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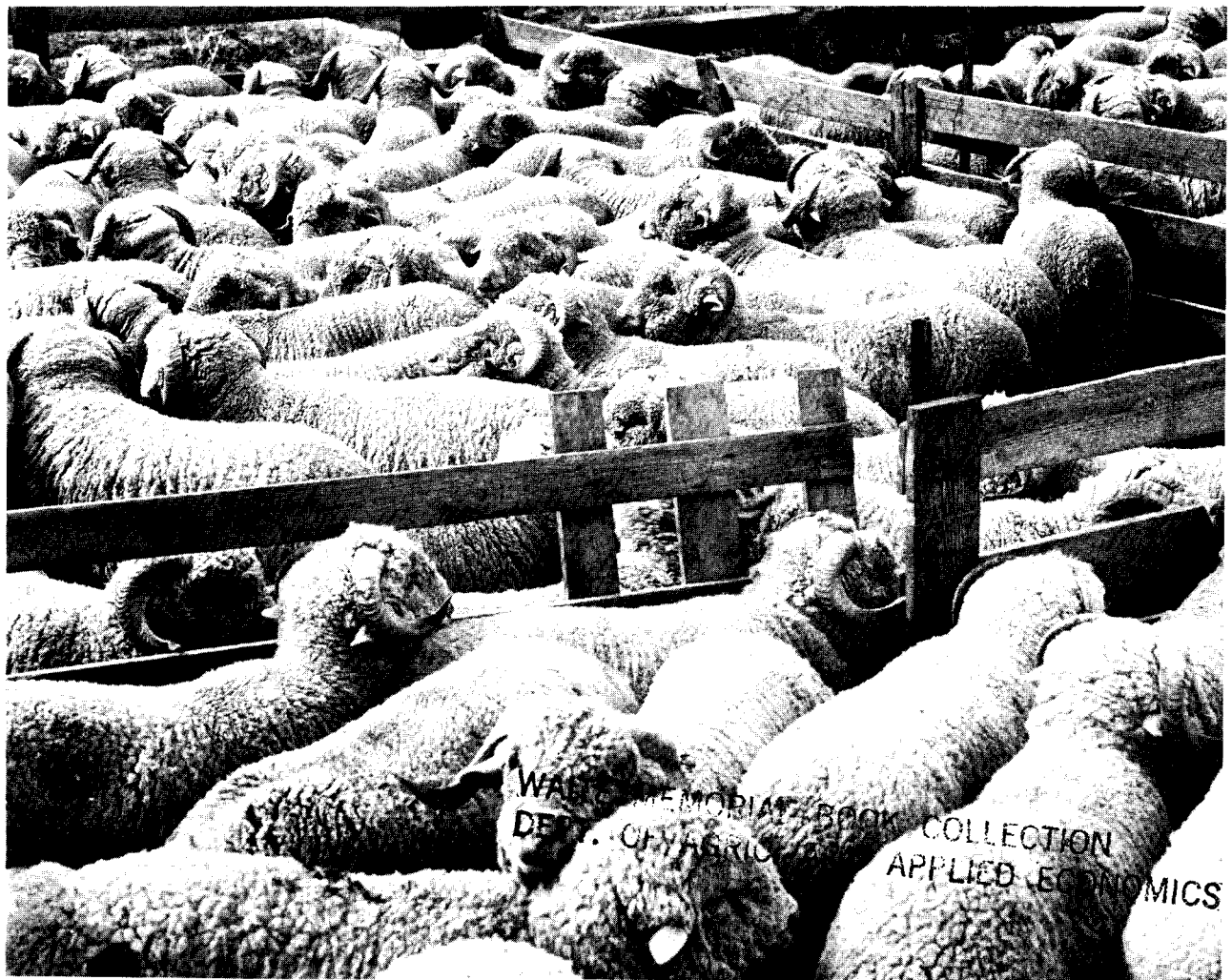
United States
Department of
Agriculture

Agricultural
Cooperative
Service

ACS
Research
Report
Number 41

Cooperative Wool Marketing Pools and Warehouses

Industry Update, Issues and Options



Cooperative Wool Marketing Pools and Warehouses: Industry Update, Issues and Options

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Abstract

In 1981, there were 158 cooperative wool marketing pools and 9 cooperative warehouses. Pools operate a few days each year to assemble and sell wool. Warehouses operate daily and also grade, store, and blend wool to buyer specifications. Pools frequently sell without knowledge of grade and clean fiber content. Producer bargaining power is also limited by declining wool production, large variation in pool membership and volume, and overlapping marketing territories among warehouses. Processing, consolidating pool and warehouse marketing, and changing pool pricing to reflect clean fiber content are options to lower marketing costs and better market power.

Key Words: Wool, cooperative, pool

ACS Research Report 41
November 1984

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Preface

The domestic wool marketing industry and its producer cooperative components, wool pools and cooperative warehouses, were last studied intensively in the 1960s. Since that period, wool production has decreased about one-third from the 1960 level of 299 million pounds. In addition, competition from manmade fibers has eroded markets for woolen apparel, and increased concentration and attrition among wool processors have reduced the bargaining power of domestic producers.

Information in this report will enable producers, pools, and cooperatives to evaluate their role in the industry to maximize their effectiveness in marketing domestic wool. The report discusses:

1. The marketing and processing channels for wools sold by pools and cooperative warehouses.
2. Characteristics of wool pools and cooperative warehouses, including membership, volume, type of wools handled, and processing activities.
3. Merchandising practices of pools and cooperative warehouses, such as methods of soliciting and evaluating bids, terms of sale, marketing charges, inventory policies, and discounts.
4. The relationship of pools and cooperative warehouses to grower-members, the Extension Service, etc., as it affects marketing knowledge and coordination of marketing services.
5. Problem areas for pools and cooperative warehouses, for example, increasing buyer competition, and improving market knowledge, and improving product value.
6. Strategic alternatives for pools and cooperative warehouses given the future outlook for the industry.

Information was obtained from a census of the 158 pools operating in 1981, a mail or telephone survey of 306 producer-members of cooperative warehouses, telephone or personal interviews with 14 wool processors, managers of 6 cooperative and noncooperative warehouses, and 18 regional wool marketing specialists.

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Highlights and Conclusions

Producer cooperative components of the domestic wool marketing industry are wool pools and cooperative wool warehouses. About 13 percent of 1981 wool production was marketed through pools and about 27 percent through cooperative wool warehouses. Warehouses and pools each assemble and sell wool for producers. However, pools operate only a few days each year whereas warehouses operate daily and offer marketing services such as grading, storing, and core-testing to determine the amount of clean fiber and fiber diameter.

Pools are primarily concentrated in the New England and Middle Atlantic States and in Montana and Idaho. Generally, pools are formed when producers lack competitive market outlets. Although domestic wool production has decreased 62 percent between 1961 and 1982, the number of wool pools has decreased only about 32 percent over the past 19 years, from 234 to 158. Because pools rely extensively on volunteer labor from members and most do not grade or core-test wool, their marketing charges are low, about 2-5 cents per pound.

Cooperative warehouses are in different areas than pools. North Central Wool Marketing Corporation has warehouses in Minneapolis, Minn., Des Moines, Iowa, Belle Fourche, S. Dak., and Ault, Colo. Another cooperative wool warehouse, Farmers-Ranchers, is also in Belle Fourche. Three cooperative warehouses, Cal-Wool, Stockton, Calif., Utah Wool, Salt Lake City, and Mid-States, with locations in Hutchinson, Kans., and Columbus, Ohio, use a common sales and financing agency, National Wool Marketing Corporation, Boston, Mass.

The cooperatives have different marketing strategies. North Central's slogan is "Serving Members Best by Meeting Our Customers' Needs." North Central does not, as a general policy, try to hold wools off the market in anticipation of higher prices, preferring instead to supply customers as their needs arise. North Central offers all producers the option of a cash price, whereas the other wool marketing cooperatives emphasize consignment. When producers consign wool, the cooperative determines the optimal selling time to maximize return to the producer. Because storage of several months' duration may be required for markets to improve, these cooperatives have occasionally processed wool into "top," (combed, carded wool) to generate greater or faster returns. The use of storage or processing to induce processors to offer better prices makes these marketing policies "grower-oriented."

Regardless of the marketing outlet or strategy used, several characteristics of the domestic industry limit returns for producers. The existence of cooperative and noncooperative warehouses, pools, mill buyers, and independent order-buyers suggests producers have considerable competition for their wool. However, these buyers service the same end-users of the wool, the same mills. Moreover, specialization by mills in fabrics requiring specific grades of wool reduces the number of mills that can be market opportunities for producers. A survey of wool pools in 1982 indicated their top marketing problem was bid solicitation. Only 7 of 115 pools responding indicated they had 4 or more changes of buyers from year to year. The remainder were evenly divided between

0-1 or 2-3 changes from year to year.

The feasibility of exporting to increase market outlets is limited by the level of domestic production. The United States produces only about 2 percent of world supplies. To meet yearly requirements, domestic processors must import as much wool as is produced in this country. Imported wools come primarily from countries whose shearing season occurs during the months that domestic wools are not being sheared. Because domestic processors purchase wool worldwide, they have virtually a continuous market.

This situation affects the feasibility of trying to obtain a higher price by storing wool until after the shearing season. Generally, prices of most agricultural commodities rise by at least the cost of storage during the off-harvest period. Wool prices do not follow this pattern clearly. A comparison of wool average prices during the February-June shearing season with average prices for the following July-January (the nonshearing season) during 1977-82 showed that the average price during the off-harvest season exceeded the shearing season average price only twice.

Competition from manmade fibers adversely affects wool markets, contributing to the attrition among mills producing woven fabrics of wool. During the period 1976-80, the number of these mills decreased by about 3 percent from year to year. Year-round availability, greater uniformity in quality and strength, and more stable prices are some of the reasons textile manufacturers prefer manmade fibers to wool. Changes in demand for wool lead to sharp fluctuations in wool prices because world supplies are fixed in the short term. Manmade fibers have greater stability because manufacturers can vary fiber production to meet demand.

Those conditions have weakened the bargaining power of domestic producers. However, producers could maximize their bargaining power within the constraints of the domestic marketing system by changing the structure of the cooperative sector and approaches to marketing or pricing wool.

Among States producing farm-flock wools, 60 pools reported between 16 and 788 members and wool volume between 2,618 and 200,000 pounds. The 52 pools producing range (territory) wools reported volume between 8,263 and 290,000 pounds and membership between 9 and 185 producers. This variation in volume and membership suggests wool pool marketing is highly fragmented. Reducing fragmentation through greater coordination, particularly coordinated sales dates, may result in more and different buyers examining and bidding on an area's wool, thereby alleviating the problem of bid solicitation.

The survey showed that during 1981, only 5 of 84 pools core-tested their wool. Core-testing enables pools to determine prices based on the clean fiber content and micron of their wool, a method more precise than the customary pricing system based on visual evaluation of the wool (grease pricing). However, many pools do not understand the difference and may undervalue high-yielding wools. Buyers know how an area's wool will yield from processing experience. Grease pricing gives buyers the flexibility to obtain the wool by bidding only a few cents more than competitors and not what the wool is actually worth.

Grading is another area where pools weaken their bargaining power. One-third of the pools surveyed relied on buyers to grade their wool. Such pools are especially vulnerable to excessive discounts by buyers for tags, burrs, or other "off-wools." Buyers alone established discounts for off-wools for 32 of 102 pools. The disparity among pool reports indicates discounts are not standardized, especially when farm-flock and territory wools are compared.

While many pools lack grading expertise, knowledge of product quality could be improved if producer-members sorted wools into general categories like "fine" and "lamb" before sale. A portable baler could facilitate core-testing and selling on a clean price basis. Another option is processing. Members of the Massachusetts Blanket Pool have improved returns from wool by manufacturing branded blankets and other wool items sold in local craft shops.

Consolidation and processing are also alternatives for cooperative wool warehouses. If National and North Central had marketed as a unit in 1981, they would have controlled about 25 percent of domestic production, improving their ability to serve and bargain with domestic processors. Consolidation could allow them to close one or more warehouses and enable graders to be more intensively utilized. These moves would lower warehouse marketing costs of 9-20 cents per pound. Extending operations into making top on commission could give warehouses pursuing grower-oriented policies an alternate source of buyers for wool.

Cooperative Wool Marketing Pools and Warehouses:

Industry Update, Issues and Options

Julie A. Hogeland
and Philip W. Sronce

INDUSTRY OVERVIEW

In the United States, sheep and lambs are raised primarily for their meat value. Wool is generally regarded as a byproduct by producers, averaging only about 10-20 percent of the carcass meat value. However, improving returns from wool remains an important objective among producers because income from wool increases the enterprise's overall profitability, frequently determining its financial success. The farm value of wool production in 1982 was \$71.8 million, excluding Government payments.

The domestic wool marketing industry and its producer cooperative components, wool pools and cooperative warehouses, have not been thoroughly studied since the 1960s. Since that period, wool production has decreased about one-third from the 1960 level of 299 million pounds. In the early 1970s, polyester fibers were beginning to be substituted for wool in clothing. Another important market declined in importance when the Vietnam War ended and orders for military uniforms were reduced. Manmade fibers replaced wool in felt fabrics for industrial use and in carpets. These markets have never been fully recaptured. During the past decade, wool represented less than 2 percent of total fiber consumption by domestic mills.

Increased concentration and attrition among wool processors, competition from better prepared imports, termination of the wool futures market, and limited inventory acquisition by mills due to high interest rates are other factors that have affected pools and cooperative warehouses during the past 10 years.

Domestic wool production has been decreasing for many years (see table 1). However, industry observers expect production to stabilize in the next decade. Production declines have resulted from predator attacks on sheep flocks and conversion of range land to urban or recreational use.

Wool production is highly seasonal because sheep are usually sheared for the summer. A small amount of wool is obtained by pulling fibers from the skins of slaughtered sheep and lambs. This occurs in meatpacking plants or a small number of wool pulleries.

Table 1—U.S. production of shorn and pulled wool, grease basis, 1960-81

Year	Shorn wool	Pulled wool	Total wool
		1,000 pounds	
1960	265,277	33,600	298,877
1961	259,161	34,500	293,661
1962	246,636	29,900	276,536
1963	232,446	28,800	261,246
1964	212,333	25,100	237,433
1965	201,463	23,300	224,763
1966	195,053	24,100	219,153
1967	188,984	22,400	211,384
1968	177,396	20,500	197,896
1969	165,749	17,100	182,849
1970	161,587	15,200	176,787
1971	160,156	12,000	172,156
1972	158,506	9,700	168,206
1973	143,738	8,000	151,738
1974	131,382	5,700	137,082
1975	119,535	6,000	125,535
1976	110,817	4,850	115,950
1977	107,159	2,450	109,778
1978	102,942	1,000	103,942
1979	104,860	900	105,760
1980	105,452	1,050	106,502
1981	109,753	1,150	110,903

Sources: Economic Research Service, U.S. Department of Agriculture, *Livestock and Meat Statistics: Supplement for 1981* (Washington, D.C.: U.S. Government Printing Office, 1982), pp. 26-27.

Economic Research Service, U.S. Department of Agriculture, *Livestock and Meat Statistics: Supplement for 1982* (Washington, D.C.: U.S. Government Printing Office, 1973), pp. 26-27.

Crop Reporting Board, Statistical Reporting Service, U.S. Department of Agriculture, *Wool and Mohair* (Washington, D.C.: March 26, 1982), pp. 1-3.

In 1982, about 110,000 farms had sheep. Domestic wool production is divided between fleece and territory States (fig. 1). The fleece area produces wool from small farms with diversified sheep breeds, whereas the territory area generally produces wool from large sheep ranches representing a single sheep breed. The fleece area contains 34 Eastern and Southern States, and the territory area contains 14 Western States.¹

In 1981, the leading wool producing States were Texas, California, Wyoming, Colorado, and South Dakota. Iowa is the largest producing State in the fleece area and is the 11th largest producing State nationwide. Ohio and Illinois, the only other major fleece States, ranked 13th and 18th, respectively (table 2).

Determination of Wool Value

The primary reasons for short-term variation in wool prices are fluctuations in world supplies and fashion trends. Because the United States produces only about 2 percent of world supplies, the value of domestic wool may be less affected by its quality than by world market conditions. In general, however, the most important determinant of the value of wool fleeces or wool clips, as they are sometimes called, is the amount of shrinkage occurring when the wool is washed before processing into fabric. Unwashed wool is called "grease wool"; washed wool is called "scoured wool." The clean yield is what remains of the wool fibers after contaminants like vegetable matter or dirt have been removed. Breeds also affect the amount of clean wool recovered.

The diameter and uniformity of the wool fibers in the fleece also affect value. Merino, Delaine, and Rambouillet produce premium fine wools but represent only 30 percent of all domestic sheep. Crossbred sheep with little or no Merino breeding account for the remaining breeds.² These breeds produce wools with coarser fibers.

Wool grades denote fiber diameter. Diameter is measured using microns and described in terms of the "spinning count," the number of hanks of yarn that can be spun from 1 clean pound of fiber. A hank is 560 yards. Diameter may be described also using the "blood" system, which gives the fraction of fine-wool Merino or Rambouillet breeding or "blood" visually perceived in the wool specimen. The

¹Parts of Oregon, Washington, and California have large fleece areas, but for convenience these States have been classified as territory areas.

²Summary of Trade & Tarriff Information, Wool & Related Animal Hair & Waste and Processed Fibers and Yarns of Wool and Related Animal Hair. Washington; USITC Publication 841; December 1982. p. 5.

Figure 1—Fleece and Territory Wool States



Table 2—Wool: shorn wool production, by top 20 States, grease basis, 1981

State	Shorn wool 1,000 pounds
Texas	20,900
California	10,645
Wyoming	10,150
Colorado	7,656
South Dakota	7,127
Utah	6,010
Montana	5,670
New Mexico	5,180
Idaho	4,972
Oregon	4,154
Iowa	3,569
Arizona	2,417
Ohio	2,325
Minnesota	2,252
North Dakota	2,216
Nebraska	1,728
Kansas	1,684
Illinois	1,307
Nevada	1,120
Missouri	1,036
Total, top 20	102,118
Other states	7,635
Total United States	109,753

Source: Crop Reporting Board, Statistical Reporting Service, U.S. Department of Agriculture, Wool and Mohair (Washington, D.C.: March 26, 1982), p. 2.

correspondence between the two systems is:

<i>Blood system</i>	<i>Wool Grade/Spinning Count</i>
Fine	64/70's
1/2 blood	60/62's
3/8 blood	56/58's
1/4 blood	50/54's
Low 1/4 blood	46/48's

In 1981, the estimated breakdown of the domestic clip was:

64/70's	26%
60/62's	26%
56/58's	27%
50/54's	16%
46/48's	5%
Total	100%

Source: Burlington Industries

Because wools coarser than 46/48's are used mainly in carpet production, domestic production is primarily used for apparel manufacture. Domestic production is evenly divided between fine (70's-60's) and medium (58's and below) grades of wool.

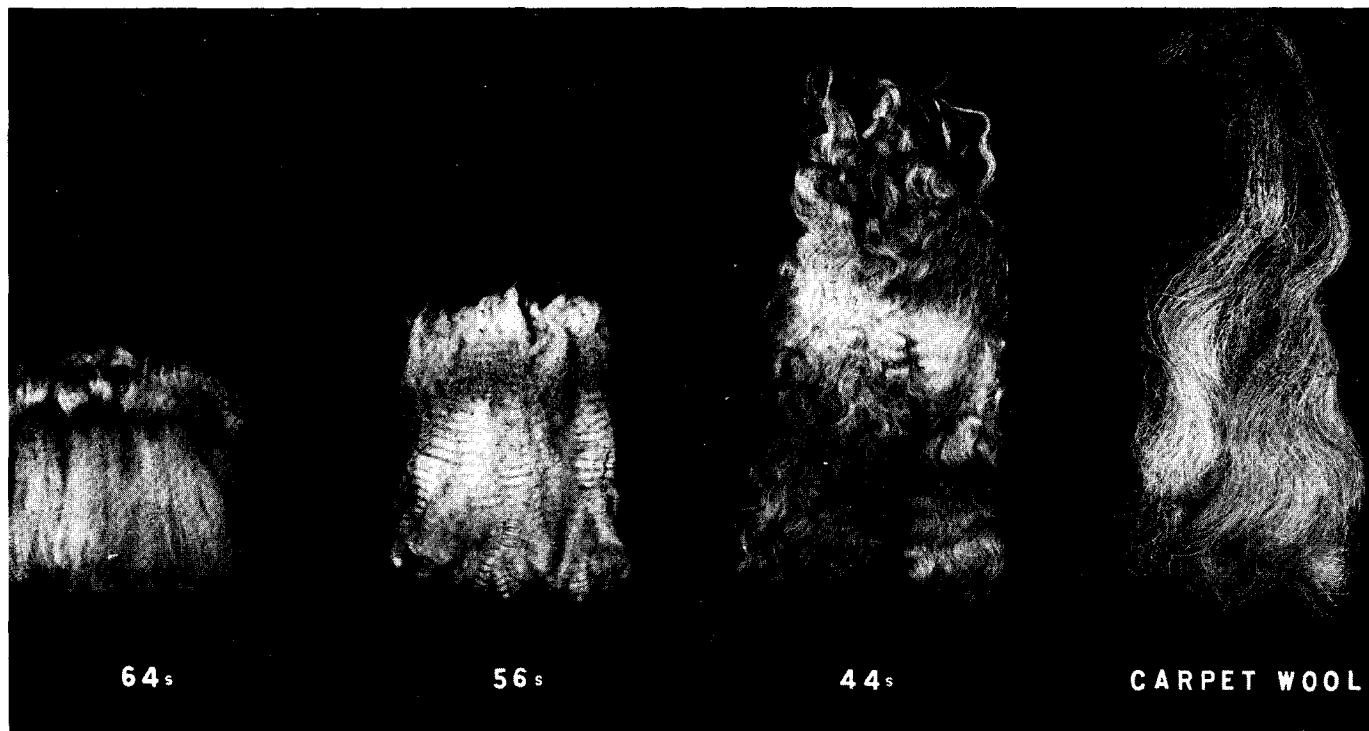
Grading is done mainly at the mill or by warehouse operators who buy or handle wool for growers and sell (or resell) it to processors. The grading procedure is performed to separate

wools with the same fiber micron count. Determining wool grade and clean yield can be done scientifically using a wool laboratory, or visually using trained graders. Grading is done visually by noting the number of crimps or curls in the wool fiber per inch. Fine wools have many crimps; coarse wools have very few. The scientific procedure, referred to as "objective measurement," is performed by taking small samples from the bags or bales holding the fleeces. A tube-like instrument is used to draw or "core" the samples, which are sent to the wool laboratory for analysis. The core test reports micron count and clean fiber content for the samples and the results are averaged for each wool lot. A grader can separate wool into categories like 54's, 60's, etc., but the micron results of the core test can precisely indicate if the wool is a "high" (very fine) or "low" (not very fine) 54's or 60's, etc. The differences between high and low micron count within a grade category can influence the price.

Wools from the large ranches on the territory states may be fairly consistent in micron count, depending on the feed used and the age of the ewes. Because the uniformity of this wool can minimize the need for grading, it can be sold as "original bag." However, a core test may be taken on the wool to determine clean yield.

Wool length and type influence value and are evaluated in the sorting procedure. The staple length, or 1 year's growth of a healthy sheep, will be about 3 inches for fine wool and about

Wool Grades



4-1/2 inches for 46/48's. Sorting also includes pulling out tags and other soiled pieces from the fleece, and dividing the wools according to whether they are white or black, lamb, and so forth. Excessively dirty or stained wools are classified as rejects. At present, no method of objective measurement exists for color, length, and fiber strength.³ The precision used in the sorting procedure generally depends on the end use. Premium fabrics require a precise sorting while fabrics for sport clothes or blankets need less.

Domestic wool is, to use industry terminology, consumed on the woolen or worsted system. All domestic wools can be consumed on the woolen system; however, the worsted system requires staple length wools, frequently fine grade. Worsted fabrics are thinner, more tightly woven, with a harder finish than woolen fabrics. Worsted fabrics are used mainly for men's suits. Woolen fabrics are used primarily in women's suits and coatings, and in blankets, where a soft, fuzzy, or heavy fabric is desired. The woolen system primarily uses short wools of all grades but also can utilize staple length wools.

MARKETING CHANNELS

Producers generally have several options when selling grease wool. If they have a substantial clip, they may sell direct to processors. Processors use salaried staff buyers to procure wool and order buyers who work on commission.

Producers can sell wool to dealers for cash or to handlers, who advance a percentage of the wool's value and sell it when the market improves (consignment marketing). Handlers may buy wool, but they do not take title to consigned wools. Dealers and handlers vary in size. Some operate on a scale requiring use of warehouses to store and prepare wool for sale. Others buy small lots in conjunction with trade in hides, scrap iron, or other barter items. Small dealers generally sell their clips to larger dealers. Dealers and handlers in the fleece states frequently use sheep shearers as buying agents. The shearer may discount the shearing fee if the producer will sell the shearer the wool.

³The Australian Wool Corporation and Australian research establishments are developing procedures to measure the yellowness and brightness of wool (the determinants of the wool's color), and the strength and length of the wool fibers, especially for wools used in worsted manufacturing. Incorporating these additional measures of wool quality into the marketing system will depend on the availability of testing equipment, the development of standards for selling with the additional information, and amendment of the selling regulations of the Australian Wool Corporation. The additional information is expected to be used in selling wool in the Australian market starting in July 1984. The eventual goal will be to sell wool entirely by a written description, without using a sample of the clip to supplement the objective measurements currently available. The Corporation anticipates reaching this goal later in the decade.



Wool Grader

Courtesy: North Central Wool Marketing Corporation

Some warehouses are organized as cooperatives that use a combination of cash and consignment marketing. Which is stressed depends on the philosophy of the cooperative, price levels, and market demand.

Grading is the most basic warehouse service. Grading and core-testing are performed as needed to merchandise wools, as some are sold "original bag." Warehouse marketing charges for grading, coring, storing, insurance, and packaging generally are about 10-13 cents per pound for territory wools, and 15-20 cents per pound for fleece wools. These charges include freight costs of 2-5 cents per pound. The lower limit on total (freight and marketing) charges is about 9 cents for territory wools and about 12 cents for fleece wools.

Warehouses buy and sell wool daily. Wool pools, another marketing option for producers, operate only a few days each year. A wool pool assembles and sells wool for producer members, sometimes sorting, grading, storing, and transporting wool, according to the available resources in the area where the pool operates. Because pools use extension and volunteer labor from members, most have marketing charges of about 2-5 cents per pound. If pool members did not supply volunteer labor, transportation, wool bags, and other assistance, charges probably would be several cents higher. Unlike warehouses, pools often sell f.o.b.-buyer. Pools are another form of cooperative marketing. The marketing channels for wool are shown in figure 2. Estimates of comparative volumes are shown in table 3.

Figure 2—Wool Marketing Channels

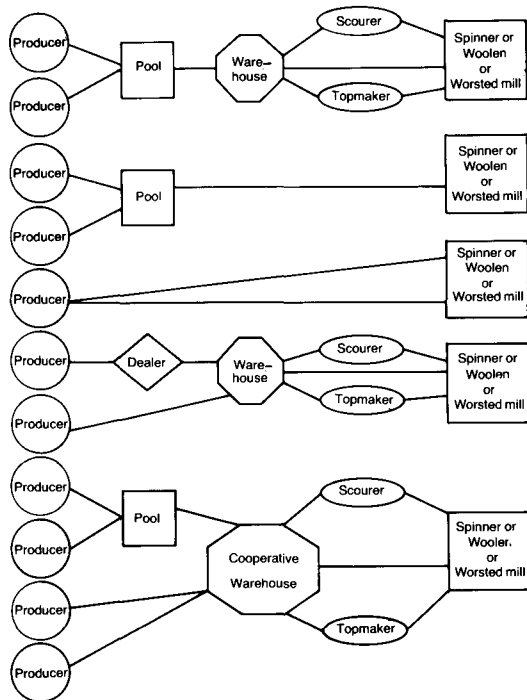


Table 3—Estimated marketing channels, domestic wool production, 1981

Marketing channel	Volume	Share of total
	Million pounds	Percent
Texas-New Mexico noncooperative warehouses	26	24
Cooperative warehouses ¹	30	27
Western pools ²	11.0	10
Eastern pools and midwestern pools ³	2.5	3
Marketed direct to mills, noncooperative warehouses and dealers	40.5	37
Total domestic production⁴	110	100

¹National (Mid-States, Utah Wool, Wyoming Wool, and Cal-Wool), North Central (South Dakota Wool Growers Assn., Iowa Wool Growers Assn., Minnesota Wool Growers Assn., Nebraska Wool Growers Assn., and Great Lakes Wool Growers Assn.), and Farmers-Ranchers.

²Montana, Idaho, Oregon, Wyoming, Washington, North Dakota, Utah, and Colorado.

³Virginia, Pennsylvania, Iowa, etc.

⁴Estimates do not add to total due to rounding. Values indicated for warehouses represent slight double-counting because they sometimes purchase pool wool.

Pool and Warehouse Marketing

In 1963, there were 125 cooperative and noncooperative warehouses. About 25 or 30 handled 70 percent of the domestic clip. Although recent data is not available on the total number of warehouses, industry observers suggest the number is close to the 40 warehouses (including cooperatives) shown in figure 3 that offer basic services such as grading and core-testing. The decrease of as much as 68 percent in warehouse numbers (from 125 to 40) occurred during the early 1970s when sheep numbers declined due to unprofitable conditions such as competition from manmade fibers.

Industry observers estimate noncooperative warehouses generally handle less than 5 million pounds each. The three regional cooperatives, North Central, National, and Farmers-Ranchers, handle 30-34 million pounds annually.

Generally, pools are formed when products lack competitive market outlets. Although domestic wool production decreased 62 percent from 1961 to 1982, the number of wool pools has decreased only about 32 percent over the past 19 years, from 234 to 158⁴ (fig. 4). About 13 percent of the 1981 wool production was marketed through pools, compared with 6 percent of domestic production in 1961.⁵

Eastern pools are concentrated in the Middle Atlantic States, a region close to southern textile mills. The nearest warehouses are in Ohio. Western pools are concentrated in Montana and Idaho. They are some distance from warehouses in Utah, Wyoming, South Dakota, and Colorado. There are 81 fleece pools and 77 territory pools.

Information on pool volume and membership was obtained from a survey of all pools known to be operating in 1981. The pools responded using 1981 data. Among the fleece States, 60 pools reported membership ranging between 16 and 788 members and wool volume varying between 2,618 pounds and 200,000 pounds. The average fleece pool membership was 154 producers and the average volume about 39,000 pounds. For territory pools, the average membership was 69 producers, and the average volume almost double that of fleece pools, at 72,000 pounds. The 52 territory pools responding reported volume ranged between 8,300 and 290,000 pounds and membership varied between 9 and 185 members. The variation in volume and membership for all pools suggests wool pool marketing is highly fragmented.

Evolution of Cooperative Warehouse Marketing

The structure of the domestic wool marketing industry developed over many years. Pool and cooperative warehouse

⁴Wilson, Dale W., *Wool Pools*. General Report 127, USDA: Farmer Cooperative Service, August 1964. Page ii.

⁵Wilson, page 2.

Figure 3—Location of Cooperative and Noncooperative Warehouses

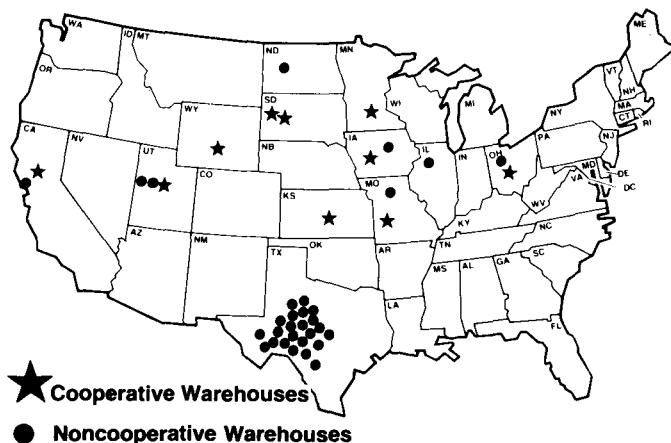
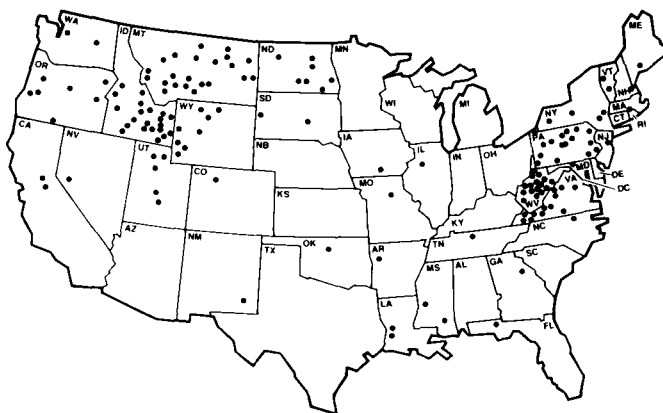


Figure 4—Location of Wool Pools in the United States, 1982¹



¹List of pools attained by talking with wool extension specialists at land grant universities.

marketing became strongly established during the 1920s and 1930s. From about 1930 to 1960, Boston was the center of the domestic wool trade. In 1929, 20 State associations formed the National Wool Marketing Corporation, a federated cooperative, to monitor market conditions and facilitate market access.

During the 1930-50 period, wool prices would fall during the shearing season, then recover during the autumn and early spring as large topmakers exhausted inventories. This situation favored development of a consignment system where wool was held off the market until prices improved. Consignment marketing increased the stability of wool prices by contributing to orderly marketing.

National advanced funds to State associations so they could remit a portion of the estimated selling price to growers for consigned wools. State associations graded, co-mingled, blended lots to meet processor specifications, and stored, along with other services. Wool was displayed for buyer inspection at the 16 warehouses affiliated with National. The marketing charges were subtracted from the grower's price at the time of settlement.

The peak marketing level for National has been about 25 percent of the domestic clip. Between 1952 and 1954, producers were required to consign to a Government-approved wool dealer or cooperative if they desired to participate in Federal price support programs.⁶ These

programs were replaced by the National Wool Act of 1954, and this legislation is still in effect. The Act enabled a producer to market wool through normal marketing channels, and consignment to a handler was no longer required. Producers received incentive payments based on the market price received for their wool and an incentive percentage required to bring the national average price for wool up to the support level.

However, the success of the consignment system led mills to begin buying direct from growers to get a lower price. The quick cash settlement from direct marketing gave growers a feeling of control over marketing. Growers consigning wool generally had no control over price beyond marketing elsewhere the following year or trying to change cooperative or dealer warehouse policies. To meet this challenge, some cooperatives began cash purchases.

In 1959, North Central Wool Marketing Corporation, a federated cooperative, was formed by State Wool Growers Associations from South Dakota, Iowa, Minnesota, and Nebraska (which dissolved its relationship with National Wool Marketing Corporation). In general, North Central tends to make a larger percent of outright purchases from growers than the cooperatives affiliated with National, that emphasize consignment.

However, consignment has remained a satisfactory option for many growers, especially during periods of low prices. In 1957, a wool marketing warehouse established through Farmers-Ranchers farm supply cooperative, Belle Fourche, S. Dak., began consignment marketing. In 1982, the combined

⁶O'Dell, Charles, *The Domestic Wool Marketing System*, USDA: Economic Research Service, Washington, D.C. March 1969. Page 16.

volume of consignments to North Central, Farmers-Ranchers, and the cooperatives served by National, was at least 17 million pounds.

Current Cooperative Structure

The objectives of wool marketing cooperatives are to:

- Obtain the best price terms possible for members by consolidating the volume of wool marketed and applying knowledge of overall market conditions in bargaining with processors;
- Provide market access for producers;
- Put wool into merchandisable condition; and
- Educate growers about wool production and clip preparation.

The cooperatives vary in the marketing services rendered, pricing approach, and production areas served.

National Wool Marketing Corporation

National Wool Marketing Corporation, Boston, Mass., is the sales and financing agency for three cooperative wool warehouses: Cal-Wool, Stockton, Calif.; Utah Wool, Salt Lake City, Utah; and Mid-States, with locations in Columbus, Ohio, and Hutchinson, Kans. In 1982, some 350 producers were members of Cal-Wool, 450 were members of Utah Wool, and 18,000 were members of Mid-States. Mid-States handles primarily farm flock fleece wools and represents about 40 percent of National's volume. Utah Wool and Cal-Wool handle about equal volumes, mainly territory wools. In 1982, these cooperative warehouses marketed about 13 million pounds through National, about 12 percent of domestic production for that year.⁷

Consignment is required by the cooperatives to facilitate orderly marketing and provide a sense of cooperative action among producers. National's cooperatives believe consignment enables the members' wool to be marketed at the best time. Producer-members are urged to consign wool before shearing so National can advise processors of product availability. Marketing agreements are used to strengthen year-to-year producer commitment to the cooperative. Maintaining wool consistency over time by keeping the same members helps the cooperatives sell on reputation. If wool is consigned, growers may receive an advance on the estimated sales price, depending on market conditions. Final payment is based on the sales price less marketing changes. Some Western wools can be sold in the original bag. National's sales

office charges a small per-pound fee for selling the associations' wool and advising warehouse managers on market conditions. Although the sales office sells most of the wool for each association, managers occasionally arrange sales on their own, as local opportunities and wool prices permit. Managers must approve all sales. Cash purchases are generally limited to small lots bought to fill specific orders.

National pursues a grower-oriented marketing strategy. During the year, warehouse showings are held for prospective buyers. If the prices bid are not satisfactory, National will hold the wool off the market until the demand improves. About 50 percent of the wool handled by National is sold within 3 months of delivery.

National also focuses on bargaining with processors and encourages visual inspection of the wool as well as sales based on core test results.

North Central Wool Marketing Corporation

A producer is automatically a member of North Central for the year when wool is shipped to one of the five State associations—the Iowa Wool Growers Association, South Dakota Wool Growers Association, Minnesota Wool Growers Association, Nebraska Wool Growers Association, and the Great Lakes Wool Growers Association (representing Wisconsin and Illinois). In 1982, 20,000 producers were members of North Central.

The cooperative has four warehouses. The Minneapolis warehouse handles about 50 percent of North Central's volume and the Des Moines, Iowa, warehouse, about 20 percent. The Minneapolis warehouse handles a mixture of fleece and territory wools, while the Des Moines warehouse handles mainly fleece wools. Fine-grade wools from Montana, Wyoming, and South Dakota, marketed through the Belle Fourche, S. Dak., warehouse, provide at least 20 percent of North Central's business. The Ault, Colo., warehouse primarily handles lamb wool, and represents about 10 percent of North Central's volume.

In 1981, North Central marketed 14.5 million pounds, about 14 percent of domestic production for that year. About 50 percent of the wool was bought from producers for cash. In the territory States, most growers are offered a clean price based on micron and yield test of the wool. The cash price in the fleece area is based on a price list supplied by the cooperative and the judgment of field representatives regarding clean yield and grade.

If producers believe they have superior wools, they may choose to receive 80-90 percent of estimated cash value and base final settlement on visual inspection or a core test. This grade and yield program was supplemented by a storage

⁷During 1982, Wyoming Wool, Rawlins, left National. Membership had been about 300 producers.

option in 1981 to provide for those wools that were not being purchased by mills. The producer receives a percentage of the estimated cash value of the wool and it is stored at a North Central warehouse until prices become more favorable. The producer pays some storage costs and interest during the time wool is held by the cooperative.

North Central does not have marketing agreements with members. However, through quarterly meetings of the board of directors, members influence the time and the way wool is sold. Selling is done primarily by the president of the cooperative. Warehouse managers do not arrange wool sales. Most wools are sold on the core and/or a guaranteed micron count.

North Central's marketing approach emphasizes product availability by frequent telephone contact with processors so they know what wools are in stock, and a pricing approach (as described by processors) of "meeting the competition everywhere." North Central does not, as a general policy, try to hold wools off the market in anticipation of higher prices, preferring to supply customers as their needs arise. It does not compete with customers by making top (combed, carded wool) on commission, as is done by some other wool warehouses. North Central uses this customer-oriented strategy⁸ to maximize orders from processors and to maintain wool turnover to support a high level of cash purchases from growers.

Farmers and Ranchers⁹

In 1957, a group of producers dissatisfied with available market outlets decided to purchase a warehouse and market their wool through Farmers and Ranchers farm supply cooperative in Belle Fourche. Wool sold through the cooperative is divided between two groups of producers. About 250-300 producers exclusively consign their wool through the Nation's Center Wool Pool. These producers sign a 10-year marketing agreement, renewable annually. About 1,000 producers market through Farmers and Ranchers Warehouse. They sign no marketing agreement and may choose any market outlet from year to year. In 1981, the total volume of wool marketed through the cooperative was 6.5 million pounds of wool, about 6 percent of domestic production for that year. About half the volume came from each producer group.

Wool is core-tested and sold on an original bag, clean-wool price basis. Marketing costs are deducted at the time of sale and the producer receives the balance. Most wool marketed

through Farmers and Ranchers is similar in quality, so there is no reason to grade it. Wool in the Belle Fourche area is high quality and management markets aggressively for the best prices.

PROCESSING SECTOR

Woolen and Worsted Mills

In the early 1970s, the manmade fiber industry began making inroads into markets for wool apparel, carpets, and industrial felts. Realizing that only low-cost mills could survive this situation, the largest mills invested \$12.5 million in new technology and became aggressive in product marketing.¹⁰ Overall, the domestic textile industry may be considered healthy and efficient. However, attrition among wool weaving and finishing mills continues. In 1958, there were 469 wool weaving and finishing mills, 397 in 1976, and 356 in 1980.¹¹ Attrition was mainly among smaller mills that couldn't afford to modernize.

Wool production contrasts sharply with manmade fiber manufacture. Changes in demand lead to sharp fluctuations in wool prices because world supplies are fixed in the short term. Producers can't quickly switch sheep breeds to meet changes in demand for woolens or worsteds. All domestic wool can be used on the woolen system, but only staple length wools can be processed on the worsted system.

Manmade fiber prices have greater stability because manufacturers can vary fiber production to meet demand and can allocate semiprocessed fiber among competing end uses (that is, apparel vs. carpets). Manmade fiber prices are generally less responsive to short-term changes because they are "set" by the manufacturer. Textile manufacturers are encouraged to use manmade fibers through discounts for bulk purchases, greater availability, and more uniformity in fiber quality and strength.

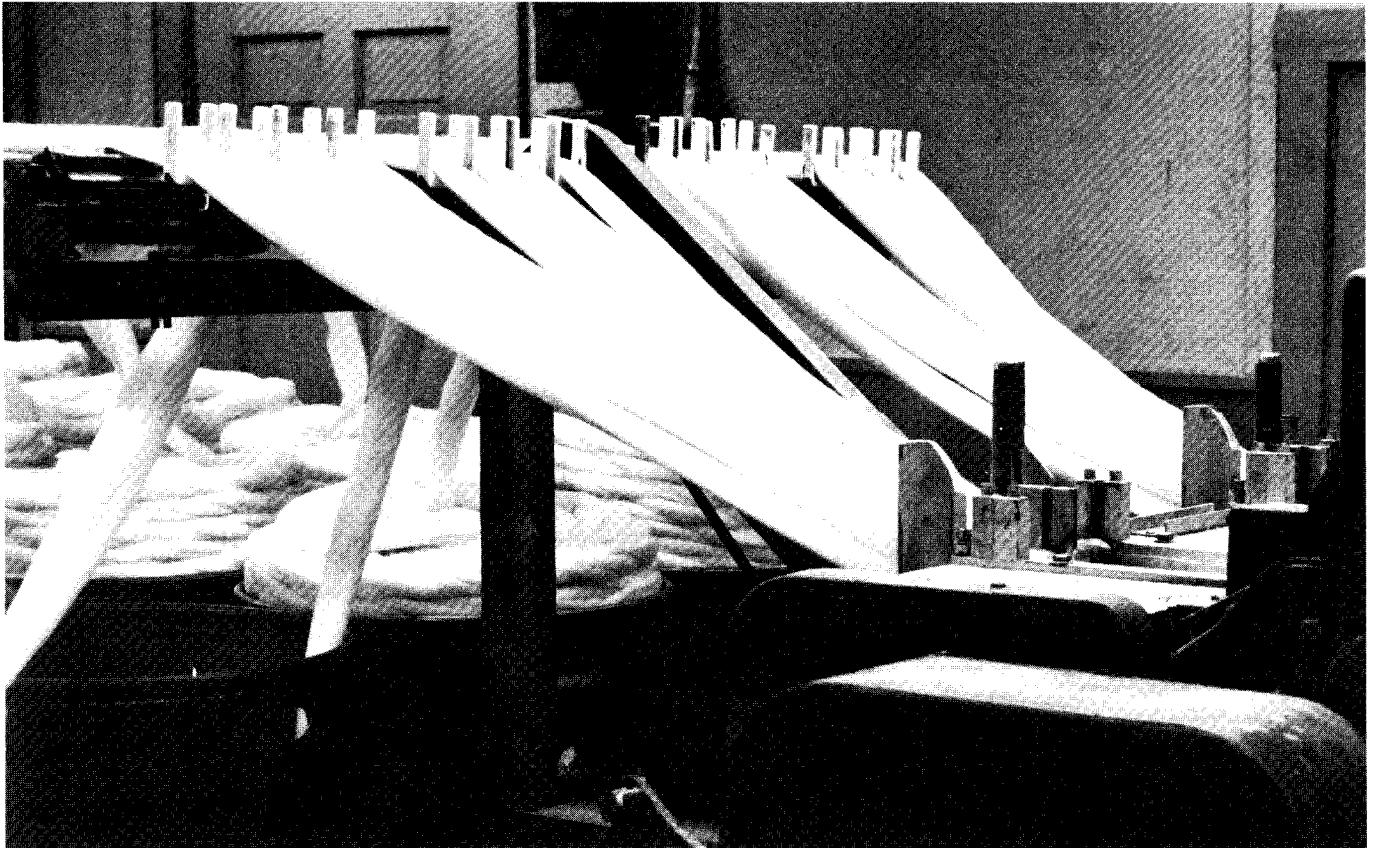
Production and consumption of manmade fibers greatly exceeds that of wool fibers (appendix table 1). Wool fabric production is not high technology, and requires more manual labor than manmade fibers for weaving and finishing. This reduces the opportunities for wool mills to lower costs.

¹⁰"Made in America," *The Wall Street Journal*, December 21, 1981, p. 18.

¹¹*Summary of Trade & Tariff Information: Broadwoven Fabrics of Wool*, USITC Publication 841, April 1981, U.S. International Trade Commission, Washington, D.C., p. 8. Numbers cited are for establishments listed under SIC 2231, wool weaving and finishing mills. Several establishments may be consolidated under one owner. Both woolen and worsted mills are included in SIC 2231. See also *The American Textile Industry*, by L. D. Howell, Agricultural Economic Report No. 58, USDA, ERS, Washington, D.C. November 1964, p. 66.

⁸The slogan of North Central is: "Serving Members Best by Meeting Our Customers' Needs."

⁹During February 1984, Farmers-Ranchers Cooperative sold their warehouse to private investors.



Combing

Courtesy: American Sheep Producers Council

In 1980, the woolen and worsted systems consumed about 57.0 and 56.4 million pounds of wool, respectively.¹² Fashion trends and other factors influencing wool demand can have a substantial impact on utilization. In 1971, the worsted system consumed almost twice as much wool. Imports, mostly from Australia, must supplement domestic wool production to meet demand for worsteds.

Scouring and Combing Industry

Scourers, spinners, and topmakers specialize in components of the wool manufacturing process. They are middlemen¹³ between producer groups selling raw wool, and weaving or knitting mills. Observers suggest that fewer than 30 mills are vertically integrated and can perform necessary middlemen functions themselves. (The two largest companies are integrated into apparel manufacture.) Mills utilize middlemen

when production requirements exceed capacity, or when middlemen can perform a function at a lower cost. Middlemen reduce risk to processors by carrying semiprocessed inventory for future use, when future demand for finished goods is unclear.

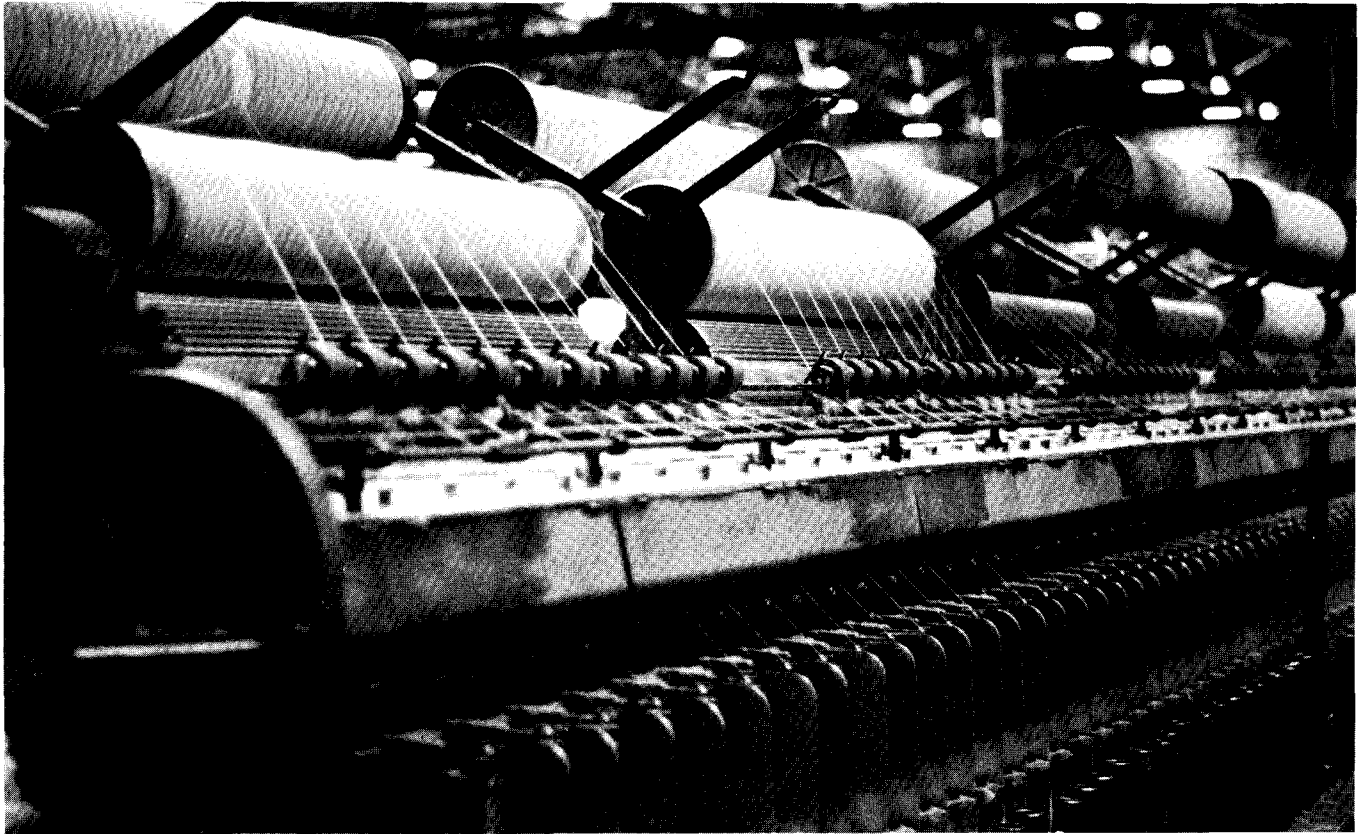
In 1981, the Boston Wool Trade Directory listed 13 scouring firms and 73 topmakers.¹⁴ Scourers sell mainly to woolen mills and topmakers sell mainly to worsted mills. Both may sell to spinners who make yarns for weaving, machine or hand knitting, rugs, furnishing, or specialty fabrics. In 1981, there were about 210 producers of spun yarns.¹⁵ Industry observers indicate the number of spinners has remained stable over the past 10 years. Unlike weavers, they could compete against polyester double knits by making polyester-wool knit blends. The primary problem facing the spinning sector is large imports of knitted apparel, especially sweaters.

¹² *Current Industrial Report: Consumption on the Woolen System and Worsted Combing*, series M22D (80)-13. September 1981, Table 1, U.S. Department of Commerce, Washington, D.C.

¹³ Middlemen may be defined as marketing institutions operating between growers and processors, i.e., warehouses, brokers, or dealers, or middlemen may also be processors of semifinished goods.

¹⁴ *The Boston Wool Trade Directory*.

¹⁵ *Summary of Trade and Tariff Information: Wool and Related Animal Hair and Waste, and Processed Fibers and Yarns of Wool and Related Animal Hair Waste*, USITC Publication 841, December 1982, U.S. International Trade Commission, p. 18.



Spinning

Courtesy: American Sheep Producers Council

The nucleus of the topmaking industry are five firms with combing machinery, who are sometimes called “combers” to differentiate them from the rest of the topmakers, who work on commission using one of the firms with machinery. (Only about five scourers work on commission.) The two largest vertically integrated mills are considered major topmakers even though they only produce top when surplus capacity is available. The two largest nonintegrated combers have foreign operations. (Nonintegrated combers produce only top.) Two combers specialize in fine wools, and one specializes in medium-grade wools.

In 1977, the four largest establishments producing scouring and combing mill products (SIC 2299) accounted for 77 percent of industry shipments, and the 20 largest establishments, virtually 100 percent.¹⁶ The topmaking and scouring industries are highly concentrated. Most topmakers operate on a much smaller scale than the major firms, as they are “in and outers” in response in market fluctuations and the number of orders commissioned.

Another factor affecting the number of commission topmakers is the number of wool warehouses integrating forward into topmaking. Wool warehouses buy grease wool from producers and customarily sell it to topmakers and other processors. Recent depressed markets have led at least five warehouses to rent combing equipment to produce top from wools they cannot sell.

In 1973, leading topmakers operated at about 75 percent of capacity.¹⁷ Attrition among combing plants and topmakers began with declines in worsted fabric production during the 1970s. The largest integrated mill formerly obtained a third of its requirements from other top manufacturers.¹⁸ In 1982, the industry was operating at 80 percent of capacity. Only eight firms had sales of at least \$5 million in 1981, compared with more than twice that number in 1950.

Between 1968 and 1982, topmaking production decreased 62 percent (table 3). Production reached a low of 39.2 million

¹⁶Data received from Bureau of the Census, U.S. Department of Commerce. (Establishments with five or fewer employees were not surveyed.)

¹⁷*Study to Determine the Economic Feasibility of Establishing a Wool Processing Industry, Phase I.* Touche Ross & Co. Boston, Mass. September 1973. p II-13.

¹⁸*Ibid.*, page IV-16.

pounds in 1974 as a recession cut into apparel demand and compounded the effect of competition from manmade fibers and wool textile imports. Although production has increased slowly, it is not expected to expand significantly beyond the level of the early 1980's.

As wool consumption declined, topmakers began specializing in fibers like mohair or angora to secure a customer base and supplement business in standard top grades, such as the 54's grade top used in sweaters. The worsted fabric sector still remains the most important component of topmaking. In 1981, about 12 million pounds of medium grade domestic top went into sweater yarns, about 20 percent of total top production for that year.¹⁹ Topmakers prefer to purchase graded wool because the varieties of top demanded by mills has dropped from about 20 to 5 over the past 20 years. Topmakers in this study said mills began relying on fewer varieties in response to the costs of inventory accumulation and the availability of imports.

The Topmaking Function

Topmakers can exist separately from vertically integrated mills through shrewd appraisal of market fluctuations and careful timing of inventory purchases. The nature of industry

¹⁹Proceedings, National Wool and Pelt Workshop, November 15-18, 1982, American Sheep Producers Council, Denver, Colorado, p. 58.

Table 4—Top production and trade

Year	Top production ¹	Imports of top and advanced wool ²	Exports of top ³	Stocks of top ⁴
1,000 pounds				
1968	155,149	6,622	365	19,549
1969	138,463	4,496	478	21,682
1970	108,435	4,406	442	16,498
1971	74,664	2,752	4,847	18,191
1972	86,696	425	25,271	17,714
1973	65,563	325	23,057	9,358
1974	39,168	520	13,142	11,640
1975	48,912	338	10,764	11,337
1976	52,406	403	4,787	n.a.
1977	43,272	842	1,300	8,067
1978	45,241	563	1,197	n.a.
1979	45,396	368	2,984	6,305
1980	53,930	311	2,326	6,776
1981	58,602	326	2,013	n.a.

¹Table 4, CIR M 22D (79)-13.

²TSUSA No. 30.75000.

³Schedule B No. 30.75000.

⁴Table 6, CIR MA 22M (77)-13. Report issued biannually after 1975.

pricing puts pressure on margins. Typically, topmakers operate on a margin of about 3 percent. Topmakers pay cash to suppliers for grease wool but must generally sell to customers on 30-, 60-, 90-day terms. (Therefore, topmakers prefer to purchase from suppliers who will space grease wool deliveries.) Ready access to a wide variety of wools is critical to reducing costs and obtaining orders. Consequently, topmakers buy from foreign and domestic suppliers to space inventory accumulation and obtain the lowest wool prices. One study said that raw material, as a component of cost, is so large that failure to be competitive in this area could easily overshadow other operating advantages as factors in determining profitability.²⁰

Top not meeting specified spinning counts can be refused by customers. Another buyer may be very hard to find, as top is generally blended for a specific use, and thus is a less flexible commodity than grease wool.²¹ Therefore topmakers prefer to purchase grease wool from suppliers who will guarantee micron count.

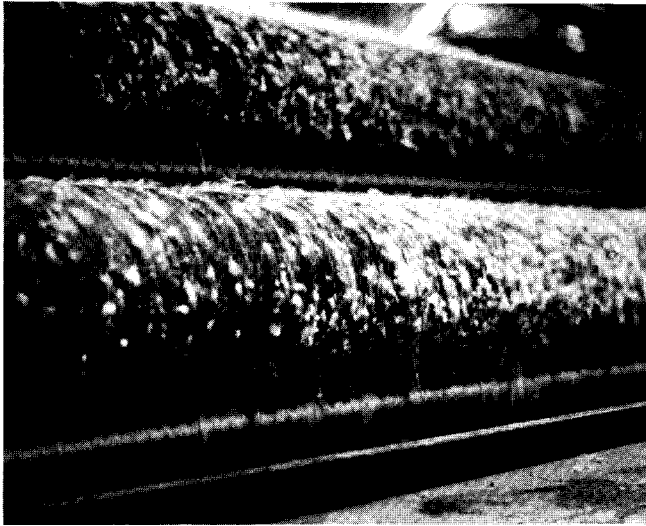
Orders are generally negotiated with mills. Assume a mill decides to price fabric samples for apparel manufacturers at \$6 per yard. At this price, it may only want to pay \$2 per pound of top (or if the mill is on the woolen system, say, 90 cents per pound of scoured wool). At those prices, the topmaker or scourer will calculate the maximum price they can afford to pay for grease wool. An important part of the topmaker function is knowing and having access to grease wool supplies across the country so the most appropriate grade of wool can be bought at the lowest possible price. Topmakers may be asked by mills to guarantee a top price for delivery several months after the order is placed, which is another aspect of the financing and market intelligence requirements of topmakers.

Top Manufacture

Two types of combs are in general use, a rectangular (French) comb and a circular (Noble) comb. The Noble comb is for wools with a longer staple and the combing process is more rigorous, removing a higher percentage of noils (short fibers). The end result is less top, because the noils are longer than those produced by French combs. A Noble comb has a stronger, smoother yarn that gives worsted fabrics superior wearing qualities. Domestic mills produce relatively small amounts of premium worsted because they compete with comparatively low-quality and low-priced apparel imports.

²⁰Study to Determine the Economic Feasibility of Establishing a Wool Processing Industry, p. IV-10.

²¹Topmakers purchase wool in the grease state almost exclusively. Evaluating quality characteristics and therefore, processing efficiencies is easier when wool is in the grease state, compared to scoured wool. Scoured wool may "felt" when baled for transport, making processing more difficult. Also, topmakers prefer to supervise scouring themselves, rather than entrust the task to commission scourers. See Study to Determine the Economic Feasibility, page IV-5.



Carding

Courtesy: American Sheep Producers Council

Topmaking results in several types of wool waste.²² Noils, the largest and most valuable, are sold to mills. Burr and card waste comes from carding and is used mainly in padding and stuffing. Soft wastes such as top and roving waste are blended with virgin wool to make coarse yarns. Hard waste is wool yarn and thread scrap, consumed on the woolen spinning system. Flock is short fibers from scouring, used mainly to produce felt. One key to making a profit in topmaking is utilizing the waste by selling some or blending it into the next production run. Producing a sizable volume of top maximizes return on waste.

To retrieve the minimum amount of waste and get the correct spinning count from the top requires a knowledgeable person to supervise the topmaking procedure. Combers who rent their machinery to topmakers do not necessarily supervise the topmaking procedure. The combers produce top for their own account and, hence, compete indirectly with topmakers. However, combers do not service the industry themselves because middlemen are able to service it for less when the vertically integrated combers are under pressure to fill orders, and because the topmakers represent a small market share. Increasing specialization with nonwool fibers among topmakers also alleviates the situation.

Wool Trade

Large amounts of wool must be imported each year to meet the needs of the domestic textile manufacturing industry. The decision to import wool or to use domestic product depends on relative prices, quality, and time. The shipping time for

imports ranges from 1 to 5 months, whereas domestic suppliers can generally ship to processors within 2 weeks. On the other hand, foreign wools tend to be packaged more attractively. The larger suppliers—Australia, South Africa, Uruguay, Argentina, and New Zealand—facilitate clip preparation that corresponds to the needs of processors. Foreign wools are skirted, which means the soft belly wool and tags have been removed from the body of the fleece. Skirting is simple if done when the sheep are sheared, but is often ignored on the smaller domestic farms. Domestic producers generally may not receive a price premium for taking extra care of the fleece in this manner. Moreover, foreign wools have less contamination with vegetable matter and plastic twine than domestic wools. When the fleece is not skirted and the contamination is excessive, processors must pay to have it removed.²³

Domestic wools tend to shrink 10-15 percent more than comparable foreign wools.²⁴ Foreign suppliers use core test results to indicate clean yield, a procedure that minimizes risk to the processors. They also guarantee the grade. Domestic wools are not routinely sold using the core test because of the size of the lots, expense, and inconvenience.

Other factors inducing imports are price fluctuations that make foreign wools competitive with domestic wools and recessions that divert premium wools from traditional West European markets to the United States.

Some producer groups have considered developing an export market for American wool to compensate for the shrinking domestic market. Historically, exports have been a small portion of domestic production. Exports of domestic apparel wool, clean basis, ranged from 86,000 pounds in 1966 (0.03 percent of production) to 385,000 pounds in 1982 (4 percent of production). Exports peaked in 1972 at 11,224,000 pounds (7 percent of production) in response to the drop in the average domestic price received to 19.6 cents per pound in 1971. The export market is considered very price sensitive.

Tariff drawbacks provide for a refund of duties paid on imported grease wool when semimanufactured wool of similar quality is exported. The manufacturing process generally involves grouping similar wools together and removing strings used to tie fleeces, a process called “matching.” Tariff drawbacks have been the primary stimulus for exports because they allowed domestic grease wool exporters to lower prices to compete with other countries for European markets. Small dealers accumulated drawbacks and sold them to exporters. Without the drawbacks, probably little wool would have been exported. However, sale of the drawbacks is not

²² *Summary of Trade and Tariff Information: Wool and Related Animal Hair and Waste, and Processed Fibers and Yarns of Wools and Related Animal Hair*, p. 18.

²³ The cost for this procedure is about 8-10 cents per pound, compared with a duty of 10 cents per pound for imported grease wools.

²⁴ *Wool and Pelt Conference Proceedings*, p. 58.

necessarily consistent with Customs Service regulations. Reduction of duties on imported grease wool has also curtailed use of drawbacks as an incentive to export wool.

Duties on Wool Imports

Duty on imports of grease wool was reduced in 1982 to about 10 cents per clean pound from 25.5 cents per clean pound. The reduction helped make imports more attractive to domestic processors. (Imports of grade 46s and below are duty-free.) Primary suppliers of dutiable raw wool are Australia (more than 50 percent in 1982), Argentina, Uruguay, and the Republic of South Africa. Imports of dutiable wool decreased from 93 to 12 million pounds between 1969 and 1974, a drop of 87 percent. They have slowly increased since 1974, reaching 48 million pounds in 1981.

The duty on imported top was 19 cents per pound, plus 6.25 percent *ad valorem*, in 1983. This duty will decrease to 3-1/2 cents plus 6.25 percent *ad valorem* in 1987. These changes will reduce the isolation of the domestic industry and increase its sensitivity to production and marketing decisions made in other countries.

Felt Manufacturing

In 1965, the four largest felt companies accounted for 4 percent of the total wool volume of all textile firms. Although it is only a small component of the domestic industry, the domestic felt industry illustrates how manmade fibers take over markets formerly held by wool. Fifteen years ago, the major domestic felt manufacturers used wool almost exclusively. Now only 10-15 percent is made from wool, most of which is imported from New Zealand and South Africa.

Feltmakers attributed the shift to manmade fibers to superior fiber quality and ease of procurement. Wool varies in quality while manmade fibers can be made to order. Manmade fibers have also duplicated the "feltability" found in the natural fiber as a result of technological changes in the 1970's. They are said to be easier to process, cleaner, more durable than wool, less expensive, and available in smaller quantities.

In general, feltmakers avoid purchasing pool wools because their wool specifications are strict and met by few areas in the country. Instead, feltmakers rely on warehouses because they prefer to purchase nearly all their wool on a description and core test basis. Attrition among warehouses in the past 10 years forced feltmakers to seek alternative sources of supply that could guarantee product quality. Foreign suppliers have been able to capture the domestic market because they packaged wools to fit processor requirements. Adhering to strict specifications for the raw product has lowered the average procurement costs of feltmakers.

WOOL MARKETING ISSUES AND CONCERNS

Pool and cooperative warehouse managers and members, processors, and wool marketing specialists identified several issues that will have an impact on the future efficiency of the industry.

Grading

On large ranches in the United States and Australia, wool is sorted and graded at the shearing pen. Because graders are scarce in the United States, most wool is graded at warehouses and mills which are used as collection points.

The purpose of warehouse grading is to blend wool to the anticipated or actual specifications of processors, using high- and low-priced wools, to maximize return to the warehouse or grower. Lots may be regraded at the mill to modify grade content if necessary. If mills frequently duplicate warehouse services, they would be less likely to pay a premium when purchasing wool. In fact, some producers believe the price for warehouse graded wool does not reflect a premium for grading. Consequently, what they perceive to be relatively high marketing charges from warehouse grading encourage producers to market direct to processors or through pools, reducing the volume over which the warehouse can spread costs.²⁵

When processors decide to limit inventory, they buy from pools only if the price is very low or if the pooled wool will fill a specific order. If the pool can find processors to bid, growers may prefer pool to warehouse marketing because of the relationship of marketing charges to prices received. For example, the gross price received by a pool may be 40 cents and marketing charges 5 cents. A warehouse may get a slightly higher price because it has more contact with processors, but the marketing charges may be considerably higher than the pool charges.

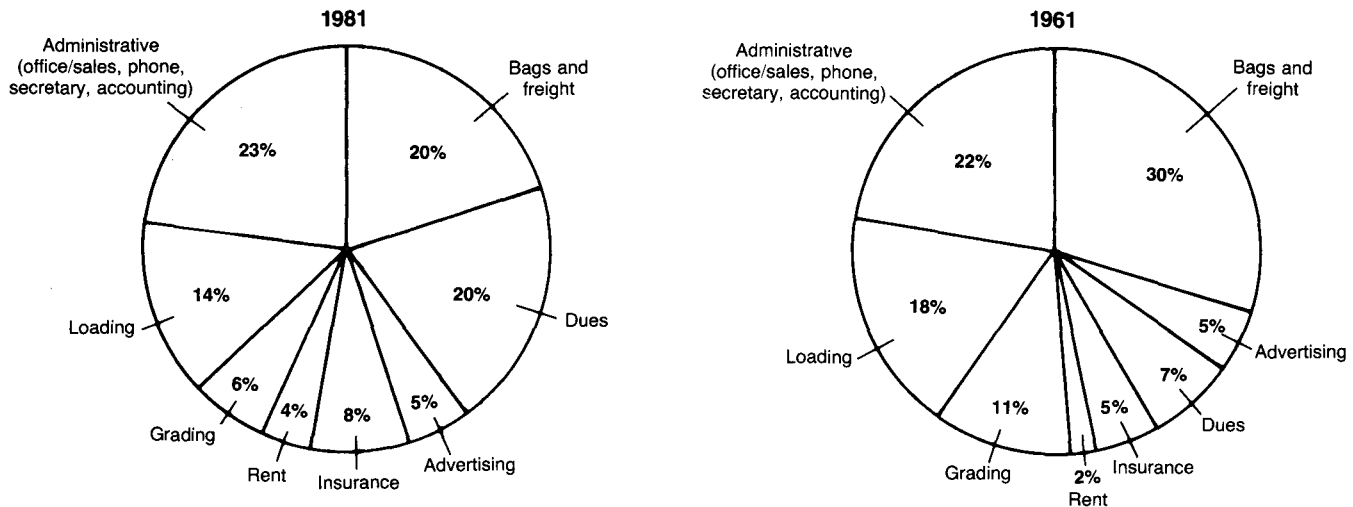
Finding processors to bid on pool wool during depressed markets is easier if the pool can describe characteristics of its wool to potential buyers, reducing their risk. However, the wool pool survey indicated that of the 84 respondents that graded wool, only 19 graded before sale. Most pools graded after the sale, primarily to reduce the number of times the wool was handled, or because a shortage of grading expertise forced them to rely on grading by the buyer.

In 1961, 47 percent of pools graded before sale, while in 1981, the figure was 17 percent.²⁶ In 1961, grading represented 11

²⁵However, this perception suggests producers may not be aware of the role of grading in determining product characteristics and consequently, potential buyers.

²⁶*Wool Pools*, p. 19.

Figure 5



See table 9 for average expenditure data.
 Source: 1981 Wool Pool Survey and *Wool Pools*, table 15, page 41.

percent of pool expenditures, and in 1981, 6 percent (fig. 5). These data suggest that pools are de-emphasizing a service that can improve their marketing efficiency. If a pool sells without knowing product quality it can depress the market for other pools and warehouses.

To some extent, pressure on the prices received by pools may be limited by warehouse sales, because these sales establish a price-quality relationship based on grading, and because volume of wool sold through warehouses exceeds pool sales. Another control over poor prices is the timing of the pool sales. Pools tend to sell sequentially, reflecting the movement of shearers across a region, tradition, or convenience. Consequently, the pools that sell the earliest in the shearing season establish the market for the remaining pools. If previous sales brought poor results, pools may decide to store wool on members' farms until the sale can be rescheduled for a more propitious time.

Pools offering grading services may want to circumvent middlemen like warehouses and deal directly with processors. Evidence suggests this is not easy for territory pools because processors, particularly topmakers, have customarily used warehouses to supply their needs. Consequently, a warehouse may bid on a graded pool and do no more than relabel and ship the wool to processors, services that could have been performed by the pool.

Dealing directly with processors is easier for fleece pools because the fleece area has relatively few warehouses, and the fleece pool marketings generally represent most of the wool

produced on a statewide basis. Processors who want the wool must use producer selling associations.

If pools cannot maximize the number of buyers bidding on the wool, they are less likely to sell the wool for its full value. Efficiencies gained from pool grading may be lost because the pool has less knowledge of the processing sector than warehouses.

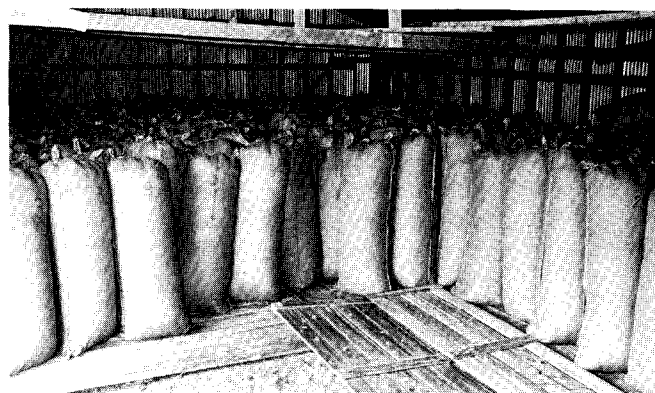
Objective Measurement

Objective measurement, like core testing and laboratory micron counts, gained momentum in Australia during the early 1970s as the price of wool was depressed by competition from manmade fibers. Australian producers realized they had little control over wool prices and demand, but they could lower marketing costs. Objective measurement reduced marketing costs and increased efficiency by facilitating sale by sample (using 1 pound of wool to represent an entire lot) and paying to producers on a grade and yield basis. The large volumes of wool produced in Australia, as well as a government marketing board, the Australian Wool Corporation, facilitated these changes in wool marketing. The United States has been slow to adopt objective measurement because its wool marketing system is fragmented, it produces less wool, and, in some cases, processors and producers resist the change.

The wool pool survey indicated only 5 pools out of 84 core-tested their wool during 1981. Use of core-testing is limited by the expense, which is about \$100 for 20,000 pounds (1/2 cent

per pound), and storage while a wool laboratory is evaluating samples. If a pool does not core test before the sale, it usually sells wool on a grease price basis. An alternative is to deliver the wool to the processor, who has the core tests done. This procedure is pricing on a "clean price delivered" basis. This method is not commonly utilized by pools because members dislike waiting for settlement; more important, pools have traditionally sold on a grease basis. Many producers apparently do not understand the difference between clean and greasy prices. Another problem is variation across members' clips, which makes core test results difficult to interpret. Test results are also misleading when the wool is sampled from loosely packed bags, rather than more densely packed bales. Evidence suggests pool wool is commonly bagged, not baled.

Buyer resistance also appears to have influenced pool selling patterns. If wool is priced on a clean basis so sellers are paid what the product is actually worth, buyers lose flexibility in pricing the wool to meet processing needs. In competing for garment manufacturers' orders, mills will price fabric samples as low as possible, which puts pressure on sellers. Buying on a grease basis requires buyers to bid only a few cents more than their competitors, not what the wool is actually worth. Pride in making better visual estimates of clean yield than competitors might lead buyers to prefer grease pricing. Moreover, low wool prices limit financial losses from misjudging the clean yield or spinning count.



Discounting helps mills lower costs. Buyers alone established the discounts for "off" or inferior quality wools for 32 of 102 pools reporting in the wool pool survey. The variation shown in table 5 shows that discounts are not standardized, especially when fleece and territory pools are compared. Some differences may be attributable to diverse production environments, as fleece flocks raised in confinement may get badly mud-stained wools compared, for example, with range herds.

Of 105 pools reporting, about 55 percent evaluated bids on the basis of total returns to the pool and the rest evaluated on the

Table 5—Number and percentage of wool pools reporting specified off-wool discounts and type of pool, 1981

Type of off-wool	Pools reporting discount allowance of—										All pools reporting ¹	
	0 - 10 percent		11 - 30 percent		31 - 50 percent		51 - 70 percent		71 - 100 percent			
	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.	No.	Pct.
Fleece pools:												
Tags	3	10	—	—	2	7	3	10	21	72	29	100
Black, grey	4	15	19	70	2	7	—	—	2	7	27	100
Burry, seedy, chaffy	4	13	22	73	3	10	—	—	1	3	30	100
Taggy	3	16	6	32	3	16	1	5	6	32	19	100
Damp	5	33	8	53	2	13	—	—	—	—	15	100
Lamb	4	17	15	65	3	13	—	—	1	4	23	100
Ram	7	54	5	39	1	8	—	—	—	—	13	100
Untied	7	47	6	40	2	13	—	—	—	—	15	100
Territory pools:												
Tags	8	28	8	28	3	10	3	10	7	24	29	100
Black, grey	3	9	4	12	21	64	5	15	—	—	33	100
Burry, seedy, chaffy	20	69	7	24	2	7	—	—	—	—	29	100
Taggy	18	72	7	24	—	—	—	—	—	—	25	100
Damp	11	58	8	42	—	—	—	—	—	—	19	100
Lamb	8	40	5	25	5	25	—	—	—	—	20	100
Ram	1	100	—	—	—	—	—	—	—	—	1	100
Untied	1	100	—	—	—	—	—	—	—	—	1	100

¹Percentages may not total 100 percent due to rounding.

basis of market prices for wools of different quality. Of 29 pools selling on the basis of total returns, 23 reported inadequate information on grade distribution and clean yield, and 6 reported adequate information. Among the 27 pools selling on the basis of different quality wools, 16 reported inadequate information on grade distribution and clean yield, and 11 reported adequate information. Thus, some pools were selling on the basis of quality without supporting information, while others with sufficient information sold on an average basis.

Several explanations of this inconsistency are possible. One, pools may not utilize quality information if the amount of better wools is a small proportion of total volume. Two, producers may have traditionally sold on the basis of reputation and grease prices, and so long as prices were in line with historical trends or prices in other areas, there was no incentive to change to a pricing system utilizing quality information. Three, producers may not have believed they would receive a premium for selling on a quality basis. Four, because only 24 pools graded or core-tested before sale, most pools probably relied on the buyer for quality information.

Of 105 pools responding to the survey, 30 were graded by wool buyers, 9 by buyers and pool representatives, 35 by extension livestock specialists, 8 by pool managers, directors, or members, and 2 by professional graders. Thus, buyers had a better indication of product quality than producers in about a third of the pools surveyed. Such pools may be forfeiting advantages from group marketing because buyers who bid a relatively high price to get the wool may compensate by taking large discounts.

Sources of Market Information

Of 107 pools reporting, 76 said they had sufficient information to make a decision on market bids. Because two-thirds of the pools sell by sealed bids, they may not utilize any information beyond selecting the highest price offered, especially if it is better than prices in other areas. This may be another indication that quality information does not enter into a sales decision.

Pools wanted information on national prices, particularly price forecasts that could help them decide whether to store wool. Respondents also wanted information on other marketing alternatives, including what members could get by not pooling. (This response suggests an opportunity for cooperative warehouse operators.) Short- and long-term processor demand for specific wools was sought. This would require forecasts of fashion trends and other variables, such as military orders.

The most important sources of information for pools were the *Wool Market News*, published by the U.S. Department of

Agriculture, and extension sheep specialists (more than 30 responses each). Wool periodicals and general livestock or farm magazines were less effective, receiving about 10 responses each. Respondents said the *Wool Market News* would be used more if it were cheaper.

Nearly 100 pools received assistance from State or county extension personnel. Extension specialists organized new pools, provided publicity to new growers; coordinated sales with other pools; solicited bids; disseminated market news; graded, loaded, and shipped wool; performed bookkeeping; and held wool schools and seminars. The range of functions performed by Extension staff suggests they should be targeted for information by wool or sheep associations.

Methods of Selling Wool

Sealed bid sales and private treaty sales are the primary ways wool is sold domestically by pools and warehouses. When the number of mills was greater sealed bid sales were frequently used by pools and warehouses. Evidence suggests such sales are mainly held by pools, with warehouses preferring to negotiate individually with prospective buyers for private treaty sales.²⁷ The wool pool survey indicated two-thirds of the pools sold their wool by sealed bid sales and the remainder conducted private treaty sales.

A sealed bid sale may be held before or after the wool is sheared. Displaying the sheared wool in a barn or other facility for a buyer "showing" may stimulate participation in the sale. Otherwise, the pool describes the content of last year's clip in a letter sent to prospective buyers.²⁸ The pool assumes the clip will remain much the same from year to year. Buyers submit bids by mail²⁹ or in person on the scheduled sale date and the wool goes to the highest bidder. Final settlement can depend on grading or core test results.

When wool prices were uncertain or unfavorable, about a third of the pools rejected the prices submitted and negotiated private treaty sales or rescheduled the sealed bidding. The rest sold regardless of price because they lacked storage or members wanted whatever was offered.

The survey indicated most pools chose to sell by sealed bid sales because of the prices obtained, the volume of wool

²⁷Private treaty sales are negotiated individually by buyers and sellers so terms of the sale are known only to the participants.

²⁸Except for those few pools that grade wool before sale.

²⁹Processors indicated this selling procedure forced them to purchase by "educated guess" because they did not have an opportunity to see much of the wool.

offered by the pool, tradition, member convenience, ease of coordinating wool assembly, and growers' need for cash. Thus, price and convenience are important influences on the marketing approach. The availability of storage or specific grades of wool, factors that would indicate a willingness to change traditional marketing methods, did not strongly affect choice of sales method.

The private treaty sale may take the form of negotiating with the highest bidder from the sealed bid sale. Otherwise, the high bidder may be refused the wool if the sealed bid sale is rescheduled. Some buyers resent negotiation because they believe the pool is not being fair to the implicit terms of the sale. They said that by holding a sale, a pool is agreeing to sell the wool at the market price, and that price is whatever the wool happens to bring on the day of the sale. For that reason, and because some buyers have incurred travel expense to attend a sale but were refused the wool, they avoid sealed bid sales. Processors interviewed wanted pools to indicate a price floor as the Australian Wool Corporation does when holding wool auctions. Bids below the floor price are automatically rejected. Processors also suggested pools should not be overly optimistic and hold a sealed bid sale when market conditions were likely to result in unacceptable prices.

Possible reasons for avoiding floor prices would be a fear of collusion among buyers or a fear of underpricing wool. However, if market information is adequate, i.e., if the pool is not holding one of the earliest sales of the season, floor prices may be a possible modification of selling procedure, especially if the wool is sold before shearing.

Marketing agreements are used to educate producers by defining quality specifications for wool delivered to the pool. Of the 106 pools responding, 48 (or 45 percent) had marketing agreements with members. The 1965 study on pool marketing said only 36 percent of the pools used marketing agreements.³⁰

Standard sales contracts enable buyers and pools to negotiate on the same basis because sales terms and discounts are specified. Half of the 51 territory pools responding used standard sales contracts. Fleece pools marketing through a State association used contracts supplied by the association. Other fleece pools seldom used contracts.

The most common sales terms among pools were:

1. Buyer takes all wool (reported by 89 pools)
2. Advance payment (44 pools)

3. Forward contract³¹ (33 pools)

4. Storage and transportation requirements (30 pools)

5. Escrow deposit (27 pools)

Consignment

If the market will not support a sealed bid sale, and the pool rejects the private treaty option, it may consign its wool to a local warehouse. Wool pool survey respondents believed consignment to warehouses increased the probability of being paid what the wool was worth because the sale could occur with better timing and the wool was more likely to be graded and sorted. Producers might even be able to get grade and yield information that could help them improve the quality of their clip.

Warehouse consignment also had disadvantages. Pools complained about delays in payment, uncertainty about the selling price, storage costs, and the paperwork from consigning many small lots of wool. Pools may not receive returns from consignment until all grades contained in the pool have been marketed. One western pool said, "Wool leaves the area and there is no recourse for grade or quality identification by growers. Delays in payment create cash flow problems with many of our growers. Historically, we have had poor results with consignment and will no longer consider it."

Some pools perceive consignment as gambling on the market. Conversely, when a sealed bid sale is held, growers can see what the market is and they have the right to reject all bids. Warehouses may not allow the producer control over the selling price, especially if consigned lots are small.

Quality information from grading growers' clips individually may increase warehouse marketing charges more than if the entire pool was graded as a unit. However, unit grading could result in pricing on an average basis instead of quality, and thereby penalize better growers.

Warehouses merchandise consigned wools as follows: If the wool corresponds to the type demanded by fashion trends, the handler may advise processors of his supply. The handler hopes pressures on processors to fill orders quickly will lead them to bid up the price for the wool. The other approach, if the wool does not correspond to current trends, is to put it in marketable condition and wait for prices to improve. Thus, consignment is a passive marketing strategy except when markets are active.

³¹Forward contracts allow producers to sell wool at a specific, fixed price for delivery at a specified time (33 pools)

³⁰Wilson, page ii.

Table 6—Average U.S. farm prices per pound for shorn wool, grease basis¹

Year	Shearing season						Nonshearing season ²						Average price		Differential (nonshearing season - season average price)
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.- June	July- Jan.	
<i>Cents per pound</i>															
1977	72.5	72.4	72.5	71.9	73.7	72.3	70.4	66.4	71.3	70.6	69.3	72.6	72.5	70.4	-0.021
1978	68.9	71.2	73.7	73.9	76.2	74.8	74.6	72.7	77.1	81.2	73.6	78.7	72.8	76.1	.033
1979	77.3	79.5	86.9	88.0	89.4	87.7	81.8	89.7	87.5	89.0	86.5	82.1	84.2	86.3	.021
1980	86.8	93.5	92.2	86.6	86.5	85.8	85.5	84.7	89.4	92.1	90.9	84.6	89.1	87.6	-.015
1981	88.3	91.8	101.0	99.7	101.0	94.4	84.8	84.3	87.3	91.1	84.2	80.4 ³	96.4	86.6	-.098
1982	80.4	83.4	89.1	88.5	79.6	74.5	68.3	66.7	59.2	61.6	57.1	52.3	84.2	62.8	-.214

¹Source: *Livestock and Meat Statistics, Supplement for 1981*, table 159, p. 139.

²The price reported for January is for the year immediately following the base year.

³Source: *Cotton and Wool Situation and Outlook*, March 1983, table 10, p. 13.

Table 7—Seasonal differences in wool prices¹: graded fleece, clean basis, 56s-58s, staple 3-1/4 and up, average per pound, delivered to mills

Year	Shearing season						Nonshearing season ²						Average price		Differential (nonshearing season - season average price)
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.- June	July- Jan.	
<i>Cents per pound</i>															
1977	161.9	162.5	158.5	157.5	157.5	157.5	157.5	157.5	157.5	158.5	160.0	162.5	159.6	158.7	-.009
1978	162.5	162.5	162.5	162.5	162.5	162.5	165.0	165.0	166.3	170.0	170.0	170.0	162.5	167.0	.045
1979	170.0	171.2	172.5	174.5	175.0	175.0	175.0	175.0	178.0	182.5	187.5	190.0	172.6	180.4	.078
1980	195.0	200.0	200.0	174.5	173.1	179.0	182.5	182.5	183.0	185.0	182.5	182.5	188.5	182.4	-.061
1981	185.6	181.2	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	175.0	161.5	178.4	173.1	-.005

¹Source: *Livestock and Meat Statistics, Supplement for 1981*, table 178, p. 152.

²The price reported for January is for the year immediately following the base year.

Table 8—Seasonal differences in wool prices¹: graded territory, clean basis, 56s-58s, staple 3-1/4 and up, average per pound, delivered to mills

Year	Shearing season						Nonshearing season ²						Average price		Differential (nonshearing season - season average price)
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.- June	July- Jan.	
<i>Cents per pound</i>															
1977	165.0	165.0	159.4	158.4	158.8	158.8	158.8	158.8	158.8	160.9	164.0	165.0	161.3	160.7	-.006
1978	165.0	165.0	166.9	167.5	167.5	167.5	170.0	170.0	171.3	175.0	175.0	175.0	166.4	172.0	.056
1979	175.0	177.4	180.0	180.0	180.0	180.0	180.0	181.2	187.0	192.5	196.3	197.5	178.5	187.8	.093
1980	202.5	207.5	186.0	176.2	180.0	188.0	197.5	197.5	198.0	200.0	200.0	197.5	190.4	196.9	.065
1981	199.4	186.2	180.7	180.7	181.2	181.2	181.2	181.2	181.2	181.2	181.2	176.5	185.6	180.5	-.051

¹Source: *Livestock and Meat Statistics, Supplement for 1981*, table 178, p. 152.

²The price reported for January is for the year immediately following the base year.

Does storing wool bring higher prices to producers? Some evidence is provided by a comparison of average prices during the shearing season and the nonshearing season (table 6).

Table 6 compares grease wool average prices during the February-June shearing season with an average for the following July-January, for the period 1977-82. The shearing months may be considered the harvest season, and the July-January period, the off-harvest period. Generally the prices of most agricultural commodities rise by at least the cost of storage during the off-harvest period. Wool prices do not clearly follow this pattern. The average price for grease wools during the off-harvest season exceeded the average price during the shearing season only during 1978 and 1979. For fleece wools, the average price during the off-harvest season was greater than the average price during the shearing season during 1978 and 1979, and for territory wools in 1978, 1979, and 1980 (tables 7 and 8).

During 1982, storage charges at three warehouses were about 1 cent, 2 cents, and 3 cents, respectively, per pound, per year.³² Greater evidence is available on overall warehouse marketing costs. Industry observers interviewed for this study (including processors, cooperative and noncooperative warehouse managers, extension personnel, and wool dealers) indicated the marketing costs for noncooperative and cooperative warehouses are similar, and the costs were about 10-13 cents per pound for territory wools and 15-20 cents per pound for fleece wools. Consequently, it is possible most warehouse storage charges are in the range of the values reported, given that storage charges are a component of total marketing costs, and these costs appear to be similar among warehouses.

Storage costs may be direct or indirect. They are generally a direct component of the marketing costs charged to producers if they consign wool to a warehouse, and an indirect component if the warehouse buys wool for cash and cannot sell it immediately. In the latter case, the warehouse will adjust the cash price to producers to compensate for interest charges on inventory and rent for warehouse storage facilities. Warehouses may also avoid direct storage costs for consigned wool by charging a commission high enough to compensate for those costs.

The price differential between the shearing season and the off-harvest period suggests the potential for producers to recover storage costs if they consigned wool. A storage cost of 3 cents per year, grease basis, is roughly equivalent to a charge of 6 cents per year on a clean basis, or about one-half cent per month. Therefore, producers storing wool should anticipate a price rise of at least 6 cents per year or 1 cent every 2 months,

³²The warehouse charging 3 cents levies this charge regardless of the number of months during the year the wool is stored.

clean basis, if they are to recover the cost of storage. The data in table 7 show that *on average*, producers would have benefited from storing fleece wools in 1978, when the off-harvest average price exceeded the shearing season average price by almost 5 cents, and during 1979, when the differential was almost 8 cents. For the remaining years, the price differentials for fleece wools were negative (the average price during the shearing season exceeded the average price during the off-harvest period). As a result, storage probably did not represent a strong opportunity to increase net returns.

Storage may not have consistently increased producer returns for territory wools. During 1978, 1979, and 1980, the price differentials for territory wools were about 6, 9, and 7 cents, respectively, but during 1977 and 1981, the differentials were negative (table 8).

These observations about the probable consequences of storing wool must be qualified by noting that the potential gain on a month-to-month basis may be much greater than indicated by average price differentials. For example, the average market value of fleece wool in June 1980 was 173.1 cents (table 7). If sold in December 1980, the gain would have been about 9 cents, a value obscured by average price differential of -6 cents. (The average shearing price exceeded the average off-harvest price by 6 cents.) Thus, it should be noted that transportation differentials, the quality and quantity of the wool sold, and daily market fluctuations about the average price may result in an individual transaction price very different from the prices listed in tables 6-8.

Nevertheless, producers don't know whether average prices at shearing will exceed prices for the rest of the year, or what the amount of the differential will be. The variation in the data in tables 6-8 suggests no "rule of thumb" exists in wool marketing to indicate whether storage or selling immediately after shearing is advisable. Consequently, producers' cooperatives have an important role in guiding the marketing decisions of their members. The cooperatives have access to processors and other sources of market information (like knowledge of upcoming orders for military uniforms) that can indicate when the market may peak.

However, by suggesting that storage does not consistently bring higher returns to producers, the data in tables 6-8 raise the question: Why doesn't wool follow the pattern of many other agricultural commodities?

The absence of a marked differential between shearing and nonshearing periods may be partially explained by the incentive payments mandated under the National Wool Act and the nature of the wool processing industry. Industry observers indicate heavy sales of wools have occurred during November and December. Yet, these months are generally slow for the apparel manufacturing trade. Typically, textile mills develop fabric samples during the spring and show them

to garment manufacturers during October. The apparel manufacturers make production decisions during the following January through May. Broadwoven wool fabrics and apparel are manufactured during the spring and summer to make fall deliveries to retailers. Mills use the fourth quarter to build inventories. Producers who want to qualify for the incentive payment by the end of the calendar year will be eager to sell. Mills can utilize this readiness to sell by bidding relatively low prices for wool (especially if wool supplies are plentiful).

Heavy imports by domestic processors modify the seasonal effect on the domestic market. The imported wools come primarily from Southern Hemisphere countries, where the shearing season occurs during the off-harvest season for domestic wools. As a result, there is no prolonged period of wool shortages in the United States.

Another influence on the pattern of wool prices is forward contracting, the practice of selling before the wool has been sheared. When higher prices are anticipated, the sale of the clip is sometimes contracted weeks or months before shearing.

The forces described can stabilize wool prices during the year, but the optimal storage period for wool is also influenced by year-to-year circumstances. Typically, pools and warehouses reschedule sales for the late summer or fall if earlier bids or sales were unsatisfactory. As domestic wool markets are influenced strongly by early spring sales, pools might need to wait a year, not a few months, to benefit from improved markets. The ultimate limitation on the effectiveness of storage as a means of receiving better wool prices is the demand for apparel, which is highly sensitive to the business cycle. Thus, wool prices may not improve for more than a year.

Competitive Environment

The existence of warehouses, pools, order buyers, small dealers, and mill buyers suggests producers have considerable competition for their wool. Yet, of the approximately 60 million pounds of domestic grease wool suitable for worsted manufacturing, 25 million pounds is bought by one buyer.³³ Specialization by woolen or worsted mills in fabrics demanding specific grades of wool create a situation where grades 60 and finer appeal to only a limited number of processors of fine worsted fabrics, and somewhat coarser wools appeal to processors of sweater blends, etc. Thus, there is not one market for wool but several, divided according to the type of garment that can be produced from each grade.

Consequently, the existence of 356 woolen and worsted mills operating as of 1980 may inaccurately portray the extent of

competition for grease wool. For example, if the 25 million pounds bought by one buyer was mostly limited to grades 60 and finer, given domestic production of only 36 million pounds of those grades during 1982, buyer competition for that wool would be much less than if all 356 mills were interested in those grades. Moreover, if a single mill buys most of the wool for either the woolen system or worsted system, the remaining 354 mills would purchase comparatively small amounts of wool, on average, given total domestic production of 110 million pounds for 1981. Industry observers suggest most woolen or worsted mills have small production runs, generally no more than 8-9 million pounds per year, probably much less.

The structure of the processing sector contrasts with the selling or producer sector. If relatively few mills are interested in a particular grade, and within that grade category one or two mills account for the majority of industry shipments, buyers would have more influence than sellers on prices, timing of purchases, and other terms of sale.

The large number of middlemen in the industry contributes to differences between the actual level of competition for wool and that perceived by growers. Because exit and entry into small wool dealerships, wool pools, or even small warehouses requires a relatively small amount of overhead, the greatest competition in the industry may exist at the middlemen or grower level. This competition adversely affects grower prices because all groups ultimately service the same end users—the mills. In poor marketing years, middlemen will put pressure on grower prices to maintain their margins. In good years, easy entry into middlemen activities can mean the producer has a large number of buyers to choose from, and may therefore become careless about clip preparation or contamination. Poor product quality will eventually convince mills to use better prepared imported wools unless domestic wools are available at comparatively low cost. Thus, the fragmentation of the domestic industry inhibits development and application of uniform pricing and dependable quality standards.

Published reports of wool trades provide only limited guidance to producers because many unrecorded trades take place.³⁴ Without access to grade or core test information about their own clip, producers cannot interpret information on grease or clean prices to maximum advantage. Moreover, published information may be 1-2 months old by the time it reaches the producer.

Small producers and pools are most likely to be affected by inadequate market information. They have limited knowledge of mills that might be interested in their product because they don't market as often as warehouses or large producers.

³³Proceedings, National Wool and Pelt Workshop, page 3.

³⁴Observation of discussion group, National Wool and Pelt Workshop.

Competition at the Pool Level

Major marketing problems reported by pools were bid solicitation (80 pools reporting), marketing information and bid evaluation (77 pools), lack of incentives for quality wool (66 pools), inadequate volume (55 pools), packing wool (43 pools), and transportation (42 pools). The top three problems indicate the primary concern of pools is receiving more buyer competition for their wool.

Only 7 of 115 pools responding said they had 4 or more changes of buyers year to year. The remainder were evenly divided between 0-1 or 2-3 changes from year to year. Most pools had from 3-4 bids during 1980 and 1981 regardless of whether they were fleece or territory. The range for fleece States in 1981 was 1-7 bids, and for 1980, 1-6 bids. For territory States, the range was 0-7 bids for 1981 and 1-7 bids for 1980, with one pool reporting 11 bids. Industry observers suggest wool buyers frequently return to the same area year after year without seeking alternatives or new sources of supply.

Ten territory pools, located in North Dakota, Utah, Idaho, Wyoming, and Montana, had only one bid in 1980 and 1981, compared with seven fleece pools in New York, parts of New England, and the Southern States. Neither volume or adequacy of help from the Extension Service, two important factors in pool marketing, appeared to contribute to the low number of bids. The volumes reported were not uniformly

low, and most reported receiving marketing or other assistance from the Extension Service. However, 15 of the pools reporting one bid said they never or only occasionally coordinated their sale date with other pools. The close coordination by pools in the Middle Atlantic States may have accounted for the high number receiving at least five bids in 1980 or 1981. Despite an average fleece pool volume half that of territory pools, 13 fleece pools were receiving 5 bids compared with 12 in the territory States. Most were in Wyoming and Montana.

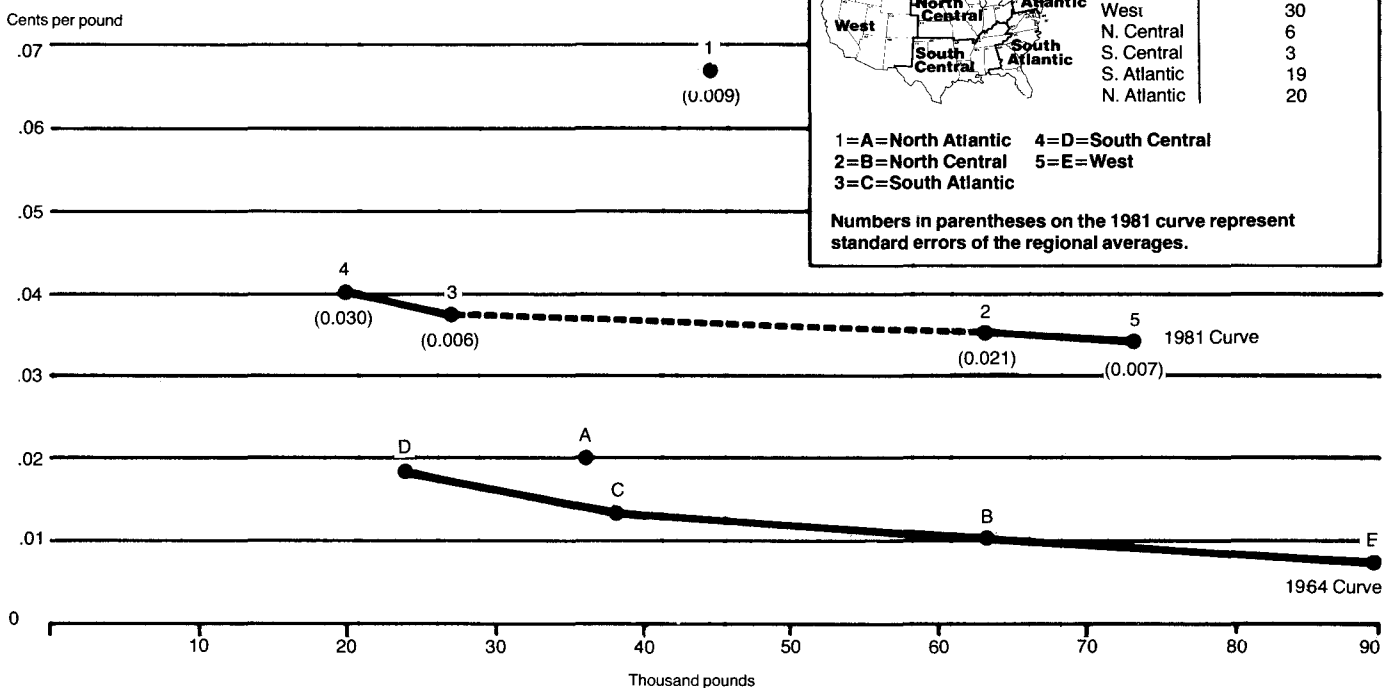
Pool Cost Structure

With a declining number of wool processors in the marketplace, one option for pools is to consolidate operations, which will enable them to reduce per pound operating costs. The relationship between volume marketed by pools and per pound operating costs was plotted in figure 6. It was assumed that variation in quality, quantity, and cost of marketing services within regions canceled variation among regions.

Figure 6 shows that in 1981 larger volume wool pools had lower average total costs per pound. This result is consistent with an average total cost curve from a 1969 study.³⁵ For both years,

³⁵ *The Domestic Wool Marketing System*, page 22. The study was published in 1969 but used 1964 data for the Average Total Cost curve.

Figure 6: Regional Weighted Average Total Cost Curve and Alternative Segments for Sample Pools in 5 Regions, 1964 and 1981.



North Atlantic region costs exceeded those in other areas.

The upward shift may be attributed to inflation and changes in emphasis of pool expenditures (table 9).

Coordination Among Producers Groups

Coordination among wool pools is much more extensive in the fleece States than in the territory States. Most of the territory pools are independent local operations, performing all marketing services without taking into consideration the activities of other pools. The generally large volumes of wool handled by territory pools (compared to fleece pools) enable them to attract buyers individually. Scattered pockets of farm flock production in territory areas can complicate coordination because buyers may not be interested in fleece wools. Also buyers may want to purchase only for immediate needs, especially when markets are depressed. An attempt at coordination in one of the territory States in the early 1970's was abandoned because buyers were afraid the poor markets would not let them recover their investment from purchases that were, of necessity, earmarked for inventory or resale. Another reason coordination is resisted is that sellers believe small mills or topmakers want pools to remain separate so they are not forced to buy large lots.

Alternatively, fleece pools view coordination as a means of attracting more buyers, and giving buyers the option of choosing among lots. Coordination through consignment to a State selling association raised prices above the open market, provided market security for growers, and offered convenience to buyers.

The emphasis of the fleece pools is maximizing the number of bids received for wool, rather than evaluating product quality. Discussion with the State associations representing the major coordinated selling efforts in the fleece States indicated grading or a precise sorting typically was not done because these services were expected to increase marketing costs. Selling on a grease basis usually was done, primarily as a result of custom, but also because pool managers believed buyers automatically converted prices to a clean basis and it was unnecessary for producers to make the conversion themselves, or because variation in wool lots was believed to result in inaccurate core-test results.

Cooperative Warehouse Membership Issues

Information about the future direction of cooperative wool warehouses was obtained from a mail and telephone survey of producer-members of Mid-States, Utah Wool, and North Central, conducted between January and June 1983. From North Central, 40 responses were received from a random sample of 230 members; from Utah Wool, 5 responses from a preselected sample of 30 members; and from Mid-States, 12 responses from a preselected sample of 30 members.

Responses to the question, "Why do producers choose to market through the cooperative?" indicated reasons like the convenience of selling to a shearer-buyer, the importance of cooperative marketing principles, or the lack of other alternatives. Most of the respondents from the three cooperatives said that marketing services such as grading or the prices received for wool were the decisive factors.

Educational Materials³⁶

A majority of respondents wanted more detailed information about market conditions. The relationship between prices and

Table 9—Comparison of pool expenditures, 1961 and 1981

Expense item	1981		1961	
	Average	Percent	Average	Percent
	Dollars	Dollars		
Office/sales	241	9	158	9
Phone	54	2	40	2
Secretary	172	6	58	4
Grading	150	6	188	11
Loading	390	14	298	18
Accounting	161	6	117	7
Rent	113	4	28	2
Insurance	222	8	88	5
Dues in other organizations	563	20	121	7
Bags and freight	521	20	491	30
Advertising and promotion	138	5	78	5
Total	2,725	100	1,665	100

¹The average volumes for 1961 and 1981 wool pools are 85,000 and 53,000 pounds, respectively.

Source: *Wool Pools*, table 16, page 41 and 1981 pool survey data.

³⁶Discussions with industry observers covered in this section suggest much of the educational material requested by producers is already available. For example, the cooperatives noted price information was readily available by telephone from the manager of each warehouse provided the producer knew the grade of wool or the breeding stock. Also, during 1983, the American Sheep Producers Council distributed to producers a poster describing proper shearing techniques. Inconsistency between survey results and available information may be attributed to a reluctance among producers to ask managers, a desire to have alternative sources of information, and lack of awareness of the extent of available information.

early or late selling, the types of wool sought, price trends, and future outlook all were needed, they said. Also sought was an explanation of wool grading, perhaps supplemented by warehouse tours or a film showing wool processing from raw fiber to fabric. The relationship between grades and prices was unclear, as well as the products produced from each grade. More complete information on the sequence of wool processing could improve producer sensitivity to industry problems such as wool contamination and understanding of marketing services and costs.

Monthly newsletters were preferable to quarterly reports. Producers objected to field representatives using 2-month old price information. Comments indicated the average producer has no idea what the price of wool is at any given time of the year except what the producer hears from unofficial sources. One producer noted, "We get reports on lambs and wool prices through a national wool magazine which is many weeks old by the time we read it a clean basis, which many small growers are unable to translate to grease wool in the fleece wool areas." Inadequate price information is a serious problem among small producers, and may contribute to a willingness to dispose of the wool for little more than the cost of shearing.

Producers also suggested "how to" booklets to discuss such things as proper shearing techniques, what to expect from a shearer, how to care for wool on the sheep, and how to package and store the sheared wool. Other desired topics were the effect of different breeds or feeds on wool quality, breeds producing optimum returns in lamb, wool, and mutton under various production conditions, ideal shearing time to maximize price and reduce storage costs, and an explanation of the merits of imported wool. Respondents also wanted greater effort from shearers. However, the effectiveness of educating producers about shearing is offset when shearer-representatives themselves use improper techniques, such as not separating tags from the rest of the fleece.

Descriptions of the condition of individual lots, giving weight, grade, shrink, and micron count, would help producers understand the connection between quality and price. Producers wanted an explanation or breakdown of marketing charges, an idea that may encounter resistance among cooperatives because their competitors (noncooperative warehouses) do not make their costs public.³⁷

Paying premium prices for better prepared wools would reinforce the effect of educational materials. The perception exists among producers that premiums are commonly paid only in territory areas.

Other Cooperative Services

Growers consigning wool wanted payment as portions of their wool lots were sold rather than full payment after the entire lot was sold. Faster warehouse payments would decrease the incentive of large growers to market through pools. Respondents believed that partial payments gave the cooperative the benefit of interest income from the unpaid balance.³⁸ However, one of the reasons for slow payment could be a delay by processor in paying the cooperative. These conflicting viewpoints suggests a need for greater communication between management and members.

Other desired services were providing a list of shearer-buyers and coordinating the movement of shearing crews among area ranches, providing ratings of shearing crews, and assistance in booking shearers.

Increasing membership or volume depends on offering a competitive price and more personal contact with producers. Field representatives acting as sheep shearers and wool buyers were sometimes the only contact with cooperative personnel. Providing more fieldmen, establishing branch warehouses, keeping members informed on the business aspects of the cooperative, and increasing wool seminars were some of the options listed. Members suggested shearers should promote their cooperative, not merely serve as a "drop point" for wool.

Producers said few veterinarians carry sheep supplies, one reason they chose to market through cooperatives that do. Such supplies are available only by mail or at the warehouse. Respondents from cooperatives' fringe areas wanted greater access to them. One option would be providing shearer-representatives with samples.

One producer said he couldn't tell from his sales slip what grade most of his wool was, and if his fine wools or entire flock should strive toward the 70s grade." Producers wanted information on the fineness of their clip to direct their sheep replacement programs.

Role of Management and Board of Directors

Directors of the cooperatives surveyed need to increase their visibility at livestock meetings or personal contact with producers. Members wanted directors to make a stronger effort to share knowledge of market trends with those they represented, and solicit the opinion of members about the direction of the cooperative. Some respondents didn't even know who their directors were. Directors with university

³⁷Cooperative warehouse managers commented that marketing charge information was available upon request.

³⁸The applicability of this comment to any individual warehouse depends on whether the producer or the cooperative pays interest charges on the unsold balance.

connections or dual roles as sheep shearers were not considered representative of the member viewpoint. Shearers who served as directors also functioned as staff members by receiving a commission on deliveries made to the cooperative, and this was viewed as a conflict of interest. Such situations may be isolated incidents; nevertheless, they are noticed by producers. Directors also lost credibility among members by not marketing all their wool through their cooperative.

Several respondents suggested the cooperative should demonstrate the financial gain from cooperative marketing compared with alternative outlets. Producers blamed management, not industry demand, when wool was unsold for months or years.

For improved contact, wool marketing cooperatives could follow the example of Land O'Lakes, which formed a "Beef Advisory Committee" of livestock producers to guide and critique operating policies of its meatpacking division. Forming an advisory committee could provide greater visibility for cooperatives having thousands of members, such as Mid-States and North Central. Some respondents suggested producer committees could work on solutions to

marketing problems as one way of increasing producer participation.

The survey suggests more publicity for the cooperatives' services. Publicity directed toward increasing membership may be more cost-effective than promoting wool use among consumers because cooperatives sell grease wool, not fabric. As grease wool is a commodity (one lot of a particular grade is basically the same as another) and, unlike fabric cannot be branded, dealers and warehouses compete on the basis of price. This condition dictates that cooperatives minimize expenditures not directly related to gaining business from producers and mills.

Relationship With Other Cooperatives

Farm supply cooperatives should be viewed as a source of new memberships because supply cooperative people are familiar with cooperative marketing. Respondents suggested that the wool cooperatives offer to market wool from local pools.

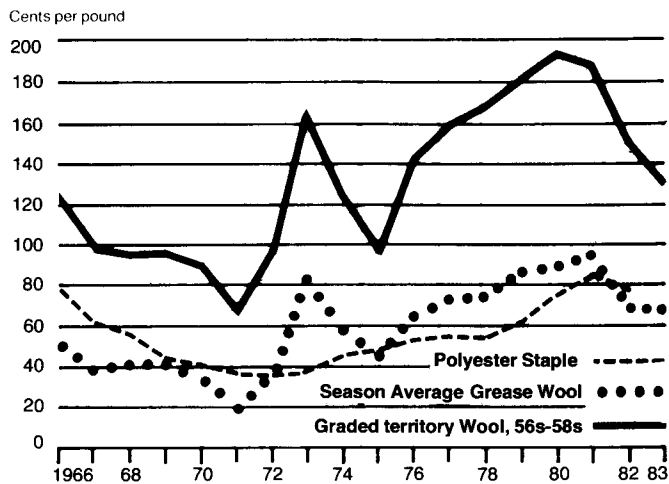
Some producers said that combining volume with other pools or cooperatives could lower marketing costs and raise prices,

Table 10—U.S. wool supply utilization and price estimates, 1976-86¹

Item	1976	1977	1978	1979	1980	1981	1982	1983	1984	1985	1986
Stock sheep, Jan. 1	11.4	11.0	10.8	10.8	11.1	11.3	11.4	10.3	10.5	10.5	10.5
Sheep shorn (mil.)	13.5	13.2	12.7	13.1	13.3	13.5	13.1	12.4	12.6	12.6	12.6
Yield (lbs.)	8.2	8.1	8.1	8.0	8.0	8.1	8.0	8.0	8.0	8.0	8.0
Prod. (mil. grease lbs.)											
Shorn wool	111.1	107.3	102.9	104.9	105.4	109.7	105.0	99.2	100.8	100.8	100.8
Pulled wool	4.9	2.5	1.0	0.9	1.1	1.2	1.0	1.0	1.0	1.0	1.0
Supply and Utility (mil. cln. lbs.)											
Stocks, Jan. 1	47.5	41.6	42.0	48.5	46.8	50.6	44.6	46.0	41.7	42.6	42.5
Production	62.2	58.5	55.1	56.0	56.4	58.6	56.2	53.1	53.9	53.9	53.9
Imports	57.5	53.0	50.4	42.3	56.5	74.3	61.4	63.6	65.0	67.0	70.0
Unaccounted	-2.8	-2.7	16.7	17.3	14.6	0	0	10.0	15.0	15.0	15.0
Total supply	164.4	150.4	164.2	164.1	174.3	183.5	162.2	172.7	175.6	178.5	181.4
Mill use	121.7	108.0	115.3	117.0	123.4	138.6	114.8	130.0	132.0	135.0	138.0
Exports	1.1	0.4	0.4	0.3	0.3	0.3	1.4	1.0	1.0	1.0	1.0
Total use	122.8	108.4	115.7	117.3	124.7	138.0	116.2	131.0	133.0	136.0	139.0
Stocks, December 31	41.6	42.0	48.5	46.8	50.6	44.6	46.0	41.7	42.6	42.5	42.4
Avg. farm price (cents/lbs.)	65.7	72.0	74.5	86.3	88.1	94.5	68.4	70.0	75.0	80.0	83.0
Support price (cents/lbs.)	72.0	99.0	108.0	115.0	123.0	135.0	137.0	153.0	164.0	170.0	178.0
Value of product (mil. \$)	73.3	77.3	76.7	90.5	92.8	103.6	71.8	69.4	75.6	80.6	83.7
Government payment (mil. \$)	7.0	29.7	34.8	32.0	37.5	46.6	68.1	79.0	84.0	85.5	90.0
Total (mil. \$)	80.3	107.0	111.5	122.5	130.3	150.2	139.9	148.4	159.6	166.1	173.7

¹Prepared by the interagency wool/mohair estimates committee, August 9, 1983.

Figure 7: Comparison of Wool and Polyester Prices



¹ Estimates as of August 1, 1983

Source: *Cotton and Wool Outlook and Situation*, USDA, various years.

Table 11—Comparison of wool and polyester prices

Year	Polyester staple (1.5 denier)	Season average grease wool pool received by producers	Graded territory wool, clean basis, 56s - 58s staple 3-1/4 and up
<i>Cents per pound</i>			
1966	79.5	52.1	124.6
1967	62.2	39.8	97.6
1968	56.0	40.5	96.0
1969	45.3	41.8	96.1
1970	40.7	35.5	88.7
1971	37.0	19.4	64.9
1972	34.5	35.0	96.0
1973	36.8	82.7	167.0
1974	46.0	59.1	126.6
1975	47.8	44.7	96.3
1976	53.0	65.7	142.6
1977	55.8	72.0	160.0
1978	54.3	74.5	168.8
1979	60.3	86.3	182.1
1980	74.3	88.1	194.2
1981	84.8	94.5	188.4
1982	76.8	68.4	152.5
1983	n.a.	68.0 ¹	130.0 ¹

¹ Estimates as of August 1, 1983.

Source: *Cotton and Wool Outlook and Situation*, USDA, various years.

reasons that propelled them toward cooperative marketing in the first place. Yet, others said competition among wool marketing cooperatives kept costs at a minimum, and would enhance prices. To the extent the latter viewpoint predominates among producers, fragmentation and not consolidation will continue to be the dominant feature of the domestic grease wool marketing system.

INDUSTRY OUTLOOK

Wool and Competing Fibers

The production outlook for Australia, the world's largest wool producer, suggests the outlook for other wool producing countries. Sheep numbers in Australia are expected to increase between 5 and 10 percent during the 1980s. Growth will be limited because of growing world demand for carcasses and live sheep, weak prices, and more favorable prospects for competing farm products.³⁹

Domestic observers expect future wool production increases to be limited to the fleece States. Innovations in sheep production, such as confinement of ewes, out-of-season and accelerated lambing, artificial insemination, etc., are more suitable for farm flocks.⁴⁰ However, only small increases in production are expected (table 10).

Production of competing manmade fibers, particularly noncellulosic⁴¹ fibers such as polyester and acrylic, is expected to increase slowly. Of all apparel fibers, only these are expected to show sustained growth.

The high cost of wool compared with manmade fibers and widely varying price swings in the raw wool market are believed to be the main reasons for declining production (table 11 and figure 7).⁴²

There are several reasons for instability in world wool prices. Because Australia is the world's leading exporter, fluctuations in Australian prices lead to changes in world prices. About 95 percent of Australian wool is exported, so international political crises or international currency fluctuations can have a substantial effect on Australian prices. Internal disruptions in production or marketing, as a result of drought or strikes,

³⁹ *The Australian Wool Industry*, "About Wool" series, No. 1, Australian Wool Corporation, G.P.O. Box 4867, Melbourne, Australia 3001.

⁴⁰ Gee, C. Kerry and Albert G. Madison, *Sheep Production in 17 Western States*, Special Series 24, Colorado State University, Ft. Collins, USA, ERS, April 1983.

⁴¹ Cellulosic fibers come from plants.

⁴² *Study to Determine the Economic Feasibility of Establishing a Wool Processing Industry*, p. IV-14.

also increase the potential for price fluctuations. The Australian Wool Corporation has sought to stabilize wool prices by purchasing wool when prices need cushioning and selling accumulated stocks when the market becomes overheated. Australia also maintains wool warehouses in the United States to facilitate year-round availability of fine grade wools.

The positive effect of the Australian market stabilization efforts on prices in the United States is not aided by the domestic emphasis on lamb production. Because wool is a byproduct, domestic producers only reduce the supply of wool if market conditions indicate sheep and lamb stocks should be reduced.

Procurement policies of domestic processors can exacerbate year-to-year price fluctuations.⁴³ During 1981-82, domestic processors had minimized inventory accumulation by a conservative buying policy. When processors anticipate consumer demand for apparel has recovered, they will begin accumulating inventories. Because processors compete for orders by being reliable suppliers, they will use forward contracting (buying the future output of grease wool suppliers) to acquire at least a portion of the stocks needed to fill customers' requirements. If grease wool suppliers hold wool off the market, waiting for prices and demand to increase, wool supplies will be reduced, forcing other processors to step up purchases.

After processors accumulate sufficient inventories to protect customer relationships, they will curtail buying. Grease wool suppliers will have forward contracted large amounts of wool to capture the increase in prices. "In general, the end of a buying movement will find all buyers with heavy inventories on hand and with large contracts for future delivery."⁴⁴ The cycle begins again when economic conditions and accumulated inventories dictate another conservative approach.

Manmade fiber markets adversely affect the outlook for wool. A 1982 New Zealand report on the outlook for the world wool industry during the 1980s suggested wool prices would sharply fluctuate around a downward trend, largely due to developments in the manmade fiber industry.⁴⁵ A decade ago, manmade fiber manufacturers overestimated future consumer demand for clothing. According to the report, chronic excess capacity in the manmade fiber industry will

continue to exert downward pressure on prices, as continuing competition among manufacturers results in the construction of larger, more efficient plants. Because manmade fibers are petroleum derivatives, further pressure will be added by the continuing drop in crude oil prices.

Producers often use marketing approaches that conflict with the manufacturing requirements of processors. The primary advantage of domestic wool over imports is a much shorter delivery time, 1 to 2 weeks compared with 1 to 5 months. However, warehouses that consistently emphasize storage as a marketing strategy reduce wool availability and encourage processors to use imports. Pools take the opposite course, making wool available immediately after shearing because storage is unavailable or growers want returns. The resulting prices can be depressed by seasonality and inadequate buyer competition, reducing the incentive of pools to improve fleece preparation.

The New Zealand report said the manmade fiber carpet industry now produces carpets virtually indistinguishable from wool. Manmade fiber inroads into these markets suggests that apparel, the remaining outlet for wool, will be threatened. Because domestic apparel production competes with low-quality and low-priced imports, even a poor natural fiber imitation could further decrease wool consumption. This scenario implies continued low prices for domestic producers as high-quality wool producers compete for buyers among the few mills using natural fiber, and those with low quality accept prices "established" by the imitation.

The response of the industry worldwide has been to emphasize the superior qualities of the natural fiber for apparel and carpet use. Domestic groups are adding a "Buy American" theme. However, marketing practices that induce processors to use imported wools and manmade fibers counteract the effectiveness of such promotion.

Industry Structure

Between 1976 and 1980, the number of wool weaving and finishing mills decreased by about 3 percent from year to year.⁴⁶ At this rate, the number of mills will be down to about 250 by 1990. This figure, however, includes mills consolidated under one owner, and therefore overestimates the extent of buyer competition.

Unlike manufacturers of standardized textile products such as denim, woolen mills must react to yearly style changes in weaves and colors, an expensive and risky process. Garments from the woolen system are purchased mainly by women, who are sensitive to fashion changes. Consequently, attrition is expected to be concentrated among woolen mills, probably

⁴³Stanback, T.M., Jr. "The Textile Cycle: Characteristics and Contributing Factors", *Southern Economic Journal*, October 1958, Vol. XXV, No. 2. The textile industry cycle described by Stanback in 1958 appears to describe the current buying practices of wool processors.

⁴⁴Stanback, page 186.

⁴⁵*Reserve Bank Bulletin*, Reserve Bank of New Zealand, Vol. 45, No. 6. July 1982. Wellington, New Zealand, page 256.

⁴⁶*Broadwoven Fabrics of Wool*, page 8.

followed by a period of consolidated ownership. Fashions that emphasize more woolen fabrics could slow this trend.

The volume of industry shipments represented by the four largest firms, about 31 percent for wool weaving and finishing mills, and about 77 percent for establishments producing combing and scouring products, is expected to continue into the late 1980s. Increased concentration among manufacturers of intermediate products such as top and scoured wool would have a particularly adverse effect on competition for wool at the grease level. A 1969 study noted larger topmakers generally depended less on domestic sources of wool than smaller firms.⁴⁷ Small topmakers' purchases of domestic wool were about 64 percent of their production, medium-sized topmakers purchased about 70 percent, and large topmakers, 52 percent. Less favorable marketing conditions for domestic growers are implied to the extent these proportions still hold.

Since 1969, many topmakers have left the industry completely or switched to nonwool fibers. Future attrition would be accelerated by retirements among existing topmakers, and the closing or changeover to manmade fibers by the two or three combers who rent equipment for commission topmaking. The expectation that the largest nonintegrated comber will increase capacity later in the decade, despite excess industry capacity of about 20 percent, also contributes to the generally pessimistic outlook for the survival of topmakers. If wool warehouses continue commission topmaking, as anticipated by industry observers, they may merely maintain, not improve, markets for growers, because warehouses already purchase grease wool to carry out their normal functions.

Decreases in woolen mills will adversely affect markets for medium grade wools, and decreases in topmakers will adversely affect markets for fine grade wools. Processing of woolen fabrics or wool blends in cotton mills on the cotton system may offset decreases in the number of woolen mills. However, wool suitable for the worsted system cannot be processed entirely on the cotton system because the length of the fibers greatly exceeds the length of cotton fibers.

Pools and Warehouses

Processors in this study predicted that the number of wool warehouses would decrease in the 1980s to correspond with declining domestic wool production and processing. Processors anticipated the two major cooperatives, National and North Central, would increase efficiency by becoming one marketing unit, as had been the case during the 1930-60 period. Processors also believed warehouse grading services would become more important if, as expected, production increased mainly in the fleece States. The expense of buying

direct from growers may also encourage processors to rely more heavily on warehouses as a source of supply.

No decline in the number of warehouses could lead to an increase in marketing charges and costs. This situation could cause producers to use pools for marketing. Regardless of volume, pools may continue to resist consolidating operations because their marketing charges are low compared with warehouses. Evidence suggests producers form yet another pool when prices are unsatisfactory, rather than combine marketings to further lower marketing costs. As indicated by the wool pool survey, pools disregard storage availability when formulating their selling strategy. Therefore, pools will probably continue to sell wool shortly after shearing and this, in combination with the fragmented pool marketing system, implies pools will not receive full value for their wool.

Pricing

As the number of processors declines, private treaty sales will replace sealed bid sales. This will make it more difficult to sell pool wool because pools are not as familiar with the processing segment.

Observers predict greater use of objective measurement and pricing on a clean basis will be a future trend in the industry. During this transition, pool wool will tend to be undervalued, even if the pool's reputation is good. Warehouse marketing charges may increase to cover the costs of additional objective measurements covering fiber length, strength, and color.⁴⁸ Warehouses may respond to cost pressures by tightening quality specifications for wool and increasing payment on a grade and yield basis. These adjustments may decrease the amount of wool marketed through warehouses in favor of pools.

Nothing suggests warehouses will de-emphasize storage as a marketing tool particularly if prices fluctuate downward in the years ahead.

Foreign Trade

Reductions in duties for grease wool and top will increase the sensitivity of the domestic industry to production and marketing decisions made in other countries. Reduction in use of tariff drawbacks will adversely affect grease wool exports. The primary export market is the Canadian textile industry, which is not expected to expand. Other markets such as Eastern Europe or some of the emerging textile manufacturing nations of Southeast Asia, are closer to Australian sources or have currency restrictions. When world markets are depressed, the major wool producing nations

⁴⁷*The Domestic Wool Industry*, p. 56.

⁴⁸However, by reducing risk to the processor, objective measurement can improve the price received for wool.

accumulate stockpiles that facilitate export market development. Major world wool suppliers will probably be quick to follow up with lower prices or larger volumes on market penetration achieved by domestic groups. However, some grease wool buyers, such as Japan, may tend to diversify away from Australia.⁴⁹ This may help domestic exporters reduce their concentration on border trade.

If domestic production does not increase, and domestic pricing and quality standards remain unchanged, processors could increase imports of grease wool. As the decade progresses, loss of commission topmakers and consolidation of mill or combing capacity could spur foreign purchases because, as previously noted, large topmakers depend less on domestic sources of wool. Conversely, recovery from recession could reopen traditional West European markets to South American and Australian wools. Thus, it is unclear what the future pattern of wool imports will be.

INCENTIVES FOR CHANGING THE PRESENT SYSTEM

The outlook for wool producers, pools, and cooperatives will be one of formidable challenges from manmade fibers, declining prices, greater consolidation in the processing sector, and continuing competition from imported wools. The current methods of confronting these challenges are through educational and promotional institutions such as the American Sheep Producers Council and the various wool growers associations, other farm and livestock associations, the Extension Service, and wool marketing agencies. Government involvement in wool marketing is limited primarily to price reporting and encouragement of greater production through the National Wool Act. The United States has no equivalent to the Australian Wool Corporation. Coordination among domestic producer groups or commodity associations is limited primarily to educational issues, such as the impact of wool contaminated with plastic twine on textile manufacturers, or legislative issues, such as the potential economic impact of eliminating or modifying the National Wool Act.

Under the present domestic wool marketing structure, evidence suggests the following problems are insufficiently addressed:

1. Producers sell wool, through pools or individually, with inadequate information on the primary quality attributes of wool, clean yield, and grade.
2. Partly because of inadequate information on wool quality, producers sell without knowledge of representative market prices.

3. Producers cannot identify or appeal to new, nontraditional buyers, thereby limiting competition for their wool or market access. Market opportunities are unequal among producers.

4. Producers have limited control over domestic prices. When markets are depressed, the price of wool on an individual fleece basis can approach the cost of shearing.⁵⁰ When markets are active, the prices of imported wools set the ceiling for domestic prices.

5. The producer or first-handler segment of the industry is fragmented, and, in the case of pools, frequently sells an ungraded product. Conversely, the buying or processor segment is concentrated in terms of the specific grades of wool demanded and the limited number of processors. This imbalance gives buyers generally greater influence over prices, discounts, determination of product quality, and other terms of trade.

These problems suggest the objectives of the domestic wool marketing industry should be:

1. Providing producers with price signals incorporating objective measurement of wool quality.
2. Coordinating the sales effort of producers to correspond to the relatively greater market power of processors, and improve market access.
3. Encouraging greater dissemination of price information, by increasing its timeliness, scope, and accessibility to producers.

Reaching these objectives could require substantial changes in the structure of the wool marketing industry, such as a marketing board, marketing order, or exclusive agency bargaining.

Marketing Boards

Marketing boards typically perform functions promoting price stability and orderly marketing. These functions can be supplemented by research on new commodity uses, establishment of grading standards, product promotion, and price negotiation or collective bargaining. The Australian Wool Corporation performs most of these activities, giving it far greater control over wool marketing than domestic producer organizations. Each year, the Australian Wool Corporation announces floor prices for every type of wool produced in Australia. The Corporation uses funds committed by growers to purchase wool at auction whenever the market

⁵⁰For example, if the price of wool is 50 cents per pound grease basis, and the fleece weighs 8 pounds, the farmer's return would be only \$1.50 if the cost of shearing was about \$2.50 per sheep, a typical cost for the Midwest.

⁴⁹*The Journal of Commerce*, August 13, 1983.



Buyers Evaluating Australian Wool

Courtesy: Australian Wool Corporation

price falls to the level of the floor price. Growers are therefore assured of receiving at least the floor price for their wool. The Australian Wool Corporation stores the purchased wool until the market improves. The wool is then sold through normal market channels. Sales of stored wool or "buffer stocks" frequently steady a market that may become overheated. The Corporation uses "flexible reserves" to steady short-term fluctuations above the floor price. Growers finance market support operations through a compulsory levy of 5 percent of their gross revenue from wool.

A domestic marketing board could establish regional pools for each grade and market the wool on behalf of producers. Under a national marketing board, pool structure could be oriented more easily toward specific types of wool, and less limited by local interests or State boundaries. This structure could equalize the market opportunities for producers with similar wools. For example, Montana, Idaho, and Wyoming could form one regional pool, and Ohio, West Virginia, and western Pennsylvania, another.

The board would be responsible for baling, sorting, and core-testing wool, by contract with a regional warehouse, or through a regional representative using a portable wool baler and a regional wool laboratory. This function would be similar to the "classing" offices maintained by the USDA's Agricultural Marketing Service for cotton growers. This procedure could also be used to sell the wool and maintain

traditional methods of marketing.

Marketing boards are generally created by a referendum among producers. After the vote, legislation describing the functions, power, and membership of the board is written. Members may be elected by producers or appointed by government and they may represent producer, consumer, or manufacturing interests. The board could be funded by producer payments from wool receipts.

Electronic Marketing

Marketing boards have been used primarily for exports. However, such a board can also be used for domestic marketing. The Ontario (Canada) Hog Producers Marketing Board coordinates the sales of all slaughter hogs produced in the province and provides information on supply and demand. The board operates a teletype auction through which all slaughter hogs must be sold. However, a regional or national auction for wool does not yet appear to be an appropriate role for a domestic marketing board. Wool is not a strong candidate for marketing by computer or teletype because objective methods of measurement are not uniformly used to describe color, length, and fiber strength. As processing tests indicate how color, length, and fiber strength can be objectively described to buyers, a complete written description will replace the sale by sample and wool can then be traded electronically.

Marketing Orders

Marketing orders cover many dairy products, fruits, vegetables, and specialty crops. Marketing orders may regulate the volume sold in the primary domestic markets and in alternative outlets, reduce the effect of seasonality on prices by smoothing the flow of commodities, specify minimum quality standards, standardize container sizes or other packaging requirements, and collect funds for promotion or research. Marketing orders may also require buyers and sellers to report prices and related information on all transactions, whether private treaty or open market sales. These aspects of marketing orders help equalize the market power of producers and processors, and restrain destructive price competition between producer-suppliers. A marketing order for wool could be as limited or extensive as producers wish.

Marketing orders for wool could be initiated on a State or nationwide basis by a request from producers, and a vote from those directly affected. (Current legislation does not authorize marketing orders for wool.) A marketing order could achieve many of the benefits obtainable from a marketing board. The primary difference between orders and boards is that the latter usually embodies stronger and broader authority, for example, directly regulating the amount produced.⁵¹

Marketing orders could alleviate such problems as shortage of price information, inconsistent packaging or quality, excessive seasonality, and the unequal market power of buyers and sellers.

However, the effectiveness of a marketing order indicating minimum prices for each grade of wool would be offset by the geographic diversity of wool production. Most States produce a mixture of wool grades on the order of 10-30 percent each of fine, 1/2 blood, 3/8 blood, and 1/4 blood. According to 1977 industry estimates, only Texas, New Mexico, Nevada, and several Southeastern States produce 50 percent of a single category of wool. Variation in domestic production allows producers outside the area covered by the order to undercut mandated prices. National coverage and mandatory grading provisions probably would be necessary for an order to be effective.

Exclusive Agency Bargaining

Exclusive agency bargaining allows producers to bargain collectively with processors, establishing prices for a specific geographic area, commodity use (for example, in the fruit and vegetable industry processing by freezing or canning),

discount allowances, etc. The bargaining may be a practice that has evolved within the industry, or may be the result of legislation, such as the 1973 Michigan Agricultural Marketing and Bargaining Act covering perishable fruits and vegetables. Negotiated sales terms are usually legally binding.

Exclusive agency bargaining is implemented by State legislation authorizing an agency or cooperative to act as the exclusive sales agent for all producers, members and nonmembers, or by formation of a common marketing agency representing grease wool suppliers. Exclusive bargaining would solve a major problem of the domestic industry—the unequal market power of buyers and sellers—but would not by itself improve the quality or quality evaluation of the domestic clip. Quality provisions are generally instituted through marketing orders or boards.

Several bargaining units could be organized regionally to accommodate the variation in wool grades. The unit could include pool, warehouse, cooperative, or individual producer sales, depending on member preferences. All bargaining authority would be held by members of the bargaining unit, who are elected by the association members. The negotiating unit could consist of representatives of processors (i.e., vertically integrated mills) and topmakers or scourers. Topmakers and other intermediate processors could be required to buy under the terms established through the negotiations. Organization and operation would be simplified if negotiations were conducted solely with the primary buyers for each wool grade.

The association could either negotiate sales, thereby allocating wool supplies among buyers, or only the terms of trade, such as prices, discounts, and delivery schedules. However, mills may be reluctant to bid on grease wool without orders for finished goods. Therefore, the most appropriate role may be to negotiate only the terms of trade. Such bargaining could standardize the terms of trade offered by buyers and assure equal treatment of all producer groups selling to the same buyer. The association could provide information about supplies and demand to producers and buyers. It could help assist producer selling groups locate new buyers. After the association determines the terms of trade, the actual marketing would be done by producers and buyers.

In addition to the aforementioned advantages, exclusive agency bargaining should provide processors with procurement costs in advance of the marketing season. This would alleviate some of the impact of depressed markets early in the season.

Potential Obstacles to System Changes

The size of the domestic industry will limit the effectiveness of major changes in the marketing system. For example,

⁵¹ *Agricultural Marketing Boards, An International Perspective*, Sidney Hoos, ed. Ballinger Publishing Co., Cambridge, Mass. 1979. "Introduction and Overview," page 11.

marketing through buffer stock operations would be more difficult for the United States than Australia because we produce only about 2 percent of world supplies. Domestic processors are essentially the only outlet for domestic wool, and they can circumvent it by using overseas suppliers or manmade fibers. The price ceiling for domestic wool will continue to be the same as comparable imports.

Moreover, the National Wool Act of 1954 was instituted, in part, to correct excessive accumulation of wool stocks by the Commodity Credit Corporation (CCC), as a result of price support loan and purchase programs. (For example, one-third of the wool produced during 1952 went to the CCC.) By its emphasis on sale and not storage, the National Wool Act helps clear the market each year.

Centralizing wool sales using a marketing board, marketing order, or exclusive agency bargaining would reduce proliferation of competing marketing agencies. However, reduction will be accompanied by resistance that will delay or prevent structural change. The importance of wool in the Australian economy generated sufficient producer support to change the system but even there, it took nearly 10 years. Unless domestic production stabilizes or increases, interest in structural change could be minimal.

Regional differences in marketing and knowledge about wool value will create resistance to change. For example, producers in Texas and New Mexico sort wool during shearing and sell on a clean price basis because a larger percentage of their income is derived from wool than from meat. Change may be more compelling in other parts of the United States but without the support of Texas and New Mexico, a marketing order would not do well.

If changes in wool merchandising are to be effective, grading by buyers and grease pricing would have to be replaced by other methods. Warehouse grading fees for wool are about 1.5 cents per pound or more, while cotton grading was only 0.002 cent per pound in 1982. If wool was reinstated as a strategic commodity by the Department of Defense, growers could argue that the Government should absorb grading costs.

COOPERATIVE AND POOL OPTIONS

Consolidated Cooperative Warehouse Marketing

If National and North Central had marketed as a unit in 1981, they would have controlled about 25 percent of domestic production. Increased bargaining power is possibly the strongest reason for consolidation. Yet, consolidation would help cooperatives serve members and processors better than other domestic suppliers or imports.

Consolidation could be achieved through a federated structure, where National and North Central would retain individual identities but market jointly, or through a centralized structure, where the cooperatives would merge into a single unit and lose individual identity.

Processors interviewed for this study wanted one sales office for all cooperative wool marketings. They believed centralization would increase efficiency, provide virtually immediate feedback on wool availability, and reduce delays from consultations between sales office and warehouse manager.

A centralized sales system could accompany a consolidated computerized inventory system, to speed processing of orders. This system could extend into procurement and sales of livestock supplies and apparel, now sidelines of both cooperatives.

Consolidation would permit closing of one or more warehouses, resulting in cost savings equivalent to decreased domestic production of wool and seasonal underemployment of graders. Consolidation would reduce or stabilize marketing costs by removing excessive competition among warehouses, and reduce administrative, bookkeeping, educational, and promotional expenses. These improvements could, in turn, operate to increase membership.

Savings could permit the operation of a centralized wool quality control program. The potential for increasing margins through commission topmaking would improve because more wool would be available to lower blending costs and meet processor specifications. Economies of scale in exporting would be another advantage.

Joint action would depend on resolution of such issues as the effect of regional cooperative identity and willingness to change directors, the concept of orderly marketing within the wool industry, whether it involves shooting for high prices or accepting the current market price and selling regularly throughout the year, the perception of some that competition between cooperatives covering the same area will raise prices, and the impact of customer or grower-oriented marketing strategies on commission topmaking or other processing.

Alternative Cooperative Warehouse Sales Policies

Issues described in this section have been important *historic* determinants of the success or failure of cooperative wool marketing efforts. Those interviewed indicated that these issues will continue to have a strong effect on the direction of cooperative marketing.

Cooperative warehouses procure wool from members by cash

purchases or by consignments. The wool may be sold to processors through different sales policies or strategies. The cooperative may (1) hold wool off the market for several months in anticipation of a price increase, or (2) turn wool over quickly by selling it as soon as possible at a competitive market price, even if markets are depressed or uncertain.

Selling wool at a competitive market price improves the efficiency of the domestic wool marketing system by giving processors immediate access to wool and the availability of domestic wool reduces the need for processors to import. By avoiding the uncertainties and delays involved in importing wool, processors may improve their ability to compete for orders for finished goods. Consequently, this policy can generate an increase in customer goodwill for the cooperative, especially important as the number of processors continues to decline. Increased goodwill can mean a greater readiness by processors to contact and buy from the cooperative rather than alternative suppliers.

Greater demand for the wools sold by a cooperative can lead to a better producer price. However, under this sales policy, the risk of adverse price changes is borne by the cooperative and not the producer if the cooperative has taken title to the wool. In the past, warehouses have lost large sums and jeopardized member equity because prices did not rise as expected. Alternatively, when some managers try to protect the cooperative from adverse markets by conservative pricing, members may lose the benefit of good markets. This sales policy may result in inequitable treatment of producers. To maintain its financial base, a cooperative that has overpaid for some grades of wool may compensate by lowering prices to producers of other grades.

Adequate price and demand forecasts are important in reducing the risk of adverse price fluctuations. However, wool sales are increasingly affected by personal relationships between buyers and sellers, as a result of the declining size of the industry and greater use of private treaties. The low number of recorded trades in the industry suggests frequent contact with processors is necessary to supplement published price reports. If processors view a warehouse as an adversary, discussions will be difficult.

Managers of warehouses that emphasize holding wool off the market may not aggressively pursue orders because they do not expect to sell until the market improves. If a warehouse appears unwilling to sell, processors will avoid contacting it when they have orders.

If a cooperative holds wool off the market, members absorb carrying costs and interest charges. This policy increases the cooperative's capital requirements as it issues cash advances on unsold wool. A policy of cash purchases and rapid turnover minimizes inventory accumulation, carrying costs, and capital needs.

Consolidated Pool Marketing

Because pools prefer not to store wool, they must maximize initial selling efforts. Therefore, pools could benefit substantially from joint marketing. Buyer competition could be increased through coordination to resolve the primary marketing problem identified by pools. Buyers appear to purchase consistently only from certain pools or areas. If these are consolidated marketings, each pool could conceivably have more and different buyers examining its wool. This approach could reduce the number of warehouses bidding on pool wool and increase contact with processors.

Coordination among territory pools has been hindered by the perception that buyers will decline to bid on large volumes of wool. However, future consolidation among mills and loss of smaller processors, especially topmakers and woolen mills, should make size less of an obstacle, and maybe even an advantage, to coordination.

Pools surveyed said insufficient market information was another problem. The experience of fleece pools indicates joint selling efforts can alleviate this problem because information can be exchanged by directors and extension staff operating over an entire State or region.

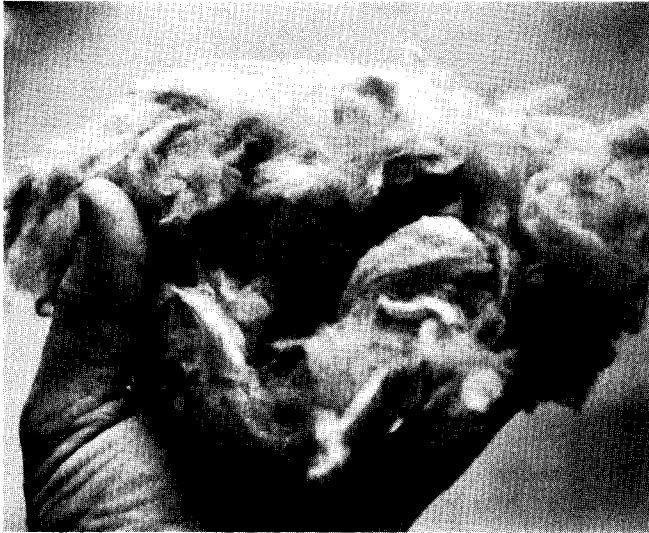
Joint marketing can improve packaging and transportation efficiencies. Increasing volume would make use of portable balers feasible and could add 2 to 3 cents per pound to the pool price. This is because truck capacity for baled wool is 40,000 pounds, compared with 16,000 to 17,000 pounds of bagged wool. Core tests on baled wool are much more accurate than those on the loosely packed bagged wool.

Obstacles to coordination of pools are local recognition of pooling identity, custom, and need for fewer directors.

Improving Product Quality

Because domestic lamb, and therefore wool, production is unlikely to increase substantially, producers must concentrate on improving wool packaging. The survey of North Central, Utah Wool, and Mid-States indicated that many producers do not know how to shear and prepare wool to maximize its market value. If the groups are representative of most producers, a strong need for further education can be seen.

For many pools, extensive grading does not appear to be feasible or cost effective. However, pools could limit excessive reliance on buyers and educate members by sorting clips into categories like fine, black, and short, rather than selling all wools as a unit. Sorting can be done during shearing or at the time of sale. Sorting before the sale enables the pool to sell without opening sacks, evaluating the wool, and then rebagging it for shipment to the processor. However, sorting at the sale may double the time needed for pool operations,



Scoured Wool

Courtesy: American Sheep Producers Council

and probably will require volunteer labor to avoid additional marketing charges of about 3-5 cents per pound from a professional sorter.

However it is done, sorting will reduce risk to the processor by defining the quality of the pool's wool. It should increase buyer competition. If a description of the wool accompanies a sealed bid solicitation, a processor can assess more accurately whether the wool meets processing requirements. Core tests can be interpreted with greater confidence by buyers and sellers when they are performed on sorted lots. Processors in this study felt pools sampling for the core testing should rely on an independent agent and not on their manager or Extension agent.

Monitoring the quality of wool over time will enable the pool to make long-term sales arrangements with buyers and thereby stabilize the price of wool for area producers. This approach is being used by pools in Oklahoma and New Hampshire.

Pricing

Selling consistently on a clean price basis would help pools and warehouses obtain full value for their wool. The danger in selling on a grease price that seems comparable with other areas is that the pool or warehouse may have high-yielding, superior wools. Buyers know how the wool will yield from processing experience and daily marketing activities not shared by wool sellers. It is to the advantage of the buyer to drive down the price using discounting. Consequently, what looks like a fair price to the producer may be a bargain to the processor.

It is possible fleece pools are not receiving the maximum

benefits possible from coordination because they sell on a grease basis and do little sorting or grading. Processors interviewed for this study cited low prices as the chief advantage to purchasing pool wool, particularly in the fleece States, where such wool was perceived to be undervalued. Relying on the buyer to define product quality may inhibit the ability of the pool to develop a reputation for good wools. The information received from buyers may not be objective, nor sufficiently detailed to educate members about the quality of their individual clips.

If forced to bid using a grease price, some processors said they would bid defensively, lowering the price by at least 10 cents per pound. Processors distrusted sale presentations used in place of objective measurement to convey information about clean yield because lots have not consistently yielded as expected.

Selling on a "clean price delivered" basis is easier for warehouse than for pools, if only because some cooperative and noncooperative warehouses have already abandoned grease pricing. Pricing on a clean basis will be a more difficult transition for pools to make because of buyer resistance and custom (many producers do not understand the difference between clean and grease prices) and inconvenience. However, the latter may be an area where more volunteer effort is needed if producers-members are to gain more than minimal benefits from group marketing. Education on clean pricing will probably be necessary.

State sheep associations or Extension livestock specialists may be able to educate pools by defining, for example, how burry a clip should be before burrs can be the legitimate basis of a substantial discount. Pools could follow the example of an Idaho group that sampled wool for core testing as it was packed for shipment. The cost of the core test is split by the pool and buyer, each receiving duplicates of the laboratory report.

Processing by Pools

Directly or indirectly, pools customarily sell wool to processors. Consequently, processors receive the financial benefit of adding value to the grease wool, including the gain from any product branding. An alternative for pools would be contracting for processing and selling finished products themselves. This option is not often considered by pools because they generally limit marketing to a few days each year. Processing would require greater year-round efforts and organization from pools. However, processing has the potential to add substantially to the price for grease wool. In 1982, members of the Blanket Pool operated by the Massachusetts Wool Board received \$1.25 per pound for grease wool, compared with a national average grease price of 68 cents.

Integration into Topmaking

Commission topmaking would enable cooperative warehouse handlers to aggressively seek orders for top when market conditions might inhibit doing so for grease wools.

Commission topmaking would be a logical extension of the grower-oriented strategy followed by National. Processors interviewed for this study thought National, unlike some competing warehouses, had sufficient grease wool volume to integrate into topmaking. Commission topmaking would offer limited leverage over some customers and represent an additional service to others. If topmakers or mills do not offer a satisfactory price for grease wool, warehouses could go into topmaking themselves and capture the margin from processing. The warehouse can use information obtained from topmaking, on the relationship between the price of grease wool and top, to bargain more effectively. It can apply pressure on the estimated margin of topmakers who purchase grease wool to raise the grease price.

Commission topmaking implies funds will need to be invested in inventory, operating capital, etc., as part of the normal financing functions performed by commission topmakers. Higher margins from topmaking may enable cooperatives to offset some financing costs. Moreover, as mills have, in effect, recently transferred the function of inventory accumulation to warehouses by buying only for immediate needs, warehouses already have started a transition to assuming the financing functions of topmakers.

Another consideration is inventory requirements. Topmakers generally buy from foreign and domestic suppliers to space inventory accumulation and financing. Domestic warehouses generally accumulate inventory at one time during the shearing season. Limitations in the cooperative's ability to procure wool outside its normal marketing area, and variation in wools delivered by members from year to year may inhibit the reliability and consistency of any topmaking activities. Topmaker competitors will be able to utilize foreign wools when the price drops below those of comparable domestic wools.

Some top products at both ends of the grade spectrum may not be suitable for domestic wools. The top market filled by warehouses may be narrowly defined, representing sporadic orders from mills. The high concentration ratio of the combing industry limits the market share available to any commission topmakers. However, the potential for greater returns from top, compared with grease wool, and the probability that large combers may not be interested in small, specialty runs, indicate cooperatives may have a role in the processing sector of the industry. The objective for cooperatives would be to develop a unique blend and be the sole supplier to a mill, generally the most secure marketing environment for a topmaker. A sustained commitment or sizable production runs would maximize returns from marketing combing waste.

Some warehouses have gone into topmaking on a speculative basis without orders from mills. Because top is a less flexible commodity than grease wool, these warehouses have had difficulty finding customers. Evidence suggests processing, inventory, and transportation costs may net the warehouse little profit unless top produced for speculation is a standard, frequently used grade. The warehouse will be competing with the sales staffs of combers, who call frequently on mills, and therefore have better opportunities to sell odd lots. Large wool supplies would allow the warehouse to lower blending costs and still achieve the correct spinning count. Consequently, commission topmaking may be most effective as an option for cooperatives if they can draw from their joint supplies, about 25 percent of the domestic clip in 1981, to overcome lack of flexibility in grease wool.

The warehouse may lose grease wool customers, other topmakers, by going into processing. Discussions with several topmakers suggest this risk is minimized if the warehouse controls supplies of desirable wools. Yet if the processor wants to use domestic wools rather than incur the loss in shipping time from imports, it may have to disregard the past history of the warehouse. Here again, pursuing a specialty market for top may protect the warehouse.

Continued commission topmaking by warehouses and reduced duties for imported top will put pressure on the margins and numbers of commission topmakers. Cooperatives may then be forced into assuming topmaking activities to offset pressure on grease prices. Timing may affect success. If a large number of topmakers drop out of production, combers may adjust capacity to directly control more topmaking themselves. The warehouse may then encounter increased resistance to entering processing. Moreover, the warehouse cannot immediately accept orders for top and expect to fill them successfully. The topmaking process of blending wools to minimize costs and get correct spinning counts is an art that may need to be acquired through practice runs with surplus wools.

Maintaining the Current System

Another option for cooperatives is to maintain the present marketing system, making few or no changes in coordination, pricing, objective measurement, etc. Evidence suggests this approach would increase the vulnerability of domestic suppliers to competition from imports and manmade fibers. The experience of the domestic felt manufacturing industry and comments by topmakers suggest wool processors will use objective measurement, imports, and manmade fibers to lower future procurement and processing costs. Continued competition from apparel imports will force processors to make these changes. Without corresponding changes, the domestic marketing system will tend to be high cost, a situation that will encourage the transition of the woolen apparel sector to a high-priced, specialty market such as mohair. Such a transition would drastically limit markets for domestic growers.

Appendix table 1—U.S. mill apparel wool consumption, imported products, and U.S. consumption and exports, 1967-82

Year	U.S. mill wool consumption		Imported textile products			Exported textile products			Domestic consumption			Wool proportion of U.S. mill total fiber C
	Domestic	Foreign	Man-made	Cotton	Wool	Man-made	Cotton	Wool	Synthetic	Cotton	Wool	
<i>1,000 pounds</i>												
1967	119.6	109.1	138.8	443.4	83.6	133.0	188.4	5.3	4,251.1	4,669.2	444.9	4.8
1968	153.5	129.8	193.3	473.8	104.3	129.0	188.2	5.7	5,359.8	4,389.7	477.0	4.7
1969	125.5	93.5	257.5	487.9	96.2	146.2	232.1	5.2	5,663.4	4,228.4	445.9	4.3
1970	83.9	79.8	329.3	463.1	85.9	147.1	199.2	4.9	5,683.1	4,037.5	354.3	3.5
1971	73.5	42.7	451.1	492.6	66.2	146.7	226.4	9.4	6,833.6	4,231.3	276.1	2.4
1972	117.4	24.8	480.5	610.7	63.0	177.6	290.4	30.6	7,868.6	4,170.1	279.3	2.3
1973	90.3	19.6	465.3	563.5	61.3	288.2	325.2	30.8	8,841.3	3,881.6	212.6	1.6
1974	63.1	11.8	371.3	502.7	53.3	390.7	392.5	23.0	7,678.6	3,416.3	146.8	1.3
1975	77.5	16.6	400.4	501.3	48.6	322.4	353.7	19.2	7,494.5	3,216.3	161.4	1.5
1976	68.2	38.4	479.5	708.6	66.7	352.2	413.2	13.9	8,179.8	3,684.4	198.7	1.6
1977	59.2	36.3	530.7	669.4	85.9	367.6	369.5	11.5	9,050.6	3,469.7	208.3	1.6
1978	75.3	27.0	642.6	845.4	92.2	441.7	355.7	11.6	9,428.6	3,530.1	222.2	1.7
1979	86.2	20.3	525.0	746.1	80.6	596.6	478.0	14.0	9,372.2	3,334.5	201.0	1.6
1980	82.9	30.5	540.6	810.9	85.1	771.5	523.1	23.8	8,553.4	3,352.2	195.2	1.6

Source: *Textile Organon*, March 1976, page 24. *Textile Organon*, March 1981, page 36. *Agricultural Statistics*, 1981, page 338.

Appendix table 2—Expenses reported by all pools, 1981 survey data

Expense items ¹	Number reporting	Range	Mean	Percent of total ²
Dues	46	\$ 0 - \$3,302	563	18
Bags and freight	37	\$ 0 - \$2,111	521	16
Loading	56	\$ 0 - \$2,655	390	12
Grading	17	\$ 0 - \$ 965	150	5
Annual meeting	24	\$ 0 - \$ 939	355	11
Office/sales committee	26	\$ 0 - \$1,787	241	8
Secretary/treasurer	33	\$ 0 - \$ 600	172	5
Accounting	24	\$ 0 - \$ 600	161	5
Miscellaneous ³	48	\$ 0 - \$6,317	774	24
Total			\$3,177	100

¹Expense items included in the table must have displayed a response rate of greater than 20 percent and a mean greater than \$150,000.

²Percentages based on 115 total respondents.

³Includes the following expense items: office supplies, incorporation fees, taxes, utilities, broker fees, repairs and maintenance, twine, check charges, equipment, bonds, leases, scale licenses, and interest.

GLOSSARY

Clean pricing. Pricing wool using objective measurements of clean yield, micron count, etc.

Clean yield. The fiber remaining after the wool has been scoured to remove contaminants like vegetable matter.

Concentration ratio. The volume of industry shipments of the largest firms in an industry. It is generally measured as the percentage represented by the 4, 8, or 20 largest firms.

Core testing. The process of mechanically sampling wool lots for laboratory evaluation of clean yield and micron count.

Forward contract. Selling an agricultural commodity before it is harvested (such as selling wool before shearing).

Grading. Visually determining the micron count of the wool.

Grease pricing. Pricing wool without objective measurements of clean yield, micron count, etc. Quality is measured visually or by reputation when grease pricing is used.

Grease wool. Unwashed wool.

Micron count. A measure of fiber diameter.

Objective measurement. The process of using instruments to measure wool characteristics such as clean yield, micron count, and color.

Original bag. Ungraded, bagged wools.

Scoured wool. Wool washed in a detergent bath to remove grease, vegetable matter, and other contaminants.

Top. Combed, carded wool. It is an intermediate product in the manufacture of fabric or yarn.

**U.S. Department of Agriculture
Agricultural Cooperative Service**

Agricultural Cooperative Service (ACS) provides research, management, and educational assistance to cooperatives to strengthen the economic position of farmers and other rural residents. It works directly with cooperative leaders and Federal and State agencies to improve organization, leadership, and operation of cooperatives and to give guidance to further development.

The agency (1) helps farmers and other rural residents develop cooperatives to obtain supplies and services at lower cost and to get better prices for products they sell; (2) advises rural residents on developing existing resources through cooperative action to enhance rural living; (3) helps cooperatives improve services and operating efficiency; (4) informs members, directors, employees, and the public on how cooperatives work and benefit their members and their communities; and (5) encourages international cooperative programs.

ACS publishes research and educational materials and issues *Farmer Cooperatives* magazine. All programs and activities are conducted on a nondiscriminatory basis, without regard to race, creed, color, sex, or national origin.