

MEASURES OF MARKET BREADTH: A LOOK AT TRADING STATISTICS

By John Bajkowski

Market breadth statistics attempt to measure how widely the full range of stocks are participating in the stock market's movement, and are more informative about the market's behavior than simply following changes in an index.

Movement of major indexes such as the Dow Jones industrial average and the S&P 500 are widely quoted and capture many headlines. While they are used as the primary barometer of the stock market's health, there are times when these indexes diverge from other market segments and do not truly reflect the broad market's overall condition. The S&P 500 index of large capitalization stocks showed strong year-to-date performance until August, while small- and mid-cap stocks have been weak since May. Through the end of August, the S&P 500 was down 1.3% since the start of the year, a small decrease in contrast to the Russell 2000 (index of small-cap stocks) decline of 22.6% over the same time period.

Fortunately there are many sources of trading statistics that help to indicate the strength, breadth, and current direction of the market in greater detail than just following the point change in an index. Market breadth measures attempt to indicate how widely the full range of stocks are participating in the movement of the stock market. While many technical analysts use these measures as timing tools, our emphasis here is to help gain an understanding of what has happened and is currently happening in the market rather than using these statistics as a forecasting tool.

A STOCK MARKET DIARY

Although trading statistics may flash across your computer or television screen during the course of the day, a summary for the day, based upon the market close, is a useful example.

Figure 1 presents a daily summary from the diaries section of the Wall Street Journal. This example includes only stocks listed on the New York Stock Exchange (NYSE), however summaries are also available for the stocks traded on Nasdaq and the American Stock Exchange (Amex).

ISSUES TRADED

"Issues traded" is the first statistic presented. This represents the number of NYSE-listed issues in which trades occurred on the exchange during any day. Generally, the more active the market in total volume, the more issues traded. However, this number will typically be close to the number of stocks listed on a particular exchange—approximately 3,500 on the NYSE, 5,500 on Nasdaq, and 800 for Amex. Because this statistic does not vary greatly from day to day, it is not worthwhile to monitor closely.

Statistics for the number of issues advancing, declining, and unchanged are worth noting. When most stocks are participating in a general market price increase, the market is said to have good breadth. However, if blue chip indexes, such as Dow Jones industrials, are advancing while the majority of stocks are declining, the market has poor breadth. Advancing issues are stocks that have closed higher than their previous day's close. Declining and unchanged issues are similarly determined relative to the previous day's close. When these statistics are quoted by the media, they typically refer to the New

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York Stock Exchange stocks. Adding the number of advances, declines, and unchanged issues together equals the number of issues traded.

The advance/decline information is often reported as a ratio: "Advancing issues outpaced declining issues three-to-two," for example. With a usual 3,500 traded and a usual 500 or so unchanged, the 3,000 that did trade in a three-to-two ratio translate to 1,800 advancing and 1,200 declining, a fairly significant advance. The advance/decline statistics in Figure 1 are for August 31, 1998, a day when the Dow Jones industrial average declined 513 points. For this bearish day 2,886 issues declined, while only 414 advanced—declining issues outpaced advancing issues by a very strong seven-to-one.

ADVANCE/DECLINE LINE

Market analysts often track the differences between advances and declines, accumulating the difference over some time period. The advance/decline line is the simplest of all breadth measures. It is typically calculated by subtracting the number of declining stocks from the number of advancing stocks and plotting the result. When more stocks are advancing than declining, the advance/decline line moves up, while a majority of declining issues pushes

the line downward. Figure 2 is a screenshot from the BigCharts Web site (www.bigcharts.com) that presents a year-to-date chart for the Dow Jones industrial average coupled with a cumulative advance/decline line in the upper window and the NYSE daily, non-cumulative advance/decline line in the lower window. The non-cumulative advance/decline line is calculated by subtracting the number of declining issues from the number of advancing issues and then dividing that figure by the total number of issues traded. Generally, values above 0.25 point to a bullish condition while values below -0.25 point to a bearish condition.

The overbought/oversold index is calculated by dividing the number of advancing issues by the number of declining issues. When the ratio is high, the market has been trending higher, while a low ratio indicates a downward trend. Often the ratio is averaged over a number of days to reduce random movements and provide a smoother curve that is easier to observe and track.

UNCHANGED ISSUES INDEX

The unchanged issues index is calculated by dividing the number of unchanged issues by the total number of issues traded. This ratio, normally expressed as a percentage, is used by some technicians to help gauge if the market is at a transition point. The ratio is normally low when the market is moving strongly—either up or down, but relatively high during periods of market consolidation. As a rule of thumb, the normal range for the index is around 15% with an expected range between 5% and 25%. On August 31, the index was a low 7.6% (271 unchanged divided by 3,571 issues traded) further

confirming the strong market move of the day.

ABSOLUTE BREADTH INDEX

The absolute breadth index indicates strong market participation without regard to market direction. It is calculated by examining the absolute difference between the number of advancing issues and declining issues and dividing the value by the number of shares traded. Expressed as a percentage it is virtually the opposite of the unchanged issues index. On August 31, the ratio was an extremely high 69% $[(2,886 - 414) \div 3,571]$ indicating a very deep level of participation among the New York Stock Exchange stocks in the market's move. [Note that the term "absolute" means that the index would have been the same if 414 issues declined and 2,886 issues advanced $(414 - 2,886)$.] The index is often averaged over a period of weeks to help gauge the consistent participation of the broad market in the overall movement.

NEW PRICE HIGH AND LOWS

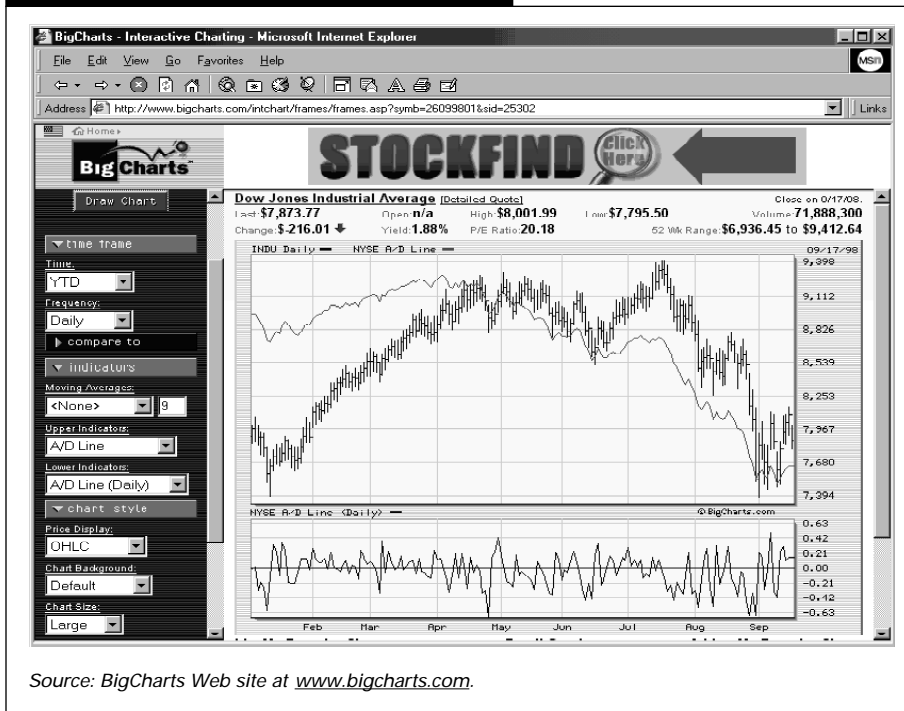
Companion statistics to the advance/decline numbers are the number of stocks reaching a 52-week high or low for the day. The example in Figure 1 from the Wall Street Journal shows these statistics for the New York Stock Exchange although these statistics are also reported for the Nasdaq and Amex. Increasing numbers of stocks reach new highs and fewer stocks reach new lows in bull markets, and the reverse is true in bear markets. On August 31, only 15 stocks reached new highs, while 1,183 (or one third of issues traded) hit new lows.

The Investor's Business Daily includes a daily section that not only lists the number of stocks hitting 52-week highs and lows for each exchange, but also lists each of the stocks, broken down by industry. This helps to identify which indus-

**FIGURE 1. STOCK MARKET DIARY
FROM WALL STREET JOURNAL**

DIARIES			
NYSE	MON	FRI	WK AGO
Issues traded	3,571	3,548	3,559
Advances	414	918	1,420
Declines	2,886	2,213	1,650
Unchanged	271	417	489
New highs	15	18	35
New lows	1,183	813	260
zAdv vol (000)	37,819	249,081	287,923
zDecl vol (000)	874,456	562,642	245,119
zTotal vol (000)	914,696	838,726	557,235
Closing tick¹	-779	-88	+167
Closing Arms² (trin)	3.32	.94	.73
zBlock trades	19,545	17,517	10,935

Source: The Wall Street Journal, September 1, 1998.

FIGURE 2. ADVANCE/DECLINE LINE

tries are leading or lagging the market. Within the industry groups, the companies are ranked by greatest daily increase in volume.

VOLUME

Volume—the total number of shares traded—is confirmation of the market movement. If share prices are rising or falling, it is more meaningful if volume is high. When volume is low, trading is thin, and buy/sell decisions can move the market disproportionately. On August 31 total trading volume was high with nearly a billion (914,696,000) NYSE shares exchanging hands.

Breaking down volume into advancing volume and declining volume adds greater understanding to the market movement. The trading volume on August 31 confirms the strong downward movement in the market. Declining volume outpaced advancing volume 874,456,000 to 37,819,000.

TICK

One of the most sensitive measures

of market activity, minute-to-minute, is the tick. The tick is calculated continuously and is the number of stocks trading higher than their previous trade less the number of stocks trading lower. An uptick or positive (plus) tick—more stocks are trading higher than their previous trade—is bullish, and a downtick or negative (minus) tick—more stocks are trading lower—is bearish. A large plus tick indicates that the short-term direction of the market is up, and a large minus tick is an indication that the market is trending down.

Since the tick is computed continuously, it is very changeable, giving up-to-the-minute readings on the market mood. The market averages may be up, but the tick can turn negative, indicating that the trading trend has reversed. The closing tick is frozen at the end of the trading day, but provides some insight into the ending market sentiment. The closing downtick of -779 on August 31 indicates that stocks were still strongly trending downward when the market closed. This is in sharp contrast to the closing tick one week previously which was a +167.

The tick of the stocks that make up the Dow Jones industrial average is referred to as the ticki and provides a quick indication of the direction of the Dow Jones industrial average. The ticki adds up the plus and minus ticks for the Dow Jones stocks, so its range is +30 to -30.

TRADERS INDEX

Combinations of some of these trading statistics have been constructed to capture fast-changing market trading information into one number. The traders index (TRIN), also known as the Arms index, is the most quoted of these combinations. The TRIN measures the distribution of the up and down volume to the advancing and declining issues. It is computed by dividing the ratio of advances to declines by the ratio of advancing volume to declining volume:

$$\frac{\text{Advances} \div \text{Declines}}{\text{Advance Volume} \div \text{Decline Volume}}$$

The TRIN is computed continuously during the day and has the advantage of weighting the number of issues moving up or down with the volume behind the movement. The TRIN is simple to interpret—readings near 1.00 are neutral, readings significantly below 1.00 are bullish, while readings much above 1.00 are bearish. Since volume is unconstrained, but the number of advancing or declining issues is constrained, when the market moves up strongly on high volume, for example, advancing volume will swamp declining volume. Even though advances may be far ahead of declines, the large ratio of advancing to declining volume will offset the advance/decline ratio, and the TRIN will fall below 1.00, flashing a short-term bullish market direction. The closing TRIN of 3.32 $[(414 \div 2,886) \div (37,819,000 \div 874,456,000)]$ was very bearish, pushed up by an overwhelming ratio of declining volume to advancing

volume.

BLOCK TRADES

Large block trades help to indicate the participation of large institutions in the market. These are single trades of a stock consisting of at least 10,000 shares.

As shown in Figure 1, the Wall Street Journal provides a total count of the number of block trades that occurred on a given day for each exchange.

Of greater interest is the block transaction summary in the Stock Market Laboratory section of Barron's, which provides a daily breakdown by exchange listing the number of block trades that occurred on up ticks, down ticks, and without change. Investors look at this information as an indication of whether the buyer or seller was more eager to complete the trade. An increasing number of block trades with up ticks helps to indicate an increasing interest in the market by the institu-

tional marketplace and tends to track a rising market.

SUMMARY

There is more to gauging the movement and strength of the market than just following the movement of the major market indexes. Short-term trading indicators provide a quick snapshot of the market conditions at any point in time during the trading hours and at the close. ♦

Sources for Market Breadth Data

INTERNET SITES (FREE)

BigCharts Interactive Charting

www.bigcharts.com

Click on the interactive chart link at the top of the main page. Allows you to chart either indexes or individual issues over a variety of time periods and frequencies. You can overlay indexes and stocks over the primary chart as well as choose from over 20 technical and fundamental indicators. The market breadth indicators available include the advance/decline line, breadth advance/decline and daily indicators, and upside/downside ratio.

Nasdaq

www.nasdaq.com

In the About Nasdaq section, select Nasdaq Facts, and go to the Nasdaq Data Download area. Offers downloadable market statistics dating back to 1971. From 1971-1998 numeric data is provided for the Nasdaq Composite and the other Nasdaq indexes such as the industrial, transportation, and utility. Over time, new composites and markets are added as the amount of data increases. Market statistics offered include the number of Nasdaq advances and declines, the number of trades for the Nasdaq National and Small-Cap markets, and the share volume for the Nasdaq National Market. Data can be downloaded in Excel, Lotus, FoxPro, and comma-delimited formats.

New York Stock Exchange

www.nyse.com

At the NYSE Market Information

section, the Market Summary provides information such as daily trading volume, the number of shares traded, and the value of those trades (\$US). The number of up, down, and unchanged issues is also provided.

PC Quote Top Ten

www.pcquote.com

Click on the Menu of Free Quote Services link at the top, right-hand side of the site; then click on the Top Ten link at the site map. Users select between the NYSE, Amex, Nasdaq, and regional exchanges, and receive total volume, advances and declines, up and down volume, tick, and TRIN values. Also provides access to most active stocks and well as those with the greatest point increases and decreases.

Reuter's Moneynet Market Snapshot

www.moneynet.com

Click on the Market Snapshot link at the top, right-hand side of the page. Customizable page offers intraday graphs of the DJIA, Nasdaq, and Amex composites and delayed trading data for the three markets. In addition, there is data for advancing and declining issues, unchanging issues, and volume, as well as the number of new highs and lows for each of the markets.

Yahoo! Finance - U.S. Market Digest

quote.yahoo.com
Offers figures on advancing and declining issues for the NYSE, Amex, Nasdaq, and Bulletin Board stocks in tabular form. Also provides the number of new highs and new lows

as well as the up, down, and unchanged volumes for these four markets.

PRINT SOURCES

Barron's

Dow Jones & Co., 84 Second Ave., Chicopee, Mass. 01020; 800-544-0422
Weekly in the Market Laboratory section. Trading Diary reports number of advances, declines, unchanged, new highs, and new lows for each exchange for the week and for each day of the past week. Reports number of advances, declines, and unchanged for the Dow Jones averages. Also lists market advance/decline volumes.

Investor's Business Daily

P.O. Box 66370, Los Angeles, Calif. 90066-8950; 800-831-2525
Daily in first section. Reports number of new highs and new lows on each exchange along with a list of each issue with a new high or new low. The Psychological Market Indicators box reports percentage figures on advisors bullish and bearish and ratios on activity such as puts versus calls, relative trading volume on exchanges, and mutual fund purchases versus redemptions.

Wall Street Journal

Dow Jones & Co., 84 Second Ave., Chicopee, Mass. 01020; 800-568-7625
Daily in Section C, page C2, Stock Market Data Bank. The Diaries list reports number of advances, declines, new highs, and new lows along with volume, tick and TRIN for NYSE, Amex, and Nasdaq issues.