FASHIONS IN FORECASTING

Stock-market behavior as interpreted by the "technicians" of statistics, charts, and trends. A report on the rising competitors of the Dow Theory, whose very popularity may have impaired its own usefulness.

by Alfred Winslow Jones

Berenice Abbott

WALL STREET DOWN TO THE SEA

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THE STANDARD, old-fashioned method of predicting the course of the stock market is first to look at facts and figures external to the market itself, and then to examine stock prices to see whether they are too high or too low. Freight-car loadings, commodity prices, bank clearings, the outlook for tax legislation, political prospects, danger of war, and countless other factors determine corporation earnings and dividends, and these, combined with money rates, are supposed to (and in the long run do) determine the prices of common stocks. But in the meantime awkward things get in the way (and in the long run, as Keynes said, we shall all be dead).

In the late summer of 1946, for instance, the Dow-Jones industrial stock average dropped in five weeks from 205 to 163, part of the move a minor panic. In spite of the stock market, business was good before the break, remained good through it, and has been good ever since.

Nevertheless there are market analysts, whose concern is the internal character of the market, who could see the decline coming. To get these predictive powers they study the statistics that the stock market itself grinds out day after day. Refined, manipulated in various ways, and interpreted, these data are sold by probably as many as twenty stock-market services and are used independently by hundreds, perhaps thousands, of individuals. They are increasingly used by brokerage firms, by some because the users believe in them, by others because their use brings in business.

In the fabulous age of predatory pool operators, narrow margins, and the bidding up of stock prices by hordes of amateurs and beginners, market analysis was little known. There was a device called the Dow Theory, and there were a few ardent chart readers. In the last ten years, however, the market has been notoriously out of gear with the underlying fundamentals, hence the older method of judging the market has been of little help. Moreover, competition in making money in the stock market is a good deal keener than in the roaring twenties; consequently, there is a demand for new methods of calling the turn.

So the technical approach has flourished and the tape readers and the market psychologists, who were the intuitive technicians of their day, have been joined by a number of

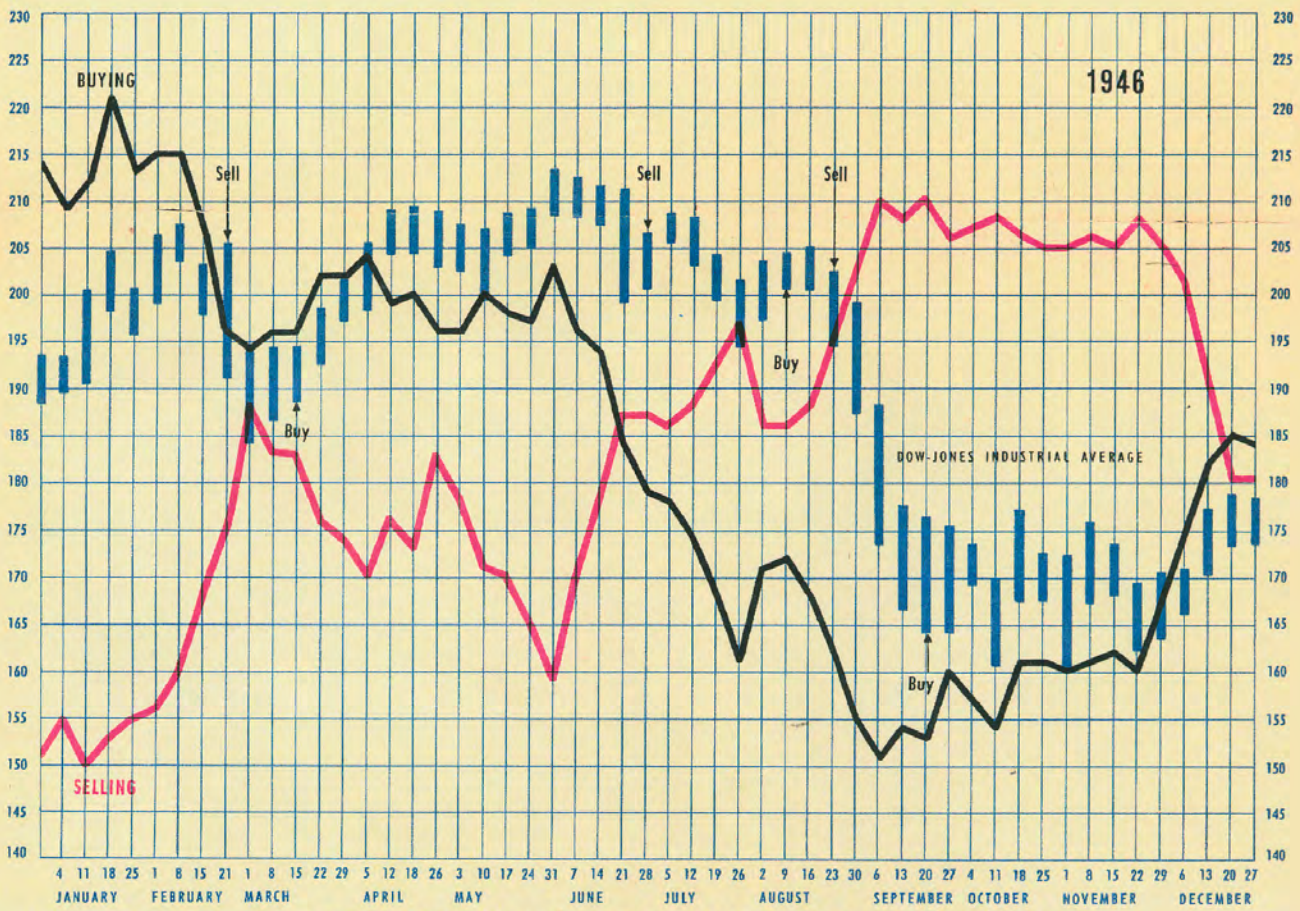
statistically minded, well-trained students of market behavior, some of whom are mentioned below. A pioneer in the field was R. W. Schabacker, who wrote extensively and published a market service. Another is Harold M. Gartley, who developed many technical tools, taught their use to his students, and has long published a mainly technical service, *The Gartley Weekly Stock Market Forecast.*

Market analysis must not be confused with any of the wonderful "systems" for beating the market, which should be mentioned just to clear the stage. One is the gridiron system, described for fun by Garfield A. Drew in *New Methods for Profit in the Stock Market.** If the loser of the Harvard-Yale football game fails to score, you buy stocks the following year, unless by chance California and Army score the same number of points in their respective games with Stanford and Navy. You sell your stocks the year after California beats Stanford.

**Metcalf Press, Boston, 1948. This book is the latest thorough exposition in the technical field.*

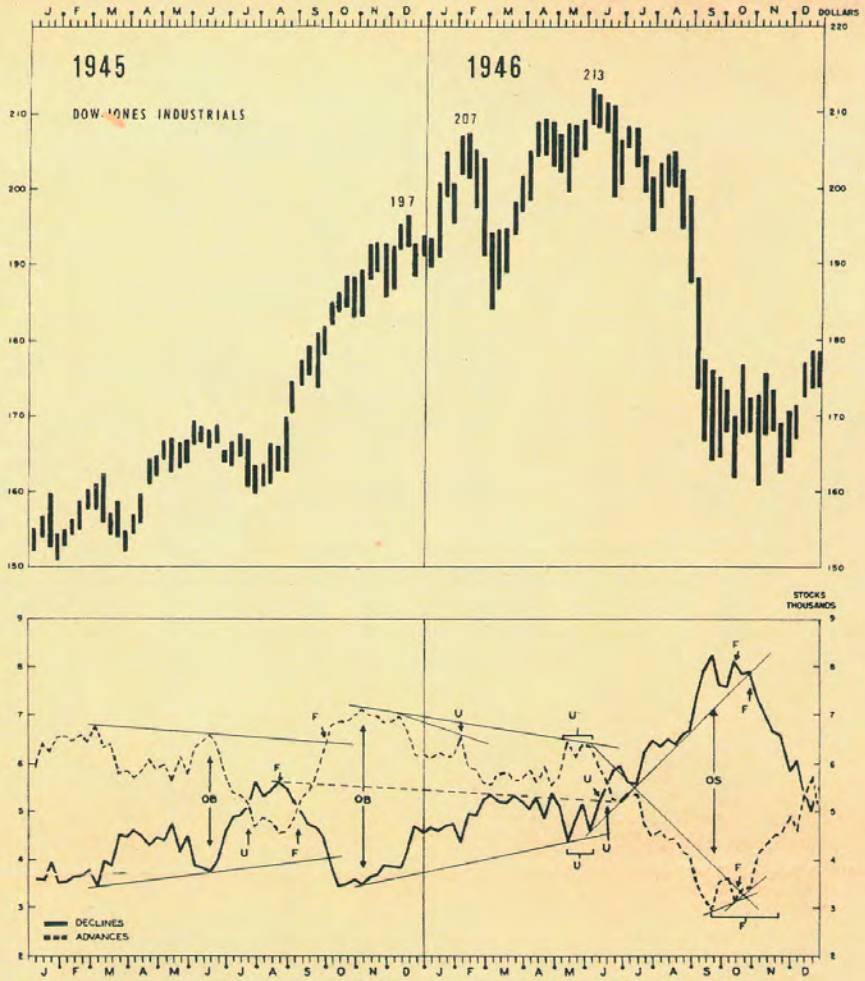
By a further use of football scores you will know in just what month to do your buying or selling. Between 1920 and 1940 you would have cleaned up. On twelve changes in market position and with only two small losses, you would have made about 600 points' profit in the Dow-Jones industrial average. But unfortunately after 1940 (which is about the time this wonderful system was worked out), everything began to go wrong.

It may be unfair to put sidereal radiation in its effect on the stock market in the same class, because this romantic hypothesis is still working fairly well and may work forever. The method is based on a type of subatomic radiation, similar to cosmic rays, which comes in from outer space and has an irregular wavelike frequency. The intensity of sidereal radiation can be recorded and measured, and then the fun begins. According to the sponsors of the idea, the rays have an effect on human emotions, on the fine balance between optimism and pessimism, and this in turn reacts on the stock market. A



1: MANSFIELD MILLS' BUYING AND SELLING CURVES

The black buying line and red line for selling (see page 180) will obviously move in opposite directions, the black line tending to reflect the trend of the market and the red line its inverted trend, but each moving apparently a little ahead of the average. Rules for buy and sell signals call for an additional curve of short-term selling intensity, but the main idea is to be in the market when the black line is moving up and the red down, and out of it under the opposite conditions. The year 1946 is a fair example. As the signals indicate, Mills picked the right positions early in the year, but on August 5, at 202 with doom impending, he got a buy signal. However, as would always be the case, the debacle had not gone far when a sell signal came about two points lower.



2: ADVANCES AND DECLINES LEAD THE MARKET

2. Dow-Jones industrials are here shown, placed above *Market Action*'s ten-week moving totals of the weekly advances and declines of all stocks. The main lesson in this is that while the "market" was moving up to successively higher peaks at 197, 207, and 213 in December, 1945, and February and May of 1946, total advances at each peak were successively fewer and total declines more. On the final rallies of July and August, advances and declines showed clearly that the whole market had gone into a state of considerable disintegration.

With declines up and advances down for any length of time, as in October, 1946, the market is in what technicians call an oversold condition (indicated by OS above, with OB for overbought). All purchases but one made since 1938 when the market was oversold and *Market Action*'s advances-and-declines graph was registering favorable (F) signals—that is, fewer successive declines and more successive advances, etc.—would have been followed by an early rise in the market.

3. E. S. Quinn's *Investographs* service uses volume in relation to price, and figure 3 shows how this would have worked from 1943 through 1946. To smooth out temporary irregularities Quinn puts weekly prices (Dow-Jones industrials) and volume into moving averages and then compares their action. (In the graph the

service based on sidereal radiation is published by the Lake States Securities Corp., now situated in the congenial environment of Los Angeles.

Many cyclical phenomena in nature—even stranger than the fluctuations in the stock market—have been observed by scientists, and remain unaccounted for, though cycle theorists are doing their best. As for the stock market, most investors and traders will prefer to use means of forecasting that have both a record of past success and also pretty clear reasons why they work, which is true of most of the market techniques described below. If handled properly, and if too much is not asked of them, considering the low probabilities of most predictions based on social data, they can undoubtedly be of help to many people who have capital to look after.

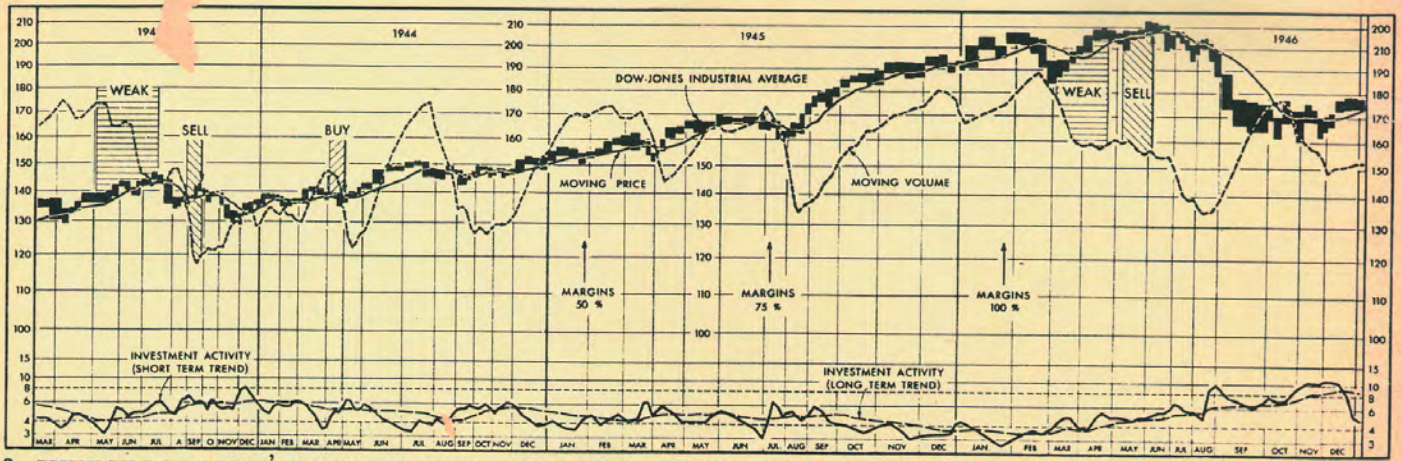
The Dow Theory

The venerable but now rather dilapidated Dow Theory is the only technical tool in the least familiar to the investing public. Its working is fairly simple. The stock market, as measured by the averages, fluctuates in tides (major moves—the bull and bear markets), in waves (intermediate moves of a few weeks to a few months), and in ripples (minor moves of a few days). These moves are superimposed so that on a given day the market could be, say, in a major upmove, an intermediate downmove, and a minor upmove.

Now the Dow Theory holds that when, after the tide has been going out, a wave reaches a higher point than the one preceding it, and when this takes place in both the Dow-Jones industrial and railroad averages, the signal is given that the tide has turned. The low point in the sequence is then looked back upon as the bear-market bottom and the reversal point that marks the beginning of a new bull market. The same rules in reverse apply to the top of a bull market, and, just as the intermediate moves signal changes in the major trend, so do minor moves signal changes in the intermediate trend.

Sometimes serious difficulties of interpretation arise since Dow theorists differ as to what distinguishes a major move from an intermediate, and an intermediate from a minor. Actually the three types of market moves are not discrete phenomena, but merge into each other both in amplitude and duration, and exist only by arbitrary definition.

For the long run of the fifty-two years during which the Dow-Jones averages have been published, the Dow Theory has worked very well. One Dow enthusiast has calculated that $100 put into the stocks of the Dow-Jones industrial average in 1897, thereafter switched in and out on Dow signals (an



3: INVESTOGRAPHS' SERVICE COMPARES THE ACTION OF VOLUME AND PRICE

vertical dimension of the solid blocks shows the actual price range during each week, and the horizontal dimension the actual weekly volume, though these actual figures are not used in the interpretation.) When the moving averages are out of gear for four consecutive weeks while prices are going up, a warning signal is given, followed by a sell signal, on which action is taken. When the two curves are in gear for four consecutive weeks with declining prices, a buy signal is given.

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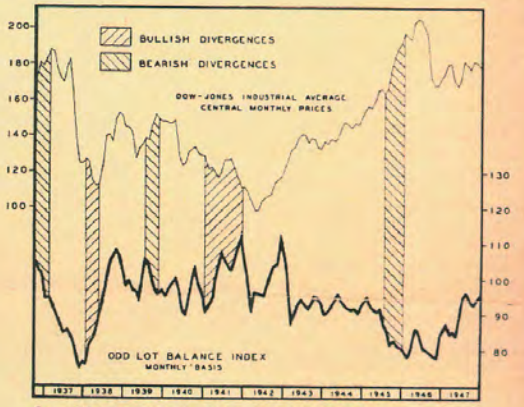
4. Drew Investment Associates publishes a service based on odd-lot trading and the lower line of the figure on the right shows the monthly odd-lot balance index. Drew divides the odd-lot sales by purchases and then makes a three-month moving average of this ratio. The curve goes up on increased selling and down on buying. Plotted against the Dow-Jones industrials, an indication is given when the curves diverge for long enough and under the right conditions—to buy if the index is heading up and to sell if it is heading down. The same material which can be used with a shorter, more sensitive time span then indicates what the shorter ups and downs of the market are likely to be.



4: ODD-LOT STATISTICS

average of one move every two years), would have grown to $5,661 by the time of their sale on the Dow bear-market confirmation of 1946. The same $100, if it had been subjected to the entire fifty-year roller-coaster ride, would have amounted to $404 at the end. Even conceding that these Dow calculations enjoy the extra advantage of hindsight, also that the Dow follower would have paid out a good deal in commissions and would have lost some dividends, still the difference argues the value of following the market trend, even by a mechanical means that is sure to miss both the tops and the bottoms.

Big swings are needed

For the last ten years, however, the Dow Theory has been doing very badly. According to the actual published interpretation of a prominent Dow theorist, buying in with $100 on June 23, 1938, the Dow follower would have had a fund worth $119.03 on the sell signal of November 9, 1948. The steady holder would have been worth $136.53 on that date and in addition would have saved commissions and received all his dividends. Moreover, even an agile trader would usually pay more and get less for his stocks than the exact price at the Dow confirmations.

The main trouble with the Dow Theory is that it depends on wide, protracted swings in the market. Another trouble is that, like any market device that gets a broad following, it tends to be a self-destroying hypothesis. Since the system's adherents are so numerous that they exert their own effect on the market, shrewd traders now try to buy and sell in anticipation of the Dow signals. Then when, say, a buy signal comes, unless they have their own good reasons for thinking that the uptrend will continue, they are likely to sell their stocks to the Dow followers stampeding in to buy.

Obviously more is needed than the blunt old Dow Theory. J. Eugene Banks of Brown Brothers, Harriman & Co. has brought financial factors into relationship with it and has published in *Barron's* (July 19, 1948) some figures to show that Dow signals are likely to be duds unless bond prices (usually a bellwether) have been strong at stock-market bottoms and weak at tops. For example, on May 14, 1948, at 189, came a bull-market confirmation, a Dow signal to buy, but between the 1946 low, and May, 1948, the Federal Reserve index of high-grade corporate bonds had ominously declined by 2.6 per cent. Subsequently, the post-election break touched off a Dow sell signal at 174 on November 9, fifteen points or 8 per cent lower than the buy signal six months earlier. Most market specialists do not like to combine fundamental and

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technical factors in their work. However, Banks's combined studies enabled him not only to avoid the Dow Theory pitfall of May, 1948, but also to forecast clearly the crack-up in 1946, as he did in a talk before the New York Society of Security Analysts in July of that year, two months before the Dow Theory had anything to say.

The Dow Theory is one of several technical devices that use market averages of selected stocks merely to define the trend of the entire stock market. Underlying all of them is the undoubted fact of momentum in psychological trends. Thus a movement of the stock market once under way generates unrealistic optimism or pessimism, so that the trend of prices then carries through and beyond some point of central value. After that, turned by profit takers or bargain hunters, with the basic forces of supply and demand altered, the market pendulum starts back and passes again through and beyond a point of reasonable value, wherever it may be. Therefore, the chances are worth considering that once a trend has reversed itself to some measured extent (as determined by the Dow Theory, or by the penetration of a moving average or trend line), the new trend will continue far enough to make it worth following.

Alfred Cowles (of the Cowles Commission) and Herbert E. Jones reported in 1937 a study of stock-price behavior for various successive intervals from twenty minutes to ten years. For series up to three years, they found that the sequences significantly outnumbered reversals: which means that as the market has been going, so is it likely to continue to go. In 1,200 monthly sequences from 1836 to 1935, the market trend succeeded itself 62.5 times out of a hundred and reversed itself 37.5 times. "The probability of obtaining such a result in a penny-tossing series is infinitesimal."

One more point needs to be made. The tools that get investors and speculators in and out of the market only after some widely followed average has turned must obviously exaggerate the movements of the market. The SEC has come out against the Dow Theory on this account, showing that the break of 1946 was made more violent by the dumping of stocks just before and after the Dow bear-market confirmation of September 3, 1946.

While no technician disregards the action of the averages, the shrewder ones now use more advanced tools. They have devised hundreds, perhaps thousands, of technical trend tools, and discarded most of them as relatively useless. Beyond is all the working over of data on groups of stocks by industries, and on individual stocks as a guide to stock selection. There are vertical-line charts, point and figure charts, volume bars, ratio lines, and oscillators, showing support and resistance zones, trend lines, and a host of other phenomena (some of which apply to the market as a whole). Picking illustrations among the trend tools has to be arbitrary. Following are a handful whose inclusion means nothing invidious. There are undoubtedly others equally valuable.

Total advances and declines

Most big metropolitan dailies publish the total number of different stocks traded in on the New York Stock Exchange (on a fairly big day the figure now runs around 1,000). "Breadth" figures divide into advances, declines, and unchanged. Obviously a strong market will be indicated by a great number of advances, and the action of the averages will bear a relationship to the number of advances and declines. But the relationship is not perfect, and therein lies a good deal of significance.

Allen Silver, in *Market Action*, publishes graphs of ten-week moving totals of the weekly advances and declines. One is reproduced in figure 2 on page 90 and shows the unhealthy condition of the whole market while the averages were making their handsome rise to a peak in late May of 1946.

Later on, in the opposite kind of situation, the figures developed like this:

	D-J industrial average	*Total ten weeks declines*	*Total ten weeks advances*
At December, 1947, low....	175	7024	4464
At February, 1948, low	165	6781	4813

That is, although the average was at a lower point in February, and there was a considerably sharper ten-week drop, nevertheless fewer stocks had declined and more had advanced. One month after this showing, in March, the market got away for its best up-move in the last two years.

Anyone who looks at the whole market will have the advantage of being able to act while the lagging averages still have their desirable (for him) effect on public sentiment, making for more optimism even after the turn at the top, so he can still sell, and more pessimism at the bottom so he can buy. Consequently, breadth statistics—that is, total advances and declines either in relationship to each other or to the total number of issues traded—are probably the most widely used type of technical tool. However, few technicians confine themselves to the use of any one device, but look for confirmation among many, and *Market Action* publishes a whole battery of them.

James F. Hughes, of Auchincloss, Parker & Redpath, the dean of the technically minded brokers, has long kept a two-day moving average of advances minus declines, and from his charts has drawn important and usually accurate conclusions concerning public participation in the market. Out of the combination of his technical work and experience he has achieved particular skill in forecasting minor moves.

Price-times-volume calculations

For the trend followers who want in a single graph a still more complete picture of what the entire market is doing there is Mansfield Mills's *Investment Survey* and L. M. Lowry's *Investment Reports*. These are similar, competing services with little to choose between them in practical results. Mills's work is described here because he explains his method more clearly.

Mills computes each day the amount of gain for each stock that goes up and multiplies it by the number of shares traded that day. If 3,700 shares of Chrysler were traded and the net change for the day was plus ¼, then Chrysler's dollar-value gain for the day was 3,700 times 25 cents, or $925. Each day all dollar-value gains are added together and total dollar-value losses computed

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in the same way. The two figures are then divided by the total volume for the day so that, without disturbing their day-to-day relationship, big-volume days will not show extreme swings. Dollar-value gains and dollar-value losses are then each put into a moving average (the length of time of the moving average is a trade secret). Figure 1 on page 89 shows how it worked in 1946.

Mills thus gives an exhaustive view of action of the market as a whole. But what he and Lowry have are still trend-following tools, with all their advantages and limitations. Because they rely on momentum they provide a guarantee against being out of step for very long, though they get their users into minor trouble when, without momentum, the trend whips back and forth as it has for the last two years. When the market undergoes big swings, as from 1942 to 1946, they do well.

Volume

Although no one seems to know why volume statistics have their forecasting virtue, yet volume is one of the oldest tools and probably the one most commonly used by the instinctive technician and tape reader. The rules are simple:

	If volume:	*While prices:*
The further trend will be: up	increases	rise
up	decreases	fall
down	increases	fall
down	decreases	rise

As long as prices and volume are acting together, the trend of prices will be upward; when they get out of whack the trend is likely to be reversed. Optimism is confirmed by the drying up of volume on the temporary setbacks in a rising market, and pessimism when rallies in a declining market show diminished activity. And these highly empirical rules seem to work fairly well whether the trader wants to look ahead for a few hours or days, or for a good many months.

The publisher of *Investographs*, E. S. Quinn, has put volume figures to use in a weekly market service (see figure 3 on page 91). The earlier performance of the volume guides was good, but the method adapts itself only to the major swings, and hence to the service of long-term investors, not to the kind of market we have had for the last two years, when no worth-while signals have been given.

All of the tools thus far discussed have used in one way or another the price trend of the market, either all stocks or those of the Dow-Jones industrial average. But the Dow-Jones industrials are not representative even of the whole industrial list, being composed of relatively high-priced, high-quality, seasoned investment stocks. The New York Stock Exchange list as a whole, with everything in it, is of lower quality, lower-priced, and more speculative. As we have already seen, the two lists behave in somewhat different ways. Thus far the inference was merely that the more speculative

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entire list leads the more conservative average, but the relationship between the two types of stocks is more complicated than that, and more is being done currently by Nicholas Molodovsky, of White, Weld & Co., to explore the difference than by anyone else.

Molodovsky's index of confidence

Molodovsky, the author of *New Tools for Stock Market Analysis*, is the most scientific and experimental of technical students. Russian-born, with advanced degrees from Harvard and the University of Paris, he was originally exclusively a student of economic conditions and of security values. He has come to the technical approach because fundamentals turned out to be inadequate as investment tools and had to be supplemented.

To gauge the effect of psychological forces on stock prices, he constructed two lists of stocks, one representing more exactly than the Dow-Jones industrials the investment issues, and the other representing more exactly than the entire list the low-priced speculative issues. One he calls the *value* stocks, the other the *vision* stocks. The two lists are made up in pairs, matched by industries and in every possible respect except price and quality, in which they differ widely.

The more volatile vision stocks normally diverge in price more widely from their "values." Thus, when in a rising trend vision stocks are going up relatively *less* than value stocks, impairment of investors' and speculators' confidence is indicated. To get a sensitive "index of confidence" Molodovsky keeps a ratio of the averages of vision stocks divided by value stocks.

He also keeps a ratio of the volume of vision stocks to the volume of value stocks since he feels that differential analysis of the activity of transactions is even more revealing of the trend-building and trend-disintegration process—for which he has developed a complete theory. Still other statistical series are used as adjuncts.

Unlike many mechanical technical tools, which give automatic buy and sell signals, Molodovsky's work has to be interpreted, and he has privately circulated the interpretations for most of the time since January, 1947. He missed about half of the twenty-six-point upmove from May to July, 1947, and fell into serious error in missing the entire upmove of thirty points last spring.

With these important exceptions, his predictions have been nearly perfect, even with respect to most of the minor moves, and, with his main indexes worked back to 1937, it looks as if the work would have been just as effective for the earlier ten years. But Molodovsky realizes that, even if there should be a long period with a perfect score, chance would have to play a considerable part since market analysis deals only in probabilities. The important thing is that work like this is experimental and well controlled and is likely to become more accurate as the method is further developed.

Drew's odd-lot indexes

The buyers and sellers of stock in less than 100-share lots do about one-eighth of the total trading on the New York Stock Exchange. They habitually buy more than they sell (the balance presumably going into investment holdings), but they are mostly not investors. The Brookings Institution has shown that between 1920 and 1938 (the period of the study) 80 to 95 per cent of all odd-lot trades were turned over within one month. Thus the majority are not only probably amateurs, and probably on balance ill-informed, but they are mostly speculators for a quick turn.

A few of the professionals in Wall Street used to receive information from the odd-lot houses on odd-lot trading, and then use the knowledge to cross the public. Since June, 1937, odd-lot statistics have been generally available, and are now published by the Securities and Exchange Commission. In recent years more and more attention has been paid to them.

Garfield A. Drew, formerly connected with United Business Service of Boston, has given a good many years of study to odd-lot statistics and is now the publisher of a service based on them. It is his conclusion that what the odd-lotters do is not always wrong (at market bottoms they follow their usual habit of buying more than they sell) but when, in the course of a market move, they significantly change their behavior, that is the time to do the opposite.

In the early stages of a rise, for example, their selling usually begins to go up in relation to their buying. This provides them with cash which later burns holes in their pockets and makes it just a little safer for others to buy. As the move progresses, with the public being drawn in on the "constructive" side, odd-lot statistics usually give a dependable signal to sell. Drew's main odd-lot balance index is shown in figure 4 on page 91.

The main shortcoming of the odd-lot data seems to be not that they give wrong signals but that they sometimes give no signal at all when a signal is called for. They act better as guides at bottoms than at tops but always have the great virtue of giving their indication to buy when the market is weak and to sell when it is strong, rather than waiting until the trend has changed. Without automatic signals that can be precisely checked, the claim seems reasonable that they would have worked well for all major and most intermediate turning points as far back as odd-lot statistics are available.

The controversy

For all their trappings of science, technical guides are at all times fallible and are of no help in foreseeing the unforeseeable. The technical approach is relatively new, and if it has been badly promoted among the public that may be partly because no technician, thinking only of his own stock-market profits, would want to see the field promoted at all. Furthermore, technicians talking to one another have tended, like all scientists and pseudo scientists, to use a strange lingo of their own. Finally, the technicians have been very backward in explaining why their ideas work as well as they do, with the result that the public easily gets market analysis mixed up with quack "systems."

Because of the high standards of the people whose work has been described, and many others, the field is rapidly improving in respectability. However, it is still in part a financial half-world frequented by at least a few

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shabby, chronic bulls (the fundamentalist camp has them, too) who sell their ideas to a constantly changing clientele seeking only easy encouragement on the bull side of the market. It has also its honest, earnest, and fascinated, but impecunious, system seekers and chart bugs.

These weaknesses make market analysis an easy mark for Wall Street academicians, and the uncritical hostility of some of them is worth reporting. In the van of the attack is A. Wilfred May, who upholds the honor of the value-seeking approach in a weekly column in the *Commercial & Financial Chronicle*, directing a steady, fine spray of ridicule at the technicians, and lumping them with spiritualists, ouija-board operators, astrologers, sunspot followers, and cycle theorists.

The technicians felt that he went overboard when he compared them in a recent column with the notorious Mr. Goldsmith. It will be remembered that Frederick N. Goldsmith some months ago got into trouble with the law for selling a financial service presumably based on information from "headquarters" and "big insiders," but actually coming through his sister, a spirit medium, from such dead insiders as J. P. Morgan and James R. Keene. The service also acquired valuable tips through the interpretation of cryptic points made in the comic strips. In a later column May came to a more sober view in which the technicians were not all charlatans.

The uses of market analysis

Thomas W. Phelps of Francis I. duPont & Co., although he is solidly in the technical camp, says that a technician is a good deal like a southern judge—frequently in error but never in doubt. He goes on to point out that you can see fairly well with one eye, but since you have two, one fundamental and one technical, why not use both. He says finally that after someone shouts "Fire" in a crowded theatre it is of little comfort to those who get trampled in the stampede to learn later in the hospital that it was a false alarm.

The bear stampede of 1946, in the one eye of a fundamentalist, was undoubtedly a false alarm. The technicians in that instance didn't so much care whether the theatre was really on fire, but without either doubt or error saw the stampede coming and left in plenty of time. On the other hand, bolts out of the blue like Pearl Harbor and the election results of 1948 give both fundamentalists and technicians more than they can cope with. Just the same, it is surprising how many technical danger signals were flying in late October, 1948, so that some technicians, at least, were not surprised by the severity of the post-election decline.

Now, if enough investors and speculators come to an advanced technical approach, and if the technical tools are further improved, it is interesting to speculate about the eventual result. It would mitigate the *irrational* swings of the most important of the capital markets, which would then fluctuate in a relatively gentle, orderly way to accommodate itself to fundamental economic changes only. But it is still a little utopian to think that the technicians, however able, will soon work themselves out of their present advantage. END