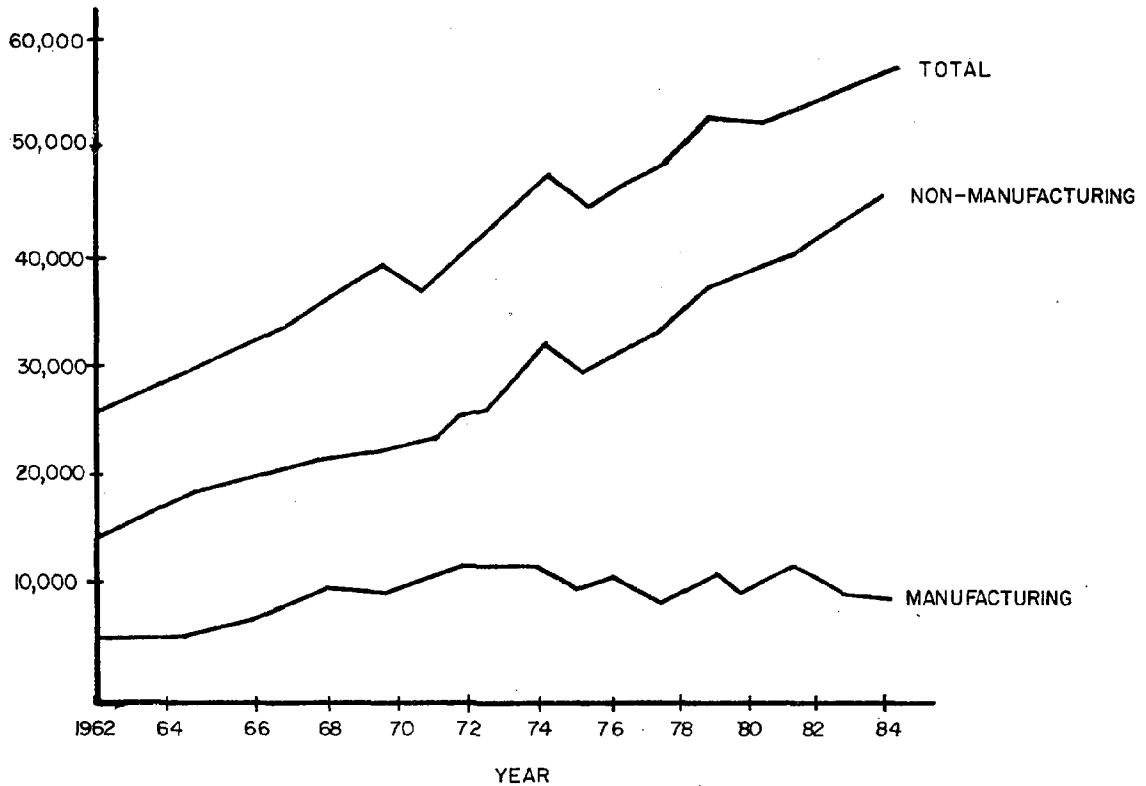


THE ECONOMY OF NEW HANOVER COUNTY

North Carolina Zone Management Program

WORK FORCE



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Technical Report 2

1986 Wilmington - New Hanover County Land-Use Plan Update

THE ECONOMY OF NEW HANOVER COUNTY

August 1985

Prepared by the New Hanover County Planning Department

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I. SUMMARY OF ECONOMIC GROWTH

- 1) New Hanover County is strengthening its role as the trade and service center of southeastern North Carolina. Manufacturing employment, however, is becoming less dominant.
- 2) While manufacturing employment in New Hanover County since the early 1960s has exhibited sporadic growth, non-manufacturing employment (particularly trade and service industries) has shown steady consistent growth.
- 3) In 1970, the County's non-manufacturing employment was only 69.6%, compared to 78% for the United States. By 1983, however, the County's non-manufacturing employment had grown to 80.0%, nearly equal to 80.2% for the United States.
4. Total industry employment (manufacturing and non-manufacturing) for both New Hanover County and the Wilmington MSA (Metropolitan Statistic Area) have experienced significant growth between 1963 and 1984.
5. New Hanover County's industries have demonstrated a significant competitive edge compared to growth trends for industries at the national level, particularly for non-manufacturing industries.

II. ASSESSING THE ECONOMIC DATA USED

In evaluating the economic conditions of New Hanover County, two types of basic information are available:

- 1) Labor force statistics, which characterize the residents of the area with respect to how many persons are employed or unemployed, and what their socioeconomic characteristics are; and
- 2) Work force statistics, which characterize the number and type of jobs of New Hanover County employers.

Members of the New Hanover County labor force may have jobs outside the County. Conversely, members of the County's work force may include residents of other counties who commute into New Hanover County for employment.

One purpose of the economic analysis is to estimate and allocate land to accommodate the future development needs of New Hanover County's employers. Another purpose of the analysis is to determine the number and type of jobs that will be created in the future. Therefore, work force statistics rather than labor force statistics are used to analyze industrial growth trends within the County and to determine future non-residential land-use needs.

It should be noted that in describing the industrial mix of the County, "industries" refers to both manufacturing and non-manufacturing establishments. Collectively, these industries make up the non-residential element of all developed land in New Hanover County.

Unless otherwise indicated, the work force data used in the analysis includes only "Industry Employment By Place of Work" as provided by the North Carolina Employment Security Commission (ESC). "Agricultural Employment" and "All Other Non-agricultural Employment", including non-agricultural self-employed workers, unpaid family workers, and domestic workers in private households) are reported under labor force by the ESC. Since this is the case, employment figures in these "Non-Industry Employment" categories are not included in most statistics. Not including these workers does not cause a significant impact, since many of these workers are employed within private houses or farms, etc.

Figure E-1 and Table E-1 provide total estimates for both Industry and Non-Industry workers. The ESC reported a total of 54,683 jobs in the County in 1984, of which 47,631 were considered industrial manufacturing or non-manufacturing.

The most obvious employment trend in the County, as evidenced by Figure E-1, is the rapid growth in total employment which is almost completely accounted for by parallel growth in the non-manufacturing industries. Manufacturing employment has stayed fairly constant, although slightly decreasing in recent years.

III. NEW HANOVER COUNTY AND THE WILMINGTON MSA

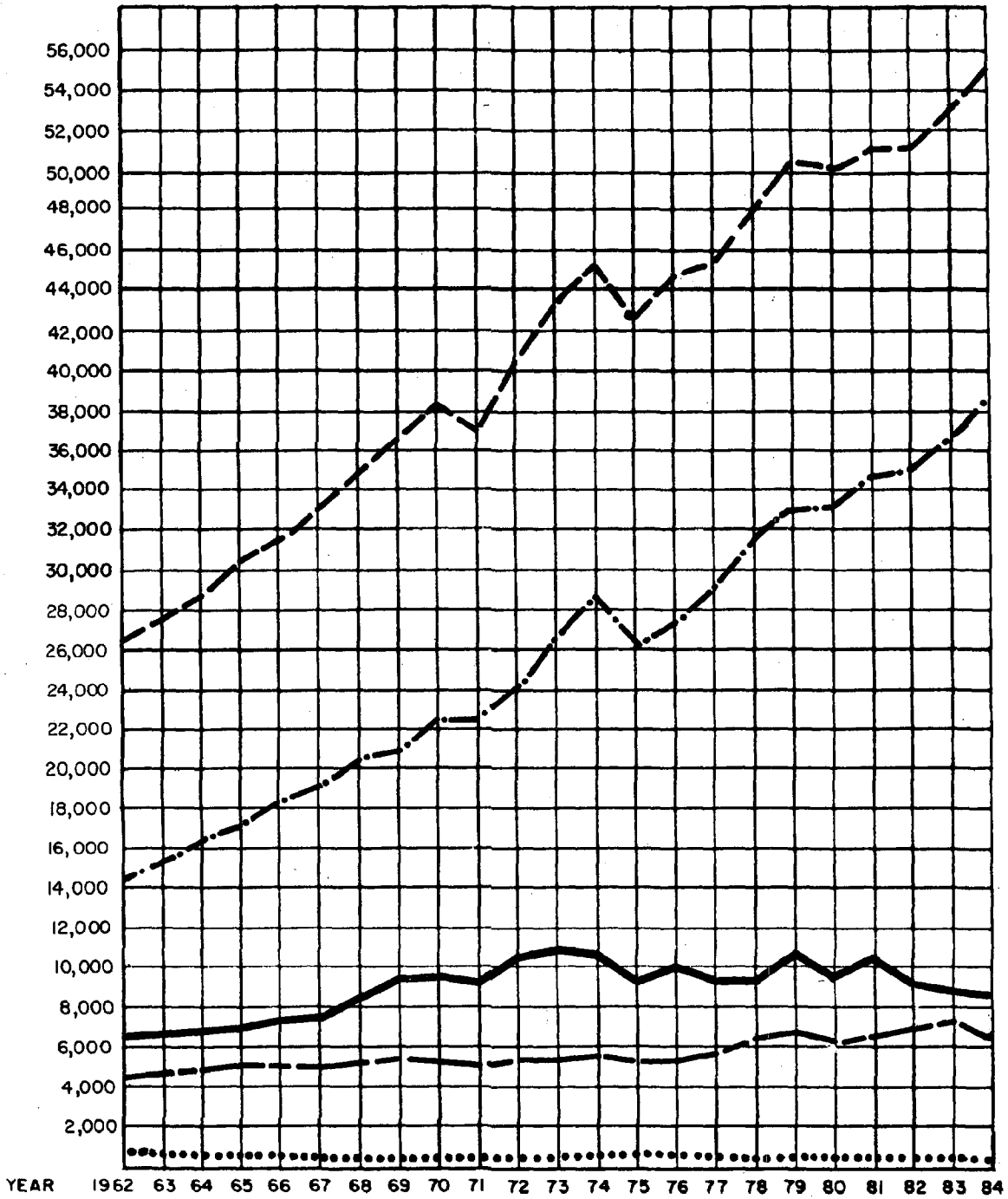
A. Industry Employment By Place Of Work

Table E-2 indicates that both New Hanover County's and the Wilmington MSA total industry employment (manufacturing and non-manufacturing employment) have experienced significant growth between 1963 and 1984. The County's total industry employment has more than doubled, from 22,280 workers in 1963 to 47,631 workers in 1984. Total industry employment for Wilmington's MSA during this time period has more than tripled, from 24,410 workers in 1963 to 73,863 workers in 1984.

Total manufacturing employment for both the County and the MSA during the period examined has fluctuated, while total non-manufacturing employment has continued to experience steady growth. Both the County and MSA have had similar proportions of manufacturing and non-manufacturing employment between 1963 to 1984. Non-manufacturing has grown in importance, from approximately 70% in 1963 to 80% in 1984. It should be noted that the Wilmington MSA included New Hanover and Brunswick Counties prior to 1984, but now includes only New Hanover County.

FIGURE E-1 EMPLOYMENT BY PLACE OF WORK

WORK FORCE



KEY

- MANUFACTURING
- AGRICULTURE
- NON-MANUFACTURING
- NON-AGRICULTURE
- TOTAL

TABLE E-1

EMPLOYMENT BY PLACE OF WORK
NEW HANOVER COUNTY

1963-1984

WORK FORCE

INDUSTRY EMPLOYMENT BY PLACE OF WORK 1/	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
Manufacturing	22,220	22,940	24,500	26,000	26,990	28,560	30,600	32,390	31,380	34,330	37,580	38,890	36,570	38,230	39,160	41,780	43,590	43,560	45,110	44,740	45,410	47,631
Non-Manufacturing	6,540	6,520	6,940	7,570	7,880	8,330	9,380	9,330	9,030	10,160	10,700	10,570	9,710	10,240	9,890	9,880	10,480	9,990	10,280	9,520	9,100	8,906
Total	15,680	16,420	17,560	18,430	19,110	20,210	21,220	22,520	22,390	22,170	26,880	28,320	26,860	27,990	29,270	31,900	33,100	33,570	34,830	34,920	36,310	28,725
NON-INDUSTRY EMPLOYMENT 2/	5,580	5,930	5,940	5,910	5,790	5,830	6,010	5,850	5,740	6,040	6,291	6,341	5,999	6,161	6,262	6,541	6,842	6,465	6,648	7,042	7,431	7,092
Agricultural Employment by place of work	860	780	640	630	570	530	490	470	470	450	464	428	442	464	392	348	321	305	283	268	247	233
All other Non-Agricultural employment by place of work 3/	4,720	5,150	5,300	5,280	5,220	5,300	5,520	5,390	5,270	5,590	5,827	5,915	5,557	5,697	5,870	6,193	6,516	6,160	6,365	6,774	7,184	6,919
TOTAL EMPLOYMENT BY PLACE OF WORK	27,800	28,870	30,440	31,910	32,780	34,390	36,610	38,210	37,120	40,370	43,871	45,231	42,569	44,391	45,422	48,321	50,422	50,025	51,758	51,782	52,841	54,683

1/ Source: Employment Security Commission of North Carolina, "North Carolina Labor Force Estimates"

2/ Figures for years after 1972 estimated by New Hanover County Planning Dept., based on following formula
 Workforce year j = (Labor force* year j) x (workforce 1970-72) / (workforce 1970-72) * data available from ESC

3/ Includes Nonagricultural self-employed workers, unpaid family workers, and domestic workers in private households.

TABLE E-2
 INDUSTRY EMPLOYMENT BY PLACE OF WORK 1/
 NEW HANOVER COUNTY AND WILMINGTON M S A
 SELECTED YEARS 1963-1984

	INDUSTRY WORK FORCE ESTIMATES										% OF INDUSTRY WORK FORCE									
	1963	1966	1969	1972	1975	1978	1981	1984	1963	1966	1969	1972	1975	1978	1981	1984				
TOTAL INDUSTRY EMPLOYMENT	22,280	26,000	30,600	34,330	36,570	41,780	45,110	47,531	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0				
MANUFACTURING	6,540	7,570	9,380	10,160	9,710	9,880	10,280	8,906	29.4	29.1	30.7	29.6	26.6	23.7	22.8	18.7				
NON-MANUFACTURING	15,680	18,430	21,220	24,170	26,860	31,900	34,830	38,725	70.6	70.9	69.3	70.4	73.4	76.3	77.2	81.3				

WILMINGTON MSA

	INDUSTRY WORK FORCE ESTIMATES										% OF INDUSTRY WORK FORCE									
	1963	1966	1969	1972	1975	1978	1981	1984	1963	1966	1969	1972	1975	1978	1981	1984				
TOTAL INDUSTRY EMPLOYMENT	24,410	28,520	34,970	43,220	45,400	51,180	58,320	73,863	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0				
MANUFACTURING	6,870	7,950	10,590	12,720	13,030	13,220	12,910	n/a	28.1	27.9	30.3	29.4	28.7	25.8	22.1	n/a				
NON-MANUFACTURING	17,540	20,570	24,380	30,500	32,370	37,960	45,410	n/a	71.9	72.1	69.7	70.6	71.3	74.2	77.9	n/a				

1/SOURCE: North Carolina Employment Security Commission, "North Carolina Labor Force Estimates"

B. New Hanover County Industry Work Force As a Percentage Of MSA Industry Work Force

Table E-3 illustrates the change that has occurred for selected years 1963-1984, in the total industry work force of New Hanover County relative to the Wilmington MSA (Brunswick and New Hanover Counties combined). It is evident that while New Hanover County continues to supply the majority, 74%, of all employment in the MSA, the County's share of employment opportunities in the MSA has continued to decline since the 1966 peak of 91.2%. This decline may be attributed to the rapid growth of Brunswick County, particularly its beach communities.

C. Manufacturing Employment In New Hanover County

Figure E-2 and Table E-4 represent the decline and growth of manufacturing industries in New Hanover County by major Standard Industrial Classification (SIC), for selected years 1963-1984. Overall, total manufacturing employment has decreased in importance in the County's work force, from 29.4% in 1963 to 18.7% in 1984. Since the late 1960's, total manufacturing employment has stayed between approximately 9,000 and 10,000 workers. Total manufacturing employment, however, has recently declined from 10,280 in 1981 to 8,906 workers in 1984.

During the decades of the 60's and 70's, employment in fabricated metals increased dramatically, with chemicals and machinery employment in distant second and third places, respectively. However, since those time periods, there have been significant reductions in fabricated metals employment, while machinery and chemical employment have increased dramatically. The chemical industry is now the leading manufacturing industry in the County with 2,581 jobs in 1984, or 5.4% of total employment. Categories of manufacturing which have continued to decline in employment from 1963 to 1984 include food, textiles, apparel, lumber and wood, and stone, clay and glass. These traditional basic industries have suffered employment declines possibly as a result of increased mechanization and technology. Declines were particularly evident during the 1970's and this trend has not changed.

D. Manufacturing Employment in New Hanover County

Figure E-3 and Table E-5 present the growth in employment of each major non-manufacturing industry in New Hanover County for the selected years 1963-1984. In marked contrast to manufacturing industries, the growth of non-manufacturing employment in the County has been steady and significant. Essentially all non-manufacturing categories exhibited an overall steady growth trend from the 1960's to the 1980's. The trade, government, and service industries are the three dominant non-manufacturing industries.

In 1984 as in 1963, non-manufacturing employment has continued to dominate the County's total workforce. Unlike frequent and unpredictable fluctuations experienced by manufacturing industries during this time period, positive growth trends experienced by the non-manufacturing employment sector are apparent. The continued growth of this sector in the future appears positive. The trade and service industries have particularly shown dramatic growth in recent years.

NEW HANOVER COUNTY INDUSTRY WORK FORCE AS A PERCENTAGE OF S.M.S.A.
INDUSTRY WORK FORCE ^{1/}

TABLE E-3

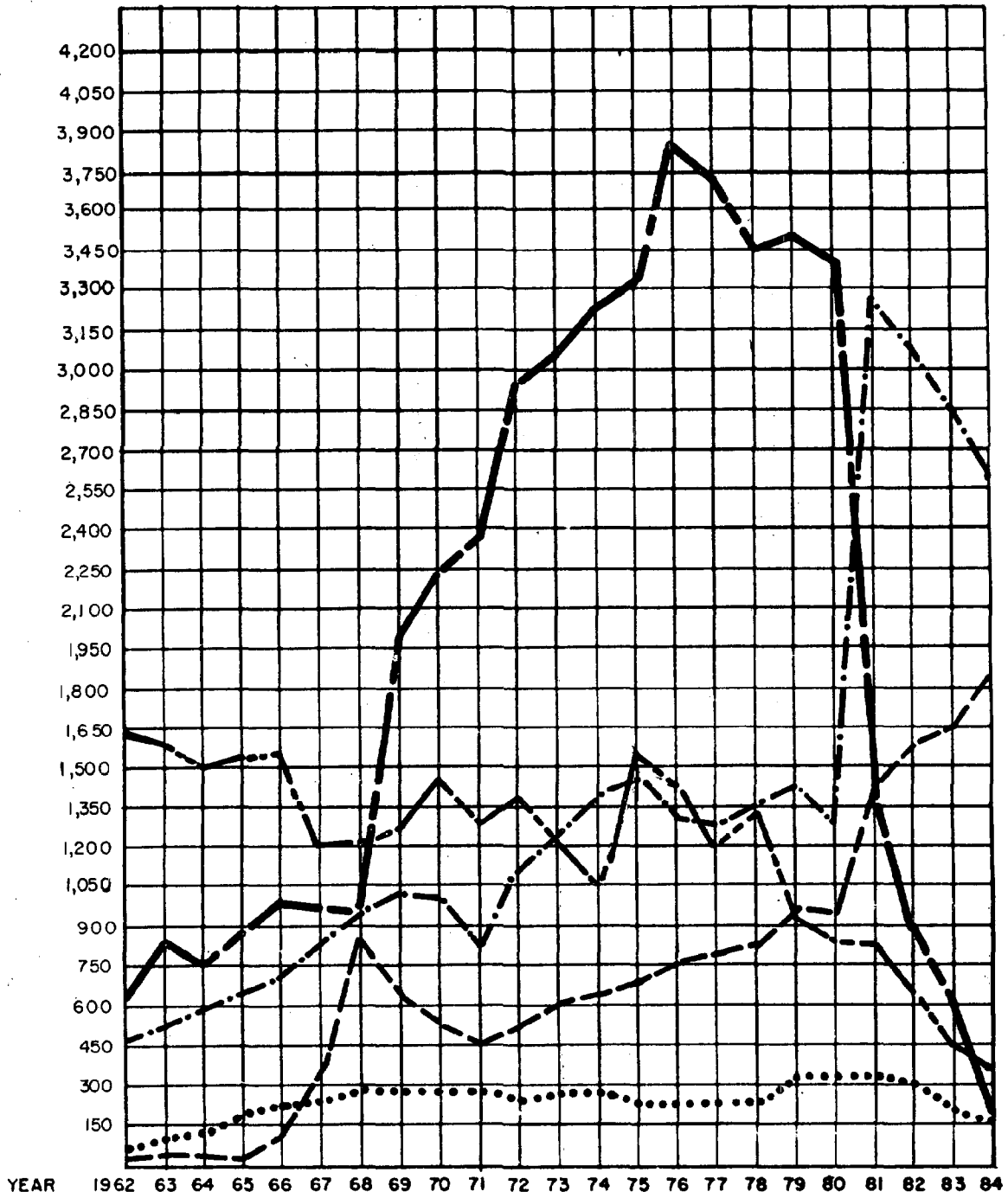
	TOTAL INDUSTRY WORK FORCE		
	<u>SMSA^{2/}</u>	<u>NEW HANOVER COUNTY</u>	<u>NEW HANOVER COUNTY</u> <u>% OF MSA</u>
1963	24,410	22,220	91.0
1966	28,520	26,000	91.2
1969	34,790	30,600	88.0
1972	43,220	34,330	79.4
1975	45,400	36,570	80.6
1978	51,180	41,780	81.6
1981	58,320	45,410	77.3
1984	73,863	54,683	74.0

1/Source: Employment Security Commission of North Carolina, "North Carolina Labor Force Estimates"

2/Includes New Hanover and Brunswick Counties.

FIGURE E-2
 MANUFACTURING EMPLOYMENT
 PART 1 OF 2

WORK FORCE



KEY

TEXTILES — — — — —

FABRICATED METALS — — — — —

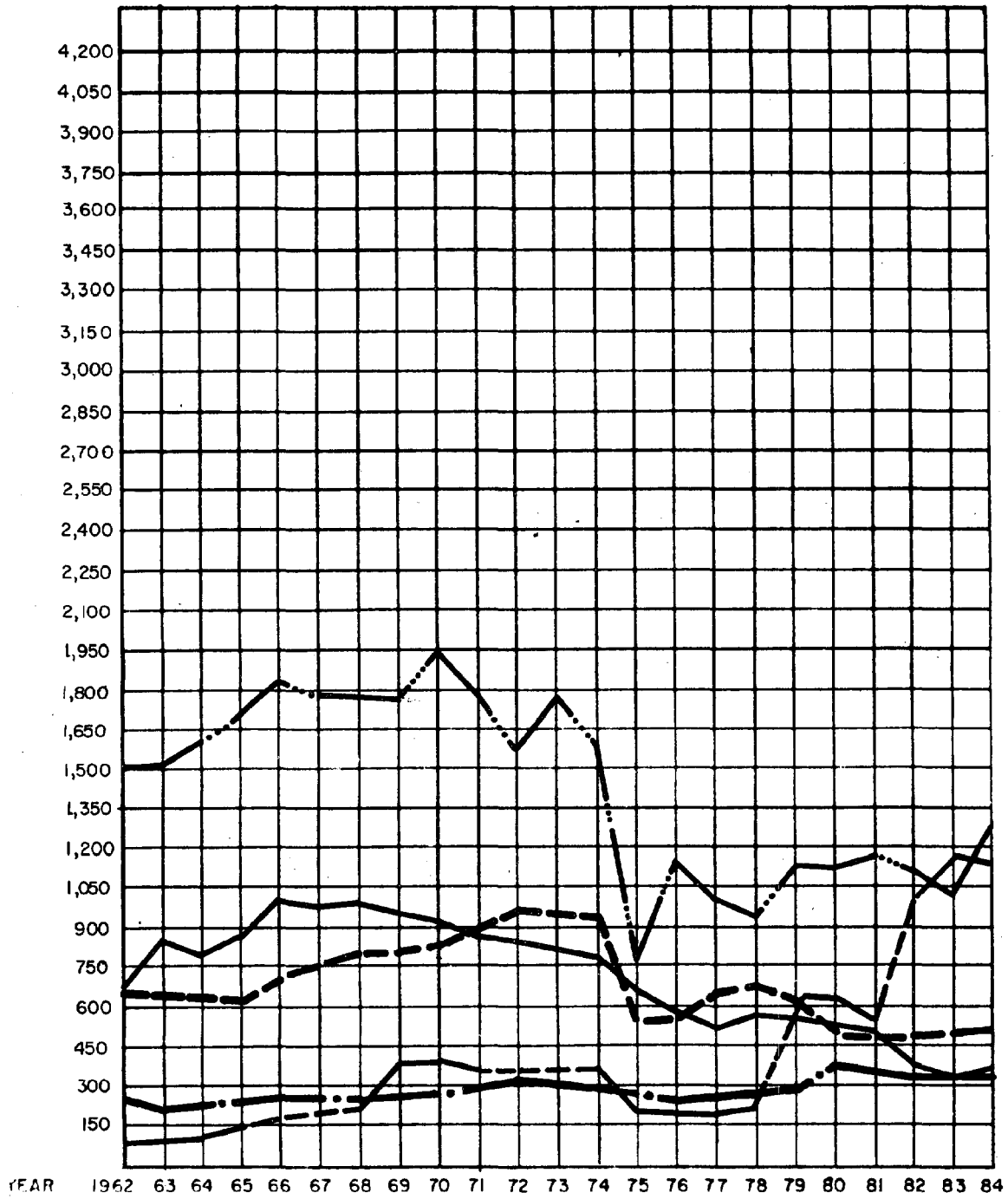
CHEMICALS — · · · · ·

MACHINERY — — — — —

STONE, CLAY, & GLASS · · · · ·

FIGURE E-2
 MANUFACTURING EMPLOYMENT
 PART 2 OF 2

WORK FORCE



KEY

FOOD



LUMBER & WOOD



APPAREL



PRINTING



OTHER



TABLE E-4
 MANUFACTURING EMPLOYMENT IN NEW HANOVER COUNTY
 SELECTED YEARS 1963-1984

	WORK FORCE										% OF TOTAL INDUSTRY WORK FORCE									
	1963	1966	1969	1972	1975	1978	1981	1984	1963	1966	1969	1972	1975	1978	1981	1984				
TOTAL INDUSTRY/2	22,220	26,000	30,600	34,330	36,570	41,780	45,110	47,631	100	100	100	100	100	100	100	100				
TOTAL MFG.	6,540	7,570	9,380	10,160	9,710	9,880	10,280	8,906	29.4	29.1	30.7	29.6	26.6	23.7	22.8	18.7				
FOOD	690	710	780	970	550	670	520	493	3.1	2.7	2.6	2.8	1.5	1.6	1.2	1.0				
TEXTILES	1,580	1,530	1,260	1,360	1,530	1,320	790	414	7.0	5.9	4.1	4.0	4.2	3.2	1.8	.9				
APPAREL	1,510	1,800	1,770	1,590	760	920	1,190	1,253	6.8	6.9	5.8	4.6	2.1	2.2	2.6	2.6				
LUMBER & WOOD	860	1,020	960	800	620	590	470	379	3.9	3.9	3.1	2.3	1.7	1.4	1.0	.8				
PRINTING	220	240	270	310	290	280	330	355	1.0	.9	.9	.9	.8	0.7	.7	.8				
CHEMICALS	550	720	1,040	1,110	1,480	1,350	3,280	2,581	2.5	2.8	3.4	3.2	4.0	3.3	7.3	5.4				
STONE, CLAY & GLASS	130	240	300	280	260	260	320	163	.6	.9	1.0	.8	.7	.6	.7	.4				
FABRICATED METALS	820	1,020	1,990	2,890	3,310	3,450	1,400	219	3.7	3.9	6.5	8.4	9.1	8.2	3.1	.5				
MACHINERY	50	120	650	500	720	810	1,450	1,876	.2	.5	2.1	1.5	2.0	2.0	3.2	3.9				
OTHER MFG. /3	130	170	360	350	190	230	530	1,173	.6	.7	1.2	1.0	0.5	.5	1.2	2.4				

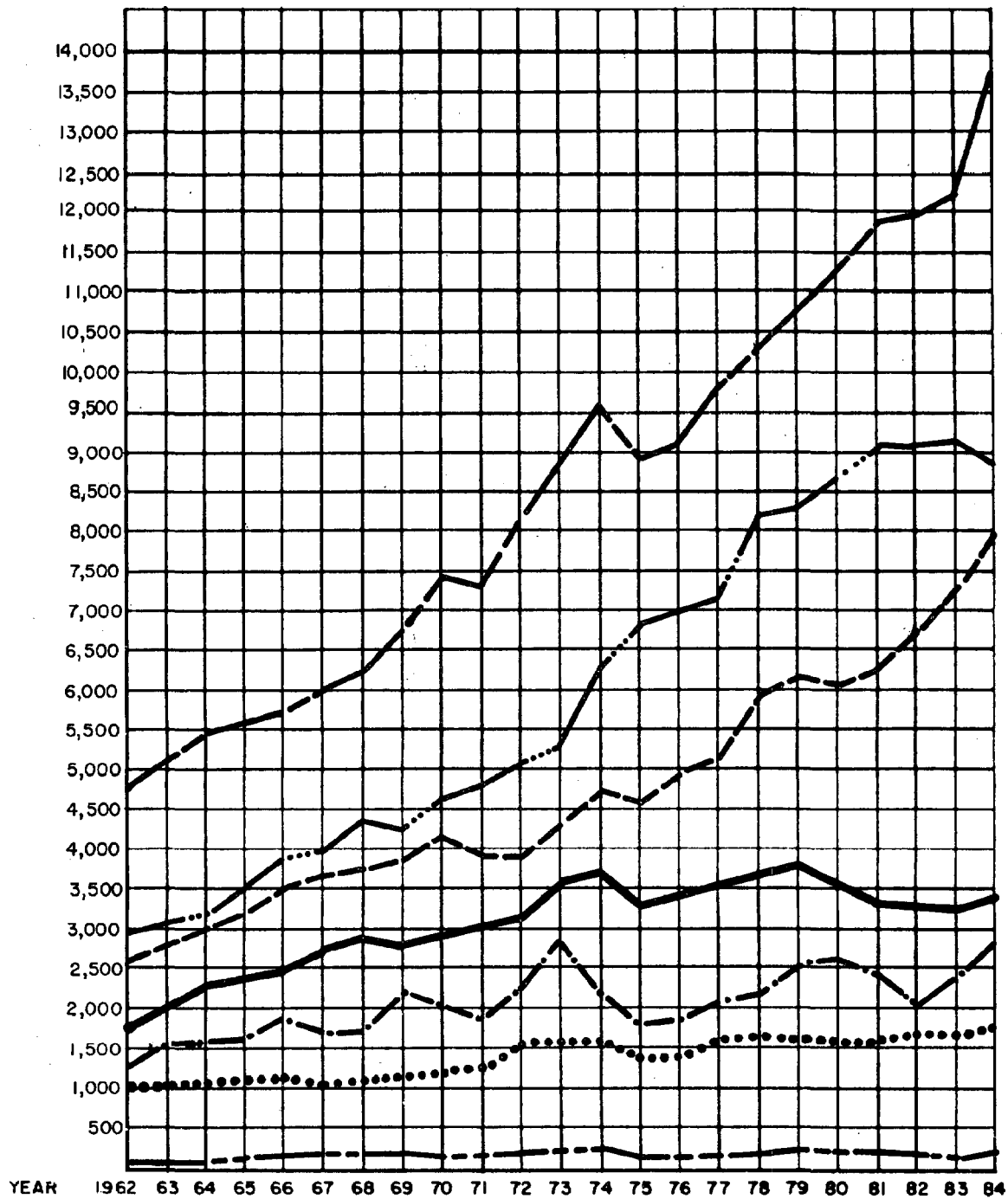
1/ SOURCE: Employment Security Commission of North Carolina, "North Carolina Labor Force Estimates"

2/ Includes both manufacturing and non-manufacturing

3/ Includes furniture, paper, petroleum, primary metals, and instruments

FIGURE E-3
NON-MANUFACTURING EMPLOYMENT

WORK FORCE



KEY

TRANS./COMM./

UTILITIES

CONSTRUCTION

TRADE

FINANCE/REAL EST

SERVICE

GOVERNMENT

OTHER

.....●

.....

TABLE E-5
 NON-MANUFACTURING EMPLOYMENT IN NEW HAMOVER COUNTY
 SELECTED YEARS 1963-1984

	WORK FORCE										% OF TOTAL INDUSTRY WORK FORCE									
	1963	1966	1969	1972	1975	1978	1981	1984	1963	1966	1969	1972	1975	1978	1981	1984				
TOTAL INDUSTRY/2	22,220	26,000	30,600	34,330	36,570	41,780	45,110	47,631	100	100	100	100	100	100	100	100				
TOTAL MFG.	15,680	18,430	21,220	24,170	26,860	31,900	34,830	38,725	70.6	70.9	69.3	70.4	73.4	76.3	77.2	81.3				
CONSTRUCTION	1,540	1,880	2,180	2,280	1,720	2,130	2,400	2,839	6.9	7.2	7.1	6.7	4.7	5.1	5.3	6.0				
TRANSPORTATION, COMMUNICATION, AND UTILITIES	2,050	2,440	2,800	3,200	3,340	3,640	3,380	3,411	9.2	9.4	9.2	9.3	9.1	8.7	7.5	7.2				
TRADE	5,150	5,640	6,680	8,090	8,950	10,240	11,800	13,554	23.2	21.7	21.8	23.6	24.5	24.5	26.2	28.4				
FINANCE, REAL ESTATE	1,010	1,030	1,190	1,510	1,460	1,640	1,550	1,794	4.6	4.0	3.9	4.4	4.0	3.9	3.4	3.8				
SERVICE	2,800	3,500	3,890	3,930	4,520	5,970	6,300	7,995	12.6	13.4	12.7	11.4	12.3	14.3	14.2	16.8				
GOVERNMENT	3,090	3,890	4,380	5,010	6,760	8,110	9,130	8,857	13.9	15.0	14.8	14.6	18.5	19.4	20.2	18.5				
OTHER NON- MANUFACTURING, /3	40	50	100	150	110	170	180	275	0.2	0.2	0.3	.4	0.3	0.4	.4	.6				

1/SOURCE: Employment Security Commission of North Carolina, "Labor Force Estimates"

2/Includes both Manufacturing and Non-manufacturing

3/Includes agricultural service, forestry, fisheries, and mining

E. Comparison Of Individual/Total Industrial Employment-New Hanover County and the United States

Table E-6 examines non-manufacturing and manufacturing employment in percentages for New Hanover County relative to the United States, (U.S.) for selected years 1970, 1978, and 1983.

In 1970, the County's non-manufacturing share of total employment was only 69.6%, compared to 78% for the United States. By 1983, however, the County's non-manufacturing employment had grown to 80.0%, nearly equal to 80.2% for the United States.

The County's trade industry has been the top performer of all County industries, increasing its share of County employment from 22.8% in 1970 to 27.0% in 1983. This level is well above the trade industry's share of national employment, which was only 22.2% in 1983. The relatively high level of the trade industry in the County may reflect its growing role as the economic center of southeast North Carolina. Interestingly, however, the service industry in the County accounted for only 16.2%, compared to 21.0% at the national level in 1983. This discrepancy may indicate that the service industry may experience significant growth in the future in the County. Government employment in the County is higher than at the national level possibly due to the location of several State and Federal regional offices.

In 1970, the County led the U.S. in all manufacturing employment, with the exceptions of machinery (electrical and non-electrical) and other manufacturing employment. Categories of manufacturing with significantly higher total employment percentages in the County included: textiles, apparel, and fabricated metal.

In examining total manufacturing employment in 1978, the County experienced a reduction in all manufacturing employment, excluding chemicals, fabricated metals, and machinery (electrical and non-electrical). Although the County experienced these reductions, food, and stone, clay and glass manufacturing employment were the only employment categories that were lower than the U.S. In addition, total employment for fabricated metals was about four times higher than the U.S.

By the end of 1983, total manufacturing employment for both the County and the U.S. had declined. It should be noted, however, that chemicals employment in the County had significantly increased during that time period.

TABLE E-6
 INDIVIDUAL/TOTAL INDUSTRIAL EMPLOYMENT
 IN THE UNITED STATES AND NEW HANOVER COUNTY
 (PERCENTAGES)

	1970		1978		1983	
	UNITED STATES	NEW HANOVER COUNTY	UNITED STATES	NEW HANOVER COUNTY	UNITED STATES	NEW HANOVER COUNTY
	100%	100%	100%	100%	100%	100%
INDUSTRY NON-MANUFACTURING						
Construction	6.5%	6.5%	4.8%	5.1%	4.2%	5.4%
Trans., Comm., and Public Utilities	6.6	8.9	6.1	8.7	5.3	7.2
Trade	21.0	22.8	20.2	24.5	22.2	27.0
Finance, Insurance and Real Estate	5.1	3.8	4.9	3.9	5.8	3.5
Service	17.4	13.0	15.5	14.3	21.0	16.2
Government	16.7	14.3	16.9	19.4	16.9	20.1
Other Non-Manufacturing	4.7	.3	5.5	0.4	4.8	.6
TOTAL NON-MANUFACTURING	78.0%	69.6%	73.9%	76.3%	80.2%	80.0%
MANUFACTURING						
Food	1.8%	2.4%	2.4%	1.6%	1.7%	1.1%
Textiles	1.0	4.5	1.3	3.2	.8	.9
Apparel	1.4	6.1	1.8	2.2	1.2	2.2
Lumber & Wood	.8	2.8	.9	1.4	.7	.8
Printing	1.3	.9	1.5	0.7	1.4	.7
Chemicals	1.2	3.0	1.4	3.3	1.1	6.4
Stone, Clay & Glass	.7	.9	.9	.6	.6	.4
Fabricated Metals	1.8	6.9	2.1	8.2	1.5	1.3
Machinery (Elec. & Non-Elec.)	4.7	1.7	5.2	2.0	4.4	3.6
Other Manufacturing	7.3	1.2	8.6	.5	6.4	2.6
TOTAL MANUFACTURING	22.0%	30.4%	26.1%	23.7%	19.8%	20.0%
TOTAL INDUSTRIAL EMPLOYMENT	100%	100%	100%	100%	100%	100%

IV. SHIFT-SHARE ANALYSIS

A. METHOD

Shift-share analysis is a regional economic analysis tool that describes changes in the industrial structure of a community in terms of three effects: national growth effect, industrial structure effect, and local competitive edge effect. These three effects sum to give net County growth in terms of number of employees for each industry. These effects are explained below and mathematically described in Table E-7.

- (1) National Growth Effect - This effect essentially answers the question, "How much would a given industry in a given locality have grown, if the industry had the same proportion of employees in the local community's economy as existed in the national economy, and if the local industry had grown at the same rate as the industry at the national level?"

EX. If the machinery manufacturing industry accounted for 4.7% of national employment in 1970 and grew to 5.2% in 1978, then the national growth effect assumes that the County's machinery industry had been 4.7% of total County employment in 1970 and had also grown at the same rate to 5.2% in 1978. This effect measures the growth in terms of number of employees, 202. (Table E-8).

- (2) Industrial Structure Effect - The industrial structure effect attempts to adjust the national growth effect by including the reality that the locality's proportion of a given industry is not likely to equal the national proportions. The industrial structure effect, however, does assume that the local industry grows at the same rate as the national industry. The effect applies that growth rate to the locality's own industrial mix.

EX. Since the County's machinery industry accounted for only 1.7% of total County employment in 1970 compared to 4.7% for the nation, the previous assumed County growth of 202 employees (as measured by the national growth effect) has to be reduced by a negative 136 employees (Table E-8), in order to reflect the County's industry mix.

- (3) Competitive Edge Effect - This effect further adjusts the national growth and industrial structure effects by accounting for the reality that local growth rates may be different than national industry growth rates due to such factors as efficiency of local firms and attractiveness of living environment.

EX. Since the County's machinery industry grew at a rate of 17% between 1970-78 as compared to a national growth rate of only 10%, the County apparently possesses some competitive edge, resulting in an adjusted increase of 194 employees (Table E-8).

Summary: National growth effect	202
Industrial structure effect	-136
Competitive edge effect	194
Net County growth, 1970-78	260

TABLE E-7
SHIFT SHARE EFFECTS

STEPS

- (1) Change in the number of employees between 1970-1978, if computed for each industry i in the County by the formula:

$$G_{ic} = b_{ic} (1978) - b_{ic} (1970)$$

Where b_{ic} is the number of employees for industry i in the County c.

- (2) Then the rate of change is calculated for each industry

$$r_{ic} = G_{ic}/b_{ic} (1970)$$

- (3) Next the County's industries are standardized to reflect the national industrial structure.

$$b^*_{ic} (1970) = b_{oc} (1970) \times b_{in}/b_{on}$$

Where b_{oc} is the total employment of all industries in the County and b_{in} is the employment of industry i in the nation n and b_{on} is the total employment o of all industries in the nation.

- (4) This standardized County structure is then compared to the actual structure to describe local industrial specialization.

$$b_{ic} (1970) - b^*_{ic} (1970)$$

- (5) Next the County's employment growth rates are compared to national rates for each industry in order to describe the differential growth rate of the County's industries

$$r_{ic} - r_{in}$$

Where r_{ic} is the growth rate of industry i in the County and r_{in} is the growth rate for industry i nationally.

- (6) From these calculations, three effects may be described:

National growth effect (V_{ic})

$$V_{ic} = b^*_{ic} (1970) \times r_{in}$$

Industrial structure effect (K_{ic})

$$K_{ic} = (b_{ic} (1970) - b^*_{ic} (1970)) \times r_{in}$$

Competitive edge effect (Q_{ic})

$$Q_{ic} = b_{ic} \times (r_{ic} - r_{in})$$

- (7) Net County growth in employment in industry i (n_{ic})

$$N_{ic} = V_{ic} + K_{ic} + Q_{ic}$$

(B) Results

An examination of Table E-8 indicates the following:

(1) If the County's industry mix and growth rate had been identical to the nation's, only 314 jobs would have been added between 1978-1983. Net actual County growth in jobs, however, indicates a gain of 3,630 jobs. The difference is accounted for the County's industry mix and competitive edge effects.

(2) The County's industry mix, however, was not conducive to growth between 1978-1983. The County, as indicated by the County's industry mix effect of negative 595 jobs, possessed a high proportion of industries that generally exhibited poor growth nationally between 1978-1983, and a low proportion of industries that did well nationally.

(3) The County's competitive edge effect, however, more than compensated for the poor industry mix. As indicated, the County's competitive edge accounted for 3,911 jobs. This very strong effect is primarily responsible for the actual net County growth of 3,630 jobs between 1978-83.

(4) This shift-share analysis further demonstrates the importance of the non-manufacturing industries to the County's rapid economic growth, compared to the manufacturing industries. As indicated for 1978-1983, the non-manufacturing industries demonstrated a competitive edge (3,454 jobs) nearly eight times greater than that exhibited by manufacturing industries (457 jobs). The non-manufacturing industries also exhibited a loss of jobs due to a poor industry mix (-251 jobs), significantly less than that exhibited by manufacturing industry (-344 jobs).

(5) In comparing the results for the two time periods analyzed, several facts are apparent: One, the County's average annual growth in the competitive edge effect was almost five times greater between 1978-1983 (782 jobs per year) than it was between 1970-1978 (162 jobs per year), primarily due to non-manufacturing growth. Two, the County's industrial mix has worsened, from five jobs per year in 1970-1978, to a negative 119 jobs per year in 1978-1983. Three, the high average County annual growth rate (1179 jobs per year) from 1970-1978 appears to have been due primarily to following the high national average annual growth effect (1012 jobs) during that period, while the continuing high County average annual growth rate in jobs (726 jobs per year) from 1978-1983 has been due primarily to the County's strong competitive edge (782 jobs per year).

TABLE E-8
SHIFT SHARE ANALYSIS OF NEW HANOVER COUNTY EMPLOYMENT GROWTH FACTORS (NUMBER OF JOBS)

	1970-1978				1978-1983			
	NET ACTUAL COUNTRY GROWTH	COUNTRY GROWTH DUE TO NATIONAL TREND	COUNTRY GROWTH DUE TO COUNTRY'S INDUSTRY MIX	COUNTRY GROWTH DUE TO COMPETITIVE EDGE	NET ACTUAL COUNTRY GROWTH	COUNTRY GROWTH DUE TO NATIONAL TREND	COUNTRY GROWTH DUE TO COUNTRY'S INDUSTRY MIX	COUNTRY GROWTH DUE TO COMPETITIVE EDGE
INDUSTRY NON-								
MANUFACTURING								
Construction	20	1068	374	-1422	300	-945	204	1041
Trans., Comm., and Public Utilities	750	716	338	-304	-360	-540	-170	350
Trade	2880	1938	242	700	2020	588	99	1333
Finance, Insurance and Real Estate	420	471	-108	57	-30	334	-77	-287
Service	1780	2034	-338	84	1370	1543	-280	107
Government	3470	1273	-192	2389	1030	167	28	835
Other Non-Manufacturing	60	107	-100	53	80	60	-55	75
TOTAL NON-MANUFACTURING	9380	7607	216	1557	4410	1207	-251	3454
MANUFACTURING								
Food	-110	-28	0	-82	-160	-45	6	-121
Textiles	-120	-33	-78	-9	-900	-70	-158	-672
Apparel	-1040	-14	-32	-994	90	-76	-41	207
Lumber & Wood	-320	46	103	-469	-230	-42	-32	-156
Printing	0	39	-16	-23	50	46	-22	26
Chemicals	390	21	23	346	1500	-22	-39	1561
Stone, Clay & Glass	-40	24	2	-66	-80	-56	10	-34
Fabricated Metals	1190	49	114	1027	-2850	-135	-483	-2232
Machinery (Elec. & Non-Elec.)	260	202	-136	194	840	-117	68	889
Other Manufacturing	-160	179	-155	-184	960	-376	347	989
TOTAL MANUFACTURING	50	485	-175	-260	-780	-893	-344	457
TOTAL	9430	8092	41	1297	3630	314	-595	3911
AVERAGE ANNUAL GROWTH	1179	1012	5	162	726	63	-119	782

