payments represent deficiency payments: the difference between the target price and the higher of the calendar year average price or the base loan rate. Diversion payments, disaster payments, and payment-in-kind entitlements are excluded.

Appendix table 4--Farm related program costs for upland cotton, 1970-88 1/

Fiscal year	Direct price support or deficiency	Diversion	Disaster	Loan operations		Total support and related expenditures 2/
				Outlays	Repayments	
			Million dollars			
1970	797.6	18.7	---	383.0	247.6	891.4
1971	890.0	24.9	---	247.2	263.7	603.2
1972	819.3	.1	---	106.6	115.4	760.4
1973	808.7	.1	---	170.3	165.3	824.0
1974	713.2	.1	---	163.1	154.8	724.6
1975	---	.1	127.0	292.7	189.9	232.8
1976 3/	---	---	124.7	105.8	237.3	-4.0
1977	---	---	95.2	168.5	159.3	104.3
1978	4/	16.8	72.8	934.3	799.9	223.8
1979	4/	23.6	189.2	332.8	404.4	141.2
1980	4/	---	104.0	401.5	441.6	64.3
1981	4/	.1	303.9	522.6	491.6	335.7
1982	467.4	.1	99.9	1,394.7	770.1	1,189.7
1983	804.3	3.3	105.5	1,363.3	958.5	1,362.9
1984	145.1	-1.1	.5	1,431.8	1,282.1	244.0
1985	1,048.5	161.8	---	808.6	449.2	1,552.7
1986	834.5	34.1	5/	2,315.8	1,071.4	2,141.9
1987	987.4	.2	5/	2,668.7	2,021.9	1,785.7
1988	211.6	-.1	5/	1,539.9	1,281.6	665.8

--- = Not applicable (no outlays).

1/ Excludes PL 480 commodity costs.

2/ Direct price support or deficiency, diversion, or disaster payments plus Government expenditures on transportation, classing, loans, loan settlements, and other expenses less sale proceeds, loan repayments, and other receipts. Negative indicates net receipts.

3/ Includes July-Sept. 1976 to allow for shift from July/June to Oct./Sept. fiscal year.

4/ Net receipts of less than $1 million.

5/ Less than $50,000.

Appendix table 5--Value comparisons for upland cotton, 1950-87

Crop year	Loan value per acre		Market value per acre		Gross value of production	
	Current dollars 1/	1982 dollars 2/	Current dollars 3/	1982 dollars 2/	Current dollars 4/	1982 dollars 2/
	Dollars				Million dollars	
1950	81.37	340.46	131.98	552.22	2,336	9,774
1951	87.37	348.09	121.90	485.66	6,579	13,064
1952	90.75	355.88	116.01	454.94	2,993	11,737
1953	108.54	419.07	123.31	476.10	2,9/4	7,757
1954	116.04	441.22	136.98	520.84	2,630	10,000
1955	144.07	529.67	155.98	573.46	2,636	9,691
1956	133.58	475.37	152.82	543.84	2,384	8,484
1957	125.04	429.69	135.85	466.84	1,834	6,302
1958	163.12	549.26	173.14	582.96	2,043	6,879
1959	157.20	517.11	166.62	548.09	2,516	8,276
1960	144.59	467.93	156.84	507.57	2,384	7,715
1961	144.72	463.85	169.30	542.63	2,641	8,465
1962	148.06	464.14	169.74	532.10	2,631	8,248
1963	167.55	517.13	194.11	599.10	2,737	8,448
1964	155.10	471.43	181.22	550.82	2,510	7,629
1965	152.83	205.53	175.33	518.73	2,367	7,003
1966	100.80	288.00	130.32	372.34	1,238	3,537
1967	90.32	251.59	140.76	392.09	1,112	3,097
1968	104.49	277.16	141.39	375.04	1,428	3,788
1969	87.68	220.30	109.55	275.25	1,205	3,028
1970	88.90	211.69	120.54	287.00	1,338	3,183
1971	85.41	192.36	143.51	323.22	1,636	3,685
1972	93.60	201.29	158.30	340.43	2,042	4,391
1973	101.60	205.25	272.52	550.55	3,243	6,552
1974	119.33	220.98	236.00	437.04	2,950	5,436
1975	162.62	274.23	268.05	452.02	2,332	3,933
1976	180.59	286.20	334.31	529.81	3,644	5,775
1977	231.63	344.18	299.32	444.75	3,951	5,871
1978	201.12	278.56	283.17	392.20	3,483	4,824
1979	271.76	345.75	396.46	504.40	5,035	6,406
1980	193.44	225.72	343.51	400.83	4,500	5,251
1981	284.33	302.48	332.03	353.22	4,582	4,873
1982	336.20	336.20	384.12	384.12	3,762	3,762
1983	277.20	128.27	402.33	186.18	2,937	1,359
1984	329.45	354.82	392.33	422.53	4,041	4,352
1985	359.84	399.06	380.18	421.62	3,857	4,277
1986	300.85	342.67	312.97	356.47	2,614	2,977
1987	365.75	430.49	500.41	588.66	4,998	5,882

1/ Loan values per harvested acre obtained by multiplying appropriate base loan rates per pound (from appendix table 3) by average yields per harvested acre. 2/ Current dollars deflated by the GNP implicit price deflator (1972 = 100). 3/ Gross value of production of upland cotton lint and seed, divided by harvested acres. Excludes Government payments. 4/ Total value of upland cotton lint and seed produced, excluding Government payments. The value of cottonseed produced averaged abut 13 percent of the total value of lint and seed in 1974-83.

Appendix table 6--World production, consumption, exports, and ending stocks for cotton, 1960-87

Crop year	Production	Consumption	Exports	Ending stocks	Stocks-to-use ratio
	1,000 bales				Percent
1960	45,005	46,051	17,121	20,375	44.2
1961	44,432	45,159	15,619	20,130	44.6
1962	46,869	43,854	15,933	24,033	54.8
1963	50,893	47,919	17,930	27,046	56.4
1964	53,934	51,413	16,857	30,057	58.5
1965	57,060	53,919	16,946	33,657	62.4
1966	52,469	46,141	18,229	29,720	52.9
1967	51,640	56,148	17,493	25,068	44.6
1968	57,019	56,552	16,983	25,421	44.9
1969	54,849	56,095	17,708	24,231	32.2
1970	55,035	57,331	17,748	23,001	40.1
1971	59,236	58,584	18,685	23,407	40.0
1972	62,037	59,743	21,196	25,413	42.5
1973	63,264	60,834	19,583	28,350	46.6
1974	64,134	57,920	17,497	53,999	58.7
1975	54,057	61,803	19,073	26,565	43.0
1976	56,738	60,938	17,571	22,564	37.0
1977	63,911	60,917	19,140	26,113	42.9
1978	59,634	63,302	19,721	22,645	35.8
1979	65,231	65,939	23,112	21,906	33.2
1980	64,805	65,733	19,686	22,233	33.8
1981	71,195	66,149	20,259	26,470	40.1
1982	68,080	68,249	19,452	25,069	37.0
1983	67,642	68,717	19,210	24,276	35.4
1984	88,134	69,979	20,224	25,203	36.0
1985	79,617	75,691	20,456	23,924	31.6
1986	70,462	82,298	25,116	42,269	51.4
1987	79,466	81,992	23,926	27,020	57.4

Appendix table 7--Provisions of upland cotton programs, 1961-89

Provision	1961	1962	1963	1964
Parity price (c/lb)	38.80	39.20	40.20	40.70
Support price (c/lb)	---	---	---	33.50
Payment rate (c/lb)	---	---	---	3.5
Payment ($)	---	---	---	15/ .0350*Yld*Dom
Target price (c/lb)	---	---	---	---
Deficiency payment: 1/				
Advance payment (c/lb)	---	---	---	---
Final payment (c/lb)	---	---	---	---
Allocation factor (%) 2/	---	---	---	---
Nonrecourse loan:				
Loan rate (c/lb) 3/	33.04	32.47	32.47	30.00
Repayment rate (c/lb) 4/	---	---	---	---
CCC domestic sales: 5/				
Legislated minimum price (c/lb) 6/	38.00+CC	37.34+CC	37.34+CC	31.50+CC
Actual price (c/lb) 7/	---	---	---	---
Acreage diversion (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Acreage diversion optional (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Set-aside (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Set-aside voluntary (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Acreage reduction (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Acreage reduction voluntary (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
PIK acreage diversion (%)	---	---	---	---
Payment rate (ba)	---	---	---	---
Payment (ba)	---	---	---	---
Compliance restrictions:				
Soil conserving base 8/	---	---	---	---
Cross-compliance 9/	---	---	---	---
Offsetting-compliance 10/	---	---	---	---
National marketing quota (1,000 ba) 11/	15,562	15,714	14,367	14,267
Marketing quota penalty (c/lb) 12/	19.5	50% of parity	50% of parity	50% of parity
National allotment acres (1,000) 13/	18,458.4	18,101.7	16,250.0	16,200.0
Acres allocated from national acreage reserve (1,000)	60.0	100.0	250.0	200.0
Farm allotment acres:				
Domestic (% of total)	---	---	---	67
Export (% of total)	---	---	---	16/ 5
National base allotment acres (1,000)	---	---	---	---
National program acres (1,000)	---	---	---	---
National base acres (1,000)	---	---	---	---
Base acres in CRP (1,000)	---	---	---	---
National export market acres reserve (1,000)	---	---	---	---
National program yield (lbs/ac)	---	---	---	434
Disaster program: 14/				
Prevented plantings payment (c/lb)	---	---	---	---
Low yield criterion (%)	---	---	---	---
Low yield payment (c/lb)	---	---	---	---
Payment limitation ($)	---	---	---	---
Advanced payment (%)	---	---	---	---
Support payment limitation ($)	---	---	---	---

See footnotes at end of table.

Continued--

Appendix table 7--Provisions of upland cotton programs, 1961-89--Continued

Provision	1965	1966	1967	1968
Parity price (c/lb)	41.70	42.80	42.90	44.50
Support price (c/lb)	33.35	30.42	31.78	32.49
Payment rate (c/lb)	4.35	9.42	11.53	12.24
Payment ($)	15/ .0435*Yld*Dom	18/ .0942*Yld*Dom	18/ .1153*Yld*Dom	18/ .1224*Yld*Dom
Target price (c/lb)	---	---	---	---
Deficiency payment: 1/				
Advance payment (c/lb)	---	---	---	---
Final payment (c/lb)	---	---	---	---
Nonrecourse loan:				
Loan rate (c/lb) 3/	29.00	21.00	20.25	20.25
Repayment rate (c/lb) 4/	---	---	---	---
CCC domestic sales: 5/				
Legislated minimum price (c/lb) 6/	30.45+CC	23.10+CC	22.27+CC	22.27+CC
Actual price (c/lb) 7/	---	---	---	---
Acreage Acreage diversion (%)	---	12.5, 25, or 35	12.5-35	5
Payment rate (c/lb)	---	10.5	10.78	10.76
Payment ($)	---	.105*Yld*Div	.1078*Yld*Div	.1076*Yld*Div
Acreage diversion optional (%)	---	---	---	0-30
Payment rate (c/lb)	---	---	---	6.00
Payment ($)	---	---	---	.06*Yld*Div
Set-aside (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Set-aside voluntary (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Acreage reduction (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Acreage reduction voluntary (%	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
PIK acreage diversion (%)	---	---	---	---
Payment rate (ba)	---	---	---	---
Payment (ba)	---	---	---	---
Compliance restrictions:				
Soil conserving base 8/	---	Yes	Yes	Yes
Cross-compliance 9/	17/ Yes	No	No	No
Offsetting-compliance 10/	---	---	Yes	---
National marketing quota (1,000 ba) 11/	14,733	15,267	16,033	16,100
Marketing quota penalty (c/lb) 12/	50% of parity	50% of parity	50% of parity	50% of parity
National allotment acres (1,000) 13/	16,200.0	16,200.0	16,200.0	16,200.0
Acres allocated from national acreage reserve (1,000)	200.0	200.0	200.0	200.0
Farm allotment acres:				
Domestic (% of total)	65	65	65	65
Export (% of total)	---	---	---	---
National base allotment acres (1,000)	---	---	---	---
National program acres (1,000)	---	---	---	---
National base acres (1,000)	---	---	---	---
Base acres in CRP (1,000)	---	---	---	---
National export market acres reserve (1,000)	---	19/ 16/ 250	19/ 16/ 250	19/ 16/ 250
National program yield (lbs/ac)	446	527	545	545
Disaster program: 14/				
Prevented plantings payment (c/lb)	---	20/ ---	20/ ---	20/ ---
Low yield criterion (%)	---	---	---	---
Low yield payment (c/lb)	---	---	---	---
Payment limitation ($)	---	---	---	---
Advanced payment (%)	---	---	---	---
Support payment limitation ($)	---	---	---	---

See footnotes at end of table.

Continued--

Appendix table 7--Provisions of upland cotton programs, 1961-89--Continued

Provision	1969	1970	1971	1972
Parity price (c/lb)	47.60	48.90	51.90	55.10
Support price (c/lb)	34.98	37.05	35.00	35.85
Payment rate (c/lb)	14.73	16.80	---	---
Payment ($)	18/ .1473*Yld*Dom	18/ .1680*Yld*Dom	---	---
Target price (c/lb)	---	---	---	---
Deficiency payment: 1/				
Advance payment (c/lb)	---	---	---	---
Final payment (c/lb)	---	---	---	---
Nonrecourse loan:				
Loan rate (c/lb) 3/	20.25	20.25	21/ 19.5	19.50
Repayment rate (c/lb) 4/	---	---	---	---
CCC domestic sales: 5/				
Legislated minimum price (c/lb) 6/	22.27+CC	22.27+CC	22.42+CC	22.42+CC
Actual price (c/lb) 7/	---	---	---	---
Acreage diversion (%)	None	None	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Acreage diversion optional (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Set-aside (%)	---	---	20	20
Payment rate (c/lb)	---	---	22/ 15.00	22/ 15.00
Payment ($)	---	---	23/ 15.00*Yld*Plt	23/ 15.00*Yld*Plt
Set-aside voluntary (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Acreage reduction (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Acreage reduction voluntary (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
PIK acreage diversion (%)	---	---	---	---
Payment rate (ba)	---	---	---	---
Payment (ba)	---	---	---	---
Compliance restrictions:				
Soil conserving base 8/	Yes	Yes	Yes	Yes
Cross-compliance 9/	No	---	---	---
Offsetting-compliance 10/	---	---	---	---
National marketing quota (1,000 ba) 11/	15,133	16,008	None	None
Marketing quota penalty (c/lb) 12/	50% of parity	50% of parity	---	---
National allotment acres (1,000) 13/	16,200.0	17,150.0	---	---
Acres allocated from national acreage reserve (1,000)	200.0	150.0	---	---
Farm allotment acres:				
Domestic (% of total)	65	65	---	---
Export (% of total)	---	---	---	--
National base allotment acres (1,000)	---	---	24/ 11,500	24/ 11,500
National program acres (1,000)	---	---	---	--
National base acres (1,000)	---	---	---	--
Base acres in CRP (1,000)	---	---	---	--
National export market acres reserve (1,000)	19/ 16/ 187.5	19/ 16/ 62.5	---	---
National program yield (lbs/ac)	545	500	532	527
Disaster program: 14/				
Prevented plantings payment (c/lb)	20/ ---	20/ ---	---	---
Low yield criterion (%)	---	---	---	---
Low yield payment (c/lb)	---	---	---	---
Payment limitation ($)	---	---	---	--
Advanced payment (%)	---	---	---	--
Support payment limitation ($)	---	---	25/ 55,000	25/ 55,000

See footnotes at end of table.

Continued--

Appendix table 7--Provisions of upland cotton programs, 1961-89--Continued

Provision	1973	1974	1975	1976
Parity price (c/lb)	66.00	73.10	78.60	79.50
Support price (c/lb)	41.52	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Target price (c/lb)	---	38.00	38.00	43.20
Deficiency payment: 1/				
Advance payment (c/lb)	---	---	---	---
Final payment (c/lb)	---	0.00	0.00	0.00
Nonrecourse loan:				
Loan rate (c/lb) 3/	19.50	27.06	36.12	38.92
Repayment rate (c/lb) 4/	---	---	---	---
CCC domestic sales: 5/				
Legislated minimum price (c/lb) 6/	21.45+CC	31.12+CC	43.70+CC	49.68+CC
Actual price (c/lb) 7/	---	---	---	---
Acreage diversion (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	
Payment ($)	---	---	---	---
Acreage diversion optional (%)	---	---	10	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Set-aside (%)	None	None	None	None
Payment rate (c/lb)	22/ 15.00	Def	Def	Def
Payment ($)	23/ 15.00*Yld*Plt	23/ 0.00*Yld*Plt	23/ 0.00*Yld*Plt	23/ 0.00*Yld*Plt
Set-aside voluntary (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Acreage reduction (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Acreage reduction voluntary (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
PIK acreage diversion (%)	---	---	---	---
Payment rate (ba)	---	---	---	---
Payment (ba)	---	---	---	---
Compliance restrictions:				
Soil conserving base 8/	Yes	No	No	No
Cross-compliance 9/	---	---	---	---
Offsetting-compliance 10/	---	---	---	---
National marketing quota (1,000 ba) 11/	None	None	None	None
Marketing quota penalty (c/lb) 12/	---	---	---	---
National allotment acres (1,000) 13/	---	---	---	---
Acres allocated from National Acreage Reserve (1,000)	---	---	---	---
Farm allotment acres:				
Domestic (% of total)	---	---	---	---
Export (% of total)	---	---	---	---
National base allotment acres (1,000)	24/ 10,000	24/ 11,000	24/ 11,000	24/ 11,000
National program acres (1,000)	---	---	---	---
National base acres (1,000)	---	---	---	---
Base acres in CRP (1,000)	---	---	---	---
National export market acres reserve (1,000)	---	---	---	---
National program yield (lbs/ac)	540	527	536	517
Disaster program: 14/				
Prevented plantings payment (c/lb)	23.62 on 75% normal yield	33/ ---	33/ ---	33/ ---
+ Low yield criterion (%)	75	---	---	---
Low yield payment (c/lb)	23.62 on the shortfall	33/---	33/ ---	33/ ---
Payment limitation ($)	31/ 100,000	31/ 100,000	31/ 100,000	31/ 100,000
Advanced payment (%)	---	---	36/ 50/50	---
Support payment limitation ($)	30/ 50,000	30/ 50,000	30/ 50,000	30/ 50,000

See footnotes at end of table.

Continued--

Appendix table 7--Provisions of upland cotton programs, 1961-89--Continued

Provision	1977	1978	1979	1980
Parity price (c/lb)	83.70	90.60	99.70	110.00
Support price (c/lb)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Target price (c/lb)	47.80	52.00	57.70	58.40
Deficiency payment: 1/				
Advance payment (c/lb)	---	---	---	---
Final payment (c/lb)	0.00	0.00	0.00	0.00
Nonrecourse loan:				
Loan rate (c/lb) 3/	44.63	27/ 48.00	27/ 50.23	27/ 48.00
Repayment rate (c/lb) 4/	---	---	---	---
CCC domestic sales: 5/				
Legislated minimum price (c/lb) 6/	54.90+CC	55.24+CC	57.76+CC	55.20+CC
Actual price (c/lb) 7/	---	---	---	---
Acreage diversion (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Acreage diversion optional (%)	---	10	10	---
Payment rate (c/lb)	---	0.02	0.02	---
Payment ($)	---	.02*Yld*Plt	.02*Yld*Plt	---
Set-aside (%)	None	None	None	None
Payment rate (c/lb)	Def	AF*Def	AF*Def	Af.Def
Payment ($) 23/	0.00*Yld*Plt	0.00*Yld*Plt	23/ 0.00*Yld*Plt	0.00*Yld*Plt
Set-aside voluntary (%)	---	28/ 20	28/ 20	28/ 10
Payment rate (c/lb)	---	Def	Def	Def
Payment ($)	---	0.00*Yld*Plt	0.00*Yld*Plt	0.00*Yld*Plt
Acreage reduction (%)	---	---	---	--
Payment rate (c/lb)	---	---	---	--
Payment ($)	---	---	---	--
Acreage reduction voluntary (%)	---	---	---	--
Payment rate (c/lb)	---	---	---	--
Payment ($)	---	---	---	--
PIK acreage diversion (%)	---	---	---	--
Payment rate (ba)	---	---	---	--
Payment (ba)	---	---	---	--
Compliance restrictions:				
Soil conserving base 8/	no	No	No	No
Cross-compliance 9/	---	---	---	--
Offsetting-compliance 10/	---	29/ Yes	29/ Yes	29/ Yes
National marketing quota (1,000 ba) 11/	None	Suspended	Suspended	Suspended
Marketing quota penalty (c/lb) 12/	---	Suspended	Suspended	Suspended
National allotment acres (1,000) 13/	---	Suspended	Suspended	Suspended
Acres allocated from national acreage reserve (1,000)	---	---	---	---
Farm allotment acres:				
Domestic (% of total)	---	---	---	---
Export (% of total)	---	---	---	---
National base allotment acres (1,000)	24/ 11,000	24/ 11,000	---	---
National program acres (1,000)	---	---	10,000	13,476
National base acres (1,000)	---	---	---	---
Base acres in CRP (1,000)	---	---	---	---
National export market acres reserve (1,000)	---	---	---	---
National program yield (lbs/ac)	510	581	549	553
Disaster program: 14/				
Prevented plantings payment (c/lb)	15.93	75% normal yield	17.30 on 75% normal yield	19.23 on 75% Normal Yield
Low yield criterion (%)	66.7	75	75	---
Low yield payment (c/lb)	15.93 on the shortfall	17.30 on the shortfall	19.23 on the shortfall	19.47 on the shortfall
Payment limitation ($)	---	---	---	---
Advanced payment (%)	---	---	---	---
Support payment limitation ($)	26/ 20,000	26/ 40,000	30/ 45,000	30/ 50,000

See footnotes at end of table.

Continued--

Appendix table 7--Provisions of upland cotton programs, 1961-89--Continued

Provision.	1981	1982	1983	1984
Parity price (c/lb)	117.00	119.00	119.00	125.00
Support price (c/lb)	---	---	---	--
Payment rate (c/lb)	---	---	---	--
Payment ($)	---	---	---	--
Target price (c/lb)	70.87	71.00	76.00	81.00
Deficiency payment: 1/				
Advance payment (c/lb)	---	9.70	10.00	--
Final payment (c/lb)	7.67	13.92	12.10	18.60
Nonrecourse loan:				
Loan rate (c/lb) 3/	52.46	57.08	55.00	55.00
Repayment rate (c/lb) 4/	---	---	---	--
CCC domestic sales: 5/				
Legislated minimum price (c/lb) 6/	60.32+CC	65.64+CC	71.50+CC	71.50+CC
Actual price (c/lb) 7/	---	---	---	---
Acreage diversion (%)	---	---	---	--
Payment rate (c/lb)	---	---	---	--
Payment ($)	---	---	---	--
Acreage diversion optional (%)	---	---	5	--
Payment rate (c/lb)	---	---	25.00	--
Payment ($)	---	---	25.00*Div	--
Set-aside (%)	None	---	---	--
Payment rate (c/lb)	Af*Def	---	---	--
Payment ($)	AF*Def*Plt	---	---	--
Set-aside voluntary (%)	28/0	---	---	--
Payment rate (c/lb)	Def	---	---	--
Payment ($)	.0767*Yld*Plt	---	---	--
Acreage reduction (%)	---	15	20	25
Payment rate (c/lb)	---	Def	Def	Def
Payment ($)	---	.1392*Yld*Plt	.121*Yld*Plt	.186*Yld*Plt
Acreage reduction voluntary (%)	---	---	---	--
Payment rate (c/lb)	---	---	---	--
Payment ($)	---	---	---	--
PIK acreage diversion (%)	---	---	34/ 10-30	--
Payment rate (ba)	---	---	35/ .80*Yld	--
Payment (ba)	---	---	35/ .80*Yld*PIK	--
Compliance restrictions:				
Soil conserving base 8/	---	---	---	--
Cross-compliance 9/	No	No	No	No
Offsetting-compliance 10/	No	No	No	No
National marketing quota (1,000 ba) 11/	Suspended	Suspended	Suspended	Suspended
Marketing quota penalty (c/lb) 12/	Suspended	Suspended	Suspended	Suspended
National allotment acres (1,000) 13/	Suspended	Suspended	Suspended	Suspended
Acres allocated from national acreage reserve (1,000)	---	---	---	---
Farm allotment acres:				
Domestic (% of total)	---	---	---	---
Export (% of total)	---	---	--	---
National base allotment acres (1,000)	---	---	24/ 11,000	24/ 11,000
National program acres (1,000)	14,022/12,838	32/ NA	32/ NA	32/ NA
National base acres (1,000)	---	15,000	15,600	15,800
Base acres in CRP (1,000)	---	---	--	---
National export market acres reserve (1,000)	---	---	--	---
National program yield (lbs/ac)	545	581	580	600
Disaster program: 14/				
Prevented plantings payment (c/lb)	23.62 on 75% normal yield	33/ ---	33/ --	33/ ---
Low yield criterion (%)	75	---	--	---
Low yield payment (c/lb)	23.62 on the shortfall	33/ ---	33/ --	33/ ---
Payment limitation ($)	31/ 100,000	31/ 100,000	31/ 100,000	31/ 100,000
Advanced payment (%)	---	---	36/ 50/50	---
Support payment limitation ($)	30/ 50,000	30/ 50,000	30/ 45,000	30/ 50,000

See footnotes at end of table.

Continued--

Appendix table 7--Provisions of upland cotton programs, 1961-89--Continued

Provision	1985	1986 37/	1987	1988
Parity price (c/lb)	123.00	124.00	128.00	134.00
Support price (c/lb)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Target price (c/lb)	81.00	81.00	79.40	75.90
Deficiency payment: 1/				
Advance payment (c/lb)	9.90	7.80	8.145	6.40
Final payment (c/lb)	23.70	26.00	17.30	19.40
Nonrecourse loan:				
Loan rate (c/lb) 3/	57.30	55.00	52.25	51.80
Repayment rate (c/lb) 4/	---	44.00	AWP	AWP
CCC domestic sales: 5/				
Legislated minimum price (c/lb) 6/	73.34+CC	50.60+CC	75.60+CC	64.77+CC
Actual price (c/lb) 7/	---	---	---	---
Acreage diversion (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Acreage diversion optional (%)	10	---	---	---
Payment rate (c/lb)	30.00	---	---	---
Payment ($)	30.00*Div	---	---	---
Set-aside (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Set-aside voluntary (%)	---	---	---	---
Payment rate (c/lb)	---	---	---	---
Payment ($)	---	---	---	---
Acreage reduction (%)	20	25	25	12.5
Payment rate (c/lb)	Def	Def	Def	Def
Payment ($)	.237*Yld*Plt	.26*Yld*Plt	.173*Yld*Plt	.194*Yld*Plt
Acreage reduction voluntary (%)	---	38/ 50-92	38/ 50-92	38/ 50-92
Payment rate (c/lb)	---	Def	Def	Def
Payment ($)	---	.2392*Yld*Bas	.24978*Yld*Bas	.1472*Yld*Bas
PIK acreage diversion (%)	---	---	---	---
Payment rate (ba)	---	---	---	---
Payment (ba)	---	---	---	---
Compliance restrictions:				
Soil conserving base 8/	---	---	---	---
Cross-compliance 9/	No	No	41/ Limited	41/ Limited
Offsetting-compliance 10/	No	No	No	No
National marketing quota (1,000 ba) 11/	Suspended	Suspended	Suspended	Suspended
Marketing quota penalty (c/lb) 12/	Suspended	Suspended	Suspended	Suspended
National allotment acres (1,000) 13/	Suspended	Suspended	Suspended	Suspended
Acres allocated from national acreage reserve (1,000)	---	---	---	---
Farm allotment acres:-				
Domestic (% of total)	---	---	---	---
Export (% of total)	---	---	---	---
National base allotment acres (1,000)	---	---	---	---
National program acres (1,000)	32/ NA	32/ NA	32/ NA	32/ NA
National base acres (1,000)	15,800	15,531	14,474	14,575
Base acres in CRP (1,000)	---	50	633	339
National export market acres reserve (1,000)	---	---	---	---
National program yield (lbs/ac)	613	39/ 608	42/ 593	46/ 590
Disaster program: 14/				
Prevented plantings payment (c/lb)	33/ ---	33/ ---	33/ ---	33/ ---
Low yield criterion (%)	---	---	---	---
Low yield payment (c/lb)	33/ ---	33/ ---	33/ ---	33/ ---
Payment limitation ($)	31/ 100,000	31/ 100,000	43/ Yes	43/ Yes
Advanced payment (%)	36/ 50/50	---	44/ 30	47/ 40
Support payment limitation ($)	30/ 50,000	40/ 50,000	45/ 50,000	45/ 50,000

See footnotes at end of table.

Continued--

Appendix table 7--Provisions of upland cotton programs, 1961-89--Continued

Provision	1989
Parity price (c/lb)	---
Support price (c/lb)	---
Payment rate (c/lb)	---
Payment ($)	---
Target price (c/lb)	73.40
Deficiency payment: 1/	
Advance payment (c/lb)	6.42
Final payment (c/lb)	---
Allocation factor (%) 2/	32/ NA
Nonrecourse loan:	
Loan rate (c/lb) 3/	50.00
Repayment rate (c/lb) 4/	AWP
CCC domestic sales: 5/	
Legislated minimum price (c/lb) 6/	---
Actual price (c/lb) 7/	---
Acreage diversion (%)	---
Payment rate (c/lb)	---
Payment ($)	---
Acreage diversion optional (%)	---
Payment rate (c/lb)	---
Payment ($)	---
Set-aside (%)	---
Payment rate (c/lb)	---
Payment ($)	---
Set-aside voluntary (%)	---
Payment rate (c/lb)	---
Payment ($)	---
Acreage reduction (%)	25
Payment rate (c/lb)	Def
Payment ($)	.214*Yld*Plt
Acreage reduction voluntary (%)	38/ 50-92
Payment rate (c/lb)	Def
Payment ($)	.1969*Yld*Bas
PIK acreage diversion (%)	---
Payment rate (ba)	---
Payment (ba)	---
Compliance restrictions:	
Soil conserving base 8/	---
Cross-compliance 9/	41/ Limited
Offsetting-compliance 10/	No
National marketing quota (1,000 ba) 11/	Suspended
Marketing quota penalty (c/lb) 12/	Suspended
National allotment acres (1,000) 13/	Suspended
Acres allocated from national acreage reserve (1,000)	---
Farm allotment acres:	
Domestic (% of total)	---
Export (% of total)	---
National base allotment acres (1,000)	---
National program acres (1,000)	32/ NA
National base acres (1,000)	14,700
Base acres in CRP (1,000)	137
National export market acres reserve (1,000)	---
National program yield (lbs/ac)	590
Disaster program: 14/	
Prevented plantings payment (c/lb)	33/ ---
Low yield criterion (%)	---
Low yield payment (c/lb)	33/ ---
Payment limitation ($)	43/ Yes
Advanced payment (%)	48/ 30
Support payment limitation ($)	45/ 50,000

Footnotes for appendix table 7--Provisions of upland cotton programs.

Abbreviations used are as follows: AF = allocation factor, AWP = adjusted world price, Ba = base acres, CC = carrying charges, Div = diverted acres, Def = deficiency payment, Dom = domestic allotment, NA = not applicable, PIK = payment-in-kind, Plt = planted acres, Yld = yield.

1/ Deficiency payment is the difference between the target price and the higher of the calendar year average market price received by farmers or the loan rate. Starting in 1986, eligible producers who agreed to forego CCC loans may receive loan deficiency payments on their production otherwise eligible for loan, not to exceed the farm program acreage times the farm program payment yield. The loan deficiency payment rate is equal to the difference between the loan rate and the loan repayment rate. Up to one-half of the loan deficiency payment may be made in negotiable marketing certificates. Loan deficiency payments are subject to the overall $250,000 payment limitation.

2/ The allocation factor, ranging from 80 to 100, is determined by dividing national program acres by number of acres harvested.

3/ This is the national average loan rate. Prior to 1961, support was based on Middling 7/8 inch cotton. Loans shown for 1961 through 1973 are basis Middling 1 inch, micronaire 3.5 through 4.9. Loans shown for 1974 through 1989 are basis Strict Low Middling 1-1/16 inch, micronaire 3.5 through 4.9. Prior to 1971, loans were on a gross weight basis. Since then, loans have been based on net weight at average location. Under the 1985 Act, the loan rate is determined by the legislated formula (lower of 85 percent of the average spot market price for Strict Low Middling 1-1/16 inch upland cotton (micronaire 3.5-4.9) at average U.S. location during the 5 preceding years, excluding the high and the low or 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 Europe prices and the U.S. spot market prices of SLM 1-1/16 cotton)

4/ If the Secretary determines that the adjusted world price is below the loan rate, then the Secretary has the authority, as granted by the 1985 Act, to implement either Plan A or Plan B for the repayment of loans. Under Plan A, the Secretary announces a loan repayment rate of 80-100 percent of the loan rate, which may not be changed subsequent to announcement. Under Plan B, the loan repayment rate is the lower of the loan rate or the current adjusted world price.

5/ Sales made at fixed prices or through competitive bids.

6/ In any event, the CCC cannot sell stockholdings for less than the going market price. In many years the announced minimum price was higher than the legislated minimum price.

7/ Simple average of actual sales.

8/ Producer must maintain soil conserving base in addition to planting diverted acres to conserving uses.

9/ Producer must be in compliance with programs for all program crops planted on the farm.

10/ Producer must be in compliance with upland cotton program requirements on other farms either owned or with an interest in.

11/ When marketing quotas are in effect, a farmer who does not comply with the cotton acreage allotment established for the kind of cotton grown on the farm is subject to a penalty on the farm marketing excess. The cotton crop from the farm is also ineligible for price support under CCC programs. Each type of cotton is treated independently. Extra long staple cotton cannot be substituted for upland cotton or visa versa.

12/ Marketing quota penalty rate for upland cotton is 50 percent of the parity price effective as of June 15 of the calendar year in which the cotton is produced.

13/ Includes acres allocated from the national acreage reserve provided to take care of minimum farm allotments as provided by cotton legislation.

14/ Bad weather or unavoidable hazard.

15/ Payment by CCC sight draft or payment-in-kind certificate at the election of the producer available on domestic allotment.

16/ Farmers who plant export acreage are not eligible for the additional price support payment. Export cotton is not eligible for price support loan. However, the amount of cotton represented by the farm yield times the acres in the effective farm allotment is eligible for the regular price support loan.

17/ Producer cannot exceed feed grain base.

18/ Payment is available only on planted acreage if less than 90 percent of the allotment is planted.

19/ All cotton produced on farms receiving export acreage must be exported.

20/ If flood, drought, or other natural disaster conditions make it impossible for a farm operator to plant cotton on a participating farm, the ASC county committee determines the acreage that would have been planted on the farm and payments are made on that basis, provided the acreage is not planted to an income producing crop.

21/ The term of the loan is 10 months from the first day of the month which the loan is made. In prior years, the loan maturity date was July 31 following the year in which the cotton was produced.

22/ Preliminary payment rate. The final payment rate is equal to the difference between the parity price for upland cotton as of August 1 and the average market price for Middling 1-inch upland cotton, micronaire 3.5-4.9 in the designated spot market during the first 5 months of the marketing year (August 1). No refund of this payment is required in the event the final payment rate calculates at less than 15 cents.

23/ If 90 percent or more of the allotment is planted, the entire allotment is considered as planted for payment purposes.

24/ A producer who plants less than 90 percent of the cotton acreage allotment will lose a portion of it the following year equivalent to the percentage underplanted up to 20 percent. After 3 consecutive years of

zero planting, the entire allotment would be removed. Allotment acreage not planted because of natural disaster or a condition beyond the control of the producer will be regarded as planted.

25/ Limitation does not include loans or purchases per person per commodity (cotton, wheat, feed grain).

26/ Limitation on total payments to eligible upland cotton, wheat, and feed grain producers per person. Does not include loans.

27/ The loan period is 10 months, but producers have the option, during the 10th month, of extending the loan for an additional 8 months whenever the spot market average price in the preceding month is 130 percent or less of the average for the previous 36 months.

28/ Voluntary set-aside requirement applies to previous year's plantings.

29/ Producers must assure that the NCA is not exceeded on nonparticipating farms they own or operate that produce a set-aside crop.

30/ Limitation on total payments to eligible upland cotton, wheat, feed grain, and rice producers per person. Does not include loans or disaster payments.

31/ Limitation on total disaster payments under the upland cotton, wheat, feed grain, and rice programs per person.

32/ National program acres, allocation factors, and voluntary acreage reductions are not applicable when an acreage reduction is in effect.

33/ Beginning with 1982 crops, disaster payments were made only to upland cotton producers to whom Federal crop insurance is unavailable. However, at the Secretary's discretion disaster emergency assistance may be paid to producers when conditions are too serious to be relieved by crop insurance or other Federal aid.

34/ Farmers complying with the 20-percent acreage reduction program are also eligible to participate in the payment-in-kind program. Producers can receive payment-in-kind either by reducing their planted acreage by an additional 10-30 percent of the base or by bidding to remove their entire bases from production.

35/ For the whole base bid program, payment is made on the entire base times the percent of the accepted bid times the farm program payment yield. Bids were evaluated on a comparative basis within each county with the restriction that total acreage removed from production under the combined acreage reduction and the payment-in-kind could not exceed 45 percent of that county's cotton acreage base.

36/ Advanced deficiency payments are made at half the projected rate. Advanced diversion payments are made at half the diversion payment rate.

37/ All cash payments subject to reductions of 4.3%, Gramm-Rudman-Hollings Act.

38/ Under the 50-92 rule, growers who plant between 50 and 92 percent of the permitted acreage to upland cotton and devote the remaining permitted acres to a conserving use are eligible to receive deficiency payments on 92 percent of the permitted acreage.

39/ Any producers whose 1986 program yield is reduced below 97 percent of their 1985 program yield received deficiency payments in the form of cotton certificates (called "additional yield certificates") sufficient to guarantee a return equal to 97 percent of their 1985 program yield.

40/ Limitation on total payments to eligible upland cotton, wheat, feed grain, rice, and extra long staple cotton producers per person. The limitation does not apply to loans, purchases, loan deficiency payments, first handler certificates, or inventory protection certificates or deficiency payments resulting from the lowering the basic (statutory) loan rate for wheat and feed grain.

41/ To be eligible for loans, purchases, and payments for wheat, feed grains, upland cotton, or rice, the acreage planted for harvest on a farm to other program crops, excluding extra long staple cotton and oats, may not exceed the crop acreage bases of those crops.

42/ Any producers, whose 1987 program yield is reduced below 95 percent of their 1985 program yield, received deficiency payments in the form of cotton certificates (called "additional yield certificates") sufficient to guarantee a return equal to 95 percent of their 1985 program yield.

43/ The total of the following payments, combined with the total deficiency and diversion payments, is limited to $250,000 per person: (1) disaster payments; (2) gain realized by repayment of a loan at a lower level than the original loan level; (3) any deficiency payment for wheat or feed grains attributed to a reduction in the statutory loan rate; (4) any loan deficiency payment; (5) any inventory reduction payment; and (6) any payment representing compensation for resource adjustment or public access for recreation.

44/ At signup, participants may request 30 percent (half in cash and half in generic certificates) of their projected 1987 deficiency payments.

45/ Total deficiency and diversion payments under the wheat, feed grain, upland cotton, extra long staple cotton, and rice programs are limited to $50,000 per person.

46/ Any producers whose 1988 program yield is reduced below 90 percent of their 1985 program yield will receive deficiency payments in the form of cotton certificates (called "additional yield certificates") sufficient to guarantee a return equal to 90 percent of their 1985 program yield.

47/ At signup, participants may request 40 percent (half in cash and half in generic certificates) of their projected 1988 deficiency payments.

48/ At signup, participants may request 30 percent of their projected 1989 deficiency payments in cash and after May 15, 1989, an additional 10 percent in generic certificates.

☆U.S. Government Printing Office : 1989 - 241-793/73239