

# economic review

AUGUST 1968



## IN THIS ISSUE

An Economic Evaluation  
of the Stock Market . . . 3

Recent Monetary  
Developments . . . . 17

FEDERAL RESERVE BANK OF CLEVELAND

Additional copies of the **ECONOMIC REVIEW** may be obtained from the Research Department, Federal Reserve Bank of Cleveland, P.O. Box 6387, Cleveland, Ohio 44101. Permission is granted to reproduce any material in this publication.

# AN ECONOMIC EVALUATION OF THE STOCK MARKET

For many years, stock market behavior has been popularly used as a barometer of the general well-being of the economy. As a result, many people implicitly accept the behavior of the stock market as a dependable economic indicator, without understanding why and without attempting to judge the quality of the market's performance in this role. The purpose of this article is two-fold: (1) to discuss the stock market as an economic indicator and (2) to discuss technical aspects of the stock market that bear on its role as an economic indicator.

## I

### STOCK PRICES AND BUSINESS ACTIVITY

The National Bureau of Economic Research has demonstrated that the assumption on the part of the American public has some basis in fact. The NBER, which is responsible for much of the basic statistical work on business cycle analysis, has rated the performance of a large number of economic series that reflect the course of business and financial activity in the United States. The series are measured over a long time period against six criteria,

including economic significance in relation to business cycles, statistical adequacy, smoothness, currency, conformity to historical business cycles, and consistency of timing during cycles. "A separate scoring plan is set up for each criterion, under which a perfect indicator would earn 100 points. The six scores are averaged to obtain a composite score."<sup>1</sup>

Stock market prices, represented by Standard & Poor's Index,<sup>2</sup> come out as the highest rated NBER indicator, with an average composite score of 81 out of 100 points. Stock prices score high for several reasons: data are available frequently and quickly, with virtually no time lag after the actual transactions; cycles in stock prices tend to lead general business cycles (by about four months); the data series is relatively smooth; and stock prices reflect many important aspects of economic activity.

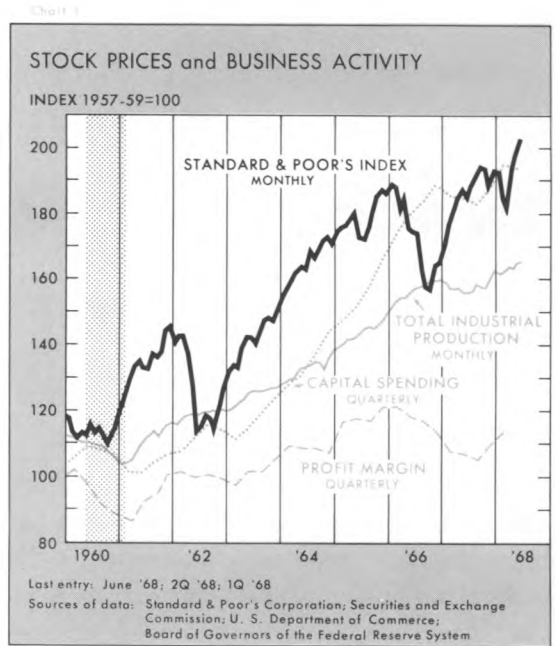
<sup>1</sup> Moore, Geoffrey H. and Julius Shiskin, *Indicators of Business Expansions and Contractions*, (New York: National Bureau of Economic Research, 1967), p. 10.

<sup>2</sup> Standard & Poor's Index of the prices of 500 common stocks, 1941-1943 = 10.

## ECONOMIC REVIEW

The relationship of stock prices to business activity is reasonably straightforward. In Chart 1, the index of *industrial production* is used because cyclical movements in that series tend to coincide with generally recognized business cycles, that is, it is a coincident indicator of economic conditions. Changes in *capital spending* are used to represent a lagging indicator of economic activity, as can be seen in the economic recovery that began in 1961. As Chart 1 shows, the Standard & Poor's Index does tend to lead movements in productive activity, as represented by changes in industrial production. Thus, it is not surprising that stock prices anticipate changes in capital spending by an even longer period of time. For example, the stock market began to rise in October 1960, preceding an increase in industrial production by five months and a recovery in capital spending by about nine months. In an NBER study of business cycle turning points, the Standard & Poor's Index led 33 turns (by a median of four months), roughly coincided with 14 turns, and lagged only five times.<sup>3</sup>

Changes in stock prices also tend to reflect market anticipations about corporate profits. In turn, a measure relating *after-tax profits to corporate income* originating in all industries frequently leads or anticipates business activity. As shown in Chart 1, there is a rough coincidence in the movements of stock market prices and corporate profit margins, particularly at interim peaks, for example, early 1962 and 1966. Based on these comparisons, it seems valid to accept the stock



market as a leading indicator of business activity. However, the chain of causation may run both ways. Stock market developments can influence business attitudes, liquidity, and spending decisions, just as business activity can be mirrored in the stock market.

## FACTORS AFFECTING THE STOCK MARKET

Examination of the recent performance of the stock market raises some question about its usefulness as an economic indicator. In order to evaluate stock market prices as an economic indicator, five indexes of stock market prices and their behavior since 1960 are shown in Chart 2. The indexes include: the Dow Jones Average, the National Quotation Bureau Index, Standard & Poor's Index, the New York Stock Exchange Index, and the

<sup>3</sup> Moore and Shiskin, *op. cit.*, p. 39.

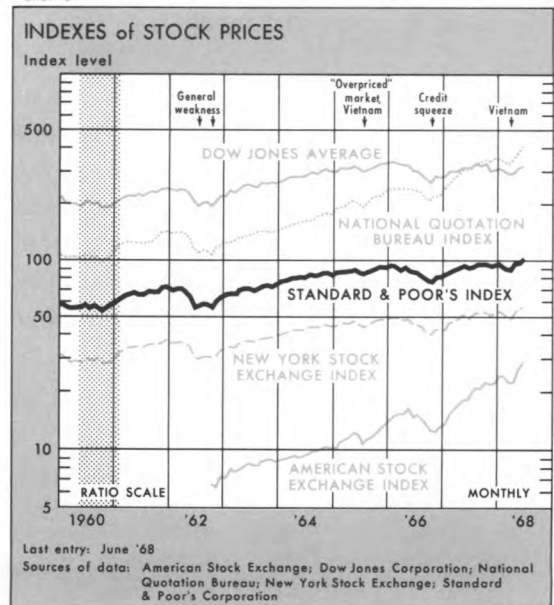
American Stock Exchange Index.<sup>4</sup> The series are quite different because they are calculated from different base periods and base prices and reflect the price behavior of different types of stocks. Despite these differences in construction and coverage, the indexes tend to move together. Each index shown in Chart 2 rose at the end of 1960, dipped noticeably in 1962, showed a brief adjustment in 1965, declined sharply in 1966, and showed another brief adjustment in 1968.

These declines are important. If stock prices are accepted as a reliable business indicator, the recent record would suggest that there were five business recessions in the last eight and one-half years. In this period, however, there was only one recession recognized by the NBER—1960-1961 (shaded area in Chart 2). Thus, the false signals in stock prices in 1962, 1965, 1966, and 1968 must be explained in order to evaluate the usefulness of stock prices as an economic indicator.

Apparently, developments other than business cycles can seriously affect stock market prices. Often, these developments are exogenous and/or noneconomic. Some of the reasons given for stock market weakness in recent years can be used as examples. Many observers believe that in 1962 the market was in a technically weak position because of high price-earnings ratios, a concurrent

squeeze on corporate profits, and diminishing concern about inflation. All three factors tend to depress stock prices, other things being equal. The brief market dip in 1965 was also blamed on overpricing, as well as public reaction to the increases in military strength in Vietnam. The drop in stock market prices in 1966 corresponded to a change in expectations about business conditions and the now-famous credit squeeze. The Vietnam situation is generally held to have caused the break in prices in early 1968. It is, therefore, apparent that at least three additional influences should be considered in reviewing the recent behavior of stock market prices—the money and credit situation, the extent of inflation, and investor psychology. It should be recognized that there is some question if these factors can be isolated to avoid misinterpreting their effects as a warning of a change in business activity.

Chart 2



<sup>4</sup> Dow Jones Average is a composite price average for 65 stocks listed on the New York Stock Exchange. National Quotation Bureau Index represents price averages for 35 quality over-the-counter industrial stocks. New York Stock Exchange Index includes all stocks listed on the exchange, published with a base of 12/31/65 = 50. The American Stock Exchange Index includes all stocks listed on the exchange, expressed in dollars.

## ECONOMIC REVIEW

**Money and Credit.** Monetary theorists give varying recognition to the impact of money and credit on the stock market. Some observers completely disregard the role of money in stock market analysis, while others, often represented by a school of economic thought known as the quantity theorists, hold that stock prices react to monetary changes after a fairly long time lag. Often the time lag is so long that "such leads may . . . raise the question whether the series [are] positively or inversely related" and make interpretation difficult.<sup>5</sup> A comparison of percent changes in the narrowly defined money supply, expressed at annual rates and as a three-month moving average, with Standard & Poor's Index, changed to a 1957-1959 base, shows that there is a rough coincidence between the rate of growth in the money supply and stock market prices. This coincidence was particularly apparent in 1966, when there was a sharp restriction in the expansion of money and credit.

However, a comparison of peaks and troughs in the 1960-1968 period reveals discrepancies in the relationship between the growth rate of the money supply and the movement of stock market prices. That is, at times changes in the money supply lead stock prices by one or two months, and at other times, stock prices seem to lead changes in the money supply. Although it cannot be stated positively that money supply growth constitutes a reliable tool for forecasting stock

market prices,<sup>6</sup> the credit squeeze in 1966 apparently had a depressing effect on the market.

**Inflation.** Many investors believe that stock market investment represents a hedge against increases in the general price level (inflation). A comparison of the Standard & Poor's Index with measures of other prices reveals some similarity between the rise in the stock market and the cost of living (consumer price index) in recent years; however, the comparison may be superficial. Although stock prices have increased as rapidly as prices of consumer goods and services in general, the influence of inflation seems to have had little relevance to the sharp drops in the stock market in 1962 and 1966. The recent climb in the stock market can be explained more clearly when earnings are included in the analysis. Stock prices usually reflect the earning power behind stocks, that is, as earnings have risen, so have market values. This can be demonstrated by using the value of cash dividends paid by manufacturing corporations on all types of stocks (including preferred stocks) as a proxy for earnings and comparing dividends with the Standard & Poor's Index (see Chart 3).

**Psychology.** It is generally recognized that investor psychology, affected by certain international and domestic developments, can play an important role in price swings in the stock market. Unfortunately, there is no accurate measure of market or investor psychology.

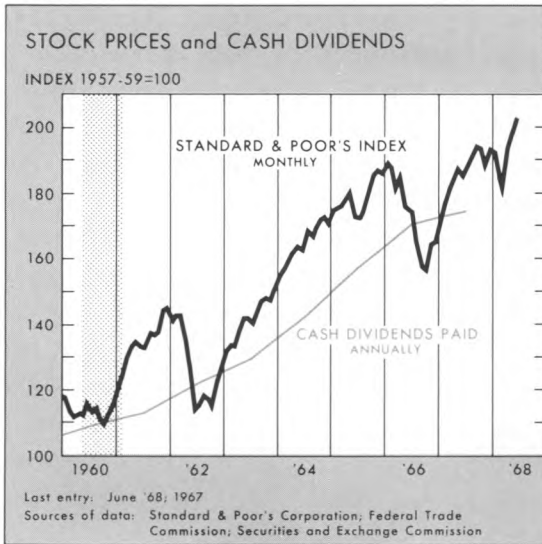
---

<sup>6</sup> Linear regression analysis using changes in the money supply as an independent variable and stock prices as the dependent variable produced a correlation ( $R^2$  adjusted) of 0.4699 and a Durbin Watson ratio of 0.2532.

---

<sup>5</sup> Moore and Shiskin, *op. cit.*, p. 19 (footnote).

Chart 3

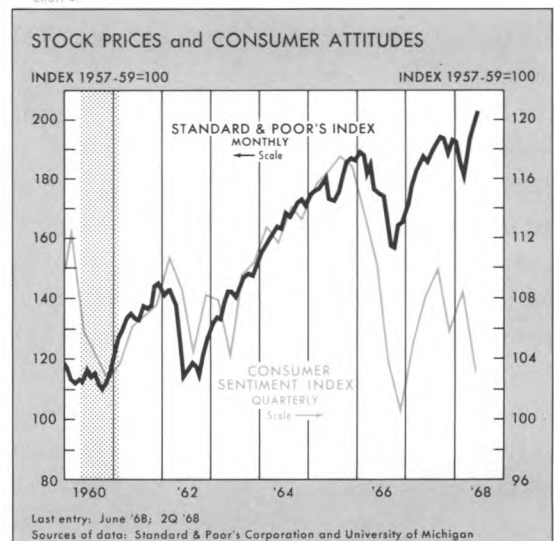


On the other hand, there are statistical series that attempt to measure consumer attitudes, including consumers' evaluations of the state of the economy, their income anticipations, and buying plans. Chart 4 compares one of the series—the index of consumer sentiment prepared by the Survey Research Center of the University of Michigan—with the Standard & Poor's Index. There is a surprising correlation between the two indexes, for reasons that are not entirely clear. It may be significant that the Michigan index began to turn down in the fourth quarter of 1965, shortly before stock prices began to erode. However, there have been false signals that would preclude the exclusive use of the consumer index to forecast the stock market. For example, consumer attitudes deteriorated early in 1963 with little apparent effect on the stock market. More recently, the level of the consumer sentiment index was far below the 1964-1965 level, at the same time that stock prices were setting new records.

## RECENT EXPERIENCE AS AN ECONOMIC INDICATOR

To summarize this discussion, it is interesting to focus on the behavior of the stock market from the time of the British devaluation in November 1967 through June 1968. During these few months, there were at least four major international financial crises, three military offensives that either worsened an existing war or threatened a new one, serious riots and an important election in France, two assassinations and a complicated presidential campaign in the United States, and a Congressional struggle in approving a program of fiscal restraint. Some of the earlier international events apparently influenced the decline in the stock market that began in January 1968. The market turned down about the time there was a serious run on the Canadian dollar and was pushed down further in the last week of January by unfavorable

Chart 4



## ECONOMIC REVIEW

news from Vietnam and Korea. An early recovery in stock prices in the second half of February was cut short by a run on the United States dollar that eventually resulted in the two-tiered gold market. From January 12 to March 5, the Standard & Poor's Index declined by 9 percent. This loss, however, was not large when compared with other recent market breaks; for example, in 1966, the same index dropped by 22 percent over a period of eight months. A subsequent recovery in stock prices occurred in March and April 1968, due in part to an over-sold market position. President Johnson's withdrawal from the presidential campaign, the decrease in bombing activity in North Vietnam, and the United States offer to begin negotiations to end the war in Vietnam are also widely attributed as major factors that influenced the April recovery in the stock market.

Interestingly, the stock market decline in January and February 1968 occurred during a period of sharp expansion in money and credit, which does not provide much support for the money supply-stock market theory of relationship, at least on a concurrent basis. In addition, early in 1968, price inflation was accelerating dangerously, which seems to indicate that the use of the stock market as an inflation hedge can be subsumed by other factors. Instead, developments in the latest period seem to be an example of the temporary but overpowering impact of investor psychology.

A comparison of stock prices with an index of bond prices (for example, the average market price of an assumed 3 percent, 20-year U. S. Treasury bond, converted to an index basis) further illustrates the recent

market situation (see Chart 5). Theoretically, when interest rates rise, both stock and bond prices tend to fall. Conversely, when interest rates decline, asset values rise, and stock and bond prices increase. In the early months shown on the chart, bond and stock prices conformed to theory and moved together. Bond prices, however, remained noticeably strong in January and February 1968, while the stock market declined by 8 percent. Although the subsequent drop was relatively severe (amounting to more than 6 percent), bond prices did not turn down significantly until the run on the United States dollar occurred early in March. In late April, bond prices did not share in the ebullience of the stock market, due largely to market concern over Congressional delay in approving the income tax surcharge.

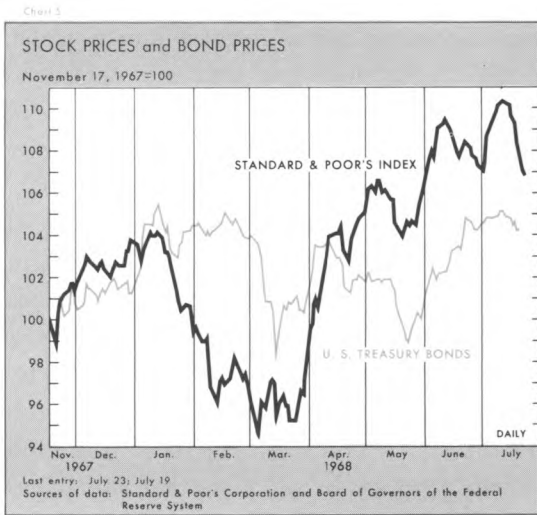
## II

### DEMAND FOR STOCKS

During the 1960-1967 period, demand for corporate stocks increased substantially. The demand for corporate stocks can be defined as gross purchases of both new and existing shares. Because complete data are not available for gross purchases, net acquisitions by selected groups are used to serve as a proxy for total demand.<sup>7</sup> The difference between net acquisitions and new shares represents an increase (or decrease) in the price of existing shares. Throughout most of the 1960-

<sup>7</sup> Net acquisitions of corporate stock are by: households, insurance companies (life, property, and casualty), private noninsured pension funds, open-end investment companies, state and local trust funds, mutual savings banks, fraternal organizations, and foreigners. Net acquisitions of corporate stock are gross purchases of both new and existing shares less gross sales.



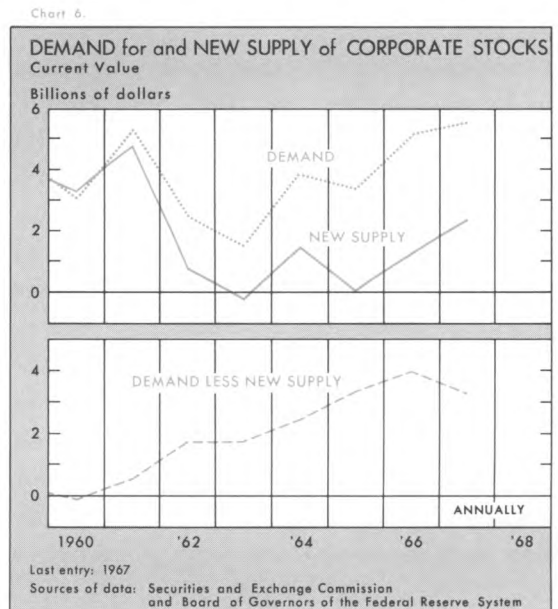


1967 period, the demand for corporate stocks increased at a faster pace than the new supply of corporate stocks. As shown in Chart 6, in 1960, the *new* supply was slightly greater than the demand for corporate stocks. In the 1961-1967 period, demand exceeded the new supply, and the prices of existing shares increased.

The increased role of institutions was one of the most important factors affecting the demand for stocks during the 1960-1967 period. For example, in 1967, the combined value of gross purchases and sales of common stocks by private noninsured pension funds, open-end investment companies (mutual funds), and insurance companies (life, property, and casualty) amounted to \$47.8 billion, compared with \$8.7 billion in 1960. In part, increased institutional activity can be attributed to legal changes that fostered more liberal attitudes toward equities. As a result, many retirement plans, trusts, and endowments became stock market oriented. Moreover, a

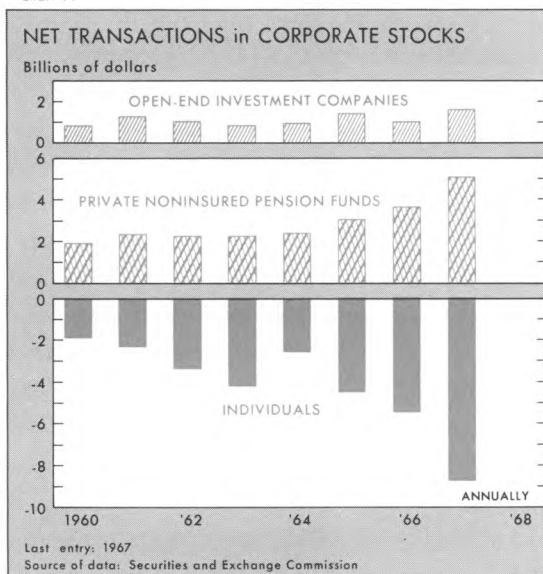
number of large life insurance companies organized and began to sell mutual funds, and others are expected to enter the field shortly.

Open-end investment companies and private noninsured pension funds are the two most important institutional investor groups in terms of the dollar volume of transactions. As shown in Chart 7, during 1960-1964, net purchases by pension funds averaged \$2.2 billion annually. Pension funds accumulated stocks at a much faster pace in the 1965-1967 period, with net purchases averaging \$3.9 billion annually. In 1967, pension funds bought \$10 billion and sold \$5 billion worth of stocks. The \$5 billion in net acquisitions in 1967 were more than double the net acquisitions in any year in the 1960-1964 period. During 1960-1964, open-end investment companies had net purchases averaging \$0.9 billion annually. In 1967, open-end investment companies bought \$14.9 billion and



## ECONOMIC REVIEW

Chart 7.



sold \$13.3 billion worth of stocks, resulting in net acquisitions of \$1.6 billion. Although the dollar volume of stocks traded by mutual funds was greater than that traded by pension funds, the former's net acquisitions were smaller (see Chart 7).

Individuals, on the other hand, sold stocks on balance during the 1960-1967 period. Available data suggest that large trusts and estates account for the bulk of sales. Individuals dispose of stocks for several reasons, such as payment of taxes, taking advantage of rising stock prices, reinvestment of funds in tax-free issues, and diversification of portfolios.<sup>8</sup> Nevertheless, the New York Stock Exchange reports that there were 20.1 million individual shareowners in 1965, compared with 6.5 million in 1952, suggesting greater public participation in the stock market. Nineteen sixty-seven was the tenth consecutive

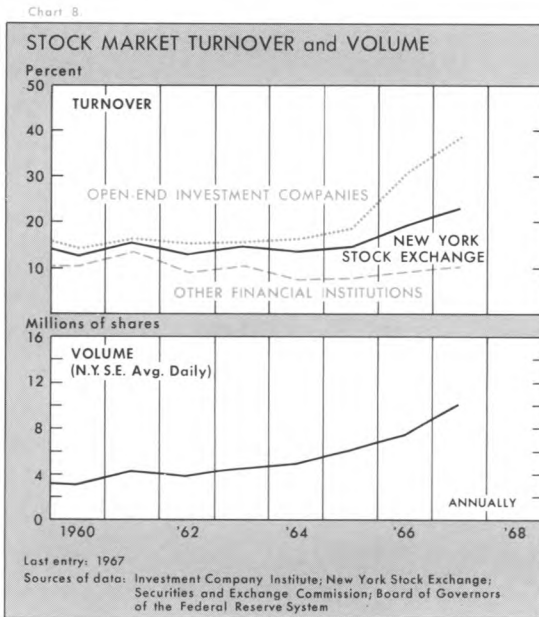
<sup>8</sup> See *Institutional Shareownership, A Research Report* by the New York Stock Exchange, 1964.

year that individuals were net sellers of stocks. In 1967, individuals sold \$8.8 billion of common and preferred stocks and purchased \$4.6 billion of investment company shares and \$4.8 billion of corporate bonds and notes.

In addition to strong demand for stocks and increased institutional activity, a change in investment attitudes influenced share prices during the 1960-1967 period. This change in attitude is exemplified by the wider acceptance, particularly by mutual funds, of investment in performance stocks—those with high growth rates in terms of market price and potential earnings. The number of performance funds formed recently has increased and some traditionally conservative mutual funds have become more performance oriented.

The turnover rate is a frequently used measure of trading activity in stocks and reflects the recent emphasis on performance. As shown in Chart 8, the turnover rate<sup>9</sup> of mutual fund portfolios began to increase markedly in 1966, and by 1967, reached 39 percent, up sharply from an average of 16 percent in the 1960-1965 period. The turnover rate on the New York Stock Exchange also increased appreciably after 1965, due largely to the influence of the mutual funds. In 1967, the turnover rate on the New York Stock Exchange was 22 percent, compared with the 1960-1965 average of 14 percent. During the period under review, the

<sup>9</sup> Turnover rates for financial institutions are computed by the Securities and Exchange Commission as the lesser of quarterly purchases or sales divided by the average of the market value of stockholdings at the beginning and end of the period. Turnover rates for the New York Stock Exchange are based on the dollar volume for the period and the average market value.



turnover rate for other financial institutions<sup>10</sup> averaged 9.8 percent, substantially lower than the rate for mutual funds and for the New York Stock Exchange. The turnover rate for other financial institutions in 1967 was 10.4 percent, up from the low of 7.6 percent in 1964, but unchanged from the 1960 rate.

The average daily volume of stocks traded on the New York Stock Exchange is another measure of market activity. As shown in the lower panel of Chart 8, volume has been accelerating since 1964. In fact, the 10 million share average daily volume in 1967 was triple the volume in 1960. Furthermore, the average daily volume in June 1968 amounted to 15.1 million shares, substantially above the 1967 average.

During the period under review, stock market credit, which is the amount borrowed to

<sup>10</sup> Other financial institutions include: private noninsured pension funds and life, property, and casualty insurance companies.

finance stock transactions with New York Stock Exchange firms, also increased. In December 1966, customers' net debit balances amounted to \$5.3 billion, or an increase of 65 percent over December 1960.<sup>11</sup> By yearend 1967, customers' net debit balances had risen further and amounted to \$7.8 billion, which was 47 percent greater than a year earlier. As a general matter, the increases in stock market credit, turnover rates, and average daily volume reflect stronger demands for equities during the 1960-1967 period.

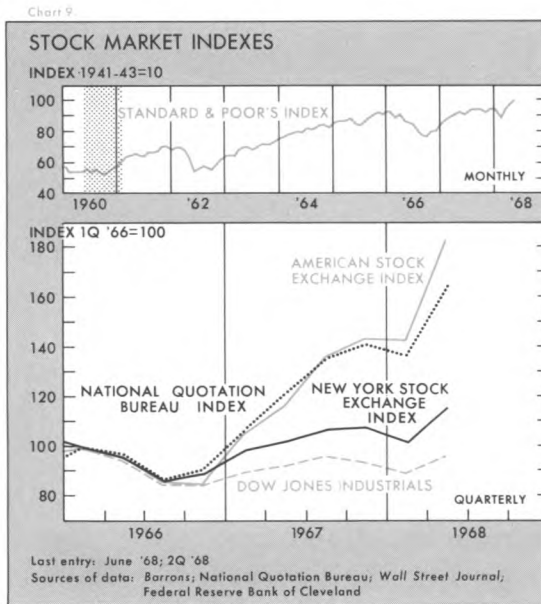
## RECENT PERFORMANCE OF SELECTED INDEXES

It is reasonable to conclude that, in recent experience, strong demands for equities, increased emphasis on performance, and other factors, such as growth of corporate earnings, benefited some groups of stocks more than others. To examine this point in greater detail, the analysis focuses on developments since January 1966, when the Standard & Poor's Index reached an interim peak (see top panel of Chart 9). The January 1966 peak ended a rise in the stock market that began in 1962, and in the months following the peak, a substantial "correction" occurred. The market did not turn around until late 1966, and a marked recovery in stock prices took place during most of 1967. A fairly sizable adjustment occurred early in 1968, and the market did not turn upward until April.

The lower panel of Chart 9 shows how various segments of the stock market, measured by four stock market indexes and aver-

<sup>11</sup> Net debit balances used exclude balances secured by U. S. Government securities.

## ECONOMIC REVIEW



ages, have performed since the first quarter of 1966.<sup>12</sup> Since the first quarter of 1966, the Dow Jones Industrial Average<sup>13</sup> (representing "blue chip" securities) has remained below the level reached in that quarter. In fact, in the second quarter of 1968, the Dow Jones Industrial Average was still 4 percent below the level of the first quarter of 1966. With the recent emphasis on glamour issues, the lackluster performance of blue chip securities should not be surprising. The New York Stock Exchange Index moved in the same general contour, but outperformed the Dow Jones

<sup>12</sup> The various indexes and averages were converted into an index using the first quarter of 1966 as the base period. Indexes are based on the closing prices and indexes for the first day of the month. Data are for the last month of the quarter.

<sup>13</sup> Dow Jones Industrial Average is a weighted price average for 30 industrial stocks listed on the New York Stock Exchange.

Industrials. In the second quarter of 1968, the New York Stock Exchange Index was 15 percent higher than the level of the first quarter of 1966.

Unseasoned and somewhat speculative-type securities are frequently associated with the American Stock Exchange. During the period under review, the American Stock Exchange Index outperformed the seasoned issues on the New York Stock Exchange by a wide margin. In the second quarter of 1968, the American Stock Exchange Index was 83 percent higher than its level in the first quarter of 1966, 87 percentage points higher than the Dow Jones Industrials, and 69 percentage points higher than the New York Stock Exchange Index. The National Quotation Bureau Index closely matched the performance of the American Stock Exchange Index in 1967, but was 19 percentage points lower than the latter in the second quarter of 1968. In summary, the data suggest that in the past few years investors and speculators favored unseasoned growth stocks to the well-seasoned blue chips, that is, emphasis was on performance.

Although the New York Stock Exchange Index did not perform as well as the other indexes, there are some glamour issues listed on the New York Stock Exchange. As shown in Chart 10, a selected group of industrial stocks on the New York Stock Exchange outperformed the Standard & Poor's Index during the period under review. These industrial groups are compared with the Standard & Poor's Index at interim highs in September 1966 and April 1968, and at interim lows in

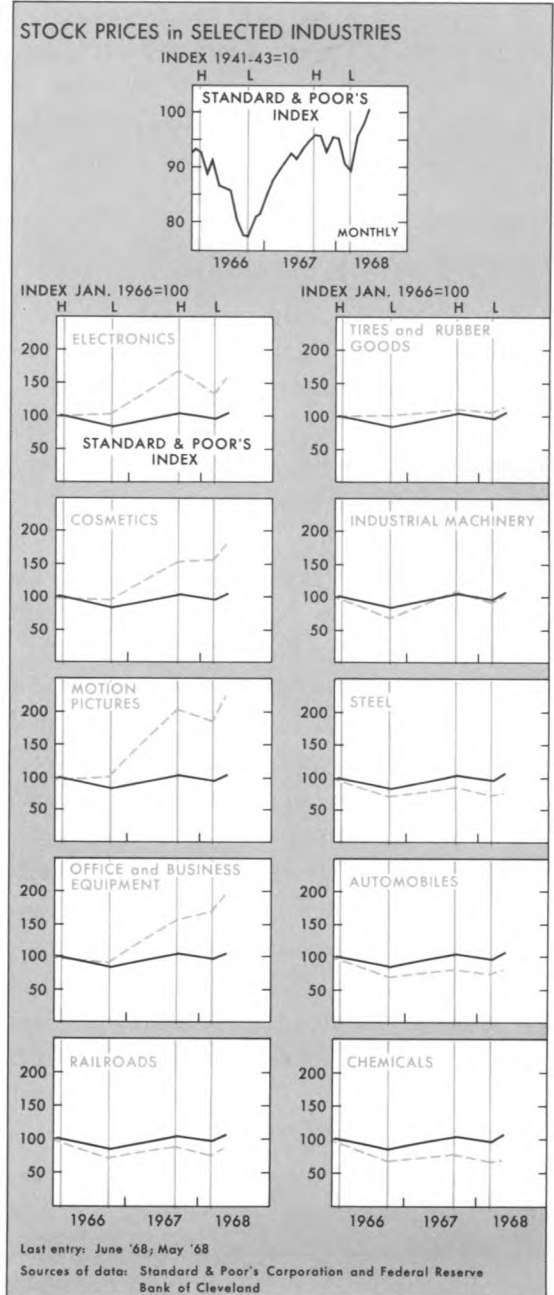
October 1966 and March 1968.<sup>14</sup>

Stocks in the electronics, cosmetics, motion pictures, and office and business equipment industries did substantially better than the Standard & Poor's Index at the 1966 low, the 1967 high, and the 1968 low. In the period shown, motion picture stocks showed the largest gain and exceeded the Standard & Poor's Index by 120 percentage points in April 1968. Of the four industrial groups, electronics had the smallest increase, exceeding the Standard & Poor's Index by 53 percentage points in April 1968. Obviously, not all groups of stocks showed such outstanding performance. For example, railroads did not perform as well as the Standard & Poor's Index (see Chart 10).

Chart 10 also shows five industrial groups—tires and rubber goods, industrial machinery, steel, automobiles, and chemicals—that represent some of the major industries located in the Fourth Federal Reserve District. Only tires and rubber goods consistently outperformed the Standard & Poor's Index, exceeding that index, on average, by about 13 percentage points. Industrial machinery outpaced the Index in September 1967, but lagged in the other selected periods. The three remaining groups—steel, automobiles, and chemicals—did not perform nearly as well as the Standard & Poor's Index. In April 1968, the Index exceeded those three groups by an average of 20 percentage points.

From the foregoing, it is clear that no single stock market average, index, or group of

Chart 10.



<sup>14</sup> January 1966 is the base period for the industry indexes; April 1968 is the latest month for which industry data are available.

## ECONOMIC REVIEW

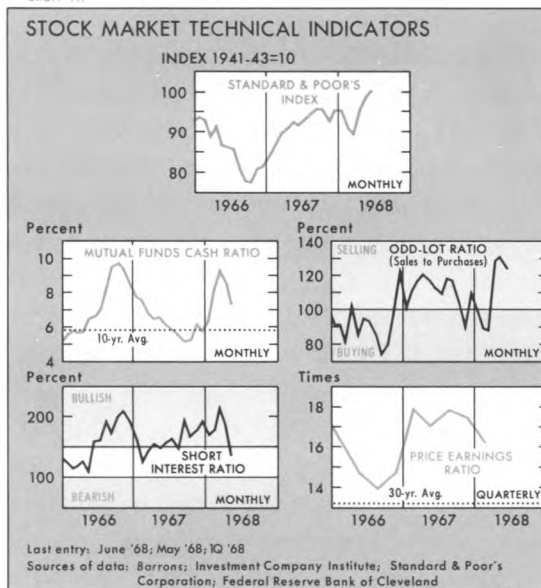
securities accurately reflects the widely divergent trends in the stock market, and that it is misleading to say that the stock market *per se* is moving up or down. Nevertheless, many stock market observers continue to judge the stock market's performance by the level of some individual average or index.

### TECHNICAL FACTORS IN THE STOCK MARKET

Many observers rely on *technical indicators* of the stock market to help forecast the direction and extent of stock price movements. As discussed earlier, investor psychology, which is perhaps the single most important technical factor affecting stock market performance in the short term, cannot be measured precisely. Indirectly, however, investor psychology can be observed in short-term changes in the level of stock prices.

Four widely used stock market technical indicators are shown in Chart 11. The mutual funds cash ratio, which relates liquid assets to total (net) assets, gives some indication of the ability of mutual funds to invest in the stock market, with a high cash ratio considered bullish. As shown in the chart, the ten-year average cash ratio amounts to 5.8 percent. In October 1966, the ratio peaked at 9.7 percent, which coincided with the low point in the Standard & Poor's Index and the beginning of the bull market that lasted throughout most of 1967. As the Standard & Poor's Index advanced in 1967, the mutual funds cash ratio declined, reaching a low of 5.2 percent in September. In early 1968, mutual funds again increased their liquidity, while the Index declined. In March 1968, the cash ratio peaked at 9.3 percent, which co-

Chart 11.



incided with the low point in the Standard & Poor's Index. In May, the cash ratio declined somewhat while the Index advanced.

The short interest ratio relates the total number of shares sold short on the New York Stock Exchange to the average stock volume for about a 30-day period (for example, February 15 to March 15). The logic behind this technical indicator is that speculators and others sell stocks "short" at high prices in anticipation of buying them back at lower prices.<sup>15</sup> When stock prices rise, those who sold short attempt to maximize profits (or minimize losses) by buying stock—or covering short positions—at the lowest possible prices, which in turn forces stock prices

<sup>15</sup> A short sale is the sale of a security that the seller does not own, or a sale affected by the delivery of a borrowed security. At some time, the short seller must buy the stock or deliver his own stock to cover the short position.

higher. A short interest ratio above 150 percent is considered bullish and below 100 percent is considered bearish. As shown in Chart 11, as the Standard & Poor's Index declined in 1966, the short interest ratio became more bullish. The 209-percent peak in the short interest ratio in November 1966 virtually coincided with the October low in the Standard & Poor's Index. Then, as the Index advanced, the short interest ratio declined to a low of 127 percent in February 1967. After February 1967, the ratio increased irregularly, reaching a high of 217 percent in March 1968, which was also the low in the Standard & Poor's Index in the first half of this year. The short interest ratio declined sharply for the next two months while the Index advanced.

The odd-lot ratio, which relates odd-lot sales to odd-lot purchases, is a third technical indicator. Some stock market technicians believe that the small investors do the right things, but at the wrong times. Available data do not completely support that position. When the Standard & Poor's Index declined in 1966, the odd-lot holders bought, and when the Index advanced, the odd-lot holders sold. It can be argued, however, that odd-lot holders sold too early in 1967. On balance, odd-lot holders bought in early 1968 and sold heavily in the April-June period while the Standard & Poor's Index advanced.

Another technical indicator—the price earnings ratio—shows how some investors appraise the growth potential of individual stocks. In the first quarter of 1968, for example, investors paid an average of 52 times earnings for office and business equipment stocks and less than 12 times earnings for

cigarette stocks.<sup>16</sup> Aside from the possibility that one stock group may have been overvalued and the other undervalued, these ratios imply that investors expected prices of office and business stocks to grow at a substantially higher rate than cigarette stocks. More importantly, price earnings ratios measure risk, with high price earnings ratios suggesting high risks. In the first quarter of 1968, the average price earnings ratio of 16.2 was appreciably higher than a 30-year average of 13.2 and the 1966 low of 13.9, but was also well below the record 23 times earnings reached in 1933 and more recently in 1962.

## CONCLUDING COMMENTS

If the stock market is to be used as an indicator of general economic activity, it should be used with caution, as some fluctuations in stock prices have little to do with real productive activity. In addition, certain structural changes within the market in recent years limit the market's value as an indicator.

It is likely that a number of basic developments will help to shape the course of share prices in the period ahead. Over and above the performance of the economy, it is highly likely that institutional demands for equities will continue to increase at a faster pace than the new supply of equities, which, by definition, should result in a higher level of stock prices. Also, there is little evidence to support

<sup>16</sup> The price earnings ratios are the high price earnings ratios of the Standard & Poor's industry stocks for first quarter 1968.

## ECONOMIC REVIEW

a view that the recent emphasis on performance is a short-term fad. In fact, the performance concept appears to be gaining wider acceptance, implying that an increasing number of investors and speculators will focus attention on a small but select group of glamour stocks. Increased volatility and high price

earnings ratios in selected groups of stocks may be the consequence. Whether these two aspects, among others, will strengthen or weaken the ability of the stock market to serve as a barometer of economic activity will be determined by business and economic analysts of the future.





# RECENT MONETARY DEVELOPMENTS

Against the background of the recently implemented program of fiscal restraint, it may be useful to review recent monetary developments, as reflected in the behavior of a number of key monetary and financial statistics during the period from May 1966 through June 1968.

## OVERVIEW

Generally speaking, the period under review includes four phases of monetary policy: a period of restraint, May-November 1966; a period of expansion, December 1966-April 1967; a period of accommodation, May-November 1967; and a period of restraint, beginning in December 1967. In view of an excessive rate of economic expansion, a major purpose of monetary policy during the first period was to restrict the growth of reserve availability. Policy in that period was marked by the introduction of a proviso clause in the directive of the Federal Open Market Committee in May 1966, under which open market operations were designed to bring about a greater restriction in reserve availability "if growth in required reserves failed

to moderate substantially."<sup>1</sup> By November 1966, however, evidence of moderating tendencies in the private economy led to a shift in monetary policy, which was implemented initially by achieving easier conditions in the money market. During the first few months of 1967, in response to an easier monetary policy, the major reserve variables expanded substantially. When the economy began to show signs of strengthening, the highly expansionary policy was transformed in May 1967 into an accommodative monetary policy, which was implemented under a directive to maintain "prevailing conditions in the money market." In early December 1967, following the British devaluation and the emergence of clear evidence that the United States economy was overheating and had become inflationary, the Federal Reserve System again moved towards restraint in order to "foster financial

<sup>1</sup> For a brief description of the proviso clause, see *Fifty Third Annual Report of the Board of Governors of the Federal Reserve System*, covering operations for the year 1966, pp. 219-220.

## ECONOMIC REVIEW

conditions conducive to resistance of inflationary pressure and progress toward reasonable equilibrium in the country's balance of payments."

The successive shifts in monetary policy during the period under review involved the use of a number of tools available to monetary policy, but not all at the same time. For example, the discount rate was changed several times. The discount rate was lowered in April 1967 and increased in November 1967 and March and April 1968. Reserve requirements on time deposits were restructured and raised twice in 1966 (July and September) and selectively lowered in March 1967; reserve requirements on demand deposits were restructured and increased in January 1968. Maximum rates payable on time deposits were changed several times (July and September 1966, and April 1968) and restructured with respect to both maturity and amount. Furthermore, after enabling Congressional legislation, steps were taken in concert with other regulatory agencies to coordinate levels of and changes in interest rate ceilings at deposit-type financial institutions. Finally, open market operations were designed to alter the growth of nonborrowed reserves (reserves supplied at the initiative of the Federal Reserve System) in accordance with the changes in policy objectives. It is difficult to disentangle the effects of various policy tools, especially in a period marked by complications in the international financial system. Nevertheless, it is apparent to most observers that, during the period under review, monetary policy acted flexibly and responsively, used virtually all of the general policy instruments available, and effectively

altered the growth of monetary reserves and bank deposits and credit as the situation warranted.

### MAY-NOVEMBER 1966

The impact of the restrictive policy during May-November 1966 shows up clearly in the behavior of the reserve aggregates (see table), the variables over which the Federal Reserve has the most control. During this period—possibly the most restrictive monetary policy period in recent history—all of the reserve aggregates declined. The behavior of bank reserves was reflected in the money supply and bank credit. The Federal Reserve System exercises only indirect control over these latter variables, which reflect in large part the responses of banks and the public to policy induced variations in bank reserves.

The narrowly defined money supply declined slightly during the May-November 1966 period, while the broader measure of the money supply plus time deposits experienced only modest growth. Total bank credit also showed only moderate growth during the period; total loans expanded fairly rapidly as banks borrowed from the Federal Reserve Banks and the Eurodollar market. Interest rates on U. S. Government securities rose, reflecting an environment of strong demands for credit combined with a restrictive monetary policy.

### DECEMBER 1966-APRIL 1967 AND MAY 1967-NOVEMBER 1967

Bank reserves expanded substantially during the December 1966-November 1967 period (see table). Expansion of nonborrowed reserves was exceptionally rapid during

## Changes in Selected Financial Variables

|   | Annual Rate of Growth*     |                              |                            |                             |
|---|----------------------------|------------------------------|----------------------------|-----------------------------|
|   | May 1966-<br>November 1966 | December 1966-<br>April 1967 | May 1967-<br>November 1967 | December 1967-<br>June 1968 |
| <b>Reserve Aggregates</b>                                 |                            |                              |                            |                             |
| Nonborrowed reserves . . . . .                            | -1.6%                      | + 20.0%                      | + 10.6%                    | + 2.1%                      |
| Total reserves . . . . .                                  | -2.4                       | + 13.3                       | + 11.0                     | + 5.2                       |
| Required reserves . . . . .                               | -1.6                       | + 12.3                       | + 12.0                     | + 4.1                       |
| <b>Money Supply and Bank Credit</b>                       |                            |                              |                            |                             |
| Money supply . . . . .                                    | -0.1                       | + 3.7                        | + 7.6                      | + 6.5                       |
| Money supply plus time deposits . . . . .                 | + 2.0                      | + 11.0                       | + 10.7                     | + 5.7                       |
| Bank credit† . . . . .                                    | + 3.7                      | + 12.6                       | + 12.2                     | + 6.2                       |
| Loans† . . . . .  | + 5.1                      | + 8.2                        | + 8.2                      | + 7.4                       |
| Investments† . . . . .                                    | + 0.8                      | + 21.4                       | + 19.8                     | + 4.0                       |
| <b>Interest Rates (monthly averages)</b>                  |                            |                              |                            |                             |
|   |                            | Change in Basis Points       |                            |                             |
| U. S. Treasury three-month bills (market yield) . . . . . | +68                        | -112                         | +112                       | +56                         |
| U. S. Government long-term bonds . . . . .                | +17                        | - 14                         | + 68                       | -13                         |

\* Monthly average of daily figures, seasonally adjusted.

† End-of-month series, all commercial banks.

Source: Board of Governors of the Federal Reserve System

December 1966-April 1967. Although nonborrowed reserves continued to expand in the May-November 1967 period, growth was considerably less than in the December 1966-April 1967 period. Much of the increase in nonborrowed reserves in the earlier phase was used to repay borrowings at the Federal Reserve Banks, leading to a slower rate of growth for total reserves than for nonborrowed reserves. Borrowings increased moderately during the second phase and were reflected in a slightly faster rate of growth of total reserves, as compared with nonborrowed reserves. The rapid growth of the reserve aggregates in large part reflected the concern of the Federal Reserve over the unsatisfactory performance of the economy.

Due chiefly to a sizable inventory adjustment, the economy showed little real growth in the first half of 1967. Evidence of strength in the economy, while widely expected, was

not apparent until the fall of 1967 and even then was obscured by the effects of strikes. A number of developments during the December 1966-November 1967 period complicated the formulation of monetary policy. These developments included a rise in interest rates—especially in the May-November 1967 phase—that threatened another round of disintermediation, the potentially adverse effects of changes in monetary policy on the international financial system, a series of large-scale Treasury financings, and an expected program of fiscal restraint. In light of these factors, monetary policy did not move to restraint until shortly after the British devaluation in November 1967.

Despite weakness in the economy, the money supply and bank credit resumed a more rapid rate of growth during the December 1966-April 1967 period. Although bank

## ECONOMIC REVIEW

reserves expanded markedly, the money supply only grew at an annual rate of 3.7 percent. The money supply plus time deposits expanded more rapidly than the narrowly defined money supply as interest rates eased somewhat and banks were able to attract time deposits (see table). The growth of bank credit also accelerated sharply in response to the growth of reserves, but most of the expansion occurred in investment portfolios. Loan expansion was only moderately greater than during the preceding period of restraint (see table).

In the May-November 1967 period, money supply growth accelerated rapidly. The rate of growth of the money supply plus time deposits was slightly less rapid in this phase, however, as rising interest rates again restrained the ability of banks to compete for time deposits. The growth of bank credit, as well as loans and investments, remained at approximately the same pace as in the preceding period. Interest rates (short- and long-term) rose sharply, despite very rapid growth of bank reserves, the money supply, and bank credit.

### DECEMBER 1967 – JUNE 1968

The impact of restrictive monetary policy, initiated in December 1967, shows up most clearly in the behavior of the reserve aggregates, especially in comparison with the behavior during the preceding two periods of monetary expansion (see table). For example, nonborrowed reserves slowed from an annual rate of increase of nearly 11 percent in the May-November 1967 period to about 2 percent in the December 1967-June 1968 period; total reserve growth also slowed markedly.

The growth of total reserves, however, was at a rate somewhat above that of nonborrowed reserves as a result of increased member bank borrowings. The slowdown in the rate of increase in nonborrowed and total reserves was transmitted to deposit growth at banks and in turn was reflected in a reduced rate of increase in required reserves.

The growth of the narrowly defined money supply, which amounted to an annual rate of 7.6 percent in the May-November 1967 period, slackened only moderately in the December 1967-June 1968 period to a 6.5 percent rate of growth. While this may appear inconsistent with the intent of policy, much of the growth of the money supply in the latter period was due to the drawing down of U. S. Government deposits during March-May 1968. U. S. Government deposits are not counted in the private money supply, although when spent, they increase private demand deposits and the money supply. The money supply plus time deposits measure showed more of a slowdown during December 1967-June 1968, due to the considerably reduced growth of time deposits.

The rate of increase of bank credit was also reduced during the December 1967-June 1968 period, as was the growth of the major components of bank credit (see table). While total loan growth slowed only moderately, the rate of increase of investment portfolios fell sharply, as banks attempted to accommodate loan demands in the face of reduced reserve growth and reduced deposit inflows.

While interest rates on long-term U. S. Government securities eased slightly on balance during the December 1967-June 1968 period, rates on short-term U. S. Government

securities on balance continued to rise, although not at the same pace as during May-November 1967. The behavior of interest rates reflects a number of influences in addition to monetary policy. For example, such factors as constantly shifting expectations, recurring problems in international financial arrangements and developments, changing prospects regarding passage of a fiscal restraint program, a strong surge in economic activity coupled with rapidly rising prices—all had an important influence on interest rate behavior during the period from December 1967 to June 1968. At the same time, the underlying concern on the part of business firms and financial institutions to maintain liquidity rebuilt in 1967—after the “credit crunch”

of 1966—stimulated strong demands for credit and contributed to upward pressures on interest rates.

In comparison with the period of restraint from May to November 1966, monetary policy during December 1967-June 1968 does not appear to have been nearly as restrictive—at least according to the statistics. The growth of reserve variables, while sharply reduced, was still relatively high in the December 1967-June 1968 period (in the May-November 1966 period, the reserve aggregates declined). Similarly, basic money and banking measures experienced greater expansion during December 1967-June 1968 than in the 1966 period, with the growth of the money supply, as previously noted, especially rapid.



“Reappraisal of the Federal Reserve Discount Mechanism: Report of A System Committee,” 1968. 23 pp. \$0.25 a copy; 10 or more sent to one address, \$0.20 each. Available from Publication Services, Division of Administrative Services, Board of Governors of the Federal Reserve System, Washington, D. C. 20551.

**RECENTLY PUBLISHED ECONOMIC COMMENTARIES OF  
THE FEDERAL RESERVE BANK OF CLEVELAND**

**"On Curbing Inflation"**

**August 3, 1968**

**"Recent Business and Banking Activity in Cleveland"**

**August 10, 1968**

**"Holdings of Municipal Obligations (Fourth District)"**

**August 17, 1968**

*Economic Commentary* is published weekly and is available without charge. Requests to be added to the mailing list or for additional copies of any issue should be sent to the Research Department, Federal Reserve Bank of Cleveland, P. O. Box 6387, Cleveland, Ohio 44101.

## NEW PUBLICATION

*Selected Economic Indicators*, a monthly supplement to the biennial *Statistical Profile: Standard Metropolitan Statistical Areas of the Fourth Federal Reserve District*, is now available from the Research Department of the Federal Reserve Bank of Cleveland. The publication presents data for all SMSAs in the Fourth District on employment, unemployment, production, distribution, construction, income, and banking. Requests to be added to the monthly mailing list for *Selected Economic Indicators* should be sent to the Research Department, Federal Reserve Bank of Cleveland, P. O. Box 6387, Cleveland, Ohio 44101.

