

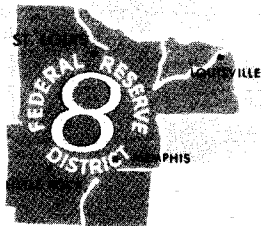
October 1965

# FEDERAL RESERVE BANK OF ST. LOUIS

# Review

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Volume 47 • Number 10

FEDERAL RESERVE BANK  
OF ST. LOUIS

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

## *Fiscal Ease and Monetary Growth*

**T**HE ECONOMY has continued to expand through the summer and early fall and is operating at a high level. Monetary growth has continued at a moderate pace, while the fiscal situation has become more expansionary. These developments promise further stimulation of aggregate demand for goods and services.

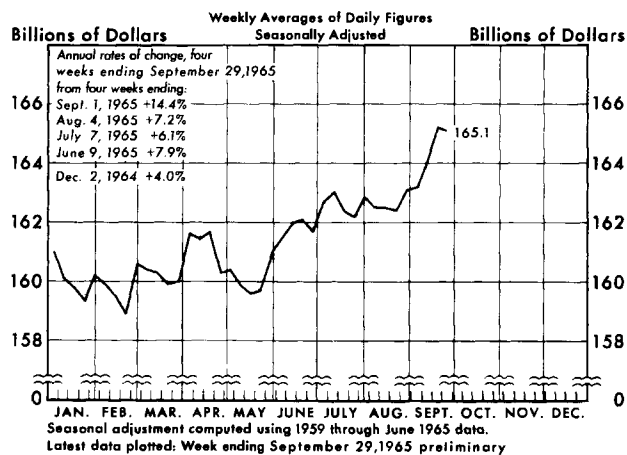
Increased Federal borrowing and expanding business activity appear to be putting upward pressures on interest rates. Rising interest rates may be helping both to bring about balance between domestic saving and investment without inflationary pressures and to restrain net capital outflows, one of the causes of a chronic deficit in the balance of payments.

### *Monetary Developments*

Money supply growth accelerated in September, after being moderate since last winter. Bank credit has continued to expand rapidly through the summer and early fall but at a more moderate rate than during last winter. Total reserves of member banks have changed little on balance since spring, and interest rates have risen.

The money supply increased markedly from August to September, after growing at a 3 per cent annual rate from last November to August. Comparatively, the money supply increased at a 4 per cent rate from September 1962 to November 1964 and at a 2 per cent average annual rate from 1951 to 1962.

## Money Supply



This year the money supply has been influenced by large shifts between Government demand deposits (not a component of the money supply) and private demand deposits (the major component of the money supply). A large build-up in Government deposits in May depressed the money supply in that month. A large reduction in Government deposits in August and September was a factor tending to increase the money supply.

Bank credit expansion moderated after April as a rapid growth in higher yielding bank loans and holdings of "other" securities (mainly municipals) was financed partly by substantial decreases in the holdings of Government securities. Bank credit increased at a 9 per cent annual rate from April to September, compared with a 12 per cent rate from November to April and a 5 per cent rate since 1948.

Total reserves of member banks, which support bank deposits and make bank credit expansion possible, increased steadily from January to June and subsequently declined slightly. These reserves averaged \$21.8 billion in September, little changed from their April level. Since April large net purchases of Government securities by the Federal Reserve, which add to bank reserves, have been offset by gold sales abroad and increases in currency in circulation. Member bank borrowing from Federal Reserve Banks has averaged about \$540 million since June, up from an average \$420 million earlier this year. This greater borrowing probably reflects the decline in nonborrowed reserves, strong credit demands, and an edging up in interest rates.

Despite little change in total reserves since April, reserves available for private demand deposits have risen moderately. A decline in U. S. Government deposits and therefore a drop in the amount of reserves required to support these deposits provided reserves for private deposits.

Interest rates have risen gradually since June, reflecting an increase in the demand for funds relative to the supply. Yields on long-term U. S. Government securities rose from 4.15 per cent in early July to 4.25 per cent in late September, after remaining almost unchanged earlier this year. During the same period yields on corporate Aaa bonds moved up from 4.46 per cent to 4.52 per cent. The three-month Treasury bill rate rose from 3.81 per cent in early July to 3.94 per cent in late September.

Demand for funds has increased as fiscal developments have turned more stimulative and as business has turned to outside sources to a greater extent in obtaining funds to finance inventory growth and large plant and equipment expenditures.<sup>1</sup> Public offerings of securities have risen to finance the Federal deficit and increased expenditures by state and local governments. On the supply side, bank credit expansion has moderated, and the flow of saving has probably not grown so fast as the demand for investment funds.<sup>2</sup> The voluntary restriction of loans to foreigners has been a factor in keeping loanable funds at home and may have kept interest rates from rising further.

A rise in interest rates is appropriate for an advancing economy operating near capacity and experiencing an outflow of private capital which is causing a balance-of-payments problem. The higher rates not only reflect the tendency for planned investment to outpace desired saving, but they also provide the means for balancing these two flows without inflationary pressures. A rise in rates—both short-term and long-term—also encourages capital flows into the United States from abroad or reduces capital outflows. Interest rates in the United States remain below those of most other countries.

### Fiscal Position

Government actions have become more expansionary than earlier this year. The "full employment surplus" has been reduced from a \$7 billion annual rate in the first half to an estimated \$3 billion rate in the second half. Barring any large changes in Government expenditures or in tax rates, fiscal developments

<sup>1</sup>Business expenditures on plant and equipment are expected to rise to a \$53.0 billion annual rate in the fourth quarter, up from an estimated \$51.2 billion rate in the third quarter and a \$50.4 billion rate in the second quarter.

<sup>2</sup>Gross private saving—including personal saving, undistributed corporate profits, capital consumption allowances, and inventory valuation adjustments—fell from the first to the second quarter of this year. Personal saving as a per cent of disposable income was 5 per cent in the second quarter, compared with a 6 per cent average since 1954.

are apt to become less expansionary in the first half of 1966, when higher social security taxes will more than offset additional decreases in excise taxes.

For purposes of determining the impact of the budget on the economy, it is desirable to separate the effects of changed tax rates, Government expenditure programs, and other actions of the Government affecting the budget from the effect on the budget of changing levels of economic activity. The "full employment budget" provides an estimate of what Government surplus or deficit would occur if the economy were at full employment, given the prevailing set of tax rates and spending programs. It indicates the net effects of Government actions such as changes in tax rates and Federal expenditure programs by assuming a certain level of economic activity, namely, full employment; it abstracts from influences on the budget which result from fluctuations in economic activity and isolates and measures effects of changes in policy. Fiscal developments are said to be more expansionary the smaller the full employment surplus or the greater the full employment deficit.

### ***The Economy***

The appropriateness of any combination of monetary and fiscal policy can be judged by reference to levels of production, employment, prices, and the condition of the balance of payments.

The level of economic activity has continued to increase during the late summer and early fall. The U. S. balance of payments has continued to be basically a deficit problem, though there was a surplus in the second quarter of the year.

Industrial production, buoyed by high retail sales, rising defense expenditures, and large investment in plant and equipment, rose rapidly during the spring and midsummer but increased little from July to August as steel production declined. After increasing at an 8 per cent annual rate from January to July, production rose at a 1.7 per cent rate from July to August. Preliminary data suggests that production changed little from August to September. By comparison, industrial production has risen at a 5 per cent rate since 1960. The large expenditures on plant and equipment, while helping to lift the economy toward capacity this year, will add significantly to future capacity.

The rapid increase in production this year has not only maintained but substantially increased inventories in the face of increased sales. The inventories of

all businesses rose to \$116 billion in July, up \$0.8 billion from June and \$5 billion from last December. Inventory build-up was especially strong in steel, where users increased inventories from about 11 million tons at the turn of the year to over 17 million tons in August. It has been estimated that steel inventories will decline at a \$2 billion annual rate during the fourth quarter.<sup>3</sup> However, inventories in general do not appear excessive relative to current sales and new and unfilled orders.

Use of the labor force has intensified rapidly during the past year. Payroll employment is estimated to have grown 4 per cent, and total civilian employment, 3 per cent since last August. During the same time period the number of persons of approximate working age (18 to 64) is estimated to have increased 1.9 per cent.

Wholesale and consumer prices have leveled off since June, after rising rapidly earlier this year. From January to June wholesale prices rose at a 4.3 per cent annual rate, accelerating a rise which began in mid-1964. Increases in the prices of farm products and processed foods were primarily responsible for the wholesale price rise earlier this year, but industrial prices also rose. Since June a decline in the prices of farm products has offset a slight rise in industrial and processed food prices. Consumer prices rose at a 2.7 per cent annual rate from January to June but have been about unchanged since midyear as food costs have leveled and declines in the prices of nonfood commodities have offset increases in the price of services. Recent declines in durable goods prices reflect cuts in excise taxes.

### ***Conclusion***

The economy continues to advance and is using its resources more fully than in recent years. Reflecting a leveling off of the prices of farm products and the reductions in excise taxes, there has been a pause in the rise of the general price indexes, which was so marked last spring. In this context, monetary developments have continued moderately expansionary, and the fiscal situation has become more stimulative. Increasing interest rates accompanying these developments may be beneficial in curbing capital outflows and in bringing about balance between saving and investment.

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<sup>3</sup>Gardner Ackley, Chairman of the Council of Economic Advisers, in a speech before the American Statistical Association in Philadelphia on September 9, 1965.

# Interest Rates, 1914-1965

## Introduction

**I**NTEREST RATES play a strategic role in the economy. They represent a cost to the borrower and, as such, may influence decisions to invest or to spend on goods or services. They represent a return to the saver and may influence saving decisions. To wealth holders and to managers of investment flows, interest rates or yields are the common denominator for evaluating alternative forms of holding wealth and alternative avenues for placing funds.

Interest rates are believed to have an effect on economic activity. Other things equal, a rise in interest rates has a dampening effect on investment decisions and increases the incentive to save. Conversely, a decline in interest rates is usually interpreted as expansionary.

There is a great deal of uncertainty concerning what causes interest rates to be what they are. A most popular interpretation emphasizes the role of changes in the supply of and demand for credit in various markets. There are questions, however, about why interest rates in general reach the level they do. Issues such as the role of productivity of capital as a basic determinant of rates, the impact of fiscal actions of the Government on rates, and the influence of rates in one country on those in another have not been resolved. There are also unanswered questions concerning why debt instruments of different maturities have different interest rates.

In addition to the other forces bearing on interest rates, it is widely agreed that monetary actions have an influence. Transactions in the Government securities market are a chief means by which the Federal Reserve System conducts monetary policy.<sup>1</sup> These transactions directly affect the prices—and, hence, the yields or interest rates—of the securities bought or sold. They also affect interest rates through their impact on

<sup>1</sup>These transactions, called “open market operations,” add to or reduce member bank reserves and have a major impact on the money supply and interest rates. See Chapters III and IV of *The Federal Reserve System: Purposes and Functions* (5th ed., Washington, D. C.: Board of Governors of the Federal Reserve System, 1963), which discuss instruments of monetary regulation and the function of bank reserves.

commercial bank credit expansion or contraction.<sup>2</sup> Indirectly, transactions in the Government securities market influence the prices, or interest rates, on virtually all marketable securities. Other monetary actions, e.g., changes in reserve requirements and in the discount rate, also have an effect on interest rates.

Because of the role interest rates play in our economic system and because System actions play a part in interest rate behavior, levels and changes in interest rates have been used as a convenient measure of monetary actions. When interest rates are high and rising, analysts using this measure describe monetary policy as restrictive; when rates are low and declining, they say policy is easy.

The following discussion and accompanying chart (see pages 6 and 7) summarize movements in interest rates on marketable securities since the Federal Reserve System began operations in 1914. From the host of available market rates, a major money market rate (four- to six-month prime commercial paper until 1937 and three-month Treasury bills thereafter) and a leading capital market rate (highest grade railway bonds until December 1919 and highest grade corporate bonds thereafter) have been selected. Although other rates give somewhat different results, these probably were typical of rates in the short-term and long-term markets.

This discussion is intended as a short resume of background information on this key financial variable,<sup>3</sup> tracing the course of interest rates since 1914 and noting some of the chief economic developments which may have had an influence on rates. Although the analysis is not designed to form the basis for conclusions regarding the proper level of interest rates or the desirability of using interest rates as a guide for

<sup>2</sup>Open market transactions add to or absorb member bank reserves, which affect the volume of commercial bank credit, bank deposits, money supply, and other financial variables. The main effect of System actions on interest rates may not be through the increase or reduction of Federal Reserve assets but through the resultant increase or decrease of assets held by the commercial banks.

<sup>3</sup>For a detailed examination of rates covering a much longer time span, see Sidney Homer, *A History of Interest Rates* (New Brunswick, N. J.: Rutgers University Press, 1963).

future public policy, such a review does provide background for these important issues.

This 50-year period may be divided roughly into three parts: before 1930, when interest rates on highest grade securities averaged about 5 per cent; 1930 to 1946, when, in the depression of the 1930's and in World War II, interest rates were low; and since 1946, when interest rates have generally worked higher. Today, both short- and long-term rates are still much lower than in some extensive earlier periods and are somewhat below the average levels of 1914 through 1929. Short-term rates averaged about the same as long-term rates during the 1914-29 period. In recent months short-term rates have been only slightly below long-term rates.

## The Course of Interest Rates

### *World War I*

During 1913 and 1914 the economy was in recession, and, although there was some quickening of activity during 1915, the average level of output during that year was only slightly changed from the previous two years. From early 1914 to November 1915 short-term interest rates declined, except for a period of uncertainty and tension in the summer and early fall of 1914, at the outbreak of World War I. The yield on prime four- to six-month commercial paper decreased from roughly 4.50 per cent in early 1914 to 3.45 per cent in November 1915. The yield on highest grade railroad bonds showed little net change during this period, averaging about 4.50 per cent.

From the end of 1915 to the late summer of 1918 a large volume of European securities were sold here, and the U. S. Government borrowed heavily. Economic activity, stimulated by a strong wartime demand for goods, rose vigorously. Reflecting these developments, interest rates increased, particularly during 1917. Yields on commercial paper jumped from 3.45 per cent in November 1915 to 6.22 per cent in August 1918. Rates on railroad bonds went up from about 4.50 per cent in late 1915 and 1916 to 5.41 per cent in September 1918.

Immediately after the war interest rates declined. Short-term rates decreased about one percentage point from August 1918 to May 1919, and long-term rates moved down about one-half of one percentage point in late 1918. During this period demand for credit slackened, and economic activity was either slowing or at a reduced level as the war drew to a close.

### *The Twenties*

Economic activity rose during most of 1919, and interest rates moved up moderately. They continued

to rise in the first half of 1920, reaching record levels. Demands for credit may have slackened somewhat with the start of the 1920-21 recession, but, if so, the decreases were more than matched by declines in the supply of funds, since bank credit, bank deposits, and money grew at a slower rate.<sup>4</sup> By July 1920 interest rates on commercial paper averaged 8.13 per cent and on highest grade corporate bonds averaged 6.34 per cent.

The 1920-21 recession was particularly severe. In late 1920 short-term rates remained relatively high; an apparent slackening in the demand for credit was nearly matched by a contraction in outstanding commercial bank credit. Interest rates declined markedly during 1921 and drifted still lower in the first half of 1922. Commercial paper, which was yielding 8.13 per cent in the fall of 1920, was bringing only 4.13 per cent in the late summer of 1922. Interest rates on corporate bonds fell from 6.34 per cent to 4.93 per cent.

On balance, from the early twenties to the end of 1927 interest rates declined, even though corporations, real estate owners, and state and local governments were large net borrowers. There was a large volume of saving, but part of the explanation for the downward drift in rates may have been in the mix of public policy actions adopted. The Federal Government was operating at a surplus and retiring debt, and there was a rapid expansion of bank credit and money during much of this period.

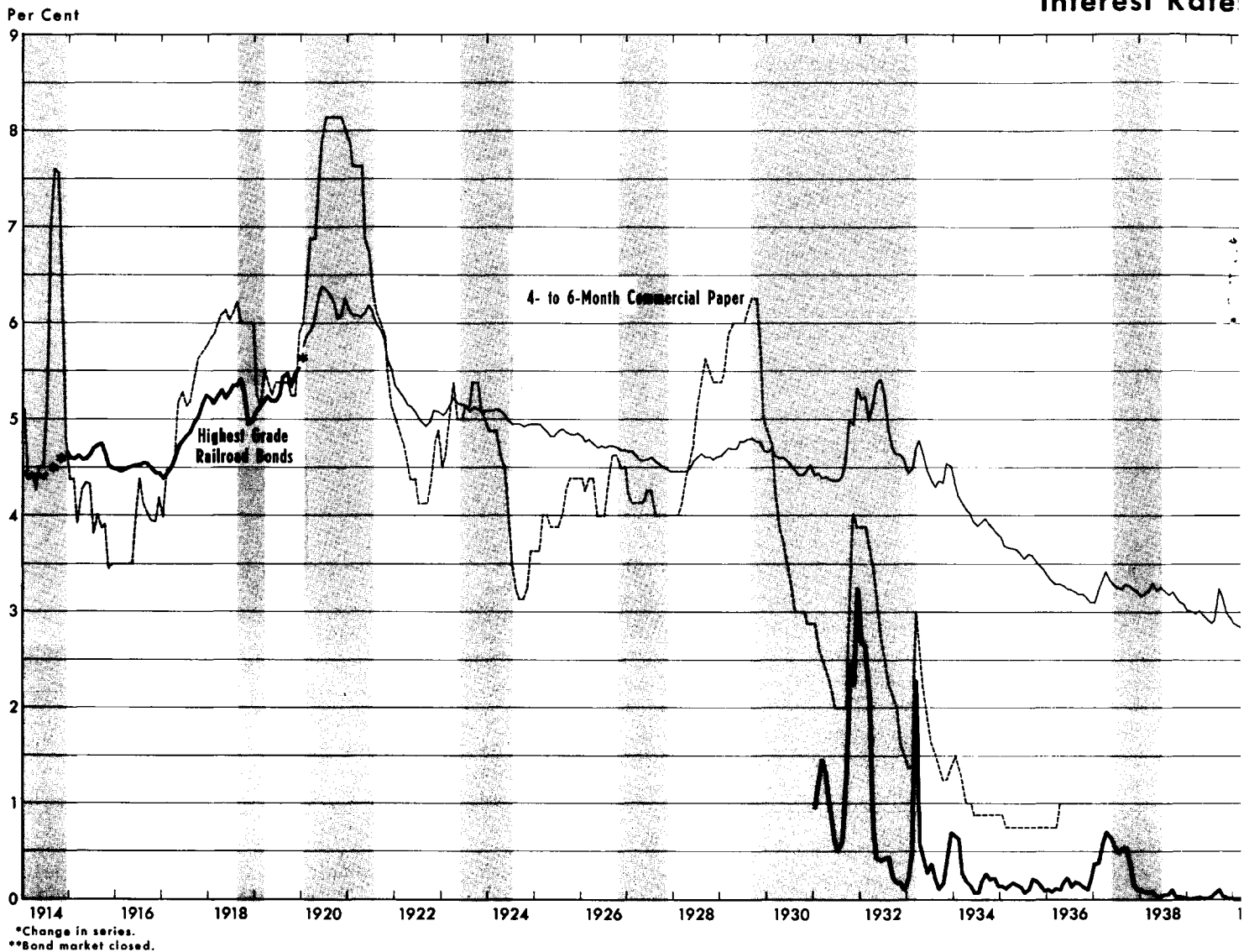
During the economic boom lasting from the fall of 1927 to the fall of 1929, interest rates again moved higher. Yields on four- to six-month commercial paper rose from 4.00 per cent to 6.25 per cent, and interest rates on highest grade corporate bonds increased from 4.50 per cent to 4.80 per cent.

### *The Depression*

In the initial stages of the great depression, beginning in late 1929, interest rates declined. From a level of 6.25 per cent in the fall of 1929, commercial paper yields dropped to 2.00 per cent in the summer and early fall of 1931. Likewise, highest grade corporate bond yields decreased, from 4.80 per cent to 4.36 per cent.

Despite the continued contraction in economic activity, interest rates rose markedly in late 1931. Foreign crises and devaluations, the large number of bank

<sup>4</sup>An examination of the rates of change in money since 1914 is presented in this Bank's September 1964 *Review* in an article entitled "Money Supply and Time Deposits, 1914-1964."



failures, and distrust of the dollar brought a large gold outflow. The Federal Reserve met this crisis in the traditional fashion by taking actions designed to raise interest rates.<sup>5</sup> Short-term rates doubled to a level of 4.00 per cent, and long-term rates went up about 1 percentage point to 5.32 per cent.

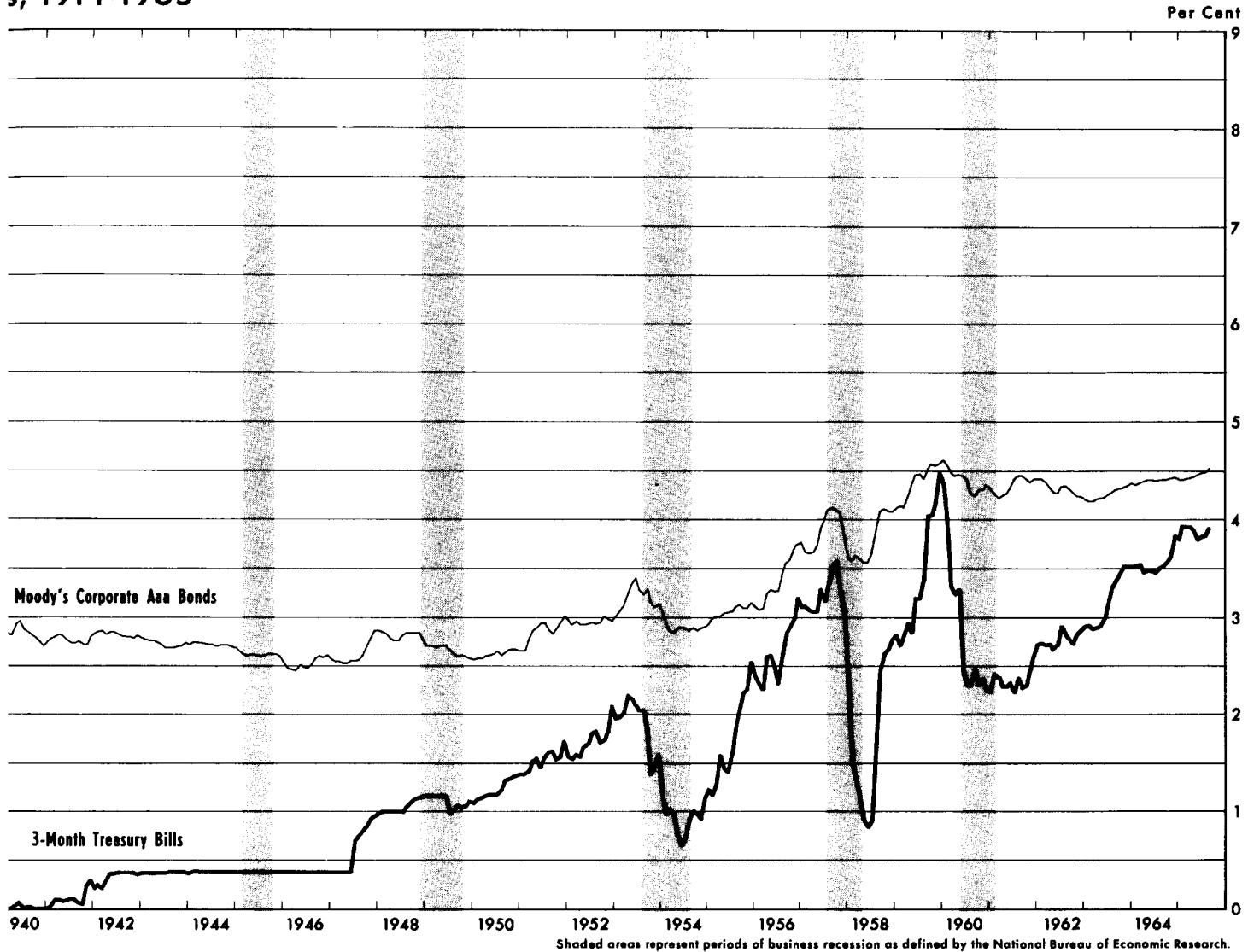
Except for another sharp jump for a brief period around the "bank holiday" in early 1933, interest rates generally worked lower until early 1937. The supply of short-term Government securities and other high-grade money market paper was severely limited. By early 1937 prime commercial paper was yielding only 0.75 per cent, and highest grade corporate bonds were

bringing 3.10 per cent. During the first quarter of 1937 interest rates jumped higher briefly but declined late in the year (during the 1937-38 recession) and continued at an unusually low level until early 1941.

### *World War II and the Immediate Postwar Period*

During 1941 and early 1942 economic activity was quickening, and short-term interest rates worked up somewhat. In early 1942 the Federal Reserve began pegging the prices of Government securities to help finance the war effort, thereby keeping interest rates down. From April 1942 to July 1947, when the peg was relaxed, yields on three-month Treasury bills remained at three-eighths of one per cent, and yields on

<sup>5</sup>See pages 1-13 of the *Eighteenth Annual Report of the Federal Reserve Board, Covering Operations for the Year 1931* (Washington, D. C.: Government Printing Office, 1932).



highest grade corporate bonds drifted from 2.85 per cent to 2.55 per cent.

Interest rates rose from July 1947 until 1949; for short-term rates the rise was sharp just after mid-1947. The economy was expanding during most of this period, although a mild economic adjustment began in late 1948. In 1949 interest rates declined. Short-term rates declined abruptly around the middle of the year, following reduction of member bank reserve requirements and discontinuance of net sales of securities by the Federal Reserve System to meet market demand (which began early in the year).<sup>6</sup> Long-term rates

<sup>6</sup>See pages 7-11 of the *Thirty-Sixth Annual Report of the Board of Governors of the Federal Reserve System, Covering Operations for the Year 1949*.

generally drifted lower throughout the year, although the decline was sharpest around midyear.

*Since 1950*

From early 1950 to the spring of 1953 interest rates rose. In March 1951, with the Treasury-Federal Reserve "accord," rates were freed from the peg. Economic activity in the early fifties, which included the period of Korean conflict, was accelerating. In late 1953 and early 1954 rates declined rather sharply, along with a contraction in economic activity.

Interest rates rose during the economic expansion from the late summer of 1954 to the fall of 1957 to a much higher level than during the previous period of economic upswing. In late 1957 and the first few

months of 1958, a period of economic recession, interest rates remained at their high level a few months, and then they fell abruptly.

From mid-1958 through 1959 rates again moved higher, surpassing the previous postwar peak levels. At the end of 1959 three-month Treasury bills were yielding about 4.50 per cent, and highest grade corporate bonds were yielding about 4.60 per cent. In early 1960, while economic activity was still at a high level, interest rates fell markedly.

Since the spring of 1960 interest rates have followed different cyclical and seasonal patterns. The new patterns may have reflected, in part, the rapid growth of C.D.'s and the mix of policy actions designed both to reduce the outflow of funds seeking higher yields abroad and to stimulate domestic economic activity. During the May 1960-February 1961 period of declining economic activity, interest rates remained about unchanged at a level down from the peak but substantially higher than the lows of the three previous recessions. Since early 1961 short-term interest rates have moved higher, but at a slower rate than in previous postwar expansions. Long-term rates have shown only small net increases. Also, the decline in short-term rates early in the year and the rise in the late summer and fall which was typical of the fifties has virtually disappeared since mid-1960. In September 1965 rates on three-month bills averaged 3.92 per cent and on highest grade corporate bonds averaged 4.52 per cent.

## Conclusions

Interest rates have generally been high and rising during periods of rapid economic expansion and have been low and declining during periods of economic contraction. Exceptions have occurred, such as the unusually high rates during the first year of the 1920-21 economic contraction, the sharp upward movement of rates during the depression in 1931, and the comparatively low rates during the period of heavy demand for goods and services during and immediately following World War II.

According to a popular belief, proper economic stabilization action calls for relatively high and rising interest rates during periods of rapid expansion, especially when output is pressing the limits of productive capacity and prices are rising. Conversely, it is generally thought that lower rates are desirable in periods of insufficient and declining demand for goods and services. According to this view, interest rates have behaved in a stabilizing fashion during the past half century, except for a few atypical periods.

Proper interest rate policy, however, may be much more complicated than merely determining that rates are rising during periods of strong economic advance and inflation or declining during periods of substantial and rising unemployment. Questions arise as to how much interest rates need to change under various conditions, what should be the relation among rates on loans of various maturities, the influence of factors other than monetary actions, and lags in the effect of changes in interest rates on economic activity.

This article does not purport to evaluate interest rate policy over this 50-year period, but an examination of the data indicates a need for caution by those who use interest rates alone as a measure of monetary action. Economic activity itself has been the major influence on rates. As activity quickens, demands for funds for capital investment and other purposes rise faster than the supplies of funds from saving, exerting upward pressures on rates. Conversely, as activity contracts, downward pressures on interest rates develop. In the light of these observations, the apparent countercyclical behavior of rates during the past 50 years may have been partially or entirely a reflection of changing economic conditions rather than a reflection of monetary actions.

For example, with the advantage of hindsight, one might conclude that the marked decline in interest rates during the depression of the early thirties resulted primarily from forces associated with the economic contraction rather than from stimulative monetary action. While interest rates were declining, bank reserves, bank credit, bank deposits, and money supply were also contracting.

Conversely, since the early fall of 1962 interest rates on three-month Treasury bills have moved up in several steps from about 2.75 per cent to about 4.00 per cent, yet bank reserves, bank credit, total bank deposits, and money have each risen markedly. One might conclude that interest rates have increased despite expansionary monetary actions and that these monetary actions have been a factor in the continued economic expansion.

In some periods of recession, although interest rates have declined, it may be that a greater decline would have been appropriate. In some periods of boom, while interest rates have risen, it may be that greater increases would have been appropriate, and there may have been times near the end of economic expansions when rates were higher or rose more rapidly than was appropriate.

*(Continued on page 12)*



# Farm Land Prices

**M**ARKET PRICES of farm real estate in the United States rose 6 per cent during the year ending March 1, 1965 (Table I). This was about the same rate of increase as in the previous year but above the 4.6 per cent average for the five-year period 1960-65.<sup>1</sup> Values per acre increased from \$53 to \$146 during the period 1946-65, an average annual rate of increase of 5.3 per cent. Since the general uptrend began in 1933, farm real estate prices have increased or remained stable each year with the exception of three years, 1939, 1950, and 1954.

In the Central Mississippi Valley<sup>2</sup> farm real estate prices increased about 7 per cent during the year ending March 1, 1965.<sup>3</sup> Such values in the area rose at an average annual rate of 6 per cent during the five

years 1960-65 and have increased at an annual rate of 5.6 per cent since 1946.

Land prices in Arkansas and Mississippi have advanced faster than in the other Valley states since 1946. The high rate of farm consolidations in these states was probably an important factor in their rapid price gains.

## Land Price Trends

### National Trends

Trends in farm real estate prices in the United States may be divided into four periods: prior to 1900 prices rose slowly; from 1900 to 1920 prices rose rapidly; from 1920 to 1933 prices declined; and since 1933 prices have again risen rapidly (Table II).

During the last half of the nineteenth century the value of farm real estate increased slowly, from an average of \$11.14 per acre in 1850 to \$19.80 per acre in 1900. Most of the increase occurred during the 20 years from 1850 to 1870, when land prices rose from \$11.14 to \$18.25 per acre, an average rate of 2.5 per cent per year. Such values remained relatively stable from 1870 to 1900, increasing an average of 0.3 per

<sup>1</sup>Years ending March 1.

<sup>2</sup>For purposes of this article the Central Mississippi Valley comprises five states, Arkansas, Kentucky, Mississippi, Missouri, and Tennessee.

<sup>3</sup>Tables similar to Table I for the Central Mississippi Valley, each of the five Central Mississippi Valley states, and Illinois and Indiana can be obtained from the Research Department, Federal Reserve Bank of St. Louis, P. O. Box 442, St. Louis, Missouri 63166.

Table I  
CHANGES IN VALUE OF FARM REAL ESTATE  
United States  
Annual Rates

Terminal Year	Initial Year	1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960	1961	1962	1963	1964	1965	
1947	1946	13.5																				
1948	1947	10.1	6.8																			
1949	1948	8.3	5.8	4.8																		
1950	1949	5.7	3.3	1.6	-1.5																	
1951	1950	7.6	6.2	6.0	6.6	15.4																
1952	1951	7.9	6.8	6.8	7.5	12.3	9.3															
1953	1952	6.9	5.9	5.7	5.9	8.5	5.2	1.2														
1954	1953	5.9	4.8	4.5	4.4	6.0	3.0	0.0	-1.2													
1955	1954	5.6	4.7	4.4	4.3	5.5	3.2	1.2	1.2	3.7												
1956	1955	5.5	4.7	4.4	4.4	5.4	3.5	2.1	2.4	4.2	4.7											
1957	1956	5.6	4.9	4.7	4.7	5.6	4.0	3.0	3.4	5.0	5.7	6.7										
1958	1957	5.5	4.8	4.6	4.6	5.4	4.1	3.2	3.6	4.8	5.2	5.5	4.2									
1959	1958	5.6	5.0	4.8	4.9	5.6	4.4	3.7	4.2	5.3	5.7	6.0	5.6	7.1								
1960	1959	5.6	5.0	4.8	4.8	5.5	4.5	3.9	4.2	5.2	5.5	5.7	5.3	5.9	4.7							
1961	1960	5.3	4.7	4.5	4.5	5.1	4.1	3.5	3.8	4.6	4.7	4.7	4.2	4.2	2.8	0.9						
1962	1961	5.3	4.7	4.6	4.6	5.1	4.2	3.7	4.0	4.7	4.8	4.8	4.4	4.5	3.6	3.1	5.4					
1963	1962	5.2	4.7	4.6	4.6	5.0	4.2	3.8	4.0	4.6	4.7	4.7	4.4	4.4	3.8	3.5	4.8	4.2				
1964	1963	5.3	4.8	4.7	4.7	5.1	4.4	4.0	4.2	4.8	4.9	5.0	4.7	4.8	4.3	4.2	5.4	5.4	6.5			
1965	1964	5.3	4.9	4.8	4.8	5.2	4.5	4.1	4.4	4.9	5.0	5.1	4.9	5.0	4.6	4.6	5.6	5.6	6.3	6.1		

Source: USDA.

Table II  
**CHANGES IN FARM LAND VALUES**  
 United States

Annual Rates	
Selected Periods, 1850-1965	
Years	Change
1850-1900 .....	1.2%
1900-1920 .....	6.5
1920-1933 .....	-6.3
1933-1965 .....	5.1

Source: USDA.

cent per year. The rate of increase for the entire half century averaged 1.2 per cent per year. Total farming area rose 2.1 per cent per year as additional land suitable for cultivation was brought into farms.

By the turn of the century most of the nation's fertile land had been settled, and the general price level, as measured by the wholesale price index, had turned up. Land prices began to rise rapidly, doubling from 1900 to 1910 and rising another 80 per cent from 1910 to 1920. Prices had risen to an average of \$69 per acre in 1920, an increase of 6.5 per cent per year for the period 1900-20. During this 20-year period land in farms continued to rise but at a reduced rate of 0.7 per cent per year. Cropland harvested rose 1.0 per cent per year.

Following 1920, farm land prices began a decline which continued throughout the twenties and into the early thirties. Prices reached bottom in 1933 after a 13-year decline during which prices per acre decreased from an average of \$69 to \$30, or at an annual rate of 6.3 per cent. Land in farms and cropland harvested rose only slightly during the period.

From the 1933 depression low, farm real estate prices rose slightly until the beginning of World War II and then turned sharply upward. From 1933 to 1941 prices rose from an average of \$30 to \$32 per acre, an average rate of increase of 0.8 per cent. From 1941 to 1946 they rose from \$32 to \$53 per acre, an average rate of 10.8 per cent. Since 1946 land values have increased at a rate of 5.3 per cent per year. For the 32-year period 1933-65 the average annual rate of increase was 5.1 per cent. Such prices appeared to be leveling off in the early 1960's as the rate of increase declined to

3.5 per cent from 1960 to 1963; however, during 1964 and 1965 the rate of increase was above the over-all average for the 1946-65 period. From 1946 to 1965 land in farms declined at an average rate of 0.3 per cent per year, while cropland harvested declined at a rate of 0.2 per cent.

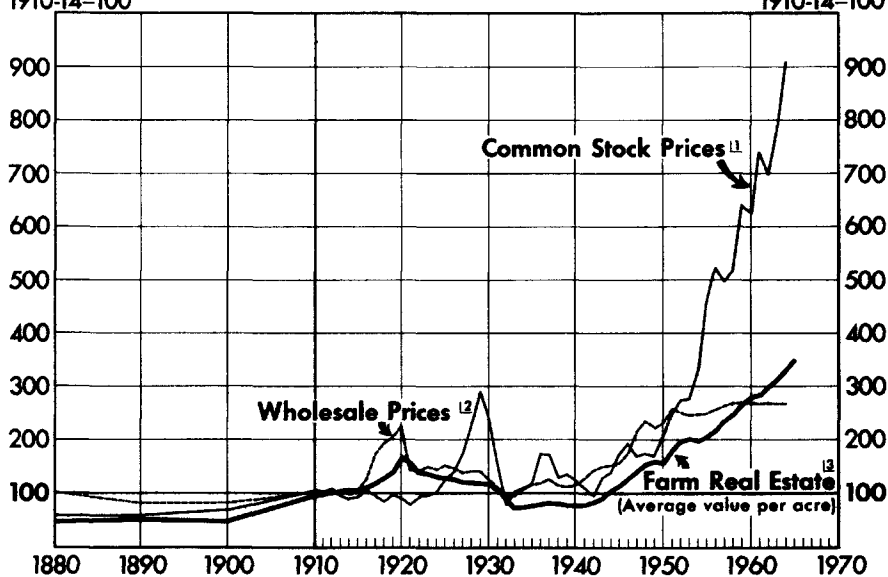
Since 1946 farm real estate prices have increased at a slower rate than prices of common stocks but faster than wholesale commodity prices. Common stock prices rose from 1946 to 1965 at an average annual rate of 8.8 per cent, well above the rate for farm land, while wholesale prices rose at an average rate of 2.3 per cent, about half the rate of increase for farm real estate.

By contrast, from the 1910-14 average to 1946 the relative prices of common stocks, wholesale commodities, and farm real estate had not changed significantly on balance (Chart 1). During the period common stock prices rose at an average annual rate of 1.9 per cent, wholesale commodity prices, at a 1.7 per cent rate, and farm real estate, at a 0.7 per cent rate.

### Trends in the Central Mississippi Valley

Land prices in the Central Mississippi Valley have generally followed the national trend. However, in recent years the rate of increase for most states in this area has been greater than the average for the nation. From 1946 to 1965 land prices in the area rose at an average annual rate of 5.6 per cent, slightly faster than

Chart I  
**PRICES**  
 Land, Common Stocks, and Wholesale Commodities  
 1910-14=100



1 Standard & Poor's stock price index, 500 common stocks.  
 2 U.S. Department of Labor, wholesale price index.  
 3 USDA.

the average for the nation. In the five years 1960-65, prices in the five states rose at an annual rate of 6.0 per cent, compared with 4.6 per cent for the nation.

Since 1946 land values have increased most rapidly in Arkansas and Mississippi, with rates of 7.2 and 6.3 per cent, respectively (Chart 2). In Kentucky values rose at the national average rate of 5.3 per cent, while the rates in the remaining valley states, Tennessee and Missouri, were slightly below the national average.

### Factors Affecting Farm Land Values

Numerous economic forces have contributed to the increases in farm real estate values. The productivity of farm real estate has increased rapidly in recent years. Demand forces have been even more dynamic. The remainder of this article outlines some of the forces which affect the supply and demand for farm real estate, with special attention to the variation in real estate price trends in the Central Mississippi Valley states.

### Supply of Farm Land

The supply of farm real estate has declined in recent years. Land in farms in the United States totaled 1,092 million acres in 1965, down about 2 per cent from the 1960 level and 5 per cent less than in 1946 (Table III).

Land in farms is price inelastic, i.e., price changes do not result in sizable changes in supply. The nation's

Table III  
LAND IN FARMS  
United States

Year	Millions of Acres
1850	294
1900	839
1940	1,061
1950	1,158
1960	1,115
1965	1,092

Source: Calculated from USDA data in "Farm Real Estate Market Developments."

Table IV  
CROP YIELDS  
United States

Year	Output per Acre (1957-59 = 100)
1940	76
1945	82
1950	84
1955	91
1960	109
1964	116

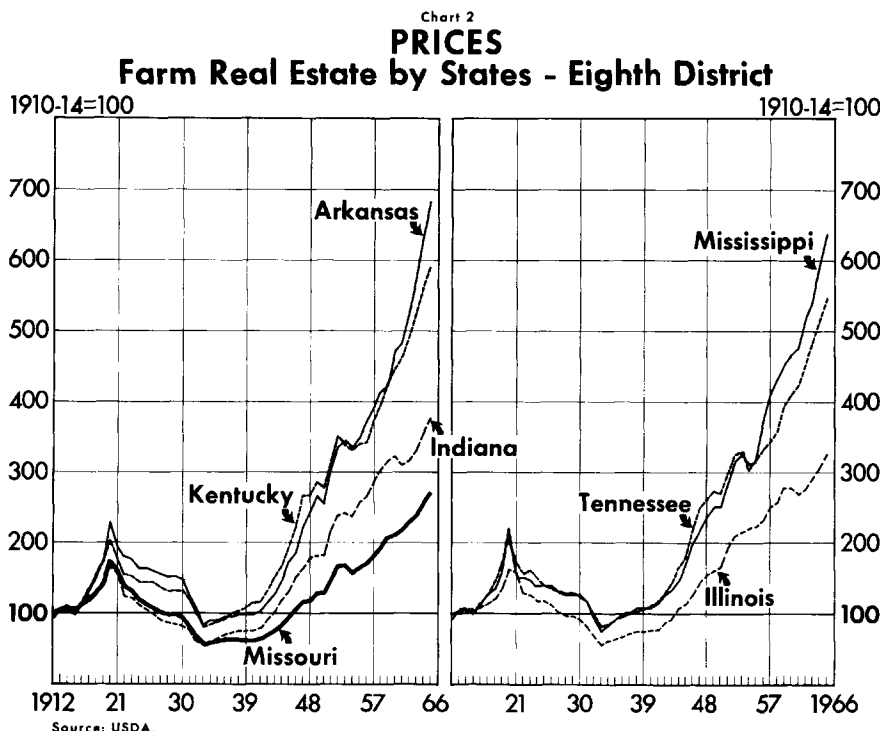
Source: USDA.

land area is fixed, and the amount useful for agriculture is also relatively inflexible. While substantially higher prices for farm commodities might bring additional acres into farms, such price increases would give rise primarily to greater production on land already in farms.

The capacity of land to produce farm products is quite flexible. The consistency of yield gains during the past 24 years points to advances in production technology and its application on farms (Table IV). Output of farm products could be increased substantially even within the current constraints of production technology. Furthermore, the rising level of farm technology seems likely to continue to boost potential output per acre.

### Demand for Farm Real Estate

The demand for farm land is determined by its use for both agricultural and nonagricultural purposes. Nonagricultural uses for land include urbanization, roads, parks, recreation areas, public conservation projects, etc. Although only a small



share of the total land area in most states is set apart for such purposes, these uses may have a substantial impact on farm real estate prices. About 20 per cent of all land in the continental United States is within commuting distance of some metropolitan area, and farm land within this range tends to take on higher values than similar land further away. Metropolitan areas continue to gain population, and this has an impact on land values over an increasing area as better roads improve transportation.

Demand for land for farming has been affected diversely by farm technology. Increased yields per acre, brought about through improved fertilization, seed, and disease control, have been an important factor tending to reduce farm commodity prices and demand for land. On the other hand, improvements in mechanization and weed control have permitted a major increase in the number of acres that can be farmed by one man, thus tending to increase farm consolidations and demand for land for farm enlargement purposes. The reduction in labor costs increases the returns to other factors of production, including land.

Government land rental and crop allotment programs have also tended to increase the demand for real estate. Land rental payments have directly increased the returns accruing to land. The acreage allotment program may also increase farm consolidations and demand for farm land. If it decreases farm output, as in the case of the rental program, returns to all factors including land are increased in view of an inelastic demand for farm commodities. Furthermore, if farming units of optimum size maximize returns to the operator and the allotment program reduces the acreage that can be farmed on existing units,

additional acres are required to bring farms back up to optimum size. Thus, demand for additional acreage for farm consolidation or enlargement is enhanced.

### *Land Prices and Farm Consolidations in the Central Mississippi Valley*

Part of the difference in farm real estate price trends among the Central Mississippi Valley states can be traced to the varying rates of farm consolidations in the area. For example, from 1945 to 1964 the annual rate of change in acres per farm was greatest in Arkansas and Mississippi, with percentage increases of 4.7 and 4.2, respectively (Table V). Land value increases in these states were also greatest, with gains of 7.1 and 6.8 per cent per year, respectively. Acres

TABLE V  
CHANGES IN FARM SIZE AND LAND VALUES  
Central Mississippi Valley, 1945 to 1964

	Annual Rates	
	Acres per Farm	Value per Acre
Arkansas .....	4.7%	7.1%
Kentucky .....	2.0	5.8
Mississippi .....	4.2	6.8
Missouri .....	2.0	5.5
Tennessee .....	1.7	5.7
Total 5 States .....	3.0	6.0
Illinois .....	1.6	5.4
Indiana .....	1.7	5.5
United States .....	2.8	5.7

Source: Calculated from USDA data in "Farm Real Estate Market Developments."

per farm in the five-state area rose at a slightly higher rate than in the nation, and value of land per acre also moved up at a higher rate.

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### *Interest Rates, 1914-1965—(Continued from page 8)*

Countercyclical policy in terms of interest rates, it would seem, requires at a minimum some upward pressures on rates from the monetary system in periods of ebullience and some downward pressures in periods of economic decline. Since many forces are at all times impinging on rates, selection of the proper rate or determining the impact of monetary actions on rates at any given time is a difficult task. Because of a desire for relatively stable money market conditions in the short run, chances for error in selecting the proper rates seem to be greatest around cyclical turn-

ing points, when there is usually the most marked change in other forces affecting interest rates.

The frequently stated conclusion that increasing monetary restraint is being imposed as evidenced by rising interest rates during a boom may not be valid, since other forces, including the expansion of activity itself, may be placing upward pressure on rates. Analysis must go deeper and seek to determine in what direction and to what extent the monetary system has been pushing rates.

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