

FACILITY FORM 602

N 66 11275  
(ACCESSION NUMBER)

15  
(PAGES)

OL 67963  
(NASA CR OR TMX OR AD NUMBER)

(THRU)

(CODE)

(CATEGORY)

UNIVERSITY OF FLORIDA

( Bureau  
of  
Economic and Business Research )

PROJECTIONS OF THE SIZE AND INDUSTRIAL  
COMPOSITION OF THE LABOR FORCE IN  
THE CAPE KENNEDY REGION

by

Norman G. Keig

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Prepared under NASA Research  
Grant NsG-507

Gainesville, Florida

June 15, 1965

GPO PRICE \$ \_\_\_\_\_

CFSTI PRICE(S) \$ \_\_\_\_\_

Hard copy (HC) 1.00

Microfiche (MF) .50

PROJECTIONS OF THE SIZE AND INDUSTRIAL COMPOSITION  
OF THE LABOR FORCE IN THE CAPE KENNEDY REGION

If the industrial growth rates of the region and the individual counties were projected to the years 1965, 1970, and 1975, what type of industrial pattern would emerge? This question is the central subject of this report. The emphasis is on "projection" rather than "prediction" because the former is a less treacherous task to undertake at this point in the analysis, at least for this investigator.

Difficulties of Prediction

The perilous nature of the task of predicting future economic developments in the region may be illustrated with reference to forecasting the future manpower requirements of the missile and space programs. These programs are the foundations for the recent rapid economic development of Brevard County and to a lesser extent of the other counties in the region. Prediction of the manpower requirements of these programs requires that assumptions be made regarding natural events, political developments, and economic conditions in the nation and the world.

These programs were located at Cape Kennedy because the vast expanse of the ocean could be safely used as a landing area for projectiles, the climate and weather made operations feasible all through the year, and there were other advantageous aspects of the natural environment. It is true that the programs have not been interrupted by New England style blizzards, but hurricanes have left their mark. The prospect that the area may be entering another cycle in which

hurricanes may increase in number during the season, coupled with technological developments which have made the location of the programs less dependent on being near a vast expanse of water, could cause a retardation in the growth of, if not an actual decline in, the programs in the region.

The programs are also dependent on political events both at home and abroad. The programs seem to be linked in some degree to the successes and failures of the Union of Soviet Socialist Republics in this technological area. Successes tend to make the Congress of the United States accept more readily the vast federal expenditures required by the programs. Failures, on the other hand, tend to produce more questioning of the desirability of such expenditures. Furthermore, the extent to which the space program is developed in Florida rather than in other states may depend in part on the relative political weight which the Congressional delegations from Florida have in Washington, D. C.

Changes in economic conditions at home are a third important factor to be considered. Inflationary pressures might lead to a curtailment or less rapid growth of the federal expenditures on the programs in order to reduce aggregate spending in the economy. Deflation, on the other hand, might make the programs more acceptable as something akin to public works measures. These natural, political, and economic factors are only a few of the many variables which must be taken into account in making predictions about future manpower needs.

The difficulties in making predictions about manpower needs may be illustrated in connection with the forecasting record of the AFETR.

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Forecasts of future manpower requirements are made quarterly. For June, 1964, the forecasts of the total permanent work force ranged from a low of 23,944 (1960 forecast) to a high of 32,385 (1962 forecast). The actual number turned out to be 27,542, which was about 15 per cent higher than the low estimate and about 17.5 per cent below the high estimate. Furthermore, it represented an increase of 36 per cent over the size of the work force in 1960.

In the same period, forecasts of the number of construction workers for 1964 ranged from a low of 1,375 (1960 forecast) to a high of 13,000 (1962 forecast). The actual figure was 3,192, which was about 53 per cent of the number predicted as late as June, 1963. The size of the permanent work force is expected to stabilize at around 27,000 by 1970 and the number of construction workers at around 2,400. These data are cited not with any idea of criticizing the forecasting procedures employed but merely to indicate how difficult it is to make accurate forecasts even when the persons doing the forecasting have had considerable experience in such work.

### The Projections

In order to avoid the pitfalls of prediction, this study is limited to projecting the labor force and industrial growth rates of the recent past. Data for this purpose are found in the estimates of the labor force made by the Florida Industrial Commission. The Commission publishes data pertaining to the size of the civilian labor force, the number of unemployed workers, the numbers employed in agricultural and nonagricultural establishments, and the number of self-employed

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nonagricultural workers. Wage and salary workers in nonagricultural establishments are classified according to industry. The data are published monthly for Brevard, Orange, Seminole, and Volusia Counties. However, the monthly labor force estimates for Brevard and Seminole Counties date back only to 1960. Annually the Commission publishes labor force estimates as of March for Indian River, Lake, and Osceola Counties.

The projections presented below were derived from the employment and labor force estimates for the years 1960 to 1964, inclusive. No altogether satisfactory method of making projections on the basis of data for only five years suggested itself. Mathematical formulae were tried but the results were rejected as ludicrous. In the end, the trends in employment in the various categories in this short period were observed, measured, and projected into the future, tempered in some cases by the judgment of the analyst.

The first set of projections, shown in Table 1, indicate that total employment in the seven-county region, using 1960 as the base year, will increase 32.27 per cent by 1965, 68.05 per cent by 1970, and 103.88 per cent by 1975. An increase of 122.89 per cent in the employment of nonfarm wage and salary workers is projected for 1975 over 1960, and one of 66.86 per cent, or something over half as much, in the employment of self-employed and domestic workers. The employment of agricultural workers is projected to decline by 13.79 per cent.

The projections for the region are summations of the projections for the individual counties, for the region does not have a status, politically or economically, independent of the separate counties.

Labor Force

Table 1. - Estimates of Total Employment, Nonfarm Wage and Salary Workers, Self-Employed and Domestic Workers, and Farm Workers in 1960, and Projections to 1965, 1970, and 1975

Area	Numbers of Workers				Percentage Changes		
	1960	1965	1970	1975	1960-65	1960-70	1960-75
Total Employment							
Brevard	39,300	68,825	97,400	123,975	75.13	147.84	215.46
Indian River	7,900	10,225	12,450	14,750	29.43	57.59	86.71
Lake	16,300	18,830	21,000	23,300	15.52	28.83	42.94
Orange	97,200	118,050	145,900	176,300	21.45	50.10	81.38
Osceola	4,050	5,005	5,955	6,940	23.58	47.04	71.36
Seminole	12,100	15,975	20,200	23,750	32.02	66.94	96.28
Volusia	38,500	47,925	58,950	70,050	24.48	53.12	81.95
Region	215,350	284,835	361,885	439,065	32.27	68.05	103.88
Nonfarm Wage and Salary Workers							
Brevard	33,500	60,925	87,050	111,175	81.87	159.85	231.87
Indian River	5,300	7,275	9,200	11,100	37.26	73.58	109.43
Lake	9,800	12,130	14,100	16,200	23.78	43.88	65.31
Orange	77,700	96,750	121,700	149,800	24.52	56.63	92.79
Osceola	2,350	3,055	3,855	4,690	30.00	64.04	99.57
Seminole	7,300	10,525	13,850	16,700	44.18	89.73	128.87
Volusia	28,800	37,375	47,450	57,550	29.77	64.76	99.83
Region	164,750	228,035	297,235	367,215	38.41	80.42	122.89
Self-Employed and Domestic Workers							
Brevard	4,800	7,000	9,500	12,000	45.83	97.92	150.00
Indian River	1,600	1,950	2,350	2,750	21.88	46.88	71.88
Lake	2,900	3,300	3,700	4,100	13.79	27.59	41.38
Orange	13,400	15,400	18,500	21,000	14.93	38.06	56.72
Osceola	1,200	1,450	1,650	1,850	20.83	37.50	54.17
Seminole	2,800	3,600	4,600	5,400	28.57	64.29	92.86
Volusia	8,300	9,150	10,200	11,300	10.24	22.89	36.14
Region	35,000	41,850	50,500	58,400	19.57	44.29	66.86
Farm Workers							
Brevard	1,000	900	850	800	-10.00	-15.00	-20.00
Indian River	1,000	1,000	900	900	---	-10.00	-10.00
Lake	3,600	3,400	3,200	3,000	- 5.56	-11.12	-16.67
Orange	6,100	5,000	5,700	5,500	- 3.28	- 6.56	- 9.84
Osceola	500	500	450	400	---	-10.00	-20.00
Seminole	2,000	1,850	1,750	1,650	- 7.50	-12.50	-17.50
Volusia	1,400	1,400	1,300	1,200	---	- 7.14	-14.29
Region	15,600	14,950	14,150	13,450	- 4.17	-10.29	-13.79

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The largest percentage increase in total employment (215.46 per cent from 1960 to 1975) is projected for Brevard County, with Seminole County a poor second and Indian River County third. The smallest percentage increase over the years is projected for Lake County, with Osceola County next to low. In terms of absolute numbers of workers, the largest increases are projected for Brevard County, Orange County, and Volusia County in that order.

In the important category of nonfarm wage and salary workers, the largest percentage increases are again projected for Brevard County (231.87 per cent from 1960 to 1975). The second largest percentage increases go to Seminole County, and the third largest to Indian River County. The smallest percentage increases are projected for Lake County, with Orange County having the next to the smallest increase. Once more, however, the largest increases in the absolute numbers of workers are projected for Brevard County, Orange County, and Volusia County in that order.

The same three counties (Brevard, Seminole, and Indian River) are the leaders once more in connection with projected percentage increases in the employment of self-employed and domestic workers. In this case, however, the smallest rates of increase are projected for Volusia County, and the next to smallest rates for Lake County. All counties in the region are projected to have net reductions in the employment of agricultural workers from 1960 to 1975. Figure 1 shows the total employment projected for the individual counties in 1965, 1970, and 1975 as compared with 1950 and 1960, while Figure 2

Figure 1. Total Employment by Counties in 1950 and 1960 and Projections for 1965, 1970, and 1975.

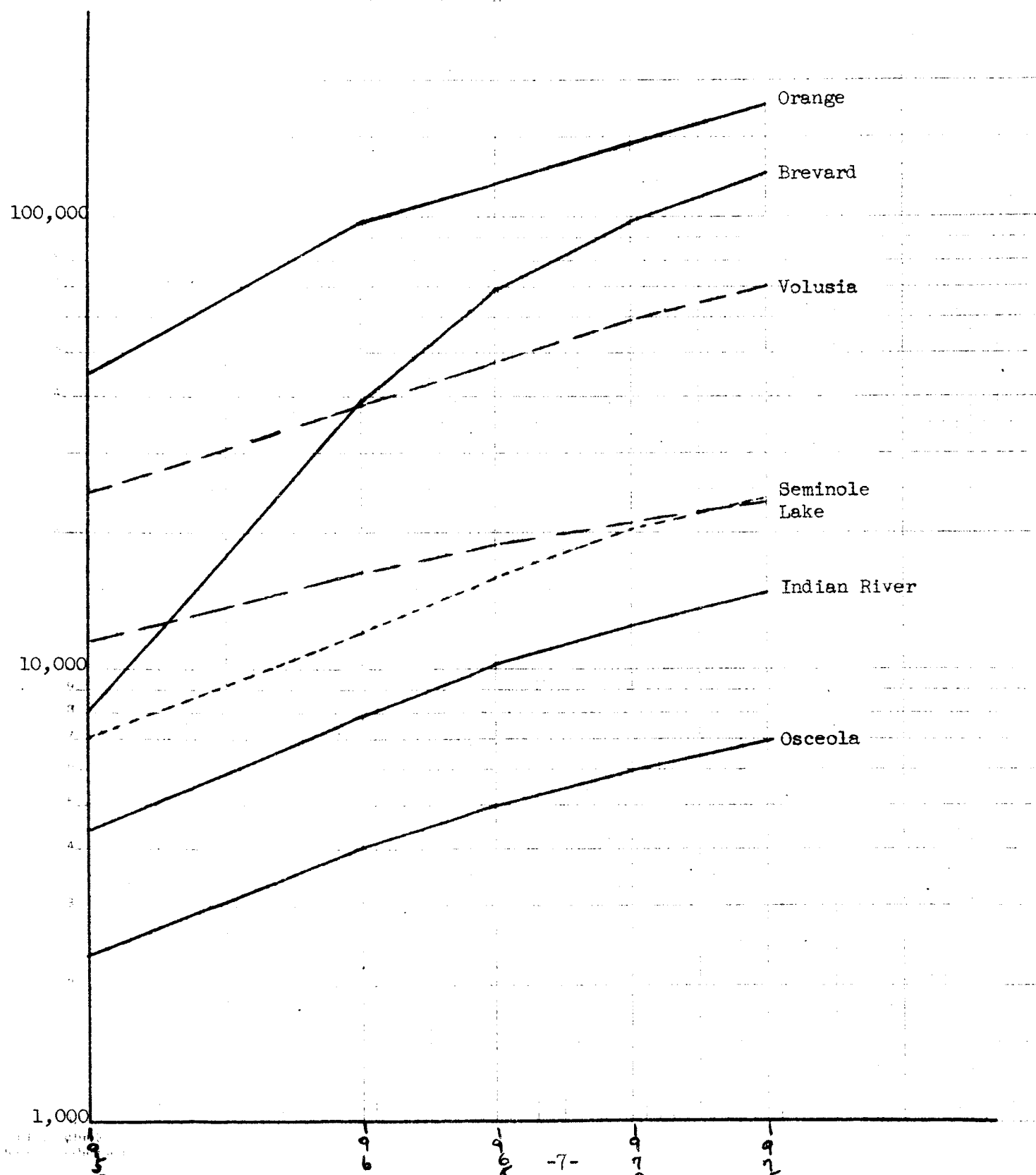
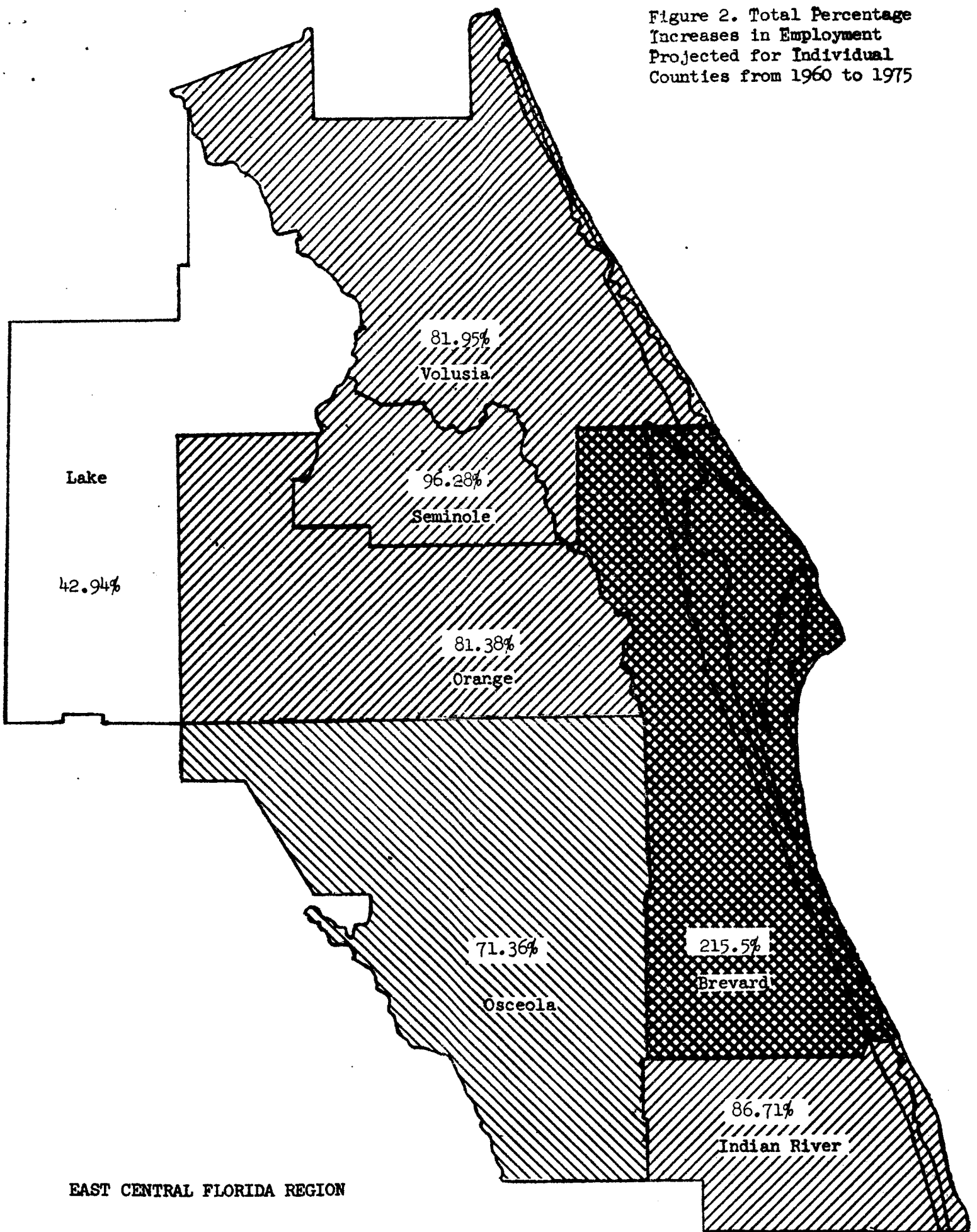




Figure 2. Total Percentage Increases in Employment Projected for Individual Counties from 1960 to 1975



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shows how the projected percentage increases in total employment from 1960 to 1975 are expected to be distributed on a geographical basis.

The employment of nonfarm wage and salary workers is projected to increase in the region as a whole by 38.41 per cent from 1960 to 1965, by 80.42 per cent from 1960 to 1970, and by 122.89 per cent from 1960 to 1975, as shown in Tables 2 and 3. The largest percentage increases would occur in the fields of government, services, and manufacturing, in that order, but the largest numbers of workers in 1975 would be employed in trade, services, and manufacturing.

In Brevard County the greatest percentage increases in employment would occur in finance, insurance, and real estate; trade; and government, and the largest numbers of workers would be employed in services, trade, and government. The largest percentage increases in employment in Indian River County would take place in construction, manufacturing, and government, but the largest numbers of workers in 1975 would be employed in the fields of trade, manufacturing, and services. Government, services, and manufacturing would provide the largest percentage increases in the employment of nonfarm wage and salary workers in Lake County, and the largest numbers of workers in 1975 would be employed in trade, services, and government.

In Orange County the largest percentage increases in the employment of nonfarm wage and salary workers would take place in government, services, and manufacturing, but the largest numbers of workers would be employed in trade, manufacturing, and services. The largest percentage increases in employment in Osceola County would occur in

Table 2. - Employment of Nonfarm Wage and Salary Workers by Industries in the Region and Individual Counties in 1960 and Projections for 1965, 1970, and 1975

	1960	1965	1970	1975	1960	1965	1970	1975
	Region							
Manufacturing	29,750	41,905	54,050	67,025	6,900	10,225	13,650	17,275
Contract Construction	16,850	22,925	29,350	35,850	3,200	7,500	10,000	11,500
Transportation, Communication, and Other Public Utilities	8,250	10,780	12,950	14,820	1,200	1,950	2,700	3,300
Trade	45,750	58,950	74,560	90,970	6,000	11,000	18,000	24,000
Finance, Insurance, and Real Estate	9,050	12,300	16,100	20,200	1,000	2,250	3,400	4,300
Services	32,650	45,525	61,025	76,350	10,700	17,300	23,800	30,800
Government	22,450	35,650	49,200	62,000	5,000	10,700	15,500	20,000
<u>Total</u>	<u>164,750</u>	<u>228,035</u>	<u>297,235</u>	<u>367,215</u>	<u>33,500</u>	<u>60,925</u>	<u>87,050</u>	<u>111,175</u>
	Lake County							
Manufacturing	800	1,100	1,550	2,000	1,400	1,780	2,200	2,750
Contract Construction	500	700	1,000	1,300	1,250	1,300	1,450	1,600
Transportation, Communication, and Other Public Utilities	150	200	250	300	450	500	600	700
Trade	1,750	2,500	2,900	3,300	3,550	3,700	4,100	4,400
Finance, Insurance, and Real Estate	350	375	500	650	400	600	750	950
Services	950	1,200	1,550	1,850	1,400	2,000	2,500	2,900
Government	800	1,200	1,450	1,700	1,350	2,250	2,500	2,900
<u>Total</u>	<u>5,300</u>	<u>7,275</u>	<u>9,200</u>	<u>11,100</u>	<u>9,800</u>	<u>12,130</u>	<u>14,100</u>	<u>16,200</u>
	Osceola County							
Manufacturing	16,100	20,500	26,000	31,500	350	500	750	1,000
Contract Construction	9,100	9,500	11,500	14,500	100	125	200	250
Transportation, Communication, and Other Public Utilities	3,800	5,050	5,700	6,300	50	80	100	120
Trade	22,700	28,000	33,000	40,000	750	950	1,060	1,170
Finance, Insurance, and Real Estate	5,000	6,000	7,500	9,500	100	200	300	400
Services	12,000	15,000	20,000	25,000	400	500	625	750
Government	9,000	12,700	18,000	23,000	600	700	850	1,000
<u>Total</u>	<u>77,700</u>	<u>96,750</u>	<u>121,700</u>	<u>149,800</u>	<u>2,350</u>	<u>3,055</u>	<u>3,885</u>	<u>4,690</u>
	Volusia County							
Manufacturing	1,000	1,750	2,400	3,000	3,200	6,250	8,000	10,500
Contract Construction	800	1,100	1,500	1,800	2,300	2,500	3,200	3,900
Transportation, Communication, and Other Public Utilities	800	1,100	1,400	1,600	1,800	1,900	2,200	2,500
Trade	2,000	2,300	3,000	3,600	9,200	10,500	12,500	14,500
Finance, Insurance, and Real Estate	300	450	600	750	1,900	2,425	3,050	3,650
Services	1,100	1,925	2,550	3,050	6,100	7,600	10,000	12,000
Government	1,300	1,900	2,400	2,900	4,300	6,200	8,500	10,500
<u>Total</u>	<u>7,300</u>	<u>10,525</u>	<u>13,850</u>	<u>16,700</u>	<u>28,800</u>	<u>37,375</u>	<u>47,450</u>	<u>57,550</u>

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Table 3. - Projected Percentage Increases Over 1960 in the Employment of Nonfarm Wage and Salary Workers in the Region and Individual Counties in 1965, 1970, and 1975

	1965	1970	1975	1965	1970	1975
	Region			Brevard County		
Manufacturing	40.86	81.68	125.29	48.19	97.83	150.36
Contract Construction	36.05	74.18	112.76	134.38	212.50	259.38
Transportation, Communication, and Other Public Utilities	30.67	56.97	79.64	62.50	125.00	175.00
Trade	28.85	62.97	98.84	183.33	200.00	300.00
Finance, Insurance, and Real Estate	35.91	77.90	123.20	125.00	240.00	330.00
Services	39.43	86.91	133.84	61.68	122.43	187.85
Government	<u>58.80</u>	<u>119.15</u>	<u>176.17</u>	<u>114.00</u>	<u>210.00</u>	<u>300.00</u>
All Categories	<u>38.41</u>	<u>80.42</u>	<u>122.89</u>	<u>81.87</u>	<u>159.85</u>	<u>231.87</u>
	Indian River County			Lake County		
Manufacturing	37.50	93.75	150.00	27.33	61.49	95.65
Contract Construction	40.00	100.00	160.00	4.40	26.37	59.34
Transportation, Communication, and Other Public Utilities	33.33	66.67	100.00	32.89	50.00	65.79
Trade	42.86	65.71	88.57	23.35	45.37	76.21
Finance, Insurance, and Real Estate	7.14	42.86	85.71	20.00	50.00	90.00
Services	26.32	63.16	94.74	25.00	66.67	108.33
Government	<u>50.00</u>	<u>81.25</u>	<u>112.50</u>	<u>41.11</u>	<u>100.00</u>	<u>155.55</u>
All Categories	<u>37.26</u>	<u>73.58</u>	<u>109.43</u>	<u>23.78</u>	<u>43.88</u>	<u>65.31</u>
	Orange County			Osceola County		
Manufacturing	27.33	61.49	95.65	42.86	114.29	185.71
Contract Construction	4.40	26.37	59.34	25.00	100.00	150.00
Transportation, Communication, and Other Public Utilities	32.89	50.00	65.79	60.00	100.00	140.00
Trade	23.35	45.37	76.21	26.67	41.33	56.00
Finance, Insurance, and Real Estate	20.00	50.00	90.00	100.00	200.00	300.00
Services	25.00	66.67	108.33	25.00	56.25	87.50
Government	<u>41.11</u>	<u>100.00</u>	<u>155.55</u>	<u>16.67</u>	<u>41.67</u>	<u>66.67</u>
All Categories	<u>24.52</u>	<u>56.63</u>	<u>92.79</u>	<u>30.00</u>	<u>65.32</u>	<u>99.57</u>
	Seminole County			Volusia County		
Manufacturing	75.00	140.00	200.00	95.31	150.00	228.13
Contract Construction	37.50	87.50	125.00	8.70	39.13	69.57
Transportation, Communication, and Other Public Utilities	37.50	75.00	100.00	5.56	22.22	38.89
Trade	15.00	50.00	80.00	14.13	35.87	57.61
Finance, Insurance, and Real Estate	50.00	100.00	150.00	27.63	60.53	92.11
Services	75.00	131.82	177.27	24.59	63.93	96.72
Government	<u>46.15</u>	<u>84.62</u>	<u>123.08</u>	<u>44.19</u>	<u>97.67</u>	<u>144.19</u>
All Categories	<u>44.18</u>	<u>89.73</u>	<u>128.77</u>	<u>29.77</u>	<u>64.76</u>	<u>99.83</u>

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finance and related activities, manufacturing, and construction, but the largest numbers of workers in 1975 would be found in trade, manufacturing, and government.

Manufacturing, services, and finance and related activities would provide the greatest percentage increases in the employment of nonfarm wage and salary workers in Seminole County, with trade, services, and manufacturing actually using the largest numbers of workers by 1975. Finally, in Volusia County, the largest percentage increases in employment are projected to occur in manufacturing, government, and services, while the largest numbers of workers would be employed in 1975 in trade and services, with manufacturing and government tied for third place. Figure 3 shows the total employment of nonfarm wage and salary workers in the individual counties in 1960 along with the projections for 1965, 1970, and 1975, while Figure 4 presents the geographical distribution of the total percentage increases in such employment which would be expected to occur by 1975 on the basis of our projections.

Figure 3. Total Employment of Nonfarm Wage and Salary Workers in Individual Counties in 1960 and Projections for 1965, 1970, and 1975.

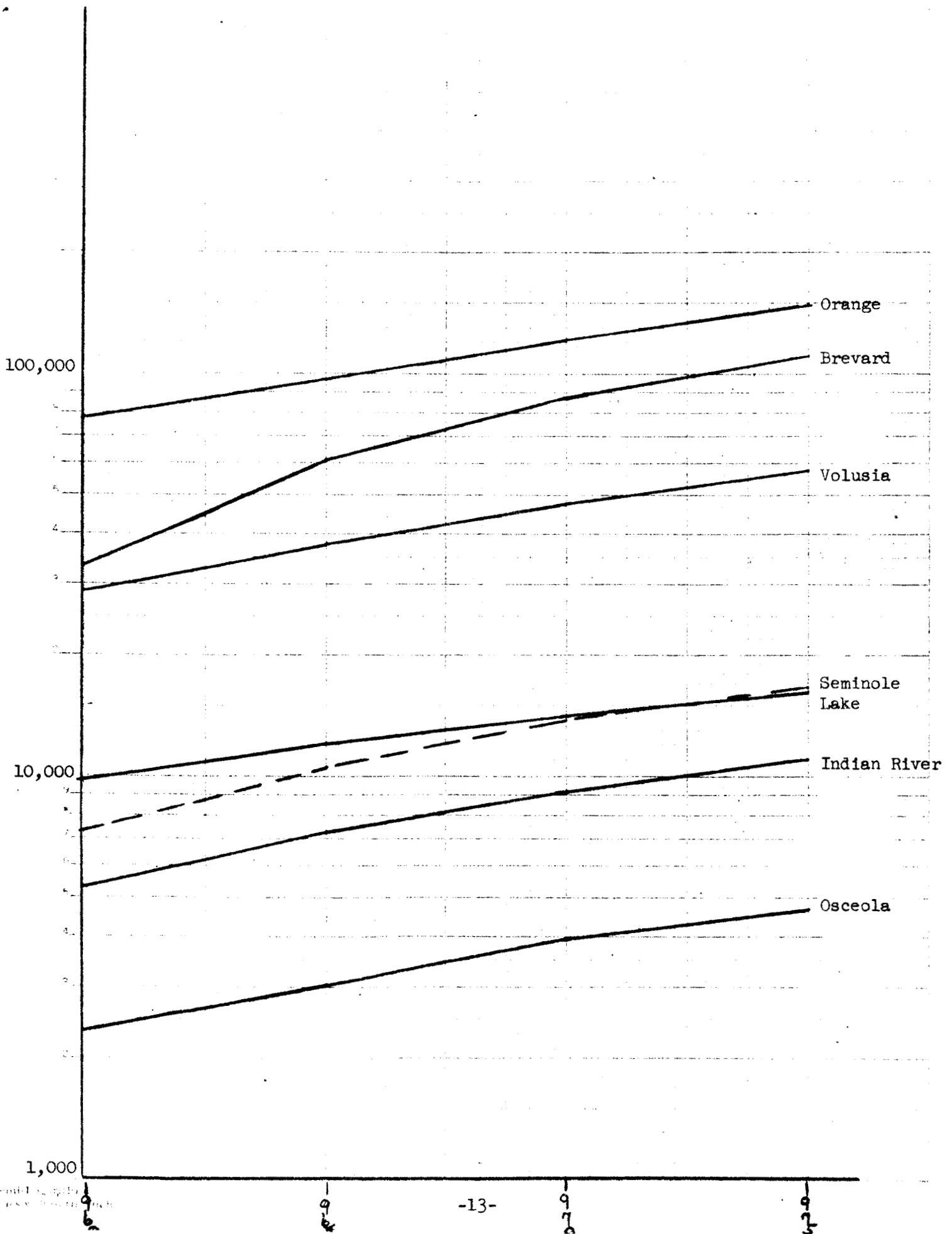
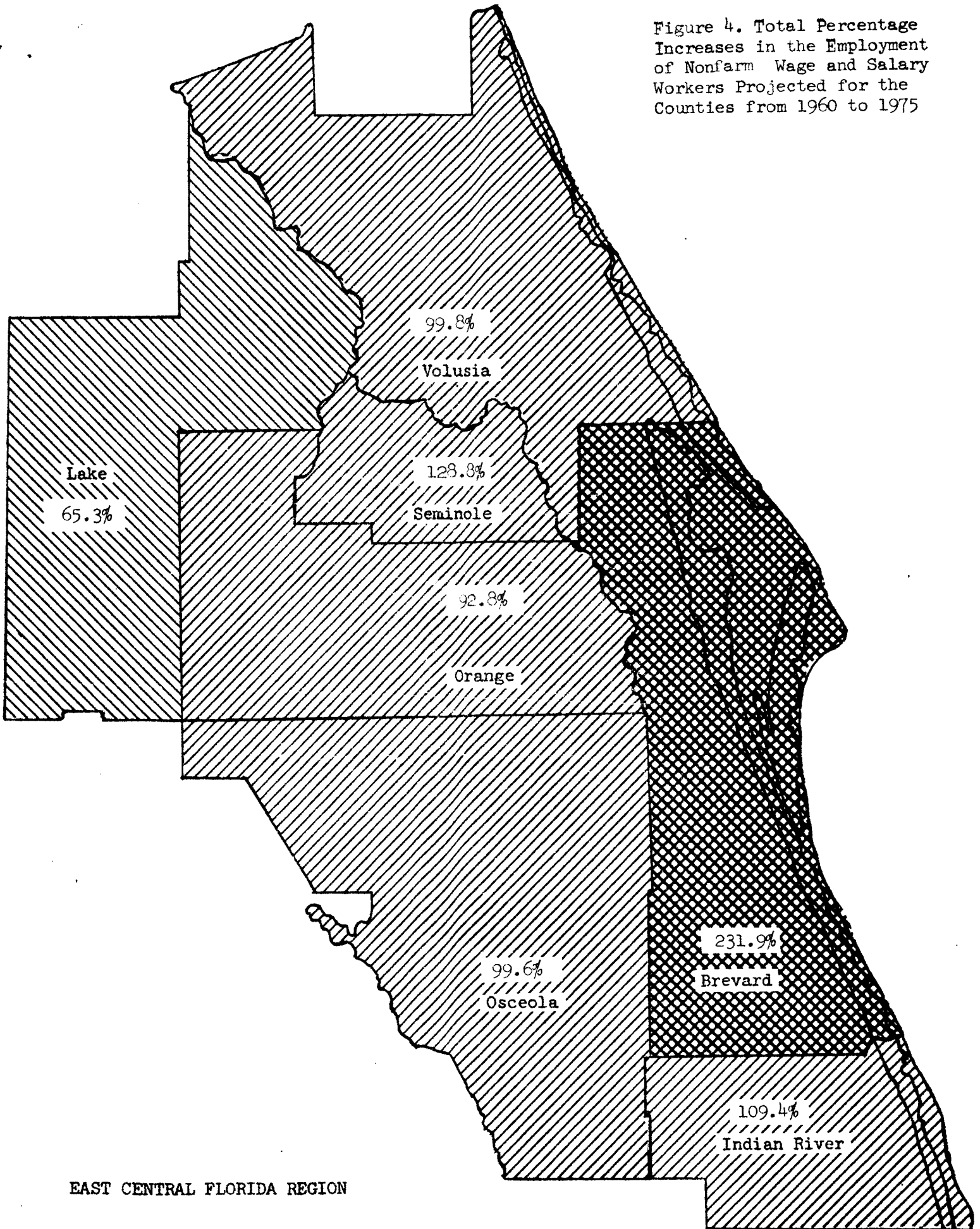


Figure 4. Total Percentage Increases in the Employment of Nonfarm Wage and Salary Workers Projected for the Counties from 1960 to 1975



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