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## The Delta Area of Southeast Missouri: A Case Study in Economic Change

**T**HE SOUTHEAST MISSOURI DELTA is an example of rapid economic change. This largely agricultural area has benefited from resource development, capital investment, and technical change, despite the relatively slow growth of markets for its farm products.

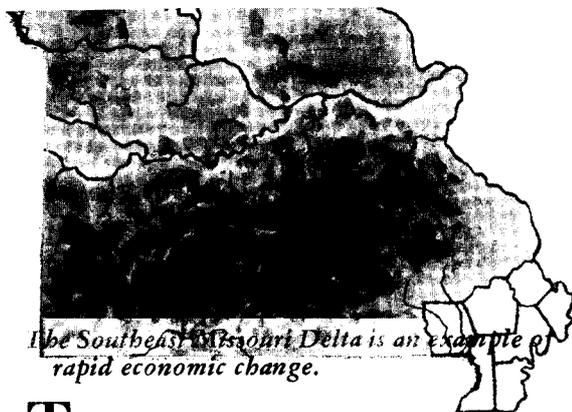
Population has declined since 1950, as farm employment has diminished, but per capita incomes have risen. Farm units have grown larger, and growing credit requirements have increased the role of financial institutions.

Efforts are being made to meet seasonal farm employment problems, to increase nonfarm employment, and to find new uses for resources diverted from cotton production.

**Federal Reserve Bank**  
*of St. Louis*



*Survey of Current Conditions—p. 86*



**T**O THE PEOPLE OF THE DELTA AREA OF SOUTHEAST MISSOURI rapid economic change is just a normal condition of life. Within the memory of many of them much of their area was a watery wilderness. Today the Missouri Delta is one of the most intensively cultivated areas in the Eighth District, producing in its seven counties about 25 per cent of the entire cash farm income of Missouri. The transition of the area in little more than a generation from swamp and forest to the present populous town and farm community is enough in itself to command attention. However, the technical revolution now going on in Delta agriculture, with its far-reaching consequences for the whole community, is fully as interesting.

Many of the ways in which people of a particular area can improve their lot within a growing national economy are well illustrated in the eventful history of the Delta. Development of natural resources, investment of capital, changes in production methods, the movement of people in search of opportunity, and the supplementing of old industries with new are all clearly to be seen. How these various kinds of effort have helped the area to benefit from national economic growth, especially in the postwar period, is the subject of this article.

*This largely agricultural area . . .*

Now, for the setting of the story. The Missouri Delta is a remarkably flat alluvial plain, crisscrossed with some 1,200 miles of ditches and canals. Favored with a long growing season, abundant rainfall, and soils of exceptional fertility and depth, the area is highly specialized in the production of cash crops, particularly cotton, soybeans, and corn. Virtually every tillable acre is under cultivation. With its specialization in crops which require relatively large amounts of labor and yield high returns per acre, this portion of Southeast Missouri has for years supported a larger population for its size than any other non-metropolitan area of the district. The cities of the area are primarily trade centers, although several are also railroad division points and nearly all have some manufacturing activity.

In trying to understand the changes which have occurred in the Southeast Missouri Delta economy, it

is helpful to make a rough division between influences operating primarily within the area, development of natural resources, for instance, and those operating from outside, such as changes in world demand for important products of the area. However, separating these influences for purposes of discussion by no means implies that they are independent of one another. Hard and fast classifications of causes and effects cannot be drawn, because what may be considered a cause from one viewpoint may appear as an effect from another.

*. . . has benefited from resource development, . . .*

The first of the major groups of influences, the internal, consists broadly of changes in the amounts of resources available to the area and changes in the productivity of those resources. The discovery of new natural resources, or their depletion, is a familiar and often dramatic story. Our history is full of accounts of natural resource discoveries which launched new communities or provided additional vitality for older ones. More typical, though less spectacular, is the gradual accumulation of wealth through saving and investment and the development of ways to produce more with whatever resources are at hand. The history of the Missouri Delta is a blend of all these elements.

The first settlers discovered a great wealth of timber and soils of unusual fertility. But the water which helped to produce such a luxuriant growth made farming impracticable except on the two low ridges which cross part of the area. Because the ground was so nearly level, the rain which fell on it was slow to run off. And, to complicate matters, streams and rivers issuing from the St. Francois highlands of the Ozarks to the North and West poured many additional tons of water into the Delta. Consequently, much of the most promising land was under water for part of each growing season, if not for all of it. This was a classic case of a resource development problem which called for effort on a much wider scale than was possible for the individual landowners primarily concerned.

Early in the century, as the timber was being cut off, a drainage corporation was formed which became the Little River Drainage District in 1907. Then began a feat of engineering and earth-moving which would be considered extraordinary even by today's standards. The flow of water from the Ozarks was diverted into the Mississippi River by a canal cut across the northern end of the Delta. Then a system of ditches from one end of the Delta to the other was constructed, leading into five major canals which eventually emptied into Big Lake in Arkansas.

A considerable part of the work was completed by 1920 and by 1940 the total investment in the system, measured by original cost, amounted to more than \$30 million. If expressed in 1956 dollars the sum would, of course, be much larger.

One early effect of the drainage work and land clearing was an influx of settlers in 1922-1924 not unlike a gold rush. Harvested cotton acreage jumped from 98,000 in 1921 to 511,000 acres by 1925. Population of the area from 1900 through 1940 grew more rapidly than did population of the rest of Missouri or the nation. By way of contrast, in many of the older farming areas of Missouri, population declined through these years.

*... capital investment, and technical change, ...*

The massive investment in the drainage works, much of it financed by outside investors, increased the productive capacity of the area by making its soil resources accessible. People moved in to use those resources. In more recent years, and particularly since World War II, increasing investment of capital and introduction of improved methods have markedly increased output per worker in the Delta without increasing total employment.

Evidence of increasing investment is the growth in use of powered equipment on Southeast Missouri Delta farms. Between 1945 and 1954 the number of tractors and motortrucks on farms of the area approximately doubled, displacing nearly 40,000 horses and mules. In addition to increasing in number, the tractors increased in average size and power over the period.

Use of the mechanical cotton picker, which is perhaps the most dramatic innovation in farm machinery in some years, has grown in this area at a remarkable rate. In 1952, according to estimates of the Missouri Division of Employment Security, mechanical cotton-pickers harvested 7 per cent of the Missouri crop. By 1955 nearly 30 per cent of the crop was machine picked, and in one county the share picked by machine was more than 40 per cent. Of the 1,114 machines used in the 1955 harvest, all but 5 were owned by Missouri growers.

In addition to benefiting from the investment in machinery and other equipment on farms, the productivity of Missouri Delta farm operators has been increased by the growth of supporting facilities in neighboring towns. For example, extensive facilities have been developed for distributing fuels, fertilizers, and a tremendous variety of tools, chemicals, building materials, seed, feed, and technical information needed by today's farmer. Contractors with heavy

equipment stand ready to do major jobs of land leveling and ditching which are too big for the farmer's own machinery. Cotton ginneries have installed the latest ginning equipment and lint cleaners to assure the largest possible turnout from the crop.

As a result of mechanization and changes in methods, total output per farmworker in the nation has doubled since the late 1920's. Production of cotton per manhour has increased more than 2½ times in the same period. In view of the changes which have taken place on the Delta farms, comparable data for this area, if available, undoubtedly would show similar trends.

*... despite the relatively slow growth of markets for its farm products.*

However, growth in physical productivity is not enough by itself to assure growth of income for the people of an area. Markets for their products must be considered. In this respect the Delta portion of Southeast Missouri, like most agricultural areas, has experienced in the last few years a relatively slow growth in the demand for the principal products it sells to the rest of the world.

The demand for cotton, in particular, has not kept pace with national economic growth. And the growth of foreign production of cotton has reduced the export market for American cotton. One consequence of increasing surpluses of cotton under the price support system has been reduction of acreage allotments. Thus, cotton acreage harvested in the Southeast Missouri Delta area declined by about 200,000 acres, or one-third, between the postwar peak in 1949 and 1955. A 57,000-acre reduction in cotton acreage harvested between the 1954 and 1955 seasons reduced the Missouri crop (virtually all of which is produced in these seven counties) by about 45,000 bales of lint and 21,000 tons of cotton seed, despite a 3 per cent increase in yields per acre. In dollar terms, that was a reduction of roughly \$10 million in the gross value of the crop. However, the decline in income resulting from the reduction in cotton acreage was not as great as it might at first appear because the land taken out of cotton was put to other uses. Acreage planted to soybeans, for instance, went up over the period. Nevertheless, under the prices prevailing in those years, none of the principal alternative uses for the land could produce as high a cash return per acre as could cotton, and so there was some reduction in cash receipts.

Fortunately, the increase in the demand for soybeans has more than matched the growth of the national economy. Soybean meal is a leading protein feed for livestock and has benefited not only from

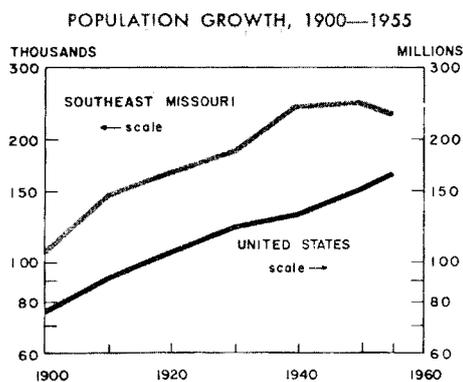
the increase in numbers of livestock being fed, but also from a sharp increase in the amounts of protein fed per animal. Other favorable indications for domestic demand are the growth in use of vegetable oils for shortenings, margarine, and frozen desserts. Export demand has grown also. Missouri Delta soybean acreage increased nearly 60 per cent between 1944 and 1954.

Another influence affecting the area from outside has been growth of employment opportunity in other areas. The availability of jobs in other areas has attracted many people away from the Delta since 1940, reinforcing the trend toward adoption of labor-saving machinery.

*Population has declined since 1950, . . .*

Thus far the principal influences for change in the Delta which have been mentioned have been the increase in productivity per worker, which has resulted from mechanization and changes in methods, the relatively slow growth of world demand for some of the area's most important products, and the growth of alternative opportunities for employment outside the area. Not all of the consequences of these and other influences bearing on the economy of the area can be clearly distinguished, but some are evident.

A sharp decline of population since 1950 is the change of which people of the Delta are perhaps most conscious. From 1900 to 1940, population of the area grew more rapidly than population of the rest of Missouri or the nation. From 1940 to 1950 Delta population continued to grow but at a rate slower than that of the rest of the country. Then between 1950 and 1955 there was a decline of about 7 per cent in the Delta population, in contrast to a 9 per cent gain for the nation. Net out-migration (excess of out-migration over in-migration) from the area between 1950 and 1955 was about 40,000 people, or 15 per cent of the area's 1950 population.



Source: U. S. Census, 1900—1950; 1955 U. S. population estimated by Bureau of Census; 1955 Missouri Delta population estimated by Federal Reserve Bank of St. Louis.

*. . . as farm employment has diminished, . . .*

The out-migration which the Delta is experiencing is part of the nation-wide movement of people from agricultural areas to urban areas. It started later here than in most of the rest of the country because the Missouri Delta was settled later. There has also been a marked shift of people from farm to town within the area. Even though nonfarm employment has been growing faster in this section of Missouri since World War II than in the rest of the country, the increase has been insufficient to absorb all of the people leaving farms plus the young people starting to work for the first time. From 1940 to 1950, the increase in nonfarm employment in the area was greater than the decline in farm employment, but the movement away from farms appears to have accelerated since 1950. One evidence of the speeding up of migration from farms is that the reduction in number of farms in the Delta area was more than twice as great from 1950 to 1954 as it was between 1945 and 1950.

The pull of other employment opportunity as an inducement for leaving farms is, of course, not unique to these few counties. It affects all farm areas to some degree. However, the Delta's specialization in cotton may well make out-migration more rapid there than in many other farming areas of the country. This is so for two reasons. First, cotton growing has generally required more labor per acre of land used than have many other kinds of farming. As cotton acreage allotments are reduced and cotton land is diverted to other crops or to livestock production, there is automatically some displacement of labor. Secondly, gains in productivity per manhour have been especially rapid in cotton production. The mechanical cotton picker, for instance, virtually unknown before 1950, has been making rapid headway in reducing cotton labor requirements.

*. . . but per capita incomes have risen.*

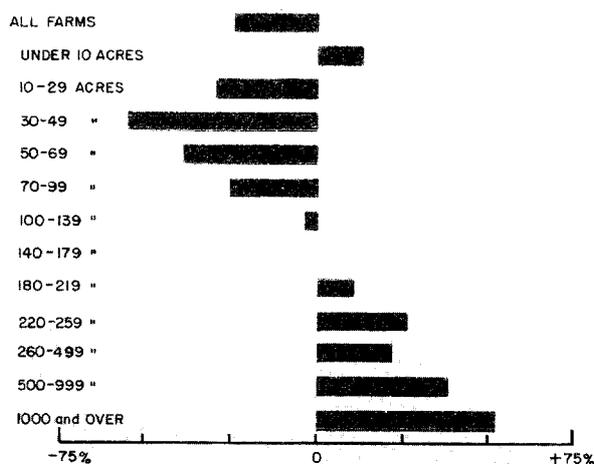
Population growth is easily seen and is of much interest to most communities, but it is not necessarily the best indicator of a community's progress. After all, growth merely means that something is getting bigger. One measure of improvement is personal income. Total personal income grew relatively more rapidly in the Missouri Delta from 1939 to 1949 than in the nation. Then from 1949 to 1953 growth of total income fell behind in the area because of the general decline in farm income which occurred in those years. But, because of the out-migration, fewer and fewer people were sharing in the income

earned there. Consequently, growth of income per capita over the fourteen years between 1939 and 1953 was almost identical with growth in the nation. So the people of the Southeast Missouri Delta are enjoying about the same rate of income growth as the people of the nation as a whole.

*Farm units have grown larger . . .*

Part of the process of increasing farm productivity is an enlargement of farm units. The upward shift in size of farms in the Delta is clearly shown by Chart 2. Migration away from farms has aided the consolidation of farms into the larger units required for efficient use of machinery. The consolidation, as was pointed out above, proceeded at a much faster rate between 1950 and 1954 than between 1945 and 1950. The average farm unit in the seven counties in 1954 was 22 acres larger and had a value of land and buildings nearly \$5,700 greater than in 1950.

PER CENT CHANGE IN NUMBER OF MISSOURI DELTA FARMS  
1945—1954



NUMBER OF FARMS, 1945—1954\*

	Number of farms		Change in number 1945-1954	Per cent change 1945-1954
	1945	1954		
All farms	22,681	17,198	-5,483	-24%
Under 10 acres	768	864	96	13
10-29 "	4,850	3,446	-1,404	-29
30-49 "	5,522	2,479	-3,043	-55
50-69 "	1,965	1,205	-760	-39
70-99 "	3,449	2,590	-859	-25
100-139 "	2,134	2,063	-71	-3
140-179 "	1,463	1,470	7	—
180-219 "	770	856	86	11
220-259 "	489	615	126	26
260-499 "	952	1,162	210	22
500-999 "	258	355	97	38
1,000 & over "	61	93	32	52

\* Butler, Dunklin, Mississippi, New Madrid, Pemiscot, Scott, Stoddard counties, Missouri.

Source: Census of Agriculture 1945, 1954 (preliminary).

*. . . and growing credit requirements have increased the role of financial institutions.*

Another one of the basic changes increasing productivity, as has been stressed earlier, is the increasing use of machinery and other forms of capital. This in turn has entailed an increase in the role played by financial institutions, especially banks. Purchase of equipment or making major land improvements requires financing. Furthermore, the farmer's cash expenses have grown, increasing his working capital requirements. For example, farmers of the Missouri Delta spent nearly \$8 million for gasoline and other petroleum fuels in 1954. Back in the days of mule power, most of the fuel was produced on the farm in the form of feed, requiring little cash outlay. Reflecting the growth in credit needs, bank loan volume and total bank resources have grown more rapidly in the Delta area of Southeast Missouri than in the rest of Missouri or the United States. The loan volumes of Production Credit Associations and National Farm Loan Associations have also shown considerable growth.

*Efforts are being made to meet seasonal farm employment problems, . . .*

With so many changes taking place it is inevitable that some problems turn up. One current difficulty is that of securing enough labor for the two peak seasons in the cotton fields, chopping in May and June, and picking in the fall. At one time most of the cotton was raised on share-crop units which were so small that the family living on each one could provide most of the labor needed even at the busiest seasons. Today the units are much larger and have fewer workers on the land the year around. Hired day laborers from the towns of the area and from the stream of migratory farm workers passing through are depended upon for the additional hands needed in chopping and picking. In some years, as in 1955, the cotton matures too late for the migratory workers passing through after the fruit and vegetable harvests in the Great Lakes states, so shortages of hand labor develop.

The magnitude of the seasonal problem is being reduced in several ways. Some of the Delta farm workers join the migratory workers in the Great Lakes states during July and August, after chopping has ceased and before picking starts, thus supplementing their incomes. Increasing use of machine cultivation, chemical weed control, and the mechanical picker tend to minimize peak labor requirements. For the farm workers living on farms, efforts are made to promote supplementary enterprises, such as livestock or vegetable growing, to occupy slack seasons.

*... to increase nonfarm employment, ...*

A second major problem of the area is to increase new employment opportunity so as to provide jobs for the young people growing up in the Delta as well as for some of the people no longer needed on the farm. To this end the Missouri Delta Development Commission was formed two years ago to supplement on an area-wide basis the industrial promotion work already being done by individual towns. There are development corporations in more than twenty cities, and within the last few years they have spent about \$1 million in construction or expansion of plants for lease to manufacturing firms. It is expected that the availability of labor and other resources in the Delta will continue to be attractive to manufacturers.

*... and to find new uses for resources diverted from cotton production.*

The third major problem of concern to people of the area is to find new uses for resources diverted from cotton production. Acreage restrictions reduced cotton plantings by approximately one-third between 1949 and 1955. Fortunately, Delta soils are well suited to many kinds of production. Therefore a wide range of possibilities is open. Increased production of livestock, fruits, vegetables, grains and the soybeans mentioned before is currently underway or being studied in various parts of the area. These adjustments in farm operations will take up land taken out of cotton production.

But new methods have to be learned, market outlets must be found, and supporting facilities in the towns have to grow, all of which require time and effort.

One of the aims of the industrial development effort is to aid the farm adjustment by bringing into the area supporting facilities to handle new farm products. Several of the projects for increasing the production of vegetables, for example, hinge upon establishment of processing and shipping facilities.

Their wealth of resources and experience provide the people of the Southeast Missouri Delta with the means to capitalize on whatever opportunities the future may provide. The well-demonstrated ability to master the art of growing cotton speaks well of their prospects for surmounting other formidable production problems. The eternal exposure to weevil and weather has made for flexibility and perseverance. And on every side the canals are a reminder of the ingenuity and work which built the Delta and can continue to improve it.

A. JAMES MEIGS

# Survey

*Released for publication July 1*

AS THE YEAR APPROACHED THE HALFWAY MARK, business activity in the Eighth Federal Reserve District held close to the high levels maintained during previous months. The demand for bank credit leveled off during June, indicating little change in activity and perhaps a lower rate of inventory building in recent weeks. Industrial production generally was at a fast pace, although assembly of automobiles and production of related equipment, and farm machinery were notable exceptions. As a result, during June insured unemployment increased in some areas or held steady instead of declining as usual in other areas. Expanding construction activity, however, filled some of this gap, and employment in most of the district's major labor markets increased from April to May. With employment and incomes at high levels, spending continued at a rapid pace for most goods, automobiles and farm equipment excepted. Growing conditions were generally favorable for district farmers, but prices of major district farm products weakened slightly in the four weeks ended June 22.

In general, factories and mines in the Eighth District continued to produce at relatively high levels in June. However, there were major cutbacks in automobile assembly and farm equipment and tire manufacture. Steel ingot output in the St. Louis area for the month was set at 98 per cent of rated capacity. Both Southern pine and hardwood production increased seasonally and were running ahead of last spring's output. During the first three weeks of June, livestock slaughter in the St. Louis area dropped seasonally, but was about one-fourth larger than in the comparable period last year. Crude oil production in district producing states remained at around the 380,000 barrel daily average mark which has been generally maintained since January. Coal mining continued to increase more than seasonally, according to the latest available data.

Construction activity has become an expanding force in the district economy. Contracts awarded in this district in May gained 28 per cent over May 1955 and in the first five months of the year, totaled \$588 million, up 6 per cent from the corresponding period last year. Value of awards for residential construction in May were also larger than a year ago.