

MONITORING THE SMART MONEY

BY USING ON-BALANCE VOLUME

By Wayne A. Thorp

The main function of the OBV is to track the activity of smart money—large traders and investors who may possess inside knowledge regarding the fundamentals of a company or the market—so you can benefit from their information without actually knowing it.

The study of technical analysis focuses primarily on price and volume. Perhaps it is not surprising that price garners most of the attention. However, volume deserves more than a cursory glance.

Volume is important because it provides information about the *strength* (or lack thereof) of price movements.

Heavier volume should be in the direction of the existing trend—volume should be relatively higher on “up” days during an uptrend and on “down” days during a downtrend. Furthermore, price movements on heavier-than-normal volume are more apt to continue than those with light(er) volume.

One of the more useful technical indicators used by technicians is “on-balance volume” (OBV), which was introduced by Joseph Granville in his 1963 book “Granville’s New Key to Stock Market Profits.” OBV takes volume analysis beyond the volume bars typically seen below a price chart and provides a visual representation of the volume flow for a given security, enabling you to compare it against the price action.

CALCULATING OBV

One reason for OBV’s popularity is its broad application—stocks, futures, options, indexes, and markets. It is also relatively easy to calculate—as long as you have price and volume data for the period you wish to analyze, you can create the OBV. The value of the OBV is strictly arbitrary: The day you begin calculating the OBV determines the initial value. What is of greater importance, however, is the trend and direction of OBV.

To calculate the OBV, you begin by comparing the closing price of one day to the closing price of the prior day:

- If the price is higher than it was the prior day, then *all* of that day’s volume is added to the previous day’s volume;
- If the price is lower than previously, the day’s volume is subtracted from the previous day’s volume;
- If the price has not changed from the prior day, the day’s volume is “ignored.”

Table 1 shows you how to calculate the OBV using daily data for General Electric for the period February 28–March 16, 2001. However, most technical analysis programs include OBV in their selection of technical indicators.

SMART MONEY VS. THE PUBLIC

When Granville introduced OBV, he argued that the market is divided into two groups—smart money (made up of large investors and traders), and the general public. The smart money—armed with better information—is able to buy securities at a lower price than the public. Granville theorized that, during bull markets, the smart money bids up prices and participates in buying for the majority of the upward price move. Once the smart money is fully invested, these investors wait for the final segment of the move. This is fueled by the general public who, after taking note of the upward move in

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TABLE 1. CALCULATING OBV: AN EXAMPLE

OBV is a running cumulative total of positive and negative volume numbers. It can be stated mathematically as:

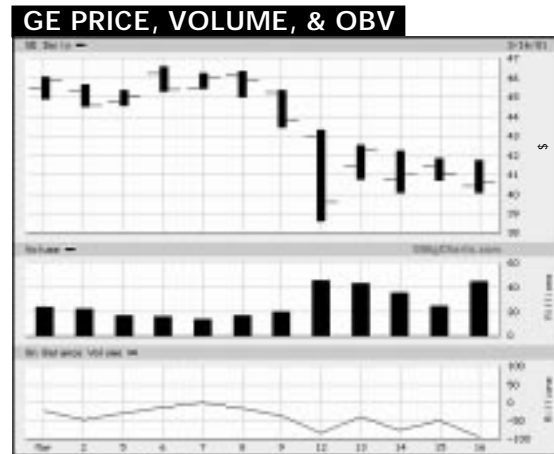
If $C_1 > C_0$:
 $OBV_0 + V_1 = OBV_1$

If $C_1 < C_0$:
 $OBV_0 - V_1 = OBV_1$

If $C_1 = C_0$:
 $OBV_0 = OBV_1$

Where:

- C_1 = Today's Closing Price
- C_0 = Previous Day's Closing Price
- OBV_0 = Previous Day's OBV Value
- V_1 = Today's Volume
- OBV_1 = Today's OBV Value



When you begin your OBV calculation, the first day's volume equals plus or minus the OBV (depending on if the day's price is higher or lower than the previous day), since there is no prior OBV value to add the first day's volume to or to subtract it from.

As an example, we'll use GE, shown here, comparing the closing prices (horizontal lines to the right of the price range bars) of February 28 (\$46.50, not shown) and March 1 (\$45.91). The volume was 23.96 million on March 1.

Since the close for March 1 was lower than the close of February 28, the OBV value for March 1 is negative 23.96 million:

3/1: $\$45.91 < \46.50 :
 $0 - 23.96 \text{ mil} = -23.96 \text{ mil}$

For March 2, the close of \$44.57 is below the close of March 1. This time we subtract the volume of March 2 from the OBV value for March 1, giving us an OBV of negative 45.95 million:

3/2: $\$44.57 < \45.91
 $-23.96 \text{ mil} - 21.99 \text{ mil} = -45.95 \text{ mil}$

On March 5 (the next business day), the closing price is above that of March 2. 21.99 million shares were traded on March 2. In this case, we then add the volume from that day (16.68 million shares) to the prior day's OBV, giving us an OBV value of negative 29.27 million:

3/5: $\$45.08 > \44.57
 $-45.95 \text{ mil} + 16.68 \text{ mil} = -29.27 \text{ mil}$

Looking at the chart for GE for this same period, you can see the interaction between price activity, volume, and the OBV line. The OBV line begins in negative territory, reflecting the fact that GE's price fell on the first day of the period. Being sure to compare only the *closing* prices, you can see where the OBV line increases on those days the closing price is above the previous close and falls on those days where the close is below the previous day's closing price.

Lastly, focus on March 12—on this day, GE's price fell \$4.21 from the close of the 9th. Also on this day, GE experienced the highest trading volume during the period—45.71 million shares traded. On this day, volume behaved as we would expect it—volume increased when there was a relatively large price move. As a result, OBV dropped sharply on the 12th as well.

price, jump on the bandwagon and continue to bid up the price. However, the general public is buying shares from the smart money, who is now selling their shares and reaping the gains. When the general public realizes what is taking place—mainly that the price is in free-fall—they rush to sell, further depressing the price. Therefore, in order to successfully use OBV, the division of the market between smart money and the general public must exist. The smart money must have someone from which to buy and which to sell, which is where the general public enters the picture.

MEASURING FUNDAMENTALS

In the book “The Technical Analysis of Stocks, Options, & Futures,” William Eng draws a comparison between the OBV indicator and fundamental analysis. The main function of the OBV is to track the activity of smart money—large traders and investors—who may possess inside knowledge regarding

the fundamentals of a company or the market as a whole. By following the OBV, you may be able to gauge where the smart money is trading and, consequently, benefit from the inside knowledge possessed by the smart money without knowing what this information actually is.

TRENDS IN OBV

Over time, the OBV line will take on a trend—either up, down, or sideways. When the OBV line is in an upward trend—meaning that each new peak in the OBV line is higher than the previous peak or each new trough is higher than the previous trough—this is an indication that the security is undergoing accumulation or buying. During an upward trend there is more volume on days in which the price goes up versus those days where the price falls. This is viewed as a bullish condition.

In contrast, when the OBV line is falling or in a downtrend, each successive peak in the OBV line is

lower than the previous peak or each trough is lower than the previous trough. This is a period of distribution or selling, which means that volume is heavier on days where the price falls in relation to days where the price increases. Such a trend is bearish in nature.

There will also be times when the OBV line is neither making new highs or new lows. This sideways trend indicates a “doubtful” trend. During this phase, traders are looking for breakouts in OBV, which would indicate the beginning of either an upward or downward trend.

Once a trend is in place, it can only be broken by a reversal in trend—going from upward to downward, or vice versa—or entering a doubtful trend from either an up or down trend.

In examining the trends in OBV, you are looking for breakouts—when the OBV changes to either a rising or falling trend. These breakouts typically occur ahead of price breakouts, so traders should

buy long on OBV upside breakouts or sell short when the OBV makes a downside breakout. Once you have entered a position based on OBV, you should remain in it until the trend changes.

Figure 1 illustrates an OBV breakout for Biogen (BGEN). As you can see from the price chart, Biogen entered a period of decline beginning in mid August of 2000, during which time money flowed out of the stock as OBV fell. In early October, Biogen found a bottom and pulled back into a trading range between \$52 and \$63. Over the next three months, both the price and OBV fluctuated within a defined range. Then in mid-January 2001, the OBV value

FIGURE 1. BIOGEN OBV BREAKOUT



FIGURE 2. ALTERA CORP. OBV NEGATIVE DIVERGENCE



the current price trend may be reversing. When such a circumstance exists, you would want to place a trade in the direction of the OBV line because, eventually, we expect the price trend to reverse in the direction of the OBV line. In other words, if the OBV line were falling while the price is in an uptrend, you would want to sell or go short. In contrast, if the OBV line were rising while prices are falling, you would want to buy or go long. Keep in

rose above its previous high value, a signal that a breakout is taking place, followed a couple of days later by the price moving outside of the trading range. In this example, an investor would want to go long when OBV began reaching new highs and stay in the trade until the upward trend in OBV reversed itself. With Biogen, the breakout to the upside lasted roughly a month, at which point both OBV and price reversed course.

price moves in one direction and the OBV moves in the opposite direction, a negative divergence is taking place. This serves as a warning that

mind that it is the *direction* of the OBV line that is important, not the OBV values themselves.

Figure 2 is an example of negative

FIGURE 3. SAFEWAY INC. OBV NEGATIVE DIVERGENCE



INTERPRETING OBV

When viewing the OBV line in tandem with a price chart, the OBV line is confirming the price movement when it moves in the same direction as price. However, when

divergence between the OBV line and price. Looking at the price movement of Altera Corp. (ALTR) in June and July 2000, we see that it makes several new near-term lows while OBV is reaching lows that are basically at the same level. We would expect the OBV line to reach new lows with the price in situations such as this. Eventually after reaching a new near-term low at the end of July, Altera rose in price from \$44 to \$65 in less than a month. This is an example of price reversing itself in the direction of the OBV.

Another example is shown in Figure 3 for Safeway Inc. (SWY). You can see in the chart that, between July and October of 2000, Safeway's price reached three new near-term highs. However, each time this high was reached, the OBV created a peak that was lower than the previous one. Here we would expect the price to move in tandem with the OBV line—which takes place when Safeway makes an abrupt fall from roughly \$54 to below \$46 in three days. The same thing happens again less than two months later. The chart shows that in late November 2000 and late January 2001, the price reached higher highs, while the OBV line reached to successive lower highs. Once the second high was reached, the price took another precipitous drop from almost \$63 to just above \$51 in a matter of days.

Lastly, Figure 4 illustrates a situation in which the stock price

FIGURE 4. TARGET CORP. PRICE FOLLOWS OBV TREND



enters an uptrend to match the movement in OBV. In this example, Target Corp. (TGT) was in the midst of a downtrend in September and October of 2000. While the OBV line was falling through the first half of this downtrend, it reversed course in late September. At this point, an investor should be on alert for the price to move upward with OBV. A week or so later, Target Corp. reached a new low and then entered an uptrend.

CONCLUSION

Students of technical analysis should be aware of the importance volume plays in the analysis process. It serves to confirm the validity of a

trend and, as we have shown using the on-balance volume indicator, can provide a warning sign of potential changes in the current price trend.

Like any other technical indicator, OBV should not be viewed in isolation. By using it in tandem with other indicators, you are better equipped to identify potential price movements—and trade accordingly.

RESOURCES

- Achelis, Steven, "Technical Analysis from A to Z," McGraw-Hill.
- Murphy, John, "The Visual Investor: How to Spot Market Trends," John Wiley & Sons.
- Eng, William, "The Technical Analysis of Stocks, Options, & Futures," Probus Publishing. ♦

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