

TABLE 5  
THE NBER "SHORT LIST"

| Subject                     | Leading Indicator   |
|-----------------------------|---|
| Capital Expenditures . . .  | Contracts and orders for plant and equipment (constant dollars)               |
| Consumer Sentiment . . .    | Index of consumer expectations  |
| Durable Goods . . . . .     | Changes in manufacturers unfilled orders for durable goods (constant dollars) |
| Employment . . . . .        | Weekly initial unemployment claims  |
| Housing . . . . .           | Index of new private house building permits                                   |
| Labor Utilization . . . . . | Average work week of production workers                                       |
| Money Supply . . . . .      | M2 (constant dollars)   |
| New Orders . . . . .        | New orders of consumer goods and materials (constant dollars)                 |
| Prices . . . . .            | Percent change in sensitive materials prices                                  |
| Production Capacity . . .   | Percentage of companies reporting slower deliveries                           |
| Stock Prices . . . . .      | Standard & Poor's 500 Stock Price Index                                       |

In the constant quest for the Holy Grail of market timing, analysts have attempted to ascertain whether one or more of these leading indicators presages not only general economic activity, but stock prices as well. If such a relationship does exist, its value to investors is obvious.

One of the best efforts was reported by Jesse Levin in the *Financial Analysts Journal* (July-August, 1970). Based on a study of seven economic peaks from 1923 to 1960, Levin discovered that a majority of the eleven leading indicators, other than stock prices, peaked ahead of stock prices. The best leader was new house building permits, with money supply and new orders close behind.

The NBER defined seven economic contractions between 1923 and 1968. The market generally led the economic turns, and a majority of the other leading indicators led stock prices at every economic cycle peak. (At the four subsequent economic peaks, from 1969 to 1983, common stocks continued to lead the economy, with a majority of the other leaders beating stocks at the top two times.)



TABLE 6

## CHARACTERISTICS OF ECONOMIC CYCLE PEAKS

| Peak of<br>S&P 500 | Peak of<br>Economic Cycle | Stock Price Peak<br>vs. Economic Peak | % of Leading<br>Indicators Peaking<br>Ahead of Stocks |
|--------------------|---------------------------|---------------------------------------|---|
| Mar. 1923          | May 1923                  | 2 Month Lead                          | 60%   |
| Sep. 1929          | Aug. 1929                 | 1 Month Lag                           | 83%   |
| Feb. 1937          | May 1937                  | 3 Month Lead                          | 67%   |
| June 1948          | Nov. 1948                 | 5 Month Lead                          | 86%   |
| Jan. 1953          | July 1953                 | 6 Month Lead                          | 67%   |
| July 1956          | July 1957                 | 12 Month Lead                         | 91%   |
| July 1959          | May 1960                  | 10 Month Lead                         | 60%   |
| Averages . . . . . |                           | 5 Month Lead                          | 73%   |

On average, 73% of the other eleven leading indicators turned down before stock prices, and in every one of the seven cycles at least a majority started declining before the market. A similar analysis of economic troughs discloses that stock price upturns were also generally preceded by increases in a majority of leading indicators.

While it therefore appears that some leading economic indicators lead not only economic turns but stock market turns as well, in point of fact there are a number of severe constraints to their practical application as market forecasting tools. It is not really so surprising that they showed good leading characteristics during the forty year period because the NBER selected them from among scores of other indicators after extensive testing and manipulation for that very reason. And seven cycles is a very small sample on which to draw large conclusions. The real question is, Can the indicators be relied upon for forecasting accuracy outside of the basic study period?

Indeed, everything went wrong during the early 1970s. The widely followed NBER short list composite index peaked in mid-1974. Not only did it fail to predict the recession, but it lagged far behind the turn in stock prices as well. The Standard & Poor's 500 Index, itself a component of the composite index, turned down a full year and a half



earlier while the broad market, as measured by the New York Stock Exchange Total Return Index, actually peaked in early 1972, more than two full years in advance of the composite. In early 1975 the staff of the NBER sat down to figure out what went wrong. Their best explanation was that the rampant price inflation of the last few years biased many of the indicators. After making "ex-post" adjustments for inflation, the NBER noted that the leading indicator composite peaked in early 1973, concurrent with the top in stock prices and prior to the actual economic turn. This belated discovery was, of course, small consolation to investors who had already lost upwards of half their investment capital by following the "lead" of the leading indicators. There is no assurance that some other problem may not crop up in future cycles.

Another problem manifest in the use of leading indicators is data reporting lags. While stock prices are known instantaneously, most economic indicators are computed but once a month and some only quarterly. Virtually all of them, regardless of their frequency or infrequency of calculation, are reported to the public with substantial lags, in some cases months later. Yet others are initially reported in preliminary form and then regularly revised weeks, months, or even years later. It does little good to know that an indicator has peaked in advance of the market if that fact is not known until some time after the market peak.

Yet another problem is the determination of what constitutes a turn in an indicator. Is it sufficient, for example, for a leading indicator to render a sell signal when, after rising continuously for a lengthy period of time, it turns down for a single month? The answer to the question is important because, just as with stock prices, leading economic indicators exhibit random fluctuations. Not every downtick or uptick signifies a lasting turn in the prevailing trend. So, it may be the better part of wisdom to observe two or three or even more months of data before stating that an actual reversal has occurred. But the longer the wait, the more lag



is imputed into the leading indicators themselves. These lags, when added to the original data reporting lags, tend to further decrease their usefulness as market timing devices.

In conclusion, it is fair to say that as good as stock prices may be as a leading indicator of general economic expansion and contraction, other non-stock price measures may perform the task just as well and possibly even better. But it is quite another thing to assume that these indicators will in themselves be of value in predicting stock prices. Since the relationship between the market and any indicator is less than precise, it is preferable to at least start with indicators that are unambiguous and immediately available. The leading economic indicators are wanting on both counts.

## 5 Will the Real Money Supply Please Stand Up?

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Many economists believe money supply is the single most important factor in national economic planning, but until about ten years ago the average investor had never heard of this term. Public interest in the subject has now carried to such an extreme that some market participants eagerly await the release of the weekly money supply statistics prior to making market decisions.

Money supply is the total of all money held by the public. The simplest form of money is cash; that is, currency and coin in circulation. Since cash in circulation is very stable and the average household or business holds most of its money in the form of constantly fluctuating checking account balances, the basic definition of money supply usually includes the total of all cash plus checking account balances, (demand deposits at commercial banks) held by everyone in the country except other banks and the government.

This basic form of money supply is called M1, or "narrow money supply." A slightly wider definition called, appro-



priately enough, "broad money supply," or M2, is the sum of several types of savings plus M1.

Most analysts concentrate their attention on M1 or M2, but a number of further refinements are also popular. For example, when large time deposits, term repurchase agreements, and institutional money market fund balances are added to M2, the result is called M3. Alternatively, a variety of other instruments can be added to M3 with the result called L (for Liquid assets). If all this sounds baroque, take heart — even economists are bewildered.

#### DEFINITIONS OF MONEY SUPPLY\*

M1 = Currency, travelers checks, demand deposits (i.e., checking account balances) and other checkable deposits.

M2 = M1 + overnight repurchase agreements and overnight Eurodollars, non-institutional money market mutual fund balances, money market deposit accounts, savings deposits, and small time deposits.

M3 = M2 + large time deposits, term Eurodollars and repurchase agreements, and institutional money market mutual fund balances.

L = M3 + U.S. savings bonds, short-term Treasury securities, bankers acceptances, and commercial paper.

\*January 1990

Money supply does play a key role in the overall scheme of economic policy, but its relationship to the stock market is primarily that of a coincident, not a leading, indicator. Current knowledge of many indicators imparts information about future changes in stock prices, but current knowledge of money supply behavior mainly imparts information regarding the current trend of the market.

The correlation between past money supply movements and future stock price changes is so weak that it is more fruitful to base price level forecasts on alternative monetary variables such as interest rates, Federal Reserve policy actions, and bank reserve positions.

Put another way, rising money supply usually accompanies rising stock prices (and vice versa), but the rate of increase in money supply has little bearing on how much stock prices



will rise in the future. Indeed, in the 1972-1974 cycle it appears that investors so well anticipated the forthcoming upturn in both money supply and the economy that the market turn preceded the other two.

The size and growth of money supply is indirectly influenced by the Federal Reserve System through its direct control over the reserves of member banks, the discount rate, and through open market operations. The exact mechanics of that influence are so complex that there is widespread disagreement as to which is cause and which is effect.

One simple view is that high money supply growth leads to lower interest rates due to an excess of money available for lending. But, on the other hand, rapid monetary expansion has usually been followed by inflation, which in turn leads to higher interest rates.

Monetary growth at first stimulates business activity, but eventually prices rise by almost the same amount as the monetary growth and the level of economic activity benefits hardly at all. Usually an initial period of rapid monetary growth is followed about six months later by real economic growth, followed a year or more after that by an increasing rate of inflation, followed still later by a period of monetary restraint designed to alleviate that inflation, with the final consequence being recession.

The United States and much of the world recently completed just such a cycle. The seeds of inflation in the mid-1960s grew into the boom of the late 1960s and early 1970s and finally bore the bitter fruit of a severe and protracted recession.

Since an expansionary monetary policy has opposite effects over the short and long terms, a constant rate of moderate growth would seem ideal. Dr. Milton Friedman of the University of Chicago and his many followers advocate just such a policy. These "monetarists" believe money supply is causal and most other economic conditions are mere effects.

A somewhat different view is taken by "fiscalists" who



believe government spending policies cause the changes in levels of national prosperity. They view money supply changes as merely one of the many effects of federal fiscal policies.

The two schools of thought are not really so far apart as it might appear because large government deficits, such as we now face, usually are financed by a rapid expansion of the money supply, enabling banks and others to purchase the government securities which are issued to finance deficits.

One of the great burning issues of the day (and decade) in economics is what rate of money supply growth is necessary to achieve general prosperity without inflation.

Many economists believe inflationary pressure is created when the long run growth of M1 exceeds 3% per annum and growth rate policies as low as 1% are supported. Recent experience suggests, however, that even a 3% growth rate would result in such a sluggish pace of business activity that unemployment would remain at politically unacceptable levels. A money supply growth of 6% annually is thought by some experts to be sufficient to alleviate unemployment without creating "too much" inflation.

It might seem, therefore, that a reasonable middle course would be to keep M1 growing near the middle of the 3% to 6% per annum range. For a number of reasons, it is not that simple. First of all, not everyone agrees on the salutary effects of constraining money supply growth within the 3% to 6% range. Secondly, there is almost no agreement among experts as to the length of time over which money supply growth rates should be calculated in order to be meaningful. Some practitioners place weight on monthly changes while others argue that trends shorter than six months, or even a year, are meaningless.

The result is "something for everyone." For example, a few years ago, six then-prevailing and popular versions of money supply viewed over four different intervals led to two dozen possible rates of monetary growth (see Table 7).



TABLE 7  
MONEY SUPPLY: ANNUAL GROWTH RATES

|                 | Latest<br>Month | Latest<br>Quarter | Latest<br>6 Months | Latest<br>12 Months |
|-----------------|-----------------|-------------------|--------------------|---------------------|
| Demand Deposits | 5.1%            | 6.7%              | 2.1%               | 2.2%                |
| M1              | 4.3             | 6.9               | 3.9                | 3.8                 |
| M2              | 7.9             | 9.7               | 7.5                | 7.0                 |
| M3              | 12.3            | 12.2              | 9.5                | 7.5                 |
| M4              | 4.4             | 5.9               | 7.2                | 8.4                 |
| M5              | 9.6             | 9.5               | 9.2                | 8.4                 |

Thus it could be said with equal accuracy that money supply was creeping upward at 2% per annum or exploding at a rate exceeding 12% per annum.

Another element of confusion is introduced by the adjustment of money supply data to remove the effects of inflation, producing data that is called "real" money supply. The adjustment is usually accomplished by dividing the published (or "nominal") money supply data by an inflation deflator based on a price index to obtain the effective, or real money supply. The resultant series expresses money supply in terms of its dollar purchasing power. As the inflation adjustment can be made using a variety of possible price indexes and time intervals, the potential array of monetary growth statistics becomes almost infinite.

Obviously this is not a situation conducive to rational policy formulation. Fortunately we are only concerned with identifying and measuring indicators that are related to the stock market. We are therefore able to ignore those aspects of money supply which are of interest only for their very gradual and long term effects on the national economy and can concentrate on those money supply movements most highly correlated with stock price trends. Extensive testing shows the best indicator to be real M2; i.e., broad money supply adjusted for inflation.