economic review

AUGUST 1969

IN THIS ISSUE

ECONOMIC TRENDS AND FLUCTUATIONS IN A HEAVY INDUSTRY AREA— THE CASE OF CLEVELAND

FEDERAL RESERVE BANK OF CLEVELAND

Additional copies of the ECONOMIC REVIEW may be obtained from the Research Department, Federal Reserve Bank of Cleveland, P. O. Box 6387, Cleveland, Ohio 44101.

ECONOMIC TRENDS AND FLUCTUATIONS IN A HEAVY INDUSTRY AREA— THE CASE OF CLEVELAND

Economic activity in the Cleveland metropolitan area is heavily dependent upon durable goods production, particularly "heavy industry" output. Historically, activity in durable goods industries—in Cleveland and in the nation—has tended to be more volatile than in nondurable goods industries. The durable goods industries have been more vulnerable to economic depressions and recessions and, in many instances, have participated more than proportionately in business expansions. Therefore, it seems logical to assume that cyclical fluctuations would tend to be greater in the Cleveland area than in the nation as a whole.

The analysis in this article attempts to determine the nature of the business cycle in Cleveland and the United States by comparing the behavior of certain indicators of the Cleveland economy with similar indicators for the nation as a whole. Although a wide range of business cycle indicators has been developed for the nation's economy, comparable information often is not available for a local area. Consequently, this article is limited to an analysis of employment and related labor market indicators for Cleveland and the United States that reveal similarities or differences in levels, trends, amplitudes, turning points in the business cycle, and seasonal patterns.

Evidence is presented to suggest that (1) the behavior of "the business cycle" in Cleveland is, in timing and duration, similar to that in the nation, but different in terms of amplitude; and (2) that economic activity in Cleveland has undergone structural changes that tend to make the area relatively more vulnerable than the nation to economic fluctuations. More specifically, the evidence seems to support the argument that each business recession since the end of World War I has had a more adverse impact on Cleveland than on the nation. Conversely, from 1921 to 1953, the expansion in activity during each business recovery was stronger in Cleveland than in the United States; as a result, the Cleveland area kept pace with the nation in long-run trends.

During the 1950's, however, structural changes began to occur in the pattern of economic activity in Cleveland. Recessions became relatively worse, and recoveries either fell short of national rebounds, or were not strong enough to enable the

BUSINESS CYCLES AND BUSINESS CYCLE INDICATORS

Because this article is concerned with time series analysis, some comments on business cycles, in general, and economic series, in particular, may be helpful. According to Burns and Mitchell:

> Business cycles are a type of fluctuation found in the aggregate economic activity of nations that organize their work mainly in business enterprises; a cycle consists of expansions occurring at the same time in many economic activities, followed by similarly general recessions, contractions, and revivals which merge into the expansion phase of the next cycle; this sequence of changes is recurrent but not periodic; in duration business cycles vary from more than one year to ten or twelve years; they are not divisible into shorter cycles of similar character with amplitudes approximately their own.[1]

The National Bureau of Economic Research (NBER), the semi-official "scorekeeper" of business cycle activity, has designated the periods of expansion and contraction that have occurred in the United States since 1854. Monthly turning points in general business activity since 1919 are shown in the accompanying table.

The entire period from trough to peak to trough is known as a reference cycle, which is the basic framework used to analyze separate economic activities. Each economic series traces a specific cycle, and the months when the turning points of *many* economic series tend to cluster are chosen as the peaks or troughs of the reference cycle. No single economic series is used to determine the turning points of a business cycle. The performance of many economic indicators is examined to determine the (somewhat artificial) mid-month point in which an economic expansion has ended and a recession has started, or vice versa.

There is disagreement among economists about the precise monthly dating of business cycle peaks and troughs.[2] However, there seems to be at least one prerequisite for a recession: Every period encompassed by declines for two or more consecutive quarters in "real" Gross National Product (GNP measured in constant dollars) since the end of World War II has been designated by the NBER as a general business recession.

Business Cycle Reference Dates

Expansion		Contraction
Trough	Peak	Trough
March 1919	January 1920	July 1921
July 1921	May 1923	July 1924
July 1924	October 1926	November 1927
November 1927	August 1929	March 1933
March 1933	May 1937	June 1938
June 1938	February 1945	October 1945
October 1945	November 1948	October 1949
October 1949	July 1953	August 1954
August 1954	July 1957	April 1958
April 1958	May 1960	February 1961
February 1961		

Source: National Bureau of Economic Research, Inc.

[1] A. F. Burns and W. C. Mitchell, *Measuring Business Cycles* (New York: National Bureau of Economic Research, 1946), p. 3.

[2] See, for example, George W. Cloos, "How Good are the National Bureau's Reference Dates?" *Journal of Business*, January 1963, and "More on Reference Dates and Leading Indicators," *Journal of Business*, July 1963.

Unfortunately, there is no series for "Gross Cleveland Product"; therefore, other data must be used to evaluate the overall economic performance of the area. The NBER, in determining turning points in the national reference cycle, uses a wide range of economic indicators, including employment, income, and various other labor market indicators. The analysis in this article follows the traditional NBER framework and utilizes data that describe economic activity in Cleveland.[3] Presumably, it can be determined whether or not the business cycle in Cleveland leads, coincides with, or lags national turning points. An inference can be drawn from a comparison of specific cycle peaks and troughs of individual series for the Cleveland economy with similar series for the nation. The NBER classifies many economic series as leading, coincident, or lagging indicators of economic activity. Leading indicators tend to register peaks and troughs before those of the general business cycle. Coincident indicators generally run concurrent with aggregate economic activity and, to a large extent, define the reference cycle. Lagging indicators tend to respond belatedly to changes in total business activity.

This article does not include any lagging indicators, although some unclassified series were examined (together with leading and coincident series) because they help to understand economic trends, fluctuations, and interrelationships in Cleveland.

[3]See *Business Cycle Indicators,* Vol. I, "Contributions to the Analysis of Current Business Conditions" (Princeton: National Bureau of Economic Research, 1961). See also the monthly publications, *Business Conditions Digest,* U. S. Department of Commerce, Bureau of the Census.

area to regain its former standing in the nation. In general, Cleveland has not shared proportionately in the growth of the economy in recent years.

A comparison of economic activity in Cleveland with that in the United States has obvious limitations. Nevertheless, for practical purposes, the performance of the nation as a whole was selected as the most convenient economic "yardstick." If relative growth performance were the sole consideration, it would be more appropriate to compare Cleveland with other mature industrial areas.[1]

STRUCTURE OF EMPLOYMENT IN CLEVELAND AND THE UNITED STATES

Cleveland is recognized as an area that specializes in heavy industry, such as the production of basic steel, motor vehicles and parts, and machinery and industrial equipment.[2] As shown in Table I, manufacturing is the largest employment sector in both Cleveland and the nation. More importantly, changing phases of the business cycle have a marked influence on the manufacturing sector. (Although mining and construction also tend to be cyclically volatile, those sectors are in relative terms less important in the overall economy.)

[1]See, for example, "Employment Performances of Cleveland, Pittsburgh, and Cincinnati, 1950-1966, Part I: Comparison with the United States; Part II: Comparison with 13 Cities; and Part III: Updating and Conclusions," *Economic Review,* Federal Reserve Bank of Cleveland, November 1967, January 1968, and March 1968, respectively.

[2]According to the *Census of Manufacturers,* by 1929, Cleveland was already well established as a major center for the production of iron and steel; foundry and machine shop products; motor vehicle bodies and parts; and electrical machinery, apparatus, and supplies.

TABLE I

Distribution of Total Nonagricultural Employment
United States and the Cleveland SMSA
1968

Employment Category	United States	Cleveland SMSA
Manufacturing	29.0%	37.1%
Wholesale and retail trade	20.7	20.6
Services and miscellaneous	15.4	14.8
Government	17.9	12.4
Transportation and public utilities	6.4	6.0
Finance, insurance, and real estate	4.9	4.7
Contract construction	4.8	4.3
Mining	0.9	0.2
Total nonagricultural employment	100.0%	100.0%

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

Manufacturing accounts for a larger share of total nonagricultural employment in Cleveland than in the nation. However, a larger share of employment in manufacturing does not necessarily mean that a local area is more prone to cyclical fluctuations than the nation. For example, the manufacturing sector in a local area may be dominated by nondurable goods industries, which are generally more stable than durable goods industries. Hourly wages are higher, the workweek typically longer, weekly earnings considerably higher, and cyclical fluctuations much greater in the durable sector than in the nondurable goods sector.

In Cleveland, the durable goods industries account for nearly three-fourths of manufacturing employment, compared with less than 60 percent in the United States (see Table II). In short, durable goods are Cleveland's "bread and butter" industries; but at the same time, they are a predominant factor in the observed phenomenon that business recessions or periods of economic adjustment are more severe in Cleveland than in the nation.

In general, employment, production, and income fluctuate more in the durable goods sector than in the nondurable goods sector. This reflects the fact that during periods of pessimism about future business conditions, or during recessions, consumers and businessmen tend to defer purchases of durable goods, such as autos, appliances, and machinery and equipment, until there is an improvement in business conditions or expectations regarding economic conditions. In contrast, employment, production, and income in nondurable goods industries, such as food and

TABLE II

Distribution of Employment in Manufacturing
United States and the Cleveland SMSA
1968

	United States	Cleveland SMSA
All manufacturing	100.0%	100.0%
Durable goods	58.7	74.7
Nonelectrical machinery	9.9	16.8
Fabricated metals	7.0	14.1
Transportation equipment	10.3	12.9
Primary metals	6.6	12.5
Electrical machinery	9.9	10.6
Furniture and fixtures	2.4	1.2
Other durable goods*	12.6	6.6
Nondurable goods	41.3	25.3
Printing and publishing	5.4	5.6
Chemicals and allied products	5.2	5.3
Food and kindred products	9.0	4.2
Apparel	7.2	2.5
Paper and allied products	3.5	1.8
Textile mill products	5.0	1.6
Other nondurable goods†	6.0	4.3

* Includes ordnance; lumber and wood products; stone, clay, and glass products; instruments and related products; and miscellaneous manufacturing.

† Includes petroleum and related products; rubber and plastics products; leather and leather products; and tobacco manufactures.

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

beverages, chemicals, and printing and publishing, tend to be more stable because the demand for products of these industries is not as sensitive to the business cycle as is the demand for durable goods. These stable industries rank high within Cleveland's nondurable goods sector. On the other hand, some nondurable goods industries (for example, rubber, leather, paper, textiles, apparel, and petroleum products) have pronounced cyclical characteristics, but in terms of employment, these industries are relatively unimportant within Cleveland's nondurable goods sector (see Table II).

THE BEHAVIOR OF EMPLOYMENT

Chart 1 provides some perspective on long-run trends and cyclical characteristics in Cleveland and the nation. Because annual data on total employment in the Cleveland area are not available for the time span studied, data on manufacturing employment are used as a proxy to reflect alternating periods of business expansion and contraction.[3] The chart clearly reveals the greater cyclical sensitivity of Cleveland. Each downward phase of manufacturing employment shown on the chart encompassed a national business recession. (The sharp decline in manufacturing employment that occurred between 1943 and 1946 included a brief recession that lasted only from February to October 1945.)

Table III shows the amplitude of cyclical swings in manufacturing employment during the 30-year period ending in 1949. During each contraction, the relative decline in manufacturing employment was greater in Cleveland than in the nation. Particularly noteworthy are the declines that have occurred during the three most severe national recessions since World War I (as measured by declines in the Federal Reserve Board's index of industrial production). In the order of severity, those recessions were 1929-1933, 1937-1938, and 1920-1921. On the other hand, as shown in Table III, each recovery or expansion was stronger in Cleveland than in the nation.

The 1950's and 1960's—A Changing Pattern. Chart 2 and Table IV provide some perspective on trends and economic fluctuations in Cleveland and

TABLE III

Contractions and Expansions of Manufacturing Employment
United States and Cleveland
1919—1949

	United States	Cleveland
Contractions		
1919-1921	−23.7%	− 34.5%
1923-1924	− 6.0	− 9.9
1926-1927	− 1.6	− 5.7
1929-1932	−35.3	− 42.7
1937-1938	−12.5	− 24.0
1943-1946	−16.5	− 20.8
1947-1949	− 7.1	− 12.6
Expansions		
1921-1923	+24.6%	+ 30.1%
1924-1926	+ 5.0	+ 8.7
1927-1929	+ 7.0	+ 11.1
1932-1937	+55.8	+ 62.4
1938-1943	+86.5	+119.1
1946-1947	+ 5.7	+ 6.5

NOTE: Data for 1919-1921 are based on production worker employment in the United States and in the City of Cleveland. Data for all other periods are based on total manufacturing employment in the United States and Cuyahoga County.

Sources: U. S. Department of Commerce; U. S. Department of Labor; Greater Cleveland Growth Association; Division of Research and Statistics, Ohio Bureau of Employment Services

[3] If manufacturing employment is adjusted for variations in the workweek and changes in productivity, the cyclical contours would virtually coincide with those of the Federal Reserve Board's index of industrial production, which is among the highly regarded coincident business cycle indicators.

the United States. Compared with data based on annual averages in Chart 1 and Table III, the seasonally adjusted monthly series on manufacturing employment permits a closer examination of timing relationships and a sharper measurement of amplitudes in the specific cycles.

Chart 2 shows that the differences in turning points in manufacturing employment between Cleveland and the nation are insignificant. At three cycle troughs—1954, 1958, and 1961—Cleveland lagged the United States by one month (see Table IV). Trough months in Cleveland and in the nation coincided in 1949 and 1967.[4] In 1957 and 1966, manufacturing employment peaked one month earlier in Cleveland than in the nation, and in 1953 and 1960, the peak months in Cleveland and the nation coincided. Nevertheless, during the 1950's and 1960's, Cleveland continued to be more vulnerable to business recessions than the nation; and significantly, recoveries were weaker in Cleveland.

After the 1948-1949 recession, the recovery and subsequent expansion of manufacturing employment was extremely vigorous in Cleveland. Directly and indirectly, the Korean War induced a major boom in Cleveland. During that conflict, there was an increase of more than 50 percent in employment in the area's motor vehicle, aircraft and parts, and machinery and equipment industries that accounted for two-thirds of the increase in Cleveland's manufacturing employment. Significant employment gains in ordnance as well as the metal-producing and fabricating industries added further stimulus to economic activity in the area during the Korean War.

As in previous recessions, the downturn after the end of the Korean War affected manufacturing employment more adversely in the Cleveland area than in the nation. However, instead of a stronger rebound in Cleveland than the nation, as had been the historical pattern, recovery in the area's manufacturing employment *fell short* of the national experience between late 1954 and early 1957. During that period, the nationwide boom in plant and equipment spending supported only a partial recovery in employment in Cleveland's metalworking industries. Moreover, Cleveland began to lose ground in comparison with the nation in the durable goods sector, particularly in the ordnance and aircraft and parts industries.

Recoveries are conventionally measured from trough to peak, or from trough to most recent date, as shown in Table IV. However, citing increases measured in this way as evidence of economic growth (a common practice) creates a misleading impression of underlying growth trends. It is more meaningful to evaluate economic progress, or the lack thereof, by measuring changes from peak to peak and by considering the time lag before a series attains its previous high.

From the Korean War peak in July 1953 to the subsequent peak in early 1957, there was a *net loss* of 7.8 percent in manufacturing employment in Cleveland, compared with a loss of 2.2 percent in the United States. As shown in Chart 2, manufacturing employment in Cleveland has not regained its post-World War II peak, which

[4] The slowdown in national economic activity during the first half of 1967, including one quarterly decline in real GNP, was not designated by the NBER as an official recession. That slowdown was concentrated in the manufacturing sector and was largely the result of production cutbacks to correct for excessive inventories. Hence, the distinct interruption in the long expansionary phase in manufacturing employment is designated in Table IV as a pause. Although recovery from the inventory adjustment was underway by August 1967, a strike in the motor vehicle industry subsequently impeded the recovery.

TABLE IV

Specific Cycles in Manufacturing Employment*
United States and the Cleveland SMSA
October 1949–July 1967

	United States		Cleveland SMSA	
Recovery	October 1949 – July 1953	+27.6%	October 1949 – July 1953	+44.7%
Recession	July 1953 – August 1954	−10.0	July 1953 – September 1954	−13.3
Recovery	August 1954 – March 1957	+ 8.7	September 1954 – February 1957	+ 7.4
Recession	March 1957 – May 1958	−10.1	February 1957 – June 1958	−19.1
Recovery	May 1958 – February 1960	+ 9.6	June 1958 – February 1960	+14.6
Recession	February 1960 – February 1961	− 6.3	February 1960 – March 1961	−13.9
Recovery	February 1961 – January 1967	+22.1	March 1961 – December 1966	+23.0
Pause	January 1967 – July 1967	− 1.7	December 1966 – July 1967	− 4.7

* Percent changes computed from seasonally adjusted data.

Sources: U. S. Department of Labor; Division of Research and Statistics, Ohio Bureau of Employment Services; Federal Reserve Bank of Cleveland

occurred in mid-1953. On the other hand, manufacturing employment in the United States surpassed the Korean War peak in 1965.

The two succeeding recessions were worse in Cleveland than in the United States, and recoveries in the area were not strong enough to prevent further relative deterioration. During the 1957-1958 recession, for example, the percent decline in manufacturing employment was almost twice as large in Cleveland as in the nation. The subsequent recovery was interrupted during the latter half of 1959 because of the prolonged strike in the steel industry. Shortly after steel inventories were rebuilt in early 1960, the nation's economy turned down again. Although the 1960-1961 recession in the nation was moderate by most standards, the relative decline in manufacturing employment was more than twice as great in Cleveland as in the nation.

From 1961 to early 1967, manufacturing employment followed a path of recovery in Cleveland that was similar to the national pattern. The loss in manufacturing employment sustained in the nation during the 1960 recession was recouped by early 1964. In contrast, the recovery in Cleveland began from a more depressed level, and manufacturing employment did not return to its previous cyclical peak (February 1960) until early 1966. In other words, the Cleveland area took five years to recover the manufacturing employment that it had lost in one recession year. The effect of the inventory adjustment in 1967 on manufacturing employment in Cleveland was more than twice as severe as in the nation. As a result, the gap in manufacturing employment between the United States and Cleveland became wider.

Reasons for the Relative Decline. The data in Charts 3 and 4 break down total manufacturing employment into durable and nondurable goods industries and help to explain the performance of Cleveland as compared with the nation. Over the business cycle, employment in the nondurable goods sector is more stable than in the durable goods sector. At the same time, the nondurable goods sector has a slower long-run growth trend.

The dominance of employment in the durable goods industries in Cleveland only partially explains the severity of cyclical downturns in the area. During the past three recessions and during the pause of 1967, percent declines in durable goods employment were greater in Cleveland than in the nation. The relative size as well as the composition of Cleveland's durable goods industries account for the area's cyclical vulnerability. Specifically, Cleveland has larger shares of employment than the nation in cyclically volatile industries, such as motor vehicles and equipment, metal stampings, screw machine products, metalworking machinery, and basic steel. On the other hand, Cleveland has relatively low employment shares in less cyclically volatile (and more rapidly growing) durable goods industries, such as communications equipment, electronic components, and instruments.

In brief, the lag in durable goods employment as well as the relative deepening of recessions in Cleveland reflects the area's failure to benefit from industries that have displayed strong growth trends in other areas. As shown in Chart 3, the spread between the indexes for durable goods employment in the United States and Cleveland that began to narrow after the Korean War widened during the late 1950's and early 1960's, due largely to Cleveland's unfavorable employment performance in the machinery industries, particularly electrical machinery. Cleveland's relative standing also deteriorated during that period because of poor employment performances in the fabricated metal products industry and the transportation equipment industry, particularly in those segments other than motor vehicles and parts.

The major surge in Cleveland's manufacturing employment occurred during the Korean War years and was concentrated in the metalworking industries. Except for rebounds after recessions, the only other phase of expansion in durable goods employment occurred during the mid-1960's. Since 1964, when employment began to break away from its stubborn plateau in Cleveland and in the nation (see Chart 2), most of the employment gain in Cleveland's durable goods sector has occurred in the electrical and nonelectrical machinery industries. The nationwide boom in plant and equipment spending was largely responsible for the stimulus to Cleveland's machinery industries during the mid-1960's, since consumer-type machinery products play a relatively small role in the area's economic activity. Employment in Cleveland's three other major metalworking industries—transportation equipment, primary metals, and fabricated metal products—has shown little net growth since 1964; those three industries also bore the brunt of the employment decline in Cleveland during 1967.

Employment patterns in the nondurable goods industries stand in sharp contrast to those in the durable goods industries. Although some nondurable goods industries are highly cyclical, aggregate employment in the nondurable goods sector undergoes relatively mild cyclical changes. However, in both Cleveland and the nation, the dampened cycle in nondurable goods employment has been accompanied by very little net growth since 1950. Charts 3 and 4 also show that the gap in the indexes of employment is less pronounced in the nondurable goods industries than in the durable goods industries; that is, Cleveland has lagged the nation more in the durable goods sector than in the nondurable goods sector.

The area's weak employment performance in the food and kindred products and textiles and apparel industries has accounted for the moderate

relative decline in Cleveland's nondurable goods sector during the past decade. The moderate growth (in absolute terms) of nondurable goods employment in Cleveland during the past decade stems largely from the chemicals and printing and publishing industries.

As shown in Chart 5, Cleveland has also lagged the nation in nonmanufacturing employment since the 1957-1958 recession. Most of the gap in the employment indexes developed during the late 1950's and early 1960's. The relatively sharp impact of the two most recent recessions on Cleveland's manufacturing employment and income also appears to have had an adverse effect on the area's nonmanufacturing sector. Specifically, between 1958 and 1963, employment in contract construction declined in Cleveland, but increased in the nation. Employment in retail trade showed virtually no net improvement in Cleveland, but rose considerably in the nation; and employment growth in the service industries was slower in Cleveland. Recently, however, the spread in the indexes of nonmanufacturing employment has shown little change. Cleveland has more or less kept pace with the nation in employment in each of the major nonmanufacturing categories in the area.

Total nonagricultural payroll employment, shown in Chart 6, reflects the behavior of both manufacturing and nonmanufacturing employment.[5] As expected, there is a more pronounced reaction in the series for Cleveland during recessions or periods of sluggish business conditions, due chiefly to the area's larger share of durable goods manufacturing employment. For example, nonagricultural employment in Cleveland peaked in 1960 at a *lower* level than in 1957. The 1957 peak was not surpassed until 1965 in Cleveland. In contrast, nonagricultural employment in the nation peaked in 1960 at a *higher* level than in 1957. Moreover, the employment loss sustained in the United States during the 1960 recession was recouped by the end of 1961—two full years *before* Cleveland recovered its employment loss.

HOURS AND EARNINGS

An examination of the workweek and average earnings in manufacturing, as well as aggregate income in the commodity-producing industries, provides another perspective on economic trends and fluctuations in Cleveland and the nation. These series, shown in Charts 7 through 10, tend to support the major points of this study of economic activity in Cleveland. The turning points of the business cycle are essentially the same in Cleveland and in the nation; recessions are relatively deeper in Cleveland; and growth in Cleveland has not kept pace with growth in the nation since the mid-1950's.

The *average workweek* of production workers in manufacturing (shown in Chart 7) is considered to be one of the more sensitive leading indicators of economic activity.[6] Months before turning points in the general business cycle, manufacturers begin changing the workweek of their employees

[5] Nonagricultural payroll employment has been rated by two authorities on business cycles as the nation's best coincident economic indicator, based on the criteria of economic significance, statistical adequacy, timing and conformity to the business cycle, and smoothness and currency of data. See Geoffrey H. Moore and Julius Shiskin, *Indicators of Business Expansions and Contractions* (New York: National Bureau of Economic Research, 1967).

[6] See Gerhard Bry, *The Average Workweek As An Economic Indicator,* Occasional Paper 69, (New York: National Bureau of Economic Research, 1959).

in response to changes in new orders. Initially, the workweek is lengthened or shortened to adjust production rates; some time later, employment begins to change direction. As a peak in the business cycle approaches, labor market conditions tend to be tight. Firms that are experiencing cutbacks in new orders generally reduce the workweek rather than lay off workers who may be hard to replace should new orders recover.[7] Firms that continue to have increases in new orders, and are probably operating at expensive overtime rates, are likely to be adding employees to their payrolls as the business cycle approaches a crest. As a result, the workweek customarily *declines* during the late stages of an expansion, while manufacturing employment is still *rising.*

As shown in Charts 2 and 7, a decisive downward swing in the manufacturing workweek is eventually followed by a turning point in manufacturing employment. For example, the workweek reached a peak in Cleveland and the nation early in 1966; manufacturing employment peaked some time later. Conversely, the upturn in the workweek early in 1967 foreshadowed the subsequent recovery in manufacturing employment, at least in the United States.

For practical forecasting purposes, however, the relationship between the workweek and employment, or business conditions in general, is imprecise. Generally, the manufacturing workweek in both Cleveland and in the nation tends to register a longer lead at business cycle peaks than at troughs.[8] However, the average workweek tends to fluctuate more in Cleveland's manufacturing sector than in that of the United States, and the area's workweek is usually longer because the workweek in durable goods industries, which predominate in Cleveland, tends to be longer and more cyclically volatile than in nondurable goods industries.

During 1966, when labor market conditions were tight, the average workweek in the nation's manufacturing industries was 41.3 hours, the longest in the post-World War II period. In Cleveland, however, the manufacturing workweek was 43.1 hours during 1966, or 1.8 hours above the national average. In 1966, almost all of the major manufacturing industries in Cleveland had a longer workweek than did the same industries in the nation. (Other economic indicators also suggest that there was more intensive utilization of human resources in Cleveland than in the United States during 1966.)

Irregular fluctuations in Cleveland's workweek are due in part to actual or anticipated local and national labor-management disputes. In Cleveland, relatively large short-run swings in the output of two major industries—steel and transportation equipment—account for many intracycle dips and rebounds in the workweek, as well as in other series discussed in this article.[9]

Average hourly earnings of production workers in manufacturing show little cyclical fluctuation,

[7] Although some employers are reluctant to lay off workers, they will adjust the workweek to maintain employee morale and a favorable "experience rating" (thereby holding down the firm's assessed rate for contributions to state unemployment compensation).

[8] Lead times of the average workweek and other selected series are summarized in Table VI.

[9] See "Dimension of Subcyclical Fluctuations in Steel and Auto Output," *Economic Review,* Federal Reserve Bank of Cleveland, March 1966, for a national perspective.

but show varying rates of increase over time (see Chart 8). For example, from mid-1952 to mid-1959, average hourly earnings rose at an annual rate of 4.9 percent in Cleveland and 4.5 percent in the United States. During the early 1960's, there was a significant reduction in the rate of increase, and, as might be expected, gains in average hourly earnings were more moderate in Cleveland than in the nation. Between mid-1959 and mid-1965, the annual rate of increase subsided to 2.7 percent in Cleveland and 2.8 percent in the United States. Since mid-1965, when inflationary pressures began to accumulate, the annual rate of increase in average hourly earnings has risen to about 5 percent in both Cleveland and the nation.

Over the long run, average hourly earnings for production workers have been roughly 16 percent higher in Cleveland than in the United States. More than half of that differential reflects the industrial mix of Cleveland, while the remainder is due to higher local wage rates. If production worker manhours in each of Cleveland's manufacturing industries were compensated at the national rate for those industries, average hourly earnings in Cleveland would still be about 7 percent higher than in the nation.[10]

Average weekly earnings of production workers in manufacturing (the product of the average workweek times average hourly earnings) have cyclical characteristics (see Chart 9). However, the irregular timing of this series with respect to reference cycle peaks and troughs has precluded its classification as an "official" indicator. Because the workweek fluctuates more in Cleveland, average weekly earnings have more pronounced cyclical swings in Cleveland than in the nation. Furthermore, because *both* the average workweek and average hourly earnings are higher in Cleveland, average weekly earnings of production workers in the area's manufacturing industries tend to be about 20 percent above the national average. During recession years or periods of sluggish manufacturing activity, such as 1967, Cleveland's differential over the national average is narrowed by 3 or 4 percentage points.

Wage and salary income in mining, manufacturing, and construction (the commodity-producing industries) is one of the most sensitive components of personal income and sheds additional light on the characteristics of Cleveland's economy (see Chart 10). In 1967, wages and salaries in Cleveland's commodity-producing industries amounted to more than $3 billion, or 40 percent of total personal income in the metropolitan area. In the United States, wages and salaries in the commodity-producing industries account for only 30 percent of total personal income.

As a monthly coincident indicator, labor income in the commodity-producing industries has a higher rating than industrial production and is second only to nonagricultural payroll employment.[11] In both Cleveland and the United States, turning points in the labor income series generally have coincided closely with reference cycle turning points. Thus, the behavior of this series (together

[10] See "Inter-City Variation in Average Hourly Earnings," *Economic Commentary,* Federal Reserve Bank of Cleveland, May 18, 1968.

[11] The series received a higher rating than the Federal Reserve Board's index of industrial production mainly because of better timing with respect to reference cycle peaks and troughs. See Moore and Shiskin, *op. cit.,* and *Business Conditions Digest.* Because data for the Cleveland metropolitan area are available only by quarters, the national series in Chart 10 is charted quarterly to maintain strict comparability.

with others previously discussed) seems to indicate that the timing and duration of the business cycle are approximately the same in Cleveland and the United States. The labor income series indicates, however, that the adverse impact of recessions on Cleveland's economy is somewhat greater than might be suggested by percent declines in employment alone. Because average weekly earnings in manufacturing and manufacturing employment tend to be depressed more in Cleveland during recessions, cyclical downswings in the labor income series are more severe in Cleveland. By inference, short-run changes in total personal income are also more volatile in the Cleveland area. The long-run behavior of wage and salary income in the commodity-producing industries corroborates the faster growth rate of Cleveland's economy during the early 1950's and the area's loss of relative position since the mid-1950's.

SUPPLY AND DEMAND CONDITIONS IN THE LABOR MARKET

Additional time series on labor market conditions complement this analysis of comparative economic trends and fluctuations in the Cleveland area. Help-wanted advertising, initial claims for state unemployment insurance, and insured and total unemployment rates display little long-run trend (see Charts 11, 12, 13, 14); however, their cyclical properties are associated with the behavior of other important economic variables. In the Cleveland area, for example, a *decline* in help-wanted advertising is usually accompanied by a *decline* in the average workweek and, within a few months, is followed by a *rise* in unemployment rates and *slowdowns* or outright *declines* in employment and incomes.

The *index of help-wanted advertising*, based on the number of help-wanted ads in the classified section of leading newspapers, is a highly rated monthly coincident indicator. The index is sensitive to changes in national business conditions and reflects the demand for labor. As might be expected, the amplitudes of cyclical swings in help-wanted advertising are greater in Cleveland than in the nation. At the regional level, however, the index may include advertising by out-of-town employers in local newspapers. Thus, a rise in help-wanted advertising in Cleveland may reflect, in part, attempts to lure workers and managers to jobs in other cities. Supply conditions also influence the volume of help-wanted advertising. According to the National Industrial Conference Board, more advertising is usually needed to fill a given job vacancy when unemployment rates are low than when unemployment rates are high.[12] Despite the fact that the index of help-wanted advertising is rated as a coincident indicator, in recent decades the index has tended to turn down several months before a peak in general business activity and has been more or less coincident on the upturn in both Cleveland and the United States (see Chart 11).

The behavior of *average weekly initial claims for state unemployment insurance, the insured unemployment rate, and the total unemployment rate* also reflect supply and demand factors in the labor market.[13] *Initial claims* are notices filed by workers covered by state unemployment insurance

[12] See *The Conference Board's New Index of Help-wanted Advertising,* Technical Paper Sixteen (New York: National Industrial Conference Board, 1964).

[13] Because these three indicators move inversely with general business conditions, each is charted on an inverted scale. Thus, downward swings of these series in Charts 12, 13, and 14 signify increasing levels—but deteriorating economic conditions.

programs as they start a period of unemployment.[14] Although classified as a leading indicator, the series on average weekly initial claims for state unemployment insurance has a greater tendency to lead at peaks in general business activity than at troughs in both Cleveland and the nation. For the past three recessions, initial claims in both Cleveland and in the nation either coincided with, or lagged by one month, the upturn in overall economic activity (see Chart 12). The fact that initial claims undergo relatively greater percent changes during recessions and recoveries in Cleveland reflects the more volatile layoff and hiring rates in the area's durable goods industries.

The *insured unemployment rate* also displays greater cyclical fluctuations in Cleveland than in the nation (see Chart 13). As a monthly coincident indicator, the insured unemployment rate is superior to the total unemployment rate in several important respects. Compared with the total unemployment rate, the insured rate is a smoother series, has a better record of timing at reference cycle peaks and troughs, and is available weekly. In addition, historical data on the insured unemployment rate for the Cleveland area are available for a longer period.

In both Cleveland and the nation, the insured unemployment rate is lower than the total unemployment rate because the noncovered portion of the labor force (such as workers in agriculture, domestic service, and firms below a minimum size) has a higher incidence of unemployment. Moreover, included in total unemployment, but excluded from insured unemployment, are persons who have exhausted their benefit rights and new workers who become unemployed before earning their rights to unemployment insurance.

The insured unemployment rate generally is at a lower level in Cleveland than in the United States because of the area's industrial structure. According to national data, insured unemployment rates tend to be lower in durable goods industries than in nondurable goods industries, except during recessions. During the 1960's, nonelectrical machinery, in particular (Cleveland's leading manufacturing industry), has had one of the lowest insured unemployment rates among the nation's major manufacturing industries.

Low levels of the insured unemployment rate suggest periods of labor shortages. For example, in Cleveland the insured unemployment rate averaged nearly 1 percent during the Korean War years, was at the 1.5 percent level during the capital goods boom of the mid-1950's, and hovered around 1 percent during 1966, late 1967, and 1968. In Cleveland and the nation, tight labor market conditions during those periods were also reflected in high levels for the manufacturing workweek and help-wanted advertising and low levels for initial unemployment claims.

The *total unemployment rate* during the 1960's shows that Cleveland outperformed the nation in achieving an important target of public policy (see Chart 14). Early in 1961, the Kennedy Administration announced as a public policy goal the attainment of an interim 4 percent unemployment rate. In Cleveland, the unemployment rate declined from its cyclical high of 8.6 percent in March 1961 to 4 percent by the latter half of 1963. In the United States, the unemployment rate declined from its cyclical high of 7.1 percent

[14] A claimant who is unemployed a full week is then counted in continued claims, which, when divided by average covered employment, becomes the insured unemployment rate. Initial claims trace a pattern very similar to that of the layoff rate in manufacturing (see *Business Conditions Digest*).

in May 1961 to an improved, although still undesirable, 5.5 percent by the latter half of 1963.

The reduction of Federal income tax rates in the spring of 1964, coupled with various Federal, state, and local programs designed to improve job opportunities, helped to reduce unemployment rates further in both Cleveland and the nation. In 1965, direct and indirect demands stemming from the Vietnam conflict were superimposed on a wave of capital goods spending that did not begin to subside until 1967. Conditions in the labor market tightened significantly. Since early 1965, the unemployment rate in Cleveland generally has ranged between 2 and 3 percent. In the United States, the unemployment rate finally declined to 4 percent at the end of 1965; since then, it has generally ranged from 3.5 to 4 percent.

The behavior of the civilian labor force helps to explain the performance of the unemployment rate. As shown in Table V, the civilian labor force in the Cleveland area declined during the 1960-1961 recession, continued down during 1962 (a year of sluggish economic activity), and moved up only slightly in 1963; as a result, the civilian labor force experienced a *net loss* of 1.2 percent between 1960 and 1963. In contrast, the civilian labor force in the United States showed a *net gain* of 3.2 percent between 1960 and 1963. The recovery in total employment after the 1960-1961 recession proceeded at roughly the same pace in both Cleveland and the nation. Therefore, the marked improvement in Cleveland's unemployment rate during the early 1960's was due to a net reduction in the labor force, *not* to a more favorable economic climate for employment in the metropolitan area.[15]

Since 1963, the civilian labor force has grown moderately faster, while total employment has grown slightly slower in Cleveland than in the United States. Thus, the gap in the total unemployment rate between Cleveland and the United States has narrowed somewhat in favor of the nation. That is, although unemployment rates have moved down since 1963 in both Cleveland and the nation, Cleveland has had *less* improvement.

TABLE V

Civilian Labor Force
United States and the Cleveland SMSA
1960–1968
(Index 1960=100)

	United States	Cleveland SMSA
1960	100.0	100.0
1961	101.2	99.1
1962	101.4	98.5
1963	103.2	98.8
1964	105.0	100.1
1965	106.9	102.9
1966	108.8	106.2
1967	111.1	108.7
1968	113.1	110.9

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

[15] According to the U. S. Department of Commerce, Bureau of the Census, between 1960 and 1965, net *outmigration* from the Cleveland SMSA totaled 29,000 persons. In contrast, between 1950 and 1960, the Cleveland SMSA experienced net *inmigration* of 121,000 persons. See "A Note On Population Migration," *Economic Commentary,* Federal Reserve Bank of Cleveland, December 16, 1967. Census data show that Cleveland also experienced an adverse swing in population growth between the 1950's and 1960's. From 1950 to 1960, resident population increased 25 percent in the Cleveland SMSA, compared with a gain of 19 percent in the United States. From April 1960 to July 1967 (the latest date for which population estimates of metropolitan areas are available), resident population increased only 7.4 percent in the Cleveland SMSA, compared with a gain of 10.3 percent in the United States.

CONCLUDING COMMENTS

Hopefully, the economic data discussed in this article and shown in the charts will contribute to an understanding of economic activity in Cleveland, compared with the nation. The various interrelationships among the series discussed in this article should provide some empirical and analytical assistance to those interested in the behavior of regional economic activity, in general, and the Cleveland metropolitan area, in particular.

There is no conclusive evidence to suggest that, in the case of Cleveland, turning points from prosperity to recession, or from recession to recovery, consistently lead or lag nationwide peaks and troughs in general business conditions. In general, business cycles in Cleveland coincide with business cycles in the nation. The nationally recognized leading and coincident economic indicators discussed in this article usually move at the same time and in the same direction in Cleveland and the United States—except that the amplitudes tend to be greater in Cleveland. Table VI summarizes the months of lead or lag in three selected economic series. At every turning point in national economic activity, the series for Cleveland have leads and lags similar to those for the United States.[16]

Every business recession since 1919 has had more of an adverse impact in the Cleveland area than in the nation as a whole, because Cleveland's industrial base has always consisted predominately of durable goods industries (mostly metalworking) that historically have been more vulnerable to cyclical recessions than nondurable goods industries. Moreover, Cleveland's durable goods sector is concentrated in the less rapidly growing and more cyclically sensitive industries. Conversely, until the end of the Korean War, Cleveland tended to have relatively strong recoveries after recessions.

The key to understanding Cleveland's economic performance lies in the behavior of the durable goods industries, which largely determine the area's overall pace of activity. For example, during the 1960-1961 recession, durable goods employment—about *one-third* of total nonfarm employment—accounted for *three-fourths* of the decline in Cleveland's total nonfarm employment. On the other hand, when business conditions improve sharply, the same durable goods industries tend to provide the major impetus to recovery and expansion in the local area.

Based on experience, Cleveland is likely to be prosperous when the motor vehicle industry is ebullient and when business expenditures for new plant and equipment are strong. When production of machinery and transportation equipment is at high levels, the area's steel industry is also likely to be booming—all of which favorably influence employment, income, and spending in supporting industries, such as wholesale and retail trade, finance, services, construction, transportation and utilities, and local government.

The evidence is clear that economic growth was considerably greater in Cleveland than in the United States during the Korean War years. Thereafter, Cleveland began to lose ground to

[16] The one major exception is that the insured unemployment rate for the United States reached its inverted peak in November 1955, or 20 months before the reference cycle peak in July 1957. In Cleveland, the insured unemployment rate also reached an inverted peak in November 1955, but the subsequent decline was later recouped and the series peaked again in April 1957, or 3 months before the reference cycle peak in July 1957.

TABLE VI

Timing Characteristics of Selected Economic Indicators at Business Cycle Turning Points*
United States and the Cleveland SMSA

	Peak	Lead (–) Lag (+) (mos.)	Trough	Lead (–) Lag (+) (mos.)
Average Workweek, Production Workers in Manufacturing				
United States	March 1953	– 4	April 1954	– 4
Cleveland SMSA	March 1953	– 4	September 1954	+ 1
United States	November 1955	–20	May 1958	+ 1
Cleveland SMSA	October 1955	–21	March 1958	– 1
United States	April 1959	–13	December 1960	– 2
Cleveland SMSA	May 1959	–12	February 1961	0
Employment in Durable Goods Industries				
United States	July 1953	0	September 1954	+ 1
Cleveland SMSA	June 1953	– 1	September 1954	+ 1
United States	February 1957	– 5	May 1958	+ 1
Cleveland SMSA	February 1957	– 5	June 1958	+ 2
United States	February 1960	– 3	February 1961	0
Cleveland SMSA	February 1960	– 3	March 1961	+ 1
Average Weekly Insured Unemployment Rate				
United States	June 1953	– 1	October 1954	+ 2
Cleveland SMSA	August 1953	+ 1	September 1954	+ 1
United States	November 1955	–20	April 1958	0
Cleveland SMSA	April 1957	– 3	June 1958	+ 2
United States	June 1959	–11	March 1961	+ 1
Cleveland SMSA	June 1959	–11	April 1961	+ 2

* Peaks and troughs of specific cycles based on seasonally adjusted data. Months of lead or lag refer to timing of specific cycles with respect to national reference cycle dates.

Sources: U. S. Department of Labor; Division of Research and Statistics, Ohio Bureau of Employment Services; Federal Reserve Bank of Cleveland

other parts of the nation. The recessions of 1957-1958 and 1960-1961 accentuated Cleveland's slowdown compared with the nation. During the past decade, the growth industries have not located in Cleveland to the extent that they have elsewhere. Therefore, Cleveland's economic growth has lagged, and recent recessions or periods of adjustment, as in 1967, have become progressively worse in Cleveland relative to the United States.

Chart 1.

EMPLOYMENT in MANUFACTURING

INDEX 1935-39=100

Chart 2.

EMPLOYMENT in MANUFACTURING INDUSTRIES

INDEX 1957-59=100

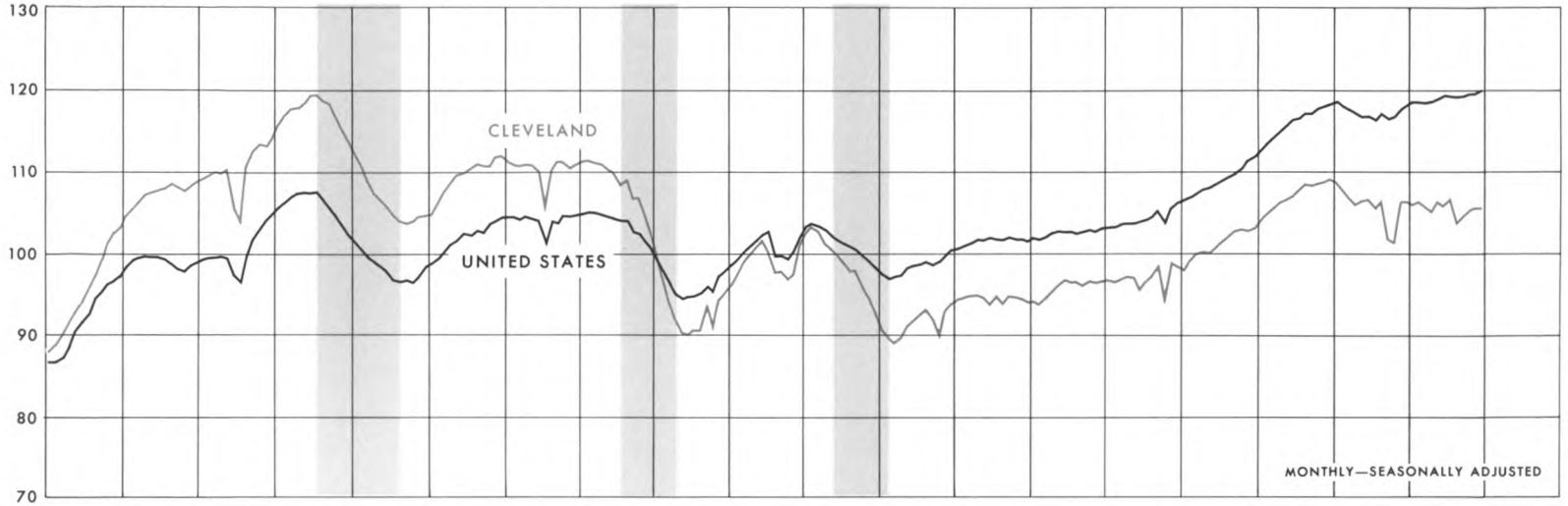


Chart 3.

EMPLOYMENT in DURABLE GOODS INDUSTRIES

INDEX 1957-59=100

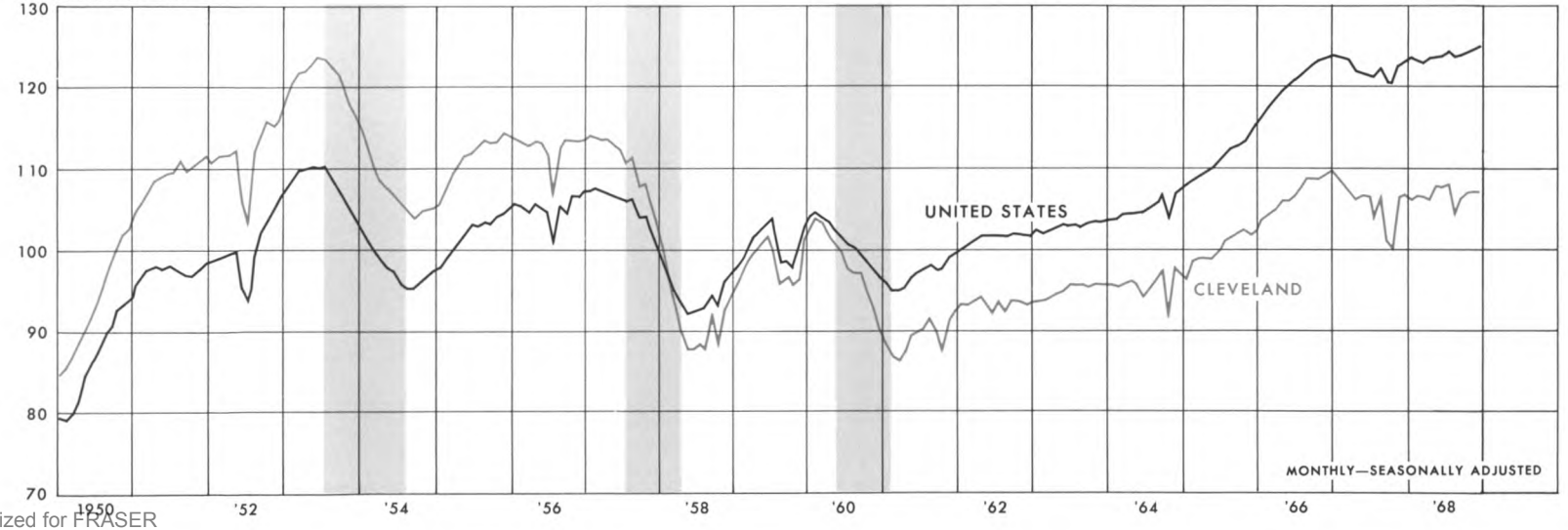


Chart 4.

EMPLOYMENT in NONDURABLE GOODS INDUSTRIES

INDEX 1957-59=100

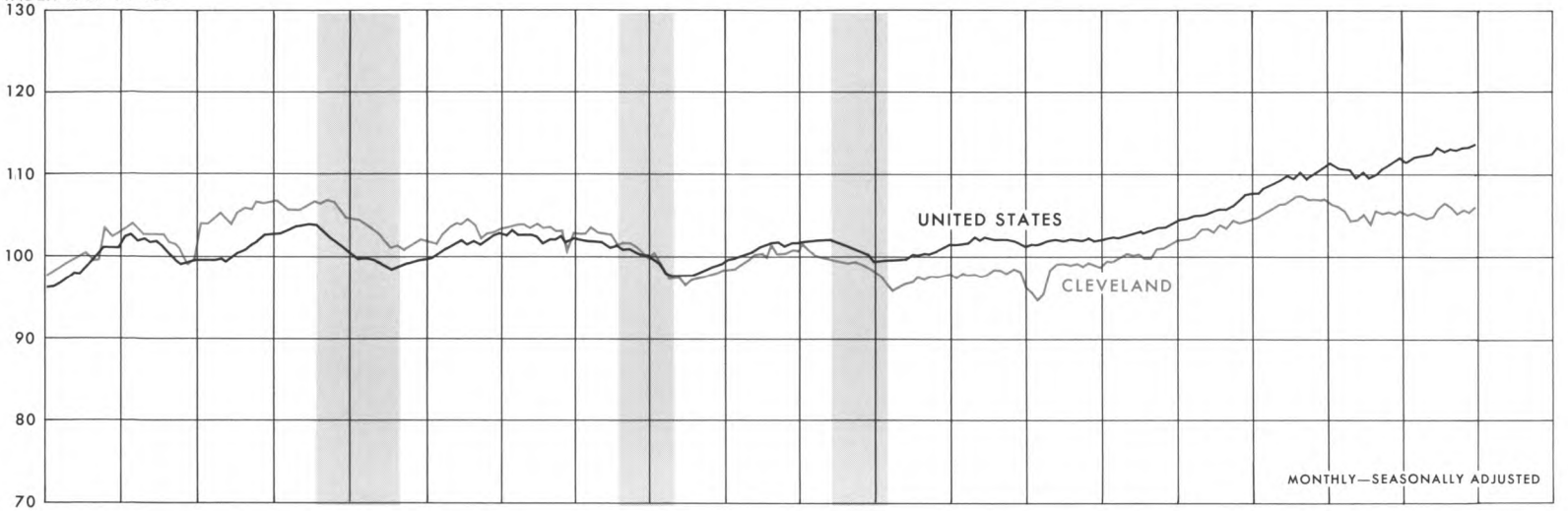


Chart 5.

EMPLOYMENT in NONMANUFACTURING INDUSTRIES

INDEX 1957-59=100

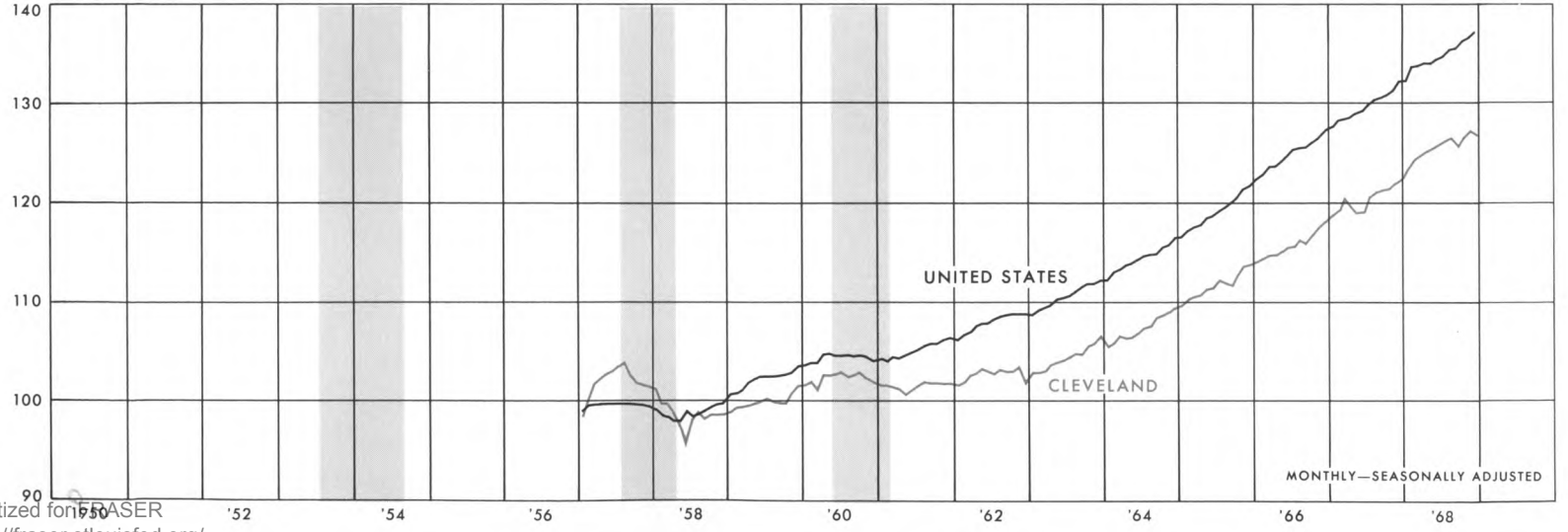


Chart 6.

EMPLOYMENT in ALL INDUSTRIES

INDEX 1957-59=100

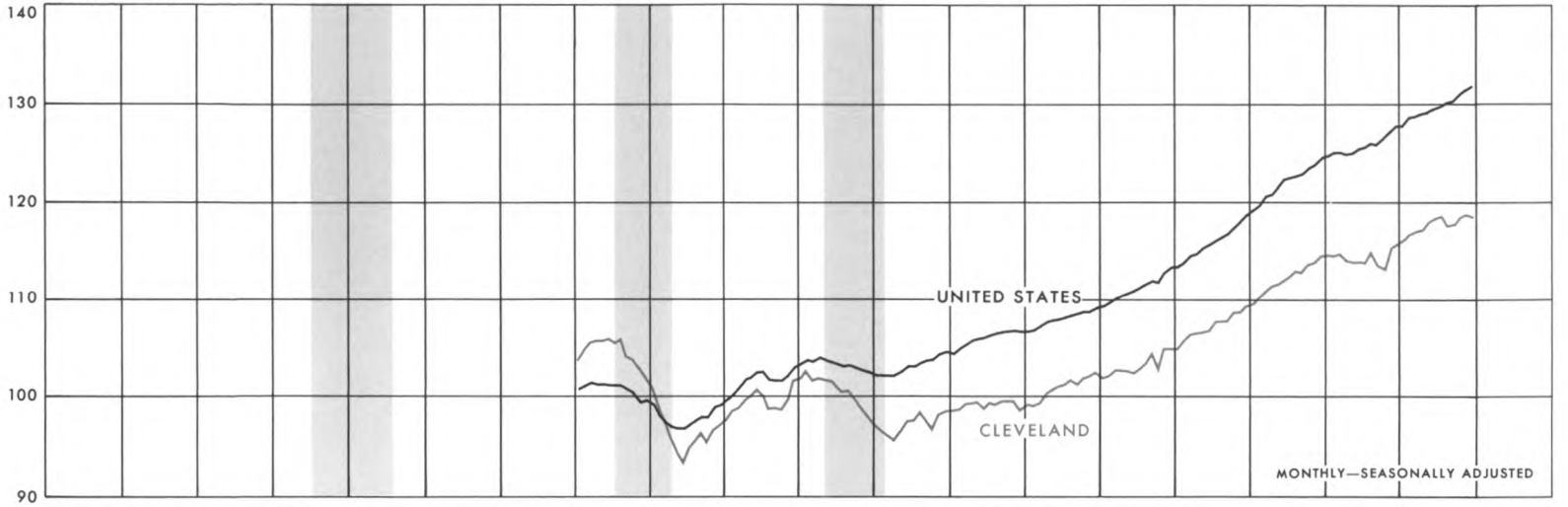


Chart 7.

AVERAGE WORKWEEK of PRODUCTION WORKERS in MANUFACTURING

Hours

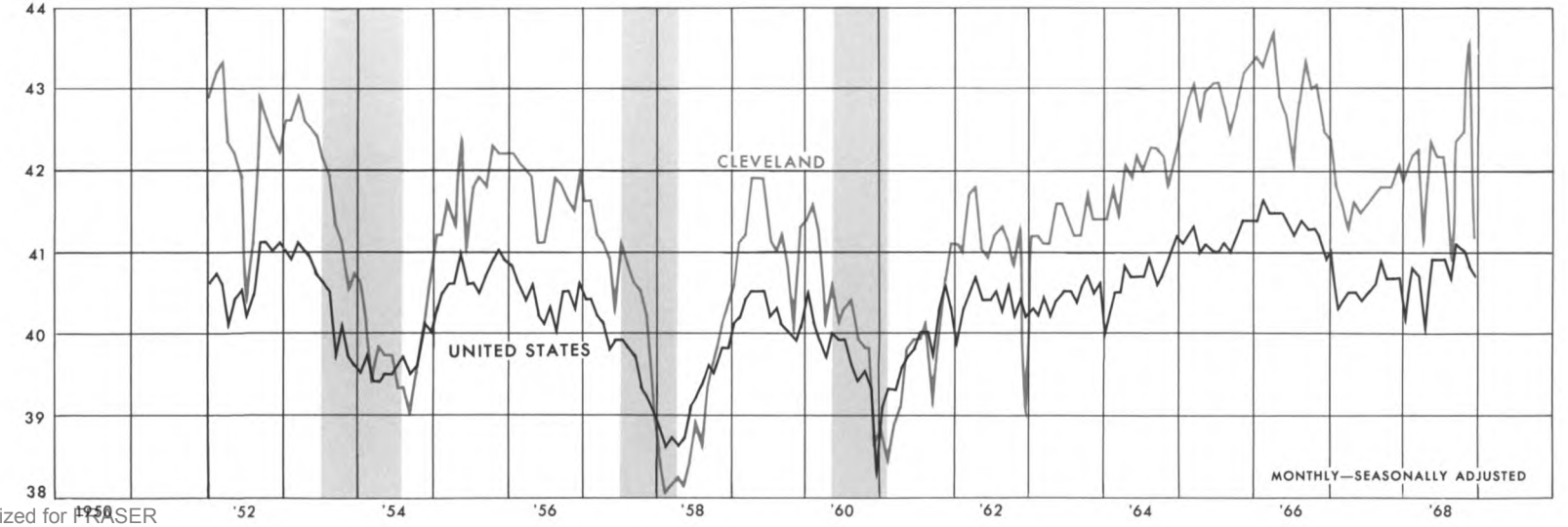


Chart 8.

AVERAGE HOURLY EARNINGS of PRODUCTION WORKERS in MANUFACTURING

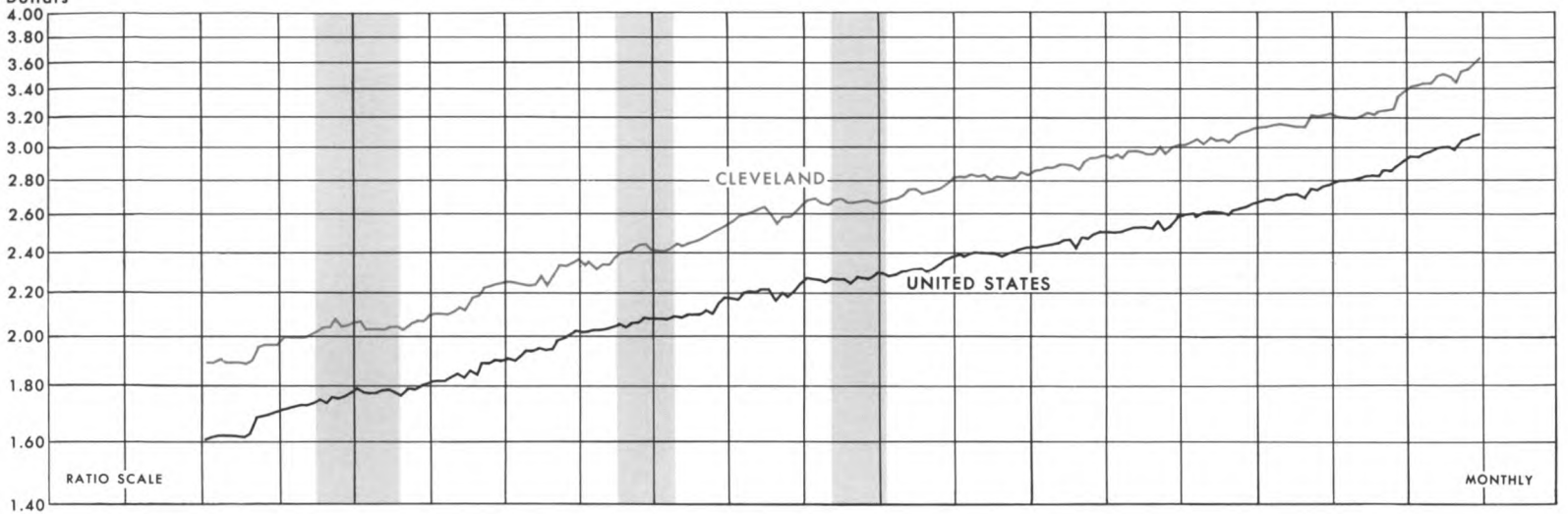


Chart 9.

AVERAGE WEEKLY EARNINGS of PRODUCTION WORKERS in MANUFACTURING

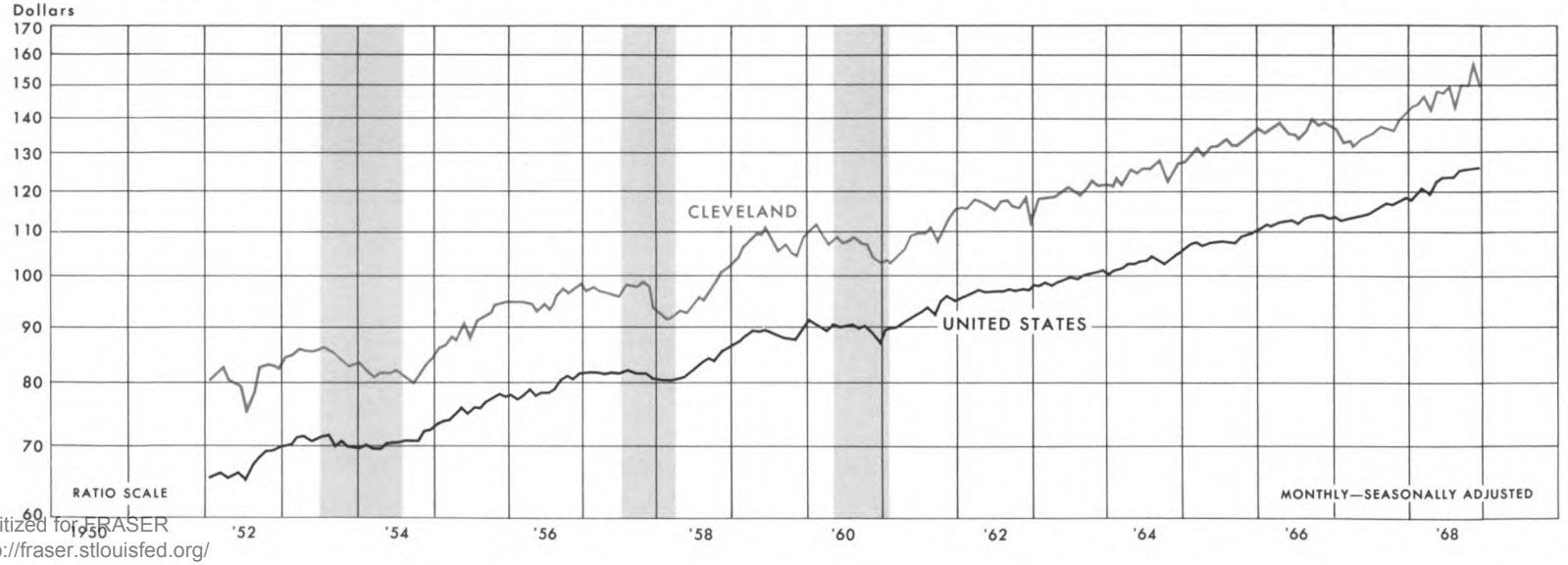


Chart 10.

WAGE and SALARY INCOME in MINING, MANUFACTURING, and CONSTRUCTION

INDEX 1957-59=100

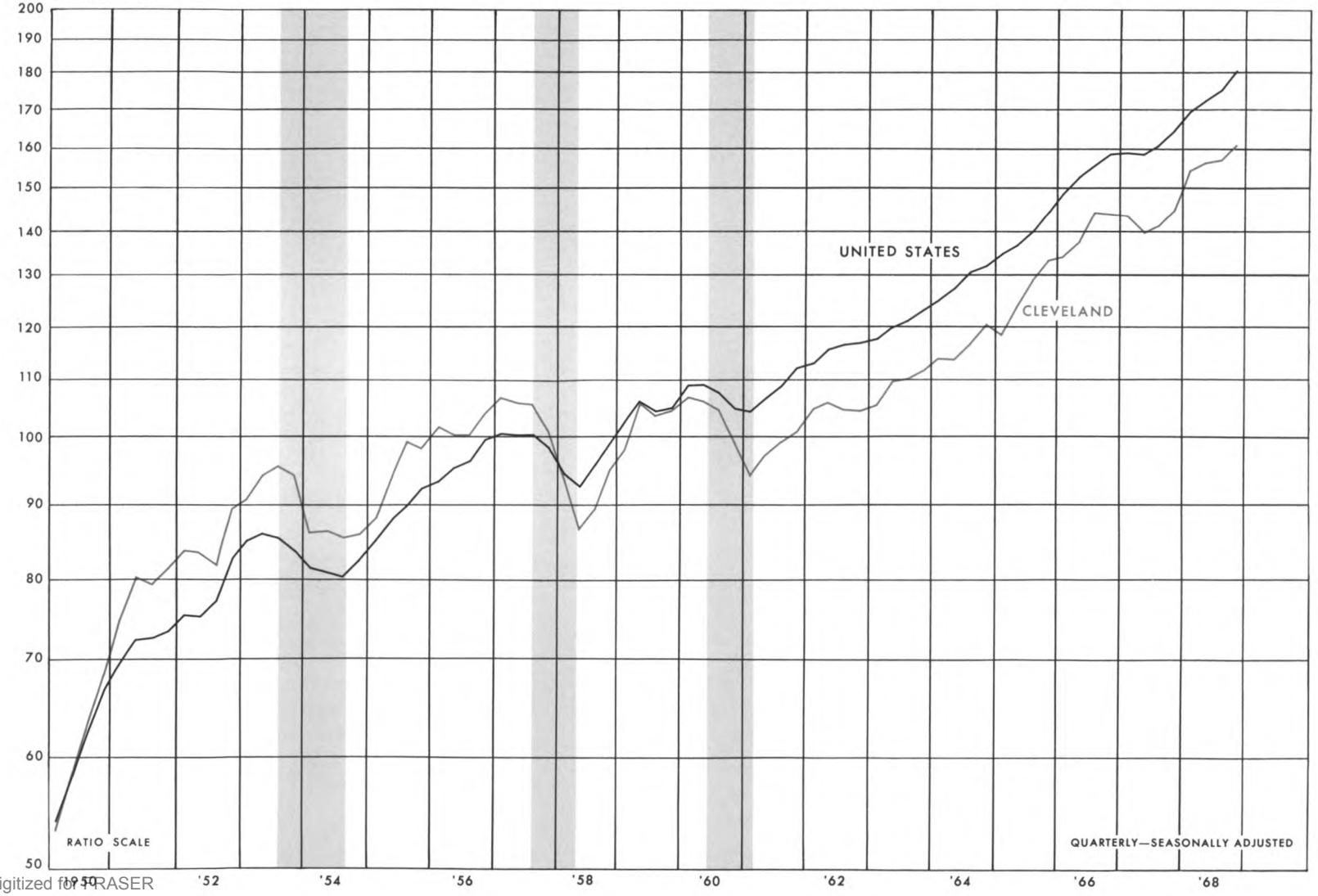


Chart 11.

HELP-WANTED ADVERTISING

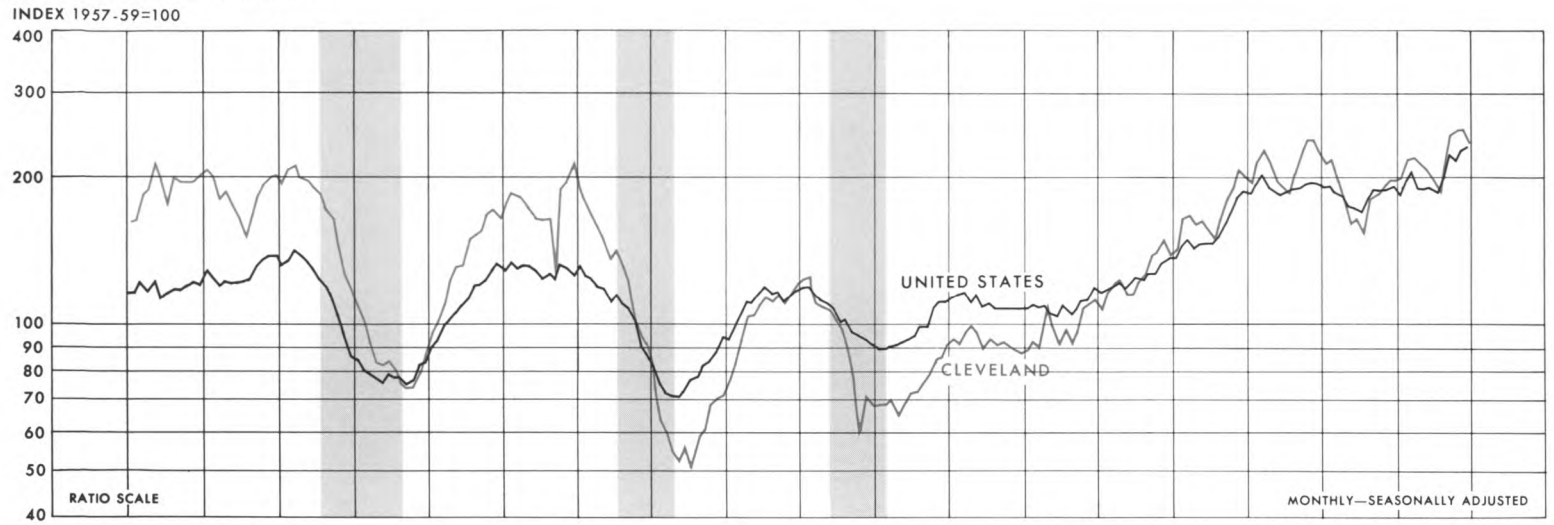


Chart 12.

AVERAGE WEEKLY INITIAL CLAIMS for STATE UNEMPLOYMENT INSURANCE

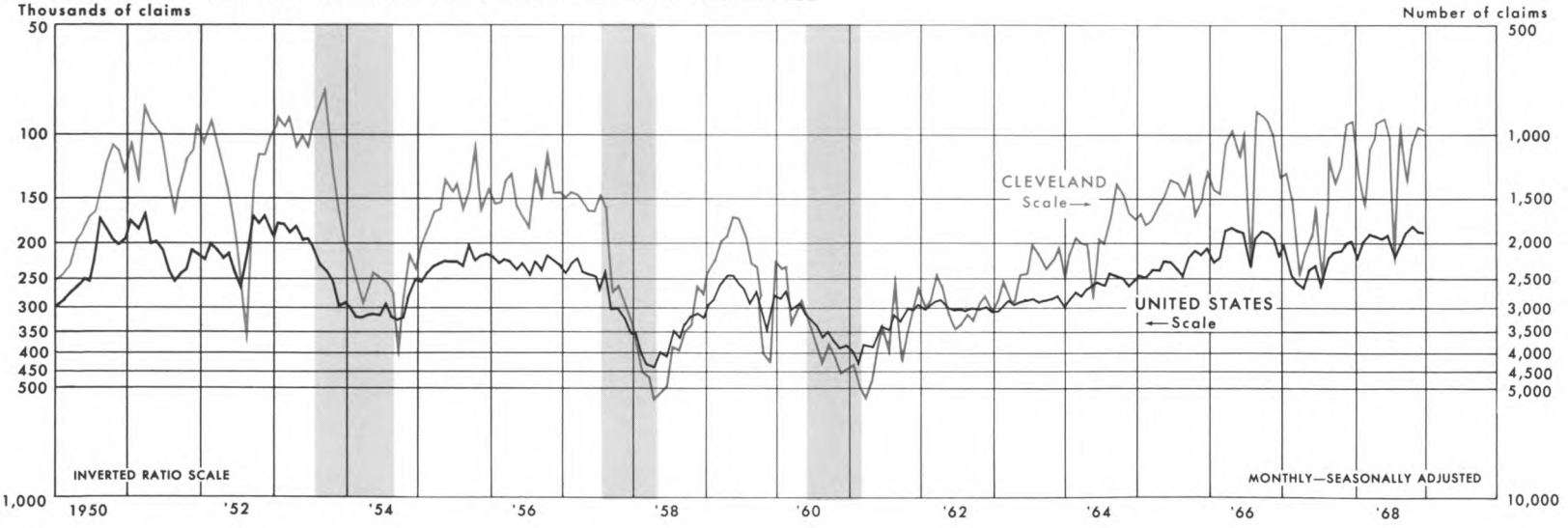


Chart 13.

AVERAGE WEEKLY INSURED UNEMPLOYMENT RATE

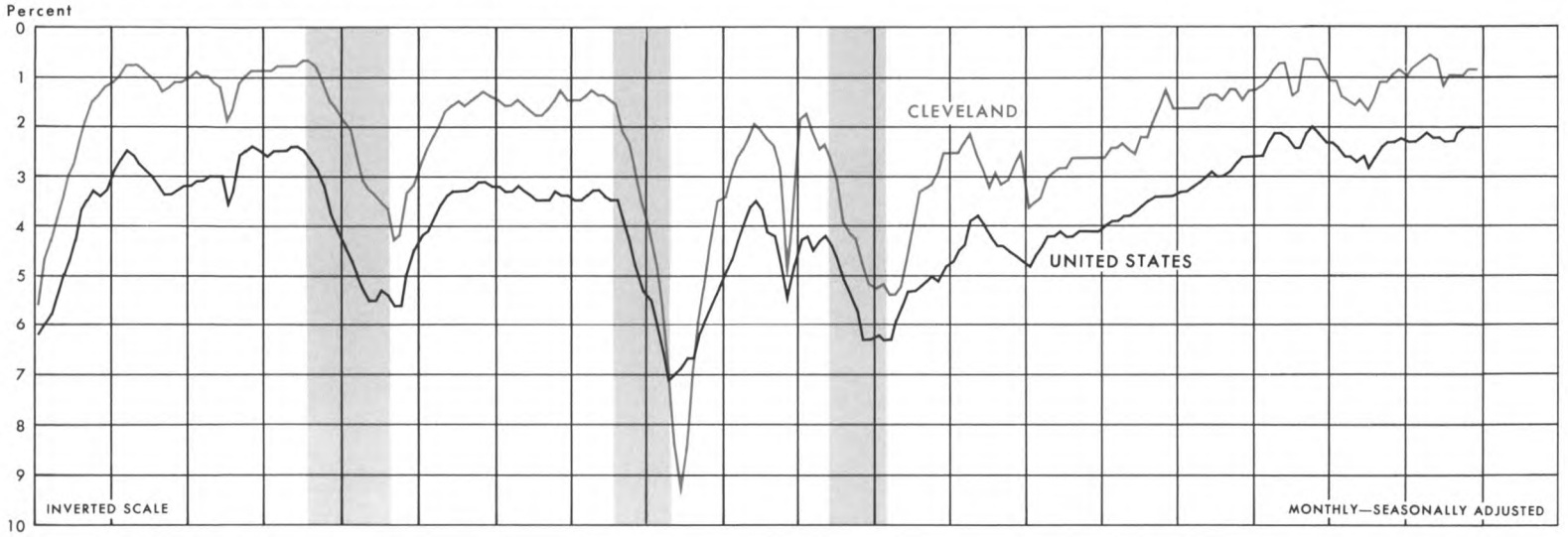


Chart 14.

TOTAL UNEMPLOYMENT RATE

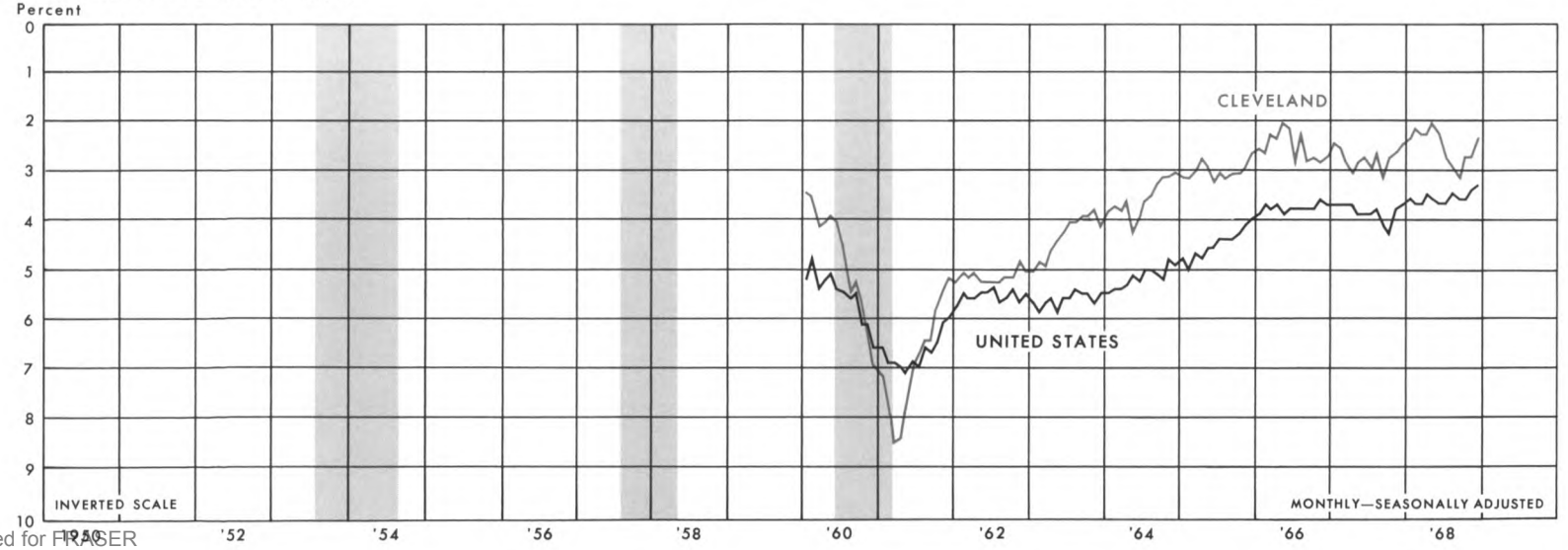
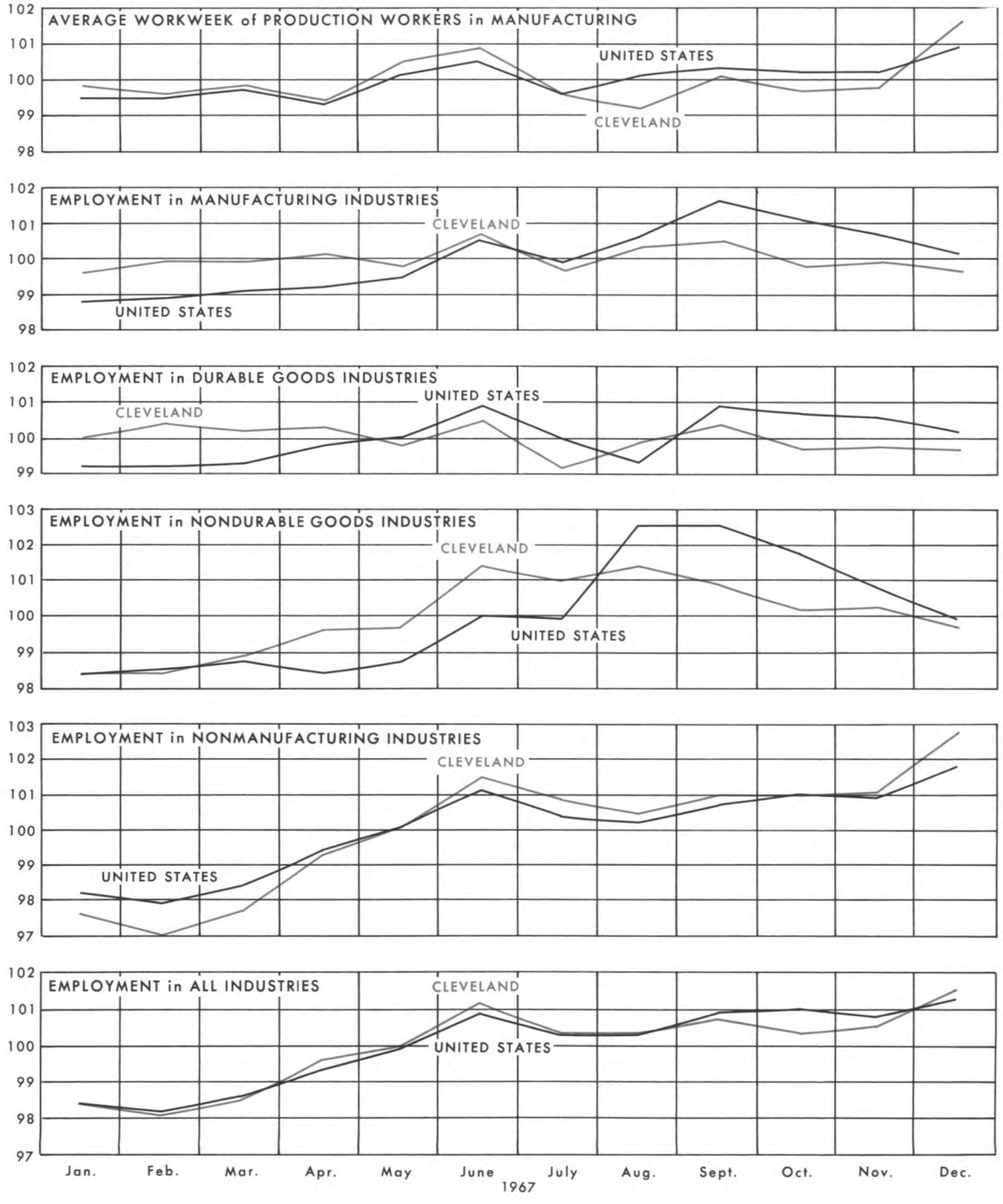


Chart 15.

SEASONAL PATTERNS

Average Workweek of Production Workers in Manufacturing and Selected Employment Groupings
Cleveland and United States

Monthly average=100



NOTES AND SOURCES

NOTE: Minor adjustments in published data on the labor force and employment in the Cleveland metropolitan area were made by the Federal Reserve Bank of Cleveland to maintain strict comparability.

The Cleveland Standard Metropolitan Statistical Area consists of Cuyahoga, Lake, Geauga, and Medina counties.

CHART 1

Manufacturing Employment, 1921-1949

NOTE: Data in Chart 1 and other selected charts are plotted on ratio (or semi-logarithmic) scales, on which equal vertical distances measure equal percent changes. For example, a movement from 75 to 100 would have the same amplitude as a change from 120 to 160.

Definition of Cleveland: Cuyahoga County

Sources: U. S. Department of Commerce; U. S. Department of Labor; Greater Cleveland Growth Association; Division of Research and Statistics, Ohio Bureau of Employment Services

CHART 2

Employment in Manufacturing Industries, 1950-1969

Definition of Cleveland: Cleveland SMSA

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

CHART 3

Employment in Durable Goods Industries, 1950-1969

Definition of Cleveland: Cleveland SMSA

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

CHART 4

Employment in Nondurable Goods Industries, 1950-1969

Definition of Cleveland: Cleveland SMSA

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

CHART 5

Employment in Nonmanufacturing Industries, 1957-1969

Definition of Cleveland: Cleveland SMSA

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

CHART 6

Employment in All Industries, 1957-1969

Definition of Cleveland: Cleveland SMSA

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

CHART 7

Average Workweek of Production Workers in Manufacturing, 1952-1969

Definition of Cleveland: 1952-1963, Cuyahoga and Lake counties; 1964-1968, Cuyahoga, Lake, Geauga, and Medina counties

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

CHART 8

Average Hourly Earnings of Production Workers in Manufacturing, 1952-1969

Definition of Cleveland: 1952-1963, Cuyahoga and Lake counties; 1964-1968, Cuyahoga, Lake, Geauga, and Medina counties

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

CHART 9

Average Weekly Earnings of Production Workers in Manufacturing, 1952-1969

Definition of Cleveland: 1952-1963, Cuyahoga and Lake counties; 1964-1968, Cuyahoga, Lake, Geauga, and Medina counties

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

CHART 10

Wage and Salary Income in Mining, Manufacturing, and Construction, 1950-1969

Definition of Cleveland: Cleveland SMSA

Sources: U. S. Department of Commerce and Division of Research and Statistics, Ohio Bureau of Employment Services

CHART 11

Help-Wanted Advertising, 1951-1969

Definition of Cleveland: Service area of newspaper

Source: National Industrial Conference Board

CHART 12

Average Weekly Initial Claims for State Unemployment Insurance, 1950-1969

Definition of Cleveland: Cuyahoga, Lake, and Geauga counties

Sources: U. S. Department of Labor (seasonal adjustment by Bureau of the Census) and Division of Research and Statistics, Ohio Bureau of Employment Services

CHART 13

Average Weekly Insured Unemployment Rate, 1950-1969

Definition of Cleveland: Cuyahoga, Lake, and Geauga counties

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

CHART 14

Total Unemployment Rate, 1960-1969

Definition of Cleveland: 1960-1963, Cuyahoga and Lake counties; 1964-1968, Cuyahoga, Lake, Geauga, and Medina counties

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

CHART 15

Seasonal Adjustment Factors, Average Workweek of Production Workers in Manufacturing and Selected Employment Groupings, 1967

Sources: U. S. Department of Labor and Federal Reserve Bank of Cleveland

APPENDIX

SEASONAL FLUCTUATIONS

Seasonal fluctuations recur regularly during certain months of the year in many economic activities. Chart 15 contrasts the seasonal patterns in the average workweek and selected employment groupings between Cleveland and the United States. The following example illustrates the interpretation of seasonal patterns.

On the basis of past experience, the average workweek in Cleveland's manufacturing industries is expected to rise 1.8 percent (about 0.7 hour) between mid-November and mid-December. If the increase is less than that, the seasonally adjusted workweek would show a decline. Of course, if the workweek actually declines when a seasonal increase is customary, the seasonally adjusted decline would be accentuated. Conversely, from mid-June to mid-July, the expected seasonal decline in Cleveland's manufacturing workweek is 1.3 percent. A decline less than that would be equivalent to a seasonally adjusted increase.

As shown in Chart 15, the average workweek in manufacturing is subject to more pronounced seasonal influences in Cleveland than in the United States. Plant shutdowns for vacations in the primary metal industries and model changeovers in the motor vehicle industry help to explain the relatively sharp decline in Cleveland's manufacturing workweek in July and August. Similarly, the greater rise in Cleveland's manufacturing workweek in December is partly attributable to stepped up activity in industries associated with motor vehicle production.

Although the manufacturing workweek is more seasonal in Cleveland than in the United States, such is not the case for manufacturing employment. For example, between September and

January, the normal seasonal decline in manufacturing employment is 2.8 percent in the United States, but only 0.9 percent in Cleveland. Seasonal employment variations in both the durable goods industries and the nondurable goods industries are less pronounced *in Cleveland than in the United States because highly seasonal durable goods industries, such as miscellaneous manufacturing; lumber and wood products; and stone, clay, and glass products, are relatively unimportant in the Cleveland area. Except for July and August, the five major metalworking industries, which predominate in Cleveland, have little seasonal variation in employment. Similarly, highly seasonal nondurable goods industries, such as tobacco manufactures, food and kindred products, petroleum and related products, and leather and leather products, are less important in Cleveland than in the nation. On the other hand, printing and publishing, chemicals, and paper, which are among the industries that experience the least seasonality in employment, account for one-half of nondurable goods employment in Cleveland, but only one-third of nondurable goods employment in the nation.*

Seasonal swings in nonmanufacturing employment, in contrast, are greater in Cleveland than in the United States. For example, from December to February (the seasonally high and low months of the year), the normal seasonal decline in nonmanufacturing employment is 3.9 percent in the United States and 5.8 percent in Cleveland. These declines mainly reflect post-holiday cutbacks in retail trade and post office employment, as well as an easing in outdoor construction activity. Between February and June, as employment in retail trade, services, and contract construction is on the upswing, the normal seasonal increase in nonmanufacturing employment is 3.2 percent in the United States and 4.5 percent in Cleveland.

Compared with national patterns, Cleveland's greater seasonal stability in manufacturing employment helps to offset the area's less seasonally stable nonmanufacturing employment. On balance, the seasonal variation in total nonagricultural employment is only slightly more pronounced in Cleveland than in the nation.

SPECIAL ANNOUNCEMENT

A limited number of copies are available of the article "Characteristics of Merging Banks" which was published as a Staff Economic Study by the Board of Governors of the Federal Reserve System in July 1969 and summarized in the July 1969 *Federal Reserve Bulletin.* The article is based on a paper presented by David L. Smith, Senior Economist, Federal Reserve Bank of Cleveland, at the Fifth Annual Meeting of the Appalachian Finance Association held at Syracuse, New York, April 25-26, 1969. Requests for copies should be directed to the Research Department, Federal Reserve Bank of Cleveland, P. O. Box 6387, Cleveland, Ohio 44101.

RECENTLY PUBLISHED ECONOMIC COMMENTARIES OF THE FEDERAL RESERVE BANK OF CLEVELAND

"Recent Developments in Housing"
July 7, 1969

"Origins and Growth of the Community College"
July 14, 1969

"Agency Issues—Old and New"
July 21, 1969

"Perspective on Automobile Prices"
July 28, 1969

"Recent Developments in the U. S. Balance of Payments"
August 4, 1969

"A Note on Some Sources of Nondeposit Bank Funds"
August 11, 1969

"Personal Income in the United States and Ohio"
August 18, 1969

"Mergers Among Trade Unions"
August 25, 1969

Economic Commentary is published weekly and is available without charge. Requests to be added to the mailing list or for additional copies of any issue should be sent to the Research Department, Federal Reserve Bank of Cleveland, P. O. Box 6387, Cleveland, Ohio 44101.

Fourth Federal Reserve District