

TEXAS AGRICULTURAL EXPERIMENT STATION

A. B. CONNER, DIRECTOR

COLLEGE STATION, BRAZOS COUNTY, TEXAS

BULLETIN NO. 501

DECEMBER, 1934

DIVISION OF FARM AND RANCH ECONOMICS
IN
COOPERATION WITH BUREAU OF AGRICULTURAL ECONOMICS,
UNITED STATES DEPARTMENT OF AGRICULTURE

Price-Quality Relationships in Farmers' Cotton Markets of Texas



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†As of January 1, 1935

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From a study of price-quality relationships in the case of 53,000 bales sold in a total of 24 farmers' markets in Texas during the past seven years, inequalities and discrepancies were found in the prices received by growers. An average under-payment of about \$4.90 a bale for Strict Middling 1-inch cotton and an over-payment of about \$5.90 a bale for Strict Low Middling 13/16-inch cotton are examples. Growers received an average of 20 per cent of the full premium for grades above Middling and six per cent of the full premium for staple lengths longer than 7/8 inch; they were assessed an average of 31 per cent of the full discount for grades below Middling and 10 per cent of the full discount for staple lengths shorter than 7/8 inch. Thus prices paid growers for the higher qualities and for the lower qualities of cotton did not differ widely from an average price.

The average price paid growers in the various farmers' markets after the effect of location had been eliminated, was found to conform rather closely to the difference in average quality of cotton in those markets. For instance, the average quality of cotton in Marshall during the season 1929-30 being 208 points lower than that in McKinney, growers selling in Marshall received an average of \$13.50 a bale less than did growers selling in McKinney. Two years later, however, a striking improvement had occurred in the quality of cotton in the Marshall area, the average quality now being only 30 points lower than that in McKinney, and producers selling in Marshall received an average of only \$1.35 a bale less than did producers selling in McKinney.

The average quality of cotton sold in a farmers' market was found to affect the price paid growers for a specific quality. For example, growers selling Low Middling 13/16-inch cotton on the same days received an average of \$1.15 a bale less in Marshall than in Greenville, where the average quality was 131 points better. Growers selling Strict Middling 1-inch cotton on the same days received an average of \$3.55 a bale more in Richmond than in Greenville, where the average quality was lower by 197 points. Data are presented showing that the general effect of a low-average quality in a farmers' market in depressing the price of specific qualities and of a high-average quality in raising the price of specific qualities, enables a grower with high average quality to sell to better advantage in a farmers' market of high-average quality than in a farmers' market of low-average quality.

The suggestion is offered that an official classing service be instituted to give the grower full information regarding the quality of the product he has for sale, and an official market news service furnishing him with all pertinent price information to enable him to determine the value of the product he has for sale.

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PRICE-QUALITY RELATIONSHIPS IN FARMERS' COTTON MARKETS OF TEXAS

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The cotton grower sells his product in the bale at a nearby market, termed in this Bulletin "farmers' market" or "local market". The volume of business in local markets varies widely usually ranging from 1,500 to 20,000 bales a season. These markets generally lack any semblance of formal organization. There are no written rules regulating business transactions between the various parties in the market. The general set up of the market and the manner of conducting business are matters largely of custom. Buyers dealing with farmers usually operate independently of one another. Each buyer, as a rule, has a ready outlet for cotton purchased from day to day through connections with some merchant or firm in a large central market. Buyers in the more important farmers' markets generally make arrangements to secure current future price quotations from telegraph companies through their Commercial News Department.

The chief agencies buying or assembling cotton in the local market are "local cotton buyers," supply merchants, ginners, and farmers' co-operatives. "Local cotton buyers," who specialize in the buying and selling of cotton, depend for their financial gains mainly on the margins between prices they pay growers and prices they receive on sales. Such buyers may serve as representatives of cotton merchants in the central market. Supply merchants, on the other hand, who have general merchandise to sell throughout the year, buy cotton largely as a means of making collections on credit extended cotton growers in the form of general merchandise. Ginners, who have ginning service to sell, buy cotton with the apparent hope of attracting a larger volume of business in order to increase their revenues from gin operations. In some of the farmers' markets growers have established cooperative associations through which to market their cotton.

Since the cotton grower sells his product in the farmers' market, the manner in which this market operates is of great moment to him. The effectiveness of the farmers' market in yielding a satisfactory price, quality considered, hinges upon the ability of buyers and sellers to determine the quality of the cotton handled, on the one hand, and upon the degree to which prices paid growers reflect relationships between price and quality obtaining in central and mill markets, on the other hand.

Object of Study

The main objects of this study are: 1. To ascertain the relationships between prices received by growers in the farmers' market and the quality of their cotton as expressed by grade and by staple length. 2. To compare the average price received by growers in the several local markets with

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the average quality of cotton in those markets. 3. To test the sensitiveness of the farmers' market to quality through a comparison of relationships between prices and quality in the local market with relationships between prices and quality revealed in "Basis-Middling" limits. In other words, the aims are those of: ascertaining the response of prices to quality in farmers' markets as operated under present conditions; determining the influence of average quality in the various local markets as a factor in establishing price levels in those markets; and measuring the response of price to quality in the farmers' markets in terms of the response of price to quality in the central markets as indicated in "Basis-Middling" limits.

Collection of Data and Method of Analysis

During the seasons, 1926-27 to 1932-33, inclusive, cotton samples were collected in a total of twenty-four farmers' markets. The location of these markets is indicated in Figure 1. Samples were secured for four

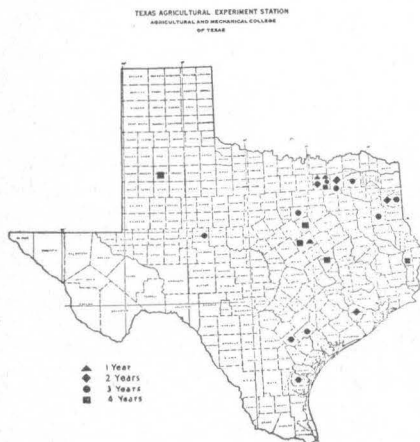


Fig. 1. Location of farmers' markets in which cotton samples were collected for this study. The number of years in which samples were obtained in each local market is indicated.

seasons at six points; three seasons at ten points; two seasons at four points; and one season at four points. In the case of each sample, the price received by the grower and the date of sale were recorded. Of the total of 53,000 bales involved in this study, samples and data on 29,000 bales were collected by the United States Department of Agriculture, and on 24,000 bales by the Texas Agricultural Experiment Station. These samples were classed as to grade and staple length by cotton classers of the United States Department of Agriculture. Daily "spot" prices for Middling 7/8-inch cotton, together with points "on" and "off" for grade and staple length were secured.

The main features of the analysis in this study may be summarized as follows:

1. Premiums and discounts prevailing in "Basis-Middling" limits used by cotton merchants in making purchases from their representatives in the farmers' markets are taken as the standard of quality recognition. Most studies of price-quality relationships in the local cotton market made hitherto have employed premiums and discounts quoted on some "spot" market or an average of the ten* designated "spot" markets.

*Augusta, Dallas, Galveston, Houston, Little Rock, Memphis, Montgomery, New Orleans, Norfolk, and Savannah.

2. The response of price to quality in the farmers' market is ascertained independently of relations of price to quality in central and mill markets. Quality recognition in the local market is determined from paired data, which facilitate a comparison of prices paid on the same day for various grades with staple length held constant and of prices paid on the same day for various staple lengths with grade held constant.

3. Premiums and discounts in prices paid growers in the local market according to the various grades and staple lengths are measured in terms of premiums and discounts obtaining in the standard "Basis-Middling" limits as the means of ascertaining the sensitiveness of the farmers' market to quality.

4. Emphasis is placed on the local market as an integral part of the marketing system. Comparisons are made as to: a. Relationships between average quality and average price paid growers in the various farmers' markets. b. Movement of "basis" during the progress of the marketing season in the local markets and in the central market. c. Movement of prices in the local market according as prices in the futures market rise or fall.

Quality recognition of mill markets, central markets, and foreign demand is reflected both in central market quotations and in merchants' "Basis-Middling" limits. Grade differences and staple premiums indicated in central market quotations are in the main for sales of cotton in "even-running" lots; that is, cotton in lots of one grade and one staple length. Grade differences and staple premiums indicated in "Basis-Middling" limits are for the general run of cotton as delivered in lots of miscellaneous grade and staple length by growers in the local market. The cotton merchant buys in the farmers' market under "Basis-Middling" conditions. If growers were selling cotton in a farmers' market giving full weight to quality, they would not receive premiums and discounts identical with those prevailing in the central market for "even-running" lots. In the case of cotton of qualities of greatest supply and greatest demand, risks and costs as influenced by heavy volume and ready merchantability would be such that the farmer could expect to receive premiums but slightly less and discounts but slightly greater than those prevailing in the central market for "even-running" lots of like qualities. In the case of cotton of qualities both higher and lower than those of the bulk of the crop, risks and costs as influenced by light volume and restricted salability would be such that the farmer could expect to receive premiums somewhat less and discounts considerably greater than those prevailing in central markets for "even-running" lots of like qualities.

In this study, relationships between premiums and discounts received by growers and the quality of their cotton were determined from transactions within the local market without regard to premiums and discounts prevailing in other markets. Prices received for the various grades were compared with those of Middling as a base and for the various staple lengths with 7/8-inch staple as a base. Comparisons involving grades were made only on days when sales in a farmers' market included Middling and some other grade, or grades, provided such bales were all of the same

staple length. Likewise, comparisons involving staple length were made only on days when sales in a local market included 7/8-inch staple and some other length, or lengths, provided such bales were all of the same grade. The pairing of data eliminates the need of adjusting for the time element in relationships between prices and quality in the farmers' market. In every instance, differences in the number of bales of the various qualities were eliminated by making comparisons on the basis of the average price per pound of each quality sold during the day. The number of comparisons made, for the seven-year period, between Middling and some other grade, and between 7/8-inch staple and some other length are shown in Column (6) of Tables 1 and 2. A procedure somewhat different from that of the present study was followed in determining relationships between prices paid growers in the local market and the quality of their cotton as reported in Bulletin No. 383, "Relation of Farm Prices to Quality of Cotton," a preliminary report issued in July, 1928, by the Texas Agricultural Experiment Station. In this case, the average price paid farmers for a given grade (Table 6) was determined from prices of all bales of such grade without regard to staple length. In like manner, the average price paid growers for a given staple length (Table 7) was ascertained from prices of all bales of such staple length without regard to grade. The accuracy of this method in measuring premiums and discounts is dependent in the case of grades upon the same distribution of staple lengths among the several grades and in the case of staple length upon the same distribution of grades among the several staple lengths.

The method used in the present study to test the sensitiveness of the farmers' market to quality in terms of price-quality relationships indicated in "Basis-Middling" limits was as follows: On each day as represented in the sample that growers sold Middling and Strict Middling of the same staple length, in the same local market, prices paid growers for Strict Middling and Middling were obtained together with "Basis-Middling" limits. If the average premium paid for Strict Middling in the local markets, for example, was found to be 10 points "on" Middling and the average premium for these same days recognized by "Basis-Middling" limits was found to be 38 points, this latter average premium would then be taken to represent full recognition for Strict Middling. The relative premium paid growers for Strict Middling in the farmers' markets would be determined by dividing 10, the average premium paid in the local market, by 38, the average premium prevailing in "Basis-Middling" limits, or 29 per cent. This same method was followed in ascertaining relative premiums and discounts paid in the local markets for the other grades and for the various staple lengths as compared with the premiums and discounts indicated in "Basis-Middling" limits. The relationships of price to quality in the local markets to those prevailing in the central market as reported in Bulletin No. 383, however, were determined from a comparison of the price paid a grower in the farmers' market with the price on the same day in the central market on cotton of like grade and staple length. This latter method seemingly assumes that had the farmer sold his bale in the central market instead of in the local market, he would

have received the same premium, or discount, as prevailed in central market quotations. This direct comparison of the price to the grower in the farmers' market with the price of similar quality in the central market pushes into the background the farmers' market as the part of the marketing system in which growers actually sell cotton of the various qualities. The local market as an entity of the marketing system in recognizing or disregarding quality is preserved by the method used in the present study.

Primary emphasis is placed, in this study, on the recognition given to quality in the farmers' market. Proper quality recognition is taken to be represented by the premiums or discounts obtaining in "Basis-Middling" limits added to or subtracted from the prices of Middling and 7/8-inch staple length paid growers in the local market. Thus, no effort was made to determine whether the prices received by growers were too high or too low in terms of absolute prices prevailing for cotton under "Basis-Middling" limits. Quotations on the Houston market were taken to represent proper quality recognition in Bulletin No. 383. Since growers sell under "Basis-Middling" conditions, as indicated above, it would seem that growers may expect to receive grade differences and staple premiums in the local market more in line with "Basis-Middling" limits than with central market quotations.

Grade Differences Prevailing in "Basis-Middling" Limits Only Partially Reflected in Price to Grower

If the average price for Middling grade in the farmers' market is taken as the base, growers received, during the seasons 1926-27 to 1932-33, an average price for grades above Middling and below Middling which reflected 20 per cent and 31 per cent, respectively, of the average premiums and discounts for like grades indicated in "Basis-Middling" limits. Likewise, if the average price for 7/8-inch staple in the farmers' market is taken as a base, growers received an average price for staple lengths longer than 7/8-inch and shorter than 7/8-inch which reflected 6 per cent and 10 per cent, respectively, of the average premiums and discounts for like staple lengths indicated in "Basis-Middling" limits. The relative premiums and discounts received by growers for specific grades and staple lengths according to seasons are shown in Tables 12 and 13.

Average prices received by growers for the various grades and paired Middling grade and for the various staple lengths and paired 7/8-inch staple are shown in Column (1) of Tables 1 and 2. Variations in the average prices of Middling may be explained as the result of: (a) Differences in distribution of sales with respect to both time within a given harvesting season and between years of the various grades determining the specific Middling sales entering into each average. (b) Differences in distribution of staple lengths as between the various grade pairs. (c) Differences in distribution as between local markets of the grade pairs entering into the comparisons. Variations in the average prices of 7/8-inch staple may be explained as the result of: (a) Differences in dis-

tribution of sales with respect to both time within a given harvesting season and between different years of the various staple lengths determining the specific 7/8-inch staple sales entering into each average. (b) Differences

Table 1. Recognition accorded grade as a quality factor in prices paid growers in the farmers' market, seasons 1926-27 to 1932-33.

Farmers' market				Average "on" and "off" "Basis- Middling" limits	Paired observations used as basis of price-quality comparisons		
Average prices ¹ for given grades selling on the same day in the same market	Average over or under payment	"On" ² and "off" ³ expressed as percentages of "Basis- Middling" limits	Average "on" and "off"		Number	Seasons when made	
Grades ⁴ and cents per pound	Per bale	Percentages	Points	Points			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	
G. M. 10.72	Mid. 10.64	—\$1.80	18	8	44	354	1929-30 1930-31 1931-32 1932-33
S. M. 11.59	Mid. 11.53	—1.15	21	6	29	2,419	All
S.L.M. 11.68	Mid. 11.88	2.55	28	—20	—71	1,340	All
L.M. 11.79	Mid. 12.52	4.10	47	—73	—155	237	All
S.G.O. 8.59	Mid. 10.30	5.85	59	—171	—288	33	1929-30 1930-31 1932-33
G. O. 10.11	Mid. 11.67	12.20	39	—156	—400	6	1929-30 1930-31

¹Each comparison involved same staple length.

²"On" means points added to price of Middling.

³"Off" means points subtracted from price of Middling.

⁴White cotton only.

in distribution of grades as between the various staple length pairs. (c) Differences in distribution as between local markets of the staple-length pairs entering into the comparisons.

On the basis of average prices to growers for Middling grade and 7/8-inch staple, over and under payments for the various grades and staple lengths in terms of premiums and discounts prevailing in "Basis-Middling" limits are indicated in Column (2) of Tables 1 and 2. The fact must be kept in mind, however, that the grower sells grade and staple length in combination and not separately. The average over or under payment received by growers is determined by particular combinations of grades and staple length in bales sold. Over and under payments based on actual

sales in local markets during the season 1930-31 are shown in Table 3. As an indication of approximate payments, over or under, in terms of "Basis-Middling" premiums or discounts, Table 4 and Figure 2 are presented.

Table 2. Recognition accorded staple length as a quality factor in prices paid growers in the farmers' market, seasons 1926-27 to 1932-33.

Farmer's market				Average "on" and "off" "Basis-Middling" limits	Paired observations used as basis of price-quality comparisons	
Average prices ¹ for given staple lengths selling on the same day in the same market	Average over or under payment	"On" ² and "off" ³ expressed as percentages of "Basis-Middling" limits	Average "on" and "off"		Number	Seasons when made
Staple lengths ⁴ and cents per pound	Per bale	Percentages	Points	Points		
(1)	(2)	(3)	(4)	(5)	(6)	(7)
$\frac{3}{4}$ 15.93 $\frac{7}{8}$ 16.48	\$6.75	29	-55	-190	11	1929-30
13/16 11.61 $\frac{7}{8}$ 11.67	3.05	9	-6	-67	1,052	All
15/16 11.62 $\frac{7}{8}$ 11.59	-2.85	5	3	60	2,448	All
1 in. 12.65 $\frac{7}{8}$ 12.60	-3.75	6	5	80	625	All
1-1/16 10.97 $\frac{7}{8}$ 10.73	-6.80	15	24	160	43	1929-30 1930-31 1931-32
$1\frac{1}{8}$ 12.14 $\frac{7}{8}$ 11.61	-6.50	29	53	183	9	1929-30 1930-31

¹Each comparison involved same grade.
²"On" means points added to price of $\frac{7}{8}$ -inch.
³"Off" means points subtracted from price of $\frac{7}{8}$ -inch.
⁴White cotton only.

It is to be noted that growers of Low Middling 13/16-inch staple received an average over payment of about \$7.15 a bale as the one extreme and that growers of Strict Middling 1-inch staple received an average under payment of about \$4.90 a bale as the other extreme. Average weekly prices to growers for a specific grade and staple length according to local market and season are shown in Table 14.

Manifestly, buyers in the local market were more discriminating in buying cotton of grades below Middling than of grades above Middling, since the relative average premium paid growers for the better grades was only two-thirds as great as the relative average discount exacted of growers for the lower grades. Furthermore, buyers in the farmers' market, in the prices they paid growers, went much farther in recognizing grades as a quality factor than they did in the case of staple lengths.

Table 3. Premiums and discounts in farmers' markets and "Basis-Middling" limits and deviations of the farmer's markets from "Basis-Middling" limits expressed in dollars per bale, season 1930-31.

Grades ¹	Staple lengths in inches				Deviations of the farmers' markets from "Basis Middling" limits in dollars per bale	
	¾		15/16		Staple lengths in inches	
	"Basis-Middling" limits	Farmers' market	"Basis-Middling" limits	Farmers' market		
	Points	Points	Points	Points	¾	15/16
Strict Middling	35	17	90	20	-\$0.90	-\$3.50
Middling	Base	Base	55	4	Base	-2.55
Strict Low Middling	-75	-24	-20	-10	2.55	0.50

¹White cotton only.

Recognition Accorded Grade Differences by "Local Cotton Buyers" and Ginner and Supply-Merchant Buyers

If the average price for Middling grade in the farmers' market is taken as the base, growers received in local markets dominated by "local cotton buyers," an average premium for grades above Middling equivalent to 29 per cent and were assessed an average discount for grades below

Table 4. Approximate deviations of premiums and discounts in the farmers' markets from "Basis-Middling" limits expressed in dollars per bale, seasons 1926-27 to 1932-33.

Grades ¹	Staple lengths in inches			
	13/16	¾	15/16	1
Strict Middling	\$1.90	-\$1.15	-\$4.00	-\$4.90
Middling	3.05	Base	-2.85	-3.75
Strict Low Middling	5.90	2.55	-0.30	-1.20
Low Middling	7.15	4.10	1.25	0.35

¹White cotton only.

Middling equivalent to 41 per cent of the average premium and discounts prevailing in "Basis-Middling" limits. In farmers' markets dominated by ginner and supply-merchant buyers, growers received an average premium for grades above Middling equivalent to 16 per cent and were assessed an average discount for grades below Middling equivalent to 25 per cent of the average premium and discount indicated in "Basis-Middling" limits.

If the average price for 7/8-inch staple length in the farmers' market is taken as the base, growers received in local markets dominated by

"local cotton buyers," an average premium for staple lengths longer than 7/8 inch equivalent to eight per cent and were assessed an average discount for staple lengths shorter than 7/8 inch equivalent to four per cent of the average premium and discount prevailing in "Basis-Middling" limits. In farmers' markets dominated by ginner and supply-merchant buyers, growers received an average premium for staple lengths longer than 7/8 inch equivalent to six per cent and were assessed an average discount for staple lengths shorter than 7/8 inch equivalent to ten per cent of the average premium and discount indicated in "Basis-Middling" limits. The relative premiums and discounts received by growers in farmers' markets for the several grades and staple lengths according as these markets were in the main "local cotton buyers'" markets or ginner and supply-merchant buyers' markets are indicated in Table 5.

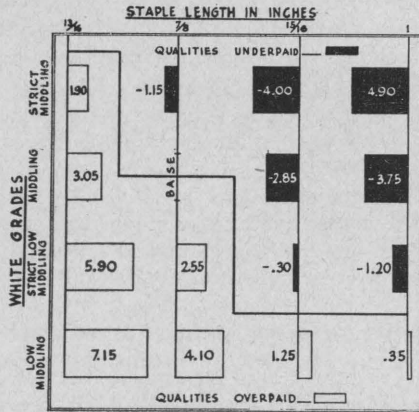


Fig. 2. Failure of premiums and discounts paid growers in the farmers' markets to correspond with premiums and discounts obtaining in "Basis-Middling" limits expressed as approximate over and under payment in dollars per bale.

Table 5. Relative premiums and discounts to growers in terms of those prevailing in "Basis-Middling" limits according to type of buyers predominating in the farmers' markets, season 1926-27 to 1932-33.

Grades ¹	Percentage of "Basis-Middling" premiums and discounts reflected in		Staple lengths ² in inches	Percentage of "Basis-Middling" premiums and discounts reflected in	
	"Local cotton buyers' " markets	Ginner and supply merchant buyers' markets		"Local cotton buyers' " markets	Ginner and supply merchant buyers' markets
Good Middling	15	22	3/4		29
Strict Middling	31	15	13/16	4	10
Middling	Base	Base	7/8	Base	Base
Strict Low Middling	38	21	15/16	7	5
Low Middling	52	48	1	4	3
Strict Good Ordinary	105	47	1-1/16	19	8
Good Ordinary	78	16	1-1/8	30	

¹White cotton only.

²In the portion of the sample collected by the U. S. D. A. staple lengths of 3/4 inch were included with staple lengths of 13/16 inch.

"Local cotton buyers" in their prices to growers came much nearer recognizing premiums and discounts for grades prevailing in "Basis-Middling" limits than did ginner and supply-merchant buyers. It is apparent that the increased activities of ginners as buyers of cotton from growers in recent years have had an adverse effect upon recognition of grades as a factor in the farmers' market.

Local buyers regardless of type gave slight consideration to staple lengths of 13/16, 15/16, and 1 inch as reflected in prices paid growers. Cotton of the longer-staple lengths brought a substantially larger portion of premiums prevailing in "Basis-Middling" limits, particularly in markets dominated by "local cotton buyers." Farmers with cotton well above the average in staple length for the community usually know this fact and will bargain with greater persistency for a premium than will growers with cotton of about the average staple length.

Price Movements in the Farmers' Market Contrasted with Price Movements in the Futures and Spot Markets

A comparison of the average weekly "basis" in the farmers' market with the average weekly "basis" in the Houston "spot" market reveals a considerable difference in the movement of these two types of markets as indicated in Table 6 and Figure 3. During the first four weeks of the

Table 6. Movement of "basis" expressed as deviations from average "basis" of ten-week period, seasons 1926-27 to 1932-33.

Week ending	Deviations from average in points	
	Farmers' market	Houston "spot" market
Sept. 19	33	16
26	23	9
Oct. 3	12	3
10	3	-2
17	-4	-4
24	-11	-6
31	-17	-7
Nov. 7	-19	-6
14	-16	-4
21	-11	1

period under consideration, the farmers' market was the better market. Whereas, during the last five weeks the Houston market was the better market. The swing of the "basis" in the farmers' market was more than twice as great as that of the "basis" in the Houston market. This can partially be accounted for by the fact that the price of Middling 7/8-inch in the farmers' market is influenced by the quality of average receipts. Average quality is invariably higher during the early part of the harvesting season. In the central market, on the other hand, each quality is presumably traded in according to its own merits. Thus no constant parity exists between prices of Middling 7/8-inch cotton in the Houston "spot" market and in the farmers' markets of Texas.

These local-market and central-market price comparisons were made in the following manner: The relationships between weekly average prices of Middling 7/8-inch cotton in the farmers' markets and in the New Orleans

futures market were determined. These averages for the farmers' markets were adjusted for location. Likewise, the relationships between weekly average prices of Middling 7/8-inch cotton in the Houston "spot" market and in the New Orleans futures market were ascertained. Deviations from the average of the ten-week period in the farmers' markets and in the Houston "spot" market were computed as recorded in Table 6.

The farmers' market and the central market represent different stages in the marketing movement. Cotton in the central market is in the form of an accumulation of volume segregated according to like qualities, thus making the commodity readily merchantable in the mill markets of the world. Cotton in the farmers market, on the other hand, is received in

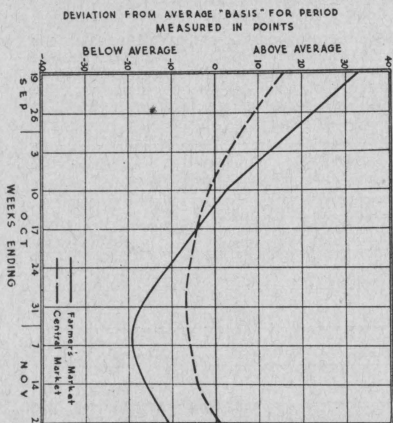


Fig. 3. Relation of movement of "basis" in the farmers' market and the Houston spot market expressed as deviations from their respective average "basis" for a ten-week period, seasons 1926-27 to 1932-33.

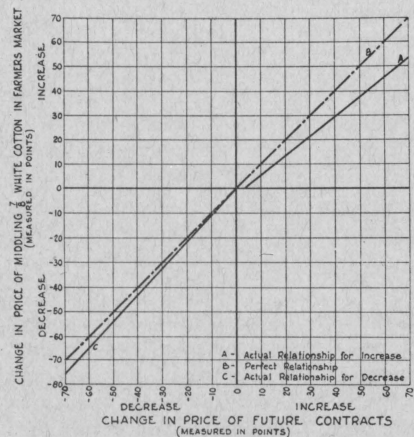


Fig. 4. Relationship between price changes from day to day in the New Orleans futures market and price changes in the farmers' market for Middling 7/8-inch cotton, seasons 1926-27 to 1932-33.

too small volume to permit assembling of the various qualities in sufficient quantities to make lots readily merchantable. Cotton of the same grade and staple length in the one market is not identical with like cotton in the other. The product in the farmers' market may be thought of as a raw product to a greater degree than cotton of like grade and staple lengths in "even-running" lots in the central market.

Local buyers follow the course of the futures market in establishing prices to the growers. It should be of interest, therefore, to determine the approximate relationship between local market prices and futures prices when the latter have a general rise or fall. On the basis of such relationships, Graphs A and C in Figure 4 were constructed. From readings on these graphs, Table 7 was compiled. In general on those days when prices of New Orleans futures for the near active month advanced, the price of Middling 7/8-inch cotton also advanced in the farmers' market but at a retarded rate; likewise, on those days when prices of New Orleans futures declined, the price of Middling 7/8-inch

cotton also declined in the farmers' market but at an accelerated rate. An advance of 20 points in futures prices was accompanied by an advance of about 12 points in the farmers' market; a decline of 20 points in futures prices

Table 7. Approximate relationships between price changes from day to day in the New Orleans futures market and price changes in the farmers' markets for Middling $\frac{3}{8}$ -inch cotton, seasons 1926-27 to 1932-33.

Changes in points	
Futures market	Farmers' market
70	53
60	44
50	37
40	29
30	21
20	12
10	5
-10	-11
-20	-22
-30	-33
-40	-43
-50	-54
-60	-66
-70	-76

was accompanied by a decline of about 22 points in the farmers' market. Apparently, local cotton buyers in prices paid growers follow changes in futures prices in such a manner as to insure themselves in part against a reversal of such changes.

Factors Influencing Price Levels Between Farmers' Markets

Thus far in this Bulletin, the analysis of price-quality relationships has been confined to averages for all farmers' markets included in this study. At this point attention is directed to price-quality responses as between different local markets.

Calculations were made to determine the relation of average quality to average price paid growers in the various farmers' markets. The average quality of the cotton in a given local market was found in this manner: The net premium or discount for grade and staple length according to premiums and discounts prevailing in "Basis-Middling" limits of all bales of the sample for a given day was divided by the number of

bales. This result indicated average quality in points for that day. Average quality for a given period, a month, or a season, was ascertained by obtaining the sum of the average quality for the days included in the period and then dividing by the number of days.

As an illustration of the relationship between average quality and average price to growers, transactions for three days during the month of October, 1930, selected at random on four farmers' markets, two of low average quality and two of high average quality, were analyzed with results as indicated in Figure 5. The fact that the point for each market determined by average price and average quality diverge but slightly from the straight line indicates a high degree of consistency between average price and average quality in the four local markets. In other words, the average price to growers as between different farmers' markets conforms rather closely to average quality in the different markets.

On the basis of the average quality and average price to growers in all local markets for all years included in this study a computation was made to determine the general relationship between average quality and average price. According to these calculations Figure 6 was constructed. Growers in a local market with quality above the average of all markets received a higher than average price of all markets but not in full for the superior quality; growers in a local market with quality below the average of all markets received a lower than average price of all markets but not in full for the inferior quality.

While the average quality in a farmers' market determines the average price to growers for the season, an analysis of relationships between average quality and average price as the marketing season progresses should be in order. Transactions on the Cleburne and Marshall markets during the month of October, 1930, were chosen for this purpose. The broken lines in Figure 7 connect points representing average price and average quality in the two markets for corresponding four-day periods. Graph A shows the approximate relationship between average quality and average

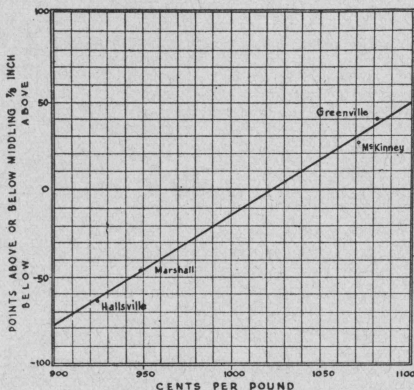


Fig. 5. Relationships between average quality and average price paid growers in four local markets during three days selected at random in the month of October, 1930. The average price and average quality at Greenville and McKinney were 141 and 88 points higher, respectively, than the average price and average quality at Marshall and Hallsville. Accordingly, the difference in average prices exceeded the differences in average quality by 53 points. Apparently, the poor reputation incurred by the low-quality markets and the good reputation enjoyed by the high-quality markets account to a large degree for the wider spread between average prices than between average qualities. Numbers at bottom of graph should have carried a decimal point. Thus, 900 should read 9.00; 950 should read 9.50; etc.

Table 8. Relationship between average quality and average price.

Season	Average price			Average quality		
	Marshall	McKinney	Difference	Marshall	McKinney	Difference
	Cents	Cents	Points	Points	Points	Points
1929-30	15.60	18.23	263	-164	44	208
1930-31	8.84	9.84	100	-35	19	54
1931-32	5.76	6.03	27	-18	12	30

price in Cleburne and Graph B in Marshall. It is obvious that the average price paid growers in these two markets was continually being adjusted to changes in average quality.

The point has been established that communities producing better than the average quality of cotton receive a better than average price; communities producing poorer than average quality receive less than average price. The question can now logically be raised as to the effect on the average price of a given community of improvement or deterioration of quality over a period of, say, two or three years.

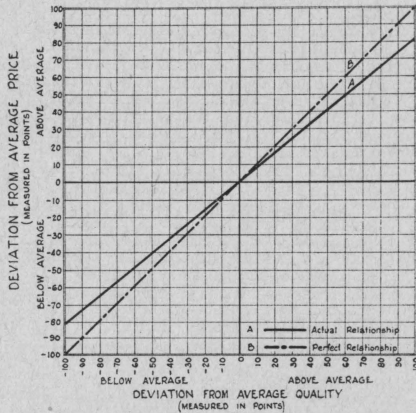


Fig. 6. Relationship between average quality and average price in farmers' markets during the seasons 1926-27 to 1932-33. If perfect relationships had existed, all points plotted to represent average price and average quality in the various farmers' markets would be located on Graph B. Approximate relationships, however, are indicated by Graph A.

points. The average grade in McKinney gained 12 points; average staple length dropped 44 points. It is to be noted that in 1929-30 the average price in Marshall was lower than the average price in McKinney not only by as many points as the difference in average quality but by an additional 55 points. The spread between average prices in 1931-32, however, was 3 points less than the difference in average quality. It is obvious that if growers in a community will improve the average quality of their cotton they may expect an advance in the average price which conforms rather closely to the improvement in quality. Variations in average price between these two markets during the month of October, 1930, were associated with changes in grade 55 per cent of the time; in staple length 85 per cent of the time; and in average quality, grade, and staple length combined, 92 per cent

of the time. To illustrate the effect of changes in average quality upon average price, Marshall and McKinney for the three seasons, 1929-30 to 1931-32, were selected. Seasonal relationships between average quality and average price are shown in Table 8. Marshall made a decided improvement over the three-year period; McKinney deteriorated somewhat. The average grade in Marshall dropped one point; average staple length improved 137

points. The average grade in McKinney gained 12 points; average staple length dropped 44 points. It is to be noted that in 1929-30 the average price in Marshall was lower than the average price in McKinney not only by as many points as the difference in average quality but by an additional 55 points. The spread between average prices in 1931-32, however, was 3 points less than the difference in average quality. It is obvious that if growers in a community will improve the average quality of their cotton they may expect an advance in the average price which conforms rather closely to the improvement in quality. Variations in average price between these two markets during the month of October, 1930, were associated with changes in grade 55 per cent of the time; in staple length 85 per cent of the time; and in average quality, grade, and staple length combined, 92 per cent

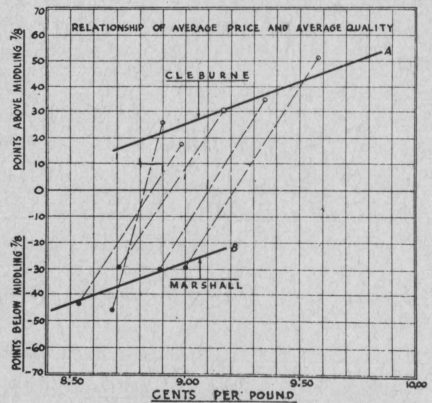


Fig. 7. Relationship between average quality and average price in Cleburne and Marshall during October, 1930. The broken lines connect points of average quality and average price of the two markets for corresponding four-day periods. Graphs A and B indicate approximate relationships between average quality and average price during the month at Cleburne and Marshall, respectively. It is evident that in each market the average price paid growers was continuously being adjusted to changes in average quality.

of the time. Evidently, changes in price levels between farmers' markets is more closely associated with staple length than with grade.

As a means of testing the general effect of improvement, or deterioration of average quality on average price, selections were made from the farmers' markets included in this study according as they experienced an improvement in average quality over that of the preceding year and continued to improve the following year, or suffered a lowering in average quality under that of the preceding year and continued to deteriorate the following year. Computations were made to indicate approximate relations between average price and average quality for the first year of improvement, or deterioration, and the second year of improvement, or deterioration. On the basis of such calculations Table 9 was compiled. Improvement in average quality the first year met a decided response in improvement in average price; furthermore, a continuance of improvement in average quality the second year yielded a small additional improvement in average price. Likewise, a deterioration in average quality the first year met a decided response in lowering of average price; a continuance of deterioration in average quality the second year resulted in an additional lowering of the average price.

Table 9. Relationship between changes in average quality and changes in average premiums and discounts paid growers in farmers' markets, seasons 1926-27 to 1932-33.

Changes from average		
Quality in points	Price in points first year	Price in points second year
100	98	102
80	77	82
60	56	60
40	36	39
20	16	18
-20	-16	-20
-40	-30	-35
-60	-44	-50
-80	-59	-65
-100	-72	-81

Since the average price paid growers in a farmers' market adjusts itself according to the average quality of the cotton in that market, an examination of the influence of average receipts on the price of specific qualities should be of interest. Relationships between average quality, average price of all qualities, and average price of Middling 7/8-inch for Cleburne and Marshall during the month of October, 1930, are shown in Table 10. Average prices indicated in this Table have been adjusted for the difference in location of the two markets and for changes in the price level. During the first half, the second half, and the whole month, Middling 7/8-inch cotton sold for an average of 30, 13, and 21 points more, respectively, in Cleburne than in Marshall. The average quality at Cleburne for the month was 29 points above Middling 7/8-inch and at Marshall 36 points under. The average price for Middling 7/8-inch was 12 points under and 10 points over the average price for all qualities in Cleburne and Marshall, respectively. This variation in the average price for like qualities of cotton (character not considered) indicates that the price of a specific quality is

directly influenced by the average quality of all receipts. That is, the relatively high quality of cotton at Cleburne lifted the price paid growers for Middling 7/8-inch; the relatively low quality of cotton at Marshall depressed the price paid for Middling 7/8-inch. The average price of Middling 7/8-inch at Cleburne was about 17 points higher and at Marshall about 26 points lower than would have been the case had this quality

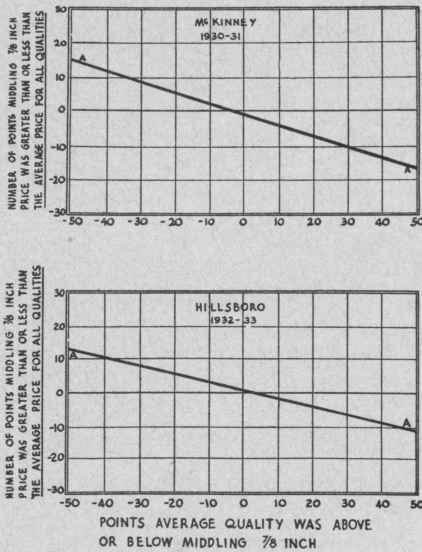


Fig. 8. The relationship between average quality and the margin between the price of Middling $\frac{7}{8}$ -inch and the average price for all qualities. The price of Middling $\frac{7}{8}$ -inch was 10 points lower than the average price of all qualities in McKinney when the average quality was about 30 points higher than Middling $\frac{7}{8}$ -inch; the price of Middling $\frac{7}{8}$ -inch was 8 points lower than the average price of all qualities when the average quality was about 19 points above Middling $\frac{7}{8}$ -inch. The price of Middling $\frac{7}{8}$ -inch was 4 points lower than the average price of all qualities in Hillsboro when the average quality was about 17 points higher than Middling $\frac{7}{8}$ -inch; the price of Middling $\frac{7}{8}$ -inch was 2 points higher than the average price of all qualities when the average quality was about 4 points lower than Middling $\frac{7}{8}$ -inch.

influence on changes in this margin. There was, however, some relationship between changes in average grade and changes in the margin between the price of Middling 7/8-inch and the price of all qualities.

Average quality in a farmers' market usually declines with the advance of the harvesting season. The effect of the variation of average quality on the price paid growers for Middling 7/8-inch cotton was determined for McKinney during the season of 1930-31 and for Hillsboro during the season of 1932-33. Figure 9 shows the general relationships in McKinney and

sold in those markets uninfluenced by the quality of average receipts. The relationship between the movement of average quality and the difference between the price of Middling 7/8-inch and the average price of all qualities to growers is shown in Figure 8.

The influence of average quality upon the price paid growers for Middling 7/8-inch cotton in the farmers' market may, of course, be measured in terms of relative importance of average grade and average staple length, the components of average quality. The degree to which the local cotton buyer pays more attention to grade than staple length, or vice-versa, the one quality factor exerts a greater influence than the other. The influence of average quality upon the prices paid for Middling 7/8-inch is shown by the manner in which the margin between the price of Middling 7/8-inch and the price of all qualities alters with changes in average quality. In McKinney during the season of 1930-31, the average grade exerted more influence on this margin than staple length or average quality. In Hillsboro during the season of 1932-33, staple length exerted no

Hillsboro between average quality and average prices to growers for all qualities, for Middling 7/8-inch, together with an approximation of what the

Table 10. Influence of average quality on average price of all qualities and on average price of Middling 7/8-inch cotton in Cleburne and Marshall, month of October 1930.

Period	Average in Cleburne			Average in Marshall		
	Quality	Price	Price of Middling 7/8	Quality	Price	Price of Middling 7/8
	Points	Cents	Cents	Points	Cents	Cents
First half of month	35	9.30	9.23	-34	8.81	8.93
Second half of month	24	9.01	8.84	-39	8.64	8.71
Average for month	29	9.15	9.03	-36	8.72	8.82

price of Middling 7/8-inch would have been had that quality been unaffected by the influence of average receipts.

As a means of comparing the various price-quality relationships obtaining during a four-week period in the early part of the marketing season with those prevailing during a four-week period in the latter part, Table 11 is presented. It is to be noted that while the price level declined 21 points, the price of Middling 7/8-inch in McKinney declined 50 points. That is, the decline in the price of Middling 7/8-inch exceeded that of the

Table 11. Changes in average price compared with changes in price level and changes in average quality, McKinney season 1930-31 and Hillsboro season 1932-33.

Market	Season	Decline in points		Dif-ference	Decline in points		Dif-ference
		Average price	Price level		Average quality	Middling 7/8	
McKinney	1930-31	55	21	34	27	50	29
Hillsboro	1932-33	138	122	16	19	136	14

general price level by 29 points. The average quality in McKinney declined 27 points. It is evident that the decline in the price of Middling 7/8-inch was approximately equal to the sum of the decline in the price level plus the decline in the average quality. The general price-quality relationships in Hillsboro two years later as between a four-week period in the early part of the marketing season and a four-week period in the later part of the marketing season were substantially the same as those in McKinney.

Bargaining Ability of Growers and Local Buyers in the Farmers' Market

Reasons for the behavior of the farmers' market regarding price-quality relationships must be sought in the organization and operation of that market. Relative bargaining strength of growers as sellers and of local buyers as purchasers is a matter of paramount significance. Legally

sellers and buyers in the farmers' market are considered equally competent to enter into contracts of sales and purchases. Practically, however, abilities of the contracting parties may vary widely. A measure of com-

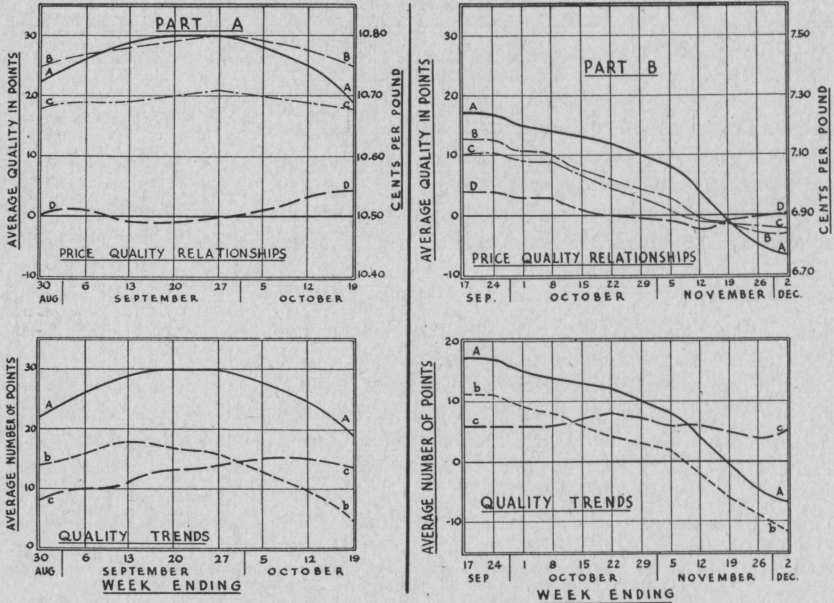


Fig. 9. Price-quality relationships and trend of quality in McKinney (Part A) during the season 1930-31 and in Hillsboro (Part B) during 1932-33. Line A in the upper section (Part A and B) indicates the movement of an average quality during the course of the marketing season. Line B in the upper sections indicates the movement of average price and Line C the movement of the price of Middling $\frac{7}{8}$ -inch. (The influence of changes in the price level has been eliminated from both prices). Line D in the upper sections indicates approximately what the price of Middling $\frac{7}{8}$ -inch would have been if this quality had sold on its merits uninfluenced by average quality. In the lower sections, Line A shows the movement of average grade in points above or below Middling $\frac{7}{8}$ -inch; Line B the movement of average staple length in points above or below $\frac{7}{8}$ -inch; and Line C the movement of average staple length in points above or below $\frac{7}{8}$ -inch.

petency of the parties to the local transaction is to be found in the skill of determining the quality of the cotton dealt in and of arriving at its market value.

The fact that cotton growers cannot class cotton is very generally recognized. A vast majority of 500 growers of Rockwall County¹ interviewed regarding methods of marketing cotton stated that they could neither grade nor staple their cotton. In a joint investigation by the United States Department of Agriculture and the Texas Agricultural Experiment Station of local cotton markets in Texas², 290 growers were interviewed regarding their ability to grade and class cotton. According to statements of these farmers, 34 could grade cotton accurately, 100 fairly well, and the remain-

¹Gabbard, L. P., An Agricultural Economic Survey of Rockwall County, Texas (February, 1925), Bulletin No. 327, Texas Agricultural Experiment Station.

²Cox, A. B., Local Cotton Marketing in Texas (June, 1927), a mimeographed report, Bureau of Agricultural Economics.

ing 156 knew little about grading. Six growers stated that they could measure staple length accurately, 52 fairly well, and 207 knew nothing about staple length. Of the thirty local cotton buyers interviewed regarding ability to class cotton, all said they could class according to grade; about seventy-five per cent could measure staple length; and about sixty per cent could distinguish differences in character and colors. It should be noted, however, that much of the classification by local buyers was according to traditional notions rather than according to the Universal Standards.

Regarding price information, growers reported dependence on the following sources in the numbers indicated: 180 on local buyers; 78 on daily newspapers; 55 on ginners; 50 on supply merchants; 30 on local exchanges; and 10 on local bankers. These growers were poorly equipped to translate the various price indicators into local market equivalents. Less than two per cent of the growers interviewed were able to convert prices of futures into prices of spot cotton; less than five per cent could determine the price of their cotton in the farmers' market in terms of Houston and Dallas spot prices. Of a group of 200 farmers only thirty per cent had anything like a clear understanding of the terms "on" and "off". Less than ten per cent could apply "on" and "off" quotations to the usual price quotation in working out the value of their own cotton.

In order to interpret the various price quotations, growers and local cotton buyers need to have a knowledge of approximate costs incidental to moving a bale of cotton from the farmers' market to the central market. Unfortunately, few farmers know with any degree of exactness the direct, indirect, and time costs involved in the movement of a bale of cotton. On the other hand, buyers are well acquainted with such costs and consequently are in a more advantageous position in the matter of converting central market prices into local market prices.

Independence of action on the part of the different buyers and of the various growers as sellers is necessary to insure free and unhampered trading on the market. Any form of collusion among buyers may influence price levels in the farmers' market to the detriment of growers. To the extent that local buyers of whatever type may make loans or otherwise give the farmer direct assistance in the production of his crop on condition that the product be delivered to the lender, the farmers' freedom of choice is restricted as between buyers with whom to transact business.

Manifestly, the bargaining position of the grower as a salesman of his own cotton in terms of its quality is vulnerable at a number of points. In the first place, he cannot ascertain with any degree of accuracy the quality of the product he is selling; in the second place, he has but little comprehension of the bearing that the various price indicators have upon the problems of arriving at values in the local market.

"Point Buying" as a Factor in Price-Quality Relationships in the Farmers' Market

The influence of the present system of operation in the local market on the individual grower within that market is yet to be considered. The

key to the whole situation is to be found in the various ramifications of the system known as "point buying." Briefly stated, "point buying" is the method by means of which the cotton trade arrives at the price offered local buyers in the various farmers' markets. This price is adjusted to the average quality of cotton in each local market and to the various costs incidental to moving the cotton from that local market to central market or to port of export.

During the progress of a marketing season, "point buying" is established and maintained in somewhat the following manner: At the opening of the marketing season, the local buyer may accumulate 50 to 100 bales before attempting to sell to a cotton merchant. The first step in making a sale is that of drawing samples from these bales and forwarding them to the cotton merchant expected to buy the cotton. The merchant grades and staples the samples and then makes a bid for the lot at so many points "on" or "off" the price of the near active futures month. These samples have the effect of establishing in the mind of the cotton merchant the quality of average receipts in this particular farmers' market. In a sense, the bid made establishes the price level for the local market. By making frequent checks on the average quality of this farmers' market, the merchant is in position to adjust the price according as average quality varies.

The cotton merchant may buy from the local buyer according to "average receipts" or "Basis-Middling." In the former case, the merchant and not the local buyer assumes all risks of changes in average quality; the merchant's price is in terms of average quality. In the latter case, the local cotton buyer and not the merchant assumes all risks of changes in average quality; the merchant's price is in terms of Middling 7/8-inch, which together with the merchant's "limits" indicates to the local buyer the standing bid of the cotton merchant for the various qualities. In the case of "average receipts" the merchant does the averaging, which the local buyer tends to pass on to the growers in the form of an average price for all qualities. In the case of "Basis-Middling" the cotton merchant buys from the local buyer on a quality basis. That is, the local buyer realizes that, whatever cotton he passes on to the merchant will bring a price adjusted to the merchants' "limits" for specific qualities. To the extent that the local buyer is unable to apply the standard of grade and staple length to the cotton purchased in the local market or to the extent that the grower is unable to bargain in terms of his specific quality, the local buyer tends to establish an average price by means of which he can make a profit on sales to merchants. Regardless of type of sale to merchants, local buyers pay a price to growers which does not vary widely from an average price.

By and large, "point buying" takes care of differences in average quality between markets; it fails to take care of differences in the quality of specific bales offered for sale by growers within the local market. It is evident that the grower's interest in the farmers' market has two main aspects: (a) So far as the specific quality of his cotton is concerned, he does not receive the full premium for the superior qualities; he is not assessed the full discount for the inferior qualities. (b) The prices paid for

specific qualities are influenced by the average quality of cotton in the market. The average price to the individual grower selling in the Marshall market during the season of 1929-30, for instance, was very low for two reasons: in the first place, the quality of his cotton was very low; in the second place, he was selling in a market with an extremely low average quality. Likewise, the status of the individual grower selling in this market was vastly improved in 1931-32, because he had individually improved the quality of his cotton and because the community as a whole had greatly improved the average quality.

The general interests of the cotton merchant under the present system are apparently taken care of. He acquires his cotton in the various local markets at a price in line with the average quality. The interest of the local buyer is fairly well taken care of in that he tends to discount the lower qualities more severely relatively than he rewards the higher qualities, and in that he hedges himself against the hazards of changes in price levels by raising his price to growers at a retarded rate when there is a general rise in prices and by lowering his price at an accelerated rate when there is a general drop in prices.

The relative status of the individual cotton grower depends mainly upon two considerations: the quality of his cotton and the average quality of receipts in the market in which he sells. If his quality is better than the average, he fails to receive full reward for superior quality; if of average quality he receives about the full value for his cotton; and if below the average he profits to the extent that he is not discounted in full. If he sells his cotton in a market of high average quality, he profits by that situation; if he sells in a market of low average quality, he suffers loss by that situation. To illustrate, growers selling Middling 13/16-inch received an average price during the month of October, 1930, at Marshall that was \$1.15 a bale less than was the case with growers selling like quality in Greenville; growers selling Strict Middling 1-inch cotton received an average price that same month at Richmond that was \$3.55 a bale more than was the case with growers selling like quality in Greenville. The average quality at Marshall that month was 164 points under Middling 7/8-inch; at Greenville 33 points under; and at Richmond 164 points over Middling 7/8-inch.

A further indication of the "averaging" influence of "point buying" is manifested in adjustments of prices within a market to changes in average quality with the progress of the marketing season. For instance, a grower in the McKinney market with a bale of Middling 7/8-inch early in the marketing season of 1930-31 had he elected to hold for sale during the latter part of the season would have lost, irrespective of changes in the price level about \$1.25 on account of the drop in the price of Middling 7/8-inch occasioned by the decline in the average quality of cotton in that market. Likewise, had a grower in Hillsboro held a bale of Middling 7/8-inch from the early part of the marketing season of 1932-33 and sold in the latter part of the season, he would have lost about 70 cents.

"Point buying" provides the merchant with a means of taking care of quality variations between farmers' markets and of following the

course of average quality within a local market. "Point buying" does not provide the foundation for a price system in the farmers' market that adequately rewards an individual grower for producing the better qualities of cotton nor fully discounts him for producing the poorer qualities. In effect, "point buying" acts as a barrier to the transmission, in full, of mill demand to the grower for the various qualities of cotton.

Adjustments Needed in the Farmers' Market to Improve Price-Quality Relationships

Certain adjustments are required in the farmers' market in order to make that market sensitive to quality. These changes are by no means revolutionary but entirely practicable and within the realm of possibilities. In the main the thing most needed centers around the matter of strengthening the bargaining position of the grower. Chief among the desirable adjustments are:

I. Provision should be made for the classification of cotton in the farmers' market prior to sale on the part of the grower, according to Official Standards of the United States Government applied by Officials of the United States Department of Agriculture. In the local market as now operated, the grower unquestionably finds it more difficult to determine the quality of his cotton than to ascertain comparative values of the various grades and staple lengths current in central and mill markets. Furthermore, so long as the grower lacks knowledge as to the quality of his cotton he has little incentive to familiarize himself with market values of the different qualities. The skill and training required to class cotton according to Official Standards are such as to make it impracticable for each farmer to become the classer of his own cotton. This service can best be performed by men who are making cotton classing their life work. The advantages of employing a disinterested third party like an official of the United States Department of Agriculture to perform the classing service is obvious. The classer's remuneration should not depend upon the number of bales he classes nor in any way be supplemented from private sources.*

It seems reasonable to assume that once the grower is in possession of information regarding the quality of his cotton he would then take steps to determine the value of his cotton in terms of its quality. Following are some of the advantages which may be expected to be gained by official classification of cotton in the farmers' market:

1. The bargaining power of the farmer would be enhanced by his having definite knowledge of the quality of his cotton.
2. The need of constant resampling would be obviated, thereby reducing the size of the "city crop."
3. An official combination classification certificate and warehouse receipt would serve as acceptable collateral, thereby increasing the liquidity of cotton in trade and enable banks to follow the course of cotton values more closely for that cotton on which they have made loans.
4. The cost of assembling cotton in "even-running" lots at interior points would be materially reduced.

*The Texas Agricultural Experiment Station makes the recommendation in Section 1.

5. Classification of cotton in the farmers' market would encourage more efficient ginning by enabling the ginner to check the grade of work that his machinery was doing.
6. This service would make possible the accumulation of a mass of data concerning the current quality of the cotton crop in relation to such important factors as varieties, soils, climate, and cultural practices.

The practicability of such classification service has been demonstrated by the manner in which the Grade and Staple Estimates project of the United States Department of Agriculture has functioned in recent years. Making available classing service to all cotton growers would in reality constitute a logical expansion of that work to include the entire crop.

II. An expansion should be made in the Official Market News Service on cotton so as to include not only quotations for "even-running" lots but also for "Basis-Middling" lots. Such quotations should be made readily available in farmers' markets, especially the more important ones. In order to bargain intelligently, the cotton grower needs to know not only the quality of his product but also the prevailing price for that quality. Trading in the farmers' market is of necessity under "Basis-Middling" conditions. Furnishing growers with quotations on "even-running" lots would be unsatisfactory in that this would lead growers to think in terms of prices unobtainable in the local market. Issuance of quotations reflecting prices prevailing for cotton under "Basis-Middling" terms would involve the collection of data on buying limits used by cotton merchants in making purchases from their representatives in the farmers' market as well as data on "Basis-Middling" transactions in both central and local markets.

Quotations of futures prices for the near active month as well as prices of "spot" cotton in "even-running" lots in central and mill markets should also be currently available in the farmers' market. Information should be at hand relative to costs incidental to moving cotton from the local market to the central and mill markets, and possibly also the cost of delivering cotton on futures contracts. For the information on costs to be most effective, they should be classified under three headings: (1) Direct, such as transportation charges and compression costs; (2) Indirect, such as general overhead and operating costs; (3) Time, such as storage fees, interest on money invested, and insurance charges.

Classifying of the growers' cotton and the assembling and disseminating of market information are sufficiently significant to be declared a public utility and consequently represent services properly to be rendered jointly by the Federal and State Governments. H. R. 9947* introduced in the House of Representatives by the Honorable James P. Buchanan June 15, 1934, is intended to provide the necessary machinery to furnish growers with much essential data relative to the quality of their cotton and market values. The purpose of the bill is stated as "To provide for the classification of cotton by grades and staple length for producers, to furnish farmers timely information on market supply, demand, location, condition, and the market prices for cotton, and for other purposes." The bill specifies,

*The Texas Agricultural Experiment Station makes reference to this Bill.

among other things, that the ginner is to take a sample not to exceed five ounces from each bale of cotton that he gins unless the producer instructs him in writing not to do so. The samples are to be submitted to the Department of Agriculture for classification with proper identification marks. Samples are to be submitted free of cost and the Department of Agriculture is to pay transportation charges on the sample. The Secretary of Agriculture is directed to collect and publish data on market prices, supply, and demand, for the various qualities of cotton. He is permitted to enter into cooperative agreements with any part of the Federal Government, State, territory, district, organization, or person so that the work can be carried out to best advantage.

III. A concentration of local sales at fewer points would give the farmers' market greater volume. A tendency in this direction would be encouraged by the fact that classing and market news services would be available directly only at the more important local markets and growers would gain full advantage of these services most readily at such points. A quality program would be greatly facilitated by a wholesale elimination of cross-road and isolated gin points as markets in which farmers sell their cotton. Improved roads and motor trucks of today make concentration at one or two points in a county a comparatively easy matter. A bale of a given grade and staple length gains in value as the number of bales of like quality available for sale in a given market increases. The greater the concentration of cotton into "even-running" lots in the farmers' market, the nearer the prices in that market should approach those of "even-running" lots in the central market.

IV. The Federal and State Governments should collect and disseminate more data on the varieties of cotton grown within each soil area and on the suitability of the different varieties to each soil area and more use should be made of such data. Thus far, insufficient data are available on the strains and varieties of cotton grown within each soil area. The economic importance of shifts from variety to variety or shifts from one strain to another within a variety has received too little attention. Comprehensive data on yields and staple lengths under different environmental conditions would form a basis for a program looking toward aligning production in accordance with environmental conditions. Data on the kinds of cotton being planted in the various soil areas must be at hand before an accurate picture of the seed stock of the cotton crop can be had. Before conditions in the farmers' market can be materially improved, however, a greater volume of cotton of about the same lengths must be produced. A local market in which the range of staple lengths runs from 13/16 to 1-1/16 inches can not be expected to operate as efficiently as one in which the range in length is smaller. This results from the fact that buyers cannot pay as much for cotton of any quality in small quantities as they can for cotton in greater quantities. A picture of the seed stock would point out the regions in which the greatest adjustment is necessary and provide the data essential to making such adjustment.

SUMMARY

Growers are not sufficiently rewarded, under the system of marketing now in vogue in the farmers' cotton market, for producing the higher qualities nor sufficiently discounted for producing the lower qualities. During the seasons 1926-27 to 1932-33, farmers received on an average 20 per cent of the premiums for grades above Middling recognized in the "Basis-Middling" limits used by merchants in buying cotton from their representatives in the local markets; growers were assessed on the average 31 per cent of the discounts for grades below Middling recognized in "Basis-Middling" limits. In the case of staple lengths, growers received on an average 6 per cent of the premiums for staple lengths above 7/8 inch prevailing in "Basis-Middling" limits; they were assessed on an average 10 per cent of the discounts for staple lengths below 7/8 inch obtaining in "Basis-Middling" limits.

In terms of premiums and discounts for quality without regard to price level, growers were underpaid on an average by \$3.50 a bale for Strict Middling 15/16-inch cotton during the season 1930-31 and overpaid on an average by \$2.55 a bale for Strict Low Middling 7/8-inch; on an average for the seven-year period, growers were underpaid by about \$4.90 a bale for Strict Middling 1-inch cotton and overpaid by about \$7.15 a bale for Low Middling 13/16-inch.

Farmers' markets may be divided into two groups according to kinds of local buyers; those markets in which the "local cotton buyers" are predominant; and those markets in which supply-merchant and ginner buyers are predominant. In the former markets, growers received on an average 29 per cent and 8 per cent of premiums recognized in "Basis-Middling" limits for grades above Middling and for staple lengths above 7/8 inch, respectively; they were assessed on an average 41 per cent and 4 per cent of the discounts prevailing in "Basis-Middling" limits for grades below Middling and staple lengths below 7/8 inch, respectively. In the latter markets, growers received on an average 16 per cent and 6 per cent of the premiums recognized in "Basis-Middling" limits for grades about Middling and for staple lengths above 7/8 inch, respectively; they were assessed on an average 25 per cent and 10 per cent of the discounts prevailing in "Basis-Middling" limits for grades below Middling and staple lengths below 7/8 inch, respectively. It is evident that increasing activities of ginner buyers of cotton from growers has had an adverse effect on recognition of quality as a price factor in the farmers' market.

Prices in the farmers' market respond from day to day to price changes in the futures market. A rise in the price of futures is followed by a rise in the price in the farmers' market but at a retarded rate; a fall in the price of futures is accompanied by a decline in the price in the farmers' market but at an accelerated rate. During the period included in this study, a rise of 20 points in the price of futures was followed by a rise of about 12 points in the price in the local market; a fall of 20 points in the price of futures was accompanied by a fall of about 22 points in the price in the local market.

Price levels in the various farmers' markets, with the effect of location eliminated, are determined in large part by the average quality of cotton offered for sale in the respective markets. Average prices in the local markets are also influenced by the reputation of these markets as to the quality of their cotton. Staple length is relatively of greater importance than grade in establishing differences in price levels between farmers' markets.

In general, in the farmers' markets studied, an improvement in the average quality of cotton was accompanied by an increase in the average price to growers. For instance, between the seasons of 1929-30 and 1931-32, the average quality in Marshall as compared with the average quality in McKinney gained \$8.90 a bale while the average price in Marshall as compared with the average price in McKinney gained \$11.30 a bale. The average quality in McKinney for the two seasons varied by \$1.60 a bale.

The average quality, under the marketing system now in vogue, directly influences the price of specific qualities. To the extent that the average quality in a farmers' market declines with the advance of the marketing season, a grower in the early part of the season with a bale of cotton of quality higher than the average electing to sell later in the season will suffer a loss approximately equivalent to the amount of the decline in average quality. To illustrate: if a grower in McKinney with a bale of Middling 7/8-inch cotton harvested about the middle of September, 1930, had retained the cotton and sold after the middle of October, he would have lost about \$1.25 a bale as a direct result of the decline in average quality in that market regardless of what happened to the general price level. Likewise, in Hillsboro during the season of 1932-33, a grower holding a bale of Middling 7/8-inch from the middle of September to the latter part of November would have lost about 70 cents a bale. The loss in McKinney was on a price level of about 10.80 cents a pound and in Hillsboro on a price level of about 7.15 cents a pound. In each case the loss was approximately two per cent of the value of the cotton at the date of ginning.

The bargaining position of the grower in the farmers' market is weakened by a general inability to grade and staple his cotton and to translate the various price indicators into the local situation.

The explanation for the situation now existing in the farmers' market must be sought in the various ramifications of "point buying." Under this system, the buyer has in mind a general average price which will enable him to offset losses on the lower qualities purchased by gains on the higher qualities. As a consequence of this leveling influence of "point buying" the grower of cotton of quality higher than the average for his community fails to receive premiums commensurate with the quality of his product; and the grower of quality under the average of his community receives more for his cotton than is warranted by its quality. In addition, the price received by a grower for a specific quality is influenced by the average quality of the cotton in the market in which he sells. During October, 1929, the average quality in Marshall was 164 points under Middling 7/8-inch, in Greenville 33 points under, and in Richmond 164 points above

Middling 7/8-inch. Growers with the same quality of cotton, Strict Low Midling 13/16-inch sold on the same days received on an average \$1.15 a bale less in Marshall, the lower average quality market, than in Greenville. Likewise, growers with the same quality of cotton, Strict Middling 1-inch sold on the same days received on an average \$3.55 a bale more in Richmond, the higher-average-quality market, than in Greenville.

Before the grower with cotton of quality higher than the average can hope to sell his product on its merits, certain adjustments are necessary in the local market. Foremost among the things needed are:

1. Official classification of cotton by an employee of the United States Department of Agriculture prior to sale by the grower.
2. Expansion of the official market news service of the United States Department of Agriculture to include price quotations for cotton under "Basis-Middling" conditions as well as in "even-running" lots.
3. Fuller collection and wider dissemination of information relative to varieties of cotton being planted in the various soil areas and their adaptability to such areas.

APPENDIX

Premiums and discounts according to season for grades and staple lengths in the farmers' markets expressed as percentages of premiums and discounts prevailing in "Basis-Middling" limits are shown in Tables 12 and 13. Average weekly prices received by growers for specific grade and staple length in the various farmers' markets included in this study are shown in Table 14.

Table 12. Premiums and discounts paid growers in the farmers' markets for grades expressed as percentages of premiums and discounts obtaining in "Basis-Middling" limits.

Grades ¹	1926-27	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33
Good Middling				26	17	17	100
Strict Middling	38	31	24	20	27	8	16
Middling	Base	Base	Base	Base	Base	Base	Base
Strict Low Middling	47	37	40	16	33	37	22
Low Middling	52	86	43	45	32	85	21
Strict Good Ordinary				60	57		47
Good Ordinary				83	19		

¹White cotton only.

Table 13. Premiums and discounts paid growers in the farmers' markets for staple lengths expressed as percentages of premiums and discounts obtaining in "Basis-Middling" limits.

Staple lengths	1926-27	1927-28	1928-29	1929-30	1930-31	1931-32	1932-33
3/4				29			
13/16	12	9	21	4	11	0	3
7/8	Base	Base	Base	Base	Base	Base	Base
15/16	53	0	20	5	4	0	0
1 inch	9	0	6	4	5	7	0
1-1/16				1	17	52	
1-1/8				6	35		

Table 14A. Average price in cents per pound received by growers for indicated grade and staple length.

Week ending	Season 1926-27			
	Mid. 7/8	Middling 15/16		
	Henderson	Robstown	Hillsboro	Lubbock
Sept. 4	17.34	18.00	18.87	
11	16.65	17.10	17.69	
18	15.62	15.87	16.12	
25	13.95		14.60	
Oct. 2	12.57	13.09	13.99	
9	11.12		12.37	10.32
16	11.31		13.25	10.50
23	10.78			10.38
30	11.53		10.25	10.35
Nov. 6	10.34			11.00
13	10.71			9.94
20	11.12			
27	10.73			10.00
Dec. 4	10.10			
11	10.07			
18				
25				
Jan. 1	10.00			
8	10.00			

Table 14B. Average price in cents per pound received by growers for indicated grade and staple length

Week ending	Season 1927-28			
	Middling 7/8			Mid. 13/16
	Hillsboro	Lubbock	Waco	Henderson
Sept. 3				20.50
10	24.00			22.50
17		22.25	21.87	20.70
24	20.42	20.14		19.62
Oct. 1	21.18	21.92	21.97	20.92
8	20.46	21.75	20.71	
15	19.89	20.50	20.20	18.65
22	19.83	21.00	19.92	17.50
29	20.38	19.63	19.97	
Nov. 5	19.87	20.75		
12	19.12	19.00		
19		19.09		18.45
26	18.50	19.05		
Dec. 3		18.48		
10		18.31	20.81	
17			20.35	
24		18.25		

Table 14E. Average price in cents per pound received by growers for indicated grade and staple length.

Week ending	Season 1930-31															
	Middling 7/8															
	Cumby	Farmers-ville	Celina	Blue Ridge	Halls-ville	Mc-Kinney	Mar-shall	Bronte	Kenedy	York town	Green-ville	Lorena	Cle-burne	Jasper	Frank-lin	
Aug. 16														10.60	10.28	
23		10.01	10.07			10.42			10.58	10.52					9.45	
30	10.44	10.91	10.74	10.72		10.71			10.87	10.67					9.42	10.50
Sept. 6	10.75	10.82	10.60	10.75	9.25	10.71	9.80		10.84	10.57		11.15	10.90	9.79	10.37	
13	10.50	10.81	10.50		9.25	10.62	9.94		10.05	10.00	10.40	10.85	10.45	9.73	10.19	
20	10.38	10.66	10.44	10.53	9.70	10.52	9.59	10.50	10.14	9.79	10.28	10.80	10.13	9.62	10.12	
27	9.72	10.12	9.90	10.00	9.17	10.06	9.44	9.82	10.00	9.35	9.97	10.65	9.90	9.41	9.75	
Oct. 4	9.29	9.67	9.40		8.46	9.58	9.09	9.40		9.03	9.62	10.16	9.62	9.22	9.30	
11	9.20				8.50	9.44	8.98	9.50		8.84	9.52		9.34	9.42	9.23	
18	8.74	9.30	9.05	9.20	7.87	9.42	8.60	8.70	9.95	9.23	9.47	9.62	8.90	9.33	8.96	
25	9.56			9.30	8.70	9.84	8.91	9.62		9.69	9.00	9.50	9.00	9.33	9.29	
Nov. 1	9.71				9.31	9.49	9.44	9.50	9.25	9.96		9.92	9.60	9.47	10.16	
8	10.06	9.93			9.30	10.14	9.25	9.77		9.82		9.62	9.80	8.50	9.32	
15	9.42	10.35						9.50					9.84		9.52	
22				9.95		9.60	9.75			9.67					9.29	
29	9.75	10.40				10.47	9.30			9.61			9.75			
Dec. 6							9.04			9.25						
13							8.56									

Table 14F. Average price in cents per pound by growers for indicated grade and staple length.

Week ending	Season 1931-32						
	Middling %						
	Mc Kinney	Frank-lin	Jasper	Green-ville	Lorena	Bronte	Marshall
Aug. 29							
Sept. 5		5.72					5.76
12	6.31	6.45			6.00		5.76
19	6.34		6.25	6.13			5.76
	6.18	5.89	5.84	6.15		5.25	5.66
26	5.78	5.66		5.71	5.85	5.00	5.49
Oct. 3	5.38	5.30	4.92	5.04	5.47	4.65	5.04
10	5.10	5.17	4.90	4.92	5.20	4.77	5.07
17	5.58	5.48	5.13	5.60	5.67	5.49	5.41
24	6.24	5.95	5.67	6.21	6.24	5.92	6.00
31	6.21	6.00	5.00	6.15	6.20	5.69	6.10
Nov. 7	6.15	5.92	5.87	6.06		5.57	6.06
14	6.21	6.20	5.08	6.09	6.30	5.85	6.03
21	6.04	5.85				5.25	5.57
28	5.82			5.40		5.20	
Dec. 5					6.00	5.22	5.59
12							5.49

Table 14G. Average price in cents per pound received by growers for indicated grade and staple length.

Week ending	Season 1932-33						
	Middling 7/8						
	Hillsboro	Franklin	Lorena	Yorktown	Cleburne	Cumby	Lubbock
Sept. 3		8.52	8.80	8.32		6.65	
10		8.67	8.25	7.92		7.76	
17	7.07	7.04	7.46	6.93	6.87	6.98	
24	7.33	7.18	7.30	6.88	7.13	6.88	
Oct. 1	7.28	7.13	7.24	6.82	7.17	7.03	
8	6.91	6.78	7.00	6.78	6.95	6.56	5.89
15	6.45	6.39	6.48	6.39	6.51	6.23	5.64
22	6.18	5.89	6.25	5.89	6.13	5.95	5.45
29	6.06	5.81	6.30	5.81	6.10	5.93	5.27
Nov. 5	6.01	5.70			5.91	6.17	5.07
12	6.04	6.58			6.00	5.97	5.27
19	6.00				6.21	5.80	5.34
26	5.67	5.05				5.58	5.12
Dec. 2	5.44						4.92
9	5.41						4.81