Productivity in Georgia Manufacturing

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Project E-400-500

PRODUCTIVITY IN GEORGIA MANUFACTURING

by

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Foreword

This report is one of a series of thought-provoking studies of the economy of Georgia by Mrs. Amy Collins, Research Economist on the staff of the Industrial Development Division. Others of the series include Georgia 1975: Employment Outlook by Industry Group and Industrial Development in Georgia, 1958-1965. All of these relate to the manufacturing segment of the Georgia economy. Since manufacturing is the largest single employment sector in Georgia, detailed analysis of this activity is not only justified, but necessary if we are to understand where Georgia is headed.

This report on productivity of specific Georgia industries is written against a national background of continuing inflation. In large part, this inflation is caused by wage increases in all sectors of the economy made, for the most part, without a commensurate increase in productivity. The report points out that Georgia manufacturing, in general, is an economic activity where higher productivity can be achieved.

The bulk of this report is made up of individual industry analyses, and these do not lend themselves to aggregation and general conclusions. However, it is clear that Georgia industries with lower than U. S. average labor costs and higher value added per dollar of payroll enjoy competitive advantages relative to many similar industries located elsewhere in the country.

Any comments and suggestions the reader may have will be welcomed.

Ross W. Hammond, Chief
Industrial Development Division
GEORGIA INSTITUTE OF TECHNOLOGY

INTRODUCTION

Productivity, and changes in productivity, involves highly complex relationships of economic data, but one or two general statements can be made to set the background for this study. Productivity usually refers to output measured in terms of various inputs -- for example, the ratio of output per man-hour, per employee, per unit of raw material used, or per unit of capital. Changes in productivity can be defined in broad terms as greater or lesser output from labor and equipment, and the changes can be measured and compared by means of the ratios of output to the various different inputs.

Since changes in productivity are caused by many different factors, any one ratio can give only part of the story. Limitations of statistical data, especially on a state (rather than a national) level, add to the difficulties of analyzing the changing relationships.

This study is an attempt to use readily available data with an acceptable consistency of definition to obtain a better understanding of productivity trends in manufacturing in Georgia. The basic measure of production used in the study is "value added by manufacture." This is described by the Census of Manufactures as follows: "Value added by manufacture is derived by subtracting the total cost of materials (including materials, supplies, fuel, electric energy, cost of resales and miscellaneous receipts) from the value of shipments (including resales) and other receipts and adjusting the resulting amount by the net change in finished products and work-in-process inventories between the beginning and end of the year. . . . It is considered to be the best value measure now available for comparing the relative economic importance of manufacturing among industries and geographic areas."

The relationships to value added by manufacture of three components of major importance are examined -- employment, payrolls, and capital expenditures for new plant and equipment. A series of charts is presented for total manufactures and for each major industry (two-digit SIC classification) with over 5,000 employees in Georgia in 1967, with the exception of the "miscellaneous manufactures" category.

Chart 1 shows trends in total employment

and in the number of production workers from the Censuses of Manufactures for 1954, 1958, 1963, and 1967.

Chart 2 illustrates the capital expenditure for new plant and equipment for the years 1954-1967 (inclusive), as far as data were available from the Censuses of Manufactures and the Annual Surveys of Manufactures.

Chart 3 consists of indexes (1954 = 100) of total employment, total payroll, and total value added by manufacture, derived from the Censuses of Manufactures.

Chart 4 gives two further indexes (1954 = 100) -- the value added by manufacture per employee (all employees[1/]) and the value added by manufacture per dollar of payroll, derived from the Censuses of Manufactures.

Chart 5 compares the value added by manufacture per employee[1/] for Georgia with that of the U. S. for 1954, 1958, 1963, and 1967 from the Censuses of Manufactures.

Chart 6 compares the value added by manufacture per dollar of payroll for Georgia with that of the U. S. for 1954, 1958, 1963, and 1967 from the Censuses of Manufactures.

In addition to the charts, a table for each industry gives data from each of the four Censuses of Manufactures for both Georgia and the U. S. and shows the change in Georgia's proportion of the national figures. The accompanying text comments on the significance of the trends revealed by the data.

All dollar figures throughout the report have been converted to 1967 constant dollars to eliminate any changes directly due to inflation.

1/ All employees are used in preference to just production workers because of the increasing number of "non-production" workers, all of whom are needed for the functioning of the industry.

PRODUCTIVITY IN GEORGIA MANUFACTURING

It is not possible to give a neat summary of productivity in Georgia manufacturing -- there are too many diverse products and methods of production. Many of Georgia's industries, however, prove to have low labor costs in relation to comparable U. S. averages, and the higher value added per dollar of payroll gives them some competitive advantage. The lag in capital expenditure for new plant and equipment in some cases may be a direct corollary of the cheaper labor. It also suggests the possibility that, in these years of continued inflation, Georgia may be in an advantageous position to meet current and future competition from both domestic and imported goods by productivity increases based on greater capital expenditure for automation.

INFLATION

A major problem in the national economy today is inflation caused by wage increases that are excessive when compared with the growth in output. This is particularly true in the services sector (including government services), where the possibilities of increases in productivity are limited. In most service jobs, any increase in wages is passed on directly to the consumer in the form of either increased prices for the same amount of work or reduction in the service given for the same money, or a combination of the two. It is rare to find a higher wage offset by the ability to do a job in reduced time.

The situation is somewhat different in the manufacturing industries, where technological improvements can multiply the output of any one man in a given time. The increase in productivity is usually the result of research and development followed by the introduction of new equipment, with possible retraining of operators and the employment of control technicians. Such production increases can lead to a reduction in price to the consumer, an increase in pay for the more skilled workmen, and an increase in profits for the company. In recent years, however, the idea of passing on such benefits to the consumer seems to have been overshadowed by the assumption that wages of factory workers should absorb any productivity increases.

A greater inflationary danger, however, has arisen in some union contract demands, where wage increases are linked to the "cost of living" index, thereby compounding an inflation that feeds upon itself, and is not related to increases in productivity.

The need for industry to operate under strict anti-pollution laws, in any event, will make it difficult to increase productivity in the coming years, and the costs of compliance with the anti-pollution requirements will be reflected in prices to the consumer and in the "cost of living" index. With "cost of living" escalator clauses, wages will go up, too -- they also will be reflected in higher prices and in the "cost of living" index. Since every price rise from other industries will trigger the same reaction, the viciousness of the upward spiral

becomes apparent.

Companies and industries that currently have low labor costs are likely to weather this storm in better shape than those where labor accounts for a high proportion of total production costs. Within the U. S., this could benefit the factories where total payrolls form a lesser proportion of total value added by manufacture than the average for the U. S. -- or, put another way, where the value added per dollar of total payroll is high in relation to the U. S. average. A further point of interest is the potential for labor saving by increased automation. Future technological innovations can benefit whole industries, but there are many companies in manufacturing that have not yet adopted the laborsaving devices currently available, and hence have potential productivity increases in reserve.

Consumers who are also wage earners receiving automatic pay increases will be able to afford inflated prices, but there will be increasing resistance on the part of other consumers to buying all but the most essential commodities. This will extend beyond the domestic market and will reduce the demand for U. S. exports. Reduction of demand for some products both at home and abroad should ultimately have a dampening effect on inflation. International competition in the home markets is, of course, another effective anti-inflation force, but the pressures of an open market are being whittled away by quotas, tariffs, and other protectionist devices.

This study is not concerned with the whole spectrum of inflationary problems, but rather with a review of manufacturing in Georgia to assess its strengths and weaknesses against this inflationary background.

ALL MANUFACTURING

In the 1967 Census of Manufactures, Georgia's employment was recorded at 423,100, an increase of 39.6% over the 1954 census figure of 303,100 manufacturing employees. During the same period, U. S. employment in manufacturing increased by only 20.0%. The comparative gain by Georgia increased its proportion of national manufacturing employment from 1.9% in 1954 to 2.2% in 1967. This was fractionally below the state's share of population, which was 2.20% of the U. S. in 1960 and reached 2.26% in 1970. (The 1967 manufacturing employment figure, carried to a second decimal place, was 2.19% of the U. S.)

Total value added by manufacturing showed a gain of 136.6% in the state during the same period, compared with an 80.1% increase for the U. S. Georgia's proportion of national value added rose from 1.4% in 1954 to 1.8% in 1967. These proportions were consistently below those for employment, however, and the value added per employee stayed well below the U. S. averages. In 1954 the state's value added per employee was $6,531, only 72.3% of the U. S. average of $9,036. By 1967 the Georgia figure had climbed to $11,070, but the national average had reached $13,558, leaving a substantial gap even though Georgia's proportion of the U. S. figure had improved to 81.6%.

Payrolls in the state also increased substantially, but remained noticeably below U. S. figures. In 1954 manufacturing payrolls for Georgia were 1.3% of the national total, compared with 1.9% of employees. By 1967 the payroll proportion was 1.7%, but by that date employment was 2.2% of the nation.

The lower wage structure in Georgia, however, enabled the state to achieve a return on its payroll outlay which was higher than the U. S. average. The value added per dollar of total payroll in Georgia in 1954 was $1.89 compared with a $1.78 average for the nation. The Georgia figure climbed as high as $2.16 in 1963 but was modified to $2.10 by 1967. This compared with a national figure in 1967 of $1.98 -- with the state maintaining a 6% lead.

Since a major factor leading to greater productivity per employee is the introduction

of new technological improvements, a measure of the extent of modernization can be obtained from the investment in new plant and equipment. Comparison of individual years could be misleading, but cumulative totals for the years from 1954 through 1967 show Georgia's capital expenditure as 1.8% of the total for the nation. This is well below the state's proportion of manufacturing employees, which reached 2.2% in 1967 from 1.9% in 1954.

The general inference from these data is that Georgia is lagging behind the nation in modernizing its manufacturing equipment and therefore has greater potential for productivity increases through capital investment in automation. This broad assumption is supported by the comparative figures on production and non-production workers. Non-production personnel include all employees above the level of working foreman; as more complex machinery is introduced into the factories, the number of production workers is cut back while at the same time programmers, engineers, technical planners, and other highly skilled personnel are added to management. By 1967, 19.8% of Georgia's manufacturing employees were classed as non-production, up from 14.2% in 1954 -- but the U. S. average was already 23.1% in 1954 and had risen to 27.8% in 1967.

Some of the gap between these figures is due to the fact that comparatively few major headquarters are located in Georgia, but if the employees in central administrative offices are excluded, leaving only the personnel of operating manufacturing establishments, the situation is substantially the same. In 1954, non-production workers in Georgia, excluding central administrative offices, were 13.7% of all employees in operating manufacturing establishments, compared with 20.9% for the U. S; by 1967, the proportions were 18.2% for Georgia and 24.5% for the U. S.

These figures, however, combine the data for all types of manufacturing industries, some of which lend themselves far more readily to automated production than others. In the pages which follow, charts and data similar to those illustrating total manufacturing trends are given for each industry of major significance in Georgia. (See "Introduction" for details.) The comparative data and proportions of the U. S. put the state's productivity trends in perspective.

As the text indicates, each industry has its own problems, and within each industry a finer breakdown would clearly reveal variations in development -- right down to individual companies. Although analysis of industries on a two-digit SIC level may have drawbacks of oversimplification, it is believed that even this broad-brush approach gives some insight into trends in productivity in Georgia.

ALL MANUFACTURING

	Georgia				United States			
	1954	1958	1963	1967	1954	1958	1963	1967
Total employment (000)	303.1	314.1	354.0	423.1	16,098.7	16,025.2	16,958.4	19,322.9
Percent of U. S.	1.9	2.0	2.1	2.2				
Non-production workers as percent of total	14.2	16.0	18.1	19.8	23.1	27.1	27.9	27.8
Total value added (000,000)	$1,979.4	$2,428.2	$3,546.9	$4,683.6	$145,471.1	$163,479.4	$209,370.4	$261,983.8
Percent of U. S.	1.4	1.5	1.7	1.8				
Value added per employee	$6,531	$7,731	$10,019	$11,070	$9,036	$10,201	$12,346	$13,558
Percent of U. S.	72.3	75.8	81.2	81.6				
Total payroll (000,000)	$1,048.6	$1,227.2	$1,641.1	$2,231.2	$81,872.2	$90,493.0	$108,889.7	$132,208.5
Percent of U. S.	1.3	1.4	1.5	1.7				
Value added per dollar of total payroll	$1.89	$1.98	$2.16	$2.10	$1.78	$1.81	$1.92	$1.98
Percent of U. S.	106.2	109.4	112.5	106.1				

Note: All dollar figures converted to 1967 dollars.

Source: U. S. Censuses of Manufactures.

GEORGIA MANUFACTURES – ALL INDUSTRIES

CHART 1
EMPLOYMENT

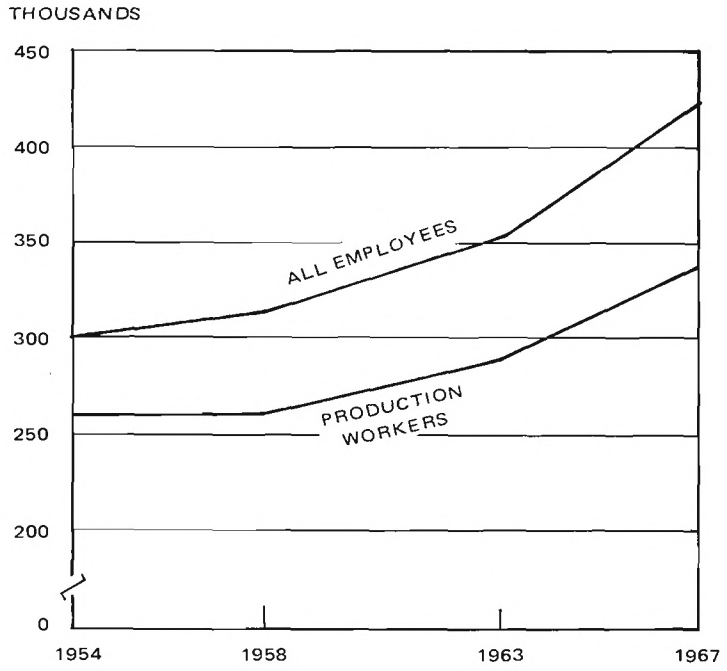
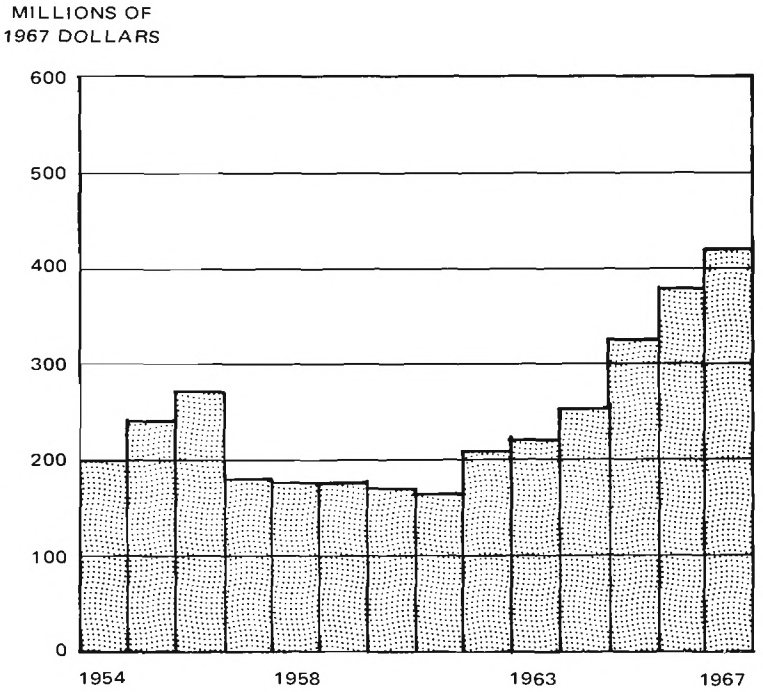


CHART 2
CAPITAL EXPENDITURES (NEW)



GEORGIA MANUFACTURES – ALL INDUSTRIES

INDEXES (1954 = 100)

CHART 3

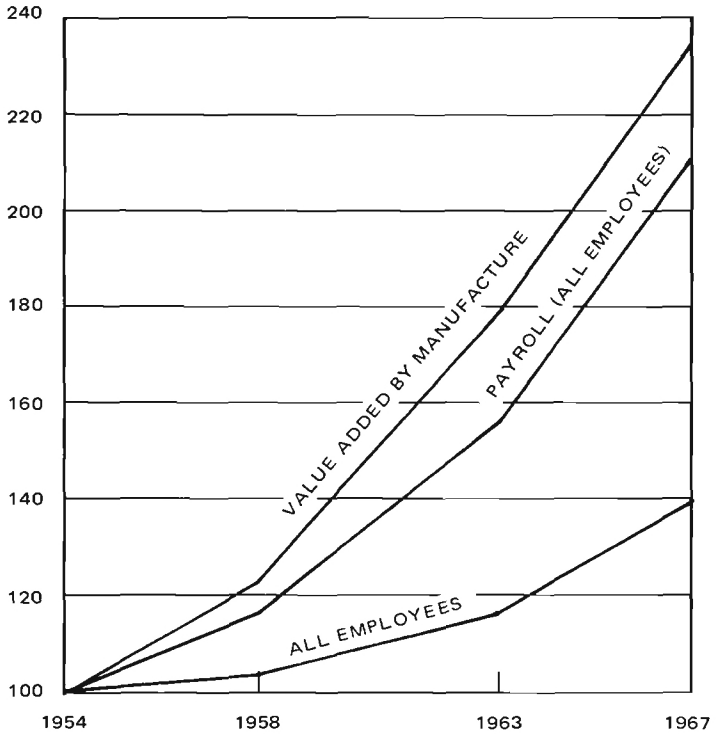
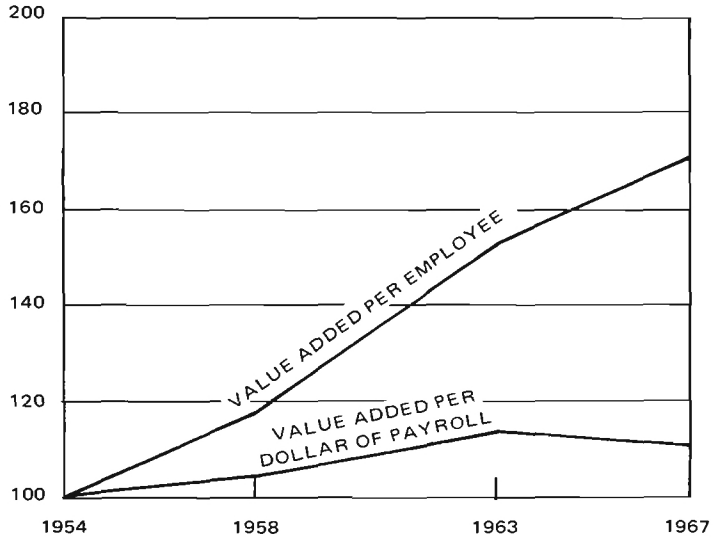


CHART 4



ALL MANUFACTURING

CHART 5
VALUE ADDED PER EMPLOYEE (ALL)

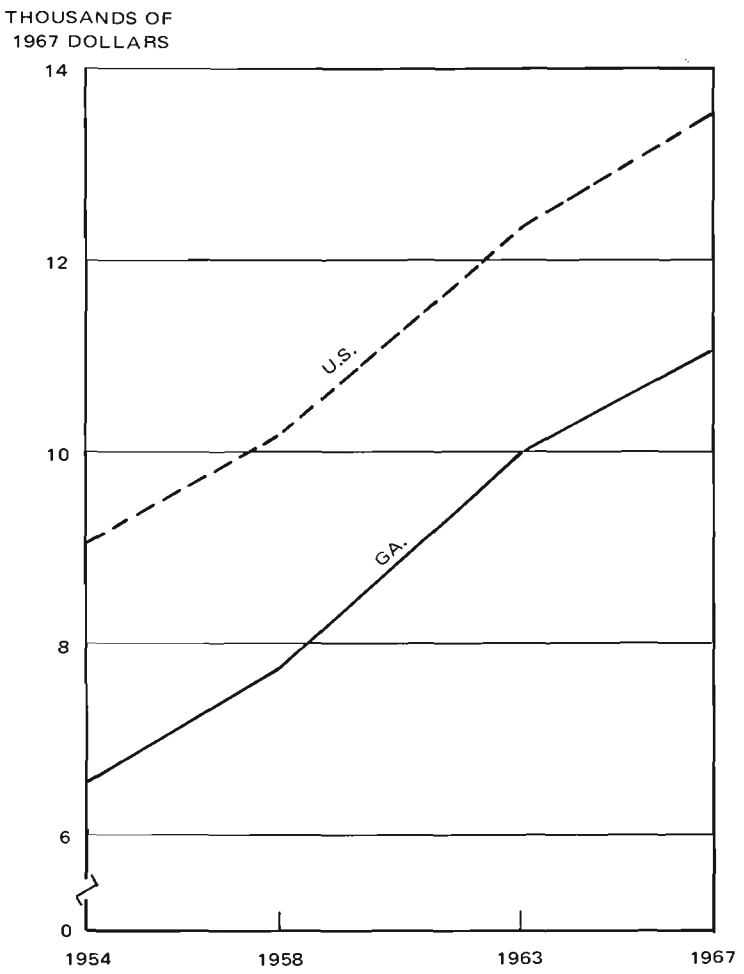
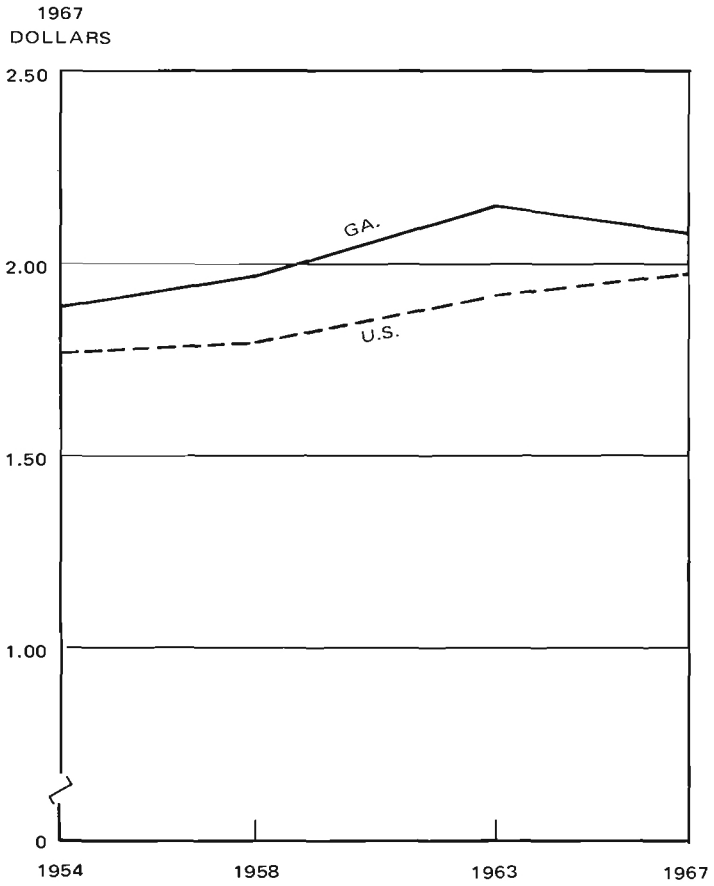


CHART 6
VALUE ADDED PER DOLLAR OF TOTAL PAYROLL



FOOD AND KINDRED PRODUCTS (SIC 20)

Georgia's employment in the food industry increased by 32% between 1963 and 1967, whereas the total figure for the U. S. moved irregularly with little net change in 1967 from 1954. As a result, Georgia's proportion of U. S. employment increased substantially, from 2.1% in 1954 to 2.8% in 1967.

Total value added by manufacture in the state increased by 70%, but the national figures showed a gain of 56% in spite of the negligible change in the number of workers. The growth of value added per employee in the U. S., therefore, easily outpaced that of Georgia. Although the state figure climbed from $9,477 to $12,197, it decreased as a proportion of the national average, from 91.2% in 1954 to 75.6% in 1967.

Wage rates in Georgia remained consistently below the U. S. average, but the advantage, as shown in the value added per dollar of payroll, was gradually lost as the state's payrolls rose with the increased number of workers. While the U. S. value added per dollar of payroll increased from $2.22 in 1954 to $2.64 in 1967, the Georgia figures declined from $2.63 to $2.52, dropping from 118.5% of the U. S. average in 1954 to 95.5% in 1967.

Capital expenditure for new plant and equipment in Georgia from 1954 through 1967 accounted for less than 2.2% of the national total, well below all but the 1954 proportion of employees. The indications are that the state is lagging behind the nation in the introduction of new technological equipment, and the increasing numbers of workers are thus unable to keep pace with the national average of value added per employee. The advantage of a lower wage structure is being offset by the increasing total payroll without a commensurate increase in value added by manufacture.

FOOD AND KINDRED PRODUCTS (SIC 20)

	Georgia				United States			
	1954	1958	1963	1967	1954	1958	1963	1967
Total employment (000)	34.6	41.4	41.9	45.7	1,646.6	1,718.1	1,643.1	1,649.6
Percent of U. S.	2.1	2.4	2.6	2.8				
Non-production workers as percent of total	29.8	30.9	30.1	28.7	30.9	33.0	33.2	32.0
Total value added (000,000)	$327.9	$397.9	$481.8	$557.4	$17,112.4	$20,444.5	$23,790.1	$26,620.9
Percent of U. S.	1.9	1.9	2.0	2.1				
Value added per employee	$9,477	$9,611	$11,498	$12,197	$10,393	$11,899	$14,479	$16,138
Percent of U. S.	91.2	80.8	79.4	75.6				
Total payroll (000,000)	$124.7	$158.2	$185.4	$221.6	$7,706.7	$8,803.8	$9,414.5	$10,076.8
Percent of U. S.	1.6	1.8	2.0	2.2				
Value added per dollar of total payroll	$2.63	$2.52	$2.60	$2.52	$2.22	$2.32	$2.53	$2.64
Percent of U. S.	118.5	108.6	102.8	95.5				

Note: All dollar figures converted to 1967 dollars.

Source: U. S. Censuses of Manufactures.

GEORGIA MANUFACTURES – FOOD AND KINDRED PRODUCTS

CHART 1
EMPLOYMENT

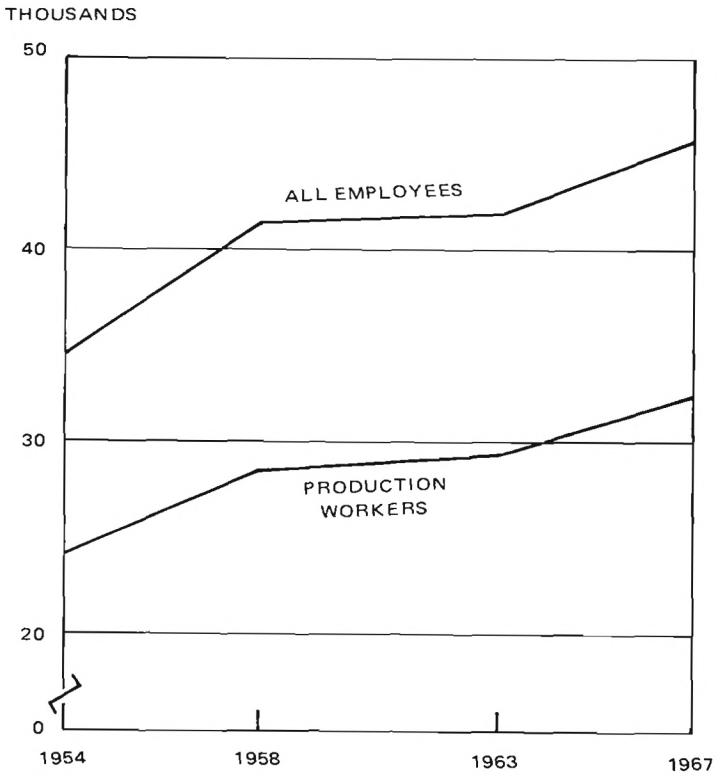
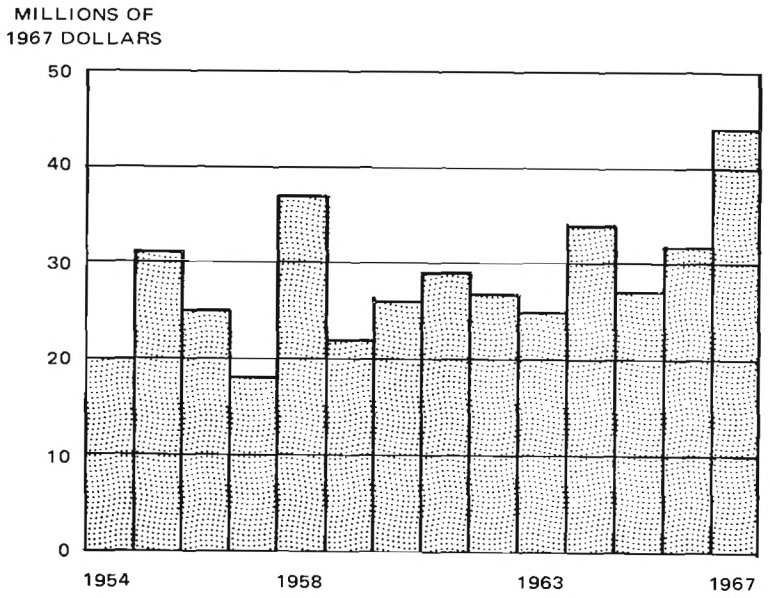


CHART 2
CAPITAL EXPENDITURES (NEW)



GEORGIA MANUFACTURES – FOOD AND KINDRED PRODUCTS

INDEXES (1954 = 100)

CHART 3

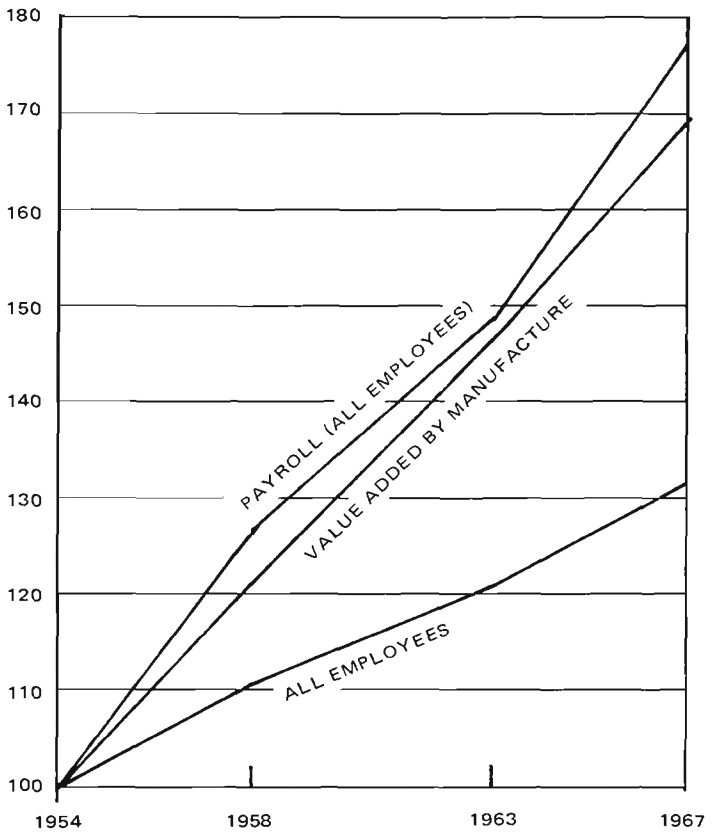
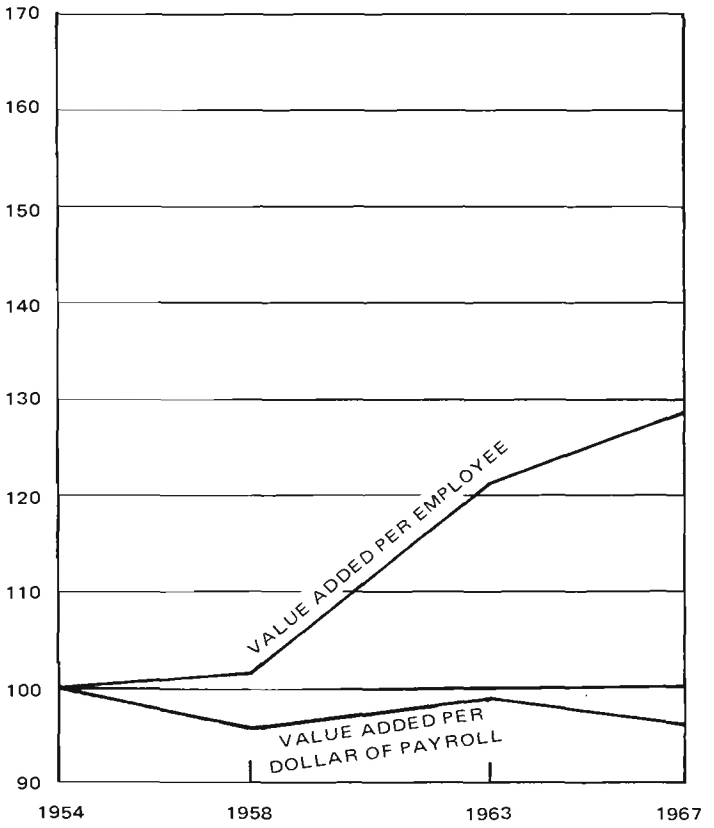


CHART 4



FOOD AND KINDRED PRODUCTS

CHART 5
VALUE ADDED PER EMPLOYEE (ALL)

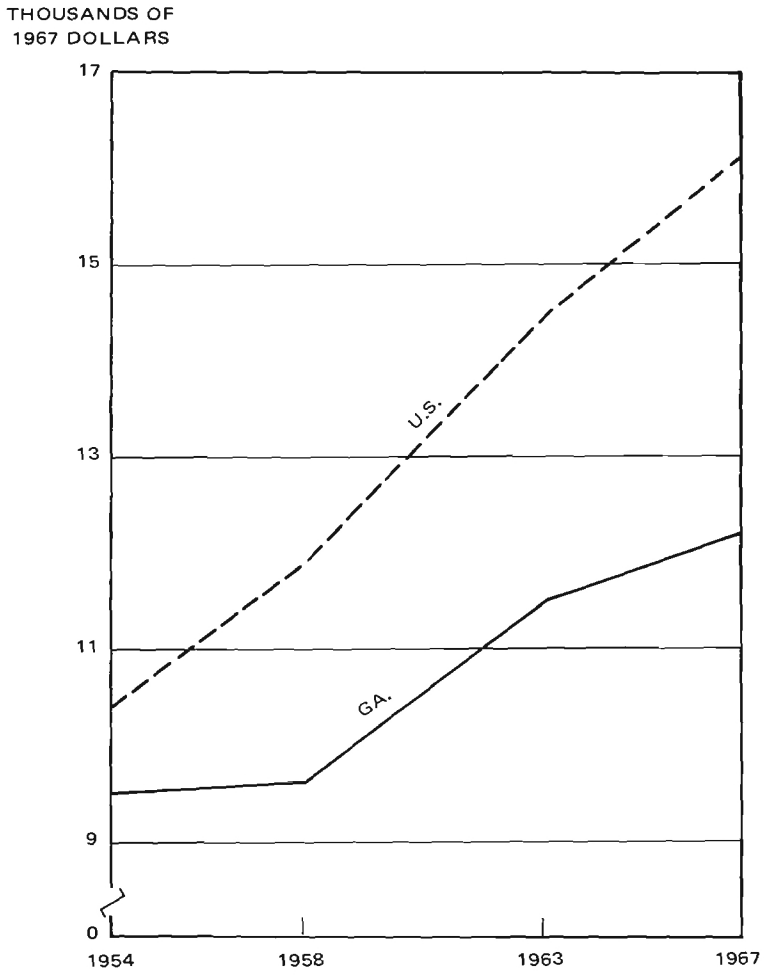
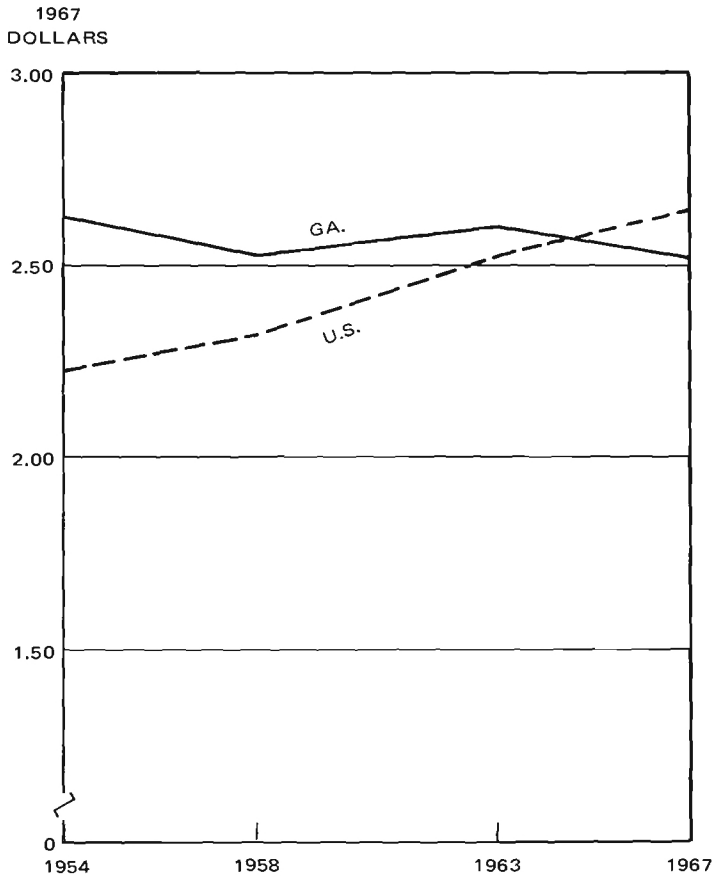


CHART 6
VALUE ADDED PER DOLLAR OF TOTAL PAYROLL



TEXTILE MILL PRODUCTS (SIC 22)

In 1967 some 11.8% of U. S. textile employment was located in Georgia, compared with 9.9% in 1954. Although the number of employees showed a decrease in 1958 and 1963 from the 1954 figure, this was a national as well as a state trend. The decline was not as great in Georgia as in the U. S. as a whole, and the recovery by 1967 was much stronger -- while the U. S. showed a net loss of over 10% between the 1954 and 1967 censuses, Georgia showed a net gain of nearly 6%.

Although total employment in this industry has fluctuated, the number of non-production workers in the state has increased in each succeeding census; by 1967 they represented 9.0% of all textile employees compared with 6.1% in 1954. These proportions continued below those of the U. S., however, where the percentage of non-production workers rose from 8.7% in 1954 to 10.9% in 1967.

Total value added by manufacture in Georgia showed substantial gains, more than doubling over the 1954-1967 period compared with a 42% gain for the nation as a whole. With the total number of employees showing comparatively little change, the value added per employee reflected the gains in total value added -- almost doubling in Georgia and increasing by 59% in the U. S. In 1954 value added per employee was only 83% of that of the nation, but the major boost in productivity in the state reversed this situation, so that by 1967 Georgia's value added per employee was higher (103.4%) than that of the U. S.

Chart 2 illustrates an important reason for the increasing productivity in the Georgia textile industry -- the flow of funds into new plant and equipment. The cumulative total of this capital expenditure for the 14 years (1954-1967) was over 13% of the total for the nation. As the chart indicates, these outlays increased in recent years, and the 1967 census data show Georgia's expenditure as over 16% of the U. S. in that year.

Payrolls increased much more rapidly than the number of employees, so the value added per dollar of payroll showed a more modest gain than the value added per employee. This gain, however, was sufficient for Georgia to pass the

U. S. in this category, with $1.99 of value added per dollar of payroll in 1967, compared with the national figure of $1.86.

The general picture adds up to one of considerable strength for the textile industry in Georgia. The substantial capital expenditure for new plant and equipment indicates that many companies are introducing new technological improvements, and this is borne out by the rapid rise in value added per employee and the increasing value added per dollar of payroll. A major factor has been the growth of tufted carpeting, and the long-delayed boom in housing should add to the importance of this section of the industry in the state.

In Georgia and the U. S., textiles face keen competition from abroad, and this has been a spur for much of the expenditure on automation. Future growth of the industry in the U. S. depends not only on the expansion of the domestic market, but also on what proportion of that market the home industry can retain.

TEXTILE MILL PRODUCTS (SIC 22)

	Georgia				United States			
	1954	1958	1963	1967	1954	1958	1963	1967
Total employment (000)	103.1	94.9	93.5	109.2	1,037.4	903.2	863.2	929.0
Percent of U. S.	9.9	10.5	10.8	11.8				
Non-production workers as percent of total	6.1	7.3	8.2	9.0	8.7	10.1	10.2	10.9
Total value added (000,000)	$472.1	$511.4	$673.8	$990.6	$5,725.3	$5,624.3	$6,674.0	$8,153.2
Percent of U. S.	8.2	9.1	10.1	12.1				
Value added per employee	$4,579	$5,389	$7,207	$9,071	$5,519	$6,227	$7,732	$8,776
Percent of U. S.	83.0	86.5	93.2	103.4				
Total payroll (000,000)	$312.4	$308.8	$364.7	$498.8	$3,769.4	$3,399.0	$3,689.6	$4,390.9
Percent of U. S.	8.3	9.1	9.9	11.4				
Value added per dollar of total payroll	$1.51	$1.66	$1.85	$1.99	$1.52	$1.65	$1.81	$1.86
Percent of U. S.	99.3	100.6	102.2	107.0				

Note: All dollar figures converted to 1967 dollars.

Source: U. S. Censuses of Manufactures.

GEORGIA MANUFACTURES – TEXTILE MILL PRODUCTS

CHART 1
EMPLOYMENT

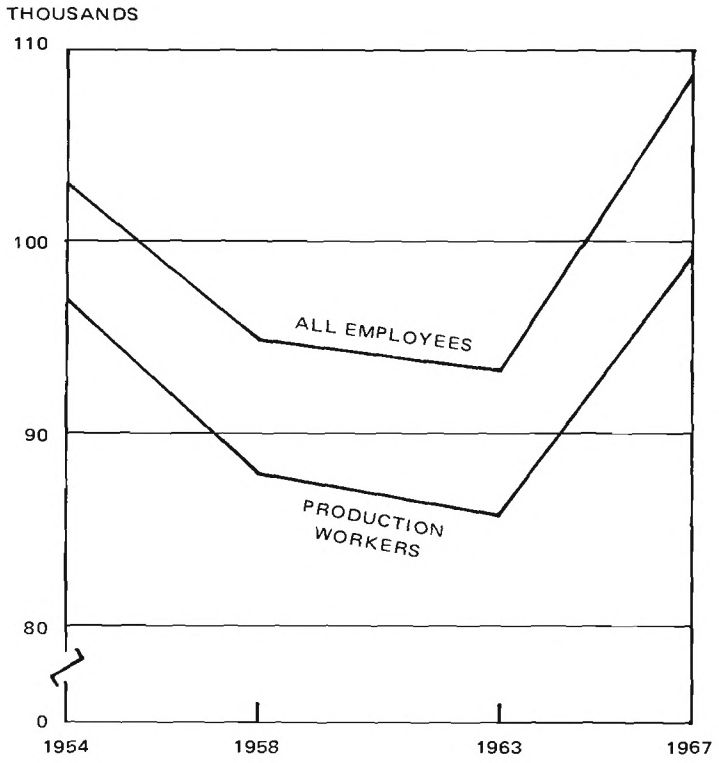
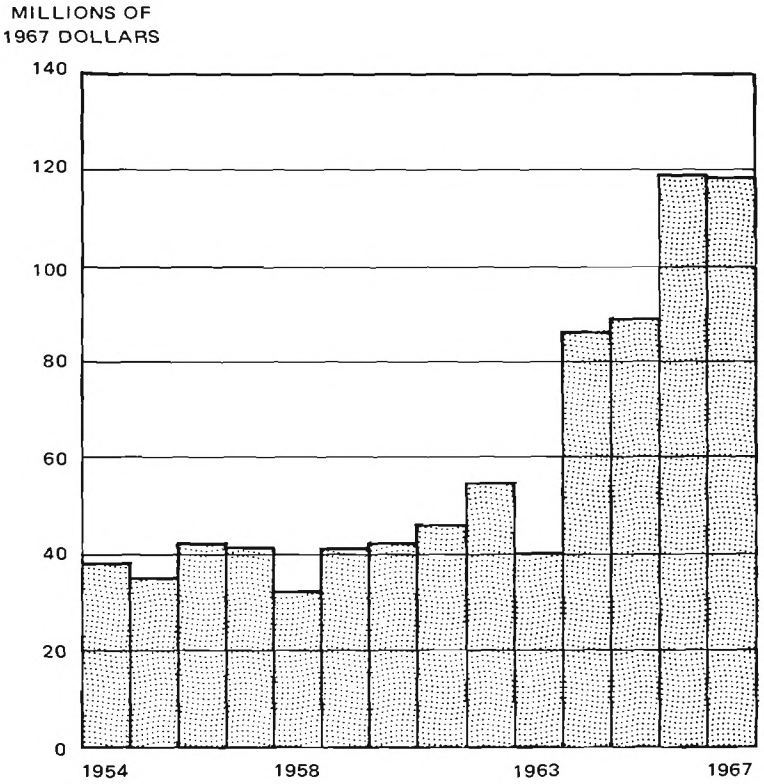


CHART 2
CAPITAL EXPENDITURES (NEW)



GEORGIA MANUFACTURES – TEXTILE MILL PRODUCTS

INDEXES (1954 = 100)

CHART 3

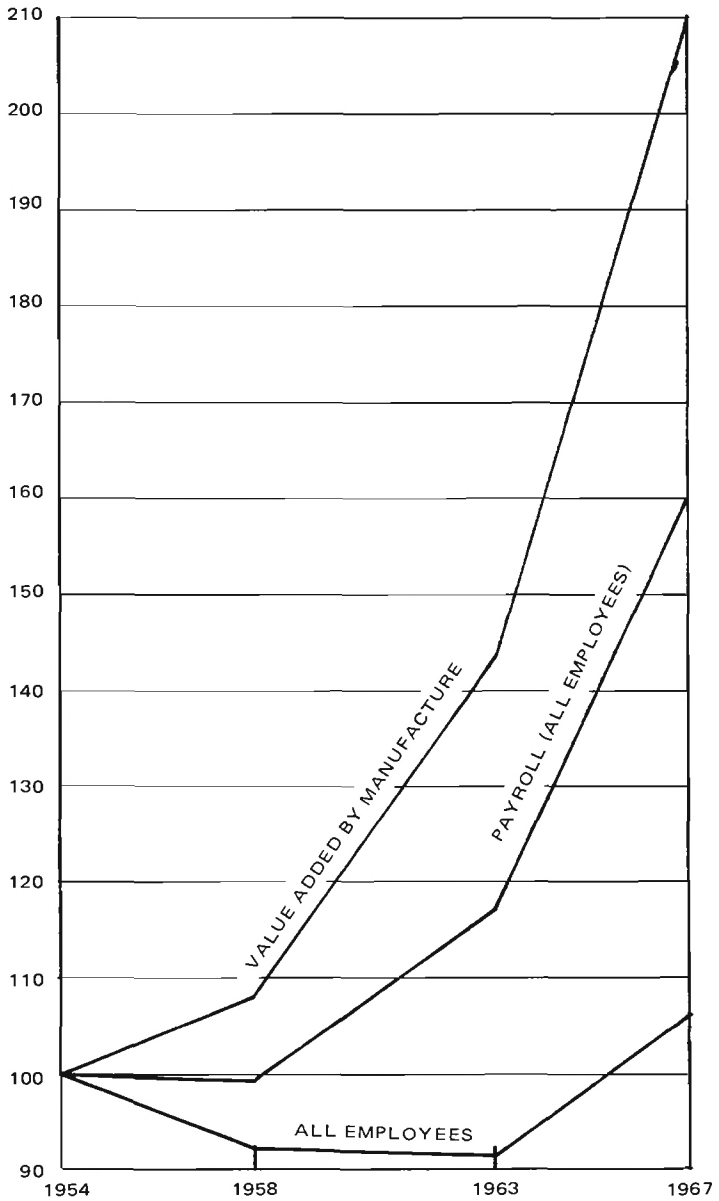
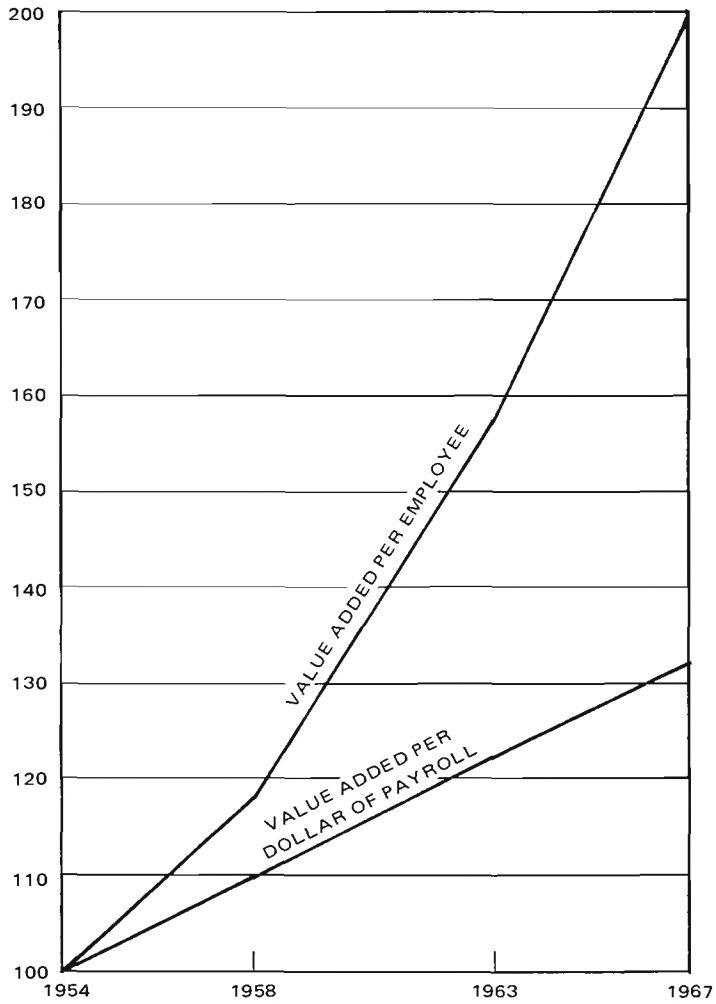


CHART 4



TEXTILE MILL PRODUCTS

CHART 5
VALUE ADDED PER EMPLOYEE (ALL)

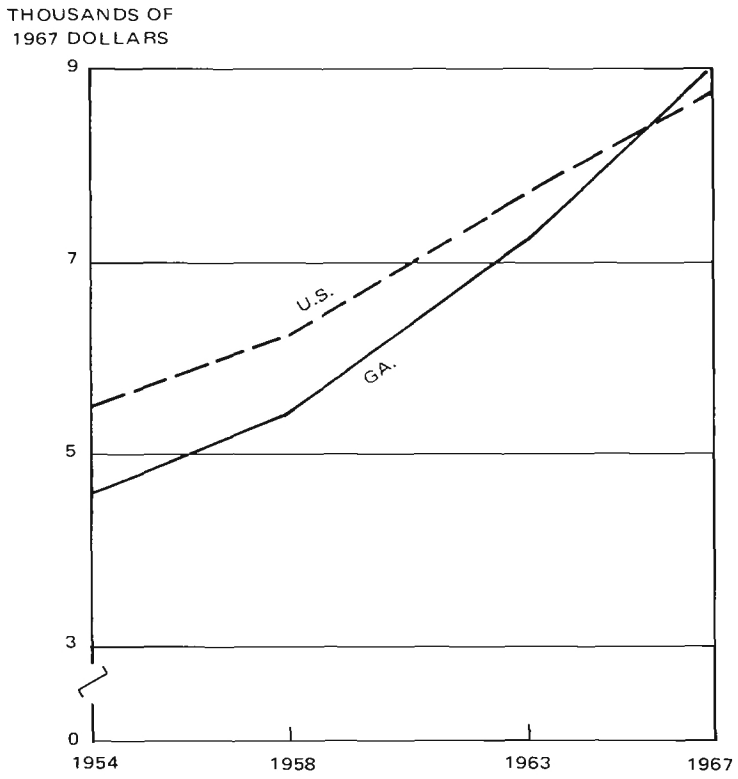
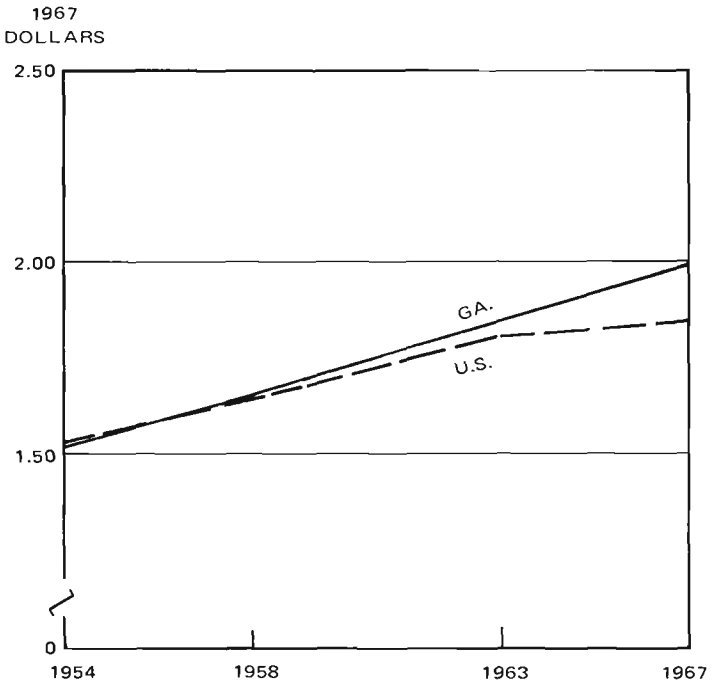


CHART 6
VALUE ADDED PER DOLLAR OF TOTAL PAYROLL



APPAREL AND OTHER TEXTILE PRODUCTS (SIC 23)

Employment in the apparel industry in Georgia increased by 81.7% between 1954 and 1967, compared with a gain of only 14.0% for the U. S. during the same period. As a result the state's proportion of total employment in this industry increased from 3.1% in 1954 to 4.9% in 1967. Non-production workers represented 10.1% of all employees nationwide in 1954, compared with only 6.8% for Georgia at that date. By 1967 the state proportion had climbed to 10.4% of the total, but had not reached the national figure, which by that date had leveled off at 11.5% non-production to 88.5% production workers.

Total value added by manufacture in Georgia increased by 179% between 1954 and 1967, compared with a national gain of 57%. The state's substantial increase lifted its proportion of the total value added in the U. S. from 2.3% in 1954 to 4.1% in 1967. Value added per employee in Georgia, however, still lagged behind the U. S. figure. After rising to 92.1% of the U. S. in 1963, from 75.1% in 1954, it dropped back to 83.8% in 1967.

Chart 2 indicates that expenditures for new plant and equipment have been low when compared to other industries of major employment and production importance in Georgia. Mechanization in the apparel industry, however, is limited by the fact that so many of its products are non-standardized and only the large producers of standardized clothing, such as shirts and underwear, are likely to be able to adopt new mechanized equipment. Georgia's total capital expenditure for the 1954-1967 period was actually 4.9% of the total for the nation -- a percentage which equalled that of the high point in employment in 1967.

Payrolls in Georgia increased by 146% between 1954 and 1967 -- compared with the 82% rise in employment. The substantial gain in total value added, when modified by the payrolls increase, shows a more modest net gain of under 14%, from $1.55 per dollar of payroll in 1954 to $1.76 in 1967. This was slightly better than the U. S. gain of just under 12%, and brought the state value added per dollar of payroll to just four cents below that of the U. S. in 1967.

Nationwide, apparel manufacturers face a major problem in import competition. Research is being stepped up in an endeavor to automate more of this labor-intensive industry and thereby cut production costs. It seems likely that the automative processes developed will be expensive (such as the recently announced Laser Garment-Cutter) and out of reach of many small apparel makers. As a result more mergers can be expected, and the small manufacturer will find it increasingly difficult to compete with cheap-labor garments from abroad and the automated production at home. All this will take time, but ultimately Georgia's future in the apparel industry may depend more upon massive capital investment than competitive wage rates.

APPAREL AND OTHER TEXTILE PRODUCTS (SIC 23)

	Georgia				United States			
	1954	1958	1963	1967	1954	1958	1963	1967
Total employment (000)	36.6	39.4	57.1	66.5	1,190.1	1,181.0	1,279.5	1,356.7
Percent of U. S.	3.1	3.3	4.5	4.9				
Non-production workers as percent of total	6.8	8.4	9.6	10.4	10.1	12.6	11.5	11.5
Total value added (000,000)	$148.2	$202.5	$352.3	$413.3	$6,420.8	$6,931.3	$8,568.4	$10,064.4
Percent of U. S.	2.3	2.9	4.1	4.1				
Value added per employee	$4,049	$5,140	$6,169	$6,215	$5,395	$5,869	$6,697	$7,418
Percent of U. S.	75.1	87.6	92.1	83.8				
Total payroll (000,000)	$95.6	$117.1	$186.8	$235.3	$3,979.8	$4,142.5	$4,821.1	$5,582.2
Percent of U. S.	2.4	2.8	3.9	4.2				
Value added per dollar of total payroll	$1.55	$1.73	$1.89	$1.76	$1.61	$1.67	$1.78	$1.80
Percent of U. S.	96.3	103.6	106.2	97.8				

Note: All dollar figures converted to 1967 dollars.

Source: U. S. Censuses of Manufactures.

GEORGIA MANUFACTURES – APPAREL AND OTHER TEXTILE PRODUCTS

CHART 1
EMPLOYMENT

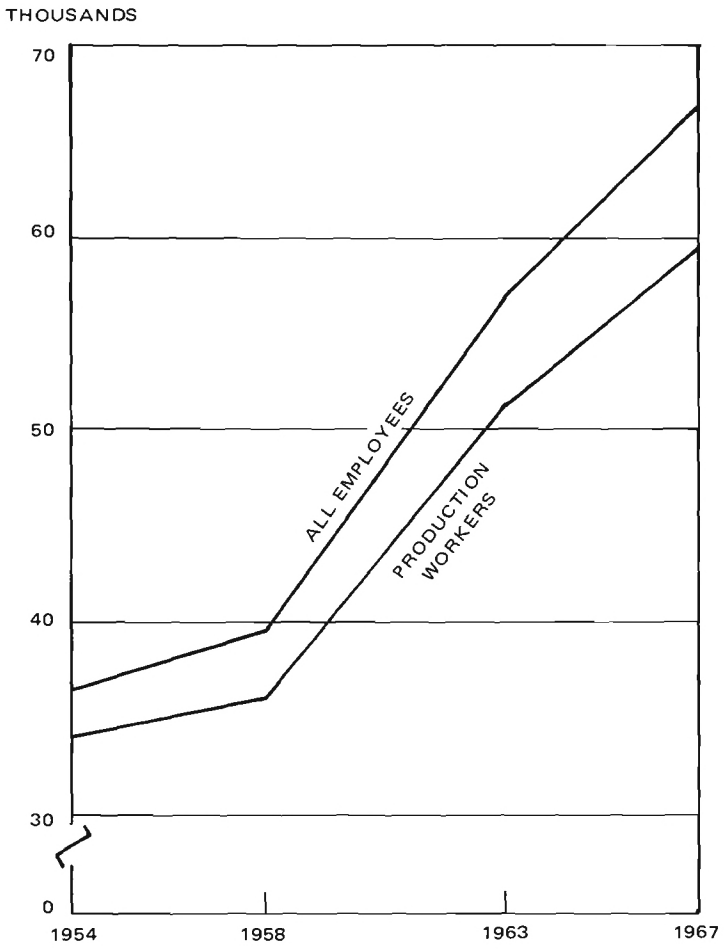
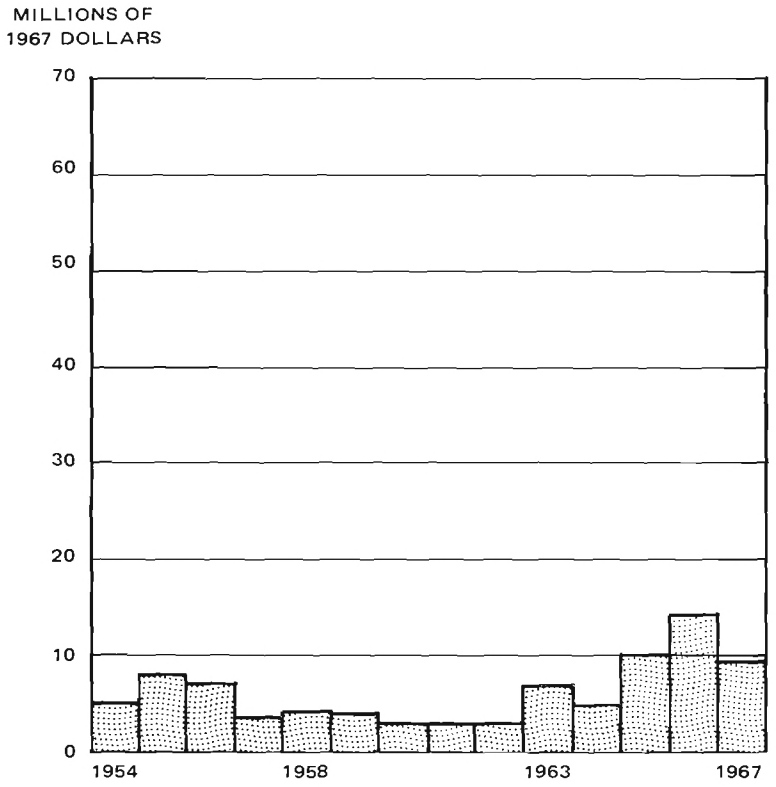


CHART 2
CAPITAL EXPENDITURES (NEW)



GEORGIA MANUFACTURES – APPAREL AND OTHER TEXTILE PRODUCTS

INDEXES (1954 = 100)

CHART 3

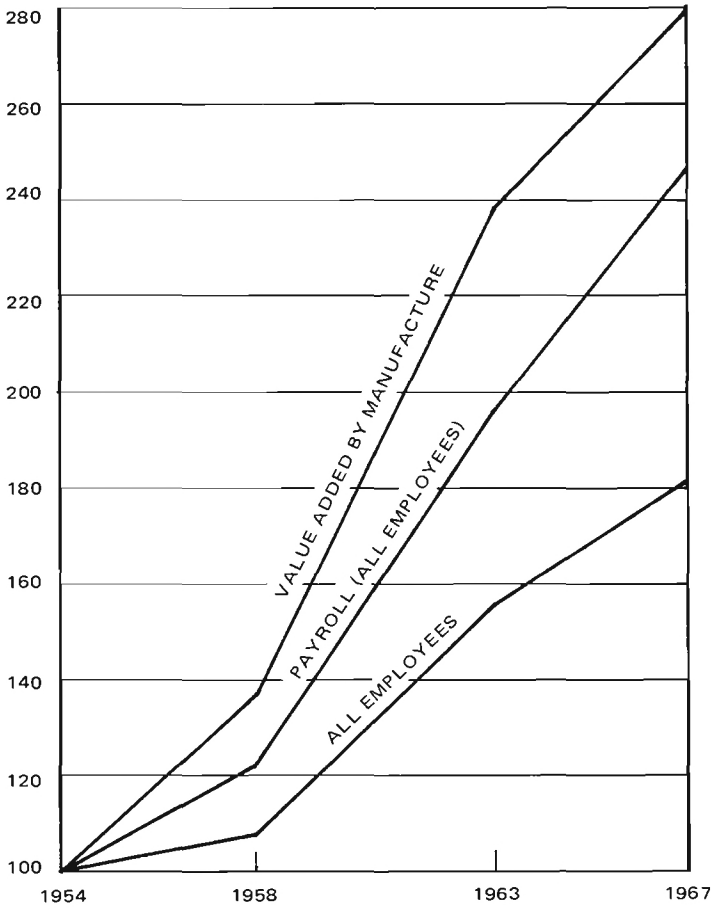
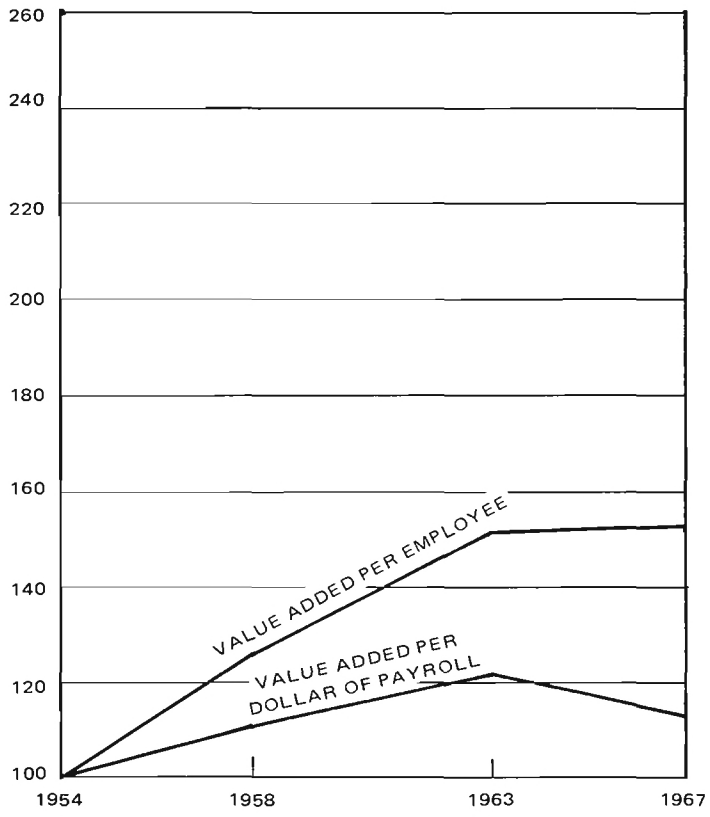


CHART 4



APPAREL AND OTHER TEXTILE PRODUCTS

CHART 5
VALUE ADDED PER EMPLOYEE (ALL)

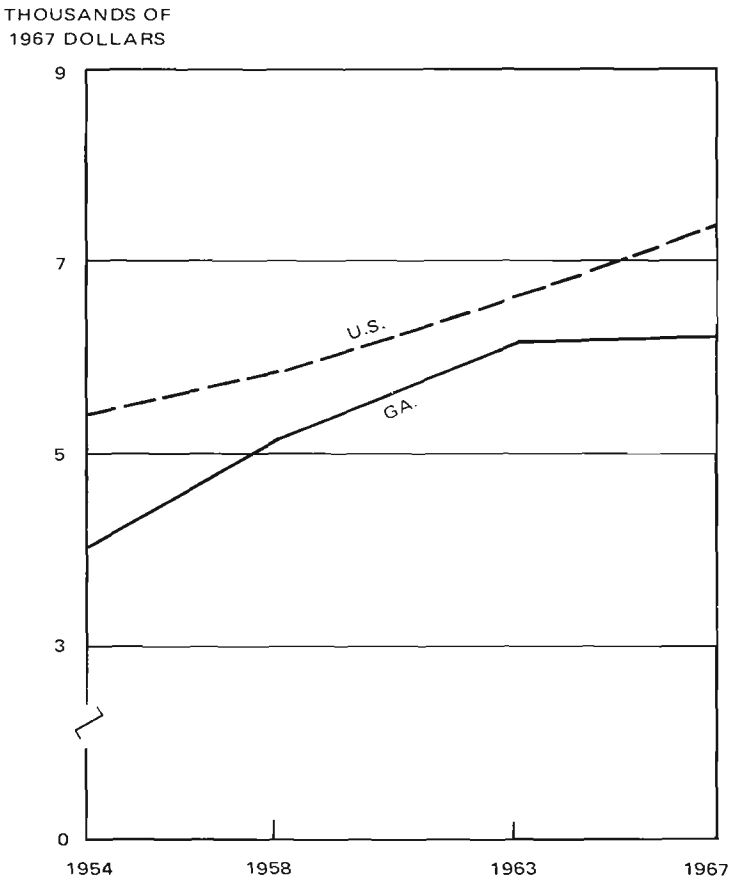
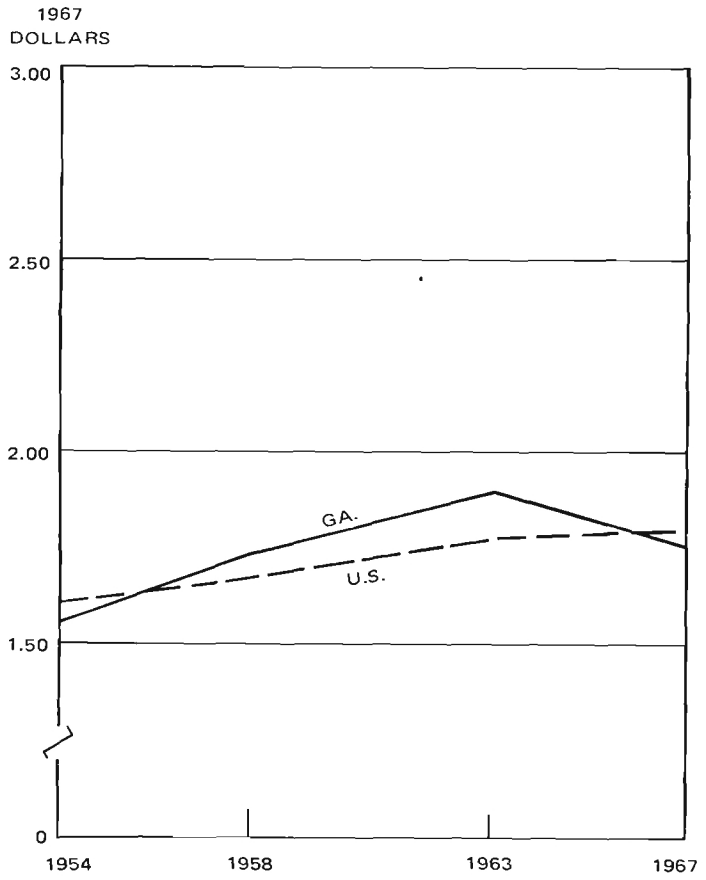


CHART 6
VALUE ADDED PER DOLLAR OF TOTAL PAYROLL



LUMBER AND WOOD PRODUCTS (SIC 24)

Employment in the lumber and wood industry has been declining for many years, and the decrease in Georgia has been at a faster rate than in the nation as a whole. In 1954 Georgia's employment of 32,300 was 5.0% of the total for the U. S. By 1967 the number of employees had dropped to 19,400, and was 3.5% of the U. S. figure.

Technological improvements and more efficient production methods have influenced all sections of the industry. Data on Georgia's expenditure for new plant and equipment are not available for some years, but a general comparison indicates that the state's capital expenditure has been about 2.8% that of the nation -- well below the lowest of the census figures for employment (3.5% of the U. S. in 1967). Total value added by the industry in Georgia has been irregular, but showed a net increase of 8.5% between 1954 and 1967 in spite of the 40.0% drop in employment. Value added by manufacture for the U. S., however, increased by over 23% and Georgia's proportion of the national figures dropped from 3.1% in 1954 to 2.8% in 1967.

When the greater reduction in the state's employment also is considered, by calculating the value added per employee, Georgia shows an 80% rise over the period, compared with 44% for the U. S. In spite of this substantial increase, Georgia's value added per employee reached only 78.6% of that of the U. S. by 1967 -- $7,057 compared with $8,977.

The much lower wage scales in Georgia (due to a large degree to the state's product mix compared with that of the nation) when related to the value added by manufacture reveals a brighter picture of Georgia's productivity in this industry. For every dollar of payroll the value added in the state was $1.68 in 1954 -- the same as in the U. S. By 1967 Georgia's value added per dollar of total payroll was $1.91, compared with the national average of $1.78.

Although the lumber and wood industry in Georgia is of decreasing importance on the basis of number of jobs, the outlook for the immediate future is promising. The market for southern pine products, particularly plywood, should grow substantially as residential construction

increases, and the increased supply of residues from the wood processing plants will permit a greater production of particleboard. Inputs to the industry, however, are likely to be in the form of capital expenditure for new technological equipment rather than an increase in the number of workers.

LUMBER AND WOOD PRODUCTS (SIC 24)

	Georgia				United States			
	1954	1958	1963	1967	1954	1958	1963	1967
Total employment (000)	32.3	26.5	22.7	19.4	645.9	585.4	563.1	554.0
Percent of U. S.	5.0	4.5	4.0	3.5				
Non-production workers as percent of total	7.7	12.8	10.1	7.7	9.9	12.5	11.7	10.5
Total value added (000,000)	$126.2	$109.6	$121.0	$136.9	$4,029.3	$3,605.4	$4,382.6	$4,973.4
Percent of U. S.	3.1	3.0	2.8	2.8				
Value added per employee	$3,907	$4,136	$5,330	$7,057	$6,238	$6,159	$7,783	$8,977
Percent of U. S.	62.6	67.2	68.5	78.6				
Total payroll (000,000)	$75.2	$65.8	$67.8	$71.8	$2,403.3	$2,318.7	$2,549.2	$2,798.9
Percent of U. S.	3.1	2.8	2.7	2.6				
Value added per dollar of total payroll	$1.68	$1.67	$1.78	$1.91	$1.68	$1.55	$1.72	$1.78
Percent of U. S.	100.0	107.7	103.5	107.3				

Note: All dollar figures converted to 1967 dollars.

Source: U. S. Censuses of Manufactures.

GEORGIA MANUFACTURES – LUMBER AND WOOD PRODUCTS

CHART 1
EMPLOYMENT

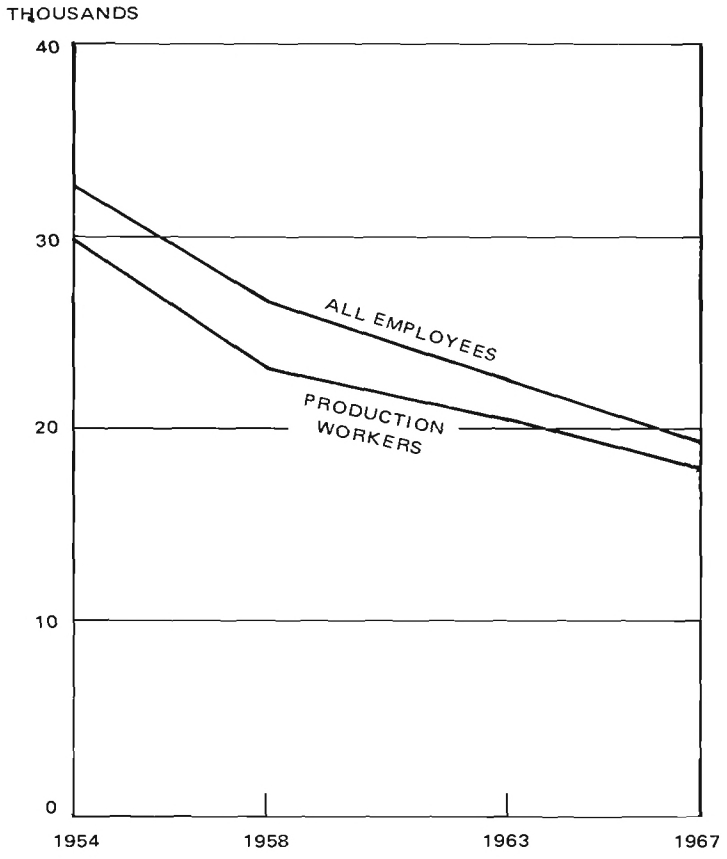
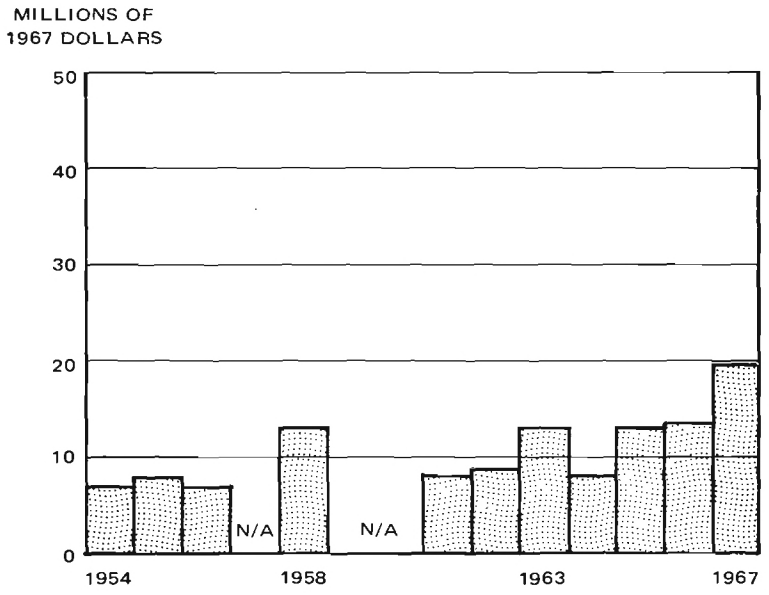


CHART 2
CAPITAL EXPENDITURES (NEW)



GEORGIA MANUFACTURES – LUMBER AND WOOD PRODUCTS

INDEXES (1954 = 100)

CHART 3

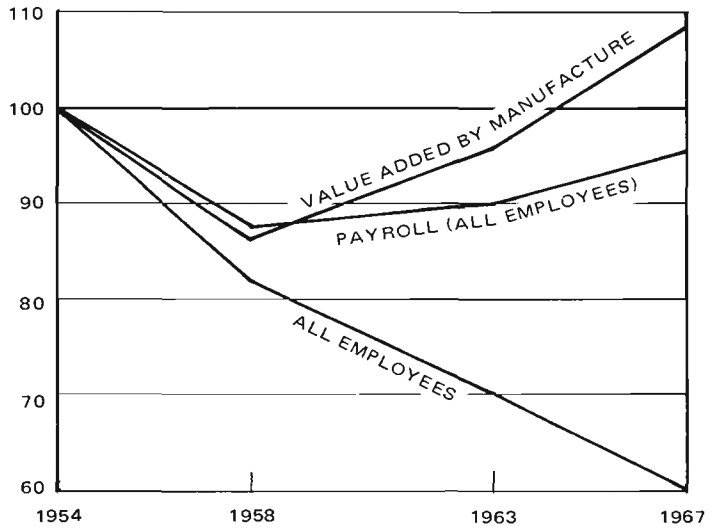
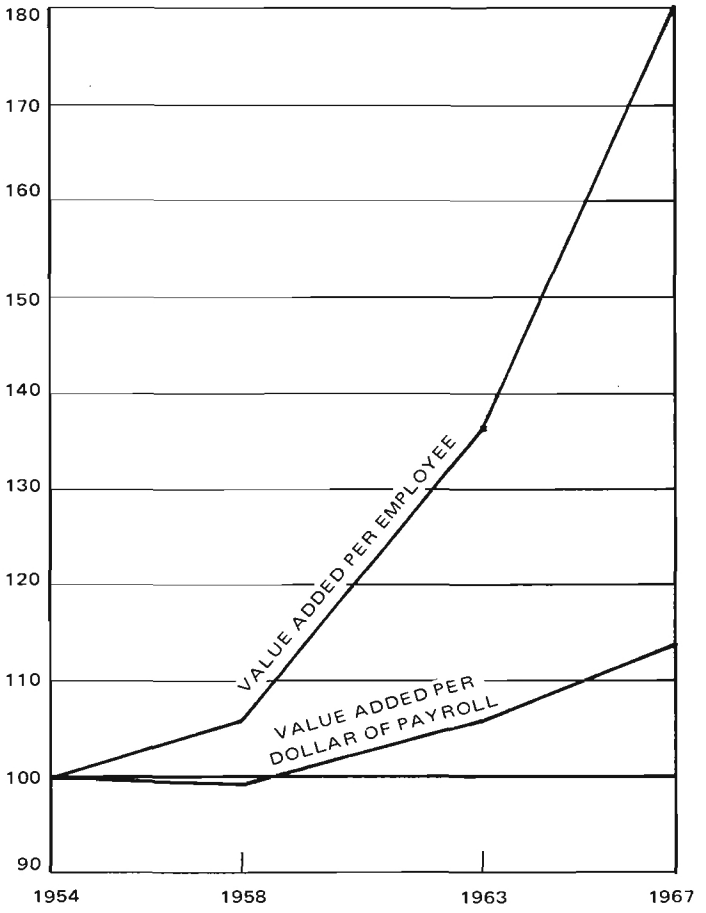


CHART 4



LUMBER AND WOOD PRODUCTS

CHART 5
VALUE ADDED PER EMPLOYEE (ALL)

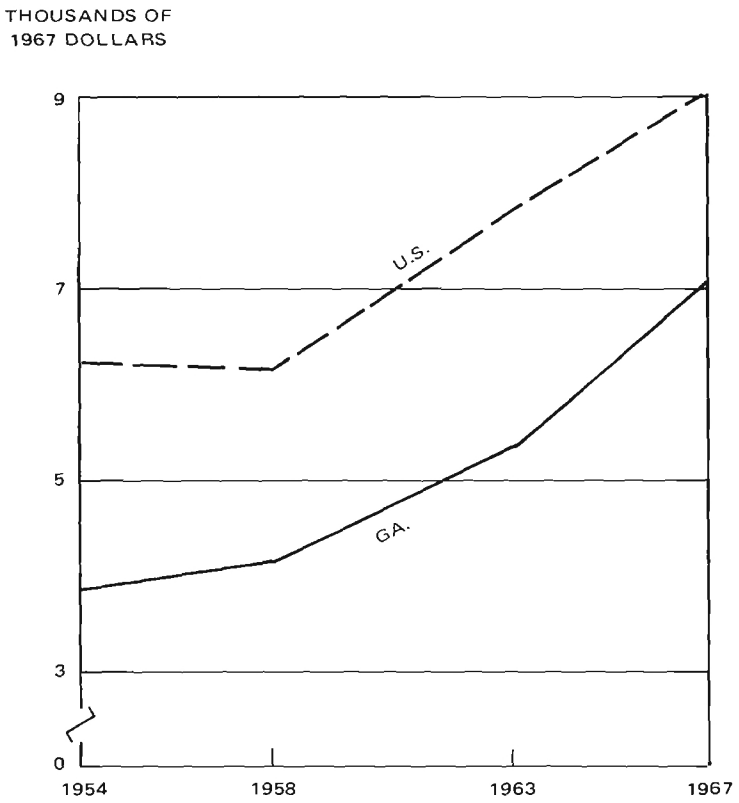
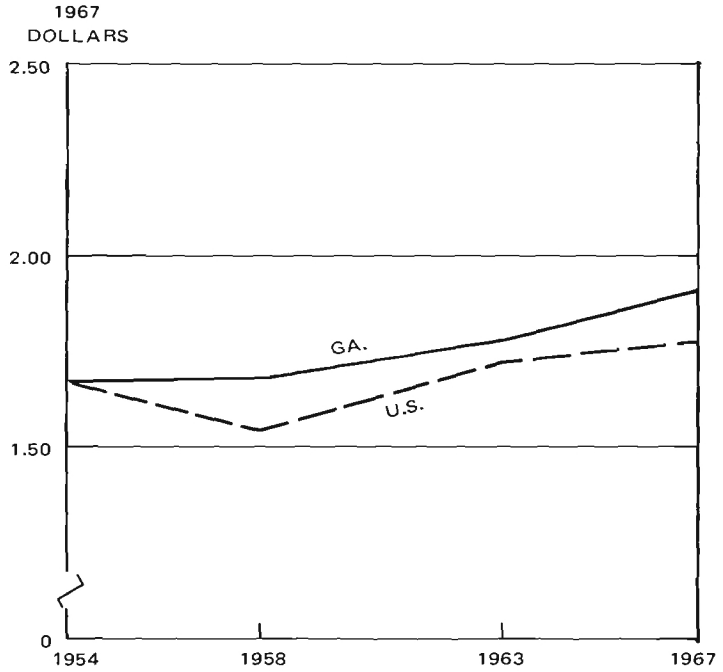


CHART 6
VALUE ADDED PER DOLLAR OF TOTAL PAYROLL



FURNITURE AND FIXTURES (SIC 25)

Between 1954 and 1967, employment in the furniture and fixtures industry in Georgia increased by nearly 33% compared with a U. S. gain of almost 25%, raising the state's proportion of national employment from 2.1% to 2.2%. Records of expenditure for new plant and equipment are incomplete in Georgia for the 14 years under review, but the available data indicate that the state's investment was below the average for the nation, with some improvement in recent years.

Total value added by manufacture in Georgia increased by 80% between 1954 and 1967 compared with 68% for the U. S., but this improvement still left the state with a value added only 1.8% that of the nation in 1967 -- compared with employment accounting for 2.2% that of the U. S. Value added per employee, therefore, remained well below the national figure -- $7,946 in Georgia in 1967, only 81% of the U. S. average of $9,804.

Payrolls increased substantially in Georgia, climbing at a faster rate in the 1954-1967 period than the value added by manufacture. As a result, the state lost some of the cost advantage it had held because of its lower wage rates. The value added per dollar of payroll dropped below the 1954 level, and also dropped below the average U. S. return, which had continued to climb throughout the period.

New household formations and the gain in personal income should create a steady demand for all types of furniture and home furnishings throughout the nation. The growth of mobile home manufacturing in Georgia has added a local market for a more specialized type of production -- smaller pieces of furniture geared to a more restricted space. To remain competitive in the face of rising payrolls, however, an increase in capital expenditure seems necessary in the state, to increase productivity by the greater use of laborsaving machinery.

FURNITURE AND FIXTURES (SIC 25)

	Georgia				United States			
	1954	1958	1963	1967	1954	1958	1963	1967
Total employment (000)	7.0	6.9	8.3	9.3	340.7	354.2	376.5	425.3
Percent of U. S.	2.1	2.0	2.2	2.2				
Non-production workers as percent of total	12.9	14.5	13.3	14.0	15.9	17.3	16.4	15.9
Total value added (000,000)	$41.1	$44.6	$53.3	$73.9	$2,482.9	$2,767.4	$3,344.4	$4,169.5
Percent of U. S.	1.7	1.6	1.6	1.8				
Value added per employee	$5,871	$6,464	$6,422	$7,946	$7,288	$7,813	$8,883	$9,804
Percent of U. S.	80.6	82.7	72.3	81.0				
Total payroll (000,000)	$22.9	$25.9	$32.4	$42.1	$1,488.4	$1,632.8	$1,882.1	$2,258.3
Percent of U. S.	1.5	1.6	1.7	1.9				
Value added per dollar of total payroll	$1.79	$1.72	$1.65	$1.76	$1.67	$1.69	$1.78	$1.85
Percent of U. S.	107.2	101.8	92.7	95.1				

Note: All dollar figures converted to 1967 dollars.

Source: U. S. Censuses of Manufactures.

GEORGIA MANUFACTURES – FURNITURE AND FIXTURES

CHART 1
EMPLOYMENT

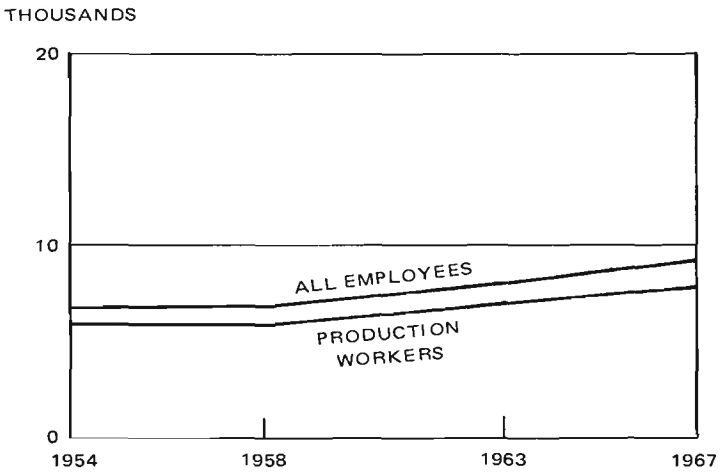
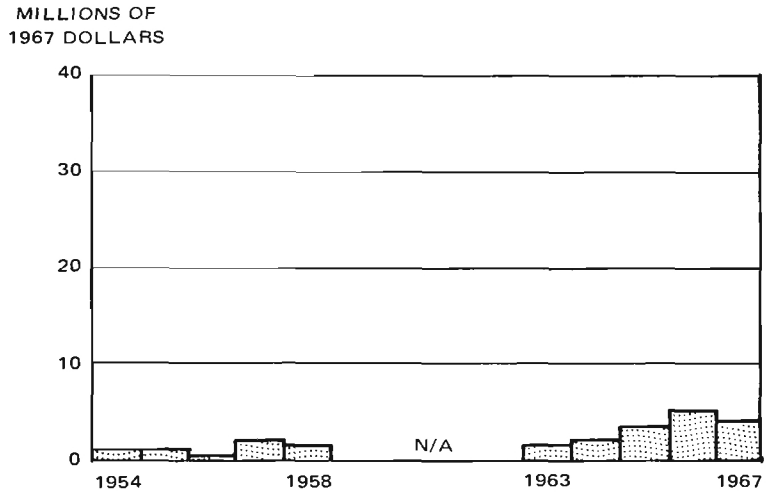


CHART 2
CAPITAL EXPENDITURES (NEW)



GEORGIA MANUFACTURES – FURNITURE AND FIXTURES

INDEXES (1954 = 100)

CHART 3

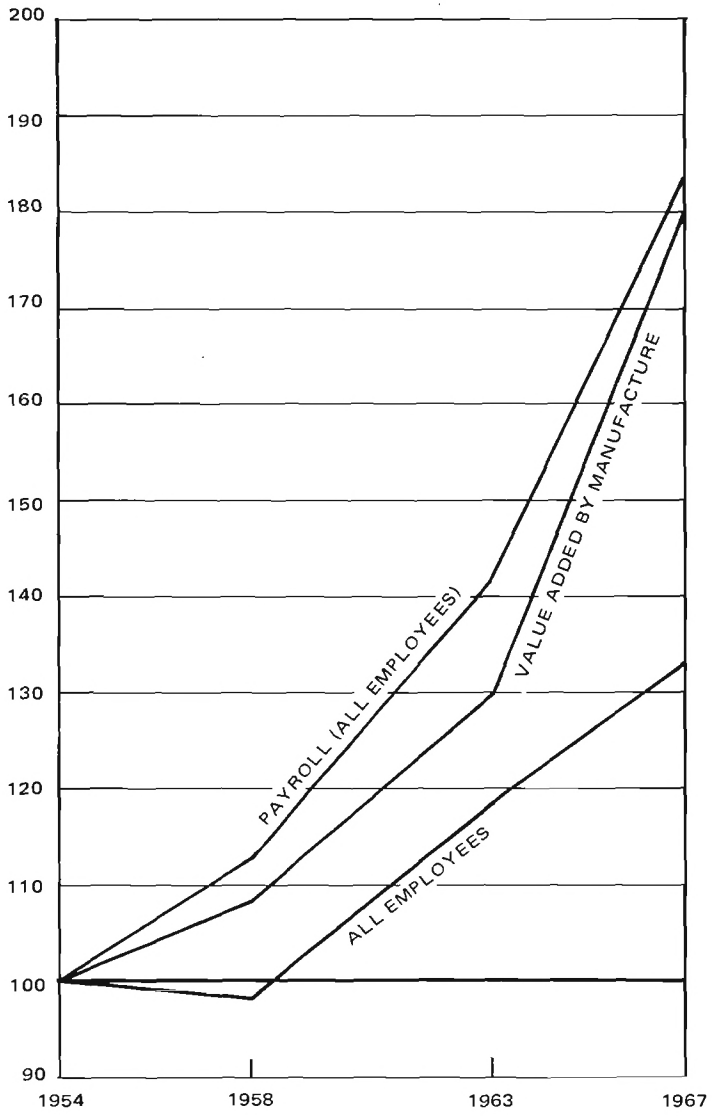
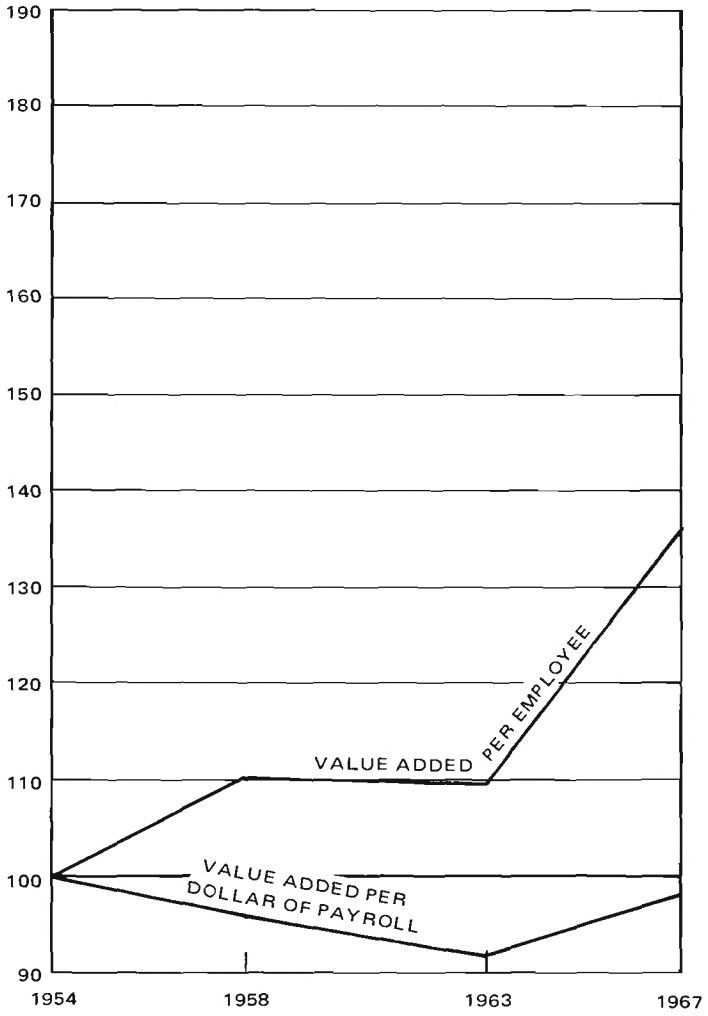


CHART 4



FURNITURE AND FIXTURES

CHART 5
VALUE ADDED PER EMPLOYEE (ALL)

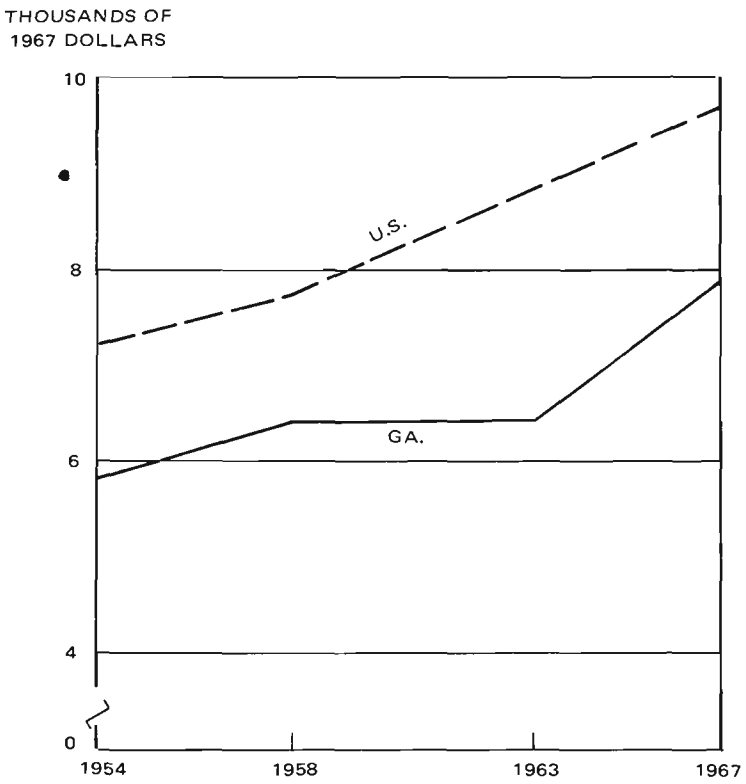
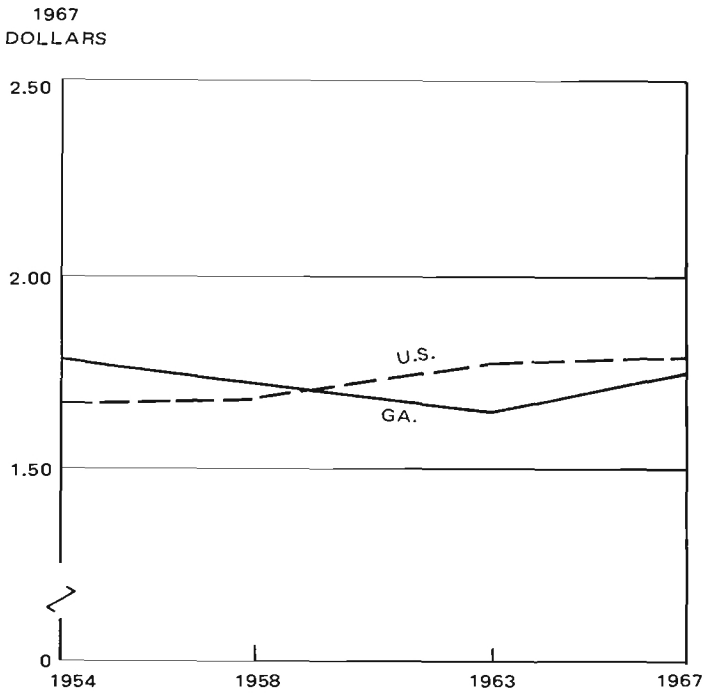


CHART 6
VALUE ADDED PER DOLLAR OF TOTAL PAYROLL



PAPER AND ALLIED PRODUCTS (SIC 26)

Employment in the paper and allied products industry in Georgia grew by 65% between 1954 and 1967 compared with a 21% growth for the U. S., thereby increasing the state's proportion of national employment from 2.6% to 3.6%. As can be seen from Chart 2, a substantial amount of capital investment also has been pumped into the industry in the state. The cumulative expenditure on new plant and equipment during the 14 years represented 5.6% of the total nationwide.

This expansion is reflected in the total value added by manufacture, which increased by 127% in Georgia during the period, compared with a 70% growth in the U. S., and brought the state's total value added to 4.5% of the nation in 1967 from 3.3% in 1954. The value added per employee climbed from $13,971 to $19,154, maintaining a substantial lead over the U. S. figures, which rose from $10,906 in 1954 to $15,270 in 1967.

During this same period, however, total payroll expenditures in Georgia jumped 129% -- climbing even faster than the 127% increase in total value added by manufacture. As a result, the value added per dollar of payroll showed a slight decrease from $2.81 in 1954 to $2.77 in 1967, while the U. S. figures improved from $2.10 to $2.20. The state still maintained a considerable lead over the national average by this measure of productivity, though its proportion of U. S. value added per dollar of payroll declined from 133.8% in 1954 to 125.9% in 1967.

Per capita consumption of paper and paper products continues to increase in the U. S. The growth of population adds to this demand, as does the expansion of the export trade. Prospects for the industry in Georgia remain very bright, especially with the increasing use of the fast-growing southern pine as a raw material. Production capacity is already high, but capital expenditure on new equipment is likely to be substantial as the industry intensifies its waste treatment processes and its development of recovery systems.

PAPER AND ALLIED PRODUCTS (SIC 26)

	Georgia				United States			
	1954	1958	1963	1967	1954	1958	1963	1967
Total employment (000)	13.8	16.8	20.5	22.8	527.7	551.3	588.0	638.9
Percent of U. S.	2.6	3.0	3.5	3.6				
Non-production workers as percent of total	18.1	18.5	21.0	20.6	17.8	19.2	20.4	20.5
Total value added (000,000)	$192.8	$263.8	$369.8	$436.7	$5,755.3	$6,547.3	$8,061.3	$9,756.3
Percent of U. S.	3.3	4.0	4.6	4.5				
Value added per employee	$13,971	$15,702	$18,041	$19,154	$10,906	$11,876	$13,710	$15,270
Percent of U. S.	128.1	132.2	131.6	125.4				
Total payroll (000,000)	$68.7	$93.0	$130.0	$157.4	$2,740.4	$3,187.1	$3,823.9	$4,436.2
Percent of U. S.	2.5	2.9	3.4	3.5				
Value added per dollar of total payroll	$2.81	$2.84	$2.84	$2.77	$2.10	$2.05	$2.11	$2.20
Percent of U. S.	133.8	138.5	134.6	125.9				

Note: All dollar figures converted to 1967 dollars.

Source: U. S. Censuses of Manufactures.

GEORGIA MANUFACTURES – PAPER AND ALLIED PRODUCTS

CHART 1
EMPLOYMENT

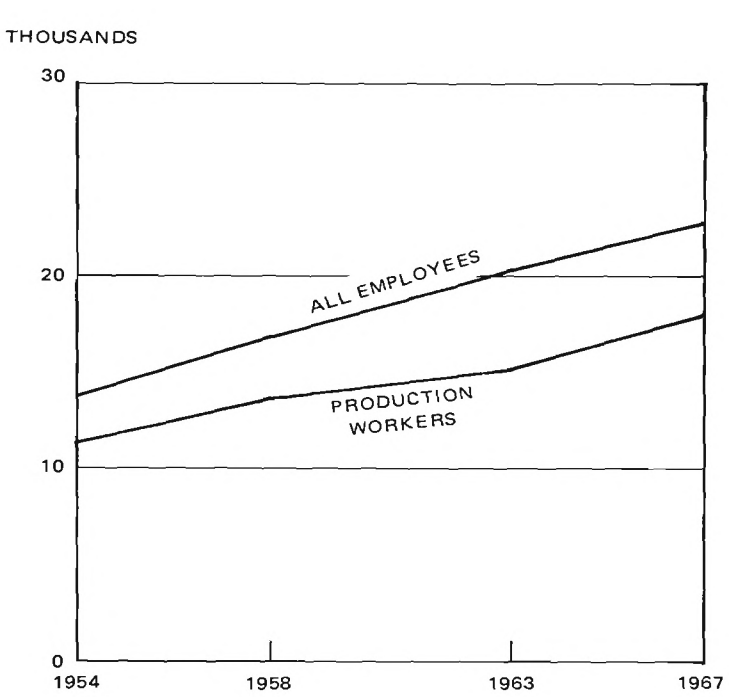
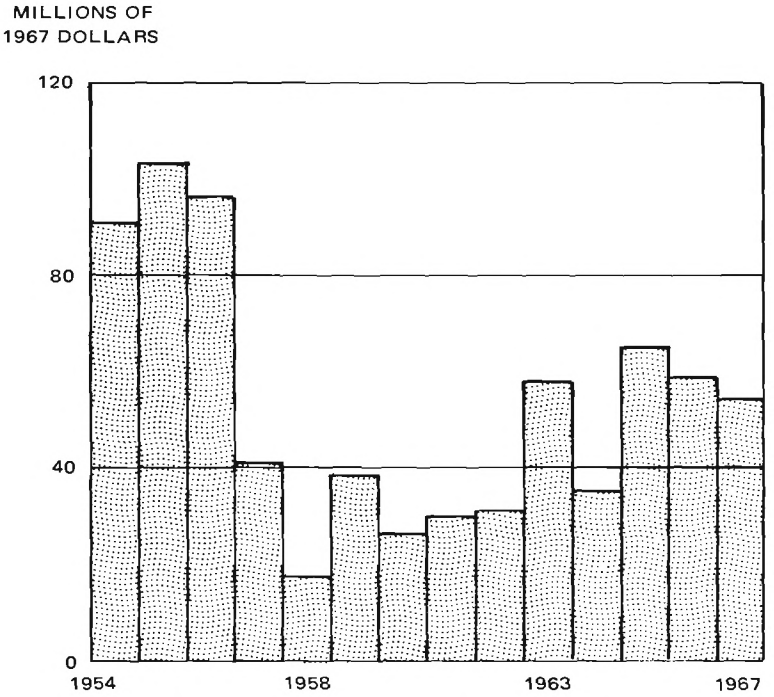


CHART 2
CAPITAL EXPENDITURES (NEW)



GEORGIA MANUFACTURES – PAPER AND ALLIED PRODUCTS

INDEXES (1954 = 100)

CHART 3

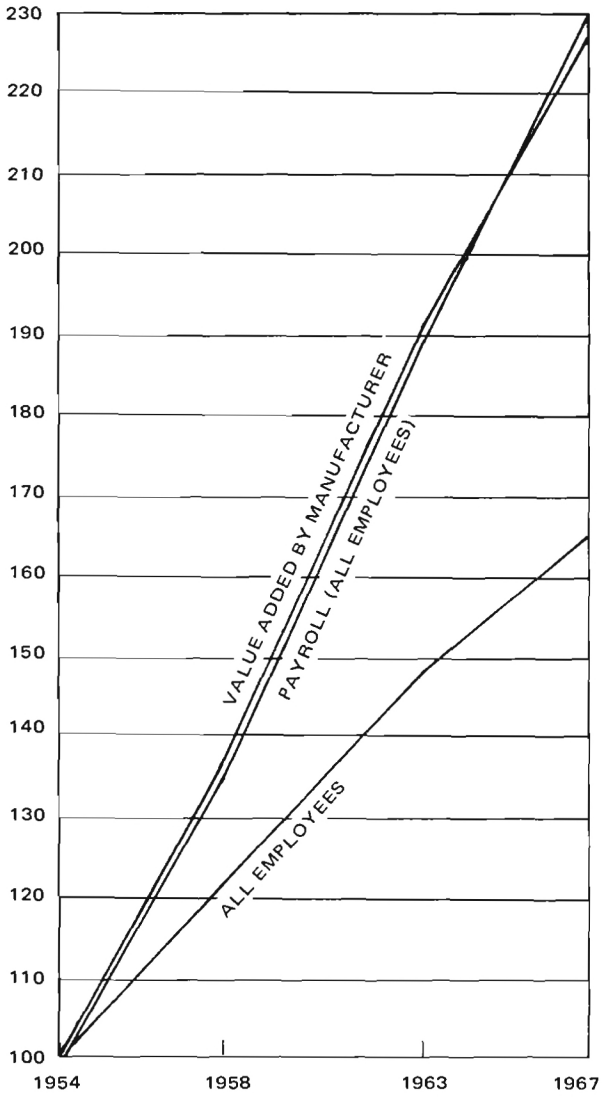
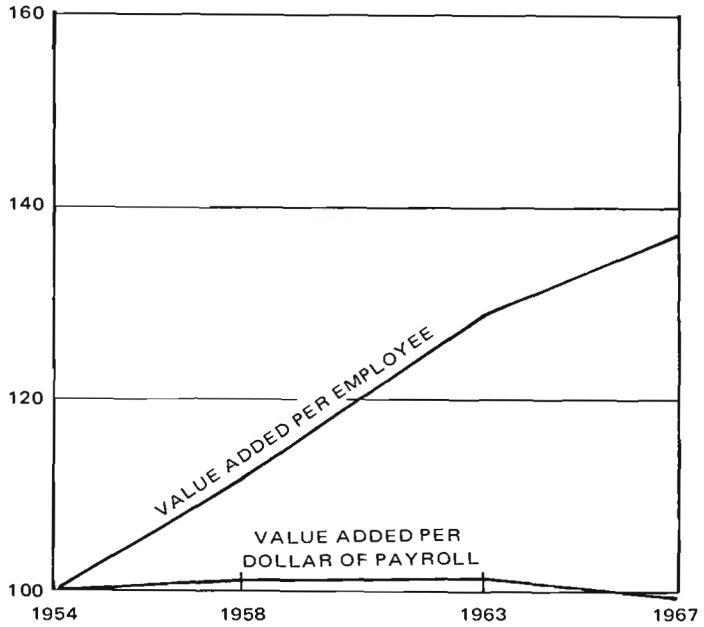


CHART 4



PAPER AND ALLIED PRODUCTS

CHART 5
VALUE ADDED PER EMPLOYEE (ALL)

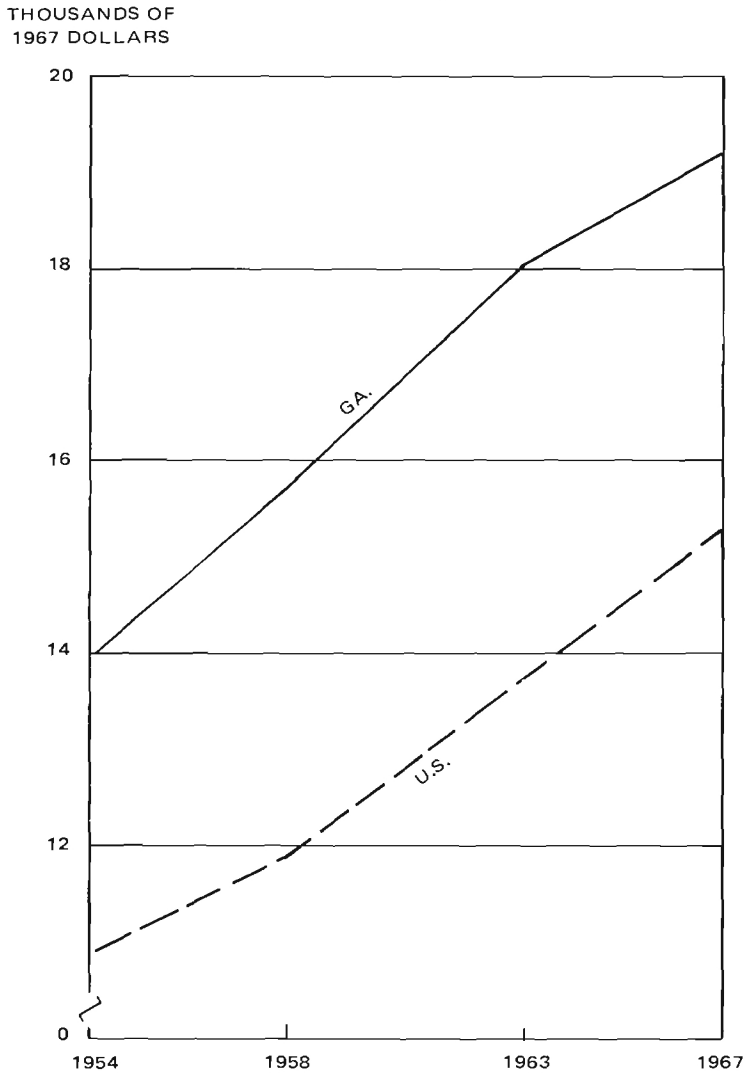
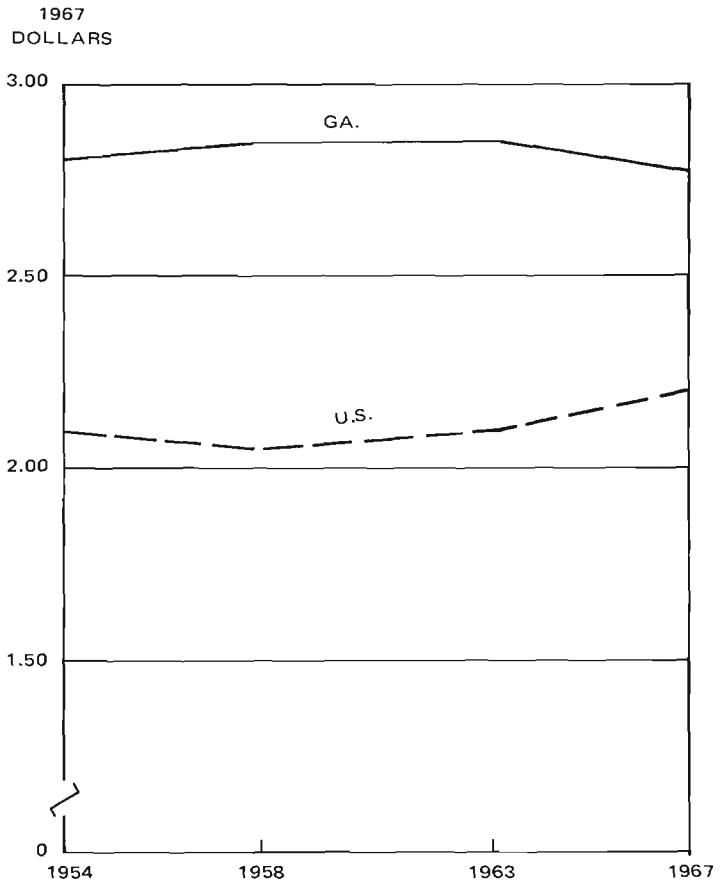


CHART 6
VALUE ADDED PER DOLLAR OF TOTAL PAYROLL



PRINTING AND PUBLISHING (SIC 27)

Although employment in printing and publishing increased by 59% in Georgia between 1954 and 1967, this industry is not strongly represented in the state -- accounting for only 1.2% of national employment. Data on capital expenditure for new plant and equipment are not available for Georgia for all the years of the 1954-1967 period, but the investment pattern appears to have been on a similar scale -- equivalent to approximately 1.0% that of the U. S.

Total value added by manufacture increased at a faster rate in Georgia than in the U. S. (120% compared with 80% between 1954 and 1967), but the state's proportion of the national total value added was still only 1.1% in 1967 -- below its proportion of number of employees. Consequently, the value added per employee in Georgia remained below the national average, even though the Georgia figures rose from $8,737 in 1954 to $12,102 in 1967.

Total payrolls in Georgia increased by 103% -- somewhat below the rate of growth of value added by manufacture. As a result, the value added per dollar of payroll increased from $1.73 in 1954 to $1.87 in 1967. This did not quite equal the improvement in the U. S. figure, which rose from $1.77 to $2.01 in the same period.

The printing and publishing industry for many years has employed a high proportion of non-production workers whose advanced technological skills put them on a managerial and top supervisory level. This trend is likely to continue as the industry adopts even more highly sophisticated equipment. Georgia's share of this industry is concentrated chiefly in the newspaper and commercial printing fields, where local service is important. It seems doubtful that the state will increase its book printing and publishing in the near future since the trend is toward the expansion and merger of existing establishments. Some special interest magazines could develop, and regional editions of some national periodicals might be printed in the state if the local distribution became large enough.

PRINTING AND PUBLISHING (SIC 27)

	Georgia				United States			
	1954	1958	1963	1967	1954	1958	1963	1967
Total employment (000)	8.0	9.6	10.2	12.7	803.5	864.6	913.2	1,031.0
Percent of U. S.	1.0	1.1	1.1	1.2				
Non-production workers as percent of total	33.7	33.3	35.3	32.3	37.9	38.7	38.7	38.7
Total value added (000,000)	$69.9	$90.1	$109.0	$153.7	$7,959.1	$9,209.0	$11,419.2	$14,355.1
Percent of U. S.	.9	1.0	1.0	1.1				
Value added per employee	$8,737	$9,385	$10,686	$12,102	$9,906	$10,651	$12,505	$13,923
Percent of U. S.	88.2	88.1	85.5	86.9				
Total payroll (000,000)	$40.4	$52.0	$61.1	$82.0	$4,499.0	$5,185.0	$6,011.1	$7,151.5
Percent of U. S.	.9	1.0	1.0	1.1				
Value added per dollar of total payroll	$1.73	$1.73	$1.78	$1.87	$1.77	$1.78	$1.90	$2.01
Percent of U. S.	97.7	97.2	93.7	93.0				

Note: All dollar figures converted to 1967 dollars.

Source: U. S. Censuses of Manufactures.

GEORGIA MANUFACTURES – PRINTING AND PUBLISHING

CHART 1
EMPLOYMENT

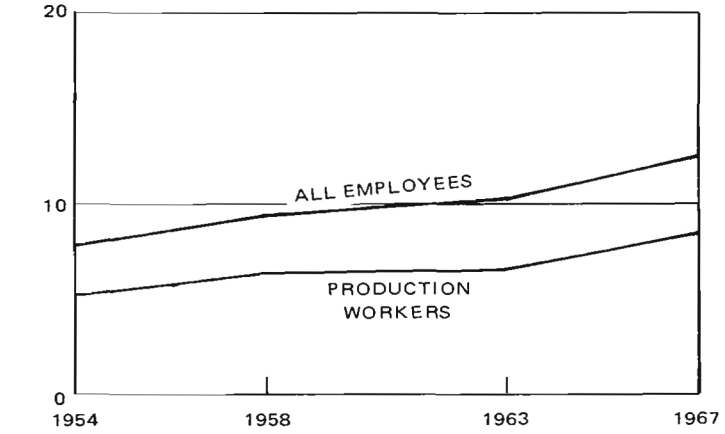
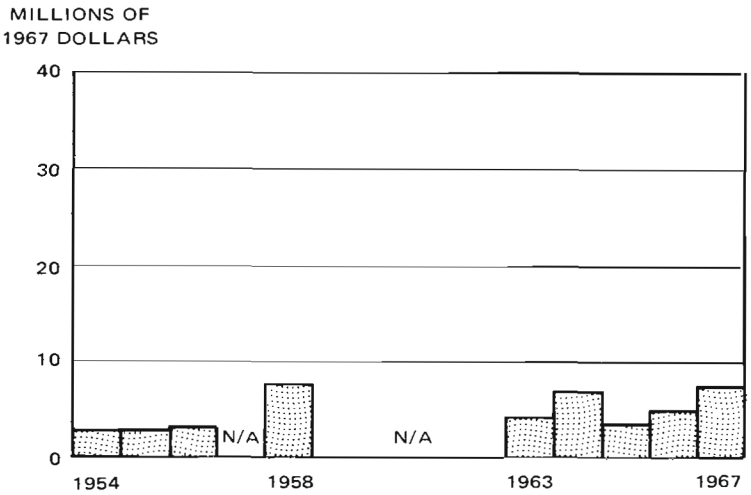


CHART 2
CAPITAL EXPENDITURES (NEW)



GEORGIA MANUFACTURES – PRINTING AND PUBLISHING

INDEXES (1954 = 100)

CHART 3

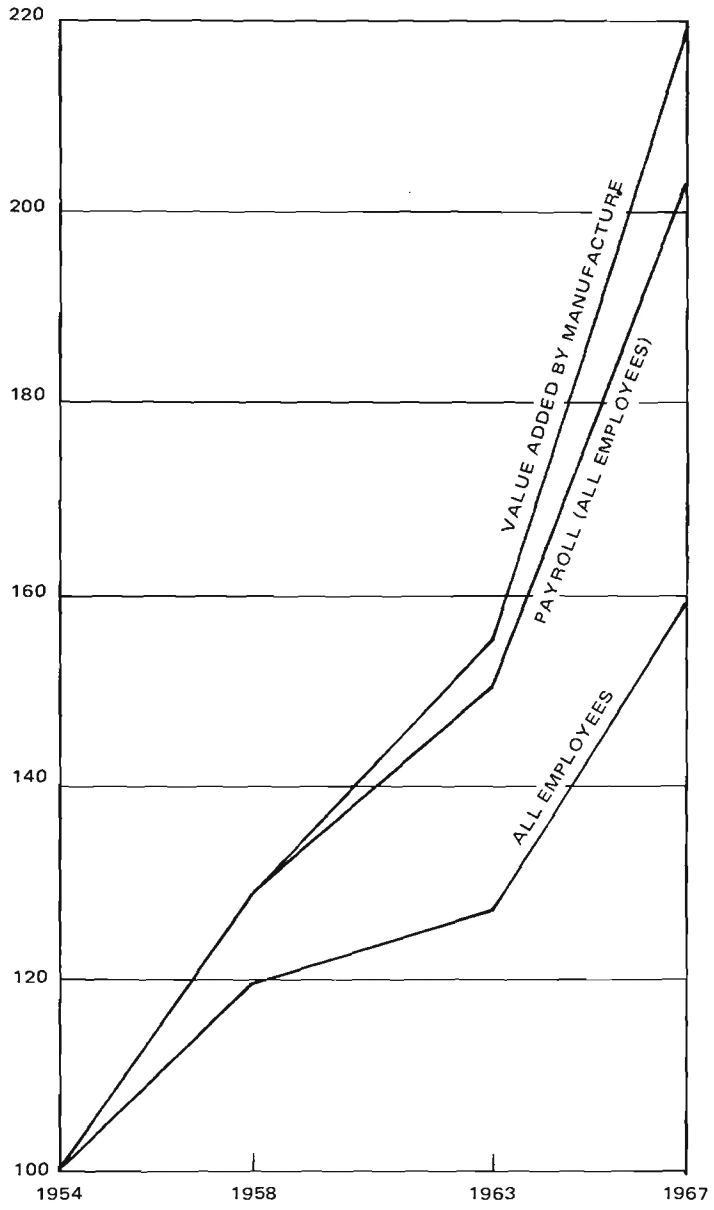
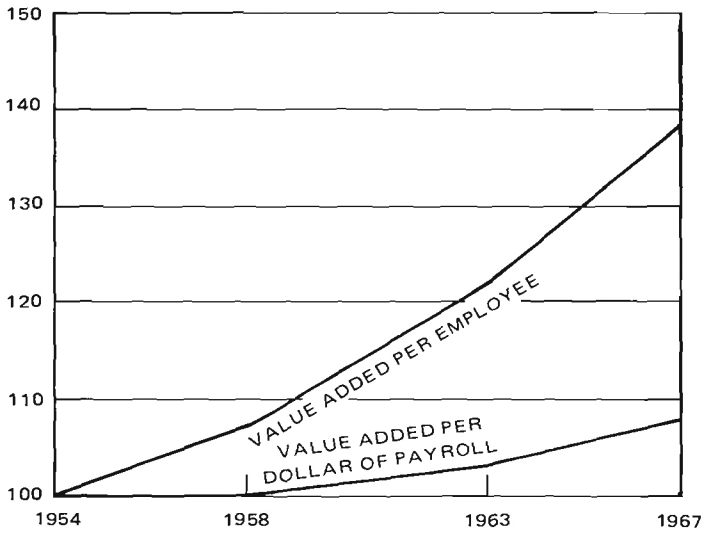


CHART 4



PRINTING AND PUBLISHING

CHART 5
VALUE ADDED PER EMPLOYEE (ALL)

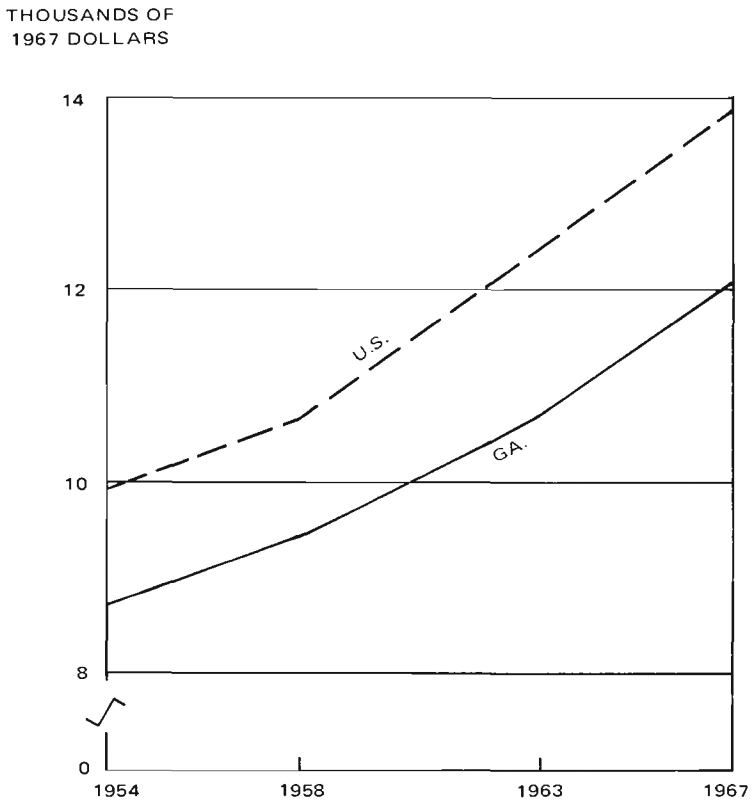
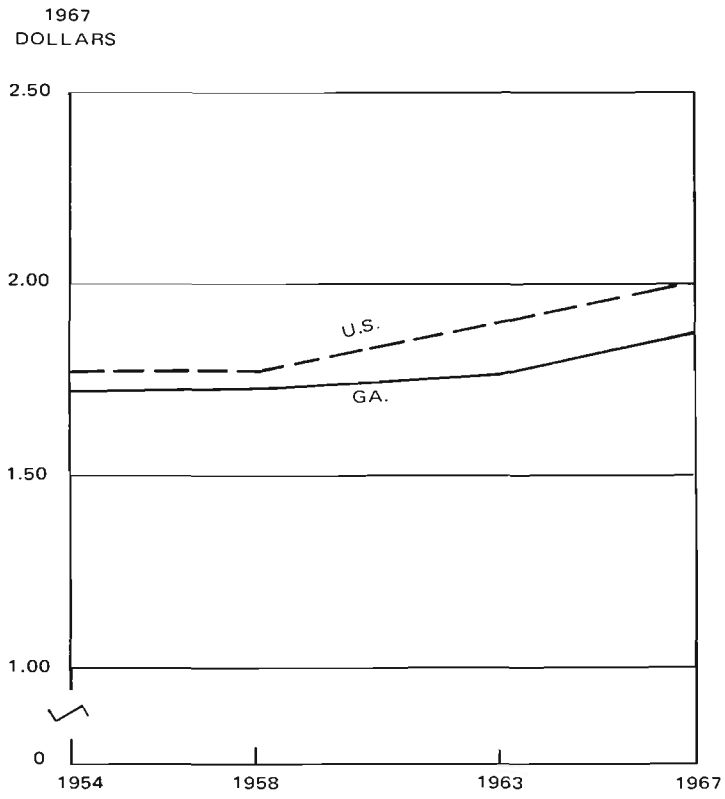


CHART 6
VALUE ADDED PER DOLLAR OF TOTAL PAYROLL



CHEMICALS AND ALLIED PRODUCTS (SIC 28)

Employment in the chemical industry showed only a modest net gain between 1954 and 1967 -- an increase of approximately 15% for both the state and the nation. The growth in value added by manufacture, however, was substantial, with the U. S. figure almost doubling and the Georgia value added more than tripling between 1954 and 1967.

Georgia's share of this industry, however, is limited, accounting for 1.4% of national employment in 1967 (the same as in 1954) and 1.3% of the national value added (up from 0.8% in 1954). The value added per employee in the state was only 60% that of the U. S. in 1954. The spurt in value added in Georgia while employment remained fairly stable, however, increased the value added per employee from $9,782 in 1954 to $26,333 in 1967, bringing the state up to 94% of the 1967 U. S. figure of $27,989.

Payrolls increased at a faster rate than employment, with Georgia showing a 98% gain compared with a 53% rise for the U. S. The payroll increases, however, were considerably below the growth in value added, leading to a sizable gain in the value added per dollar of total payroll. The state outpaced the nation in this measure of productivity, climbing from $2.52 in 1954 to $3.97 in 1967 compared with $2.83 to $3.66 for the U. S. over the same period.

Capital expenditures for new plant and equipment in Georgia during the 14 years from 1954 through 1967 were roughly 1.2% of U. S. expenditures -- not sufficiently great by comparison to explain the state's relative gain in value added by manufacture. A brief examination of more detailed data indicates that although Georgia's chemical industry is small, the major growth in recent years has been in soap, cleaners, and toilet goods, and in industrial chemicals -- products with a high value added per employee.

Opinions vary on whether the U. S. chemical industry can maintain its past growth into the seventies. The enormous outlays on research may lead to new developments with dynamic growth markets (such as occurred with plastics and fibers), but the industry also is faced with heavy expenditures for pollution control. Since the industry already is highly automated, further modernization

to offset these additional costs as well as the increase in wages and other basic production charges may be limited, while at the same time any boost in prices could reduce foreign markets. The lower wage structure in Georgia and the ability to serve southern markets at lower distribution costs could enable the state to increase its share of the industry.

CHEMICALS AND ALLIED PRODUCTS (SIC 28)

	Georgia				United States			
	1954	1958	1963	1967	1954	1958	1963	1967
Total employment (000)	10.1	9.6	10.8	11.7	733.9	698.3	737.4	841.4
Percent of U. S.	1.4	1.4	1.5	1.4				
Non-production workers as percent of total	22.8	30.2	30.6	36.7	32.2	35.1	35.7	35.7
Total value added (000,000)	$98.8	$149.5	$240.2	$308.1	$11,866.8	$14,215.7	$19,168.6	$23,550.1
Percent of U. S.	.8	1.1	1.3	1.3				
Value added per employee	$9,782	$15,573	$22,244	$26,333	$16,170	$20,358	$25,995	$27,989
Percent of U. S	60.5	76.5	85.6	94.1				
Total payroll (000,000)	$39.2	$48.9	$62.7	$77.7	$4,197.4	$4,551.3	$5,417.1	$6,443.0
Percent of U. S.	.9	1.1	1.2	1.2				
Value added per dollar of total payroll	$2.52	$3.06	$3.83	$3.97	$2.83	$3.12	$3.54	$3.66
Percent of U. S.	89.0	98.1	108.2	108.5				

Note: All dollar figures converted to 1967 dollars.

Source: U. S. Censuses of Manufactures.

GEORGIA MANUFACTURES – CHEMICALS AND ALLIED PRODUCTS

CHART 1
EMPLOYMENT

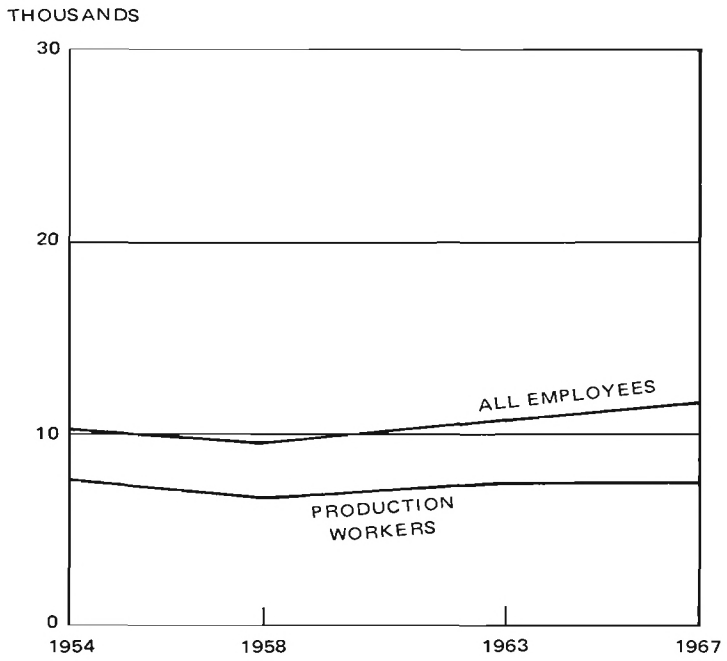
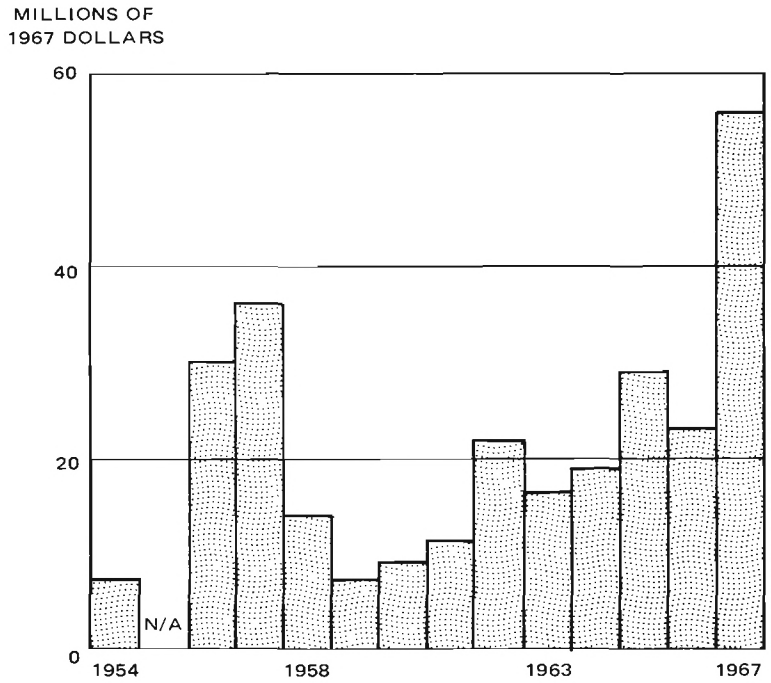


CHART 2
CAPITAL EXPENDITURES (NEW)



GEORGIA MANUFACTURES – CHEMICALS AND ALLIED PRODUCTS

INDEXES (1954 = 100)

CHART 3

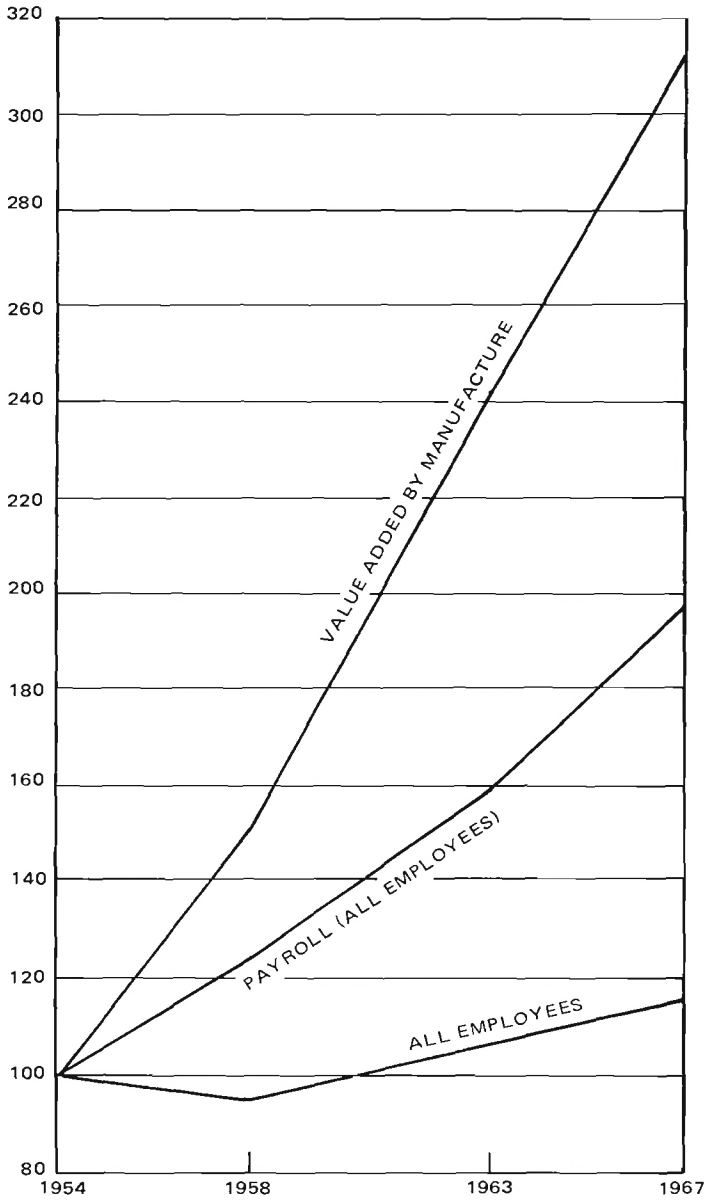
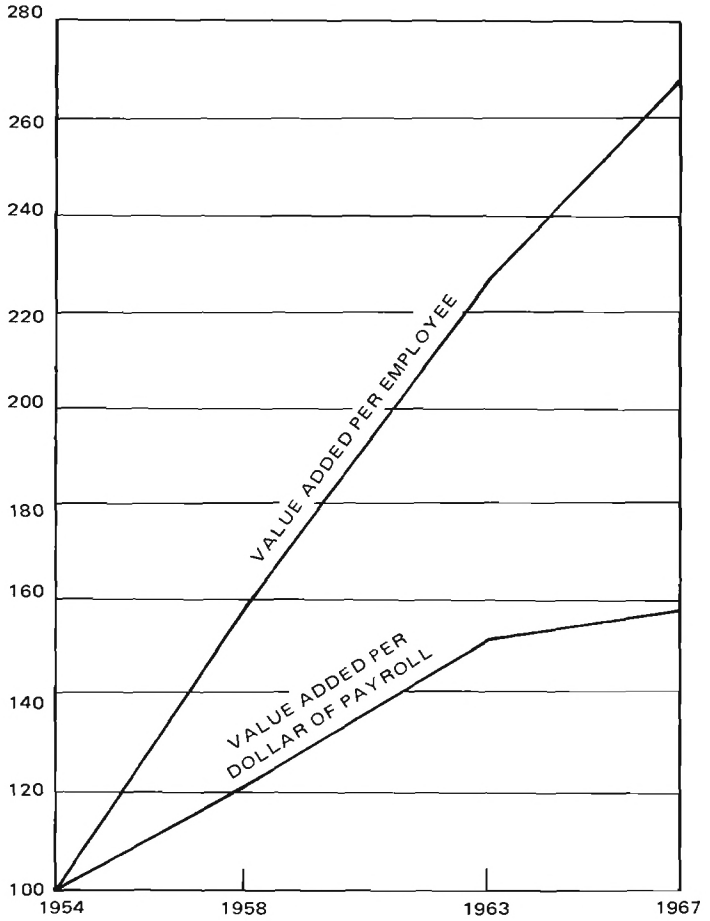


CHART 4



CHEMICALS AND ALLIED PRODUCTS

CHART 5
VALUE ADDED PER EMPLOYEE (ALL)

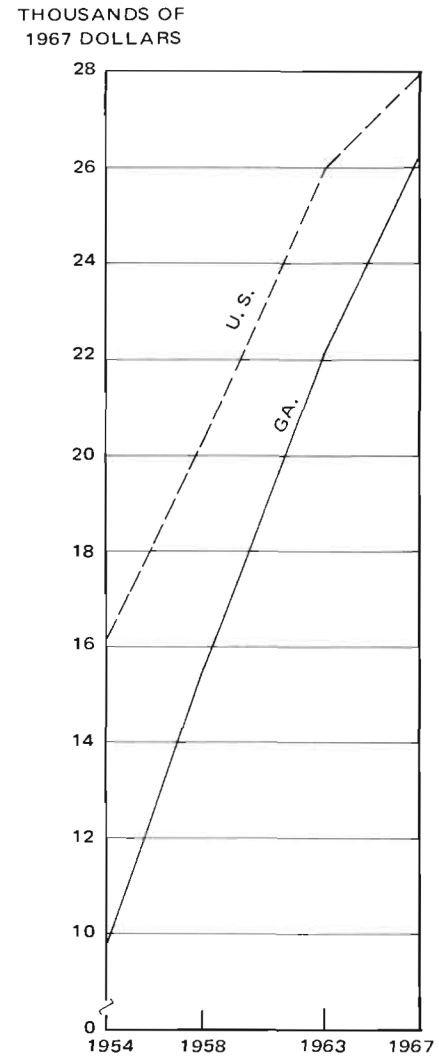
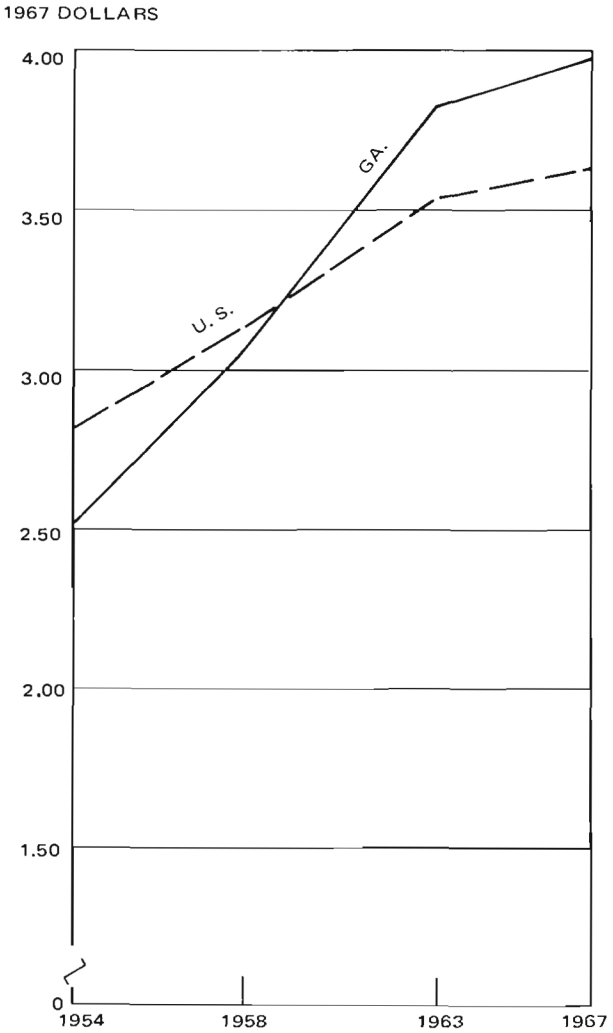


CHART 6
VALUE ADDED PER DOLLAR OF TOTAL PAYROLL



STONE, CLAY, AND GLASS PRODUCTS (SIC 32)

Figures for 1954 have been excluded in the study of this industry because they were not sufficiently comparable with those of later years. From 1958 to 1967, however, Georgia increased its employment by 44% compared with a national growth of only 7%. As a result the state's proportion of U. S. employment rose from 1.7% in 1958 to 2.3% in 1967.

Value added by manufacture increased by 90% in the state compared with a national gain of 30%, but even with this growth the value added in Georgia represented only 1.9% of that of the nation in 1967 -- compared with 2.3% of employees. Thus, although the value added per employee in Georgia increased from $8,677 to $11,478 over the period, the 1967 figure was only 81.2% of the comparable value added per employee of $14,127 for the U. S.

Payrolls grew at a similar rate to the value added by manufacture in both the state and the nation. The lower wage scales in Georgia gave the state a slight advantage over the U. S. in value added per dollar of payroll, but the net increase in this measure of production between 1958 and 1967 was in each case less than 2%.

Expansion of this industry in Georgia has been chiefly in concrete products, and this trend is likely to continue. Concrete precast units for various building purposes could develop into a significant part of the construction industry market.

STONE, CLAY, AND GLASS PRODUCTS (SIC 32)

	Georgia				United States			
	1954*	1958	1963	1967	1954*	1958	1963	1967
Total employment (000)		9.6	12.1	13.8		552.5	573.9	589.9
Percent of U. S.		1.7	2.1	2.3				
Non-production workers as percent of total		16.7	18.2	20.3		19.5	20.6	20.4
Total value added (000,000)		$83.3	$128.0	$158.4		$6,391.1	$7,677.7	$8,333.4
Percent of U. S.		1.3	1.7	1.9				
Value added per employee		$8,677	$10,575	$11,478		$11,568	$13,378	$14,127
Percent of U. S.		75.0	79.0	81.2				
Total payroll (000,000)		$38.7	$55.6	$72.4		$2,987.3	$3,501.6	$3,825.5
Percent of U. S.		1.3	1.6	1.9				
Value added per dollar of total payroll		$2.15	$2.30	$2.19		$2.14	$2.19	$2.18
Percent of U. S.		100.5	105.0	100.5				

Note: All dollar figures converted to 1967 dollars.

* Data not available or not comparable.

Source: U. S. Censuses of Manufactures.

GEORGIA MANUFACTURES – STONE, CLAY, AND GLASS PRODUCTS

CHART 1
EMPLOYMENT

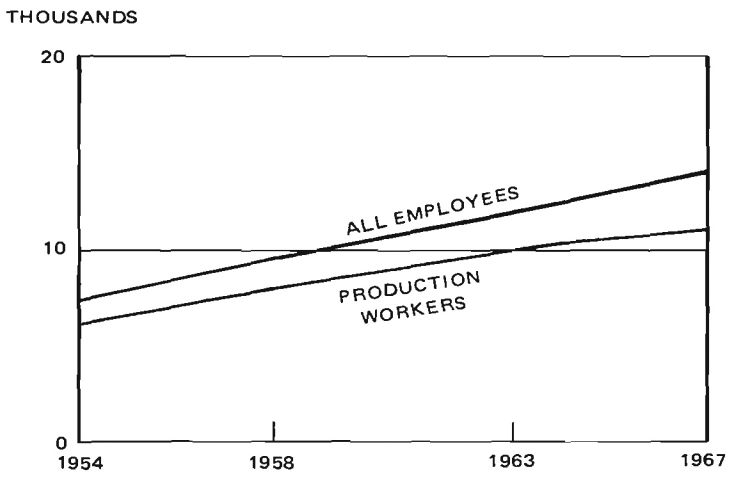
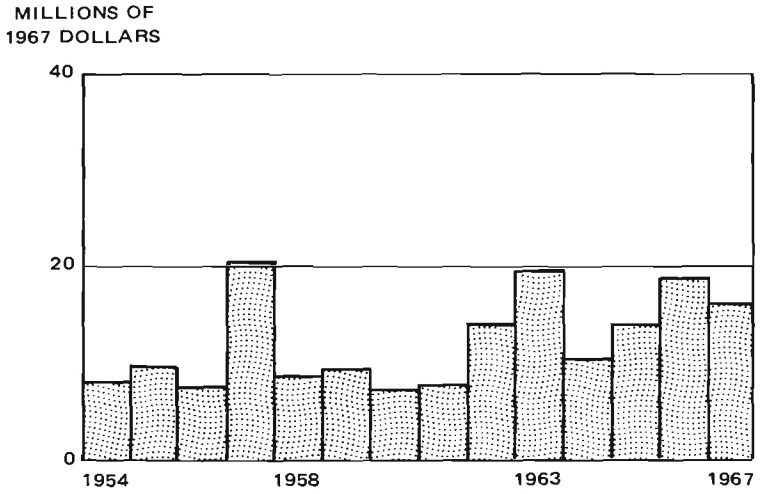


CHART 2
CAPITAL EXPENDITURES (NEW)



GEORGIA MANUFACTURES – STONE, CLAY, AND GLASS PRODUCTS

INDEXES (1958 = 100)

CHART 3

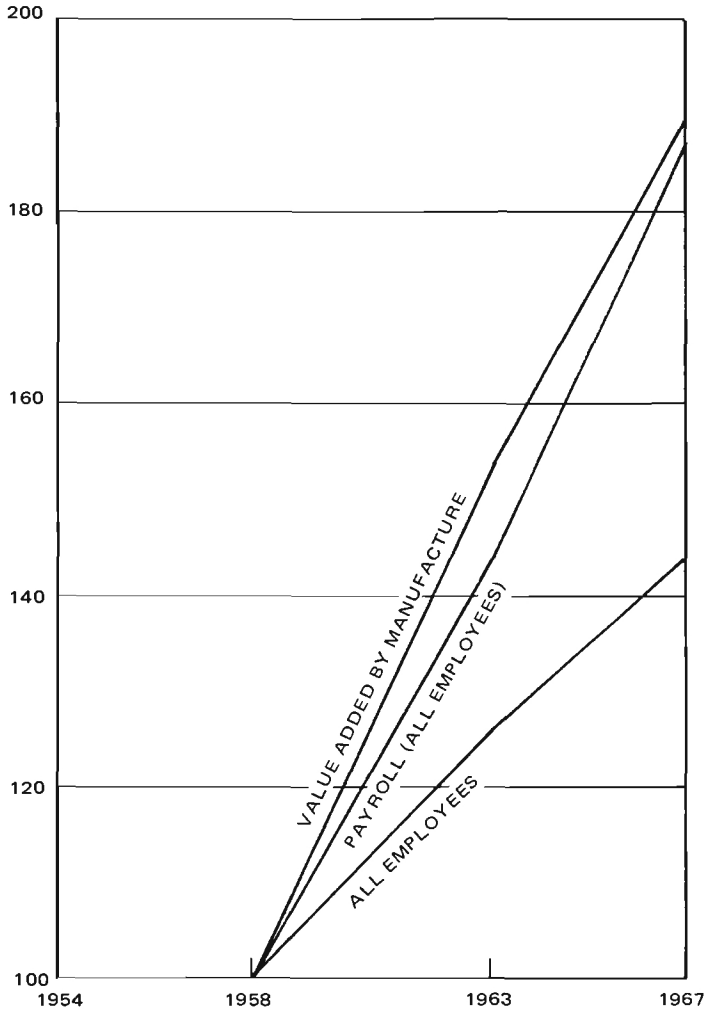
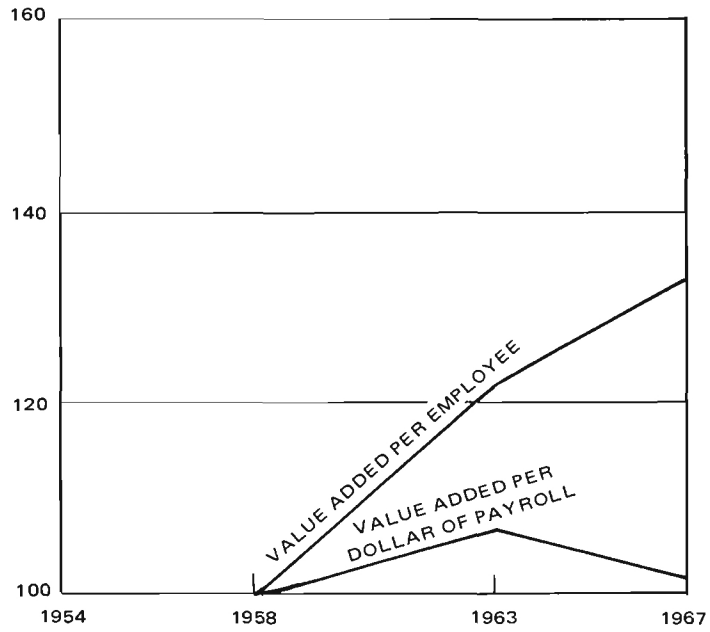


CHART 4



STONE, CLAY AND GLASS PRODUCTS

CHART 5
VALUE ADDED PER EMPLOYEE (ALL)

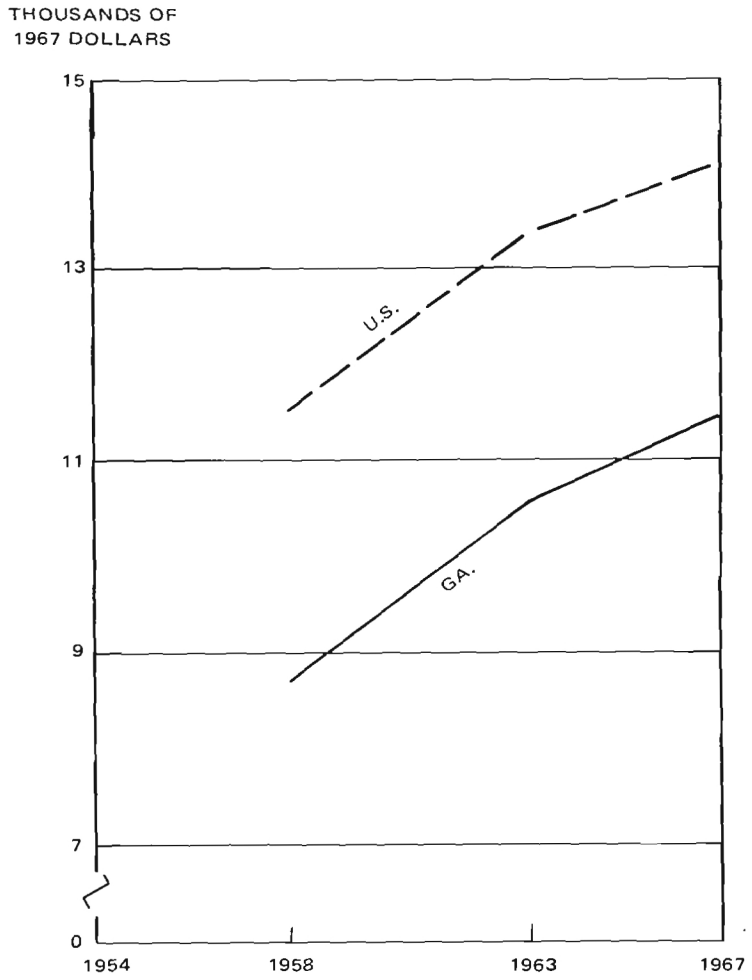
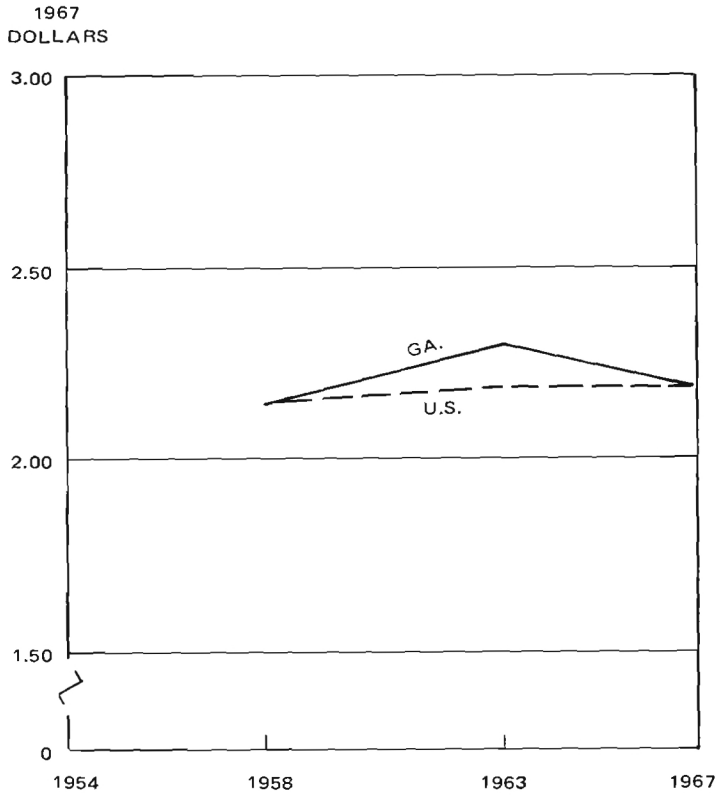


CHART 6
VALUE ADDED PER DOLLAR OF TOTAL PAYROLL



PRIMARY METAL INDUSTRIES (SIC 33)

Employment in this industry represented only 1.3% of Georgia's total manufacturing workers in 1967 and only 0.4% of primary metal employees in the U. S. This latter figure, however, had climbed from 0.2% in 1954. Value added by manufacture was also 0.4% of the U. S. in 1967, but this proportion had risen from 0.1% in 1954. The value added per employee, therefore, showed a substantial gain, rising from 62.8% of the U. S. figure in 1954 to 85.4% in 1967.

Payrolls in both the state and the nation grew faster than the number of employees, but not as fast as value added by manufacture. Value added per dollar of payroll increased by 63% in Georgia, from $1.34 in 1954 to $2.18 in 1967, compared with an 8% increase in the U. S. over the same period, from $1.88 to $2.03.

Georgia's basic figures in this industry are comparatively small, however, so that the opening or closing of one sizable company could influence the data to a considerable degree. The possibilities of steel manufacturing in the state (using scrap or imported ore) have been studied, and if a major mill were established, it could have considerable impact on related industries. The extraction of alumina from Georgia's kaolin clay also has been discussed, but world supplies of bauxite appear plentiful, and as long as the use of bauxite for alumina production is more economic, the possibilities for kaolin processing are remote.

PRIMARY METAL INDUSTRIES (SIC 33)

	Georgia				United States			
	1954	1958	1963	1967	1954	1958	1963	1967
Total employment (000)	2.7	3.3	3.5	5.7	1,152.2	1,091.9	1,126.5	1,281.0
Percent of U. S.	.2	.3	.3	.4				
Non-production workers as percent of total	18.5	21.2	20.0	21.0	16.0	19.1	18.1	18.7
Total value added (000,000)	$18.1	$18.7	$39.2	$75.7	$12,304.6	$13,331.2	$16,424.1	$19,978.2
Percent of U. S.	.1	.1	.2	.4				
Value added per employee	$6,704	$5,667	$11,212	$13,281	$10,679	$12,209	$14,580	$15,596
Percent of U. S.	62.8	46.4	76.9	85.2				
Total payroll (000,000)	$13.5	$15.9	$19.8	$34.7	$6,538.3	$7,254.0	$8,430.2	$9,850.9
Percent of U. S.	.2	.2	.2	.4				
Value added per dollar of total payroll	$1.34	$1.17	$1.98	$2.18	$1.88	$1.84	$1.95	$2.03
Percent of U. S.	71.3	63.6	101.5	107.4				

Note: All dollar figures converted to 1967 dollars.

Source: U. S. Censuses of Manufactures.

GEORGIA MANUFACTURES – PRIMARY METAL INDUSTRIES

CHART 1
EMPLOYMENT

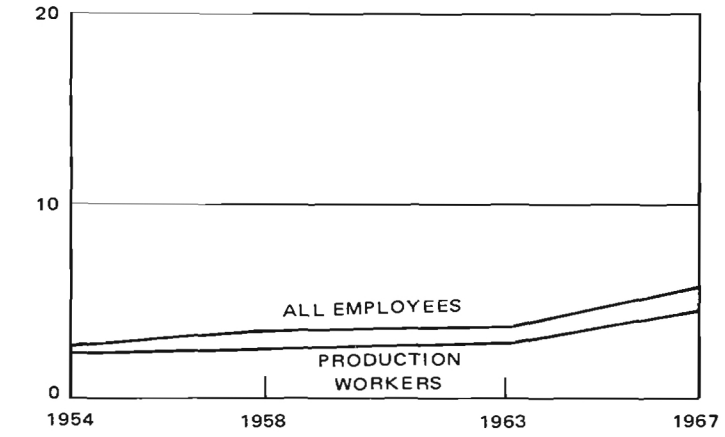
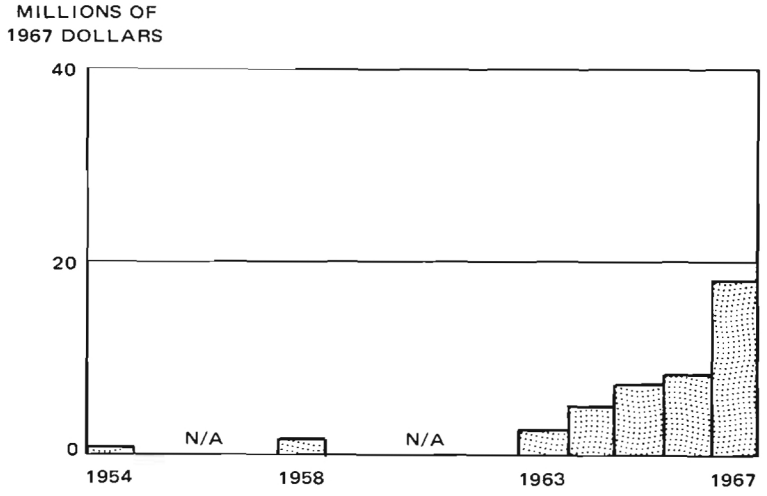


CHART 2
CAPITAL EXPENDITURES (NEW)



GEORGIA MANUFACTURES – PRIMARY METAL INDUSTRIES

INDEXES (1954 = 100)

CHART 3

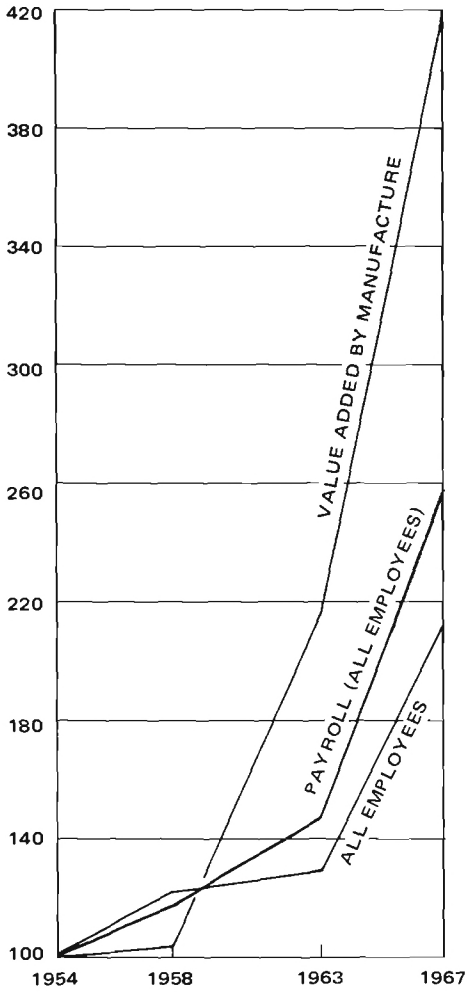
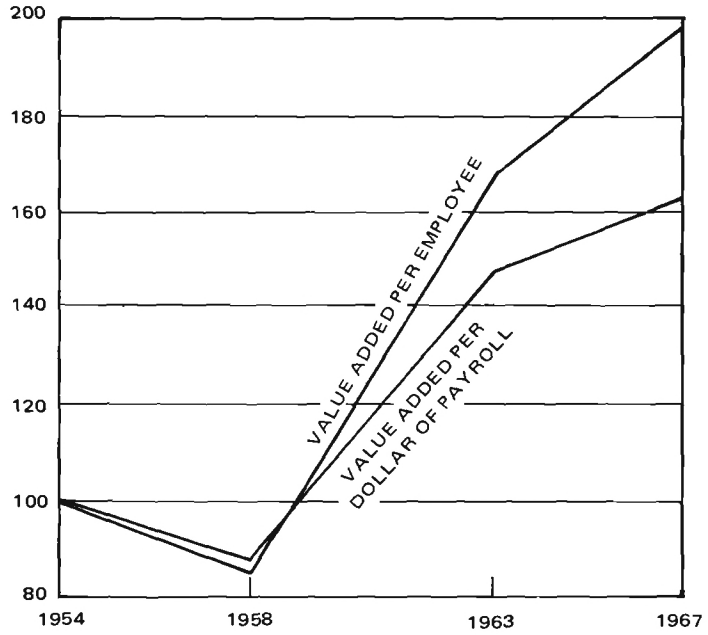


CHART 4



PRIMARY METAL INDUSTRIES

CHART 5
VALUE ADDED PER EMPLOYEE (ALL)

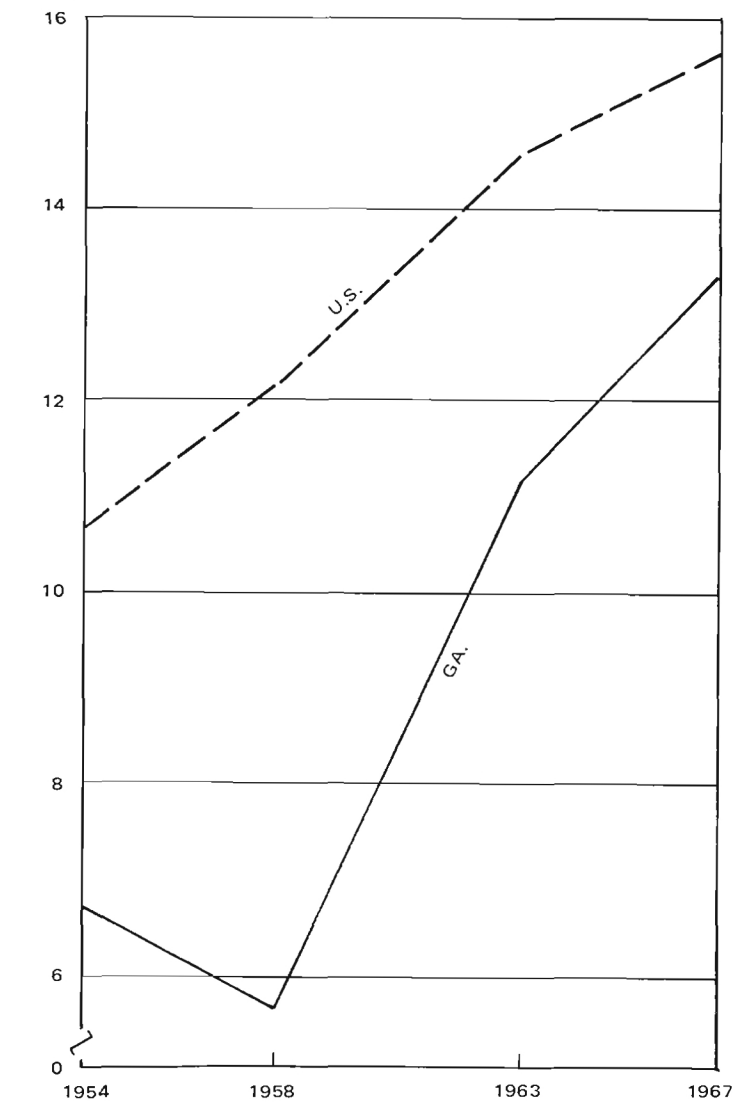
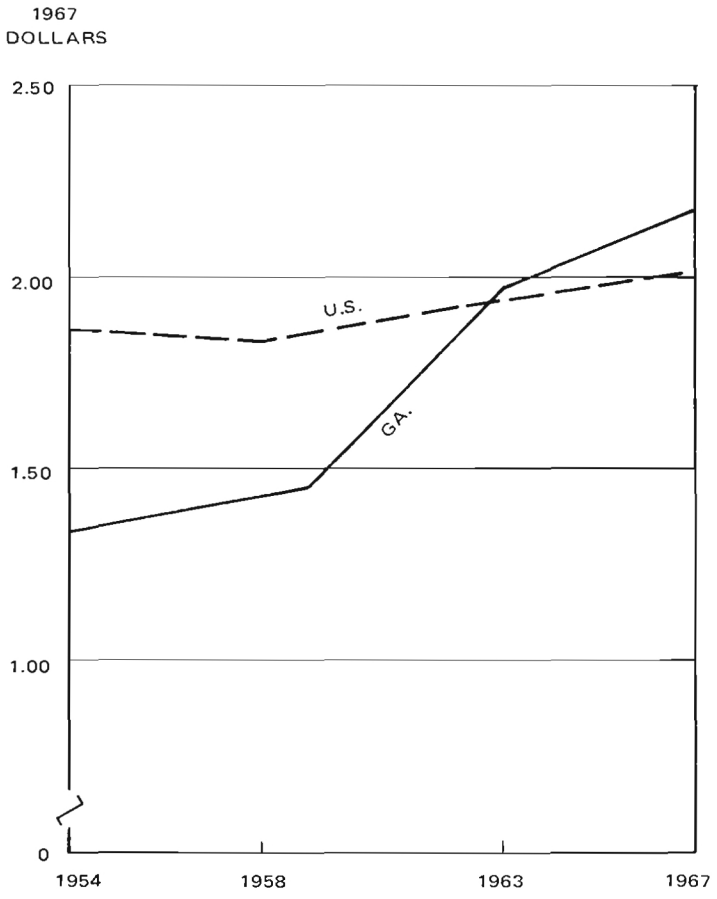


CHART 6
VALUE ADDED PER DOLLAR OF TOTAL PAYROLL



FABRICATED METAL PRODUCTS (SIC 34)

Employment in fabricated metal products in Georgia increased by 153% between 1954 and 1967 compared with a 32% gain for the U. S. The state's representation in this industry was still low, with 1.1% of the nation's employees compared to just under 2.3% of population. Georgia's value added by manufacture jumped by 279% over the same period, whereas the U. S. gain was 81%. Although this caused the state's percentage of the national value added to double, from 0.4% to 0.8%, it was well below the proportion of employees. As a result, Georgia's value added per employee, which climbed from $6,965 to $10,458, was only 77.8% of the U. S. per employee figure in 1967.

Total payrolls in Georgia rose 261% between 1954 and 1967 -- almost as rapidly as total value added by manufacture -- so the value added per dollar of payroll showed only a modest increase of 5% over the period. Wages remained below the level of the U. S. average, however, and the value added per dollar of payroll was thus far more competitive with that of the U. S. than the value added per employee.

Capital expenditure for new plant and equipment in the state during the 1954-1967 period was roughly 1% of that of the U. S. -- higher than the 1967 proportions of value added or payrolls -- so Georgia can be expected to continue to expand its share of national output. The industry is becoming increasingly automated, but the wide diversity of products and the overall increase in demand should continue to raise employment levels.

FABRICATED METAL PRODUCTS (SIC 34)

	Georgia				United States			
	1954	1958	1963	1967	1954	1958	1963	1967
Total employment (000)	5.7	7.0	10.8	14.4	1,019.4	1,060.5	1,082.1	1,341.8
Percent of U. S.	.6	.7	1.0	1.1				
Non-production workers as percent of total	19.3	21.4	16.7	19.4	19.4	23.2	22.0	21.2
Total value added (000,000)	$39.7	$56.5	$114.1	$150.6	$9,970.2	$10,903.0	$13,833.3	$18,042.6
Percent of U. S.	.4	.5	.8	.8				
Value added per employee	$6,965	$8,071	$10,566	$10,458	$9,780	$10,281	$12,784	$13,447
Percent of U. S.	71.0	78.5	82.7	77.8				
Total payroll (000,000)	$22.5	$32.9	$56.1	$81.3	$5,465.8	$6,266.2	$6,962.4	$9,319.5
Percent of U. S.	.4	.5	.8	.9				
Value added per dollar of total payroll	$1.76	$1.72	$2.03	$1.85	$1.82	$1.74	$1.99	$1.94
Percent of U. S.	96.7	98.9	102.0	95.4				

Note: All dollar figures converted to 1967 dollars.

Source: U. S. Censuses of Manufactures.

GEORGIA MANUFACTURES – FABRICATED METAL PRODUCTS

CHART 1
EMPLOYMENT

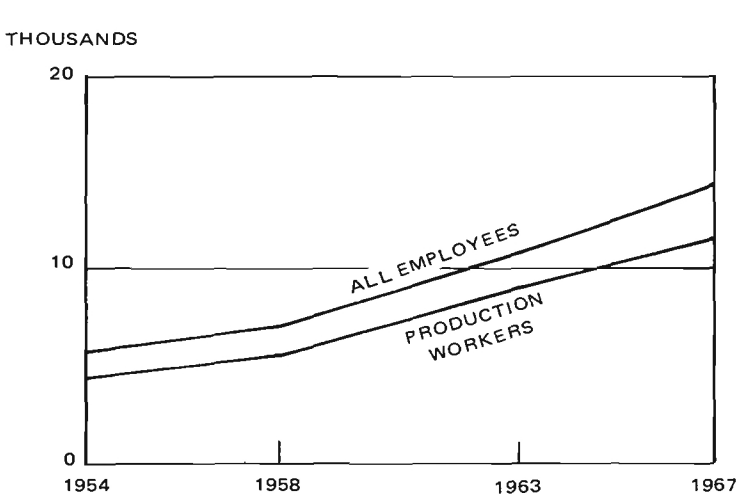
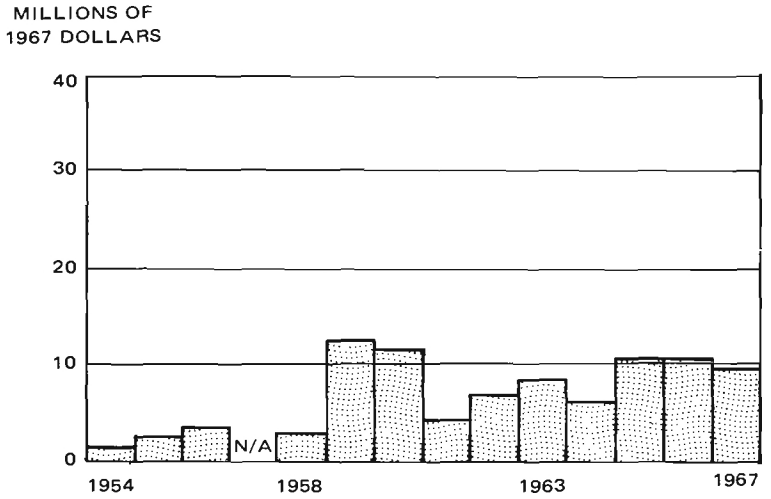


CHART 2
CAPITAL EXPENDITURES (NEW)



GEORGIA MANUFACTURES – FABRICATED METAL PRODUCTS

INDEXES (1954 = 100)

CHART 3

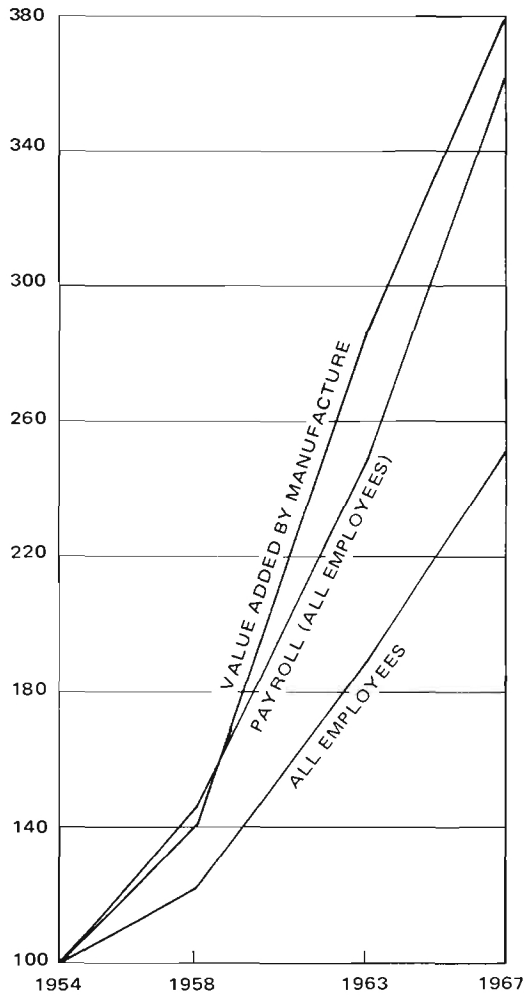
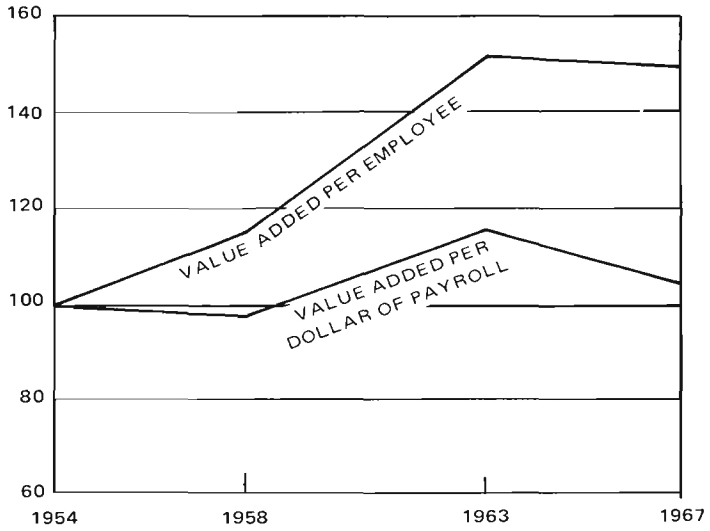


CHART 4



FABRICATED METAL PRODUCTS

CHART 5
VALUE ADDED PER EMPLOYEE (ALL)

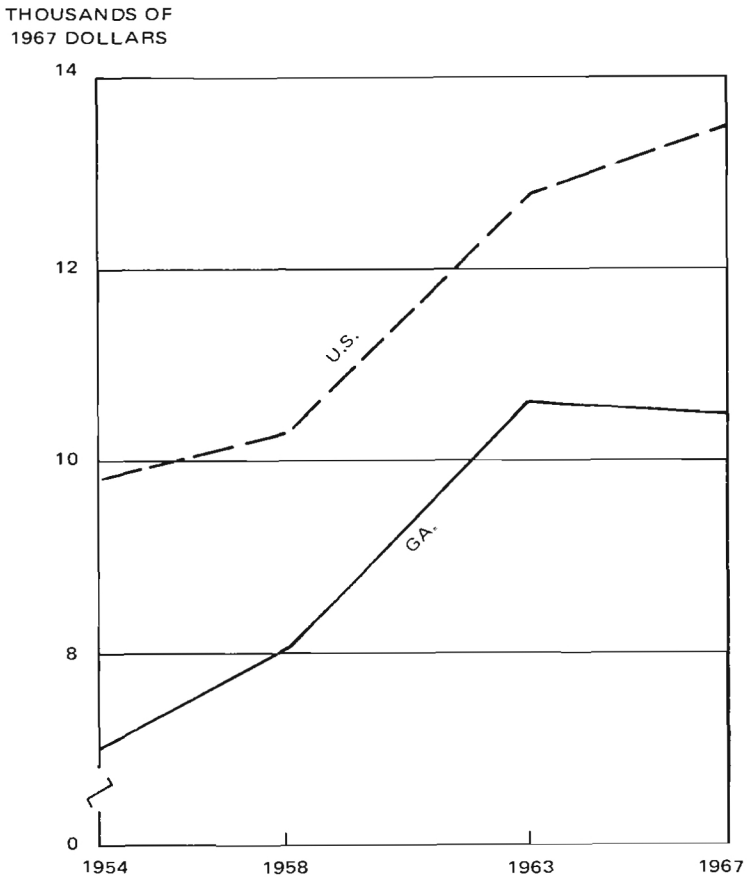
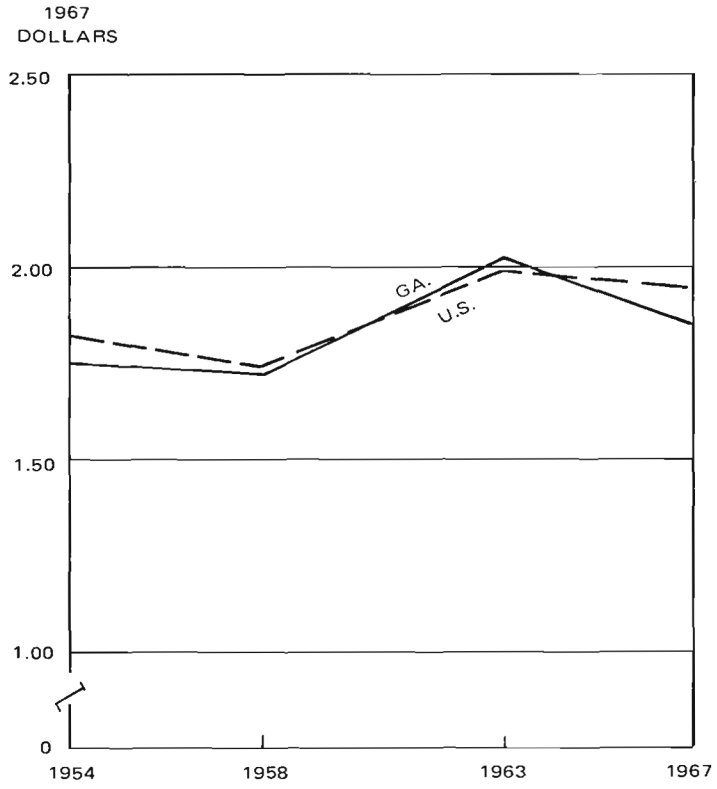


CHART 6
VALUE ADDED PER DOLLAR OF TOTAL PAYROLL



MACHINERY, EXCEPT ELECTRICAL (SIC 35)

Only 2.7% of Georgia's manufacturing employees worked in this industry in 1967, and they accounted for only 0.6% of national employment. The actual number of employees increased by 3,500 between 1958 and 1967 -- a gain of 44%. This increase was somewhat greater than that of the U. S., the rounded off figures concealing the fact that the 1958 proportion of the U. S. was slightly below 0.6% and that of 1967 slightly above 0.6%.

The same situation, in reverse, obtains in the total value added data, where the increasing value added for Georgia appeared to parallel the U. S. growth but actually declined slightly as a proportion of the national figures. These variances are sufficient to cause the value added per employee to show a decrease as a percentage of the U. S.

Total payrolls in Georgia increased fractionally in their relation to the U. S. figures, and the value added per dollar of payroll, while rising by one cent between 1958 and 1967, declined as a percent of the U. S. average.

There seems little immediate possibility that Georgia will increase its proportion of this industry to any appreciable degree. The complex machinery and tools manufactured for use in other industries are more and more the product of highly skilled engineers, technicians, and programmers working both in research and development and in the control of highly automated production lines. Capital expenditure for new plant and equipment in Georgia has been roughly 0.4% of national figures in recent years -- giving no indication of any gain in the state's proportion of the industry.

MACHINERY, EXCEPT ELECTRICAL (SIC 35)

	Georgia				United States			
	1954*	1958	1963	1967	1954*	1958	1963	1967
Total employment (000)		8.0	8.9	11.5		1,350.3	1,459.4	1,864.5
Percent of U. S.		.6	.6	.6				
Non-production workers as percent of total		26.3	23.6	21.7		29.6	28.4	27.6
Total value added (000,000)		$77.4	$93.8	$135.4		$14,338.3	$19,070.0	$27,836.4
Percent of U. S.		.5	.5	.5				
Value added per employee		$9,675	$10,545	$11,774		$10,619	$13,067	$14,930
Percent of U. S.		91.1	80.7	78.9				
Total payroll (000,000)		$39.7	$49.8	$69.1		$8,448.0	$10,432.4	$14,226.3
Percent of U. S.		.5	.5	.5				
Value added per dollar of total payroll		$1.95	$1.88	$1.96		$1.70	$1.83	$1.96
Percent of U. S.		114.7	102.7	100.0				

Note: All dollar figures converted to 1967 dollars.

* Data not available or not comparable.

Source: U. S. Censuses of Manufactures.

GEORGIA MANUFACTURES – MACHINERY, EXCEPT ELECTRICAL

CHART 1
EMPLOYMENT

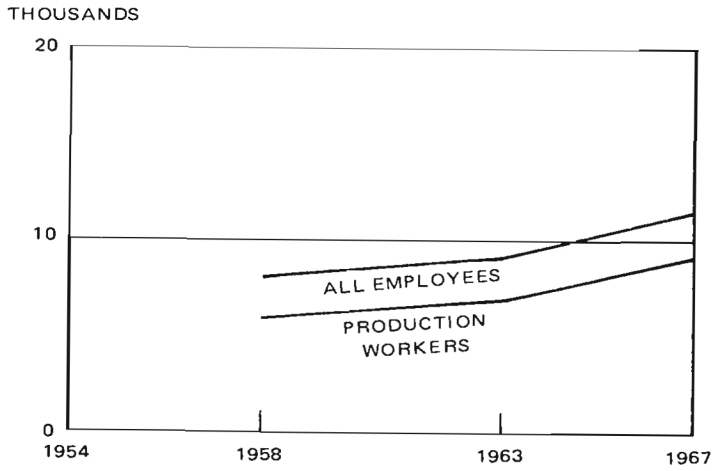
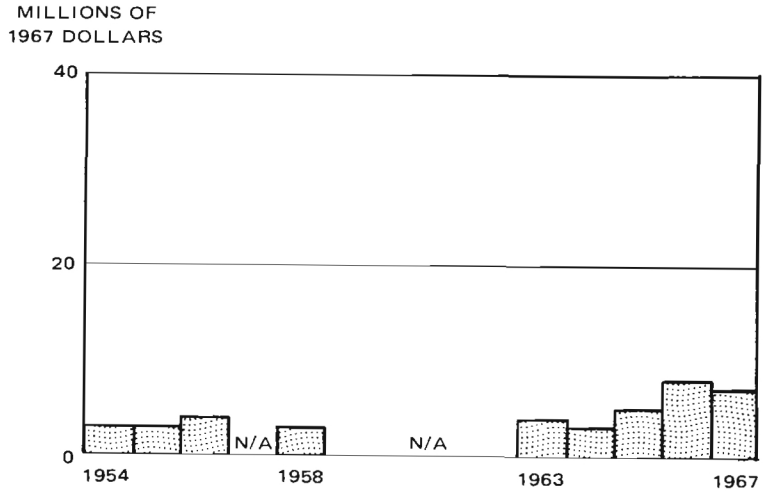


CHART 2
CAPITAL EXPENDITURES (NEW)



GEORGIA MANUFACTURES – MACHINERY, EXCEPT ELECTRICAL

INDEXES (1958 = 100)

CHART 3

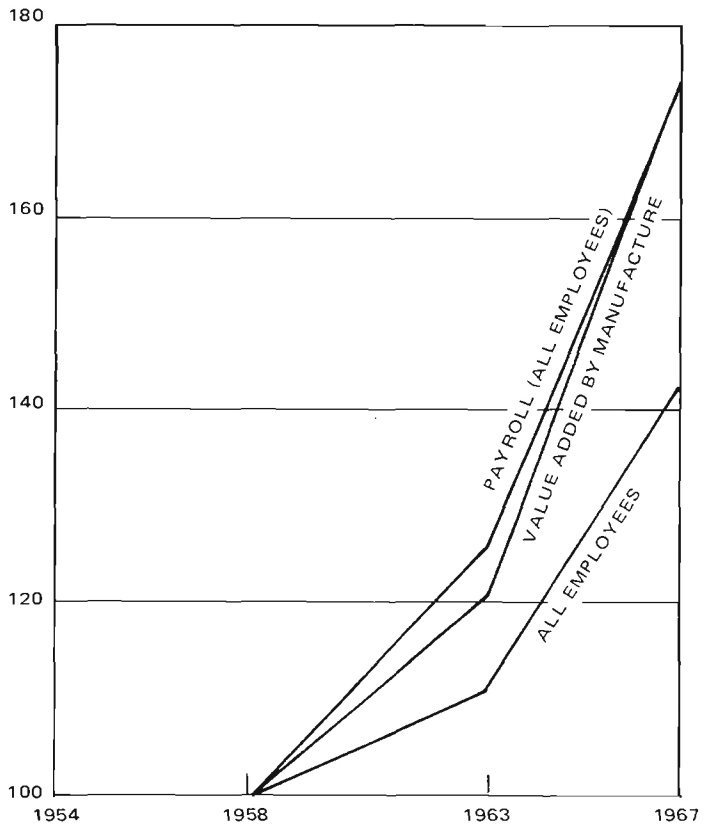
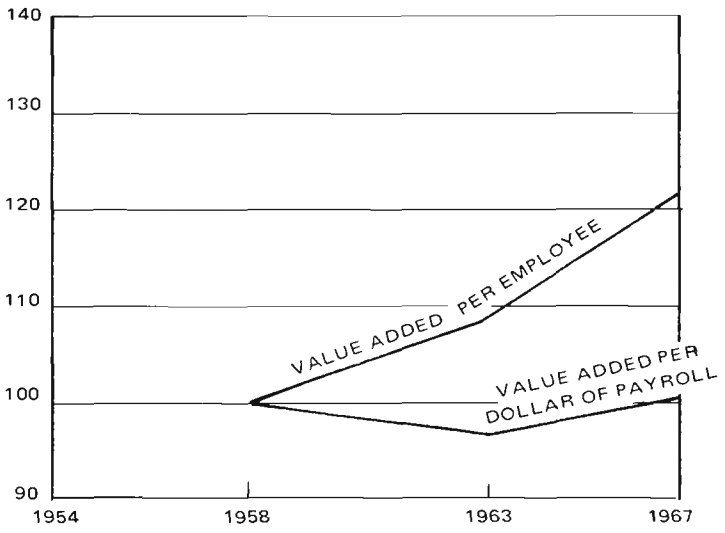


CHART 4



MACHINERY, EXCEPT ELECTRICAL

CHART 5
VALUE ADDED PER EMPLOYEE (ALL)

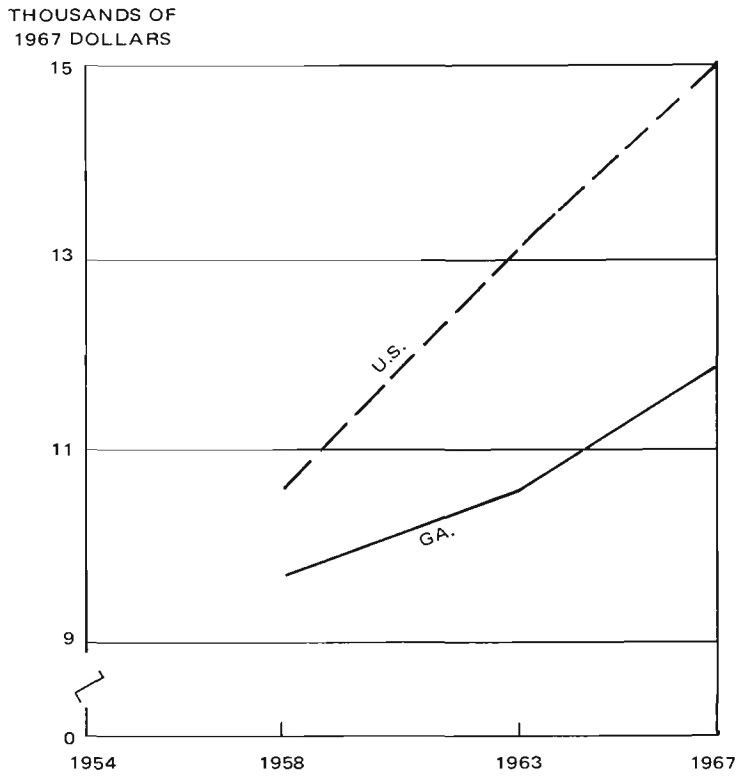
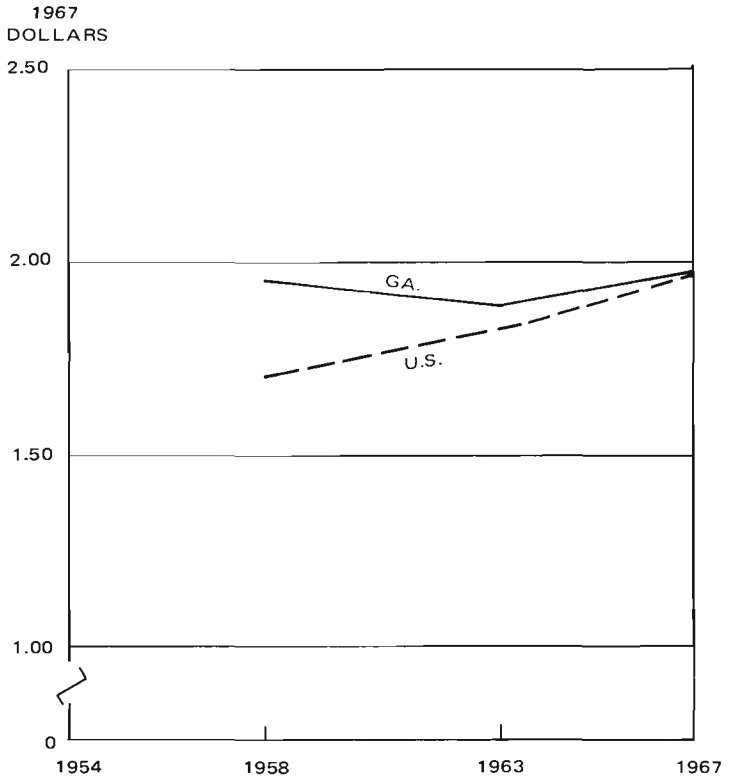


CHART 6
VALUE ADDED PER DOLLAR OF TOTAL PAYROLL



ELECTRICAL EQUIPMENT AND SUPPLIES (SIC 36)

Although the number of employees in the electrical equipment and supplies industry in Georgia increased by 126% between 1958 and 1967, the 1967 figure of 8,600 still represented only 2.0% of the state's total manufacturing employment and less than 0.5% of the national employment for this industry. Output, as measured by total value added by manufacture, increased by 163% in Georgia over the same period, compared with a 100% increase for the U. S. Value added per employee for the state was consistently higher than the national averages for each of the three censuses.

Total payrolls also increased faster in the state than in the nation, but the average pay scale remained below the U. S., with the total payroll in Georgia in 1967 only 0.4% of the U. S. figure compared with 0.5% of national employment. As a result, Georgia's value added per dollar of payroll was well above the U. S. average.

Georgia's strong performance in this industry, in which it has such a comparatively small share, is due to the concentration of work in electric transmission and distribution equipment (SIC 361). In 1967 over two-thirds of the state's electrical equipment workers were in this subsection of the industry, which has a value added by manufacture above the average for the industry as a whole. These workers accounted for 3.3% of the U. S. total employees in SIC 361. In addition, capital expenditure for new plant and equipment in this section of the industry in Georgia increased each year from 1963, and in 1967 it totaled $8.9 million, accounting for over 6% of comparable national expenditure.

The strength of this part of the industry may well lead to expansion in related fields and enable Georgia to increase its share of electrical machinery and equipment production.

ELECTRICAL EQUIPMENT AND SUPPLIES (SIC 36)

	Georgia				United States			
	1954*	1958	1963	1967	1954	1958	1963	1967
Total employment (000)		3.8	5.4	8.6	959.1	1,140.8	1,511.8	1,874.9
Percent of U. S.		.3	.4	.5				
Non-production workers as percent of total		23.7	27.8	26.7	24.7	27.9	30.6	29.4
Total value added (000,000)		$47.7	$79.9	$125.5	*	$12,271.1	$18,541.4	$24,487.3
Percent of U. S.		.4	.4	.5				
Value added per employee		$12,553	$14,796	$14,593	*	$10,757	$12,264	$13,056
Percent of U. S.		116.7	120.6	111.8				
Total payroll (000,000)		$21.4	$32.0	$52.8	$4,911.1	$6,647.3	$10,119.9	$12,968.0
Percent of U. S.		.3	.3	.4				
Value added per dollar of total payroll		$2.23	$2.50	$2.38	*	$1.85	$1.83	$1.89
Percent of U. S.		120.5	136.6	125.9				

Note: All dollar figures converted to 1967 dollars.

* Data not available or not comparable.

Source: U. S. Censuses of Manufactures.

GEORGIA MANUFACTURES – ELECTRICAL EQUIPMENT AND SUPPLIES

CHART 1
EMPLOYMENT

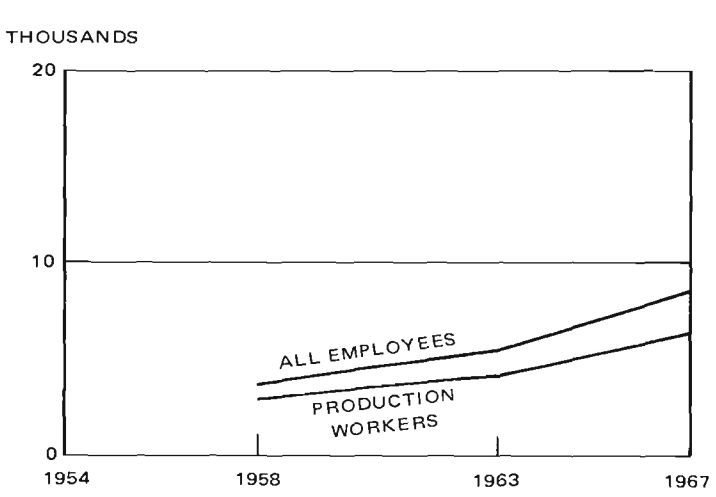
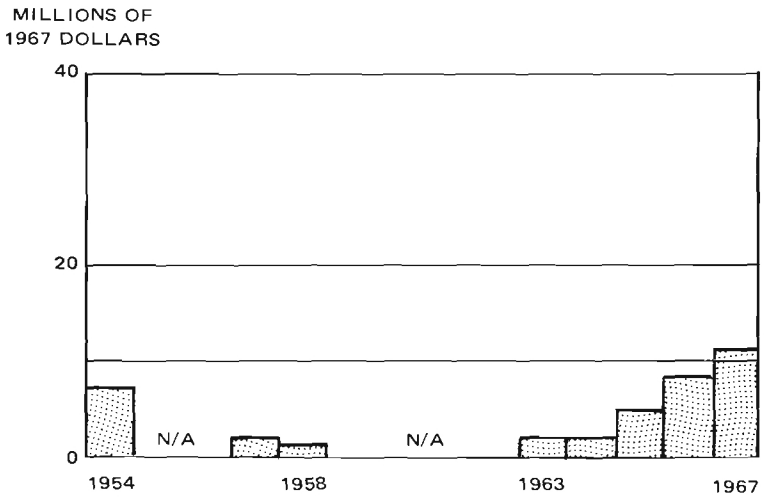


CHART 2
CAPITAL EXPENDITURES (NEW)



GEORGIA MANUFACTURES – ELECTRICAL EQUIPMENT AND SUPPLIES

INDEXES (1958 = 100)

CHART 3

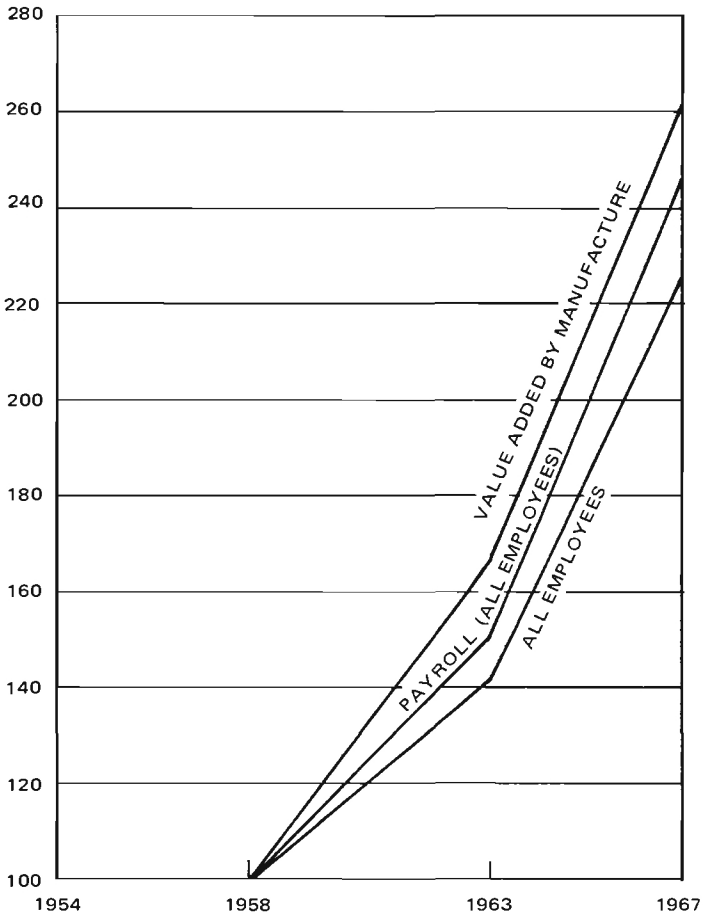
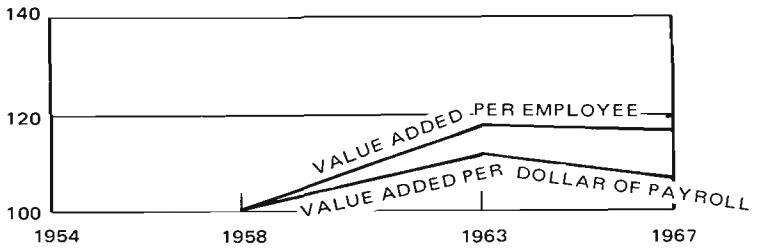


CHART 4



ELECTRICAL EQUIPMENT AND SUPPLIES

CHART 5
VALUE ADDED PER EMPLOYEE (ALL)

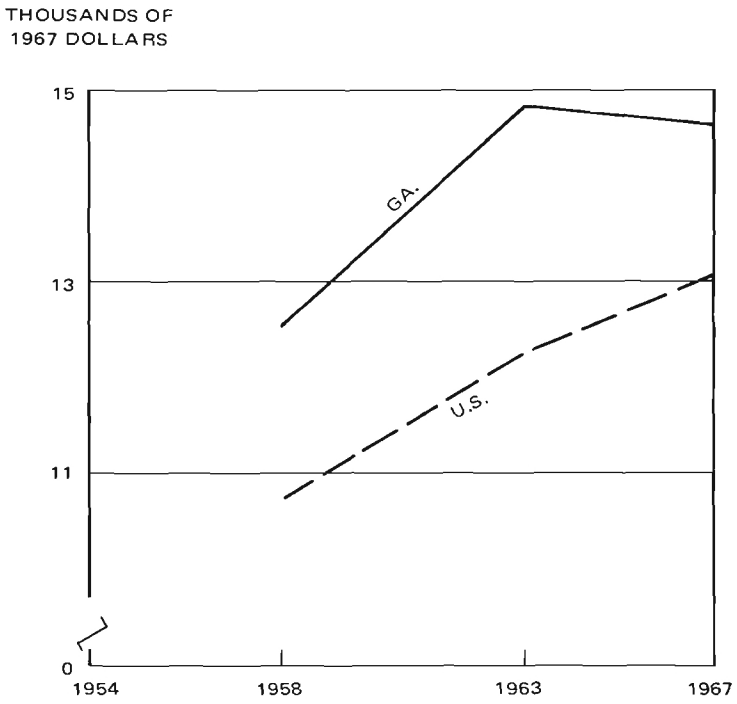
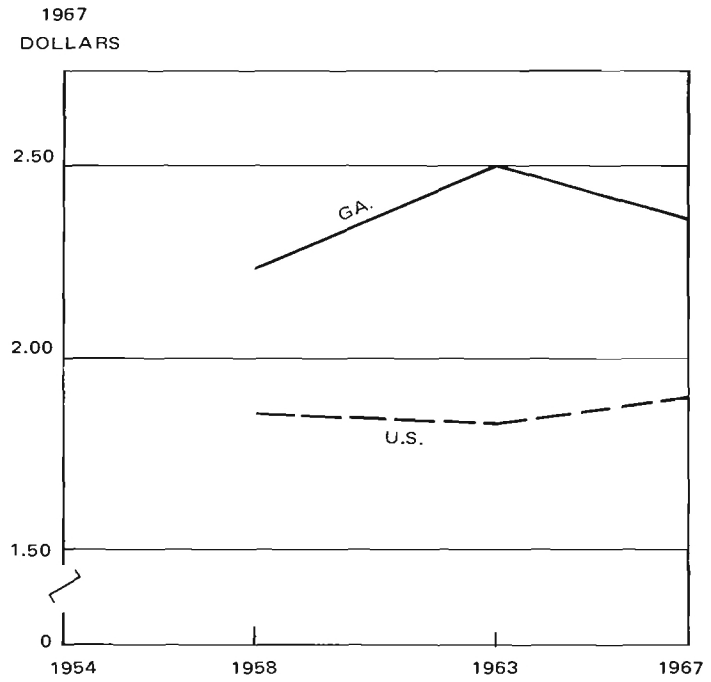


CHART 6
VALUE ADDED PER DOLLAR OF TOTAL PAYROLL



TRANSPORTATION EQUIPMENT (SIC 37)

Transportation equipment is the fourth largest manufacturing industry in Georgia, measured by employment size, and ranks second in value added by manufacture. Employment increased by 93% between 1954 and 1967, from 22,700 to 43,900 workers, and the state's proportion of national employment rose from 1.3% to 2.4% during this same period.

Total value added by manufacture increased 188% in Georgia compared with an increase of 69% nationwide. The national gain, however, was achieved with an employment increase of less than 8%. As a result, although Georgia's value added per employee rose from $11,352 in 1954 to $16,897 in 1967, the state figures dropped from 116% to 110% of the relative U. S. data.

The value added per employee for Georgia, however, remained consistently higher than that of the U. S., and a similar situation obtained in the value added per dollar of payroll data. Total payrolls in the state increased substantially, but held roughly to the same proportions of U. S. figures as the number of employees. The value added per dollar of total payroll increased, but, while a level above that of the U. S. was maintained, the lead over national figures was reduced.

Few details are available in the census breakdown of the total figures for this industry in Georgia, but the state's transportation equipment production is dominated by the automotive assembly plants and Lockheed's aircraft company in metropolitan Atlanta. Federal aircraft orders or cutbacks, or a boom or lag in automobile demand, therefore, can have considerable impact on this industry and on subsidiary industries in Georgia. The existence of these major establishments has a further effect on the basic economy of the state by creating a body of skilled technicians and craftsmen in the area.

TRANSPORTATION EQUIPMENT (SIC 37)

	Georgia				United States			
	1954	1958	1963	1967	1954	1958	1963	1967
Total employment (000)	22.7	24.6	30.4	43.9	1,705.5	1,562.4	1,601.2	1,834.1
Percent of U. S.	1.3	1.6	1.9	2.4				
Non-production workers as percent of total	24.7	26.4	30.3	35.3	22.1	27.2	28.2	27.1
Total value added (000,000)	$257.7	$295.8	$560.6	$741.8	$16,691.0	$17,689.2	$23,781.4	$28,173.9
Percent of U. S.	1.5	1.7	2.4	2.6				
Value added per employee	$11,352	$12,024	$18,441	$16,897	$9,787	$11,322	$14,852	$15,361
Percent of U. S.	116.0	106.2	124.2	110.0				
Total payroll (000,000)	$137.5	$168.4	$244.7	$370.5	$10,317.0	$10,609.5	$12,925.4	$15,173.7
Percent of U. S.	1.3	1.6	1.9	2.4				
Value added per dollar of total payroll	$1.87	$1.76	$2.29	$2.00	$1.62	$1.67	$1.84	$1.86
Percent of U. S.	115.4	105.4	124.5	107.5				

Note: All dollar figures converted to 1967 dollars.

Source: U. S. Censuses of Manufactures.

GEORGIA MANUFACTURES – TRANSPORTATION EQUIPMENT

CHART 1
EMPLOYMENT

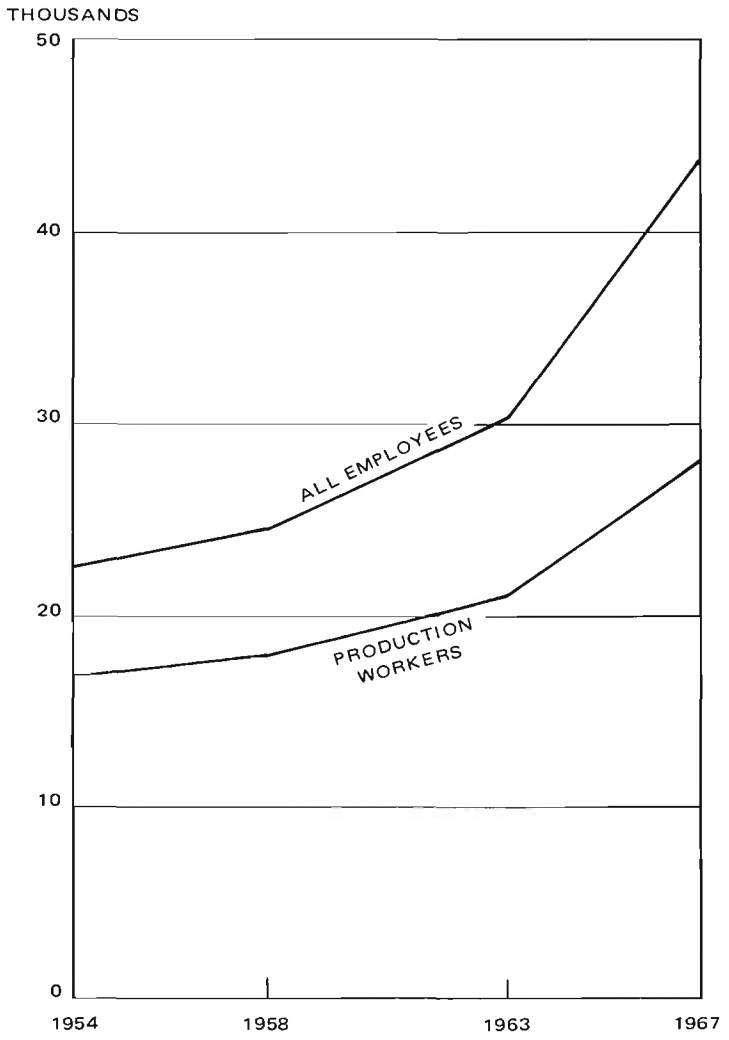
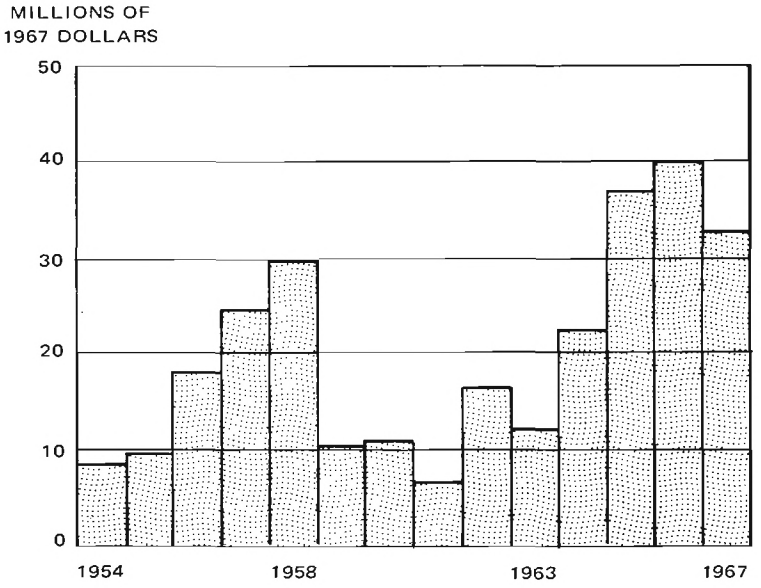


CHART 2
CAPITAL EXPENDITURES (NEW)



GEORGIA MANUFACTURES – TRANSPORTATION EQUIPMENT

INDEXES (1954 = 100)

CHART 3

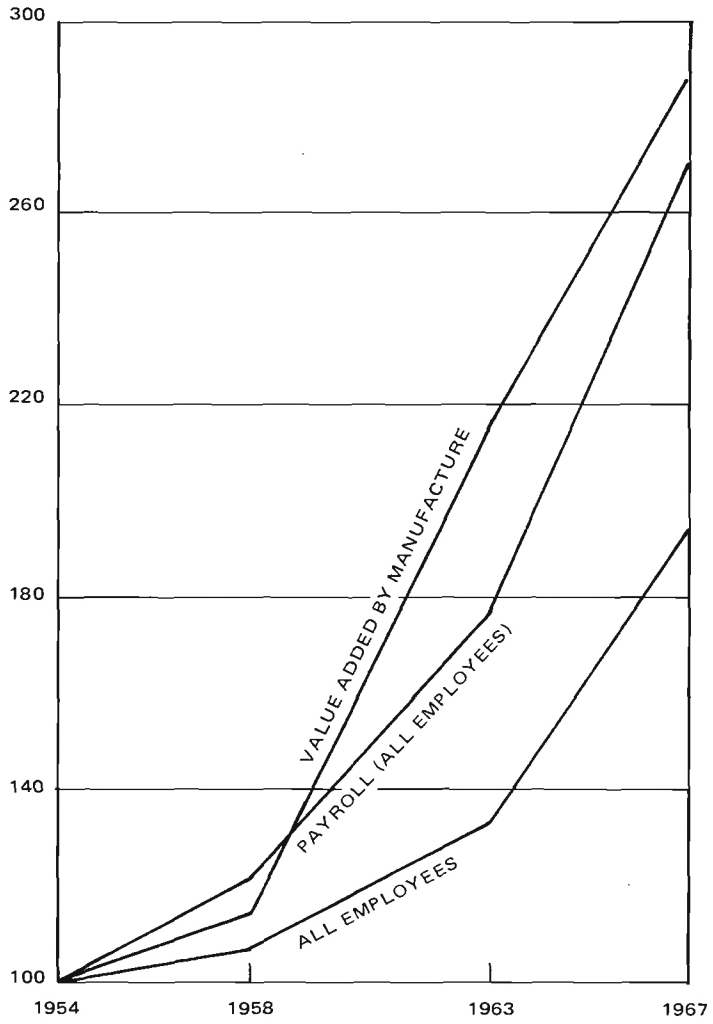
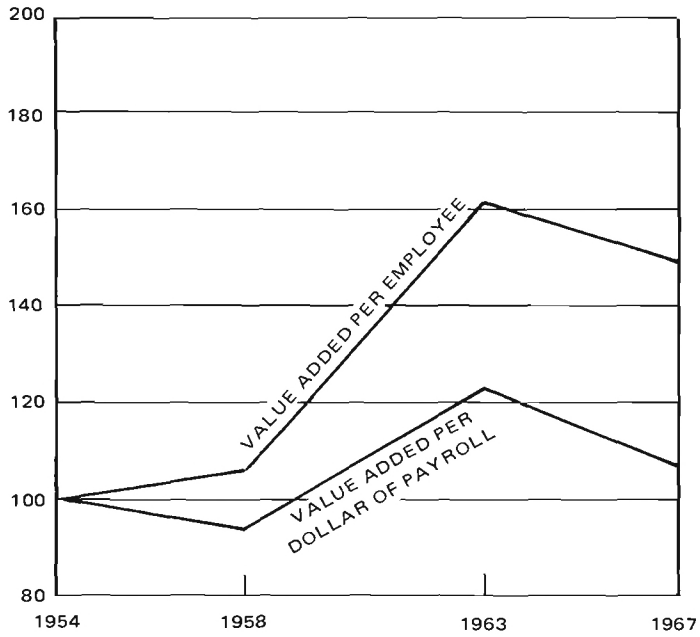


CHART 4



TRANSPORTATION EQUIPMENT

CHART 5
VALUE ADDED PER EMPLOYEE (ALL)

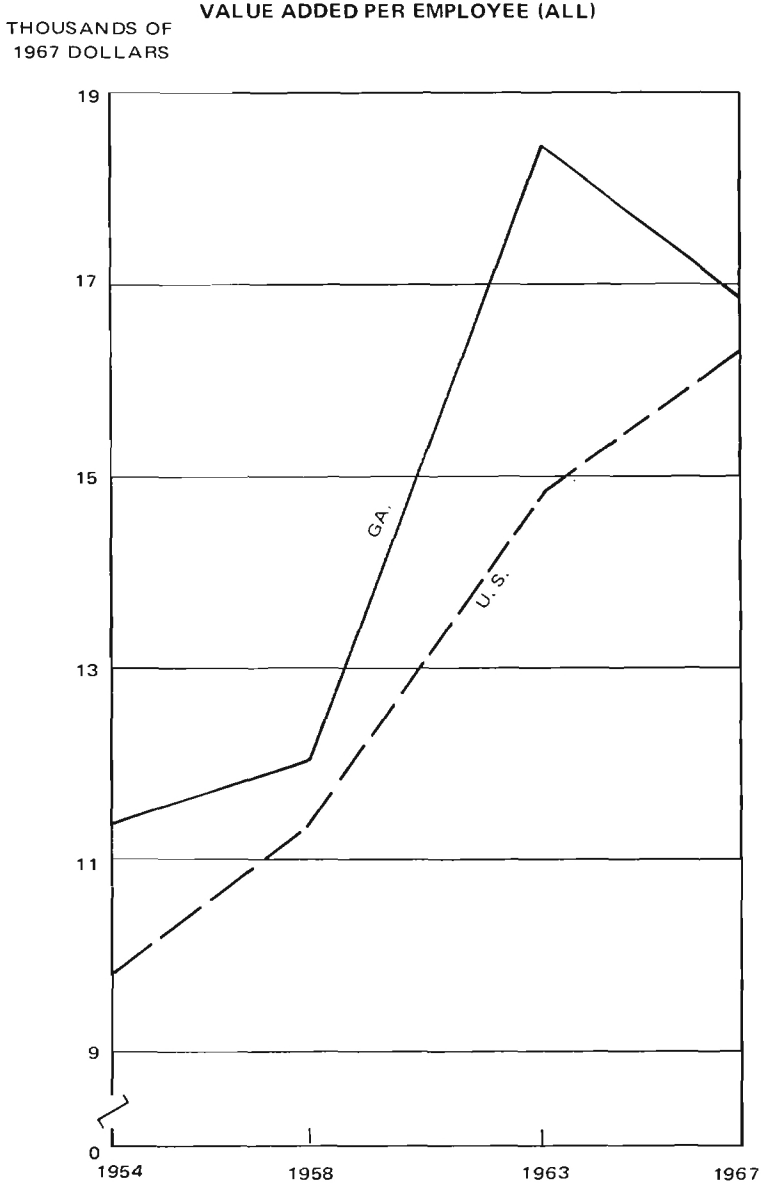


CHART 6
VALUE ADDED PER DOLLAR OF TOTAL PAYROLL