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ADJUSTING UNITED STATES COTTON PRODUCTION TO  
NATIONAL AND INTERNATIONAL ECONOMIC  
CONDITIONS

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Statutory Cotton Adjustment Policies Can Lead to Intended Goals  
Only Under Conceptually Optimum Industry Conditions

I propose, in the time available for this discussion, to deal as adequately as possible with four questions that have been, and remain, critical to growers and all others concerned with cotton in both the American and foreign markets. These questions are as follows: (1) What industry model would be appropriate to attain the intended goals under statutory agricultural policies and programs in the United States? (2) How well does this model coincide with real life conditions in the cotton industry? (3) How successful have these adjustment policies and programs been in attaining the intended goals? (4) What problems have arisen and what lessons do 30 years of government participation in cotton production and marketing offer for future guidance?

The policies and goals that apply to cotton, like those for other farm products, are specified in the basic adjustment legislation for American agriculture and general farm income support. In summary, the over-all goal for agriculture is equitable income to individual farmers in comparison with Americans employed in other pursuits. The policies for accomplishing this goal involve price manipulation through quantity controls, non-recourse loans, product purchases on government accounts, and, in some instances, direct compensatory payments to farmers. Administrators, during the past 27 years, have directed their efforts primarily towards accomplishing two specific modifications in the pattern of cotton farmer incomes as they would exist in the absence of government action programs. The first has been a continuing and persistent effort to raise the level of income to the growers. They have also undertaken, secondly, to bring about certain shifts in relative incomes among growers. They have tried to increase the earnings of the less favorably situated growers with relatively small income more than those already receiving favorable earnings, and thus to narrow the differences among farmers in the industry.

Let us now turn our attention to the first question above. In other words, let us undertake to identify and define the cotton industry characteristics necessary in order to assure that statutory policies and programs will reach their goals. We can save time by directing our attention to the basic Agricultural Adjustment Act of 1938 and its later amendments. It is convenient, furthermore, to classify the individual characteristics that are relevant to such an optimum adjustment model in terms of the conventional categories familiar to the economists; those concerned with

(a) demand, (b) supply, and (c) institutional factors affecting cotton production, distribution, and consumption. We must, in considering these various characteristics, recognize both national and foreign aspects of the cotton industry.

#### Domestic and Foreign Demand Must Be Inelastic

We pointed out above that the major goals in the agricultural adjustment programs have concerned farm income. Parity prices and price manipulation techniques come into the picture as the mechanics for attaining these goals. Thus the parity price concept enjoys its status because it represents a tangible and specific mechanism for evaluating how adequately farm incomes measure up to those received by workers in other industries or to some specified standard. Some, who use the parity concept, are unaware of its basic inadequacies which make it unreliable, and even misleading, as a criterion for evaluating income levels or for guiding programs to improve them. Others, though aware of them in greater or less degree, choose to ignore such difficulties for reasons of administrative convenience, for lack of an acceptable substitute, or because of the status that parity price has as a notion in being.

Quantity regulation and control has remained a cornerstone of the price manipulation policies since the original AAA act in 1933. The 1938 act, its predecessors, and many of the subsequent amendments have included specific, and sometimes complicated, provisions for establishing production goals at various levels, and for determining acreage allotments. The central position of this notion is not accidental; early literature includes repeated examples of reasoning and arguments to the effect that only through such government-directed common action is it possible for farmers to adjust their production to market needs in a fashion parallel to that used--allegedly with success--by industry.

But what are the theoretical implications of this philosophy? What demand characteristics must we specify, in other words, for an industry model that would be optimum for using the Agricultural Adjustment Act philosophy and policies to attain the intended goals? It appears evident that demand for cotton both in the domestic and in the foreign market necessarily must be quite inelastic within practical ranges for production. This would mean that relatively minor reductions in quantities produced would accomplish price rises sufficient to make important income improvements; conversely, it would eliminate the possibility of obtaining such improvements through expanding production because such expansion would be at the cost of relatively greater price declines. We can go behind this general statement and indicate the necessary conditions in various segments of the market that are prerequisite for such demand inelasticity. We will ignore supply for the moment and specify, first, that little or no possibility exists to substitute alternative fibers--such as cellulosic synthetics--for cotton in the United States market; next, second, that

little or no possibility exists to substitute foreign growth for American cotton in the foreign markets; finally, third, that the same condition, no appreciable substitution for cotton, applies to synthetic fibers in the same foreign markets.

### Supplies Must Be Subject to Effective Control

Authors and sponsors of the 1933 legislation were convinced by the immediately previous Federal Farm Board experience that effective supply regulation is essential to price manipulation as a means of income support. They also were preoccupied with industrial precedents for quantity control. Evidence indicates that from the beginning loans and other direct price support were viewed as emergency measures; the architects of farm policy believed that controlling production and regulating the flow of farm products into the markets would be effective means for establishing the price and equitable income levels envisioned in the goals.

But for this approach to be successful the control machinery must actually control! This requirement, in turn, has some very important implications and conditions: (1) The mechanics of control are facilitated if some particular resource(s), in itself subject to control, and is (are) essential for production; (2) This critical resource must lend itself to convenient and efficient regulation; (3) There must be an administrative agency that is capable of, and willing to, enforce controls on production through regulating use of the resource(s). But all of these measures will be ineffective unless (4) production technology and practices are reasonably mature, stabilized, and, therefore, leave little or no opportunity for farmers to increase yields through improving the ratio of output to inputs of the critical resources. Again, (5) under a democratic system of government farmers must be willing to leave the freed resources idle, or able to find acceptable alternative uses. Finally, (6) the variations among farmers in resources available must be insufficient to introduce serious administrative difficulties or substantial opportunities for evading regulations.

We already eliminated the problem of competition from foreign cotton growers when, in our section on demand, we specified that one characteristic of our optimum adjustment model is that there is little or no possibility of substituting foreign fiber for American cotton in foreign markets. We, therefore, have limited our supply characteristics for this optimum model to those which involve only American growers in the United States market.

### Institutional Factors Must Not Interfere With Economic Forces

Our third group of necessary conditions for an optimum adjustment model includes the entire range of national and international governmental policies and programs. We are concerned here to insure that no action, either positive or negative, by an individual country, or a group, will

interfere with the free operation of the demand and supply conditions affecting our hypothetical cotton industry. This means, first, that governments will not use production subsidies or mandatory delivery quantities to encourage cotton development or expansion in foreign producing areas. It means, second, that importing countries will not impose quotas, tariffs, exchange control, or other means of restricting or distorting the normal cotton distribution and consumption patterns. Third, it goes without saying that neither actual hostilities nor cold war economic stratagems will arise to distort normal economic relationships. Finally, on the domestic front, variations in farm size must be insufficient to generate serious earnings variations among United States farmers.

#### Variations in Actual Cotton Industry Characteristics From This Optimum Adjustment Model Explain the Difficulties and Failures in the Cotton Adjustment Program

This section brings us to grips with questions Nos. 2 and 3 in our critical list of 4; we necessarily must consider them together. They concern both the realism of the optimum adjustment model, and the effectiveness of policies based on it.

Again it will be to our advantage if we consider the various important characteristics under their respective categories. First, however, we must consider a very important condition under the list of institutional factors; we specified there that both hot and cold wars should be excluded. Actually the world has seldom seen a period of greater change in the political, social, and economic sectors of human society than that of the past 27 years, the period during which the United States government has undertaken through agricultural adjustment legislation and programs to solve problems relating to low cotton farmer incomes. The adjustment program began at the depths of the depression, it has continued through the greatest war in world history, a lesser but none the less critical war, a world-wide political upheaval that has broken ties of empire, changed governments within countries and brought new shifts in alignments among countries, and unprecedented developments in technological and economic sectors. Cotton, as an international commodity, is highly vulnerable to the impact of the changes generated by such forces. They have created drastic differences in the actual real life situation as compared with our ideal adjustment model. These very changes, furthermore, have increased and compounded the difficulty in effective measurement for the purpose of evaluating our ideal adjustment model. It is still possible, however, to identify some of the major differences between an optimum framework for using cotton adjustment policies to achieve income goals and the dominant characteristics of the United States and foreign cotton industries. Still more to the point, it also is possible to adduce evidence for the purpose of identifying the main discrepancies in the optimum adjustment model, as compared with actuality.

#### Increased Consumption of Cotton and Other Fibers Evidences Both Market Growth and Demand Elasticity

The cotton industry in the world as a whole has grown tremendously since the United States inaugurated cotton adjustment policies and programs

in 1933. I will cite a few of the highlights of this growth: These comparisons will involve the 5 cotton marketing seasons ending with 31 July 1932 as the pre-adjustment period, and the 4-year period ending with 31 July 1960 as the most recent data. Total world consumption during the first period averaged about 24 million bales; approximately one-fourth was by United States mills and the remainder in foreign countries. The world total during the recent period was up 75 percent with the United States showing a gain of somewhat less than 50 percent. Foreign consumption, in contrast, had risen by more than 80 percent. These sharp gains in world and foreign consumption were made possible by comparable increases in production. United States cotton output, however, actually averaged 14 percent less during the recent period than in the pre-New Deal era, while foreign output rose to almost 3 times its earlier level. These data speak for themselves. Clearly, the provisions of the adjustment policies and programs must have been reasonably close to those of a model that includes no provision for market growth. The result obviously is that United States producers not only failed to share in world and foreign growth, but also lost a portion of their previously available markets outside the United States. Thus, United States cotton exports averaged 8.1 million bales in 1928-1932, but had dropped to 5.9 million bales in the most recent period. Foreign mills compensated for reduced United States cotton imports by almost doubling their use of foreign growths; this consumption rose from 18.2 to 33.4 million bales. These period average data, reflecting United States production and exports, and foreign consumption of both American and foreign cotton, provide evidence that the foreign market for American cotton is not highly inelastic, as required for the optimum adjustment model. Foreign demand for American cotton, on the contrary, was reasonably elastic during the inter-war period between 1920 and the late 1930's and this elasticity has tended to increase following World War II. Mr. Mark Fowler's doctoral dissertation, now nearing completion, indicates that the

TABLE 1. World Cotton Production and Consumption by Five-year Periods, 1920-1959

Year beginning 1 August	Production			U.S. Exports (million bales)	Consumption		
	U.S.	Foreign	World		U.S.	Foreign	World
1920-1924	11.0	9.4	20.4	6.3	5.9	14.3	20.2
1928-1932	14.7	11.7	26.4	8.1	5.9	18.2	24.1
1933-1937	12.9	17.0	29.9	6.2	6.2	21.1	27.3
1940-1944	11.8	15.4	27.2	1.4	10.4	13.7	24.1
1950-1954	14.1	21.4	35.5	4.1	9.3	26.3	35.6
1955	14.7	28.0	42.7	2.3	9.2	30.3	39.5
1956-1959	12.6	31.0	43.6	5.9	8.6	33.4	42.0

Source: USDA reports.

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coefficients of long-run range demand elasticity for United States cotton in the foreign market ranged from approximately 1.1 to 1.6 during the inter-war period when calculated for periods of 5 years. This elasticity has increased to approximately 1.8 during the period since World War II. Similar coefficients, based on year-to-year changes, indicate a short-term demand elasticity of about .8 for the inter-war range and 1.4 since World War II. Mr. Fowler suggests that the short-term coefficients may underestimate, and those for the longer periods over-estimate, the actual relationships. These coefficients indicate, of course, that a given amount of price reduction is associated with a greater than proportional increase in exports, and that this favorable relation between price and quantities taken has strengthened for American cotton exports since World War II. The data cited above would tend to indicate that such a gain in demand elasticity has occurred for United States cotton exports. This follows because a marked increase in world and foreign cotton consumption has been accompanied by a reduction in United States production and exports; United States cotton thus represents a smaller portion of the total foreign consumption.

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The low export levels following World War II were in 1947 with 2,000,000 bales and 1955 with 2.2 million bales total exports; both years featured United States prices sharply above comparable cotton staples in the world markets. More competitive price relationships held during the intervening years, and United States exports doubled the low levels of these two seasons. The 1955 marketing season, ending on 31 July 1956 is notable; it was the last one before the United States initiated its payment-in-kind subsidy program. The purpose of this program was to correct the competitive disadvantage of our cotton. For this purpose the Commodity Credit Corporation has issued certificates to United States exporters enabling them to recover from 6-1/2 to a high of 8 cents per pound (in 1959-60) of their original cost on all American cotton shipped abroad in commercial channels. This program is in addition to the various special export financing arrangements under which the government pays the entire cost of exporting American cotton. The authorities have regulated the amount of these export subsidies in accordance with the differential between the United States domestic and the world price of competitive cottons in continuing this policy. The Commodity Credit Corporation has reduced the subsidy from the 1959 season's level of 8 cents to 6-1/2 cents for the current season. United States exports have averaged nearly 6 million bales per year during the 4 years following the inauguration of the subsidy program; the season just ended apparently saw a 7 million bales total for exports.

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We find, therefore, that the actual market situation differs widely from the optimum model for effective agricultural adjustment. A considerable degree of demand elasticity exists in foreign markets for American cotton, and this has tended to increase as the relative proportions that U. S. cotton represents of the total world supply has decreased.

The evidence regarding the extent to which the textile industry in the United States has substituted synthetic fiber for cotton is not as clear cut as that for elasticity in the foreign markets. Again, we can state without

qualification that substantial growth is evident; the average amount of cellulosic (rayon and acetate) synthetic fiber used in the 5 calendar years prior to 1933 represents the equivalent of about 380,000 bales of cotton. By 1959 total United States consumption of these fibers had expanded to equal almost 3-1/2 million bales of cotton--almost 10 times it earlier level. The real problem is to determine to what extent this expansion displaced cotton in the United States textile industry. An effective analysis to measure cross elasticity would provide valuable guidance here. We can begin now with the assumption that part of the expansion in cellulosic synthetic fiber from about 1-1/2 pounds per person just prior to 1933 to approximately 10 pounds per person during the last 15 years reflects technical characteristics rather than price competition. In other words, an important fraction of this expansion would have occurred irrespective of the relation of synthetic fiber prices to cotton prices. There is strong evidence, however, that price relationships have been important in stimulating expanded use of the cellulosic fibers. The prices of rayon and acetate in the 5 years prior to 1933 began at almost 3 times the level of cotton yarn. They decreased consistently, and reasonably steadily, from that level until in 1944 the two fibers were approximately equivalent in price, pound for pound. Consumption of cellulosic synthetics per capita multiplied by about 4 times during the 16 year period prior to 1944, and represented the equivalent of a little more than 6 pounds of cotton at its termination. A further increase in use--to the 10-lb. of cotton equivalent--occurred during the following 15 years. The peak, equal to about 12.5 pounds of cotton, came in 1950, however, when the synthetic fiber price represented only 69 percent of the cost of its equivalent in cotton yarn. The price of the synthetic fibers relative to cotton has varied from 112 to 123 percent during recent years. Another interesting item here is that in 1959 the per capita consumption of cotton amounted to 24-1/2 pounds, the highest in 3 years and the first of these years to show an increase. Rayon and acetate use equalled 10.0 pounds of cotton. The history of cotton consumption since the war years of 1940-44, when it averaged 37 pounds per capita, has been a steady decline according to 5-year average comparisons.

There is even less evidence available to evaluate the relationship of rayon and acetate expansion in foreign countries to relative prices for these fibers versus cotton. One fact again stands out clearly; tremendous increases have occurred in synthetic production and use. We indicated above that American production in 1959 is equivalent to about 3-1/2 million bales of cotton; foreign production during the same season adds another 10 million bales of cotton equivalent to the world total for synthetic cellulosic fiber production. This current 10 million bales figure compares with production equivalent to approximately 1,400,000 bales of cotton for the pre-1933 period. We can summarize the United States and foreign situation regarding cellulosic fibers by stating that the rate of expansion and some price evidence indicates that cotton consumption would be higher if these synthetic fibers did not exist. Several facts suggest that a sharper degree of price competition between cotton and these cellulosic fibers may develop in the United States if, indeed, it has not already begun. These include (a) a tendency for total per capita consumption of cellulosic fibers



to stabilize, (b) the closely comparable prices that have developed for these two fibers during the last ten to fifteen years, and (c) recent evidence that price competition between these fibers does affect the relative consumption of each. We deliberately have restricted this discussion to the cellulosic fibers under the assumption that the technical characteristics and end uses for the non-cellulosic tend to minimize the degree of competition between these fibers and cotton.

Price Manipulation Through Quantity Control Has Failed in the Face of Both Supply Elasticity and Basic Shifts in Supply

The cotton adjustment program has relied almost entirely upon acreage control, through individual farm allotments, as a means of limiting market quantities. As a result, the average United States cotton acreage during the 4 crop seasons ending with 1959 was about 14 million acres. This figure represents slightly over one-third of the 41 million acre average for the 5 seasons ending with 1932. Production data already cited indicate that the net result of cutting the acreage two-thirds was to reduce production by 14 percent one seventh--about 2 million bales--between the two periods. Obviously, acreage control failed as an effective mechanism for regulating quantities marketed. The fact that United States cotton farmers have succeeded in maintaining production quite close to pre-adjustment levels in spite of the acreage reduction, plus the shrinkage of exports and foreign consumption of American cotton, explains the surplus problem that has dominated our cotton adjustment policies throughout the last 27 years, except for the World War II period.

Three important facts underly the remarkable expansion in United States cotton yields during the last quarter century. Two relate to supply elasticity: (a) Farmers responsible for much of the pre-adjustment production were not operating at the conceptual highest profit combination--the point at which marginal revenue equalled marginal cost; (b) cotton outranks other alternatives in profit potential by a considerable margin in most areas. The third explains the sharp shift of the supply function to the right: (c) The adjustment period has coincided with the era of most remarkable improvement in technology and in ratio of outputs to inputs and in ratio of output value to input costs ever recorded in American agriculture. Thus two forces, supply elasticity and a shift toward increased supply, have combined their influences to accomplish 2 and 1/3 times as high a cotton yield per harvested acre in 1959 as in 1928. Before 1925 the trend yield, as measured by a 9-year centered moving average, was 160 pounds per harvested acre; by 1955 it had risen to 374 pounds. These increases, furthermore, tended to accelerate in the years after 1954 when farmers again began operating under acreage allotments.

Two reasons explain why farmers were operating their cotton enterprises short of optimum input proportions prior to acreage allotments, and therefore were able to accomplish yield increases merely by extending inputs until they reached or approached this conceptual highest-profit combination. Lack of capital is very important; many operators found themselves concerned with obtaining the maximum average return per unit of operating

capital rather than with extending variable input applications to the point that marginal input cost equated with marginal value product. A most important second reason was that many farmers were uninformed regarding technological developments, and did not realize the opportunities to obtain higher profits by increasing inputs and yields. Evidence from 1950 and 1954 in the West and to some extent in the Delta supports this reasoning. Western (Arizona, California, and New Mexico) cotton yielded 620 pounds of lint per acre in 1949, rose to 764 pounds in the acreage allotment year of 1950 but dropped to 625 pounds in 1951. The yield gain from 1953 to 1954 was from 646 to 862 pounds of lint per acre. Delta yields also rose slightly in both these situations but failed to drop back from 1950 to 1951. Yields in every other area of the United States showed the increase from 1953 to 1954 but weather conditions prevented such gains from 1949 to 1950 in these remaining areas, and probably explain the failure of Delta yields to accomplish greater gains in 1950.

The dominant fact that explains increased cotton yield, and production has been improved technology. This means a shift of the supply curve to the right; thus farmers have found and apparently still are finding it possible to increase outputs to the same quantities of inputs, or at least, certainly, to the same case outlays. They are doing this through more effective land management, better timing of operations, improved varieties and strains, more precise and specific pest control and mechanized methods that reduce labor costs. We must recognize here also that the quality of inputs, and frequently the mix, has changed drastically and that these shifts have supported yield increases. The results show up in the phenomenal yield improvements during the past 5 years, although this force has operated in greater or less degree ever since the late 1930's. Two specific examples will illustrate its effect. Considering only the West, the 5-year yield of cotton per acre was 705 pounds for the 1950 through 1954 seasons. The comparable figure for the immediately past four seasons was 981 pounds, a gain of more than half a bale per acre! The United States as a whole averaged 287 pounds per acre during the earlier period and 434 during the immediately past four seasons. This upward shift represents a gain of 3/10th of a bale per acre.

Farmers have capitalized upon these increased yields, particularly to the extent that they reflect higher ratios of outputs to inputs, plus cost savings through mechanization, to improve their efficiency greatly in terms of production cost per pound. This is true both absolutely and relative to costs for other crops and the general price level. The fact that cotton farmers have failed to accomplish equal technological breakthroughs and cost reduction for alternative crops on their farms has strengthened the competitive earnings position of cotton. For practically all cotton farms there is no other crop of similar market outlet breadth that can approach anywhere near to cotton in profit potential. This tended to be true prior to the improvements outlined above, and provided a tremendous incentive to farmers in their efforts to increase cotton yields and earnings. They recognized that cotton represented their only opportunity to maintain existing or to obtain higher incomes. This situation was aggravated, of course, to the extent that land shifted out of cotton increased the market

supplies of feeds and other alternative crops, lowered their prices, and thus worsened their relative position.

The results under the Choice A-Choice B alternatives provide interesting evidence of the views farmers hold, particularly in the West, regarding the relative ranking of profit opportunities on cotton farms. Not all farmers elected the Price B alternative that permits them to increase acreage by 40 percent above basic allotments with the condition that they accept lower support prices by 15 percent of parity than those for Choice A. Those who did in 1959 expanded cotton plantings by slightly over a million acres--6.2 percent. The comparable figures for 1960 are 1,200,000 acres, or 7.3 percent. The West showed a 240,000-acre increase--19 percent--in 1959 and this increased to 350,000 acres, or 29 percent, for the 1960 crop. It is evident that western farmers are convinced that their cotton production costs are sufficiently below the support prices to offer them an opportunity to increase total farm net earnings through growing more cotton and accepting a price reduction. This judgment, and the appropriate action, applies to relatively more operators and acres in the West than in the rest of the United States. This is a clear-cut example of one of the problems that regional variations present to the administrators of the cotton adjustments program. Again, we find that the cotton industry characteristics obtaining in the real life situation differ distinctly from those necessary to the optimum adjustment model. Legislation and policies, therefore, have proved inadequate to deal effectively with production conditions. This is why supply problems persist, surpluses accumulate, and special arrangements and programs become necessary in order to ameliorate these difficulties.

Foreign supply conditions have varied as widely as domestic from the hypothetical optimum adjustment model. Foreign production has increased by almost 3 times since the 5 years preceding 1933. We pointed out above that United States production declined by about 2 million bales during the same years. The result is a complete reversal in the relative importance of United States and foreign cotton in the total world supply. United States production represented 56 percent of the 26.4 million bale world total in the seasons 1928 through 1932. It had dropped to a mere 28 percent of the 43.6 million bale total during the most recent 4 seasons. About 40 percent of the cotton consumed in foreign countries must be imported. The change in the proportion that United States cotton represents of this total foreign trade quantity reveals the degree to which American growers have sacrificed the export market. The United States furnished about 60 percent of the total cotton entering foreign trade during the 5 seasons ending with 1932. In contrast, preliminary data indicate that foreign exporters provided about 60 percent of the 14.3 million bales that were exported during the 4 seasons that ended the 31st of last July. This means that the United States cotton growers exchanged positions with foreigners during the intervening period. Thus it is evident from the record that considerable elasticity of demand does exist in the foreign market and, furthermore, that an important degree of supply elasticity also is found there. These changes in exports and the relative importance of export sources further corroborate the data previously presented regarding the impact of relative prices on United States cotton exports.

## Institutional Factors Have Seriously Interfered With Economic Forces

It is not necessary to elaborate on the numerous and diverse instances in which governmental policy, or other institutions, have imposed restrictions upon the free operation of economic forces. Much of the foreign cotton that enters export channels comes from countries that are relatively less developed than the importing nations. These exporters of cotton and other raw materials increasingly are striving to build up the industrial and other segments of their economies. The history of their efforts in this direction is one of attempting to channel resources and efforts into uses intended to increase production deemed favorable to their ultimate goals. In some instances, such as Turkey, Greece, and areas in Africa, this has meant measures to stimulate and encourage cotton production. In other instances, it may actually tend to discourage cotton growers. Few areas are completely free of government influence in one direction or another. Facts regarding the type and expense of import regulation and control in the principal consuming countries also are well known, and do not require detailed consideration at this time. We can say merely that import regulations through customs, exchange control, or other financial means, or through quantitative regulations, such as quotas, have been the order of the day ever since the beginning of World War II, and in some instances, even before. Only in recent years have tendencies developed to reduce such interferences. We can add in passing that one strong force encouraging the growth of the synthetic fiber industry in foreign countries has been such governmental interferences that have made it difficult for textile producers to obtain cotton and other fibers through imports.

Turning to the domestic scene again, we also know that wide variations do exist in the size of operation and in farm incomes among American cotton growers. We know in California, for example, that by far the greater percentage of our 15,000 cotton growers holds acreage allotments of 20 acres or less. Much larger operators, however, are responsible for the greater fraction of cotton land and production. Similar variation exists in other parts of the country and indeed has underlain many of the major difficulties that statutory cotton adjustment has faced in its attempts to accomplish its goals. We can summarize the impact of this small size problem by saying that perhaps a majority of the cotton growers controls such limited resources that no administratively feasible support price could possibly assure them equitable earnings for their firms, themselves, and their families.

Again we must conclude relative to the institutional forces, as for the previously discussed economic factors, that the real life situation departs radically from the conceptually optimum adjustment model. The legislation appropriate to this model thus is ill-adapted to solve the problems facing United States cotton growers.

### Summary and Recommendations

The preceding pages leave Question No. 4 unanswered. We can say for summary purposes that the answers to the 3 prior questions are as follows:

Question No. 1. The framework of the enabling legislation and the history of the policies and programs followed under its authority indicate that success in using it to attain its intended goals would require that the industry, to be adjusted, must have certain definite characteristics and meet certain specific conditions. These include essentially 4 basic criteria: (a) A comparatively static position with virtually no growth; (b) Relatively inelastic demand in both the domestic and foreign markets; (c) Supply characteristics that facilitate effective and complete production and market delivery controls in the domestic market and an inelastic foreign supply, consistent with demand inelasticity for United States cotton in foreign markets; (d) No institutional interferences with the specified economic conditions.

Question No. 2. The actual characteristics and conditions in the world cotton industry have varied widely from those of the optimum model essential for the agricultural adjustment legislation to attain its intended goals. These differences have extended into each of the 4 areas listed in the answer to Question No. 1. Growth has continued; foreign demand, at least, has proved reasonably elastic; supply has proved to be elastic in both domestic and foreign producing areas and that it does not lend itself readily to effective control even in the United States.

Question No. 3. Difficulties and failures have dogged the paths of administrators and farmers from the beginning of the agricultural adjustment programs. Attempts at supply regulation have been unsuccessful; this device thus failed to accomplish the hoped-for price manipulation and income support. Instead, United States cotton surpluses have persisted as an unsolved problem, and at times have grown to almost unmanageable levels; special devices and programs have been necessary to deal with these accumulations. Failure of the production control and quantity regulation programs to accomplish price objectives has led to loans, and they, in turn, to export subsidies; direct purchases and compensatory payments also have come into experimental use. After 27 years of effort to solve the United States cotton farmers' problems through government policies and programs the industry now finds itself with tremendously greater production capacity than at the beginning, but with a smaller market.

#### Valuable Lessons are Available from 27 Years of Cotton Adjustment Experimentation

The answers to the first 3 questions provide the basis for those appropriate to No. 4. These necessarily must cover several aspects of the over-all cotton adjustment problem:

a. Goals for future programs should be realistic and attainable, free from the constraints imposed by the parity price concept and similar irrelevant extraneous mechanisms, and flexible enough to adjust to a changing economy.

b. New legislation and policies should recognize distinctive problems among United States cotton producers, and provide appropriate goals and programs for each. Thus the problems of uneconomic farm size and poverty

should be distinguished and approached separately from those relating to incomes on commercial farms.

c. The policies and programs should be appropriate to the goals; they should recognize actual characteristics and conditions in the domestic and foreign segments of the world cotton economy, and should be projected with full awareness of their probable results if, as, and when they are likely to stimulate significant shifts in cotton prices, production, distribution, or consumption.

d. Policies and programs should be planned and projected well into the future, and include the maximum possible degree of flexibility in order to facilitate individual farm planning and adjustments.

The preceding 4 points relate primarily to cotton growers and the cotton industry. Three other points also merit mention, although they apply somewhat more broadly to agricultural adjustment and to United States agriculture as a whole:

e. Programs should involve an absolute minimum of interference with regular market pricing and distribution mechanisms, and should allow for growth in both the cotton industry and the general economy. Measures directed to withdrawing resources from use, such as the type of total farm retirement soil bank program, may prove less disrupting than attempting to control production on individual farms.

f. New agricultural adjustment programs must recognize and deal effectively with problems left over from the previous ones; they must include specific measures and provide time required to work off surpluses accumulated over several years, for example.

g. Planning and development activities for the purpose of formulating new legislation and programs should include studies and evaluations for the specific purpose of obtaining all possible guidance from experience with those in the past.

A good starting point would be Senate Document 12, 1st Session of the 85th Congress. This Report on Various Methods of Supporting the Price of Cotton provides challenging ideas and insurance against panaceas for every serious-minded citizen concerned with cotton and incomes to cotton farmers.

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