

economic review

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FEDERAL RESERVE BANK OF CLEVELAND

A TALE OF THREE TAX CUTS

THE LARGEST tax cut in the nation's history (in dollar terms) was implemented last month. That action is the third major reduction in income taxes in the postwar period, and is probably one of the most significant fiscal steps that the nation has ever taken. The 1964 tax cut represents an attempt to move an already expanding economy to a higher level from which it may continue to expand.

There is a general consensus that initially the economy will respond favorably to the tax cut. But there are widely divergent views regarding both the nature and magnitude of the response. It is clear that the tax reduction has created much enthusiasm concerning the near-term economic outlook. In the extreme, some even view the tax reduction as a panacea for nearly all our economic ills. Others see the tax reduction as insurance against recession in the near term.

Any evaluation of the impact of the 1964 tax cut should include a review of the experiences associated with the two tax cuts that occurred earlier in the postwar period. This is particularly important in view of the fact that those experiences indicate that a tax cut needs to be timed appropriately in order to be most effective.

The first major postwar tax cut became effective in April 1948 and the second was completed in August 1954.* The 1948 tax cut was aimed primarily at personal income taxes rather than corporate taxes. Changes in the law resulted in an average personal tax reduction of 21 percent. The \$4.7 billion reduction in Federal revenue amounted to 2.7

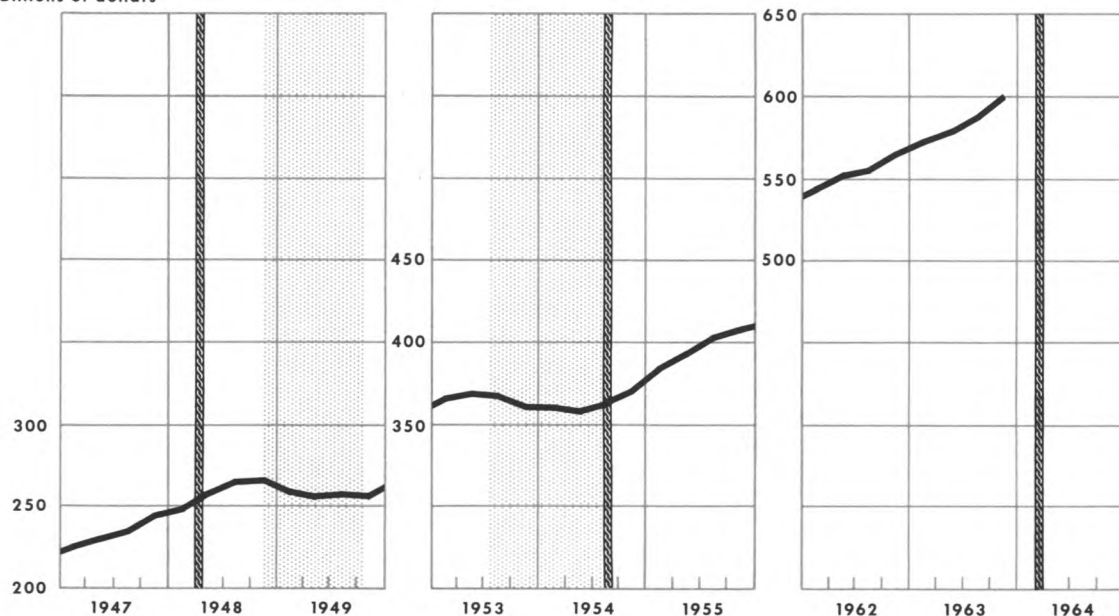
* In addition to the tax legislation passed in August, the higher rates on personal and corporate income (in the case of the latter, an excess profits tax) included in the Revenue Act of 1951 expired in January 1954, and increases in selected excise taxes also adopted in 1951 were allowed to expire in April 1954.

1

GROSS NATIONAL PRODUCT

Seasonally Adjusted Annual Rates

Billions of dollars



Source of data: U.S. Department of Commerce

NOTE: Shaded area represents recession and black vertical line represents month of tax cut

percent of disposable personal income at the time the measure was passed. The 1954 legislation was more comprehensive, affecting both personal and corporate income taxes, with a total reduction in Federal revenue of \$7.4 billion. Social security taxes were also increased in 1954, however, so that the net tax reduction totaled \$6.1 billion, or 2.5 percent of disposable income.

The 1964 tax reduction also applies to both personal and corporate income taxes. The nature of the 1964 tax cut is similar to that of 1948, however, in that actual reductions have been made in tax rates; in 1954 the most important change in the tax structure took the form of changes in exemptions, deductions,

and classifications of taxable income. Under the 1964 tax cut, the reduction in income tax liabilities has been estimated at \$11.5 billion, or 2.5 percent of disposable income. The average reduction in individual liabilities amounts to 19 percent, and in corporate liabilities to nearly 10 percent.

The underlying rationale of all the postwar tax reductions has been the same, namely, that a reduction in taxes would stimulate additional spending and investment in the private sectors of the economy, and thereby assure a higher rate of economic growth. Even with the similarity of purpose, however, it is significant that each of the tax cuts occurred at different phases of the business

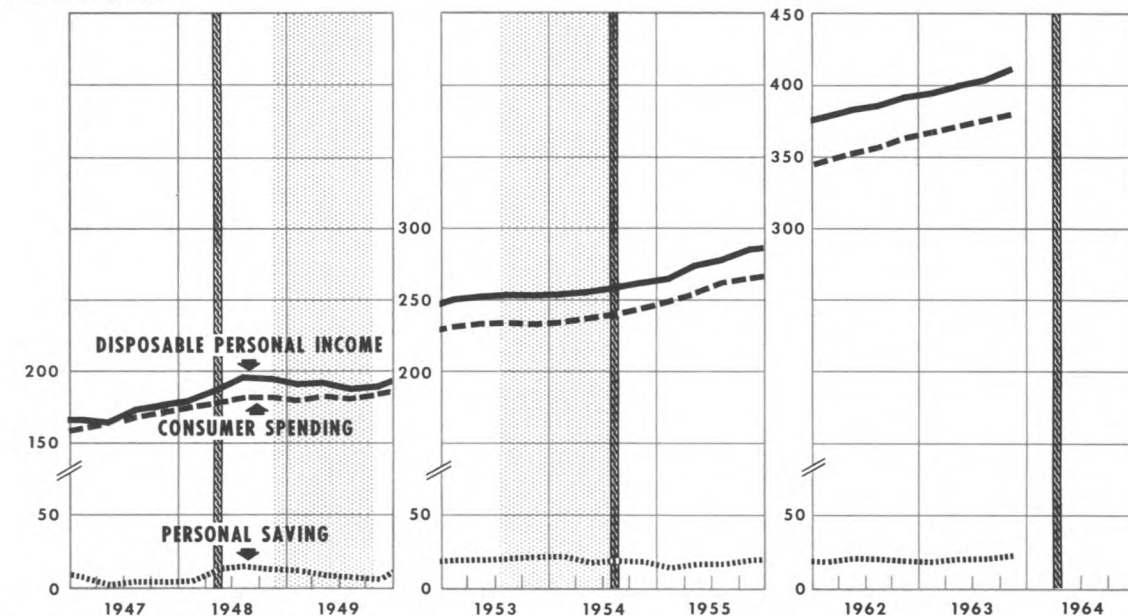
ECONOMIC REVIEW

2

CONSUMER SECTOR

Seasonally Adjusted Annual Rates

Billions of dollars



Source of data: U.S. Department of Commerce

cycle, i.e., when economic variables were not only at different levels but were in different relationship to each other. In the case of the first two postwar tax cuts, differences in timing contributed importantly to the actual turn of events in the economy. Moreover, such events were also influenced by contrasting patterns in both fiscal and monetary policy.

GROSS NATIONAL PRODUCT

As Chart 1 shows, the 1954 tax cut occurred at a favorable time, as the economy was moving out of recession, and thus provided an additional stimulus to economic activity. The circumstances surrounding the

1948 reduction were different. In 1948 GNP continued to increase for only three quarters following the tax cut and then declined in the first quarter of 1949, reflecting a recession that set in late in 1948. In contrast, in 1954 a recession ended during the quarter in which the tax cut was completed, with GNP then advancing rapidly during the following year. That advance subsequently carried into 1957.

Chart 1 also shows the differences in economic conditions prior to the 1948 and 1954 tax cuts. GNP increased substantially in the four quarters preceding the tax cut in 1948, whereas it declined moderately in the four quarters prior to the 1954 reduction.

At the time of the 1964 tax cut economic activity was in a strongly rising phase. For 1963 as a whole, GNP amounted to \$585 billion, reaching the \$600 billion mark in the fourth quarter, the quarter in which the largest increase of the year occurred. The behavior of GNP in the four quarters prior to the 1964 tax cut was thus more like the 1948 experience than the 1954 experience.

CONSUMER SECTOR

Chart 2 presents the major measures of consumer behavior. During the four quarters preceding the 1948 tax reduction, income and consumer spending expanded rapidly. In the two quarters immediately following the 1948 tax cut, disposable income increased 9 percent, while consumer spending increased only 3 percent. Two-thirds of the increase in consumer income was thus channeled into personal savings. In the third quarter after the tax cut, the fourth quarter of 1948, disposable income declined, signifying the recession that began in November, seven months after the tax cut.

In the four quarters preceding the 1954 tax cut, disposable income and consumer spending each advanced 1 percent. In the year following, consumer spending increased nearly 10 percent, while disposable income advanced 9 percent. Thus, in marked contrast to the 1948 experience, the increase in consumer spending actually exceeded that of disposable income, as the rate of personal saving declined.

The behavior of consumers prior to the 1964 tax cut was similar to that preceding the 1948 tax reduction in that both disposable income and consumer spending were in

strongly rising phases. Anticipations for the quarters following the 1964 tax cut, however, are similar to what actually happened in 1954-55, i.e., considerable advances in disposable income and consumer spending. As a result, many observers believe that the bulk of any increase in GNP in 1964 will be derived from consumer spending, largely reflecting both the direct and indirect (secondary) effects of the increase in disposable income due to the tax cut. In this view, a noticeable uptilt in consumer spending may take place in the second quarter, as the tax cut begins to take hold.

The saving pattern of consumers will be a major factor in short-run economic developments. Saving rose in the fourth quarter of 1963. This is similar to what happened in 1948, when saving rose slightly in the quarter preceding the tax cut; at that time, however, saving also rose in the quarter of and in the one immediately after the tax cut—and by significant amounts—thus largely nullifying the effects of the tax cut. The 1954 situation was different, with the tax cut not being offset by increased consumer savings; in fact saving, which was already in a downtrend, declined for two more quarters, allowing the tax cut to stimulate the economy. A major question at this time is thus: just how will savings patterns in 1964 respond to the tax cut?

Many observers hold the view that savings will continue to rise through the second quarter of 1964. These observers also hold that savings will then decline steadily, perhaps sustaining a particularly sharp fall in the second quarter of 1965, because of the impact of underwithholding of income taxes in 1964, before returning to a "normal"

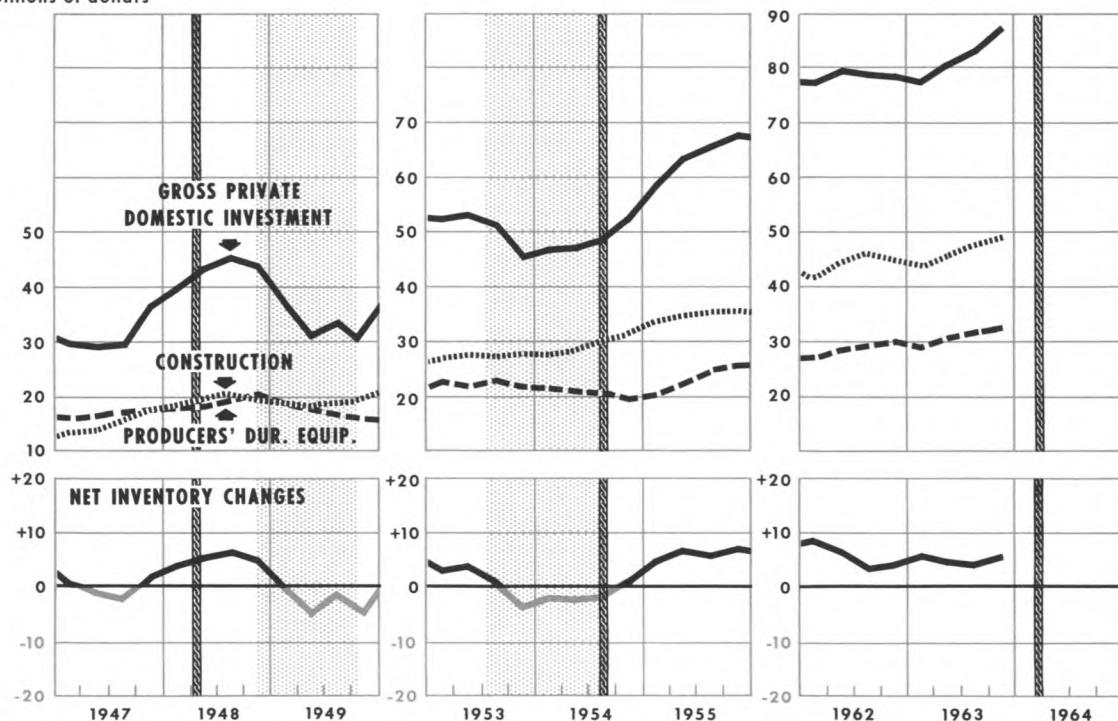
ECONOMIC REVIEW

3

BUSINESS SECTOR

Seasonally Adjusted Annual Rates

Billions of dollars



Source of data: U.S. Department of Commerce

level. Others do not visualize such a savings pattern; rather, they feel it is more likely that many individuals will spend the additional income made available by the tax cut—in the early stages for nondurable goods and services, and later for durables, after downpayments are accumulated. This turn of events would tend to provide more of an immediate thrust from the consumer sector to the economy than is assumed by some observers.

BUSINESS SECTOR

Chart 3 shows the major indicators of business behavior. In the four quarters preceding the 1948 tax reduction, private investment

rose more than 30 percent, with the bulk of the increase occurring in the two quarters immediately preceding the tax cut. As the lower panel of the chart shows, the largest share of the increase in investment was accounted for by business inventories. Thus, the reduction in taxes seems to have accelerated, but not sustained, an already rapidly expanding business sector. Two quarters following the tax cut, private investment declined, largely as a result of a slow-down in inventory accumulation. Within a year after the tax cut, private investment had receded to the 1947 level.

In contrast, in the four quarters preceding the completion of the 1954 tax cut, private

investment at first declined and then increased only moderately. Inventory behavior dominated the pace and direction of investment in that period as it did in 1948. In the four quarters following completion of the tax cut, private investment advanced roughly 35 percent.

As Chart 3 also shows, developments in the business sector prior to the 1964 tax cut suggest that more "balance" exists in the economy than was present in either 1948 or 1954. For example, the recent advance in business spending has been based broadly in construction and spending for heavy goods; inventory accumulation has continued to be moderate. The contrast between the present and 1948 and 1954 is in fact quite marked.

Of central importance in the near term is whether balance in the business sector will be maintained. In this connection, many observers anticipate a continuation of moderate inventory building, with a slight rise conforming to a widely expected increase in GNP. On the other hand, if consumers respond more swiftly and more strongly to the tax cut than these observers foresee, then additional impetus could be provided for a larger buildup in inventories—which might trigger, or accompany, or follow an upsurge in prices.

The improved outlook for plant and equipment spending is of major significance in the overall business sector. The 10 percent rise for 1964 announced in the most recent S.E.C.-Commerce Department survey should have a buoyant effect on the economy. This increase could in turn become even larger if a general sequence such as the following

evolved fully: tax cut, increased disposable income, greater consumer confidence and spending, step-up in business inventory building, price pressures and sharp upward thrust in economic activity. It should be remembered that business firms already have received a stimulus to investment from liberalized depreciation allowances and investment tax credits; they are now to have larger after-tax profits. The continuation of these factors could result in a capital spending expansion in excess of that currently envisaged, and thus provide a strong contribution to an expanding economy.

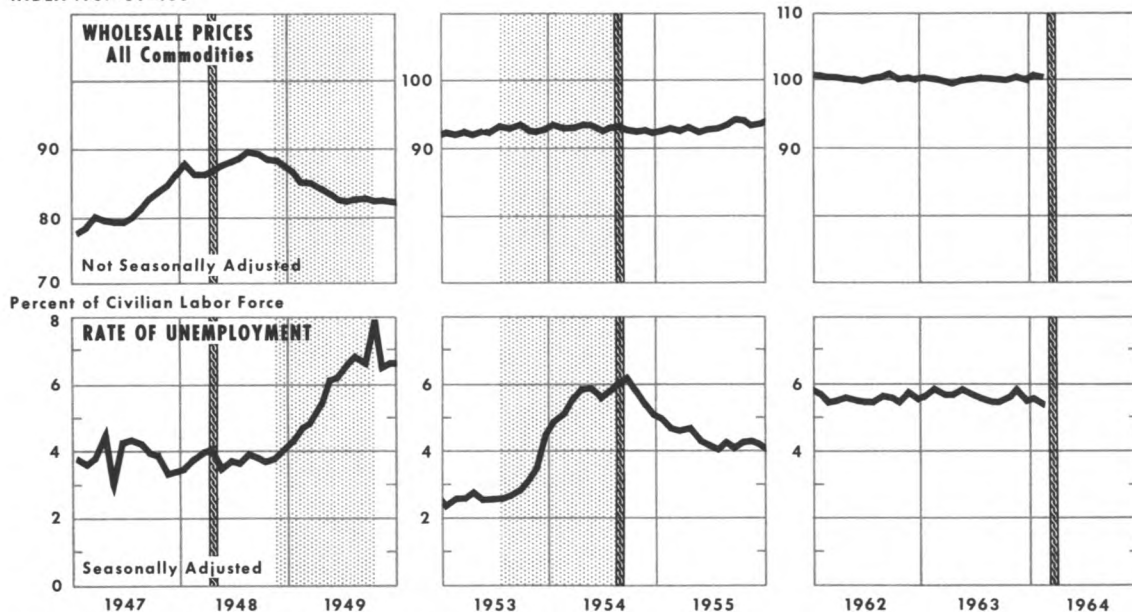
WHOLESALE PRICES AND UNEMPLOYMENT

Chart 4 presents key factors in the economic environments of 1948, 1954, and 1964. In the 12 months preceding the 1948 tax cut prices rose rapidly, with the wholesale price index advancing 7 points from 80 to 87. This reflected in part the termination of wartime price and wage controls. A tax reduction at that time increased the likelihood of further price increases and instability associated with sharp price movements. In marked contrast, in the year preceding the 1954 tax cut, the wholesale price index scarcely moved.

In the current situation, the recent behavior of wholesale prices is easy to describe—virtual stability. In fact, we have now had six years of virtual stability. The contrast to the 1948 situation is marked; the similarity with 1954 is equally marked. There is much concern in many quarters, however, about the current price situation. The behavior of some of the price indexes, and impressions gained

WHOLESALE PRICES and UNEMPLOYMENT

INDEX 1957-59=100



Sources of data: Bureau of Labor Statistics; Bureau of the Census

from business firms and the market place, taken together, indicate some churning in prices, but as yet no concrete statistical evidence that price increases are in the ascendancy. Price developments may be a crucial aspect of economic activity in the near term.

With reference to resource utilization, the level of unemployment in 1948 was not a major economic problem. As the lower panel of Chart 4 shows, the rate of unemployment had declined in the last half of 1947 and then rose to less than 4.0 percent, a level that is now accepted as full employment. It remained at that level until early 1949, indicating the relative absence of cyclical unemployment at the time of the tax cut. On the other hand, unemployment reached a peak of 6 percent

in the third quarter of 1954, at the completion of the tax cut; as the economy began to expand, the rate fell, and by mid-1955 had receded to a low of 4 percent, the same level attained before the 1948 tax cut.

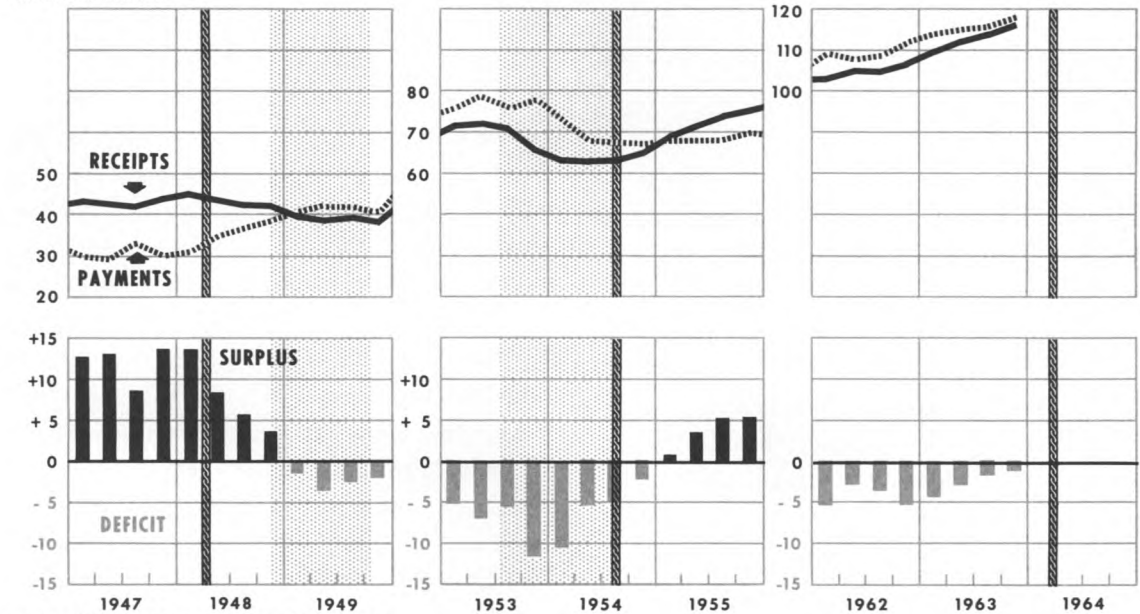
In 1964 the rate of unemployment is of major concern to the economy. While the unemployment rate of 6 percent at the time of the 1954 tax cut can be explained as largely cyclically induced, and the 4 percent rate in 1948 was the "going rate," the factors associated with the rate of unemployment in 1964 are more complex. A major issue to be resolved in 1964—and in 1965—is the ability of the tax cut to reduce unemployment. It does not appear to be simply a matter of just increasing economic activity

5

NATIONAL INCOME BUDGET

Seasonally Adjusted Annual Rates

Billions of dollars



Source of data: U.S. Department of Commerce

and thereby reducing unemployment. On the contrary, the unemployed include a large number of those who lack the education, training, or skills necessary to qualify for available employment opportunities. And this condition may not be closely connected with the level of aggregate demand. Over and above such structural problems, however, it is also difficult to estimate the combined effects of rising economic activity, the creation of new jobs, labor force developments, changes in productivity, and changes in hours worked on unemployment. Many observers at this time do not envisage much improvement in the unemployment situation, at least in the near term. On the other hand, other observers have supported the tax cut

in the belief that it would provide a lift to the economy sufficient to reduce unemployment significantly.

In addition to differences in economic conditions, there were significant dissimilarities in the conduct of fiscal and monetary policy in 1948 and 1954, both before and following the tax cuts.

NATIONAL INCOME BUDGET

Chart 5 shows the total receipts, total payments, and resulting deficit or surpluses of the Federal government on a national income budget basis. In the period preceding the 1948 tax cut, the Federal budget was in substantial surplus. Thus, fiscal policy was deflationary, in large part due to an effort to

avoid further price pressures and reduce the national debt. As the tax cut became effective however, fiscal policy became less deflationary as evidenced by the significantly smaller surpluses during the rest of 1948. A deficit was not recorded until the first quarter of 1949.

The situation in 1954 contrasted sharply to 1948. The Federal budget had been in deficit for a considerable period of time preceding the completion of the 1954 tax action. Following the tax reduction and the improvement in economic conditions, however, fiscal policy first became less expansionary, and then moderately restrictive, as indicated by the reduction in the size of deficits and the eventual surpluses beginning in the first quarter of 1955.

Chart 5 also shows the current budget situation. Recent quarters have been ones of increasing receipts and payments, with gradually declining budget deficits beginning in the first quarter of 1963, i.e., a progressively less expansionary impact of the budget on the economy. Present indications are that the budget deficit widened somewhat during the first quarter of 1964, and will widen by a very considerable amount in the second quarter. This turn of events will represent a major fiscal stimulus to the economy. The budget deficit should begin to decline in the third quarter and to move toward balance, as receipts respond to rising economic activity. The turnabout in the Federal fiscal position suggests that the budget stimulus to the economy will be receding after midyear 1964. It also suggests that the economy may be subjected to whipsawing by fiscal developments.

INTEREST RATES

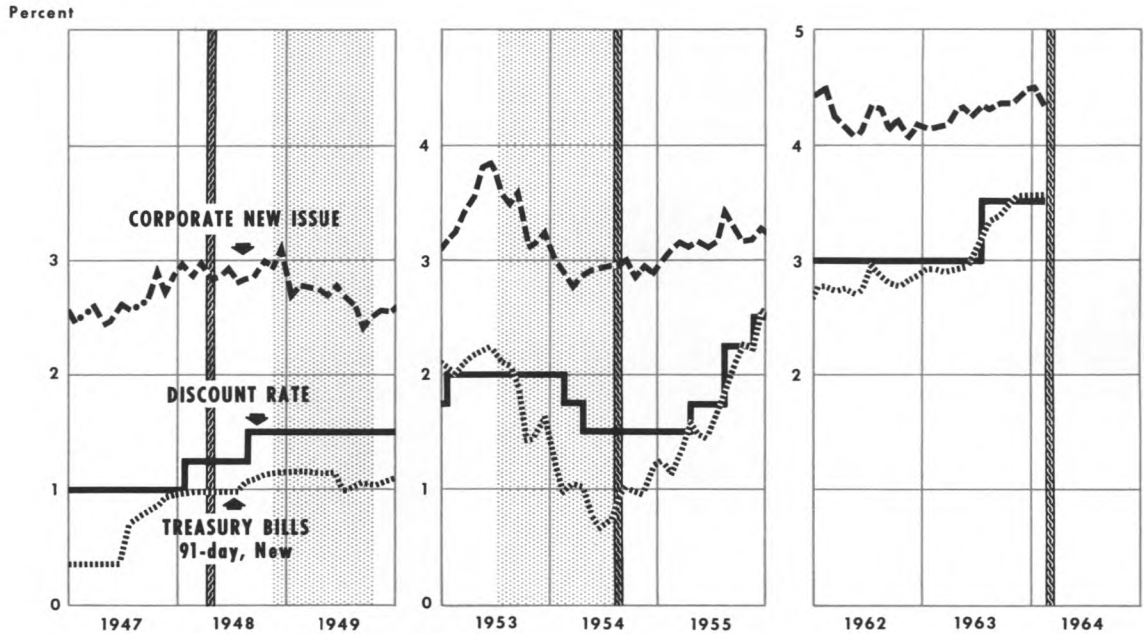
Each of the periods under review was influenced by different sets of financial market conditions and monetary operations. For example, in 1947-48 the Federal Reserve System was concerned with the behavior of prices and the inflationary potential resulting from large holdings of liquid assets by the public. The situation was seriously complicated by the fact that the System was unable to combat these problems effectively because of the continuation of the policy of supporting or pegging the price of U. S. Treasury securities. The Federal Reserve, like the Administration, feared that a tax cut would merely add to the already high liquidity of the economy and result in increased inflation. Despite the handicaps under which it was operating, the System attempted to adopt a more restrictive monetary policy in 1948.

As Chart 6 shows, the discount rate was increased twice in 1948. The Board of Governors also raised requirements for all member banks on both demand and time deposits. The upward movement of both the new corporate bond issue rate and the 91-day Treasury bill rate prior to the tax cut reflected the demands for credit associated with the accelerated pace of investment, as well as the increased restrictiveness of monetary policy.

In 1954 the situation was different in that the timing of the tax cut was such that monetary policy was able to play a complementary role and thereby help bring about the desired expansion without the risk of too much stimulation. The System's role was made easier of course by the fact that the policy of pegged rates had been abandoned in 1951. As Chart

6

INTEREST RATES



Source of data: Board of Governors of the Federal Reserve System

6 shows, the discount rate was lowered twice in 1954, remaining at 1.50 percent until the expansion was well underway in 1955. In addition, reserve requirements were lowered on both demand and time deposits, thus freeing about \$1.5 billion in reserves.

Prior to the 1954 tax cut, both short- and long-term interest rates declined, as indicated by the chart. Once the expansion was underway, however, interest rates rose in response to increased demands for credit, and the discount rate was increased as monetary policy became less expansionary.

At the time of the 1964 tax cut, the behavior of short-term interest rates reflects the general stability of interest rates that has character-

ized recent years. The bill rate has moved in a narrow range slightly above the discount rate during the past 4 months. On balance, it has shown little tendency to break out of this range, even with the recent increase in the British bank rate. The discount rate was raised in 1963, the first change since 1960, and the first increase during the current expansion. The cost of short-term funds is currently higher than at the time of the tax cut in either 1948 or 1954. As indicated earlier, the behavior of interest rates at the time of the 1948 tax cut was influenced by some attempted monetary restraint, however mild it may have been, while the behavior in 1954 reflected mainly monetary expansion.

ECONOMIC REVIEW

Based on the corporate new issue rate, the cost of long-term funds is also higher now than in either 1948 or 1954. As Chart 6 shows, however, the rate is no higher now than 2 years ago. In contrast, at the time of the 1948 tax cut, the new issue rate was in a rising phase (turning down after the peak); and in 1954 after having moved down, the rate was in a level phase (turning up with economic activity).

MONETARY POLICY

In evaluating the role of monetary policy at the time of previous tax cuts, it may be suggested that monetary policy complemented the tax reduction in stimulating the economy in 1954; on the other hand, monetary policy was required to work at cross purposes in 1948, although its influence may have been limited.

The 1948 and 1954 experiences indicate that a tax reduction by itself may not be enough to sustain economic expansion unless properly timed in relation to existing economic circumstances. These would include the conduct of monetary policy, which in turn also reflects the pace and direction of economic activity at the time of a tax cut. Timing and circumstances, therefore, became particularly crucial elements in the influence of a tax cut on the economy. In the case of 1954, the economy was operating below capacity, with sufficient slack to permit a substantial increase in aggregate demand without fear of overstimulation. In contrast, in the latter part of 1947 and early 1948, strong business expansion was already underway, and the economy was operating near full capacity; this was evidenced by rising prices and

relative absence of unemployment. In that case, tax reduction subjected the economy to a risk of overstimulation. Sentiment of this type may have prompted the President to veto the tax cut twice before it was finally passed.

In the current situation, monetary policy is a moderately expansionary factor in the economy. In fact, regardless of the measure used—two widely used measures are shown on Chart 7—monetary policy has been expansionary during the past three years. In short, the Federal Reserve System has supplied large amounts of financial resources in order to help support the business expansion. It is noteworthy that the discount rate action in mid-1963 appears to have had little effect on the behavior of either of the measures shown on the chart.

The rapid growth in the money supply plus time deposits in the four quarters prior to the 1964 tax cut surpassed by a very large margin that which occurred in similar time periods prior to the two earlier tax cuts. The amount of liquidity in the economy at the time of the 1964 tax cut is relatively high—as illustrated by the relation of liquid assets to GNP—but not nearly as high as in 1948, which reflected the after-effects of the high liquidity built up during World War II, or as in 1954, which was at the bottom of a recession when liquidity should be very high. Liquid assets have been increasing faster than GNP since late 1961, a development that is quite atypical for a period of business expansion. Moreover, the liquid asset-GNP ratio is currently at the highest level since 1958.

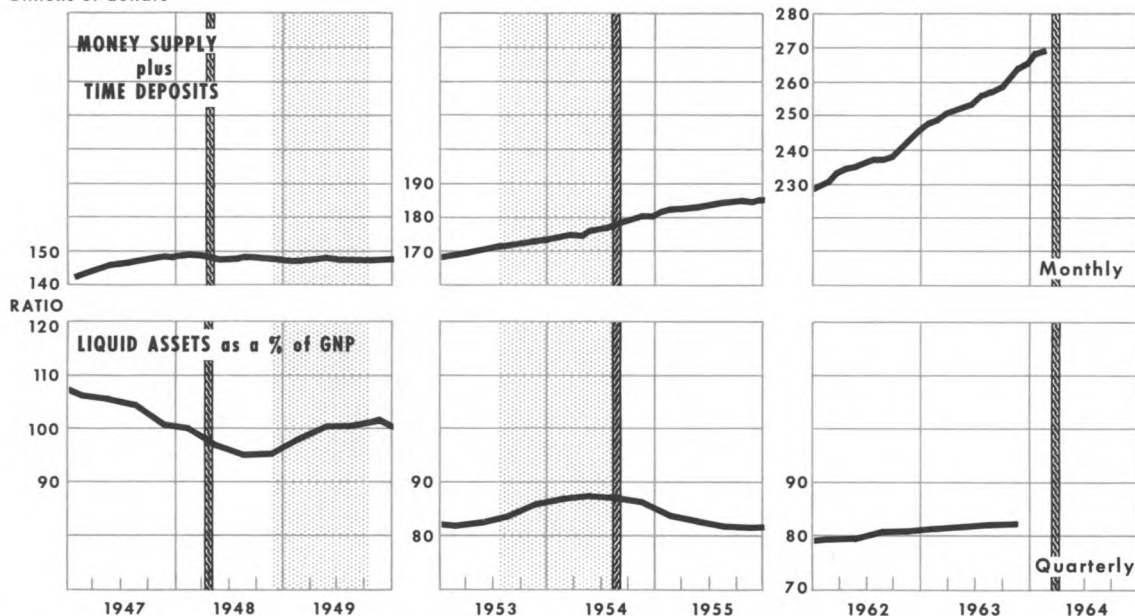
The 1964 tax cut has occurred at a time when monetary policy is moderately ex-

7

MONETARY INDICATORS

Seasonally Adjusted

Billions of dollars



Source of data: Board of Governors of the Federal Reserve System

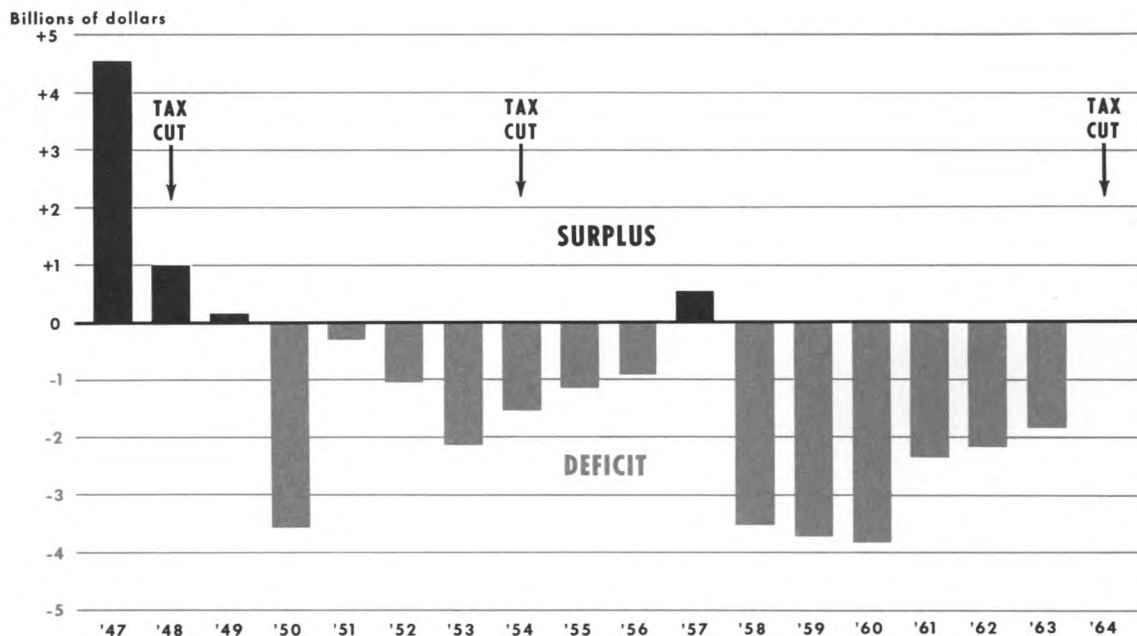
pansionary. In contrast, the 1948 tax cut took place when the authorities had moved toward restraint; the 1954 tax cut was accompanied by policy that remained expansionary until recovery was well under way.

U. S. BALANCE OF PAYMENTS

An additional factor in the current economic environment that did not pose a challenge in either 1948 or 1954 is highlighted in Chart 8. In 1948, our balance of payments accounts were still in surplus, reflecting mainly the large export balance of the immediate postwar years. In 1954, although there was a deficit in the balance of payments, it was not considered a problem situation; this was the period of dollar

shortage and planned deficits. In 1964, the U. S. has a balance of payments problem—one which has been of serious proportions since 1958. This situation has had important implications for both monetary and fiscal policy, and should be reckoned with in any appraisal of the tax cut. There are alternative ways the tax cut can affect the balance of payments. For example, one logical sequence is: rising business activity, higher imports, deterioration in the trade balance, and an adverse influence in the payments balance. There is also a logical sequence in the following: improved incentives from better returns, additional domestic investment, less capital outflow, and a favorable influence on the payments balance.

U.S. BALANCE OF PAYMENTS



NOTE: 1963 includes net receipts from nonmarketable securities.

CONCLUSION

The 1964 tax cut has occurred at a time when the economy is in a strongly rising phase. Most measures of business activity have been chalking up new records, week after week or month after month, with reassuring regularity. Despite the momentum of business activity, the economic situation appears to have been reasonably well balanced. If there is imbalance, it may be in the monetary area, where extended monetary expansion has raised some questions concerning the possibility of financial excesses and deterioration in the quality of credit.

The 1964 tax cut has received broad support from business, banking, labor, and economists. The rationale of the tax cut is that, even with considerable expansion, economic activity is not as high as it should be, and a gap exists between actual and potential activity. That is to say, our rate of growth has been insufficient to utilize to an adequate extent our human and physical resources, or to absorb additional ones. To bring about a more favorable situation, it is necessary to improve incentives to spend and invest—and this can be done best by reducing the high tax rates that may have been dampening economic incentive.

The tax cut was implemented in full recognition of the risks involved in such a course of action during a period of economic expansion, and when the Federal budget is already in deficit. Perhaps for that reason, the 1964 tax cut has been described as the "greatest fiscal experiment". However, this still leaves a number of questions unanswered. Has the tax cut been timed properly? Will unemployment decline, and if so, how fast and how much? Will prices remain stable or will there be price inflation, and if so, how fast and how much? Will we face a situation like 1948? Or will the economy respond as in 1954? What problems will be created for monetary policy and for the balance of payments?

These questions will remain unresolved until the events of the next few months actually unfold. If the forecasts of the Administration and other observers materialize, the overall pattern for 1964 and into 1965 would seem to be that of a gradual and sustainable buildup in the economy, in other words, continued balance and continued expansion, but

at a higher level.

Another pattern could emerge. The economy could become "overheated" or "overstimulated" by the tax cut, i.e., too rapid an acceleration of rates of spending and investing could occur. This could come from the combination of large-scale fiscal stimulus (primarily in the timing), considerable liquidity in the economy, and a pervasive optimism in response to the tax cut and in anticipation of an expected upsurge in economic activity. Such a turn of events could create difficulties for the economy. For example, at prevailing levels of output, a substantial rise in aggregate demand may induce speculative activity or temporary shortages, and in turn price pressures. Developments associated with conditions of this type could nullify gains expected from the tax cut. More significantly, they could reintroduce a cyclical instability that was characteristic of the 1950s. If this were to occur it would complicate the role of public policy, particularly monetary policy in both its domestic and international considerations.



THOROUGHBREDS IN KENTUCKY

Note: Photo by Skeets Meadors, courtesy of Keeneland Association.

THIS IS the time of year when attention is focused on the nation's best three-year-old Thoroughbred race horses as they prepare for the annual running of the Kentucky Derby on the first Saturday in May. In the state of Kentucky, however, Thoroughbreds are of year-round interest. Kentucky ranks as the nation's largest producer of Thoroughbred race horses and is the center of the industry.

This article is primarily concerned with the Thoroughbred race horse industry in Kentucky. Attention is focused on size, location, and types of farms in the Kentucky Thoroughbred farm complex.¹

For the United States and Canada, capital investment in race tracks, farms, and stock of the Thoroughbred industry is estimated at \$1.7 billion; employment totals about 75,000

persons with an annual payroll of \$375 million.²

The Thoroughbred race horse industry is comprised of two parts—racing and breeding. A total investment of \$1.2 billion in the racing portion is accounted for largely by race tracks whose value is estimated at \$1.0 billion. The remainder represents horses in training, as shown in Table I. The aggregate investment in breeding amounts to roughly \$500 million, and is equally divided between breeding farms and breeding stock.

Kentucky is by far the most important state in the Thoroughbred breeding industry. Approximately one-fourth of the U. S. and

¹ A definition of Thoroughbred as well as other relevant terms are found in the glossary at the end of this article.

² Estimated by the Thoroughbred Racing Association. This figure includes people employed at Thoroughbred race tracks and on breeding farms as well as those employed in related enterprises such as printing, publishing, transportation, and feed; seasonal help hired in local areas is not included.

Canadian Thoroughbred foal crop is produced in Kentucky, exceeding by a substantial margin that produced in second-ranked California, as shown in the accompanying map. Although investment figures are not available for the state, it has been estimated that the total investment in Kentucky's breeding farms and breeding stock is approximately \$125 million, or one-fourth of total investment in the breeding portion of the Thoroughbred industry in the U. S. and Canada.

In contrast to the prominent position in the breeding of Thoroughbred horses, only a minor portion of Thoroughbred racing takes place in Kentucky. The state's five race tracks account for only 3 percent of the total attendance and pari-mutuel handle at U. S. tracks. In comparison, New York ranks first in terms of racing, with about one-fifth of U. S. attendance and mutuel handle.

KENTUCKY'S THOROUGHBRED COMPLEX

Most of the Thoroughbred horse farms in Kentucky are located in the "inner bluegrass area" which encompasses Bourbon, Fayette, and Woodford counties. Thoroughbred production is particularly heavy in the triangle framed by the cities of Versailles, Lexington, and Paris. The local climate, soils, and topography played a significant part in the development of the industry in this region. Soils in particular are thought to be an important influence in the early growth of the industry; underlying limestone formations result in a high level of soil phosphates and calcium that contribute to the good physical quality of horses raised in the area.

The Kentucky Thoroughbred breeding industry is comprised of approximately 250 farms, of which some 200 are located in the three-county area. The size of farms ranges from less than 5 acres to more than 3,000 acres. Management of the farms is also diversified—some are owner-operated while others are operated by managers for absentee owners.

As with many industries, the growth and continuance of the breeding industry in central Kentucky have been helped by the advantages and economies that result from concentration in a single area. For example, some of the best Thoroughbred stallions are located in the Lexington horse farm complex. The nation's leading sire in 1963 in terms of money won by offspring was Bold Ruler, a Kentucky-based horse. In addition, eight other Kentucky stallions, Nasrullah, Johns Joy, Spy Song, Double Jay, Royal Charger, Swaps, My Babu, and Greek Song were also

Table I

Investment in the Thoroughbred Industry United States and Canada Estimated Value in Millions of Dollars 1963

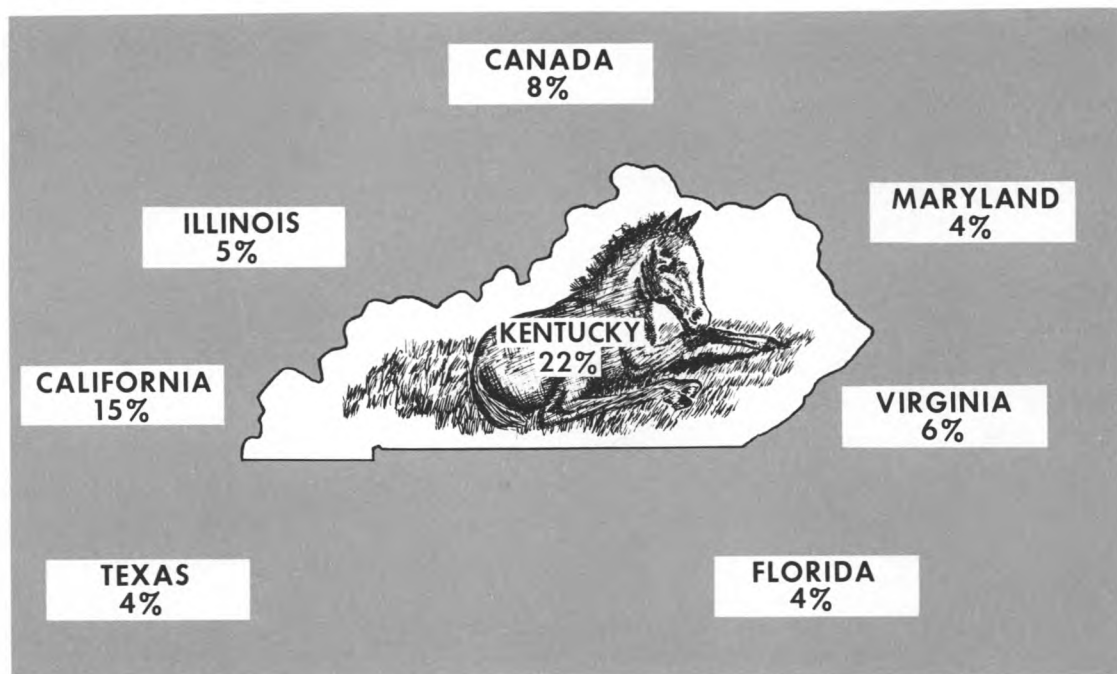
Racing	
36,000 horses in training	\$ 200
101 race tracks	1,000
Breeding	
2,000 breeding farms	250
3,000 stallions	50
18,000 broodmares	127
11,000 yearlings	55
14,000 foals	28
Total Investment	\$1,710

Sources: Thoroughbred Racing Association and
Cromwell Bloodstock Agency

ECONOMIC REVIEW

THOROUGHBRED FOAL REGISTRATIONS

Selected States and Canada
Percent of Total Crop



Source of data: *The Blood-Horse*

among the nation's top ten sires for 1963 according to data compiled by Triangle Publications. The availability of such outstanding stallions obviously is an advantage to breeders in the area.

The concentration of horse farms in this region also has resulted in the establishment of specialized businesses to serve the industry. For example, veterinarians who specialize in the diseases and injuries of the race horse have established practices in the region, as well as clinics that provide medical treatment to horses. Local vaning companies offer virtually any type of transportation for horses, while specialized insurance companies protect owners of highly valued

horses against loss. The local and regional feed companies and feed manufacturers cater to the horse industry. Other enterprises set up in connection with the horse farms include printing and publishing of Thoroughbred magazines, auction sales, blacksmithing, fencing, and specialized barn construction firms. Another feature of area concentration has been development of a labor force, from managers to grooms, skilled in handling Thoroughbreds.

HORSES TO RACE OR TO SELL

There are two types of breeding farms; one type raises Thoroughbreds to sell while the other raises stock to race for the farm's

racing stable. On farms where horses are raised to sell, the intensity of the enterprise varies from farms that concentrate mainly on horses to those where one or two broodmares are kept as a sideline to a general farm operation.

Most market breeders attempt to sell their animals at one of two Keeneland yearling sales. These two sales account for more than half of all the yearlings sold at auction each year in the U. S. and Canada and almost 40 percent of the entire yearling crop raised in Kentucky. In 1963, for example, of the 2,267 yearlings sold (15 percent of the entire yearling crop), more than one-half—1,178—were sold at Keeneland. At the Keeneland summer sale in July, a limited number of yearlings (usually 275 to 300) are sold. Yearlings are selected for this sale primarily on the basis of pedigrees but conformation is also considered. In 1963 yearlings marketed at the July sale averaged \$14,191 per head, substantially higher than all other sales, as shown in Table III. The Keeneland fall sale in September is open to all yearlings, and (as also shown in Table III) more yearlings are sold at this auction than at any other sale.

The higher prices paid for these yearlings reflect the high quality of Kentucky-bred horses. Typically, a measure of quality is the number of stakes races won by a Thoroughbred. Stakes races offer the most money and prestige to winners, and consequently attract the best horses. In 1963 Kentucky-bred horses won 54 percent of all stakes races although the state produces only 22 percent of the foal crop.

As would be expected, most Kentucky market breeders attempt to market their

yearlings at the selective Keeneland summer sale or otherwise at the Keeneland fall sale. To obtain a high price for his crop the market breeder must offer a sound, sleek yearling with fashionable bloodlines or parentage. What is fashionable depends largely on success in racing as measured by earnings; a fashionable sire's popularity, for example, may be due to high winnings of his offspring.

Bloodlines offered by a particular market breeder are largely determined by his ability to purchase popular parentage. Popular sires have the most expensive stud fees, ranging up to \$12,500. Another limitation on the individual market breeder's selection of bloodlines may be his inability to forecast what will be popular or fashionable in the future.

The owner who raises horses to race as part of an integrated farm operation places a different emphasis on the environment in which his horses are raised. In contrast to the market breeder who prepares for the yearling sales, the racing breeder aims directly for the race track; he can raise a tougher yearling since the animal does not have to be sleek and fat at sale time. In addition, the racing breeder controls the breaking, training, conditioning, and racing phases of his horses' development. Conversely, the market breeder has no control over racing conditions of horses he breeds although his reputation is built on the success or failure of his animals.

GROWTH IN RACING

The popularity of Thoroughbred horse racing, measured by attendance at races and the volume of pari-mutuel betting, has re-

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corded substantial growth in recent years, as shown in Table II. Attendance at Thoroughbred race tracks reached a record 35.5 million in 1963, 10 percent above 1962 and 27 percent higher than in 1954. Pari-mutuel handle registered a 7 percent year-to-year gain and advanced 35 percent from the 1954 level. The number of racing days (also shown in Table II) and consequently the

Table II

Thoroughbred Race Track Statistics United States

	1963	% Change from	
		1962	1954
Attendance (mil.) . . .	35.5	+10%	+27%
Pari-mutuel handle (bil.) . . . \$	2.8	+ 7	+35
Racing days . . .	4,060	+ 8	+46

Source: National Association of State Racing Commissioners

Table III

Major Yearling Sales

	Number Sold in 1963	Average Price Paid 1963	% Change from 1962
Keeneland summer (Kentucky) . . .	275	\$14,191	+ 9%
Saratoga (New York) . . .	254	12,815	+ 4
Del Mar (California) . . .	120	8,286	+ 9
Keeneland fall (Kentucky) . . .	903	3,613	+10
Maryland	184	2,298	— 4
Canada	113	1,955	—10
Others	418	2,563	—20
Total	2,267	\$ 5,790	+ 4

Sources: *The Blood-Horse* and Keeneland Association

number of races run also advanced substantially. Prices paid for Thoroughbred yearlings have advanced sharply, despite large gains in the number sold, reflecting the growth in racing and subsequent increase in the demand for race horses (see Chart).

RECORD SALES VOLUME

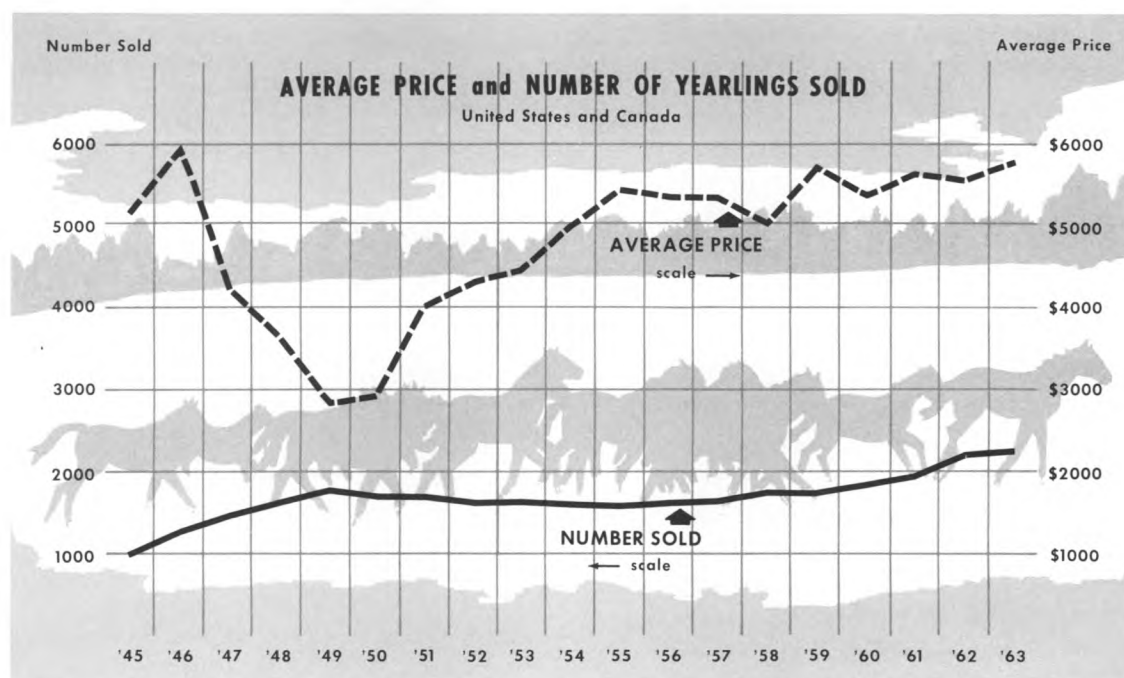
In 1963 auction sales of yearlings totaled a record \$13.1 million, up 5 percent from a year earlier. Average price paid advanced to \$5,790 per head, second only to 1946 when only one-half as many yearlings were sold.

Yearling sales in Kentucky grossed \$7.2 million in 1963, compared with \$6.2 million a year earlier. As previously mentioned, more than half of the yearlings sold by auction are consigned to the Keeneland summer and fall sales. These two sales, along with the Del Mar (California) sale held in August, recorded sharp year-to-year gains in average prices paid, as shown in Table III.

The growth in the Thoroughbred industry and the increased demand for yearlings are further reflected in the higher prices paid for larger numbers of breeding stock. In 1963, 842 animals, mainly broodmares, were sold at public auction, and the average price received was \$4,616; ten years earlier, 398 horses were sold for an average price of \$3,431.

GEOGRAPHIC DIVERSIFICATION

The Thoroughbred breeding industry has become less concentrated geographically. Although the number of foals born in Kentucky each year has continued to increase, the state's proportion of the total foal crop has



Source of data: *The Blood-Horse*

declined. From 1957 to 1962, the Kentucky crop increased from 3,061 to 3,173 foals, but dropped from 29 percent to 22 percent of the total (see Table IV). The largest gains by

other states producing Thoroughbred foals were 2-point advances recorded in Illinois and Florida which moved to 5 percent and 4 percent, respectively, of the total crop.

Table IV

**Foal Crop and Stakes Winners
Selected States and Canada
Percent of Total**

	Foal Crop		Stakes Winners	
	1957	1962	1958	1963
Kentucky	29%	22%	58%	54%
California	14	15	15	18
Canada	8	8	7	6
Virginia	6	6	3	5
Illinois	3	5	0	1
Florida	2	4	1	3
Texas	3	4	2	1
Maryland	5	4	4	3

Source: *The Blood-Horse*

The proportion of stakes winners accounted for by Kentucky-bred horses has also declined (see Table IV). Kentucky horses won 58 percent of the stakes races in 1958 but only 54 percent in 1963. The largest gains in breeding stakes winners during the period were made by California and Virginia. In 1963 California-bred horses won 18 percent of the elite stakes races while the figure for Virginia was 5 percent (see Table IV).

Despite the state's smaller share of the industry, the outlook for Thoroughbreds in Kentucky appears bright. Seemingly, the decline in Kentucky's share has resulted from faster growth in other areas—not an outflow

of Kentucky breeders. Growth in areas such as Florida and California reflects expanding population and racing. In addition, states such as Illinois, Florida, California, and Maryland encourage growth in the breeding indus-

try by holding stakes races restricted to horses bred in the state. Despite gains in other areas, however, Kentucky remains by far the nation's leading producer of Thoroughbred foals and stakes winners.

GLOSSARY

The term **bloodlines** is used to describe a direct sequence of ancestors in a pedigree.

A **broodmare** is a female horse kept for breeding purposes.

A **colt** is a young male horse before reaching an arbitrarily designated age of maturity.

Conformation describes the outline or form of a horse and how he is constructed.

Fashion describes ancestry or bloodlines currently in demand because of success in winning races. For example, a stallion or broodmare may be fashionable because of a successful racing career, because offspring have won consistently, or both.

A **filly** is a young female horse usually less than four years old.

Foals are young horses from the time they are born until they are one year old.

Pari-mutuel handle is the sum of all money bet on a race or may be the entire amount of money bet over a period of time.

A **pedigree** is a record of the ancestry of a horse, while registration papers are official certification of an animal's parentage.

Sire is the male parent or father. Technically, use may be limited to a stallion having at least one colt who has won a race.

A **stakes race** is a sporting event in which a prize (trophy, money, or both) is put up for the winner.

Stallions are male horses kept for breeding purposes.

A **studhorse** is a male horse kept for breeding, especially for public use for a fee.

Thoroughbreds are a light, speedy breed of horse used chiefly for racing. The breed originated from crosses between English mares and Arabian stallions imported into England at the end of the 17th century. All Thoroughbreds must be able to trace their ancestry to three stallions, Matchem (1758), Herod (1758), and Eclipse (1764), descended from the imported Arabian stallions.

A **yearling** is a race horse between his first and second birthday. Since a race horse is one year older on January 1 of each year, actual age of a yearling can range from a few days to almost two years depending on when the foal was born.

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Fourth Federal Reserve District