

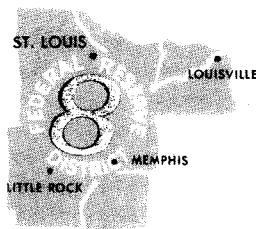
September 1964

FEDERAL RESERVE BANK OF ST. LOUIS

Review

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P.O. Box 442, St. Louis, Mo. 63166

National Economy Advances

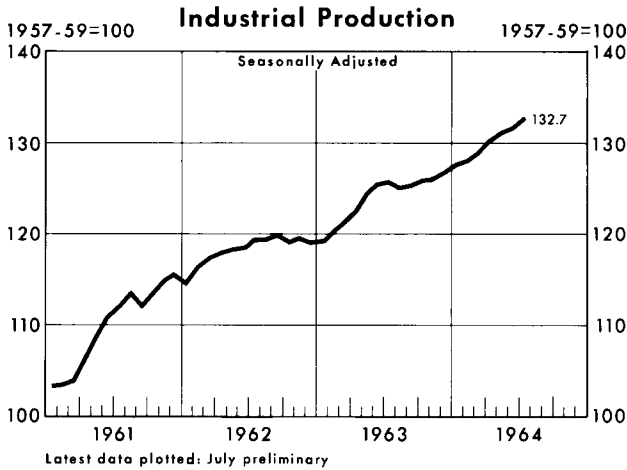
MOST MAJOR INDICATORS of domestic economic activity continued to advance during the summer. Increases in income, spending, and production were accompanied by relatively stable prices. Payroll employment in nonfarm establishments continued its steady rise throughout the summer months.

Industrial production during the summer continued the strong upward movement which has prevailed throughout this year and last. Preliminary estimates indicate that production remained high in August. The 8 per cent rate of growth of industrial output from January to July was widespread, as almost every major industry group shared in the increases. This year's increase compares with a 6.5 per cent increase during 1963.

Nonagricultural payroll employment increased at an annual rate of 3.6 per cent from January to July. Unemployment, as a per cent of the labor force, was at about 5 per cent during the summer, compared with a 5.6 per cent rate in January and an average of 5.7 per cent in 1963.

Rising production and employment were accompanied by expanding after-tax income and retail sales. From January to July disposable income increased at an 8.8 per cent annual rate compared with the 5.4 per cent increase last year. Retail sales rose at an 8.8 per cent rate, also, greater than the 3.8 per cent increase

in 1963. Sales of nondurable goods showed the strongest gains this year.



The substantial advances of the economy in recent months occurred with little or no upward movements of the general level of prices. Consumer prices rose at a 1.1 per cent annual rate from January to July, slightly less than the 1.7 per cent increase during last year. Wholesale prices drifted down the first half of the year, but rose slightly in July.

Federal Fiscal Developments

Federal Government spending continued to expand during the first half of 1964. According to the national income accounts budget, expenditures by the government rose from an annual rate of \$116.6 billion in the fourth quarter of 1963 to a rate of \$120.2 billion in the second quarter of 1964, an annual rate of increase of 6.2 per cent. This compares with a 3.4 per cent rate of increase during 1963.



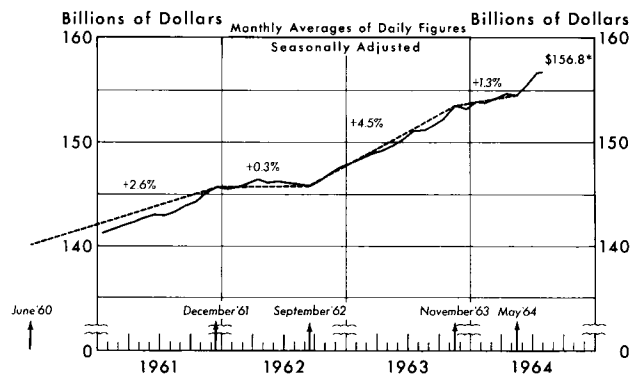
Federal Government receipts dropped from an annual rate of \$117.2 billion in the fourth quarter of 1963 to a rate of \$111.0 billion in the second quarter of 1964. The \$6.2 billion decline in receipts was primarily a result of the tax cut. Since the final quarter of 1964, personal tax receipts have declined by \$7.3 billion and corporate profits tax accruals by \$0.2 billion.

The net budget position of the Federal Government shifted from a surplus of \$0.6 billion (annual rate) in the fourth quarter of 1963 to a deficit of \$9.2 billion (annual rate) in the second quarter of 1964.

Financial Developments

Monetary developments were more expansive from May to the month ending August 15 than in the previous six months. Over the summer, the nation's money supply (demand deposits plus currency) rose at a 7.1

Money Supply Dollar Amounts



Dashed line represents periods of no marked and sustained changes in the rates of change.

Percentages are annual rates of change between months indicated.

*Latest figure plotted is month ending August 15, preliminary.

per cent annual rate, markedly higher than its 1.3 per cent rate of expansion from November 1963 to May. The May to August increase of money was most rapid from late May to early July. The rate of increase since the month ending July 15 appears to have been about 3 per cent a year. The average annual rate of monetary expansion from last November to the month ending August 15 was 3 per cent compared with the 4.5 per cent rate which prevailed from September 1962 to November 1963, and the 2.0 per cent average annual rate from 1951 to 1963.

Most of the increase in money supply over the summer was accounted for by a rapid increase in demand deposits. These deposits rose at a 7.5 per cent rate from May to the month ending August 15 compared with an 0.2 per cent rate during the previous six months.

The marked expansion in money during the summer
(Continued on Page 12)

Money Supply and Time Deposits, 1914-1964

THE ACCOMPANYING TABLES AND CHART summarize growth rates of the money supply, time deposits, and the two combined, since 1914. Because 1964 marks the fiftieth anniversary of the Federal Reserve System and since a principal function of the Federal Reserve System is the regulation of the money supply,¹ it would appear appropriate to record the rates of change of the stock of money for the past fifty years.²

Money is defined by the Federal Reserve System as the sum of currency outside of banks and demand deposits.³ An alternative definition of money, one adhered to by a number of monetary analysts, includes time deposits at commercial banks with demand deposits and currency. A broader concept of money might include savings and loan shares, Treasury bills, or other financial claims. In the discussion which follows, the term "money" refers to the sum of demand deposits and currency.

The charts and tables presented here indicate that there is a consistent empirical relationship between changes in the growth rates of either money or money plus time deposits and the turning points of business cycles. The relationship is somewhat more reliable for money than it is for money plus time deposits,

¹ Board of Governors of the Federal Reserve System, *The Federal Reserve System: Purposes and Functions* (Washington, D. C., 1963), p. 4.

² Two years ago Professor Harry Johnson, with the support of the Rockefeller Foundation, prepared for *The American Economic Review* a survey of the current literature regarding monetary theory and policy. Professor Johnson defined monetary theory as comprising "... theories concerning the influence of the quantity of money in the economic system and monetary policy as policy employing the central bank's control of the supply of money as an instrument for achieving the objectives of general economic policy." Harry Johnson, "Monetary Theory and Policy," *The American Economic Review*, (Vol. LII, June 1962, No. 3). See particularly p. 335 and pp. 357-369.

³ The demand deposit component of the money supply consists of demand deposits at all commercial banks, other than those due to domestic commercial banks and the U. S. Government, less cash items in process of collection and Federal Reserve float, plus foreign demand balances at Federal Reserve Banks. Prior to 1947, the money supply did not include foreign demand balances at Federal Reserve Banks and F. R. float was not deducted from demand deposits.

since changes in growth rates of time deposits have frequently moved in an offsetting direction.⁴

The Data

The experience of the past fifty years with respect to changes in the money supply, money plus time deposits, and time deposits alone is presented in the chart and accompanying tables. The chart on pages 6 and 7 has three tiers. The top tier shows month-to-month changes in the money supply expressed in annual rates from August 1914 through June 1964.⁵ The middle and bottom tiers present similar data for time deposits and for money plus time deposits. The shaded vertical bars on the charts denote periods of economic contraction as determined by the National Bureau of Economic Research. Dates for these periods are given in Table I.

Table I
NATIONAL BUREAU OF ECONOMIC RESEARCH
PERIODS OF CONTRACTION

(Peak to Trough)		No. of Months
Peak	Trough	
Jan. 1913	Dec. 1914	23
Aug. 1918	Mar. 1919	7
Jan. 1920	July 1921	18
May 1923	July 1924	14
Oct. 1926	Nov. 1927	13
Aug. 1929	Mar. 1933	43
May 1937	June 1938	13
Feb. 1945	Oct. 1945	8
Nov. 1948	Oct. 1949	11
July 1953	Aug. 1954	13
July 1957	Apr. 1958	9
May 1960	Feb. 1961	9

Each of the three time series has been examined for periods of uniform rates of change—that is, periods during which there were no marked and sustained

⁴ For an extensive examination of possible causes and effects of changes in the money supply and time deposits from 1951 to 1961 see the following articles which have appeared in this bank's monthly *Review*: "Changes in Selected Liquid Assets, 1951-61" (October 1961); "Member Bank Reserves and the Money Supply" (March 1962); "Changes in the Velocity of Money, 1951-62" (June 1962).

⁵ Tables listing the seasonally adjusted annual rates of month-to-month change in the money supply, time deposits, and the sum of the two are available upon request.

Table II
MONEY SUPPLY¹

Compounded Annual Rates of Change
(Seasonally Adjusted)

Periods of No Marked and Sustained Changes in Rates of Change (Represented by bars on charts)	Annual Rates of Change ²
June 1914 - June 1964	5.3%
June 1914 - March 1920	13.6
June 1914 - Dec. 1917	14.2
Dec. 1917 - Feb. 1919	8.2
Feb. 1919 - March 1920	17.4
March 1920 - Jan. 1922	— 8.2
Jan. 1922 - Sept. 1929	3.4
Jan. 1922 - Sept. 1925	7.0
Jan. 1922 - Jan. 1923	11.0
Jan. 1923 - April 1924	0.5
April 1924 - Sept. 1925	10.3
Sept. 1925 - Sept. 1929	0.2
Sept. 1925 - Dec. 1926	— 2.5
Dec. 1926 - April 1928	3.3
April 1928 - Sept. 1929	— 0.4
Sept. 1929 - Aug. 1933	— 7.9
Sept. 1929 - March 1931	— 4.2
March 1931 - July 1932	—14.3
July 1932 - Aug. 1933	— 4.8
Aug. 1933 - March 1937	14.5
Aug. 1933 - June 1936	16.7
June 1936 - March 1937	6.5
March 1937 - Dec. 1937	— 8.4
Dec. 1937 - June 1939	7.9
June 1939 - June 1942	17.9
June 1942 - June 1946	18.9
June 1942 - Dec. 1943	30.8
Dec. 1943 - June 1946	12.3
June 1946 - April 1953	2.7
June 1946 - Jan. 1948	3.9
Jan. 1948 - Nov. 1949	— 1.2
Nov. 1949 - April 1953	4.3
April 1953 - June 1964	1.8
April 1953 - Dec. 1956	1.8
April 1953 - April 1954	0.3
April 1954 - May 1955	4.3
May 1955 - Dec. 1956	1.1
Dec. 1956 - June 1960	0.7
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

¹ Sources: Basic data for June 1914-Dec. 1946: Milton Friedman and Anna Jacobson Schwartz, *A Monetary History of the United States 1867-1960*, a study by the National Bureau of Economic Research (Princeton: Princeton University Press, 1963), Table A-1, Col. 7.

Basic data for Jan. 1947-June 1964: Board of Governors of the Federal Reserve System.

² Compounded annual rate of change of stock from the initial month to the terminal month of each period.

Table III
TIME DEPOSITS¹

Compounded Annual Rates of Change
(Seasonally Adjusted)

Periods of No Marked and Sustained Changes in Rates of Change (Represented by bars on charts)	Annual Rates of Change ²
June 1914 - June 1964	6.7%
June 1914 - May 1920	15.7
June 1914 - Aug. 1915	7.8
Aug. 1915 - Jan. 1917	25.3
Jan. 1917 - Oct. 1918	6.4
Oct. 1918 - May 1920	24.3
May 1920 - Jan. 1922	1.3
Jan. 1922 - Oct. 1930	6.9
Jan. 1922 - June 1923	15.5
June 1923 - Jan. 1926	8.8
Jan. 1926 - Dec. 1926	3.1
Dec. 1926 - May 1928	9.9
May 1928 - Oct. 1930	— 0-
Oct. 1930 - May 1933	—21.7
May 1933 - Sept. 1937	8.2
May 1933 - May 1935	9.7
May 1935 - Sept. 1937	6.9
Sept. 1937 - April 1942	0.7
Sept. 1937 - Nov. 1938	— 1.1
Nov. 1938 - Oct. 1941	3.0
Oct. 1941 - April 1942	— 7.4
April 1942 - Nov. 1946	18.4
April 1942 - Feb. 1944	14.1
Feb. 1944 - Sept. 1945	28.1
Sept. 1945 - Nov. 1946	12.7
Nov. 1946 - May 1951	2.0
Nov. 1946 - Feb. 1948	4.7
Feb. 1948 - May 1951	0.9
May 1951 - Aug. 1954	8.4
May 1951 - Sept. 1953	7.4
Sept. 1953 - Aug. 1954	10.9
Aug. 1954 - June 1964	9.7
Aug. 1954 - Nov. 1956	3.7
Nov. 1956 - Aug. 1958	13.2
Aug. 1958 - June 1960	2.9
June 1960 - June 1964	14.9

¹ Sources: Basic data for June 1914-Dec. 1946: Friedman and Schwartz, *op. cit.*, Table A-1, Col. 3.

Basic data for Jan. 1946-June 1964: Board of Governors of the Federal Reserve System.

² See footnote 2, Table II.

changes in the rates of change.⁶ These periods are represented by the horizontal bars on the chart. Because of wide, short-run fluctuations in the data, the terminal points selected for periods are somewhat arbitrary. While different analysts might divide the fifty-year span somewhat differently, it is believed that most analysts would find substantially similar periods. The average annual rate of change for each period selected for money is presented in Table II, for time deposits in Table III, and for the sum of money and time deposits in Table IV.

⁶ An alternative method of analysis might consist of detecting periods when rates of change were uniformly increasing or declining.

Table IV
MONEY SUPPLY PLUS TIME DEPOSITS¹

Compounded Annual Rates of Change

(Seasonally Adjusted)

Periods of No Marked and Sustained Changes in Rates of Change (Represented by bars on charts)	Annual Rates of Change ²
June 1914 - June 1964	5.8%
June 1914 - April 1920	14.0
June 1914 - May 1917	14.5
May 1917 - April 1920	13.5
May 1917 - Feb. 1919	10.6
Feb. 1919 - April 1920	18.0
April 1920 - Jan. 1922	— 5.0
Jan. 1922 - April 1930	4.5
Jan. 1922 - Oct. 1925	8.5
Jan. 1922 - Jan. 1923	12.4
Jan. 1923 - Apr. 1924	4.1
Apr. 1924 - Oct. 1925	9.7
Oct. 1925 - April 1930	1.3
Oct. 1925 - Dec. 1926	0.1
Dec. 1926 - Apr. 1928	6.1
Apr. 1928 - Apr. 1930	— 1.0
April 1930 - April 1933	—13.3
April 1930 - July 1931	— 5.9
July 1931 - June 1932	—20.0
June 1932 - April 1933	—16.2
April 1933 - Feb. 1937	11.6
April 1933 - July 1936	12.5
July 1936 - Feb. 1937	6.7
Feb. 1937 - May 1938	— 2.4
May 1938 - June 1942	11.7
June 1942 - Nov. 1945	21.2
June 1942 - Dec. 1943	27.2
Dec. 1943 - Nov. 1945	16.7
Nov. 1945 - Dec. 1952	3.4
Nov. 1945 - July 1947	5.8
July 1947 - Dec. 1949	0.4
Dec. 1949 - Dec. 1952	4.5
Dec. 1952 - June 1964	4.3
Dec. 1952 - April 1954	2.7
April 1954 - Feb. 1955	5.5
Feb. 1955 - June 1960	4.3
Feb. 1955 - Jan. 1958	1.9
Jan. 1958 - May 1959	6.4
May 1959 - June 1960	1.1
June 1960 - June 1964	8.6
June 1960 - April 1962	7.0
April 1962 - Sept. 1962	4.2
Sept. 1962 - June 1964	8.0

¹ Sources: Basic data for June 1914-Dec. 1946: Friedman and Schwartz, *op. cit.*, Table A-1, Col. 8.

Basic data for Jan. 1947-June 1964: Board of Governors of the Federal Reserve System.

² See footnote 2, Table II.

Alternative Measure of the Key Monetary Variable

A basic hypothesis of monetary theory states that an increase in the supply of money, or of some other key monetary variable, relative to the demand for it would result, with some lag, in a rise in spending and economic activity. Accordingly, unless there has been a change in demand, an acceleration in the rate of increase in this key monetary variable would be expected to contribute to a rise in economic activity. Conversely, a reduction in the rate of growth of the stock of this key monetary variable, unmatched by a decline in the demand for it, may cause a decline in business activity.

Experience during the past 50 years indicates that marked and sustained changes in the rates of growth in either money or money plus time deposits have usually been followed by cyclical turning points (note top and bottom tier of chart). This would seem to indicate that increases and decreases in the money supply and money supply plus time deposits have not been matched by corresponding increases and decreases in the demand for them and have contributed to significant corresponding economic expansions and contractions. Since this relation appears to have existed both for money and for money plus time deposits, it would seem that either of these variables may be regarded as "key monetary variables" within the spirit of the hypothesis developed above.

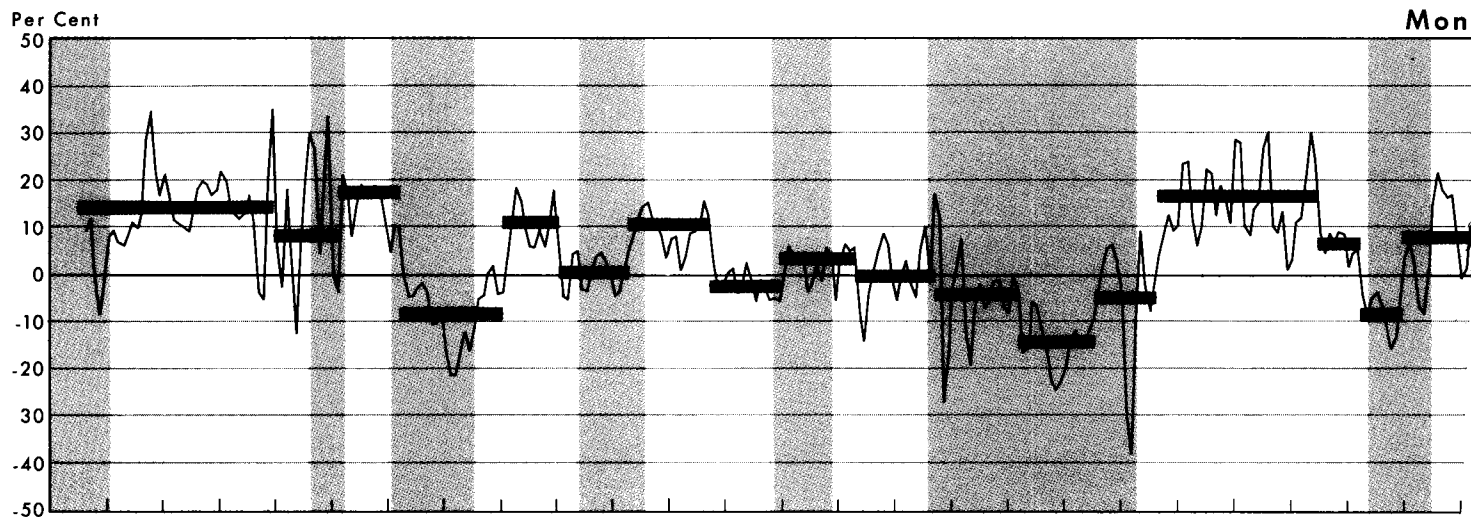
The growth rates of both money and money plus time deposits have generally declined prior to business cycle peaks and have risen before cycle troughs. A comparison of the top tier of the chart with the bottom tier shows that, except for periods of economic reconversion after World War I and World War II, the average rate of change of money declined prior to eight of the nine business cycle peaks while the average rate of growth of money plus time deposits decreased preceding seven of the nine peaks. The average rate of change for both money and money plus time deposits rose prior to seven of the nine cycle troughs.⁷ The hypotheses were violated for both money and money plus time deposits at the January 1920 peak, the July 1921

⁷ In many instances, however, the change in the magnitude of the growth rate of money was quite different from the change for money plus time deposits.

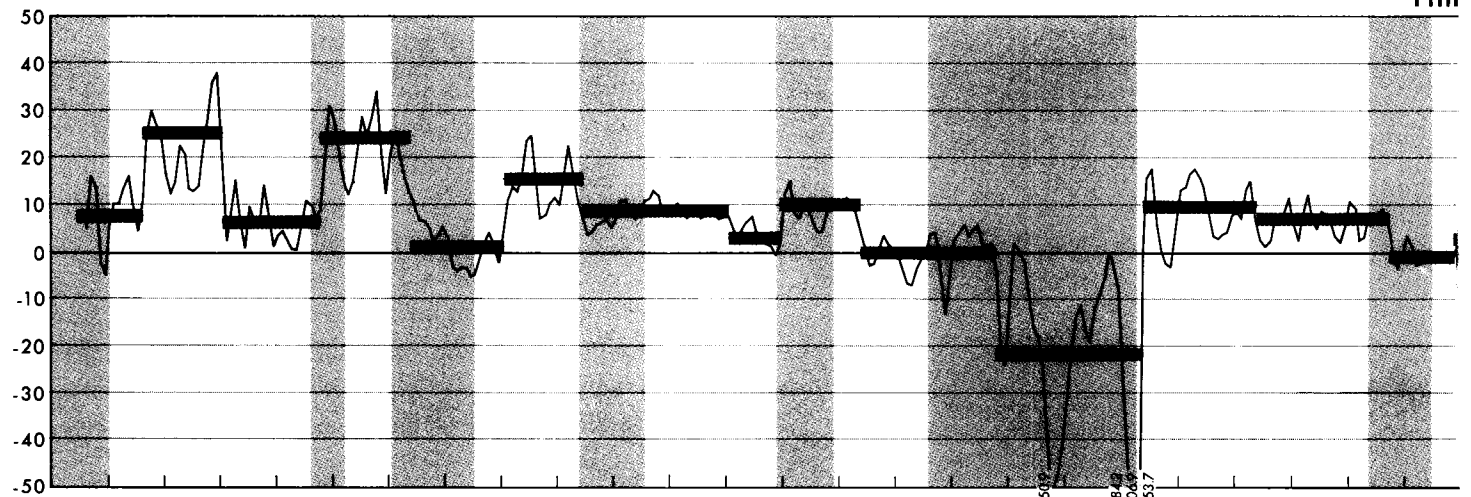
Money Supply and Tin

Annual R

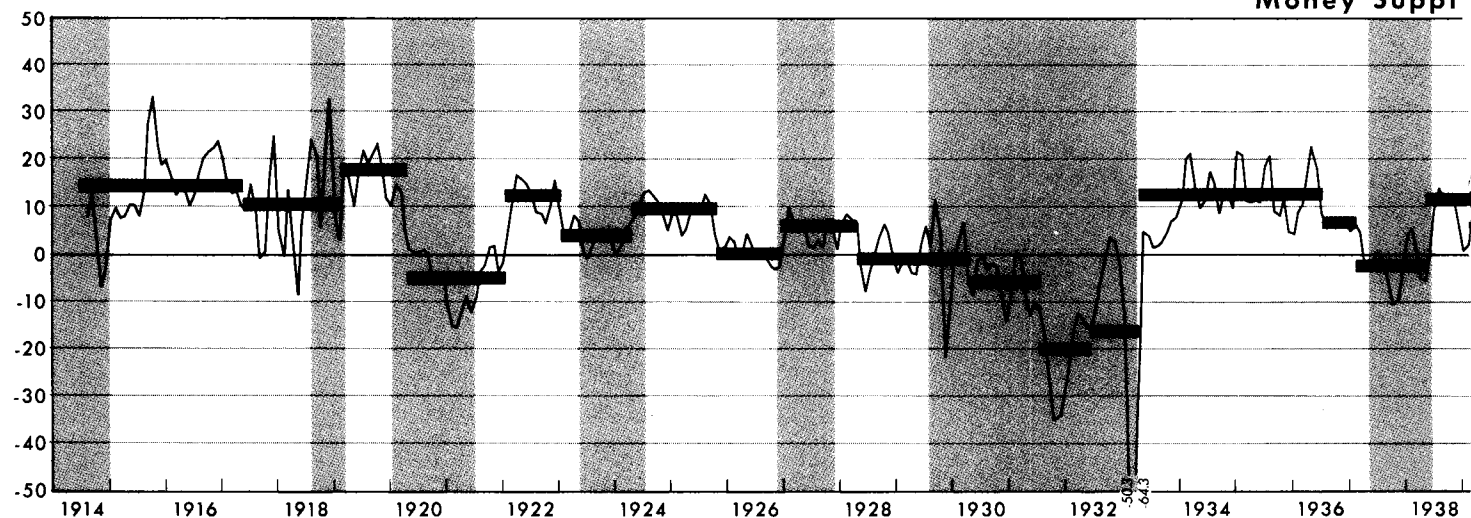
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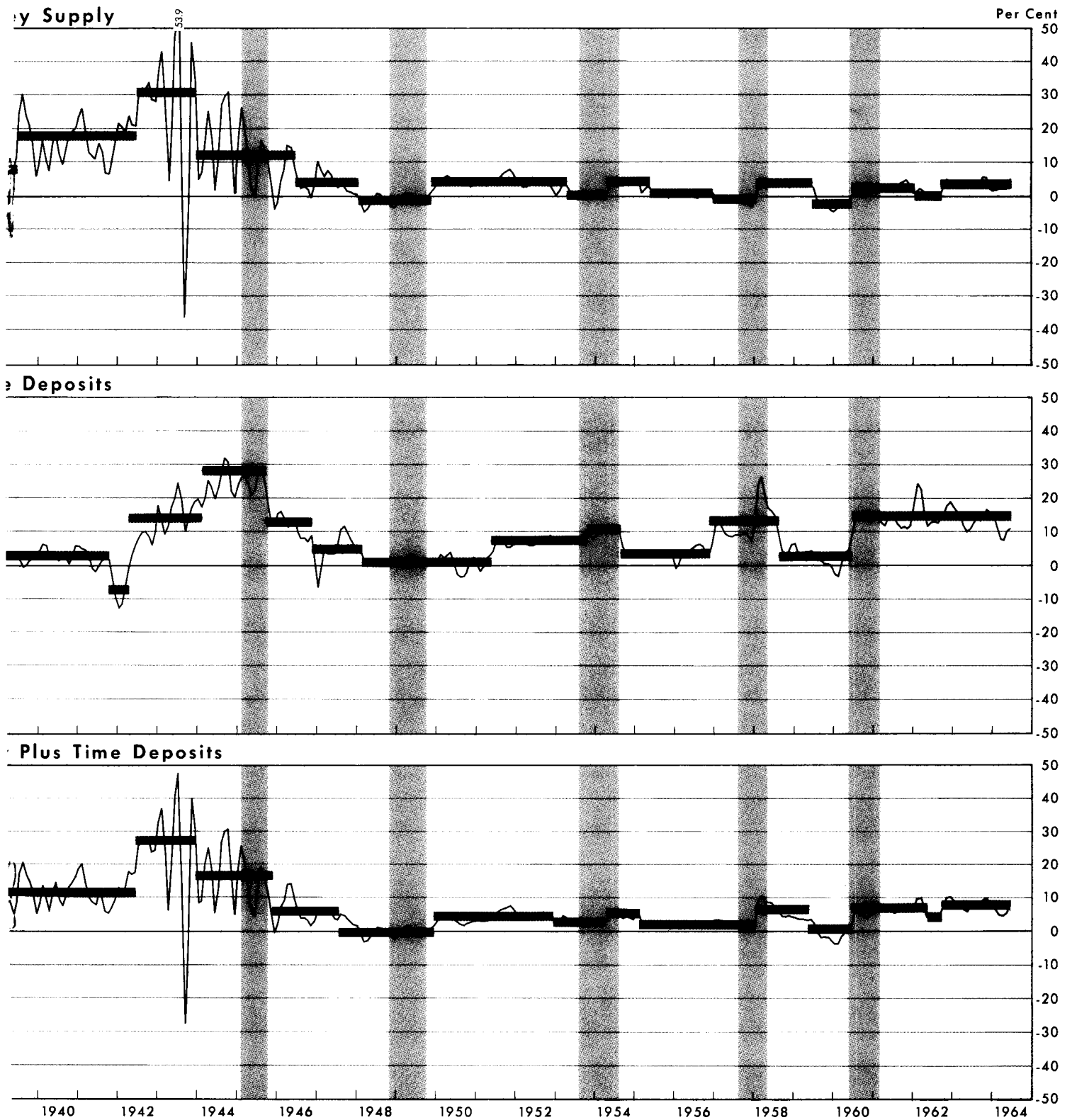
Money Suppl



Three-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 rates of change (data in Tables II to IV). Vertical shaded areas indicate periods of business recessions (data in Table I).

Money Deposits, 1914-1964

Percentages of Change



Data prior to 1947 from *A Monetary History of the United States 1867-1960*, Milton Friedman and Anna Jacobson Schwartz, a study by the National Bureau of Economic Research (Princeton: Princeton University Press, 1963), Table A-1.

Data for 1947 and after from the Board of Governors of the Federal Reserve System.

trough, and the November 1949 trough.⁸ In addition, money plus time deposits did not decline prior to the peak of 1957.

Although movements in money and money plus time deposits were both broadly consistent with the hypothesis relating the key monetary variable to changing economic activity, it should not be concluded that the choice between these alternatives is a matter of complete indifference. It would seem that to use money plus time deposits instead of money as the key monetary variable, movements of time deposits should add to (or, as a minimum condition, not detract from) the precision of relationship with business cycle peaks and troughs. To meet this condition, it would be necessary that movements in time deposits also conform to the hypotheses outlined above.

If the time path of rates of change of time deposits had conformed to the hypotheses, the rates of change would have fallen prior to cycle peaks and would have risen before cycle troughs. However, for the most part, this was not the case. For example, in November 1956, eight months before a business cycle peak, there was an increase, not a decrease, in the rate of growth of time deposits. During the previous recession period (1953-54), the movement of time deposits was also inconsistent with the hypotheses. For more than two years prior to the business cycle peak of July 1953 time deposits rose at an average annual rate of 7.4 per cent. According to the hypotheses, the growth rate should have declined at some time during this period.

Likewise, in the thirty-five years before 1950, the rate of change of time deposits in most instances did

⁸ A careful inspection of the rates of change of money and money plus time deposits shortly preceding the peak of January 1920 shows a decline in the monthly rates of change, although the terminal point chosen for the average rate of change comes later. Similarly, the rates of month-to-month changes began to rise prior to the trough of July 1921.

not decline before a business cycle peak nor rise before a cycle trough. Thus, contrary to the hypotheses, time deposits did not fall prior to the cycle peaks of 1937, 1923, and 1920 nor rise prior to the cycle troughs of 1949, 1933, 1924, and 1921.

Although the rates of change both of money and of money plus time deposits have generally decreased some months before business cycle peaks and have risen before cycle troughs, at certain times the addition of time deposits to money has tended to weaken the observable relationship to economic activity. For example, because of an expansion in the growth rate of time deposits, the average rate of change of money plus time deposits failed to decline preceding the cycle peak of July 1957. Going further into the past, the decline in the rate of change of time deposits in September 1937 resulted in an increase in the rate of change of money plus time deposits one month prior to the cycle trough of June 1938; the growth rate of money rose six months before the trough.

While it is evident that the sum of money and time deposits conforms to the hypotheses relating changes in the key monetary variable to changes in economic activity, it does so because of changes in money and not because of changes in time deposits. Movements of the total of money and time deposits seem to be dominated by movements of the money supply. Adding time deposits to money does not appear to fashion a variable which is more closely related to business cycle peaks and troughs but simply creates the possibility of obscuring the relationship between monetary action and economic activity. In view of the rapid growth of time deposits relative to demand deposits, the relationship between changes in the growth rates of money plus time deposits and cyclical turning points may be less in the future than in the past.

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Per Capita Income of the Farm Population

PER CAPITA PERSONAL INCOME of the farm population averaged \$1,425 per year in the three years 1961-1963 or less than two-thirds that of the nonfarm population. The real income difference, however, may be considerably less than is indicated by the personal income data after allowance is made for full retail value of goods and services produced on the farm and used in the household, differences in cost of purchased items, capital accumulations, and differences in the level of education.

Farm Income Compared to Nonfarm Income

Per capita personal income of the farm population rose from a yearly average of \$211 in 1934-36 to \$1,425 in 1961-63.¹ The increase has resulted from gains in total personal income and a persistent decline in the farm population. Total annual personal income of the farm population rose from an average of \$6.8 billion in 1934-36 to \$20.1 billion in 1961-63. Income from farm sources rose from \$4.4 billion to \$13.2 billion, while that from nonfarm sources rose from \$2.4 billion to \$7.0 billion. The farm population declined from 32.1 million to 14.2 million during the period (Chart 1).

¹ 1934 is the earliest date for which comparable data are available.

In comparison, the average per capita income of the nonfarm population rose from \$567 in 1934-36 to \$2,437 in 1961-63. Total nonfarm personal income rose from an average per year of \$54.0 billion to \$418.2 billion, an increase of almost eight fold. The per capita gain, however, was only about four fold as the nonfarm population almost doubled, rising from 95 million to 172 million.

In terms of average annual rate of increase, per capita personal income of farm people grew faster (8.2 per cent) than that of nonfarm people (6.2 per cent) during the three decades 1934 through 1963 (Chart 2). Per capita farm income increased from 32 per cent of nonfarm income in 1934 to 55 per cent in 1963 (trend line basis). If these trends continue, farm to nonfarm income will rise about two percentage points during the next decade (Chart 3, next page).

Although per capita farm income during the past three decades has risen faster than nonfarm income, the difference in average incomes of the two groups has widened in absolute dollar amounts. Nonfarm incomes averaged \$356 per year more than farm incomes in 1934-36. By 1961-63, nonfarm incomes were \$1,012 more than farm incomes.

Chart 1

Farm Population and Farm Employment

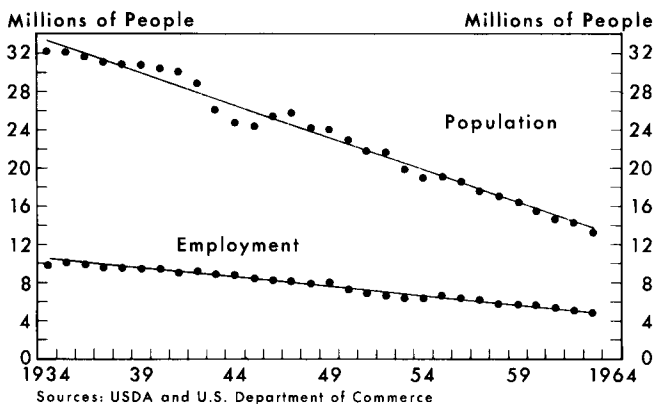
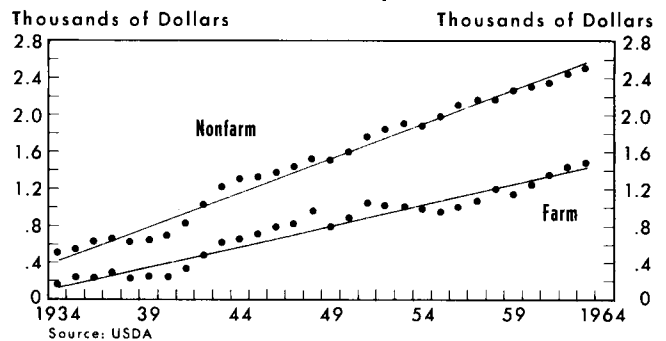


Chart 2

Per Capita Personal Income of Farm and Nonfarm Populations



Income Comparison Problems

The use of personal income data as a means for measuring relative real income in the farm and non-farm sectors has been questioned on the basis of methods used in calculating income estimates and of differences in welfare provided by a given level of income.

Assigning Values to Noncash Income

In determining current returns to farm people, values are assigned to home-produced food and fuel consumed in the household and the use of farm dwellings. Estimates of the value of food and fuel are made on the basis of prices received by farmers for similar items. Such prices are well below retail prices paid by urban consumers. In recent years the use of retail prices would have more than doubled the value of home consumption on farms, which averaged about \$75 per person in 1963.

In recent years the average rental value assigned to farm dwellings has been roughly \$25 per month per family, or about a third the average rent paid by nonfarm people.² There is some question, however, as to what extent this difference in rent is a real price differential and to what extent a difference in quality of housing in the two sectors. Census data tend to indicate that at least part of the rental difference is related to differences in quality. For example, in 1960,

² Rental values are assigned to both farm and nonfarm houses which are occupied by owners or by others who are not charged a specific cash rental for their home.

91 per cent of urban houses had bathrooms compared to 65 per cent in rural areas. After making due allowance for lower quality, however, rental values assigned to farm dwellings appear to be lower than those assigned to nonfarm homes.

Purchasing Power of Farm Dollars

The level of prices paid by farm people for family living items is probably lower than that paid for the same items by the nonfarm population. One study has indicated that retail prices in the city averaged about 10 per cent higher than in the country.³ In addition, costs incidental to earning an income such as travel to and from work, parking fees, meals, and clothes may be greater for the nonfarm sector.

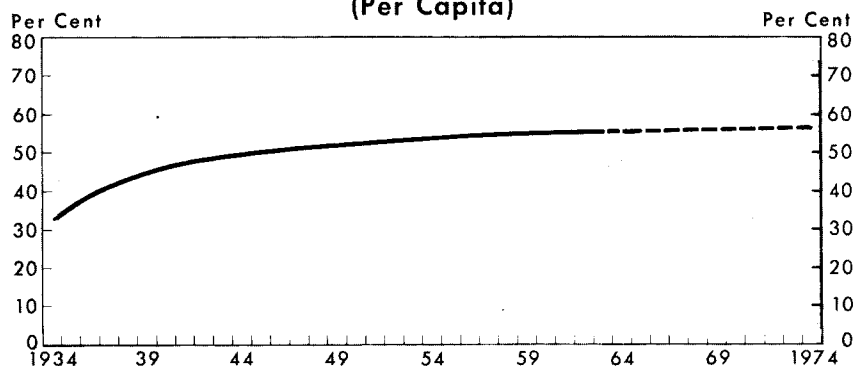
Opportunity to Accumulate Capital

In addition to problems of comparing current income, the ability to accumulate greater assets in agriculture is apparently an important factor in determining real income and welfare over the long run. Despite the lower personal incomes in agriculture, a large proportion of farm operators manage to accumulate substantial assets. A study by the National Bureau of Economic Research found that only two of nine major occupational groups, namely, the self-employed and managerial, had surpassed farmers in the accum-

³ *Major Statistical Series of the U. S. Department of Agriculture, How They Are Constructed*, Volume 3, 1958, p. 9.

Chart 3

Farm Income as Per Cent of Nonfarm Income
(Per Capita)



THE TREND LINE equation for the per capita income of farm population is $Y=101+44x$ where x is the number of years beginning with 1934=1. The trend line for the income of the nonfarm population is given by the equation $Z=375+73x$. The income of the farm population as a per cent of that of the nonfarm population is $\frac{Y}{Z}(100\%) = \frac{101+44x(100\%)}{375+73x}$. The rate of change at any year is found by evaluating the derivative
$$\frac{d\left(\frac{Y}{Z}\right)}{dx} = \frac{9127(100)}{(375+73x)^2}$$

ulation of assets as of 1950 (Table I). Since farm debt was less than 10 per cent of assets at that time, farm

Table I
Distribution of Spending Units by Total Assets Within Occupational Groups, 1950

Occupational group	Total Assets		
	0-\$2,000 (Per cent)	\$2,000-\$10,000 (Per cent)	\$10,000 & over (Per cent)
Professional and semiprofessional	20	38	42
Managerial	8	33	59
Self-employed	5	22	73
Clerical and sales	40	35	25
Skilled and semiskilled	37	39	24
Unskilled and service	56	31	13
Farm operator	15	33	52
Retired	27	21	52
All other	51	31	18
All spending units	35	32	33

Source: Lippman, Robert J. *The Share of Top Wealth-Holders in National Wealth. A Study by the National Bureau of Economic Research*, Princeton University Press, 1962, p. 134.

operators apparently had higher net worths than most other groups. This ability to accumulate substantial net worth in relation to income is largely the result of capital gains which are not included in income. Such capital gains are, however, an important factor and should be considered in a comparison of real income in agriculture with that of the nonfarm population.

Educational Levels a Factor

A substantial portion of the farm-nonfarm personal income differential apparently can be attributed to differences in the educational levels of labor in the two groups. In March 1959 the median number of school years completed by rural farm people twenty-five years old and over in the nation was 8.7 years.⁴ In comparison, the median for urban people in this age group was 11.4 years, or 2.7 years more of school work than was attained by farm people.

Since the average educational level of farm labor is below that of nonfarm labor, higher returns in the nonfarm sector would be expected in a free competitive labor market.⁵ Within each sector a higher level of education and skills would be expected to earn higher incomes. Indicative of this association of education and earnings are the findings of a recent study as shown in Table II. The data indicate that farm wage earners who completed nine or more years of school earned about \$450 per year more than those

⁴ Bureau of the Census, *Current Population Reports, Population Characteristics*, Series P-20, No. 99, February 4, 1960, p. 5.

⁵ Both farm and nonfarm workers receive on-the-job training.

who had completed only five to eight years. The same study indicated a strong relationship between income and years of school completed for all full-time male employees 35 to 54 years old (Table III).

Table II
Average Wages Earned at Farm Work by Male Household Heads in 1960 by Years of School Completed

Years of school completed	Thousands of workers	Day's farm wage work per worker	Wages earned at farm work	
			Per year	Per day worked
0-4	223	181	925	5.10
5-8	392	193	1,432	7.40
9 and over	243	191	1,882	9.85

Source: USDA, *Agricultural Information Bulletin No. 262*, 1962. Includes only those household heads who did twenty-five days or more of farm wage work during the year.

Table III
Median of School Years Completed by Income Groups Of Men 35 to 54 Years Old Who Were Year-Round Full-Time Workers

United States: March 1957

Total money income	Per cent	Median school years completed
All income groups	100.0	11.3
Under \$2,000	9.3	8.3
\$2,000 to \$3,999	23.4	8.8
\$4,000 to \$5,999	38.1	11.2
\$6,000 to \$7,999	16.9	12.4
\$8,000 and over	12.2	13.0

Source: Bureau of the Census, *Current Population Reports, Population Characteristics*, Series P-20, No. 99, February 4, 1960, p. 6.

Labor Adjustments Reduce Income Difference

After allowances are made for all the above factors, still a difference in farm and nonfarm real income apparently exists and will probably continue to exist for many years. This raises questions as to why so many people remain on farms. Many farmers could enhance their incomes substantially by shifting from farm to nonfarm employment. Such a process tends to raise the incomes of those remaining in agriculture. A reduction in the farm labor force tends to reduce production of farm commodities; the reduced supply will generally bring sufficiently higher prices to more than offset the smaller quantity, thus increasing income to the industry.⁶ With the smaller work force, a greater total income would be distributed among fewer people, resulting in higher per capita returns.⁷

⁶ If a reduction in farm labor is accompanied by an increase in capital, however, an increase in output may result. This has occurred during the past several decades.

⁷ It is probable that those leaving the farms will be in the lower income group, thus minimizing the impact on increased per capita income.

The failure of real income in agriculture to approach that in the nonfarm sector is attributed to the immobility of farm labor. Reasons given for this failure of labor resources to adjust at a faster rate are: (a) farmers may lack knowledge of higher paying employment opportunities in the nonfarm sector; (b) most nonfarm employment opportunities require specialized skills or professional training which farmers generally do not possess; (c) many farm people are satisfied with the greater independence and opportunities for recreation characteristic of farm life. The continuing real difference between average incomes of farm and nonfarm workers is operating to allocate our labor force more efficiently. This is indicated by the fact that labor in agriculture declined at the annual rate of 3 per cent from 1958 to 1963, while nonfarm employment rose at the annual rate of 2 per cent.

Summary

Although the stated per capita personal income of farm people in recent years has been about 60 per

cent of that of nonfarm people, the difference in real income may be considerably less. Part of the difference in the nominal incomes results from the fact that personal income data for farm people understates their real incomes. Furthermore, the difference of about three years in average educational levels of the two population groups may account for a large part of their income difference. A more precise evaluation of returns to labor would involve a comparison of farm and nonfarm workers having equal educational levels. A comparison of the welfare levels of the farm and nonfarm populations of the same educational status might show less difference than the average per capita personal income figures indicate.

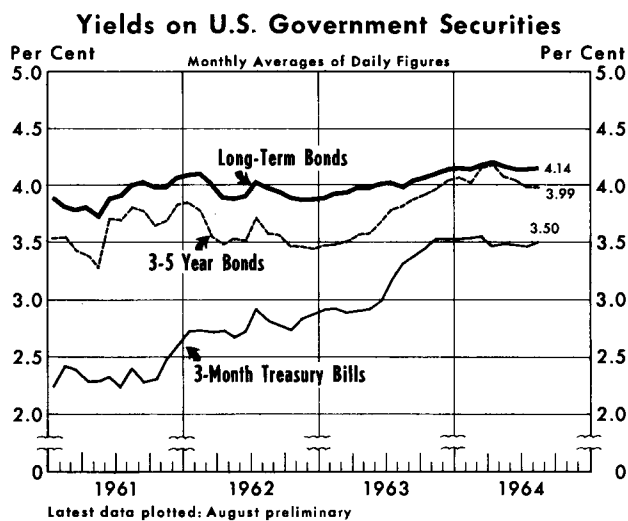
A real difference in income, which is effective in allocating our labor force more efficiently, is indicated by the steady decline in the size of the farm labor force.

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reflected an advance in the rate of expansion in member bank reserves. During this period, total reserves rose at a 5.2 per cent annual rate compared with a 4.1 per cent rate from November 1963 to May. Reserves available for private demand deposits rose at a 7.4 per cent rate from May to the month ending August 15, after decreasing slightly during the previous six months.

money and bank reserves over the summer months. Yields on Government securities remained near the levels reached late last year.



Interest rates have remained about unchanged. Apparently effects of increased demand for loan funds have been offset by the relatively rapid expansion in

New Member Banks

The First National Bank of Jacksonville, Jacksonville, Illinois, opened for business on August 14 with capital of \$150,000 and surplus of \$100,000. The bank's officers are: Theodore C. Rammelkamp, President; James C. Coultas, Vice President; Paul E. Utterback, Executive Vice President and Cashier; and William H. Etherton, Assistant Cashier.

* * *

The First National Bank of Pulaski County, St. Robert, Missouri, opened for business on August 15. The bank has capital of \$150,000 and surplus of \$100,000. Its officers are V. L. Long, President, and Ardo Roberts, Executive Vice President and Cashier.

* * *

The First National Bank of Poplar Bluff, Poplar Bluff, Missouri, opened for business on August 29. The bank's capitalization consists of capital of \$350,000 and surplus of \$140,000. Its officers are: Robert A. Seifert, President and Acting Chairman of the Board; George E. Spaeth, Executive Vice President and Secretary; K. Q. Lewis, First Vice President; Syl Resnik, Second Vice President; and Robert O. Trout, Cashier.