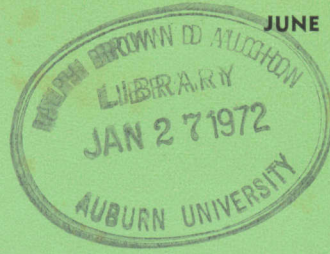


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An Analysis of Income and Employment Changes in Four Rural Counties in Alabama, 1960-69



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An Analysis of Income and Employment Changes in Four Rural Counties in Alabama, 1960-69¹

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MANY RURAL AREAS in the South are economically depressed. They are characterized by underemployment, unemployment, low income, and lagging economic development. In most of these areas, per capita income has consistently fallen behind state and national averages, while the rate of unemployment has risen above both averages. In recent years this has occurred during a period characterized by expanding national output, relatively high employment, and a generally rising level of living.

Several studies in the past few years have focused on the problem of low income and underdevelopment in rural areas in the South. This research has stressed such important concerns as characteristics and distribution of population, levels of living, manpower, land values and tenure, income distribution, and natural resource use and development.

Two recent regional research efforts involving Alabama have documented significant changes and trends among rural households in selected low-income areas of the South. The first of these undertakings, in 1960, centered on the accumulation of a substantial amount of descriptive material about various aspects of the low-income problem.³ This study involved the interviewing of the heads and homemakers of selected households in 30 low-income counties in seven Southern States.

A follow-up study in 1966 was concerned with the processes of development and mobility.⁴ It involved reinterviewing the house-

¹ This report represents partial results of Alabama's contribution to S-79, a study of rural development and the quality of life in the rural South.

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³ Southern Regional Project S-44, "Factors in the Adjustment of Families and Individuals in Low-Income Rural Areas of the South."

⁴ Southern Regional Project S-61, "Human Resource Development and Mobility in the South."

holds included in the first study and demonstrated what had happened to these rural low-income families with respect to level of living, occupational change, and educational change.

Four Alabama counties included in both studies were: Clarke, Fayette, Monroe, and Tallapoosa, see map. These counties were classified as rural and low income in both 1960 and 1966.

Some of the data provided by these projects provided an opportunity to determine some key economic changes that have occurred in these four Alabama counties since the inception of the original project in 1960. Data on changes in levels of income and employment need to be ascertained, since this information was not directly obtained in either of the other studies. Also, key factors in overall economic development of any depressed area are income and employment opportunities. Perhaps even more important is the composition of income and employment and the extent to which industrialization has taken place. In addition, transformations that have occurred in the structure of the income and employment dimensions of the economy must also be identified if development of a viable economy is to occur.

OBJECTIVES

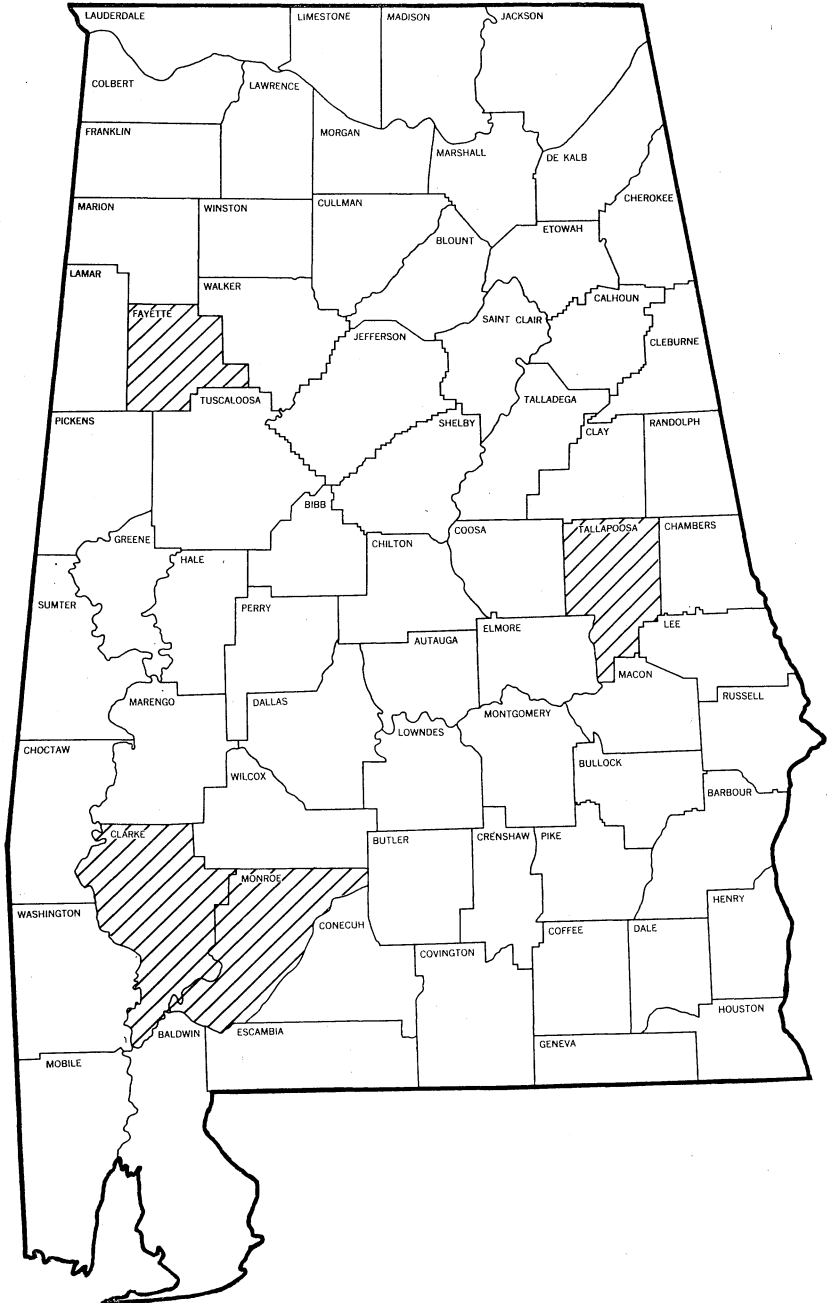
The overall objective of this study was to identify and analyze the structural transformation from 1960 through 1969 in economies of four selected rural Alabama counties in terms of the income and employment dimensions. Even though these counties are not adjoining, they were treated as a composite study area because they possessed comparable characteristics and were similarly aggregated in previous studies.

Specific objectives of the study were:

1. To estimate aggregate changes that have occurred in selected variables in this four-county study area;
2. To isolate causes of any shifts in the income and employment variables through the use of shift-share analysis; and
3. To compare the relative economic performance of the selected counties with that of the State and the Nation.

PROCEDURE

Secondary data were used in this study to obtain county, state, and national shifts in key transformation variables. Secondary data were used because of the prohibitive time and cost necessary



Alabama counties included in low-income studies in 1960 and 1966.

for collection of primary data and because primary data were not available for many of the relationships depicted in the model. Most of the data used in the model were collected from census and other government publications. In cases where data were limited "best" estimates were used.

Firms in the study area were aggregated into 10 sectors. The delineation of sectors basically followed the major grouping of industries as classified by the Bureau of Labor Statistics. This aggregation procedure was accomplished to reflect the structural relationships of these sectors as they apply to the study area.

A brief description of the composition of each sector follows:

1. The agricultural sector includes all operations in the area engaged in agricultural production. Included are such firms as livestock, crop, and fruit or vegetable farms, and hatcheries, artificial inseminators, veterinarians, and others who provide service to farming operations on a contract or fee basis.

2. The mining sector includes those establishments in the area engaged in extraction of petroleum, sand, gravel, and clays.

3. The construction sector includes firms engaged in construction of buildings; special trade contractors engaged in specialized construction activities such as plumbing, painting, electrical work and carpentry; and general contractors.

4. The manufacturing sector includes those firms in the area engaged in food manufacturing; textile and apparel manufacture, printing and publishing; production of stone, clay, glass or concrete production; and firms involved in lumber and wood products, furniture and fixtures, and paper and allied products.

5. The transportation and public utilities sector includes all trucking and warehousing activities within the area, electrical companies, telephone companies, gas companies, radio and television stations, and water and sanitary services.

6. The wholesale and retail sector includes all wholesale and retail trade within the study area.

7. The finance, insurance, and real estate sector includes commercial banking establishments, security and commodity brokers, credit agencies, insurance agencies, and real estate agencies.

8. The services sector includes establishments such as hotels and other lodging places; establishments providing personal business, repair, and amusement services; and medical, legal, engineering and other professional and miscellaneous services.

9. The State and local government sector includes all economic activity originating from county, municipal, and State governments.

10. The Federal government sector includes all economic activity in the area originating from the Federal government.

AGGREGATE CHANGES IN SELECTED VARIABLES IN THE STUDY AREA

In order to conduct a study of an area, it is necessary to have knowledge of the social and economic conditions of that area. Ideally, data on such factors as population distribution, level and sources of personal income, and level and type of employment should be known before such a study is undertaken. Descriptive material presented here will also aid in formulating the shift-share model used later.

Population

The population in the study area was predominantly rural in 1960, Table 1. About a third of the people lived in areas classified as urban by the Bureau of the Census. Such population distribution was in sharp contrast to that of the State, which had become principally urban by 1960. By 1970 this distribution had not changed appreciably, but there were slight shifts toward urbanization in both the study area and in the State. Perhaps of greater importance is the fact that total population in the study area declined by approximately 1,600 people during the decade — slightly less than 2 per cent.

Personal Income

It is in the area of personal income that widest discrepancies between the study area and other areas appear. County per capita personal income estimates indicate that the study area lagged con-

TABLE 1. POPULATION CHANGES, URBAN AND RURAL, SELECTED AREAS, 1960-1970

Area	1960			1970		
	Urban	Rural	Total	Urban	Rural	Total
Alabama						
Number.....	1,791,721	1,475,019	3,266,740	2,011,941	1,432,224	3,444,165
Per cent.....	54.8	45.2	100.0	58.4	41.6	100.0
Study area						
Number.....	33,843	65,422	99,265	35,889	61,810	97,699
Per cent.....	34.1	65.9	100.0	36.4	63.6	100.0

TABLE 2. CHANGES IN PER CAPITA PERSONAL INCOME, UNITED STATES, ALABAMA, AND STUDY AREA, 1960-1969

Region	1960	1969	Change 1960 to 1969
	<i>Dol.</i>	<i>Dol.</i>	<i>Pct.</i>
United States.....	2,215	3,687	66.5
Alabama.....	1,464	2,582	76.4
Study area.....	1,111	2,026	82.4
Clarke County.....	1,089	2,031	86.5
Fayette County.....	880	1,609	82.8
Monroe County.....	1,004	1,725	71.8
Tallapoosa County.....	1,303	2,411	85.0

Source: *Survey of Current Business*, August 1961 and August 1970, and *Personal Income Supplement to Alabama Business*, May 1963 and February 1971.

siderably behind both the United States and Alabama in per capita income at both the beginning and end of the decade of the 1960's, Table 2. In 1960, for instance, per capita income in the four counties comprising the study area was approximately one-half the national average and 76 per cent of that for Alabama. There were greater variations on a county basis, as Fayette County had a level of per capita income approximately 40 per cent of that for the Nation.

Expansions of significant magnitude occurred in the study area from 1960 to 1969 as gains for the area as a whole outstripped those for Alabama and the Nation. In fact, only one county had a rate of increase in per capita income below the state level; but it was still greater than the national increase. On a relative percentage basis, gains in the study area were approximately 24 per cent greater than those for the Nation, and the level of per capita income was approximately 55 per cent of that for the Nation and about 80 per cent of that for the State. On an individual county basis, greater variations occurred.

Total personal income in the four counties comprising the study area increased about 92 per cent from 1960 to 1969, Table 3. Of the major components of personal income, greatest percentage increase occurred in other labor income. Income changes of approximately 125 per cent occurred in property income and transfer payments, while the final and largest component of personal income, wage and salary disbursements, increased about 100 per cent.

Within the wage and salary component, greatest increase was in the finance, insurance, and real estate sector. Firms in this sector paid out \$3.8 million in wages and salaries in 1969 as con-

TABLE 3. PERSONAL INCOME, BY MAJOR SOURCE, STUDY AREA, 1960 TO 1969

Source	1960		1969		Change 1960 to 1969
	<i>Thou. dol.</i>	<i>Pct.</i>	<i>Thou. dol.</i>	<i>Pct.</i>	<i>Pct.</i>
Wage and salary disbursements.....	65,241	59.2	133,238	62.8	104.2
Agriculture.....	1,368	1.2	1,192	.6	-12.9
Mining.....	0	0	940	.4	∞
Contract construction.....	1,897	1.7	7,006	3.3	269.3
Manufacturing.....	39,057	35.4	74,954	35.3	91.9
Transportation and utilities.....	2,141	1.9	6,241	2.9	191.5
Wholesale and retail trade.....	7,307	6.6	13,934	6.6	90.7
Finance, insurance, and real estate.....	958	.9	3,814	1.8	298.1
Services.....	2,493	2.3	6,372	3.0	155.6
State and local government.....	4,010	3.6	8,449	4.0	110.7
Federal government.....	6,007	5.4	10,336	4.9	72.1
Other labor income.....	3,523	3.2	9,326	4.4	164.7
Proprietors' income.....	20,211	18.3	24,138	11.4	19.4
Farm.....	8,421	7.6	9,370	4.4	11.3
Nonfarm.....	11,790	10.7	14,768	7.0	25.3
Property income.....	10,690	9.7	24,217	11.4	126.5
Transfer payments.....	13,138	11.9	29,925	14.1	127.8
Less: Personal contributions for Social Security.....	2,514	2.3	8,594	4.0	241.8
Total.....	110,290	100.0	212,242	100.0	92.4

trusted with less than \$1 million in 1960. Other rapid-growing components were contract construction, transportation and public utilities, services, and State and local government. Only the agricultural sector experienced a decline in wage and salary disbursements.

The income distribution pattern also shifted during the period. Personal income attributable to proprietors decreased from 18 per cent of the total to 11 per cent, while transfer payments increased from 12 to 14 per cent of the total personal income distribution. Percentage of income generated by wage and salary payments by the Federal government decreased slightly, as did agriculture. Small increases occurred in finance, insurance, and real estate and services. For the remaining income sources, total contribution of each appeared stabilized at 1960 levels.

Total personal income during the period increased at a greater rate in the study area than in either Alabama or the United States, Table 4. Growth rates for the study area were higher than those for Alabama and the United States in four of the five major

TABLE 4. CHANGES IN INCOME, BY SOURCE, UNITED STATES, ALABAMA, AND STUDY AREA, 1960 TO 1969

Source	Changes in income, 1960 to 1970		
	United States	Alabama	Study area
	<i>Pct.</i>	<i>Pct.</i>	<i>Pct.</i>
Wage and salary disbursements.....	87.6	92.8	104.2
Agriculture.....	1.2	17.6	-12.9
Mining.....	40.5	-9.1	∞
Contract construction.....	96.1	102.4	269.3
Manufacturing.....	80.2	106.5	91.9
Transportation and utilities.....	64.4	64.6	191.5
Wholesale and retail trade.....	68.1	74.6	90.7
Finance, insurance, and real estate.....	97.2	75.2	298.1
Services.....	123.9	130.8	155.6
State and local government.....	134.2	122.6	110.7
Federal government.....	120.5	75.8	72.1
Other industries.....	57.3	160.0
Other labor income.....	150.1	160.8	164.7
Proprietors' income.....	44.6	32.8	19.4
Farm.....	36.2	45.8	11.3
Nonfarm.....	47.5	26.6	25.3
Property income.....	102.8	126.3	126.5
Transfer payments.....	120.8	123.1	127.8
Less: Personal contributions for			
Social Security.....	182.3	165.6	241.8
Total.....	86.6	90.4	92.4

sources of personal income — only in the proprietor income did study area growth rates lag. Widest discrepancies among the personal income sources occurred in wage and salary disbursements, especially in finance, insurance, and real estate, contract construction, and transportation and public utilities. In each of these sectors, growth rates for the study area were much greater than those for the other two areas.

It is noteworthy that wage and salary payments from agriculture in the study area changed at a negative rate during this time period and also that the growth in farm proprietor income was substantially less in the study area than in the State or Nation. This, coupled with the large increases in the financial services, public utility, and construction sectors, seems to indicate a growing rate of industrialization in the four rural counties from 1960 to 1969.

County income data are presented in detail in Appendix Tables 5 through 8.

Employment

Total employment in the study area increased 22.5 per cent from 1960 to 1969, Table 5. Greatest percentage changes occurred

TABLE 5. EMPLOYMENT, BY MAJOR SECTOR, STUDY AREA, 1960-1969

Sector	1960		1969		Change 1960 to 1969
	No.	Pct.	No.	Pct.	Pct.
Agriculture.....	4,140	15.8	2,800	8.7	-32.4
Mining.....	0	0	100	.3	∞
Contract construction.....	635	2.4	1,340	4.2	111.0
Manufacturing.....	13,850	52.6	16,960	52.6	22.5
Transportation and public utilities.....	605	2.3	650	2.0	7.4
Wholesale and retail trade.....	3,055	11.6	3,720	11.5	21.8
Finance, insurance and real estate.....	285	1.1	560	1.7	96.5
Services.....	1,335	5.1	2,020	6.3	51.3
State and local government.....	1,405	5.3	2,920	9.1	107.8
Federal government.....	1,020	3.9	1,180	3.7	15.7
Total.....	26,330	100.0	32,250	100.0	22.5

in the contract construction, State and local government, and finance, insurance, and real estate sectors. Only in agriculture did employment decline. Changes occurring in each county are presented in Appendix Tables 11-14.

Of perhaps greater importance, however, were the shifts in distribution of employment from 1960 to 1969. Greatest shift in the study area was out of agriculture and into services, State and local government, and contract construction. Employment distribution in most other sectors appeared to be stabilized at 1960 levels.

During the same time period, total employment in the United States and Alabama increased 23.8 and 21.9 per cent, respectively, Table 6. With respect to other areas, the study area experienced

TABLE 6. CHANGES IN EMPLOYMENT, BY SECTOR, UNITED STATES, ALABAMA, AND STUDY AREA, 1960 TO 1969

Sector	Changes in employment, 1960 to 1969		
	United States	Alabama	Study area
	Pct.	Pct.	Pct.
Agriculture.....	-33.9	-32.0	-32.4
Mining.....	-13.1	-38.5	∞
Contract construction.....	19.1	19.4	111.0
Manufacturing.....	20.1	33.8	22.5
Transportation and utilities.....	10.7	12.0	7.4
Wholesale and retail trade.....	28.6	25.0	21.8
Finance, insurance, and real estate.....	33.3	26.8	96.5
Services.....	51.0	41.7	51.3
State and local government.....	55.3	53.1	107.8
Federal government.....	21.5	-7.5	15.7
Total.....	23.8	21.9	22.5

larger employment gains in the construction, State and local government, services, and finance, insurance, and real estate sectors. Manufacturing employment grew at a faster rate in the study area than in the United States, but less than in Alabama.

By most standards, the four-county study area was economically depressed in 1960 and, to some extent, in 1969. In 1960, most of the population lived in rural areas and the per capita income lagged behind both national and state levels. During the period, however, per capita income grew at a faster rate than was true of the other two areas. Total personal income also increased by a greater percentage in the study area. Employment increased approximately 22 per cent while population declined almost 2 per cent.

Since income and employment are such vital factors in overall economic development of an area, some means of quantitatively assessing changes in both factors must be developed. If these shifts in income and employment can be isolated, they partly explain structural transformations in the economy and provide possible insight into the future direction of development and change in the economy. One technique for isolating the various factors associated with income and employment changes is through use of the shift-share model.

THE SHIFT-SHARE MODEL⁵

Growth Effects

One means of identifying factors underlying changes in income and employment in the study area is through use of shift-share analysis. This technique is used to separate an area's income and employment growth into three factors and measures the contribution of each. Although it does not provide basic answers to changes in composition of income and employment, shift-share analysis does provide a useful framework for tracing causes and effects of such trends.

The initial step in identifying factors responsible for variations in income and employment changes is to dissect the total growth increment into three effects: national-growth, industrial-mix, and regional-share.

⁵ For a detailed discussion of the practical and theoretical concepts involved in shift-share analysis, see *Survey of Current Business*, August 1970.

National-Growth Effect

The national-growth effect measures overall growth of the national economy. This effect is calculated by applying to each income or employment component in the base year (1960) the percentage change in total income or employment between the base year and the terminal year (1969). The national effect must be isolated in order to focus on the two remaining effects which account for differences in regional-growth patterns.

Industrial-Mix Effect

The industrial-mix effect, called the component-mix effect when referring to income changes, results from differences between income and employment structure of an area and of the Nation. For example, if a large proportion of an area's economy consists of industries that are growing slowly nationally, that area's employment might expand at a below-average rate even though each employment source in the area was increasing at a rate above the national average. The reverse would also hold true.

The component- or industrial-mix effect is estimated by applying to each income or employment component in the base year the difference between the national growth rate for that component and the overall or average national growth rate. If the former is larger, the particular income component is a rapid-growth component. Its presence in the economy gives rise to area growth; the size of the increase will vary according to the relative proportion of the component located in the area. On the other hand, where the component growth rate is less than the overall national rate, it is termed a slow-growth component and it has a negative effect on income and employment. Again, this effect is a relative one.

Regional-Share Effect

The third element of an area's growth is the regional-share effect, which also is the second factor accounting for differential change between an area and the Nation. This element is calculated by applying to each income or employment component in the base year the difference between the percentage change in that component in the area and percentage change in the same component nationally.

The regional-share effect tells something of the competitive position of an area in relation to the rest of the Nation. For instance, an employment component that is growing faster in an

area than its counterparts in the Nation as a whole will add to the area's overall growth relative to that of the Nation, while a slower-growing component will bring forth an opposite effect. That is, a positive difference signifies a shift of the particular component into the area; a negative difference indicates a shift out of the area.

Mathematical Formulation

Shift-share analysis can be stated mathematically in the following terms:

$$(1) \sum_{i=1}^m \sum_{j=1}^n X_{ij} = X_{00}$$

$$(2) \Delta X_{ij} = (X_{ij}^t - X_{ij}^o)$$

$$(3) r_{00} = (X_{00}^t - X_{00}^o) | X_{00}^o$$

$$(4) r_{i0} = (X_{i0}^t - X_{i0}^o) | X_{i0}^o$$

$$(5) r_{ij} = (X_{ij}^t - X_{ij}^o) | X_{ij}^o$$

$$(6) \Delta X_{ij} = [(X_{ij}^o) (r_{00})] + [(X_{ij}^o) (r_{i0} - r_{00})] + [(X_{ij}^o) (r_{ij} - r_{i0})]$$

where

X_{ij} = employment or income component i in area j

X_{ij}^o = employment or income component i in area j at an initial time point, o

X_{ij}^t = employment or income component i in area j at a terminal time point, t

X_{00} = national or aggregate employment or income in all components

X_{i0} = national or aggregate employment or income in component i

r_{00} = national-growth effect

r_{i0} = industrial-mix effect

r_{ij} = regional-share effect

RESULTS OF SHIFT-SHARE ANALYSIS

Income Effects

National-Growth Effect

The national-growth effect accounted for about 94 per cent of the total increase in personal income in the four-county study area during the period 1960-1969, Table 7. During the same time period, national growth explained about 96 per cent of the total change in personal income in Alabama. This is to say that, if firms in Alabama and the study area counties had experienced changes in income at the same rate as the Nation as a whole, 96 and 94 per cent, respectively, of the total change would have been accounted for.

The national-income effect varied on a county basis from a low of about 80 per cent in Clarke County, the fastest-growing county in the area, to a high of 118 per cent in Monroe County, the slowest-growing county.

Component-Mix Effect

The component-mix effect did not explain a large percentage of the change in income in the study area counties, accounting for about 3 per cent of the change or approximately \$3.1 million. The effect was negative in the study area. This can be interpreted to mean that the study area's mix of income-producing activities was composed more of the slow-growing components nationally rather than the rapid-growing ones. Fast-growing income components of the national economy were: other labor income, State and local government, services, transfer payments, Federal government, property income, finance, insurance, and real estate, and contract construction.

The negative impact of the component-mix effect varied from less than 1 per cent to about 8 per cent in the individual counties comprising the study area.

Regional-Share Effect

Regional-share effect is the main explanatory factor in differentiating area income growth. It also follows that primary emphasis should be placed on the regional-share effect in projecting area growth.

In economic analysis, the regional-share effect is generally regarded as an indicator of the competitive position of a given

geographic area in comparison with other areas. This is true because the regional-share effect compares the performances of an industrial sector in a given area with that of the same industrial sector in other areas. A positive regional share effect indicates a gain in the competitive position of an industry in relation to other similar industries in other areas, while a negative effect signifies the opposite.

For Alabama, the regional-share effect accounted for 2.5 per cent of total personal income growth during the study period or approximately \$105 million in additional income, Table 7. Thus, the competitive position of Alabama with respect to other states and regions was enhanced by this amount. Greatest regional-share impact occurred in the manufacturing sector as there was an increase of \$258 million attributed to the improved competitive position of manufacturing in the State, Appendix Table 15. Second largest gains occurred in property or rental income — \$106 million. Primary losses were in Federal government wages and salaries and nonfarm proprietor income. Growth rates in both lagged behind the national norm.

The composite regional-share effect accounted for about 9 per cent of the total income change in the study area or \$9.6 million. As was true for Alabama, greatest impact was in the manufacturing sector, Appendix Table 16. Income generated by manufacturing firms in the four-county study area grew at a more rapid rate than like firms did nationally, adding \$4.6 million to the competitive position of this sector. During the decade, shifts in manufacturing accounted for an additional \$35 million in total wages and salaries.

Wage and salary disbursements from the construction sector were the second largest regional-share effect accounting for about \$3.3 million.

Other income components having large regional-share shifts were wages and salaries in the transportation and public utilities sector and property income, each of which accounted for over \$2.5 million.

Negative regional-share effects occurred in Federal government wage and salary disbursements, nonfarm proprietor income, and farm proprietor income. Growth rates in each of these components failed to maintain the national rate.

By far the largest regional-share income effect occurred in Clarke County, Table 7. This is to say that, of counties in the

study area, Clarke County made the greatest comparative advances in improving its overall competitive position in personal income. The aggregate effect of the improved competitive position was to increase personal income by some \$7 million at the expense of other areas and regions, Appendix Table 17.

Shifts in wage and salary disbursements in manufacturing accounted for more than half the net regional-share effect, \$3.9 million. Other major components contributing to this effect were State and local government and finance, insurance, and real estate.

Negative regional-share growth occurred in farm proprietor income, nonfarm proprietor income, services, contract construction and wholesale and retail trade. Each of these components failed to achieve the growth rate for its national counterpart.

Regional-share shifts in personal income in Fayette County accounted for almost 11 per cent of the total income change during the period under analysis, Table 7. Increases in wages and salaries originating from the manufacturing sector were the dominant regional-share effect, Appendix Table 18. Other noteworthy increases occurred in wholesale and retail trade and farm proprietor income, both of which increased at rates higher than the national rate for each.

TABLE 7. INCOME AND COMPONENTS OF INCOME CHANGES, SELECTED AREAS, 1960-1969

Area	Total income change	Income growth factors			
		National growth	Com- ponent mix	Regional share	Net ¹ relative change
	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Thou. dol.</i>
United States.....	399,028,000	399,028,000	0	0	0
Alabama.....	4,327,000	4,143,000	81,000	105,000	186,000
Study area.....	101,952	95,510	-3,136	9,599	6,463
Clarke County.....	30,516	24,265	-770	7,030	6,260
Fayette County.....	13,718	12,305	-41	1,457	1,416
Monroe County.....	16,490	19,441	-1,332	-1,616	-2,948
Tallapoosa County.....	41,228	39,498	-992	2,719	1,727
Per cent distribution of income change					
United States.....	100.00	100.0	0	0	0
Alabama.....	100.00	95.6	1.9	2.5	4.4
Study area.....	100.00	93.7	-3.1	9.4	6.3
Clarke County.....	100.00	79.5	-2.5	23.0	20.5
Fayette County.....	100.00	89.7	-.3	10.6	10.3
Monroe County.....	100.00	117.9	-8.1	-9.8	-17.9
Tallapoosa County.....	100.00	95.8	-2.4	6.6	4.2

¹ Net relative change refers to the combined component-mix and regional-share effects. The combined effect is used in this manner throughout the study.

Largest regional-share decreases occurred in wages and salaries paid by government, both State and local and Federal. Other negative effects were in services and nonfarm proprietor income.

Monroe County was the only county in the study area to have a negative regional-share effect, Table 7. Of the total income change in the county, a negative \$1.6 million or 9.8 per cent was attributed to a declining overall competitive position with regard to the rest of the Nation. The overall rate of income change in Monroe County of 73.5 per cent was well below the national increase of 86.6 per cent.

The composite pattern of income shifts in Monroe County is presented in Appendix Table 19. In contrast to Clarke and Fayette counties, the manufacturing sector did not maintain its competitive position during the period and contributed a large amount toward the regional-share deficit. Greatest negative effect, however, occurred in the Federal government sector.

Even though income components failed to keep pace with their national counterparts, there were some bright spots in the Monroe County economy. Contract construction grew at a rate of 740 per cent during the period, accounting for a regional-share impact of \$2.2 million, and transportation and public utilities wages and salaries increased some sixfold. Wholesale and retail trade finance, insurance, and real estate also contributed positive regional-share growth rates.

The regional-share income pattern exhibited in Tallapoosa County differed from the other counties in the study area. Although the regional share effect accounted for almost 7 per cent of the aggregate income change, the components contributing to \$2.9 million regional-share increase differed from those found in the other counties, Appendix Table 20. For instance, the greatest effect was in property income — \$1.6 million. This was followed by wage and salary disbursements from the services sector, which had been negative in Fayette and Clarke counties.

Large contributions were also made by increased wage and salary payments from the construction and wholesale and retail sectors.

Greatest negative shifts occurred in manufacturing which, although total wages and salaries increased, accounted for —\$1.1 million. Nonfarm proprietor income also had a negative regional-share effect, as did Federal government wage and salary payments.

Employment Effects

National-Growth Effect

On the average, the national-growth effect accounted for more than 100 per cent of the total employment change in Alabama and the study area during the period 1960-1969, Table 8. On an individual county basis, this effect ranged from about 67 per cent in Clarke County (the fastest-growing area) to 188 per cent in Tallapoosa County (the slowest-growing area).

The dominance of the national-growth effect reflects the fact that the economy of the United States is really a single entity made up of highly interrelated subeconomies. Each of these subeconomies specializes in the production of goods or services in which it has a comparative advantage. Since the major markets for these goods usually lie elsewhere, changes in economic growth in one area are transmitted in large measure to other areas of the Nation.

Industrial-Mix Effect

During the decade of 1960-1969, industrial-mix effect played only a small role in explaining the change in employment in Alabama and this effect was negative. As can be seen from Table 8, component mix accounted for about 6 per cent of the growth in employment in Alabama during this time period. That is, chang-

TABLE 8. EMPLOYMENT AND COMPONENTS OF EMPLOYMENT CHANGES,
SELECTED AREAS, 1960-1969

Area	Total employment change	Employment growth factors			
		National growth	Indus- trial mix	Regional share	Net relative change
	No.	No.	No.	No.	No.
United States.....	14,187,000	0	0	0	0
Alabama.....	190,000	206,845	-11,190	-4,955	-16,145
Study area.....	5,920	6,266	-2,054	1,713	-341
Clarke County.....	1,970	1,312	-456	1,116	660
Fayette County.....	1,090	780	-471	785	314
Monroe County.....	1,150	1,193	-682	639	-43
Tallapoosa County.....	1,600	3,011	-406	-1,003	-1,409
		Per cent distribution of employment change			
United States.....	100.0	100.0	0	0	0
Alabama.....	100.0	108.9	-5.9	-2.7	-8.6
Study area.....	100.0	105.8	-34.7	28.9	-5.8
Clarke County.....	100.0	66.6	-23.1	56.6	33.5
Fayette County.....	100.0	71.6	-43.2	72.0	28.8
Monroe County.....	100.0	103.7	-59.3	55.6	-3.7
Tallapoosa County.....	100.0	188.2	-25.4	-62.7	-88.1

ing industrial-mix in Alabama accounted for approximately 11,000 jobs.

Nationwide, five employment components grew faster than the national employment average during this period. They tended to contribute to a positive industrial-mix effect. Included in these fast growing components were the following sectors: State and local government; services; finance, insurance, and real estate; and wholesale and retail trade.

The six slow growing national employment components contributed to a negative industrial-mix effect in Alabama and the four-county study area. These were: Federal government, manufacturing, contract construction, transportation and public utilities, mining, and agriculture. The large declines in employment in mining and agriculture tended to contribute heavily to the negative effect in Alabama.

In the study area, the industrial-mix effect played a greater role than on the State level. Much of the expansion that occurred in this area was in sectors that were expanding at a rate less than the national average. That is, most of the increases in employment occurred in slow-growing national industries. For instance, the fastest-growing industry in the study area was contract construction which was a slow-growing component nationally.

On an individual county basis, the impact of industrial mix on total employment growth varied from a minus 23 to a minus 59 per cent. Again this was primarily caused by greater relative growth in industries in the study area that were slow-growing industries nationally. That is, a greater relative proportion of the industries in the four-county area was composed of slow-growing national industries.

Regional-Share Effects

As was mentioned previously, regional-share is the primary factor explaining differential growth rates of various regions or areas. Therefore, any discussion of shift-share analysis should be devoted primarily to regional-share effects.

For Alabama as a whole, the regional-share effect accounted for a negative 2.7 per cent of the total employment growth in the State from 1960 to 1969 or a loss of approximately 5,000 jobs because of a declining overall competitive position with regard to other states. Primary losses in the regional-share effect were in the Federal government, services, wholesale and retail, and mining

sectors, Appendix Table 21. In the Federal government and mining sectors, there were actual declines in employment, but there were large increases in the other two sectors. Employment in services increased approximately 40 per cent and wholesale and retail trade about 25 per cent, but these increases were less than the national average. Thus, increases in Alabama, though large, were not of the same magnitude as the national increases. The only industrial components accounting for positive regional-share effects were in the manufacturing and agricultural sectors. The rate of growth of manufacturing employment increased about 34 per cent in Alabama during the period under analysis and only 20 per cent nationally. Thus, Alabama's competitive position as far as employment in manufacturing was concerned was greatly enhanced, and approximately 32,000 jobs in manufacturing were gained at the expense of other areas. In agriculture, on the other hand, there was a positive regional-share employment effect because the rate of decline in agricultural employment was almost 2 per cent less than that for the Nation.

The aggregate regional-share effect for the study area was positive. Almost 29 per cent of the total change in employment in the counties under study was attributed to an increased share of total employment relative to other areas. Greatest regional-share employment gains for the area as a whole occurred in the State and local government, contract construction, and manufacturing sectors, Appendix Table 22. Of these, the contract construction sector expanded employment at a rate almost six times the national average, while employment by State and local government agencies increased at about twice the national average.

Negative effects occurred in the wholesale and retail trade, Federal government, and transportation and public utilities sector. Overall, positive gains occurred in each sector from 1960 to 1969, but they were less than the national average for each. Thus, the competitive position of these sectors in the study area was diminished.

From Table 8, it can be seen that regional-share accounted for a large proportion of the total employment change in Clarke County during the period under analysis. Employment shifts for this county are presented in detail in Appendix Table 23.

Greatest regional-share impact occurred in the manufacturing sector of the Clarke County economy from 1960 to 1969, as manufacturing employment increased at a rate of slightly more than 4

per cent per year. Approximately 538 of the 840-job increase was a result of the regional-share effect. This was accomplished concurrently with an increase in contract construction and State and local government employment. To a lesser degree, there were increases in the Federal government and finance, insurance and real estate sectors.

The only appreciable decrease in regional-share employment came in wholesale and retail trade. Although there was a net increase of almost 200 jobs in this sector, the rate of expansion was slightly less than the national average. Thus, the county lost 63 jobs on a regional-share basis.

The greatest regional-share effect in the study area occurred in Fayette County, Table 8. The competitive position of employment with respect to other areas in the Nation was greatly enhanced as approximately 72 per cent of the total change in employment in the county was accounted for by regional shifts. Approximately 785 of the 1,090 additional jobs resulted from these shifts.

Appendix Table 24 gives insight into the composition of these regional shifts. Positive changes occurred in all sectors except wholesale and retail trade, services, and Federal government. Manufacturing industries in the county accounted for the greatest regional share gain with employment in manufacturing almost doubling during the 1960 decade. In fact, approximately 93 per cent of the total regional-share gain was attributed to increases in employment in this sector.

The regional-share employment effect in Monroe County closely approximated that of Clarke and Fayette counties, Table 8. Greatest regional impacts were in the manufacturing and contract construction sectors. Expansion rates in employment in both sectors greatly exceeded the national rates; in fact, the expansion rate in construction employment was 10 times greater than the national average, Appendix Table 25.

Negative effects were present only in the two government sectors.

Tallapoosa County represented somewhat of a paradox. The competitive position of employment declined drastically; approximately a negative 63 per cent of the total employment growth in the county was attributed to regional-share losses, Table 8.

Largest loss attributable to regional share occurred in the manufacturing sector, Appendix Table 26. Growth in manufacturing

industries in the county during the decade of the 1960's was stagnated — increasing only about 4 per cent during the entire period. This accounted for a regional-share loss in employment of almost 1,400 jobs.

Other industrial sectors in the county experiencing regional-share losses were wholesale and retail trade and transportation and public utilities. The former showed an overall employment increase during the period while the latter experienced a decline in total employment, the reason for which is not readily apparent.

State and local government and contract construction were the primary sectors having positive regional-share effects.

Combined Income and Employment Effects

Combined or aggregated income and employment changes in the study area are presented in Table 9. Total income change approximated \$102 million while employment increased by 5,920. Of the aggregate income change, \$95.6 million was attributed to the national-growth effect, —\$3.1 million to the component-mix effect, and \$9.6 million to the regional-share effect. The net relative change in income was \$6.4 million. This indicates that, relative to other areas and regions, income increased some \$6.4 million more than that required to keep pace with the national change in personal income.

Employment increases, on the other hand, amounted to 6,226, —2,054, and 1,713 for the national-growth, industrial-mix, and regional-share effects, respectively. The net relative change was —341, indicating that an additional 341 more jobs would have been created if the study area had kept pace with the rest of the Nation in employment changes.

Overall, the study area appears to have made considerable progress in increasing income and employment, especially in personal income. When it is considered that employment in the area *increased* by 5,920 while at the same time population *decreased* by 1,600, then it could also be said that considerable progress has been made in this key variable. Positive regional-share effect in both income and employment indicate an increasing competitive position in each.

SUMMARY AND CONCLUSIONS

The overall purpose of this study was to ascertain the changes that have occurred during the past 10 years in the economic struc-

TABLE 9. COMBINED INCOME AND EMPLOYMENT CHANGES, STUDY AREA, 1960 TO 1969

Area	Total change		Growth factors							
	Income	Employment	National growth		Component mix		Regional share		Net relative change	
			Income	Employment	Income	Employment	Income	Employment	Income	Employment
	<i>Thou. dol.</i>	<i>No.</i>	<i>Thou. dol.</i>	<i>No.</i>	<i>Thou. dol.</i>	<i>No.</i>	<i>Thou. dol.</i>	<i>No.</i>	<i>Thou. dol.</i>	<i>No.</i>
Study area.....	101,952	5,920	95,510	6,266	-3,136	-2,054	9,559	1,713	6,463	-341
Clarke County.....	30,516	1,970	24,265	1,312	-770	-456	7,030	1,116	6,260	660
Fayette County.....	13,718	1,090	12,305	780	-41	-471	1,457	785	1,416	314
Monroe County.....	16,490	1,150	19,441	1,193	-1,332	-632	-1,616	639	-2,948	-43
Tallapoosa County.....	41,228	1,600	39,498	3,011	-992	-406	2,719	-1,003	1,727	-1,409

ture of four rural counties in Alabama — Clarke, Fayette, Monroe, and Tallapoosa. Data for the study were assembled from numerous secondary sources, and all firms in the area were aggregated into 10 sectors based on the Bureau of Labor Statistics classification scheme.

Counties in the area were classified as predominantly rural in both the 1960 and 1970 censuses. About one-third of the population lived in urban areas during both time periods. In addition, total population in the area declined by about 1,600 people from 1960 to 1970.

Significant changes occurred in both per capita and total personal income in the study area from 1960 to 1969. Per capita personal income grew at a rate of about 82 per cent, contrasted with a growth rate of only 66 per cent nationally and 76 per cent statewide. Clarke County, with an 86 per cent increase, was the fastest-growing county in the study area. Total personal income, on the other hand, increased approximately 92 per cent in the study area, contrasted with an 86 per cent increase for the United States and a 90 per cent increase for Alabama. Four of the five major sources of personal income changed at greater rates than did their national or state counterparts. Wages and salaries experienced the greatest increase, 104 per cent; and within this component greatest increase was in the finance, insurance, and real estate sector. Only the agricultural sector experienced a decline in wage and salary disbursements; additionally, the change in farm proprietor income was substantially less in the study area than in the State or Nation. This — coupled with the large increases in the financial services, public utility, and construction sectors — seems to indicate a growing rate of industrialization in the study area.

That the four counties in the study area had become more industrialized is borne out by sectoral employment data. Total employment increased approximately 22.5 per cent. Greatest percentage changes occurred in the contract construction, State and local government, and finance, insurance, and real estate sectors. Only in agriculture did employment decline. Greatest employment shifts from agriculture were into services, State and local government, and contract construction. Employment in most other sectors appeared stabilized at 1960 levels.

With regard to the United States and Alabama, the four-county area experienced larger employment gains in construction, State

and local government, services, and financial sectors. Increases in construction activity caused employment in this sector to be significantly higher than in the other two areas. Employment in manufacturing grew at a faster rate in the study area than in the United States, but less than in Alabama.

In an attempt to identify the factors underlying changes in income and employment, shift-share analysis was used. Using this technique, an area's income and employment growth can be separated into three factors: national-growth effect, industrial- or component-mix effect, and regional-share effect. The national-growth effect measures the growth of an area in terms of the national economy, while the industrial- or component-mix effect results from differences between the income or employment structure of an area and the Nation. The regional-share effect is a measure of the competitive position of an area with regard to the rest of the Nation.

The results of the shift-share analysis of income changes indicated that the national-growth effect accounted for approximately 94 per cent of the increase in personal income in the study area, while component mix-effect accounted for a minus 3 per cent and regional-share 9 per cent. Thus, a net relative change in personal income of 6 per cent occurred in the study area contrasted with a change of 2.5 per cent for Alabama.

Regional-share is the main explanatory factor in differentiating area income growth, and in economic analysis it is generally regarded as an indicator of the competitive position of a given geographic area relative to other areas. The composite regional-share effect for the study area accounted for about 9 per cent of total income change or \$9.6 million between 1960 and 1969. Greatest regional-share impact was in the manufacturing sector; wage and salary disbursements generated by manufacturing firms grew at a rate surpassing like firms nationally, adding approximately \$4.6 million to the competitive position of this sector. Second largest regional share effects occurred in wage and salary disbursements by the construction sector. This was followed by wages and salaries from the transportation and public utilities sector and by property income. Large negative effects occurred in Federal government, nonfarm proprietor income, and farm proprietor income.

Shift-share analysis of employment changes indicated that the national-growth effect accounted for approximately 106 per cent of total employment change. This indicates that employment in

the study area increased at a rate below that of the Nation. At the same time, the industrial-mix effect accounted for a minus 35 per cent of the growth, indicating that the study area was not attracting as many fast-growing components as slow-growing ones. The regional-share effect, however, was a positive 29 per cent.

The regional-share effect indicated that 29 per cent of the total change that occurred in employment was attributed to an increased share of total employment relative to other areas. Greatest regional-share employment gains occurred in State and local government, contract construction, and manufacturing. Of these, employment in the contract construction sector expanded at a rate almost six times the national average for construction — thus tremendously improving the competitive position of the sector nationwide. Negative effects occurred in the wholesale and retail trade, Federal government, and transportation and public utilities sectors.

From an aggregate viewpoint, the four rural counties in the study area appear to have expanded both the income and employment dimensions of the economy. A net relative increase of \$6.4 million in personal income occurred from 1960 to 1969. Although there was a net relative decrease of 341 jobs, total employment did increase in spite of a population decline of 1,600. Furthermore, the regional-share employment effect accounted for an increase of 1,713 jobs, thus enhancing the competitive position of the area. Such a continued regional-share growth in income and employment could provide a greatly increased level of living in the future.

APPENDIX

APPENDIX TABLE 1. URBAN AND RURAL POPULATION, SELECTED AREAS, 1960

Area	Urban		Rural		Total	
	No.	Pct.	No.	Pct.	No.	Pct.
Alabama.....	1,791,721	54.8	1,475,019	45.2	3,266,740	100.0
Study area.....	33,843	34.1	65,422	65.9	99,265	100.0
Clarke County.....	8,141	31.6	17,597	68.4	25,738	100.0
Fayette County.....	4,227	26.2	11,921	73.8	16,148	100.0
Monroe County.....	3,632	16.2	18,740	83.8	22,372	100.0
Tallapoosa County.....	17,843	51.0	17,164	49.0	35,007	100.0

Source: *U.S. Census of Population, 1960: General Social and Economic Characteristics.*

APPENDIX TABLE 2. URBAN AND RURAL POPULATION, SELECTED AREAS, 1970

Area	Urban		Rural		Total	
	No.	Pct.	No.	Pct.	No.	Pct.
Alabama.....	2,011,941	58.4	1,432,224	41.6	3,444,165	100.0
Study area.....	35,889	36.7	61,810	63.3	97,699	100.0
Clarke County.....	9,726	36.4	16,998	63.6	26,724	100.0
Fayette County.....	4,707	29.0	11,545	71.0	16,252	100.0
Monroe County.....	4,846	23.2	16,037	66.8	20,883	100.0
Tallapoosa County.....	16,610	49.1	17,230	50.9	33,840	100.0

Source: *Advance Report, U.S. Census of Population, 1970: Alabama.*

APPENDIX TABLE 3. PERSONAL INCOME, BY MAJOR SOURCE, UNITED STATES, 1960-1969

Item	1960	1969	Change 1960 to 1969
	Mil. dol.	Mil. dol.	Pct.
Personal income.....	399,028	744,479	86.6
Wage and salary disbursements.....	269,087	504,705	87.6
Farms.....	2,974	3,010	1.2
Mining.....	3,832	5,384	40.5
Contract construction.....	15,619	30,631	96.1
Manufacturing.....	87,411	157,543	80.2
Wholesale and retail trade.....	49,073	82,474	68.1
Finance, insurance and real estate.....	12,551	24,756	97.2
Transportation, communications, and public utilities.....	22,709	37,337	64.4
Services.....	28,147	63,018	123.9
Federal government.....	20,962	46,219	120.5
State and local government.....	25,162	58,939	134.2
Other industries.....	627	986	57.3
Other labor income.....	10,994	27,499	150.1
Proprietors' income.....	46,236	66,846	44.6
Farm.....	12,034	16,393	36.2
Nonfarm.....	34,202	50,453	47.5
Property income.....	52,444	106,338	102.8
Transfer payments.....	29,476	65,084	120.8
Less: Personal contribution for Social Security.....	9,206	25,993	182.3

Source: *Survey of Current Business*, August 1970 and August 1963.

APPENDIX TABLE 4. PERSONAL INCOME, BY MAJOR SOURCE, ALABAMA, 1960-1969

Item	1960	1969	Change 1960 to 1969
	<i>Mil. dol.</i>	<i>Mil. dol.</i>	<i>Pct.</i>
Personal income.....	4,789	9,116	90.4
Wage and salary disbursements.....	3,252	6,271	92.8
Farms.....	34	40	17.6
Mining.....	66	60	-9.1
Contract construction.....	170	344	102.4
Manufacturing.....	982	2,028	106.5
Wholesale and retail trade.....	516	901	74.6
Finance, insurance and real estate.....	137	240	75.2
Transportation, communications and public utilities.....	246	405	64.6
Services.....	302	697	130.8
Federal government.....	475	835	75.8
State and local government.....	318	708	122.6
Other industries.....	5	13	160.0
Other labor income.....	130	339	160.8
Proprietor's income.....	661	878	32.8
Farm.....	227	331	45.8
Nonfarm.....	433	548	26.6
Property income.....	453	1,025	126.3
Transfer payments.....	415	926	123.1
Less: Personal contributions for Social Security.....	122	324	165.6

Source: Personal Income Supplement to *Alabama Business*, February 1965 and *Survey of Current Business*, August 1970.

APPENDIX TABLE 5. PERSONAL INCOME, BY MAJOR SOURCE,
CLARKE COUNTY, ALABAMA, 1960 TO 1969

Item	1960	1969	Change 1960 to 1969
	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Pct.</i>
Personal income.....	28,022	58,538	108.9
Wage and salary disbursements.....	16,535	38,369	132.0
Agriculture.....	364	423	16.2
Mining.....	0	683	∞
Contract construction.....	572	816	42.7
Manufacturing.....	8,090	18,517	128.9
Transportation and utilities.....	774	1,921	148.2
Wholesale and retail trade.....	2,947	4,774	62.0
Finance, insurance, and real estate.....	335	1,797	436.4
Services.....	673	1,027	52.6
State and local government.....	1,114	3,846	245.2
Federal government.....	1,665	4,565	174.2
Other labor income.....	745	2,169	191.1
Proprietor's income.....	5,032	5,465	8.6
Farm.....	1,682	1,386	-17.6
Nonfarm.....	3,350	4,079	21.8
Property income.....	2,949	6,886	133.5
Transfer payments.....	3,404	7,991	134.8
Less: Personal contribution for Social Security.....	644	2,337	262.9

Source: Personal Income Supplement to *Alabama Business*, May 1963 and February 1971.

APPENDIX TABLE 6. PERSONAL INCOME, BY MAJOR SOURCE,
FAYETTE COUNTY, ALABAMA, 1960 TO 1969

Item	1960	1969	Change 1960 to 1969
	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Pct.</i>
Personal income.....	14,210	27,928	96.5
Wage and salary disbursements.....	6,689	14,880	122.5
Agriculture.....	363	272	-25.1
Mining.....	0	212	∞
Contract construction.....	173	536	209.8
Manufacturing.....	2,330	7,640	227.9
Transportation and utilities.....	343	588	71.4
Wholesale and retail trade.....	810	1,700	109.9
Finance, insurance, and real estate.....	96	244	154.2
Services.....	307	464	51.1
State and local government.....	908	1,488	63.9
Federal government.....	1,358	1,736	27.8
Other labor income.....	406	1,109	173.2
Proprietor's income.....	3,315	4,748	43.2
Farm.....	1,675	2,577	53.9
Nonfarm.....	1,640	2,171	32.4
Property income.....	1,658	3,210	93.6
Transfer payments.....	2,407	5,412	124.8
Less: Personal contributions for Social Security.....	265	1,430	439.6

Source: Personal Income Supplement to *Alabama Business*, May 1963 and February 1971.

APPENDIX TABLE 7. PERSONAL INCOME, BY MAJOR SOURCE,
MONROE COUNTY, ALABAMA, 1960 TO 1969

Item	1960	1969	Change 1960 to 1969
	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Pct.</i>
Personal income.....	22,450	38,940	73.5
Wage and salary disbursements.....	11,426	21,959	92.2
Agriculture.....	505	380	-24.8
Mining.....	0	45	∞
Contract construction.....	345	2,898	740.0
Manufacturing.....	5,590	8,413	50.5
Transportation and utilities.....	328	2,204	572.0
Wholesale and retail trade.....	1,219	2,784	128.4
Finance, insurance, and real estate.....	116	649	459.5
Services.....	420	1,169	178.3
State and local government.....	1,164	1,578	35.6
Federal government.....	1,739	1,839	5.8
Other labor income.....	639	1,568	145.4
Proprietor's income.....	6,126	7,105	16.0
Farm.....	3,450	3,708	7.5
Nonfarm.....	2,676	3,397	26.9
Property income.....	2,166	4,546	109.9
Transfer payment.....	2,544	5,453	114.3
Less: Personal contributions for Social Security.....	451	1,638	274.3

Source: Personal Income Supplement to *Alabama Business*, May 1963 and February 1971.

APPENDIX TABLE 8. PERSONAL INCOME, BY MAJOR SOURCE,
TALLAPOOSA COUNTY, ALABAMA, 1960 TO 1969

Item	1960	1969	Change 1960 to 1969
	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Pct.</i>
Personal income.....	45,608	86,836	90.4
Wage and salary disbursements.....	30,591	58,030	89.7
Agriculture.....	136	117	-14.0
Mining.....	0	0	0
Contract construction.....	807	2,756	241.5
Manufacturing.....	23,047	40,384	75.2
Transportation and utilities.....	696	1,528	119.5
Wholesale and retail trade.....	2,331	4,676	100.6
Finance, insurance, and real estate.....	411	1,124	173.5
Services.....	1,093	3,712	239.6
State and local government.....	824	1,537	86.5
Federal government.....	1,245	2,196	76.4
Other labor income.....	1,733	4,480	158.5
Proprietor's income.....	5,738	6,820	18.9
Farm.....	1,614	1,699	5.3
Nonfarm.....	4,124	5,121	24.2
Property income.....	3,917	9,575	144.4
Transfer payments.....	4,783	11,069	131.4
Less: Personal contributions for Social Security.....	1,154	3,139	172.0

Source: Personal Income Supplement to *Alabama Business*, May 1963 and February 1971.

APPENDIX TABLE 9. EMPLOYMENT, BY MAJOR SECTOR,
UNITED STATES, 1960-1969

Sector	1960	1969	Change 1960 to 1969
	<i>Thou.</i>	<i>Thou.</i>	<i>Pct.</i>
Agriculture.....	5,459 ¹	3,606 ¹	-33.9
Mining.....	712 ²	619 ³	-13.1
Contract construction.....	2,885	3,437	19.1
Manufacturing.....	16,796	20,169	20.1
Transportation and public utilities.....	4,004	4,431	10.7
Wholesale and retail trade.....	11,391	14,645	28.6
Finance, insurance and real estate.....	2,669	3,557	33.3
Services.....	7,423	11,211	51.0
State and local government.....	6,083	9,446	55.3
Federal government.....	2,270	2,758	21.5
Total.....	59,692	73,879	23.8

¹ Source: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, XVI, February 1970.

² Source: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings Statistics for the United States, 1909-68*, August 1968.

³ Source: U.S. Department of Labor, Bureau of Labor Statistics, *Employment and Earnings*, XVII, December 1970.

APPENDIX TABLE 10. EMPLOYMENT, BY MAJOR SECTOR, ALABAMA, 1960 TO 1969

Sector	1960	1969	Change 1960 to 1969
	No.	No.	Pct.
Agriculture.....	91,700 ¹	62,400 ³	-32.0
Mining.....	13,000 ²	8,000	-38.5
Contract construction.....	43,200	51,600	19.4
Manufacturing.....	237,000	317,000	33.8
Transportation and public utilities.....	50,100	56,100	12.0
Wholesale and retail trade.....	150,800	188,500	25.0
Finance, insurance, and real estate.....	32,500	41,200	26.8
Services.....	90,100	127,700	41.7
State and local government.....	95,600	146,330 ⁴	53.1
Federal government.....	64,200	59,370	-7.5
Total.....	868,200	1,058,200	21.9

¹ Source: *Employment and Earnings Statistics for States and Areas 1939-1967*, August 1968.

² Sectors other than agriculture represent wage and salary employment only.

³ With the exception of agriculture figures, data for 1969 represent an average of the monthly employment for March, June, December.

⁴ December 1969 figures for State and local and Federal government employment were used in allocating total 1969 government employment of 205,700 to the two government sectors. Basic data were from Alabama Department of Industrial Relations, *Alabama Labor Market*, January 1971.

APPENDIX TABLE 11. EMPLOYMENT, BY MAJOR SECTOR,
CLARKE COUNTY, ALABAMA, 1960-1969

Sector	1960	1969	Change 1960 to 1969
	No.	No.	Pct.
Agriculture.....	980	660	-32.7
Mining.....	0	90	∞
Contract construction.....	100	290	190.0
Manufacturing.....	2,400	3,420	42.5
Transportation and public utilities.....	200	220	10.0
Wholesale and retail trade.....	900	1,090	21.1
Finance, insurance, and real estate.....	90	170	88.9
Services.....	280	420	50.0
State and local government.....	335	795	137.3
Federal government.....	225	325	44.4
Total.....	5,510	7,480	35.8

Source: Research and Statistics Division, Alabama Department of Industrial Relations, Montgomery, Alabama.

APPENDIX TABLE 12. EMPLOYMENT, BY MAJOR SECTOR,
FAYETTE COUNTY, ALABAMA, 1960-1969

Sector	1960	1969	Change 1960 to 1969
	No.	No.	Pct.
Agriculture.....	990	670	-32.3
Mining.....	0	0	0
Contract construction.....	40	110	175.0
Manufacturing.....	1,040	1,980	90.4
Transportation and public utilities.....	100	140	40.0
Wholesale and retail trade.....	440	500	13.6
Finance, insurance, and real estate.....	40	80	100.0
Services.....	160	200	25.0
State and local government.....	275	485	76.4
Federal government.....	185	195	5.4
Total.....	3,270	4,360	33.3

Source: Research and Statistics Division, Alabama Department of Industrial Relations, Montgomery, Alabama.

APPENDIX TABLE 13. EMPLOYMENT, BY MAJOR SECTOR,
MONROE COUNTY, ALABAMA, 1960-1969

Sector	1960	1969	Change 1960 to 1969
	No.	No.	Pct.
Agriculture.....	1,360	920	-32.4
Mining.....	0	10	∞
Contract construction.....	105	310	195.2
Manufacturing.....	2,020	2,860	41.6
Transportation and public utilities.....	125	170	36.0
Wholesale and retail trade.....	535	730	36.4
Finance, insurance, and real estate.....	45	90	100.0
Services.....	235	370	57.4
State and local government.....	350	500	42.9
Federal government.....	235	200	-14.9
Total.....	5,010	6,160	23.0

Source: Research and Statistics Division, Alabama Department of Industrial Relations, Montgomery, Alabama.

APPENDIX TABLE 14. EMPLOYMENT, BY MAJOR SECTOR,
TALLAPOOSA COUNTY, ALABAMA, 1960-1969

Sector	1960	1969	Change 1960 to 1969
	No.	No.	Pct.
Agriculture	810	550	-32.1
Mining	0	0	0
Contract construction	390	630	61.5
Manufacturing	8,390	8,700	3.7
Transportation and public utilities	180	120	-33.3
Wholesale and retail trade	1,180	1,400	18.6
Finance, insurance, and real estate	110	220	100.0
Services	660	1,030	56.1
State and local government	555	1,140	105.4
Federal government	375	460	22.7
Total	12,650	14,250	12.6

Source: Research and Statistics Division, Alabama Department of Industrial Relations, Montgomery, Alabama.

APPENDIX TABLE 15. SHIFT-SHARE ANALYSIS OF INCOME CHANGES,
ALABAMA, 1960-1969

Income components	National growth	Com- ponent mix	Regional share	Net ¹ relative change
	Mil. dol.	Mil. dol.	Mil. dol.	Mil. dol.
Total personal income	4,143	81	105	186
Fast-growing components	2,078	754	-117	637
Other labor income	113	83	14	97
State and local government	275	151	-37	114
Services	262	113	21	134
Transfer payments	359	142	10	152
Federal government	411	161	-212	-51
Property income	392	73	106	179
Finance, insurance, real estate	119	15	-30	-15
Contract construction	147	16	11	27
Slow-growing components	2,171	-556	202	-354
Manufacturing	850	-63	258	195
Wholesale and retail trade	447	-95	34	-61
Transportation, communication and public utilities	213	-55	0	-55
Other industries	4	-1	5	4
Nonfarm proprietor income	374	-169	-90	-259
Mining	57	-30	-33	-63
Farm proprietor income	197	-114	22	-92
Farms	29	-29	6	-23
Less: Personal contributions for Social Security	106	117	-20	97

¹ Combined component-mix and regional-share effects. This convention will be used throughout the study.

APPENDIX TABLE 16. SHIFT-SHARE ANALYSIS OF INCOME CHANGES,
STUDY AREA, 1960-1969

Income components	National growth	Component mix	Regional share	Net relative change
	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Thou. dol.</i>
Personal income.....	95,510	-3,136	9,599	6,463
Fast-growing components.....	36,994	13,619	6,120	19,739
Other labor income.....	3,051	2,237	514	2,751
State and local government.....	3,473	1,909	-942	967
Services.....	2,159	930	790	1,720
Transfer payments.....	11,378	4,493	920	5,413
Federal government.....	5,202	2,036	-2,907	-871
Property income.....	9,258	1,732	2,534	4,266
Finance, insurance, and real estate.....	830	102	1,925	2,027
Contract construction.....	1,643	180	3,286	3,466
Slow-growing components.....	60,693	-14,349	4,975	-9,374
Manufacturing.....	33,823	-2,500	4,570	2,070
Wholesale and retail trade.....	6,328	-1,352	1,651	299
Transportation and public utilities.....	1,854	-475	2,721	2,246
Nonfarm proprietor income.....	10,210	-4,610	-2,617	-7,227
Mining.....	0	0	940	940
Farm proprietor income.....	7,293	-4,244	-2,097	-6,341
Agriculture.....	1,185	-1,168	-193	-1,361
Less: Personal contributions for Social Security.....	2,177	2,406	1,496	3,902

APPENDIX TABLE 17. SHIFT-SHARE ANALYSIS OF INCOME CHANGES,
CLARKE COUNTY, ALABAMA, 1960-1969

Income components	National growth	Component mix	Regional share	Net relative change
	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Thou. dol.</i>
Personal income.....	24,265	-770	7,030	6,260
Fast-growing components.....	9,922	3,550	4,169	7,719
Other labor income.....	645	473	305	778
State and local government.....	965	530	1,237	1,767
Services.....	583	251	-480	-229
Transfer payments.....	2,948	1,164	447	1,641
Federal government.....	1,442	564	894	1,458
Property income.....	2,554	478	905	1,383
Finance, insurance, and real estate.....	290	36	1,136	1,172
Contract construction.....	495	54	-305	-251
Slow-growing components.....	14,901	-3,704	3,381	-323
Manufacturing.....	7,006	-518	3,940	3,422
Wholesale and retail trade.....	2,552	-545	-180	-725
Transportation and public utilities.....	670	-172	649	477
Nonfarm proprietor income.....	2,901	-1,310	-861	-2,171
Mining.....	0	0	683	683
Farm proprietor income.....	1,457	-848	-905	-1,753
Agriculture.....	315	-311	55	-256
Less: Personal contributions for Social Security.....	558	616	520	1,136

APPENDIX TABLE 18. SHIFT-SHARE ANALYSIS OF INCOME CHANGES,
FAYETTE COUNTY, ALABAMA 1960-1969

Income components	National growth	Component mix	Regional share	Net relative change
	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Thou. dol.</i>
Personal income.....	12,305	-41	1,457	1,416
Fast-growing components.....	6,333	2,383	-1,830	553
Other labor income.....	352	258	94	352
State and local government.....	786	432	-638	-206
Services.....	266	115	-223	-108
Transfer payments.....	2,084	823	96	919
Federal government.....	1,176	460	-1,259	-799
Property income.....	1,436	269	-152	117
Finance, insurance, and real estate.....	83	10	55	65
Contract construction.....	150	16	197	213
Slow-growing components.....	6,201	-2,170	3,969	1,799
Manufacturing.....	2,018	-149	3,441	3,292
Wholesale and retail trade.....	701	-150	339	189
Transportation and public utilities.....	297	-76	24	-52
Nonfarm proprietor income.....	1,420	-641	-248	-889
Mining.....	0	0	212	212
Farm proprietor income.....	1,451	-844	296	-548
Agriculture.....	314	-310	-95	-405
Less: Personal contributions for Social Security.....	229	254	682	936

APPENDIX TABLE 19. SHIFT-SHARE ANALYSIS OF INCOME CHANGES,
MONROE COUNTY, ALABAMA, 1960-1969

Income components	National growth	Component mix	Regional share	Net relative change
	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Thou. dol.</i>
Personal income.....	19,441	-1,332	-1,616	-2,948
Fast-growing components.....	7,909	2,973	-314	2,659
Other labor income.....	553	406	-30	376
State and local government.....	1,008	554	-1,148	-594
Services.....	364	157	228	385
Transfer payments.....	2,203	870	-165	705
Federal government.....	1,506	590	-1,994	-1,404
Property income.....	1,876	351	154	505
Finance, insurance, and real estate.....	100	12	420	432
Contract construction.....	299	33	2,221	2,254
Slow-growing components.....	11,923	-3,873	-887	-4,760
Manufacturing.....	4,841	-358	-7,660	-2,018
Wholesale and retail trade.....	1,056	-226	735	509
Transportation and public utilities.....	284	-73	1,665	1,592
Nonfarm proprietor income.....	2,317	-1,046	-551	-1,597
Mining.....	0	0	45	45
Farm proprietor income.....	2,988	-1,739	-990	-2,729
Agriculture.....	437	-431	-131	-562
Less: Personal contributions for Social Security.....	391	432	415	847

APPENDIX TABLE 20. SHIFT-SHARE ANALYSIS OF INCOME CHANGES,
TALLAPOOSA COUNTY, ALABAMA, 1960-1969

Income component	National growth	Component mix	Regional share	Net relative change
	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Thou. dol.</i>	<i>Thou. dol.</i>
Personal income.....	39,498	-992	2,719	1,727
Fast-growing components.....	12,829	4,714	4,092	8,806
Other labor income.....	1,501	1,100	146	1,246
State and local government.....	714	392	-393	-1
Services.....	947	408	1,265	1,673
Transfer payments.....	4,142	1,636	507	2,143
Federal government.....	1,078	422	-549	-127
Property income.....	3,392	635	1,629	2,264
Finance, insurance, and real estate.....	356	44	314	358
Contract construction.....	699	77	1,173	1,250
Slow-growing components.....	27,668	-4,602	-1,492	-6,094
Manufacturing.....	19,959	-1,475	-1,152	-2,627
Wholesale and retail trade.....	2,019	-431	758	327
Transportation and public utilities.....	603	-155	383	228
Nonfarm proprietor income.....	3,571	-1,612	-961	-2,573
Mining.....	0	0	0	0
Farm proprietor income.....	1,398	-813	-499	-1,312
Agriculture.....	118	-116	-21	-137
Less: Personal contributions for Social Security.....	999	1,104	-119	985

APPENDIX TABLE 21. SHIFT-SHARE ANALYSIS OF EMPLOYMENT CHANGES,
ALABAMA, 1960-1969

Employment components	National growth	Industrial mix	Regional share	Net relative change
	<i>No.</i>	<i>No.</i>	<i>No.</i>	<i>No.</i>
Total employment.....	206,845	-11,190	-4,955	-16,145
Fast-growing components.....	88,035	64,955	-18,025	46,930
State and local government.....	22,965	30,115	-2,105	28,010
Services.....	21,445	24,510	-8,380	16,130
Finance, insurance, and real estate.....	7,735	3,090	-2,110	980
Wholesale and retail trade.....	35,890	7,240	-5,430	1,810
Slow-growing components.....	118,810	-76,145	13,070	-63,075
Federal government.....	15,280	-1,475	-18,620	-20,095
Manufacturing.....	56,405	-8,770	32,470	23,700
Contract construction.....	10,280	-2,030	130	-1,900
Transportation and public utilities.....	11,925	-6,565	650	-5,915
Mining.....	3,095	-4,800	-3,300	-8,100
Agriculture.....	21,825	-52,505	1,740	-50,765

APPENDIX TABLE 22. SHIFT-SHARE ANALYSIS OF EMPLOYMENT CHANGES, STUDY AREA, 1960-1969

Component	National growth	Industrial mix	Regional share	Net relative change
	No.	No.	No.	No.
Total employment.....	6,266	-2,054	1,713	-341
Fast-growing components.....	1,447	979	714	1,693
State and local government.....	334	442	738	1,180
Services.....	318	363	4	367
Finance, insurance, and real estate.....	68	27	180	207
Wholesale and retail trade.....	727	147	-208	-61
Slow-growing components.....	4,819	-3,033	999	-2,034
Federal government.....	243	-23	-59	-82
Manufacturing.....	3,296	-512	332	-180
Contract construction.....	151	-30	584	554
Transportation and public utilities.....	144	-79	-20	-99
Mining.....	0	0	100	100
Agriculture.....	985	-2,389	62	-2,327

APPENDIX TABLE 23. SHIFT-SHARE ANALYSIS OF EMPLOYMENT CHANGES, CLARKE COUNTY, ALABAMA, 1960-1969

Component	National growth	Industrial mix	Regional share	Net relative change
	No.	No.	No.	No.
Total employment.....	1,312	-456	1,116	660
Fast-growing components.....	382	234	254	448
State and local government.....	80	106	275	381
Services.....	67	76	-3	73
Finance, insurance, and real estate.....	21	9	50	59
Wholesale and retail trade.....	214	43	-68	-25
Slow-growing components.....	930	-690	862	172
Federal government.....	54	-5	52	47
Manufacturing.....	571	-89	538	449
Contract construction.....	24	-5	171	166
Transportation and public utilities.....	48	-26	-1	-27
Mining.....	0	0	90	90
Agriculture.....	233	-565	12	-553

APPENDIX TABLE 24. SHIFT-SHARE ANALYSIS OF EMPLOYMENT CHANGES,
FAYETTE COUNTY, ALABAMA, 1960-1969

Component	National growth	Industrial mix	Regional share	Net relative change
	No.	No.	No.	No.
Total employment.....	780	-471	785	314
Fast-growing components.....	218	156	-23	133
State and local government.....	65	87	58	145
Services.....	38	44	-42	2
Finance, insurance, real estate.....	10	4	27	31
Wholesale and retail trade.....	105	21	-66	-45
Slow-growing components.....	562	-627	808	181
Federal government.....	44	-3	-30	-33
Manufacturing.....	248	-38	731	693
Contract construction.....	10	-2	62	60
Transportation and utilities.....	24	-13	29	16
Mining.....	0	0	0	0
Agriculture.....	236	-571	16	-555

APPENDIX TABLE 25. SHIFT-SHARE ANALYSIS OF EMPLOYMENT CHANGES,
MONROE COUNTY, ALABAMA, 1960-1969

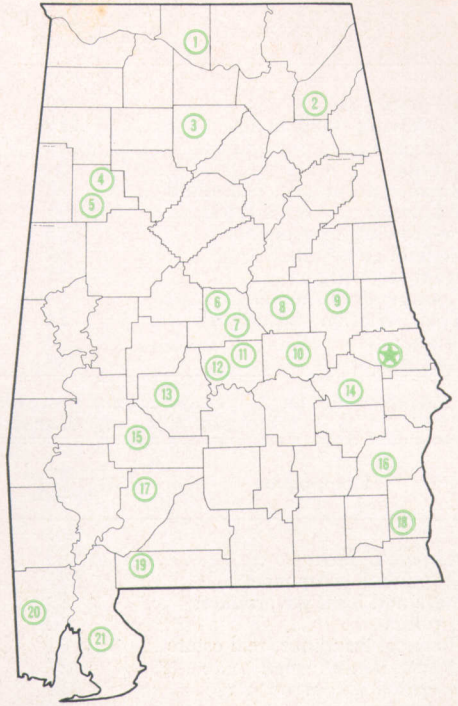
Component	National growth	Industrial mix	Regional share	Net relative change
	No.	No.	No.	No.
Total employment.....	1,193	-682	639	-43
Fast-growing components.....	277	204	44	248
State and local government.....	83	110	-43	67
Services.....	56	64	15	79
Finance, insurance, real estate.....	11	4	30	34
Wholesale and retail trade.....	127	26	42	68
Slow-growing components.....	916	-886	595	-291
Federal government.....	56	-5	-86	-91
Manufacturing.....	481	-75	434	359
Contract construction.....	25	-5	185	180
Transportation and utilities.....	30	-16	32	16
Mining.....	0	0	10	10
Agriculture.....	324	-785	20	-765

APPENDIX TABLE 26. SHIFT-SHARE ANALYSIS OF EMPLOYMENT CHANGES,
TALLAPOOSA COUNTY, ALABAMA, 1960-1969

Component	National growth	Industrial mix	Regional share	Net relative change
	No.	No.	No.	No.
Total employment.....	3,011	-406	-1,003	-1,409
Fast-growing components.....	596	422	267	689
State and local government.....	132	175	278	453
Services.....	157	180	34	214
Finance, insurance, real estate.....	26	10	73	83
Wholesale and retail trade.....	281	57	-118	-61
Slow-growing components.....	2,415	-828	-1,270	-2,098
Federal government.....	89	-9	5	-4
Manufacturing.....	1,997	-310	-1,376	-1,686
Contract construction.....	93	-18	165	147
Transportation and utilities.....	43	-24	-79	-103
Mining.....	0	0	0	0
Agriculture.....	193	-467	15	-452

AGRICULTURAL EXPERIMENT STATION SYSTEM OF ALABAMA'S LAND-GRANT UNIVERSITY

With an agricultural research unit in every major soil area, Auburn University serves the needs of field crop, live-stock, forestry, and horticultural producers in each region in Alabama. Every citizen of the State has a stake in this research program, since any advantage from new and more economical ways of producing and handling farm products directly benefits the consuming public.



Research Unit Identification

Main Agricultural Experiment Station, Auburn

1. Tennessee Valley Substation, Belle Mina.
2. Sand Mountain Substation, Crossville.
3. North Alabama Horticulture Substation, Cullman.
4. Upper Coastal Plain Substation, Winfield.
5. Forestry Unit, Fayette County.
6. Thorsby Foundation Seed Stocks Farm, Thorsby.
7. Chilton Area Horticulture Substation, Clanton.
8. Forestry Unit, Coosa County.
9. Piedmont Substation, Camp Hill.
10. Plant Breeding Unit, Tallassee.
11. Forestry Unit, Autauga County.
12. Prattville Experiment Field, Prattville.
13. Black Belt Substation, Marion Junction.
14. Tuskegee Experiment Field, Tuskegee.
15. Lower Coastal Plain Substation, Camden.
16. Forestry Unit, Barbour County.
17. Monroeville Experiment Field, Monroeville.
18. Wiregrass Substation, Headland.
19. Brewton Experiment Field, Brewton.
20. Ornamental Horticulture Field Station, Spring Hill.
21. Gulf Coast Substation, Fairhope.