

Cotton Price Policy and Foreign Production

Recent increases in foreign cotton acreage—occurring along with the accumulation of American surpluses, declining U. S. raw cotton exports and reduced consumption by domestic mills—cannot be attributed simply to U. S. cotton price policies, according to this study. Acreage increases since World War II by the three largest foreign free-world cotton exporters (Mexico, Brazil and Egypt) were not associated with U. S. export price changes, although acreage increases in some of the other important cotton-producing countries could be related to these changes. Increasing acreage and production trends for cotton in several of the newly developing countries probably reflect strong efforts by their governments to increase agricultural output and export earnings, regardless of world market conditions.

COTTON LOOMS large in California's agricultural economy. Production in the state increased from 350,000 bales in the immediate postwar years to nearly 2 million bales in 1960, and California is now the second largest cotton producing state. Cotton is the state's most valuable crop, accounting for 15% of total crop receipts. It is also California's most important farm export. Because cotton is a "basic" commodity produced in many states, California's part in the industry is largely determined by national price and marketing programs and by domestic and foreign demand.

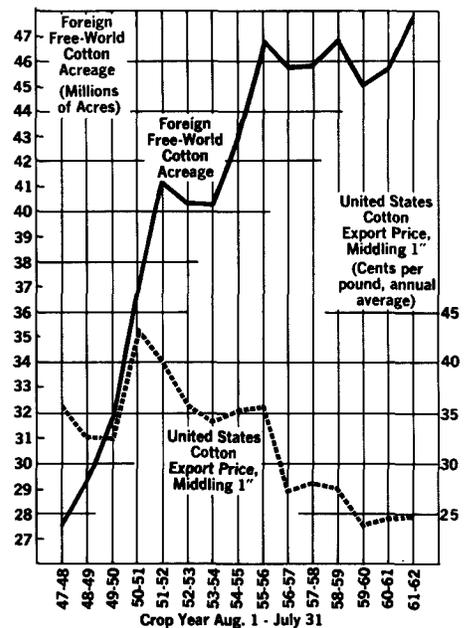
Consumption channels

The prosperity of California cotton—and the entire domestic cotton economy—depends basically upon the quantity of cotton consumed. The two basic consumption channels are (1) domestic mills and (2) raw cotton exports. Domestic mill consumption of cotton in recent years has been restricted by greatly increased use of man-made fibers—rayon, nylon, Dacron, etc. Partly as a result of this interfiber competition, per capita mill consumption of cotton has been decreasing and in 1958 and 1961 was at the

lowest level since 1935. Mill consumption of domestic cotton has also been restricted by greatly increased cotton textile imports.

Under these circumstances of limited domestic markets, the export market for U. S. cotton has acquired new significance. But because of production expansion in traditional producing countries and the emergence of many newly developing countries as cotton producers and exporters, the U. S. position has declined from dominant to a residual supplier in the world cotton trade.

From 1924 to 1933, U. S. exports averaged 8 million bales of cotton per year, which accounted for approximately 58% of world cotton exports. During the 1951 to 1960 period, an average of only 4.8 million bales of U. S. cotton were exported annually—representing 34% of world cotton exports. Logically, it could be assumed that the size of American cotton exports is determined largely by foreign consumption, the size of the foreign crop, and our export pricing policy. Low export subsidies (resulting in a higher export price) and high foreign production may result in smaller export sales and accumulation of surplus stocks.



Role of price

Domestic pricing policy has borne much of the blame for the present plight of United States cotton. The price support program, it is argued, has reduced the competitive advantage of domestic cotton over the man-made fibers. Increased cotton textile imports presumably reflect the export subsidy program which permits foreign mills to buy American cotton at about 8½ cents per pound less than U. S. mills. It is also argued that the United States price support program has held world cotton prices above "equilibrium" levels, resulting in greatly increased foreign production.

Because the United States supplies approximately one third of all cotton moving in world trade, this country undoubtedly influences world cotton prices. The relationship between world prices and production is not clear, although it seems likely that higher prices would result in expanded output. From the U. S. view-

point, the crucial relationship is between foreign production and the United States export price. Foreign free-world acreage and the U. S. export price for Middling 1-inch fiber are shown in the graph.

The graph shows (1) the extremely rapid increase in free-world acreage through 1955, (2) the relatively constant acreage from 1956 to 1959, and (3) the slight acreage increase since 1959. These acreage changes may be related to price changes. The period of rapid acreage increase partially coincided with the record-high cotton prices of the Korean War. The period of relative acreage stability began at the time (1956-57) the U. S. export price was lowered 6½ cents by an equal export subsidy. Recent foreign acreage increases have occurred together with slightly higher U. S. export prices.

Admittedly, this grossly oversimplifies the world cotton economy. Foreign production includes a wide variety of cotton qualities produced under greatly divergent conditions. Certainly, factors other than U. S. export price would be expected to influence foreign production. A statistical analysis of 10 countries, accounting for 75% of the foreign free-

world production, was designed to explain the factors behind changes in foreign free-world cotton acreage since World War II. Preliminary results are shown in the table.

The cotton economies of most of these countries are isolated to various degrees from the free play of world prices. Domestic economic goals are achieved by measures such as cotton export taxes, agricultural price support programs, and export and import restrictions. This analysis indicates that changes of acreage in Brazil, Egypt, Mexico (the three largest foreign free-world exporters), and El Salvador were not statistically related to the United States export price. On the other hand, acreage changes in Pakistan, Peru, India, Turkey, and Nicaragua were positively related to U. S. price changes.

In this analysis, acreage response to U. S. export price changes was greatest for Nicaragua, Turkey, and India. From 1947 to 1961, a 1% average price change was accompanied by a 9% acreage change in relatively unimportant Nicaragua, a 1.6% change in Turkey, and a 1.1% change in the foreign free world's largest cotton producer, India.

In six of the 10 countries studied,

acreage has increased significantly. This increase ranged from 3.8% per year in Mexico to 52% in Nicaragua. This strong upward trend is also characteristic of several other countries not included in the analysis but which presently produce substantial amounts of cotton. As a result, world cotton production has become increasingly "decentralized" in the post-war era. In the 1934 to 1938 period, only 11 countries exported more than 100,000 bales annually as compared with 23 countries each exporting more than 100,000 bales per year in 1960-61. These strong acreage and production trends probably reflect such factors as better adapted seed, dissemination of technical know-how, the impact of new irrigation schemes, and better marketing facilities. Most of these "trend factors" (see table) cannot be attributed directly to U. S. price policy but reflect strong efforts by foreign countries to modernize agriculture and diversify exports.

Several factors other than U. S. prices, associated with foreign acreage changes, include relative internal prices between wheat and cotton in Mexico and Pakistan and between coffee and cotton in Brazil. Domestic cotton consumption and carry-over also explain year-to-year acreage changes in some countries. For example, large cotton stocks in Egypt in any one year are generally associated with reduced acreage the following year.

This analysis suggests that foreign acreage changes in the large exporting countries are not generally associated with U. S. price changes. However, in a number of important producing countries, a significant relationship does exist between acreage and U. S. price. Under these conditions, increases in U. S. prices might well adversely affect our export markets. One difficult question that has not been considered in this discussion is the probable size of foreign production if the domestic price support program had not existed in previous years. If prices have, in fact, been held above "equilibrium" levels, foreign producers may have been induced to expand acreage. Also, this analysis did not consider yield-per-acre influences. But both yield per acre and total acreage determine production, and it is foreign production which partly determines the size of U. S. cotton exports.

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Country	Rank as foreign free-world cotton producer, 1960*	Percent of acreage variation explained in analysis	Are acreage changes statistically related to U. S. export price?	Other significant explanatory variables	Average annual percent increase in acreage, 1947-1961
India	1	90	Yes	Gold and foreign exchange holdings of previous years; internal cotton consumption in previous years.	**
Egypt	2	78	No	Cotton stocks in previous years.	**
Mexico	3	93	No	Cotton stocks in previous years; cotton-wheat price relative; trend factors.	3.8
Brazil	4	53	No	Cotton-coffee price relative.	**
Pakistan	5	92	Yes	Internal cotton consumption in previous years; cotton-wheat price relative.	**
Turkey	6	92	Yes	Export price of Turkish tobacco; trend factors.	9.9
Peru	7	98	Yes	Trend factors.	6.4
Colombia	13	94	Yes (negative relationship)	Internal cotton consumption in previous years; trend factors.	28.7
El Salvador	17	90	No	Trend factors.	15.2
Nicaragua	21	85	Yes	Trend factors.	52.0

* The Soviet Union and the Chinese mainland historically rank second and third behind the United States in total world cotton production.

** Indicates no strong trend is evident.

The regression equations were logarithmic in form, except for the explanatory variable—trend—which was entered linearly. Average annual data for the period 1947-1961 were used. Explanatory variables were generally lagged one year or an average of the previous two years. Data relating to cotton stocks, production, and consumption are reported by the International Cotton Advisory Committee. Price data for other commodities are from publications of the Food and Agriculture Organization of the United Nations. Financial statistics are reported by the International Monetary Fund.