

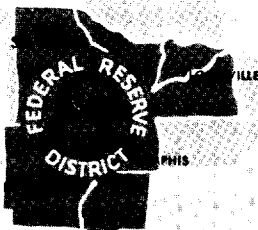
November 1964

FEDERAL RESERVE BANK OF ST. LOUIS

Review

CONTENTS

	Page
<i>Money Supply in Five Countries, 1951-1964..</i>	1
<i>Production and Money Expand Rapidly—with neither Price Inflation nor Interest Rate Increases</i>	6
<i>Employment and Population Trends in the Central Mississippi Valley</i>	10
<i>Economic Indicators—St. Louis and Louisville..</i>	15



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Money Supply in Five Countries, 1951-1964

MONEY SUPPLY STATISTICS¹ for five leading industrial nations are presented in the accompanying tables and charts. It is hoped that readers may find the data, presented in the manner outlined below, more useful than in their original form.² Although the major interest in studying money supply behavior lies in relating it to economic activity, this has not been done in this preliminary article.³ However, readers who have followed the financial history of the respective countries may find that they can infer the causes of variation in the rate of change of money supply from time to time or the possible economic effects of this variation.

According to one view, monetary policy is "policy employing the central bank's control of the supply of money as an instrument for achieving the objectives of general economic policy."⁴ It is not assumed in this article that any or all of these countries at any or all times necessarily sought to achieve a certain increase or decrease in the money supply. Rather, money supply data are presented in a manner that may be more readily used by any who think that money supply changes may be one useful *ex post* indi-

¹ Data for the four foreign countries are derived from *International Financial Statistics*, published by the International Monetary Fund. For the U. S., Federal Reserve Board data are used.

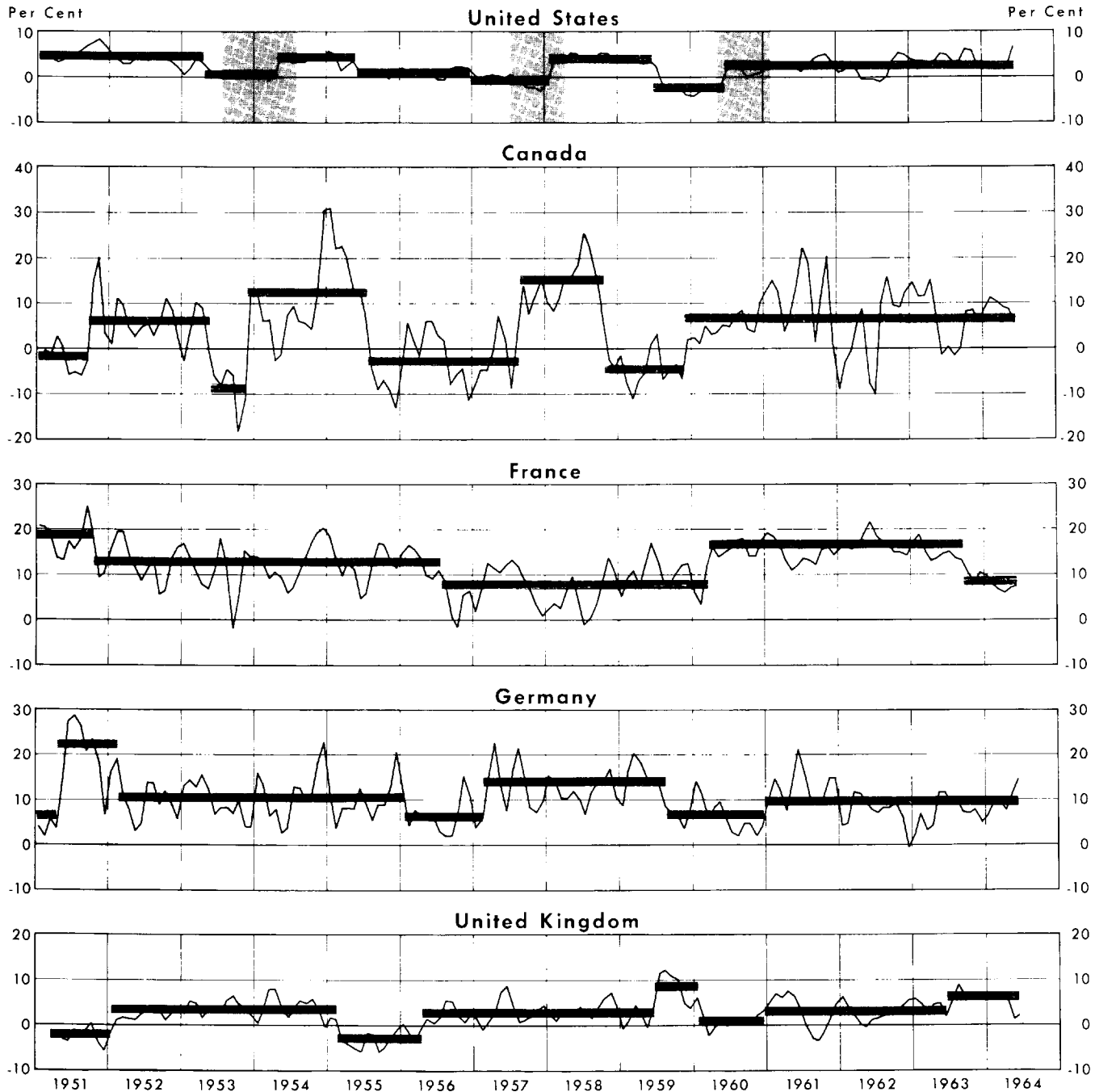
² See this *Review*, September 1964, for a similar presentation covering U. S. monetary experience since 1914.

³ For a discussion of the rough relationship between recent monetary change and other economic variables in five foreign countries, see this *Review*, August 1964, p. 6.

⁴ Harry Johnson, "Monetary Theory and Policy," *The American Economic Review*, Vol. LII, No. 3, June 1962, p. 335.

Money Supply in Five

Annual Rates of Change



The plotted lines represent 3-month moving averages of annual rates of change, weighted 1-2-1, computed from seasonally adjusted data. Bars indicate average rates for periods of no marked and sustained change in the rate of change (data in Tables I to V). Shaded areas represent periods of business recession.

Data for the United States are provided by the Board of Governors of the Federal Reserve System. Data for the four other countries are taken from *International Financial Statistics*, published by the International Monetary Fund.

Countries, 1951 - 1964

Table I
UNITED STATES

Compounded Annual Rates of Change

Periods of No Marked and Sustained Change in the Rate of Change (Represented by bars on charts)	Annual Rate of Change
Dec. 1950 - June 1964	2.2%
Dec. 1950 - Apr. 1953	4.3
Apr. 1953 - Apr. 1954	0.3
Apr. 1954 - May 1955	4.3
May 1955 - Dec. 1956	1.1
Dec. 1956 - Jan. 1958	-0.9
Jan. 1958 - June 1959	4.1
June 1959 - June 1960	-2.3
June 1960 - June 1964	2.7
June 1960 - Jan. 1962	2.4
Jan. 1962 - Sept. 1962	0.3
Sept. 1962 - June 1964	3.8

Table II
CANADA

Compounded Annual Rates of Change

Periods of No Marked and Sustained Change in the Rate of Change (Represented by bars on charts)	Annual Rate of Change
Dec. 1950 - June 1964	4.6%
Dec. 1950 - Sept. 1951	-2.0
Sept. 1951 - May 1953	6.1
May 1953 - Nov. 1953	-8.9
Nov. 1953 - July 1955	12.4
Nov. 1953 - Oct. 1954	6.1
Oct. 1954 - July 1955	20.2
July 1955 - Aug. 1957	-2.7
July 1955 - Jan. 1956	-7.7
Jan. 1956 - Aug. 1956	3.2
Aug. 1956 - Aug. 1957	-3.7
Aug. 1957 - Oct. 1958	15.3
Aug. 1957 - May 1958	12.6
May 1958 - Oct. 1958	18.6
Oct. 1958 - Nov. 1959	-4.3
Nov. 1959 - June 1964	7.0
Nov. 1959 - Nov. 1960	4.3
Nov. 1960 - Nov. 1961	13.0
Nov. 1961 - July 1962	-2.0
July 1962 - May 1963	12.3
May 1963 - Sept. 1963	-0.7
Sept. 1963 - June 1964	8.7

Table III
FRANCE

Compounded Annual Rates of Change

Periods of No Marked and Sustained Change in the Rate of Change (Represented by bars on charts)	Annual Rate of Change
Dec. 1950 - June 1964	12.6%
Dec. 1950 - Oct. 1951	18.7
Oct. 1951 - July 1956	12.8
July 1956 - Mar. 1960	7.8
July 1956 - Feb. 1957	4.2
Feb. 1957 - Oct. 1957	11.3
Oct. 1957 - Oct. 1958	3.8
Oct. 1958 - Mar. 1960	10.8
Mar. 1960 - Sept. 1963	16.7
Sept. 1963 - June 1964	8.4

Table IV
GERMANY

Compounded Annual Rates of Change

Periods of No Marked and Sustained Change in the Rate of Change (Represented by bars on charts)	Annual Rate of Change
Dec. 1950 - June 1964	10.6%
Dec. 1950 - Apr. 1951	6.6
Apr. 1951 - Feb. 1952	22.2
Feb. 1952 - Jan. 1956	10.5
Jan. 1956 - Feb. 1957	6.2
Feb. 1957 - Aug. 1959	14.0
Aug. 1959 - Dec. 1960	6.6
Aug. 1959 - June 1960	8.3
June 1960 - Dec. 1960	3.6
Dec. 1960 - June 1964	9.6
Dec. 1960 - Dec. 1961	13.6
Dec. 1961 - Nov. 1962	8.2
Nov. 1962 - Apr. 1963	3.4
Apr. 1963 - June 1964	9.5

Table V
UNITED KINGDOM

Compounded Annual Rates of Change

Periods of No Marked and Sustained Change in the Rate of Change (Represented by bars on charts)	Annual Rate of Change
March 1951 - June 1964	2.5%
March 1951 - Jan. 1952	-2.1
Jan. 1952 - Feb. 1955	3.4
Feb. 1955 - Apr. 1956	-3.0
Apr. 1956 - June 1959	2.8
June 1959 - Jan. 1960	8.6
Jan. 1960 - Dec. 1960	0.8
Dec. 1960 - June 1963	3.1
Dec. 1960 - June 1961	5.9
June 1961 - Dec. 1961	-0.3
Dec. 1961 - Nov. 1962	2.5
Nov. 1962 - June 1963	4.4
June 1963 - June 1964	6.2

cator of monetary policy or action or who wish to study the relation between money supply and other economic variables. To the extent that money supply behavior relates to levels and changes of prices, income, and interest rates within a country, foreign monetary experience may be of considerable importance in affecting international trade and capital flows and hence have a significant effect on the U. S. balance of payments.

The basic data, seasonally adjusted by the IMF, have been refined and presented in the following manner:

1. Three-month moving averages, weighted 1-2-1, of month-to-month annual rates of change in the money supply have been computed and plotted. The three-month averages serve to smooth short-term variation in changes in the rate of change of the money supply with an acceptable minimum distortion in the timing of changes.

2. Periods of time have been chosen in which no marked and sustained change in the rate of change of the money supply for each country occurred.

3. The average annual compounded rate of change in the money supply has been computed on the basis of the 1-2-1 moving average of the money *stock* at the beginning and end of each period chosen as outlined in (2). This rate of change then establishes the vertical position of each bar plotted.

Questions as to comparability of the basic data for each country over the whole period studied, or as between different countries, might be raised. However, in view of the long experience and effort of the IMF to present reliable figures based on a consistent definition of money,⁵ it is presumed that the data are sufficiently comparable to merit the use made of them here.

Canada

Since 1950, the Canadian money supply has increased at an average annual rate of 4.6 per cent. During this period, there have been wide variations in the rate of monetary expansion. Compared to the other

countries studied here, fluctuations in the rate of change of the money supply have been both more numerous and more pronounced. In particular, since mid-1953, there has been a marked absence of relatively long periods of stable monetary growth. Over the same period, however, extreme high and low rates of monetary change have tended to moderate.

Since September 1963, the 8.7 per cent rate of monetary growth in Canada has been rather high in comparison with both the 4.6 per cent rate of growth for the whole period since 1950 and recent experience in the United States and the United Kingdom.

France

The French money supply has increased at an average annual rate of 12.6 per cent since 1950. For over four years, from late 1951 to mid-1956, the rate of monetary growth was about 13 per cent. Then, from July 1956 to March 1960, the overall growth rate was significantly lower, averaging 7.8 per cent. Within this period of almost four years, there were two periods when money was increasing at about a 4 per cent annual rate and two periods when the rate of increase was about 11 per cent per annum. The second major period of stable monetary growth, from March 1960 to September 1963, was marked by an exceptionally high annual rate of 17 per cent.

During the past year, monetary expansion has fallen sharply. Although still high by comparison with the United States or the United Kingdom, French monetary growth since September 1963 has been at an 8.4 per cent annual rate, significantly lower than the average for the past 13 years.

Germany

The 10.6 per cent annual rate of increase in the German money supply since 1950 has been nearly as great as that of France. However, there has been more variation in the rate of growth over this period for Germany than for France.

From 1951 to early 1957, monetary expansion was progressively more restrained, falling from 22 per cent per annum in April 1951-February 1952 to a 6 per cent annual rate of increase from January 1956 to February 1957. Since early 1957, changes in the rate of growth have become more variable, both as to amount and frequency of change.

⁵ ". . . The term *Money Supply* refers to free currency and free deposits subject to check owned by the public, i.e., owned by others than banks and the central Government. Deposits in postal institutions are included if they are subject to check, and deposits held on foreign account are also included." *International Financial Statistics*, Vol. I, No. 2, p. vi, 1948. This definition is approximately the same as that used by the Federal Reserve System.

The period from February 1957 to August 1959 was one of greater than average growth. Monetary growth was then relatively slow for 16 months up to December 1960. Since December 1960, the increase in the money supply has averaged 9.6 per cent per annum. At no time during the 13½-year period did the annual rate of monetary expansion fall below 6 per cent for any sustained period.

United Kingdom

The 2.5 per cent annual rate of growth in the British money supply since 1951 has been comparable with that in the United States and quite low compared with the other countries covered in this article. From early 1951 to mid-1959, there were two relatively prolonged periods of stable monetary growth and two brief periods in which the money supply actually declined. Over the following five years, from mid-1959 to mid-1964, there were more frequent changes in the rate of change in the money supply. During the period as a whole, the annual rate of increase averaged 3.8 per cent. Since June of 1963, the money supply has grown at about a 6 per cent rate, higher than in any other period of comparable length since 1951.

United States

Since 1951, a recurrent pattern has marked the course of monetary expansion in the United States. Typically, periods of successively lower rates of increase of money have occurred during periods of economic expansion. During recessions, the rate of monetary growth at some point has risen. Since 1951, there have been two periods when the money supply decreased—December 1956-January 1958 and June 1959-June 1960. Compared with the four other countries considered here, variation in rates of U. S. monetary change has been much less marked.

Summary

Over the entire period 1951-64, monetary growth has occurred at diverse rates in the five countries covered in this article. Many factors—e.g., the rate of economic growth; structural problems arising from wartime dislocations; types of stabilization problems, goals, and available policy instruments; different financial institutions and practices—might be considered to explain these national differences or to appraise the appropriateness of the long-run rates of monetary expansion which did take place.

During various shorter periods of time, a wide variety of rates of monetary growth can be observed (Table VI). These differing rates of monetary change

Table VI
MONEY SUPPLY

	Annual Rate of Change Prevailing at	
	Mid-1954	Mid-1964
Canada	6.1	8.7
France	12.8	8.4
Germany	10.5	9.5
United Kingdom	3.4	6.2
United States	1.8	3.8

largely reflect the fact that cyclical economic developments are not parallel in all countries. Thus, rates of monetary growth prevailing as of June 1954 were quite low in the United States and the United Kingdom relative to France and Germany. A decade later this disparity was much less marked. Compared either with experience ten years earlier or with respective rates of monetary growth over the entire period being considered, monetary expansion as of June 1964 was lower in both France and Germany and higher in the United States and the United Kingdom. Nevertheless, the money supply continued to increase much faster in the first half of 1964 in France and Germany than in the United States and the United Kingdom.



Production and Money Expand Rapidly— *with neither Price Inflation nor Interest Rate Increases*

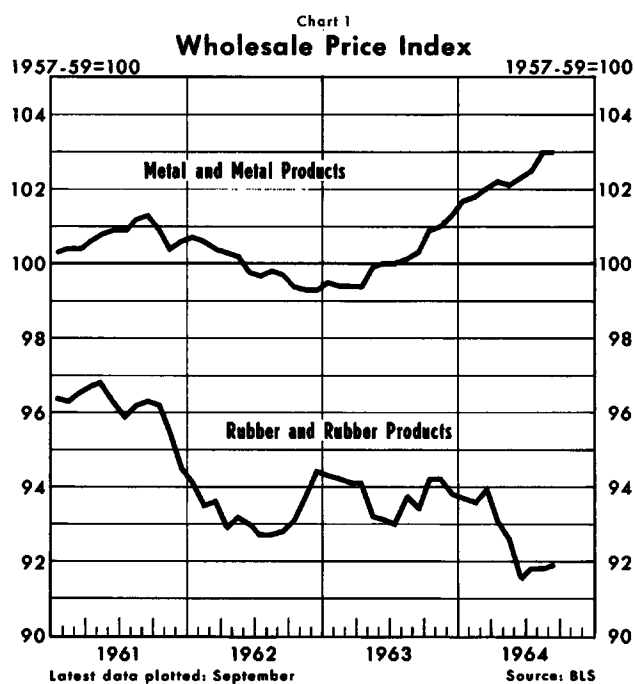
ALTHOUGH OUTPUT HAS RISEN rapidly in 1964, general price trends have not changed. While credit demands have been strong, the general level of interest rates has not risen.

The economy has continued to expand, with production, employment, and spending moving strongly upward. In September and October, however, there was a pause in activity as a result of work stoppages in the automobile industry. Although prices of selected industrial materials have risen since early this year, general price levels have not moved differently from the way they have in other recent years.

Interest rate stability is an unusual feature of the recent financial scene; during other periods of economic advance, when capital formation trends were strong, interest rates have generally risen. Monetary expansion has been marked, especially since early summer; the money supply has risen at a 5.8 per cent annual rate since June. Total member bank reserves have risen at a 6.3 per cent rate since May, after rising more moderately from October to May (at a 4.3 per cent annual rate).

Some Prices Rise but General Trends Are Unchanged

The rise in total demand for the economy's product has not been accompanied by a change in general price trends. Although increases have occurred in prices of individual items and of some product groups — reflecting increases in market demand — there have been offsetting price declines in other areas. For example, prices of metal and metal products have risen since early 1963, while prices of rubber and rubber products have drifted lower (Chart 1).

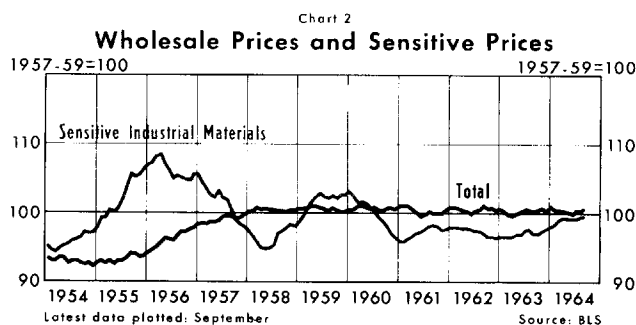


Such offsetting price behavior is not unusual. Indeed, price increases in some product areas are the means by which a market economy allocates limited supplies and attracts resources to the creation of those goods and services for which there is relatively strong demand. Price increases have been most pronounced in services, a field in which employment has also risen rapidly. Price decreases tend to occur in areas where there is weak product demand relative to supply and in fields of most rapid technological gains.

Achievement of both price stability and a rising standard of living requires that some of the fruits of technological gains be passed on to the general public in the form of price *decreases* — as has been the case with many farm commodities — rather than be entirely retained through wage and profits increases

within the industries of most greatly increased efficiency. Such price decreases are necessary to offset price increases which must occur in fields of slowly advancing or stable technology if these groups are to experience an improved standard of living and if wage rates for similar labor are to be about the same in different fields.

In recent months there have been increases in so-called sensitive prices. Although the general level of wholesale prices has continued to fluctuate about the level which was reached in early 1958, prices of selected industrial materials — including hides, steel scrap, copper, zinc, and lead—have risen since the fall of 1963. As Chart 2 shows, even though the



general level of wholesale prices has been unchanged since 1958, prices of these sensitive industrial materials have moved in response to changing cyclical conditions.

Employment Rises

Payroll employment, apparently a relatively reliable indicator of the state of the labor market, increased at an annual rate of 2.1 per cent from August to September, about the same as the average for recent months. Total employment decreased slightly from September to October and has shown a net decline since April. However, it is believed that the total employment data are relatively unreliable for indicating short-term developments in the labor market.

During the past year and in other recent years, employment increases in expanding areas of the economy have been sufficient to offset employment declines in agriculture and other areas of rapidly increasing technology or lagging final demand. In addition, the rise in employment has been great enough to accommodate those coming of working age and entering the labor force plus a substantial proportion of those population groups which have increasingly

sought to participate in the labor force.¹ This has been true for the past ten months, for the current period of expansion which began in early 1961, for the period since the last peak in national economic activity, and, indeed, for most of the postwar era.

Total employment has expanded at a 1.1 per cent average annual rate since 1948. During this period agricultural employment declined by 3.4 million workers and other employment increased by 14.3 million (an annual rate of increase of 1.6 per cent). Estimated payroll employment, which accounts for about 90 per cent of estimated nonagricultural employment,² rose at a 1.7 per cent rate during this period.

Employment increases since late 1948, since mid-1960, and since early 1961 have been most rapid in fields of relatively strong product demand (e.g., state and local government) and in areas of relatively slow technological change (e.g., services and construction). Employment has declined or has grown only slightly in fields of most rapid technological advance and/or relatively weak product demand (Chart 3, page 8).

The continued expansion in the economy is reflected in unemployment statistics. Unemployment among married men has recently been about 2.8 per cent compared with 3.2 per cent early this year (Chart 4, page 8). Recent rates are well below rates reached in the 1958-60 expansion, but are somewhat higher than in the 1955-57 expansion, a period marked by some price inflation. The number unemployed 15 weeks or more has also declined thus far in 1964. In October such long-term unemployment was 1.3 per cent of the labor force; from mid-1962 to early 1964, it was virtually unchanged near the 1.5 per cent level (Chart 4).

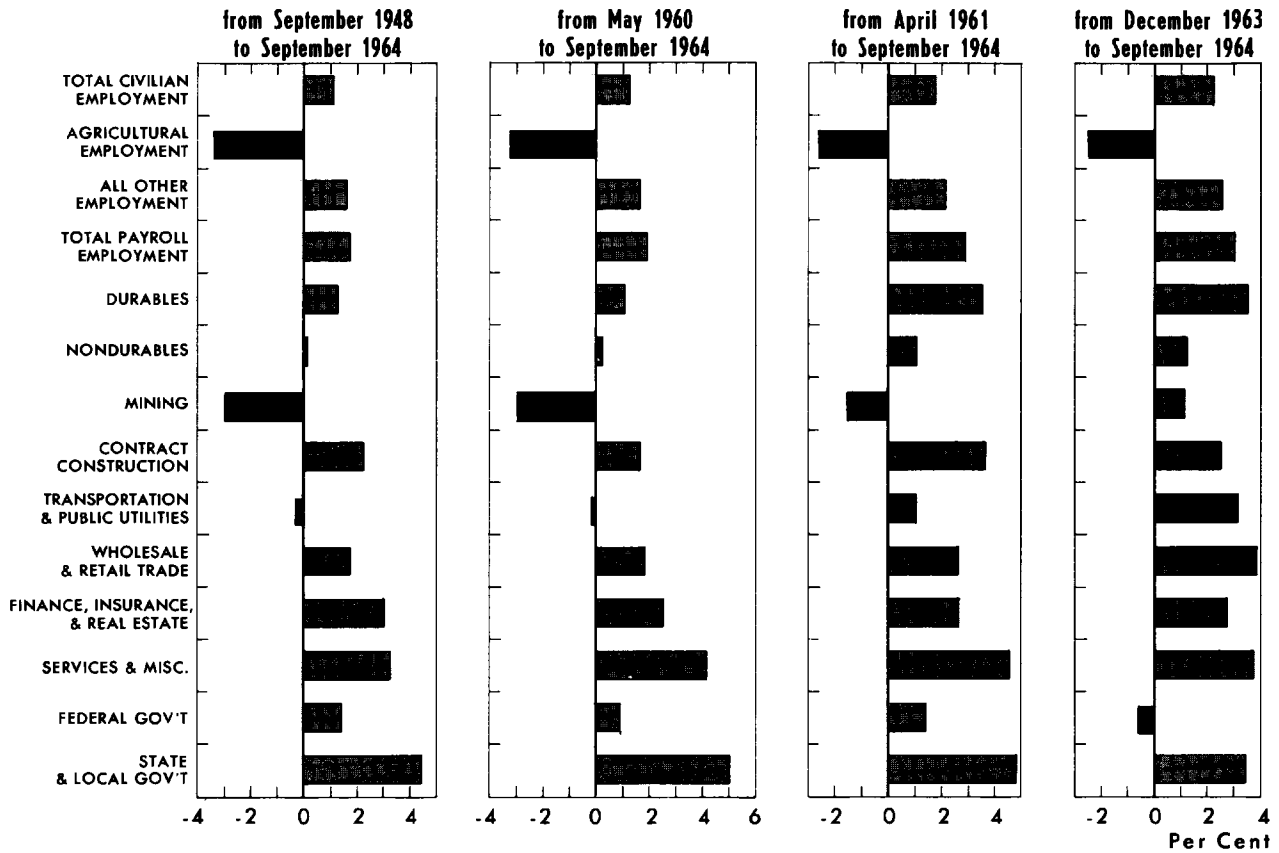
Credit Demands Strengthen but Interest Rates Remain Stable

Despite the rapid increase in economic activity in 1964 and the accompanying strengthening in credit

¹ See "Recent Employment Trends" in the October issue of this *Review*.

² Payroll employment data differ from nonagricultural employment data in that the former are obtained from Department of Labor surveys of nonagricultural establishments while the latter stem from Bureau of the Census surveys of a sample of households. In addition, there are differences in coverage: the nonagricultural employment household survey data include estimates of proprietors, the self-employed and unpaid workers in family businesses, and domestic workers in households.

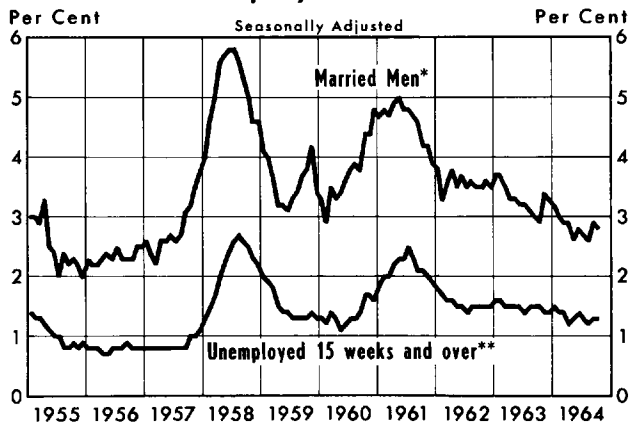
Chart 3
Changes in Selected Components of Employment
 Annual Rates of Change



demands, the general structure of interest rates has remained stable. The pattern of stability has been in evidence during much of the expansion beginning in early 1961 and has been particularly marked since late last year (Chart 5).

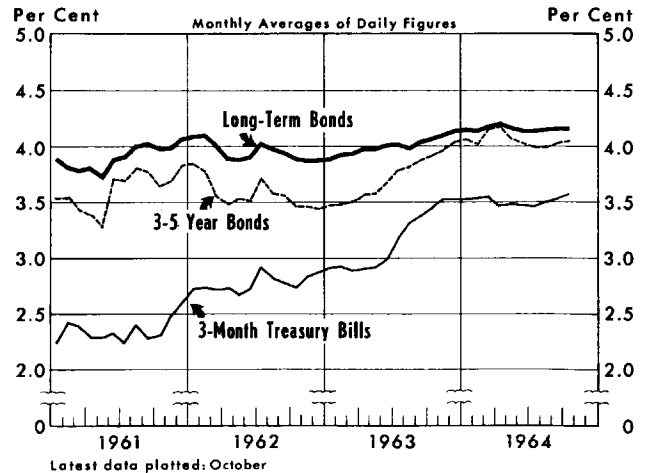
Yields on three-month Treasury bills have moved within the 3.45 to 3.57 per cent range since October 1963. In November this year bill rates reached the upper portion of this range. Treasury bill yields have risen 1.15 percentage points since February 1961, the

Chart 4
Unemployment Rates



*Unemployed as a percent of married men in the civilian labor force.
 **Unemployed as a percent of the civilian labor force.
 Latest data plotted: October
 Source: BLS

Chart 5
Yields on U.S. Government Securities



Latest data plotted: October

trough of the 1960-61 recession. From trough to peak in the 1958-60 and 1954-57 expansions, bill rates rose 2.16 and 2.24 percentage points, respectively. However, short-term interest rates did not decline as much in the 1960-61 period as in earlier postwar recessions.

Although the structure of interest rates has remained generally stable during the current expansion, and especially in the last twelve months, there have been significant departures from this pattern. Mortgage rates are actually somewhat lower in November this year than in early 1961, the trough of the recent recession. Yields on highest and medium grade corporate bonds have been about unchanged on balance. On the other hand, yields on long-term U. S. Government securities have risen somewhat during the expansion, but the rise has been less than in earlier periods of rising business activity.

With stable interest rates, increased credit demands have resulted in a rapid expansion in the total quantity of credit outstanding. Bank credit has risen at an 8.3 per cent annual rate since September of last year and at an 11.3 per cent rate since July. These rates of increase are comparable with growth rates since 1961.

Money Supply Increases Rapidly

Monetary expansion has accelerated in recent months. Since June, money has risen at a 5.8 per cent annual rate; from October 1963 to June, money increased at a 3.3 per cent annual rate. The rate of increase in the stock of money since the beginning of the current economic expansion, at 3.3 per cent, is substantially greater than during the two preceding expansions. Money rose at 1.7 and 1.2 per cent annual rates in the 1954-57 and 1958-60 expansions, respectively.

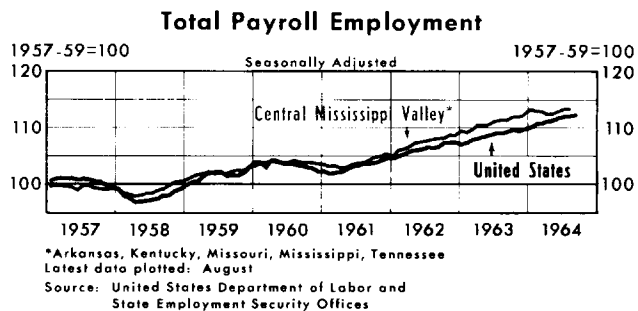
The recent relatively high rate of monetary expansion was fostered by an increase in the rate of growth of member bank reserves. From May to October, total reserves rose at a 6.3 per cent annual rate and, from August, at an 8.6 per cent rate. During the seven months ending with May, bank reserves expanded at a 4.3 per cent annual rate. Reserves available for private demand deposits have also risen rapidly. Since May, they have risen at a 7.5 per cent annual rate and, since August, at a 10.7 per cent rate, while from October last year to May, these reserves were virtually unchanged.



Employment and Population Trends in the Central Mississippi Valley

EMPLOYMENT in the Central Mississippi Valley¹ has expanded more rapidly than in the nation as a whole since the 1957-59 period. These advances of employment in recent years are in contrast with previous trends (Table I).² Based on the 1957-59 average, U. S. payroll employment³ has risen at an average annual rate of 2 per cent. For the same period, payroll employment in the five Central Mississippi Val-

ley states combined has increased at a 2.2 per cent annual rate.⁴



¹ Included in the discussion are Arkansas, Kentucky, Mississippi, Missouri, and Tennessee. Each of these states is completely or partly contained in the Eighth Federal Reserve District. Parts of Illinois and Indiana are also included in the Eighth District, but these states are not analyzed here. For purposes of this article, "Central Mississippi Valley" will refer to the five above-mentioned states.

² For an analysis of state employment trends during the 1940-60 period, see "The Geographical Redistribution of Employment: An Examination of the Elements of Change," *Survey of Current Business*, October 1964.

³ Total nonfarm payroll employment is used as the fundamental measure of employment because of its general availability. Tennessee and Kentucky do not make available total employment estimates on a regular monthly basis.

The growth of nonfarm payroll employment in the Central Mississippi Valley has occurred at about the same rate in both the manufacturing and nonmanufacturing sectors. This is in contrast with the national pattern where the employment increase in manufacturing has been slower than in nonmanufacturing (Table II). Manufacturing employment has risen at an annual rate of 2.1 per cent in the Valley compared with 0.8 per cent for the United States (Table III). Nonmanufacturing employment has increased at a 2.3 per cent rate in the region and 2.6 per cent in the nation.

⁴ The statistical data and comparisons used in this article are believed to be valid for the purposes intended. However, the following considerations should be noted. 1) There is no assurance that trends of the past six years will be continued. 2) A base other than 1957-59 would give somewhat different results. 3) State and local employment statistics may not be precisely comparable with each other or with national figures.

Table I
EMPLOYMENT

Annual Rates of Change

	Total Employment			Payroll Employment		
	1940 to 1950	1950 to 1960	1957-59 to Summer 1964 ¹	1940 to 1950	1950 to 1960	1957-59 to Summer 1964 ¹
Arkansas	0.6	-0.7	1.9	4.8	2.3	3.8
Kentucky	1.5	0.0	n.a.	3.9	1.7	2.0
Mississippi	0.1	-0.4	2.3	4.6	3.0	3.0
Missouri	1.8	0.5	0.5	3.7	1.4	1.1
Tennessee	2.3	0.8	n.a.	5.4	2.2	2.9
Total 5 states	1.4	0.2	n.a.	4.3	1.9	2.2
United States	2.7	1.6	1.5	4.0	2.0	2.0

¹ Data for summer 1964 are averages of June, July, and August seasonally adjusted figures. n.a. Not available.

Sources: U. S. Census of Population, U. S. Bureau of Labor Statistics, and State Employment Security Offices.

Table II
EMPLOYEES ON NONFARM PAYROLLS, BY INDUSTRY, SUMMER 1964¹

	Arkansas		Kentucky		Mississippi		Missouri		Tennessee		Total Five States		United States	
	Thousands		Thousands		Thousands		Thousands		Thousands		Thousands		Thousands	
	of	1957-59	of	1957-59	of	1957-59	of	1957-59	of	1957-59	of	1957-59	of	1957-59
	Persons	= 100	Persons	= 100	Persons	= 100	Persons	= 100	Persons	= 100	Persons	= 100	Persons	= 100
Manufacturing	122.9	133.2	189.8	113.5	139.6	123.3	406.0	104.8	357.4	120.0	1,215.7	114.9	17,428	105.0
Durables	62.5	131.0	97.1	117.4	63.1	123.7	208.8	109.5	132.4	120.4	563.9	117.0	9,910	106.0
Nondurables	60.4	135.4	92.7	109.6	76.6	123.2	197.2	100.3	225.0	119.8	651.9	113.2	7,518	103.8
Nonmanufacturing	307.4	120.7	526.3	112.0	311.1	115.8	1,009.4	108.4	686.2	117.8	2,840.4	113.3	41,727	116.0
Mining	5.0	78.1	29.0	79.9	6.4	108.5	7.8	90.7	6.8	84.0	55.0	84.2	647	84.0
Construction	30.4	165.2	42.6	123.5	27.9	129.8	78.1	121.8	62.8	146.0	241.8	133.2	3,468	120.1
Trans. and public util.	29.2	102.5	54.6	98.0	25.7	99.6	115.0	92.7	56.9	99.5	281.4	96.6	4,021	98.7
Trade	92.0	118.6	147.5	108.5	88.5	109.7	314.2	102.2	206.3	107.6	848.5	106.9	12,267	112.3
Fin., ins., real estate	17.0	139.3	28.6	127.7	16.0	133.3	78.5	116.3	45.8	129.4	185.9	124.3	2,981	117.8
Government	77.2	112.4	124.1	114.6	94.3	115.1	212.7	114.9	165.9	118.5	674.2	115.4	9,575	121.2
Services, misc.	56.6	132.6	99.8	129.8	52.4	128.1	203.2	116.8	141.6	132.1	553.6	125.3	8,769	127.2
Total	430.3	124.1	716.1	112.4	450.7	118.0	1,415.4	107.4	1,043.6	118.5	4,056.1	113.8	59,155	112.5

¹ Data for summer 1964 are averages of June, July, and August figures.
Sources: U. S. Bureau of Labor Statistics and State Employment Security Offices.

Table III
POPULATION AND EMPLOYMENT

Annual Rates of Change from 1957-59 to Summer 1964¹

	Population	Total Employment	Total Payroll Employment	Manu- facturing Employment	Nonmanu- facturing Employment
<u>States</u>					
Arkansas	1.9	1.9	3.8	5.2	3.3
Kentucky	1.1	n.a.	2.0	2.4	1.8
Mississippi	1.7	2.3	3.0	3.7	2.8
Missouri	0.8	0.5	1.1	0.7	1.3
Tennessee	1.6	n.a.	2.9	3.1	2.8
Total 5 states	1.3	n.a.	2.2	2.1	2.3
<u>Metropolitan Areas²</u>					
St. Louis	n.a.	0.3	0.6	-0.4	1.2
Louisville	n.a.	0.6	0.9	0.3	1.3
Memphis	n.a.	1.6	2.0	1.6	2.1
Little Rock	n.a.	2.4	3.6	4.6	3.3
Evansville	n.a.	-0.3	0.1	-1.1	1.0
Springfield, Mo.	n.a.	2.5	2.6	5.4	1.6
Fort Smith	n.a.	2.2	5.0	6.7	4.1
United States	1.7	1.5	2.0	0.8	2.6

¹ Employment data for summer 1964 are averages of June, July, and August seasonally adjusted figures.
² In Eighth Federal Reserve District.
n.a. Not available.

Sources: U. S. Bureau of the Census, *Current Population Reports*; U. S. Bureau of Labor Statistics; and State Employment Security Offices.

The recent expansion of employment in the Central Mississippi Valley has been associated with a significant shift in population trends in most of the states (Table IV). Population in the five states increased at a 1.1 per cent annual rate during the 1960-63 period compared with a 0.4 per cent rate in the preceding decade. A shifting pattern of migration trends has been responsible for the recent increase in the rate of growth of population. These changing population trends are probably closely related to the strong employment conditions in the area in recent years.

Each of the five states has shared in the employment increases during the 1957-64 period, but in varying degrees. Since 1957-59, payroll employment has risen at an annual rate of 3.8 per cent in Arkansas, 2 per cent in Kentucky, 3 per cent in Mississippi, 1.1 per cent in Missouri, 2.9 per cent in Tennessee, and 2.2 per cent in the five states combined. These figures indicate that the southern portion of the Central Mississippi Valley has registered the strongest gains in employment (Table III).

Arkansas

Total employment in Arkansas has expanded at a 1.9 per cent annual rate since 1957-59 compared with a 1.5 per cent rate nationally (Table III). Payroll employment has increased at a 3.8 per cent rate compared with a U. S. rate of 2 per cent. Employment increases have been strongest in manufacturing, but nonmanufacturing employment has also risen faster than in the nation. Within each of these categories, industry increases have been widespread (Table II). Manufacturing gains have been at about the same rate for durables and for nondurables. Nonmanufacturing employment has advanced most rapidly in the construction, finance, and service industries.

Expanding employment opportunities in Arkansas have been accompanied by substantial net in-migration (excess of persons entering state over those leaving) in recent years (Table IV). It is estimated that from 1960 to 1963 the net in-migration rate has been 0.6 per cent per year, which compares with a net out-migration annual rate of 2.3 per cent in the 1950's. The natural increase via births and deaths has fallen somewhat since the 1950's and has been at about the same rate as in the United States.

State-wide employment trends have also been in evidence in the metropolitan areas of the state.⁵ Since 1957-59, both total employment and nonfarm payroll employment in Little Rock and Fort Smith, as in the state, have risen significantly faster than in the nation (Table III). Little Rock employment has expanded at an annual rate of 2.4 per cent since 1957-59 compared with a 1.9 per cent rate for the state and 1.5 per cent for the United States. Manufacturing employment increases in Little Rock have been especially strong.

Fort Smith employment has advanced significantly since 1957-59, with almost all the increase occurring in 1962. Subsequently, employment has remained on a high plateau.

Kentucky

Payroll employment in Kentucky has increased since 1957-59 at an annual rate of 2 per cent, the same rate as for the United States (Table III). Expansion rates in manufacturing and nonmanufacturing have been 2.4 and 1.8 per cent, respectively. Finance and services employment have both risen at about a 5 per cent annual rate.

Along with its comparatively rapid increase of payroll employment, Kentucky's population growth rate has recently increased, although it apparently has remained below the U. S. rate (Table IV). The increase has been accounted for by a sharp decline in the rate of net out-

Table IV
POPULATION, 1950-60 AND 1960-63

	Annual Rates of Change				Total Net Change ³	
	Natural Increase ¹		Net Migration ²		1950-60	1960-63
	1950-60	1960-63	1950-60	1960-63		
Arkansas	1.7	1.3	-2.3	0.6	-0.7	1.9
Kentucky	1.6	1.3	-1.3	-0.5	0.3	0.9
Mississippi	2.0	1.7	-2.0	-0.2	0.0	1.5
Missouri	1.2	1.1	-0.3	-0.6	0.9	0.5
Tennessee	1.6	1.3	-0.8	0.2	0.8	1.5
Total 5 states	1.6	1.3	-1.1	-0.2	0.4	1.1
Illinois	1.3	1.3	0.1	-0.4	1.5	0.9
Indiana	1.5	1.4	0.2	-0.6	1.7	0.8
United States	1.5	1.4	0.2	0.2	1.7	1.6

¹ Births minus deaths.

² Persons entering state minus persons leaving state.

³ Figures may not balance because of rounding.

Source: U. S. Bureau of the Census, *Current Population Reports*, Series P-25, Nos. 247, 289.

⁵ Monthly data and charts for metropolitan areas in the Central Mississippi Valley may be obtained upon request to the Research Department of this bank.

migration. During 1960-63, net movement out of Kentucky was at a rate of 0.5 per cent per year compared with a 1.3 per cent rate during the 1950's.

In the Louisville metropolitan area, employment has lagged behind the rest of the state, particularly in the manufacturing sector. Total employment has increased at an annual rate of 0.6 per cent since 1957-59, with virtually all of the gains registered in the last two years. Manufacturing employment has just recently attained levels which prevailed in 1957-59.

Mississippi

Total employment has expanded more rapidly in Mississippi than in the nation since 1957-59, at an annual rate of 2.3 per cent (Table III). Payroll employment has increased at a 3 per cent rate. Contributing to the increase has been the advance of manufacturing employment at a 3.7 per cent annual rate. Nonmanufacturing concerns have increased their employment at an annual rate of 2.8 per cent since 1957-59, with construction, finance, and services the industry leaders.

Population increase in Mississippi has not been quite so rapid as the growth of employment. The net out-migration rate of 0.2 per cent during 1960-63, however, represents a substantial decline from the 2 per cent rate prevailing during the 1950's.

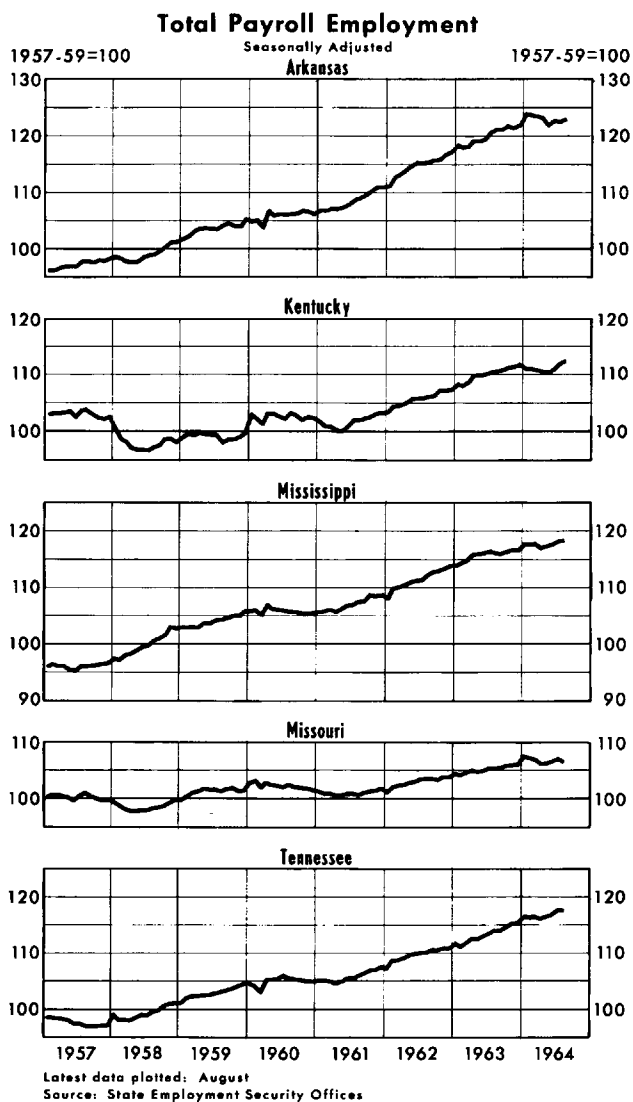
Missouri

Since 1957-59, both total employment and nonfarm payroll employment in metropolitan St. Louis and in Missouri as a whole have grown at a slower rate than in the United States (Table III). In Springfield, Missouri, the rate of growth has been more rapid than for either the state or the nation.

Manufacturing employment in Missouri has increased at a lesser rate than in the other four states but at about the same rate as for the United States. Nonmanufacturing payroll employment has increased at a substantially lower rate for Missouri than for the nation.

The relatively slow growth of employment in Missouri has been reflected in a recent acceleration of the net out-migration rate (Table IV). From 1950 to 1960, the average annual rate of net out-migration was 0.3 per cent; during 1960-63, it was 0.6 per cent.

Payroll employment in the St. Louis metropolitan



area since 1957-59 has increased at a rate about half that for Missouri. Nonmanufacturing employment in St. Louis has risen steadily and slowly, while manufacturing employment has yet to attain its 1957-59 level.

Tennessee

Tennessee payroll employment has grown at a 2.9 per cent annual rate since 1957-59 (Table III). Gains have been greatest in manufacturing, but nonmanufacturing employment has also increased faster than in the nation. Construction, finance, and services have all shown large employment gains since 1957-59.

The rise of employment has been accompanied by a sharp reversal of migration trends. From 1950 to 1960, the annual rate of net out-migration was 0.8 per cent, but, since 1960, there has been a net in-migration rate of 0.2 per cent.

The Memphis metropolitan area has shared in the state-wide employment gains. Since 1957-59, manufacturing employment has risen at an annual rate of 1.6 per cent, and the number of nonmanufacturing employees has increased at a 2.1 per cent rate (Table III).

Conclusion

In sharp contrast with immediately preceding trends,⁶ employment growth in the Central Mississippi Valley during the past six years has been more rapid than in the nation. Growth has been especially marked in the southern part of the area, and, for the region as a whole, has been most rapid outside the major metropolitan areas.

Arkansas and Mississippi have shifted from a negative trend of total employment in the 1950-60 decade to a positive trend markedly above that for the United States as a whole (Table I). In Mississippi and Tennessee the rate of increase in payroll employment since 1957-59 has been one and one-half times as great as in the nation, and in Arkansas it has been twice as great.

Employment growth has been less rapid in the major metropolitan areas than in other parts of the Central Mississippi Valley (Table III). The rate of increase of total employment in the St. Louis metro-

politan area has been less than in all of Missouri. The rate of increase in Memphis has been less than in nearby Mississippi. The rate of increase of payroll employment has been less in St. Louis than in Missouri, less in Louisville than in Kentucky, less in Memphis than in Tennessee or in Mississippi. The exception has been in Little Rock, where the rate of growth in total employment has been greater than in the state, and the growth in payroll employment has been about the same as in the state.

The employment experience of the Central Mississippi Valley in recent years suggests a new upward trend in economic growth. In the current jargon of economic historians and development economists, it appears that the least industrialized parts of the Central Mississippi Valley may have reached, some time in the late 1950's, a point of "take-off into sustained growth." The rapid growth of the relatively nonindustrialized states, Arkansas and Mississippi, lends support to the "take-off" hypothesis. The contrasting growth rates of "mature" metropolitan areas and non-metropolitan parts of states are a further consistent aspect.

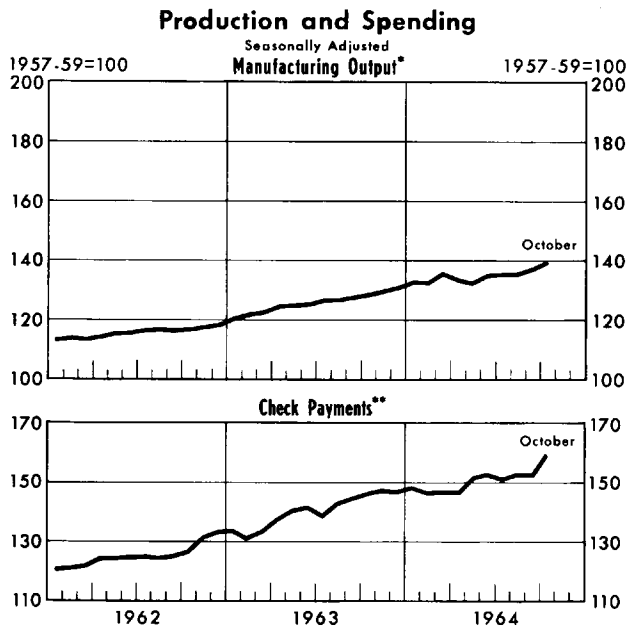
Whether the recent, relatively rapid growth in the Central Mississippi Valley, and especially in nonmetropolitan sections, is actually a "take-off into sustained growth" or is a temporary flurry of increased activity remains to be seen.

⁶ These trends are summarized in the *Survey of Current Business*, October 1964.



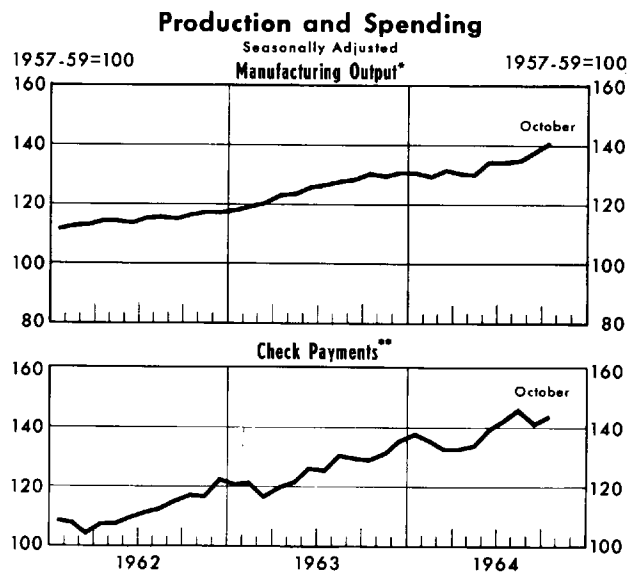
ECONOMIC INDICATORS

St. Louis Metropolitan Area



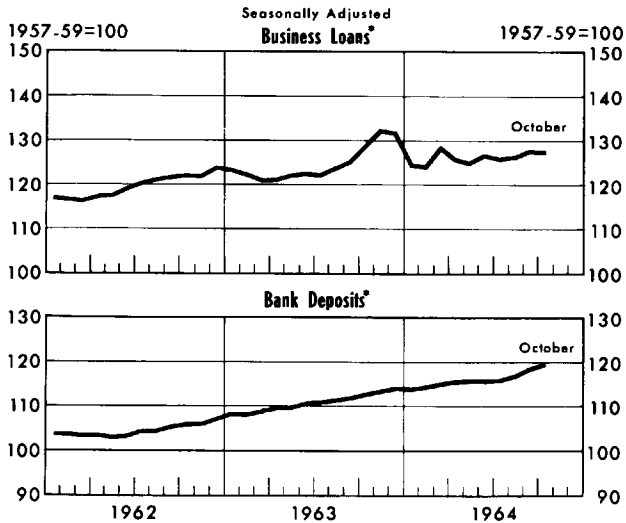
* Five-month moving averages (except for latest two months, which are averages of four months and three months).
** Three-month moving averages (except latest month, which is a two-month average).

Louisville Metropolitan Area



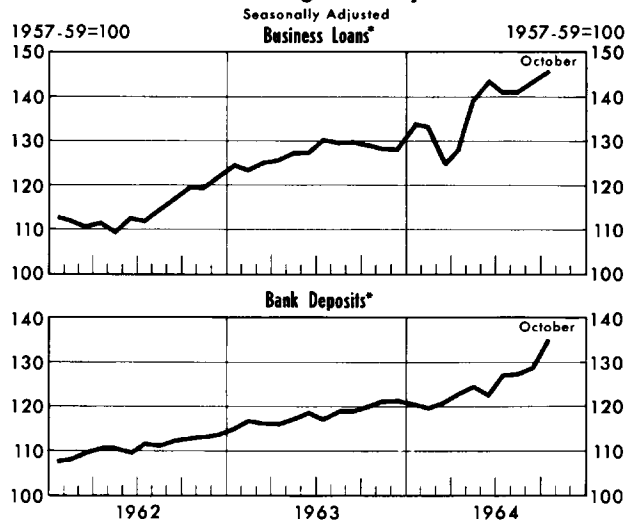
* Five-month moving averages (except for latest two months, which are averages of four months and three months).
** Three-month moving averages (except latest month, which is a two-month average).

Banking Activity



* Weekly reporting banks.

Banking Activity



* Weekly reporting banks.

CHARTS AND TABLES of economic data for each of seven metropolitan areas in the Central Mississippi Valley are available monthly in a report of this bank entitled **SELECTED ECONOMIC INDICATORS**. Direct request to: Research Dept., Federal Reserve Bank of St. Louis, P. O. Box 442, St. Louis, Missouri 63166.

SUBSCRIPTIONS TO THIS BANK'S REVIEW are available to the public without charge, including bulk mailings to banks, business organizations, educational institutions, and others. For information write: Research Department, Federal Reserve Bank of St. Louis, P. O. Box 442, St. Louis, Missouri 63166.