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COTTON CROP CONTRACTING PROBLEMS AND POTENTIALS

A Task Force Report by
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Thomas L. Sporleder and John P. Nichols

a research project conducted for
COTTON INCORPORATED
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Robert E. Branson
Coordinator

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REPORT HIGHLIGHTS

Crop contracting may be defined as an agreement between producer and buyer, made prior to harvest and often before planting time, to purchase all or part of a producer's crop. Terms of price establishment, quality and quantity of product, and time of delivery are stipulated in the contract. Crop contracting is far from new, having prevailed in the United States for years.

This study was conducted to examine the development of, variations in and reasons therefor, for cotton crop contracting in the United States. More importantly, however, the major focus was on motivations underlying cotton crop contracting, the advantages and disadvantages of this marketing method, and its potential future role. Also of key importance is an evaluation of its estimated effect upon cotton price stability. Conclusions are drawn in the first section of the highlights regarding the foregoing research objectives. Recommendations from the research for improvement of the system for cotton crop contracting, as opposed to just improving the contract, are suggested in the second portion.

The study was conducted for Cotton Incorporated under a research grant from its Economic Research and Development Division. All major segments of the cotton marketing industry were included in the nationwide research endeavor: cotton gins, merchants and/or shippers, cooperatives, mills, Producer Credit Association and commercial banking organizations, and the Agricultural Market Service of the U.S. Department of Agriculture.

Conclusions

General

* Cotton crop contracting as it is now known had its beginning in the United States in the 1950's. The peak year of contracting thus far was in 1973. In that year there was a high level of world cotton demand,

a perceived short fall in the cotton supply and sharp change in foreign exchange rates all of which made contracting attractive. Also, Japan was particularly active in contracting in 1973.

* The recent levels of crop contracting reported by the U.S. Department of Agriculture are generally confirmed by this study, between a fourth and a third of the U.S. cotton crop in 1972, two-thirds to three-fourths in 1973, and about one-fifth in 1974. Industry leaders expect contracting in the future to range between 20 and 50 percent of the crop. It will reach the upper figure only in periods of strong demand for cotton in relation to foreseeable supplies.

* Considerable variation in cotton crop contracting has occurred among U.S. production regions. Contracting is more prevalent in California-Arizona, the Lower Rio Grande Valley of Texas and the Mississippi Delta states than elsewhere. Activity is low in most of the Texas-Oklahoma area and among the Southeastern states, except when a possible short fall in cotton supply induces merchants, mills and export buyers to expand contracting. The latter areas have less stability in cotton yields and quality than do the former, and, therefore, are not generally as favored for contracting at the present time.

* It is useful to consider the timing of contracting as divisable into three periods, November - January, February - May and June - October. The first period is active for long established mill-producer or merchant-producer relationships and involves primarily large producers in California-Arizona, Texas Rio Grande Valley and the Mississippi Delta. Such contracting can represent about 20 percent of the total national production as it did for the 1974 crop.

When contracting is active in the second and third periods, it may reflect concern over adequacy of cotton supplies. Increased activity occurs in the first mentioned areas plus expansion into the Texas-Oklahoma and Southeastern regions.

* Crop contracts are on an acreage or bale basis, either of which may represent all or part of the growers' anticipated production depending on the agreement made.

* Prices stipulated in crop contracts are specified either in cents per pound or the equivalent expressed in points on or off the December futures at the time or the government loan price for the crop year. A call provision can be used which allows the actual price to be fixed by the futures market on a future day. Another arrangement states a minimum price with a sharing of any price increase above that equally by the grower and the buyer.

* Contracts may be either on a hog round basis (stipulated price irrespective of quality produced) or be on a schedule of premiums or discounts according to the quality produced and delivered. Harvesting and ginning instructions may be stated since these can affect cotton quality.

Cotton Mills

* Of 18 of the major cotton mills surveyed, 12 had engaged in cotton crop contracting. The mills surveyed accounted for an estimated 40 percent of the domestic mill cotton consumption in 1973. Among the ones using crop contracting, an average of 21, 34 and 14 percent of their cotton purchases were obtained by crop contracts during 1972, 1973 and 1974.

* Mills experienced in the use of crop contracting say it definitely has a continuing place in cotton marketing, even though some compliance problems were encountered in 1973.

* Major motivations behind crop contracting by mills were:
  1. Helps establish cotton and mill goods prices so mill output can be sold farther ahead.
  2. Helps obtain desired quality cotton from known production areas.
  3. Assures new crop cotton deliveries in October and November when sometimes it is difficult to get supplies delivered from dealers and warehouses.
  4. Already have established satisfactory, continuing crop contracting relationships with an appreciable number of cotton producers.
  5. Procurement cost savings may be available from crop contracting directly with producers versus buying in other marketing channels.

* Difficulties mills reported regarding crop contracting included these:
  1. Futures price hedging is not as efficient against an acreage contract as it is for a bale contract; therefore, prefer bale basis.
  2. Compliance is sometimes a problem when dealing with unknown producers or those not contracted with before.
  3. Cotton grade and staple received may vary too much from needs of small mills or those with specialized lines of products that cannot use a wide range of qualities.

Cotton Merchants

* Almost all of the major U.S. cotton merchants expect crop contracting to continue as a buying method.

* Individual cotton merchants in recent years purchased anywhere from 10 to 90 percent of their cotton needs for a given year via crop contracting. The proportion contracted depends on the perceived supply and demand situation for the given year, and especially on the attitude of the individual merchant toward crop contracts.

* Motivations for crop contracting by cotton merchants included:
    1. Gives merchant an earlier committed cotton supply which is important in competing for foreign markets as well as domestic sales.
    2. Can set cotton price earlier which allows early entry into foreign markets.
    3. Crop contracts permit merchants to avoid the expense of entering the futures market to offset advanced sales to mills. If a "call" contract is made, it avoids entry into the futures market up to the time the seller fixes the price.

* Export buyers use crop contracting because it assures them a cotton supply for foreign mill customers that desire to plan and buy ahead beyond the immediate crop marketing year. Reportedly this is especially important among mills in the Far East.

* The major disadvantage reported by merchants was non-performance by a few producers on their crop contracts.

Cotton Producers

* Large producers experienced in crop contracting prefer it for half or more of their production when:
    1. It permits fixing of price at a level deemed profitable to them at the time the contract was let.
    2. Barring crop failures, out of pocket production costs for the total crop may, in effect, be covered by the contract returns. When needed, it is an aid in securing crop financing.

* Most producers, outside California-Arizona, prefer an acreage contract and a hog round price rather than a bale contract with staple and quality premiums and discounts. This is because the quality of upland cotton and number of bales produced is less predictable in the other states.

* Difficulties cotton producers encounter in crop contracting include:
  1. Merchants and mills prefer to move to a bale and quality basis for contracts because they ultimately must market on that basis. Also, that type of contract can be more adequately hedged in the futures market when necessary.
  2. Some financially marginal merchants or those who failed to adequately hedge their market position have failed to perform on contracts with growers.
  3. Difficulty in knowing what is a reasonable price for contract cotton.

* Time preferences among producers for crop contracting were reported to be November - January, 23 percent; February - May, 56 percent; and June - October, 21 percent.

* Some lending institutions are beginning to give attention to crop contracts as a basis for production loans. For this to occur contracts must be made in the October - January time segment when farm credit lines are established for the coming year.

Crop Contracting Effects on Cotton Prices

* Price variability during the 12-month spot market season for the 1973 cotton crop, when about two-thirds to three-fourths of the crop was under crop contract, was no larger than it was in 1972 when only about a fourth to a third of the cotton was crop contracted. This was found to be true for prices in the spot as well as the futures market. Therefore, on the limited evidence available thus far, it cannot be concluded that crop contracting increased price variability within the August - July marketing season.

* Crop contracting extends the market for a single crop to about 21 months. On this basis, price variability for the 1973 crop was about 50 percent larger than for the 1972 crop. However, crop contracting is a partial substitute for taking hedging positions in futures trading. Therefore, there is reason to conclude that without crop contracting for the 1973 crop, some of the effects would have merely been transferred to the futures market. The net result could have been essentially the same price instability without crop contracting. Also, the price of any agricultural product sold under essentially free market conditions will show greater variability over a 21-month period than for 12 months.

Market Information

* Almost unanimous agreement was expressed by all segments of the industry that cotton producers, to operate properly with crop contracting, need a vastly improved system of market information. Included would be educational guidance on how to obtain the information and how to use it.

Recommendations

The following recommendations are offered as suggestions to improve the marketing system for cotton through crop contracts.

To Government

* Consideration should be given to developing a low cost government crop insurance program consistent with cotton contracting that would be available in all production counties and cover one-third to one-half of the normal cotton yield for a producer. Thereby a crop contracting grower would have the funds, in the event of a complete or near total crop failure, to either purchase cotton for delivery on a one-third production contract or to buy out of the contract.

* Require registration through the Agricultural Stabilization and Conservation Service (ASCS) offices of all persons or firms offering cotton crop contracts. Included would be general information as to the background of the firms concerned plus financial ratings of the firms as provided by one or more nationally known business rating services. Producers would have access to this registry at their local ASCS offices to guide them in contracting decisions.

* Require that producers' ASCS production records and reports be available to crop contracting firms as a check 1) on the producers' potential to deliver before a contract is signed and 2) when needed, on cotton delivery performance under contracts.

* ASCS offices should be given consideration for 1) the record keeping point of all crop contracting, 2) compliance performance recorder on producers and buyers and 3) issuer of stamps to be affixed to green cards for contracted cotton so it may be readily identified from uncontracted cotton in all marketing channels.

* Evaluate the possible need to designate an agency such as the Commodity Exchange Authority, which now has monitoring responsibility for futures trading, to monitor crop contracting to avoid development of market position malpractices. The CEA (in the future to become the Commodity Futures Trading Commission) now has monitoring responsibility for futures trading.

To Merchants and Mills

* A crop disaster clause should be formulated that is reasonably equitable to the crop contract buyer and seller. Such a provision will assist materially in greater producer willingness to crop contract on a bale basis up to a third or half of their normally expected production.

Producers and merchants interviewed were generally favorably inclined toward this possibility.

* Establish a stated or known price discount where acreage and hog round crop contracts are offered, in comparison with bale and quality contracts, to reflect the added associated risks to the buyer. The added risks arise from the interdeterminant quantity and quality of cotton that may be delivered under an acreage and hog round basis, plus the concurrent inability of the buyer to establish an efficient futures trading hedge position.

* Obtain certified records from the Agricultural Stabilization and Conservation Service office of the U.S. Department of Agriculture, regarding the producers' past cotton acreage, yields and production. This will assist in avoidance of producer noncompliance problems arising from unrealistic levels of contracting by growers.

To Producers

* Most cotton producers would have profited by taking three separate price positions during the 1973-74 and 1974-75 marketing years, instead of only one. Therefore, it is suggested that producers consider contracting only one-third until harvest. This assumes that in each case the contract price offered equals to or exceeds the producer's cost of production. The mill or merchant profit position is not determined by a single contract, whereas for the producer it is, if the latter contracts his full production under a single crop contract with a single price.

* It appears that crop contracting will tend toward a bale and quality basis. Therefore, producers must exercise care under bale contracting

to assure that they can deliver the agreed upon number of bales. Consequently, it is recommended that producers avoid contracting more than one-third to one-half of their anticipated total cotton production. This policy will help prevent the need for producers to buy cotton, because of poor production yields, to fulfill their contracts.

* Producers should carefully check, through banks and/or government offices, on the financial reliability and reputation of merchants with whom they make contracts.

* Cotton growers should encourage the inclusion of crop disaster clauses in crop contracts. Such a provision makes bale contracts far more acceptable from the grower standpoint. Disaster clauses though must be firmly defined and not usable as a convenient means of escape from producer compliance on contracts.

* Establish a reliable, timely and fully available market information system for cotton producers, operated on behalf of cotton growers. Several alternatives can be considered, one of which may be the provision of such a service by Cotton Incorporated from producer funds.

* Individual cotton producers should move toward organization of local area marketing associations for the purpose of attaining adequate physical volume of cotton acreage and production to negotiate directly with merchants and mills in crop contracting. Such groups can assume better initiative in obtaining contracts than individual producers operating separately.

To the Industry

* Consider the possible limitation of crop contracting, if on a fixed price basis, to a specified beginning date of the year preceding the

harvest of the specified crop. Limitations on cotton marketing are not desirable, but it appears extremely risky for producers as well as buyers to contract ahead several years at fixed, or even on a formula pricing basis, in a highly volatile national and international economy such as is now being experienced. A system of options for contracting, however, could be devised to provide supply assurance for buyers for future years subject to acceptable price terms being agreed upon each year within a specified contracting period.

* Crop contracting provides a competitive marketing advantage that is not otherwise available to cotton. Therefore, its use should be continued. Every effort should be made to improve the framework within which crop contracting operates in order that its benefits can be realized to their fullest extent.

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CROP CONTRACTING - WHAT AND WHY IS IT?

Crop contracting may be defined as an agreement between producer and buyer, made prior to harvest and often before planting, to purchase all or part of a producer's crop. Terms of price establishment, quality and quantity of product, and time of delivery are stipulated in the contract. Crop contracting is far from new. It has prevailed in U.S. agriculture for years.

Contracting has been common between growers and processors of canning vegetables for years. Seed stock for many crops are grown under contract. In the livestock sector, contracting between processing plants and broiler growers emerged in the 1960's as a major operational system [1].

Crop contracts for cotton first received wide attention in 1973. However, even cotton crop contracting extends back to the 1950's, though it was then on a comparatively small scale. Several factors moved it to a dominant position in 1973. One was growth of Japan to a major international marketer as well as processor of cotton at home and among other Far East countries. To assure itself of the essential cotton supplies, action was taken to guarantee them by advance contracts. Secondly, through their world trade position contracts, Japanese trading companies were among the first to perceive a potential short fall in world cotton supplies from the 1973 crop. They moved to capitalize on this expectation by expanding their crop contracting activities.

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Simultaneously a third factor emerged. Wide fluctuations developed in international monetary exchange rates. The American dollar, long a stable international trade currency, underwent considerable weakness and devaluation in foreign monetary markets. Therefore, it became attractive to world traders to hold commodities rather than dollars. Cotton was one of the desirable commodities, being indestructable given moderate care.

Such added impetus to cotton crop contracting by Japan, and realization of its origins, could not go unnoticed. Thus, fourthly, U.S. merchants and mills felt compelled to respond by expanding their own contracting activity to assure themselves of their usual offtake from the crop. The combined result was coverage of approximately 75 percent of the 1973 U.S. cotton production by crop contracts, according to market news reports of the U.S. Department of Agriculture.

By contrast, U.S. Department of Agriculture August 1 estimates are that crop contracting covers only about 20 percent of the U.S. 1974 cotton production. Such a decline in contracting has led some observers to conclude that contracting is only a temporary phenomenon. However, knowledgeable producers, merchants, and mills recognize it has favorable attributes and believe it will continue as a cotton marketing method. Admittedly, the system of cotton crop contracting has left considerable to be desired. For example, the terms of contracting do not appear to have attained stability. Also, noncompliance on contracts has been a problem as some growers failed to deliver their 1973 crops and some buyers did not stand behind their contracts, especially in 1972 and 1974. Nor is there a consensus as to whether crop contracting is a favorable or unfavorable influence on cotton pricing, especially with respect to promoting price stability.

The latter problem interfaces with market news reporting for crop contracting. The question is whether the market information is anywhere near adequate in breadth and timeliness needed for such a marketing method to function properly.

Realizing the foregoing uncertainties regarding contracting, Cotton Incorporated through its Economic Research and Development Division funded the research reported herein. This report endeavors to clarify the issues, suggest possible solutions, and encourage consideration by the cotton industry as a whole, and by producers in particular, of the future role contracting should serve.

MARKETING CHALLENGE FACING COTTON

Though it is beyond the purview of this report to detail the present competitive position of cotton, it nonetheless seems appropriate to identify some of the salient circumstances. The purpose is to underline the role that crop contracting can play in the cotton industry.

Since 1960, cotton's share of the U.S. fiber market has declined from 64.6 percent to one of only 29.3 percent of the total [2]. Except for the expanding size of the fiber market, cotton production would be only about 65 percent of its present level. Appearance of synthetic fiber, especially polyester in permanent press blends, has provided a convenience to apparel care which cotton alone cannot yet meet. Yet, on the other hand, cotton has innate characteristics that are unique to it and provide a comfort factor to the wearer or user. In the competition for market share, any factor which impedes cotton marketing worsens cotton's ability to maintain its market.

Among the handicaps confronting cotton are the following. There is less breakage (ends down) of synthetic fiber on spinning equipment than for cotton. Broken yarns are retied by labor attending the spinning machines. The more ends down, the more labor required to man the machines. Thus cotton spinning costs are higher.

Cotton has not had the benefit of intensive marketing programs like those supporting synthetic fibers for more than a decade. Advertising, sales, and promotion expenditures for the competitive fibers have been substantial. Only recently was Cotton Incorporated established to evolve a marketing program to support cotton. Much progress has been made. However, equality of effort has not yet been attained because that will require more time. Mill executives readily say that they are sold synthetics but instead must go buy cotton. This says much about the differential in the market support situation.

From the mill viewpoint another significant problem for cotton is its price instability. Intensification occurred in 1973 when the price ranged from the mid-thirties to the 90 cent level. Meanwhile the price of polyester reportedly changed only about 5 cents. Thus a question in the present study is whether crop contracting can assist in achieving greater cotton price stability in the fiber market.

One further factor is important to the current cotton situation--the marked change in the government cotton program. For the 1974 crop, acreage was not limited. Also the loan price was set near 25 cents per pound so it would not serve as a stimulus to production. The new goal of government programs is to unfetter agriculture from its years of government acreage controls and incentive support prices and instead let competitive market prices and production responses work. But this can and usually does lead to considerable year to year oscillation in crop prices and production. That, however, is exactly what cotton does not need, for it impairs its critical market battle with synthetic fibers.

Prior experience indicates that a year of high cotton prices is likely to evoke larger acreage and production the following year. The increased cotton supply sharply reduces prices the next year. That causes farmers to plant fewer acres the following year and have less production. Prices consequently again go upward. The cycle repeats itself with cotton prices moving in a continual up and down pattern. To observe this production and price behavior, one must examine the 1920-29 decade which was prior to initiation of the government acreage control and Commodity Credit Corporation loan programs. During that period the season average cotton prices received by farmers ranged from 12.47 to 28.69 cents per pound and production from 7.9 to 17.9 million bales. By comparison season average prices at which farmers sold cotton during 1960-69 varied from 21.09 cents to 32.92 cents per pound and production ranged from 7.4 to 15.3 million bales.

The coefficient of variation for prices was 23 percent for 1920-29 and 17 percent for 1960-69, Tables 1 and 2. During 1960-69 the price moved mostly downward as government subsidy payments increased from about 3 to 16 cents per pound.

With cotton facing the foregoing competitive problems, crop contracting needs to be a useful marketing tool and not an added handicap. This report endeavors to assess its potential role.

Table 1. Production and season average price of upland cotton, United States, 1920-29

Year	Production	Season average price per pound received by farmers
	1,000 bales[1/]	cents
1920	13,429	15.92
1921	7,945	17.01
1922	9,755	22.87
1923	10,140	28.69
1924	13,630	22.91
1925	16,105	19.59
1926	17,978	12.47
1927	12,956	20.19
1928	14,477	17.99
1929	14,825	16.79
Range	10,033	16.22
Coefficient of variation	23.36	23.37

[1/] 500-pound gross weight bales.

Source: U.S. Department of Agriculture, Agricultural Statistics, 1937.

Table 2. Production and season average price of upland cotton, United States, 1960-70

Year	Production[1/]	Season average price per pound received by farmers [2/]	Support payment rate per pound	Total producer returns per pound
	1,000 bales	cents	cents	cents
1960	14,272	30.19		30.19
1961	14,318	32.92		32.92
1962	14,867	31.90		31.90
1963	15,334	32.23		32.23
1964	15,182	29.76	3.50[3/]	33.26
1965	14,973	28.14	4.35[3/]	32.49
1966	9,575	20.84	9.42	30.26
1967	7,458	25.59	11.53	37.12
1968	10,948	22.15	12.24	34.39
1969	9,990	21.09	14.73	35.82
1970	10,192	21.98	16.80	38.78
Range	7,876	12.08	13.30	8.59
Coefficient of variation	22.88	17.73	48.15	8.26

[1/] Figures are in 480-pound net weight bales from 1969 to 1970. Prior to 1969, in 500-pound gross weight bales.

[2/] Gross weight price, including bagging and ties, except that extra-long staple cotton is included in net weight price. Includes allowance for unredeemed loans and purchases by the Government valued at the average loan and purchase rate, by State.

[3/] Paid to small producers and producers planting only domestic allotment.

Sources: U.S. Department of Agriculture, Agricultural Statistics, 1972.
U.S. Department of Agriculture, Cotton Production and Farm Income Estimates under Selected and Alternative Programs, Economic Research Service, Agricultural Economics Report No. 212, September 1971.

THE RESEARCH PLAN

Given the cotton marketing situation and the developments regarding contracting, the following research objectives were considered pertinent.

The first was to determine the basic motives that lie behind cotton crop contracting on the part of domestic and foreign buyers and producers. The second was to appraise the effect of contracting upon the bargaining position of cotton growers. And the third was to interpret the implications of contracting for the design of a more effective cotton marketing system.

Analyses based upon historical data were out of the question because neither the required data nor the time span of experience existed. Therefore, it was necessary to analyze instead recent statistical information, principally 1970 through mid 1974, for indications of current and potential market effects of contracting. Even more important, however, was the need to get at the motivations and goals of the cotton industry in using crop contracting. These could best be obtained by executive interviews among the key industry decision makers. From these a conclusion would be reached as to the probability that continuing need exists for contracting and whether the pricing and compliance problems might be resolved through better market organization for this marketing method.

Field research was organized to interview management of mills, merchants, cooperatives, gins and financial institutions serving producers and/or merchants. Recognition was given to the geographic distribution of the industry. Major mill concentration is in the South and Southeast. The dominant merchants are mostly concentrated in Memphis, Dallas and parts of California. The four major regional cotton producer cooperatives were visited. Gins were sampled from five production regions: California-Arizona, El Paso-New Mexico, Texas-Oklahoma, the Mississippi Delta states and the Southeast. Several major financial institutions were included in selected areas.

Personal interview sessions were the primary research procedures using depth interviews that covered contracting operations and individual or company attitudes. An exception was the gin survey. Distances to individual gins, and therefore prospective travel costs, made it advisable to conduct that survey by telephone.

All interviewing was by the professional staff of the Texas Agricultural Market Research and Development Center. Summaries were prepared of each interview and references to key questions tabulated. In view of the high degree of concentration of business among several major firms, emphasis was placed on obtaining responses from these firms. Specifics of the research sample coverage are discussed in the relevant sections of the report.

AN OVERVIEW OF COTTON CONTRACTING

When It Began

According to interviews among 18 of the nation's major cotton mill firms, many of which operate numerous mill plants within their companies, cotton crop contracting first appeared in the early 1950's. Thus it is by no means a new phenomenon. Crop contracting during the 1950's was primarily between mills and large producers who had an interest in direct selling to mills. The earliest contracting between merchants and mills encountered in this survey was in the early 1960's. According to industry executives familiar with the history of cotton marketing, crop contracting never amounted to more than 10 percent of the total crop prior to about 1967. This is also confirmed by a USDA report by Mighell and Hoofnagle [1].

Volume of Contracting

A review of cotton crop contracting from 1970 to 1974 is sufficient to trace major changes in volume over recent years. According to the U.S. Department of Agriculture, contracting covered 11 percent of the deliveries from the U.S. crop in 1970, 43 percent in 1971, 36 percent in 1972, 75 percent in 1973, Table 3. By August 1 of 1974, only 21 percent of the 1974 crop was under contract. For the 1970-74 period, the average was about 37 percent. Because of the recency of cotton contracting reporting, variation has occurred in the agency given reporting responsibility. Except for part of 1972 and 1973, it was assigned to the Cotton Division, Agricultural Marketing Service. In the interim period, estimates were provided by the Statistical Reporting Service of the USDA.

Table 3. Forward contracting of upland cotton by farmers, United States, 1970-74

State and geographic area	Crop Year									
	1970	1971	1972			1973			1974	
	End of Season[1/]	End of Season[1/]	May 1[1/]	Aug. 1[2/]	End of Season[1/]	Apr. 1[1/]	Aug. 1[2/]	End of Season[1/]	Apr. 1[1/]	Aug. 1[1/]
	percent									
Southeastern:										
North Carolina	3	4	20	†	8	20	†	66	8	8
South Carolina	5	20	65	†	30	33	†	75	13	17
Georgia	4	6	11	†	6	8	†	64	4	4
Alabama	15	48	46	†	33	60	†	83	10	11
Area average	8	28	38	21	23	34	41	73	9	10
South Central:										
Missouri	22	75	85	†	63	68	†	89	35	36
Mississippi	25	69	77	†	72	82	†	87	36	37
Arkansas	17	73	83	†	74	85	†	90	30	30
Louisiana	8	26	46	†	47	72	†	84	20	22
Tennessee	2	20	36	†	44	58	†	84	15	17
Area average	17	59	71	59	66	78	72	87	29	31
Southwestern:										
Oklahoma	*	7	2	†	7	17	†	35	0	*
Texas	7	39	14	†	13	16	†	69	5	7
Area average	7	37	13	13	13	16	28	68	5	6
Far Western:										
New Mexico	*	8	2	†	2	9	†	69	13	12
Arizona	6	19	53	†	29	55	†	75	44	40
California	8	28	46	†	25	40	†	80	64	59
Area average	6	23	45	31	24	40	57	75	55	51
United States	11	43	39	32	36	42	45	75	19	21

[1/] Estimates made by Cotton Division, Agricultural Marketing Service.
[2/] Compiled from reports of the Crop Reporting Board, Statistical Reporting Service.
* Less than 0.5 percent. † Information not available.
Source: U.S. Department of Agriculture, Agricultural Marketing Service, Cotton Division.

Location of Contracting

Considerable variation has occurred in contracting among the geographic regions. In the earlier period contracting was highest in the Mississippi Delta area, primarily Louisiana, Mississippi, Arkansas and Tennessee, in terms of total acreage and production involved. The range in contract coverage was from 17 percent of the crop in 1970 to 87 percent in 1973. For the current crop year, 1974, it is about a third of the crop, Table 3.

More recently the Western Region is the leading area for cotton crop contracting. The proportion under contract for the crop years of 1970 through 1974 was 6, 23, 24, 75 and 51 percent, respectively. Contracting in 1974 declined very sharply in the Southeast and Southwest regions, dropping to only 10 and 6 percent of the crop, respectively.

Timing of Contracting

One purpose of contracting is to provide the buyer an assured supply of cotton within a specified grade range. It, therefore, behooves the contractor to let contracts early in the year before others can encroach on his preferred supply sources. Furthermore, the producer often is interested in obtaining a contract prior to planting time. These motivations led to the establishment of a seasonal pattern in contracting. Statistical estimates of cotton crop contracting were not reported by the U.S. Department of Agriculture prior to April or May the first of each year. Another estimate was made for August 1. Unfortunately, this prevents calculation of a monthly or quarterly seasonality pattern. Interviews with both mills and merchants confirmed that contracting activity is initiated as early as October through January for the forthcoming crop.

The reliability of estimates of contracting is probably not resolved. Being a new and experimental activity for some merchants

and mills, the universe of contractors upon which to base estimates probably lacks desired stability. Therefore, the statistical sample cannot be fine tuned for accuracy of reported data. Another difficulty lies in the change in responsibility for the estimates away from the Agricultural Marketing Service to the Statistical Reporting Service and then back again. There is little correspondence between the estimates of the two agencies. Evidences of these problems appear in the seasonal graphs for the South Central and the Far West regions, where contracting is generally prevalent, Figure 1. Contracting should show a stable or upward movement in the percentage of the crop under contract from April through the end of the crop year. Other movements reflect either sampling or weighting errors in data reporting. Consideration must be given, however, to the fact that some inexperienced buyers entered into contracts in these years and reneged on or bought out of their contracts, as did some cotton producers. Overall, however, the latter did not represent a major quantity nationally.

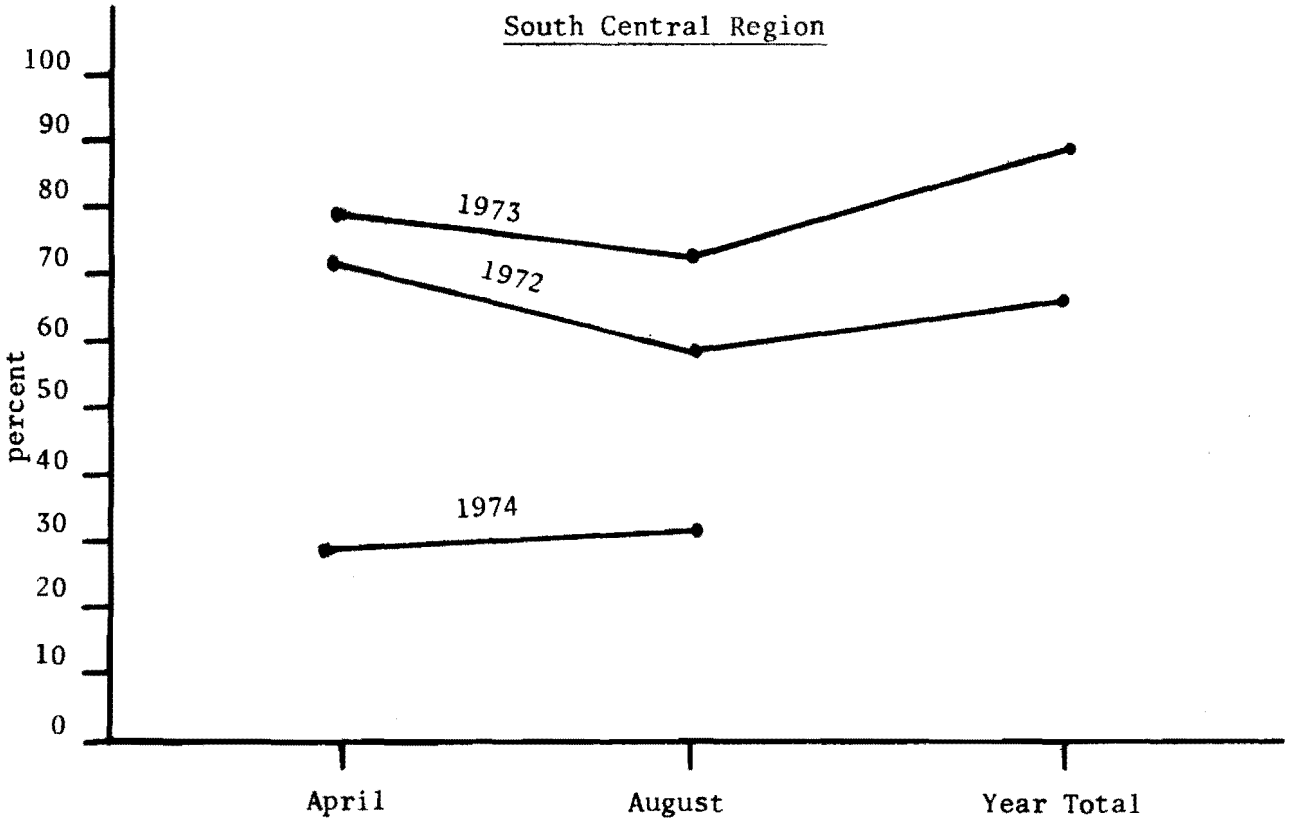
Contracting Terms

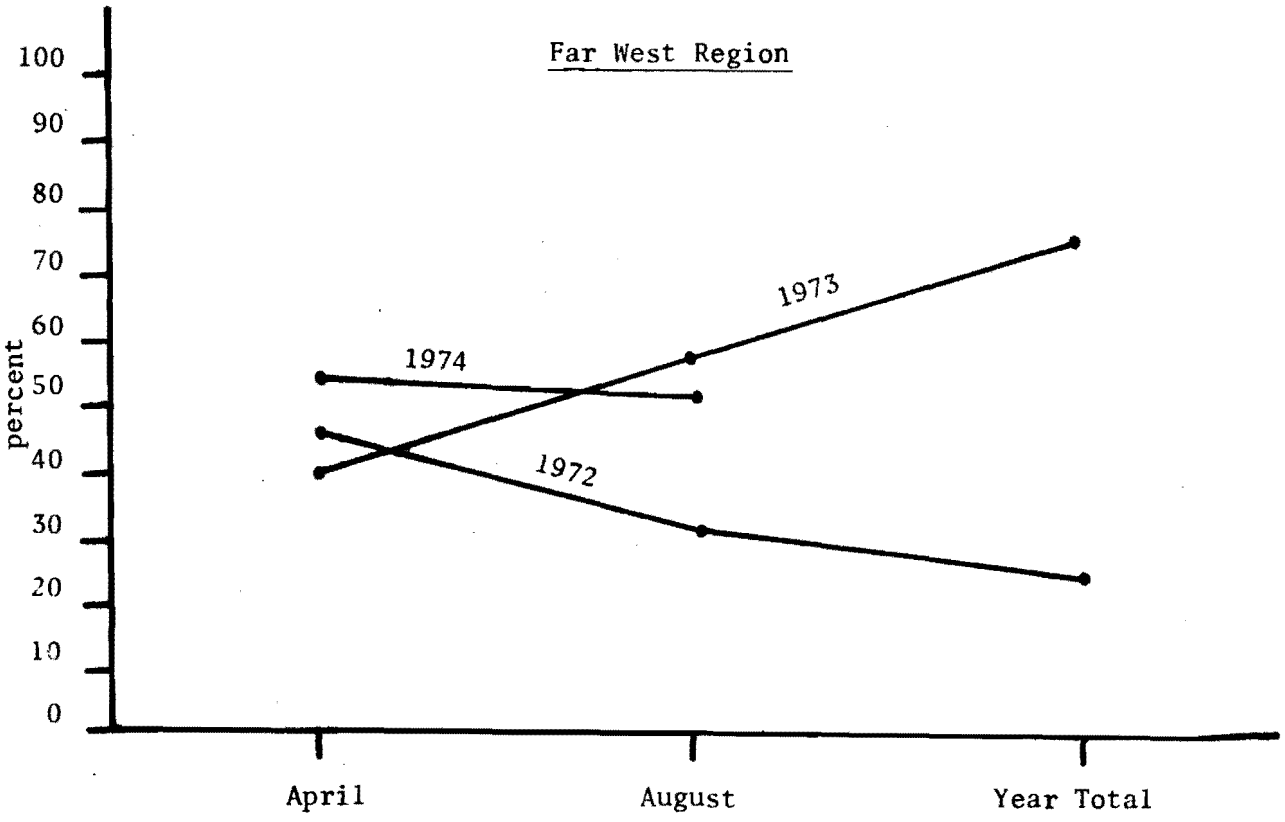
Several contract terms have been employed in recent years for cotton contracting. Each of the principal options used is discussed below with the primary advantage of each noted.

Bale Versus Acreage

Usually the first contract feature considered is whether an acreage versus bale basis is used. An acreage agreement requires the producer to deliver all of the crop grown on the designated land. A bale contract requires that a specified number of bales be delivered, whether it is produced or not. Cotton growers prefer the acreage contract since they have no contract risk in terms of variability of size of the crop due to weather conditions. Most bale contracts

Figure 1. Percent of crop contracted, selected cotton production regions by April, August and year total, 1972-74





require that the quantity must be delivered. Merchants and mills desire bale contracts since they must ultimately deal in bales in their respective sales and spinning requirements.

Fixed Versus Call Price

A fixed contract price is normally indicated in one of three ways. The price may be stated in number of cents per pound, say 52 cents, to be paid upon delivery of the cotton in conformance with contract terms.

Another alternative is to state the price in terms of a basis, on or off, the December futures market number two contract price. That futures contract is for strict low middling 1 1/16 inch cotton. The basis is stated in points with 100 points to a cent. Reflected in the basis is the price spread between the spot market price for cotton as of a given date and the futures market price of a stated month. In crop contracting the basis also reflects a differential for quality between the cotton expected from the contract as compared with the futures contract grade of strict low middling 1 1/16 inch staple and an allowance for transportation costs to the merchant warehouse or mill warehouse involved.

A third method is to express the contract price in terms of a basis differential from the announced government loan price for the crop year involved. Since the loan price is now at a low level, contract prices geared to it will likely be in terms of so many hundred points over the loan. Again quality differentials and transportation costs will also be reflected in the basis used. The 1974 loan price was initially announced at 25.26 cents per pound for upland cotton for the base quality and staple, strict low middling, 1 1/16 inch compared with spot market quotations in early December 1974 of 41.40 cents.

A "sellers' call" allows the cotton producer the option to select the time between the signing of the contract and date of delivery when he wishes to set the price. Usually the contract is stated in terms of the number of basis points by which the price shall differ from the December futures market price of a number two contract. A number two contract calls for strict low middling 1 1/16 inch length staple. The basis again reflects cotton quality and transportation costs from the producer to the delivery point involved.

When a merchant or mill holds a sales contract that is offset by a crop contract, they generally prefer to use a fixed price for the crop contract since it allows the setting of their operating margins within the two agreed upon prices. If no sales contract exists to use against the crop contract, an "on call" price provides the advantage of delaying the time the merchant or mill needs to take an offsetting futures contract position as a hedge against the price risk involved in forward contracting for cotton. The saving is in the reduced cost of money required to post margins for part of the period, or after the call, rather than the total contract period involved.

Producers, on the other hand, usually prefer a fixed rather than "on call" price. The incentive to farmers for contracting is to fix price rather than speculate on future price changes. Furthermore, even if a farmer wants to contract his cotton but set the price later because he feels prices will go up, most farmers are not adequately knowledgeable about the futures market to feel comfortable with an "on call" price arrangement.

Hog Round Versus Grade and Staple

A fixed price, regardless of cotton quality delivered, is termed a "hog round" agreement. If price is to vary with quality, it is a "grade and staple" contract.

Most farmers prefer a hog round contract because the grade and staple obtained in a given crop are partly a function of weather conditions prevailing during the growing and harvesting season. Since weather is unpredictable, the associate quality risk is shifted to the buyer in a hog round contract. However, merchants and mills ultimately depend on an adequate supply of specific qualities of cotton. The merchant's primary function is to be able to assemble and offer his customers uniform lots of grade and staple in cotton. These lots may be labeled either under his own house names or by USDA grades. Whichever, the mill desires "even-running" bales of known fiber characteristics, so that good performance is obtained on its spinning equipment. Permitted thereby is a higher degree of control over the quality of the woven fabric produced by the mill, an aspect that helps it to hold or expand its own products market.

With the foregoing brief review of cotton crop contracting, it is now appropriate to look more closely at the industry's experience, attitudes and views regarding it.

PERFORMANCE OF COTTON CONTRACTING, MOTIVATIONS, AND ATTITUDES HELD BY INDUSTRY SEGMENTS

Markets are built or lost through the degree of meeting the end users' requirements. Since crop contracting is not a consumer service but a marketing service that stops with the mill, the latter is the logical place to begin. Therefore, the presentation will begin with the mills and proceed through the marketing system back to the producer.

The Cotton Mill Perspective

Before examining the mill viewpoint, it is pertinent to consider the composition of the mill survey. According to an unofficial estimate by the U. S. Bureau of the Census, there were approximately 200 mill firms in the nation in 1970. Eighteen mills comprised the Market Center's survey. All are members, with minor exceptions, of the top 25 in the industry in cotton usage. Information was secured as to their cotton consumption in 1970 and 1973. It is summarized below, Table 4. The surveyed mills accounted for an estimated 40 percent of the U. S. domestic mill consumption of cotton in 1973.

Mill Contracting Activity

Of the 18 mills, 12 had engaged in crop contracting. Two had been contracting since the early or mid 1950's. For most the starting date was in the late 1960's or the early 1970's. All mills surveyed who had previously engaged in cotton crop contracting, save one, were doing so in 1974. The amount of contracting, however, was generally less than during 1973. Not all mills provided figures regarding their contracting. The average among mills who did was 21 percent of their respective purchases of all cotton during the two or three years prior to 1973. For 1973, the proportion was about 34 percent, and in 1974 only 14 percent.

Table 4. Cotton consumption of U.S. mills included in crop contracting study

Annual Consumption	Year 1970	Year 1973
thous. bales	number of mills	
Over 300	5	4
100 - 299	6	7
Under 100	7	7
Total	18	18

Source: Texas Agricultural Market Research and Development Center, Texas Agricultural Experiment Station, survey data.

Table 5. Percentage of surveyed U.S. mills' cotton purchases covered by crop contracts compared with industry total

Crop year	Surveyed contracting mills[1/]	Total cotton industry[2/]
	percent	
1972	21	40
1973	34	75
1974	14	21

[1/] Does not include mills who did not contract or those who failed to provide figures during Market Research Center survey of selected mills.

[2/] USDA estimate for the total cotton crop, which includes contracting by merchants and mills as well as foreign buyers either direct, through merchants, and for cooperatives.

Source: Texas Agricultural Market Research and Development Center, Texas Agricultural Experiment Station, survey data.

These figures are reasonably consonant with the total industrywide contracting levels reported by the USDA since the latter also includes merchants and foreign buyers' contracting activity, Table 5.

Mill contracting can be classified into three groups time wise. The first contracting period is very early, October or November through January before the crop is planted in April. Another group involves contracts from February to June 1. The third period is apparently active about June 1 to harvest time. This allows the final period of contracting to take the acreage planted and prospective crop size into consideration. An indication of the timing of contracting, according to mills interviewed, is noted in Table 6.

In 1973, half of the surveyed larger mill firms engaged in contracting were active before April 1, and an average of about two-thirds of their 1973 crop contracts were signed by that date. The 1974 situation reflected changed conditions. Somewhat fewer, albeit the more experienced, mills were contracting; consequently, about three-fourths of these were already active prior to April 1. However, an average of only about half of their contracts were completed by that date. This probably reflected a lack of general agreement between mills and producers as to an acceptable price level. It is reported that there was a flurry of 1974 crop contracting from October 1973 through January 1974; then price expectation differences emerged. Producers wanted about 60 cents per pound and mills felt that 52 cents more properly reflected coming market conditions.

When asked about reasons for less contracting in 1974 than a year previous, two major answers emerged. Foremost was a lower level of orders received by all mills interviewed compared to 1973. This led to an expectation of smaller total demand and caused mills to drop their crop contract offering price. The resulting disparity between the prices offered and what cotton producers expected became the second obstacle to further contracting. Several other less significant factors

Table 6. Proportion of cotton crop contracting by U.S. mills completed as of indicated date, 1973 and 1974 1/

Item	1973		1974	
	April 1	June 1	April 1	June 1
Share of contracting mills active by indicated date:	50	100	77	100
Average percent of year's contracts completed by indicated date:	67	100	47	100

1/ Based on 12 contracting large mills and those providing indicated information among the 18 surveyed.

Source: Texas Agricultural Market Research and Development Center, Texas Agricultural Experiment Station, survey data.

served as a restraining influence. Among them were noncompliance by some producers on their 1973 contracts, tight money supplies so that margin funds for hedging contracts were less available, and lastly a feeling that 1974 cotton supplies would be more adequate relative to demand.

Mill Attitudes

Attitudes toward and motivations for crop contracting by mills obviously will be a major determinant as to whether this cotton buying method continues in 1975 and beyond. Therefore, particular attention was paid to this aspect in the survey.

Almost all mills interviewed were of the opinion that cotton contracting has a place in the marketing system. Such was the opinion even of mills that had experienced grower compliance problems in 1973. Enthusiasm for contracting, nonetheless, varies both with the mill's experience and its capabilities for this type of program. Some mills have not established a system of grower contacts on a sufficient scale to make contracting a viable source of supply. A reliable field operations program aids good relationships between the cotton growers and the mill and avoids compliance problems on quality and delivery requirements. Those mills having the field contacts see contracting as a permanent part of their cotton procurement program.

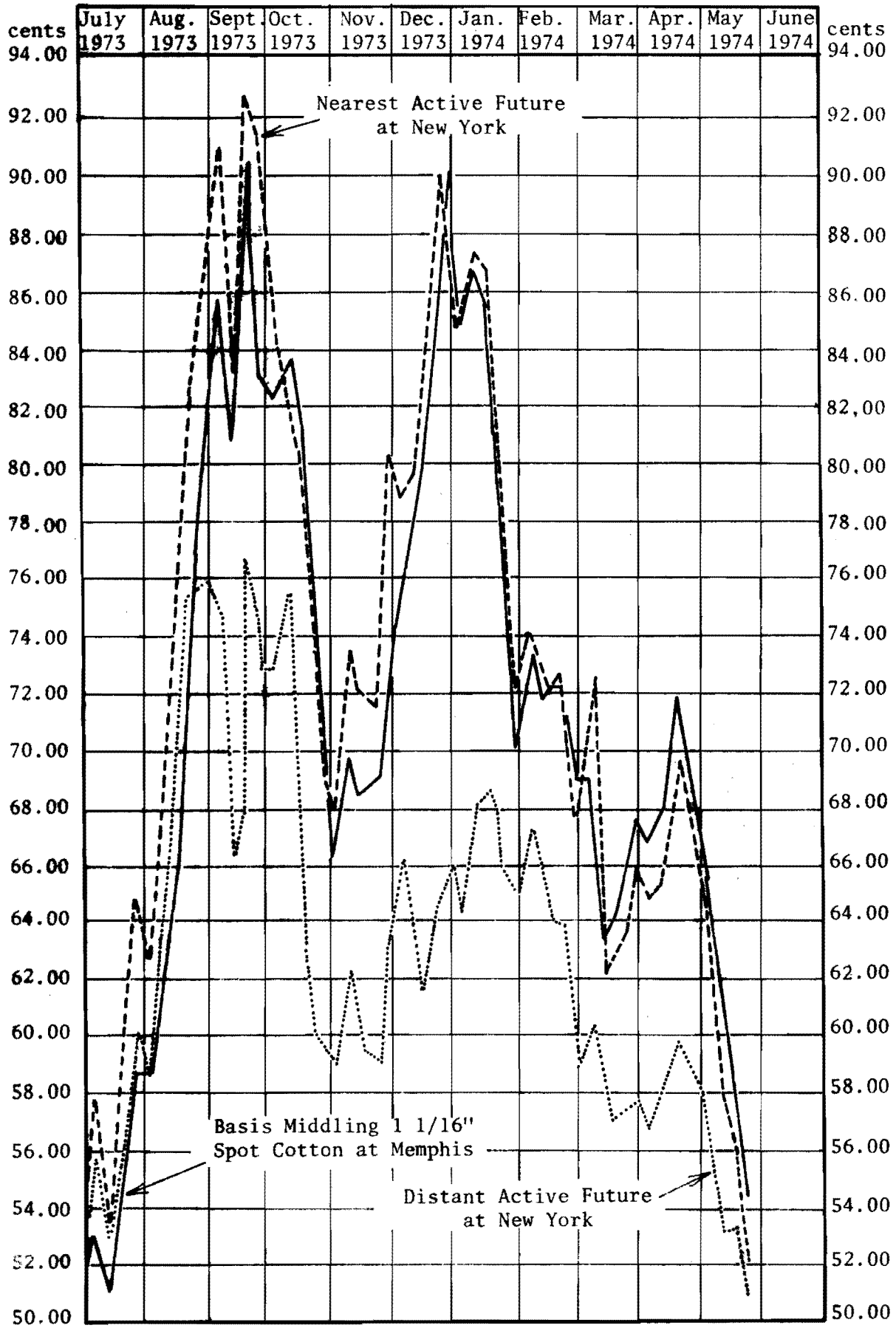
A second factor affecting mill attitudes toward contracting arises from their experience with and/or capabilities of engaging in futures market operations. When a mill contracts with a grower and the price to the grower is set, the mill faces three alternatives. It need do nothing further if it has orders for goods in hand, because these were made with a cotton price in mind that allowed the mill operating and profit margins to be covered from further price risk.

If mill orders are not covering the crop contract, price risk exists for the mill and the other two alternatives must be faced. One is to take a speculative position, hoping that either cotton price for the remainder of the season remains stable or rises, preserving its margin or giving it an added speculative profit. But it stands to lose and see its year's profits wiped out if the cotton price falls and it must lower its prices on mill goods, or lose market share with the same margin.

The remaining alternative is to make a sale in the futures market to offset the crop contract price. This establishes a so-called hedged position and substantially eliminates the price risk to the mill. However, trading in the futures market requires financial resources, just as in the stock market, plus futures trading know how and experience. All mills do not have a person experienced in futures market nor have they assigned capital for futures trading. Lack of futures market trading personnel resulted from the long period of government held surplus cotton stocks, during which cotton prices deviated narrowly within season from support levels. Consequently, mills faced little price risk and had no need for such professional traders.

Though it is possible for mills to employ a futures market trader, the availability of these persons is limited. Individuals would have to be obtained primarily from merchant firms and brokerage houses. More importantly, employing such a person is looked upon as just another added expense and uncertainty in buying cotton. It is much simpler to buy synthetic fibers, where price changes and risks are minimal and purchases can be made as needed rather than in advance. The price risk associated with holding cotton, or cotton contracts, is easily perceived by observing the course of spot market Memphis prices and the nearest and distant active futures market prices during the period of July 1973 through June 1974, Figure 2. This chart was provided through the courtesy of one of the major mills interviewed.

Figure 2. Weekly prices of spot and number 2 futures cotton (cents per pound)



Source: Provided by courtesy of one of the cotton mills.

Mills were asked if they hedged crop contracts that were not offset by mill orders. Replies implied the presence of the problems noted above.

Are Cotton Crop Contracts Hedged When not Covered by Mill Orders

Mill Reply	Percent
Yes	46
Partially	15
No	23
No response	15
	100

Some mills shift price risk by buying from merchants as they need cotton to cover mill orders. Also, they may contract ahead for their cotton supply through merchants by using an on call price, usually based on December futures or another distant month. The cotton price is called as soon as mill sales of goods are obtained. This is used because major merchants are generally very experienced at futures market hedging of cotton supplies they hold in their own account for later sale to mills or exporters. Going through merchants also has other advantages which will be considered later. But merchants must be compensated for these services. Also, some of the direct benefits of working with cotton growers under contract may be foregone if buying is through merchants.

Mill Motivations

Whether crop contracting directly or through merchants, the point has already been made that mills are of the opinion that contracting will continue--but for what reasons and on what scale?

Mill executives interviewed cited several motivations that support a continuation of cotton crop contracting. Among them were the following.

1. Helps establish cotton and our goods prices so we can sell mill output farther ahead.
2. Helps obtain a specific quality of cotton that we need from a known production area.
3. Provides cotton in October and November when it is difficult to get supplies delivered from merchants and shippers.
4. Provides controls on ginning methods for cotton received.
5. Insures a supply of cotton for the mill and especially useful if short supply of cotton is in prospect.
6. Prefers to buy cotton on gin weights because it results in a cost saving to us.
7. Have already established satisfactory relationships with growers for contracting.
8. Helps get the crop in the ground and, thereby, aids the overall cotton supply situation.

Given these crop contracting advantages, mill executives were asked why this buying method was not used exclusively. Limiting factors mentioned included these.

1. Compliance may be a problem especially when dealing with growers whom you do not know.
2. In some cotton growing areas, weather conditions are more variable than elsewhere and this affects the predictability of quality (especially micronaire). This also applies to late harvested cotton in some production areas.
3. Cannot hedge efficiently against an acreage contract.
4. Lack storage space to accept all of cotton needs at harvest time.
5. Do not know enough growers.
6. Would require paying for all of supply during harvest time and thereby ties up too much money and interest rates are now too high for that.

Considering the above advantages and disadvantages, the mill executives were asked to give their judgments as to the probable range of total cotton crop contracting over the next five or more years. Such an estimate is difficult for a mill representative to make, since the level of contracting by merchants must also be taken into consideration. The consensus view among major U. S. mills interviewed, was that the minimum level for crop contracting would range between 15 and 35 percent of U. S. production. The maximum was likely to be 50 to 60 percent.

If cotton crop contracting is to continue, it must be at an equitable price sufficient to bring forth the desired cotton supply. Estimates of the required price for 1974 and 1975 reflected a high degree of unanimity of opinion. The range was from 45 to 55 cents per pound. The average was 50 cents and the average deviation from that estimate was only 2 cents per pound. This was the view during the late spring and early summer of 1974.

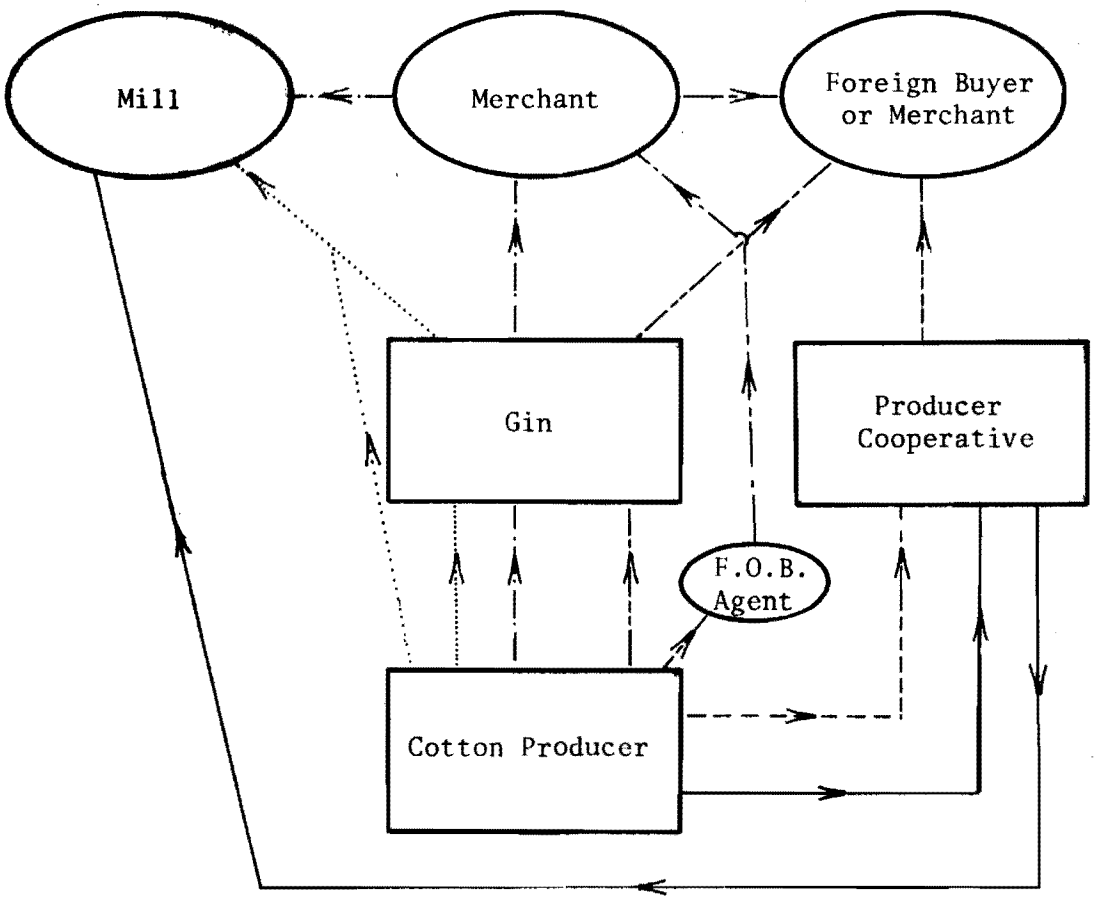
Mills agreed that contracting would continue at a higher level in California-Arizona, the Mississippi Delta area, and the Rio Grande Valley of Texas than elsewhere. For West and Central Texas and the Southeastern region of the U. S. activity would usually be at a decidedly lower level.

Merchant Perspective

Though some may believe that merchants are reluctant and only recent participants in crop contracting, such was not found to be the case. Merchants reported several advantages to contracting, though views among them vary. Almost all expect crop contracting to continue.

Official data are not reported regarding the share of cotton crop contracting by merchants versus mills. Both are initiators of contracting in the United States. Foreign buyers usually operate through domestic merchants and/or their own trading company offices in the United States. Basically six channels are involved in the present contract marketing system, Figure 3.

Figure 3. Principal cotton crop contracting systems



No individual firm has a complete overview of the entire crop contracting picture. Nonetheless, most mill executives provided estimates of the share of the 1973-74 crop contracts made by mills versus merchants, with the caution that these were rough estimates. On the basis of their opinions, 65 percent of the crop contracting was by merchants and one-third by mills. Thus attitudes and motivations among cotton merchants are very important to a total appraisal of the future of cotton crop contracting.

Executive interviews were held with 14 major cotton merchant firms operating in the domestic and international markets. Each had major buying operations over one or more of the five cotton production areas as defined in this report. The combined annual volume traded by these firms is estimated at between 7 and 8 million bales. All of this is not net trading, however, since merchants engage in cross trading among themselves to obtain uniform lots of cotton (quality and staple) for their mill customers.

Merchant Contracting Activity

For background information, the merchants interviewed were asked from whom they usually purchase their cotton. Each has his own preferred source and some relied on two primary sources. In total all the major buying sources were reported: large producers, gins, F.O.B. men and/or country buyers, cooperatives, commission agents, and other merchants. Similarly, sales outlets were reported as a few specific domestic mills or several domestic mills, to Europe, to Japan or export market generally.

Buying cotton under crop contract ranged widely from 10 to 90 percent of their total supply depending on the merchant's attitude toward contracting, the crop year involved and the geographic area of his buying. Merchant contracting apparently approached an average of 40 to 50 percent of total merchant purchases in the 1973-74 crop year.

Bale contracts are preferred by merchants and were used wherever possible, especially in California and Arizona and to some degree in the Mississippi Valley. Acreage contracts were required where producers insisted on them which was often the case in the Mississippi Delta states and in Texas and Oklahoma. Even in the latter cases, however, premium prices were offered by merchants for a bale basis agreement. Apparently many farmers felt that the premium did not offset the protection they gain under an acreage contract, especially when weather variability in their locale makes their production estimates uncertain.

On balance merchants got good performance on a high percentage of their contracts with farmers. Those buying in production areas where contracting was relatively new, such as West Texas and Louisiana, encountered the most problems. There was full agreement that future crop contracting would be limited to those cotton producers who have shown they will perform. Nonperformance, according to the consensus view, apparently occurred among less than 10 percent of the producers contracting with merchants.

Merchants offer farmers fixed price cotton crop contracts mostly for two reasons. If the merchant has an order from a mill he may prefer to cover it with a crop contract to eliminate his open supply position. When the mill order is at a fixed price, the crop contract is let at a somewhat lower price, in order to allow the price spread to meet the merchants' operating costs and profit margin.

Mills also buy from merchants on a call price basis. Until the mill calls the price, the merchant has a price risk if he has given producers fixed price crop contracts to cover his supply for the mill order. To avoid most of this risk, the merchant sells a contract in the futures market, which he closes when the mill calls the price on its order. The futures market hedge by the merchant, however, is not without cost. He must pay commissions plus the tying up of capital to post margins on the contract. Advantages to crop contracts must be sufficient to more than compensate for the added costs, which must also include the cost of finding the producer and making the contract in the first place.

Crop contracts may be let by merchants on their own account; i.e., without any kind of forward sale in hand. In that event, the price risk is again largely shifted by simultaneously selling offsetting contracts in the futures market. The latter is closed out at the time the cotton under contract is sold in the domestic or export market at a fixed price.

Merchant Attitudes

Varied opinions were offered as to what would improve contracting with growers. Following are some of the comments.

Certainly a better balance between cotton supply and demand takes the pressure off performance. Neither growers nor marginal type contract dealers would be under pressure to avoid performance. Yet, as good as this suggestion is, it is a condition which cannot always be guaranteed because of vicissitudes that strike on the demand as well as supply side.

Another suggestion was to make partial crop contracts so that yield variations would not affect the ability to deliver the anticipated quantity. Somewhat similar is the recommendation that contracts be made only after the crop is planted so that some of the uncertainty is removed.

Nondelivery of harvested cotton would be alleviated, say some, if ASCS records could be used as a check on compliance. Lastly, tightening of contract terms is proposed to avoid ambiguities found during the stress of the 1973-74 crop season.

Merchants prefer to move to a bale contract, instead of acreage, because they must deliver bales to mills and/or export buyers. Concern here was heightened because of those few farmers who avoided delivery of all of their bales under the acreage contract when cotton prices became so high. Achievement of a bale contract throughout the cotton belt would likely require a disaster clause in the contracts before growers outside California would accept it. Yet, merchants are not certain at this time in their attitude toward a disaster clause.

Clearly, some degree of questioning still surrounds merchants' attitudes regarding cotton crop contracting. Despite these, the majority contacted think it will remain as a method of buying cotton.

The difficulty of adapting contracting to areas outside of California-Arizona and the Mississippi Delta states is clearly recognized. Some merchants report it is a definite aid to their foreign marketing program. Yet a few view it as mostly a help to the producer, who can use it to assist in budget planning and crop financing.

Several of the merchants estimated that for the next few years, crop contracting will average from about 25 to 50 percent of all cotton purchases, mills and merchants combined. The average of the forecasts was between 40 and 45 percent. This suggests that in normal years, contracting will center around 40 percent, be 15 to 20 percent in poor years, and go to the 50 and 60 percent level in those years very conducive to contracting.

Merchant Motivations

Interest of the more innovative merchants in contracting stems from definite advantages perceived in this method of buying cotton. Some others doubtless have contracted more as a defensive retaliation to this change in marketing practices, but the future course of contracting will be changed by the more innovative firms.

Advantages to cotton crop contracting noted by merchants can be summarized into the following six.

1. Permits merchant to have an earlier assured cotton supply with which to consumate sales for future delivery with domestic mills and foreign buyers.
2. Assures a supply of cotton from selected sources rather than depending on obtaining it in trading after the cotton harvest.

3. Permits price per pound to be set farther in advance, which is an aid in sales to mills and exporters.
4. With the advantages under items one, two and three above, a much better competitive position is achieved in securing foreign market sales.
5. Properly used, contracting can help equate cotton supply and demand and thereby contribute to market stability.
6. Crop contracts avoid the need and expense of buying in the futures market to offset advanced fixed price sales to mills or export buyers.

A brief discussion of each of the above advantages which motivates merchants to crop contract may be useful for clarification purposes. Clearly it is possible for a merchant to sell 1,000 bales of 1975 crop cotton for delivery in January of 1976 and at a preset price. In doing so, the merchant, to avoid undue speculative risk on the price, will buy 10 futures contracts (50,000 pounds or about 100 bales each) in the December 1975 position. For it he must pay a commission on the order and also post a cash margin. The commission is $50 per contract (round turn), which for 10 contracts would be $500. The margin rate for hedging is $500 per contract, which times 10 contracts would be $5,000. At prime interest rates of 8.5 percent, the cost of carrying the contract for 13 months would be about $460. Thus, the combined commission and interest cost on capital invested would amount to $960, or about a dollar per bale. This is equivalent to the dollar per bale fee usually paid as a commission to gins or F.O.B. buyers for obtaining crop contracts.

However, the excessive cost of the futures hedge versus the crop contract, from the merchants' standpoint, comes from having to quickly add to margin funds if prices move against him. The $500 margin per contract (100 bales) is equivalent to only one cent a pound. If the price moves by as much as five cents, then margin rises to $2,500 per contract, or for ten contracts it becomes $25,000. That brings interest cost on ten contracts to $2,125 per 12 months. Total cost in such

a case rises to $2,625 for the ten contracts (1,000 bales) or a cost of about $2.62 per bale. Assumed, of course, is a perfect hedge which is seldom if ever achieved. A shift in basis points against the merchant's position, or a change in the spread between the spot and futures market prices, can add several more dollars per bale to the merchant's extra cost of taking a futures hedge as compared with a crop contract.

By obtaining producer crop contracts to offset the 1,000 bale advance sale, the merchant avoids the futures trading costs and has instead a per bale fee for obtaining the contract which is a dollar per bale at the gin level. Spot cotton sold through the gin also involves a dollar per bale charge to the buyer. Therefore, the net cost becomes zero from that standpoint.

What the merchant must concern himself with is the grade and quantity the farmer will deliver. Consequently, merchants carefully choose the production areas in which to contract and the dependability of the grower in honoring his contract. Given grower performance, the merchant can proceed without further concern over his advance sale contract with the mill or foreign buyer.

Obviously the merchant's risks and costs are materially reduced for extended period advance sales of cotton in world markets, or domestically if he can use the crop contract as a basis for such marketing activity. It is not surprising then that most merchants see crop contracting continuing as a marketing method.

Views as to whether contracting helps equate supply and demand and thereby stabilizes prices are not without qualification. Some think it can have a detrimental effect, especially if contracting attains a level equivalent to 75 percent or more of the forthcoming crop. The opposite of these views is held by other merchants. Further consideration of this aspect will occur in the conclusions section of the report.

Financial Institutions' Views

Sixteen financial institutions consisting of country banks, central city banks, Production Credit Associations and the Farmers Home Administration were interviewed regarding current and prospective operations regarding cotton production financing. These were located across the Cotton Belt. In California-Arizona financial assistance is also provided growers by the cotton seed oil mills. Lending practices appear to be highly uniform making further extension of the sample of marginal value.

Financing of cotton crop production was originally assumed by the country banks and still is by those who have the determination to continue with it. Much of the financing, though, has been assumed by the Production Credit Associations in the Cotton Belt. Interviews revealed no major difference between the financing policies of the local commercial banks and the PCA offices. In some locales, commercial banks are the primary lender and in others PCA offices.

Central city banks generally operate as correspondent banks for the agricultural finance field, but a few are continuing a strong direct program.

The level of a production loan, for the most part, is determined by the cash flow needs for making the crop. A farm budget estimate compares the projected expenses versus the estimated crop income. Income flow is based on either estimated future prices or on contract prices where the latter exists. In the case of large farm operations, loans are made on a less specific basis and greater weight is given to past experience of the producer's management and performance ability in setting a line of credit.

Collateral universally included liens on crops and government payments as well as movable assets such as on equipment and cattle.

Inclusion of land usually occurred only in marginal situations. As some bankers explained, cotton is only one of the crops in the farmer's total operation and the line of credit is established for the overall farming enterprise. Credit lines are set some time between September and February 1. Since cotton contracting also beings about this time, a question was raised as to whether a cotton crop contract influenced financing arrangements for producers. Rarely, so far, have cotton contracts entered into the credit line or level judgements, except in California-Arizona when there is a longer history of contracting. Exceptions otherwise were new or marginal type producers wherein ability to repay loans was somewhat in doubt if a crop contract was not present.

Financial assets of producers since 1970 have generally been good. Consequently, the need to closely evaluate farm loans has not been a problem. Of major concern, therefore, is the view financial institutions will have of crop contracting's role in the future for producer financing.

Unquestionably, a pervasive traditionalism was found among the financial institutions. Over the years so much attention has been directed to the usual financial analysis, procedures, and collateral, that scarce attention was paid to crop contracting. Nonetheless, the longer the matter was discussed, the more financial executives perceived contracting as a useful financing tool. In defense of the banks, one must recognize that most early participants in contracting were mostly large farm operators whose financial credit lines were already well established. Furthermore, only recently were basic agricultural commodities shifted to a substantially free market basis and away from government program market guarantees.

Thus crop contracting's full impact on the financial aspect of cotton production is yet to evolve. Motivations of banks to encourage farmers to crop contract their 1974-75 cotton crop were rather minimal. With downturns in cotton prices, how fast will banker interest increase?

Export Buyer Motivations

During the four year period of 1970-73, United States exports of cotton amounted to an average of 4,430,000 bales per year. In both 1972 and 1973 our exports exceeded five million bales per year. Of all the nations to which our cotton was exported, four have accounted for nearly half of the total. These are Japan, Taiwan, Thailand and Korea. The Japanese influence in these markets is all pervasive. Japanese mills, through their trading companies, endeavor to obtain raw material supplies, like cotton, not only for one but several years in advance. This is viewed necessary to their economic stability and market share maintenance within total world market operations.

A complementary device to the above policy is forward cotton crop contracting in the United States and around the world. A learning experience in 1973-74 proved to the Japanese that only a few nations can be depended upon insofar as performance on contracts is concerned. Major among these is the United States. It is not surprising then that the Japanese trading companies place special emphasis on cotton crop contracting in the United States. Achievement of an average of 47 percent of our cotton exports to the four nations represented in Table 7 is, in part, a reflection of this situation.

Clearly the Far Eastern mills are highly motivated toward crop contracting and will continue to be in the future.

Gin and Producer View of Cotton Crop Contracting

A view of contracting at the producer level is available from producers or gin managers that serve them. Because of the difficulty of contracting a national sample of producers, the alternative of gin managers was used.

Table 7. Percent of total exports of U.S. cotton to indicated Far East markets, 1970-73

Year	Japan	Taiwan Thailand	Korea	Total	Number of Bales
		percent			
1966-70	24	11	12	47	3,622
1970	22	15	13	50	3,737
1971	22	12	15	49	3,229
1972	20	11	11	42	5,007
1973	22	13	13	48	5,746
1970-73 average	21	13	13	47	4,430

Source: Foreign Agricultural Service, U.S.D.A.

Table 8. Total number cotton gins by geographic area, 1973

Area[1/]	Total Gins	Survey Sample
	number	
West	333	35
New Mexico	85	10
Texas-Oklahoma	1,025	35
Mississippi Delta	1,417	35
Southeast	909	35
Total	3,769	150

[1/] West: California, Arizona, Nevada; New Mexico: New Mexico and Trans Pecos area of Texas; Texas-Oklahoma: Texas (less Trans Pecos area) and Oklahoma; Mississippi Delta: Louisiana, Mississippi, Arkansas, Tennessee, Missouri; Southeast: Georgia, Florida, North Carolina, South Carolina, Virginia, Alabama.

Source: U.S. Department of Agriculture, U.S. Cotton Classing Offices, Agricultural Marketing Service.

Approximately 3,700 cotton gins operate in the United States according to Agricultural Marketing Service, USDA, gin registration records. Efforts to develop a stratified sample of gins by gin size was abandoned because USDA records of size of gins were not available. Therefore, a probability sample of 150 gins stratified by major production areas was prepared by the Market Center staff and interviewed by telephone. The geographic distribution of the sample by gin output for the 1973 crop is shown in Tables 8 and 9. As happens in all lines of business, some managers have been in their positions only one or two years. For that reason some gin managers could not report operations of prior years.

Contract Operations to 1974

One evaluation of the reliability of the gin sample can be obtained by comparing the weighted average of the managers' estimates of the level of crop contracting in their own respective service areas with national estimates published by the Agricultural Marketing Service of the USDA, Table 10. The USDA figure is within the sampling error range of the gin estimate for 1974. It is slightly over for 1972 and 1973 at the 95 percent confidence level.[1/] The national average from the gin sample is a weighted average with the five year (1967-73) level of production in the five main production areas used as weights.

Estimates of contracting within each of the five cotton growing areas were calculated in order to obtain the national estimate. Although the sample by area was not intended to be sufficient for regional estimates, the proper direction of shifts in contracting were reflected in each. Also, some merchants report that the USDA figures on contracting in the West are too high, Table 11.

[1/] There is a sampling error for the USDA figure, but it is unknown, as well as the sample size employed. Therefore, a statistical test of significant difference between the two percentages cannot be determined.

Table 9. Distribution of cotton gins surveyed by production area and gin size, 1973

Area[1/]	Gin Size in Number of Bales Output					
	0-999	1,000-2,999	3,000-4,999	5,000-6,999	7,000 or more	Total Respondents
	percent of sample					number
West	0	8	8	26	58	35
New Mexico	0	45	33	0	22	9
Texas-Oklahoma	3	37	23	17	20	35
Mississippi Delta	6	46	23	8	17	35
Southeast	6	59	17	6	12	34
Average[2/]	4	38	20	13	25	148[3/]

[1/] West: California, Arizona, Nevada; New Mexico: New Mexico and Trans Pecos area of Texas; Texas-Oklahoma: Texas (less Trans Pecos area of Texas) and Oklahoma; Mississippi Delta: Louisiana, Mississippi, Arkansas, Tennessee, Missouri; Southeast: Georgia, Florida, North Carolina, South Carolina, Virginia, Alabama.

[2/] Average is weighted by production in indicated areas in 1968-72.

[3/] Output data were not reported for one gin in New Mexico and one in the Southeast.

Source: National survey among gins, Texas Agricultural Market Research & Development Center, Texas A&M University.

Table 10. Percent of U.S. cotton crop contracted, USDA and gin sample estimates, 1972, 1973 and 1974

Year	USDA[1/] Mean	Gin Sample[2/] Mean	Gin Sample Estimated Sampling Error
	percent[3/]	percent	percentage points[4/]
1972	36	26	±7.0
1973	75	64	±7.7
1974	21	22	±6.6

[1/] Cotton Division, Agricultural Marketing Service, USDA.

[2/] Survey of 150 gins by Texas Agricultural Market Research and Development Center, Texas Agricultural Experiment Station. Based on estimated percent of crop in the gin's own service area that was under crop contract.

[3/] Standard error of USDA estimate is not available.

[4/] At 95 percent confidence level.

Source: U.S. Department of Agriculture, Cotton Division, Agricultural Marketing Service; and national survey among gins, Texas Agricultural Market Research & Development Center, Texas A&M University.

Table 11. Percent of U.S. cotton crop contracted by area, as estimated by gins, 1972, 1973 and 1974 and weighted U.S. average

Area[1/]	Year		
	1972	1973	1974
		percent	
West	12	59	37
New Mexico	2	56	12
Texas-Oklahoma	20	59	8
Mississippi Delta	42	68	31
Southeast	17	71	8
U.S. Average[2/]	26	64	22

[1/] West: California, Arizona, Nevada; New Mexico: New Mexico and Trans Pecos area of Texas; Texas-Oklahoma: Texas (less Trans Pecos area of Texas) and Oklahoma; Mississippi Delta: Louisiana, Mississippi, Arkansas, Tennessee, Missouri; Southeast: Georgia, Florida, North Carolina, South Carolina, Virginia, Alabama.

[2/] Based on 1968-72 average production by region.

Source: National survey among gins, Texas Agricultural Market Research & Development Center, Texas A&M University.

The contribution by production area to the total of cotton crop contracting presents a significant development in the pattern of this activity, Table 12. Continued contracting at relatively high levels in the West and in the Mississippi Delta states is contrary to the market decline in the Southeast and the Southwest. As a result, the Mississippi Delta area appears to be the leading source of contract cotton and the West (California-Arizona) the other important contributor. This concurs with conclusions in the mill and merchant segment of the industry.

Replies of gin managers showed cotton crop contracting to be far from new. The earliest time mentioned was during the 1930's in the California, Arizona and New Mexico areas, the late 1950's in the Mississippi Delta states, and the early 1960's in Texas-Oklahoma. With roots that far back, contracting is not likely to disappear. Of concern, though is not its existence but rather whether it will be on a sufficient scale in the future to influence cotton future marketing methods and systems.

Contracting activity can decline by being concentrated in fewer areas, or by more selectivity among cotton farmers in an area, or a combination of these. Gin managers' replies implied both types of curtailment occurred in 1974, Table 13.

In the Mississippi Delta states, as well as the Southeast, there is some evidence that mills, though not predominant, have increased their share of total crop contracting activity, Table 14. Estimates were about 41 percent of the 1974 contracts in the Delta states were with mills. That is double the share reported for either 1972 or 1973. The mill share in the Southeast, also reported at 40 percent, represents a mill share growth of about a third over the two prior years. Implied is a lesser decline in mill crop contracting than with merchants.

Table 12. Regional contribution to total U.S. cotton crop contracts, 1972-74

Area[1/]	Annual Regional Contribution to Total Cotton Crop Contracted 2/		
	1972	1973	1974
	percent		
West	8	17	39
New Mexico	3/	7	1
Texas-Oklahoma	25	36	9
Mississippi Delta	61	33	48
Southeast	7	11	4
Total	100	100	100
Percent of U.S. crop contracted[4/]	26	64	22

1/ West: California, Arizona, Nevada; New Mexico: New Mexico and Trans Pecos area of Texas; Texas-Oklahoma: Texas (less Trans Pecos area) and Oklahoma; Mississippi Delta: Louisiana, Mississippi, Arkansas, Tennessee, Missouri; Southeast: Georgia, Florida, North Carolina, South Carolina, Virginia, Alabama.

2/ Based on percent contracted in the region and total annual production of the respective region.

3/ Less than one percent.

4/ Based on 1968-72 average production weights by region.

Source: U.S. Department of Agriculture, Crop Production, Statistical Reporting Service, Crop Reporting Board, Washington, D.C., August 12, 1974. National survey among gins, Texas Agricultural Market Research and Development Center, Texas Agricultural Experiment Station.

Table 13. Was there crop contracting in your gin service area? 1971-74

Area [1/]	Gins Surveyed	Proportion of Gins Answering "Yes"			
		1971	1972	1973	1974
	number		percent		
West	35	6	60	100	100
New Mexico	10	10	30	100	90
Texas-Oklahoma	35	15	54	94	23
Mississippi Delta	35	51	89	97	89
Southeast	35	20	43	97	60
Total [2/]	150	28	67	97	68

[1/] West: California, Arizona, Nevada; New Mexico: New Mexico and Trans Pecos area of Texas; Texas-Oklahoma: Texas (less Trans Pecos area) and Oklahoma; Mississippi Delta: Louisiana, Mississippi, Arkansas, Tennessee, Missouri; Southeast: Georgia, Florida, North Carolina, South Carolina, Virginia, Alabama.

[2/] Weighted average based on 1968-72 production by indicated area.

Source: National survey among gins, Texas Agricultural Market Research & Development Center, Texas A&M University.

Table 14. Proportion of producer cotton crop contracts made with merchants, by production area, as estimated by gin managers, 1972-74

Area[1/]	Gins Surveyed	Contracts with Merchant[2/]		
		1972	1973	1974
	number	percent of all contracts		
West[3/]	35	100[2/]	100	100
New Mexico	10	100[2/]	100	100
Texas-Oklahoma	35	93	97	100[2/]
Mississippi Delta	35	79	80	59
Southeast	35	73	61	61
Total or weighted average	150	87	87	80

[1/] West: California, Arizona, Nevada; New Mexico: New Mexico and Trans Pecos area of Texas; Texas-Oklahoma: Texas (less Trans Pecos area of Texas) and Oklahoma; Mississippi Delta: Louisiana, Mississippi, Arkansas, Tennessee, Missouri; Southeast: Georgia, Florida, North Carolina, South Carolina, Virginia, Alabama.

[2/] Remaining percentage of contracts was primarily directly with mills.

[3/] Report of 100 percent contracting with merchants does not imply lack of mills contracting. Merchants act as agents for mills and cooperatives do likewise.

Source: Texas Agricultural Market Research and Development Center, Texas Agricultural Experiment Station, Texas A&M University, national survey among gins.

Not only did shifts occur in the mix of who offered contracts, but also some changes occurred in the type of contract offered in 1974 versus 1973. For reasons already discussed, farmers in all areas except California have preferred the acreage contract and hog round rather than grade and staple. Market conditions for the 1973 crop gave farmers leverage toward the hog round basis for the 1974 contracts, Table 15. Other than in California-Arizona, the dominate contract in all cotton growing areas is still on an acreage base, Table 16.

Gins implement the crop contracting system as agents or brokers for mill or merchant contracts. Mills and merchants also go direct to farmers. No government reports are made regarding the division of this activity but some insight is provided by the gin survey results, Table 17. Caution should be used regarding the regional figures because the sample at that level is small. The broad indications nonetheless are probably noteworthy. Gin involvement on an agent or broker basis apparently is less in the West and New Mexico than elsewhere since 80 to 90 percent of the managers reported negatively. In that area Calcot activities are quite broad in scope and include this contracting function. Among the other regions, a third to a half of the gins provided a broker or commission service. Fixed fee per bale on an agent basis, is the dominant arrangement among participating gins.

Gin managers usually consider it their responsibility to represent their farmers in achieving acceptable cotton prices in the contracts. Nationally about three-fourths of those serving as agents or brokers reported assisting in price establishment. Usually this means advising mills or merchants when pricing terms offered are not adequate to interest producers.

Gin managers confirmed that mills provide ginning instruction in contracts. Approximately half of the gins said instructions were received, Table 18. Instructions were more common in the Mississippi Delta states area where nearly eight out of ten gins are endeavoring to help in this regard. By contrast, this is of minor concern in the West and New Mexico.

Table 15. Type of cotton crop contracts with growers, by estimated market share, United States, 1972-74

Type of Contract	Year		
	1972	1973	1974
	percent		
Bale basis: [1]			
Hog round, fixed price	4	3	3
Hog round, call price	0	1	[2]
Grade and staple, fixed price	22	21	21
Grade and staple, call price	1	1	1
Subtotal	27	26	25
Acreage basis:			
Hog round, fixed price	41	34	45
Hog round, call price	1	1	1
Grade and staple, fixed price	30	38	28
Grade and staple, call price	1	1	1
Subtotal	73	74	75
Total	100	100	100

[1] Most of the bale contracts are in the California-Arizona area.

[2] Less than 1 percent.

Source: National survey sample of 150 gins, Texas Agricultural Market Research and Development Center, Texas Agricultural Experiment Station.

Table 16. First and second most important contracts, by production area, 1974

Area	Leading type[1/] of contract	Second most important contract type
West	B-GS-F	A-GS-F
New Mexico	A-GS-F	B-GS-F
Texas-Oklahoma	A-HR-F	A-GS-F
Mississippi Delta	A-HR-F	A-GS-F
Southeast	A-HR-F	A-GS-F

[1/] Contract type codes are B = bale, A = acreage, GS = grade and staple, HR = hog round, F = fixed price.

Source: National survey among gins, Texas Agricultural Market Research and Development Center, Texas A&M University.

Table 17. Proportion of gins serving as agents or brokers for cotton crop contracts and type of arrangement, by area, 1974

Area[1/]	Total Respondents	Offer Service	Type of Service Arrangement Offered				Total
			Broker Fixed-Fee	Broker Commission	Agent Fixed-Fee	Agent Commission	
	number		percent				
West	35	9	--	--	65	35	100
New Mexico	10	20	--	50	50	--	100
Texas-Oklahoma	35	54	5	5	90	--	100
Mississippi Delta	35	37	16	--	76	8	100
Southeast	34	50	24	12	46	18	100
Weighted Total	149	38	11	5	76	8	100

[1/] West: California, Arizona, Nevada; New Mexico: New Mexico and Trans Pecos area of Texas; Texas-Oklahoma: Texas (less Trans Pecos area) and Oklahoma; Mississippi Delta: Louisiana, Mississippi, Arkansas, Tennessee, Missouri; Southeast: Georgia, Florida, North Carolina, South Carolina, Virginia, Alabama.

Source: National survey among gins, Texas Agricultural Market Research and Development Center, Texas Agricultural Experiment Station.

Table 18. Are ginning specifications included in cotton crop contracts, by area, 1974

Area[1/]	Yes	No	Gins Responding
	percent		number
West	6	94	35
New Mexico	0	100	10
Texas-Oklahoma	53	47	34
Mississippi Delta	79	21	34
Southeast	54	46	35
Weighted Average[2/]	53	47	148

[1/] West: California, Arizona, Nevada; New Mexico: New Mexico and Trans Pecos area; Texas-Oklahoma: Texas (less Trans Pecos area) and Oklahoma; Mississippi Delta: Louisiana, Mississippi, Arkansas, Tennessee, Missouri; Southeast: Georgia, Florida, North Carolina, South Carolina, Virginia, Alabama.

[2/] Production areas are weighted by their five year average level of cotton production resulting in the following weights: West 18, New Mexico-El Paso 3, Texas-Oklahoma 29, Mississippi Delta 39 and Southeast 11.

Source: National survey among gins, Texas Agricultural Market Research and Development Center, Texas A&M University.

Producer Attitudes and Motivations

Producers' attitudes toward crop contracting obviously are of key significance to its future, although the support of all is not essential. Farmers' views are reflected through the awareness of gin managers as to their attitudes and opinions.

Generally favorable attitudes toward crop contracting were reported in 43 percent of the gin service areas. Within 25 percent mixed emotions prevail, and a largely unfavorable view dominated in the other 32 percent. Favorable attitudes were highest in the West (California-Arizona), where only a 6 percent negative reading was noted, Table 19. This is not surprising since contracting has functioned well there. The largest negative attitude, 50 percent, came from the Mississippi Delta states.

Comments from the West were mostly in support of contracting, including the following:

Favorable--

1. Have contracted satisfactorily
2. More growers wish they had contracted
3. Producers want to obtain financing
4. Why gamble when you have security of a contract

Unfavorable--

5. Apprehensive about recent bankrupt merchant

Mississippi Delta reports were more of the unfavorable type:

Favorable--

1. Will contract as long as price stays up
2. Wish had contracted more

Unfavorable--

3. Was burned on price last year

Table 19. Growers' attitudes, in gin service areas, toward cotton crop contracting, by geographic area, 1974

Area[1/]	Attitude			Total	Gin sample areas
	Favorable	Mixed emotions	Unfavorable		
	percent				number
West	83	11	6	100	35
New Mexico	60	20	20	100	10
Texas-Oklahoma	51	29	20	100	35
Mississippi Delta	18	32	50	100	28
Southeast	34	17	49	100	35
Weighted Total Percentage[2/]	43	25	32	100	143

[1/] West: California, Arizona, Nevada; New Mexico: New Mexico and Trans Pecos area of Texas; Texas-Oklahoma: Texas (less Trans Pecos area of Texas) and Oklahoma; Mississippi Delta: Louisiana, Mississippi, Arkansas, Tennessee, Missouri; Southeast: Georgia, Florida, North Carolina, South Carolina, Virginia, Alabama.

[2/] Based on 1968-72 average production by region.

Source: National survey among gins, Texas Agricultural Market Research & Development Center, Texas A&M University.

4. Merchants will not honor contracts
5. Worried about merchant bankruptcy
6. Have not been able to get a fair price

Similar comments were made from the other production regions.

Assigning the "undecided" votes evenly to the for and against positions, the result is favorable to crop contracts 55 percent and unfavorable 45. Apparently producer interest in contracting will continue, but possibilities for improvements require attention. Several questions in this regard were posed.

1. Type of contract growers want.
2. Type of contract growers will accept.
3. Growers' views about contract preferences.
4. Time of year contracting is preferred.
5. Should weather disaster clause be in the bale contract.
6. Price growers consider necessary.

About two-thirds of the gin managers responded to the above list. Growers interest first is in an acreage contract. Save for the California-Arizona and New Mexico region, over 80 percent of the replies favored an acreage basis, Table 20. Desired secondly in all regions is a fixed price. That accords with merchants' comments that most farmers do not understand futures markets and prices. Growers in most regions, thirdly, prefer to contract only a part of their anticipated crop, Table 20.

As in any bargaining situation, what will be accepted is less demanding than what is preferred. In the judgement of the gin managers, a majority of cotton growers will 1) accept bale contracts (87%); 2) even take a grade and staple basis (75%); but 3) desire a fixed price (100%); and 4) desire to contract only a part of their crop (76%), Table 21.

Growers' comments about contracting reflected a desire for a bale, grade and staple basis in the West, but there is grower uneasiness over weather variability effects on quantity and quality in other production regions.

Table 20. Type of cotton crop contract desired by growers, by area, 1974

Area[1/]	Type of Contract[2/]								Total	Respondents
	B-GS-F-P	B-GS-F-All	A-GS-F-P	B-HR-F-P	A-HR-F-P	A-HR-F-All	B-HR-F-All	A-GS-F-All		
	percent									number
West	65	9	13	9	--	--	--	4	100	23
New Mexico	--	--	34	22	22	11	--	11	100	9
Texas-Oklahoma	--	--	29	--	14	43	--	14	100	14
Mississippi Delta	6	--	21	9	21	29	3	3	100	34
Southeast	7	--	--	--	40	40	7	6	100	15
Weighted Average	15	2	20	6	17	29	2	7	100	95

[1/] West: California, Arizona, Nevada; New Mexico: New Mexico and Trans Pecos area of Texas; Texas-Oklahoma: Texas (less Trans Pecos area) and Oklahoma; Mississippi Delta: Louisiana, Mississippi, Arkansas, Tennessee, Missouri; Southeast: Georgia, Florida, North Carolina, South Carolina, Virginia, Alabama.

[2/] Type: 1) Quantity: Bale - B, Acre - A. 2) Basis: Hog Round - HR, Grade & Staple - GS. 3) Pricing: Fixed - F. 4: Crop: Part - P, All - All.

Source: Texas Agricultural Market Research and Development Center, Texas A&M University, survey data.

Table 21. Type of cotton crop contracts acceptable to growers, by area, 1974

Area[1/]	Type of Contract[2/]							Total	Gin Areas Responding
	B-GS-F-P	B-GS-F-All	A-GS-F-P	B-HR-F-P	B-HR-F-A	A-HR-F-A	A-HR-F-P		
	percent of growers								number
West	96	--	4	--	--	--	--	100	23
New Mexico	34	11	33	11	--	11	--	100	9
Texas-Oklahoma	50	50	--	--	--	--	--	100	14
Mississippi Delta	46	3	6	21	6	9	9	100	34
Southeast	21	7	7	58	--	7	--	100	14
Weighted Average	53	17	5	15	2	5	3	100	94

[1/] West: California, Arizona, Nevada; New Mexico: New Mexico and Trans Pecos area of Texas; Texas-Oklahoma: Texas (less Trans Pecos area) and Oklahoma; Mississippi Delta: Louisiana, Mississippi, Arkansas, Tennessee, Missouri; Southeast: Georgia, Florida, North Carolina, South Carolina, Virginia, Alabama.

[2/] Type: 1) Quantity: Bale - B, Acre - A. 2) Basis: Hog Round - HR, Grade & Staple - GS. 3) Pricing: Fixed - F. 4) Crop: Part - P, All - All.

Source: Texas Agricultural Market Research & Development Center, Texas A&M University, survey data.

Gin managers in several instances reported prices farmers considered necessary to obtain crop contracts from their area, Table 22. These ranged from 45 to 70 cents per pound. Fifty-five cents is about the average which is comparable to mill executives' estimates of the price required to get cotton in the ground for the next several years, unless economic conditions materially change.

Of importance to farmers is the time of cotton crop contracting. Monthly data were grouped to reflect three basic periods: 1) land preparation (November-January), 2) preplanting (February-May), and 3) post-planting (June or after). No significant differences between recent practices and the preferred periods were found, Table 23.

Finally, the above may be compared with reported actual delivery dates under cotton crop contracts, Table 24. The most noticeable change from 1972 to 1974 is the increase in deliveries during September, October, and November--20 percent compared with a previous 6 percent of the total. That coincides with comments of the cotton mill executives who stressed their efforts to increase crop contract cotton deliveries in the September-November months.

Table 22. Required minimum price for future cotton crop contracts, gin manager estimates by production area, United States, 1974

Contract Price per Pound	West	New Mexico	Texas-Oklahoma	Mississippi Delta	South-east	United States
cents	percent of sample areas[1/]					
70	0	0	0	9	6	4
65	0	17	0	18	6	8
60	62	50	38	18	53	37
55	21	17	8	9	12	11
50	17	17	46	28	23	30
45	0	0	8	18	0	10
Total	100	100	100	100	100	100

[1/] Based on replies from 82 gin managers obtained from a total sample of 150 gins.

Source: Texas Agricultural Market Research & Development Center, Texas A&M University, survey data.

Table 23. Time of and producers' preferences regarding cotton contracting month, United States

Months	Actual	Preferred	T Value
	percent		
November - January	20	23	0.63 N.S.
February - May	56	56	0.00 N.S.
June - October	24	21	0.62 N.S.
Total	100	100	

Source: Texas Agricultural Market Research and Development Center, Texas A&M University, national survey among gins.

Table 24. Delivery dates for cotton under crop contracts, United States, 1972-74

Month	Year			T values[1/]
	1972	1973	1974	1973-74
	percent of total			
September - November	8	7	21	3.57***
December	47	50	42	1.39*
January	5	2	2	.00
February - March	5	5	1	2.05**
As ginned	34	34	32	0.36
Income tax options	1	2	2	.00
Total	100	100	100	

[1/] Significant at 99 percent confidence level ***, at 95 percent **, and 90 percent *.

Source: Texas Agricultural Market Research and Development Center, Texas A&M University, national survey among gins.

CONSIDERATION OF CONTRACT PROVISIONS IN COTTON CONTRACTING

Contract Provisions That Should Be Evaluated

A wide variety of individual contracts have been used in cotton crop contracting. In addition to the basic differences between bale and acreage contracts, and various pricing schemes, substantial variation in legal and general terms exists. The industry continues to work toward development of acceptable standard or model contracts, but such model contracts will not displace the need for careful legal and business analysis of each contracting proposition. Points which should be considered are the following.

What, exactly, is being contracted?

Most bale contracts are exactly that--a contract to deliver a specified quantity of bales on or by a specific date. Variations in dates and qualities deliverable may be allowed. The risk associated with meeting the delivery of the bales is the producer's, although disaster clauses may be applicable under certain conditions.

Acreage contracts are much more variable. Such contracts can be viewed in some instances as the sale of the use of a specific piece of land with the necessary management, supplies, and equipment to grow a crop of cotton. Virtually all risks shift to the buyer.

How will the price be determined?

Variations exist from prices for each specific grade/staple, basis futures or loan, to a set amount per pound regardless of quality.

Seller's call contracts have been used in some cases. While they are slightly more complex than fixed price contracts, they may offer advantages to both buyer and seller.

What specific requirements should be made of the producer or buyer?

If there is reason, a producer may be required to grow, harvest or gin his crop in a specific manner. Similarly, a buyer, particularly if a middleman, may be required to hedge his purchase in a specific manner, as by sale of futures contracts. Each specific item should, or should not, be in a contract for a reason. Each item in a contract should be there because it serves the interest of one or both parties, and the price for the cotton covered should reflect the values so provided.

Producers generally are not well informed as to the full range of provisions which a crop contract may or may not contain. Before signing contracts, both seller and buyer should recheck to see that the contract covers all of the necessary points, and no more, and that the price reflects the specifics contracted.

Importance of integrity of the contracting parties.

Ultimately, the performance and satisfaction of a contract rests upon the capability, attention and worthiness of the parties involved. For both buyer and seller the most important single element in a contract may be thorough and up-to-date knowledge of the party with which he is contracting.

Indications from the Research

The following observations are not related to a model contract concept except as may be incidental. Rather, these emerged from the research interviews with mills, merchants, financial institutions and gin managers as useful considerations in crop contracting.

Bale Basis

General evidence from the research indicates that there may be an industry trend, except in California-Arizona, to a bale and quality basis for contracts. Trading eventually is on a bale and quality basis at the merchant and mill level. When producers accept contracts for a part of their anticipated production, rather than full production, their objections to the bale contract become considerably lessened.

Grade and Staple with Premiums and Discounts

There seems to be no logical reason why grade and staple premiums and discounts should not be reflected back to the producer level in order to encourage maintenance of as high quality at the production level as possible. Quality in many instances reflects weather conditions during the growing season. However, if grade and staple are not specified in the contract, the price on a hog round basis reflects a price discount that in effect accomplishes the same thing.

Harvest Method

The contract should stipulate harvesting instructions and penalties for harvesting otherwise. Some of the noncompliance of contracts in 1973 arose from evasion of proper harvesting procedures stipulated in contracts.

Gin Instructions

The usual crop contract now includes some stipulation about ginning instructions. Because of selective area contracting by merchants and mills, the ginning procedures are usually known.

Further experience may be required to indicate whether these need to be stipulated in broad terms or whether more exact instructions will be advisable.

Delivery Date

One purpose of contracting may be to obtain cotton deliveries during specified months. Mills indicated that in some cases October and November deliveries otherwise were difficult to obtain. Therefore, delivery dates should be given careful consideration.

Fixed or Called Price

Most producer contracts are set on a fixed price basis with points on or off the CCC loan price or the December futures price. To a limited degree, sellers on call prices are used based on December futures. However, for this practice to become more widely acceptable, it is necessary that producers know more about futures markets and how they operate.

Limit Contract to Part of Total Expected Yield

Inability to know yields beforehand where there are wide variations in weather conditions makes it inadvisable for producers to contract their full anticipated production under normal growing conditions. Largely because of this reason, producers have been inclined to prefer acreage rather than bale contracts. General acceptance was found among producers, merchants and mills interviewed to bale contracting for one-half or two-thirds of a producers' anticipated production. Consequently, this procedure is highly recommended outside the California-Arizona areas.

Disaster Clause

Further consideration needs to be given to the feasibility of disaster clauses under bale contracts. Producers are more willing to accept bale contracts if disaster clauses are included. This gives them relief from having to buy cotton in case growing conditions make it impossible to produce the required number of bales. Since mills and/or merchants contract over a reasonably wide geographic area, inclusion of a disaster clause would likely affect a small proportion of their potential deliveries.

Check Privilege on ASCS Records

In order to prevent willful noncompliance with crop contracting, it should be stipulated in the contract that the mill, merchant or other firm holding the contract should have the privilege of examining the yield and production records turned in by the producer to the Agicultural Stabilization and Conservation Service. This record forms the producer's historical record of production and on which acreage or marketing quotas are applied when these are in operation. Therefore, it is to the advantage of the producer to record his full production to protect his acreage and yield base.

Cover Sale Rights for Landlord's Share

Part of the noncompliance problem encountered in 1973 was an effort on the part of landlords to remove their cotton from the contract of sale when a higher price was available in the open market. Contracts, when desired, should indicate that the landlord's share is included. Signatures of landlords should be obtained on contracts to make this obligation firm.

Provision for ASCS Contracting Record

It is suggested that the ASCS might assume the responsibility of the clearing house for information on contracts existing between buyers and individual producers. This would prevent double contracting occurring and also facilitate the release of contracted cotton because of lack of a universal system of records. Apparently some of the uncontracted cotton in 1973 had difficulty in moving because of differences of opinion about whether the bales involved were within or outside the existing contracts.

IMPACT ON COTTON PRICE BEHAVIOR

Experience during the 1970-74 period raises the question of what effect crop contracting has, if any, on cotton prices. The latter part of the period certainly was not noted for price stability. The question is whether there was a causal or coincidental relationship between the two phenomena. In search for an answer, price behavior in relation to contracting has been analyzed on a 12-month and 21-month basis over three crop years.

Crop Contracting and 12-Month Price Behavior

Without crop contracting, the typical marketing period for cotton covers 12 months. It begins about August when crop harvest gets underway and extends through the following July, after which marketing of the next crop begins. This August-July period is also recognized as the marketing year by USDA statistics.

For purposes of evaluating cotton price behavior, two price series for cotton were examined, one being the price at designated spot markets[1/] and the other the average of futures prices for near trading months on the New York Cotton Exchange.

Analysis of monthly average spot market prices, Table 25, revealed that price variability changed considerably over the four-year period. During 1970-71, when govenment price supports strongly influenced market prices, the price range over the marketing year was only 2.80 cents and the coefficient of price variation was only 3.6 percent. By the 1973-74 marketing year as government support faded away, the price range was 25.88 cents with a coefficient of variation of 13.2

[1/] The 11 designated spot markets for cotton are Greenville, SC; Atlanta and Augusta, GA; Montgomery, AL; Memphis, TN; Greenwood, MS; Dallas, Houston and Lubbock, TX; Phoenix, AZ; and Fresno, CA. Little Rock, AR was deleted November 1, 1973.

Table 25. Average price of strict low middling, 1 1/16", cotton in designated spot markets, by months, 1970-71 through 1973-74 marketing seasons

Month	1970-71	1971-72	1972-73	1973-74
		cents per pound		
August	25.55	28.91	34.21	69.37
September	25.31	29.37	29.20	83.05
October	25.06	29.82	27.37	77.96
November	24.77	30.18	30.02	68.98
December	24.55	32.02	32.21	78.74
January	24.80	34.61	35.08	80.32
February	25.22	35.14	36.05	70.88
March	25.67	35.65	37.68	64.68
April	25.98	37.85	42.50	65.64
May	26.53	39.34	47.54	58.43
June	27.13	37.77	48.31	57.17
July	27.35	36.23	54.42	57.22
Price behavior measurements 12-month spot market		1971 crop	1972 crop	1973 crop
Average	25.66	33.91	37.88	69.37
Price range	2.80	10.43	27.05	25.88
Standard deviation	.92	3.69	8.54	9.16
Coefficient of variation	3.59	10.90	22.53	13.21
Price behavior measurements 21-month contract and spot market period		1971 crop (Nov. 1970-July 1972)	1972 crop (Nov. 1971-July 1973)	1973 crop (Nov. 1972-July 1974)
Average		30.42	36.83	56.96
Price range		14.79	27.05	53.03
Standard deviation		4.99	6.67	16.99
Coefficient of variation		16.00	19.00	29.00

Source: U.S. Department of Agriculture, Cotton Price Statistics (monthly price data), Cotton Division, A.M.S., Vol. 56, No. 2, September 1974, p. 18.

percent. That was a 9.2 fold gain in the within season price range and a 3.7 fold increase in the coefficient of variation. As noted, however, this appears to be largely the effect of withdrawal of government price stabilizing activity and not the results of crop contracting. This conclusion is supported by the fact that spot market price variability for the 12 months was less in 1973-74, when contracting represented 75 percent of the crop, than it was in 1972-73 when contracting covered only 36 percent of the crop. The price range in 1973-74 was 1.17 cents less and the coefficient of variation was down 9.3 points. Therefore, it can be concluded that the variability of spot market prices during the marketing year (August-July) was not increased by a higher level of crop contracting.

Crop Contracting and 21-Month Price Behavior

A direct effect of crop contracting is a lengthening of the marketing season the producer faces for his cotton. Rather than a 12-month August-July season, it starts in November and extends through July of the second following year. Thus, a 21-month marketing season arises from the individual producer's standpoint, Table 26. The marketing time dimension is thereby expanded by nine months or 75 percent.

A longer time span normally involves greater price variability. However, a comparison of the spot market prices for the 1971 crop year on a 12- versus 21-month basis finds reasonable comparability between the two time length periods. That crop year the price range was 10.43 cents, with a coefficient of variation of 10.90, on a 12-month basis versus a 14.79 cent price range, and a 16.00 coefficient of variation, for the 21-month period. For the 1972 crop, the price range was 27.05 cents versus 27.05 and a coefficient of variation of 22.53 compared with 19.00.

Table 26. Marketing period for cotton

Harvest Year	Active Market Period		
	Crop Contracts[1/]	Spot Market	Total Market
1972	Nov. 1971-July 1972	Aug. 1972-July 1973	Nov. 1971-July 1973
No. of months	9	12	21
1973	Nov. 1972-July 1973	Aug. 1973-July 1974	Nov. 1972-July 1974
No. of months	9	12	21

[1/] Some contracting occurs in October but November is used here as the usual starting month. Not considered are the multi-year crop contracts.

Source: U.S. Department of Agriculture and survey information.

The 1973 crop year experience, when contracting was high, was decidedly different. The price range over the 21-month marketing period was 53.03 cents in contrast to 25.88 cents for the 12-month span, or an increase of over 100 percent. The coefficient of price variation rose from 13.21 to a level of 29.00, up about 120 percent. A somewhat comparable price pattern is provided in an analysis of near active months futures quotations, Table 27.

Greater price variability observed for the 1973 cotton crop coincided with the increased level of cotton contracting. This has led some to conclude that the high level of crop contracting was the causal factor. The total cotton supply and disposition data for the two years were comparable and lend support to such a view, Table 28. However, several unusual circumstances emerged in 1973 that cast doubt on the validity of such a conclusion. A marketing season clearly is not the same viewed backward versus forward. Attention will now be directed to those matters.

Special Considerations Influencing the 1973 Marketing Season

The 1973 year opened with plantings estimates down 7 percent from the 1972 level indicating a 1973 decline in production of as much as 1 million bales from 1972. The export developments were also a factor. Exactly how much Japanese trading companies increased their purchases of U.S. cotton is not clear but U.S. exports gained 0.8 million bales. Some reports are that the trading companies speculatively bought U.S. cotton and left it in the warehouses for resale into the U.S. market at a hoped for later profit, partly because of an anticipation of a world supply short fall and partly as a commodity haven against fluctuating international exchange rates. If this amounted to as much as 750 thousand to 1 million bales, the combined effect of 1) a lower crop outlook, 2) increased export demand plus, 3) domestic market

Table 27. Closing futures prices for middling 1 1/16" cotton on the New York Cotton Exchange for near active months, mid-month 1970-71 to 1973-74

Month (15th or previous quote date)	1970-71	1971-72	1972-73	1973-74
		cents per pound		
August	26.47	31.90	29.25	74.00
September	27.41	30.49	26.74	85.00
October	26.55	31.97	27.05	81.35
November	26.25	31.16	32.51	71.90
December	26.45	35.88	34.13	79.50
January	26.56	37.10	36.20	88.85
February	26.80	37.40	38.24	70.32
March	26.84	38.85	40.60	61.26
April	27.32	39.78	46.00	66.55
May	29.16	42.95	48.25	56.00
June	27.28	39.00	48.30	56.10
July	31.70	30.27	55.95	54.15
Price behavior measurements 12-month spot market		1971 crop	1972 crop	1973 crop
Average	27.40	35.56	38.60	70.42
Price range	5.45	12.68	29.21	34.70
Standard deviation	1.54	4.27	9.40	11.85
Coefficient of variation	5.63	12.00	24.34	16.00
Price behavior measurements 21-month contract and spot market		1971 crop (Nov. 1970-July 1972)	1972 crop (Nov. 1971-July 1973)	1973 crop (Nov. 1972-July 1974)
Average		32.15	37.89	58.34
Price range		16.70	29.21	56.34
Standard deviation		5.25	7.00	17.49
Coefficient of variation		16.00	20.00	29.00

Source: U.S. Department of Agriculture, Cotton Price Statistics, Cotton Division, Agricultural Marketing Service, Annual reports 1970-71 through 1973-74.

Table 28. U.S. cotton supply and disposition, loan, spot and futures prices, 1965-74

Year Begin. August 1	Carry-over	Total Supply	Mill Consumption	Exports	Total Off-take	Loan Price	Spot Price	Futures Price 1/	U.S. Supply Less Exports
	- - - - -1,000 480-pound net weight bales- - - - -					- - - - - -cents- - - - -			bales
1965	14,288	29,261	9,501	3,035	12,536	29.00	29.60	28.25	26,226
1966	16,869	26,828	9,479	4,832	14,311	21.20	22.08	26.19	21,996
1967	12,526	19,898	8,987	4,361	13,348	20.55	24.83	31.94	15,537
1968	6,452	17,560	8,249	2,825	11,074	20.60	22.90	27.10	14,735
1969	6,526	16,534	8,034	2,878	10,911	20.70	22.15	25.51	13,656
1970	5,792	16,180	8,123	3,897	12,020	20.70	23.55	27.40	12,283
1971	4,285	14,792	8,177	3,385	11,562	19.50 2/	31.52	35.56	11,407
1972	3,312	17,021	7,769	5,311	13,097 3/	19.50 2/	33.14	38.60	11,710
1973	4,058	17,230	7,472	6,119	13,591	20.65 2/	67.10	70.42	11,111
1974 4/	3,851	16,690	6,780	4,513	11,293	27.06 2/	-- 5/	-- 5/	12,177

1/ Average based on mid-month futures prices for near active months.

2/ Net weight basis.

3/ Includes small amount destroyed.

4/ Preliminary and estimated.

5/ Not available.

Source: U.S. Department of Agriculture, Cotton Price Statistics 1965-74 and Cotton Situation Report, August 1974.

buying by trading companies as an exchange rate shelter could have easily appeared as a 2.5 to 3.0 million bales tighter 1973 market than in 1972. This outlook was compounded by heavy rains and flood conditions in part of the Mississippi Delta production area which reduced anticipated cotton planting and thereby foreseeable supplies. These developments together with speculative apprehension toward the year end over availability of cotton supplies, outside of crop contracts, could understandably propel cotton prices toward the 80 and 90 cent per pound level that was eventually reached.

It may be helpful to visualize the marketing year through the concept of a market supply and demand diagram. The approximately 3.0 million bale tighter market outlook toward the end of the 1973 crop marketing year could have been perceived as either an increase in demand from D_1, D_1 to D_2, D_2 or a fall in available supply from S_1, S_1 to S_2, S_2 by those in the market at the time, Figure 4. Whatever the case, the effect was to raise price to the 70 cent per pound level.

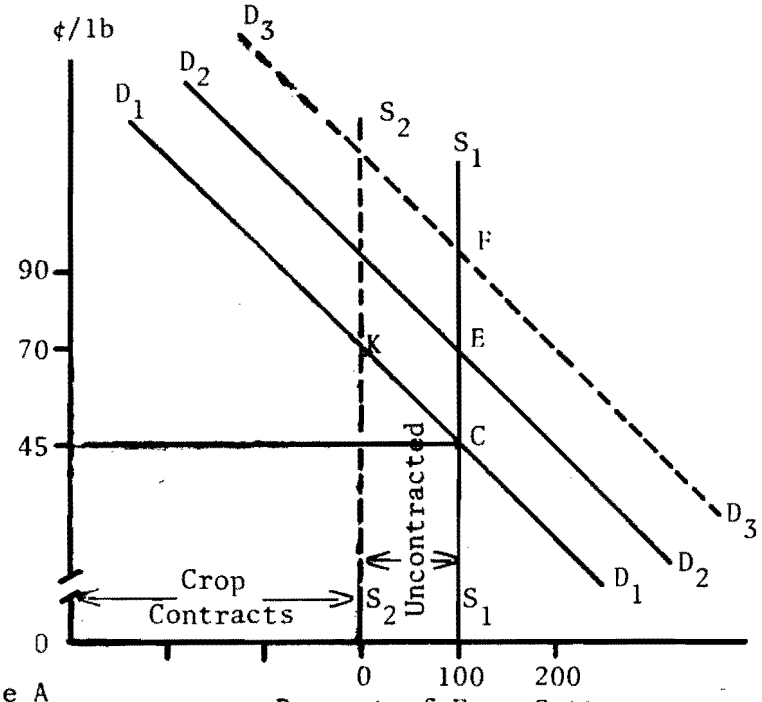
The graphic presentation represents a subjective interpretation of what possibly transpired; nonetheless, it is largely substantiated by comments of mill and merchant executives interviewed. Furthermore, the price and supply figures are based on known data. Only the slope and location of the demand lines in Figure 4 are subjective.

No recent demand analysis for cotton is available directed to raw cotton prices. Prior studies have indicated a price elasticity of demand for cotton of between 0.1 and 0.2 [3]. This finding appears to be confirmed by a recent fiber demand study [4]. However, another recent study failed to find any statistically desirable demand elasticities [5].

A more steeply sloped demand line would be required in Figure 4 to reflect as low a demand elasticity with respect to price as the above cited studies report. The prospective 3 million bale tightening

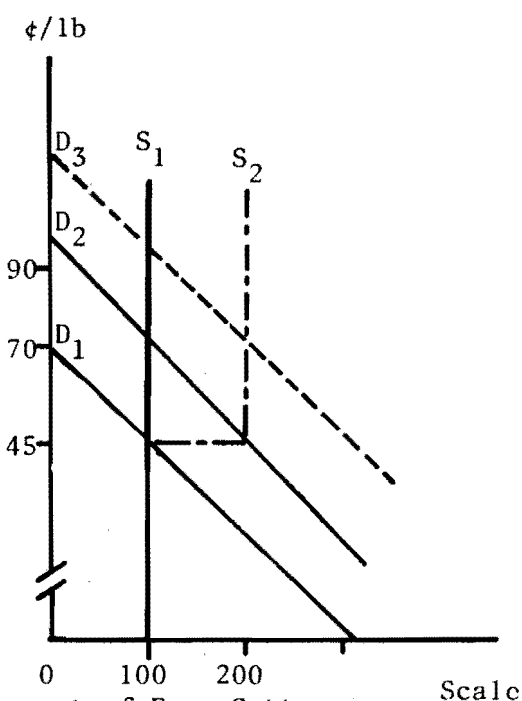
Interaction between crop contracting and spot market cotton price

Figure 4



Scale A	Percent of Free Cotton					
Scale B	0	3	6	9	12	15
	Million Bales					
Scale C	0	25	50	75	100	125
	Percent of 12 Million Bale Base					

Figure 5



Scale A	Percent of Free Cotton			
Scale B	9	12	15	
	Million Bales			
Scale C	75	100	125	
	Pct. of 12 Mill. Bale Base			

3 mill. bale buffer stock

of supply referred to above would be equivalent to a 25 percent reduction in supply, which at a 0.14 price elasticity of demand would create about a 175 percent jump in price. Applied to the average spot market price of 33.14 cents per pound average in 1973, Table 28, that would result in a price estimate of 91 cents for the 1973 crop. It is difficult, though, to accept cotton demand as being so highly inelastic, even within season, though the combined effect of the two demand shifts surmised here give the same price result.

The limited evidence and information available from the research interviews seem to suggest that perhaps half of the price rise for the 1973 crop was the effect of a second successive increase in export and domestic demand. The second half possibly reflected a semi-panic, delayed reaction to the exceptionally high portion of crop sold through crop contracts in 1973. Such a delayed reaction is possibly somewhat like that to the U.S. grain sale to Russia. Realization of its impact was delayed mostly until after the fact.

Average cotton exports for the 1968-71 period were 3.2 million bales but they jumped to 5.3 million bales in 1972 and 6.1 million in 1973, Table 28. Contracted cotton with growers represented 4.9 million bales in 1972 and 9.7 million bales in the 1973 crop. The proportion of the increased exports represented in these crop contracts is not reported by official sources.

A conceptual economic analysis framework for the 1973-74 situation based on the graphic presentation, Figure 4 and Figure 5 is discussed below.

Cotton production in 1973 was about 12 million bales. Of this amount 75 percent, or 9 million bales, by harvest time was under crop contracts to merchants or mills. This is depicted in Figure 4 by reading scale B, which shows a 12 million bale crop as noted by the supply line S_1, S_1. The bales under crop contract are represented by the amount in Figure 4 which terminates on scale B at 9 million bales.

The uncontracted portion of the crop is the 3 million bales lying between 9 and 12 million bales, scale B.

Because of increased export firm demand for 1973 crop cotton, the demand line shifted upward from the level of D_1, D_1 to D_2, D_2. Against a fixed supply this raised the price from 45 cents, point C in Figure 4, to about 70 cents per pound; point E in Figure 4. Actual exports, however, increased by only about 1 million bales. The effect, nonetheless, was to further shorten the domestic U.S. supply possibly over and above contracting effects by that amount, and cause U.S. mills to be increasingly concerned about adequacy of cotton supplies. That concern triggered a second stage of psychologically based demand which shifted the demand line to the D_3, D_3 level. That brought prices for a short period to the 90 cents per pound level, point F in Figure 4. No demand studies are available that provide information on the elasticity of demand for cotton within a marketing year. Consequently, the slope of the demand lines in Figure 4 are purely subjective yet probably are not entirely unrealistic. Demand line D_1, D_1 for example has an arc demand elasticity of 0.66 between points K and C in Figure 4.

The obvious conclusion is that what appeared in the annual crop summary data, Table 28, to be a comparable year to 1972 was actually far from it. Market prices, not annual supply and off-take data, mirrored the prevailing uncertainties.

The Potential of Market Uncertainties Affecting Contracting versus Futures Market Activity

Was a high level of crop contracting a contributor to the price instability surrounding the 1973 U.S. cotton crop? Or, was contracting, like price, simply responding to the market supply and demand uncertainties? Conceptually, the price gyrations could have appeared regardless of any contracting. It must be considered, as noted earlier in this report,

that cotton crop contracting is simply a partial replacement for futures market operations. Given the desire to 1) use cotton as a hedge against fluctuating international exchange rates and 2) to forward buy cotton because of an anticipated world short-fall in supply, a position could equally well have been taken in the futures market to accomplish the same ends. In fact, that would be the usual approach. That it was not used and, therefore, was not mirrored in the futures market sooner apparently was what caught the U.S. industry somewhat off guard.

Economics of the situation induced the forward position to be taken in cotton through crop contracts rather than futures contracts. As merchants interviewed reported, the cost of taking a forward cotton position via crop contracting, is less than through the futures market. Margin costs arise immediately in the latter but may not be present at all, or at most for only the partial period of the contract, in the former.

One may pursue the analogy further between crop contracting and forward buying speculatively in the futures market. Recent events find some holders of crop contracts not taking delivery and instead buying out of the contracts. Comparable action results when the speculator long in cotton makes a futures contract sale to close his position when the market has moved against him. He takes the differential loss between his buy price which could have been 70 cents versus a current sale price of 50 cents. Buying out of a crop contract for 20 cents would be a parallel situation. Importantly in both situations--crop contracts or futures market trading--the original forward buying puts definite upward pressure on prices and the counter sales exert a downward price force.

Another factor motivating foreign buyers to use crop contracts instead of futures markets in the 1973 crop period was that little if any money had to be paid before harvest of the crop. Devaluation of

the dollar was anticipated; therefore, settling of payments after devaluation meant a lower cost of cotton in terms of yen or other Far East currencies.

In retrospect, the question does arise as to whether cotton price behavior--contract, spot and futures--might have been substantially different had there been better market information dissemination. Attention now turns to that subject.

NEED FOR IMPROVED MARKET INFORMATION SYSTEM

Statement of the Problem

The need for and value of market information generally increases with the length of time involved in the product's normal production and marketing processes. As that time period increases, so do the number of variables that comprise an adequate market information system. These principles require consideration in relation to changes induced by cotton crop contracting.

The current market information system for cotton was established for an active spot market which began with the crop harvest in August and continued until the next crop harvest. The basic question at issue was the value of cotton during that 12-month marketing period. The price risk that confronted cotton producers was considerably limited by three factors: 1) the crop size was already known, 2) mills by then had a feel for the strength of cotton goods orders, and 3) large CCC loan stocks prevent substantial deviations from the loan price. Introduction of futures trading added a few months to the time dimension and increased the information system requirements. For the most part, however, futures market information users are merchants, marketing cooperatives and mills. Cotton usually readily passes from producers into those hands.

Crop contracting has extended the price risk period for producers to 21 months. Producers are, thereby, required to judge the possible price changes over two crops rather than one, with little additional market information to assist them. Compounding the problem is the historical tendency for farmers to make judgements based on last years' prices rather than on an evaluation of future potential market developments. Nothing was unusual in their accepting 1973 crop contracts at 32 to 35 cents per pound, in view of a 33 cent average spot market

price for 1972 cotton. For October 1972 through January 1973, the designated spot markets' average price was 31.17 cents per pound for strict low middling, 1 1/16" staple. Futures market quotations were at a comparable level.

Cotton growers were not helped in their appraisal of the market outlook by the USDA actions and outlook statements during the winter of 1972-73. Secretary Butz announced the provisions of the 1973 Upland Cotton Program and these were restated as follows in the Cotton Situation, February 1973.

> Major provisions of the 1973 Upland Cotton Program, announced in November, include:
>
> A national base acreage allotment of 10 million acres, down from 11 1/2 million in 1972.
>
> No cropland set-aside requirement as a condition of program eligibility compared with a 20% requirement in 1972.
>
> A national production goal of 12.1 million 480-pound net weight bales, nearly a million below the year earlier goal.
>
> A preliminary payment of 15 cents per pound, same as 1972.

The Secretary of Agriculture was quoted as follows.

> Adjustments in the national base acreage allotment to 10 million acres will improve cotton's position in the marketplace. At the same time, individual producers can increase their overall income by putting lands formerly in set-aside or in cotton into other crops that are currently in short supply [5].

Producers were further partly misled by the following comment in the February 1973 Cotton Situation report summary.

> Look for sharply larger U.S. cotton exports during the balance of 1972-73. After a slow start this season, movement into export markets has picked up and may total 4 million bales or more, up from the 3 1/3 million last year [5].

Instead of 4 million bales of exports, the 1972-73 marketing year figure was 5.3 million bales or 65 percent greater than in 1971-72.

Also, the predicted carryover in the summer of 1973 was over-estimated by about 1 million bales, being 4 million bales instead of the predicted 5 million. Given this guideline market information, farmers engaged in early contracting of the 1973 cotton crop acted in a very rational manner when contracting at prices of between 30 and 40 cents per pound. However, the spot market price eventually reached 90 cents per pound during a short period of the 1973 crop year.

Little wonder that the survey found almost unanimous agreement that better market information is badly needed, especially for cotton farmers. Comments by merchants and financing agencies can be tersely summed up as "too little and too late." Only a few feel the information is available if the farmers would only dig it out. Being accustomed to using little, if any, forward information, most farmers do not know what to look for, much less where.

Possible Components of a Prototype Market Information System

As one merchant stated, there are only four basic requirements of a good market information system: current year supply, current year demand, coming year supply, and coming year demand. The difficulty comes in arriving, with acceptable accuracy, at these four determinants, and before the fact, not concurrently or afterward.

It is not the intent to prescribe here a market information system embodying all of the sophistication today's market organization demands. That would be the subject of another study. Nonetheless, it is evident that major components would include the following:

1. Demand expectations analysis
    a. Domestic
        1) Major retailer current inventory position, sales trends, and expectations for 12 to 18 months ahead
        2) Cutter's (apparel manufacturer's) inventory position, sales trends, and expectations for 12 to 18 months ahead

3) Mill inventory position, sales trends, and level of advanced orders for 12 months ahead

b. Export
   1) Far East mill activity trends, year ahead expectations and advanced orders position
   2) Japanese trading company inventory, market outlook and purchase plans for next 12 months
   3) Economic planning activity in Far East markets and implications for cotton
   4) European mill demand trends, expectations and advanced order positions for coming year

c. Market outlook for synthetic fiber competition within U.S. and foreign markets
   1) Sales levels, inventory position, capacity of plants, expansion plans for next 12 to 15 months
   2) Anticipated pricing policies and relationship to other fibers
   3) Market promotion activity, level and form, for synthetics, current and plans for next 18 months

2. Supply forecast
   a. U.S. production estimates for coming marketing period on a high, low and probable level
   b. Carryover position at each marketing level: producer, merchant, mill and government with range of expectations
   c. Foreign supply expectations: high, low and probable levels over coming marketing year

3. Crop contracting activity by area in U.S. by mills, merchants and foreign buyers and expectations
   a. Volume contracted
   b. Price levels accepted
   c. Mill and merchant contract offerings
   d. Producer offerings

The above market information service should be available to cotton producers in as complete detail as possible on a biweekly basis from October through December and weekly from January through April, and at least monthly thereafter until the following October.

Who Should Provide Market Information Service?

A few firms engaged in agricultural product marketing have highly sophisticated market information systems. Constant effort is made to

improve them because the better the system the greater the potential profit opportunities. These are often classed as multinational firms. The same motivation does not prevail for governmental forecasting efforts, either from internal or external demand. Since good market information is valuable, competitive motivations endeavor to keep it private and confidential.

The cotton producer is the least knowledgeable of all in the cotton industry regarding market information. Even if mills and merchants have perfect information, it is improbable, for three reasons, that it could be communicated to producers. First, the better the information, the more likely one firm will profit by it. Second, it is an expensive task for them to assume, with uncertain returns for their efforts. Third, farmers might view it as self-serving and, therefore, highly suspect in value. Farmers, therefore, need a system of their own. Alternatives need to be explored. One would be to assign the task to Cotton Incorporated since it represents and is financed primarily by cotton growers. The larger producer marketing cooperatives endeavor to provide market information to their members, as do some merchant firms for their customer use. These should continue and be improved, as desired, but a more generally available source for farmers is essential if a free market system for cotton, with or without contracting is to function properly.

The use of market information should be for planned closer alignment of production to demand at reasonable market prices. It could be assisted materially, however, if a moderate level of buffer stocks were available to assist with unforeseen circumstances.

The Advantage of Buffer Stocks to Moderate Cotton Price Behavior

The governmental decision to sell its reserve stocks of agricultural products has haunted the U.S. economy ever since. Total elimination

of stocks contributed to our general inflation problems. Equally undesirable was the price instability created in the respective product markets. That is of major concern in the case of cotton in its competition against synthetics for fiber markets.

Whereas improved market information can assist in avoiding excessive swings in cotton prices, coupled with a reasonable quantity of buffer stocks it can achieve a more successful leverage toward cotton price stability. How large need buffer stocks be? Partial insight into the matter is available from the graphic analysis of Figures 4 and 5.

The 3 million bales of uncontracted 1973 cotton was faced with the upward shift in demand to D_2, D_2. The market equilibrium price thus became about 70 cents per pound, but scarce buying represented by D_3, D_3 moved it to 90 cents per pound. Figure 5 examines the 3 million uncommitted supply and the estimated required further supply that might possibly have held the price of cotton at 45 cents. The relationship of the demand lines transferred from Figure 4 suggests that a reserve of about 3 million bales, in addition to normal trade channel supplies, possibly could have stabilized prices. This, of course, is only a subjective analysis and would require proper research for a firm conclusion.

The official position of the USDA is that the industry (merchants, mills and cotton growers) should establish and carry this reserve. Thus far, and especially at today's cost of money, no one is volunteering for the job. At 45 cents per pound, the value of a 480-pound net weight bale would be $216. The 3 million bale reserve would have an inventory value of $648 million. Carrying charges at 8.5 percent interest would equal $55 million annually, not counting transportation and storage expenses. Whether this outlay can be carried within the industry remains to be seen. Regardless of who carries the burden of managing these reserve stocks, it is desirable that a more adequate information system be available.

MARKET ORGANIZATION ALTERNATIVES FOR COTTON CROP CONTRACTING

Cotton crop contracting introduces a new requirement upon the cotton production-marketing system. Namely, an improved coordination between supply and demand is required--one that can, in effect, span two crop years rather than one. Thus the relationship or linkage between the parts of the production-marketing organization depicted in Figure 6 must become a closer knit system.

First, it is helpful to simply identify existing and conceptual crop contracting marketing systems noted in the accompanying chart.

Existing systems:

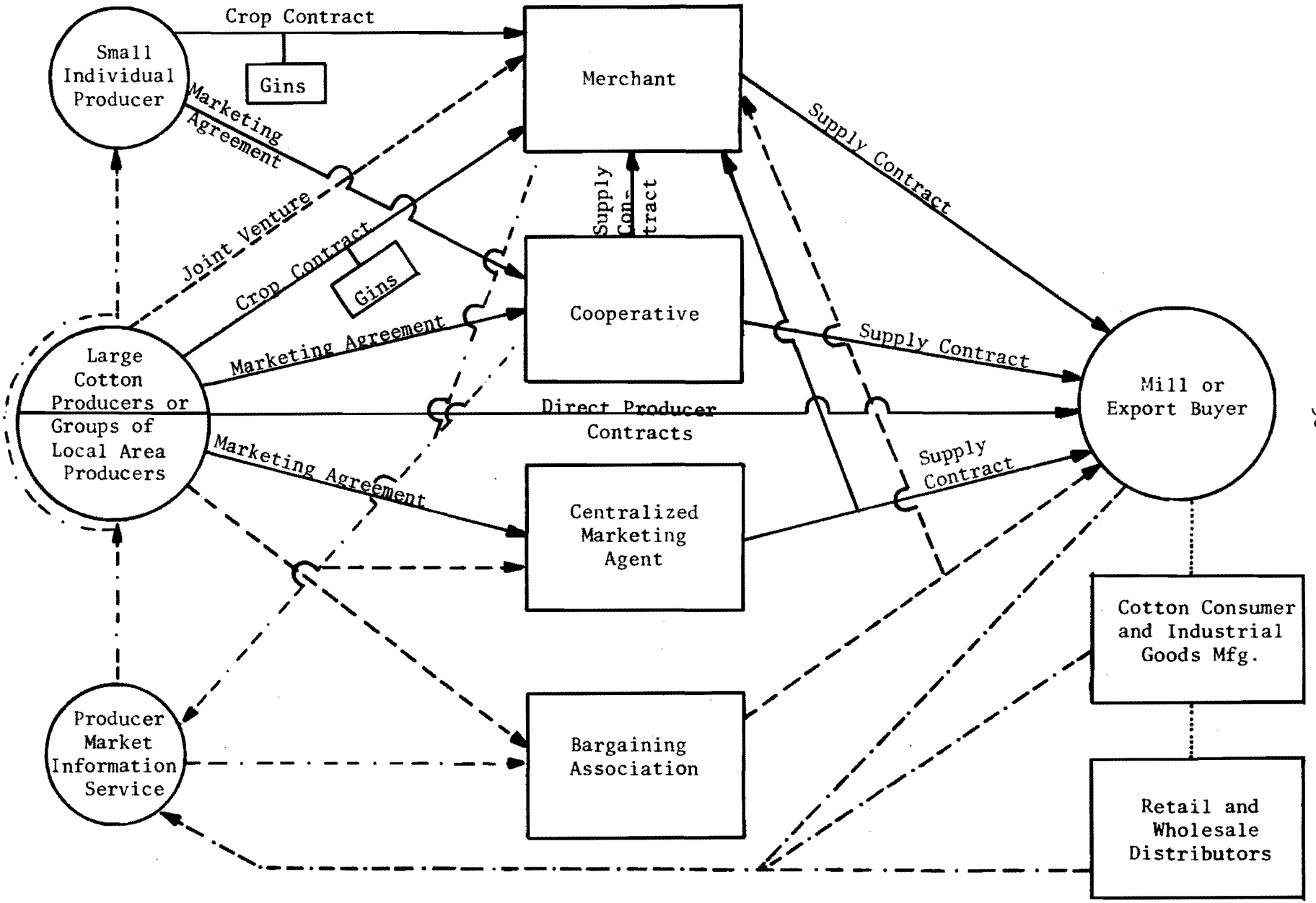
1. Producer production contract between large producers, or groups of small producers, with mill or export buyer.

   This system is now used primarily between mills and large producers where past working relationships have been established. Contracting initiative usually comes from the cotton producer. This system will grow with the further development of central ginning.

2. Producer contract with merchant.

   A system wherein the merchant initiates contracts with individual producers, small and large, to assure himself of a cotton supply for which he may or may not have an advanced sale. If contracts are not covered by advanced sales, they may be hedged in the futures market until sales to mills or export firms are achieved.

Figure 6. Actual or conceptual market organization systems for cotton crop contracting



3. Mill or exporter contract with producer, with merchant serving as agent contractor with the producer.

   One of the more prevalent systems during the 1970's. Initiative generally lies with the mill or foreign buyer.

4. Producer marketing agreement with his cooperative and the cooperative in turn having a supply contract to mills or foreign buyers.

   A system that has operated in several forms in recent years depending upon whether the cooperative uses a call pool, seasonal pool, or acts as agent for mill, or export buyers for crop contracts. Initiative lies usually with the cooperative but may lie with the buyer.

5. Producer advanced marketing agreement with his cooperative and a cooperative spot sales or near term contracts to mills and export buyers, with occasional sales to merchants.

   A system used in part for domestic market sales by the cooperatives. Initiative normally is by the cooperative.

Conceptual systems:

1. Establishment of producer area crop contracting associations that would 1) combine potential supplies of small and/or large producers 2) establish a marketing office and 3) actively seek sales to mills and/or foreign buyers. Objective is to place added marketing initiative and involvement at the cotton producer's level.

2. Marketing agreement by individual growers with a merchant who will serve as their crop contract marketing agent. The

agent will actively seek supply contracts with mills or foreign buyers for the growers he represents.

3. Producer bargaining association.

   A bargaining association could be formed that would establish the basic terms of trade and pricing for crop production contracts that could either be suggestive or binding on the industry, depending on the authority granted to the association. Cotton trading would proceed through normal channels. Initiative lies with producers. Would likely require legislative support to be effective if adopted.

4. Joint venture of producers and merchant firms in establishing crop contract marketing service for its members.

   A group of producers would jointly obtain or designate an existing merchant as their sales representative in cotton contract marketing and participate jointly in financing the marketing expenses involved.

It is useless to modify a marketing system unless inefficiencies inequities or bargaining imbalance develop in its performance, or else changes occur in marketing methods that induce a cause for marketing system restructuring. Some may feel that one or more of these has occurred as a result of greater dependence upon cotton crop contracting for assuming a market stability role for cotton formerly performed by government programs. Certainly the 1971-74 experience record suggests that the present system is not performing adequately for all concerned.

Caught in a period of sharp market changes, the question is unresolved as to where the real market coordination responsibility in the cotton industry will finally rest. Mills, merchants and cooperatives have tried to fill the breech left by the formidable change in government programs. Expansion of crop contracting is one effort to

provide needed coordination signals. But experience so far has clearly shown that crop contracting must be accompanied by a far more adept market intelligence input. Government information dissemination programs presently are not nearly adequate for the task.

Several alternatives may be outlined here for further consideration.

1. Request a much expanded market information service from the U. S. Department of Agriculture in terms of breadth of information provided as well as frequency of dissemination.

2. Establish an improved market information program through the National Cotton Council. The program would disseminate frequent meaningful demand and supply information forecasts to guide crop contracting terms by producers, merchants and mills.

3. Producers could establish their own system of market analysis and information, possibly through Cotton Incorporated, to guide crop contracting activity.

4. Expand market information systems of cooperatives. Re-emphasize seasonal pools for crop contracting since these have the ability to reflect the average price prevailing over the full marketing period of 21 months. Co-ops would make forward crop-type contracts with merchants, mills and export buyers and have binding commitment crop contracts or marketing agreements with their producer members. Increased emphasis on internal market information programs would be required to guide members in production decisions.

5. Organization of individual producers into local area marketing associations for the purpose of attaining adequate physical volume of cotton acreage and production to deal directly with merchants and mills in crop contracts. Such

groups can assume better initiative in obtaining contracts than individual producers, especially when the latter have only an average or less amount of acreage. This will assist producers to be active in contracting rather than only passive receivers of offers that hopefully become available to them.

A consideration must be given not only to the desirability but also the feasibility of establishing each of the alternatives and its relationship to the marketing systems outlined in Figure 6.

Thus far few examples have been noted of a joint venture arrangement between producers and a merchant. Potentials for this arrangement may become important if growers have reason to doubt the reliability of merchants in honoring crop contracts. Merchants could be allied to grower groups on a fixed fee or commission basis to represent them. In such an arrangement the merchant would also be expected to provide market information services to the growers he represents.

Bargaining associations have little prospect of being successful unless backed by some official designation as sole bargaining agent for their producer members. The history of bargaining in agricultural products has not been encouraging thus far. Given legislative backing, as proposed by the Mondale Bill, it could become a viable alternative.

Formation of a centralized marketing agency would be a new departure for cotton. Conceptually it could handle all cotton crop contracts not already moving through producer cooperatives. If given total responsibility, it could designate or license cooperatives and merchants as one of their representatives. The major thrust would be to coordinate the supply and demand for crop contracts. That would be accomplished with the aid of a sophisticated market information system which the agency would develop primarily for the producers' use and possibly as a service to the total industry.

Crop contracting within the span of only three years has experienced the full range of market conditions within which it must function to be successful. In 1973, cotton demand was exceptionally strong. It was only moderate in 1974. Thus far in 1975, cotton demand has been extremely weak. The experience of these three years helps provide useful insight as to what organizational support crop contracting may need to be more effective. The above suggestions are designed to stimulate consideration of the formulation of marketing systems that can serve the cotton industry best.

Information obtained in the course of the research suggests that the following should be given priority in consideration of marketing system improvement. Producers should be encouraged to consider conceptual systems number one and two. This is advisable to place the grower in a more direct participating position in establishing effective marketing of his own crop and coordination of his production with it. It is desirable to use the skills of existing merchants under system two. Where this is not available on a mutually satisfactory basis to growers and merchants, system one should be considered for activation. Both systems could operate on a corporate, private enterprise basis.

Simultaneously, existing cooperatives should intensify their efforts to establish an improved marketing system for crop contracts, establish long-range marketing strategies, and establish continued initiative in utilizing the crop contracting marketing method.

Development of the suggested market information system for producers should proceed as rapidly as possible. A general consensus found in the study is inclined toward the performance of this function by Cotton Incorporated. Some question that the U. S. Department of Agriculture would have the necessary latitude and/or flexibility to perform this particular task. Merchants and mills already have access to a wide range of market information whereas cotton producers are lacking in this regard. Cotton Incorporated is largely a producer based organization and logically might assume responsibility for the market information program to producers.

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