Technical Methods of Forecasting Stock Prices

Willford I. King

Journal of the American Statistical Association, Volume 29, Issue 187 (Sep., 1934), 323-325.

TECHNICAL METHODS OF FORECASTING STOCK PRICES

A dinner meeting of the American Statistical Association was held on Tuesday evening, April 24, 1934, at the Roger Smith Restaurant, 41st Street and Madison Avenue, New York City. One hundred and sixty-one persons were in attendance. The general topic for discussion was "Technical Methods of Forecasting Stock Prices."

Donald W. Ellsworth, Editor of the *Annalist*, presided. He initiated the discussion by calling attention to the fact that stock prices are influenced not only by economic forces but also by political forces. The forecaster must take the latter as well as the former into account if he is to be successful. The article by Holbrook Working in this JOURNAL, March, 1933, was referred to as raising the question as to whether or not stock price fluctuations are due merely to chance. Mr. Ellsworth asserted that, in two respects at least, the movements of stock prices are different from cumulative chance phenomenon:

1. Unlike chance data, stock prices cannot go below zero.
2. The fact that stock prices are tied to earnings definitely limits the altitude to which they can climb.

In the discussion which followed the reading of the papers, Mr. Ellsworth asked Frederick R. Macaulay to comment on the relationship between chance phenomena and stock market behavior. In reply, Dr. Macaulay called attention to the fact that the normal curve is only one of the many distributions which may result from chance. If, for example, one threw dice, some of which were loaded but slightly, one would obtain as a result, not a normal but a skew distribution. A chance arrangement of this type might behave in a manner closely resembling the way in which the stock market acts. This would be especially true if, from time to time, the loading was shifted from some of the dice to others. The shorter movements of the stock market behave much like the normal chance distribution. This can scarcely be said, however, of the longer swings.

The first regular speaker of the evening was Mr. H. M. Gartley who presented an outline of methods of technical approach. Mr. Gartley expressed the view that, while forecasters of stock prices should give careful attention to economic and political forces influencing the market, they cannot safely afford to ignore the information contained in the movements of the stock market itself. He stated that the criticism is often made that market changes can do nothing more than record effects, for they come too late to show causes. In his opinion, however, this assumption is incorrect, for, to a great extent, the changes occurring on one day indicate the probable changes which will occur on the next day. The method of utilizing the actions of the market to predict its own future course is not new, having been followed at least since 1885. The Dow Theory is perhaps the best known of the earlier attempts along this line.

The forecaster has two problems. His first is to tell when to buy stocks. Economic data which would be helpful for this purpose often appear too late to be useful. Market data, on the other hand, are available each day that the mar-

ket is open. The second problem of the forecaster is to tell which stocks to buy. The relative behavior of the various stocks in the market offers material assistance in this connection. For example, it is inadvisable to buy a stock the price of which is falling behind the prices of other stocks in the same group.

In closing, Mr. Gartley stated that pending legislation to regulate the stock market, will, if enacted, curtail speculation by an unknown fraction. The chances are that both short selling and speculative manipulation will be lessened. If so, the minor trend movements of the market will probably grow more erratic than in the past and the larger swings of the market will probably be of smaller amplitude than formerly.

Mr. Gartley expressed the opinion that, if a forecasting system became very widely accepted so that it was followed by the majority of speculators, it would probably become useless. A critic from the floor took exception to this point of view and contended that acceptance of a forecast would probably accentuate rather than lessen the predicted movement.

The second speaker of the evening was Mr. R. W. Schabacker, Financial Editor of *Forbes Magazine* who spoke on The Logic of the Technical Approach. Mr. Schabacker pointed out that one of the strong features of the methods used by those who depend primarily upon market movements is that these methods, although frequently giving rise to small losses, rarely result in large losses. The stock market moves in trends. As long as people wish to buy rather than sell, the trend will be upward. When more sellers than buyers appear, the trend will turn downward. It is not important to know why either buyers or sellers are in the majority—all that is necessary is to know that such is the case and align oneself accordingly. As soon as the trend changes, one must also change his position in the market, and the rules of technical analysis make such a change practically automatic.

Mr. Schabacker illustrated his thesis by a few practical examples of chart theory, including the following:

1. When the trend of the market gradually flattens out, a change in direction is likely to occur.
2. A head and shoulders bottom usually indicates that a rising movement is ahead.
3. When a reaction cancels more than two-thirds of the previous advance, the chances are that the decline will go much further.

The third speaker on the program was James F. Hughes, Analyst for Charles D. Barney and Company. His topic was the Intermediate Speculative Approach. Mr. Hughes began by stating that the reason he was more interested in intermediate movements than in long-time swings of the stock market is that the intermediate movements, running from one to six months in length, give to the speculator a sporting chance of obtaining profit from three to four times as large as he could get by following the major movements only. Furthermore, it is easier to forecast intermediate than major movements. This is especially true at present because of the fact that economic forces are materially modified by the New Deal. On the other hand, the market continues to perform as usual,

and the best method of forecasting movements is to use indications from the market itself.

Mr. Hughes emphasized the fact that this type of forecasting is based wholly upon probabilities. It makes no pretense of stating certainties. In some cases, the regularity of performance is great enough to make the probability of successful forecasting high. For example, between 1929 and 1932, the rule held that the summer and winter seasons were marked by advances while the spring and autumn seasons rather regularly showed declines. In nearly every case the technical rally from a temporary bottom amounted to between 45 and 55 per cent of the decline from the last preceding high. Similarly, during the present bull market, each setback has amounted to approximately 50 per cent of the rise just preceding.

In response to a request from the floor, each of the three speakers of the evening registered his forecast of the outlook of the market for the near future. The forecasts are as follows: H. M. Gartley—The market is now at 105 on the Dow-Jones average. The probabilities are that, between now and October 10, 1934, the July, 1933, high will be exceeded materially—prices rising at least to 128. If the October, 1933, low is penetrated before the July, 1933, high has been overtopped, we will be in a bear market. R. W. Schabacker—The market will probably continue for the next six months in a trading range without any sharp advances or declines. The next two months, however, will probably see minor advances. The chances are in favor of a spring rise and a summer decline. Recently, however, the action of the market has been too slight to make it give any very definite forecast. James F. Hughes—The present outlook is very bullish. A peak may be reached around Decoration Day. If, however, the market then pushes ahead, the chances are that the crest will be reached around Labor Day. If the expected spring advance does not materialize, prices will probably run up materially during the summer and reach a summer high about Labor Day.

WILLFORD I. KING, *Secretary*

PROGRESS OF WORK IN THE CENSUS BUREAU

CENSUS BILL LOST IN THE SENATE

The bill to provide for a "census of unemployment, employment, and occupations" to be taken as of November 12, 1934, passed the House on June 7, but was lost in the Senate where it was never brought up for consideration, being left on the calendar when Congress adjourned on June 18. While population was not explicitly included in the scope of the census as defined in the title of the bill, Section 1 provided for the inclusion of "such enumeration of population as the Director of the Census might deem appropriate and necessary for the purposes of this section." That would have given the Director all the authority needed for taking a complete population census. The bill provided that the date of the quinquennial census of agriculture which under the existing law is January 1, 1935, be changed to November 12, 1934, so that it could be taken in conjunction with the census provided for in the bill.