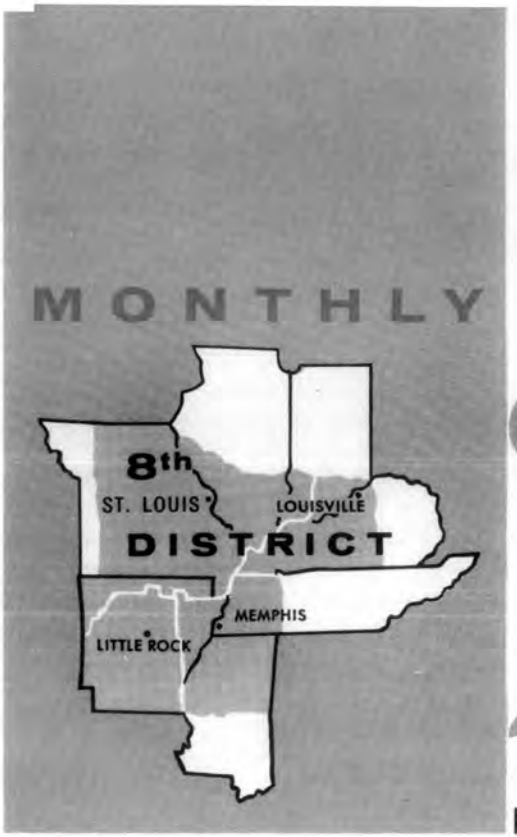

Review

FEDERAL RESERVE BANK
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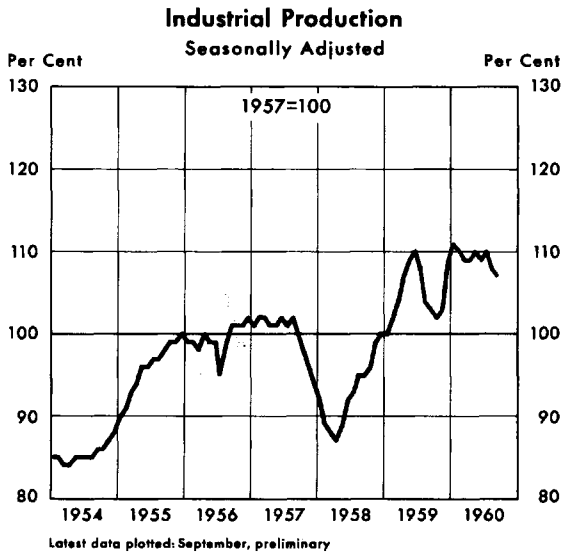
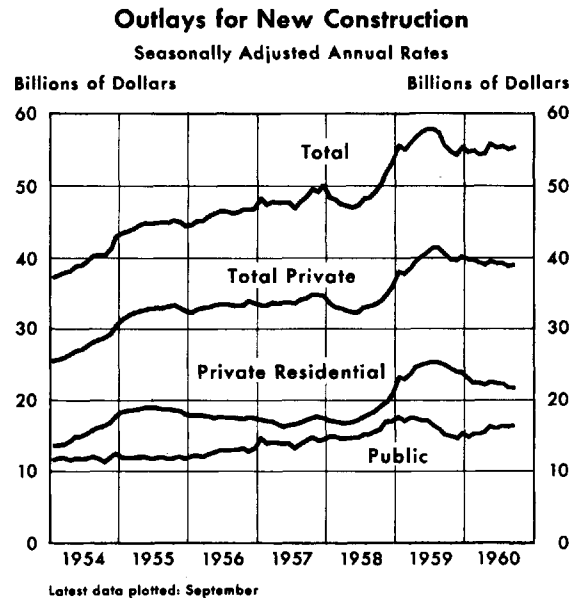
Industrial Production Declines in Third Quarter

A DOWNWARD DRIFT of industrial output marked the third quarter of the year. In September the index of Industrial Production was at 107 per cent of the 1957 level, as compared to 110 in July and 111 at the January high. An expansion of automobile production from August to September failed to offset declines in production of other durable goods, including materials and business equipment. Production of nondurable goods also declined between August and September. Current figures relating to operations in the nation's steel mills reflect continuing weaknesses in economic activity. Steel output in the week ending October 22 was estimated at 54.6 per cent of capacity. October output, in contrast to the usual sharp seasonal expansion, is running only slightly above September's rate.



Over the first six months of 1960 manufacturers experienced a steady growth in inventories partly as a consequence of persisting declines in sales of finished products. By reducing purchases of raw materials over the past several months, manufacturers succeeded during July and August in halting inventory growth – even though sales continued to fall. In August, some strength appeared in new orders for durable goods and defense items.

Expenditures for new construction during September were at a seasonally adjusted annual rate of $55.4 billion, up $400 million from August but broadly consistent with the level attained in late 1959. Through the first three quarters of 1960 declines in expenditures on private construction, especially residential construction, have been approximately offset by steady



expansion in public construction. In September, housing starts resumed their decline from early 1959 peaks, dropping sharply to a seasonally adjusted annual rate of 1,077,000 units, the lowest rate since mid-1958.

Over the summer months (from May to August) the nation's civilian labor force increased by 1.4 million persons—an increase due in large part to the entry of students into the labor force. During the same period the seasonally adjusted rate of unemployment climbed from 4.9 per cent of the civilian labor force to 5.9 per cent—the highest figure since November 1959. With the reopening of schools in September the labor force declined by 915,000. However, the number of unemployed workers fell to 3,400,000, a decline of 400,000. As a result, the September seasonally adjusted rate of unemployment declined slightly to 5.7 per cent of the labor force.

Although personal income has increased each month in 1960, its rate of increase has declined considerably—reflecting the weakening in economic activity. Personal income (seasonally adjusted) rose slightly between August and September as a decline in manufacturing payrolls was offset by increases in other types of income. Payroll increases in the service industries and in state and local governments pro-

vided part of the offset. Transfer payments, including unemployment compensation, social security payments, and veterans' benefits, increased by $400 million (annual rate). Farm income remained constant at a $12.2 billion annual rate.

Retail sales during the third quarter continued a decline from April's high, a seasonally adjusted annual rate of $226.8 billion. The September rate of $216.8 billion was the lowest month in 1960. Similarly, after taking account of seasonal influences, the nation's department store sales continued their decline through the third quarter.

The consumer price index was unchanged during August, the fourth consecutive month without appreciable increases. Small declines in prices of food, housefurnishings, and new cars were offset by increases in the remaining components of the index.

Wholesale prices fluctuated within a range of one percentage point during the first three quarters of 1960. A general weakening in prices of farm products from April through August of this year was reversed in September. Farm prices continued to show increases in October. Reflecting the adverse developments in manufacturers' inventories and sales, small declines have been registered in machinery and in certain raw materials basic to the production process, such as steel scrap and copper.

Member Bank Reserves Increase

THE TOTAL RESERVES of member banks, adjusted for seasonal variation and the change in reserve requirements, have increased by $480 million or at an annual rate of about 7 per cent from May to early October. This was in contrast to the rather sharp decline in reserves which began in late January. The rise during recent weeks brought total reserves to a level slightly above the peak reached in January.

The increase in total reserves was brought about by many factors. Federal Reserve net purchases of securities added about $1.4 billion. This was partially offset by gold outflow from the country of about $715 million and a reduction in member bank borrowing. A rise in excess reserves of about $350 million in late August and early September was probably due in part to vault cash action.[1] Excess reserves declined in late September, but rose substantially in early October.

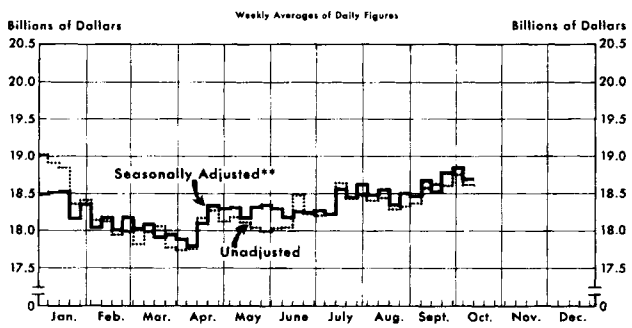
Factors Affecting Member Bank Reserves

Change from May to the average of two weeks ending October 12, 1960
(In millions dollars)
Sign indicates effect on reserves

Currency in Circulation	+	98
Gold and Foreign	—	726
F. R. Float, Treasury and Other	+	15
Total Money Market Factors	—	613
Open Market Operations	+	1,372
Member Bank Borrowing	—	308
Total Central Bank Credit	+	1,064
Required Reserves	+	271
Excess Reserves	+	180
Total Reserves	+	451
Outstanding daily average for the two weeks ending October 12:		
Total Reserves		18,690
Required Reserves		18,041
Excess Reserves		649
Member Bank Borrowing		174

Data preliminary and seasonally unadjusted.

Total Effective Reserves of Member Banks*



Latest data plotted: Week Ending October 12, preliminary.

*For data previous to September 1, figures are total reserves less $125 million for estimated change in reserve requirements. Data after September 1 are total reserves.

**Seasonal adjustment factors were obtained roughly by averaging daily figures for each calendar day for the five years 1955-1959. These were divided by the average level for the entire five years. The seven calendar date factors were then averaged to obtain the weekly factors. Unadjusted data were divided by weekly average factors to obtain the seasonally adjusted data.

Bank Credit Rises

From the end of May to the end of September, commercial bank credit rose over $4 billion, according to preliminary data. Usually bank credit does not expand so rapidly at this time of year; during the corresponding four months last year commercial bank credit rose $2.3 billion.

[1] See "Changes in Member Bank Reserve Requirements," in the August issue of this *Review*, and "Some Observations on Excess Reserves of Member Banks," in the current issue of this *Review*.

Slightly over half of the $4 billion expansion in bank credit during the four months ending with September was in loans. Most of the increase in loans reflected seasonal influences. Business loans rose less than they normally do at this time, reflecting net repayments by metal and metal products producers and petroleum, coal, chemical and rubber firms. Real estate loans also rose somewhat less than seasonally. On the other hand, loans on securities increased, and indications are that consumer loans were up more than seasonally. Banks increased their investment portfolios about $2 billion during the four months; a more than usual gain for this time of year. Most of the net purchases were of Government securities, but banks also increased their holdings of municipal and corporate obligations.

Money Supply Up Since May

The money supply, seasonally adjusted, has risen at an annual rate of over 2 per cent from May through September. This recent increase in the money supply is in contrast to the almost continuous decline which occurred from July 1959 to May 1960. Despite the increase in the quantity of money in recent months, the money supply is well below the July 1959 peak. Only about 25 per cent of the previous decline has been recovered.

There was a modest decline of $100 million in the money supply during September, despite the rise in bank credit. The decline reflected primarily a shift of deposits from demand accounts of individuals and businesses (which are included as part of the money supply) to time and U. S. Treasury accounts (which are not included).

The rate of turnover of money apparently leveled off from May through September. By contrast, the turnover of demand deposits at 337 reporting centers outside the seven large financial cities rose almost steadily from mid-1958 through the first three months of 1960.

Interest Rates Decline

The general level of interest rates has fallen sharply this year, reflecting primarily a weakening in the demand for credit some of which was of a seasonal nature. Yields on three-month Treasury bills, which averaged 4.49 per cent during December 1959, were averaging 2.30 per cent in July. Other short-term rates, notably rates on commercial paper and bankers acceptances, declined nearly as much. Yields on long-term Government and corporate bonds decreased, although the decline in this sector of the market was less pronounced.

Bill rates have worked up from 2.30 per cent in July to 2.49 per cent in the first 18 days of October, but this rise was probably less than usual for this time of year. Yields on corporate bonds and on real estate mortgages continued to decline at a modest rate from July to early October. Conversely, interest rates on long-term Government bonds rose slightly, probably reflecting in part the recent advance refunding by the Treasury.

Treasury Revises Budget Estimate

The estimate of Federal cash surplus for the fiscal year 1961 (ending next June 30) has been revised downward in recent weeks. Last January it was estimated that receipts from the public would exceed payments by $5.9 billion in fiscal 1961. The revised estimate made by the Bureau of the Budget in recent weeks now anticipates a surplus of $2.5 billion. The leveling off of economic activity has reduced anticipated tax receipts, principally from those paid out of corporate profits, and increased some outlays, such as those for unemployment insurance. Also, the reduction in the estimated surplus resulted in part from the fact that all revenue measures anticipated in the previous budget estimate were not enacted while at the same time added spending programs have been undertaken.

The smaller surplus would, of course, be more conducive to economic expansion. If business conditions continue at recent levels or decline from these levels, the current $2.5 billion estimated surplus will have to be revised downward again because even the most current estimate was based on the assumption of a rising level of income and employment. In the event of a further fall in economic activity, the automatic stabilizers built into the Federal taxing and spending operations will work further. Tax revenues would decline as income falls, while spending on welfare activities such as unemployment would be increased. This could lessen or wipe out the predicted surplus.

Treasury Extends Maturity of Debt

The Treasury's advance refunding during September converted about $4 billion of World War II 2½'s maturing between 1962 and 1969 into 20-, 30-, and 38-year 3½'s. This refunding increased the average maturity of the Federal debt, and probably reduced slightly the liquidity of the economy. The Treasury in October raised about $3 billion in new money, through auctioning 244-day tax anticipation bills and reducing the amount of one-year bills outstanding. These actions increased the volume of short-term Government securities held by the public. On November 15 two issues totaling $10.8 billion, of which about $5.7 billion is held by the public, will mature. The Treasury's refunding offer is expected in late October.

Stock Prices in Perspective

DURING SEPTEMBER many stock prices declined rather sharply. The fall in the value of corporate equities was noted widely and caused much concern. However, it is not unusual for stock quotations to fluctuate widely, and, despite the decline, corporate stock prices are still relatively high in relation to prices of past years according to many measures.

Extent of Decline

Although stock prices generally decreased during September, performance was not uniform among all issues. Prices of some individual stocks fell over 25 per cent in September while a few issues actually rose in value over the month. The Standard and Poor's 500 Stock Composite closed at 52.48 on September 28 (1941-43 = 10), down 10 per cent from a month earlier and 14 per cent below the peak in the index, reached August 3, 1959. Since September 28 (to October 24), the index has shown little net change.

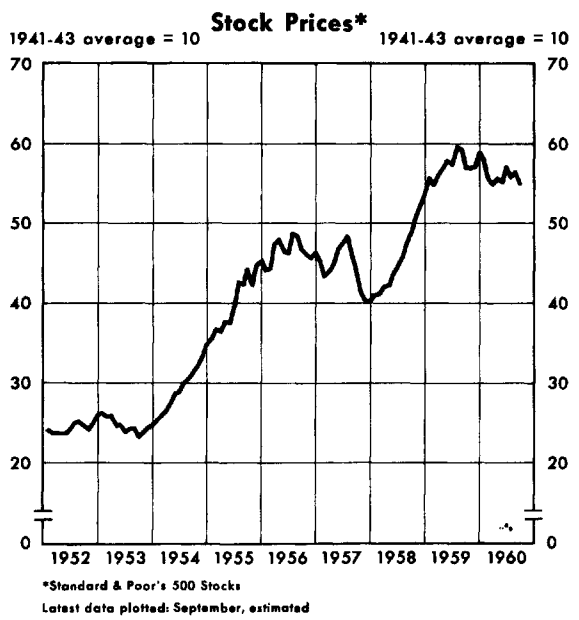
Reasons given for the decline in stock prices have been numerous. The lack of strength in the business situation and the uncertain prospect for future business conditions have probably been mentioned most frequently. Some corporations have reported less favorable earnings in recent quarters, and a few have cut their dividend payments. Further, the outlook for general price stability is reportedly better now than it has been for some twenty years, a prospect which may tend to reduce the demand for common stocks (since some investors consider them inflation hedges). Also, dividend yields on stocks in recent years have been relatively low compared with interest rates available on high-grade bonds. With some investors expecting bond prices to continue to rise, as they have done since January, the relative attractiveness of bonds becomes even more pronounced.

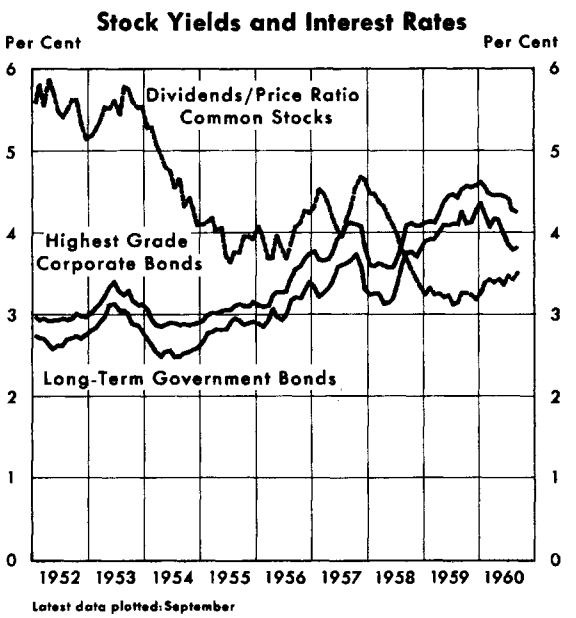
When a somewhat longer view is taken of past stock prices the recent low level of about 52½ in the index—although below the record high of about 61—is still relatively high. For example, the market is now twice as high as in 1952. The index had never reached 40 until 1955 and went above 50 only in 1958. At current levels (October 15) the 1958-59 boom in stocks has been only partially wiped out and the market is above the peaks of 1956 and 1957.

Yields on Stocks

It is reasonable to expect that as corporations grow and their earning capacity increases stock prices will rise. However, stock prices in recent years have been rising faster than corporate dividends and corporate earnings, and thus dividend and earnings yields on common stocks have been declining at a time when returns on bonds and mortgages have been increasing. At September market prices and current dividend rates, it is estimated that the average dividend-price ratio on common stocks was roughly 3½ per cent. At the same time, a person could earn 4¼ per cent on the highest grade corporate bonds. By contrast, in the six years 1950-1955 average stock yields were 5.48 per cent, and average interest rates on prime bonds

(Continued on page 12)





Some Observations on Excess Reserves of Member Banks

THE FEDERAL RESERVE SYSTEM in attempting to affect the volume of bank credit and the money supply operates directly on total member bank reserves. The volume of total reserves determines at any given time the *upper limits* of bank credit and the money supply. However, the correlation between total member bank reserves and the volume of bank credit and money is not perfect, particularly in the short run. One reason for the lack of complete symmetry is that member banks will hold varying amounts of excess reserves, i.e., reserves above those required to support deposits.

The rises in excess reserves since April 1960, and particularly the sharp increases in September and again in October, are recent examples of "slippage" between changes in total reserves and changes in bank credit. In this five-month period excess reserves increased by an estimated $232 million while total reserves increased by $466 million. The growth in excess reserves points out the need to look not only at changes in total reserves but also at the components of total reserves; required and excess reserves.

In periods when the System is adding to member bank reserves with a view toward stimulating an increase in bank credit, more total reserves must be furnished banks in order to obtain a given increase in bank credit if banks are simultaneously increasing their excess reserves. Similarly during periods of restraint the System must first absorb much of the excess reserves before its actions become fully effective.

In general, it can be said banks keep excess reserves to some minimum level since they are a non-earning asset. Yet, excess reserves exist because banks do not always invest new reserves immediately upon receiving them and because some banks find it desirable to have a margin of funds to meet unexpected deposit withdrawals or loan demands. Some smaller banks keep a comfortable reserve position to avoid the costs of making daily calculations and the necessary asset adjustments required of a bank which is always almost fully invested.

Without suggesting that fluctuations in excess reserves are necessarily a critical problem facing monetary authorities, such fluctuations, nevertheless, from time to time make the problem of influencing the money supply more difficult. For this reason an understanding of fluctuations in excess reserves is desirable. This study is an analysis of the trends over a span of years and some of the cyclical, seasonal and random factors that have had important effects on the levels of excess reserves.

Trend Since 1947

The volume of excess reserves has been driftin downward since the mid-forties (see chart). In th depression years of the 1930's excess reserves reached their all-time high. During 1947 averages of daily figures amounted to $850 million compared with $445 million during 1959, and $490 million during the first 9 months of 1960. This trend toward smaller excess reserves is apparent at all classes of banks. The decline in dollar amount has been slightly greater for central reserve city and reserve city banks than for "country" banks (see chart). During 1947, the ratios of excess reserves to total reserves were 2¼ per cent for city banks and 12⅓ per cent for country banks, whereas during 1959 the like comparisons were ½ of 1 per cent and 6½ per cent, respectively. Even with the sharp rise in excess reserves during recent months this ratio averaged slightly larger than ½ of 1 per cent for city banks and 7 per cent for country banks thus far in 1960. The sizable reductions in the ratios of excess reserves to total reserves indicate that banks have elected to put more of their available funds to use. Probably the chief reason for the decline has been the postwar rise in interest rates making the alternative cost of holding idle cash higher. Two other reasons for the decrease in excess reserves have been the development of institutions for facilitating interbank lending and the growth in the size of the average bank. The development of the Federal funds market facilitates disposing of excess reserves. Also, since small banks generally hold a larger per cent of excess reserves than large banks, the growth in the size of the average bank has resulted in there being less excess reserves.

Cyclical Movements

There has been a modest cyclical fluctuation in excess reserves. When demands for credit are large and interest rates high, banks trim down the amount of unused funds they hold. On the other hand, when loan demands decrease and interest rates fall, banks tend to carry more uninvested funds. Member banks may borrow funds from the Federal Reserve as well as draw upon excess reserves during periods of heavy loan demands or large deposit withdrawals. In periods of high excess reserves (1954, 1958, and 1960) borrowings were usually low, and in periods when banks held relatively small amounts of excess reserves (1956, 1957, and 1959), borrowings have tended to be high (see Table I). Excess reserves fluctuated much less than borrowings but in the opposite direction.

Table I

Excess Reserves and Borrowings from the Federal Reserve

Daily Average for Third Quarters of Selected Years

(Millions of Dollars)

	Excess Reserves	Borrowings
1954	817	82
1956	579	809
1957	530	970
1958	621	279
1959	427	956
1960	562	302

Seasonal Pattern—Monthly

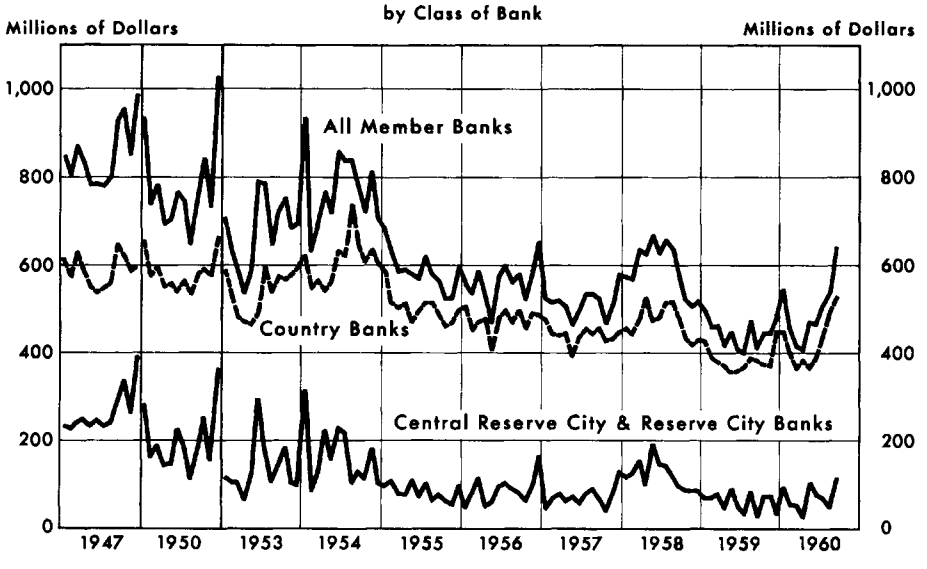
There is only a slight seasonal pattern in monthly averages of daily excess reserves. Currency in circulation and Federal Reserve float have a pronounced seasonal impact on total and excess reserves, but for the most part have opposite effects. Movements of currency into circulation cause banks to lose reserves while an increase in float increases member bank reserves. Required reserves of member banks also have a pronounced seasonal pattern as bank credit usually expands in the fall and contracts in the spring. However, System open market operations and changes in member bank borrowing have tended to reduce the net seasonal effect of the money market factors.

Currency movements have the largest seasonal influence on reserves. As money flows into circulation before vacation periods and holidays, banks are drained of reserves, and conversely, as money returns from circulation banks gain reserves. Changes in Federal Reserve float, however, partially offset the effect of currency movements. The largest currency outflows occur during November and December; the 1955-1959 average change in these two months amounted to $850 million, which was offset in part by a $400 million average net addition from Federal Reserve float. During January and February each year an opposite set of forces occur as currency returns from circulation (averaging $1,150 million), and float declines ($460 million) from the high level reached toward the end of the year.

Daily average data for the period 1955 through 1959 indicate that excess reserves were usually high during December (averaging over $580 million) and low in October (averaging $510 million). For other months, average excess reserves fluctuated within narrow limits ranging between $520 million and $560 million.

Excess Reserves of Member Banks

by Class of Bank



Latest data plotted: September, preliminary

Weekly and Daily

As one might expect, the shorter the period of time selected, the greater the fluctuations in excess reserves. Sizable changes in the weekly data occur frequently, but offsetting changes develop within fairly short periods of time. For example, during the five years ending with 1959, changes from week to week seldom showed a steady increase or decline of longer than three weeks. It also followed, in many instances, that when the direction was reversed, the increase or decline in the first week was sizable, tending to bring excess reserves close to the longer run level.

One of the weekly changes in excess reserves that occurred with almost routine regularity

was a decline in the last statement week of the month. This was occasioned by the reduction in excess reserves at the country banks. The contributing factor was probably the month-end contraction in float. This pattern did not hold for December as the banking system usually has sizable excess reserves during the last week of the year. At this time the large post-Christmas return flow of currency begins. At the country banks, excess reserves reach their highest levels during mid-month, i.e., statement weeks ending from the 10th through the 25th reflecting in part the mid-month expansion in float.

On an intraweekly basis, the gyrations in excess reserves are very pronounced and apparently have only a modest seasonal pattern. During 1959 estimated excess reserves ranged from a deficiency of $0.4 billion to a peak of $1.2 billion. At the peak level, excess reserves were relatively high at both classes of banks. The country banks in the aggregate were never deficient on reserves but the level fell as low as $5 million. In contrast, city banks often showed aggregate reserve deficiencies. Since requirements are based on average holdings, deficiencies one day can be offset by excesses another. For this reason daily fluctuations are self adjusting and generally little attention need be paid to them for monetary policy purposes.

Random Fluctuations

Excess reserves are affected by almost every bank transaction. Hence, there are many random forces affecting excess reserves, and as a result these reserves fluctuate rather widely and unpredictably. The injection or withdrawal of a large quantity of reserves, such as through a change in reserve requirements, immediately increases or decreases excess reserves by a like amount. Within a relatively short span of time banks will adjust to this change so that their excess reserve position will return to the ratio which banks desire to hold.

For example, if a reduction in reserve requirements released $500 million of additional reserves, excess reserves would increase initially by $500 million. Some of the newly acquired reserves would probably be used to repay borrowings or expand credit the same day. As this process continues, excess reserves would continue to decline until they reached a level which banks thought appropriate. A loss of $500 million of reserves would have the opposite effect on excess reserves.

The permission to count cash in vault as reserves has tended to give excess reserves a temporary boost. Each of many individual banks gained relatively small amounts of new reserves. Since some banks cannot find immediate profitable uses for these funds, excess reserves tend to remain at a high level for a time. In early December 1959, the Board of Governors permitted member banks to count about $230 million of cash in vault as reserves. Reflecting this gain of funds, excess reserves averaged about $70 million higher in December and January than in the two preceeding months. Similarly, in late August and early September this year banks were allowed to count about $480 million more of their cash in vault as reserves and excess reserves again rose, from an average of $537 million in August to an estimated $641 million in September.

Conclusion

The level of excess reserves has drifted downward from an annual average of $850 million during 1947 to $445 million during 1959. In large part this lower level of excess reserves represented the banking system's choice of more intensive use of their available funds, especially at the country banks.

Seasonal forces, primarily consisting of changes in currency in circulation and Federal Reserve float add or drain sizable amounts of funds at certain periods of the year. The need for reserves to support deposits also fluctuates seasonally. The largest seasonal forces occur from November through February, but System purchases or sales of Government securities in the open market and member bank borrowings from Reserve Banks tend to offset a major portion of the seasonal effects. In addition, excess reserves may show large fluctuations at certain times resulting from unusual transactions, but these have been of short duration. Also, there has been a moderate cyclical variation in the downward drift in excess reserves.

Changes from week to week may be sizable but an unbroken increase or decline was seldom evident for longer than three weeks; it was also evident in these periods that when the direction of change reversed the net movement was sizable, bringing the level quickly back to the longer run trend.

FARM CAPITAL

THE TOTAL VALUE of farm capital moved to a new record high of $203.6 billion in the 12 months ending January 1, 1960, according to the United States Department of Agriculture.[1] Total value of all farm assets rose $1.3 billion, or 0.6 of one per cent. Farm real estate values rose $4.0 billion to a new record high of $129.1 billion. Value of machinery and motor vehicles rose about $700 million, or 4.0 per cent. Household furnishings and equipment and investment in cooperatives made smaller gains. Partially offsetting the increases were declines in deposits and currency holdings and in value of livestock and crops stored.

During the year the average value of capital per farm continued the rapid upward trend of the past two decades, reaching a peak of $44.8 thousand, 2.9 per cent above the level of the previous year and more than five times the 1940 average.

Total Farm Assets

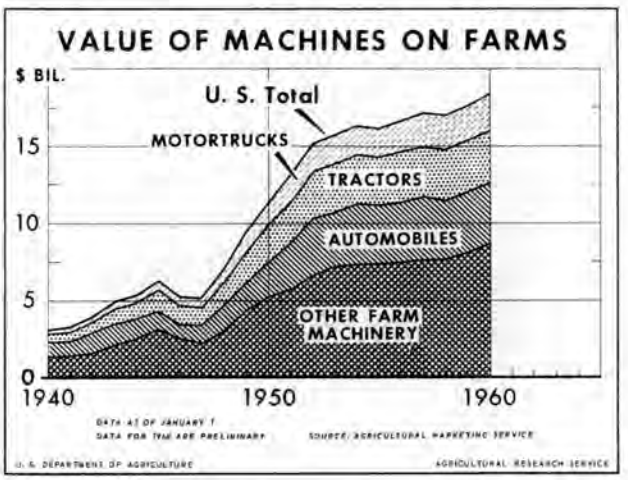
Real Estate Values Have Increased at a Slower Rate

Although the major factor in the increase in value of farm assets in 1959 was the rise in farm real estate values, the rate of increase in such values was less than in the previous three years. The value of farm real estate advanced only 3.2 per cent during the year ending March 1, 1960, compared to advances in excess of 6 per cent for each of the three years ending in 1957, 1958, and 1959. The slowdown was most pronounced in the Corn Belt, Lake States, and the Northern Plains.[2] On March 1, 1960, values in the Corn Belt and Lake States averaged only 1 per cent higher than a year earlier and in the four months ending March 1 this year average values in these two areas declined. Furthermore in the four months ending July 1 this year average values for the nation declined 1 per cent.

Other Assets Have Shown Mixed Trends

Other types of farm assets showing an increase for the year include machinery and motor vehicles, and household furnishings and equipment. These groups rose 4.0 per cent and 2.4 per cent, respectively. The value of machinery on farms on January 1, 1960 was $18.4 billion, or $0.7 billion above the total a year earlier (Chart 1). Gross expenditures for farm machinery during the year were $3.7 billion, up 2.4 per

Chart 1



cent from such expenditures in 1958 and the fourth highest expenditures for farm machinery on record. Leading the list in 1959 were outlays for tractors, which were up 15 per cent from the preceding year. Expenditures for automobiles and motor trucks were less than in 1958 but expenditures for other farm machinery rose 10 per cent.

Reflecting generally lower prices, the value of livestock on farms declined from $18.1 billion to $16.2 billion, a loss of 10 per cent in the year ending January 1, 1960. Livestock numbers were generally higher this year than last (Chart 2, next page). For example, the value of beef cattle declined from $14.8 billion on January 1, 1959 to $13.8 billion this year as a 5 per cent increase in cattle numbers was more than offset by a 13 per cent decline in prices. Price was also a major factor in the decline in the value of hogs. While hog numbers rose 1 per cent during the year, hog prices declined 25 per cent, contributing to a 40 per cent drop in the value of all hogs on farms. Among the

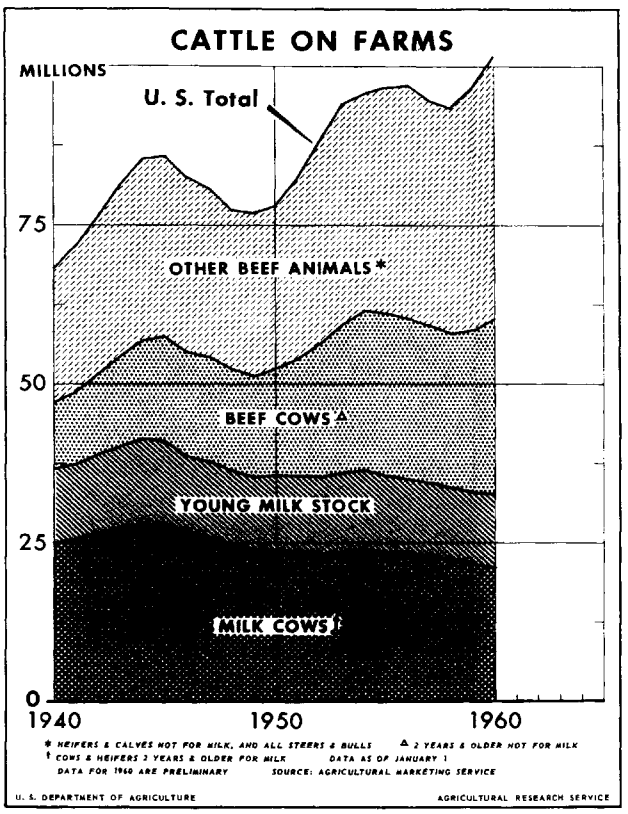
Tables for this article are available upon request to the Research Department, Federal Reserve Bank of St. Louis.

[1] The basic data for the article are from *The Balance Sheet of Agriculture, 1960*, United States Department of Agriculture.

[2] Corn Belt includes Ohio, Indiana, Illinois, Iowa, and Missouri; Lake States—Michigan, Wisconsin, and Minnesota; Northern Plains—North Dakota, South Dakota, Nebraska, and Kansas.

less important livestock groups, the value of sheep declined while the value of turkeys was the same as a year earlier and that of horses and mules increased.

Chart 2



The value of crops owned by farmers and stored both on and off farms declined $1.3 billion or 14.5 per cent. Measured in constant prices, the physical inventories decreased about 13 per cent. The value of crops stored on farms changed very little, with a decrease in the value of wheat being offset by an increase in the value of corn. Most of the decline in crops stored off farms was accounted for by a reduction of cotton and wheat stocks under the CCC loan. The decline in wheat was attributable to the smaller crop in 1959. A change in the Commodity Credit Corporation program under which most of the cotton produced in 1959 was purchased outright rather than held as security for loans accounts for the reduction in cotton inventories.

Liquid financial assets owned by farmers on January 1, 1960 were estimated at $14.3 billion, or $900 million less than a year earlier. Reflecting the major decline in net farm income nationally, all Federal Reserve Districts except the St. Louis, Philadelphia, and San Francisco districts reported decreases in farmer-owned checking accounts.[3] Lower prices for farm commodities, increased production costs, and unfavorable weather were particularly important factors in the Corn Belt and the Great Plains. An increase of about 66 per cent in the cotton crop coupled with support prices were the major factors in the 6 per cent increase in farmer-owned demand deposits in the Eighth Federal Reserve District.

Farm Debt has Risen

Liabilities of farmers continued to move up in 1959, reaching $24.3 billion, a record level since the beginning of farm balance sheet records in 1940. Farm real estate debt rose $1.0 billion, with total outstandings moving up to $12.3 billion. Other debt to reporting institutions increased $0.9 billion to $6.7 billion.[4] Other debt to nonreporting institutions was estimated to have increased $0.2 billion.[5] Nonrecourse loans to farmers held or guaranteed by the Commodity Credit Corporation declined $1.1 billion.

The ratio of total farm debt to total farm assets is still low compared to pre-World War II levels. Farm debt of $24.3 billion on January 1, 1960 was equivalent to 11.9 per cent of total farm assets. Compared to the post-World War II low debt-to-asset ratio of 7.4 per cent in 1948 the increase has been substantial. However, a look at pre-World War II ratios reveals that farmers still have relatively low debt-asset ratios. For example, in 1940 farm debt totaled 19 per cent of the value of farm assets and the ratio remained above the current level through 1943.

Assets Per Farm

While total capital in agriculture has risen persistently during the last two decades, gains in capital per farm have been even greater, as the number of farms has declined. Average total assets per farm rose from $8.3 thousand in 1940 to $44.8 thousand in 1960. This is more than a 400 per cent increase during the two decades, whereas total capital in agriculture increased less than 300 per cent.

All physical assets per farm moved up substantially during the period. The greatest percentage gain, however, was in machinery and motor vehicles. This category of assets per farm rose from $0.5 thousand in 1940 to $4.1 thousand in 1960, more than 700 percent. While an increase in machinery prices of 2.4 times contributed to the increase in dollar value of machinery, the gain in physical quantity was also

[3] Realized net farm income in the nation declined from $13.0 billion in 1958 to $11.3 billion in 1959, a reduction of 13 per cent.

[4] Includes all operating banks, Production Credit Associations, the Farmers Home Administration, and discounts of the Federal Intermediate Credit Banks for livestock credit corporations, and livestock loan companies.

[5] Merchants, dealers, individuals, finance companies, and others.

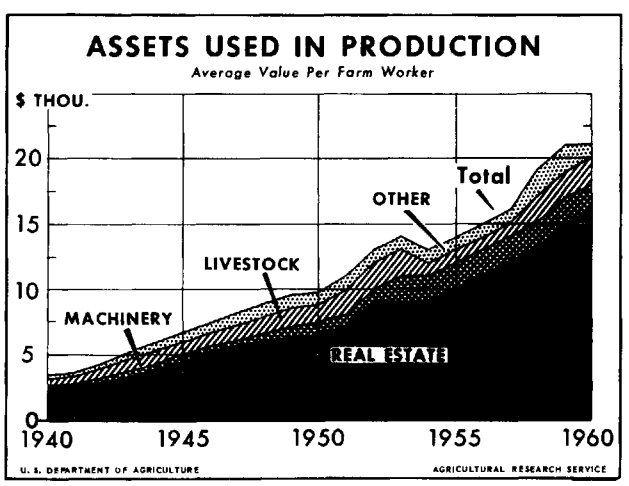
great. For example, at 1940 prices, the value of farm machinery and motor vehicle assets per farm rose from $488 in 1940 to $1,526 in 1960, a more than 200 per cent increase.

Machinery Has Replaced Labor

Most of the increase in farm machinery use is probably associated with the differential in cost of machine capital versus human labor. The great demand for labor and rapidly rising wage rates in nonfarm occupations provided sufficient incentive in the last two decades for many farm workers to seek employment elsewhere. With this increased demand for farm workers by nonfarm industries, average farm wage rates were bid up throughout the 'fifties despite the decline in farm employment and total net farm income in the second half of the decade.

An indication of the changing cost of labor versus machinery is the unequal rate of increase in wage rates and farm machinery prices from 1940 to 1960. Farm wage rates rose over 400 per cent during this period, double the rate of increase in farm machinery prices. Furthermore, prices of motor supplies including gasoline, etc., a major factor in machinery operating cost, rose only 75 per cent during the period. This wide disparity in the rate of increase in wages compared to machinery prices and the major technological advances in farm machinery have doubtless been major influences in the rapid substitution of machinery for labor on the nation's farms in the two decades (Chart 3). During the period the value of

Chart 3



machinery on farms, at 1940 prices, tripled and total farm output rose almost 50 per cent while the average number of workers on farms declined from 11.0 million to 7.4 million, a decline of almost one-third.

Average Size of Farms Has Increased

The substitution of machinery for labor in agriculture has also had an important impact on other types of farm capital assets. Tractors, plows, planters, cultivators and harvesters have greatly increased the average size of farms that can be handled efficiently by one operator. Once such machinery is purchased, costs per acre farmed decline sharply as farm size increases. Presumably, the fixed costs of machinery and power are often covered in the original farm unit and the total of such costs changes little when acreage is added. With other costs proportional to the acreage farmed, the added acres generally result in a reduction in average costs per unit of output. The incentive for increasing size of farms in order to reduce production costs has had an important impact on real estate capital investment per farm. Even if the decision to purchase machinery and additional land was made simultaneously it does not invalidate the conclusion that mechanization has had an important impact on real estate assets per farm unit by increasing the optimum-efficiency size of farms.

The incentive to expand farm size has pushed the national average acres per farm up from 167 in 1940 to an estimated 255 in 1960. Furthermore, with farmers bidding against one another for the limited amount of available acres suitable for cropland and with the generally rising price level, farm land values have risen substantially. Average value per acre in 1960 was approximately 3½ times the level of 1940. The combined factors of larger farms and higher per acre land values had as of early 1960 pushed average real estate values per farm up approximately 5½ times the 1940 levels.

Investment in Livestock Has Risen

Increased acres per farm has also been a factor in increased capital investments in livestock on farms where it is desirable to market a large proportion of the crops produced through livestock. Apparently, feed crop output per acre is at least as great on large farms as on small ones[6]. Thus, with output of feed crops increasing proportionately with the size of farms the larger farms will support greater numbers of livestock.

Furthermore, technology in the mechanization of livestock production operations has paralleled that of other farming operations, increasing the optimum-efficiency size of livestock enterprises.

[6] See, *Farm Resources Needed for Specified Income Levels.* United States Department of Agriculture, Agricultural Information Bulletin Number 180, p. 30.

The total value of livestock inventories per farm rose approximately 4½ times during the 20-year period from 1940 to 1960. Again, much of the gain was a result of price inflation. But the number of animals per farm of most major types of livestock has gone up substantially. For example, the number of beef cattle per farm more than doubled from 1940 to 1960. Also, numbers of all other types of livestock, excluding sheep, have increased.

The Demand for Liquid Assets Has Increased

Larger farm units together with the generally rising volume of purchased inputs have resulted in a growing need for liquid assets per farm. Cash outlays for feed, seed, fertilizer, machinery upkeep, and fuel have all increased in recent years. Larger holdings of cash balances and other financial assets are needed to meet such expenditures.

Conclusion

The returns from additional capital on individual farms have been sufficient in the last two decades to provide incentive for major new investments. Average value of all assets per farm increased fivefold. The value of machinery and motor vehicles per farm rose eightfold. Real estate values per farm rose 5½ times, and livestock increased 4½ times during the period. A substantial portion of the gains resulted from the bidding up of prices. However, the physical volume of assets also rose appreciably. At constant prices the value of farm machinery per farm rose threefold. Acres per farm increased from 167 in 1940 to 255 in 1960. The number of beef cattle per farm doubled and numbers of other kinds of productive livestock per farm have increased.

Stock Prices In Perspective *(Continued from page 5)*

were 2.93 per cent. Today, pension funds, insurance companies endowment funds, and other investors have a greater current income incentive to buy bonds than stocks, both absolutely and relative to past periods.

Earnings-price ratios on corporate stocks have also shown a marked decline in recent years, as the rise in common stock prices has exceeded the increase in corporate net profits. In the 1950-56 period, earnings on common stocks averaged about 10-1/5 per cent of prices, and at the levels of prices and earnings in September this year they were at the rate of about 6¼ per cent.

Comparison with Other Declines

Stock prices tend to fluctuate over a wider range than prices of fixed-income securities, production, or personal incomes. On ten occasions since 1900, the market average has fallen at least twice as much as the 14 per cent contraction over the past year. Conversely, there have been an equal number of big rises, and in most cases the rises have been larger than the declines.

In the extreme 1929-32 collapse the 500 stock composite dropped 86 per cent. However, virtually no one believes there is a possibility for such a drastic reduction to recur. In the most recent of the ten largest "bear" markets this century, 1946-47, stock prices fell about 29 per cent from an index level of 19¼ to 13¾. Although the country was undergoing postwar conversion from wartime to peacetime production, the pace of business activity was vigorous and prices of most other goods were rising. The decline in stock prices then probably reflected a widespread belief that the country would suffer an early postwar depression.

Conclusions

After reaching a peak in August 1959, stock prices declined about 8 per cent, but recovered most of the loss by year end. Early in 1960 stock prices declined then leveled off, and declined again in late August and September to a level 14 per cent below the high. Yet, prices of corporate equities are still at historically high levels. Even when compared with corporate profits and dividends, stock prices are unusually high in comparison with the past. Many times in the past stock values have contracted much more than the recent decline.

Whether prices will fall further and how far they might fall cannot be foretold. The fact that stocks may appear to be amply valued according to some tests does not mean that stock prices must necessarily adjust downward. Even if one could forecast the trend of business activity or general prices over the coming year or two, this would not assure an accurate projection of stock prices since movements in the stock market are not always closely related to business activity. Even if investors felt strongly that business activity would decline in the near future, stock prices might rise from their present levels if investors had an optimistic view of the longer run growth prospects or feared a general price inflation. Conversely, stock prices might well decline in periods of business boom, depending on such things as the tax policies, wage rates, and beliefs regarding the longer run outlook for growth and prices. Finally, it may be added that the performance of particular issues and categories of stocks may run counter to the prevailing trend.