SIMON S. BRAND*

THE DECLINE IN THE COTTON FUTURES MARKET

During recent years there have been important changes in the levels of use of various commodity futures markets in the United States. In the autumn of 1963 the level of open contracts in all grain futures exceeded 700 million bushels for the first time in history, with almost half the total in soybean futures, which is now the world's largest commodity market in transactions value. Trading in corn futures reached a record level in 1961, and has since been sustained at levels much higher than any previously attained, despite some decline from the 1961 peak. In 1961/62 the use of the wheat futures market reached a postwar peak from which it has since declined moderately; the futures markets for the less important grains, oats and rye, have also been exceptionally well used in recent years.

Among the major imported commodities, sugar and cocoa have been traded very actively on futures markets in recent years, while the coffee futures market, which had fallen into virtual disuse, has revived slightly as prices strengthened. And among commodities which do not figure significantly in the foreign trade of the United States, the futures market for eggs has only recently declined from record levels of use, that for Irish potatoes grew rapidly to current record levels of use, but faces the ominous threat of prohibiting legislation—the same fate which befell the onion futures market in 1958, after it had developed rapidly.

The degree and kind of governmental intervention in the marketing of the various commodities have probably affected the level of use of futures markets more than any other single factor, excepting of course outright prohibition. The dramatic and contra-seasonal upsurge in the open interest in corn futures in the spring of 1961, which continued into 1962, directly reflected a new selling program by the Commodity Credit Corporation (CCC), the agency through which the government owns stocks. More commonly, the various government programs have impinged adversely upon the use of futures markets, especially via the accumulation and storage of surplus stocks which are not, but would otherwise be, hedged in futures contracts. The decline in cotton futures trading provides an

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outstanding example of this relationship. Once preeminent, with annual trading volume in excess of $15 billion, cotton futures trading has fallen below the one-half billion dollar level in recent years, and now verges upon obscurity.

In the 1952/53 marketing year, the average level of month-end open contracts on all cotton futures markets in the United States was 3,666,000 bales. Ten years later the level had declined to a mere 282,000 bales. The apparent reasons for this decline are the subject of this paper, with attention focused on events during the period in which the downturn started.

The present analysis is based on—and lends support to—the thesis that the level of use of futures markets is fundamentally determined by the demand for hedging facilities; furthermore, that hedging does not consist primarily in "matching one risk with an opposing risk," as is commonly thought, but is done to facilitate business operations and secure profits in a variety of ways (*10,* pp. 434–43). The category of hedging with which this paper is most directly concerned is carrying-charge hedging, that is hedging "done in connection with the holding of commodity stocks for direct profit from storage" (*10,* p. 438).

MARKETING OF COTTON IN THE UNITED STATES

Harvesting of cotton in the United States begins in July, reaches a peak during the period September to November, and tapers off through December, often into January. Since many farmers sell their cotton as soon as it is baled at the gins, marketing off the farms follows very much the same pattern, but continues through winter and into spring.

The first link in the marketing system is the so-called "farmers' market," where the farmer sells his cotton to the ginners, country buyers for cotton merchants, mill buyers, or country merchants. An additional source of demand is presented by the government loan program, which is, for eligible farmers, an alternative to marketing their crop through commercial channels.

From the local buyers some of the cotton passes on directly to mills, whence the bulk finds its way into consumption, or to merchants at the seaports or rail concentration points. The merchants assemble large quantities of cotton and class it into homogeneous lots according to standard classifications or specifications of their domestic or foreign customers.

Exports of cotton are handled by merchants, some of whom specialize in export trade, others practicing it as subsidiary to their domestic operations.

ROLE OF FUTURES MARKETS IN THE COTTON TRADE

In the cotton trade, the futures markets contribute directly to the establishment of spot prices for cotton through the mechanism of trading cotton "on call," that is, in relation to an agreed futures price. The option is then left to one of the parties, usually the buyer, to conclude the transaction as soon as he is satisfied that the spot price, as determined by the specified futures price, is most favorable for him (*6,* pp. 1–3; *8,* p. 4).

Futures trading in cotton has taken place largely in response to hedging needs. In the next section evidence will be presented suggesting that the recent decline in the cotton futures market resulted from a diminished need for hedging facilities, but Table 1 shows in a more static way the predominance of hedging posi-

TABLE 1.—CLASSIFICATION OF TRADERS' POSITIONS ON THE NEW YORK AND NEW ORLEANS COTTON EXCHANGES, SEPTEMBER 28, 1956*

Classification	Number of traders	Positions (*bales*)		Per cent of traders	Per cent of positions	
		Long	Short		Long	Short
New York						
Speculative	564	396,900	231,100	48.5	25.7	14.9
Hedging	599	1,148,200	1,315,000	51.5	74.3	85.1
Total	1,163	1,546,100[a]	1,546,100	100.0	100.0	100.0
New Orleans						
Speculative	196	163,000	191,400	59.2	49.4	58.0
Hedging	135	167,200	138,800	40.8	50.6	42.0
Total	331	330,200	330,200	100.0	100.0	100.0

* Data from U.S. Dept. Agr., Commodity Exchange Authority (CEA), *Cotton Futures: Survey of Open Contracts on the New York Cotton Exchange and New Orleans Cotton Exchange, September 28, 1956* (processed, n.d.), p. 3.

[a] Includes 1,000 bales to balance and adjust minor errors in reports.

tions in the two largest cotton futures markets. Although open contracts were about equally distributed between hedging and speculative positions on the New Orleans Cotton Exchange, hedging positions made up the major proportion of open contracts at New York, which was by far the largest of the cotton futures markets.[1]

However, the crucial role of hedging in determining the level of use of futures markets does not depend on its quantitative preponderance, but rather on its close relationship to the basic economic functions of futures markets. The data in Table 1 are, therefore, of more interest in a different context, namely in relation to the distribution of contracts among various categories of contract holders.

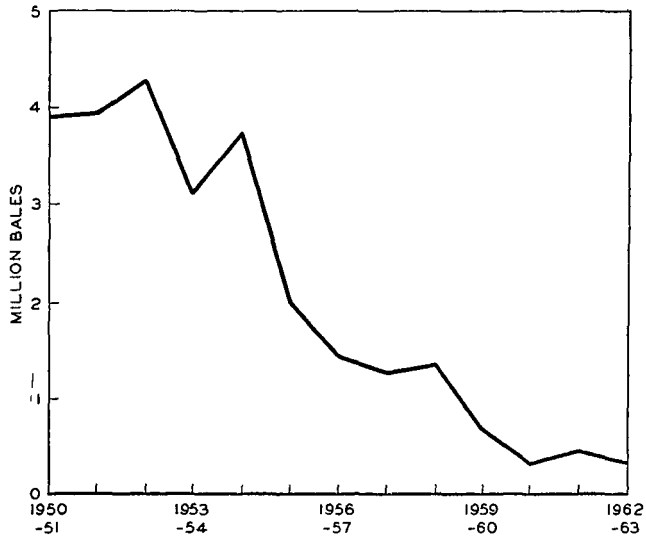
Most of the short hedging done in these markets covered stocks owned by merchants operating in domestic and foreign trade in raw cotton, who also purchased futures contracts to hedge their short commitments in spot cotton. The 1956 survey from which Table 1 was derived showed that "merchants and exporters" had held 66.0 per cent of the total long, and 52.9 per cent of the total short positions on the New York Cotton Exchange, and 50.2 per cent and 34.2 per cent respectively on the New Orleans Cotton Exchange (7, pp. 9, 11). The rest of the hedging on these markets was done mostly by manufacturers of cotton products who hedged their inventories and used the futures markets to facilitate business operations. Small local buyers and farmers did not hedge as a rule (2, p. 3).

RECENT DEVELOPMENTS IN COTTON FUTURES MARKETS

The above discussion of the cotton trade refers to the period before the sharp decline of trading in cotton futures which began in the 1955/56 marketing year. To give a clearer indication of the magnitude and timing of this decline, Chart 1 is presented below.

[1] In addition to the New York and New Orleans markets, relatively insignificant amounts of cotton futures are traded on the Chicago Board of Trade.

CHART 1.—COTTON: AVERAGE MONTH-END OPEN CONTRACTS, OCTOBER THROUGH FEBRUARY, ALL MARKETS COMBINED, ANNUALLY, 1950/51 TO 1962/63*



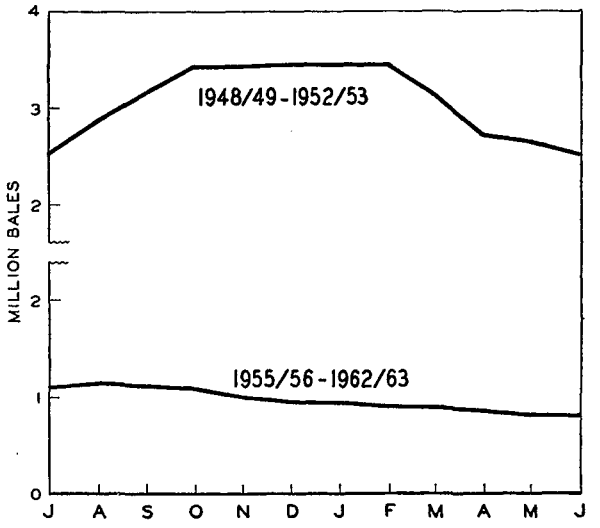
* Data from U.S. Dept. Agr., Commodity Exchange Authority, *Commodity Futures Statistics*, various issues.

Chart 1 shows the average level of month-end open contracts for the five months October through February, the season during which the peak level of open contracts was normally reached in the period before the decline started. The chart shows that the sustained decline in the use of the cotton futures markets started during the marketing year 1955/56.

Not only did the use of the futures markets decline absolutely, but there was also a marked change in the seasonal pattern of use (Chart 2). The seasonal pattern of open contracts from 1948/49 to 1952/53 is the pattern that would be expected on the basis of the description of the cotton trade given in the previous sections. Stocks of cotton would be built up over the October-February period and the accompanying activities in the merchandising of cotton would result in a high level of long and short commitments in spot cotton that would be hedged in futures. The different and much less marked seasonal pattern indicated for 1955/56 to 1962/63, quite apart from the change in absolute level of trading, suggests strongly that between the two periods something must have interfered with the institutional mechanism of the cotton trade. Chart 2 does not, of course, indicate whether this interference directly affected the hedging or the speculative sector of the futures markets, but Charts 3 and 4 provide insight into this aspect.

Chart 3 shows the seasonal patterns of the level of open contracts on cotton futures markets, and of the level of merchant stocks of cotton, i.e., stocks in public warehouses not held by the Commodity Credit Corporation, for the two years immediately preceding the onset of the decline in the use of these markets. The close correspondence in seasonal movement of these two variables is evident. In Chart 4, which presents the same evidence for the two years immediately succeeding the onset of the decline there is no semblance or correspondence between the

CHART 2.—COTTON: MONTH-END OPEN CONTRACTS, ALL MARKETS COMBINED, AVERAGES FOR 1948/49 TO 1952/53 AND 1955/56 TO 1962/63*



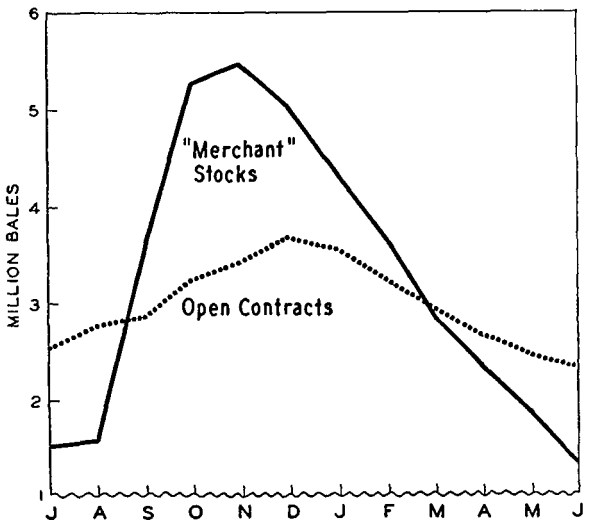
* Averages for corresponding months July through June from U.S. Dept. Agr., Commodity Exchange Authority, *Commodity Futures Statistics*, various issues.

movements of the two variables over the season. Charts 3 and 4 demonstrate that the strong correlation between merchant stocks and open contracts that existed prior to 1955/56 disappeared after 1955/56. Since the correlation between these two variables reflects the extent of the hedging use of futures markets, it would seem reasonable to infer that the interference in the cotton trade which had apparently taken place directly affected the hedging needs of the trade.

The major immediate factor that caused the decline in the cotton futures market after 1956/57 was evidently the change in the government's cotton export program in that marketing year. For the two decades before 1956, the government had assisted cotton exports by cash subsidies, export differential payments, special grants and donations, loans, sales for foreign currencies, and barter programs. Since 1953/54, under the Mutual Security Act and later under the Agricultural Trade Development and Assistance Act (Public Law 480), American cotton has been sold for inconvertible foreign currencies of which over half are made available to the particular countries as development loans, and more than one-third spent on United States projects within the importing countries (*4*, p. 20). Under the different programs, cotton owned by the Commodity Credit Corporation has been sold for domestic or export use, but at not less than 105 per cent of the current support price plus a reasonable carrying charge. This meant that when a merchant purchased cotton from CCC stocks, he had to pay a price in which a carrying charge was included, as for any other cotton. Owners of free cotton stocks obtained the carrying charge competitively by hedging on the futures market.

On August 12, 1955, the Secretary of Agriculture announced the possibility of offering later in the marketing year limited quantities of CCC stocks for sale on an *open* competitive bid basis. These CCC sales would no longer be limited to

CHART 3.—COTTON: MONTH-END OPEN CONTRACTS, ALL MARKETS COMBINED, AND "MERCHANT" STOCKS, AVERAGE FOR 1953/54 AND 1954/55*



* Averages for corresponding months July through June from U.S. Dept. Agr., Commodity Exchange Authority, *Commodity Futures Statistics*, various issues; its Economic Research Service, *Statistics on Cotton and Related Data* (Stat. Bull. 329, April 1963, and Supplement for 1963, January 1964), and *The Cotton Situation*, various issues. "Merchant" stocks here computed as stocks in public storage and at compresses less CCC stocks (pooled, owned, and loans outstanding).

price ranges above the current support price which included a carrying charge, but could be sold, if intended for export, at prices in line with world market prices, which might be below the support price and not high enough to include a carrying charge. In effect, then, the CCC would assume the cost of carrying cotton stocks for export, so that cotton exporters would no longer need to carry them, nor to hedge in order to secure a carrying charge.

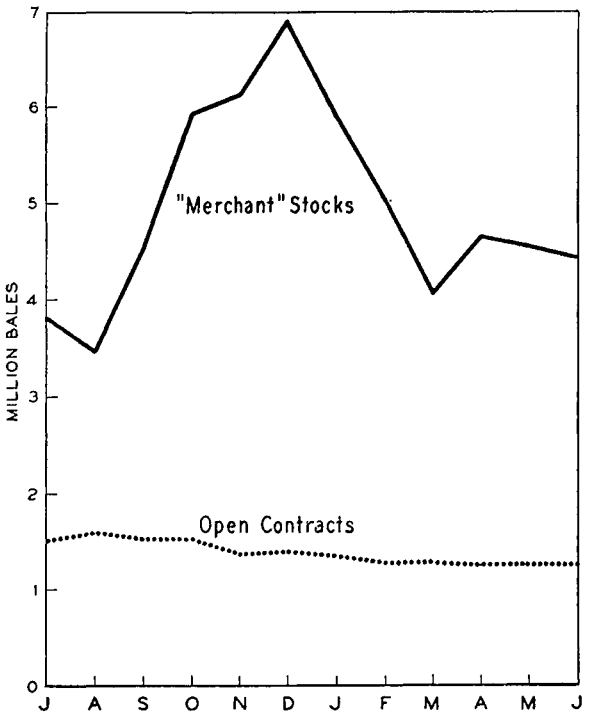
The new cotton export program was formally initiated early in 1956, although cotton sold from CCC stocks under the new arrangement was not to be exported before the beginning of the 1956/57 marketing year (August 1). On this date, nearly all merchant stocks had been purchased from CCC stocks under the new program. During the year further sales were made, making the total sales under the program about 7 million bales for the 1956/57 marketing year. Clearly, the rise in merchant stocks to about 6.2 million bales in December 1956 consisted to a very large extent of this unhedged export cotton.

The new export program has also greatly reduced the price-making role of the futures markets, since the CCC sells its stocks at immediately effective prices, thus to a large extent eliminating the trading of cotton "on call" (*8*, pp. 4, 7).

The export program, which has been singled out as the most important cause of the decline, was only initiated during 1956; nevertheless, the decline and the change in the relation between free stocks and open contracts had already started in the 1955/56 marketing year. Some additional explanation is thus called for to account for the earlier stages of the observed changes.

There was a normal build-up of merchant stocks early in the 1955/56 season,

CHART 4.—COTTON: MONTH-END OPEN CONTRACTS, ALL MARKETS COMBINED, AND "MERCHANT" STOCKS, AVERAGE FOR 1956/57–1957/58*



* Averages for corresponding months July through June from sources cited for Chart 3.

but CCC stocks built up even more rapidly, to such an extent that the CCC largely took over the stock-carrying function from private operators. Warehouse operators were paid a direct carrying charge for CCC stocks carried, and the demand for hedging facilities on the futures markets was accordingly diminished.

Moreover, the new export program had been announced in early August 1955, and cotton exporters were therefore aware of the possibility that the CCC might in effect carry stocks for export free into 1956; this may have induced exporters to postpone their purchases of cotton for export. The first CCC sales under the new export program began in January 1956, so that CCC stocks diminished and merchant stocks were in some measure augmented. These stocks were not hedged, for reasons explained above.

For the 1958/59 crop year, a payment in kind (PIK) export subsidy program similar to that applied to wheat two years earlier was announced. The major purpose of the PIK program in wheat had been to restore the export business to the private trade. Exporters bought wheat for export in commercial positions, and were granted certificates entitling them to receive pro rata quantities of CCC-owned stocks. This program caused a noticeable revival in wheat futures trading, as had been expected by the trade interests who developed and advocated the plan. The PIK program in cotton failed to stimulate a revival of the futures mar-

ket, however, as the CCC sales for export which had been inaugurated in 1956 continued to dominate the export picture. Exports fell to the relatively low level of 2.8 million bales in 1958/59, all of which came from CCC export sales and the PIK program. The relative importance of the two programs is indicated in the fact that by May 11, 1959, 2.3 million bales had been sold by the CCC under the export program, and only 300,000 bales registered under the PIK program. Clearly the PIK program could not have the same effect upon cotton futures trading as it had in wheat, because the CCC was an aggressive seller of cotton for export.

Beginning with the 1959/60 crop year, another program inimical to the use of futures markets was introduced. This plan gave growers a choice between higher supports with acreage restrictions and lower supports with greater planting freedom. Most growers opted for the first choice, and the CCC purchased the cotton directly, instead of acquiring it through the earlier non-recourse loan procedure. The CCC authority to sell cotton for unrestricted use was revised to permit sales at lower prices, with the result that the CCC acquired and resold most of the cotton that would otherwise have been acquired and hedged by merchants.

At this time (1959–60 and 1960–61) the CCC could still sell for export on an open competitive bid basis, could sell for unrestricted use at a price related to the lower support level cotton that had been acquired at the higher support level, and could grant PIK certificates for export of cotton sold for unrestricted use. All of these transactions were priced at time of sale, with the result that both the pricing and stock-carrying functions of the futures markets were virtually usurped. For instance, at the start of the 1959 season the CCC held about 7 million bales. By October 30 it had sold approximately 5 million bales and purchased approximately 4 million bales. Of the 4 million bales purchased, approximately 3.5 million were "Choice A" (high support) cotton, approximately 1.6 million bales of which were resold for unrestricted use. The CCC had become the cotton merchant for the American cotton crop, and had no need to use the futures markets.

Nothing has thus far been said about the effect of these developments on speculation in cotton futures. Government intervention in the cotton trade presumably reduced price fluctuations and thus made the futures market less attractive for speculators. But the main function of the cotton futures market, like other futures markets, is not speculation but the accommodation of hedging needs, with speculation only a secondary activity that makes the futures market more effective for hedging (*1*). Greatly diminished need for the hedging facilities provided by the markets led to a dwindling of the markets and consequent decline in speculation as well. With the government willing to bear the costs of storage for a major part of the cotton crop, the cotton futures market no longer had a useful function to perform. The cost to the government of the assumption of this responsibility—that had been borne by private traders—is undoubtedly large, but it is concealed by the nature of the legislation.

CONCLUSIONS

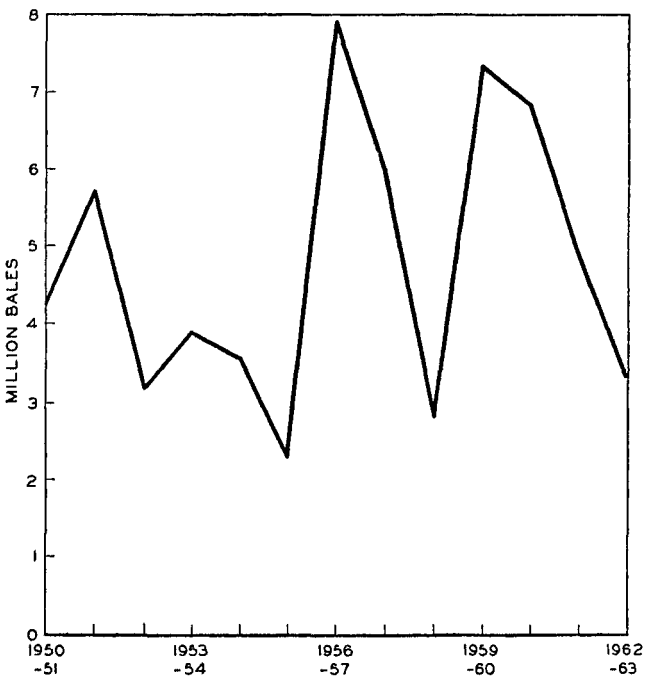
During the early 1950's, the cotton price support program in the United States kept cotton prices above world market levels, with the result that United States

cotton exports declined steadily (Chart 5), and cotton stocks increased, with the CCC holding the largest part. This building up of cotton stocks to a record end-year carryover in 1955/56 prompted the government to announce a new cotton export program late in 1955, by which it would attempt to stimulate cotton exports in order to bring total disappearance more in line with total production of cotton in the United States. As Charts 5 and 6 show, the new cotton export program was successful in attaining its immediate objectives—cotton exports increased sharply during 1956/57, resulting in a reduction of end-year carryover, especially of CCC stocks, by the end of that marketing year. At the same time, the new export program caused the CCC to take over in part functions of institutions previously developed to fulfill the needs of the trade; the cotton futures market became superfluous in the new environment.

The future of the cotton futures market will depend on the course that government policy takes. Up to the time of writing, government programs have evidently been perpetuating, rather than terminating, the measures apparently responsible for the decline in the cotton futures market.

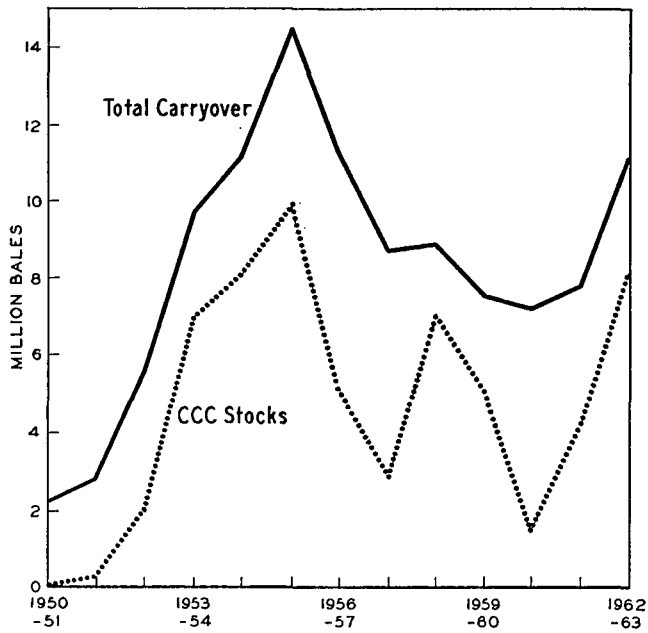
As a result of the combined influence of continuing price supports for domestic growers, competition from rayons and other synthetics, and growing foreign production of cotton, total carryover in the United States on August 1, 1963 reached 11.2 million bales, the highest since 1957. On the same date CCC stocks were 8.2 million bales—3.7 million above the figure for a year earlier. In October 1962, the

CHART 5.—COTTON: VOLUME OF UNITED STATES EXPORTS, 1950/51–1962/63*



* August-July gross exports in 500-pound bales from U.S. Dept. Agr., Economic Research Service, *Statistics on Cotton and Related Data* (Stat. Bull. 329, April 1963, and Supplement for 1963, January 1964).

CHART 6.—COTTON: UNITED STATES CARRYOVER, TOTAL AND HELD BY THE COMMODITY CREDIT CORPORATION, END OF THE MARKETING YEAR, 1950/51–1962/63*



* Commodity Credit Corporation stocks include pooled, owned, and loans outstanding. Data from sources cited for Chart 5.

Cotton Advisory Committee recommended to the Department of Agriculture a new cotton program "for the 1963 and subsequent cotton crops." The suggested program, on which Administration proposals before the 1963 session of Congress were based, included payments to domestic cotton users to offset the effect of the export subsidy on their international competitive position. Also suggested was the issuance of freely negotiable payment-in-kind certificates to the last handlers of export cotton, as an incentive to cotton exporters, and a producer-choice acreage program (*5*, p. 9; *3*).

Early in May 1963, an alternative cotton program, sponsored by Senators Talmadge (Ga.) and Humphrey (Minn.), was reported to be gaining support in Congress. This program would permit growers to have greater freedom in planting and would support prices to growers at levels in line with world market prices, compensating growers for a part of the anticipated price decline by direct government payments (*9*).

Should this direct-payment approach be adopted, its effect would be to partially separate measures aimed at maintaining farm income from the actual marketing of cotton, tending to restore the same kind of day-to-day operations in cotton marketing that prevailed when the cotton futures market was flourishing. A recuperation, if not full recovery, of the cotton futures market could then be expected. If, on the other hand, the Administration-backed proposal becomes law, there seems to be little prospect for a revival of this market.

The particular program that had such disastrous consequences for the cotton

futures market was not greatly different in its goals from programs which have been applied to other commodities in recent years with much different consequences for futures markets. The payment-in-kind export subsidy program in wheat was adopted in 1956 in a deliberate and successful effort to restore much of the exportation of wheat to the private trade, and it gave rise to an abrupt *increase* in wheat futures trading. The stocks reduction program in corn, inaugurated in 1961, provided a great stimulus to futures trading, as mentioned at the outset. Yet the cotton program, also aiming toward reduction of surplus stocks and also designed to stimulate commercial exports, has caused the virtual demise of the cotton futures market. Most forms and degrees of governmental intervention in behalf of agricultural producers in the United States have had some deterrent effect upon futures trading. But the particular sequence of legislative programs applied to cotton culminated in the greater usurpation by the CCC of the roles of warehouseman and merchant than in other commodity trades, which is reflected in the virtual demise of the cotton futures markets.

The exact nature of new legislation can, of course, not be foreseen, nor would its consequences for futures markets be completely evident until it had been assimilated into trade practice. What does seem clear, however, is that the fate of the cotton futures market may hang in the balance between programs that differ little in their consequences for farmers and taxpayers, but vary greatly in their consequences for marketing institutions. And since it is both traditional and in accordance with the determined policy of the Congress to minimize the disruptions to existing marketing arrangements in agricultural legislation, the failure to do so in this instance, however unwitting or unpredictable, suggests renewed efforts to devise a less disruptive program.

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