

ABSTRACT

A COMPARATIVE REGIONAL ANALYSIS OF THE  
WHOLESALE MARKETING MARGIN FOR  
CRUSHED COTTONSEED

M. Dean Ethridge

Cotton production in the United States is divided into four regions and wholesale marketing margins for crushed cottonseed in the regions are analyzed during the period 1958-73. Technical yield coefficients are combined with product prices for cottonseed oil, meal, linters and hulls in order to determine by regions the annual wholesale values of products from a ton of cottonseed. The difference between these wholesale values and regional farm prices per ton of cottonseed gives regional marketing margins per ton of cottonseed.

Substantial regional price and margin differences are documented and regression analysis is used to further investigate margin behavior over time. Regression results support the hypothesis that wholesale margins have been abnormally high during the 1972 and 1973 marketing years. Even use of a marketing cost index to explicitly account for increasing costs of processing and handling did not explain the large margins during these years.

A Comparative Regional Analysis of the  
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Economic events since the 1972-73 crop year have generated much interest in cottonseed prices. Cotton producers have observed wholesale prices of cottonseed oil and meal approximately double during the last three years and have wondered whether they are getting an equitable share of this increased income. They have largely ceased to think of their cottonseed as just a means of payment for ginning charges and have begun to regard it as a potential source of supplementary income.

The limited objective of this paper is to examine by regions the wholesale marketing margin for cottonseed during the crop years of 1958-1973 in order to (1) more clearly determine how the marketing margin has behaved and (2) discover inconsistencies, if any, among the regional marketing margins.

Regional Breakdown

Cotton may be produced only in the southern portions of the United States, generally south of the 36th parallel. Four major cotton producing regions may be delineated as in Figure 1, where it is seen that each region contains all or portions of the following states:

Southeast Region - Alabama, Florida, Georgia, North Carolina, South Carolina, and Virginia;

South Central Region - Arkansas, Louisiana, Mississippi, Missouri, Tennessee, Illinois, and Kentucky;

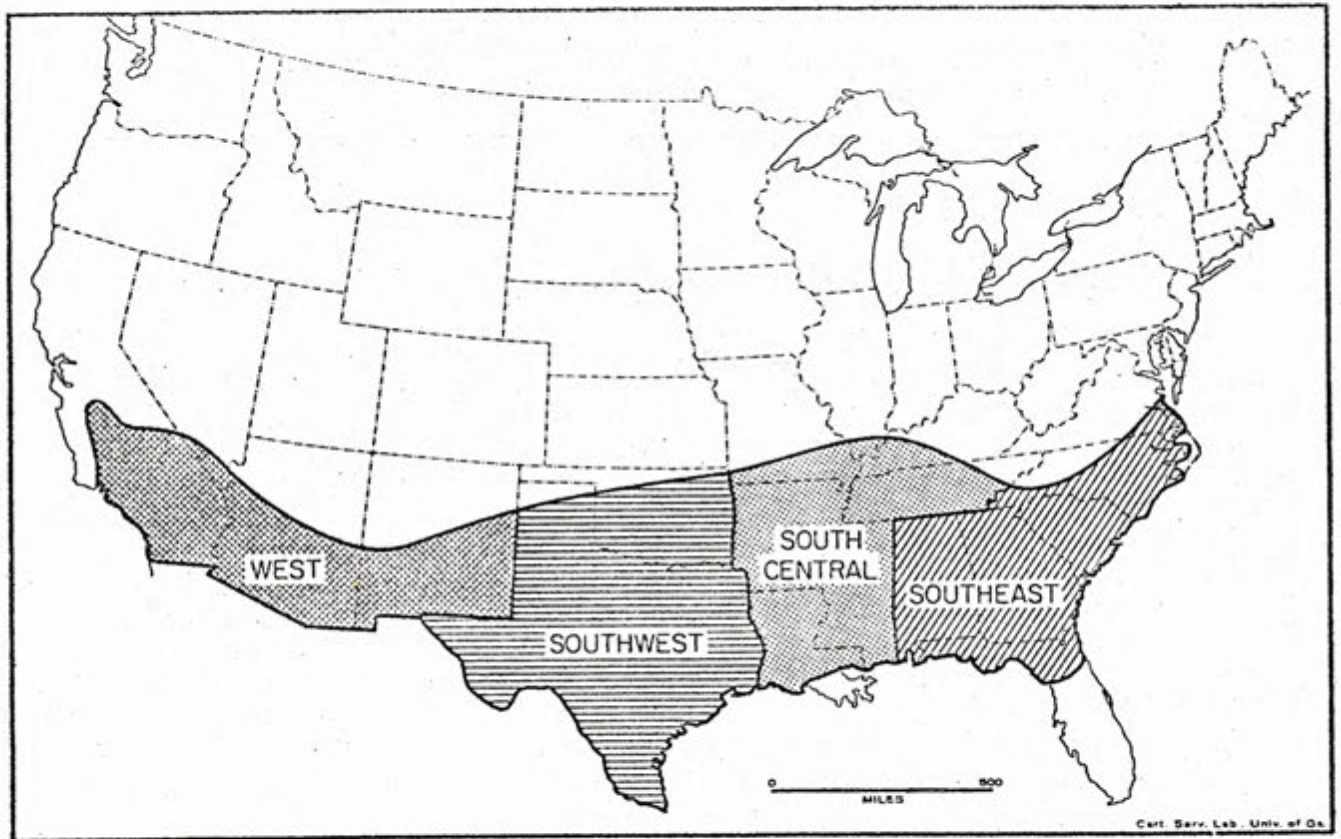


Figure 1. Four Major Cotton Production Regions in the United States.

Southwest Region - Oklahoma and Texas; and

West Region - Arizona, California, New Mexico, and Nevada.

This regional breakdown is often used by the U.S. Department of Agriculture [3, 10] and it provides production and marketing areas that are distinctive enough to warrant separate economic analysis. Northern and Southern boundaries of cotton production in Figure 1 were taken from [15, Figure 9].

### Market Value of Cottonseed Products

Cottonseed which are not kept for next season's planting are sent to crushing plants where four marketable products are normally obtained: cottonseed oil, meal, linters and hulls. Table 1 shows regional estimates of the yield of products from a ton of cottonseed during the years 1958-73, expressed in both pounds and percent. It is seen that yields of the various products do differ somewhat among regions, with cottonseed yielding: most oil in the West, most meal and linters in the Southeast, and most hulls in the Southwest. The average yields for all regions are: oil - 16.6%, meal - 46.5%, linters - 9.4%, and hulls - 22.4%. The remaining 5.1% of the average volume of a ton of cottonseed is waste material which has no market value.

Annual estimates of regional wholesale market prices for each cottonseed product are given in the first four columns of Table 2. These time-series data should be fairly good indicators of regional prices; however, two qualifications should be emphasized. First, oil prices in the West Region were obtained by adjusting wholesale prices for crude soybean oil. Conversations with industry personnel in California revealed that, due to the vertically integrated structure of crushing and refining firms, very little crude cottonseed oil in the West Region is wholesaled. Whenever it is, however, the rule-of-thumb used to set price is to increase the crude soybean price in Decatur, Illinois by 15-20%. Based on this, the Decatur price was increased by 17.5% in order to obtain oil prices for the West Region.

The second qualification concerns hull prices, for which time series data prior to 1969 is available only for the Southeast Region. Since it

Table 1. Regional Yields of Cottonseed Oil, Meal, Linters, Hulls and Waste Products from Crushing a Ton of Cottonseed, Average for 1958-73<sup>a</sup>

Region	Yield of Products Per Ton of Seed Crushed									
	Oil %	lb.	Meal %	lb.	Linters %	lb.	Hulls %	lb.	Waste <sup>b/</sup> %	lb.
Southeast	16.55	331	47.40	948	10.80	216	18.95	379	6.30	126
South Central	16.45	329	46.10	922	9.25	185	22.45	449	5.75	115
Southeast	16.10	322	46.25	925	7.90	158	25.90	518	3.85	77
West	17.35	347	46.15	923	9.50	190	22.45	449	4.55	91
Average	16.61	332	46.48	930	9.36	198	22.44	449	5.11	102

<sup>a/</sup> Regional yield data were available only for the 1965-72 crop years. For these 7 years, average regional yields were expressed as percentages of average U.S. yields. Then, assuming these percentages to be constant over the 1958-73 period, average U.S. yield data for the 16-year period was multiplied by regional percentages in order to derive the regional estimates shown.

<sup>b/</sup> Includes motes, grabbots, and hullfibers.

SOURCE: U.S. Department of Agriculture, [12, Tables 14 and 20], with data for 1971-73 furnished directly by the Commodity Economics Division.

is thought that hull prices during 1958-68 were fairly stable and comparable among regions, it was deemed satisfactory to use Southeast prices for all regions up to 1969 and the available regional data thereafter.

Inspection of the wholesale product prices in Table 2 reveals some notable differences among regions. For example, average oil price over the 16-year period varies from a low of \$258.88 per ton (about 12.9¢ per pound) in the Southwest Region to a high of \$270.63 per ton (about 13.5¢ per pound) in the Southeast Region. Distortions among regions have tended to get worse in recent years; thus, in 1972, wholesale price of oil was almost 48% higher in the Southeast than in the Southwest.

Column B of Table 2 gives annual regional wholesale values of products obtained from cottonseed. This column is derived by multiplying each product price by appropriate regional yield coefficients (i.e., the percentages in Table 1) and summing the weighted prices for each year. The 16-year averages for these wholesale values vary from \$92.46 per ton of cottonseed in the Southwest to \$100.80 per ton in the West. Differences in individual years are often substantial, although regional prices rarely move in opposite directions from year-to-year.

#### Marketing Margin and Farmers' Share

Column C of Table 2 gives regional farm prices for cottonseed. These are subtracted from wholesale product values to obtain the marketing margin (Column D) and divided by wholesale product values to obtain the farmers' share of wholesale income from cottonseed products (column E).

On the average, marketing margin is lowest and farmers' share highest in the Southwest Region. Conversely, marketing margin is highest and farmers share lowest in the Southeast Region. Actually, the farmers' share

Table 2. Cottonseed by Regions: Wholesale Market Value, Farm Price, Marketing Margin, and Farmers' Share of Income, per Ton Basis, 1958-73.

SOUTHEAST								
Year beginning August	(A) Wholesale market prices of products				(B) Wholesale value of products <sup>e/</sup>	(C) Farm price for cottonseed <sup>f/</sup>	(D) Marketing margin (B-C)	(E) Farmers' share (C+B)
	Oil <sup>a/</sup>	Meal <sup>b/</sup>	Linters <sup>c/</sup>	Hulls <sup>d/</sup>				
Dollars per ton								
								Percent
1958	234.00	65.08	121.60	7.00	84.03	47.10	36.93	56.0
1959	200.00	60.56	121.20	7.00	76.22	35.10	41.12	46.0
1960	236.00	60.07	124.80	7.00	82.34	36.20	46.14	44.0
1961	250.00	64.99	147.40	10.00	89.99	45.70	44.29	50.8
1962	210.00	70.81	135.80	15.00	85.83	45.60	40.23	53.1
1963	200.00	67.75	135.40	15.00	82.68	47.30	35.38	57.2
1964	232.00	63.69	124.80	15.00	84.91	44.00	40.91	51.8
1965	260.00	73.25	128.00	18.00	94.99	44.30	50.69	46.6
1966	260.00	83.67	167.60	22.00	104.96	63.80	41.16	60.8
1967	256.00	80.27	154.60	22.00	101.28	51.90	49.38	51.2
1968	232.00	69.08	128.20	11.00	87.07	49.10	37.97	56.4
1969	244.00	74.85	100.80	29.60	92.36	40.00	52.36	43.3
1970	294.00	78.46	108.00	23.00	101.87	50.20	51.67	49.3
1971	272.00	79.28	133.80	26.00	101.97	50.80	51.17	49.8
1972	330.00	152.53	105.40	21.00	142.28	45.20	97.08	31.8
1973	620.00	142.20	186.80	21.00	194.17	93.80	100.37	48.3
Average	270.63	80.41	132.76	16.81	100.43	49.38	51.05	49.2
SOUTH CENTRAL								
1958	230.40	60.55	118.20	7.00	78.32	45.20	33.12	57.7
1959	199.20	55.65	120.60	7.00	71.15	38.00	33.15	53.4
1960	232.80	55.10	130.00	7.00	77.29	41.10	36.19	53.2
1961	247.80	59.25	149.60	10.00	84.16	50.40	33.76	59.9
1962	207.40	65.60	141.60	15.00	80.82	47.70	33.12	59.0
1963	197.40	63.35	144.80	15.00	78.44	51.90	26.54	66.2
1964	230.40	59.90	134.40	15.00	81.31	47.90	33.41	58.9
1965	256.60	68.80	129.00	18.00	89.90	47.30	42.60	52.6
1966	257.80	78.55	173.80	22.00	99.64	67.90	31.74	68.1
1967	253.40	77.40	166.80	22.00	97.73	56.70	41.03	58.0
1968	231.20	66.70	136.00	11.00	83.83	50.80	33.03	60.6
1969	241.00	71.00	110.60	19.06	86.88	41.80	45.08	48.1
1970	294.20	73.50	113.80	19.72	97.23	55.50	41.73	57.1
1971	264.60	73.90	141.80	14.41	93.95	56.60	37.35	60.2
1972	274.40	144.80	100.60	17.46	125.12	48.30	76.82	38.6
1973	614.20	138.00	186.40	27.42	188.05	99.50	88.55	52.9
Average	264.55	75.75	137.38	15.44	94.61	52.91	41.70	55.9

See footnotes at end of table.

Table 2 - Continued

Year beginning August	SOUTHWEST							
	(A) Wholesale market prices of products				(B) Wholesale value of products <sup>e/</sup>	(C) Farm price for cottonseed <sup>f/</sup>	(D) Marketing margin (B-C)	(E) Farmers' share (C:B)
	Oil <sup>a/</sup>	Meal <sup>b/</sup>	Linters <sup>c/</sup>	Hulls <sup>d/</sup>				Percent
	-----Dollars per ton-----							
1958	225.20	59.39	117.60	7.00	74.83	42.30	32.53	56.5
1959	194.60	59.01	123.40	7.00	70.18	38.20	31.98	54.4
1960	232.40	52.81	130.00	7.00	73.92	41.30	32.62	55.9
1961	244.00	58.88	135.40	10.00	79.80	51.30	28.50	64.3
1962	203.40	64.15	138.60	15.00	77.25	47.70	29.55	61.7
1963	197.00	64.60	134.20	15.00	76.08	52.60	23.48	69.1
1964	232.40	59.27	130.40	15.00	79.02	47.30	31.72	59.9
1965	255.40	66.15	125.80	18.00	86.31	46.80	39.51	54.3
1966	258.00	81.79	170.80	22.00	98.56	67.30	31.26	68.3
1967	249.40	75.13	159.20	22.00	93.18	55.90	37.28	60.0
1968	227.40	65.65	126.40	11.00	79.81	50.40	29.41	63.2
1969	237.60	74.59	98.20	24.94	86.97	42.10	44.87	48.4
1970	290.80	81.06	110.60	28.94	100.54	55.20	45.34	54.9
1971	261.00	79.22	140.60	28.29	97.09	56.50	40.59	58.2
1972	223.40	144.78	99.40	25.22	117.31	48.80	68.51	41.6
1973	610.00	143.45	187.60	35.33	188.53	94.50	94.03	50.1
Average	258.88	76.87	133.01	18.23	92.46	52.38	40.08	56.7
	WEST							
1958	226.00	60.70	131.20	7.00	81.26	43.30	37.96	53.3
1959	196.00	61.20	153.40	7.00	78.39	43.50	34.89	55.5
1960	260.00	54.35	130.40	7.00	84.15	50.40	33.75	59.9
1961	232.00	62.52	145.20	10.00	85.14	55.40	29.74	65.1
1962	206.00	72.54	131.40	15.00	85.07	50.00	35.07	58.8
1963	198.00	70.62	128.00	15.00	82.47	48.10	34.37	58.3
1964	258.00	63.17	137.60	15.00	90.36	48.30	42.06	53.5
1965	268.00	70.70	133.00	18.00	95.80	47.30	48.50	49.4
1966	254.00	76.78	172.40	22.00	100.82	61.50	39.32	61.0
1967	204.00	74.28	149.00	22.00	88.77	53.60	35.17	60.4
1968	190.00	68.52	133.80	11.00	79.77	50.90	28.87	63.8
1969	254.00	72.42	96.20	19.91	91.10	38.90	52.20	42.7
1970	294.00	87.25	119.00	24.30	108.04	64.60	43.44	59.8
1971	280.00	86.70	119.40	26.58	105.90	62.10	43.80	58.6
1972	312.00	147.53	105.60	23.46	137.52	55.10	82.42	40.1
1973	688.00	148.54	223.80	40.29	218.23	114.40	103.83	52.4
Average	270.00	79.86	138.09	17.72	100.80	55.46	45.34	55.0

<sup>a/</sup> Season average price of crude cottonseed oil in tank cars, f.o.b., at the following regional market points: Southeast - all Southeastern mills; South Central - all Mississippi Valley points; Southwest - Waco, Texas; and West - estimated by increasing the crude soybean oil price at Decatur, Illinois by 17.5%.

SOURCE: U.S. Department of Agriculture [11, 12].

<sup>b/</sup> Season average price of bulk cottonseed meal, 41% protein, at the following regional market points: Southeast - Atlanta; South Central - Memphis; Southwest - Lubbock, Texas; and West - California mills.

SOURCE: U.S. Department of Agriculture [7].

<sup>c/</sup> Season weighted average price of grade 4, staple 4 linters, at the following regional market points: Southeast - Atlanta; South Central - Memphis; Southwest - Dallas; and West - Los Angeles.

SOURCE: U.S. Department of Agriculture [8]. Years prior to 1963 were obtained from unpublished work sheets.

<sup>d/</sup> Season average price of cottonseed hulls in carload lots, at the following regional market points: Southeast - Atlanta; South Central - for 1958-68, Atlanta prices; for 1969-73, Mississippi Valley points; Southwest - for 1958-68, Atlanta prices; for 1969-73, Texas and Oklahoma market points; and West - for 1958-68, Atlanta prices; for 1969-73, California market points.

SOURCE: U.S. Department of Agriculture [11] and ARS working papers.

<sup>e/</sup> Weighted average of the four product prices, the weights being proportionate yields in Table 1.

<sup>f/</sup> Weighted average of state prices.

SOURCE: U.S. Department of Agriculture [13, 14].



tends to be quite similar among all regions except the Southeast, which averages 6-8% below that of other regions. Furthermore, farmers' share in the Southeast has tended to shrink at an accelerated pace (relative to other regions) in recent years.

For all regions, the farmers' share averaged higher during the first eight years of the period than during the last eight years (being about 2-3% less in the later years). Therefore, cotton farmers have generally been unable to command even a constant percentage share of the wholesale value of cottonseed. Furthermore, during the high product prices of 1972 farmers' share dropped about 15-17% below the average for the entire period. In 1973, it ranged from about 1% to 7% below the 16-year average.

As mentioned earlier, farmers have traditionally viewed the income from cottonseed primarily as a means of paying ginning charges. It is conceivable that lower ginning charges are accompanied by lower prices for cottonseed. This would be poor accounting practice; nevertheless, occurrence of low marketing margins with high ginning charges would be an interesting phenomenon to economists and farmers. In Table 3, average regional ginning charges per bale of cotton during the 1958-73 period are converted to ginning charges per ton of cottonseed and then added to the regional wholesale marketing margin per ton of cottonseed. The resulting regional margin-plus-ginning charges (Table 3, column D) indicate much more equality among the four regions than do the marketing margins alone (Table 3, column A). In fact the Southeast Region now compares favorably with the other three and the West Region has the highest average margin-plus-ginning charge. Obviously these observations are not conclusive, but subsidization of ginning costs by lowering cottonseed prices is consistent

Table 3. Wholesale Cottonseed Marketing Margin Compared with Marketing Margin Plus Ginning Charges Per Ton of Cottonseed, by Regions, Average for 1958-73.

Region	(A)	(B)	(C)	(D)
	Wholesale Marketing Margin	Ginning Charge per Bale of Cotton	Ginning Charge per Ton of Cottonseed <sup>a/</sup>	Margin plus Ginning Charge (A+C)
	-----Dollars-----			
Southeast	51.05	14.59	35.89	86.94
South Central	41.70	17.17	42.07	83.77
Southwest	40.08	19.32	46.75	86.83
West	45.34	19.71	47.90	93.24

<sup>a/</sup> Derived by multiplying average regional ginning charges per bale by average regional ratio of cotton bales to one ton of cottonseed. These ratios were: Southeast - 2.46; South Central - 2.45; Southwest - 2.42; and West - 2.43.

SOURCE: For ginning charges, Ghetti and Looney [3, Table 1] and U.S. Department of Agriculture [9]. For cotton and cottonseed production, U.S. Department of Agriculture [14].

with the general results in Table 3. If true in some or all regions, market efficiency, equity and accountability could be improved by stopping the practice.

#### Regression Estimation of Marketing Margins

Further evidence on marketing margin behavior may be obtained by linear regression analysis. Table 4 summarizes regional results of regressing, over the period 1958-73, wholesale market value of cottonseed on farm price of cottonseed and a shift (dummy) variable for the last two years of the period.

The shift variable, equal to zero during 1958-71 and equal to one during 1972-73, may be used to test the hypothesis that the spread between wholesale and farm values has been unusually large during the last two years.

Table 4. Results of Regressing Wholesale Market Value of Cottonseed on Farm Price of Cottonseed and a Shift Variable for the Last Two Years, by Regions, 1958-73<sup>a/</sup>

Region	Constant Term	Farm Price	1972-73 Shift Variable	R <sup>2</sup>	Durbin-Watson Statistic
Southeast	43.11* (6.47)	1.02* (7.37)	53.92* (9.75)	0.96	1.73
South Central	30.03* (4.94)	1.17* (9.44)	44.04* (8.86)	0.97	2.15
Southwest	18.27* (2.12)	1.32* (7.82)	40.02* (6.08)	0.94	1.80
West	26.99* (3.46)	1.22* (8.32)	47.10* (6.34)	0.96	1.97

<sup>a/</sup> Number in parentheses below each estimated coefficient is the Student's t-ratio for the coefficient.

\*Significant at 99% confidence level.

The hypothesis is supported if the estimated coefficient of this shift variable is positive and significantly different from zero.

Results in Table 1 for the Southeast Region indicate that wholesale market value increases on the average by \$1.02 per ton whenever farm price increases by \$1.00 per ton. Furthermore, during the last two marketing years (1972-73 and 1973-74), the spread between wholesale and farm values has averaged about \$53.92 more than it did during the rest of the period.

Results in Table 4 are fairly consistent among regions. The coefficients of determination ( $R^2$ ) range from .94 to .97 and the Durbin-Watson d-statistics all indicate that no significant autocorrelation of residuals exists. The farm price coefficients range from \$1.02 to \$1.32 and the 1972-73 shift variable coefficients range from \$40.02 to \$53.92. Furthermore, estimated coefficients of these causal variables are all significantly different from zero at the 99% confidence level.

The spread between wholesale and farm values of cottonseed is expected to be increased as processing and related marketing costs increase. In an attempt to explicitly incorporate the effect of marketing costs, a representative cost index was derived using four major cost categories: labor, machinery, transportation, and fuel and electricity costs. While these costs are not exhaustive, they are dominant ones that are readily translated into higher wholesale prices. Based on past publications [2, 5, 6] and on current contacts with cottonseed industry personnel, the relative share of each of these costs is estimated to be as follows: labor costs - 35%; machinery costs - 25%; transportation costs - 24%; and fuel and electricity costs - 16%.

Table 5 gives cost indexes for each of the four cost categories and, using the foregoing percentages, derives a weighted average cost index for the years 1958-73.<sup>1/</sup> It would have been desirable to derive a separate marketing cost index for each region; however, this was not possible.

Regional regression results with the market cost index included are summarized in Table 6. Marketing cost index coefficients exhibit the expected positive signs; two being significant at the 99% confidence level, one at the 95% level, and one at the 90% level. Even with the marketing cost index included, all coefficients for the 1972-73 shift variable are still large and highly significant, which further reinforces the hypothesis that marketing margins were abnormally large during the past two years. The goodness of fit of all regression equations (as indicated by  $R^2$ ) is uniformly high and the Durbin-Watson d-statistics still indicate no significant autocorrelation of residuals.

Table 5. Determination of a Weighted Average Cost Index (1967=100) for Wholesale Marketing of Cottonseed Products, 1958-73

Year	Labor Cost	Machinery Cost	Transportation Cost	Fuel and Electricity Cost	Weighted Average Cost
	Index <sup>a/</sup>	Index <sup>b/</sup>	Index <sup>c/</sup>	Index <sup>d/</sup>	Index <sup>e/</sup>
-----Percent-----					
1958	72.0	87.5	112.6	95.3	89.4
1959	74.7	90.4	97.7	95.3	87.5
1960	77.4	91.2	90.0	96.1	86.9
1961	80.2	90.5	98.7	97.2	89.9
1962	83.3	90.9	85.9	96.7	88.0
1963	86.0	91.4	84.6	96.3	88.7
1964	88.3	91.9	96.7	93.7	92.1
1965	90.7	92.5	98.0	95.5	93.7
1966	94.6	96.6	103.1	97.8	97.7
1967	100.0	100.0	100.0	100.0	100.0
1968	107.0	103.3	108.4	98.9	105.1
1969	112.8	107.0	110.7	100.9	108.9
1970	119.8	113.7	115.1	105.9	114.9
1971	127.6	119.1	124.1	114.2	122.5
1972	137.4	122.4	132.5	118.6	129.5
1973	146.7	127.0	155.4	145.5	143.7

<sup>a/</sup> Index of average hourly earnings of U.S. production workers in the "miscellaneous food and kindred products industry."

SOURCE: U.S. Department of Labor [16].

<sup>b/</sup> Wholesale price index for "general purpose machinery and equipment" in the U.S.

SOURCE: U.S. Department of Labor [17, 18].

<sup>c/</sup> Index of weighted average freight revenue per ton of cottonseed products for Class I railroads in the U.S.

SOURCE: Interstate Commerce Commission [4].

<sup>d/</sup> Wholesale price index for "fuels and related products and power" in the U.S.

SOURCE: U.S. Department of Labor [17, 18].

<sup>e/</sup> Each index weighted as follows: labor - 0.35; machinery - 0.25; transportation - 0.24; fuel and electricity - 0.16.

Table 6. Results of Regressing Wholesale Market Value of Cottonseed on Farm Price of Cottonseed, a Marketing Cost Index, and a Shift Variable for the Last Two Years, by Regions, 1958-73<sup>a/</sup>

Region	Constant Term	Farm Price	Marketing Cost Index	1972-73 Shift Variable	R <sup>2</sup>	Durbin-Watson Statistic
Southeast	14.02 (1.28)	0.88* (7.38)	0.37* (3.03)	42.90* (7.58)	0.98	2.46
South Central	10.09 (0.89)	1.01* (8.57)	0.26 <sup>Δ</sup> (2.01)	36.44* (6.22)	0.98	2.65
Southwest	-13.68 (-0.99)	1.14* (7.32)	0.42* (2.69)	27.61* (3.88)	0.97	2.35
West	4.95 (0.30)	1.11* (7.01)	0.28 <sup>θ</sup> (1.51)	39.71* (4.61)	0.97	2.09

<sup>a/</sup> Number in parentheses below each estimated coefficient is the Student's t-ratio for the coefficient.

\* Significant at 99% confidence level.

<sup>Δ</sup> Significant at 95% confidence level.

<sup>θ</sup> Significant at 90% confidence level.

#### Summary and Conclusions

This analysis has documented regional differences in wholesale marketing margins for crushed cottonseed over the period 1958-73. It has also illustrated the basic reason for producer unrest about cottonseed farm prices during recent years; e.g., the unusually high marketing margins and low farmers' share of wholesale income during the 1972 and 1973 crop years. The Southeast Region has exhibited the largest increases in marketing margins and the largest declines in farmers' share.

Regression analysis gave additional support to the hypothesis that marketing margins were unusually large during the 1972 and 1973 marketing seasons. Use of a marketing cost index to allow for increases in costs of handling cottonseed did not alter this conclusion.

This study contributes to understanding marketing margin behavior for cottonseed and it suggests that much potential exists for improving market efficiency. It would be helpful to further examine margin behavior at the retail level; however, much additional data would be required. Also, it would be informative to compare cottonseed margins with those for other oil and meal bearing crops, such as soybeans and peanuts. Either of these projects would constitute legitimate marketing research inquiries, since they would help locate problem areas and facilitate more detailed research aimed at improving marketing efficiency.

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## FOOTNOTES

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<sup>1/</sup>A similar marketing cost index was used by Ethridge and Brannen [1].