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PRICES OF APPAREL WOOL

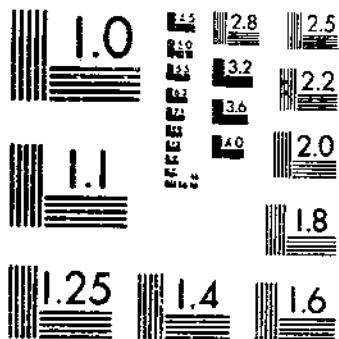
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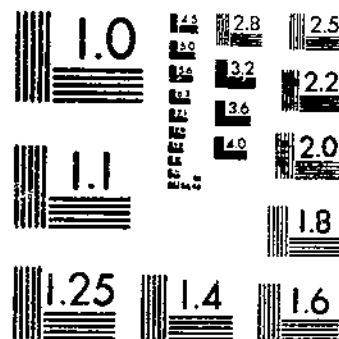
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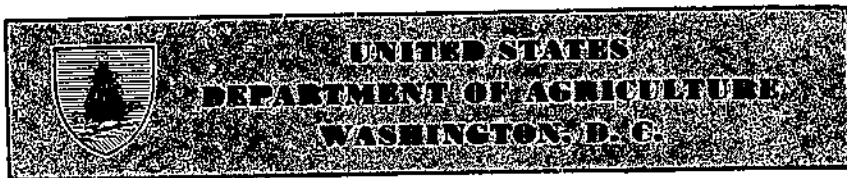
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Prices of Apparel Wool¹

By ALBERT M. HERMIE, *Agricultural Economic Statistician*
Bureau of Agricultural Economics

CONTENTS

	Page		Page
Summary and conclusions.....	1	Analysis of factors affecting apparel wool prices—Con.	
Objective of study.....	3	Relation between prices in domestic and foreign markets.....	32
Nature and uses of commodity.....	3	Grade and staple differentials at Boston.....	37
Apparel and carpet wool.....	3	Relation between farm price and Boston market prices.....	41
Grading of apparel wool.....	4	Interstate variation in average price received by domestic growers for shorn wool.....	42
Geographic distribution.....	5	Marketing and manufacturing margins for wool textiles.....	46
Marketing of wool.....	8	Literature cited.....	48
Uses of apparel wool.....	10		
Structure of price-making forces.....	12		
Supply of apparel wool.....	12		
Demand for apparel wool.....	18		
Analysis of factors affecting apparel wool prices.....	28		
Statistical analysis of factors affecting world price of apparel wool.....	28		

SUMMARY AND CONCLUSIONS

The United States imports a substantial part of its wool requirements. Therefore, the price level of wool in the United States is determined, to a considerable extent, by world conditions of supply and demand.

An analysis covering the period 1921-38 indicated that an increase of 1 percent in world production of apparel wool was associated on the average with a decrease of 3 to 4 percent in the world price. An increase of 1 percent in total income of the principal consuming countries was associated with an increase of 1 percent in the world price of wool. These relationships have been distorted by the unusual circumstances of the war and postwar periods, but they still represent our best estimates of the normal effects of world supply and demand upon wool prices.

Production of wool in individual countries may change rather sharply, but year-to-year changes in world production are relatively

¹ Submitted for publication May 1951. The research on which this report is based was made possible by the Research and Marketing Act of 1946

small. Short-term changes may result from unfavorable weather conditions in many localities, or disease, or growers' decisions based on market expectations. Possible alternative uses of productive resources and the length of the production period are other considerations that enter into growers' decisions. Moreover, as wool (particularly crossbred wool) and meat are joint products of the sheep enterprise, both quantitative and qualitative changes in the production of wool may occur as a byproduct of decisions regarding the production of meat. As production cannot respond quickly to changes in price, the price of wool is greatly influenced by short-term changes in demand.

Demand for raw wool is derived from consumer demand for the various apparel, household, and other finished wool products. Consumer demand for wool goods varies from country to country because of differences in real income, climate, custom, and other factors. In the United States, demand varies from year to year with changes in income and with changes in fashion. During a period of years, demand for wool in this country has been influenced by improvements in heating and transportation facilities and by the development and consumer acceptance of synthetic fibers.

Consumer expenditure for clothing in the United States was found to be closely associated with disposable income. As most items of clothing are fairly durable and individuals are equipped with smaller or larger stocks, expenditure for clothing may be sharply contracted or expanded in any given year, to meet the current situation with respect to income and to other needs.

Although consumer expenditure for clothing varies directly with consumer purchasing power, only a small part of the year-to-year variation in mill consumption of apparel wool, as well as of all textile fibers, in the United States was found to be associated with year-to-year changes in disposable income, textile prices, and trend. A partial explanation probably lies in the fact that mill consumption reflects anticipated future, rather than current, consumer demand for textile products. Because of the many time-consuming processes that characterize the wool textile and apparel industries, there is a considerable space between the time the raw wool is put into process and the time the manufactured goods become available at retail. As the industries are not integrated, purchases by retailers must be preceded by a series of purchases and sales at the preceding stages of production and distribution. Purchasers are guided in the timing and volume of their buying by advance commitments of their customers and by their expectations as to price trends in their raw material markets.

As the greater part of the product of the industry consists of so-called style lines, the styling of which is determined at the early stages of manufacture, purchases must be made well in advance of actual need. Contraction and expansion of inventories resulting from errors of anticipation may be largely responsible for the extreme and somewhat erratic fluctuations in consumption by mills, and they are an important factor in the demand for raw wool.

OBJECTIVE OF STUDY

The economic position of the apparel-wool industry has long been of national concern. A study having as its objective the analysis of supply-demand-price relationships of apparel wool has been carried on in the Bureau of Agricultural Economics as a part of the Research and Marketing Act project entitled "Price, Supply, and Consumption Analysis for Farm Products." An attempt has been made to analyze the structure of the price-making forces for apparel wool and to measure quantitatively, to the extent which available statistical data permit, the factors that affect the prices of apparel wool. It is hoped that it will be of value to wool growers, dealers, manufacturers, and others directly or indirectly interested in the apparel wool industry.

NATURE AND USES OF THE COMMODITY

Wool is the hair or fiber which is sheared from living sheep (shorn wool) or removed from the pelts of slaughtered sheep (pulled wool). It is one of the oldest of the textile fibers. Since the beginning of recorded history it has been an important material for the production of wearing apparel. Unlike cotton, which is used extensively for industrial purposes, wool is used principally for clothing, although substantial quantities are used in the manufacture of blankets, upholstery, and floor coverings. The resilience, wrinkle-resistance, hygroscopic quality, felting property, and low heat conductivity of wool account for its desirability as a textile fiber in the manufacture of such items.

APPAREL AND CARPET WOOL

The great variation in the physical characteristics of wool has resulted in a large number of commercial types, commanding widely different prices at any given time. Among these characteristics are fineness or diameter of fiber, length of fiber, uniformity, color, luster, elasticity, strength, and suppleness. Wool varies greatly with respect to these qualities not only from one breed of sheep to another, but also from fleece to fleece, and from one part to another of the same fleece.

In the markets of the United States, the two general categories, apparel and carpet, take their names from the principal uses to which the fiber is put.

Apparel wool is used chiefly for clothing but it is also used in the manufacture of blankets and upholstery and drapery fabrics. Such wool is obtained from improved breeds of sheep and is finer and softer than carpet wool. The question of grading is complicated.

Carpet wool is obtained from native or unimproved sheep. Carpet wools are coarse, harsh, wiry, usually strong and sound, and kinky rather than crimped or waved. Most varieties have a pronounced color defect ranging from deep gray to black, or from light fawn to dark brown. Such wools, as the name implies, are used principally in the manufacture of floor coverings, but they are often used in the manufacture of apparel fabrics when special effects are desired as, for example, in certain kinds of tweeds. There is no established grading system for carpet wools; they are described in terms of the country

or locality of origin and sometimes by color. Familiar names are *Joria* and *Vicanere* from East India, *Kandahar* from Afghanistan, *Aleppo* from Syria, *Sining* from China, and *Cordoba* from South America.

GRADING OF APPAREL WOOL

Apparel wool is classified principally on the basis of the fineness or diameter of the fiber (grade) and the length of the fiber (staple). No one classification system is in universal use the world over.

Two alternative systems of designating fineness or grade of shorn apparel wool are in use—the blood system and the count system. Originally, the blood grades designated the proportion of merino blood in the sheep which produced the wool. The count numbers originally indicated the number of hanks of yarn, of 560 yards each, which could be spun from a pound of wool top. Both systems of grade terms, however, have lost their original significance. They are terms now generally known and accepted in the wool industry for the various degrees of fineness in the wool fiber. In the United States, blood terms are used more commonly than count terms, whereas in practically all other countries the reverse is the case. Table 1 shows the approximate correspondence between grades in the two systems.

In the world wool trade, half-blood (60's) and finer wools are known as merinos, and grades below half-blood are referred to as crossbreds. Wools that grade 50's to 58's are commonly known as fine crossbreds, those that grade 44's to 48's as medium crossbreds, and those that grade 40's and below as low crossbreds.

In addition to these general grading systems, various systems are used locally in wool-producing and wool-consuming countries. In the British Dominions, wools are sometimes classified, in order of fineness, as merino, comeback, fine crossbred, and medium crossbred; the coarse wools are designated by breed names, such as Lincoln and Cottswold. South American countries use the system generally used in the world wool trade. However, a second system there used grades wool from fine to coarse as follows: Merino, prima, 1's, 2's, 3's, 4's, 5's, and 6's.

In the United States, fineness and length of pulled wool are indicated by letters, such as AA, A, and so on down to C super. AA is approximately equivalent to a fine combing shorn wool.

The terms used in the blood and count systems refer only to the classification of apparel wool on the basis of diameter or fineness of fiber. In the United States, the terms describing market groups for length are combing and clothing. Generally speaking, combing wools are those of sufficient length to be combed—that is, processed on the worsted system. As English or Bradford combs require a longer wool than French combs, wools generally must be of sufficient length for combing on Bradford combs to be graded as combing wools. Wools too short for Bradford combing are graded as carding wools. However, those long enough for combing on French combs but shorter than desired for Bradford combs are sometimes referred to as French combing wools. In each grade, the longest wools are the combing wools. For the fine and half-blood grades, it is customary to make three divisions—strictly combing, French combing, and clothing. The term "delaïne" is frequently used to describe strictly combing fine

wools from the eastern farming States and the term "staple" for strictly combing fine territory wools. Texas wools are classified according to growth as 12 months, 8 months, and fall shorn.

TABLE 1.—*Apparel-wool grades according to blood and numerical or count system*¹

Blood system	Count or numerical system
Fine.....	64's, 70's, 80's.
Half blood ($\frac{1}{2}$ blood).....	60's, 62's.
Three-eighths blood ($\frac{3}{8}$ blood).....	56's, 58's.
Quarter blood ($\frac{1}{4}$ blood).....	48's, 50's.
Low-quarter blood.....	46's.
Common.....	44's.
Braid.....	36's, 40's.

¹ Several changes have been made in the commercial classification of wool by spinning count since Government grade designations were established in 1933 for the United States. The main changes were in $\frac{1}{2}$ -blood wools originally 58's-60's, now 60's-62's; and in $\frac{3}{8}$ -blood wools previously 56's, now 56's-58's. The count classifications shown here are those now in general use by the trade.

GEOGRAPHIC DISTRIBUTION

Wool is a world commodity. Some wool is produced in nearly every part of the world. However, the combined output of the seven largest producing countries—Australia, Argentina, New Zealand, Soviet Union, United States, British South Africa, and Uruguay—represents about three-fourths of the world total (tables 2 and 3). Annual world production between 1920 and 1950 ranged from a low of 3.0 billion pounds, grease basis, in 1920, to a high of 4.2 billion pounds in 1941. At present, about four-fifths of the wool produced is apparel wool.

The seven largest wool-producing countries are also the principal producers of apparel wool. They produce about 85 percent of the apparel wool. Of these, the five surplus-producing or exporting countries—Australia, Argentina, New Zealand, British South Africa, and Uruguay—account for about 70 percent of the world total. The chief countries in the production of carpet wool are Argentina, the Balkan countries, China, French Africa, India, Iran, Pakistan, the Soviet Union, and Turkey.

Just as production is widely distributed over the globe, so also is consumption. Wool-textile industries of varying sizes are established in nearly 50 countries. The bulk of consumption, however, as in the case of production, is concentrated in a comparatively few countries. During the interwar years, about four-fifths of the wool produced was consumed by mills in eight countries—United Kingdom, United States, France, Germany, Soviet Union, Japan, Italy, and Belgium (table 4). Not all of the wool used by mills in these countries is for ultimate home consumption. A substantial part consumed by mills in all of them (except in the United States and the Soviet Union) normally is exported in the form of semimanufactured and manufactured goods.

Between 60 and 70 percent of the world production of apparel wool enters into international trade (fig. 1). The five surplus-producing countries normally export between 85 and 90 percent of their output. Six of the eight large consumers, on the other hand, normally import more than three-fourths of their annual requirements (table 5).

TABLE 2.—*Production of wool, grease basis, chief producing countries, average 1934-38, annual 1949 and 1950*

Country	Average 1934-38		1949		1950	
	Production	Percent of total	Production	Percent of total	Production	Percent of total
	<i>Million pounds</i>	<i>Percent</i>	<i>Million pounds</i>	<i>Percent</i>	<i>Million pounds</i>	<i>Percent</i>
Australia.....	995	26.8	1,155	29.5	1,177	29.3
Argentina.....	370	10.0	420	10.7	420	10.4
New Zealand.....	299	8.1	300	9.9	372	9.3
Soviet Union.....	240	6.5	315	8.0	325	8.1
United States.....	425	11.5	252	6.4	253	6.3
British South Africa.....	239	6.5	218	5.6	230	5.7
Uruguay.....	118	3.2	163	4.2	176	4.4
Total.....	2,686	72.6	2,913	74.3	2,953	73.5
World total.....	3,698	100.0	3,920	100.0	4,020	100.0

Compiled from reports of the Office of Foreign Agricultural Relations of the United States Department of Agriculture.

TABLE 3.—*Percentage distribution of world production and consumption of wool, by continent, averages 1934-38 and 1947-48*

Continent	Production		Consumption	
	Average 1934-38	Average 1947-48	Average 1934-38	Average 1947-48 ¹
	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>	<i>Percent</i>
Europe.....	14	11	59	51
Soviet Union.....	6	8	7	5
Asia.....	9	9	11	5
Africa.....	9	7	(²)	1
Oceania.....	34	30	2	3
North America.....	12	9	18	31
South America.....	16	20	3	4
World.....	100	100	100	100

¹ World consumption exceeded production about 25 percent in 1947-48

² Less than 0.5 percent.

Consumption data from world fiber review, 1949, table H, page 91 (2); production data from reports of office of Foreign Agricultural Relations, United States Department of Agriculture.

TABLE 4.—*Estimated consumption of wool, clean basis, by chief consuming countries, average 1934-38, annual 1947 and 1948*

Country	Average 1934-38		1947		1948	
	Con- sump- tion	Per- cent- age of total	Con- sump- tion	Per- cent- age of total	Con- sump- tion	Per- cent- age of total
	<i>Million pounds</i>	<i>Percent</i>	<i>Million pounds</i>	<i>Percent</i>	<i>Million pounds</i>	<i>Percent</i>
United Kingdom.....	440	21.5	401	17.0	440	18.1
United States.....	344	16.8	698	29.6	693	28.5
France.....	229	11.2	243	10.3	278	11.4
Germany:						
Western Zones.....	132	6.4	50	2.1	82	3.4
Soviet Zone.....	55	2.7	18	.8	22	.9
Total.....	187	9.1	68	2.9	104	4.3
Soviet Union.....	154	7.5	121	5.1	132	5.4
Japan.....	110	5.4	26	1.1	24	1.0
Italy.....	68	3.3	132	5.6	104	4.3
Belgium.....	62	3.0	79	3.4	66	2.7
Other countries.....	456	22.2	587	25.0	589	21.3
Estimated world total.....	2,050	100.0	2,355	100.0	2,430	100.0

Derived from data presented in WORLD FIBER REVIEW, 1949, table H, page 91 (2).

TABLE 5.—*Shares of major exporting and importing countries in world trade in raw wool, average 1934-38, annual 1947 and 1948*

Major export- ing country	Percentage of world exports			Major import- ing country	Percentage of world imports		
	Average 1934-38	1947	1948		Average 1934-38	1947	1948
	<i>Percent</i>	<i>Per- cent</i>	<i>Per- cent</i>		<i>Percent</i>	<i>Per- cent</i>	<i>Per- cent</i>
Argentina.....	15	20	7	Belgium.....	5	9	6
Australia.....	42	40	53	France.....	14	15	18
New Zealand.....	13	18	13	Germany.....	13	3	4
South Africa.....	11	10	12	Italy.....	4	13	5
Uruguay.....	6	6	7	Japan.....	10	(¹)	1
Total.....	87	94	92	United King- dom.....	29	19	21
				United States.....	11	25	30
				Total.....	86	84	85

¹ Less than 0.5 percent.

From WORLD FIBER REVIEW, 1949, table 26, page 50 (2).

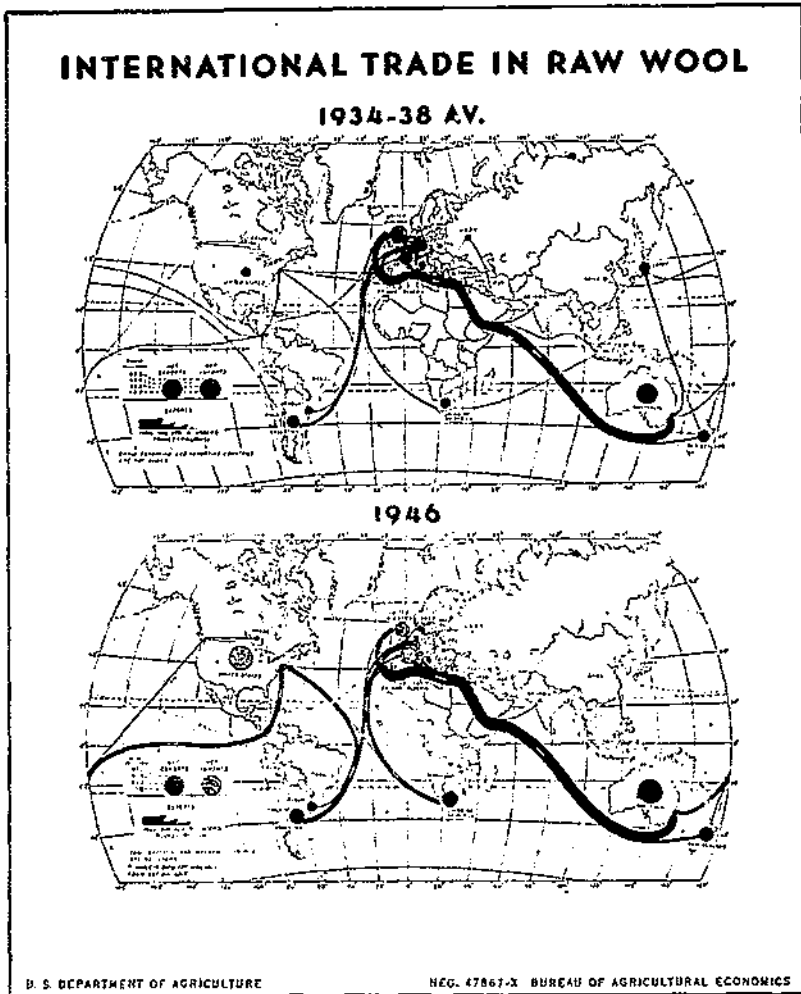


FIGURE 1.—More than 80 percent of the wool that entered world trade during 1934-38 came from the five chief surplus-producing countries of the Southern Hemisphere—Australia, Argentina, New Zealand, Union of South Africa, and Uruguay. In 1946, these countries supplied about 95 percent of the total. World trade in raw wool declined gradually after 1946, when a peak of 3 billion pounds was traded, and in 1949 was less than 100 million pounds larger than the 1934-38 average. The large volume of wool that entered world trade following World War II was made possible by the wartime accumulation of wool in the surplus-producing countries.

MARKETING OF WOOL

Practically all British Dominion wools are sold at public auction, either in the Dominions or in the United Kingdom. Until about the opening of World War I, London was the leading and largest auction center for raw wool in the world. Because of its proximity to the large consuming centers in the United Kingdom and continental

Europe, it is still the most important spot wool market in the world. During the interwar years, auction sales in the Dominions developed rapidly. At present, among the chief auction centers for Dominion wool are London and Liverpool in the United Kingdom; Albury, Brisbane, Geelong, Goulburn, Melbourne, New Castle, Perth, and Sydney in Australia; Auckland, Christchurch, Dunedin, Invercargill, Napier, Wanganui, and Wellington in New Zealand; and Capetown, Durbin, East London, and Port Elizabeth in British South Africa. Sydney, Australia, is now probably the world's most important single wool-selling center.

Auction programs are fixed each year by committees consisting of representatives of growers, brokers, and buyers. These men decide upon the dates of the sales as well as the quantity to be offered at each selling center. In the United States, Argentina, and Uruguay practically the entire clips are disposed of by private sale. But before 1939 a small quantity of Argentine wool from European owned estates was shipped to London for sale by public auction.

In the United States, a majority of the growers usually sell their wool at or soon after shearing time, but the time of selling varies from year to year. In all years some, and in some years a large proportion of the wool is sold by contract well in advance of the shearing, usually in December, January, and February. On the other hand, in all years some, and in some years a large proportion of the clip is consigned by producers to dealers or to growers' cooperative associations. Consigned wool may not be sold for several months or for one or more years. The volume of contracting prior to shearing, by dealers and manufacturers, and the volume of consigning by growers depend upon their anticipations as to price trends in the wool markets.

Marketing practices vary in different parts of the country, largely because of differences in size and uniformity of the individual clips. In the so-called territory States, where the clips run large, most of the wool is bought at the ranch by resident agents or traveling buyers for Boston dealers, or is consigned to cooperative marketing agencies. In the fleeces-wool States, where most of the clips are small, the greater part of the wool is bought on the farms by country dealers, who accumulate wool on their own account or buy on commission for Boston dealers. In Texas, most of the wool usually is shipped to warehouses for sale, but in some years many buyers purchase direct from producers at their ranches.

It is estimated that, before World War II, between 5 and 10 percent of the clip was bought direct from growers or country dealers by representatives of topmakers and manufacturers (4).² The greater part of such direct buying takes place in Texas because of the uniformity of Texas wool, the concentration of production within limited areas, and the convenience of inspection of wool assembled at well-organized warehouses. Some direct buying also is done in the fleeces-wool States.

Domestic pulled wool usually is sold direct to consumers by the large meat packers through their Boston offices. Smaller pulleries sell direct from their plants through salesmen or by sample and correspondence. Others sell through agents in Boston.

² Figures in parentheses refer to Literature Cited, p.48.

Domestic and imported wools are concentrated in central markets, particularly Boston, where they are stored in relatively uniform lots until needed by consumers. Most of the wool requirements of manufacturers, particularly the worsted mills, are bought in the grease, but sizable quantities of clothing wools and off wools are bought in the scoured stage, particularly by woolen mills.

USES OF APPAREL WOOL.

The industries that utilize apparel wool are separate and distinct from those that utilize carpet wool. Under relatively normal conditions, about three-fourths of the wool used in the United States is apparel wool and the remainder is carpet wool.

The principal uses of apparel wool are for clothing (particularly outerwear), blankets, and drapery and upholstery fabrics. Included among the apparel items are coats, suits, trousers, dresses, sweaters, skirts, jackets, robes, gloves and mittens, and hosiery. The non-apparel uses include blankets, transportation and furniture upholstery, draperies, buntings, billiard cloths, smelter cloth, filter cloth, paper-makers' felts, and laundry felts. Automobile cloths constitute the only important class of industrial uses.

More than three-fourths of the apparel wool consumed in the United States normally enters into the manufacture of apparel items. Figure 2 shows the approximate distribution of the wool consumed in the United States in 1949. About 98 percent of the apparel wool was consumed in the spinning of woolen and worsted yarn. The remainder was used in the manufacture of pressed felt, largely for hat bodies. About 85 percent of the woolen and worsted yarn entered into the production of woven fabrics and 15 percent was used for knit goods. About 83 percent of the woven fabrics was used in the manufacture of apparel. Of the woven apparel fabrics, 45 percent were fabrics for men's and boys' wear, including suitings, trouserings, overcoatings, and topcoatings; 46 percent were fabrics for women's and children's wear, such as suitings, coatings, and dress fabrics; and 9 percent were other apparel fabrics. Of the nonapparel fabrics, blanketing made up 34 percent, transportation upholstery 38 percent, draperies and furniture upholstery 6 percent; and other nonapparel 22 percent.

Table 6 shows the approximate percentage distribution of production in the United States of woven fabrics (including woven felt) containing by weight 25 percent or more wool, reprocessed wool, or reused wool.

TABLE 6.—*Percentage distribution of production of woven fabrics (including woven felt), United States, 1935, 1937, 1939, and 1947-49*

Woven fabric	1935	1937	1939	1947	1948	1949
Apparel.....	<i>Percent</i> 75.6	<i>Percent</i> 76.6	<i>Percent</i> 79.5	<i>Percent</i> 85.4	<i>Percent</i> 85.5	<i>Percent</i> 83.4
Household.....	11.6	9.4	10.4	7.6	5.4	6.6
Other.....	12.8	14.0	10.1	7.0	9.1	10.0
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

Data for 1935, 1937 and 1939, derived from UNITED STATES CENSUS OF MANUFACTURES (7); data for other years derived from WOOL MANUFACTURES (8).

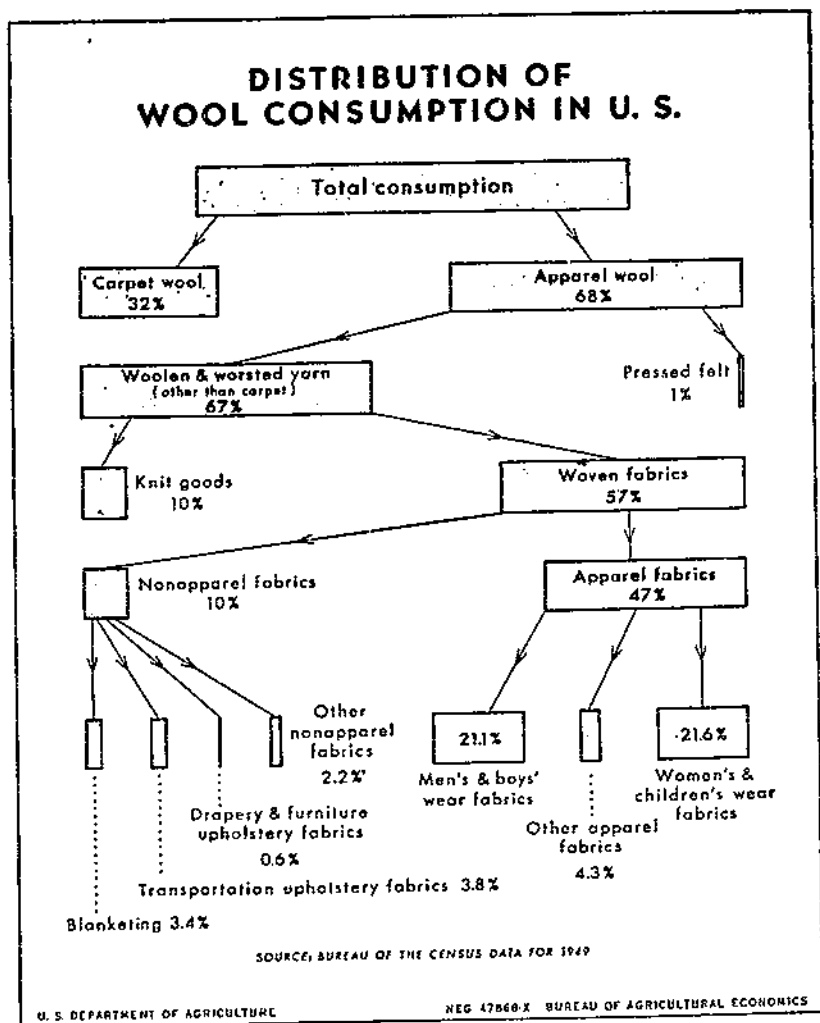


Figure 2.—About a third of the raw wool consumed in the United States in 1949 was carpet wool. The greater part of this wool was used in the manufacture of floor coverings, although small quantities were used in the manufacture of press cloths, knit and felt boots, and heavy fulled lumbermen's socks.

About 2 percent of the apparel wool was used in batting and in the manufacture of pressed felt, mostly for hat bodies. The other 98 percent was consumed in the spinning of woolen and worsted yarn. About 15 percent of the woolen and worsted yarn was used in the production of knit goods, including sweaters, hosiery, underwear, and gloves and mittens. The remainder was used in the weaving of fabrics, including such apparel fabrics as suitings, trouserings, dress fabrics, and coatings and such nonapparel fabrics as blanketing, upholstery, draperies, and woven industrial felts.

STRUCTURE OF PRICE-MAKING FORCES

SUPPLY OF APPAREL WOOL

PRODUCTION

The trend of world wool production was gradually upward, except for minor interruptions, from 2,960 million pounds, grease basis, in 1920 to 4,200 million pounds in 1941 (table 7). From 1941 to 1947 output declined, reaching a low of 3,710 million pounds in 1947. This decline was due to a reduction in sheep numbers in British South Africa and Australia because of drought conditions, in Europe because of the war, and in the United States largely because returns from other agricultural enterprises were relatively greater than from sheep. Production has shown a slight increase in the last 3 years. The trend of world production of wool is illustrated by the annual averages for consecutive 5-year periods, beginning with 1920-24—3,050, 3,618, 3,664, 3,804, 4,122, and 3,800 million pounds, respectively. In recent years apparel wool has represented about 80 percent of the total production.

In addition to an increase in world sheep numbers since 1920, improved breeding has greatly accelerated the expansion of wool production. It has led to substantial increases in average yields per sheep. For example, the average weight per fleece in the United States increased from 7.2 pounds, grease basis, in 1920 to slightly more than 8 pounds in 1951.

Although the size of the clip of individual countries may change rather sharply, year-to-year changes in world production generally are relatively small. Short-term changes may result from unfavorable weather conditions in many localities, the prevalence of disease, or grower's decisions based on market expectations.

Possible alternative uses of productive resources are influential in such decisions. Also, the length of the production period severely restricts the effectiveness of decisions, particularly with respect to short-term increases. As wool, particularly crossbred, is produced jointly with meat, changes in wool production, both quantitative and qualitative, may be one outcome of decisions regarding the production of meat.

The concentration of the raising of sheep and the production of wool in five countries in the Southern Hemisphere is mainly the result of economic factors. Sheep raising is well suited to their climate, land resources, and sparse populations. These countries, with their predominantly agricultural economies and inadequate home markets, depend on countries that have expanding industrial populations as markets for their agricultural production. The fact that wool is a relatively nonperishable commodity, with a relatively high value per unit of volume and weight compared with other agricultural products, makes it well suited to overseas shipment.

Almost all of the wool produced in Uruguay and the three British Dominions—Australia, New Zealand, and British South Africa—and about two-thirds of the output of Argentina, is classified as apparel wool. The proportion of merino wool in the total production in each of these five countries is as follows: British South Africa, more than 95 percent; Australia, about 80 percent; Uruguay, about 50 percent;

Argentina, less than 15 percent; and New Zealand, less than 5 percent. The kind of wool produced in Argentina, Uruguay, and New Zealand has been strongly influenced by the development of cold-storage overseas transport since the latter part of the nineteenth century. The present preponderance of crossbred sheep in these countries reflects the shift from fine-wool sheep to mutton breeds.

TABLE 7.—*Production of wool, grease basis, in 5 chief surplus-producing countries, United States, and world, 1920-50*

Year	5 chief surplus-producing countries ¹	United States	Other countries	Estimated world total
	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>	<i>Million pounds</i>
1920.....	1,443.0	293.8	1,223.2	2,960.0
1921.....	1,553.8	290.2	1,206.0	3,050.0
1922.....	1,584.6	270.4	1,185.0	3,040.0
1923.....	1,514.1	272.7	1,213.2	3,000.0
1924.....	1,646.2	282.0	1,271.8	3,200.0
1925.....	1,724.2	300.0	1,335.8	3,360.0
1926.....	1,881.1	318.9	1,370.0	3,570.0
1927.....	1,887.7	330.5	1,392.8	3,620.0
1928.....	2,003.2	366.7	1,400.1	3,770.0
1929.....	1,986.1	382.3	1,401.6	3,770.0
1930.....	1,971.1	414.0	1,314.9	3,700.0
1931.....	2,052.1	442.4	1,225.5	3,720.0
1932.....	2,133.3	418.1	1,178.6	3,730.0
1933.....	2,029.4	438.4	1,162.2	3,630.0
1934.....	1,957.4	420.4	1,153.2	3,540.0
1935.....	1,991.2	427.5	1,181.3	3,600.0
1936.....	2,039.9	419.4	1,230.7	3,690.0
1937.....	2,035.5	422.3	1,312.2	3,770.0
1938.....	2,083.7	424.4	1,381.9	3,890.0
1939.....	2,260.8	426.2	1,383.0	4,070.0
1940.....	2,356.8	434.0	1,389.2	4,180.0
1941.....	2,383.2	453.3	1,363.5	4,200.0
1942.....	2,375.2	455.0	1,329.8	4,160.0
1943.....	2,411.9	444.0	1,284.1	4,140.0
1944.....	2,267.8	411.8	1,250.4	3,930.0
1945.....	2,191.4	378.4	1,230.2	3,800.0
1946.....	2,244.8	341.8	1,233.4	3,820.0
1947.....	2,165.5	309.4	1,235.1	3,710.0
1948 ²	2,180.0	280.5	1,289.5	3,750.0
1949 ²	2,345.8	252.5	1,321.7	3,920.0
1950 ²	2,375.4	252.5	1,392.1	4,020.0

¹ Argentina, Australia, British South Africa, New Zealand, and Uruguay.

² Preliminary.

Compiled from records of the Office of Foreign Agricultural Relations.

Practically all of the wool produced in the United States is apparel wool. A study conducted by the United States Tariff Commission indicated that during the years 1936-40, 53.2 percent of domestic production, scoured basis, consisted of fine and half-blood wool. Tables 8 and 9 show the approximate percentage distribution of domestic wool production, by grades, and by States or areas, for those

years. The Livestock Branch of the Production and Marketing Administration of the United States Department of Agriculture has estimated that about 58.7 percent, scoured basis, of domestic production in 1946 consisted of fine and half-blood wool (table 10). These estimates are the result of an analysis of the purchases of the Commodity Credit Corporation for that year. The CCC bought practically all the domestic wool produced in 1946.

TABLE 8.—Percentage distribution of domestic shorn-wool production, grease basis, by grades, by States or areas, average 1936-40

State or area	Fine	½ blood	⅔ blood	¼ blood	Low ¹
	Percent	Percent	Percent	Percent	Percent
Farming region ²	13	9	38	35	5
New England.....	5	5	53	34	3
New York ³	25	14	33	24	4
Pennsylvania.....	31	10	26	29	4
Virginia ⁴	6	6	46	39	3
West Virginia.....	14	7	45	32	2
Kentucky.....	7	11	47	32	3
Tennessee.....	2	6	49	40	3
Southern ⁵	3	4	48	40	5
Ohio.....	39	10	32	17	2
Indiana.....	8	8	38	43	3
Michigan.....	27	10	31	28	4
Illinois.....	10	8	34	45	3
Wisconsin.....	9	6	38	40	7
Minnesota.....	8	11	39	38	4
Iowa.....	13	8	32	43	4
Central West ⁶	15	10	32	41	2
North and South Dakota ⁷	14	15	42	27	2
Western Oregon ⁸	9	4	18	38	31
Range region ⁹	65	18	12	4	1
Average.....	52	16	18	12	2

¹ Includes low-quarter blood, common, and braid.

² North and South Atlantic, East and West North Central, and South Central regions, exclusive of Texas; western parts of North and South Dakota, Nebraska, and Kansas; the Willamette Valley of western Oregon and parts of western Washington.

³ Includes New Jersey.

⁴ Includes Maryland.

⁵ North Carolina to Mississippi and Louisiana, including Arkansas.

⁶ Oklahoma, Missouri, and eastern parts of Nebraska and Kansas.

⁷ Excludes western or range section of North and South Dakota.

⁸ Willamette Valley and parts of western Washington.

⁹ The far West and Texas, including the western portions of North and South Dakota, Nebraska, and Kansas, but excluding the Willamette Valley in western Oregon, and excluding the farm-grown wools of western Washington.

Compiled from UNITED STATES WOOLS, PRODUCTION BY REGIONS AND BY GRADES, 1930-40 (18).

TABLE 9.—Percentage distribution of wool production, by grades, United States, average 1936-40

Grade	Shorn		Pulled		Shorn and pulled	
	Grease basis	Scoured basis	Washed basis	Scoured basis	Grease and washed	Scoured basis
	Percent	Percent	Percent	Percent	Percent	Percent
Fine.....	52.3	44.2	26.2	21.4	48.4	38.7
Half blood.....	15.8	15.8	10.8	10.3	15.1	14.5
Three-eighths blood.....	18.5	21.9	36.9	38.9	21.2	26.0
Quarter blood.....	11.5	15.5	21.5	24.2	13.0	17.6
Low-quarter blood and coarser.....	1.0	2.6	4.6	5.2	2.3	3.2
Total.....	100.0	100.0	100.0	100.0	100.0	100.0

Derived from UNITED STATES WOOLS, PRODUCTION BY REGIONS AND BY GRADES, 1936-40, table 5, page 15 (13).

Most of the wool produced in the United States is shorn wool, sheared from living sheep. In 1950 more than 85 percent of the total consisted of such wool, the other 15 percent being pulled wool, removed from the pelts of slaughtered sheep. Production of both is widely distributed over the United States. Some shorn wool is produced in every State (table 11). In 1950, production, by States, ranged from 12 thousand pounds in Rhode Island to almost 53 million pounds in Texas. The 10 largest wool-producing States that year, listed in order, were Texas, Wyoming, California, Montana, Utah, Colorado, New Mexico, Idaho, Missouri, and Ohio. Production in these States made up 72 percent of the total.

Most of the domestic clip is shorn from February to July, inclusive. The schedule is about as shown in table 12. Data on receipts of domestic wool at Boston indicate that, for the 10 years 1930-39, about 62 percent of the total was received in June, July, and August (table 13).

Pulled wool is produced mainly in large slaughtering and meat-packing plants, but considerable quantities are produced also in independent wool pulleries in various parts of the country. The six leading States in 1950, in order of the quantity of wool pulled, were Illinois, California, Pennsylvania, New York, Massachusetts, and Colorado.

Production of pulled wool is heaviest during the winter and early spring months, partly because of the heavier slaughter and partly because of the age of the sheep slaughtered and the heavier fleeces during those months. However, pulled wool is produced in every month of the year.

TABLE 10.—Percentage distribution of wool production, by grades, United States, 1946

Grade	Shorn		Pulled, clean basis	Shorn and pulled, clean basis
	Grease basis	Clean basis		
	Percent	Percent	Percent	Percent
Fine (64's and finer).....	53.0	45.6	9.7	36.8
Half blood (58/60's to 60/64's).....	16.2	16.6	38.3	21.9
Three-eighths blood (56's to 56/58's).....	16.5	20.6	45.7	26.8
Quarter blood (48/50's to 50/56's).....	9.9	12.9	5.3	11.1
Low-quarter blood (46's to 48's).....	1.5	1.4	.7	1.2
Common and braid (36's to 44's).....	.5	.7	.3	.6
Offsorts (ungraded).....	2.3	2.2		1.6
Total.....	100.0	100.0	100.0	100.0

FROM MARKETING ACTIVITIES (10).

TABLE 11.—Production of shorn wool, grease basis, by States, 1950

State	Production	Per-centage of total	State	Production	Per-centage of total
	1,000 pounds	Percent		1,000 pounds	Percent
United States.....	220, 135	100.00	Nebraska.....	2, 273	1.03
Texas.....	52, 636	23.92	Wisconsin.....	1, 608	.73
Wyoming.....	17, 680	8.03	Pennsylvania.....	1, 520	.69
California.....	15, 547	7.06	West Virginia.....	1, 453	.66
Montana.....	14, 034	6.38	Virginia.....	1, 383	.63
Utah.....	11, 353	5.16	Tennessee.....	1, 269	.58
Colorado.....	10, 614	4.84	New York.....	1, 080	.49
New Mexico.....	10, 626	4.83	Oklahoma.....	927	.42
Idaho.....	9, 400	4.27	Louisiana.....	405	.18
Missouri.....	8, 161	3.71	Mississippi.....	338	.15
Ohio.....	7, 812	3.55	Maryland.....	277	.13
South Dakota.....	5, 745	2.61	Arkansas.....	244	.11
Oregon.....	5, 366	2.44	North Carolina.....	162	.07
Iowa.....	5, 132	2.33	Maine.....	121	.06
Minnesota.....	4, 000	1.82	Alabama.....	83	.04
Kentucky.....	3, 993	1.81	Vermont.....	77	.03
Kansas.....	3, 646	1.66	Georgia.....	54	.02
Nevada.....	3, 503	1.59	New Jersey.....	54	.02
Illinois.....	3, 385	1.54	Massachusetts.....	44	.02
Washington.....	2, 964	1.35	New Hampshire.....	38	.02
North Dakota.....	2, 829	1.29	Florida.....	33	.01
Indiana.....	2, 764	1.26	Connecticut.....	32	.01
Michigan.....	2, 688	1.22	South Carolina.....	14	.01
Arizona.....	2, 651	1.20	Delaware.....	13	.01
			Rhode Island.....	12	.01

TABLE 12.—*Approximate shearing schedule in the United States*

Month	Area
January.....	Imperial Valley and Colorado River district; Riverside County, Calif.; Salt River Valley, Ariz.
February.....	Salt River Valley, Ariz.; Imperial County, Calif.; Snake River Valley, Idaho; Blythe district, Riverside County, Calif.
March.....	California; Yakima Valley, Washington; Arizona.
April.....	Central and northern California; Oregon, Washington, and southern Texas.
May.....	Texas, California, Oregon, Washington, Wyoming, Utah, Idaho, Colorado, Nevada, and Midwestern and Eastern States.
June.....	New Mexico, Colorado, Montana, North and South Dakota, Midwestern and Eastern States; lambs, north coast section, California.
July.....	North coast section, California; lambs, California, Colorado, and Montana.
August.....	California, lambs and fall shearing.
September.....	Texas and California, fall shearing, shearing of feeder lambs at all concentration points and feed yards.
October.....	Texas, fall shearing; shearing of feeder lambs throughout the country.
November.....	Tagging of California ewes prior to lambing.

From WYOMING WOOL GROWER (15).

TABLE 13.—*Percentage distribution of monthly receipts of domestic wool, Boston, average 1930-39*

Month	Percentage distribution	Month	Percentage distribution
	<i>Percent</i>		<i>Percent</i>
January.....	2	July.....	27
February.....	2	August.....	15
March.....	2	September.....	7
April.....	4	October.....	5
May.....	9	November.....	4
June.....	20	December.....	3

Derived from data obtained from THE COMMERCIAL BULLETIN (1) and from reports of the Agricultural Marketing Service of the U. S. Department of Agriculture.

STOCKS

In addition to the wool produced each year, raw wool in varying quantities is carried over from year to year. The volume and composition of the carry-over have decided influence as price-determining factors. There is no series of figures on world stocks of raw wool, but such limited information as is available for the years from 1926 to 1938 indicates that world carry-over of apparel wool varies considerably. The range for those years appears to have been from roughly 65 percent of production for the 1933 season to about 40 percent for 1937. Stocks at the beginning of the 1933-34 season were about one and one-half times as large as those at the beginning of the 1937-38 season. The average for the period was apparently in the neighborhood of 55 percent of annual production.

Furthermore, topmakers, spinners, weavers, knitters, apparel manufacturers, cloth and apparel jobbers, and retailers all carry stocks of semiprocessed and manufactured goods of varying sizes in anticipation of future needs. Such stocks, which may be in the form of top, noils, waste, yarn, fabric, or finished products, influence the price of raw wool in world markets. Data from which the size of and the year-to-year changes in such holdings can be determined are not available, but it is estimated that from 6 to 12 months elapse between the time the raw wool is put into process and the time the end products are sold at retail. In other words, over a period of years the raw-wool equivalent of such holdings at the beginning of the season would average about 75 percent of average annual consumption.

DEMAND FOR APPAREL WOOL

Apparel wool is not directly consumable. It is a raw material, the demand for which is derived from the consumer demand for finished goods. Consumer demand for wool goods—hence indirectly, for raw wool—is a composite demand consisting of the demand for the many apparel, household, and other wool products. In the United States, more than 75 percent of the apparel wool consumed normally enters into the manufacture of items of wearing apparel.

At given world prices, consumer demand for wool goods varies from country to country, depending on such factors as differences in real income, climate, social habits, and cost of wool clothing. The combined effect is reflected in the wide range of per capita net consumption of wool for different countries (table 14). Per capita net consumption in 1948 varied from about one-tenth of 1 pound, clean basis, in China and India to more than 8 pounds in New Zealand.

Factors that affect year-to-year variation in consumer takings of wool products in any one country include the following: Changes in consumer purchasing power and the general level of business activity; population changes; custom, style, and fashion changes, which influence not only the over-all demand for apparel wool but also the demand for specific grades and qualities; cost of wool clothing relative to cost of substitute products and other budget items; consumer preference; central heating and improved transportation facilities, which have resulted in the use of lighter weight clothing, particularly in the United States; consumer stocks of wool goods; and advertising.

TABLE 14.—Per capita net consumption of wool, clean basis, selected countries, average 1934-38, annual 1947 and 1948

Country	Per capita net consumption ¹		
	Average 1934-38	1947	1948
	Pounds	Pounds	Pounds
New Zealand.....	4.63	6.83	8.15
Sweden.....	3.55	7.05	6.61
Australia.....	4.63	5.29	6.39
Netherlands.....	4.08	5.95	6.17
United Kingdom.....	5.27	5.95	5.95
Belgium.....	4.55	5.95	5.51
Switzerland.....	3.53	6.61	5.51
United States.....	2.66	4.63	4.85
Canada.....	4.06	4.62	4.62
Argentina.....	3.00	3.97	3.97
Denmark.....	3.84	3.74	3.52
Norway.....	3.55	3.31	3.52
France.....	3.44	5.07	3.31
Iceland.....	3.28	3.52	3.31
Czechoslovakia.....	2.05	3.09	2.64
Finland.....	2.16	1.32	2.20
Italy.....	1.21	2.42	1.98
Portugal.....	1.63	1.76	1.76
Yugoslavia.....	1.74	.88	1.32
South Africa.....	.83	1.32	1.32
Poland.....	.99	1.10	1.10
Hungary.....	1.12	.66	.88
Spain.....	1.63	1.10	.88
Soviet Union.....	.86	.66	.66
Japan.....	1.26	.22	.22
China.....	.11	.11	.11
India/Pakistan.....	.09	.09	.09

¹ Per capita consumption calculated on a net basis, that is, domestic wool production and/or trade balances of raw wool, semimanufactured and manufactured goods, all expressed as raw wool weight equivalent.

Derived from WORLD FIBER SURVEY, 1947, table B, page 174 (3), and WORLD FIBER REVIEW, 1949, table S, page 109 (3).

STATISTICAL ANALYSIS OF FACTORS AFFECTING CONSUMER PURCHASES OF CLOTHING

Available data do not permit the determination and statistical measurement of the factors that affect consumer takings of wool goods at the retail level over a period of years. Some indication of the possible effect of certain of these factors can be obtained, however, from a study of the factors that influence consumer expenditure for all clothing in the United States. A statistical analysis of the relation between real consumer expenditure for all clothing and disposable income, apparel prices, and trend indicated that consumer expenditure for clothing can be explained largely on the basis of disposable income. More than 94 percent of the variation in annual

TABLE 15.—Series used in analysis of factors affecting consumer expenditures for clothing, United States, 1929-50

	Index of per capita disposable income, deflated (1935-39=100) ¹	Index of apparel prices, deflated (1935-39=100) ²	Per capita expenditures for clothing, deflated ³
1929.....	107.8	94.1	\$53.07
1930.....	97.7	94.4	46.70
1931.....	91.1	94.4	43.78
1932.....	76.5	93.0	34.61
1933.....	76.0	95.1	32.90
1934.....	83.2	100.4	36.82
1935.....	90.7	98.7	39.51
1936.....	101.6	98.6	42.10
1937.....	104.9	100.1	40.63
1938.....	97.6	101.4	40.24
1939.....	105.2	101.2	43.64
1940.....	111.6	101.5	44.88
1941.....	127.9	101.0	49.70
1942.....	144.9	106.6	50.15
1943.....	152.0	104.9	58.85
1944.....	165.3	110.6	60.00
1945.....	164.3	113.6	63.82
1946.....	157.4	115.0	67.21
1947.....	144.1	116.7	59.07
1948.....	146.4	115.7	57.54
1949.....	144.8	112.4	54.57
1950 ⁴	152.1	109.8	(⁵)

¹ Bureau of Agricultural Economics, Index of Disposable Personal Income (1935-39=100) based on Department of Commerce estimates of disposable personal income divided by population of United States on July 1, adjusted for underenumeration of children under 5 years old and deflated by Consumer's Price Index of the Bureau of Labor Statistics (1935-39=100).

² Bureau of Labor Statistics Consumer's Price Index for Apparel (1935-39=100) deflated by Bureau of Labor Statistics Consumer's Price Index for All Items (1935-39=100).

³ Consumer Expenditure for Clothing and Accessories, Excluding Footwear, Department of Commerce, deflated by Bureau of Labor Statistics Index of Consumer Prices for Apparel and divided by the population of the United States on July 1, adjusted for underenumeration of children under 5 years old.

⁴ Preliminary.

⁵ Not available.

clothing expenditure for the years 1929 through 1939 was associated with this factor, with prices of textiles, and with trend.

The variables used in the correlation analysis are shown in table 15 and are specifically referred to as follows:

X_1 —Consumer Expenditure for Clothing and Accessories, Excluding Footwear, Department of Commerce, deflated by Bureau of Labor Statistics Index of Consumer Prices for Apparel and divided by the population of the United States on July 1, adjusted for underenumeration of children under 5 years old.

X_2 —Bureau of Agricultural Economics, Index of Disposable Personal Income (1935-39=100) based on Department of Commerce estimates of disposable personal income divided by population of United States on July 1, adjusted for underenumeration of children under 5 years old and deflated by Consumer's Price Index of the Bureau of Labor Statistics (1935-39=100).

X_2 —Bureau of Labor Statistics Consumers' Price Index for Apparel (1935-39=100), deflated by Bureau of Labor Statistics Consumers' Price Index for all Items (1935-39=100).

X_1 —Time (1929=1).

Years before 1929 were not included as the series on consumer expenditure for clothing begins in that year.

The following equation was found to best express the relation between the variables:

$$(1) X_1' = -16.724 + 0.470 X_2 + 0.214 X_3 - 1.145 X_4$$

(0.047) (0.353) (0.330)

Figures in parentheses are standard errors.³

The resulting equation (1) indicates that, other factors held constant, expenditure for clothing increased with disposable income. For an increase or decrease of one unit in the index of per capita disposable real income (one unit in the index is equivalent to 5.10 dollars in per capita real income in terms of 1935-39 dollars), per capita clothing expenditure increased or decreased, respectively, 47 cents.

The regression equation also indicates that, other things being equal, per capita real expenditure for clothing tended to decrease with time, at an average rate of 1.14 dollars per year.

Table 16 and figure 3 show the trend of the proportion of per capita consumer expenditure and per capita disposable income expended for clothing.

The lack of a statistically significant relation between relative prices and expenditures was due, in part, to the limited variation in relative prices. This does not mean that clothing purchases would not respond to wide changes in relative prices.

In a second analysis, first differences of logarithms of the data of the previous analysis were used in place of the actual values. The resulting equation was as follows:

$$(2) X_1' = +0.570 + 0.991 X_2' + 0.588 X_3'$$

(0.162) (0.760)

Figures in parentheses are standard errors.⁴

³ Other statistical measures relating to the analysis are as follows:

$R_{1,23}^2 = .949$	$R_{1,231} = .974$	$S_{1,231} = 1.541$
$R_{1,234}^2 = .928$	$R_{1,231} = .963$	$t_{b12,31} = 10.000$
$r_{12,31} = .967$	$\beta_{12,31} = .927$	$t_{b13,21} = 0.606$
$r_{13,21} = .223$	$\beta_{13,21} = .119$	$t_{b11,23} = -3.169$
$r_{14,23} = -.796$	$\beta_{14,23} = -.662$	

For 0.01 level of significance, $t = 3.499$; for 0.05 level of significance, $t = 2.365$.

⁴ Other statistical measures relating to this analysis are as follows:

$R_{1,23}^2 = .862$	$R_{1,23} = .928$	$S_{1,23} = 0.020$
$r_{12,3} = .918$	$\beta_{12,3} = .880$	$t_{b12,3} = 3.114$
$r_{13,2} = .280$	$\beta_{13,2} = .118$	$t_{b13,2} = 0.773$

For 0.01 level of significance, $t = 3.499$; for 0.05 level of significance, $t = 2.365$.

TABLE 16.—Percentage relationship between per capita expenditures for clothing and per capita disposable income and per capita consumer personal expenditures, United States, 1929-49

Year	Per capita money expenditures for clothing as a percentage of— ¹		Per capita real expenditures for clothing as a percentage of— ⁴	
	Per capita disposable income ²	Per capita consumer personal expenditures ³	Per capita real disposable income ⁵	Per capita real consumer personal expenditures ⁶
	Percent	Percent	Percent	Percent
1929.....	9.09	9.52	9.67	10.11
1930.....	8.85	9.20	9.38	9.75
1931.....	8.90	9.17	9.42	9.71
1932.....	8.25	8.02	8.87	8.62
1933.....	8.08	7.88	8.50	8.28
1934.....	8.71	8.67	8.68	8.63
1935.....	8.44	8.71	8.55	8.83
1936.....	8.01	8.47	8.13	8.60
1937.....	7.61	8.07	7.59	8.06
1938.....	8.21	8.33	8.10	8.22
1939.....	8.23	8.56	8.14	8.47
1940.....	8.01	8.41	7.89	8.29
1941.....	7.70	8.61	7.62	8.52
1942.....	7.23	9.25	6.78	8.67
1943.....	7.92	10.26	7.54	9.78
1944.....	7.87	10.37	7.12	9.38
1945.....	8.65	10.62	7.62	9.34
1946.....	9.65	10.35	8.41	9.00
1947.....	9.25	9.53	7.92	8.16
1948.....	8.81	9.39	7.61	8.12
1949.....	8.16	8.70	7.26	7.73

¹ Consumer Expenditures for Clothing and Accessories, Excluding Footwear, Department of Commerce, divided by population of United States on July 1, Bureau of the Census.

² Disposable Income, Department of Commerce, divided by population of United States on July 1, Bureau of the Census.

³ Consumer Personal Expenditures, Department of Commerce, divided by population of United States on July 1, Bureau of the Census.

⁴ Consumer Expenditures for Clothing and Accessories, Excluding Footwear, Department of Commerce, deflated by Bureau of Labor Statistics Consumer Price Index for Apparel (1935-39=100), and divided by population of United States on July 1, Bureau of the Census.

⁵ Disposable Income, Department of Commerce, deflated by Bureau of Labor Statistics Consumer Price Index for All Items (1935-39=100), and divided by population of the United States on July 1, Bureau of the Census.

⁶ Consumer Personal Expenditures, Department of Commerce, deflated by Bureau of Labor Statistics Consumer Price Index for All Items (1935-39=100), and divided by population of the United States on July 1, Bureau of the Census.

The regression equation (2) indicates that at the average levels of the variables, an increase of 0.99 percent in expenditure was associated with a 1-percent increase in income. As in the previous analysis, the relation between relative prices and expenditure was found to be not significant.

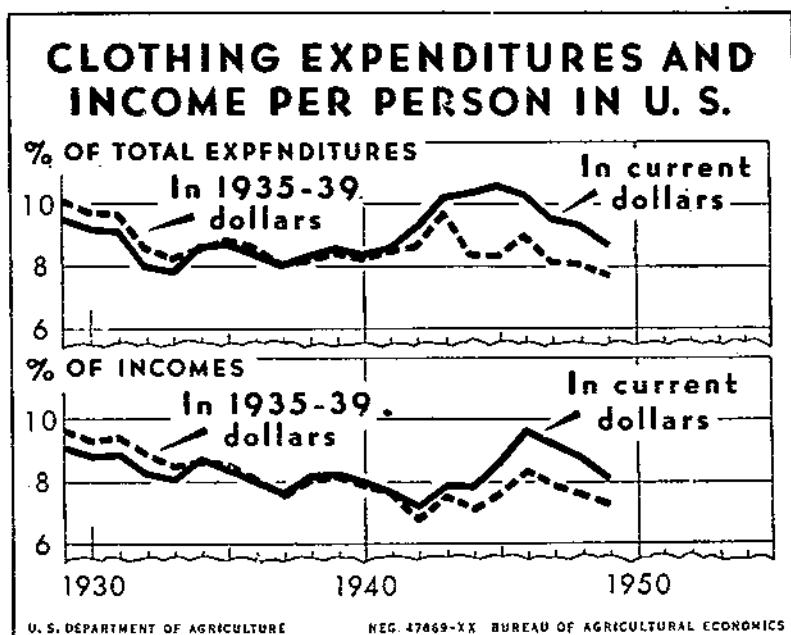


FIGURE 3.—Consumer expenditures for clothing in the United States vary directly with disposable income. During 1929-49, the percentage of disposable income spent for clothing ranged between 7.23 and 9.65 percent and averaged 8.42 percent. The trend of the percentage was downward during 1929-42, upward during 1942-46, and downward again during 1946-49. Expenditures for clothing represented between 7.88 and 10.62 percent and averaged 9.24 percent of total consumer expenditures.

INCOME ELASTICITY OF CLOTHING EXPENDITURE

The first analysis indicates that, at the 1929-39 average levels, a change of 1.07 percent in expenditure was associated with a 1-percent change in income. In other words, the average income elasticity for the period 1929-39 was about 1.07. The second analysis indicated an average income elasticity for the same period of 0.99.

Analysis of data on consumer expenditure obtained from 1935-36 consumer purchase studies, as shown in table 17, indicates that prewar expenditures for clothing increased as income increased. The percentage of total expenditure for clothing increased with total expenditure. The average income elasticity of expenditure for clothing for all income groups was somewhat higher than the income elasticity of both expenditure for food and expenditure for housing.⁵

⁵ The equations used to express the relation between income and expenditures for clothing, for housing, and for food were as follows:

$$\begin{aligned} (1) \log Y_1 &= -0.800 + 0.924 \log X_1 \\ (2) \log Y_2 &= 0.291 + 0.748 \log X_1 \\ (3) \log Y_3 &= 0.975 + 0.542 \log X_1 \end{aligned}$$

where X_1 = income, Y_1 = expenditure for clothing, Y_2 = expenditure for housing and Y_3 = expenditure for food. These equations indicate average income elasticity coefficients of 0.924 for clothing expenditure, 0.748 for housing expenditure, and 0.542 for food expenditure.

TABLE 17.—Average expenditure of families for clothing by income level, United States, 1935-36

Income level	Families		Average income per family	Average expenditure per family for—			
	Number	Percentage of total		All consumption items	Clothing	Clothing as a percentage of—	
						Income	Total consumption expenditure
	Thousands	Percent	Dollars	Dollars	Dollars	Percent	Percent
Under 500.....	4, 178	14. 2	312	466	35	11. 2	7. 5
500-750.....	3, 799	12. 9	627	707	56	8. 9	7. 9
750-1,000.....	4, 277	14. 6	874	914	78	8. 9	8. 5
1,000-1,250.....	3, 882	13. 2	1, 120	1, 127	100	8. 9	8. 9
1,250-1,500.....	2, 865	9. 8	1, 364	1, 316	123	9. 0	9. 3
1,500-1,750.....	2, 343	8. 0	1, 612	1, 512	147	9. 1	9. 7
1,750-2,000.....	1, 897	6. 4	1, 829	1, 684	164	9. 0	9. 7
2,000-2,500.....	2, 363	8. 4	2, 221	1, 968	207	9. 3	10. 5
2,500-3,000.....	1, 314	4. 5	2, 715	2, 302	255	9. 4	11. 1
3,000-4,000.....	1, 182	4. 0	3, 394	2, 729	316	9. 3	11. 6
4,000-5,000.....	403	1. 4	4, 391	3, 276	408	9. 3	12. 5
5,000-10,000.....	510	1. 7	6, 874	4, 454	557	8. 1	12. 5
10,000-15,000.....	132	. 4	11, 353	6, 097	829	7. 3	13. 6
15,000-20,000.....	59	. 2	17, 331	9, 134	1, 265	7. 3	13. 8
20,000 and over.....	94	. 3	41, 871	14, 822	2, 177	5. 2	14. 7
All levels.....	29, 400	100. 0	1, 622	1, 389	141	8. 7	10. 1

Reproduced from FAMILY EXPENDITURES IN THE UNITED STATES, 1935-36, tables 1, 3-4, pp. 1-2 (9).

The relatively high income elasticity of clothing expenditure is not surprising. Although clothing constitutes one of the basic essentials, the provision of adequate clothing does not represent the same degree of urgency as the provision of food and shelter. Clothing represents a category of consumption for which expenditure can be more sharply contracted or expanded in any given year to meet particular circumstances than can expenditure for almost any other essential. A considerable part of this flexibility arises from the fact that most articles of clothing are fairly durable, and that individuals are equipped with smaller or larger stocks of clothing which may be made to suffice for most needs if other demands on spendable funds are sufficiently pressing. Therefore, and because of the wider range of selection as to number, quality, and price than in most other categories of consumption, the level of expenditure for clothing accommodates itself much more readily than do food and housing to the current situation with respect both to income and to requirements other than clothing.

A rough approximation to family expenditure for wool clothing, by income groups, was obtained from the 1935-36 consumer purchase

studies. Analysis of the data revealed that, as in the case of all clothing, expenditure for wool clothing increased with income. For the major items of wool apparel, both unit prices and per capita unit purchases increased with income. This would indicate that per capita consumption of wool increases with income and so also does the grade and quality of wool consumed in the form of apparel.

Statistical analyses disclose that only a small part of the year-to-year variation in mill consumption of apparel wool in the United States, as well as of all textile fibers, was associated with disposable income, price, and trend during the interwar years (fig. 4). This is not surprising, for, although consumer demand for clothing varies directly with consumer purchasing power, mill consumption reflects anticipated future rather than current consumer demand for textile products. Because of the many time-consuming processes of the wool-textile and apparel industries, considerable time elapses between the dates when the raw wool is put into process and the manufactured goods become available at retail.

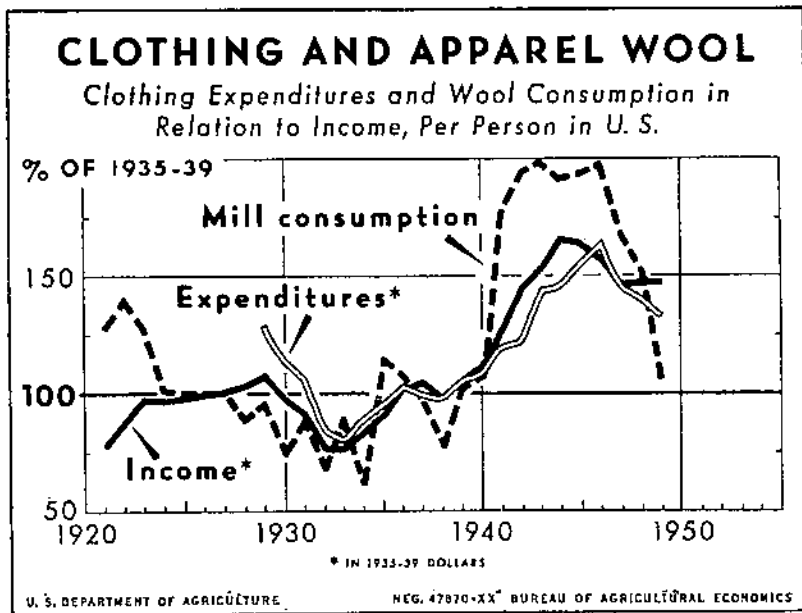


FIGURE 4.—Consumer expenditure for clothing varies directly with consumer purchasing power. Consumption of apparel wool in the long run tends to be high when disposable income is high, and vice versa. However, only a small part of the year-to-year variation in mill consumption was found to be associated with changes in disposable income and prices of apparel wool. A partial explanation lies in the fact that consumption by mills reflects anticipated future rather than current consumer demand for textile products. Fluctuations in inventories may be largely responsible for the extreme and somewhat erratic fluctuations in mill consumption of the raw fiber.

Furthermore, the wool-textile and apparel industries are not integrated. They consist of several consecutive levels of production under separate ownership. Purchases by retailers in anticipation of consumer-buying seasons must be preceded by a series of purchases and sales at the preceding stages of production and distribution. Purchases must be made some time in advance of actual need as a large part of the production of the industry consists of style lines, the styling of which is determined at the early stages of manufacture. Retailers usually order only a part of their anticipated requirements in advance of the beginning of the regular consumer-buying seasons; the remainder is bought on a day-to-day fill-in basis. Clothing manufacturers, weavers, knitters, spinners, and topmakers are guided in the timing of their buying by the advance commitments of their customers and their expectations as to price trends in their markets for raw materials. Topmakers, spinners, weavers, knitters, cutters, converters, wholesalers, and retailers, all must carry stocks of semiprocessed or manufactured goods of varying sizes in anticipation of future needs. Errors of anticipation can be compensated for to a considerable extent by changes in inventories.

In a sense, mill consumption of raw wool reflects both a consumer demand and an inventory demand. An examination of the relation between fluctuations in retail sales of wool products and in the various stages of production and marketing whereby raw wool is converted into finished goods, and of the relation of prices to buying movements, probably would help to explain the extreme and somewhat erratic fluctuations in mill consumption of apparel wool, but presently available statistics are too limited to permit such an investigation.

Both year-to-year changes in, and the long-term trend of, the consumption of apparel wool are influenced by the competition between apparel wool and other textile fibers and materials, as well as the wastes derived from wool (table 18). The extent of the substitution for any one particular use depends mainly upon the relative prices and quality characteristics of the materials and upon consumer preference. Wool competes with spun rayon in men's summer suitings, with fur in women's coats, with mohair in upholstery fabrics, and so on. In the woolen section of the industry, noils, a byproduct of the combing operation in the worsted section, compete with clothing wools. Wool fiber reclaimed from discarded apparel, cutter's scraps, and manufacturer's samples are used as substitutes for raw wool in the production of woolens.

Substitution in the wool-textile industry is not limited to the replacement of raw wool by other materials. Two or more wools may be suitable for the same use and therefore compete among themselves. Likewise, different wool yarn or fabric constructions encroach on one another's markets.

TABLE 18.—Per capita consumption of wool, rayon, cotton, and silk, United States, 1920-50¹

Year	Wool (scoured basis) ²			Rayon	Cotton	Silk	Total
	Apparel ³	Carpet ⁴	Total				
	Pounds	Pounds	Pounds				
1920	2.48	0.47	2.95	0.08	26.51	0.36	29.90
1921	2.76	.40	3.16	.18	23.96	.48	27.78
1922	2.84	.85	3.69	.22	26.45	.52	30.88
1923	2.78	.90	3.77	.29	27.89	.55	32.50
1924	2.19	.81	3.00	.37	23.10	.52	26.09
1925	2.17	.85	3.02	.50	26.54	.66	30.72
1926	2.17	.75	2.92	.52	27.36	.65	31.45
1927	2.17	.80	2.97	.81	30.14	.71	34.66
1928	1.93	.84	2.77	.83	26.43	.72	30.75
1929	2.08	.91	3.02	1.10	28.11	.80	33.03
1930	1.62	.51	2.13	.96	21.13	.65	24.87
1931	1.91	.58	2.49	1.27	21.27	.70	25.73
1932	1.50	.33	1.83	1.24	19.61	.60	23.28
1933	1.94	.57	2.51	1.72	24.13	.56	28.92
1934	1.32	.49	1.81	1.55	20.90	.48	24.74
1935	2.49	.77	3.26	2.02	21.57	.57	27.42
1936	2.33	.82	3.15	2.50	26.93	.52	33.10
1937	2.12	.82	2.94	2.35	28.12	.49	33.90
1938	1.68	.50	2.18	2.52	22.33	.44	27.47
1939	2.22	.79	3.01	3.48	27.54	.42	34.45
1940	2.33	.74	3.07	3.63	29.80	.36	36.86
1941	3.84	.90	4.83	4.41	38.72	.19	48.15
1942	4.14	.31	4.45	4.58	41.56	(⁵)	50.59
1943	4.39	.24	4.63	4.78	38.37	(⁵)	47.78
1944	4.15	.33	4.48	5.07	34.48	(⁵)	44.03
1945	4.20	.40	4.60	5.48	32.16	.01	42.25
1946	4.29	.90	5.19	6.16	33.84	.10	45.29
1947	3.63	1.19	4.82	6.82	32.20	.02	43.86
1948	3.29	1.41	4.70	7.80	30.28	.05	42.83
1949	2.26	1.08	3.34	6.60	25.58	.02	35.54
1950 ⁶	2.81	1.28	4.09	8.85	30.68	.07	43.69

¹ Includes military and textile exports.

² Before 1942 wool was considered as consumed when carded or otherwise advanced beyond scouring or raw-stock dyeing. Beginning 1942 wool was considered as consumed (1) on the woolen system when laid in mixes and (2) on the worsted system when entering scouring bowls. Beginning August 1943 consumption on the worsted system is taken as the sum of top and noil production. Consumption of raw wool on the cotton and other spinning systems is not included in 1946 and later years. It is included in earlier years. Consumption data also included raw wool consumed in batting and felt manufactures before 1947, but not in 1947 and later years.

³ For 1920-41 includes all domestic wool and all foreign wool except Donskoi, Smyrna, East Indian, Chinese, and similar wools particularly suitable for floor coverings. Data for these years include a small quantity of duty-free foreign wool and exclude a small quantity of duty-paid foreign wool. Data for later years include all duty-paid foreign wool and exclude all duty-free foreign wool.

⁴ For 1920-41 includes only Donskoi, Smyrna, East Indian, Chinese, and other foreign wools particularly suitable for floor coverings. Data for these years include a small quantity of duty-paid foreign wool and exclude a small quantity of duty-free foreign wool. Data for later years include all duty-free foreign wool and exclude all duty-paid foreign wool.

⁵ Less than 0.005 pound.

⁶ Preliminary.

Rayon data compiled from RAYON ORGANON (⁵); data for other fibers compiled from reports of the Bureau of the Census.

ANALYSIS OF FACTORS AFFECTING APPAREL WOOL PRICES

STATISTICAL ANALYSIS OF FACTORS AFFECTING WORLD PRICE OF APPAREL WOOL

The pages that follow are devoted to the results of two correlation analyses measuring the relation between apparel wool prices and world wool production, an index of income and trend. In the first analysis, time was treated as an independent variable. In the other, trend ratio rather than actual values were used. Both analyses cover the period beginning with the wool season of 1921-22 and extending through the 1937-38 season. The beginning year was determined by the availability of the London price series, which begins in 1921. Later years were not included because the outbreak of war in 1939 distorted the picture. The analyses reveal that a large part of the variation in prices for apparel wool was associated with the other factors considered.

The specific variables used in the first analysis are as follows:

X_1 (Price)—Annual average price of medium and fine wool (56's and 64's/70's/80's), clean content basis, at London auctions, year beginning July 1.

X_2 (Supply)—World wool production, grease basis, excluding production in the Soviet Union and China.

X_3 (Demand Shifter)—Index of nominal income for six of the chief consuming countries (United Kingdom, United States, France, Germany, Japan, and Italy).

X_4 (Time)—Wool year 1921-22=1.

The series are given in table 19.

A London price series was used to represent the world price for apparel wool. London is one of the principal world markets for this commodity. It reflects supply and demand conditions throughout the world. Moreover, it is the only world market for which quotations are available on a scoured basis for the period under consideration. The series was constructed by taking the arithmetic mean of (1) price quotations for 64's/70's/80's good medium fleeces, clean cost, without oil, and (2) price quotations for 56's combing fine cross-bred fleeces, clean cost, without oil. The prices used are annual average actual or money prices.

The supply series used in the analysis is necessarily a rough approximation of the world production of apparel wool on a grease basis. The production figure for any 1 year includes wool produced mostly in the spring in the Northern Hemisphere and during the season beginning July 1 or October 1 of the same calendar year in the Southern Hemisphere. The chief wool-shearing months in the principal producing countries are about as shown in figure 5. The series was obtained by deducting production in the Soviet Union and China from total world production of apparel and carpet wool. Production in these two countries consists chiefly of coarse apparel or carpet wools. For the series so derived, probably as high as 10 percent may be carpet wool. An additional 5 percent consists of coarse cross-bred wool, which is usually considered as carpet wool but is frequently used for apparel purposes.

Unfortunately, no series on world stocks at beginnings of seasons is available. As stocks doubtless had some influence on wool prices, the series on world production is only imperfectly representative of the supply factors operative during the 1921-38 period.

TABLE 19.—Series used in and estimated prices obtained from analyses of apparel wool prices, 1921-37

Year	Estimated world production of apparel wool ¹		Index of nominal income for 6 of chief consuming countries ²		Average price per pound of fine and medium apparel wool ³			
	Actual	Trend ratio	Actual	Trend ratio	Observed		Estimated	
					Actual	Trend ratio	Time regression	Trend ratio
	Million pounds				Pence		Pence	Pence
1921	2,660	0.9680	61.5	0.7611	34.6	0.7293	43.4	37.6
1922	2,710	.9675	74.1	.9242	46.2	1.0130	46.3	43.5
1923	2,650	.9285	81.0	1.0000	53.9	1.2314	50.4	51.2
1924	2,820	.9701	88.6	1.1089	57.4	1.3687	47.7	47.1
1925	2,960	1.0000	89.8	1.1281	41.1	1.0249	43.7	41.4
1926	3,140	1.0422	91.7	1.1564	38.5	1.0061	38.7	34.7
1927	3,170	1.0339	92.6	1.1722	43.1	1.1330	38.0	34.7
1928	3,290	1.0548	98.8	1.2570	38.7	1.1186	36.3	33.1
1929	3,300	1.0404	93.1	1.1890	25.6	.7814	34.0	31.0
1930	3,320	1.0295	70.2	.9000	18.0	.5820	25.2	21.8
1931	3,420	1.0430	54.4	.7001	16.1	.5534	16.5	13.5
1932	3,490	1.0474	51.1	.6602	17.7	.6493	13.0	11.1
1933	3,410	1.0074	61.0	.7912	26.6	1.0463	19.0	17.3
1934	3,340	.9715	64.3	.8372	20.3	.8606	22.3	20.1
1935	3,370	.9653	72.7	.9503	24.2	1.1124	24.2	21.4
1936	3,430	.9678	91.6	1.2021	29.6	1.4860	28.9	24.3
1937	3,450	.9591	95.0	1.2516	25.4	1.4045	29.4	23.5

¹ World production of all wool, grease basis, excluding production in Soviet Union and China. Probably about 10 percent of world production exclusive of Soviet Union and China is carpet wool. An additional 5 percent is coarse crossbred, usually reported with carpet wool but frequently used for apparel purposes.

² Sum of weighted products of indexes of wholesale prices and industrial production for United Kingdom, United States, France, Germany, Japan, and Italy. The weight assigned each country is that country's proportionate share of total disappearance of wool in the 6 countries during 1930-38: United Kingdom, 27.5; United States, 24.8; France, 19.2; Germany, 13.9; Japan, 8.2; and Italy, 6.4.

³ Arithmetic mean of price quotations at London auctions for (1) 64's/70's/80's good medium fleeces, clean cost, without oil, and (2) 55's combing fine crossbred fleeces, clean cost, without oil.

As a measure of the strength of world demand for apparel wool, an index of nominal income for six of the principal consuming countries (United Kingdom, United States, France, Germany, Japan, and Italy) was constructed. These six countries jointly accounted for about 65 percent of total world disappearance of raw apparel wool during 1930-38. Additional countries would have been included had the necessary data been available. Specifically, the index was constructed by taking the sum of the weighted products of indexes of wholesale prices and industrial production for the countries included in the

index. The weight assigned to each country represents that country's proportionate share of total disappearance in the six countries during 1930-38.

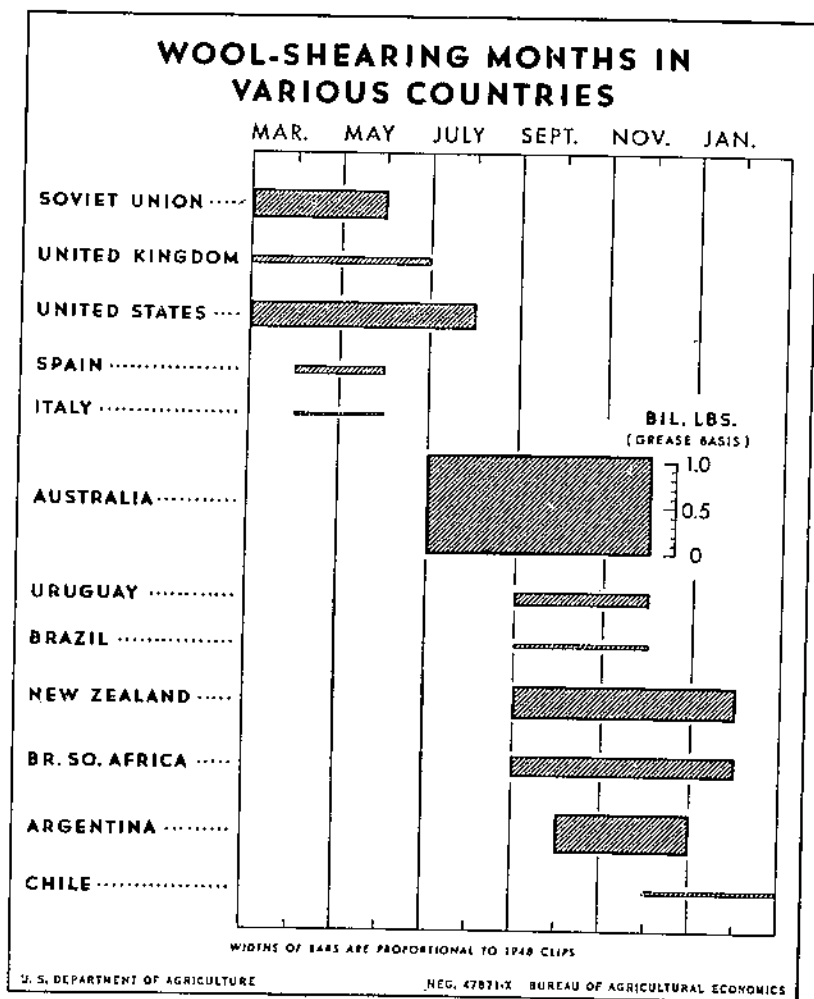


FIGURE 5.—Some wool is produced in every month of the year. In the Northern Hemisphere, wool is shorn mostly during February to July; in the Southern Hemisphere, the bulk of shearing takes place during July to December.

Time was included as an independent variable to measure the effects of factors other than those specifically represented in the analysis, to the extent that the combined influence of such other factors may have progressively increased or decreased during the period studied.

The regression equation obtained from the multiple correlation analysis is as follows:⁶

$$(3) \quad X'_1 = 105.136 - 0.031 X_2 + 0.352 X_3 - 0.060 X_4 \\ (0.012) \quad (0.094) \quad (0.686)$$

The regression equation (3) above indicates that the average net change in the annual price of apparel wool was associated with changes in the independent variables as follows:

(1) For an increase or decrease of 1 million pounds in world production of apparel wool, the money price of apparel wool decreased or increased, respectively, 0.03 pence per pound, clean content basis. At the average levels of the variables, price changed about 3.03 percent for a 1-percent change in production.

(2) For an increase or decrease of 1 point in the index of nominal income for the six principal consuming countries, the price of apparel wool increased or decreased, respectively, 0.35 pence per pound. At 1921-37 average levels, a change of 0.84 percent in price was associated with a 1-percent change in income.

(3) The net trend in the money price of apparel wool was downward at the rate of 0.01 pence per year. The net negative regression, however, is not significant statistically.

The extremely high intercorrelation among the independent variables lessens the confidence that can be placed in the reliability of the results. In the second analysis this was overcome by using trend ratio rather than actual values.⁷

⁶ Other statistical measures relating to this analysis are as follows:

$R^2_{1,234} = .827$	$R_{1,234} = .910$	$S_{1,234} = 5.863$
$R^2_{1,234} = .787$	$R_{1,234} = .887$	$t_{12,34} = -2.611$
$r_{12,34} = -.597$	$r_{12,34} = -0.729$	$t_{13,24} = 3.743$
$r_{13,24} = .721$	$r_{13,24} = 0.433$	$t_{14,23} = -0.088$
$r_{14,23} = -.025$	$r_{14,23} = -0.024$	

For 0.01 level of significance, $t=3.012$; for 0.05 level of significance, $t=2.160$.

⁷ More specifically, the equations to the trends of the money price of apparel wool, world production, and nominal income are, respectively,

$$T_{X_1} = 49.27647 - 1.18348X_4,$$

$$T_{X_2} = 2694.55878 + 53.08824X_4,$$

$$T_{X_3} = 81.09635 - 0.30613X_4,$$

where T_{X_1} is measured in pence, T_{X_2} in million pounds, T_{X_3} in index units, and X_4 in years, the origin being at January 1, 1922. The ratios of money prices, world production, and the index of nominal income to their respective trends are given in table 19 (p. 29). The variables used in the analysis are specifically referred to as follows:

Y_1 (Price)—Annual average price of medium and fine wool (56's and 64's/70's/80's), clean content basis, at London auctions, year beginning July 1, expressed as a trend ratio.

Y_2 (Supply)—World wool production, excluding production in the Soviet Union and China, expressed as a trend ratio.

Y_3 (Demand Shifter)—Index of nominal income for six of the chief consuming countries (United Kingdom, United States, France, Germany, Japan, and Italy), expressed as a trend ratio.

The following equation was found as the best expression of the relation between the variables:

$$(4) X_1' = 3.595 - 3.637 X_2' + 0.971 X_3'$$

(0.964) (0.192)

Figures in parentheses are standard errors.⁸

The regression equation (4) indicates that when price, production, and income are at their trend levels:

(1) An increase or decrease of 1 percent in production, on the average, has been associated with a decrease or increase, respectively, of 3.64 percent in the money price of apparel wool.

(2) An increase or decrease of 1 percent in the index of nominal income, if maintained for 1 year, on the average, has been associated with an increase or decrease, respectively, of 0.97 percent in the money price of apparel wool.

The coefficients of partial correlation and the β coefficients serve to indicate the relative influence of world production and demand, as represented by an index of nominal income, upon the price of apparel wool during the period studied.

The analyses indicate that changes in the money price of apparel wool were somewhat more closely associated with changes in demand than with changes in world production. Because of the absence of stocks as a factor in the analyses, however, supply may have been of greater importance than is indicated by the correlations.

Prices of wool during World War II and for some time afterward were dominated by government policies. The British Joint Organization was particularly influential in the postwar period because of its control of huge wartime accumulations of Dominion wools. These new factors completely overshadowed the effects of moderate year-to-year changes in wool production during the 1940's. However, the 1921-38 analyses still provide the best available measures of the normal effects of world production and income upon wool prices.

RELATION BETWEEN PRICES IN DOMESTIC AND FOREIGN MARKETS

With wool-textile manufacture centered in countries that have insufficient supplies of home-grown wool, a world price is established in the markets of the surplus-producing countries.

On the average over a period of years, substantially more apparel wool is consumed in the United States than is produced (fig. 6). During the interwar period, the United States imported more than 25 percent of its consumption requirements, although the percentage varied considerably from year to year. The proportion in later years has been higher, owing to military requirements during the war, a

⁸ Other statistical measures relating to the analysis are as follows:

$R_{1,23}^2 = .744$	$R_{1,23} = .862$	$S_{1,23} = 0.154$
$r_{12,3} = -.710$	$\beta_{12,3} = -0.516$	$t_{b_{12,3}} = -3.773$
$r_{13,2} = .804$	$\beta_{13,2} = 0.685$	$t_{b_{13,2}} = 5.056$

For 0.01 level of significance, $t = 2.977$.

decline in domestic production since 1942, and a higher level of consumption in the postwar period. Although the tariff tends to maintain a differential between world prices and open-market prices of comparable domestic wools approximately equal to the tariff, the absolute level of the domestic price tends to rise and fall with changes in the total demand for and the supply of wool throughout the world (fig. 7).

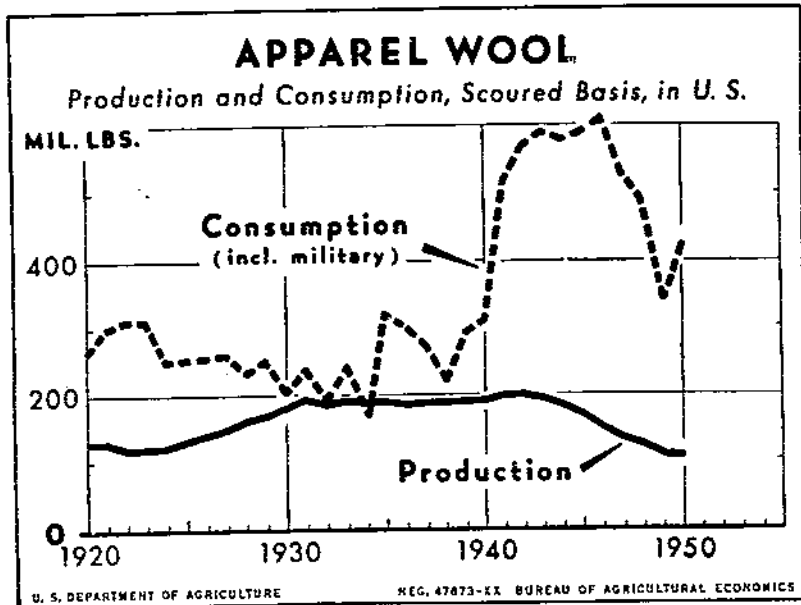


FIGURE 6.—On the average over a period of years, consumption of apparel wool in the United States is substantially in excess of domestic production. More than 25 percent of the apparel wool consumed during the interwar years was of foreign origin, although the percentage varied considerably from year to year. The proportion of foreign wool in total consumption during 1940-50 was higher, owing to military requirements during the war years, a decline in domestic production beginning in 1943, and a higher level of civilian consumption following World War II.

A comparison of prices at Boston of domestic territory fine strictly combing wool with prices of approximately comparable British Dominion wools at Boston and at London is given in table 20 and figure 8. The Boston prices for both domestic and imported wools are quoted prices compiled from reports of the Market News Service of the United States Department of Agriculture. They are actual selling prices to the extent that significant sales occur; when sales are negligible or nonexistent, they are asking prices of dealers or, if available, bid and asked prices. The London prices are actual selling prices at the London auctions compiled by Kreglinger and Fernau.

The comparison indicates that, in general, open-market prices of domestic wool follow the pattern established in foreign markets; however, they normally tend to be somewhat lower than duty-paid prices of approximately comparable grades of foreign wools, partly

because of different methods of preparation for market of domestic as compared with foreign wools. A detailed study of the comparative prices and price differentials on domestic and foreign wools for the years 1924-35 was published by the United States Tariff Commission in 1937 (14), for the years 1935-43 in 1944 (12), and for later years in 1948 (11).

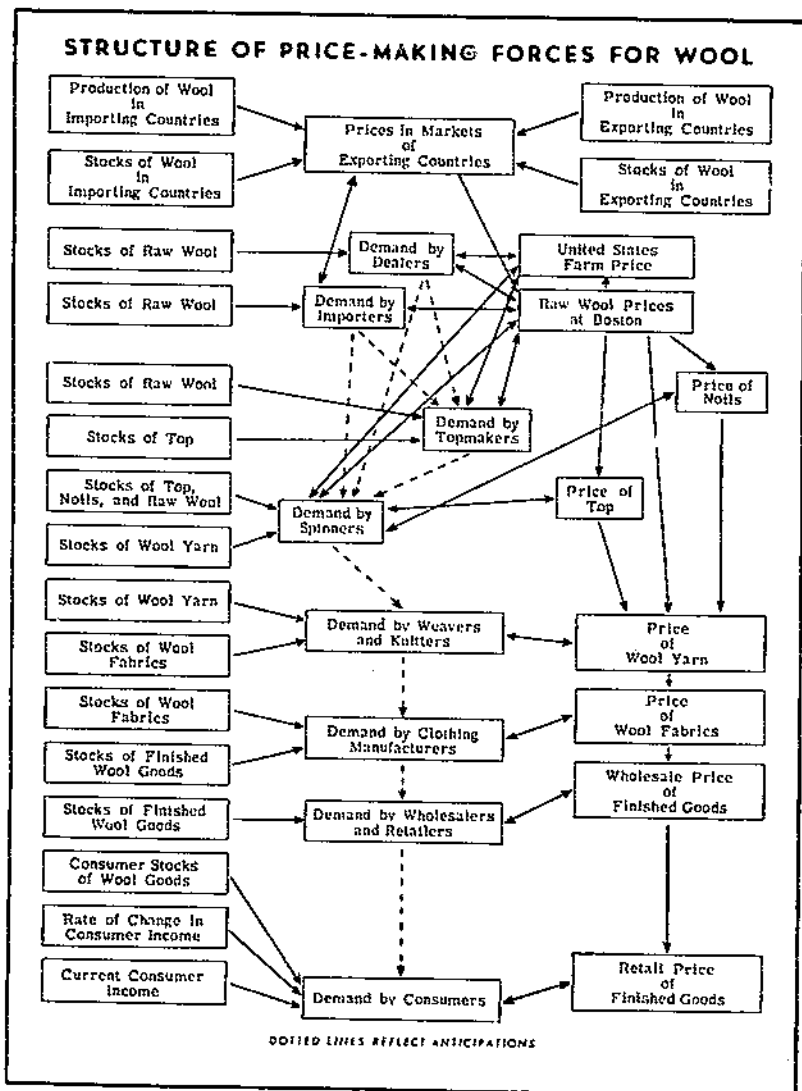


FIGURE 7.—Although the tariff tends to maintain a differential between world prices and open-market prices of comparable domestic wools approximately equal to the amount of the tariff, the absolute level of the domestic price tends to rise and fall with changes in the total demand for and supply of wool throughout the world.

TABLE 20.—Average price per pound and price differentials of fine wool at Boston and London markets, 1924-50

Year	Price			Duty	Price differentials, after adjustment for duty, of domestic at Boston and British Dominion at—	
	Domestic fine territory staple at Boston ¹	British Dominion			Boston	London
		Australian 64's-70's good top-making, in bond, ex-duty at Boston ²	64's-70's combing good medium fleeces at London ³			
	Cents	Cents	Cents	Cents	Cents	Cents
1924	141.2	(⁴)	130.3	31.0	(⁴)	20.1
1925	139.0	(⁴)	116.4	31.0	(⁴)	8.4
1926	116.2	(⁴)	95.1	31.0	(⁴)	9.9
1927	110.3	(⁴)	95.8	31.0	(⁴)	16.5
1928	116.1	102.0	98.3	31.0	16.9	13.2
1929	98.1	81.0	74.3	31.0	13.9	7.2
1930	76.2	56.0	51.2	31.5	11.3	6.5
1931	63.1	46.0	36.7	34.0	16.9	7.6
1932	47.0	30.0	28.9	31.0	17.0	15.9
1933	67.0	45.9	45.5	34.0	12.9	12.5
1934	81.6	61.9	58.8	34.0	14.3	11.2
1935	74.8	52.6	52.6	34.0	11.8	11.8
1936	92.0	66.2	65.4	34.0	8.2	7.4
1937	101.9	71.9	73.0	34.0	4.0	5.1
1938	70.4	50.4	51.9	34.0	14.0	15.5
1939	82.7	52.4	(⁵)	34.0	3.7	(⁶)
1940	96.3	61.4	(⁵)	34.0	.9	(⁶)
1941	108.8	69.5	(⁵)	34.0	-5.3	(⁶)
1942	119.1	75.4	(⁵)	34.0	-9.7	(⁶)
1943	117.8	75.9	(⁵)	34.0	-7.9	(⁶)
1944	119.0	72.1	(⁵)	34.0	-12.9	(⁶)
1945	117.7	75.2	(⁵)	34.0	-8.5	(⁶)
1946	102.6	76.1	(⁵)	34.0	7.5	(⁶)
1947	124.2	102.9	114.6	34.0	12.7	24.4
1948	164.6	159.9	179.5	25.5	20.8	40.4
1949	166.4	170.3	179.7	25.5	29.4	38.8
1950	199.2	198.7	216.2	25.5	25.0	42.5

¹ Price per pound, clean basis, American yield, for territory fine, combing (staple 64's and finer). Data for January 1944-July 1947 are Commodity Credit Corporation selling prices and for August 1947-July 1948 are from THE COMMERCIAL BULLETIN (7).

² Price per pound, clean basis, American yield, for Australian 64's-70's good top-making wool, in bond at Boston.

³ Price per pound, clean basis, Bradford yield, for Dominion 64's-70's-80's good medium fleeces at London auctions. Compiled from Kreglinger and Fernau market reports. Prices are based on opening and closing quotations for each series of London sales.

⁴ Not available.

⁵ An adjustment of 0.5 cent was made to allow for the higher duty after June 17. More than 80 percent of 1930 imports entered at the lower rate.

⁶ London auctions suspended August 1939 to August 1946.

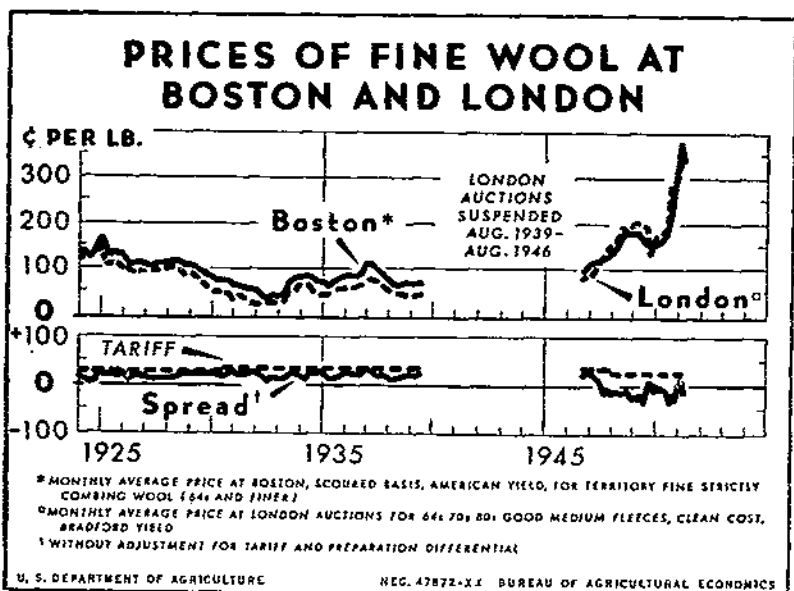


FIGURE 8.—Open-market prices of apparel wool at Boston and at London tend to rise and fall together, reflecting world conditions of supply and demand. Prices of domestic wools, however, normally tend to be somewhat less than the duty-paid prices of comparable British Dominion wools, owing largely to the better preparation for market of the latter.

As a result largely of Government policy, prices of domestic wools during the period 1940-46 were substantially above duty-paid prices of approximately comparable imported wools. When the Government began to place large military orders for wool textiles in 1940, the War Department, under the provisions of the Buy American Act of 1933, required the use of domestic wools as long as available in the grades needed. In 1941 the War Department, in order to encourage an increase in domestic production, allowed substantial differentials in favor of domestic wools when used in military fabrics. The OPA ceiling prices for both domestic and foreign wools, which were put into effect in February 1942, were based on market prices that prevailed late in 1941, which favored domestic wools. When the wool purchase program of the Commodity Credit Corporation was inaugurated in 1943, purchase prices were based on OPA ceiling prices. Prices of domestic wools at Boston changed but little from early in 1942 until late in 1945. Likewise, prices for imported wool were rather stable for the period 1942-45 owing to OPA ceilings and the policies followed by the British Government.

Selling prices of the Commodity Credit Corporation, which had been identical with purchase prices, were reduced in November 1945 and again in February 1946. But as the CCC was prohibited by law from selling below parity, it was necessary to raise selling prices from time to time in later months. Under the provisions of Public Law 360, approved by the President on August 5, 1947, the CCC was permitted to dispose of its accumulated stocks at less than parity.

But with the reopening of British Empire auctions in September 1946, prices of foreign wools rose rapidly. During 1947, duty-paid prices of most imported fine wools, adjusted for the preparation differential, advanced to levels above the selling prices of CCC for comparable domestic wools. Price advances for foreign wools since September 1946 have been greater than for domestic wools, and since late in 1947 duty-paid prices of imported wools have been higher than those for comparable domestic wools.

GRADE AND STAPLE DIFFERENTIALS AT BOSTON

Prices for the various staples and grades of apparel wool tend to rise and fall together, as illustrated by the high degree of parallelism of the curves of prices of the different grades in figure 9. However, changes in price usually are not proportional for all grades and staples owing to disproportionate changes in the supply of and demand for the various grades and staples (tables 21 and 22). Changes in disposable income and fashion strongly influence the demand for the different grades and staples and therefore the spread in prices between them.

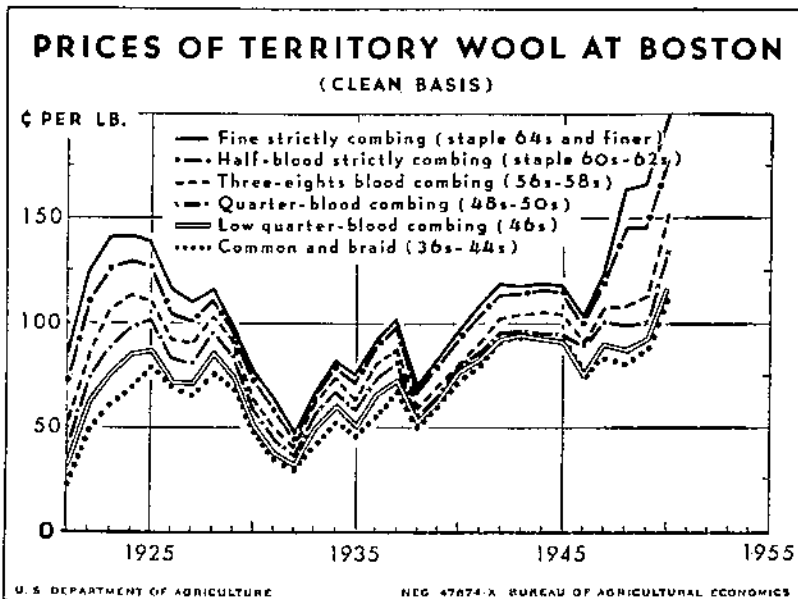


FIGURE 9.—Prices for the various grades of apparel wool tend to rise and fall together. However, because of disproportionate changes in the supply of and demand for the various grades, changes in prices usually are not proportional for all grades.

The proportion of total consumption of apparel wool in the United States represented by any one grade varies considerably from year to year. Also, since 1920 there has been a material shift in the demand for the different wool goods in the United States and consequently for the different grades of wool used (tables 23 and 24).

TABLE 21.—Price per pound of graded territory shorn wool, clean basis, by grades, Boston, 1924-50

Year	Fine			½ blood			¾ blood		¼ blood combing	Low ¼ blood	Common and braid
	Staple	French combing	Clothing	Staple	French combing	Clothing	Combing	Clothing			
	Cents	Cents	Cents	Cents	Cents	Cents	Cents	Cents			
1924	141.2	131.1	124.2	129.6	(1)	116.9	113.1	103.5	97.8	84.5	68.6
1925	139.0	131.1	124.5	126.8	(1)	114.2	110.6	99.0	101.5	86.1	78.5
1926	116.2	106.9	100.0	101.1	(1)	91.8	92.5	82.2	83.0	71.9	68.3
1927	110.3	103.2	95.0	100.8	94.8	89.0	90.6	79.5	80.7	71.1	65.2
1928	116.1	109.1	103.9	111.3	106.0	100.0	103.6	94.5	95.8	86.0	75.8
1929	98.1	91.5	90.1	97.0	93.5	89.6	92.3	85.7	83.4	73.5	67.6
1930	76.2	71.9	67.4	72.1	67.8	65.0	63.4	58.8	58.9	50.8	46.0
1931	63.1	57.9	54.5	57.8	54.5	50.7	49.9	45.3	44.1	37.9	34.4
1932	47.0	43.6	40.4	41.4	41.5	38.6	40.4	36.5	36.0	32.0	29.3
1933	67.0	61.3	60.5	61.7	61.5	57.9	60.8	57.2	56.3	49.6	42.6
1934	81.6	77.9	73.8	78.4	74.9	71.5	74.2	69.4	67.5	59.6	52.5
1935	74.8	70.3	65.6	71.3	67.9	63.9	63.6	59.2	58.6	51.4	46.0
1936	92.0	88.6	84.6	88.6	85.5	81.7	80.4	75.0	73.9	65.9	56.9
1937	101.9	96.8	91.1	98.0	92.9	88.7	87.1	81.0	81.1	72.1	67.0
1938	70.4	65.9	61.4	66.3	62.6	59.1	58.9	54.5	54.2	52.4	50.0
1939	82.7	78.4	73.0	78.4	74.4	70.6	69.3	65.0	65.2	62.6	59.9
1940	96.3	91.2	85.8	91.6	87.7	82.6	79.7	75.4	74.6	76.1	72.8
1941	108.8	104.1	98.2	103.1	99.5	95.0	91.2	86.9	85.8	82.3	80.0
1942	119.1	115.4	107.5	113.5	109.5	103.7	102.6	94.4	95.3	90.7	90.4
1943	117.8	113.3	109.1	114.6	109.4	106.5	104.2	96.8	94.6	93.7	92.0
1944	119.0	114.2	109.2	115.1	109.0	106.5	104.5	98.5	95.0	92.0	92.0
1945	117.7	114.3	109.4	114.8	108.1	104.8	103.5	97.0	94.6	90.7	90.8
1946	102.6	99.0	90.0	99.8	96.4	84.9	91.4	79.9	88.2	75.6	75.0
1947	124.2	120.4	105.2	118.8	113.7	100.2	107.0	96.5	100.6	89.2	82.2
1948	164.6	155.0	125.8	145.5	137.0	116.0	107.6	92.0	99.3	88.1	80.7
1949	166.4	155.2	137.0	147.0	136.6	120.6	112.8	95.0	100.1	92.5	87.5
1950	199.2	189.3	172.6	178.2	162.9	142.6	151.0	116.3	134.3	116.2	110.9

¹ Not available.

TABLE 22.—Percentage relation between price of territory fine-staple combing wool and other territory wools, clean basis, by grades, Boston, 1924-50

Year	Fine			½ blood			¾ blood		¼ blood combing	Low ¼ blood	Common and braid
	Staple	French combing	Clothing	Staple	French combing	Clothing	Combing	Clothing			
	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent	Percent
1924	100	92.8	88.0	91.8	(1)	82.8	80.1	73.3	69.3	59.8	48.6
1925	100	94.3	89.6	91.2	(1)	82.2	79.6	71.2	73.0	61.9	56.5
1926	100	92.0	86.1	89.6	(1)	81.6	79.6	70.7	71.4	61.9	58.8
1927	100	93.6	86.1	91.4	85.9	80.7	82.1	72.1	73.2	64.5	59.1
1928	100	94.2	89.5	95.9	91.3	86.1	89.2	81.4	82.5	74.1	65.3
1929	100	96.3	91.8	98.9	95.3	91.3	94.1	87.4	85.0	74.9	68.9
1930	100	94.4	88.5	94.6	89.0	85.3	83.2	77.2	77.3	66.7	60.4
1931	100	91.8	86.4	91.6	86.4	80.3	79.1	71.8	69.9	60.1	54.5
1932	100	92.8	86.0	94.5	88.3	82.1	86.0	77.7	76.6	68.1	62.3
1933	100	96.0	90.3	96.6	91.8	86.4	90.7	85.4	84.0	74.0	63.6
1934	100	95.5	90.4	96.1	91.8	87.6	90.9	85.0	82.7	73.0	64.3
1935	100	94.0	87.7	95.3	90.8	85.4	85.0	79.1	78.3	68.7	61.5
1936	100	96.3	92.0	96.3	92.9	88.8	87.4	81.5	80.3	71.6	61.8
1937	100	95.0	89.4	96.2	91.2	87.0	85.5	79.5	79.6	70.8	65.8
1938	100	93.6	87.2	94.2	88.9	83.9	83.7	77.4	77.0	74.4	71.0
1939	100	94.8	88.3	94.8	90.0	85.4	83.8	78.6	78.8	75.7	72.4
1940	100	94.7	89.1	95.1	91.1	85.8	82.8	78.3	77.5	79.0	75.6
1941	100	95.7	90.3	94.8	91.5	87.3	83.8	79.9	78.9	75.6	73.5
1942	100	96.9	90.3	95.3	91.9	87.1	86.1	79.3	80.0	76.2	75.9
1943	100	96.2	92.6	97.3	92.9	90.4	88.5	82.2	80.3	79.5	78.1
1944	100	96.0	91.8	96.7	91.6	89.5	87.8	82.8	79.8	77.3	77.3
1945	100	97.1	92.9	97.5	91.8	89.0	87.9	82.4	80.4	77.1	77.1
1946	100	96.5	87.7	97.3	94.0	82.7	80.1	77.9	86.0	73.7	73.1
1947	100	96.9	84.7	95.7	91.5	80.7	86.2	77.7	81.0	71.8	66.2
1948	100	94.2	76.4	88.4	83.2	72.5	65.4	55.9	60.3	53.5	49.0
1949	100	93.3	82.3	88.3	82.1	70.5	67.8	57.1	60.2	55.6	52.6
1950	100	95.0	86.6	89.5	81.8	71.6	75.8	58.4	67.4	58.3	55.7

¹ Not available.

This is reflected in rather marked changes in the relative quantities of the different grades consumed. The proportion of fine wool (64's and finer) has shown a gradual upward trend, as illustrated by the averages for consecutive 5-year interwar periods, beginning with 1921-25, as follows: 24.2, 29.9, 35.5, and 40.6 percent, respectively. At the same time, the trend of the proportion of quarter-blood wools (48's, 50's) has been gradually downward, the consecutive 5-year averages being 30.1, 21.3, 17.0, and 15.1 percent, respectively.

TABLE 23.—Percentage distribution of mill consumption of apparel wool, by grades, United States, 1921-50

Year	64's and finer	58's, 60's	50's	48's, 50's	46's and coarser	Total
	Percent	Percent	Percent	Percent	Percent	Percent
1921	25.3	16.1	22.0	32.2	4.4	100.0
1922	20.7	15.4	25.1	33.6	5.2	100.0
1923	22.6	14.2	24.0	32.7	6.5	100.0
1924	26.6	14.9	23.2	26.4	8.9	100.0
1925	26.5	15.3	23.3	26.0	8.9	100.0
1926	23.9	15.3	24.0	25.3	11.5	100.0
1927	27.7	15.8	21.4	21.9	13.2	100.0
1928	29.0	17.7	21.2	22.1	10.0	100.0
1929	31.4	17.6	20.5	19.8	10.7	100.0
1930	37.5	18.2	17.6	17.4	9.3	100.0
1931	35.2	19.2	20.8	16.4	8.4	100.0
1932	34.5	20.3	20.5	17.7	7.0	100.0
1933	37.1	17.8	19.9	16.3	8.9	100.0
1934	32.6	17.2	22.8	17.8	9.6	100.0
1935	38.1	15.4	23.0	16.7	6.8	100.0
1936	36.7	14.2	21.4	15.9	11.8	100.0
1937	38.4	13.1	21.3	14.8	12.4	100.0
1938	41.4	13.3	22.1	16.3	6.9	100.0
1939	42.4	13.3	21.8	14.5	8.0	100.0
1940	44.5	14.9	19.1	13.9	7.6	100.0
1941	43.2	15.1	18.6	12.8	10.3	100.0
	60's and finer		50's up to 60's		48's and coarser	
1942	52.5		34.4		13.1	100.0
1943	46.5		42.4		11.1	100.0
1944	46.6		41.9		11.5	100.0
1945	47.8		41.9		10.3	100.0
1946	54.9		31.2		13.9	100.0
1947	62.2		25.6		12.2	100.0
1948	62.6		26.9		10.5	100.0
1949	54.6		35.4		10.0	100.0
1950	55.8		34.9		9.3	100.0

Derived from reports of the Bureau of the Census. Percentages for years prior to 1938 are based on reports covering 75 to 80 percent of the industry.

TABLE 24.—Percentage distribution of apparel wool consumption by worsted and woolen systems, United States, 1921-50

Year	System		Total
	Worsted	Woolen ¹	
	Percent	Percent	Percent
1921.....	68	32	100
1922.....	65	35	100
1923.....	68	32	100
1924.....	65	35	100
1925.....	68	32	100
1926.....	71	29	100
1927.....	70	30	100
1928.....	68	32	100
1929.....	73	27	100
1930.....	75	25	100
1931.....	77	23	100
1932.....	74	26	100
1933.....	75	25	100
1934.....	66	34	100
1935.....	69	31	100
1936.....	68	32	100
1937.....	67	33	100
1938.....	67	33	100
1939.....	69	31	100
1940.....	66	34	100
1941.....	64	36	100
1942.....	54	46	100
1943.....	48	52	100
1944.....	50	50	100
1945.....	50	50	100
1946.....	57	43	100
1947.....	64	36	100
1948.....	66	34	100
1949.....	59	41	100
1950.....	67	33	100

¹ Consumption of raw wool on the cotton and other systems of spinning is included in consumption on the woolen system in 1945 and earlier years but not in later years. Consumption on the woolen system includes consumption in batting and felt manufactures in 1946 and earlier years but not in later years.

Derived from reports of the Bureau of the Census.

RELATION BETWEEN FARM PRICE AND BOSTON MARKET PRICES

Changes in farm prices of wool are closely associated with changes in Boston market prices. If clean basis market prices are converted to a grease basis equivalent, a 1-cent change in Boston prices from year to year is usually accompanied by a similar change in the United States farm price. This is not an exact relationship as marketing margins vary somewhat from year to year.

Accurate current data on marketing margins between farm and Boston price levels are not available. A study published by the Bureau of Agricultural Economics (5) in 1945 indicated that marketing charges during 1935-39 averaged a little less than 20 percent of

the Boston price, or 13 to 14 cents a pound on a scoured weight basis. This margin was derived by statistical adjustments of the farm price data rather than from direct information on marketing charges.

INTERSTATE VARIATION IN AVERAGE PRICE RECEIVED BY DOMESTIC GROWERS FOR SHORN WOOL

The average price received by domestic growers for shorn wool in the United States varies considerably from one State to another (table 25). In 1950, for example, the average price ranged from 42 cents per pound, grease basis, in Alabama to 64 cents in Texas. The variation reflects differences in grade and staple of wool produced, differences in shrinkage or yield, differences in marketing practices and marketing costs, and other factors.

TABLE 25.—Average price per pound received by farmers for shorn wool, grease basis, by States, 1950

State	Price	State	Price
	<i>Cents</i>		<i>Cents</i>
United States.....	57.3	North Carolina.....	52.0
Texas.....	64.0	Indiana.....	51.0
Montana.....	63.0	Florida.....	51.0
South Dakota.....	61.0	Connecticut.....	50.0
Pennsylvania.....	61.0	Massachusetts.....	50.0
Oregon.....	58.0	Rhode Island.....	50.0
Virginia.....	58.0	Michigan.....	50.0
Kentucky.....	57.0	Illinois.....	50.0
California.....	56.0	Nebraska.....	49.0
Utah.....	56.0	Mississippi.....	49.0
Colorado.....	56.0	Arkansas.....	48.0
Wyoming.....	56.0	New Jersey.....	48.0
Ohio.....	56.0	New York.....	48.0
Nevada.....	55.0	Delaware.....	47.0
Tennessee.....	55.0	Arizona.....	47.0
West Virginia.....	55.0	New Hampshire.....	47.0
Louisiana.....	55.0	Kansas.....	46.0
Missouri.....	55.0	Maryland.....	46.0
Wisconsin.....	55.0	Vermont.....	46.0
New Mexico.....	54.0	Maine.....	45.0
North Dakota.....	54.0	South Carolina.....	44.0
Iowa.....	53.0	Oklahoma.....	44.0
Idaho.....	52.0	Georgia.....	43.0
Washington.....	52.0	Alabama.....	42.0
Minnesota.....	52.0		

Locality of growth is a factor in prices of apparel wool. Because of differences in breeding, grazing conditions, soil, and climate, wools grown in different regions of the United States differ widely as to grade, staple, condition, shrinkage, and color (tables 8, 9, 10, and 26). Shorn wools in the United States are usually sold with reference to the State or area where produced. For convenience, the market tends to group domestic wools under three broad descriptions—fleece, ter-

ritory, and Texas. Many subdivisions of these descriptions are in regular use, however.

Fleece wools are grown in all the Eastern and Southern States and as far west as the Dakotas (eastern part), Nebraska, Kansas, and Oklahoma. The sheep are chiefly of the mutton breeds. Between 70 and 75 percent of the fleece wools are graded as three-eighths blood or coarser. Wools grown east of the Mississippi River and in some parts of Minnesota, Iowa, and Missouri, are light in color and of relatively light shrinkage; they are referred to as bright fleece wools in the domestic wool trade. In the hilly sections of southern Ohio, Michigan, and a small part of western Pennsylvania and northeastern West Virginia, much of the land is unsuitable for crops and is kept in pasture. In these areas, merino sheep are raised extensively; a light-shrinking, fine delaine wool is produced. Fleece wools grown in the farm areas of North and South Dakota, Nebraska, Kansas, Oklahoma, and in parts of Minnesota, Iowa, Wisconsin, and Missouri are somewhat dark in color and of moderately heavy shrinkage. These wools are referred to as semibright fleece wools.

Territory wools are grown in the far West and in the western sections of North and South Dakota, Nebraska, and Kansas. Sheep are herded in bands on open ranges. The wool produced is of higher shrinkage than is fleece wool. More than 80 percent of the wools grade half-blood or finer. Wools grown in Arizona, California, New Mexico, and Oregon are generally known by the State name, as wools from these States have peculiarities that distinguish them from wools from other States and regions.

The sheep industry in Texas is carried on in a way somewhat intermediate between the western range and eastern farm systems. Much of the land is fenced. Texas wools are mostly fine wools from merino breeds. They are uniform in character and somewhat softer than the territory wools.

The spread between farm prices and Boston prices, or the merchandising margin, varies considerably from State to State. Average deductions for more than 100 million pounds of wool handled by the Commodity Credit Corporation in 1943 ranged from 4.35 cents per pound for ungraded Texas wool to 6.76 cents per pound for ungraded Oklahoma wool and from 5.10 cents per pound for graded Texas wool to 7.52 cents for graded Oklahoma wool. The margins for ungraded wool ranged from 8.9 percent of the Boston price for Texas and North Dakota wool to 20 percent for Oklahoma wool; and for graded wool from 10.6 percent of the Boston price for Texas and North Dakota wool to 19.8 percent for Oklahoma wool (5).

For 77 million pounds of ungraded wool handled by the Commodity Credit Corporation that year, transportation charges averaged 48 percent of the total merchandising margins (5). Most of the domestic clip is transported a great distance. Although the production of wool is widely distributed over the United States, the greater part is produced in the Southwest and far West (table 27). On the other hand, the bulk of the raw wool is consumed in the northeastern part of the United States (table 28). In 1939, 43 percent of the apparel wool was consumed by mills in Massachusetts alone.

TABLE 26.—*Shrinkage of domestic shorn wools, by grade, by States or areas, average 1936-40*

State or area	Fine	½ blood	¾ blood	¼ blood	Low ¹
	Percent	Percent	Percent	Percent	Percent
Farming region ²	62	56	47	43	42
New England.....	60	53	45	42	41
New York ³	63	58	48	44	43
Pennsylvania.....	59	54	46	42	42
Virginia ⁴	58	52	41	39	38
West Virginia.....	59	55	41	38	38
Kentucky.....	57	51	42	39	38
Tennessee.....	56	52	42	39	37
Southern ⁵	60	58	43	40	38
Ohio.....	62	55	46	43	42
Indiana.....	63	58	47	44	44
Michigan.....	64	57	47	44	42
Illinois.....	64	58	48	45	44
Wisconsin.....	64	58	47	44	43
Minnesota.....	65	60	50	47	46
Iowa.....	64	58	49	46	46
Central West ⁶	66	61	52	49	46
North and South Dakota ⁷	65	60	54	50	48
Western Oregon ⁸	62	55	47	40	38
Range region ⁹	66	60	57	52	46
Average.....	66	60	52	45	44

¹ Includes low-quarter blood, common, and braid.

² North and South Atlantic, East and West North Central, and South Central regions, exclusive of Texas; western parts of North and South Dakota, Nebraska, and Kansas; the Willamette Valley of western Oregon, and parts of western Washington.

³ Includes New Jersey.

⁴ Includes Maryland.

⁵ North Carolina to Mississippi and Louisiana, including Arkansas.

⁶ Oklahoma, Missouri, and eastern part of Nebraska and Kansas.

⁷ Excludes western, or range, section of North and South Dakota.

⁸ Willamette Valley and parts of western Washington.

⁹ The far West and Texas, including the western parts of North and South Dakota, and Nebraska and Kansas, but excluding the Willamette Valley in western Oregon and excluding the farm-grown wools of western Washington.

Compiled from UNITED STATES WOOLS, PRODUCTION BY REGIONS AND BY GRADES, 1936-40 (13).

TABLE 27.—*Production of shorn wool, grease basis, by divisions, United States, 1950*

Division	1950		Division	1950	
	Production	Percent- age of total		Production	Percent- age of total
	<i>1,000 pounds</i>	<i>Percent</i>		<i>1,000 pounds</i>	<i>Percent</i>
United States.....	220, 135	100. 0	West North Cen- tral ¹	31, 795	14. 4
North Atlantic ¹	2, 981	1. 4	South Central ²	59, 945	27. 2
South Atlantic ²	3, 389	1. 5	Western ³	103, 768	47. 2
East North Cen- tral ³	18, 257	8. 3			

¹ Includes Connecticut, Maine, Massachusetts, Pennsylvania, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

² Includes Delaware, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, and West Virginia.

³ Includes Illinois, Indiana, Michigan, Ohio, and Wisconsin.

⁴ Includes Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, and South Dakota.

⁵ Includes Alabama, Arkansas, Kentucky, Louisiana, Mississippi, Oklahoma, Tennessee, and Texas.

⁶ Includes Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

TABLE 28.—*Mill consumption of apparel wool, scoured basis, by States, 1939*

State	Apparel-wool consumption		State	Apparel-wool consumption	
	Con- sump- tion	Percent- age of total		Con- sump- tion	Percent- age of total
	<i>Thou- sand pounds</i>	<i>Percent</i>		<i>Thou- sand pounds</i>	<i>Percent</i>
United States.....	296, 785	100. 00	Oregon.....	2, 934	. 99
Massachusetts.....	127, 757	43. 06	Illinois.....	2, 377	. 80
Rhode Island.....	49, 571	16. 70	Wisconsin.....	2, 142	. 72
New Jersey.....	23, 487	7. 91	Michigan.....	2, 019	. 68
Pennsylvania.....	16, 038	5. 40	Indiana.....	1, 671	. 56
New York.....	14, 386	4. 85	Virginia.....	1, 629	. 55
Ohio.....	9, 241	3. 11	Tennessee.....	1, 471	. 50
Maine.....	8, 616	2. 90	Minnesota.....	1, 303	. 44
New Hampshire.....	7, 900	2. 66	West Virginia.....	1, 266	. 43
Connecticut.....	6, 711	2. 26	Vermont.....	836	. 28
North Carolina.....	5, 178	1. 74	California.....	384	. 13
Georgia.....	3, 103	1. 05	Other States.....	6, 765	2. 28

Derived from 1939 CENSUS OF MANUFACTURES (7).

MARKETING AND MANUFACTURING MARGINS FOR WOOL TEXTILES

Before wool can be used by the ultimate consumers, it must be processed, manufactured, and marketed through highly specialized channels. Figure 10 shows the general pattern of the various processes of the wool-textile industry. As these practices and procedures vary with each individual firm and with the type of fabric, the figure represents only a fairly common general outline of the routine of the industry. The complete sequence of operations shown is not necessarily carried out in any one factory. In the United Kingdom, for example, there is a large degree of specialization, especially in the worsted section. Many manufacturers are engaged in one stage of manufacture only, such as topmaking, spinning, or weaving.

Because of the extensive processing and servicing required, returns to growers for the raw wool amount to only a relatively small proportion of the prices paid by consumers for the finished wool products. A study of marketing and manufacturing margins for wool textiles by the Bureau of Agricultural Economics (5) indicated that during the 16 years, 1926-41, returns to growers for the raw wool averaged about 13 percent of the retail prices of the finished goods. The proportion varied directly with the price of wool, from almost 18 percent in 1928 to 6 percent in 1932, and to about 17 percent in 1941. Marketing, manufacturing, and merchandising margins for wool averaged more than 87 percent of the consumer's dollar during the period. On the average, in 1939, about 11.4 percent of the consumer's dollar went to growers for farm production; 2.7 percent for all the services rendered in taking the wool from the producer and delivering it to the manufacturer, not including scouring; 13.4 percent for scouring, carding or combing, spinning, and weaving and finishing fabrics; 34.6 percent for manufacturing apparel and household goods; 3.1 percent for wholesaling; and 34.8 percent for retailing.

As agencies that are primarily engaged in the different kinds of conversion, in one respect, may engage also in some of the same kinds of conversions in other respects, the margins indicated for each type of conversion and service do not necessarily reflect accurately the charges made by each type of agency.

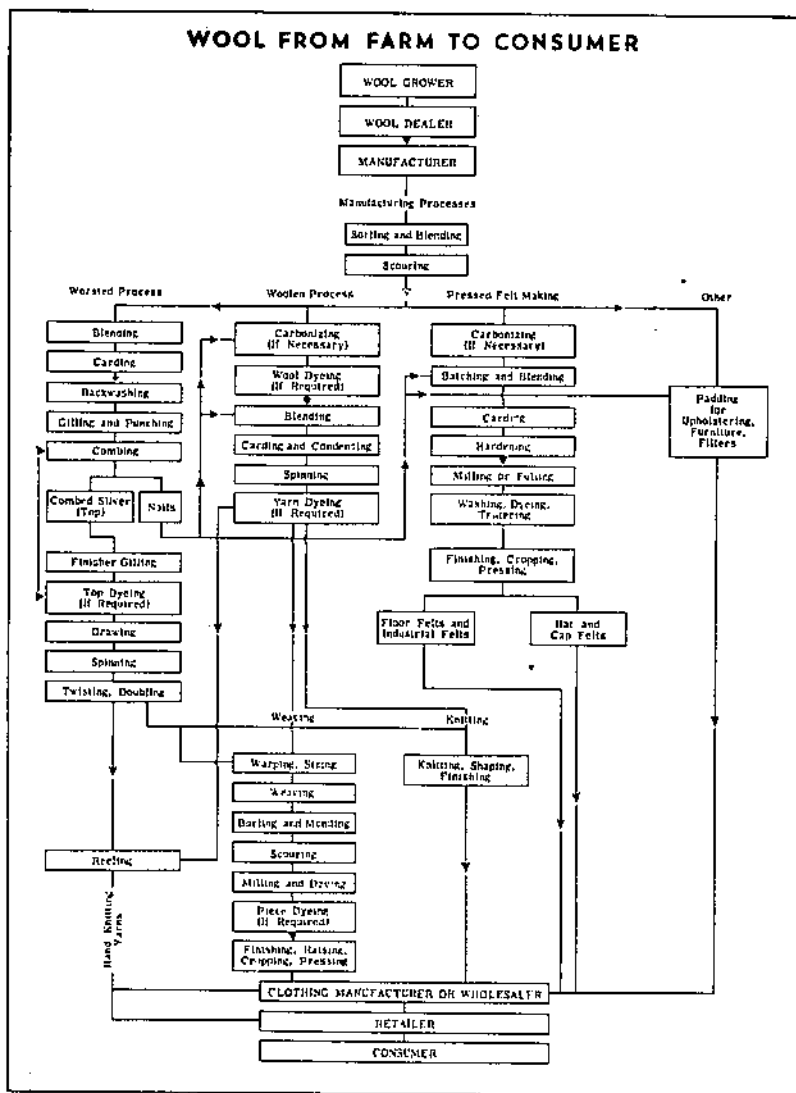


FIGURE 10.—Before apparel wool can be used by the ultimate consumer, it must be processed, manufactured, and marketed through highly specialized channels. Wool is subject to many variations in manufacture, depending upon the individual firm and the type of yarn or fabric. Many of the processes through which wool passes are designed to improve the appearance or feel of a yarn or fabric.

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