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EMPLOYMENT PATTERNS IN THE FOURTH DISTRICT, 1965-1967

In the past three years, nonfarm employment[1] in the Fourth District experienced in turn periods of sharp increase, slackened growth, outright decline, and renewed growth. Nonfarm employment increased at an accelerated pace from early 1965 until late 1966, when employment growth began to taper off. Slackened growth subsequently was followed by a period of declining employment. In mid-1967, employment began once again to increase, although the advance was obscured somewhat by major strikes in the second half. This article examines the behavior of nonfarm employment in the Fourth Federal Reserve District during 1965-1967 against the background of developments in the nation. The article also discusses the behavior of related series such as unemployment, the factory workweek, and weekly earnings.

EMPLOYMENT

During 1954-1964, the growth of nonfarm employment in the Fourth District[2] was slower than in the United States as a whole. This was due largely to the fact that the District experienced relatively small gains in nonfarm employment in periods of economic expansion and relatively large losses in periods of recession. As a result, the District's share of total employment in the United States declined almost continuously following the Korean War (see table). The decline was more pronounced in the manufacturing sector than in nonmanufacturing. Moreover, in both total nonfarm employment and manufacturing employment, the decline tended to accelerate during the years that fell within recession periods (1954, 1958, and 1961).

As shown in Chart 1, during 1965-1966, employment expanded rapidly in both the

[1] Employment data used in this article are the nonagricultural wage and salary employment series published by the U. S. Department of Labor and cooperating state agencies.

[2] As used here, data for the Fourth District cover the entire State of Ohio and the Pittsburgh and Erie, Pennsylvania, metropolitan areas. Corresponding monthly statistics for the remaining portions of the District are not available on a current basis. The resulting less-than-complete employment totals for the District — estimated to fall short by about 10 percent for the manufacturing sector— do not significantly bias the conclusions.

Nonagricultural Wage and Salary Employment
Fourth District as Percent of United States Total
Annual Averages

	All Industries	Manufacturing	Nonmanufacturing
1950	8.01%	10.50%	6.75%
1951	8.10	10.70	6.75
1952	8.03	10.53	6.74
1953	8.13	10.60	6.81
1954	7.95	10.29	6.78
1955	7.93	10.32	6.73
1956	7.88	10.27	6.71
1957	7.85	10.21	6.72
1958	7.53	9.59	6.60
1959	7.41	9.46	6.48
1960	7.38	9.47	6.44
1961	7.15	9.11	6.30
1962	7.05	9.01	6.20
1963	6.99	9.05	6.11
1964	6.96	9.11	6.06
1965	6.97	9.13	6.05
1966	6.94	9.03	6.04
1967*	6.85	8.88	6.01

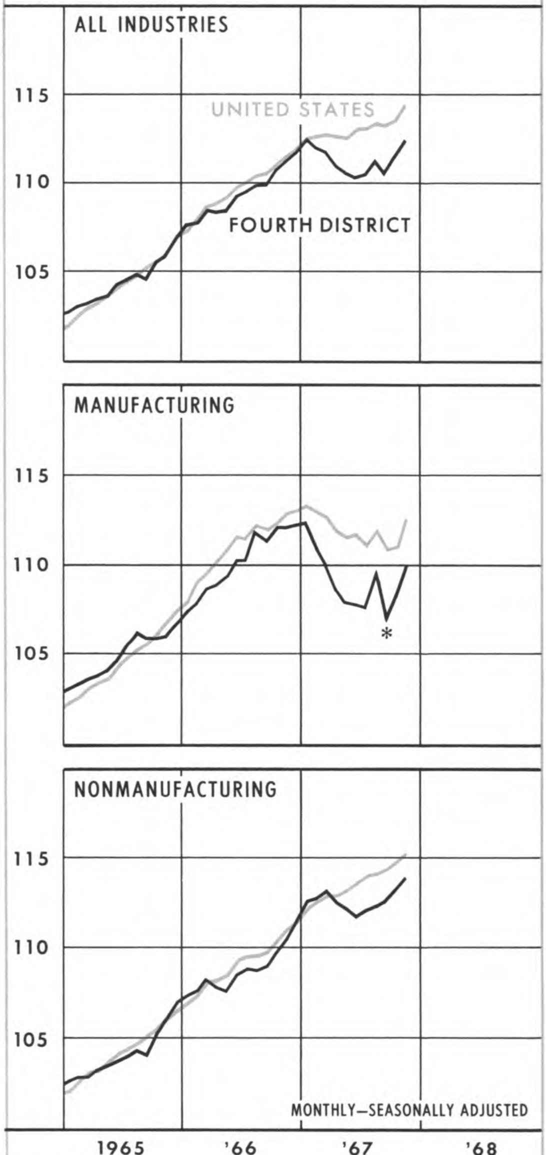
* Estimated by Federal Reserve Bank of Cleveland.

Sources: U. S. Department of Labor; Division of Research and Statistics, Ohio Bureau of Employment Services; Pennsylvania Bureau of Employment Security

Fourth District and the nation. Since employment gains in the District were at about the same pace as those in the nation (measured from average 1964 levels), the District's share of total nonfarm employment remained virtually unchanged. This was also the case in the nonmanufacturing component of total employment. In manufacturing, however, a leveling in late 1966 reduced the District's share of total manufacturing employment.

When nonfarm employment in the District turned down early in 1967, developments in the District and in the nation as a whole began to diverge. As shown in Chart 1, manufacturing employment peaked in January 1967 in both the District and the nation, but the subsequent decline was both longer and

Chart 1.
NONFARM PAYROLL EMPLOYMENT
United States and Fourth District
INDEX 1964=100



* Strike.
Sources of data: U.S. Department of Labor; Division of Research and Statistics, Ohio Bureau of Employment Services; Pennsylvania Bureau of Employment Security
Last entry: Nov. '67

deeper in the District than in the nation, thus perpetuating the previously mentioned pattern of larger losses in the District during periods of economic slack. The greater severity of employment loss in the District is underscored by the fact that manufacturing employment in the District was below the corresponding year-earlier level in each month from April through October 1967 compared with only July through October in the nation as a whole. In November 1967 — the latest month for which data are available — manufacturing employment in the District was still 2.1 percent below the January peak, compared with a shortfall of only 0.7 percent in the nation.

Nonmanufacturing employment continued to expand for a short time in 1967 after the downturn in manufacturing employment, but at a reduced pace. In the District, nonmanufacturing employment (seasonally adjusted) did not turn down until April, when the actual rise in the number employed was less than seasonally expected. The total loss in nonmanufacturing employment during April-June was fully recovered by October, and by November, nonmanufacturing employment in the District was 0.7 percent above its previous peak. As shown in Chart 1, nonmanufacturing employment in the nation continued to increase throughout 1967, although there was some hesitation during March-April. After the hesitation, nonmanufacturing employment resumed its earlier pace, and by November, was 2 percent above the March level.

Total nonfarm employment in the District fell by about 2 percent between February and June 1967, reflecting the sharp decline in manufacturing employment in the District combined with the mild decline in nonmanufacturing employment; during July-November, the employment loss was almost completely recovered. In contrast, total nonfarm employment in the nation dipped only slightly in April and May 1967, reflecting the relatively small reduction in manufacturing employment coupled with no decline in nonmanufacturing employment; by November, total nonfarm employment in the United States was 1.5 percent greater than the level reached in March 1967.

For 1967 as a whole, the performance of employment in the District, on an annual average basis, fell considerably short of both the previous year's performance and the national performance, as the following figures show:

	1965-1966		1966-1967	
	Fourth District	United States	Fourth District	United States
All industries	+4.7%	+5.2%	+1.9%	+3.2%
Manufacturing	+5.0	+6.2	—0.9	+0.8
Nonmanufacturing	+4.5	+4.7	+3.7	+4.2

The gap between the total numbers for the District and for the nation was wider in 1967 — a year with some economic slack — than in 1966 — a year marked by vigorous expansion — indicating further deterioration in 1967 in the District's share of total nonfarm employment in the United States (see accompanying table on page 4). On the other hand, the deterioration in 1967 was less than in 1961, 1957, or 1954.

In 1967, manufacturing employment, both in the District and in the nation, was set back more than nonmanufacturing employment, and the setback in manufacturing employment was more severe in the District. Because manufacturing employment accounts for about 38 percent of total nonfarm employment in the District compared with only 30 percent in the United States, the unfavorable performance of District manufacturing employment was particularly serious.

EMPLOYMENT IN INDIVIDUAL INDUSTRIES

In view of the relatively similar patterns of nonmanufacturing employment in the District and the nation during the period under review, the following discussion centers on the manufacturing sector. Chart 2 shows employment (on an index basis), in both the Fourth District and the nation, for selected major industries that are important in the economic life of the Fourth District. The chart provides an indication of the weak areas in the District. For example, during 1965-1967, employment in each of the five major durable goods industries reached a peak at a lower level in the District than in the United States, reflecting slower rates of employment growth in the District for those industries. The failure of the District to match national rates of growth occurred even in such "growth industries" as electrical equipment and machinery. Apparently, the fastest growing portions of those two industries are not sufficiently represented in the District.

During 1965-1967, the primary metal industries were plagued by wide swings in employment levels before and after the steel labor contract expiration date, as well as by a generally poor employment growth record. As a result, performance of the industry in the District fell below the national average in the closing months of 1965 and remained there during 1966 and 1967. Because employment in primary metals in the District constitutes nearly three times as large a proportion of manufacturing employment as in the nation — 19 percent and 7 percent, respectively — the depressing effect of an unfavorable performance on total manufacturing employment is obviously much greater in the District.

Generally speaking, the nondurable goods industries as a group appear to be more a source of employment stability than a source of vigorous growth (see Chart 2). In the District, the nondurable goods group accounts for only one-fourth of total manufacturing employment, compared with two-fifths in the nation as a whole. This means that a larger proportion of manufacturing employment in the District is drawn from the durable goods industries whose cyclical instability contributes to employment fluctuations that exceed the national average.

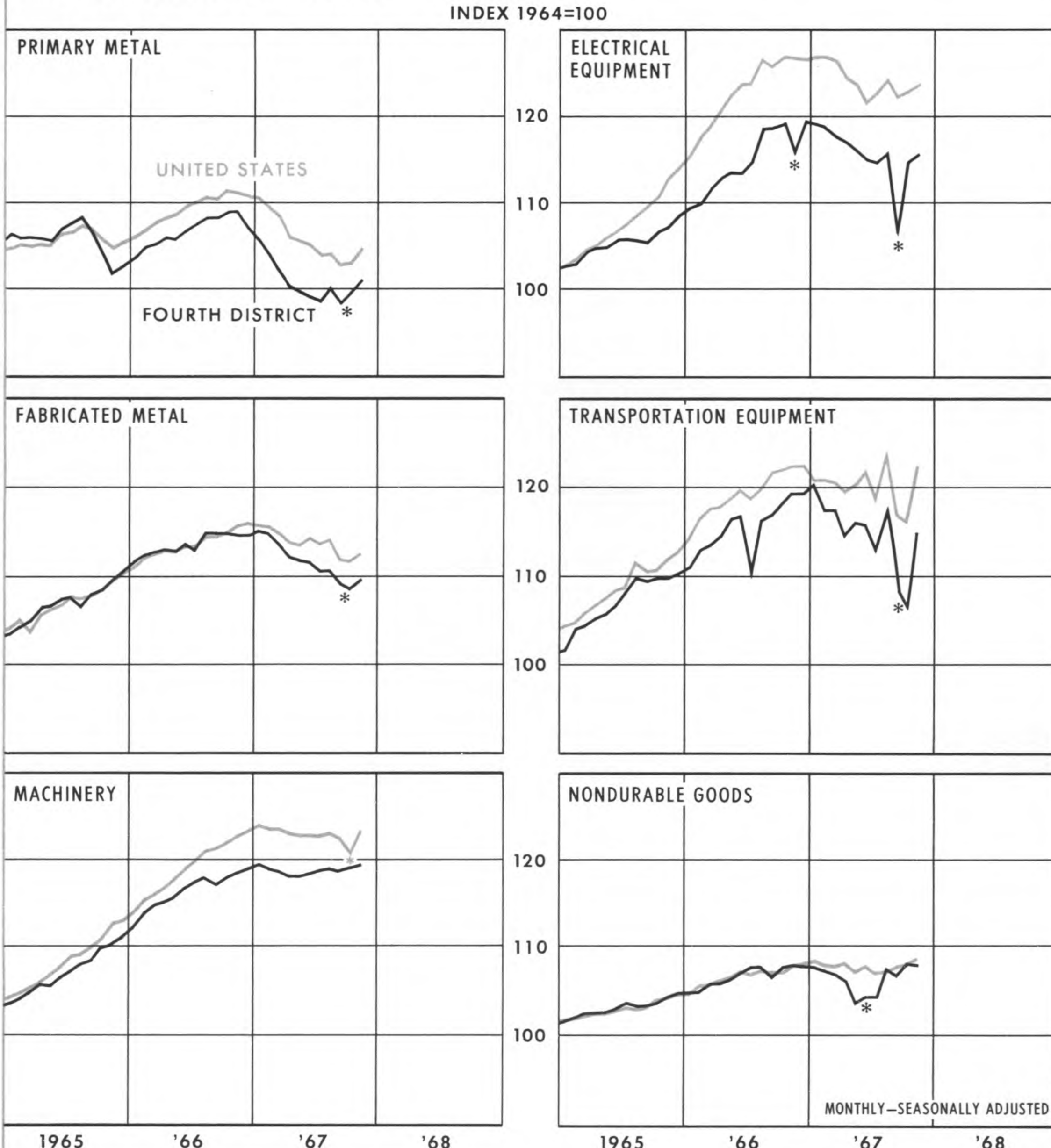
EMPLOYMENT IN MAJOR METROPOLITAN AREAS

The pattern of accelerated employment gains during 1965 and most of 1966, followed by a decline early in 1967 and recovery after midyear, generally also held true for the major metropolitan areas in the Fourth District. There were, however, some important individual variations because of differences in the industrial composition of individual areas. As would be expected, the variations were clearly much less pronounced in nonmanufacturing than in manufacturing. As

Chart 2.

EMPLOYMENT in SELECTED INDUSTRIES

United States and Fourth District



* Strike.

Sources of data: U.S. Department of Labor; Division of Research and Statistics, Ohio Bureau of Employment Services; Pennsylvania Bureau of Employment Security

Last entry: Nov. '67

shown in Chart 3, nonmanufacturing employment in the six areas continued to rise until early 1967, even after manufacturing employment turned down. When nonmanufacturing did turn down in these areas, the declines were less severe both in terms of duration and magnitude than was the case in manufacturing employment. In all areas except Pittsburgh, the reductions in nonmanufacturing employment were more than recovered by November 1967.

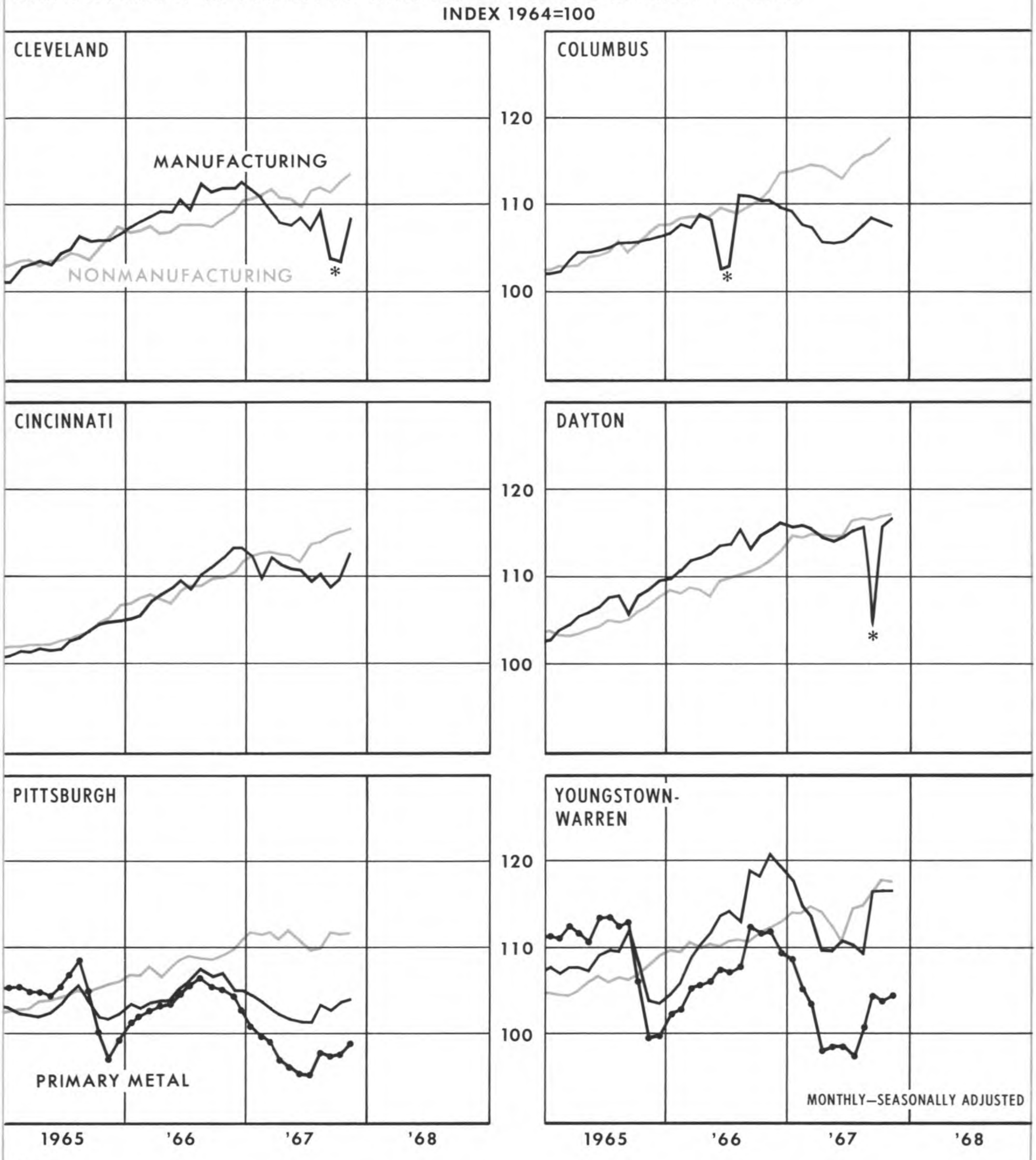
In marked contrast, the behavior of manufacturing employment during 1965-1967 varied considerably among the areas, in terms of both the magnitude and timing of changes. Among the six areas, Dayton stands out as having the largest, longest, and steadiest rise in manufacturing employment during the period under review, as well as the smallest decline in the first half of 1967. The loss, including the sharp setback experienced in the fall of 1967 due to a strike in the electrical equipment industry, was completely reversed by November. The substantial expansion of manufacturing employment in Dayton reflects the fact that two "growth industries" — machinery and electrical equipment — account for over one-half of the area's manufacturing employment. In the case of the machinery industry in Dayton, employment growth after 1964 considerably exceeded the national average.

At the other extreme, Pittsburgh represents the case of an area heavily influenced by an industry that experienced a net loss in employment during the period under review. Nearly 45 percent of Pittsburgh's factory employment is in primary metals (mostly steel), while only 15 percent is in the relatively stable nondurable goods sector. The early peak (August 1965) in employment in primary metals in Pittsburgh and the heavy adverse effects of subsequent employment declines in that industry on the area's total manufacturing employment — offsetting in part employment gains in other industries — are evident in Chart 3. Manufacturing employment in Pittsburgh declined by nearly 6 percent from a high in August 1966 to a low in June 1967, and by November 1967, showed a still unrecovered loss of over 3 percent. On the other hand, employment in manufacturing industries excluding primary metals declined by 3 percent between the high and the low, and was within 1 percent of full recovery by November. There was no net gain in manufacturing employment in the Pittsburgh area during the period under review.

The Youngstown-Warren area is another case where the primary metal industries heavily dominate manufacturing employment, accounting for over half of manufacturing employment. However, the effects of that industry's heavy employment losses in 1966 and 1967 were largely offset by a more than doubling of employment in the transportation equipment industry in Youngstown during the period under review, as the nation's largest automobile manufacturer established a new plant in the area. As shown in Chart 3, manufacturing employment in the Youngstown area declined by 9 percent between November 1966 and May 1967; by November 1967, manufacturing employment was still more than 3 percent below the earlier high. Without primary metals, the decline of manufacturing employment amounted to only 6 percent, and

Chart 3.

EMPLOYMENT in SELECTED MAJOR FOURTH DISTRICT AREAS



* Strike.

Sources of data: U.S. Department of Labor; Division of Research and Statistics, Ohio Bureau of Employment Services; Pennsylvania Bureau of Employment Security

Last entry: Nov. '67

by November 1967, all losses in employment were recovered.

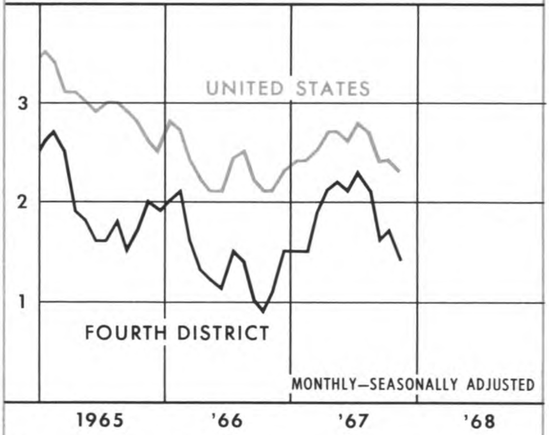
UNEMPLOYMENT

The accelerated rise in nonfarm employment in 1965 and most of 1966 was accompanied by a decline in unemployment[3] in both the District and the nation (see Chart 4). The low rates of insured unemployment in mid-1966 had not been attained for many years, either in the nation or in the District; from available evidence, it appears that the low rates achieved in 1953 came closest to matching the 1966 scores. Insured unemployment increased as the growth of manufacturing employment tapered off in late 1966 and then declined in the first half of 1967. The increase in the District in 1967 was greater than in the nation as a whole — 1.3 percentage points compared with 0.6 point — reflecting the relatively greater loss in manufacturing employment in the District.[4] However, the insured unemployment rate in the District in 1967 did not rise above the rate in the nation as it generally does in periods of a sharp decline in economic activity.

If employment levels after mid-1967 were not completely convincing in signaling the end of a period of economic slack, mainly because major strikes held back overall employment growth, no such uncertainty was evident from the behavior of insured unemployment. As shown in Chart 4, after mid-1967, the behavior of insured unemployment rates in both the nation and the District clearly supported the contention that economic activity had resumed an upward course. In fact, insured unemployment continued to improve in September and October even though the rate of total unemployment seemed to signal an almost alarming rise in joblessness.

The behavior of insured unemployment in the major metropolitan areas of the District was similar to that for the District as a whole during the period under review. There were, however, some variations with respect to the

Chart 4.
INSURED UNEMPLOYMENT
As Percent of Covered Employment
United States and Fourth District
Percent



Sources of data: U.S. Department of Labor; Division of Research and Statistics, Ohio Bureau of Employment Services; Pennsylvania Bureau of Employment Security

Last entry: Nov. '67

[3] Insured rather than total unemployment is used in this discussion because insured unemployment data (continued claims) for local areas appear to be more reliable than estimates of total unemployment, and because insured unemployment — unlike total unemployment — is immune to the movements of marginal workers into and out of the labor force.

[4] In the first half of 1967, the national rate of total unemployment was much less sensitive to the softening of employment than was the insured unemployment rate.

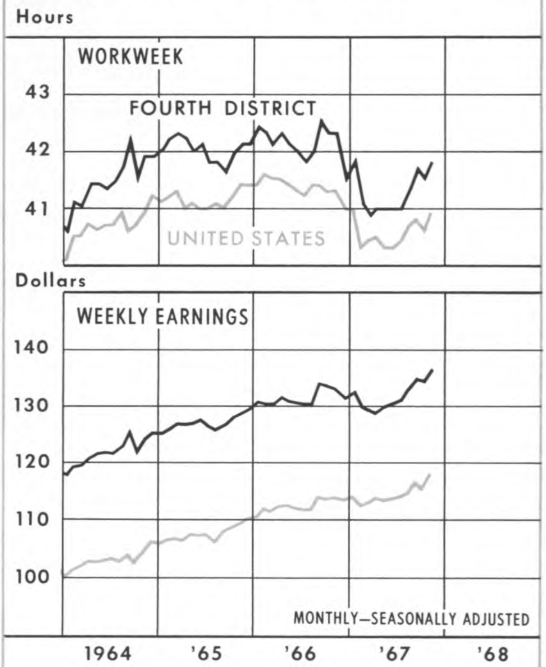
level and extent of fluctuations, most of which can be explained by circumstances unique to each area. In the Dayton area, for example, insured unemployment in the first half of 1967 rose relatively little, reflecting the modest decline in employment. At the other extreme, insured unemployment in the Youngstown-Warren area — usually a mirror image of the ups and downs of employment in the steel industry — rose sharply early in 1967, reflecting cutbacks in employment in primary metals.

FACTORY WORKWEEK

The behavior of the length of the workweek provides additional insights into the utilization of manpower resources. The top panel of Chart 5 shows average weekly hours of production workers in manufacturing industries in the Fourth District and the nation. As the chart clearly reveals, the average workweek throughout the period under review was significantly longer in the District than in the nation as a whole. In fact, that pattern is consistent with the record of the past 15 years. As a general rule, in periods of expansion, the workweek in the District has been considerably longer than in the United States as a whole; in periods of recession, the margin has tended to narrow or disappear completely. Nonetheless, the average difference of 0.8 hour in favor of the District that prevailed during 1964-1966 was wider than at any time since the beginning of the series in 1952.

In keeping with its recognized role as a leading indicator, the workweek in the District and the nation rose sharply in 1964, well before the acceleration of growth in employment in 1965. Growth of the workweek slackened during 1965 and 1966, both in the District and the nation, at a time when employment growth was strongest. The national workweek series peaked early in 1966 and gradually moved downward, until a sharp decline occurred in February 1967, coincident with the severe reduction of manufacturing employment previously discussed. The decline in the workweek from the high in 1966 to the low in 1967 was somewhat greater in

Chart 5.
FACTORY WORKWEEK and WEEKLY EARNINGS
United States and Fourth District



Sources of data: U.S. Department of Labor; Division of Research and Statistics, Ohio Bureau of Employment Services; Pennsylvania Bureau of Employment Security

Last entry: Nov. '67

the District than in the nation as a whole — 1.5 hours and 1.3 hours, respectively. As a result, the gap between the District and the nation narrowed to 0.6 hour in mid-1967. With the turnaround in employment during the second half of 1967, weekly hours in both the District and the nation returned to the levels from which the declines had started in February.

The aggregate workweek figure for manufacturing industries in the District tends to conceal the wide fluctuations that occur among the various industry groups. For example, in the transportation equipment industry, the shortest average workweek in 1967 was almost 8 hours less than the longest workweek (December 1965) during the period under review. The 8-hour difference was twice as large as that which occurred in the same industry in the nation as a whole; it was also considerably greater than the spread between the longest and the shortest workweeks in any other major industry in the District during 1965-1967. Because the transportation equipment industry represents nearly one-tenth of all manufacturing activity in the District, the wide swings in the workweek of that industry heavily influence the behavior of the total workweek for all industries combined.

WEEKLY EARNINGS

Changes in the length of the average workweek in the manufacturing industries play a major role in the changes in weekly earnings of factory workers. While earnings have a built-in upward bias as long as wage rates continue to rise, changes in the workweek are quite influential in tilting the balance of marginal changes in earnings. This, in fact, was the case during the period under review.

As shown in the bottom panel of Chart 5, weekly earnings rose vigorously in 1964 in line with the sharp increase in the workweek, and continued to advance, but at a more moderate pace in 1965 and most of 1966, both in the District and in the nation. The more moderate gain in earnings in 1965 reflected a small net increase in the workweek. In 1966, the advance in weekly earnings slowed even more, as the workweek began to decline and helped to neutralize the effect of rising wages. Earnings peaked in September 1966, and then declined slowly during the remainder of the year, in both the District and the nation; a further sharp decline in February 1967 reflected the severe reduction in the workweek referred to earlier. The decline in weekly earnings from the peak in 1966 to the low in 1967 was noticeably larger in the District than in the United States — over $5 per week compared with less than $2 — due to deeper cuts in the workweek and a greater proportion of high-wage industries in the District.

The severe decline in weekly earnings in early 1967 in the District — unlike the more modest decline in the nation — kept earnings during February-June below the level of the corresponding months in 1966 (see Chart 5). The shortfall was particularly large in those industries where the workweek was most drastically reduced, including transportation equipment and primary metals. In those industries, average earnings in the nation as a whole also dropped below year-earlier levels during several months in 1967, although not to the same extent as in the District. In the metropolitan areas where the transportation equipment and primary metal industries are major employers — including Cleveland, Pittsburgh, and Youngstown-Warren — weekly earnings also dropped below year-earlier levels during several months in 1967.

Weekly earnings in November 1967 (for all manufacturing industries combined) were well above the previous peak levels of September 1966 — by $2.50 in the District and $4 in the nation — even though the average workweek in November was 0.7 hour shorter in the District and 0.5 hour shorter in the United States than in September 1966.

CONCLUDING COMMENTS

Employment levels in the District will undoubtedly benefit from the quicker pace of activity in the major durable goods industries that is expected during the first half of 1968. The extent to which employment improves will determine whether the Fourth District will be able to recover fully the employment losses sustained during the early part of 1967. If the improvement is insufficient, then 1967 will have been another period — along with 1954, 1958, and 1961 — when the Fourth District's share of the nation's total nonfarm employment experienced a sizable permanent reduction.

EMPLOYMENT PERFORMANCES OF CLEVELAND, PITTSBURGH, AND CINCINNATI, 1950-1966

PART II: COMPARISON WITH 13 CITIES

This study is concerned with comparative employment performances of Cleveland, Pittsburgh, and Cincinnati during 1950-1966. In Part I, which appeared in the November 1967 issue of the *Economic Review*, data for the three cities were compared with data for the United States for the 1950-1960 and 1959-1964 periods. In the present article, the three cities are compared with ten other large cities of the East and North Central regions of the United States, also for the two periods under review. The third and final article will appear in a later issue of the *Economic Review*, and will update the findings of the first two articles, centering attention on the period from 1964 through 1966.

OVERVIEW ON THE 13 CITIES

Table IV presents background data on the 13 cities under review. As the data show, the cities in 1960 ranged in population size from Chicago (6.2 million) to Kansas City (1.1 million). In 1960, Pittsburgh ranked fifth among the 13 cities; Cleveland, seventh; and Cincinnati, eleventh. Table IV also includes data on percent changes in both total employment and covered employment for the various metropolitan areas for 1950-1960 and 1959-1964.[15] In both cases, the percent changes reflect the effects of industry mix as well as competitive factors for individual industries. Percent changes are shown at the bottom of the table for the 13-city total and for the United States as a whole. The scores for the 13-city total are consistently less favorable than the United States totals, with the differences even more marked in the case of covered employment.

In terms of percent change in total employment, 1950-1960, Kansas City scored the largest gain (23.8 percent) while Pittsburgh

[15] "Percent Change in Employment, 1950-1960" and "Percent Change in Covered Employment, 1950-1960" differ because the former is based on more complete data. "Covered" employment includes that portion of "total" nonagricultural employment represented by the 28 industries listed in the major tables of this study. See *Growth Patterns in Employment by County, 1940-1950 and 1950-1960*, by Lowell D. Ashby, Office of Business Economics, U. S. Department of Commerce, 8 volumes, 1965, and Technical Note, Appendix.

showed the smallest gain (3.5 percent). The considerably smaller rates of gain indicated in the "Percent Change in Covered Employment, 1950-1960" reflect the fact that the industries not covered in this study, especially the category "Industry not reported," would have made the total results more favorable.[16] For 1950-1960, in terms of percent change in covered employment, Minneapolis-St. Paul had the most favorable score, with Kansas City second. Pittsburgh's gain was the smallest. In the case of percent change in total employment, Kansas City was first, with Minneapolis-St. Paul only slightly behind. Again, Pittsburgh had the worst showing.

For 1959-1964, in percent change in covered employment, Baltimore had the most favorable score, with Kansas City second; again, Pittsburgh's total was least favorable, in fact showing a substantial decline (see Table IV). In terms of percent change in total employment for 1959-1964, Minneapolis-St. Paul ranked first; Kansas City, second; and Buffalo, last.

13-CITY PERFORMANCE BY INDUSTRIES, 1950-1960 AND 1959-1964

A comparison of the employment performance for each of the 13 metropolitan areas, by the 28 industry or service categories,[17] is shown in Tables V-a-m. The Baltimore metropolitan area is used for illustration (see Table V-a). As shown in Table V-a, for the "Food and kindred products" industry (No. 3), there was a 10.7 percent employment gain between 1950 and 1960. The relative growth indicator for that industry amounted to plus 492, when computed against the 13-city aggregate rather than against the United States total as used in the earlier article.[18] In the second period (1959-1964), Baltimore had an employment *decline* of 2.7 percent for "Food and kindred products," accompanied by a relative growth indicator (compared with the 13 cities) of plus 1,493. The contrasting performances of the two periods clearly implies that the 13-city aggregate for "Food and kindred products" could not have been very favorable during the 1959-1964 period. This is confirmed by the percent changes in employment for the 13-city aggregate for the two periods, shown in the last two columns of Table V-a. Thus, the 13 cities shifted from an employment gain of 8.0 percent for "Food and kindred products" in the first period to a decline of 10.5 percent in the second period. The scores for the other cities and industry categories are presented in the subdivisions of Table V.

For the "Total of covered industries," the percent change in employment (i.e., plus 12.2 percent for Baltimore for 1950-1960) reflects

[16] That is especially so in the case of Chicago where "Industry not reported" was quite large in the 1950-1960 period. The marked differences between the figures shown in "Percent Change in Employment" and "Percent Change in Covered Employment" would constitute a serious defect if the main argument were centered around the "Percent Change in Covered Employment." The emphasis in this study, however, is mainly on differences between industries within a given area, and between areas, rather than on total performances of the cities.

[17] See Technical Note, Appendix.

[18] See "Employment Performances of Cleveland, Pittsburgh, and Cincinnati, 1950-1966, Part I: Comparison with the United States," *Economic Review,* Federal Reserve Bank of Cleveland, Cleveland, Ohio, November, 1967.

both the advantage or disadvantage that the city may have had because of its "industry mix," i.e., its relative proportion of fast-growing industries and its competitive performance among the 13 cities (relative growth indicator). However, the total for the relative growth indicator (plus 13,374 for Baltimore for 1950-1960) reflects only its competitive standing against the other selected cities, based on differential percent changes. While the emphasis in this study is on competitive standings, especially when the pattern within a given metropolitan area is examined, the overall percent change in employment is also a valid statistic and in certain respects is more comprehensive and more familiar in concept.

HIGHS AND LOWS AMONG THE CITIES

Table VI reveals the cities that are high or low scorers among the 13, for the various industries in each of the two periods. Section a includes the 1950-1960 period and section b, the 1959-1964 period.

Cleveland, Pittsburgh, and Cincinnati only appear a few times as high scorers in either percent change in employment or in the relative growth indicator for 1950-1960. Cleveland had the highest relative growth indicator in the "Motor vehicles and equipment" industry as a result of the surge in employment in that industry during the period; for percent change in employment in motor vehicles, however, Milwaukee was first (see Table VI-a). Pittsburgh was high in "Lumber, wood products, furniture" in the 1950-1960 period for both the percent change and relative growth indicator, and also had the largest relative growth indicator for "Entertainment, recreation services." Cincinnati was first in "Aircraft and parts, ships, etc." in the 1950-1960 period, as measured by percent change in employment; but St. Louis, because of its larger employment in the industry, was high in the relative growth indicator. Cincinnati was also the highest in percent change in "Trucking and warehousing" and "Communications" in the 1950-1960 period, although for both industries, other cities had larger relative growth indicators.

In the 1959-1964 period, highs for the three cities were less frequent. Cleveland had the largest relative growth indicator in "Mining" in the 1959-1964 period. In percent change in employment, Pittsburgh led in "Textile mill products" and "Lumber, wood products, furniture," while Cleveland led in unclassified manufacturing, a category that is difficult to interpret. Cincinnati does not appear on the list of highs for the 1959-1964 period.

In the list of low scorers, particularly in the 1959-1964 period, Pittsburgh appears frequently, either in percent change in employment or in relative growth indicator, or both. Cleveland was low in percent change in employment in "Apparel" in the first period, and in "Food and kindred products" and "Entertainment, recreation services," in the second period. In all three cases, however, other cities showed lower relative growth indicators. According to both the percent change in employment and the relative growth indicator, Cincinnati was low in "Paper and allied products" in the first period, and low in "Chemicals and allied products" and "Lumber, wood products, furniture" in the second period. In terms of percent change in employment, Cincinnati was low in "Paper and allied products" in the first period, and low in "Chemicals and allied products" and "Lumber, wood products, furniture" in the second period. In terms of percent change in employment, Cincinnati was low in "Machinery," "Primary metals," and "Personal services including hotels" in the first period, and in "Apparel" in the second period.

It is interesting to see what cities other than the three under special consideration scored highs, especially in some of the industries that are particularly important in Cleveland, Pittsburgh, and Cincinnati. For "Primary metals," Baltimore had the largest relative growth indicator for the first period, while Boston scored the largest percent gain in employment. In the second period, Baltimore was high according to both measurements. For "Machinery," measured by the relative growth indicator, Boston was high in the first period and Minneapolis-St. Paul in the second period; however, in percent change in employment, Baltimore was at the top in the first period and Kansas City in the second period.

In the second period, Buffalo succeeded Cleveland as high scorer for "Motor vehicles and equipment" with respect to the relative growth indicator. In percent change, Milwaukee was high in the first period and Boston in the second. For "Fabricated metal products," Detroit was the highest in both periods as measured by the relative growth indicator, while top places in percent change in employment in the two periods went to Kansas City and Buffalo, respectively. In "Chemicals and allied products," Philadelphia led in both periods in relative growth indicator and also in percent change in employment in the first period; Minneapolis-St. Paul had the largest percent gain in employment in the second period.

In the trade and service groups, in the 1950-1960 period, Detroit was high scorer in the relative growth indicator in "Wholesale trade," "Retail trade," "Personal services including hotels," "Business and repair services," and "Professional services." For percent change in employment in the first period, Detroit was high in "Business and repair services" and "Professional services." In the 1959-1964 period, Detroit did not lead in any of the trade and service groups.

For the "Total of covered industries," the high and low scorers are as follows: In the first period, Minneapolis-St. Paul was high, both in percent change in total employment and total relative growth indicator. In the second period, Baltimore was high by both measurements. The low scorer in the first period in percent change in employment was Pittsburgh, and Chicago was low in relative growth indicator.[19] The low scorer in the second period was Pittsburgh, both in terms of percent change in total employment and total relative growth indicator.

CLEVELAND PATTERN COMPARED WITH 13 CITIES, 1950-1960 AND 1959-1964

The relative growth indicators measured against the 13 cities for Cleveland for the various industry and service groups are

[19] As a qualification of the result for Chicago, the larger cities tend to show larger relative growth indicators than the smaller cities, whether on the up or down sides. Further, the qualifications concerning the unusually large figures for "Industry not reported" in Chicago already mentioned should be considered at this point.

summarized in Table VII-a. Sections b and c of Table VII apply to Pittsburgh and Cincinnati, respectively.[20]

Two industries in Cleveland showed a significant favorable change in both periods — "Printing and publishing" and "Textile mill products." The "Printing and publishing" industry had a relative growth indicator of plus 1,537 for the first period and plus 684 for the second period (Table VII-a, Category A). The importance of "Printing and publishing" for Cleveland is shown by the number employed in the industry in Cleveland in 1960 — 19,019. On the other hand. "Textile mill products" is a relatively small industry in Cleveland.

There were fewer industries in Cleveland with unfavorable changes in both periods (Category B) when similar cities are used for comparison than when the United States is the standard, as discussed in Part I.[21] Industries with consistently unfavorable changes include: "Machinery," "Fabricated metal products," "Aircraft and parts, ships, etc.," and "Chemicals and allied products." Absent from the list are "Retail trade" and "Primary metals," both of which are unfavorable in the comparisons with the United States. In the case of "Retail trade," it is apparent that the sharpest increases in employment took place in parts of the United States outside the 13 metropolitan areas; as a result, in the 13-city comparison, Cleveland's negative scores are alleviated. A somewhat similar situation is indicated for "Primary metals"; accordingly, that industry does not appear on the consistently unfavorable list for Cleveland in the 13-city comparison. In the 1959-1964 period, however, Cleveland did register a negative relative growth indicator of 4,494 for "Primary metals" (Category C).

Among the industries with significant changes in one period only (Category C), in addition to "Primary metals," there are a number of manufacturing or service groups with either favorable or unfavorable scores, either for one period or the other. Most important of these is "Motor vehicles and equipment," with a relative growth indicator in the 1950-1960 period of plus 14,382. This confirms the fact that the surge in "Motor vehicles and equipment" (discussed in Part I) was important, whether compared with the 13 cities or the nation. Among the service groups, positive scores were made in the second period in "Finance, insurance, and real estate" and "Professional services," whereas neither group is favorable in the United States comparison. The showings in the 13-city comparison are favorable for these two groups, even though Cleveland was not a top scorer among the 13 cities.

The list of Cleveland industries with marked shifts (favorable or unfavorable) between the two periods (Category D) is limited to five groups: "Food and kindred products," "Retail trade," "Wholesale trade," "Apparel," and "Contract construction." "Food and kindred products," "Retail trade," and "Wholesale trade" were favorable in the first period, while "Apparel" and "Contract construction" moved ahead in the second period.

For Cleveland's "Total of covered industries," the positive relative growth indicator

[20] Not all industry or service groups included in Table V are carried over into the summary Table VII.

[21] See *Economic Review*, November, 1967.

for the 1950-1960 period (plus 3,811) is in marked contrast to the negative showing when the United States total is the standard of comparison.[22] Cleveland's total score was relatively unfavorable in the second period, with the total relative growth indicator minus 4,764 (Table VII-a).[23]

PITTSBURGH PATTERN COMPARED WITH 13 CITIES, 1950-1960 AND 1959-1964

A summary of the Pittsburgh pattern, with relative growth indicators measured against 13-city aggregates, is shown in Table VII-b. For most important industries, there is little improvement over the performance shown in the United States comparison, as discussed in Part I.

Only one industry in Pittsburgh had significant favorable changes in both periods (Category A), "Motor vehicles and equipment." Unfortunately, that industry employs relatively few people in the city.

While there are fewer industries with unfavorable changes in both periods (Category B) than in the national comparison, there is substantial overlapping, including "Primary metals," "Machinery," "Retail trade," "Mining," "Contract construction," "Professional services," and "Aircraft and parts, ships, etc." In addition, "Railroads and railway express" and "Business and repair services" show unfavorable changes in both periods for Pittsburgh when measured against the 13 cities, but not in the national comparison.

Three other important Pittsburgh industries or service groups — "Fabricated metal products," "Finance, insurance, and real estate," and "Food and kindred products"—show up unfavorably in only one period in the 13-city comparison, in contrast to the unfavorable performance for both periods in the national comparison. Only one of these groups — "Food and kindred products" — had a significantly favorable showing in either of the two periods, with a positive relative growth indicator in the 1950-1960 period (Category C). The other two industries or service groups had significant negative showings in one period, coupled with insignificant changes in the other period (Category C). Additional Pittsburgh industries showing significant changes in one period only are indicated in Category C. The most conspicuous score is for "Wholesale trade," with a relative growth indicator of minus 10,557 in the second period. Only one of the covered industries in Pittsburgh shows a marked shift between the two periods — "Printing and publishing" (Category D) — from favorable to unfavorable.

For the "Total of covered industries" in Pittsburgh, the relative growth indicator became more unfavorable in the second period. Because the figures represent cumulative changes and the second period is of only half the duration of the first period, the relative

[22] See *Economic Review*, November, 1967.

[23] Cleveland's overall performance for the two periods may be evaluated by comparing the percent change figures for Cleveland with those for the 13-city total (Table V). However, such percent change figures reflect the effects of "industry mix" as well as competitive factors. The cautions regarding interpretation of totals outlined in the Appendix also apply.

deterioration in Pittsburgh is substantial.[24]

CINCINNATI PATTERN COMPARED WITH 13 CITIES, 1950-1960 AND 1959-1964

Among the relative growth indicators for Cincinnati's various industry and service groups, measured against the 13-city aggregate, only the "Fabricated metal products" industry shows favorable changes in both periods (Table VII-c, Category A).

There is only one industry with significant unfavorable changes in both periods (Category B); that is, "Machinery," Cincinnati's most important industry. On the other hand, "Retail trade," "Professional services," "Apparel," "Wholesale trade," and "Printing and publishing" appear in the highly unfavorable category in the national comparison, but the change in the standard of comparison provides, in effect, a rescue operation for one of the two periods.

Of the Cincinnati industries with significant changes in one period only (Category C), four had favorable changes — "Trucking and warehousing" and "Communications" for the first period, and "Entertainment, recreation services" and "Food and kindred products" for the second period. Eight other industry or service groups scored unfavorable changes in one period.

The category of industries with marked shifts between the two periods is important for Cincinnati, especially because of the showing of "Aircraft and parts, ships, etc." (Category D). The relative growth indicator (compared with 13 cities) changed from plus 11,948 in the first period to minus 2,330 in the second period. This change (centered in the "aircraft parts" segment of the category) offers some explanation why Cincinnati's total performance shifted from relatively favorable in 1950-1960 to markedly unfavorable in 1959-1964. Industries other than aircraft and parts are included among the groups with significant shifts between the two periods, although the magnitudes of the indicators are much less spectacular.

[24] If percent changes are used, in place of relative grow indicators, the same general pattern emerges. In that formulation, the greater deterioration in the second period is shown by the fact that employment in the "Total of covered industries" actually declined by 7.1 percent in Pittsburgh, while the corresponding figure for the 13-city total was a gain of 4.8 percent (Table V). Note here the qualifications regarding the significance of a figure of this type. It is rare, however, to find an outright decline in any figure for total (or near total) employment for a given metropolitan area in the two fairly long periods under consideration; many of the negative figures for relative growth indicators, of course, represent merely a comparative deficit in the rate of growth.

TABLE IV
Population, 1960, Employment Changes for Selected Periods
13 Selected Cities

	Population 1960 (thous.)	Percent Change in Employment* 1950-1960	Percent Change in "Covered Employment"† 1950-1960	Percent Change in Employment* 1959-1964	Percent Change in "Covered Employment"† 1959-1964
Chicago	6,221	+13.0%	+ 6.6%	+ 5.0%	+ 3.3%
Philadelphia	4,343	+16.1	+11.5	+ 3.4	+ 4.7
Detroit	3,762	+11.7	+ 7.4	+ 7.4	+ 7.9
Boston‡	3,109	+12.7	+ 7.8	+ 3.7	+ 8.4
Pittsburgh	2,405	+ 3.5	+ 0.7	+ 1.0	— 7.1
St. Louis	2,105	+11.0	+ 8.1	+ 7.4	+ 5.1
Cleveland	1,909	+15.5	+11.9	+ 6.5	+ 3.3
Baltimore	1,727	+17.6	+12.2	+ 7.2	+14.1
Minneapolis-St. Paul	1,482	+23.1	+19.8	+12.3	+ 9.7
Buffalo	1,307	+14.0	+10.2	+ 0.3	— 2.7
Cincinnati	1,268	+18.2	+13.0	+ 4.7	— 0.2
Milwaukee	1,233	+17.4	+13.7	+ 7.3	+ 6.7
Kansas City	1,093	+23.8	+16.8	+11.8	+10.8
13-City Total	31,964	+14.0%	+ 9.2%	+ 5.5%	+ 4.8%
United States Total	178,464	+23.0%	+18.4%	+ 9.1%	+ 9.3%

* Total nonagricultural employment.

† See "Total of covered industries," Column 1 of Tables V-a through V-m.

‡ Includes entire counties of Essex, Middlesex, Norfolk, and Suffolk. (See Technical Note, Appendix.) Population of Boston official SMSA in 1960 was 2,595,000.

Sources: Census of Population, 1960; *County Business Patterns,* 1959 and 1964, Bureau of the Census, U. S. Department of Commerce; Lowell D. Ashby, *Growth Patterns in Employment by County, 1940-1950 and 1950-1960,* Office of Business Economics, U. S. Department of Commerce, 1966

TABLE V-a
Employment Changes by Industry and Relative Growth Indicators
Baltimore Compared with 13 Selected Cities
1950-1960 and 1959-1964

	Baltimore				Total 13-Cities	
	Percent Change in Employment 1950-1960	Relative Growth Indicator 1950-1960	Percent Change in Employment 1959-1964	Relative Growth Indicator 1959-1964	Percent Change in Employment 1950-1960	Percent Change in Employment 1959-1964
1. Mining	— 19.3%	+ 213	— 22.4%	— 57	—46.6%	—16.1%
2. Contract construction	— 4.6	— 2,944	+ 8.6	+ 1,537	+ 2.7	+ 3.2
3. Food and kindred products	+ 10.7	+ 492	— 2.7	+ 1,493	+ 8.0	—10.5
4. Textile mill products	— 40.4	+ 396	— 37.1	— 495	—51.0	—17.8
5. Apparel	— 6.1	+ 900	+ 10.9	+ 1,595	—12.2	— 0.1
6. Lumber, wood products, furniture	— 2.8	+ 310	— 7.7	— 30	— 8.6	— 7.2
7. Paper and allied products	+ 40.9	+ 1,255	+ 20.5	+ 793	+ 8.3	+ 6.3
8. Printing and publishing	+ 20.1	— 361	+ 5.8	+ 183	+23.8	+ 4.0
9. Chemicals and allied products	+ 11.2	— 1,145	+ 4.4	+ 889	+23.0	— 5.5
10. Petroleum and coal products	— 39.3	— 1,008	— 7.8	— 25	— 9.3	— 4.7
11. Machinery	+118.4	+11,381	+ 33.8	+ 5,764	+31.6	+ 8.1
12. Motor vehicles and equipment	— 22.0	— 443	+ 2.7	— 95	—13.8	+ 4.8
13. Aircraft and parts, ships, etc.	+ 42.6	— 104	— 13.3	+ 672	+43.3	—21.3
14. Primary metals	+ 21.5	+ 7,934	+140.6	+21,101	— 3.4	— 2.8
15. Fabricated metal products	— 13.1	— 5,596	+ 14.2	+ 1,999	+29.3	— 6.5
16. Manufacturing, n.e.c.	+ 17.2	+ 2,168	+ 9.3	+ 1,413	+ 2.5	— 1.2
17. Railroads and railway express	— 19.9	+ 1,321	— 12.2	+ 810	—29.4	—20.5
18. Trucking and warehousing	+ 26.6	+ 247	— 1.4	— 743	+23.4	+ 5.8
19. Transportation other than rail and trucking	— 25.7	— 2,019	— 10.3	— 1,883	—13.5	+ 1.3
20. Communications	+ 12.8	+ 474	+ 1.8	+ 228	+ 6.0	+ 3.9
21. Utilities and sanitary service	+ 3.6	+ 102	+ 2.5	+ 468	+ 2.6	— 3.4
22. Wholesale trade	— 0.8	— 1,410	+ 9.5	+ 2,291	+ 6.0	+ 2.0
23. Retail trade	+ 1.8	+ 212	+ 6.6	— 1,134	+ 1.6	+ 7.9
24. Finance, insurance, and real estate	+ 30.3	+ 1,064	+ 12.5	+ 158	+25.5	+12.0
25. Personal services including hotels	— 9.9	— 349	+ 4.7	— 339	— 7.9	+ 7.2
26. Business and repair services	+ 11.1	— 1,423	+ 59.4	+ 2,788	+23.7	+30.6
27. Entertainment, recreation services	— 1.0	+ 162	+ 3.3	+ 262	— 4.2	— 2.3
28. Professional services	+ 53.4	+ 1,545	+ 32.9	+ 1,742	+50.2	+23.8
Total of covered industries	+ 12.2%	+13,374	+ 14.1%	+41,385	+ 9.2%	+ 4.8%

Sources: *Growth Patterns in Employment by County, 1940-1950 and 1950-1960,* Office of Business Economics, U. S. Department of Commerce, 1966; unpublished estimates for selected industries from U. S. Department of Commerce; *County Business Patterns,* Bureau of the Census, U. S. Department of Commerce, 1959 and 1964; unpublished estimates by U. S. Railroad Retirement Board; Federal Reserve Bank of Cleveland (See Technical Note, Appendix.)

TABLE V-b
Employment Changes by Industry and Relative Growth Indicators
Boston Compared with 13 Selected Cities
1950-1960 and 1959-1964

	Boston				Total 13-Cities	
	Percent Change in Employment 1950-1960	Relative Growth Indicator 1950-1960	Percent Change in Employment 1959-1964	Relative Growth Indicator 1959-1964	Percent Change in Employment 1950-1960	Percent Change in Employment 1959-1964
1. Mining	—13.3%	+ 345	—15.9%	+ 2	—46.6%	—16.1%
2. Contract construction	— 1.5	— 2,888	+15.3	+ 4,384	+ 2.7	+ 3.2
3. Food and kindred products	+21.2	+ 3,997	—19.4	— 3,031	+ 8.0	—10.5
4. Textile mill products	—64.6	— 7,251	—19.9	— 375	—51.0	—17.8
5. Apparel	+ 2.3	+ 3,780	+16.8	+ 3,670	—12.2	— 0.1
6. Lumber, wood products, furniture	— 7.5	+ 100	+ 1.8	+ 634	— 8.6	— 7.2
7. Paper and allied products	+ 4.4	— 561	+ 4.2	— 305	+ 8.3	+ 6.3
8. Printing and publishing	+20.9	— 713	+ 8.8	+ 1,146	+23.8	+ 4.0
9. Chemicals and allied products	—16.8	— 5,048	— 6.3	— 66	+23.0	— 5.5
10. Petroleum and coal products	—47.8	— 1,301	—62.3	— 841	— 9.3	— 4.7
11. Machinery	+73.1	+27,425	+13.0	+ 4,453	+31.6	+ 8.1
12. Motor vehicles and equ pment	—47.0	— 1,854	+65.4	+ 1,410	—13.8	+ 4.8
13. Aircraft and parts, ships, etc.	+35.6	— 1,287	— 6.6	+ 716	+43.3	—21.3
14. Primary metals	+22.0	+ 1,439	—15.3	— 772	— 3.4	— 2.8
15. Fabricated metal products	+72.0	+ 6,789	— 6.3	+ 32	+29.3	— 6.5
16. Manufacturing, n.e.c.	— 5.4	— 7,657	— 5.0	— 3,325	+ 2.5	— 1.2
17. Railroads and railway express	—53.2	— 4,260	—33.3	— 962	—29.4	—20.5
18. Trucking and warehousing	+ 7.4	— 2,330	+12.8	+ 1,009	+23.4	+ 5.8
19. Transportation other than rail and trucking	—13.0	+ 119	— 7.1	— 1,952	—13.5	+ 1.3
20. Communications	+ 8.7	+ 517	+ 0.3	+ 254	+ 6.0	+ 3.9
21. Utilities and sanitary service	— 5.6	— 1,470	+17.9	+ 1,964	+ 2.6	— 3.4
22. Wholesale trade	— 3.2	— 4,625	+ 5.7	+ 2,544	+ 6.0	+ 2.0
23. Retail trade	— 4.2	—11,234	+10.8	+ 5,017	+ 1.6	+ 7.9
24. Finance, insurance, and real estate	+20.0	— 3,300	+10.5	— 1,048	+25.5	+12.0
25. Personal services including hotels	—11.8	— 1,588	+ 1.6	— 1,525	— 7.9	+ 7.2
26. Business and repair services	+29.8	+ 1,691	+47.4	+ 3,970	+23.7	+30.6
27. Entertainment, recreation services	—14.9	— 1,029	+ 4.9	+ 534	— 4.2	— 2.3
28. Professional services	+43.9	— 8,150	+28.9	+ 1,317	+50.2	+23.8
Total of covered industries	+ 7.8%	—20,344	+ 8.4%	+18,854	+ 9.2%	+ 4.8%

Sources: *Growth Patterns in Employment by County, 1940-1950 and 1950-1960*, Office of Business Economics, U. S. Department of Commerce, 1966; unpublished estimates for selected industries from U. S. Department of Commerce; *County Business Patterns,* Bureau of the Census, U. S. Department of Commerce, 1959 and 1964; unpublished estimates by U. S. Railroad Retirement Board; Federal Reserve Bank of Cleveland (See Technical Note, Appendix.)

TABLE V-c
Employment Changes by Industry and Relative Growth Indicators
Buffalo Compared with 13 Selected Cities
1950-1960 and 1959-1964

	Buffalo				Total 13-Cities	
	Percent Change in Employment 1950-1960	Relative Growth Indicator 1950-1960	Percent Change in Employment 1959-1964	Relative Growth Indicator 1959-1964	Percent Change in Employment 1950-1960	Percent Change in Employment 1959-1964
1. Mining	—35.6%	+ 53	+ 8.6%	+ 75	—46.6%	—16.1%
2. Contract construction	+28.3	+5,451	—24.0	— 4,667	+ 2.7	+ 3.2
3. Food and kindred products	+11.7	+ 527	— 6.6	+ 542	+ 8.0	—10.5
4. Textile mill products	—41.6	+ 221	—25.5	— 110	—51.0	—17.8
5. Apparel	—27.1	— 534	—22.2	— 595	—12.2	— 0.1
6. Lumber, wood products, furniture	— 1.0	+ 314	—15.2	— 218	— 8.6	— 7.2
7. Paper and allied products	—10.9	—1,459	— 6.7	— 967	+ 8.3	+ 6.3
8. Printing and publishing	+32.2	+ 664	— 1.2	— 406	+23.8	+ 4.0
9. Chemicals and allied products	+ 6.7	—2,695	— 7.5	— 268	+23.0	— 5.5
10. Petroleum and coal products	—37.4	— 584	—21.0	— 149	— 9.3	— 4.7
11. Machinery	+11.2	—4,935	+ 5.1	— 780	+31.6	+ 8.1
12. Motor vehicles and equipment	+24.3	+7,003	+39.6	+ 5,018	—13.8	+ 4.8
13. Aircraft and parts, ships, etc.	+22.6	—1,306	—55.7	— 2,465	+43.3	—21.3
14. Primary metals	+ 6.5	+3,448	—18.1	— 5,518	— 3.4	— 2.8
15. Fabricated metal products	—18.3	—5,164	+16.8	+ 1,946	+29.3	— 6.5
16. Manufacturing, n.e.c.	— 3.7	—1,101	—17.0	— 2,853	+ 2.5	— 1.2
17. Railroads and railway express	—36.5	—1,197	—21.2	— 67	—29.4	—20.5
18. Trucking and warehousing	+27.8	+ 245	+ 1.2	— 333	+23.4	+ 5.8
19. Transportation other than rail and trucking	—26.9	— 943	—16.5	— 953	—13.5	+ 1.3
20. Communications	+22.0	+ 732	— 8.6	— 428	+ 6.0	+ 3.9
21. Utilities and sanitary service	+14.9	+ 805	— 9.7	— 314	+ 2.6	— 3.4
22. Wholesale trade	+ 6.4	+ 58	— 6.2	— 1,922	+ 6.0	+ 2.0
23. Retail trade	+ 4.7	+2,042	+ 1.6	— 3,944	+ 1.6	+ 7.9
24. Finance, insurance, and real estate	+29.9	+ 571	+ 4.8	— 1,094	+25.5	+12.0
25. Personal services including hotels	— 7.6	+ 36	— 2.3	— 817	— 7.9	+ 7.2
26. Business and repair services	+22.4	— 105	+52.9	+ 1,401	+23.7	+30.6
27. Entertainment, recreation services	+ 2.3	+ 226	— 6.9	— 168	— 4.2	— 2.3
28. Professional services	+53.2	+1,122	+19.5	— 1,979	+50.2	+23.8
Total of covered industries	+10.2%	+3,495	— 2.7%	—22,033	+ 9.2%	+ 4.8%

Sources: *Growth Patterns in Employment by County, 1940-1950 and 1950-1960,* Office of Business Economics, U. S. Department of Commerce, 1966; unpublished estimates for selected industries from U. S. Department of Commerce; *County Business Patterns,* Bureau of the Census, U. S. Department of Commerce, 1959 and 1964; unpublished estimates by U. S. Railroad Retirement Board; Federal Reserve Bank of Cleveland (See Technical Note, Appendix.)

TABLE V-d
Employment Changes by Industry and Relative Growth Indicators
Chicago Compared with 13 Selected Cities
1950-1960 and 1959-1964

	Chicago				Total 13-Cities	
	Percent Change in Employment 1950-1960	Relative Growth Indicator 1950-1960	Percent Change in Employment 1959-1964	Relative Growth Indicator 1959-1964	Percent Change in Employment 1950-1960	Percent Change in Employment 1959-1964
1. Mining	—11.5%	+ 675	— 8.0%	+ 357	—46.6%	—16.1%
2. Contract construction	+15.1	+ 12,607	— 2.7	— 5,499	+ 2.7	+ 3.2
3. Food and kindred products	— 5.1	— 12,837	—10.1	+ 288	+ 8.0	—10.5
4. Textile mill products	—22.2	+ 2,456	—15.2	+ 149	—51.0	—17.8
5. Apparel	—24.4	— 4,357	—16.6	— 5,219	—12.2	— 0.1
6. Lumber, wood products, furniture	—12.2	— 1,080	— 7.6	— 100	— 8.6	— 7.2
7. Paper and allied products	+ 1.9	— 1,457	+13.1	+ 1,661	+ 8.3	+ 6.3
8. Printing and publishing	+ 8.7	— 11,653	+ 4.6	+ 422	+23.8	+ 4.0
9. Chemicals and allied products	+23.7	+ 228	— 4.7	+ 282	+23.0	— 5.5
10. Petroleum and coal products	+ 2.5	+ 1,571	— 6.9	— 123	— 9.3	— 4.7
11. Machinery	+19.4	— 25,669	— 1.3	—22,346	+31.6	+ 8.1
12. Motor vehicles and equipment	+ 8.2	+ 3,930	+16.3	+ 1,728	—13.8	+ 4.8
13. Aircraft and parts, ships, etc.	—18.2	— 9,551	-0-	+ 3,240	+43.3	—21.3
14. Primary metals	—14.0*	— 8,080*	+ 0.6*	+ 2,316*	— 3.4	— 2.8
15. Fabricated metal products	+15.8	— 11,081	—14.6	— 8,653	+29.3	— 6.5
16. Manufacturing, n.e.c.	+ 8.8	+ 5,949	+ 6.5	+ 7,403	+ 2.5	— 1.2
17. Railroads and railway express	—28.1	+ 1,059	—16.7	+ 2,359	—29.4	—20.5
18. Trucking and warehousing	+24.0	+ 239	+ 8.7	+ 1,303	+23.4	+ 5.8
19. Transportation other than rail and trucking	— 7.1	+ 2,817	— 2.1	— 1,565	—13.5	+ 1.3
20. Communications	— 7.1	— 5,131	— 9.9	— 3,326	+ 6.0	+ 3.9
21. Utilities and sanitary service	+ 1.7	— 265	—12.6	— 2,164	+ 2.6	— 3.4
22. Wholesale trade	+ 1.8	— 4,015	+ 3.8	+ 3,072	+ 6.0	+ 2.0
23. Retail trade	— 1.7	— 11,952	+11.2	+10,962	+ 1.6	+ 7.9
24. Finance, insurance, and real estate	+20.4	— 5,521	+ 9.1	— 4,142	+25.5	+12.0
25. Personal services including hotels	—14.3	— 5,432	+ 4.5	— 1,835	— 7.9	+ 7.2
26. Business and repair services	+24.5	+ 427	+20.2	— 7,030	+23.7	+30.6
27. Entertainment, recreation services	— 9.3	— 1,049	—10.7	— 1,568	— 4.2	— 2.3
28. Professional services	+42.9	— 13,149	+26.8	— 1,014	+50.2	+23.8
Total of covered industries	+ 6.6%	—100,321	+ 3.3%	—29,042	+ 9.2%	+ 4.8%

* See Technical Note, Appendix.

Sources: *Growth Patterns in Employment by County, 1940-1950 and 1950-1960,* Office of Business Economics, U. S. Department of Commerce, 1966; unpublished estimates for selected industries from U. S. Department of Commerce; *County Business Patterns,* Bureau of the Census, U. S. Department of Commerce, 1959 and 1964; unpublished estimates by U. S. Railroad Retirement Board; Federal Reserve Bank of Cleveland (See Technical Note, Appendix.)

TABLE V-e
Employment Changes by Industry and Relative Growth Indicators
Cincinnati Compared with 13 Selected Cities
1950-1960 and 1959-1964

	Cincinnati				Total 13-Cities	
	Percent Change in Employment 1950-1960	Relative Growth Indicator 1950-1960	Percent Change in Employment 1959-1964	Relative Growth Indicator 1959-1964	Percent Change in Employment 1950-1960	Percent Change in Employment 1959-1964
1. Mining	+ 51.2%	+ 338	—10.6%	+ 29	—46.6%	—16.1%
2. Contract construction	+ 12.4	+ 2,274	— 4.4	— 1,229	+ 2.7	+ 3.2
3. Food and kindred products	+ 10.4	+ 373	— 7.7	+ 506	+ 8.0	—10.5
4. Textile mill products	— 23.5	+ 376	—28.8	— 112	—51.0	—17.8
5. Apparel	— 22.0	— 647	—22.3	— 1,317	—12.2	— 0.1
6. Lumber, wood products, furniture	— 8.9	— 19	—26.8	— 1,012	— 8.6	— 7.2
7. Paper and allied products	— 14.0	— 1,555	+ 6.5	+ 14	+ 8.3	+ 6.3
8. Printing and publishing	+ 19.8	— 443	— 4.6	— 1,047	+23.8	+ 4.0
9. Chemicals and allied products	+ 36.3	+ 1,532	—16.9	— 1,567	+23.0	— 5.5
10. Petroleum and coal products	+ 2.8	+ 237	— 8.6	— 61	— 9.3	— 4.7
11. Machinery	+ 10.1	— 5,937	+ 6.8	— 345	+31.6	+ 8.1
12. Motor vehicles and equipment	+ 36.1	+ 4,499	— 0.7	— 685	—13.8	+ 4.8
13. Aircraft and parts, ships, etc.	+1,714.4	+11,948	—33.9	— 2,330	+43.3	—21.3
14. Primary metals	— 28.4	— 1,854	+ 0.1	+ 120	— 3.4	— 2.8
15. Fabricated metal products	+ 39.5	+ 955	— 0.7	+ 745	+29.3	— 6.5
16. Manufacturing, n.e.c.	+ 1.3	— 206	— 9.2	— 1,303	+ 2.5	— 1.2
17. Railroads and railway express	— 35.3	— 834	—18.6	+ 164	—29.4	—20.5
18. Trucking and warehousing	+ 39.2	+ 939	+ 1.6	— 317	+23.4	+ 5.8
19. Transportation other than rail and trucking	— 15.0	— 80	+ 7.8	+ 249	—13.5	+ 1.3
20. Communications	+ 23.9	+ 925	+ 1.4	+ 160	+ 6.0	+ 3.9
21. Utilities and sanitary service	+ 11.9	+ 561	— 2.3	+ 48	+ 2.6	— 3.4
22. Wholesale trade	+ 0.4	— 936	+ 3.1	+ 293	+ 6.0	+ 2.0
23. Retail trade	+ 0.9	— 454	+ 0.2	— 4,681	+ 1.6	+ 7.9
24. Finance, insurance, and real estate	+ 29.5	+ 627	+13.2	+ 235	+25.5	+12.0
25. Personal services including hotels	— 17.4	— 1,371	+ 6.9	— 34	— 7.9	+ 7.2
26. Business and repair services	+ 11.2	— 1,245	+54.1	+ 1,566	+23.7	+30.6
27. Entertainment, recreation services	+ 1.4	+ 226	+16.4	+ 745	— 4.2	— 2.3
28. Professional services	+ 47.3	— 925	+27.4	— 48	+50.2	+23.8
Total of covered industries	+ 13.0%	+ 9,304	— 0.2%	—11,214	+ 9.2%	+ 4.8%

Sources: *Growth Patterns in Employment by County, 1940-1950 and 1950-1960,* Office of Business Economics, U. S. Department of Commerce, 1966; unpublished estimates for selected industries from U. S. Department of Commerce; *County Business Patterns,* Bureau of the Census, U. S. Department of Commerce, 1959 and 1964; unpublished estimates by U. S. Railroad Retirement Board; Federal Reserve Bank of Cleveland (See Technical Note, Appendix.)

TABLE V-f
Employment Changes by Industry and Relative Growth Indicators
Cleveland Compared with 13 Selected Cities
1950-1960 and 1959-1964

	Cleveland				Total 13-Cities	
	Percent Change in Employment 1950-1960	Relative Growth Indicator 1950-1960	Percent Change in Employment 1959-1964	Relative Growth Indicator 1959-1964	Percent Change in Employment 1950-1960	Percent Change in Employmen 1959-1964
1. Mining	+19.0%	+ 515	+16.5%	+ 390	—46.6%	—16.1%
2. Contract construction	— 1.9	— 1,537	+10.8	+1,866	+ 2.7	+ 3.2
3. Food and kindred products	+35.7	+ 3,034	—25.9	—2,334	+ 8.0	—10.5
4. Textile mill products	—22.9	+ 1,618	— 6.1	+ 608	—51.0	—17.8
5. Apparel	—27.2	— 1,701	+20.5	+1,445	—12.2	— 0.1
6. Lumber, wood products, furniture	— 7.3	+ 65	—21.3	— 726	— 8.6	— 7.2
7. Paper and allied products	+25.3	+ 762	+ 5.7	— 29	+ 8.3	+ 6.3
8. Printing and publishing	+34.7	+ 1,537	+ 8.7	+ 684	+23.8	+ 4.0
9. Chemicals and allied products	+15.9	— 1,112	—13.6	—1,336	+23.0	— 5.5
10. Petroleum and coal products	— 8.3	+ 38	— 3.5	+ 19	— 9.3	— 4.7
11. Machinery	+14.1	—10,833	+ 5.1	—1,822	+31.6	+ 8.1
12. Motor vehicles and equipment	+39.9	+14,382	+ 3.7	— 407	—13.8	+ 4.8
13. Aircraft and parts, ships, etc.	+ 8.3	— 3,951	—31.3	—1,484	+43.3	—21.3
14. Primary metals	— 2.1	+ 498	—13.5	—4,494	— 3.4	— 2.8
15. Fabricated metal products	+11.1	— 5,201	— 9.3	—1,015	+29.3	— 6.5
16. Manufacturing, n.e.c.	+10.0	+ 1,371	+30.7	+4,546	+ 2.5	— 1.2
17. Railroads and railway express	—26.5	+ 480	—19.0	+ 182	—29.4	—20.5
18. Trucking and warehousing	+21.0	— 220	+ 6.2	+ 46	+23.4	+ 5.8
19. Transportation other than rail and trucking	—19.8	— 684	+11.2	+ 747	—13.5	+ 1.3
20. Communications	+ 5.4	— 48	— 1.0	+ 1	+ 6.0	+ 3.9
21. Utilities and sanitary service	— 0.3	— 275	+ 0.8	+ 235	+ 2.6	— 3.4
22. Wholesale trade	+13.3	+ 1,780	+ 0.1	— 898	+ 6.0	+ 2.0
23. Retail trade	+ 3.8	+ 2,133	+ 6.5	—1,264	+ 1.6	+ 7.9
24. Finance, insurance, and real estate	+28.7	+ 734	+16.5	+1,321	+25.5	+12.0
25. Personal services including hotels	— 4.7	+ 617	+ 2.4	— 749	— 7.9	+ 7.2
26. Business and repair services	+19.6	— 639	+26.9	— 591	+23.7	+30.6
27. Entertainment, recreation services	— 8.3	— 245	—16.8	— 919	— 4.2	— 2.3
28. Professional services	+51.4	+ 693	+30.8	+1,314	+50.2	+23.8
Total of covered industries	+11.9%	+ 3,811	+ 3.3%	—4,764	+ 9.2%	+ 4.8%

Sources: *Growth Patterns in Employment by County, 1940-1950 and 1950-1960*, Office of Business Economics, U. S. Department of Commerce, 1966; unpublished estimates for selected industries from U. S. Department of Commerce; *County Business Patterns*, Bureau of the Census, U. S. Department of Commerce, 1959 and 1964; unpublished estimates by U. S. Railroad Retirement Board; Federal Reserve Bank of Cleveland (See Technical Note, Appendix.)

TABLE V-g
Employment Changes by Industry and Relative Growth Indicators
Detroit Compared with 13 Selected Cities
1950-1960 and 1959-1964

	Detroit				Total 13-Cities	
	Percent Change in Employment 1950-1960	Relative Growth Indicator 1950-1960	Percent Change in Employment 1959-1964	Relative Growth Indicator 1959-1964	Percent Change in Employment 1950-1960	Percent Change in Employment 1959-1964
1. Mining	+ 3.5%	+ 463	+ 7.9%	+ 192	—46.6%	—16.1%
2. Contract construction	— 6.7	— 5,441	+24.5	+ 7,882	+ 2.7	+ 3.2
3. Food and kindred products	+36.4	+ 5,712	— 6.9	+ 808	+ 8.0	—10.5
4. Textile mill products	— 8.2	+ 709	+76.5	+ 658	—51.0	—17.8
5. Apparel	+11.9	+ 663	+44.5	+ 3,028	—12.2	— 0.1
6. Lumber, wood products, furniture	— 9.6	— 48	+ 2.6	+ 468	— 8.6	— 7.2
7. Paper and allied products	+29.0	+ 622	+12.6	+ 263	+ 8.3	+ 6.3
8. Printing and publishing	+52.2	+ 4,749	+ 3.9	— 23	+23.8	+ 4.0
9. Chemicals and allied products	+12.6	— 1,635	— 9.2	— 589	+23.0	— 5.5
10. Petroleum and coal products	—28.0	— 459	—10.8	— 74	— 9.3	— 4.7
11. Machinery	+51.1	+11,681	+ 7.1	— 911	+31.6	+ 8.1
12. Motor vehicles and equipment	—26.5	—42,608	— 0.1	— 8,132	—13.8	+ 4.8
13. Aircraft and parts, ships, etc.	+84.0	+ 1,336	—35.6	— 1,791	+43.3	—21.3
14. Primary metals	+ 4.2	+ 2,573	— 2.7	+ 155	— 3.4	— 2.8
15. Fabricated metal products	+55.6	+ 8,352	+ 8.1	+ 6,161	+29.3	— 6.5
16. Manufacturing, n.e.c.	— 0.3	— 784	+28.4	+ 6,208	+ 2.5	— 1.2
17. Railroads and railway express	—19.4	+ 1,387	—16.8	+ 418	—29.4	—20.5
18. Trucking and warehousing	+37.0	+ 2,002	— 1.3	— 1,368	+23.4	+ 5.8
19. Transportation other than rail and trucking	—26.1	— 2,086	+21.3	+ 1,570	—13.5	+ 1.3
20. Communications	+13.0	+ 1,034	— 3.2	— 355	+ 6.0	+ 3.9
21. Utilities and sanitary service	— 2.0	— 892	— 8.5	— 768	+ 2.6	— 3.4
22. Wholesale trade	+23.7	+ 6,136	+ 5.6	+ 2,336	+ 6.0	+ 2.0
23. Retail trade	+ 8.6	+12,696	+ 8.7	+ 1,299	+ 1.6	+ 7.9
24. Finance, insurance, and real estate	+30.7	+ 2,029	+14.4	+ 1,141	+25.5	+12.0
25. Personal services including hotels	— 1.7	+ 2,204	+13.5	+ 1,534	— 7.9	+ 7.2
26. Business and repair services	+35.0	+ 2,979	+30.5	— 28	+23.7	+30.6
27. Entertainment, recreation services	— 9.2	— 556	+ 2.7	+ 513	— 4.2	— 2.3
28. Professional services	+71.9	+18,487	+32.0	+ 2,778	+50.2	+23.8
Total of covered industries	+ 7.4%	+31,305	+ 7.9%	+23,373	+ 9.2%	+ 4.8%

Sources: *Growth Patterns in Employment by County, 1940-1950 and 1950-1960,* Office of Business Economics, U. S. Department of Commerce, 1966, unpublished estimates for selected industries from U. S. Department of Commerce; *County Business Patterns,* Bureau of the Census, U. S. Department of Commerce, 1959 and 1964; unpublished estimates by U. S. Railroad Retirement Board; Federal Reserve Bank of Cleveland (See Technical Note, Appendix.)

TABLE V-h
Employment Changes by Industry and Relative Growth Indicators
Kansas City Compared with 13 Selected Cities
1950-1960 and 1959-1964

	Kansas City				Total 13-Cities	
	Percent Change in Employment 1950-1960	Relative Growth Indicator 1950-1960	Percent Change in Employment 1959-1964	Relative Growth Indicator 1959-1964	Percent Change in Employment 1950-1960	Percent Change in Employment 1959-1964
1. Mining	+ 9.6%	+ 417	+ 22.9%	+ 368	—46.6%	—16.1%
2. Contract construction	— 3.4	— 1,414	— 1.9	— 999	+ 2.7	+ 3.2
3. Food and kindred products	— 11.5	— 3,471	— 0.8	+ 1,598	+ 8.0	—10.5
4. Textile mill products	— 53.3	— 16	— 4.2	+ 25	—51.0	—17.8
5. Apparel	+ 1.5	+ 934	+ 4.6	+ 359	—12.2	— 0.1
6. Lumber, wood products, furniture	+ 4.0	+ 313	+ 2.3	+ 206	— 8.6	— 7.2
7. Paper and allied products	+ 49.9	+ 1,091	— 1.9	— 343	+ 8.3	+ 6.3
8. Printing and publishing	+ 57.2	+ 2,419	+ 8.6	+ 451	+23.8	+ 4.0
9. Chemicals and allied products	+ 40.8	+ 794	— 1.5	+ 212	+23.0	— 5.5
10. Petroleum and coal products	— 7.4	+ 73	— 17.4	— 295	— 9.3	— 4.7
11. Machinery	+ 69.5	+ 2,720	+117.2	+ 7,977	+31.6	+ 8.1
12. Motor vehicles and equipment	— 9.7	+ 414	— 17.5	— 1,133	—13.8	+ 4.8
13. Aircraft and parts, ships, etc.	+117.1	+ 826	— 59.7	— 527	+43.3	—21.3
14. Primary metals	— 8.1	— 282	— 15.1	— 804	— 3.4	— 2.8
15. Fabricated metal products	+205.2	+ 8,299	— 5.7	+ 59	+29.3	— 6.5
16. Manufacturing, n.e.c.	+ 25.6	+ 1,751	+ 21.0	+ 1,572	+ 2.5	— 1.2
17. Railroads and railway express	— 19.5	+ 1,641	— 24.1	— 508	—29.4	—20.5
18. Trucking and warehousing	+ 30.8	+ 528	+ 2.4	— 302	+23.4	+ 5.8
19. Transportation other than rail and trucking	+ 10.0	+ 2,232	+ 7.1	+ 331	—13.5	+ 1.3
20. Communications	+ 22.0	+ 869	+ 0.8	+ 119	+ 6.0	+ 3.9
21. Utilities and sanitary service	+ 11.9	+ 521	— 7.4	— 182	+ 2.6	— 3.4
22. Wholesale trade	+ 13.7	+ 1,439	+ 9.5	+ 2,470	+ 6.0	+ 2.0
23. Retail trade	+ 2.4	+ 546	+ 16.0	+ 4,799	+ 1.6	+ 7.9
24. Finance, insurance, and real estate	+ 32.7	+ 1,303	+ 19.2	+ 1,695	+25.5	+12.0
25. Personal services including hotels	— 3.5	+ 618	+ 4.2	— 332	— 7.9	+ 7.2
26. Business and repair services	+ 20.4	— 297	+ 53.6	+ 1,771	+23.7	+30.6
27. Entertainment, recreation services	+ 0.7	+ 162	+ 1.1	+ 125	— 4.2	— 2.3
28. Professional services	+ 61.4	+ 3,305	+ 30.2	+ 615	+50.2	+23.8
Total of covered industries	+ 16.8%	+27,735	+ 10.8%	+19,327	+ 9.2%	+ 4.8%

Sources: *Growth Patterns in Employment by County, 1940-1950 and 1950-1960,* Office of Business Economics, U. S. Department of Commerce, 1966, unpublished estimates for selected industries from U. S. Department of Commerce; *County Business Patterns,* Bureau of the Census, U. S. Department of Commerce, 1959 and 1964; unpublished estimates by U. S. Railroad Retirement Board; Federal Reserve Bank of Cleveland (See Technical Note, Appendix.)

TABLE V-i

Employment Changes by Industry and Relative Growth Indicators

Milwaukee Compared with 13 Selected Cities

1950-1960 and 1959-1964

	Milwaukee				Total 13-Cities	
	Percent Change in Employment 1950-1960	Relative Growth Indicator 1950-1960	Percent Change in Employment 1959-1964	Relative Growth Indicator 1959-1964	Percent Change in Employment 1950-1960	Percent Change in Employment 1959-1964
1. Mining	— 5.8%	+ 220	-0-	+ 62	—46.6%	—16.1%
2. Contract construction	+ 1.8	— 194	— 3.1%	—1,131	+ 2.7	+ 3.2
3. Food and kindred products	— 0.1	—1,618	— 14.7	— 910	+ 8.0	—10.5
4. Textile mill products	—66.1	— 647	+ 43.4	+ 752	—51.0	—17.8
5. Apparel	—22.5	— 447	— 10.4	— 363	—12.2	— 0.1
6. Lumber, wood products, furniture	—26.5	— 648	— 0.6	+ 165	— 8.6	— 7.2
7. Paper and allied products	+ 6.4	— 78	+ 17.2	+ 457	+ 8.3	+ 6.3
8. Printing and publishing	+31.6	+ 763	— 2.9	— 724	+23.8	+ 4.0
9. Chemicals and allied products	+19.7	— 92	+ 0.9	+ 204	+23.0	— 5.5
10. Petroleum and coal products	—36.3	— 165	— 14.5	— 21	— 9.3	— 4.7
11. Machinery	+23.1	—5,450	+ 10.1	+1,399	+31.6	+ 8.1
12. Motor vehicles and equipment	+47.4	+8,115	+ 0.8	— 485	—13.8	+ 4.8
13. Aircraft and parts, ships, etc.	— 6.5	—1,068	— 3.9	+ 93	+43.3	—21.3
14. Primary metals	+ 9.1	+1,677	+ 4.8	+1,415	— 3.4	— 2.8
15. Fabricated metal products	— 2.5	—4,460	+ 3.8	+1,367	+29.3	— 6.5
16. Manufacturing, n.e.c.	+ 4.1	+ 307	+ 3.9	+ 737	+ 2.5	— 1.2
17. Railroads and railway express	—32.8	— 267	— 20.0	+ 28	—29.4	—20.5
18. Trucking and warehousing	+23.4	+ 1	+ 10.5	+ 296	+23.4	+ 5.8
19. Transportation other than rail and trucking	—12.6	+ 49	— 0.1	— 62	—13.5	+ 1.3
20. Communications	+ 0.6	— 309	— 9.3	— 506	+ 6.0	+ 3.9
21. Utilities and sanitary service	+ 6.3	+ 262	+214.7	+3,949	+ 2.6	— 3.4
22. Wholesale trade	+ 7.8	+ 285	+ 0.8	— 331	+ 6.0	+ 2.0
23. Retail trade	+12.0	+6,682	+ 6.1	—1,104	+ 1.6	+ 7.9
24. Finance, insurance, and real estate	+34.7	+1,374	+ 10.3	— 332	+25.5	+12.0
25. Personal services including hotels	— 6.7	+ 139	+ 12.4	+ 493	— 7.9	+ 7.2
26. Business and repair services	+19.3	— 416	+ 22.5	— 676	+23.7	+30.6
27. Entertainment, recreation services	— 3.0	+ 41	+ 0.5	+ 98	— 4.2	— 2.3
28. Professional services	+49.0	— 397	+ 28.8	+ 297	+50.2	+23.8
Total of covered industries	+13.7%	+3,659	+ 6.7%	+4,967	+ 9.2%	+ 4.8%

Sources: *Growth Patterns in Employment by County, 1940-1950 and 1950-1960,* Office of Business Economics, U. S. Department of Commerce, 1966; unpublished estimates for selected industries from U. S. Department of Commerce; *County Business Patterns,* Bureau of the Census, U. S. Department of Commerce, 1959 and 1964; unpublished estimates by U. S. Railroad Retirement Board; Federal Reserve Bank of Cleveland (See Technical Note, Appendix.)

TABLE V-j
Employment Changes by Industry and Relative Growth Indicators
Minneapolis-St. Paul Compared with 13 Selected Cities
1950-1960 and 1959-1964

	Minneapolis-St. Paul				Total 13-Cities	
	Percent Change in Employment 1950-1960	Relative Growth Indicator 1950-1960	Percent Change in Employment 1959-1964	Relative Growth Indicator 1959-1964	Percent Change in Employment 1950-1960	Percent Change in Employment 1959-1964
1. Mining	— 1.6%	+ 164	+14.1%	+ 90	—46.6%	—16.1%
2. Contract construction	+18.9	+ 4,424	+ 3.6	+ 85	+ 2.7	+ 3.2
3. Food and kindred products	+10.9	+ 682	— 8.9	+ 325	+ 8.0	—10.5
4. Textile mill products	—34.9	+ 361	+ 8.0	+ 366	—51.0	—17.8
5. Apparel	—24.1	— 894	—17.3	— 1,030	—12.2	— 0.1
6. Lumber, wood products, furniture	—14.6	— 325	— 9.2	— 45	— 8.6	— 7.2
7. Paper and allied products	+12.4	+ 172	+ 4.7	— 74	+ 8.3	+ 6.3
8. Printing and publishing	+39.9	+ 2,013	+17.3	+ 1,730	+23.8	+ 4.0
9. Chemicals and allied products	+ 4.6	— 795	+43.3	+ 1,609	+23.0	— 5.5
10. Petroleum and coal products	+29.1	+ 390	+32.4	+ 365	— 9.3	— 4.7
11. Machinery	+15.3	— 4,367	+46.6	+11,578	+31.6	+ 8.1
12. Motor vehicles and equipment	+ 5.0	+ 589	+ 7.5	+ 50	—13.8	+ 4.8
13. Aircraft and parts, ships, etc.	+99.3	+ 344	+11.5	+ 294	+43.3	—21.3
14. Primary metals	—12.2	— 261	+50.0	+ 924	— 3.4	— 2.8
15. Fabricated metal products	+89.8	+ 4,892	— 2.1	+ 437	+29.3	— 6.5
16. Manufacturing, n.e.c.	+77.0	+13,038	—30.8	— 7,903	+ 2.5	— 1.2
17. Railroads and railway express	—23.2	+ 1,297	—20.4	+ 19	—29.4	—20.5
18. Trucking and warehousing	+23.9	+ 39	— 2.4	— 787	+23.4	+ 5.8
19. Transportation other than rail and trucking	— 2.1	+ 1,126	— 7.7	— 747	—13.5	+ 1.3
20. Communications	+17.8	+ 765	— 1.3	— 18	+ 6.0	+ 3.9
21. Utilities and sanitary service	+14.0	+ 752	— 5.1	— 106	+ 2.6	— 3.4
22. Wholesale trade	+15.4	+ 2,765	+ 1.2	— 414	+ 6.0	+ 2.0
23. Retail trade	+ 5.2	+ 3,043	+15.2	+ 5,959	+ 1.6	+ 7.9
24. Finance, insurance, and real estate	+34.2	+ 2,265	+20.4	+ 2,767	+25.5	+12.0
25. Personal services including hotels	+ 5.1	+ 1,923	+21.0	+ 1,741	— 7.9	+ 7.2
26. Business and repair services	+16.6	— 997	+27.9	— 341	+23.7	+30.6
27. Entertainment, recreation services	+11.6	+ 731	+23.3	+ 1,187	— 4.2	— 2.3
28. Professional services	+53.5	+ 1,754	+28.4	+ 282	+50.2	+23.8
Total of covered industries	+19.8%	+35,890	+ 9.7%	+18,343	+ 9.2%	+ 4.8%

Sources: *Growth Patterns in Employment by County, 1940-1950 and 1950-1960,* Office of Business Economics, U. S. Department of Commerce, 1966; unpublished estimates for selected industries from U. S. Department of Commerce; *County Business Patterns,* Bureau of the Census, U. S. Department of Commerce, 1959 and 1964; unpublished estimates by U. S. Railroad Retirement Board; Federal Reserve Bank of Cleveland (See Technical Note, Appendix.)

TABLE V-k
Employment Changes by Industry and Relative Growth Indicators
Philadelphia Compared with 13 Selected Cities
1950-1960 and 1959-1964

	Philadelphia				Total 13-Cities	
	Percent Change in Employment 1950-1960	Relative Growth Indicator 1950-1960	Percent Change in Employment 1959-1964	Relative Growth Indicator 1959-1964	Percent Change in Employment 1950-1960	Percent Change in Employment 1959-1964
1. Mining	+18.6%	+ 992	—34.8%	— 353	—46.6%	—16.1%
2. Contract construction	— 6.1	— 7,749	+ 1.2	—1,237	+ 2.7	+ 3.2
3. Food and kindred products	+24.2	+ 6,969	— 7.0	+1,644	+ 8.0	—10.5
4. Textile mill products	—48.5	+ 1,573	—25.3	—2,699	—51.0	—17.8
5. Apparel	— 4.9	+ 4,195	— 1.3	— 696	—12.2	— 0.1
6. Lumber, wood products, furniture	— 8.0	+ 60	— 0.6	+ 690	— 8.6	— 7.2
7. Paper and allied products	+12.0	+ 722	+12.3	+1,097	+ 8.3	+ 6.3
8. Printing and publishing	+26.2	+ 817	+ 1.5	— 936	+23.8	+ 4.0
9. Chemicals and allied products	+49.9	+ 7,217	+ 0.4	+1,903	+23.0	— 5.5
10. Petroleum and coal products	+12.6	+ 4,512	—11.2	—1,012	— 9.3	— 4.7
11. Machinery	+49.4	+13,933	+ 9.4	+1,127	+31.6	+ 8.1
12. Motor vehicles and equipment	—15.7	— 296	— 5.1	— 617	—13.8	+ 4.8
13. Aircraft and parts, ships, etc.	+10.7	— 8,154	+ 7.1	+3,841	+43.3	—21.3
14. Primary metals	+ 6.0	+ 3,100	— 8.3	—1,760	— 3.4	— 2.8
15. Fabricated metal products	+52.6	+ 7,994	— 8.3	— 860	+29.3	— 6.5
16. Manufacturing, n.e.c.	— 1.3	— 2,445	— 2.9	— 900	+ 2.5	— 1.2
17. Railroads and railway express	—25.8	+ 987	—24.6	— 837	—29.4	—20.5
18. Trucking and warehousing	+15.2	— 1,526	+ 8.0	+ 464	+23.4	+ 5.8
19. Transportation other than rail and trucking	—14.4	— 265	+19.2	+3,918	—13.5	+ 1.3
20. Communications	+12.8	+ 1,313	+18.5	+3,261	+ 6.0	+ 3.9
21. Utilities and sanitary service	+ 2.8	+ 47	— 3.4	— 5	+ 2.6	— 3.4
22. Wholesale trade	+10.7	+ 2,395	+ 4.7	+2,373	+ 6.0	+ 2.0
23. Retail trade	+ 3.6	+ 4,503	+ 5.9	—3,958	+ 1.6	+ 7.9
24. Finance, insurance, and real estate	+24.1	— 873	+13.1	+ 767	+25.5	+12.0
25. Personal services including hotels	— 3.9	+ 1,732	+11.4	+1,244	— 7.9	+ 7.2
26. Business and repair services	+29.5	+ 1,892	+25.3	—1,632	+23.7	+30.6
27. Entertainment, recreation services	+ 2.3	+ 662	— 4.0	— 168	— 4.2	— 2.3
28. Professional services	+47.8	— 2,842	+27.1	— 448	+50.2	+23.8
Total of covered industries	+11.5%	+41,465	+ 4.7%	+4,211	+ 9.2%	+ 4.8%

Sources: *Growth Patterns in Employment by County, 1940-1950 and 1950-1960,* Office of Business Economics, U. S. Department of Commerce, 1966; unpublished estimates for selected industries from U. S. Department of Commerce; *County Business Patterns,* Bureau of the Census, U. S. Department of Commerce, 1959 and 1964; unpublished estimates by U. S. Railroad Retirement Board; Federal Reserve Bank of Cleveland (See Technical Note, Appendix.)

TABLE V-I

Employment Changes by Industry and Relative Growth Indicators
Pittsburgh Compared with 13 Selected Cities

1950-1960 and 1959-1964

	Pittsburgh				Total 13-Cities	
	Percent Change in Employment 1950-1960	Relative Growth Indicator 1950-1960	Percent Change in Employment 1959-1964	Relative Growth Indicator 1959-1964	Percent Change in Employment 1950-1960	Percent Change in Employment 1959-1964
1. Mining	—62.9%	— 5,019	— 28.3%	— 1,467	—46.6%	—16.1%
2. Contract construction	— 4.1	— 2,981	— 8.9	— 3,928	+ 2.7	+ 3.2
3. Food and kindred products	+16.3	+ 1,591	— 11.7	— 218	+ 8.0	—10.5
4. Textile mill products	—59.4	— 107	+130.8	+ 371	—51.0	—17.8
5. Apparel	+ 6.6	+ 397	+ 15.9	+ 316	—12.2	— 0.1
6. Lumber, wood products, furniture	+14.5	+ 645	+ 8.0	+ 334	— 8.6	— 7.2
7. Paper and allied products	+16.8	+ 246	— 25.8	— 1,226	+ 8.3	+ 6.3
8. Printing and publishing	+35.1	+ 1,065	— 15.5	— 1,838	+23.8	+ 4.0
9. Chemicals and allied products	+25.0	+ 147	— 6.0	— 28	+23.0	— 5.5
10. Petroleum and coal products	—69.3	— 3,679	+ 15.0	+ 119	— 9.3	— 4.7
11. Machinery	+16.5	— 6,756	+ 1.1	— 2,909	+31.6	+ 8.1
12. Motor vehicles and equipment	+39.8	+ 1,235	+ 36.5	+ 539	—13.8	+ 4.8
13. Aircraft and parts, ships, etc.	+ 8.7	— 1,947	— 36.1	— 1,034	+43.3	—21.3
14. Primary metals	— 9.0	— 8,418	— 16.2	—17,228	— 3.4	— 2.8
15. Fabricated metal products	+25.9	— 737	— 19.6	— 3,912	+29.3	— 6.5
16. Manufacturing, n.e.c.	—12.1	— 4,790	— 2.8	— 396	+ 2.5	— 1.2
17. Railroads and railway express	—34.7	— 1,713	— 24.8	— 893	—29.4	—20.5
18. Trucking and warehousing	+17.5	— 556	+ 8.9	+ 313	+23.4	+ 5.8
19. Transportation other than rail and trucking	—22.9	— 979	+ 3.1	+ 167	—13.5	+ 1.3
20. Communications	— 4.0	— 1,048	+ 2.3	+ 293	+ 6.0	+ 3.9
21. Utilities and sanitary service	+ 2.7	+ 13	— 29.2	— 3,429	+ 2.6	— 3.4
22. Wholesale trade	+ 7.8	+ 466	— 20.0	—10,557	+ 6.0	+ 2.0
23. Retail trade	— 3.1	— 5,890	— 0.1	— 8,591	+ 1.6	+ 7.9
24. Finance, insurance, and real estate	+22.5	— 791	+ 0.7	— 3,658	+25.5	+12.0
25. Personal services including hotels	— 1.5	+ 1,465	+ 7.3	+ 10	— 7.9	+ 7.2
26. Business and repair services	+15.1	— 1,398	+ 25.4	— 668	+23.7	+30.6
27. Entertainment, recreation services	+ 6.5	+ 762	— 15.4	— 961	— 4.2	— 2.3
28. Professional services	+45.7	— 2,957	+ 11.6	— 8,922	+50.2	+23.8
Total of covered industries	+ 0.7%	—41,734	— 7.1%	—69,501	+ 9.2%	+ 4.8%

Sources: *Growth Patterns in Employment by County, 1940-1950 and 1950-1960,* Office of Business Economics, U. S. Department of Commerce, 1966; unpublished estimates for selected industries from U. S. Department of Commerce; *County Business Patterns,* Bureau of the Census, U. S. Department of Commerce, 1959 and 1964; unpublished estimates by U. S. Railroad Retirement Board; Federal Reserve Bank of Cleveland (See Technical Note, Appendix.)

TABLE V-m
Employment Changes by Industry and Relative Growth Indicators
St. Louis Compared with 13 Selected Cities
1950-1960 and 1959-1964

	St. Louis				Total 13-Cities	
	Percent Change in Employment 1950-1960	Relative Growth Indicator 1950-1960	Percent Change in Employment 1959-1964	Relative Growth Indicator 1959-1964	Percent Change in Employment 1950-1960	Percent Change in Employment 1959-1964
1. Mining	— 26.8%	+ 622	— 4.9%	+ 314	—46.6%	—16.1%
2. Contract construction	+ 3.8	+ 382	+12.5	+2,937	+ 2.7	+ 3.2
3. Food and kindred products	— 8.3	— 5,440	—13.0	— 709	+ 8.0	—10.5
4. Textile mill products	— 38.5	+ 312	+53.0	+1,032	—51.0	—17.8
5. Apparel	— 25.3	— 2,296	— 8.6	—1,193	—12.2	— 0.1
6. Lumber, wood products, furniture	— 3.3	+ 311	—12.6	— 320	— 8.6	— 7.2
7. Paper and allied products	+ 11.5	+ 239	— 9.4	—1,353	+ 8.3	+ 6.3
8. Printing and publishing	+ 17.1	— 859	+ 6.7	+ 356	+23.8	+ 4.0
9. Chemicals and allied products	+ 39.6	+ 2,610	—11.6	—1,245	+23.0	— 5.5
10. Petroleum and coal products	— 3.9	+ 395	+72.6	+2,097	— 9.3	— 4.7
11. Machinery	+ 21.9	— 3,191	— 2.0	—3,190	+31.6	+ 8.1
12. Motor vehicles and equipment	+ 28.7	+ 5,023	+26.6	+2,785	—13.8	+ 4.8
13. Aircraft and parts, ships, etc.	+201.2	+12,913	+ 5.8	+ 779	+43.3	—21.3
14. Primary metals	— 12.0	— 1,793	+18.8	+4,589	— 3.4	— 2.8
15. Fabricated metal products	+ 2.8	— 5,050	+ 3.0	+1,695	+29.3	— 6.5
16. Manufacturing, n.e.c.	— 14.8	— 7,587	—16.8	—5,199	+ 2.5	— 1.2
17. Railroads and railway express	— 29.1	+ 88	—23.9	— 714	—29.4	—20.5
18. Trucking and warehousing	+ 26.5	+ 392	+ 8.6	+ 420	+23.4	+ 5.8
19. Transportation other than rail and trucking	— 6.2	+ 715	+ 3.5	+ 190	—13.5	+ 1.3
20. Communications	+ 5.0	— 98	+ 2.2	+ 318	+ 6.0	+ 3.9
21. Utilities and sanitary service	+ 1.2	— 159	+ 1.0	+ 301	+ 2.6	— 3.4
22. Wholesale trade	— 7.5	— 4,325	— 0.5	—1,258	+ 6.0	+ 2.0
23. Retail trade	— 0.5	— 2,280	+ 4.5	—3,359	+ 1.6	+ 7.9
24. Finance, insurance, and real estate	+ 27.4	+ 514	+18.0	+2,192	+25.5	+12.0
25. Personal services including hotels	— 7.9	+ 7	+10.5	+ 609	— 7.9	+ 7.2
26. Business and repair services	+ 20.6	— 465	+26.7	— 530	+23.7	+30.6
27. Entertainment, recreation services	— 5.8	— 92	+ 3.2	+ 320	— 4.2	— 2.3
28. Professional services	+ 52.8	+ 1,507	+37.4	+4,066	+50.2	+23.8
Total of covered industries	+ 8.1%	— 7,605	+ 5.1%	+5,930	+ 9.2%	+ 4.8%

Sources: *Growth Patterns in Employment by County, 1940-1950 and 1950-1960,* Office of Business Economics, U. S. Department of Commerce, 1966; unpublished estimates for selected industries from U. S. Department of Commerce; *County Business Patterns,* Bureau of the Census, U. S. Department of Commerce, 1959 and 1964; unpublished estimates by U. S. Railroad Retirement Board; Federal Reserve Bank of Cleveland (See Technical Note, Appendix.)

TABLE VI-a
Employment Changes by Industry and Relative Growth Indicators
1950-1960

	High, 1950-1960				Low, 1950-1960			
	Percent Change in Employment		Relative Growth Indicator		Percent Change in Employment		Relative Growth Indicator	
1. Mining	Cincinnati	+ 51.2%	Philadelphia	+ 992	Pittsburgh	—62.9%	Pittsburgh	— 5,019
2. Contract construction	Buffalo	+ 28.3	Chicago	+12,607	Detroit	— 6.7	Philadelphia	— 7,749
3. Food and kindred products	Detroit	+ 36.4	Philadelphia	+ 6,969	Kansas City	—11.5	Chicago	— 12,837
4. Textile mill products	Detroit	— 8.2	Chicago	+ 2,456	Milwaukee	—66.1	Boston	— 7,251
5. Apparel	Detroit	+ 11.9	Philadelphia	+ 4,195	Cleveland	—27.2	Chicago	— 4,357
6. Lumber, wood products, furniture	Pittsburgh	+ 14.5	Pittsburgh	+ 645	Milwaukee	—26.5	Chicago	— 1,080
7. Paper and allied products	Kansas City	+ 49.9	Baltimore	+ 1,255	Cincinnati	—14.0	Cincinnati	— 1,555
8. Printing and publishing	Kansas City	+ 57.2	Detroit	+ 4,749	Chicago	+ 8.7	Chicago	— 11,653
9. Chemicals and allied products	Philadelphia	+ 49.9	Philadelphia	+ 7,217	Boston	—16.8	Boston	— 5,048
10. Petroleum and coal products	Minn.-St. Paul	+ 29.1	Philadelphia	+ 4,512	Pittsburgh	—69.3	Pittsburgh	— 3,679
11. Machinery	Baltimore	+ 118.4	Boston	+27,425	Cincinnati	+10.1	Chicago	— 25,669
12. Motor vehicles and equipment	Milwaukee	+ 47.4	Cleveland	+14,382	Boston	—47.0	Detroit	— 42,608
13. Aircraft and parts, ships, etc.	Cincinnati	+1,714.4	St. Louis	+12,913	Chicago	—18.2	Chicago	— 9,551
14. Primary metals	Boston	+ 22.0	Baltimore	+ 7,934	Cincinnati	—28.4	Pittsburgh	— 8,418
15. Fabricated metal products	Kansas City	+ 205.2	Detroit	+ 8,352	Buffalo	—18.3	Chicago	— 11,081
16. Manufacturing, n.e.c.	Minn.-St. Paul	+ 77.0	Minn.-St. Paul	+13,038	St. Louis	—14.8	Boston	— 7,657
17. Railroads and railway express	Detroit	— 19.4	Kansas City	+ 1,641	Boston	—53.2	Boston	— 4,260
18. Trucking and warehousing	Cincinnati	+ 39.2	Detroit	+ 2,002	Boston	+ 7.4	Boston	— 2,330
19. Transportation other than rail and trucking	Kansas City	+ 10.0	Chicago	+ 2,817	Buffalo	—26.9	Detroit	— 2,086
20. Communications	Cincinnati	+ 23.9	Philadelphia	+ 1,313	Chicago	— 7.1	Chicago	— 5,131
21. Utilities and sanitary service	Buffalo	+ 14.9	Buffalo	+ 521	Boston	— 5.6	Boston	— 1,470
22. Wholesale trade	Detroit	+ 23.7	Detroit	+ 6,136	St. Louis	— 7.5	Boston	— 4,625
23. Retail trade	Milwaukee	+ 12.0	Detroit	+12,696	Boston	— 4.2	Chicago	— 11,952
24. Finance, insurance, and real estate	Milwaukee	+ 34.7	Minn.-St. Paul	+ 2,265	Boston	+20.0	Chicago	— 5,521
25. Personal services including hotels	Minn.-St. Paul	+ 5.1	Detroit	+ 2,204	Cincinnati	—17.4	Chicago	— 5,432
26. Business and repair services	Detroit	+ 35.0	Detroit	+ 2,979	Baltimore	+11.1	Baltimore	— 1,423
27. Entertainment, recreation services	Minn.-St. Paul	+ 11.6	Pittsburgh	+ 762	Boston	—14.9	Chicago	— 1,049
28. Professional services	Detroit	+ 71.9	Detroit	+18,487	Chicago	+42.9	Chicago	— 13,149
Total of covered industries	Minn.-St. Paul	+ 19.8%	Minn.-St. Paul	+35,890	Pittsburgh	+ 0.7%	Chicago	—100,321

Source: Data are derived from Table V

TABLE VI-b
Employment Changes by Industry and Relative Growth Indicators
1959-1964

	High, 1959-1964				Low, 1959-1964			
	Percent Change in Employment		Relative Growth Indicator		Percent Change in Employment		Relative Growth Indicator	
1. Mining	Kansas City	+ 22.9%	Cleveland	+ 390	Philadelphia	—34.8%	Pittsburgh	— 1,467
2. Contract construction	Detroit	+ 24.5	Boston	+ 4,384	Buffalo	—24.0	Chicago	— 5,499
3. Food and kindred products	Kansas City	— 0.8	Philadelphia	+ 1,644	Cleveland	—25.9	Boston	— 3,031
4. Textile mill products	Pittsburgh	+130.8	St. Louis	+ 1,032	Baltimore	—37.1	Philadelphia	— 2,699
5. Apparel	Detroit	+ 44.5	Boston	+ 3,670	Cincinnati	—22.3	Chicago	— 5,219
6. Lumber, wood products, furniture	Pittsburgh	+ 8.0	Philadelphia	+ 690	Cincinnati	—26.8	Cincinnati	— 1,012
7. Paper and allied products	Baltimore	+ 20.5	Chicago	+ 1,661	Pittsburgh	—25.8	St. Louis	— 1,353
8. Printing and publishing	Minn.-St. Paul	+ 17.3	Minn.-St. Paul	+ 1,730	Pittsburgh	—15.5	Pittsburgh	— 1,838
9. Chemicals and allied products	Minn.-St. Paul	+ 43.3	Philadelphia	+ 1,903	Cincinnati	—16.9	Cincinnati	— 1,567
10. Petroleum and coal products	St. Louis	+ 72.6	St. Louis	+ 2,097	Boston	—62.3	Philadelphia	— 1,012
11. Machinery	Kansas City	+117.2	Minn.-St. Paul	+11,578	St. Louis	— 2.0	Chicago	—22,346
12. Motor vehicles and equipment	Boston	+ 65.4	Buffalo	+ 5,018	Kansas City	—17.5	Detroit	— 8,132
13. Aircraft and parts, ships, etc.	Minn.-St. Paul	+ 11.5	Philadelphia	+ 3,841	Kansas City	—59.7	Buffalo	— 2,465
14. Primary metals	Baltimore	+140.6	Baltimore	+21,101	Buffalo	—18.1	Pittsburgh	—17,228
15. Fabricated metal products	Buffalo	+ 16.8	Detroit	+ 6,161	Pittsburgh	—19.6	Chicago	— 8,653
16. Manufacturing, n.e.c.	Cleveland	+ 30.7	Chicago	+ 7,403	Minn.-St. Paul	—30.8	Minn.-St. Paul	— 7,903
17. Railroads and railway express	Baltimore	— 12.2	Chicago	+ 2,359	Boston	—33.3	Boston	— 962
18. Trucking and warehousing	Boston	+ 12.8	Chicago	+ 1,303	Minn.-St. Paul	— 2.4	Detroit	— 1,368
19. Transportation other than rail and trucking	Detroit	+ 21.3	Philadelphia	+ 3,918	Buffalo	—16.5	Boston	— 1,952
20. Communications	Philadelphia	+ 18.5	Philadelphia	+ 3,261	Chicago	— 9.9	Chicago	— 3,326
21. Utilities and sanitary service	Milwaukee	+214.7	Milwaukee	+ 3,949	Pittsburgh	—29.2	Pittsburgh	— 3,429
22. Wholesale trade	Baltimore	+ 9.5	Chicago	+ 3,072	Pittsburgh	—20.0	Pittsburgh	—10,557
23. Retail trade	Kansas City	+ 16.0	Chicago	+10,962	Pittsburgh	— 0.1	Pittsburgh	— 8,591
24. Finance, insurance, and real estate	Minn.-St. Paul	+ 20.4	Minn.-St. Paul	+ 2,767	Pittsburgh	+ 0.7	Chicago	— 4,142
25. Personal services including hotels	Minn.-St. Paul	+ 21.0	Minn.-St. Paul	+ 1,741	Buffalo	— 2.3	Chicago	— 1,835
26. Business and repair services	Baltimore	+ 59.4	Boston	+ 3,970	Chicago	+20.2	Chicago	— 7,030
27. Entertainment, recreation services	Minn.-St. Paul	+ 23.3	Minn.-St. Paul	+ 1,187	Cleveland	—16.8	Chicago	— 1,568
28. Professional services	St. Louis	+ 37.4	St. Louis	+ 4,066	Pittsburgh	+11.6	Pittsburgh	— 8,922
Total of covered industries	Baltimore	+ 14.1%	Baltimore	+41,385	Pittsburgh	— 7.1%	Pittsburgh	—69,501

Source: Data are derived from Table V

TABLE VII-a

Summary of Employment Changes by Industry
Cleveland Compared with 13 Selected Cities
1950-1960 and 1959-1964

	Relative Growth Indicator		Number Employed
	1950-1960	1959-1964	1960
A. Favorable Changes in Both Periods			
Textile mill products	+ 1,618	+ 608	4,442
Printing and publishing	+ 1,537	+ 684	19,019
B. Unfavorable Changes in Both Periods			
Machinery	—10,833	—1,822	70,416
Fabricated metal products	— 5,201	—1,015	31,763
Aircraft and parts, ships, etc.	— 3,951	—1,484	12,224
Chemicals and allied products	— 1,112	—1,336	18,044
C. Significant Changes in One Period Only			
Motor vehicles and equipment	+14,382	—	37,479
Finance, insurance, and real estate	—	+1,321	29,810
Professional services	—	+1,314	81,358
Transportation other than rail and trucking	—	+ 747	8,695
Primary metals	—	—4,494	39,783
Entertainment, recreation services	—	— 919	5,461
Personal services including hotels	—	— 749	18,386
Lumber, wood products, furniture	—	— 726	4,598
Business and repair services	—	— 591	18,460
D. Marked Shifts Between Two Periods			
Food and kindred products	+ 3,034	—2,334	14,867
Retail trade	+ 2,133	—1,264	101,542
Wholesale trade	+ 1,780	— 898	27,691
Apparel	— 1,701	+1,445	8,218
Contract construction	— 1,537	+1,866	32,571
TOTAL of covered industries*	+ 3,811	—4,764	656,661

* Includes 8 covered industries not listed in the table. Except for "Manufacturing, not elsewhere classified," the unlisted industries show relatively small changes, i.e., (for this table) increases or declines of less than 1,000 in the first period, or increases or declines of less than 500 in the second (or shorter) period.

Source: Data are derived from Table V (Dash indicates insignificant changes.)

TABLE VII-b
Summary of Employment Changes by Industry
Pittsburgh Compared with 13 Selected Cities
1950-1960 and 1959-1964

	Relative Growth Indicator		Number Employed
	1950-1960	1959-1964	1960
A. Favorable Changes in Both Periods			
Motor vehicles and equipment	+ 1,235	+ 539	3,223
B. Unfavorable Changes in Both Periods			
Primary metals	— 8,418	—17,228	134,891
Machinery	— 6,756	— 2,909	51,902
Retail trade	— 5,890	— 8,591	121,153
Mining	— 5,019	— 1,467	11,409
Contract construction	— 2,981	— 3,928	42,118
Professional services	— 2,957	— 8,922	96,136
Aircraft and parts, ships, etc.	— 1,947	— 1,034	6,122
Railroads and railway express	— 1,713	— 893	21,196
Business and repair services	— 1,398	— 668	18,720
C. Significant Changes in One Period Only			
Food and kindred products	+ 1,591	—	22,268
Personal services including hotels	+ 1,465	—	22,355
Petroleum and coal products	— 3,679	—	1,885
Communications	— 1,048	—	10,050
Wholesale trade	—	—10,557	27,884
Fabricated metal products	—	— 3,912	27,623
Finance, insurance, and real estate	—	— 3,658	32,416
Utilities and sanitary service	—	— 3,429	13,689
Paper and allied products	—	— 1,226	3,385
Entertainment, recreation services	—	— 961	7,602
D. Marked Shifts Between Two Periods			
Printing and publishing	+ 1,065	— 1,838	12,701
TOTAL of covered industries*	—41,734	—69,501	752,119

* Includes 7 covered industries not listed in the table. Except for "Manufacturing, not elsewhere classified," the unlisted industries show relatively small changes, i.e., (for this table) increases or declines of less than 1,000 in the first period, or increases or declines of less than 500 in the second (or shorter) period.

Source: Data are derived from Table V (Dash indicates insignificant changes.)

TABLE VII-c
Summary of Employment Changes by Industry
Cincinnati Compared with 13 Selected Cities
1950-1960 and 1959-1964

	Relative Growth Indicator		Number Employed
	1950-1960	1959-1964	1960
A. Favorable Changes in Both Periods			
Fabricated metal products	+ 955	+ 745	13,019
B. Unfavorable Changes in Both Periods			
Machinery	— 5,937	— 345	30,326
C. Significant Changes in One Period Only			
Trucking and warehousing	+ 939	—	8,239
Communications	+ 925	—	6,406
Entertainment, recreation services	—	+ 745	4,099
Food and kindred products	—	+ 506	17,591
Paper and allied products	— 1,555	—	6,013
Wholesale trade	— 936	—	16,939
Professional services	— 925	—	48,502
Railroads and railway express	— 834	—	9,160
Retail trade	—	— 4,681	68,313
Apparel	—	— 1,317	5,113
Printing and publishing	—	— 1,047	13,350
Lumber, wood products, furniture	—	— 1,012	5,374
D. Marked Shifts Between Two Periods			
Aircraft and parts, ships, etc.	+11,948	— 2,330	12,973
Motor vehicles and equipment	+ 4,499	— 685	12,283
Contract construction	+ 2,274	— 1,229	26,435
Chemicals and allied products	+ 1,532	— 1,567	15,716
Primary metals	— 1,854	+ 120	5,298
Business and repair services	— 1,245	+ 1,566	11,070
TOTAL of covered industries*	+ 9,304	—11,214	401,180

* Includes 6 covered industries not listed in the table. Except for "Manufacturing, not elsewhere classified," the unlisted industries show relatively small changes, i.e., (for this table) increases or declines of less than 800 in the first period, or increases or declines of less than 400 in the second (or shorter) period.

Source: Data are derived from Table V (Dash indicates insignificant changes.)

APPENDIX

Technical Note*

* Applies to the three articles in the series, and will be included at the end of each article.

Geographical Coverage. Wherever the term "city" or "metropolitan area" is used in the text, it refers to the "Standard Metropolitan Statistical Area," composed of one or more counties as designated in the official list. The single exception is Boston, for which the official SMSA cuts across county lines, as is the case generally in the New England States. As a substitute for the Boston SMSA, this study uses a composite of data for the entire counties of Essex, Middlesex, Norfolk, and Suffolk. The resulting totals for "Boston," although not necessarily the percent changes, become somewhat larger than would be the case for the official SMSA. (See footnote of Table IV for the population differences involved.)

County composition of the SMSA's used here is that defined by the Bureau of the Budget in 1964. Data for earlier years were adjusted, where necessary, by addition of data for required counties. Thus, Cleveland, in this study includes Medina and Geauga Counties, as well as Cuyahoga and Lake Counties. Likewise, the Cincinnati SMSA includes Dearborn County, Indiana, in addition to three counties in Ohio and three counties in Kentucky.

Use of the SMSA unit has a particular drawback in the case of at least one of the covered industries for one of the SMSA's; that is, "Primary metals" for the Chicago SMSA. A large part of the steel industry of the greater Chicago area is located in the Gary-Hammond-East Chicago SMSA and, therefore, does not appear in our figures for the Chicago SMSA. This has the effect of seriously understating the Chicago performance for "Primary metals" for the 1950-1960 period. Thus, including Gary, etc., would have the effect of altering the percent change figure for Chicago shown in Table V from minus 14 percent to minus 4 percent, accompanied by a virtual elimination of the negative figure for the relative growth indicator. For the 1959-1964 period, however, use of the enlarged area would make little change in the Chicago scores for percent change or relative growth indicator.

As a supplement to the footnote shown in Table I, it may be noted that the data on numbers employed in 1950 and 1960, as shown in columns 1 and 2, and also the basic employment data used in Table V, were drawn from unpublished figures for the various SMSA's provided by the Office of Business Economics, U. S. Department of Commerce. With certain exceptions, these data could have been computed by adding the appropriate counties making up the SMSA's, as shown in the published volumes of *Growth Patterns in Employment by County*. (The exceptions are noted below in connection with the "Miscellaneous" problem.)

Basic data for our treatment of the 1959-1964 period were obtained from *County Business Patterns,* U.S. Department of Commerce and U.S. Department of Health, Education, and Welfare. For the 1959 data, as drawn from that source, it was necessary to add figures for the individual counties in order to obtain SMSA totals. For the 1964 data, however, the published volumes of *County Business Patterns* provide data in SMSA form. In utilizing data drawn from this source, it was necessary by means of estimation to fill certain gaps occasioned by the "nondisclosure" rule. Figures on numbers employed that were derived from our own estimates are indicated in the appropriate columns of Table II by a notation of "e," although such notation is not carried through the succeeding computation columns. In the case of the estimates within the tables for Cleveland, Pittsburgh, and Cincinnati, it was possible to obtain sufficient supplementary information to warrant considerable confidence in the estimates. Estimates, wherever they occur, for the other areas are less fully documented.

Industry Coverage. The 28 industry or service groups used consistently in this study were selected to serve as a least common denominator, for purposes of comparability, between the breakdowns provided by the OBE study already identified (which provided the basic data for our 1950-1960 treatment) and *County Business Patterns* (which provided the basic data for our 1959-1964 treatment). Certain minor changes in the industry captions were effected for clarity; i.e., we use the caption "Aircraft and parts, ships, etc." in place of "Other transportation equipment," referring to transportation equipment other than "Motor vehicles and equipment." In the process of achieving comparability it was necessary to drop the category of "Public administration," as shown in the OBE study (an omission noted in the text); on the other hand, it was possible to include the category "Railroads and railway express," which is not contained in the *County Business Patterns* summaries, by obtaining special estimates for the SMSA's involved from the U. S. Railroad Retirement Board.

An important part of the data used in the 1950-1960 treatment represents certain special breakdowns in the form of unpublished data provided by the OBE. These breakdowns apply to the category entitled "Other and miscellaneous manufacturing" as published in *Growth Patterns in Employment by County*. The special breakdowns were needed because they include such important industries as "Primary metals," "Fabricated metal products," and others. Even with this aid, however, Category No. 16, "Manufacturing, n.e.c." in our standard list is undesirably large; unfortunately, it includes industries of considerable importance, such as rubber and rubber products, and stone, clay, and glass.

It should be noted that differences in sources of basic data mentioned above could give rise to a conceptual problem. Thus, data for the period 1950-1960, although drawn here from the OBE study as indicated, have their original source in Census of Population reports, in which employment is allocated to the place of residence of the employee. Data for the 1959-1964 period, however, are drawn from sources that assign employment to the place of work. In working with data for corporate cities or for individual counties, such a disjuncture may be serious, or even decisive, but it may be considered to be of relatively small importance in dealing with metropolitan areas embracing counties, as is the case here. That judgment is used widely as a working rule by regional analysts, despite the extensive commuting distances often traveled by the employee. Supplementary data for the 1964-1966 period contained in the third article are based on the place-of-work criterion, as in the case of the 1959-1964 period.

Meaning of Totals. In addition to the industry and service categories (which constitute the main focus of the study) the various tables also show a final line for totals, usually in the form of "Total of covered industries." In interpreting such totals, certain basic points should be kept in mind: (1) "Covered employment" is not identical with "Total employment"; (2) for relative growth indicators, although not for percent change data, the relative sizes of the cities represent important underlying influences. Because of the nature of the computation, a relative growth indicator for a given industry in a large city may be larger (either plus or minus) than for a smaller city. At the same time, however, the variation among industries in this respect is so large as to render undesirable, and probably statistically indefensible, the use of any standard adjustment factor; and (3) statistical problems arising from levels of aggregation occur at certain points in the use of data for "totals" shown here.

The last-mentioned point is seen most clearly by reference to the final line of Table I, with accompanying footnote. It might be thought that the computation of total relative growth indicators could be done *either* by following through the computations in a horizontal direction, exactly as was done for the individual industries, or by summing the relative growth indicators for the individual industries as shown in the final column. In fact, the results obtained by the two methods will, and should, differ because the degree of aggregation has an effect on the summation of relative growth indicators. That, in turn, goes back to differences in industry mix between the city under consideration and the standard of comparison, whether the latter is the United States total or the aggregate of 13 cities. The method of obtaining the total of relative growth indicators, as shown in the lower right corner of Tables I-a-c, is the same as that used in *Growth Patterns in Employment by County;* that is, the total is obtained by a vertical addition of the individual industry entries rather than by the horizontal route of aggregate percentage computations.

APPENDIX TABLE I

Identification of Covered Industries by Standard Industrial Classification Code

Industry	SIC Code
1. Mining	10-14
2. Contract construction	15-17
3. Food and kindred products	20
4. Textile mill products	22
5. Apparel	23
6. Lumber, wood products, furniture	24-25
7. Paper and allied products	26
8. Printing and publishing	27
9. Chemicals and allied products	28
10. Petroleum and coal products	29
11. Machinery	35-36
12. Motor vehicles and equipment	371
13. Aircraft and parts, ships, etc.	37 (except 371)
14. Primary metals	33
15. Fabricated metal products	34
16. Manufacturing, n.e.c.	21, 30-32, 38-39
17. Railroads and railway express	40
18. Trucking and warehousing	42
19. Transportation other than rail and trucking	41, 44-47
20. Communications	48
21. Utilities and sanitary service	49
22. Wholesale trade	50
23. Retail trade	52-59
24. Finance, insurance, and real estate	60-67
25. Personal services including hotels	70, 72
26. Business and repair services	73, 75-76
27. Entertainment, recreation services	78-79
28. Professional services	80-82, 84, 86, 89

APPENDIX TABLE II

Components of Percent Changes in Total Nonagricultural Employment Cleveland, Pittsburgh, and Cincinnati 1950-1960

	Changes Related to:			
	National Growth*	Industry Mix	Regional Share†	Total Change
Cleveland	+22.9%	+1.6%	— 9.0%	+15.5%
Pittsburgh	+22.9	—2.0	—17.4	+ 3.5
Cincinnati	+22.9	+0.2	— 4.9	+18.2

*Total employment gain for United States, all nonagricultural industries; when combined with change in components shown in next two columns, the result is "total change" shown in final column.

†Same concept as "relative growth indicator" used in this study. Total United States change is the standard of reference.

Sources: Same as Table I, main text

RECENTLY PUBLISHED ECONOMIC COMMENTARIES OF THE FEDERAL RESERVE BANK OF CLEVELAND

"Trends in the Corporate Bond Market in 1967"
December 2, 1967

"Aspects of Two Devaluations"
December 9, 1967

"A Note on Population Migration"
December 16, 1967

"Negotiable CDs in 1966-1967"
December 23, 1967

"Outlook for Agriculture in 1968"
January 6, 1968

"Recent Patterns in Commercial and Industrial Loans"
January 13, 1968

"Special Drawing Rights"
January 20, 1968

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