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Cotton and Wool

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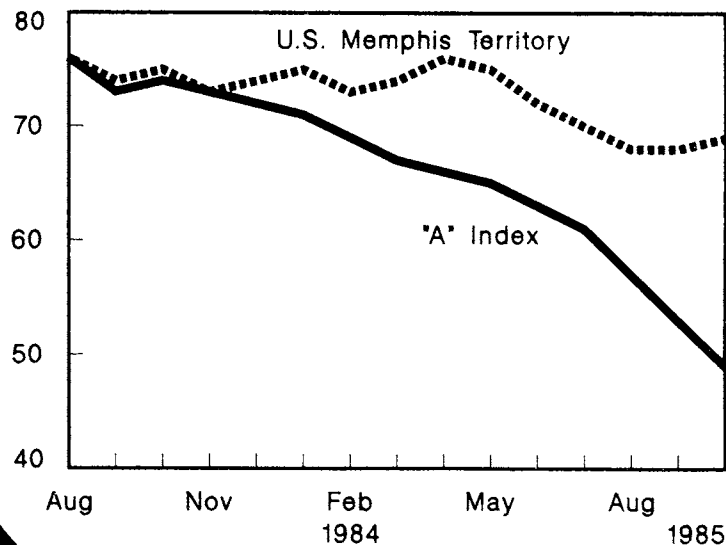
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Outlook and Situation Report

ITHACA, N.Y. 14853

Cotton Prices in Northern Europe

Cents per pound



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SUMMARY

Americans will be using more cotton in 1985/86 as cotton's share of the apparel market rises from 39 percent last year to 42 percent this year. Consumer preference for natural fibers and lower cotton prices are helping mill use to rise from 5.5 million bales in 1984/85 to an estimated 5.75 million this season.

Textile imports in 1985 are about the same as in 1984. Consequently, continued increases in retail sales are benefiting U.S. mills. The slowdown in import growth resulted from excessive retail inventories a year ago, when this year's imports were being ordered. Inventories in relation to sales have now been worked down, and imports are likely to rise. However, growth in U.S. cotton's market share will probably offset increased competition from imports.

U.S. cotton delivered to Northern Europe is over 40 percent more expensive than cotton of comparable quality from most other countries. U.S. exports normally account for 10 percent of foreign mill use, but may account for only 5 percent this year as exports are forecast to drop to 3.5 million bales. Higher quality and GSM-102 credit guarantees are helping U.S. exports from falling further.

U.S. cotton farmers are achieving their fourth record yield in 7 years, and 1985/86 production is forecast at 13.9 million bales, while U.S. stocks will total nearly 9 million bales by the end of this season. As much as two-thirds of those stocks might eventually be forfeited to the CCC. Farm prices are hovering around 56 cents a pound, compared with an average 58 cents during 1984/85 and 66 cents in 1983/84.

Foreign production in 1985/86 is estimated at 68 million bales compared with 74 million last season. Production is forecast lower than 1984 in almost every Western Hemisphere country except the United States. However, production in Europe, Africa, and the Soviet Union is forecast higher by a combined 1.3 million bales--almost equal to the decline in the Western Hemisphere.

Prices received by foreign countries for cotton are declining. Responses of producers will be key factors in determining whether U.S. exports in 1985/86 and beyond are able to rebound from the loss of market share this season. The centrally planned economies, as well as Egypt, Sudan, Pakistan, and India have in the past demonstrated almost no response to lower prices. Still, some countries, notably Australia, Turkey, and countries in the Western Hemisphere, will probably react to lower prices by planting less cotton. However, because foreign beginning stocks in 1986/87 will rise to about 43 million bales, production

will have to drop 7 percent to 63 million bales to hold supplies even.

A 1985 farm bill was passed by the House in early October, but the full Senate had not acted on its version of the bill as of mid-November. Both the House and Senate versions contain cotton titles that would allow loan rates to fall while maintaining the target price at 81 cents a pound in 1986/87.

High prices for Egyptian ELS cotton are helping boost U.S. exports of ELS. Exports are forecast at 100,000 bales. Mill use could fall to 47,000 bales. Consequently, ending stocks of ELS are expected to remain about unchanged for 1985/86, even though production is estimated at 148,000 bales.

Mill consumption of raw wool this year is expected to be about 117 million pounds, clean, 11 percent below the previous 5-year average. The U.S. wool business continues to be depressed by textile imports.

U.S. sheep numbers continue to decline. The stock sheep inventory last January, totaled 8.9 million, the lowest since records began in 1867. Wool production in 1984, 50 million pounds, clean, was the smallest on record dating back to 1909. About 72 million pounds of raw wool will be imported in 1985, 60 percent more than domestic production. Raw wool prices received by farmers are about 10 cents below last year, reflecting relatively slow wool mill use in 1985.

The manmade fiber industry slowed in the third quarter as measured by quantity produced, stock levels in producers' plants, and total shipments. Nonglass manmade fiber production, 2 billion pounds in the third quarter, declined 2 percent from the second but was 4 percent above a year earlier. Stocks in producers' plants at the end of September were 11 percent below a year earlier. Most of the decline occurred in staple fibers. Total shipments (domestic plus exports) in the third quarter, at 2 billion pounds, were 1 percent below the second quarter. The capacity use rate was 78 percent, compared with 79 percent in the second quarter and 76 percent a year earlier.

This issue of the Cotton and Wool Outlook and Situation Report contains three special articles. The first looks at the Textile and Apparel Trade Enforcement Act of 1985. It concludes that the Senate version of the bill would allow textile imports to continue growing as a share of U.S. domestic consumption, while the House version would cut imports substantially. A second special article presents seasonal adjustment factors for U.S. cotton exports, total and to 10 major destinations, while the third article presents a model of U.S. wool prices and consumption.

TEXTILES AND THE ECONOMY

The U.S. economy grew at a 3.3 percent annual rate in the third quarter—a modest increase but triple the rate in the first half of 1985. Most of this growth occurred in consumer durables and government purchases. While consumer expenditures, in total, did not change significantly from the two earlier quarters, the composition did. Motor vehicle purchases in the third quarter grew twice as fast as they did in the first two quarters. This growth was stimulated by below-market financing offered by major auto producers. Government purchases increased through greater defense spending and unusually large grain acquisitions by the Commodity Credit Corporation. Major brakes on the third quarter economy were declining business inventories and investment, and the continued large trade deficit.

Other economic data also indicated a moderate third quarter. The index of industrial production increased at an annual rate of 1.6 percent compared with 1.3 percent in the second quarter and 2.3 percent in the first. The capacity utilization rate for all manufacturing was 80.1 percent, a slight decline from 80.3 percent in the second quarter and 80.5 in the first.

Nondurable retail sales have been mixed. Average monthly seasonally-adjusted retail sales in the third quarter rose 0.7 percent, compared with 1.8 percent in the second quarter and 1.1 percent in the first. The index of leading indicators has also been mixed. It rose 1.4 percent in the third quarter, after an increase of 0.1 percent in the second quarter and 1.6 percent in the first.

Third quarter textile manufacturing output rose at an annual rate of 25.6 percent compared with 14.6 percent in the second quarter after declining continuously from fourth quarter 1983. Capacity utilization rates for the textile industry fell every quarter from first quarter 1984's 88.6 percent to 79.4 percent in first quarter 1985. They rose to 82.1 percent in the second quarter and 85.5 percent in the third.

One of the negative effects of large textile imports can be seen by comparing unemployment rates in the textile mill and apparel manufacturing industries. Imports

have a greater effect on U.S. apparel production than on production of semi-manufactured textile products such as yarn and fabric. Unemployment rates have usually been higher in apparel manufacturing than in the textile mill industry. During the 6 years from 1979 to 1984, the average annual unemployment rates for apparel manufacturing ranged between 0.9 and 3.4 percent higher than the textile mill industry rates.

Unemployment rates in 1985 for the textile mill industry decreased, in contrast to the apparel industry rate. The average quarterly rate for textile mill workers declined from a high of 11.3 percent in the first quarter to 8.7 percent in the third quarter. The October rate was 8.5 percent. In contrast, the rate for apparel manufacturing employees increased from 10.0 percent in the first quarter to 13.0 percent in the third. The October rate was 12.0 percent.

Consumption of textile fibers in the third quarter was 2.8 billion pounds, 0.6 percent more than the previous quarter and 7.6 percent above a year earlier. Cotton use was 0.7 billion pounds, up 2 percent from the second. Non-cellulosic fibers, at 2.1 billion pounds, increased 0.3 percent from the second quarter.

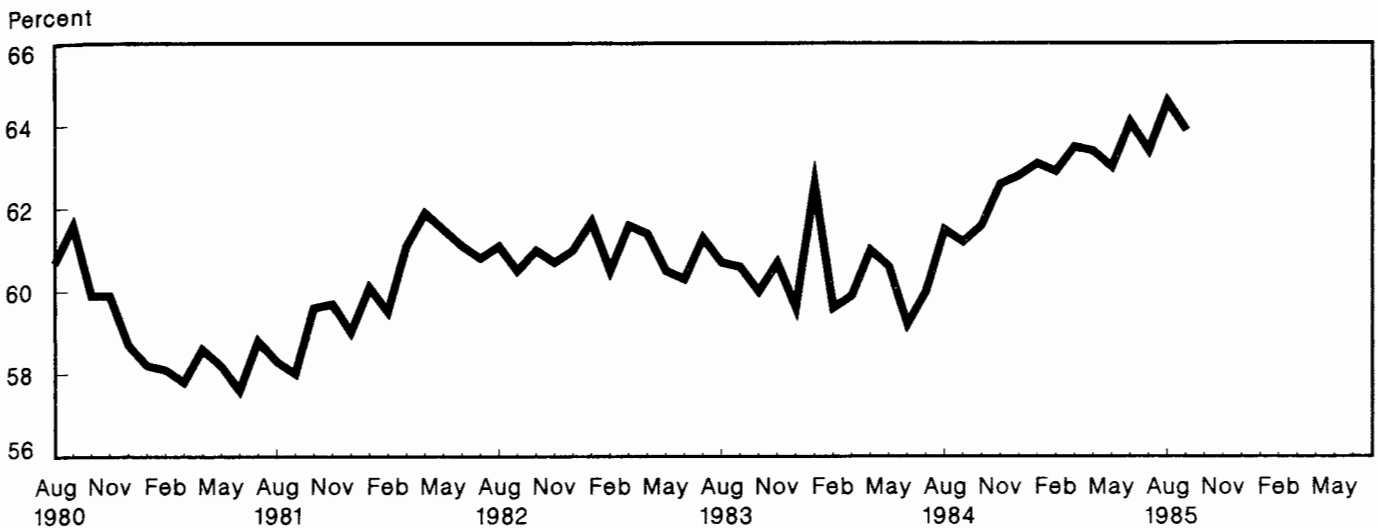
COTTON SITUATION AND OUTLOOK U.S. Mill Use Rising, Exports Falling

Americans Using More Cotton

Years from now, the U.S. textile industry may look back on 1984/85 as the season when cotton finally turned the corner, once and for all, in its competition with manmade fibers. "Natural" blend pants and shirts of 60 percent cotton and 40 percent polyester are increasingly available at retail stores. Use of heavy weight, 100-percent denim is rising, and the cotton content of other apparel products, ranging from socks and underwear to womens' wear, is increasing (figure 1).

A shift in consumer preferences toward natural fibers, improved technology for using cotton, a fashion trend toward heavyweight denim, and a decline in the cotton/polyester price ratio (table 8), combined with a perception that cotton will remain relatively

Figure 1
Cotton's Share of Fiber Use on the Cotton System



less expensive, underlie the rise in cotton's market share. The influence of trends in fashion and consumer preferences cannot be quantified, but cotton's share of domestic consumption began rising in 1980, and wool's market share began rising in 1975.¹ Retailers indicate that shifts in consumer tastes are causing these changes.

However, cheaper cotton prices are probably also influencing market share. During 1976-80, the cotton/polyester price ratio averaged 1.29. The ratio fell to 1.01 in 1981, climbed to 1.14 in 1983, and may average 1.06 in 1985.

Largely as a result of cotton's increased market share, Americans will buy more cotton during 1985/86 than in 1984/85, and much of the increase will benefit U.S., rather than foreign, textile mills. Total U.S. fiber mill use is rising as retail sales continue to grow, while textile imports through September 1985 were about equal to a year earlier.

Textile imports could resume their long-run average growth rate of about 7 percent per year during 1986, while retail sales may falter. However, cotton's improved market share will probably offset increased import competition, causing U.S. mill use to rise about 4 percent to 5.75 million bales during 1985/86.

¹Domestic consumption equals mill use plus the raw fiber equivalent of textile imports minus textile exports.

Small Retail Sales Gains Likely

Deflated retail sales at general merchandise stores and apparel and accessory stores are still rising, although at much slower rates than a year ago (figure 2). The positive year-to-year changes in sales reflect continued strength in the consumer sector of the U.S. economy. However, the relatively small increases of recent months also reflect slow growth in real disposable personal income.

Real income may rise only about 2 percent in 1985, and an even smaller rise is possible in 1986. Furthermore, savings as a percent of disposable personal income dropped to about 4 percent during the first 3 quarters of 1985, compared with a 1980-84 average of 6 percent. Consumers will probably try to rebuild their savings during 1985/86, especially if gains in personal income remain small. Consequently, retail sales of fiber products may rise less than 2 percent during the next year.

Textile Import Growth Likely

Textile imports during January-September 1985 were about equal to imports a year earlier, largely because retail inventories were growing too rapidly during 1984, when imports for 1985 were being ordered (figure 3). Retail sales and inventories rose following the recession. But during 1984, as sales began to slow, retailers worked to lower their inventory/sales ratios.

While retailers did not actually reduce their inventories in 1985, the rate of growth slowed sufficiently such that sales were able to catch up, and inventory/sales ratios are now lower than in 1984. Because inventories have already been brought into line with sales, a further slowing in growth is unlikely. Therefore, imports may rise in 1986, causing U.S. mill use of all fibers to decline.

Textile imports will probably rebound in 1986 because the fundamentals underlying the U.S. textile trade deficit remain. Wages in the U.S. textile industry are above most foreign wages. Prices for raw fiber paid by

U.S. mills are above those paid by foreign mills. Despite the drop in the U.S. dollar since March 1985, the dollar continues to buy more of most foreign currencies than it did in the late 1970's (table A).

One factor which could alter the outlook for textile imports and U.S. mill use would be enactment of protectionist trade legislation. The Textile and Apparel Trade Enforcement Act, if enacted, could limit U.S. textile imports, although the impact of the law will vary depending on what amendments are added (see special article this issue).

Figure 2
Year-to-Year Changes in Retail Sales*

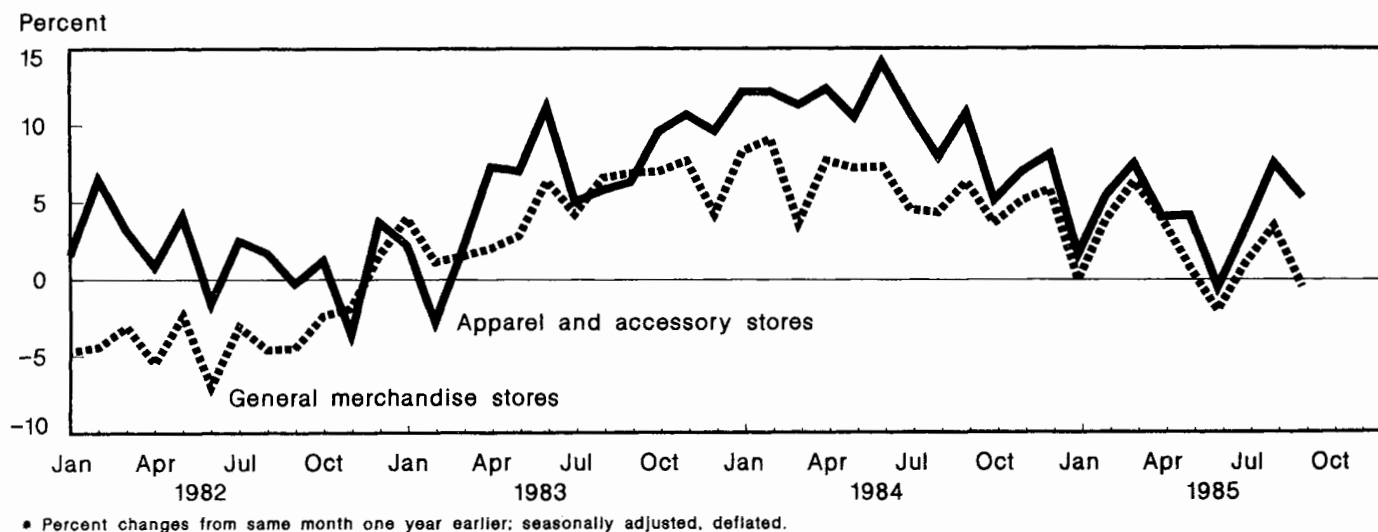


Figure 3
Year-to-Year Changes in Retail Inventories*

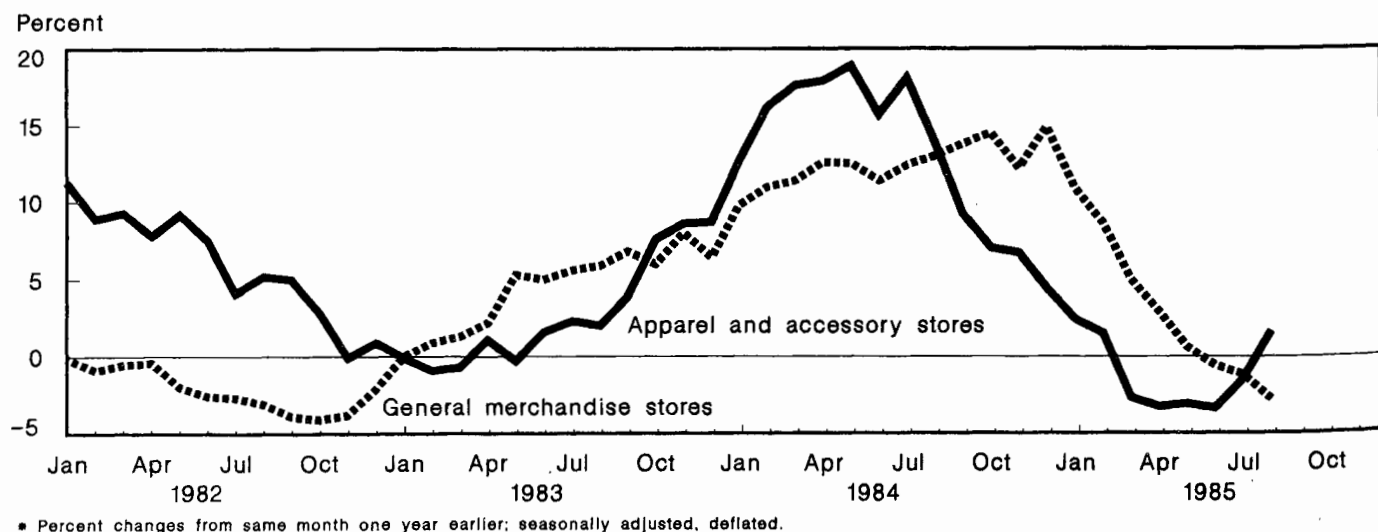
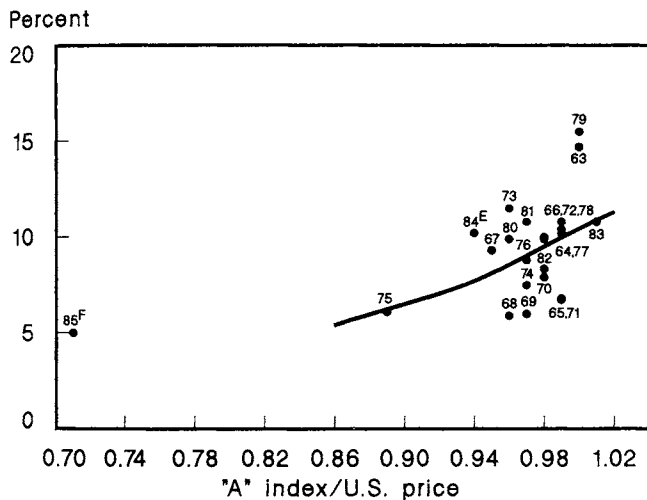


Table A--Foreign currency units per U.S. dollar

	German mark	Japanese yen	British pound	Korean won
1970	3.66	360.0	0.42	310.6
1975	2.46	296.8	.45	484.0
1980	1.82	226.7	.43	607.4
1981	2.26	220.5	.50	681.0
1982	2.43	249.1	.57	731.1
1983	2.55	237.5	.66	775.8
1984	2.85	237.5	.75	806.0
October 1985	2.64	214.6	.70	892.1

Figure 4
U.S. Exports' Share of Foreign Mill Use



E=Estimated. F=Forecast.

U.S. Cotton Exports: Gloom Pervades Outlook

As of November 8, the price of Memphis Territory Middling 1-3/32 inches cotton delivered to Northern Europe was about 69.25 cents a pound. At the same time, prices for cotton of equivalent quality from Guatemala, Russia, Australia, French West Africa, and Mexico (the Outlook "A" Index) averaged 48 cents a pound. Therefore, the United States is not going to export very much.

The ratio of the "A" index over U.S. prices in Northern Europe usually averages about 0.98, and U.S. cotton exports normally equal about 10 percent of foreign mill use (figure 4). However, foreign cotton prices are now so much lower that U.S. exports for 1985/86 are forecast to drop to 3.5 million bales, from 6.2 million last season.

The forecast is buttressed by the pace of shipments through October (see special article for seasonal adjustment factors), plus the knowledge that quality and GSM-102 credit guarantees will keep U.S. exports from falling further. Some U.S. cotton, particularly that produced in California's San Joaquin Valley, is of such high quality that some mills will buy it even at relatively high prices. About \$350 million in GSM-102 credit guarantees have been announced for cotton shipments to Korea, Yugoslavia, Ecuador, Hungary, and Jamaica for fiscal 1986. These shipments are expected to account for 1.1 million bales of U.S. exports.

1985/86 Production and Stocks

Record Yields

As of November 1, U.S. cotton production in 1985 was forecast at 13.9 million bales (table 1). Chances are two out of three that actual production will range between 13.3 and 14.4 million bales.

The above-average crop is occurring, despite a 30 percent, 3.6-million-acre acreage reduction program, because yields are forecast to average 644 pounds per acre—7 percent above the record, and 22 percent above the five-year average.

Stocks-to-Use Ratio Worst Since 1965/66

With a harvest of 13.9 million bales, and forecast use of only 9.3 million, U.S. cotton stocks could more than double to nearly 9 million bales by the end of 1985/86. The resulting ratio of ending stocks to use (0.95) would be the worst since 1965/66 (figure 5). In the past, when the stocks-to-use ratio exceeded 0.5, farm prices were supported by the loan rate (figure 6).

The weighted average of farm prices during January-September was about 54 cents a pound—more than 3 cents below the 1985 loan rate (figure 7). If prices during October-December average less than 60 cents a pound, the maximum 1985 deficiency payment rate of 23.7 cents a pound will be paid to participating farmers. U.S. farm prices are usually lowest at the peak of harvest in October and November.

Figure 5
U.S. Cotton Stocks-to-Use Ratios

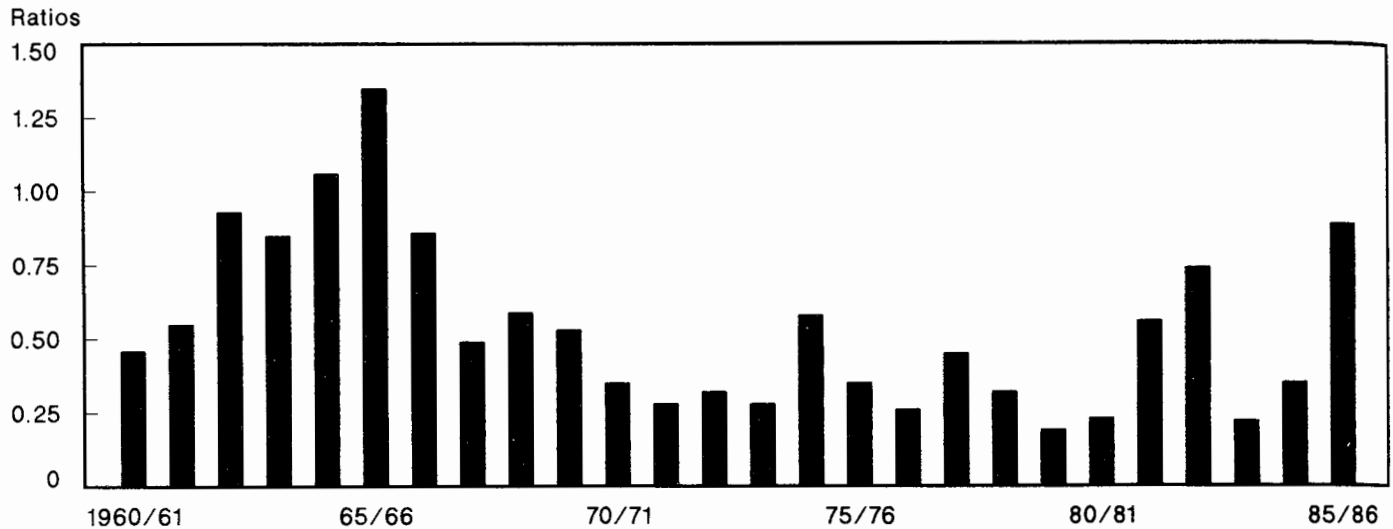


Figure 6
Cotton Farm Prices Relative to Loan Rates Versus Stocks-to-Use Ratios

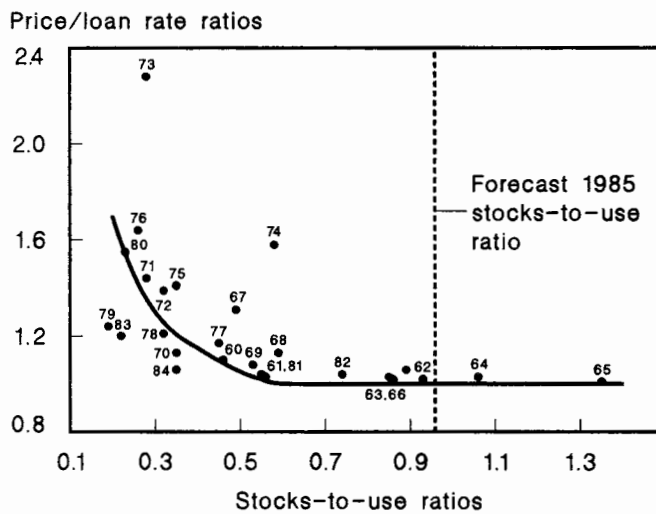
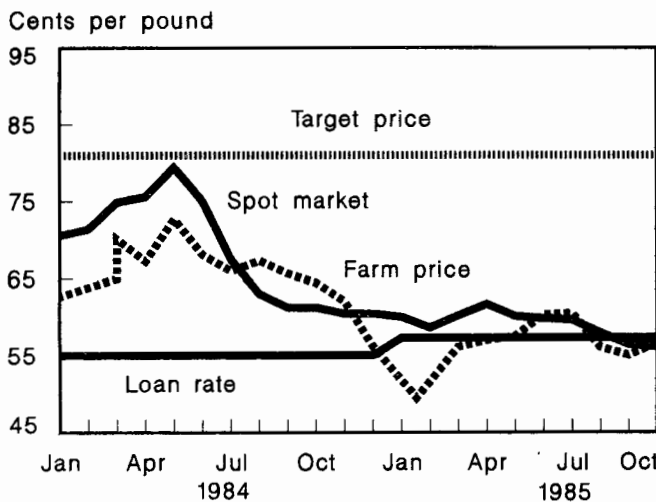
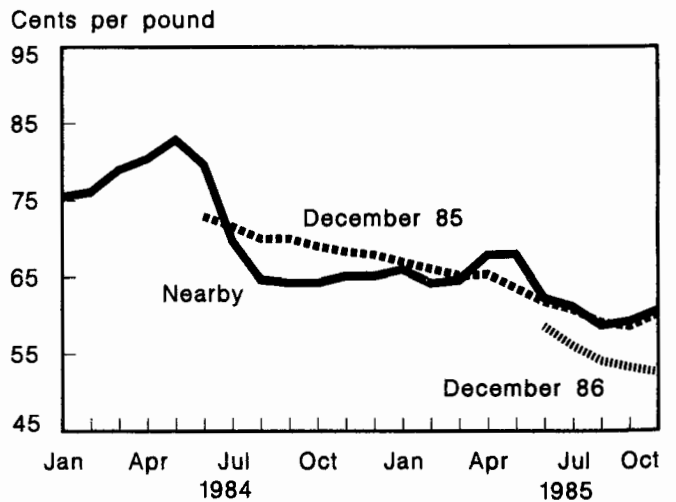


Figure 7
U.S. Cotton Prices



U.S. Cotton Futures Prices*



* Monthly average of daily closing prices.

Foreign Cotton Outlook And Situation

Stocks Rising;

Acreage Down in Western Hemisphere and Asia, Up in Africa

Foreign production in 1985/86 is estimated at 68 million bales compared with 74 million last season (table B). Production in 1985 is expected to slide about 5 million bales in China, 1 million in Brazil, 400,000 in Mexico, 300,000 each in Pakistan and Turkey, and about 200,000 in Australia. A development which bodes well for future U.S. exports is that 1985 production is expected to decline in almost every Western Hemisphere country except the United States. However, an offsetting development is that cotton production in Europe, Africa, and the Soviet Union is forecast higher in 1985 by a combined 1.3 million bales--almost equal to the decline in the Western Hemisphere.

The declines in production are caused more by changes in area than in yields.

Table B-- Changes in Foreign Cotton Production, Acreage and Yields, 1984 to 1985

Region	Production		Harvested area	Yield
	1984	1985		
	Thousand bales		Percent change	
Western Hemisphere	8,648	6,934	-1,714	-13
Europe	965	1,163	198	16
Africa	5,550	6,009	459	3
Asia 1/	59,091	53,683	-5,408	-3
Foreign	74,254	67,789	-6,465	-3

1/ Includes USSR and Australia

Cotton area in foreign Western Hemisphere countries declined 13 percent from 1984 to 1985, and similar declines occurred in China, Pakistan, and Turkey. Plantings rose in Europe and Africa.

Cotton plantings fell in the Western Hemisphere as area devoted to feed grains rose. For instance, cotton plantings in Argentina dropped 4 percent in 1985 while corn plantings rose 11 percent. EEC cotton subsidies led to increased plantings in Greece in 1985. The increase in African plantings occurred almost entirely in Egypt and Sudan, where large irrigated operations are being developed with World Bank funds. Cotton plantings fell in China because of shifts in Government policies favoring alternative crops.

Foreign cotton consumption will rise to about 66 million bales in 1985/86, a record (table C). Cotton consumption in China is forecast to rise about 1.7 million bales, mostly because the Government is selling cheaply 2.3 million bales of low-quality cotton for use as padding in quilts and clothing.

Cotton use in net raw-cotton importers as a group will fall about 150,000 bales. Textile exports from these countries are flat and the textile industries in Japan and Korea are affected by yarn imports from Pakistan and China. Cotton use in Egypt and Pakistan is rising because their supplies of cotton are larger this year than last year.

Despite a 2-million-bale increase in China's mill use plus exports, ending stocks in that country are forecast to rise 5 million

Table C--Ending stocks and consumption in foreign countries

Ratio	Stocks			Use			Stocks-to-use 1/
	Foreign	China	Foreign Less China	Foreign	China	Foreign less China	
	Thousand 480-lb bales						
79/80	18,172	1,548	16,624	59,648	14,100	45,548	0.36
80/81	18,651	2,392	16,259	59,994	15,100	44,894	0.36
81/82	18,692	1,892	16,800	60,805	16,200	44,605	0.38
82/83	17,209	3,017	14,192	62,679	16,400	46,279	0.31
83/84	21,887	7,767	14,120	62,984	16,000	46,984	0.30
84/85 est.	38,149	19,867	18,277	63,579	15,500	48,079	0.38
85/86 for.	42,769	25,167	17,602	66,116	17,200	48,916	0.36

1/ Foreign Less China

bales to 25.2 million in 1985/86. Stocks are rising in China because production is expected to reach 24 million bales, 4.5 million more than the Government's procurement target. Stocks in other countries are expected to fall about 700,000 bales.
Prices Dropping

Prices received by foreign countries for cotton are declining (table D). Responses of foreign producers to the lower prices will be key factors in determining whether U.S. exports in 1986/87 and beyond are able to rebound from the loss of market share this season.

The 40-percent decline in the "A" index between the 1984 average and September 1985 results from large surpluses in China and the United States, combined with a growing recognition that changes in U.S. farm policies could lead to even lower prices during 1986/87. This recognition may be causing many countries to aggressively attempt to reduce their stocks of cotton now--leading to stronger price competition in world markets than might otherwise occur.

Reactions to lower cotton prices will vary (Table E). The centrally planned economies, as well as Egypt, Sudan, Pakistan, and India, have in the past demonstrated almost no response to lower prices. Further, the elasticities shown will probably be mitigated by declines in competing crop prices.

Still, there are some countries, notably Australia, Turkey, and Western Hemisphere nations, which will probably react to lower cotton prices by planting less cotton. Reports from Mexico, Turkey, and Peru indicate that acreage may indeed decline in 1986. However, it may take several years to work foreign cotton supplies lower. Because foreign beginning stocks in 1986/87 will rise to about 43 million bales, production in 1986/87 will have to drop 7 percent to 63 million bales just to hold supplies even.

Farm Bill Debate Continues

A 1985 farm bill was passed by the House of Representatives in early October, but the full Senate had not yet acted on its version as of mid-November. Both the House and Senate versions contain similar cotton titles. The bill

Table D--Index of prices received by Outlook "A" Index cotton producers

Year	U.S. farm price	Outlook "A" Index	Weighted dollar exchange rate 2/	Index of prices received in foreign currency
Cents/lb.				
1980	74.7	97.97	48.3	47.3
1981	54.3	83.53	66.4	55.5
1982	59.4	72.57	77.3	56.1
1983	66.4	84.08	112.0	94.2
1984	58.7	80.91	174.1	140.9
1985	1/ 56.6	1/ 49.01	1/ 221.8	108.7

1/ October, 1985. 2/ Foreign currency units per U.S. dollar for countries included in the "A" index calculations, weighted by exports from each "A" index country.

Table E--Estimated percent change in harvested area caused by a 10-percent decline in cotton prices.

Country	Percent change
Australia	-3.5
Mexico	-4.0
Central America	-4.0
Brazil	-1.0
Other South America	-6.0
Turkey	-3.5
Egypt and Sudan	-0.5
Pakistan	-0.5
India	-0.5
USSR	-0.5
PRC	0

Source: Collins, Keith J., Robert B. Evans, and Robert D. Barry. "World Cotton Production and Use: Projections for 1985 and 1990."

USDA Foreign Agricultural Economics Report No. 154, June 1979.

passed in the House by exactly a two-thirds majority.

The House version of the cotton title would keep the target price at 81 cents a pound in 1986/87, but the loan rate could be lowered. If U.S. prices are judged to be above world prices, as determined by a formula to be announced, then the U.S. loan rate could drop as low as 44 cents a pound. In addition, USDA could offer to first buyers of cotton additional commodities from Commodity Credit Corporation (CCC) inventories. A buyer of cotton would receive the cotton, plus extra

commodities from CCC stocks. This would serve to lower prices paid by textile mills, foreign and domestic, below prices received by farmers.

The Senate version of the bill would also keep the 1986/87 cotton target price at 81 cents a pound, but the minimum loan rate would be 55 cents. However, the Senate version would allow repayment of the 1986-crop loans at rates equivalent to world prices adjusted to a U.S. farm-basis. Consequently, the Senate bill would put no floor under U.S. prices.

What if such a cotton title is enacted? If U.S. prices fall sufficiently to bring the ratio of the "A" index over U.S. prices in Northern Europe back to the long-term average of 0.98 (figure 4), U.S. exports might rebound during 1986/87 and 1987/88 to 9-10 percent of foreign mill use. That would imply a 3-million-bale rise in U.S. exports.

A drop in cotton prices would force adjustments in the manmade fiber industries, and the weighted average of all fiber prices could decline. That might lead to an increase in U.S. fiber mill use, and an improvement in cotton's share of fiber mill use. Cotton's mill-use share in 1984 was 24.8 percent of 10.8 billion pounds of fibers used. The change in cotton mill use resulting from a drop in cotton prices could be about 200,000 to 400,000 bales. That means that total disappearance might rebound to 12-13 million bales by 1987/88.

With beginning stocks of nearly 9 million bales in 1986/87, and 15-16 million acres of cotton base, acreage-reduction programs will likely still be necessary. However, improvement in cotton use would make a reduction in stocks possible. Assuming average weather, a stocks-to-use ratio below 0.50 might occur within three seasons. If production of about 10 million bales is desired in 1986, a combination of acreage reduction and cash land diversion totaling 40-50 percent would be needed.

ELS Outlook and Situation

High prices for Egyptian extra-long staple (ELS) cotton are helping boost exports of ELS cotton from the United States. Consequently,

ending stocks of ELS are expected to remain about unchanged during 1985/86, even though production is estimated at 148,000 bales (table 3).

Exports of ELS reached 90,000 bales in 1984/85. The previous record was 52,000 in 1979/80. The ELS loan rate was 82.5 cents a pound in 1984/85, about 10 cents a pound below the average farm price. With the ELS loan rate below the market clearing level, ELS exports were able to respond to a shortage of Egyptian cotton. Even though Egyptian production is rebounding, prices for Egyptian ELS remain high, and U.S. ELS exports are running ahead of last season.

ELS mill use fell to 49,000 bales in 1984/85 from 67,000 the previous season, and a further decline is forecast for 1985/86. Retail inventories grew too large in 1984/85--prompting a decline in orders. Retail sales are expected to slow during 1985/86.

The increase in ELS production forecast for 1985/86 is mostly the result of increased plantings in Arizona, although ELS yields in Arizona and New Mexico are also expected to rise.

WOOL SITUATION U.S. Situation

Mill Consumption Down

Raw wool mill consumption in the third quarter was 27.6 million pounds, clean, 12 percent below second quarter and 14 percent below a year earlier (table F). Apparel wool consumption in the third quarter was 24.7 million pounds, 14 percent below the previous quarter and 16 percent below a year ago. The worsted system used 11.5 million pounds, while the woolen system used 13.2 million.

The third quarter's share of 60's and finer fibers was 60 percent, compared to 62 percent in the second quarter and 60 percent a year earlier. Raw wool used in carpets was 2.9 million pounds, 5 percent more than the second quarter. Reflecting the slow demand by mills in the first 9 months and unchanged consumption in the fourth quarter, the 1985 mill consumption of raw wool is expected to

be 117 million pounds, 11 percent less than the average of the past 5 years (table G).

Raw wool prices in the summer and fall exhibited little change and reflected the slow, inactive market. Prices for the finer territory grades, 64's and 62's, remained unchanged from June through October, \$1.93 and \$1.68 per pound, clean, respectively, while the medium grades, 56's and 54's, ranged between \$1.23 and \$1.30. Imported wool prices have declined slightly since the beginning of the season in July. The finer grades, 70's and 64's, in October went from \$3.00 to \$2.76 and \$2.20 to \$2.14, respectively, while the medium grades, 58's and 56's, went from \$1.72 to \$1.74, and \$1.51 to \$1.53, respectively. The average raw wool price received by farmers in October was \$0.701 per pound, greasy (table H). The September price was \$0.613.

Imports of raw wool in the third quarter were 18.7 million pounds, clean, up 6 percent from the second quarter and 15 percent below a year earlier. Dutiable imports were 11.6 million pounds, of which 82 percent came from Australia, 9 percent from New Zealand, and 5 percent from South Africa (table I). Duty-free imports were 7.2 million pounds, of which 75 percent came from New Zealand, 12 percent from the United Kingdom, and 4 percent from Argentina.

Raw wool exports in the third quarter were 172,000 pounds, clean, of which 73 percent went to Canada and 27 percent to the United Kingdom.

Support Program Vital to Producers

Recent cost data on sheep and wool production indicate that profitability increased significantly from 1982 through 1984. Receipts less cash expenses rose from an average loss of \$1.19 per ewe in 1982 to a gain of \$13.40 in 1984. During these three years the wool support payments were 16 to 20 percent of the average sheep producer's income. Without the support payments, wool-sheep producers would have lost an average of \$8.97 per ewe in 1982 and \$5.47 in 1983. There would have been an average profit of \$1.94 per ewe in 1984 without a support program.

Total cash expenses ranged from an average of \$43.05 per ewe in 1983 to \$48.39 in

1982. More than two-thirds of these expenses were for interest, feed, and hired labor.

Interest, the largest single expense, varied from 28 percent of total expenses in 1982 to 21 percent in 1983. Feed cost share was 28 percent in 1982 and 32 percent in both 1983 and 1984. The hired labor cost share ranged from 13 percent in 1982 to 14 percent in 1983 and 1984.

Table F--U.S. mill consumption of raw wool, scoured basis

Year	Apparel wool	Carpet wool	Total
1,000 pounds			
1981	127,752	10,896	138,648
1982	105,857	9,825	115,682
1983 1/	126,729	13,851	140,580
1984 1/	128,982	13,088	142,070
Jan.-Mar.			
1982	31,988	2,576	34,564
1983 1/	30,214	3,462	33,676
1984 1/	36,623	3,438	40,061
1985 2/	27,370	3,990	31,360
Apr.-June			
1982	26,960	2,405	29,365
1983 1/	32,636	3,644	36,280
1984 1/	36,252	3,940	40,192
1985 2/	28,693	2,737	31,430
July-Sept.			
1982	22,415	2,728	25,143
1983 1/	30,712	3,865	34,577
1984 1/	29,326	2,721	32,047
1985 2/	24,689	2,886	27,575
Oct.-Dec.			
1982	24,494	2,116	26,610
1983 1/	33,167	2,880	36,047
1984 1/	26,781	2,989	29,770

1/ Revised. 2/ Preliminary.

Compiled from reports of the Bureau of the Census.

Table G--Wool supply and disappearance, clean content

Item	1982	1983	1984	1985 1/
Million pounds				
Stocks, Jan. 1	49.8	58.4	59.9	63.1
Production	56.8	55.1	49.8	45.5
Imports	61.4	78.1	94.2	72.2
Diff. unacc.	7.5	9.9	0.0	0.0
Total supply	175.5	201.5	203.9	179.0
Mill use	115.7	140.6	142.1	117.0
Exports	1.4	1.0	0.5	1.0
Total use	117.1	141.6	142.6	118.0
Stocks, Dec. 31	58.4	59.9	63.1	61.0

1/ Estimated.

Compiled from reports of the Bureau of the Census.

Table H--Average U.S. farm prices per pound for shorn wool, grease basis

Month	1982	1983	1984	1985 1/
Cents				
January	73.1	50.0	58.4	68.2
February	72.9	57.1	67.1	65.3
March	63.6	56.0	79.3	72.2
April	83.6	65.7	87.9	74.8
May	76.5	65.0	86.5	74.6
June	68.0	63.5	86.6	72.5
July	77.0	62.7	82.3	67.9
August	64.2	59.6	78.5	62.5
September	56.5	57.2	74.3	61.3
October	70.7	66.4	80.2	70.1
November	54.7	70.1	67.5	
December	55.5	64.1	69.4	
Weighted season average	68.4	61.3	79.5	

1/ Preliminary.

Table I--U.S. imports of dutiable and duty-free raw wool for consumption, clean content

Year	Dutiable	Duty-free	Total
1,000 pounds			
1981	48,106	26,146	74,252
1982	39,988	21,433	61,421
1983	49,371	28,688	78,059
1984	63,271	30,906	94,177
Jan.-Mar.			
1982	15,356	5,514	20,870
1983	10,549	5,639	16,188
1984	20,665	7,303	27,968
1985	15,139	7,397	22,536
Apr.-June			
1982	10,798	6,620	17,418
1983	12,216	6,902	19,118
1984	16,761	8,126	24,887
1985	9,661	7,951	17,612
July-Sept.			
1982	7,417	5,465	12,882
1983	10,818	6,614	17,432
1984	12,035	10,003	22,038
1985	11,573	7,158	18,731
Oct.-Dec.			
1982	6,417	3,834	10,251
1983	15,788	9,533	25,321
1984	13,810	5,474	19,284

Compiled from reports of the Bureau of the Census.

Compound 1080 Use Upheld

The U.S. 10th Circuit Court of Appeals has recently upheld the decision of the Environmental Protection Agency (EPA) to allow use of Compound 1080 against coyotes and other livestock predators in collars and to allow registration in single lethal dose baits. The ruling also permitted local-level government employees to qualify under EPA's rule that would limit applicator eligibility to "state and federal employees".

Compound 1080 can be used in two extremely restricted delivery systems: toxic collars and small baits placed in areas frequented by coyotes. Collars would be filled with a solution of the chemical and placed around the throats of the livestock in anticipation of coyote attacks. Actual use of this predicide will be on a State-by-State basis. Currently, no State allows its use. Each State will have to authorize firms to sell the chemical-containing collar. In addition, States will organize certification and training programs for special State or county people to be responsible for the safe and effective location of single-dose baits.

WORLD OVERVIEW

World Wool Production Static

The most recent estimate places the world sheep population for the 1983-84 season at 1,106 million, up 1 million from the previous season. While world sheep numbers are up, growing conditions in the leading sheep countries have been less than ideal, so average fleece weights will be down. The latest forecast places world wool production for the 1985-1986 season at 3.68 billion pounds, clean, slightly above last year.

Increased wool output in Australia, South America, South Africa, the United Kingdom, and Pakistan during the 1985-86 season may almost balance cutbacks in New Zealand, the USSR, China, and the United States.

World supplies for the current season, 4.04 billion pounds, will be about 2 percent below last year. This lower level was the result of an 18 percent reduction of carry-in compared to the previous year. During 1984-85 Australian stocks fell 18 percent,

New Zealand 58 percent, and South African 85 percent.

Both the Australian Wool Corporation (AWC) and the New Zealand Wool Board (NZWB) raised their minimum (floor) prices to be effective for the 1985-86 season. The Australian floor price was raised A30 cents (6.4 percent) to A500 cents/kgm., clean, while the New Zealand minimum price went up NZ20 cents (4.7 percent) to NZ 443 cents/kgm.

Mixed Wool Markets

While the Australian Market indicator, MI, (a weighted average index of 13 wool categories) declined 3 percent from August through October, prices of major wool categories have been mixed. The market for the very fine grades, 72's and finer, and the broader merino grades, 56's to 60's has been weak. In contrast, the market for middle fineness grades 62's to 70's and the crossbred grades 46's to 54's has been strong. The major customers of Australian wool came from Eastern and Western Europe and China.

New Zealand's wool market has also been weak this fall. Their market indicator ranged from a season-opening 478 to 482 in late September before dropping to 468 in mid-October and firming up to 475 in the fourth week of October. To maintain this rather steady price pattern, the New Zealand Wool Board had to buy about 20 percent of the weekly offerings in September and October, compared with their buying only 4 percent during the 1984-1985 season. This increased support action has been caused in part by an appreciation of New Zealand currency in this time period. Most of the demand for New Zealand wool has come from local mills and Far Eastern customers.

The South African wool market has been quite strong this season. The market indicator opened the season in early September at SA895 cents/kgm., 6 percent above the May level. By mid-October it had risen to 1054 before dropping to 999 in late October, 19 percent above the May level. More than 93 percent of the South African wool offered this season has been purchased by the trade. South African stocks increased 1 percent in this two month period. A factor influencing this market has been the depreciation of the rand

this season, reaching 32 percent against the U.S. dollar by the end of October compared to last April-May-June.

MOHAIR

Strong Overseas Demand

American exports of mohair in the first nine months totaled 6.3 million pounds, clean, 32 percent above the average of the past 5 years with a value of \$28.7 million. Three countries took 90 percent of these shipments: the United Kingdom (74 percent), South Africa (9 percent), and Italy (7 percent). U.S. exports in 1985 are estimated to be 8 million pounds clean.

The market for adult hair is very strong while the market for kid and young goat hair is softer. Adult hair in mid-October was \$3.15 - \$3.40, young goat \$3.50 - \$3.70, and kid in excess of \$5.00. Mohair stocks in early October were estimated to be at a somewhat normal level of about 4 million pounds.

Recent data indicate that annual world mohair production averaged 41.4 million pounds, greasy, during 1980-1984. Three countries have been the major producers: South Africa averaged 15.8 million (38 percent), Turkey 11.8 million (29 percent), and the United States 10.1 million (24 percent). U.S. production in 1985 is estimated to be 11.3 million pounds greasy.

South African production in 1985 is estimated at 18-19 million pounds, greasy. Stocks as of early October were very low. Almost all South African mohair is exported. Their major customers are Japan, Italy, France, and the United Kingdom.

Turkish production in 1985 is estimated at 7.7 million pounds, down 2.5 percent from last year. Turkish goat numbers have declined because of increased slaughter for the Middle East red meat markets.

MANMADE FIBERS

Manmade Fiber Activity Down

The manmade fiber industry slowed in the third quarter as measured by the quantity produced, stock levels, and total shipments.

Nonglass manmade fiber production, 2.02 billion pounds in the third quarter, declined 2 percent from the second quarter but was 4 percent above a year earlier (table 12). Staple output at 1 billion pounds was down 3 percent from the second quarter while filament, at 1.02 billion pounds, was slightly less than the previous quarter. If cotton prices were to decline precipitously in 1986/87, manmade fiber capacity plans might be delayed.

Manmade fiber stocks in producers' plants at the end of September were 11 percent below a year earlier. Filament noncellulosic fiber inventory was down 1 percent. In this group, nylon was 13 percent less while polyester and olefin were up 12 and 4 percent, respectively. Noncellulosic staple fiber stocks are, by comparison, down 18 percent. Stocks of three staple groups declined; polyester- 25 percent, acrylic- 17 percent, and nylon- 10 percent. Olefin staple stocks were up 13 percent.

Total shipments (domestic plus exports) of nonglass fibers in the third quarter were 2.07 billion pounds, 1 percent below the second quarter and 7 percent more than a year ago. Noncellulosic fiber shipments totaled 1.93 billion pounds and cellulosic fibers 0.14 billion.

Domestic shipments of noncellulosic fibers were 1.78 billion pounds in the third quarter, slightly more than the previous quarter. Reflecting greater requirements of the carpet industry, nylon filament and staple fibers accounted for almost all the increase. Overseas shipments of manmade fibers were 0.16 billion pounds, 15 percent less than the second quarter.

Recent data concerning manmade fiber capacity indicate that the industry will have a planned expansion rate of 1.8 percent annually into 1987. The largest expansion rates will be for olefin filament, 5.9 percent, and nylon staple, 2.7 percent. In contrast, acrylic staple and acetate staple capacities are expected to decline 2.2 and 1.2 percent per year, respectively.

The production capacity of nonglass fibers averaged 2.6 billion pounds in each quarter of 1985, staple fiber capacity was 1.38 billion pounds, and filament 1.22 billion. The operating rate of manmade fiber plants in the third quarter averaged 78 percent. Staple

plants operated at 72 percent while filament plants operated at 84 percent. To obtain a desired return on investment, fiber producers need to operate at 85 to 90 percent of capacity.

Consumption data for the second quarter are shown for three manmade fiber markets in table 13. In the three quarters beginning with fourth quarter 1984, the carpet market has displaced the woven market as the largest manmade fiber end-use. The carpet market took 622 million pounds in the second quarter, 16 percent above the first and a record high. Most of this increase was in filament nylon, used to make contract carpeting.

Nylon is the major carpet fiber and, at the same time, the carpet market is its most important end-use. Nylon was 56 percent of all filament carpet fibers and 75 percent of all staple fibers. The carpet market accounted for 59 percent of filament nylon use and 94 percent of staple nylon. Preliminary third quarter data indicate that nylon fibers shipped to the carpet industry increased 6 percent from the second quarter. Staple nylon rose 5 percent and filament 8 percent.

The woven market took 487 million pounds of manmade fibers with a decrease of less than 2 percent from the first quarter. Staple fiber use in woven textile products declined 1 percent from the first quarter, reflecting the greater use of cotton over polyester staple. Filament fibers increased 8 percent.

About 313 million pounds of manmade fibers were used in knit products in the second quarter, 12 percent more than the previous quarter. Increased filament use occurred in tricot blouses as well as more staple fiber in knit outer garments and men's underwear.

Prices of raw materials for noncellulosic fibers continued to firm in the second quarter but softened in the third quarter (table 14). Xylene (a raw material for polyester fibers) prices strengthened at the beginning of the second quarter from \$1.05/gallon to a peak of \$1.25 in June and July due to strong demand by gasoline blenders as an octane enhancer. Prices weakened in September as the demand for gasoline declined after Labor Day. Acrylonitrile (a raw material for acrylic fibers) prices in early summer were between

\$0.38–0.41/pound. The export market in 1985 is expected to take 35 percent of U.S. acrylonitrile output, which should keep the price firm. The increasing supply of propylene caused the price of chemical grade propylene (a raw material for acrylic and olefin fibers)

to decline from 17 cents per pound in April to about 15 cents in the third quarter. A fire and explosion in one supplier's refinery and a rising export demand firmed prices to 16 cents by late October and early November.

THE TEXTILE AND APPAREL TRADE ENFORCEMENT ACT OF 1985: HOW WILL IT AFFECT TEXTILE IMPORTS?

M. Ann Tutwiler
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ABSTRACT: The Textile and Apparel Trade Enforcement Act of 1985 was introduced in Congress in March 1985. To date, 1985 textile imports are 1 percent above last year's levels. If the Senate version of the bill becomes law, U.S. textile imports of cotton, wool and manmade fibers will fall an estimated 1–2 percent in the first year of implementation. Over the longer term, the bill would allow import quotas from controlled countries to increase 3 percent each year. But actual imports from all sources might increase an estimated 32 percent over 1985 levels by 1990—a 6 percent compound annual growth rate which compares with a 7 percent annual rate during 1966–84 and a 19 percent annual rate during the last 5 years. If the House version of the bill prevails, U.S. imports will fall 25 percent in 1985, quotas will increase 2 percent annually, and imports in 1990 would be 5 percent below imports in 1984. The following analysis of both bills gives some idea of their potential effect on textile imports, cotton mill use and cotton exports. The analysis does not consider the broader international political ramifications of either bill.

Key words: Textiles, imports, trade, trade protectionism.

Introduction

The Textile and Apparel Trade Enforcement Act was introduced in Congress in March 1985 in response to textile producers' request for protection from increased imports. There are two versions of the act in Congress. The House version (HR 1562) mandates deep cuts in textile imports from 12 major exporters. It would cut total textile imports 25 percent in the first year of implementation and hold the annual growth rate in quotas to 2 percent.² While the bill was approved by the House, it did not pass by a two-thirds majority.

The Senate version of the bill—offered by Senators Thurmond and Hollings as a substitute for HR1562—is more moderate in scope and would cut imports from the three largest foreign producers and hold 1985 imports from the next nine producers to their 1984 levels. Both bills would limit the growth of import quotas from other producing countries. Neither bill would restrict imports from the European Community or Canada.

The legislative outcome will, no doubt, be a compromise between the House and the Senate bills. The following analysis of both

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²Estimate based on U.S. Department of Commerce study of House version of Textile and Apparel Trade Enforcement Act compiled by office of Textiles and Apparel.

bills gives some idea of the range of restrictions which might be placed on textile imports and the likely effects on domestic mill use and cotton exports. The analysis does not consider the broader international political ramifications of either bill.

Existing Textile Trade Restrictions

Currently, bilateral agreements limiting textile imports are negotiated under the Multi-Fiber Arrangement (MFA). The MFA allows developed countries to limit imports of specific textile products from certain countries, when those imports threaten domestic production, while permitting entry of other textile products. Although there are constraints on certain categories of textile imports under the MFA, there is no limit on the overall growth rate of imports into the United States.

Proponents of the Textile and Apparel Trade Enforcement Act, citing a 19-percent annual rate of growth in textile imports since 1980, argue that the MFA does not prevent market disruption. They maintain that flexible category-by-category limits allow exporters to shift their production from controlled to uncontrolled categories and fibers, circumvent the MFA quotas, increase total exports to the United States, and threaten the U.S. textile industry.

The Senate Bill

The Senate version of the Textile and Apparel Trade Enforcement Act divides producing nations into four groups according to the quantity of textiles they exported to the United States in 1984 and sets particular growth rates and limitations on each group.

Definitions and Provisions of Senate Bill

- o Major Producers are defined as any country whose textile exports accounted for 10 percent or more of total U.S. imports in 1984. These countries-- Hong Kong, South Korea and Taiwan--would be allowed to increase their 1985 shipments by 1 percent over the lesser of:
 - (1) what their 1984 shipments in cotton and manmade textile categories would have been had they grown 6 percent each year since 1980. (For wool products the base

rate of growth would be 1 percent per year since 1980.)

Or, (2) the quantity of textiles that actually entered in 1984, if the United States has an agreement limiting growth in that category to less than 6 percent.

In no case could imports from the Major Producers in particular categories be cut more than 30 percent of their actual 1984 levels or be allowed to fall below certain minimum quotas. After 1985, import quotas would be allowed to increase 1 percent per year in all categories.

- o Producers are defined as countries, except Caribbean Basin Initiative (CBI) countries, capturing 1.25 percent or more of the U.S. market. These countries include Brazil, India, Pakistan, Thailand, Singapore, Indonesia, the Philippines, China and Japan. Their exports in 1985 could not exceed 1984 levels. Future quota growth would be 1 percent per year.
- o CBI Producers--Mexico, Haiti, Jamaica, the Dominican Republic, Guatemala, El Salvador, Honduras, Costa Rica, and the Windward and Leeward Islands--would be allowed to increase their 1985 exports to the United States 15 percent over 1984 levels. Future growth rates in import quotas would be 15 percent per year.
- o Small Producers, including over 100 countries, would be allowed to increase their exports 15 percent over 1984 in categories in which imports do not threaten U.S. production, and by 1 percent in import-sensitive categories--that is, categories in which the ratio of imports to domestic production equals or exceeds 40 percent. Future annual growth in quotas would be 6 percent in categories which do not threaten U.S. production and 1 percent in import-sensitive categories.
- o Imports from the European Community and Canada are excluded from these provisions.
- o In any case, import quotas would not fall below minimum levels which are specified in bilateral agreements under the MFA.

These levels are one million square yard equivalents (SYE) in textile categories; 700,000 SYE in apparel categories and 100,000 SYE in wool categories. Countries would be allowed to ship these quantities in any category, regardless of whether they have ever produced textile or apparel products in that category. Once a country meets the minimum quota in a given category, imports in that category will be allowed to grow according to the rate specified for that country and category.

- o For the first time, imports of several fiber categories not covered under the MFA would be limited. Textile and apparel imports of these fibers, which include silk, ramie, and linen, would be treated the same as imports of cotton, wool and manmade fibers. Imports of non-MFA fibers from Major Producers and Producers would be allowed to increase 1 percent over 1985 levels; imports from Small Producers, 6 percent, and imports from the CBI Producers, 15 percent over 1985 levels.
- o The bill will be retroactive to December 31, 1985. If 1985 imports from a particular country in a particular category exceed the limits specified by the bill, those imports will be counted toward the country's 1986 limits for that category.

- o If in the future, U.S. imports from any Small Producer account for more than 1.25 percent of all U.S. imports, that country will permanently become a Producer and will be subject to the same limitations as a Producer.
- o Finally, the bill would establish an import licensing system under which all countries (including the EEC and Canada) would be required to obtain a permit to ship to the United States.

The Effect of the Senate Bill on Textile Imports in 1985

The ultimate impact of the Senate bill on textile imports is dampened by the minimum quota provision. Without these quotas, imports would be reduced 35.6 percent; with these quotas, imports would fall 14 percent.

These quotas would act as an upper, and probably lower boundary for the Major Producers, who are presently exceeding their quotas. The quotas would act as an upper bound for other countries, who have not reached theirs. In every case, imports may be below these quotas, but cannot exceed them.

Shipments from the Major Producers would be cut back to 2,444 million SYE under the growth formula outlined in the bill (table J). Under the minimum quota provision, imports from the Major Producers cannot be

Table J. Impact of Senate textile bill on 1985 imports of cotton, wool and manmade fiber products 1/

Country group	Actual imports 1984	Imports allowed by growth formula 1985 2/	Quotas 1985 3/	Estimated 1985 imports without bill 4/	Estimated 1985 imports with bill 5/	Percentage change without bill 1984-1985 4/	Percentage change with bill 1984-1985
	Million SYE				Percent		
Major Producers	3,799	2,444	3,265	3,550	3,265	-6.6	-14.0
Producers	3,342	3,342	3,593	3,150	3,150	-5.8	-5.8
Small Producers	1,003	1,099	2,999	1,390	1,390	38.6	38.6
Caribbean Producers	584	672	1,021	595	595	1.9	1.9
Total, Controlled	8,728	7,557	10,878	8,685	8,400	-0.5	-3.8
Europe and Canada	1,432	NA	NA	1,620	1,625	13.5	13.5
Total, World	10,160	NA	NA	10,305	10,025	1.4	-1.5

1/ Based on all imports from all shippers. 2/ Based on growth formulas specified in bill, see p. 33-34 for details. 3/ Based on provision allowing countries to ship minimum quantities in textile and apparel categories, see p. 34 for details. 4/ Based on year to date shipments in 1985, see table K. World total differs from total in table 2, as proportions from each group have shifted slightly. 5/ Based on year-to-date shipments in 1985, except that major producers would be subject to lower quotas.

restricted to less than 3,265 million SYE. From January to August 1985, imports from the Major Producers were 7 percent lower than in January to August 1984 (table K). Despite this decrease, imports from the Major Producers still exceed the minimum quotas allowed. If the bill is enacted, their shipments would be cut 14 percent from 1984 to 3,265 million SYE—the 1985 quota.³

Shipments in 1985 from the Producing countries would be held to their 1984 level of 3,342 million SYE under the bill's growth formula. The minimum quota provision would allow imports to increase 7.5 percent to 3,593 million SYE. But 1985 imports are falling 6 percent from last years' level. Based on this decline, 1985 imports will be an estimated 3,150 million SYE, below both the group's 1984 shipments of 3,342 million SYE and their quota of 3,593 million SYE.

The Small Producing countries could, under the bill, increase their imports 10 percent to 1,099 million SYE. Under the minimum quota provision, they could increase their imports 199 percent to 2,999 million SYE. Imports in 1985 have increased 38

percent over last year, but the Small Producers are still far from reaching their quota. Based on a 38 percent growth, their 1985 shipments are estimated at 1,390 million SYE.

Imports from the CBI countries could grow 15 percent over 1984 levels under the bill's growth formula. The minimum quota provision could allow imports to increase as much as 75 percent, to 1,021 million SYE in 1985. But actual growth has been much slower; 1985 imports are 2 percent above 1984. At that rate, imports from the Caribbean Basin will reach 595 million SYE in 1985.

Imports from the European Community and Canada are up 14 percent over last year. Based on that rate of increase, total 1985 shipments will equal 1,625 million SYE.

If the bill is passed, overall 1985 imports from all sources would fall an estimated 1–2 percent.

Effects of the Senate Bill on Textile Imports in the Long Term

The long term impacts of the Senate bill are uncertain, primarily because of two "wild card" clauses in the bill. First, a country would be able to shift its textile production into any category where it is not shipping the minimum levels, regardless of whether it has ever produced textiles in that category. Second, imports from the EC and Canada are not controlled under the act.

Imports from the Major Producing countries in 1985 would be held to their quota of 3,265 million SYE. After 1985, the bill allows imports from them to grow by an annual rate of 1 percent (table L). Therefore, imports from the Major Producers would probably be 3,430 SYE in 1990, or 5 percent above 1985 levels.

Imports from the Producing countries are estimated at 3,150 million SYE in 1985. Import quotas from these nine countries are also restricted to a 1-percent annual growth rate, but they have unused quotas of 500 million SYE in 1985. According to a study by the International Trade Commission, the Producing countries have the potential to

³Actual 1980 and 1984 imports and estimates of minimum quotas are based on analysis of Senate bill conducted by the U.S. Department of Commerce, Office of Textiles and Apparel. Year-to-date estimates are based on September, 1985 *Major Shippers Report*.

Table K. --Imports of cotton, wool and manmade fibers products, January-September 1984 and 1985.

Country group	Sept/84	Sept/85	Change
	Million SYE		Percent
Major Producers	3,103	2,897	-6.6
Producers	2,687	2,532	-5.8
Small Producers	788	1,090	38.4
Caribbean Producers	409	417	1.9
Europe and Canada	1,090	1,236	13.5
World	8,076	8,129	0.65

Source: Major shippers report.

increase their exports and fill these quotas⁴, but they are unlikely to do so next year. However, they could reach their quota by 1987, if imports grew at an annual rate of 7 percent, compared with a 19-percent annual rate during 1980-1984. Thus by 1987, the Producing countries would probably be able to fill their quota of 3,593 million SYE; imports in 1990 would then be 3,715 SYE.

Small producers will ship an estimated 1,390 million SYE in 1985. Under the bill's growth provisions, annual quotas from this group can grow by 1 percent in import-sensitive categories and 6 percent in non-sensitive categories. But small producers are using less than half of their 1985 quotas. Imports from this group rose at an annual rate of 20 percent during 1980-1985 alone, and in 1985 imports from these countries are rising 38 percent. To reach their maximum quota by 1990, imports from small producers would have to grow at an annual rate of 22 percent. Growth of that magnitude is conceivable, especially since imports from the major shippers will be limited and they could invest in textile plants in Small Producing countries to take advantage of underused quotas.

However, the 1980-1985 growth rate for Small Producers of 20 percent is higher than average. Imports were low in 1980 because of the U.S. recession; imports were high in 1985 due to the strong dollar. During 1978-1985, overall imports rose at only half the annual rate achieved during 1980-85. If imports rise at an annual rate of 15 percent, faster than the seven-year average but roughly half the rate of growth in 1985, then imports from these 100 countries will reach 2,595 million SYE in 1990.

Imports from the CBI producers are estimated at 595 million SYE in 1985, far below the group's quota of 1,021 million SYE. Under the bill, imports could increase 15 percent per year to 2,055 million SYE in 1990. However, imports from the CBI countries grew 10 percent annually from 1980 to 1985, and at only half that rate from 1978 to 1985. While there will no doubt be some shift in textile investment and production to the Caribbean Basin away from the Major Producers as a result of the bill, it is unlikely, even with increased investment, that the CBI countries will be able to fill their 1990 quotas. If imports rise at an annual rate of 8 percent--faster than the seven-year average and less than the rate of growth in 1980-1985--imports from the CBI producers will be about 875 million SYE in 1990.

Imports from Canada and Europe grew at a compound annual rate of 10 percent from

⁴USITC Emerging Textile Exporting Countries, 1984 USITC Publication 1716, July 1985.

Table L.--Long run impact of Senate textile bill on imports of cotton, wool and manmade fiber products

Country group	Growth in quotas				Growth in imports:			
	Quotas 1985 1/	Annual growth rate of quotas	Quotas in 1990	Change in quotas 1985-1990	Estimated 1985 imports with bill	Estimated annual growth rate in imports	Estimated 1990 imports with bill 2/	Change in imports 1985-1990
	SYE	SYE	SYE	Percent	SYE	Percent	SYE	Percent
Major producers	3,265	1.01	3,430	5.10	3,265	1.01	3,430	5.1
Producers	3,593	1.01	3,780	5.10	3,150	1.03	3,715	16.4
Small Producers	2,999	1.03	3,480	15.93	1,390	1.15	2,595	86.7
Caribbean producers	1,021	1.15	2,055	101.27	595	1.08	875	47.0
Total, controlled	10,878	1.03	12,745	17.10	8,400	1.05	10,615	25.8
Europe and Canada	NA	NA	NA	NA	1,625	1.10	2,615	61.1
Total, World	NA	NA	NA	NA	10,025	1.06	13,230	31.9

1/ Assuming all countries could meet their quota in 1985. 2/ Assumptions of 3 percent annual growth in U.S. GNP and 5 percent annual deflation of the dollar underlie these estimates.

1978 to 1985; imports are rising about 14 percent in 1985. At the lower rate, 1990 imports could reach 2,615 million SYE.

Total imports could increase approximately 32 percent from 1985 to 1990—an annual growth rate of about 6 percent, only slightly slower than the 7.4 percent rate that prevailed from 1966 to 1984 but sharply below the 19 percent rate of the past 5 years. The slower growth would result from restrictions on imports from the Major Producers; a weakening of the U.S. dollar; the saturation of some import categories; and slower U.S. economic growth averaging 3 percent annually. If the U.S. economy grows at an annual rate of 4 percent during 1986–1990 and the dollar remains near its current levels, U.S. textile imports could grow by more than 6 percent.

Effect of the House Bill on Textile Imports in 1985 and in the Long Term

The House bill and the analysis of its impact on textile imports are similar to the foregoing, except for one critical provision. The House bill combines Major Producers and Producers into one category. Imports from these twelve countries would be treated as are imports from the Major Producers in the Senate bill. The CBI countries, the EC and Canada would be subject to the same provisions as in the Senate bill, and all other countries would be treated as are Small Producers.

The implications for textile imports both in 1985 and in 1990 are substantial. As table M shows, imports from controlled sources would fall by 31 percent in 1985. All imports would decrease by 25 percent, because imports from the EC and Canada will still grow by at least 13 percent.

Over the longer term, quotas would grow 2 percent yearly. Because quotas act as an upper bound on imports from the twelve Major Producers in the House bill, actual imports from them would increase by 5 percent. The minimum quota also caps imports from the Producers; their imports would grow 3 percent annually. The minimum quota would not, however, hinder imports from the CBI countries. Because the House bill would sharply cut imports from the twelve Major Producers, imports from the CBI countries probably would grow more rapidly than under the Senate bill as the Major Producers invest in the CBI region and as the CBI countries themselves move to fill the gap. Similarly, imports from the EC and Canada would probably grow somewhat faster under the House bill than under the Senate version. Total imports—allowing for an annual 10 percent increase in imports from the CBI producers and 12 percent from Canada and the EC—would rise 5 percent annually, or to 9375 by 1990.

Effects on Mill Use and Exports of U.S. Cotton

Enactment of the Senate's textile trade bill will have some effects on mill use and

Table M.—Impact of house textile bill on 1985 imports of cotton, wool and manmade fiber products 1/

Country group	Growth in quotas			Growth in imports:			
	Actual imports 1984	Imports allowed by growth formula 1985 2/	Quotas 1985 3/	Estimated 1985 imports without bill 4/	Estimated 1985 imports with bill	Percentage change from without bill 4/	Percentage change from with bill
		Million square yard equivalents				Percent	
Major producers	7,073	4,169	4,273	6,632	4,273	-6.2	-39.6
Producers	878	944	972	1,166	972	32.8	10.7
Caribbean producers	545	626	618	555	555	1.8	1.8
Total, controlled	8,496	5,739	5,863	8,446	5,800	-0.6	-31.7
Europe and Canada	1,432	NA	NA	1,624	1,624	13.5	13.5
Total, World	9,928	NA	NA	9,977	7,424	0.5	-25.2

1/ Based on imports from major shippers. 2/ Based on growth formulas specified in House bill, see p. 40 for details. 3/ Based on provision allowing countries to ship minimum quantities in textile and apparel categories, see p. 34 for details. 4/ Based on year to date shipments in 1985, table K. World total differs from total in table K as proportions from each group have shifted slightly.

Table N.--Long run impact of House textile bill on imports of cotton, wool and manmade fiber products

Country group	Growth in quotas				Growth in imports:			
	Quotas 1985 2/	Annual growth rate of quotas	Quotas in 1990	Percentage change in quotas 1985-1990	Estimated 1985 imports with bill	Estimated growth rate in imports	Estimated 1990 imports with bill	Percentage Change in imports 1985-1990
	SYE	Percent	SYE	Percent	SYE	Percent	SYE	Percent
Major producers	4,273	1.01	4,491	5.1	4,273	1.01	4,490	5.1
Producers	972	1.03	1,125	15.9	972	1.03	1,125	15.9
Caribbean producers	618	1.06	827	33.82	555	1.10	895	61.3
Total, controlled	5,800	1.02	6,445	11.1	5,800	1.02	6,510	12.0
Europe and Canada	NA	NA	NA	NA	1,624	1.12	2,862	76.2
Total, World	NA	NA	NA	NA	7,424	1.05	9,375	26.3

1/ Assuming all countries could meet their quota in 1985 5 percent annual deflation of the dollar underline these estimates.

2/ Assumptions of 3 percent annual growth in U.S. GNP and

exports of U.S. cotton. Mill use in 1985/86 could rise an additional 100,000 to 200,000 bales, as textile imports are reduced in 1985 and 1986. Passage of the bill may also have a psychological effect on many U.S. retailers, causing them to purchase more products from domestic firms in 1986, until effects of the bill become clearer.

In the longer run, the bill will allow imports to rise faster than domestic consumption. Barring major improvements in U.S. textile exports, this will force U.S. mill use of all fibers down. However, the smaller increases in U.S. textile imports caused by the bill could mean an additional 50,000 bales of U.S. cotton mill use per season than would otherwise occur.⁵

On the other hand, passage of the House version of the textile trade bill would have a very large impact on U.S. fiber mill use. Cotton mill use during 1985/86 might rise 200,000 - 300,000 bales, but mill use in 1986/87 and beyond might be as much as 1 million bales higher per year than would otherwise occur.⁶

Some countries will respond to a textile bill by reducing imports of U.S. cotton and other commodities. The Major Producers identified in the Senate version of the textile bill--Hong Kong, South Korea, and Taiwan--are expected to buy about 1 million bales of U.S. cotton during 1985/86 compared with 1.9 million bales last season. These countries are already shifting their raw cotton

purchases away from the United States because foreign cotton is cheaper. U.S. exports in 1985/86 are expected to account for only about 40 percent of total cotton exports to those three markets. The United States will have less than 5 percent of the Hong Kong market. Furthermore, Taiwan and South Korea have strong political and economic ties to the United States, and all three currently run overall trade surpluses with the United States. Also, most U.S. cotton exports to South Korea are financed with U.S. Government credit guarantees. Therefore, the threat of overt trade retaliation from the major producers is probably minor. Relatively high U.S. cotton prices are cutting market share more than trade retaliation probably would.

⁵Example: 1984 U.S. cotton textile imports (3.05 million equivalent bales), times the lower rate of growth in imports caused by the textile bill (1.4 percent), equals 42,700 bales. Round to 50,000. Ignore offsetting effects such as higher retail prices.

⁶10,071 SYE in 1985 x 1.07 percent, compounded for 5 years = 14,391
14,391 - 9375 = 35% drop in 1990.
3.1 million bales in 1985 x 1.06 percent compounded for 5 years =
4.2 million bales
4.2 - 35% = 1.5 million bale reduction in textile imports
1.5 x 75% = 1.1 million bale increase in mill use.

In the long run, both versions of the textile trade bill will lower the rate of growth of textile exports from Taiwan, Hong Kong and South Korea 3-4 percent per year. Consequently, U.S. cotton exports during 1986-90 may be 50,000-100,000 bales lower per year.⁷

The effects of a textile trade bill on U.S. cotton exports to the nine Producers may not be very great in the near term. Of the nine countries, only Thailand, Indonesia, the Philippines, and Japan import significant amounts of U.S. cotton. The Japanese textile industry is itself affected by imports, and cotton mill use in Japan may decline for reasons other than U.S. trade restrictions.

U.S. cotton exports to Thailand, Indonesia, and the Philippines are expected to total less than 250,000 bales in 1985/86. The U.S. share of their raw cotton markets is dropping because cheaper cotton is available elsewhere.

Under the Senate version, textile imports from the nine Producers will not be rolled back, although the future rates of import growth from Thailand, Indonesia, and the Philippines could be slowed. However, these Producers are not now exhausting their quotas, and restraints imposed on the Major Producers may actually benefit the Producers.

Under the House version, textile imports from the nine producers would be rolled back, and U.S. exports to Thailand, Indonesia, and the Philippines could conceivably drop to zero. However, exports to those three countries are expected to account for only 7 percent of total U.S. cotton exports this season.

⁷Imports by Korea in 1985/86 are expected to total 1.65 million bales; Taiwan 1.05 million bales, and Hong Kong 775,000 bales. Assume 3 percent decline in each. Assume U.S. market share rebounds to 90 percent in Korea, 50 percent in Taiwan, and 15 percent in Hong Kong.

If anything, U.S. cotton exports to the Small Producers, the CBI countries, and the EC and Canada would be enhanced by enactment of a textile bill. By restricting U.S. imports from the Major Producers and Producers, the bill will grant greater market share to other countries. Therefore, the net effect on U.S. cotton exports to all destinations will probably be small.

Conclusion

Because of the inclusion of minimum quotas and the exclusion of the EC and Canada, both versions of the Textile and Apparel Trade Enforcement Act may have a smaller impact on textile imports during the first year of implementation than is anticipated by their supporters or detractors. Under the Senate's bill, 1985 imports from the three Major Producers will fall 14 percent, but total imports will decline 1 to 2 percent. The House bill would reduce imports from the twelve Major Producers 40 percent; overall imports would fall 25 percent.

Over the longer term, the Senate bill offers no guarantee of growth rates low enough to allow U.S. textile manufacturers to recapture the domestic market. While the estimated growth rate of 6 percent is below the 19 percent rate of the past 5 years, it still exceeds the 1 percent annual growth in the domestic market. Enactment of the House version would have a significant impact on future textile imports and domestic mill use. While 1990 imports could be 25 percent above imports in 1985, 1990 imports would be less than imports were in 1984 by 5 percent. Both versions of the Textile and Apparel Trade Enforcement Act will shift textile investment and production from the Major Producers to other countries.

When assessed as an isolated piece of legislation, the Senate version of the Textile and Apparel Trade Enforcement Act would have a relatively small impact on cotton exports. However, given the current international political environment, the ramifications of either bill may be more extensive than this economic analysis indicates.

SEASONAL ADJUSTMENT FACTORS FOR U.S. COTTON EXPORTS

By

Richard Cantor, Terry Townsend, and Joe Glauber¹

ABSTRACT: U.S. cotton exports generally follow a seasonal pattern related to availability following harvest. The seasonal factors describing this pattern can be used in estimating the pace of current shipments.

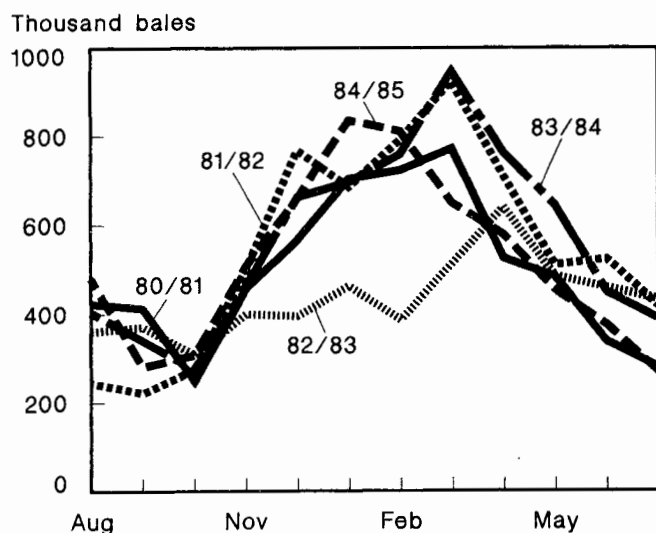
Keywords: U.S. cotton exports, seasonal adjustment factors, X-11.

Introduction

U.S. cotton exports generally follow a seasonal pattern linked to the timing of each harvest (figure 8). Exports are usually lowest in October, when most harvest activity begins. Exports tend to rise in November as more cotton becomes available, and peak in March. After March, most foreign commitments have been met, and exports begin to slide.

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Figure 8
U.S. Monthly Cotton Exports, 1980/81 - 84/85



This seasonal variation is particularly important in determining within-year fluctuations of U.S. cotton exports. That is, trends and cycles determine the overall level of exports during each crop year. However, between August and July of each year, shipments follow a slowly evolving seasonal pattern. After identifying this pattern, each monthly observation can be compared to the historical pattern, to describe the pace (overall level of exports) for the current season.

Most analysts intuitively adjust monthly export data by noting whether shipments to date are running ahead of or behind the pace of previous years. In this paper, the seasonal patterns underlying U.S. cotton exports (total and to 10 major destinations) are identified statistically based on monthly data from 1970/71 to 1984/85. Use of these patterns in checking the forecast of U.S. exports for a season, based on recent monthly data, is demonstrated.

Methodology

U.S. cotton exports from August 1970 through July 1985 were adjusted seasonally using the X-11 Procedure in SAS, an adaptation of the Bureau of the Census X-11 Seasonal Adjustment program.² The X-11 program is based on the assumption that seasonal fluctuations can be measured in the original series and separated from trend,

²SAS/ETS User's Guide, 1982 Edition. pages 147-148. SAS Institute Inc., Box 8000, Cary, North Carolina, 27511.

cyclical, and irregular fluctuations. It is also assumed that these factors are related in a multiplicative fashion such that:

$$\text{Trend} * \text{cycle} * \text{seasonal} * \text{irregular} = \text{observation}$$

The seasonal component is defined as within-year variation that is essentially repeated each year. The trend and cycle components include variation due to long-term trend and the business cycle, while the irregular component consists of residual variation due to events such as unseasonable weather, longshoremen's strikes, or political events.

The first step in the X-11 procedure is to calculate 12-month moving averages from the original data; these averages provide preliminary estimates of the trend * cycle components of the series. The original data are then divided by the 12-month moving averages to isolate the seasonal * irregular components.

The next step is to calculate centered moving averages of the seasonal * irregular data, which provide estimates of the seasonal factors and the irregular component.

Those observations in the original monthly data that are seen to have extreme irregular components are modified. Moving averages of the modified seasonal * irregular components are then calculated to estimate new seasonal factors—factors that are less influenced by extreme irregular observations. The X-11 procedure makes additional iterations in which

improved estimates of the irregular component are used to produce final estimates of the seasonal factors. These include forecasts for the year ahead, the seasonally adjusted series, the trend * cycle components, and the irregular component.

Results

The seasonal factors for total U.S. exports range from 57 in October to 142 in March (table O and figure 9). This means that actual shipments in October are normally about 57 percent of the monthly average for the season, while shipments in March are usually 142 percent of the average. U.S. cotton is usually harvested during

Figure 9
Seasonal Factors for U.S. Cotton Exports

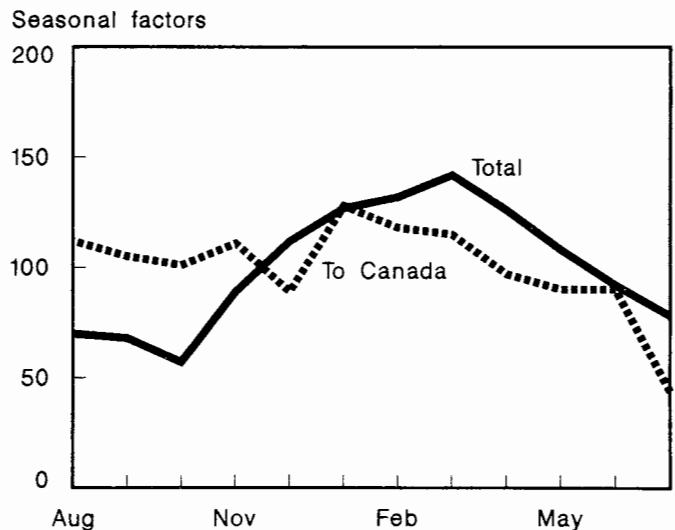


Table O.—Seasonal adjustment factors for U.S. cotton exports, forecast for 1985/86

Shipment month	Destination										
	Total	Hong Kong	Thailand	Indonesia	Japan	S. Korea	Taiwan	Italy	France	W. Germany	Canada
August	70.0	78.8	92.5	90.4	75.5	78.4	58.2	58.5	39.8	31.4	111.8
September	67.7	48.8	80.8	86.7	55.2	74.4	48.2	58.6	54.7	48.0	104.5
October	56.9	52.6	65.5	82.7	48.0	65.0	37.9	54.0	63.3	58.8	101.0
November	89.0	78.7	60.7	91.6	119.9	85.7	60.6	79.0	102.8	124.3	110.7
December	112.0	103.8	73.3	115.3	128.4	105.6	78.2	103.5	135.1	156.9	89.0
January	127.1	127.8	109.5	124.9	135.2	122.7	96.3	132.1	190.4	176.7	128.4
February	132.3	160.4	125.8	103.2	119.8	118.7	153.1	143.5	160.3	170.3	117.8
March	142.2	157.7	180.6	110.0	123.9	131.8	188.9	150.0	162.9	150.4	114.9
April	125.7	156.2	121.7	100.6	117.0	128.0	155.2	135.3	104.0	71.4	97.4
May	107.9	76.5	110.4	100.0	94.4	96.5	140.4	126.7	86.8	106.2	90.0
June	91.8	95.4	90.9	103.0	97.3	96.1	117.4	105.2	72.8	57.3	90.2
July	78.1	63.6	85.0	93.6	86.1	97.0	63.6	53.8	25.5	49.9	43.8
Average	100.1	100.0	99.7	100.2	100.1	100.0	99.8	100.0	99.9	100.1	100.0

August–January, and most is marketed during November–March. Cotton from the Far West is usually available for export earlier than most of the cotton grown in Texas because of differences in growing seasons.

Shipments of U.S. cotton to most foreign mills tend to peak during January–March. There are several reasons for this. Foreign mills are often uncertain about shipping delays. They may desire to stock all the varieties they need, provided there are adequate storage facilities, leading to large shipments when harvesting is completed. Another reason for these peaks in U.S. shipments is that cotton usually is less expensive immediately after harvest. Mills contract for immediate shipment to take advantage of these low prices. As the crop year progresses, prices rise as exportable supplies decrease.

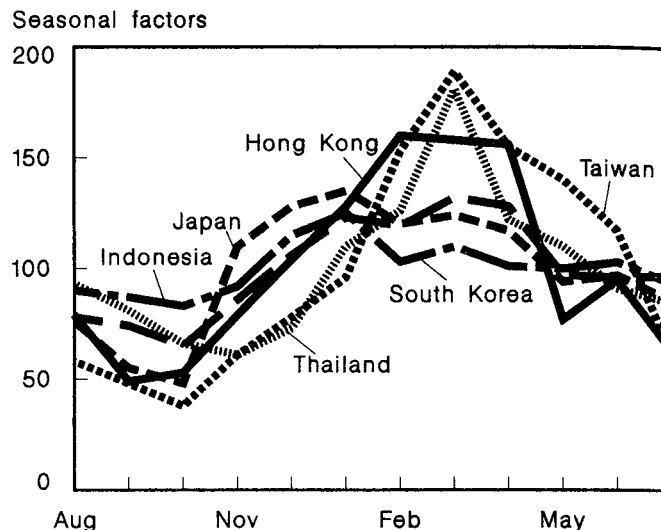
In addition, competing sources of raw cotton can influence U.S. seasonal export patterns. For example, firms in Western Europe generally buy Northern Hemisphere cotton, all of which is usually available at about the same time, leading to a surge in shipments during December–March. On the other hand, Asian mills buy a greater proportion of their supplies from the Southern Hemisphere which become available during the spring. With a greater diversity of sources, Asian mills are able to space deliveries more evenly.

U.S. cotton exports to the top six Asian markets follow a similar seasonal pattern (figure 10). Like other U.S. shipments, exports to Japan, South Korea, Taiwan, Indonesia, Hong Kong, and Thailand decline during the first 3–4 months of the marketing year. This can be attributed to a conscious drawdown of stocks of old-crop cotton, and the relatively high price of U.S. cotton during this time. Also, a preponderance of national holidays in Asia occur during these months.

Beginning in November, seasonal factors for U.S. cotton exports to Asia begin to climb as new-crop cotton becomes available. The peaks occur during January–March when harvesting is virtually complete.

Although the seasonal factors for U.S. shipments to Asia are fairly uniform, subtle differences distinguish exports to individual

Figure 10
Seasonal Factors for U.S. Cotton Exports to Major Asian Destinations



countries. Indonesia is the most stable customer. The seasonal factors for Indonesia reach a low of about 85 in October and a high of 125 in January. One of the reasons for this consistency may be the method Indonesia uses to procure raw cotton. Government-owned mills tender for cotton and seek a steady flow of raw material. Indonesia splits its purchases of U.S. cotton into approximately two-thirds from the Far West and one-third from Texas. This leads to a seasonal peak in January, rather than March, since cotton from the Far West is available 1–2 months earlier than cotton from the Southwest.

U.S. exports to Japan and South Korea are also fairly stable during the crop year, with shipments to Japan showing slightly more variation. About 85 percent of Japanese cotton imports from the United States are from California and Arizona, and U.S. shipments to Japan peak in January.

South Korea is a major recipient of GSM-102 credit for cotton. This helps ease financial constraints on Korean mills, allowing them the freedom to accept regularly timed shipments with credit guarantees used throughout the period. About 40 percent of South Korean purchases are of San Joaquin Valley types and 20 percent are of California–Arizona types. The remaining 40 percent comes from the Southwest and the Delta. This diversity spreads out U.S. shipments to South Korea and pushes the seasonal peak back to March.

U.S. shipments to Hong Kong, Taiwan, and Thailand are highly seasonal. Shipments to Taiwan show the greatest variation, with a seasonal index of 40 in October and 190 in March. Taiwan is very price-sensitive and buys from many countries. U.S. exports to Taiwan consist of an almost equal proportion of Texas and low-grade Arizona cotton. Of the six countries examined in this region, Taiwan's imports were the closest to an even mix of staple lengths (50 percent less than 1 inch and 50 percent greater than 1 inch). This implies a regular import pattern, but sensitivity to price and a variety of sources for low-grade cotton produce an extremely wide-ranging set of monthly factors.

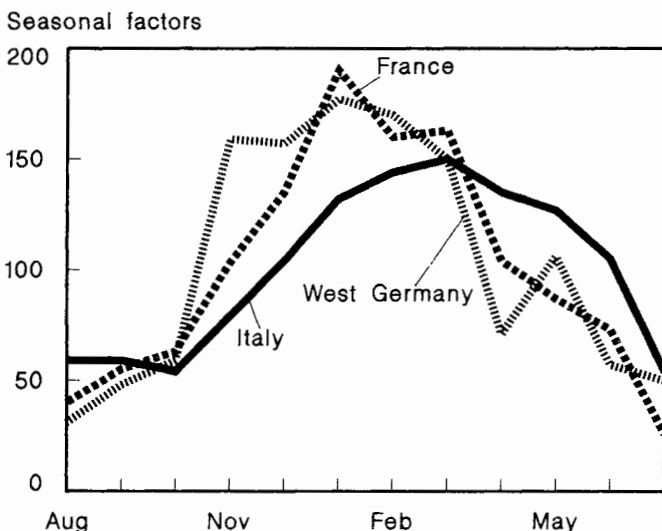
In the past, U.S. shipments to Hong Kong were usually lowest in September and October, and highest during February-April. However, as China becomes the overwhelming supplier of raw cotton to Hong Kong, the seasonal pattern of exports from the United States may change. The change is expected to take the form of an earlier peak and a precipitous decline afterwards. China is likely to supply nearly all Hong Kong's future imports except for high-grades from the Far West.

Thailand is a seasonal market for raw cotton, with the low occurring in November, the latest low of any of the nations examined, and a pronounced peak occurring in March. Thailand also produces cotton, most of which is harvested during late fall. With an impending harvest of 100,000-200,000 bales, import needs are now lower. The largest shipments to Thailand come in March, as most exports are from Texas.

U.S. exports to Western Europe are highly seasonal, with peaks occurring during January-March and lows occurring in July and August (figure 11). In France and West Germany, mill vacations cause a virtual shutdown during the summer months. During the ensuing months, stocks are replenished and imports of U.S. cotton build to their zenith. Shipments to France and Germany usually peak in January.

West Germany is the biggest U.S. customer for extra-long staple cotton, and many mills spin for the top-of-the-line textile market. About 60 percent of U.S. shipments are from the San Joaquin Valley. Cotton from Arizona and the Memphis region makes up

Figure 11
Seasonal Factors for U.S. Cotton Exports to Major European Countries



another 15 percent and the rest comes from Texas. Shipments to West Germany in April are usually half March's level.

France usually imports a variety of types from the United States. Its purchases are mostly of Far West cotton with some Delta and Texas types. U.S. shipments to France peak in January and decline rapidly thereafter. In fact, shipments to France show the greatest seasonal variation of all 10 countries.

During the summer months, shipments to Italy have seasonal factors that vary less than 5 points. From July through October the factors range from 54 to 59, with July and October being nearly identical. Mills in Italy spin a combination of coarse- and fine-count yarns using mostly Texas cotton, along with cotton from the San Joaquin Valley and the Delta. Italy is a big producer of denim, a product which uses short staple cotton, and this is one of the reasons shipments to Italy peak in March rather than January.

The pattern of U.S. shipments to Canada is completely different (figure 9). Canada uses U.S. cotton much the same as U.S. mills do. The seasonal factors start at about 110 in August and gradually decline to draw down old-crop inventories by December. As the new crop becomes available, the seasonal factors rise from 90 in December to almost 130 in January. The index does not fall below 100 until April, and even then stays at 90 until July. The drop in shipments during July occurs

because of mill vacations. Shipments to Canada are consistent throughout the year, mostly because of long-term trade relationships with U.S. suppliers.

Implications for 1985/86

Although exports totaled 6.2 million bales during 1984/85, seasonally adjusted exports during February-July 1985 dropped by half from their peak in January, with declines occurring each month. Exports in July (268,000 bales) moved at a seasonally adjusted rate of 4.1 million bales.

U.S. exports in August were 207,000 bales; in September, 214,000 bales; and in October, exports were about 160,000 bales.³

³October estimated from U.S. Export Sales reports.

When divided by the seasonal factors of 70.0, 67.7, and 56.9 (from table M), and multiplied by 12, the monthly data implied seasonally adjusted annual rates of 3.5 million bales, 3.8 million bales, and 3.4 million bales. While further declines in exports at seasonally adjusted rates are possible, it appears from the first-quarter data that U.S. exports have bottomed out for the 1985/86 season at a new plateau of about 3.5 million bales.

The seasonally adjusted rate for the 10 countries in this study fell dramatically during June-August. In June, the combined pace was 3.4 million bales, July saw a 3.0-million rate, and August's pace was 2.5 million. Export volume to these 10 nations in 1984/85 represented 71 percent of total U.S. exports. Therefore, current seasonally adjusted rates for these countries are in line with the 1985/86 U.S. export forecast of 3.5 million bales.

A MODEL OF WOOL PRICES AND CONSUMPTION

by
Julie A. Hogeland¹

ABSTRACT: A simultaneous equation model explaining U.S. mill consumption of apparel-grade wool and the season average grease price for wool is presented. Results suggest that raw wool prices and mill consumption are simultaneously determined variables. Further, models of wool prices based on factors in the textile market, rather than the lamb market, may be a useful direction for further research.

Keywords: Wool, mill consumption, season average price, simultaneous equation model.

Introduction

U.S. lamb and wool production declined steadily during the past 40 years, even though the U.S. Government attempted to increase wool production through producer "incentive payments" stemming from the National Wool Act of 1954. The net effect, considering predators, conversion of range land to urban uses, shortages of shearers, and other negative factors, is that the United States produces only 2 percent of the world's wool. The inflexibility of the breeding cycle for sheep and changes in foreign exchange rates are only two of the many reasons that wool prices fluctuate so widely. Wool consumption has also been declining, primarily due to strong competition from noncellulosic manmade fibers.

This article presents a simultaneous equation model of wool demand and supply. The dependent variables are mill consumption of apparel grade wool and the raw wool price received by domestic producers during 1960-83.

Model Specification

In previous research, the supply or demand for wool was estimated using single-equation models. Ferguson and Polasek argued the close relationship between foreign and domestic prices implies that the latter do not depend on domestic demand (1). Mill

consumption of raw wool has also been considered exogenous. According to McKenzie, lags in the level of mill production mean past prices have a greater effect on mill activity than current prices (2). Testing a simultaneous equation model has been viewed as a preferable but difficult alternative to these arguments, given the need to allow for the impact of new fibers on wool markets. Previous models also disregarded the impact of textile industry activity on wool prices, focusing instead on production alternatives to sheep, such as cattle or wheat (3,4).

The model specification tests whether wool prices and mill consumption are independent of one another or jointly determined. The model also evaluates the impact of textile market forces on wool prices.

The specification is:

$MC = f(AP, SAGP, PS, TEXIMP, OUTPUT)$
and,

$SAGP = f(MC, PS, SWP, IMP, SLAG)$

where,

MC = U.S. mill consumption of apparel-grade wool (million lbs),

AP = price of representative type of Australian wool (U.S. cents/lb),

SAGP = raw wool price received by U.S. producers (cents/lb),

OUTPUT = domestic spun yarn production (million lbs),

PS = price of 1.5 denier polyester staple (cents/lb),

¹Agricultural economist with the Agricultural Cooperative Service, USDA.

SWP = domestic shorn wool production (million lbs, greasy),

IMP = raw wool imports for apparel manufacture (million lbs clean),

TEXIMP = raw wool content of domestic textile imports (million lbs),

SLAG = raw wool price received by U.S. producers lagged one year.

The sign of the Australian price coefficient was indeterminate. As an input into mill consumption, the effect would be negative; as a substitute for domestic wools, the effect would be positive. The domestic industry generally must import as much wool as is produced domestically to meet processing requirements.

As a supply function, SAGP was expected to vary positively with MC, PS, and SLAG, and inversely with SWP, and IMP.

Data were obtained from published statistics of the U.S. Department of Agriculture and the U.S. Department of Commerce (6,7).

Results

The second-stage regressions from the two stage least squares estimation, corrected for serial correlation using a Cochran-Orcutt procedure, were:

MC =	-531.77	+ 0.75 AP	+ 2.78 PS	- 6.72 SAGPHAT	+ 1.21 OUTPUT
t value:	-5.93	3.11	11.56	-5.39	8.06
significance:	.0001	.0083	.0001	.0001	.0001
R ² =	.95				

LSAGP* =	-1.55	+ 5.97 LMCHAT	- 0.08 LPS	- 3.89 LSWP	- 2.08 LIMP	+ 0.93 LSLAG
t value:	-1.32	9.75	-0.61	-11.47	-9.92	6.43
sig.	.2130	.0001	.5522	.0001	.0001	.0001
R ² =	.95					

The terms "MCHAT" and "SAGPHAT" refer to the estimated values of MC and SAGP according to the two stage least squares procedure. As the literature review was inconclusive about functional forms, the model was estimated using both log-log and linear formulations. The fit of the MC equation to the data improved greatly with a linear format, and the fit of the SAGP equation improved slightly using a log-log format.

TEXIMP was included in the initial estimates. Results in terms of R² and the significance of other explanatory variables were unsatisfactory, so TEXIMP was dropped. Consequently, further work is indicated on the relationship of TEXIMP to wool consumption.

The signs of all variables were as hypothesized, except for the coefficient of PS in the SAGP equation. This variable was also the only one not highly significant. As the

*All variables in this equation are expressed in logs.

The SAGP equation represents wool supply, and the MC equation wool demand. The raw wool price is technically called the "season average grease price." This price is an average of prices received from ungraded wools as they come off the sheep--with dirt and vegetable matter included. Buyers price such wool by visually estimating the "clean yield". Insofar as these measurements do not accurately reflect the value of the wool, this price series is subject to measurement error. The alternative, using prices for graded and cleaned wools, would have been equivalent to estimating a supply function for each grade individually or in combination. Such analysis would greatly complicate the study and add little to the results. Moreover, the season average grease price has the advantage of representing overall U.S. production and is the price used to determine incentive payments under the National Wool Act.

As a measure of wool demand, mill consumption was expected to vary inversely with SAGP and TEXIMP and positively with OUPUT and PS. PS was used as a proxy for the prices of manmade fibers like acrylic that are more directly competitive with wool, but for which data are not readily available.

OUTPUT is used as an overall measure of economic activity in the textile industry. Gross National Product (GNP) is more commonly used to measure economic activity, but estimation of derived relationships, according to Tomek and Robinson, "requires data corresponding to the appropriate stage of marketing "(5). Spun yarn production includes wool fibers, since all wool except felt is converted to yarn during textile manufacture, and also includes yarns made from other fibers. Excluded from spun yarn output is production of flat filament yarns that are used primarily for hosiery and industrial uses.

polyester price serves as a proxy for the prices of fibers more directly competitive with wool, it was retained in the model.

The elasticity of mill consumption with respect to the season average grease price, computed at the means of MC and SAGP, is estimated from the MC equation to be -2.04 . This estimate is far higher than most other estimates.

Results from Ferguson and Polasek indicated that the elasticity of U.S. wool consumption with respect to deflated wool farm prices was -0.55 . In the Campbell study, the elasticity of wool consumption in eight OECD countries with respect to the Australian clean price indicator was -0.13 . The higher elasticity estimate in this study may be caused by the fact that SAGP was not deflated. U.S. farm prices of wool ranged between 19.6 cents a pound and 94.5 cents a pound during 1960–83, while U.S. mill use of wool dropped steadily. The exclusion of TEXIMP may also be leading to model misspecification.

An overview of the wool and mohair industries, *Background for 1985 Farm Legislation*, contains comments that influenced alternative specifications of the model:

Because the United States exports little wool and produces only half what U.S. mills use, foreign supply, demand, and prices (reflected through exchange rates), rather than U.S. supplies are major determinants of U.S. prices. . .

Wool prices tend to be . . . uncertain. They depend on economic forces affecting sheep numbers (such as lamb prices) in addition to forces affecting overall demand. (8)

Lamb prices expressed in logs were incorporated into the LSAGP model to test their effect relative to textile market forces. Although lamb prices were highly significant, the R^2 for the MC equation decreased from .95 to .87, and the significance of AP and SAGPHAT declined substantially. These results suggest the influence of multicollinearity. Further work is needed on the relationship between lamb and wool prices. Also, the Australian price used in the MC equation was incorporated into the SAGP equation to test its effect on domestic prices.

The results were again inconclusive because of multicollinearity.

Conclusions

Statistical evidence strongly suggests raw wool prices and mill consumption are simultaneously determined variables. Specifying models of wool prices based on factors in the textile market rather than the lamb market may be a useful direction for further research. Approximately 30 percent more variation in the dependent variable was explained using a model related to lamb markets.

The magnitude of the polyester staple coefficient is much greater for the domestic industry than Campbell found for the major wool consuming countries (2.78 vs. 0.23) (9). The difference may result from the nature of the U.S. textile industry. Overseas wool mills target a premium market by producing fabrics in greater variety and smaller quantities than the United States. Domestic mills generally produce fabrics competing with lower-quality and lower-priced apparel imports (10). Technology allows domestic mills producing worsted wool fabrics to easily switch to manmade fibers. Under these circumstances, the domestic industry would be more sensitive to relative price changes, so a change in the price of the substitute fiber would have a larger impact on mill consumption, other things being equal.

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Table 1-Cotton: Acreage, production, and yield, by States

State	Planted acres				Harvested acres				Lint yield per harvested acre				Production			
	Average 1980-84	1983	1984	1985 2/	Average 1980-84	1983	1984	1985 1/	Average 1980-84	1983	1984 3/	1985 2/	Average 1980-84	1983	1984	1985 2/
		--1,000 acres--				--1,000 acres--				--Pounds--				--1,000 bales 4/-		
Alabama	303	219	309	295	300	215	307	327	566	409	699	734	357	183	447	500
Arizona 5/	468	291	430	410	466	284	429	390	1,196	1,225	1,227	1,255	1,165	725	1,097	1,020
Arkansas	502	320	470	465	470	290	465	440	540	535	632	731	503	323	612	670
California 5/	1,368	960	1,410	1,350	1,358	950	1,400	1,340	1,032	996	999	1,110	2,920	1,971	2,913	3,100
Florida	14	13	17	22	13	12	17	22	659	608	847	781	19	15	30	35
Georgia	162	120	175	250	156	115	172	260	535	467	784	720	175	112	281	390
Kansas	1	0	1	1	0	0	0	1	264	240	288	480	0	0	0	1
Louisiana	589	420	650	640	581	410	645	635	603	623	786	612	732	532	1,056	810
Mississippi	1,022	687	1,045	1,100	1,004	675	1,032	1,040	674	640	767	785	1,404	900	1,650	1,700
Missouri	183	108	164	155	166	193	162	152	475	377	554	584	162	73	187	185
New Mexico 5/	100	56	77	70	82	47	69	55	566	715	605	655	95	70	87	75
North Carolina	75	60	97	89	74	59	96	88	522	350	600	627	82	43	120	115
Oklahoma	518	320	425	370	466	300	375	355	244	232	234	352	242	145	183	260
South Carolina	102	69	104	124	101	69	104	122	577	369	785	728	124	53	170	185
Tennessee	287	220	340	310	275	215	325	330	463	337	498	553	268	151	337	380
Texas 5/	6,092	4,000	5,350	5,000	5,320	3,550	4,700	4,700	320	322	376	439	3,545	2,380	3,680	4,300
Virginia	1	0	1	1	0	0	1	1	466	360	528	591	0	0	1	2
Upland	11,787	7,863	11,065	10,652	10,835	7,284	10,300	10,258	528	506	599	642	11,795	7,677	12,851	13,727
American-Pima	69	63	80	87	68	63	80	87	708	725	786	818	102	95	130	148
United States	11,856	7,926	11,145	10,770	10,903	7,347	10,379	10,344	530	508	600	644	11,897	7,771	12,982	13,875

1/ Indicated (Crop Production, November 12, 1985). 2/ Crop Reporting Board report of October 10, 1985. 3/ Bales of 480-pounds net weight. 4/ 480-lb. net weight bales. 5/ Upland only.

Table 2.--U.S. cotton supply and use 1960/61 - 84/85

Crop year	Area		Yield	Beginning stocks	Supply		Total	Disappearance		Total	Unac-counted	Ending stocks	Farm price 1/
	Planted	Harvested			Production	Imports		Mill use	Exports				
	1,000 acres		lbs/ac.				1,000 480-lb. bales						
1960	16,080	15,309	446	7,501	14,237	129	21,867	8,353	6,857	15,210	399	7,056	31.3
1961	16,588	15,634	438	7,056	14,283	153	21,492	9,017	5,056	14,073	280	7,699	34.2
1962	16,293	15,569	457	7,699	14,827	137	22,663	8,484	3,429	11,913	386	11,136	33.1
1963	14,843	14,212	517	11,136	15,294	135	26,565	8,696	5,775	14,471	257	12,351	33.4
1964	14,836	14,055	517	12,351	15,145	118	27,614	9,261	4,195	13,456	91	14,249	30.9
1965	14,152	13,613	527	14,249	14,938	118	29,305	9,596	3,035	12,631	354	17,028	29.2
1966	10,349	9,553	480	17,028	9,557	105	26,690	9,574	4,832	14,406	60	12,344	21.5
1967	9,450	7,997	447	12,344	7,443	149	19,936	9,077	4,361	13,438	86	6,584	26.5
1968	10,912	10,159	516	6,584	10,926	68	17,578	8,332	2,825	11,157	123	6,544	22.9
1969	11,882	11,051	434	6,544	9,990	52	16,586	8,114	2,878	10,992	249	5,843	21.8
1970	11,945	11,155	438	5,843	10,192	37	16,072	8,204	3,897	12,101	232	4,203	22.8
1971	12,355	11,471	438	4,203	10,477	72	14,752	8,259	3,385	11,644	150	3,258	28.1
1972	14,001	12,984	507	3,258	13,704	34	16,996	7,769	5,311	13,080	305	4,221	27.2
1973	12,480	11,970	520	4,221	12,974	48	17,243	7,472	6,123	13,595	160	3,808	44.4
1974	13,679	12,547	441	3,808	11,540	34	15,382	5,860	3,926	9,786	112	5,708	42.7
1975	9,492	8,796	453	5,708	8,302	92	14,102	7,250	3,311	10,561	140	3,681	51.1
1976	11,656	10,914	465	3,681	10,581	38	14,300	6,674	4,784	11,458	86	2,928	63.8
1977	13,694	13,275	520	2,928	14,389	5	17,322	6,483	5,484	11,967	-8	5,347	52.1
1978	13,360	12,400	420	5,347	10,856	4	16,207	6,352	6,180	12,532	283	3,958	58.1
1979	13,978	12,831	547	3,958	14,629	5	18,592	6,506	9,229	15,735	143	3,000	62.3
1980	14,533	13,215	404	3,000	11,122	27	14,149	5,891	5,926	11,817	336	2,668	74.4
1981	14,330	13,841	542	2,668	15,646	26	18,340	5,264	6,567	11,831	123	6,632	54.0
1982	11,345	9,734	590	6,632	11,963	20	18,615	5,513	5,207	10,720	42	7,937	59.1
1983	7,926	7,348	508	7,937	7,777	12	15,720	5,928	6,786	12,712	-232	2,775	66.0
1984	11,145	10,379	600	2,775	12,882	24	15,681	5,540	6,215	11,755	76	4,102	57.5
1985 2/	10,739	10,344	644	4,102	13,875	14	17,991	5,747	3,500	9,247	129	8,873	

1/ Weighted average upland price. 2/ Estimated.

Table 3.--Cotton: Supply and disappearance, by type, United States

Year beginning August 1	Supply				Disappearance			Difference unaccounted 4/	Ending stocks July 31
	Beginning stocks August 1 1/	Production 2/	Imports	Total	Mill consumption 3/	Exports	Total		
1,000 480-pound net weight bales 5/									
Upland									
1980	2,868	11,018	27	13,913	5,807	5,776	11,583	228	2,618
1981	2,618	15,566	19	18,203	5,216	6,438	11,654	-9	6,540
1982	6,567	11,864	12	18,443	5,457	5,194	10,651	52	7,844
1983	7,844	7,677	8	15,529	5,861	6,750	12,611	-225	2,693
1984	2,693	12,852	21	15,566	5,491	6,125	11,616	74	4,024
1985 7/	4,024	13,727	10	17,761	5,700	3,400	9,100	139	8,800
Extra-long staple 6/									
1980	30	104	1	135	63	20	83	-2	50
1981	50	80	7	137	48	7	55	-10	92
1982	65	99	8	172	56	13	69	-10	93
1983	93	95	4	192	67	36	103	-7	82
1984	82	130	3	215	49	90	139	2	78
1985 7/	78	148	4	230	47	100	147	-10	73

1/Compiled from Bureau of the Census data and adjusted to an August 1 480-pound net weight basis. Excludes preseason ginnings. 2/Includes preseason ginnings. 3/Adjusted to August 1-July 31 marketing year. 4/Difference between ending stocks based on Census data and preceding season's supply less disappearance. For upland cotton, this difference primarily reflects an increase of an estimated 1 percent in average bale weights due to moisture absorption once cotton is ginned and begins to flow through marketing channels. Additional moisture is absorbed by cotton moving in export channels. For ELS cotton, this difference reflects, in part, reporting discrepancies for stocks, mill consumption, and exports. 5/Factors used to convert running bales to equivalent 480-pound net weight bales for carryover and consumption of domestic cotton are based on the relationship between 480 pounds and the gin weight of a running bale, raised by 1 percent (moisture factor). 6/Includes American-Pima, Sea Island, and foreign grown ELS cotton. 7/Preliminary and estimated.

Table 4.--Cotton: Supply and disappearance of all kinds; by months, United States 1/

Date	Supply						Disappearance				
	Beginning stocks 2/			Gin- nings 3/	Imports	Total	Mill con- sump- tion 4/	Exports	Total	Ending stocks 5/	
	At mills	In public storage 6/	Other 7/								Total
1,000 480-pound net weight bales											
1983/84											
August	792	6,978	167	7,937	326	2	8,265	552	403	955	7,310
September	750	6,493	67	7,310	473	1	7,784	520	359	859	6,925
October	661	6,077	187	6,925	2,664	1	9,590	510	274	784	8,806
November	581	7,513	712	8,806	2,750	1	11,557	509	462	971	10,586
December	583	9,114	889	10,586	1,248	0	11,834	436	663	1,099	10,735
January	640	9,197	898	10,735	273	1	11,009	540	640	1,236	9,773
February	674	7,840	1,259	9,773	37	1	9,811	492	759	1,251	8,560
March	742	6,625	1,193	8,560	0	0	8,560	506	947	1,453	7,107
April	772	5,211	1,124	7,107	0	0	7,107	478	763	1,241	5,866
May	799	4,125	942	5,866	0	1	5,867	528	644	1,172	4,695
June	798	3,089	808	4,695	0	2	4,697	443	449	892	3,805
July	856	2,304	645	3,805	0	3	3,808	414	388	802	3,006
Season	792	6,978	167	7,937	7,771	12	15,720	9/ 5,926	6,786	12,712	2,775
1984/85											
August	830	1,839	106	2,775	490	2	3,267	510	479	989	2,278
September	747	1,550	-19	2,264	561	1	2,840	426	280	706	2,134
October	673	1,489	-28	2,102	3,250	1	5,385	509	307	816	4,569
November	567	3,521	481	4,432	4,810	0	9,379	436	507	943	8,436
December	586	7,836	14	8,144	2,173	0	10,609	375	660	1,035	9,574
January	715	7,915	944	9,212	1,283	2	10,859	485	836	1,321	9,538
February	851	7,780	907	9,135	228	3	9,769	438	811	1,249	8,520
March	916	6,853	751	8,110		5	8,525	457	649	1,106	7,419
April	854	5,918	647	7,009		6	7,425	486	578	1,064	6,361
May	834	5,035	492	5,951		1	6,362	524	453	977	5,385
June 8/	842	4,199	344	4,975		2	5,387	440	375	815	4,572
July 8/	769	3,739	64	4,162		0	4,572	459	268	727	3,845
Season	830	1,839	1,016	2,775	12,795	23	15,593	5,545	6,203	11,748	4,102
1985/86											
August 8/	768	3,070	264	4,102	632	1	4,735	525	207	732	4,003
September 8/	685	2,960	358	4,003	1,809	0	5,812	493	200	693	5,119
October 8/	630	3,903	586	5,119							

1/Compiled from Bureau of the Census data and adjusted to a 480-pound net weight basis. 2/August stocks adjusted to an August 1 basis, excluding preseason ginnings. 3/August data include preseason ginnings. 4/Adjusted to a calendar month. 5/Supply less disappearance. End of season stocks adjusted by Bureau of the Census data. Differences primarily reflect varying bale weights. 6/Adjusted to 480-pound bales by use of monthly conversion factors for mill stocks. 7/Primarily cotton on farms and in transit. Estimated by subtracting public storage and mill stocks from total stocks. 8/Preliminary and estimated. 9/ Adjusted total.

Table 5.—Cotton: Supply and use; U.S., major importers, major exporters, and world

Year beginning August 1	United States	World less United States				World 3/
		Major importers 1/	Major exporters 2/	Other	Total	
Million 480-pound bales						
1984/85						
Supply						
Beginning stocks	2.8	4.4	11.7	5.8	21.9	24.6
Production	13.0	1.0	53.7	19.5	74.2	87.2
Imports	4/	15.4	1.2	3.6	20.2	20.2
Use						
Mill use	5.5	16.0	31.4	16.2	63.6	69.1
Exports	6.2	.6	9.2	4.5	14.3	20.5
Ending stocks	4.1	4.3	25.9	27.9	38.1	42.2
1985/86						
Supply						
Beginning stocks	4.1	4.3	25.9	7.9	38.1	42.2
Production	13.9	1.2	48.7	17.9	67.8	81.7
Imports	4/	15.1	1.0	3.4	19.5	19.5
Use						
Mill use	5.8	15.8	33.7	16.6	66.1	71.9
Exports	3.5	.6	10.4	5.2	16.2	19.6
Ending stocks	8.9	4.1	31.2	7.5	42.8	51.6

1/Includes Western Europe, Eastern Europe, Japan, Korea, Taiwan, and Hong Kong. 2/Includes the USSR, Pakistan, Egypt, Sudan, Turkey, Central America, Australia, and Mexico. 3/Total trade of individual countries, including intra-regional trade. World imports and exports may not balance due to cotton in transit and reporting discrepancies in some countries. 4/Less than 50,000 bales. 5/Preliminary and estimated.

Totals may not add and stocks may not balance due to rounding, a small quantity of cotton destroyed, and differences unaccounted.

Note: Australia and China are now classified as major exporters.

Table 6.--Index of prices of selected cotton growths and qualities, and price per pound of U.S. M-1-3/32" c.i.f Northern Europe

Month	1983		1984		1985	
	Index 1/	U.S. M 1-3/32"	Index 1/	U.S. M 1-3/32"	Index 1/	U.S. M 1-3/32"
Cents						
January	71.88	74.25	87.58	85.50	71.40	74.75
February	74.32	75.50	87.44	85.38	69.21	72.94
March	78.89	81.35	88.43	88.20	67.34	73.70
April	80.23	80.75	88.99	89.63	66.26	75.94
May	81.96	80.63	88.88	91.25	65.07	74.80
June	86.01	85.05	83.71	83.00	62.85	72.44
July	88.44	88.06	78.99	78.94	61.10	70.38
August	90.80	88.94	75.52	75.85	56.97	68.20
September	89.85	88.15	73.16	74.00	53.43	67.94
October	88.11	88.06	73.63	74.69	49.01	68.56
November	89.13	88.81	72.64	73.25		
December	89.36	89.25	71.98	74.00		
Average	84.08	84.07	80.91	81.14		

1/ Outlook "A" index of Liverpool Cotton Services. Average of the 5 lowest priced of 10 selected growths.

Cotton Outlook, Liverpool Cotton Services.

Table 7. --Cotton: Strict low middling, spot prices in designated U.S. markets, loan rates, and prices received by farmers for upland cotton

Year beginning August 1	Average spot market prices per pound (net weight) 1/						Price per pound received by farmers for upland cotton (net weight) 2/
	15/16 inch	1 inch	1-1/32 inches	1-1/16 inches	1-3/32 inches	1-1/8 inches	
Cents							
1982/83	52.39	56.41	61.17	63.08	63.47	64.63	3/ 59.1
1983/84	62.54	66.32	70.71	73.11	73.55	75.37	3/ 66.0
1984/85							
August	55.91	59.15	60.78	63.01	63.45	64.49	67.3
September	54.18	57.39	58.93	61.16	61.60	62.41	65.6
October	54.48	58.21	58.95	61.15	60.71	61.10	64.4
November	54.42	57.37	58.29	60.43	59.99	59.68	62.0
December	53.40	56.33	58.29	60.45	60.01	60.51	56.1
January	51.66	55.16	57.81	59.96	59.52	60.57	52.2
February	49.93	53.50	56.39	58.65	58.21	58.89	49.5
March	50.26	53.98	57.92	60.18	59.74	60.31	56.1
April	51.68	56.09	59.45	61.71	61.27	61.40	57.0
May	50.75	54.64	57.85	60.11	59.67	58.85	57.5
June	50.47	54.38	57.56	59.76	59.32	59.06	60.3
July	51.51	55.51	57.40	59.55	59.99	58.66	60.5
Season	52.39	55.98	58.30	60.51	60.29	60.49	3/ 57.5
Loan rate 4/	45.20	49.15	52.70	55.00	55.40	55.60	
1985/86							
August	49.66	52.88	55.75	57.87	57.40	57.13	56.0
September	48.62	51.96	54.27	56.38	55.89	55.90	55.0
Loan rate 4/	49.08	52.68	55.03	57.28	57.68	57.88	

1/Spot market loan rates and prices are for cotton with micronaire readings of 3.5 through 4.9.

2/Excludes domestic allotment payments, price support and diversion payments. 3/Weighted average. 4/SLM 1-1/16" average location.

Agricultural Stabilization and Conservation Service, Agricultural Marketing Service, and Statistical Reporting Service.

Table 8. --Fiber prices: Landed Group B mill points, cotton prices, and manmade staple fiber prices at f.o.b. producing plants, actual and estimated raw fiber equivalent

Calendar year	Cotton 1/		Rayon 2/		Polyester 3/		Price ratios 5/	
	Actual	Raw fiber equivalent 4/	Actual	Raw fiber equivalent 4/	Actual	Raw fiber equivalent 4/	Cotton/rayon	Cotton/polyester
Cents per pound								
1980	88	98	74	78	74	77	1.26	1.27
1981	80	89	86	90	85	88	.99	1.01
1982	68	76	84	88	77	80	.86	.95
1983	78	86	80	84	73	76	1.02	1.13
1984								
January	79	88	84	88	80	83	1.00	1.06
February	79	88	84	88	81	84	1.00	1.05
March	83	92	84	88	81	84	1.05	1.10
April	83	93	84	88	81	84	1.06	1.11
May	86	96	84	88	81	84	1.09	1.14
June	84	93	84	88	81	84	1.06	1.11
July	75	83	84	88	80	83	.94	1.00
August	70	78	84	88	79	82	.89	.95
September	68	76	84	88	78	81	.86	.94
October	67	74	84	88	76	79	.84	.94
November	68	76	84	88	74	77	.86	.99
December	68	76	84	88	74	77	.86	.99
Average	76	84	84	88	79	82	.95	1.02
1985								
January	69	76	82	85	72	75	.89	1.01
February	67	74	81	84	68	71	.88	1.04
March	68	75	81	84	66	69	.89	1.09
April	70	78	78	81	66	69	.96	1.13
May	67	75	78	81	67	70	.93	1.07
June	66	73	78	81	67	70	.90	1.04
July	65	72	78	81	66	69	.89	1.04
August	63	70	78	81	65	68	.86	1.03
September	62	69	78	81	65	68	.85	1.01

1/SLM-1-1/16" at Group B Mill points, net weight. 2/1.5 and 3.0 denier, regular rayon staple. 3/Reported average market price for 1.5 denier polyester staple for cotton blending. 4/Actual prices converted to estimated raw fiber equivalent as follows: cotton, divided by 0.90, rayon and polyester, divided by 0.96. 5/ Raw fiber equivalent.

Agricultural Marketing Service and Trade reports.

Table 9.—Upland cotton and manmade staple fibers: Mill consumption on cotton-system spinning spindles

Year beginning August 1	Cotton	Manmade			Total fibers	Cotton's share of total
		Rayon and acetate	Non-cellulosic	Total		
		1,000 pounds				Percent
1982/83	2,619,556	217,911	1,477,847	1,695,758	4,315,314	60.7
1983/84	2,791,905	259,441	1,591,056	1,850,497	4,642,402	60.1
1984/85						
August	215,093	19,482	113,554	133,036	348,129	61.8
September	255,838	24,496	135,961	160,457	416,295	61.5
October	214,998	20,420	112,104	132,524	347,522	61.9
November	195,959	17,443	98,783	116,226	312,185	62.8
December	212,683	18,531	106,674	125,205	337,888	62.9
January	200,751	16,888	100,994	117,882	318,633	63.0
February	210,378	17,625	107,855	125,480	335,858	62.6
March	261,223	22,481	128,978	151,459	412,682	63.3
April	210,965	16,233	104,734	120,967	331,932	63.6
May	220,683	18,634	105,506	124,140	344,823	64.0
June	263,980	22,361	130,821	153,182	417,162	63.3
July	185,762	16,603	90,631	107,234	292,996	63.4
Season	2,648,313	231,197	1,336,595	1,567,792	4,216,105	62.8
1985/86						
August	230,445	19,137	107,370	126,507	356,952	64.6
September 1/	281,810	24,244	135,006	159,250	441,060	63.9

1/ Preliminary and estimated.

Compiled from reports of the Bureau of the Census.

Table 10.—Cotton and manmade fibers: Daily rate of mill consumption on cotton-system spinning spindles, unadjusted and seasonally adjusted

Month	Upland cotton				Manmade staple							
	1984/85		1985/86 1/		1984/85				1985/86 1/			
	Unad-justed	Ad-justed	Unad-justed	Ad-justed	Rayon and acetate		Non-cellulosic 2/		Rayon and acetate		Non-cellulosic 2/	
					Unad-justed	Ad-justed	Unad-justed	Ad-justed	Unad-justed	Ad-justed	Unad-justed	Ad-justed
	480-lb. bales				1,000 pounds							
August	22,204	21,536	24,074	23,350	974	966	5,678	5,550	957	949	5,369	5,248
September	21,125	20,895			980	988	5,438	5,406	970	978	5,400	5,368
October	22,168	20,718			1,021	971	5,605	5,293				
November	20,205	19,848			872	801	4,939	4,919				
December	17,571	20,337			741	846	4,267	4,927				
January	20,754	20,608			844	835	5,050	4,970				
February	21,731	20,755			881	858	5,393	5,059				
March	21,599	20,768			899	857	5,159	4,918				
April	21,785	21,274			812	789	5,237	5,155				
May	22,792	21,811			932	893	5,275	5,151				
June	21,818	22,038			894	879	5,233	5,217				
July	19,187	22,389			830	1,029	4,532	5,221				

1/Preliminary. 2/Includes nylon, acrylic and modacrylic, polyester, and other manmade fibers.

Compiled from reports of the Bureau of the Census.

Table 11--Estimated U.S. mill consumption of raw cotton by major type of textile product

Item	1982		1983				1984					1985	
	Annual	1 Q	2 Q	3 Q	4 Q	Annual	1 Q	2 Q	3 Q	4 Q	Annual	1 Q	2 Q
1,000 bales 2/													
All or most cotton													
Duck	102	33	30	26	28	117	30	32	33	36	131	31	33
Sheeting	344	88	91	90	97	366	94	89	85	88	354	91	85
Print cloth	253	74	68	69	71	282	75	74	67	75	291	77	69
Denim	965	307	317	301	299	1,224	301	291	244	212	1,048	277	335
Toweling	701	178	174	178	166	696	157	127	147	128	559	33	29
Blanketing	80	23	24	24	22	93	28	30	30	29	117	34	41
Corduroy	269	66	70	65	63	264	62	72	54	46	234	56	47
Misc. 3/	406	101	117	107	101	426	109	100	88	80	377	75	93
Total	3,120	870	891	860	847	3,468	856	815	746	694	3,111	674	732
Polyester/cotton fab:													
Batiste	39	10	8	8	9	35	9	8	7	6	30	8	7
Bed sheeting	302	85	90	86	89	350	83	87	79	83	332	83	76
Broadcloth	39	11	12	11	13	47	9	9	11	10	39	8	6
Twills	273	78	78	65	72	293	88	89	77	67	321	62	56
Oxfords	17	5	6	9	11	31	10	10	11	12	43	12	13
Poplins	82	20	20	20	19	79	23	23	21	21	88	20	17
Sateens	7	1	2	2	2	7	2	2	3	3	10	3	3
Yarn dyed fabric	71	15	17	19	22	73	19	17	14	15	65	16	15
Print cloth	205	56	55	58	58	227	59	60	55	54	228	58	60
Other	98	20	24	28	32	104	27	26	22	19	94	19	19
Total	1,133	301	312	306	327	1,246	329	331	300	290	1,250	289	272
Other textile products													
Knit fabric	1,425	408	406	400	408	1,622	406	404	398	407	1,615	406	404
Narrow	62	18	17	16	18	69	20	19	14	19	72	20	18
Thread	112	32	30	26	31	119	29	27	25	26	107	27	25
Rope	48	12	13	11	12	48	13	12	10	10	45	10	10
Total	1,647	470	466	453	469	1,858	468	462	447	462	1,839	463	457
Grand total	5,900	1,641	1,669	1,619	1,643	6,572	1,653	1,608	1,493	1,446	6,200	1,426	1,461
Actual mill consumption	5,183	1,429	1,485	1,481	1,455	5,850	1,538	1,449	1,352	1,320	5,659	1,380	1,449
Residual	+717	+212	+184	+138	+188	+722	+115	+159	+141	+126	+541	+46	+12

1/ Preliminary. 2/480-pounds, net weight. 3/ Includes fine cotton fabrics

Based on data from Bureau of the Census reports and National Cotton Council.

Table 12--Manmade fiber production and capacity 1/

Fiber	1983		1984				1985					1986	Projected 1987 capacity	Average annual change 1985-87	
	Year	1Q	2Q	3Q	4Q	Year	1Q	2Q	3Q	4Q	Year				
	Million pounds											Percent			
Grand total 2/ 4/ all fibers															
Capacity	11,879	2,977	3,013	3,016	3,022	12,028	2,601	2,607	2,603	2,613	10,424	10,560	10,791	1.8	
Production	9,359	2,416	2,427	2,286	2,332	9,461	2,020	2,058	2,021						
Percent	79	81	81	76	77	79	78	79	78						
Total staple															
Capacity	5,322	1,349	1,362	1,368	1,375	5,454	1,388	1,389	1,380	1,375	5,532	5,581	5,667	1.2	
Production	4,347	1,116	1,132	1,047	1,042	4,337	1,031	1,031	999						
Percent	82	83	83	77	76	80	74	74	72						
Total filament 2/ 4/															
Capacity	6,557	1,628	1,651	1,648	1,647	6,574	1,213	1,218	1,223	1,238	4,892	4,979	5,124	2.3	
Production	5,012	1,300	1,295	1,239	1,290	5,124	989	1,027	1,022						
Percent	76	80	78	75	78	78	82	84	84						
Polyester total															
Capacity	4,278	1,063	1,073	1,073	1,072	4,281	1,067	1,060	1,060	1,068	4,255	4,315	4,379	1.5	
Production	3,544	881	871	811	829	3,392	837	852	814						
Percent	83	83	81	76	77	79	78	80	77						
Staple															
Capacity	2,708	686	696	696	696	2,774	697	696	697	697	2,787	2,827	2,889	1.8	
Production	2,184	562	574	531	525	2,192	521	512	469						
Percent	81	82	82	76	75	79	75	74	67						
Filament															
Capacity	1,570	377	377	377	376	1,507	370	364	363	371	1,468	1,488	1,490	0.7	
Production	1,360	319	297	280	304	1,200	316	341	345						
Percent	87	85	79	74	81	80	85	93	95						
Nylon total															
Capacity	2,877	721	726	724	722	2,893	727	732	735	739	2,933	3,005	3,055	2.1	
Production	2,418	622	625	576	589	2,412	562	560	602						
Percent	84	86	86	80	82	83	77	77	82						
Staple															
Capacity	997	258	261	262	264	1,045	266	268	269	271	1,074	1,126	1,132	2.7	
Production	926	221	217	193	204	835	192	201	216						
Percent	93	86	83	74	77	80	72	75	80						
Filament															
Capacity	1,880	463	465	462	458	1,848	461	464	466	468	1,859	1,879	1,923	1.7	
Production	1,492	401	408	383	385	1,577	370	359	386						
Percent	79	87	88	83	84	85	80	77	83						
Olefin total															
Capacity	1,351	350	355	363	370	1,438	402	424	428	433	1,687	1,747	1,846	4.7	
Production	906	235	246	236	280	997	314	332	313						
Percent	67	67	69	65	76	69	78	78	73						
Staple															
Capacity	273	73	75	80	84	312	102	109	108	109	428	434	434	0.7	
Production	190	57	62	64	67	250	69	73	75						
Percent	69	78	83	83	80	80	68	67	69						
Filament															
Capacity	1,078	277	280	283	286	1,126	300	315	320	324	1,259	1,313	1,412	5.9	
Production	716	178	184	172	213	747	245	267	238						
Percent	66	64	66	61	74	66	82	85	74						
Acrylic staple															
Capacity	830	204	201	202	202	809	195	187	178	169	729	680	698	-2.2	
Production	671	172	175	165	159	671	163	159	152						
Percent	81	84	87	82	79	83	84	85	85						
Non-cellulosic non-glass total 2/															
Capacity	9,366	2,345	2,363	2,369	2,374	9,451	2,398	2,411	2,408	2,417	9,634	9,777	10,008	1.9	
Production	7,561	1,916	1,922	1,793	1,863	7,494	1,881	1,917	1,884						
Percent	81	82	81	76	78	79	78	79	78						
Staple															
Capacity	4,808	1,221	1,233	1,240	1,246	4,940	1,260	1,260	1,252	1,246	5,018	5,067	5,153	1.3	
Production	3,971	1,012	1,028	953	955	3,948	945	945	912						
Percent	82	83	83	77	77	80	75	74	73						
Filament 2/															
Capacity	4,558	1,124	1,130	1,129	1,128	4,511	1,138	1,138	1,156	1,171	4,616	4,710	4,855	2.6	
Production	3,590	904	894	840	908	3,546	936	936	974						
Percent	79	80	79	74	80	79	82	82	84						
Rayon staple															
Capacity	510	127	128	127	128	510	128	128	128	129	514	514	514	--	
Production	375	104	104	94	87	389	86	86	87						
Percent	74	82	81	74	68	76	67	67	68						
Acetate filament 4/															
Capacity	299	67	67	67	67	268	75	75	67	67	276	269	269	-1.2	
Production	228	55	56	50	37	198	53	53	48						
Percent	76	82	84	75	55	74	71	71	72						
Glass filament 5/															
Capacity	1,637	421	438	437	436	1,732									
Production	1,167	333	337	343	337	1,350									
Percent	72	79	77	78	77	78									

1/ Capacity data as of May 1985. 2/ Includes estimated spandex capacity and production not shown. 3/ Includes acetate staple capacity and production beginning in 1985. 4/ Includes rayon filament capacity and production beginning in 1985. 5/ Does not include capacity and production of glass filament beginning in 1985 due to unavailability of production data.

Compiled from Textile Organon.

Table 13--Domestic shipments of manmade fibers by major category 1/

Fiber type	1982				1983				1984				1985		
	1 Q	2 Q	3 Q	4 Q	1 Q	2 Q	3 Q	4 Q	1 Q	2 Q	3 Q	4 Q	1 Q	2 Q	3 Q
Million pounds															
Woven products															
Total	480.5	491.0	476.8	503.9	538.0	624.3	604.8	618.1	586.7	570.4	544.1	531.6	475.5	487.4	NA
Polyester	318.1	322.1	318.6	337.3	355.5	420.3	401.6	421.4	387.4	374.7	362.5	350.9	320.7	327.8	NA
Rayon	38.2	34.4	35.1	37.8	40.8	45.3	47.0	49.0	48.9	42.8	43.2	42.8	39.0	39.4	NA
Olefin	49.3	53.6	48.8	49.0	57.5	65.7	66.8	61.5	60.6	63.4	56.6	61.7	64.8	71.0	NA
Nylon	41.3	43.5	39.8	44.2	43.7	48.1	43.0	43.1	43.6	45.8	42.0	41.7	36.1	32.2	NA
Acetate	23.2	24.0	21.9	22.6	25.1	29.4	30.1	30.7	29.9	30.8	27.5	21.3	NA	NA	NA
Acrylic	10.4	13.4	12.6	13.0	15.4	15.5	16.3	12.4	16.3	12.1	12.3	13.2	14.9	17.0	NA
Knit products															
Total	318.7	332.6	318.8	315.4	373.0	395.8	373.6	374.3	345.9	333.3	291.5	282.3	280.7	313.4	NA
Polyester	151.4	151.6	150.7	150.5	191.1	196.6	184.6	192.4	166.0	154.5	131.7	139.2	137.9	162.2	NA
Nylon	64.6	61.3	63.0	64.2	71.1	76.1	72.9	75.6	73.1	64.5	62.5	61.1	65.1	67.2	NA
Acrylic	79.1	95.6	85.1	83.3	89.6	96.5	93.4	87.3	86.4	92.1	79.5	65.3	76.1	87.2	NA
Acetate	20.6	21.2	17.1	14.4	18.7	24.1	20.7	17.7	18.5	20.8	15.7	14.5	NA	NA	NA
Rayon	3.0	2.9	2.9	3.0	2.5	2.5	2.0	1.3	1.9	1.4	2.1	2.2	1.6	1.3	NA
Carpets															
Total	359.4	412.9	439.2	408.9	451.5	574.1	560.3	542.7	521.3	543.8	517.2	549.0	538.5	622.4	NA
Nylon	248.7	291.5	319.8	293.9	319.2	417.1	412.3	401.2	385.7	393.8	370.5	371.2	340.4	397.5	423.0
Olefin	86.1	89.2	91.7	84.5	97.6	117.1	114.8	110.1	104.2	114.4	114.6	145.2	167.3	190.9	NA
Polyester	24.6	32.0	27.6	30.5	34.7	39.8	33.2	31.3	31.2	35.6	32.0	32.6	30.7	33.9	30.3
Acrylic	---	---	---	---	---	---	---	---	---	---	---	---	---	---	NA
Rayon	---	.1	---	---	---	0.1	---	0.1	0.2	---	0.1	---	0.1	0.1	NA

1/ Filament plus staple.
NA = not available.

Compiled from Textile Organon.

Table 14-- Reported spot prices of raw material for manmade fibers

Product	1985						
	April	May	June	July	August	September	October
Virgin Xylene 1/	1.05-1.22	1.18-1.25	1.24-1.25	1.24-1.25	1.23-1.24	1.15-1.20	1.12-1.15
Cyclohexane 1/	1.277-1.318	N.A.	1.532	1.492-1.532	N.A.	N.A.	1.319-1.451
Propylene							
Polymer grade 2/	0.17	0.153-0.155	N.A.	0.148-0.15	0.148-0.15	0.148-0.15	0.153-0.16
Acrylonitrile 2/	N.A.	N.A.	0.38-.41	N.A.	N.A.	N.A.	N.A.

1/ Dollars per gallon
2/ Dollars per pound

Table 15. --Raw cotton equivalent of U.S. textile imports, 1981-85

Year	Yarn 1/	Fabric 2/	Household articles 3/ 5/	Wearing apparel 4/	Floor covering	Total weight	Bales 6/
1,000 pounds							
1981	24,083	355,000	76,279	503,977	2,561	961,900	2,004.0
1982	28,508	270,525	91,831	510,519	2,408	903,791	1,882.9
1983	42,131	352,253	110,786	622,806	7,526	1,135,502	2,365.6
1984							
January	6,515	42,741	13,881	59,643	1,137	123,917	258.2
February	6,623	41,237	15,147	67,937	1,125	132,069	275.1
March	5,940	44,636	13,840	69,225	1,564	135,205	281.7
April	6,380	42,438	15,051	57,032	1,264	122,165	254.5
May	5,482	34,251	12,057	55,738	907	108,435	225.9
June	4,124	45,208	11,358	62,371	749	123,810	257.9
July	5,691	46,268	16,528	91,099	1,572	161,158	335.7
August	3,722	42,180	13,653	69,069	1,622	130,246	271.3
September	2,931	37,341	12,868	74,390	1,068	128,598	267.9
October	2,623	37,747	14,530	56,100	1,226	112,226	233.8
November	2,071	31,664	11,556	53,724	1,336	100,351	209.1
December	2,604	27,339	12,880	43,393	1,079	87,295	181.9
Total	54,706	473,050	163,349	759,721	14,649	1,465,475	3,053.1
1985							
January	2,736	28,948	13,096	64,155	1,298	110,233	229.7
February	3,844	39,276	13,850	77,672	1,424	136,066	283.5
March	3,460	40,797	15,493	78,696	1,985	140,431	292.6
April	4,446	34,343	12,216	59,262	1,600	111,867	233.1
May	4,118	43,299	14,737	73,248	1,908	137,310	286.1
June	4,016	37,387	13,728	75,584	1,244	131,959	274.9
July	5,251	34,981	13,578	87,450	1,294	142,554	297.0
August	3,961	32,106	12,467	72,363	1,539	122,436	255.1

1/ Includes yarn, sewing thread, crochet, and knitting yarn. 2/ Includes blends (tapestry and upholstery fabrics, tire cord fabrics, cloths in chief value cotton containing other fibers); pile fabrics and mfrs. (velvets, velveteens, corduroys, plushes and chenilles); lace fabric and articles (nets and netting, veils and veilings, edging, embroideries, etc., and lace window curtains). 3/ Includes bed clothes and towels (blankets, quilts, bedspreads, sheets and pillow cases; table damask and mfrs.; household and clothing articles (braids--except hat braids, tubing, labels, lacing, wicking, loom harness, table and bureau covers, polishing and dust cloths, fabric with fast edges, cords, tassels, garters, suspenders and braces covers, corsets and brassieres, etc.); miscellaneous products (belts and belting, fish nets and netting, and coated, filled or waterproof fabrics). 4/ Includes gloves, hosiery, and handkerchiefs; and other wearing apparel (knit and woven underwear and outerwear; collars, cuffs, shirts, coats, vests, robes, pajamas, and ornamented wearing apparel). 5/ Includes quantities in the TSUSA 706 luggage categories. The raw fiber equivalent quantity was 14,091 thousand pounds from 1983, and 18,749 from 1984. For January-August 1985 these quantities were 2,001, 2,096, 2,447, 2,060, 2,225, 1,986, 2,379 and 1,650, respectively. 6/ 1,000 480-pound bales.

Table 16.--Raw cotton equivalent of U.S. textile exports, 1981-84

Year and month	Yarn 1/	Fabric 2/	Household furnishings 3/	Wearing apparel 4/	Industrial products 5/	Total weight	Bales 6/
1,000 pounds							
1981	38,072	134,379	54,407	122,936	17,505	367,299	765.2
1982	30,080	89,476	39,473	80,034	14,277	253,340	527.8
1983	31,224	61,848	42,867	72,070	11,601	219,610	457.5
1984							
January	1,781	5,241	2,995	5,772	1,000	16,789	35.0
February	1,524	4,656	3,091	5,960	695	15,926	33.2
March	1,423	5,377	3,186	7,365	1,093	18,444	38.4
April	1,894	4,851	3,665	5,388	1,073	16,871	35.1
May	1,315	5,790	3,794	6,173	1,620	18,692	38.9
June	1,745	6,542	3,516	6,518	1,708	20,029	41.7
July	1,258	5,480	3,019	5,560	1,253	16,570	34.5
August	1,452	4,961	2,895	5,047	1,339	15,694	32.7
September	2,301	5,447	2,816	5,000	1,115	16,679	34.7
October	2,044	6,305	3,222	5,588	1,615	18,774	39.1
November	2,312	4,639	2,806	5,174	1,308	16,239	33.8
December	1,153	5,473	2,835	4,719	1,195	15,375	32.0
Total	20,202	64,762	37,840	68,264	15,014	206,082	429.3

1/ Includes yarn, sewing thread, crochet, darning and embroidery cotton, twine and cordage.

2/ Includes standard constructions and tire cord (fabrics and tire cloth for export to the Philippines to embroider and otherwise manufacture and return to the U.S.), other tapestry and upholstery fabrics, table damask, pile fabrics and remnants, and knit fabrics. 3/ Includes blankets, spreads, pillow cases, sheets, towels, and other curtains and draperies and house furnishings not elsewhere specified, floor covering and other household and clothing articles (canvas articles and manufactures, braids, narrow fabrics, elastic webbing, waterproof garments and laces and lace articles. 4/ Includes knits, gloves and mitts of woven fabric, underwear and outerwear of woven fabric, handkerchiefs and wearing apparel containing mixed fibers (corsets, brassieres, girdles, garters, armbands, suspenders, neckties and cravats). 5/ Includes rubberized fabrics, bags, and industrial belting. 6/ 480-lb. net weight bales, (1,000 bales).

Table 17. Manmade fiber equivalent of U.S. textile imports, 1981-85

Year	Yarn 1/	Other manu- factures 2/	Fabric 3/	Wearing apparel 4/	Floor covering 5/	Total imports 6/
1,000 pounds						
1981	34,862	56,425	110,923	436,866		639,076
1982	38,160	171,973	111,652	485,311		807,1096
1983	58,008	269,018	146,064	574,387	22,013	1,069,490
1984						
January	6,374	25,970	14,410	51,309	2,279	100,342
February	6,723	32,272	13,801	63,143	2,921	118,860
March	6,739	32,462	14,850	53,158	3,000	110,209
April	5,496	34,686	16,716	50,854	2,753	110,505
May	5,625	34,625	14,793	56,106	3,199	114,348
June	5,148	39,280	15,335	59,784	2,901	122,448
July	8,062	49,827	19,989	88,893	2,699	169,470
August	6,007	32,794	18,119	67,932	2,869	127,721
September	8,232	25,151	16,012	62,699	2,707	114,801
October	3,537	22,149	14,817	54,779	3,511	98,793
November	3,806	20,741	11,481	41,984	2,501	80,513
December	6,303	17,874	10,777	36,827	2,776	74,557
Total	72,052	367,831	181,100	687,468	34,116	1,342,567
1985						
January	6,141	9,369	19,630	50,393	3,243	88,776
February	4,563	9,999	17,992	63,777	2,832	99,163
March	6,647	11,643	21,302	59,027	4,093	102,712
April	5,623	9,072	11,845	48,092	4,152	78,784
May	9,002	11,989	16,511	67,838	3,598	108,938
June	8,016	10,199	16,937	73,103	3,287	111,542
July	7,013	10,161	15,095	88,024	2,425	122,718
August	5,973	9,654	13,581	73,841	3,748	106,797

1/ Includes sliver tops and roving, yarns spun, sewing thread and handwork yarns, and yarns thrown or piled (not included in these data are quantities of imported textured noncellulosic yarn not over 20 turns per inch). 2/ Includes rayon tire fabric including cord fabrics, and other manufactures (not elsewhere classified). 3/ Includes woven fabric, handkerchiefs, knit fabric, lace and lace articles (veils and veilings, nets and nettings, lace window curtains, edging, insertings, flouncings, allovers, etc., embroideries, and ornamented wearing apparel), narrow fabrics (braids, except hat braids, fabrics with fast edges not over 12 inches wide, garters, suspenders, braces, tubing, cords, tassels, gill nets, webs, seines, and other nets for fishing). 4 Includes knit (gloves, hosiery, underwear, outerwear, and hats), and not knit. 5/ Not available prior to January 1983. 6/ Includes quantities in the TSUSA 706 luggage categories. The raw fiber equivalent quantity for 1983, was 180,553 thousand pounds; and for January-August 1984, 7,564, 17,130, 13,453, 11,770, 13,277, 12,438, 14,268, and 12,183 thousand pounds respectively.

Table 18.--- Manmade fiber equivalent of U.S. textile exports, 1981-84

Year	Yarn 1/	Fabric 2/	Apparel 3/	Other manu- factures 4/	Floor covering 5/	Total
1,000 pounds						
1981	62,261	256,361	120,649	198,460		637,731
1982	40,169	174,828	75,234	148,324		438,555
1983	35,286	148,620	70,838	91,426	111,539	457,709
1984						
January	2,538	10,909	5,793	7,861	7,977	35,078
February	3,181	10,961	6,738	7,435	8,732	37,047
March	3,786	12,164	7,889	9,339	7,030	40,208
April	2,495	11,311	6,459	9,755	8,480	38,500
May	2,999	12,917	6,501	11,826	8,544	42,787
June	3,188	14,784	7,365	11,885	9,307	46,529
July	2,023	12,703	6,431	11,699	7,773	40,629
August	3,570	13,970	7,298	13,151	6,029	44,018
September	4,306	14,409	6,068	11,703	7,448	43,934
October	3,880	14,577	7,022	12,159	6,870	44,508
November	3,463	11,747	6,350	10,213	5,165	36,938
December	2,899	12,144	5,531	8,744	8,374	37,692
Total	38,328	152,596	79,445	125,770	91,729	487,868

1/ Includes sliver tops and roving (products made from waste); spun yarns, sewing thread and handwork, and yarns. 2/ Includes woven fabric (pile and tufted fabric such as corduroy); knit or crocheted; and narrow fabrics (ribbons, trimmings, and braids, except hat braids). 3/ Hosiery, underwear, and nightwear, and outerwear. 4/ Tire cord and tire cord fabric, house furnishings, and other manufactures not elsewhere classified. 5/ Not available prior to January 1983.

Table 19.--Raw wool content of U.S. textile imports 1981-85 1/

Year	Wastes, noils, tops, and yarns 2/	Woven fabrics 3/	Other manu- factures 4/	Wearing apparel 5/	Carpets and rugs	Total
1,000 pounds						
1981	25,578	27,783	1,302	40,887	18,076	113,626
1982	19,448	25,633	1,154	46,363	19,642	112,240
1983	26,327	28,130	1,690	58,805	34,829	149,781
1984						
January	2,408	2,425	188	3,435	4,263	12,719
February	2,566	2,929	226	4,078	4,061	13,860
March	3,934	3,182	215	2,889	5,074	15,294
April	3,569	4,190	112	2,770	3,914	14,555
May	4,049	4,073	166	4,174	3,467	15,929
June	2,767	4,247	173	6,292	3,033	16,512
July	3,921	5,145	229	12,730	4,769	26,794
August	3,276	4,368	217	11,761	3,737	23,359
September	2,985	3,089	273	12,335	5,001	23,683
October	2,773	2,121	210	9,889	4,549	19,552
November	2,264	1,690	294	7,126	4,514	15,888
December	2,042	1,609	254	3,442	4,673	12,020
Total	36,554	39,068	2,557	80,931	51,055	210,165
1985						
January	2,285	2,092	107	5,730	4,941	15,155
February	2,063	2,412	155	5,843	4,956	15,429
March	2,666	3,900	142	5,865	5,808	18,338
April	2,374	3,676	105	5,628	5,305	17,088
May	2,630	4,923	138	9,564	4,916	22,171
June	2,578	4,822	129	12,766	4,529	24,824
July	2,663	3,898	162	19,704	4,005	30,432
August	2,237	3,128	184	18,632	4,484	28,665

1/ Includes manufactures of mohair, alpaca, and other wool-like specialty hair. 2/ Includes advanced wool, but not rags. 3/ Includes pile fabric and manufactures, tapestry, and upholstery goods and press and billiard cloths. 4/ Includes other manufactures (knit fabrics in the piece and miscellaneous manufactures not elsewhere specified), and wool blankets (carriage and automobile robes, steamer rugs, etc.). 5/ Includes knit and other than knit but not rags.

Compiled from reports of the Bureau of the Census.

Table 20.--Raw wool content of U.S. textile exports, 1981-84 1/

Year	Wastes, noils, tops, and yarns 2/	Fabrics 3/	Other manu- factures 4/	Wearing apparel 5/	Carpets and rugs	Total
1,000 pounds						
1981	4,172	1,863	2,111	3,976	201	12,323
1982	6,015	1,404	1,455	2,893	180	11,947
1983	5,880	1,305	1,279	2,975	140	11,579
1984						
January	858	126	92	158	5	1,239
February	815	89	99	173	12	1,188
March	659	83	126	268	13	1,149
April	359	94	89	382	7	931
May	301	158	202	165	15	841
June	370	139	116	124	6	755
July	266	205	140	136	19	766
August	340	84	365	300	9	1,098
September	487	257	284	217	7	1,252
October	332	108	171	172	8	791
November	363	139	158	286	12	958
December	264	159	124	497	16	1,060
Total	5,414	1,641	1,966	2,878	129	12,028

1/ Includes manufactures of mohair, alpaca, and other wool-like specialty hair. 2/ Includes advanced wool, but not rags. 3/ Includes woven and knit fabrics. 4/ Includes other manufactures, felts, and wool blankets; Census Bureau's Schedule B classification designated manufactures, n.e.c., not including rags. 5/ Includes knit and other than knit.

Compiled from reports of the Bureau of the Census.

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