FOREWORD BY GREG MORRIS

author of *Candlestick Charting Explained* and *The Complete Guide to Market Breadth Indicators*

# THE TRADER'S BOOK OF VOLUME

## The Definitive Guide to Volume Trading

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To my mom, Geraldine (Gilada) Leibovit, who passed in her 94th year when I was heading to Israel, where she now eternally rests, and who could never understand how I ended up in the stock market.

To Louis Rukeyser, who took a Jewish cowboy from Sedona, Arizona, and placed him in the midst of Wall Street big shots, confirming his belief that research from the canyons of the west can equal or outdo research from the canyons of Wall Street.

To Yale Hirsch, whose *Stock Traders Almanac* (my first read book on the stock market in 1987) provided infinite encouragement to stay with the stock market.

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# CONTENTS

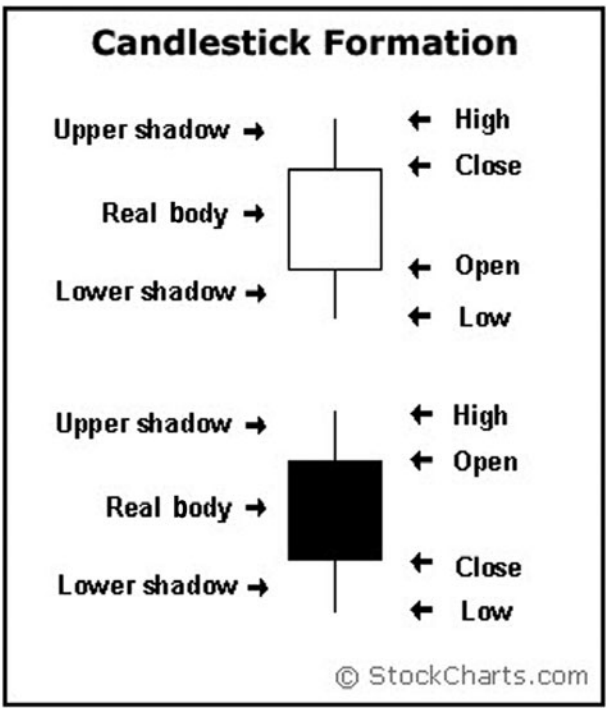


**Chart 4.23** Components of a Candlestick

One example of a common candlestick continuation pattern that is especially common in the foreign exchange (FX) market is interestingly named the *in-neck thrusting pattern*. The example of the E-Mini Euro FX futures contract in Chart 4.24 shows the in-neck thrusting pattern as it unfolds during a downward move. Note that most candlestick patterns are short term in nature, so they develop quickly. Chart 4.24 illustrates the pattern in a downtrend, but this pattern is also valid in uptrends as well. In the downtrend example in Chart 4.24, the pattern unfolds as follows:

- Day 1. Consists of a long black candle signaling the conviction among sellers.
- Day 2. The candle has a white body (which means that the closing price is above the opening price) as buyers step in to try to stem the decline. This candle usually has a long tail, which signals that there was a strong battle to push price lower, but for this day the buyers prevailed.

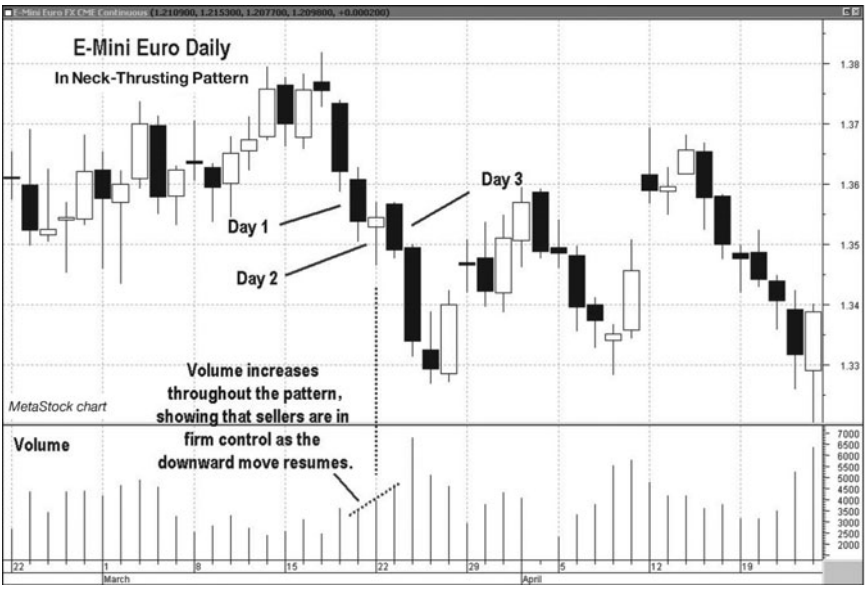


**Chart 4.24** Candlestick Continuation Pattern, E-Mini Euro Futures

*Source*: MetaStock

- Day 3. On the third day, buyers attempt to push price higher but fail, and the sellers resume control, which results in another large black candle resuming the downtrend.

Volume increases throughout the pattern, showing a definite battle for control of the market. In this case, it was ultimately won by sellers.

This chapter has presented volume overlays as a way to detect and assess trend strength. We have also learned to identify and confirm price chart formations using their corresponding volume patterns to predict continuation in trend direction.

## Summary

- Volume allows traders the opportunity to see how much intensity or conviction is behind price movements of individual stocks or the market as a whole. In a sense, volume "validates" price movements and can also give insight as to whether a trend is likely to continue

or change direction. Keep in mind the trader's mantra: *Volume precedes price*.

- As such, volume will show changes in its characteristics that will alert traders to the end of an uptrend or a downtrend before the price actually reverses. For example, in a downtrending market, the volume should expand during the down moves (confirmation of trend) and contract during countertrend bounces. When the volume patterns begin to change, they serve to alert a trader to shifts in trend.
- Trends, and the strength of those trends, can be assessed and confirmed through the use of *overlays* to determine volume strength and the conviction behind price movement. Such overlays can confirm robust or lagging trends.
- Popular overlays include volume moving averages, linear regression, and Moving Average Convergence/Divergence (MACD) of volume.
- Price formation patterns, when used in conjunction with their corresponding volume patterns, can also give strong confirmation as to the direction of a tradeworthy trend. Spotting the price patterns and corresponding volume patterns of pennants, flags, triangles, and gaps helps to predict a continuation in trend direction.

# Chapter 5

## THE VOLUME ALERT: IDENTIFYING TREND REVERSAL PATTERNS

So far in our Volume Analysis, we have explored a variety of trading tools and methods to identify chart patterns and assess trends. A trend reversal pattern can occur intraday, lasting a few hours; short term, lasting a few days to a few weeks; or long term, lasting several months. The recognition of reversals is a critical skill in the trader's toolbox; it is typically easier to spot and follow trends, but also easier to "get burned" when a reversal signal is missed. A great degree of analysis and insight is required to spot reversal patterns, and the ability to do so can set you apart from the average trader. Chapter 5 focuses specifically on identifying trend reversal patterns.

These chart patterns contain volume behavior that provides insight into the conviction of the trend and can alert us to perhaps the most critically important patterns in the market for traders. In our Volume Analysis, we will examine examples of broad-market trend reversals, index reversals, and the reversals of individual issues. We will look at longer-term "macro" trend reversals and shorter-trend reversals, of interest only to an intraday trader. What to keep in mind when examining these charts is the trader's mantra: volume precedes price. The intensity of a reversal may come as a surprise, but the reversal itself never should. The market flashes warning signals, and the volume behavior within these patterns is an early alert that a change in sentiment and trend is underway.

## Macro, or Longer-Term, Trend Reversals

Using Volume Analysis, we identified the price trend and assessed under what circumstances we might anticipate a reversal. In this section, we focus our attention on actual trend reversal patterns. All the reversal patterns that we will be discussing can occur in the broad market, in an index or commodity, or in an individual issue. Our first three examples display simple trend reversal patterns in the macro, or longer-term, prevailing trend.

Chart 5.1 for the iShares Russell 2000 Trust ETF (IWM) shows how the volume pattern tipped traders off that a change in price direction was coming in the summer of 2007. Price had been in an uptrend (a pattern of higher highs and higher lows) since March 2003 (the full trend duration is not shown, in order to scale recent events properly).

As price made new highs in May and June 2007, seen in area A, the price pattern became choppy. Looking at price alone would tell you that IWM was in a consolidation phase, but that's about it. When volume is included in the analysis, however, the picture becomes clearer. Notice how volume activity increased during this choppy phase. Following a trend, choppy price action combined with an increase in volume is a sign of distribution. Every time eager buyers entered the market, there were

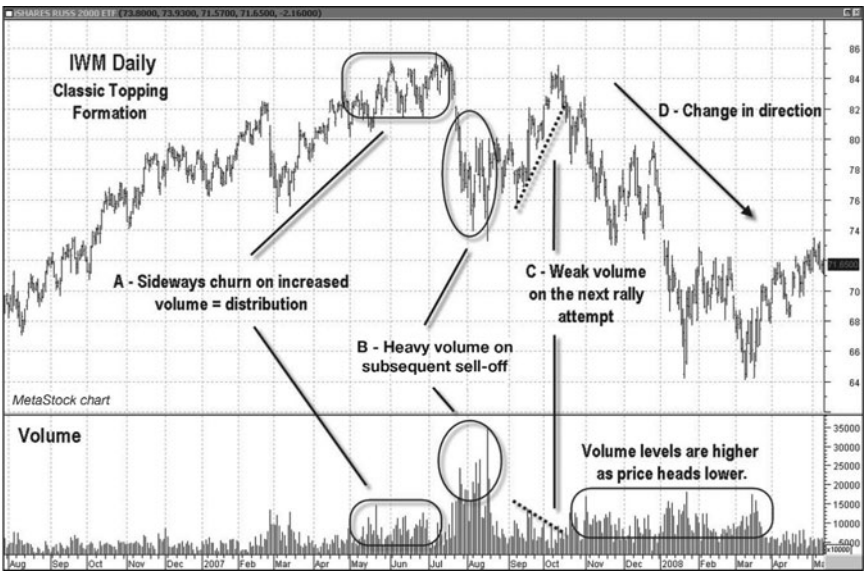


**Chart 5.1** Classic Volume/Price Reversal Scenario, iShares Russell 2000 Trust ETF

*Source*: MetaStock

sellers willing to take profits and give up their shares. The elevated supply held price in check, which prevented any further upward push in price.

In area B, the overhead supply proved too much for the market to bear, which prompted sharp selling into August. At that point, a trend reversal was definitely taking shape, but we needed one more piece of evidence before making that call. That piece of evidence was the behavior of volume on the next rally attempt in area C.

Note how, on the rally attempt following the August sell-off, the volume contracted as price moved higher and approached the summer 2007 highs. This was a definite sign that there was not enough fuel in the tank (volume) to push prices significantly higher, which opened the door for a sell-off (area D). Notice the consistently higher level of volume during the sell-off as compared to the previous rally attempt in area C. That showed a definite shift in trader sentiment and that sellers were firmly in control.

Just as a volume spike in a strong uptrend can alert traders that buying pressure has exhausted itself in the market, a spike in volume following a steep downtrend can also alert traders that sellers have exhausted themselves in a fit of panic selling.

Note in Chart 5.2 for IBM that the volume pattern is rather consistent throughout the three-month downtrend from December 2004 through

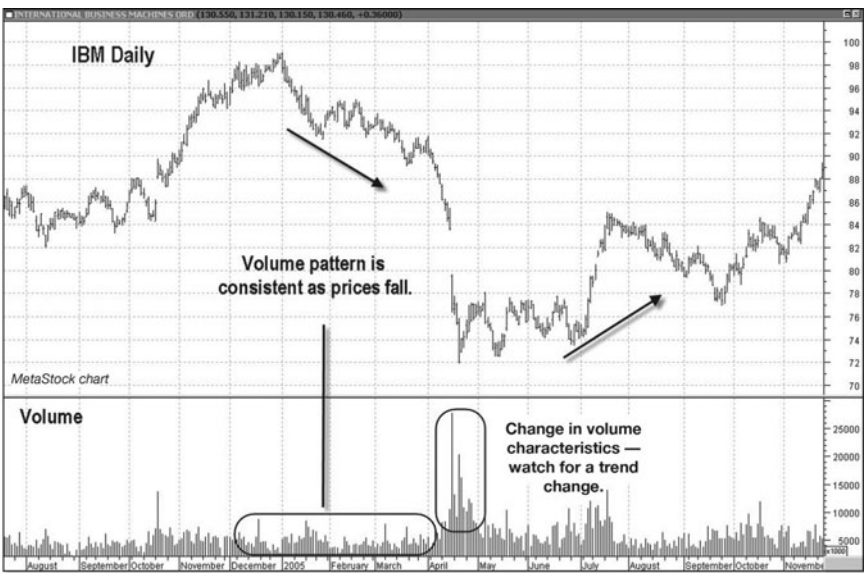


**Chart 5.2** Trend Reversal with Spike and Consolidation, IBM

*Source*: MetaStock

April 2005. In mid-April, however, volume spiked higher as price dropped sharply to a new low. The sharp increase in volume showed that sellers wanted out so bad that they were willing to dump shares on the market in order to protect themselves from further losses. This type of seller behavior usually marks a low point in sentiment. Note also how price chopped sideways in a three-month consolidation pattern before reversing and moving higher.

## Reversal Off an Intense Downtrend

Intense downtrend reversals are characterized by falling prices with noticeably rising volume. While the previous example in IBM showed steady selling with a consistent volume pattern, the intense downtrend shows true and strong negative sentiment.

Chart 5.3 for the S&P Industrial Select SPDR ETF (XLI) shows a new downtrend developing in May 2008. Note how volume increased throughout the sell-off as price was making a series of lower lows and highs. This type of intensity reflected increasing negative sentiment, as traders looked to eliminate further loss.

The consistently high volume in October and November 2008 confirmed that negative sentiment toward XLI was still very strong. After a brief

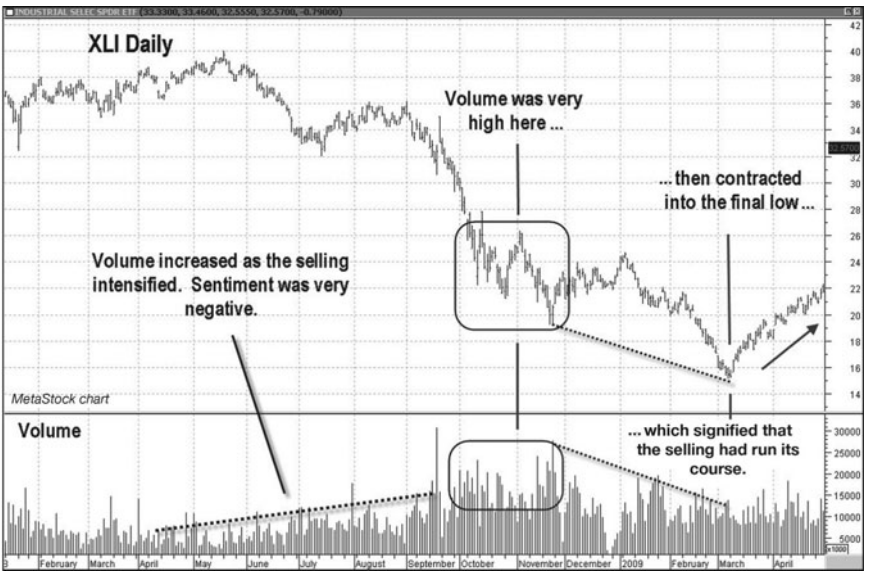


**Chart 5.3** Reversal Off Intense Downtrend, S&P Select Industrial SPDR ETF

*Source*: MetaStock

rally from late November into early January 2009, price once again headed lower, this time making a new low. As the new low was made, notice how volume decreased as price pushed lower. This change in the volume pattern showed that negative sentiment was waning. This meant selling pressure had weakened, indicating that a trend change was imminent.

## Short-Term Reversals and Overlays

In the previous three examples, we concentrated on long-term macro trend changes based on our Volume Analysis over a period of months. What about changes in volume patterns for the more active trader wishing to capitalize on short-term price movements? One solution lies in the use of volume overlays. In this section, we will concentrate on the use of volume moving averages (VMAs), first introduced and explained in Chapter 4.

Shorter-period VMA parameters show changes in volume patterns useful for the active trader to spot short-term trends. The key to selecting the proper time frame for your VMA is to pick a length that is neither too short (which can lead to trading whipsaws) nor too long (which can lead to "indicator lag," or the generation of late signals).

In our Volume Analysis of short-term reversals, we chose a 9-period exponential moving average (EMA) to use with our daily charts. An EMA, which weights more recent data more heavily, is favored over a simple, or linear, moving average for this purpose because of its sensitivity to recent data and thus its ability to reveal more recent volume shifts.

When examining the behavior of the VMA, traders should note its dual ability to both confirm a trend and signal a potential reversal. In the following discussion, we note the volume pattern of the VMA under different market conditions. In an uptrending market, an increasing VMA confirms that trader sentiment is positive, as buying pressure forces prices higher. A VMA that peaks and begins to turn lower in an uptrending market signals that buying pressure has temporarily peaked, which provides an early alert to a pullback or to a potential reversal in trend. In a declining market, a rising VMA indicates that trader sentiment is negative, since selling pressure drives price movement lower, confirming the downtrend. Once the VMA peaks and moves lower in a downtrending market, it signals that selling pressure has diminished, thus providing an early alert to a rally or potential reversal.

Chart 5.4 for the S&P 500 SPDR ETF (SPY) shows how the 9-day VMA can be used to pinpoint short-term lows in the market. Note how

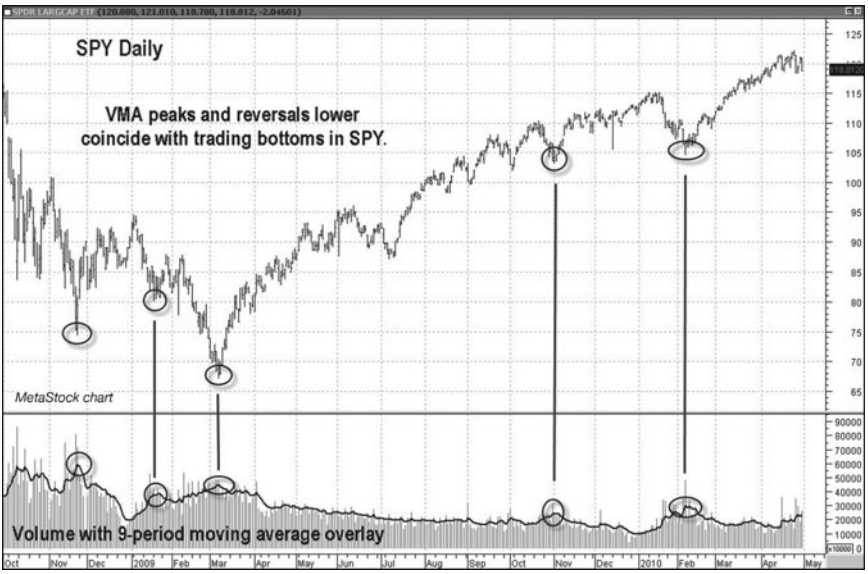


**Chart 5.4** Reversals Signaled by 9-Day VMA Overlay, S&P 500 SPDR ETF

*Source*: MetaStock

each time the VMA peaked after moving higher, a short-term trading bottom was formed in the market.

Chart 5.5 of the Nasdaq 100 Trust ETF (QQQQ) shows the 9-day exponential moving average at work there also. This overlay tends to show more bottoms than tops because of the more emotional nature of market participants (elevated volume) during sell-offs, but notice in the QQQQ chart how the 9-day VMA caught a couple of swing highs in QQQQ in March and June 2009.

## Reversals Signaled by MACD Volume Overlay

It's worth looking at the same chart of QQQQ using the same volume principle, only this time using the Moving Average Convergence/Divergence (MACD) volume overlay (see Chart 5.6). This is a more sensitive overlay, as it shows more frequent and more clearly defined peaks. Notice how each time the MACD of volume peaked well above the zero line and turned lower, price changed short-term direction. This alerted the active trader to short-term changes in direction, which could be used for taking profits or initiating new positions.

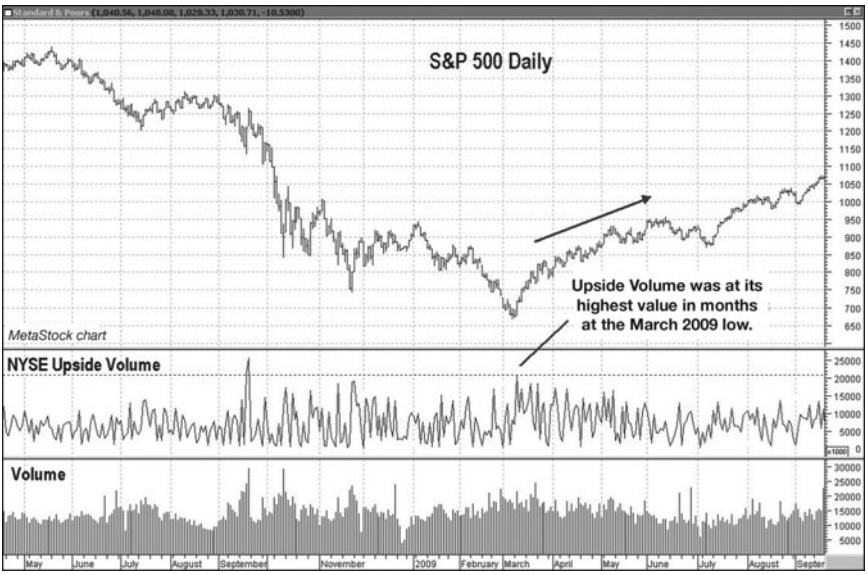


**Chart 8.80** Upside Volume Indicator, S&P 500 Daily

*Source*: MetaStock

Chart 8.80 shows that the Upside Volume of the S&P 500 was rather tame during the downtrend, with the exception of the massive spike in September 2008, when the real meltdown began. A line has been drawn across the top of the March 2009 spike to demonstrate how much higher that spike was compared to the spikes that followed the previous September 2008 spike high. Earlier we discussed the behavior of Downside Volume coming into the March 2009 low. Now with Upside Volume spiking and prices reversing, chances were good that this would at the very least lead to a solid recovery rally.

Smoothing Upside Volume with a moving average is good for showing divergences with price. In Chart 8.81, Upside Volume of the S&P 500 has been smoothed with a 5-day simple moving average. Note how in March 2010 price makes a lower low while Upside Volume makes a higher low, showing that shares were being accumulated as price worked lower.

The S&P 500 as shown in Chart 8.82 shows a negative divergence in December 2008 through January 2009 with the 5-day simple moving average of Upside Volume. Price worked its way higher through December and into January, while Upside Volume dropped noticeably. This preceded the sharp, final drop into the March 2009 low.

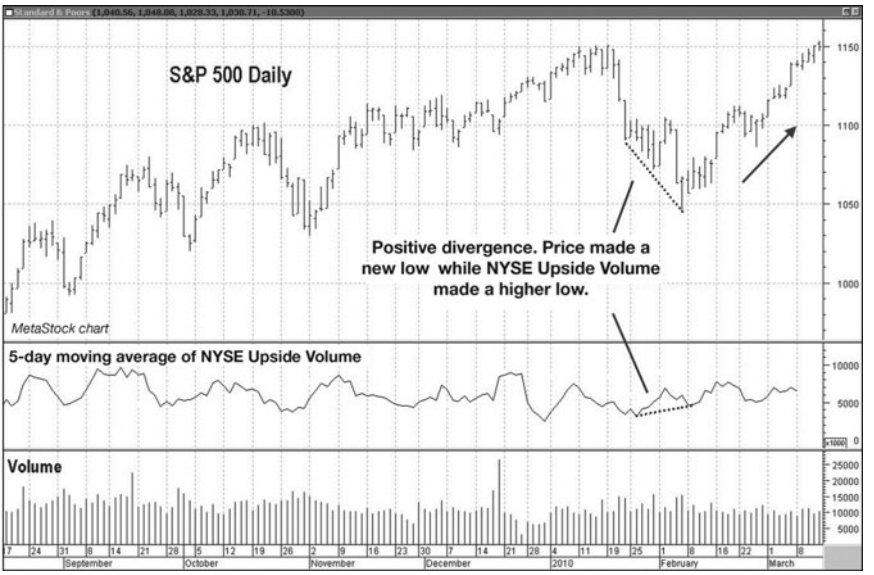


**Chart 8.81** Upside Volume Indicator, 5-Day Moving Average, Positive Divergence, S&P 500 Daily

*Source*: MetaStock

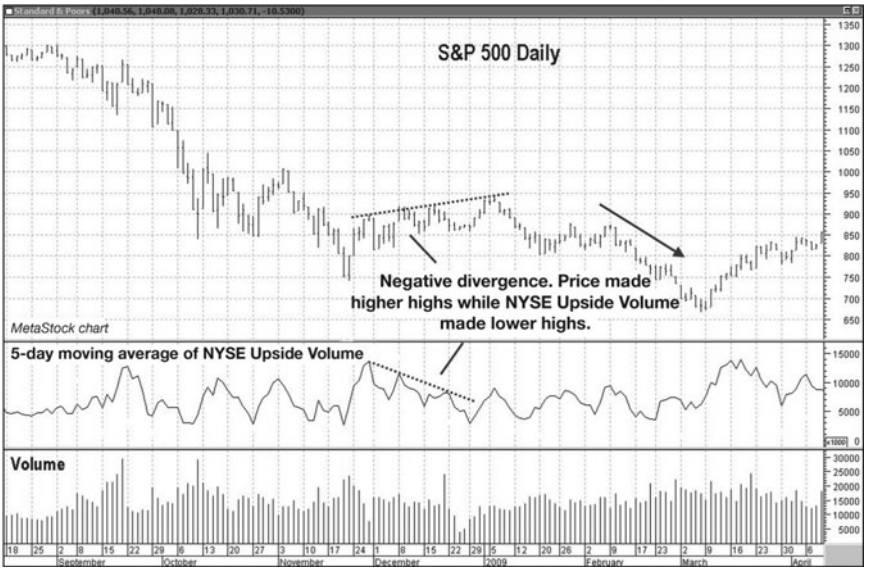


**Chart 8.82** Upside Volume Indicator, 5-Day Moving Average, Negative Divergence, S&P 500 Daily

*Source*: MetaStock

## Trade Setup

This trade setup example of the DJ Diamonds Trust ETF (DIA) will use a 5-day moving average of NYSE Upside Volume in conjunction with price action to initiate a short trade.

In Chart 8.83, note how price formed a top in October 2007 in what turned out to be the major top prior to the 2008 bear market. At the time, however, it simply looked like a solid trend continuation trading opportunity was developing. The short-term corrective rally that began in November was rather sharp from a price perspective, but the 5-day moving average of NYSE Upside Volume was showing a negative divergence with price. Overall volume (in the bottom window) was lackluster on the push higher, which was also a clue that there was more selling to come. Those two divergences made a compelling case for a short trade. The trade entry trigger would be a violation of the support line drawn that connected the November and December lows.

## Trade Entry

Chart 8.84 takes a closer look at the time frame in which a trade could have been initiated. Once price penetrated the support line to the downside on

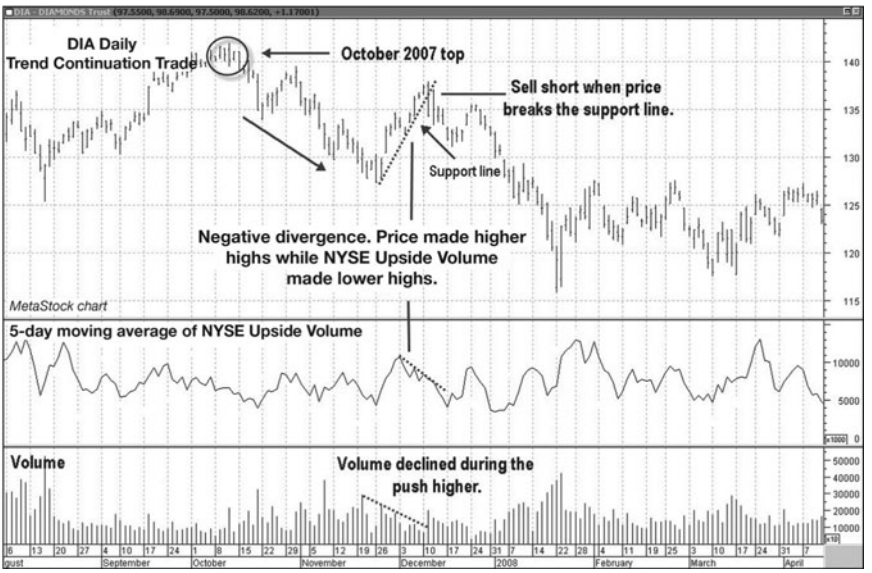


**Chart 8.83** Upside Volume Indicator, Negative Divergence Trade Setup, DJ Diamonds Trust ETF

*Source*: MetaStock

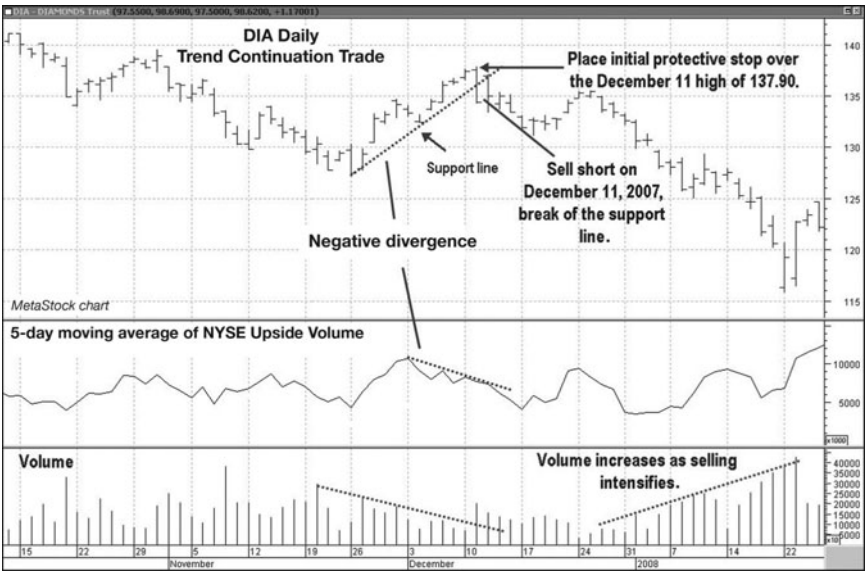


**Chart 8.84** Upside Volume Indicator, Negative Divergence Trade Entry, DJ Diamonds Trust ETF

*Source*: MetaStock

December 11, 2007, a short position could have been initiated. The initial protective stop should have been placed over the December 11 high of 137.90. The tight stop on this trade opened the door for solid profit potential with a very small amount of risk.

## Trader Tips

Upside and Downside Volume can be analyzed separately and are good for the following:

- Showing changes in volume patterns, giving clues to potential trend changes
- Spotting divergences between price and volume

One drawback of using Upside/Downside Volume indicators is that they are short term in nature and not well suited for intermediate- and longer-term trading decisions. Many useful oscillators and ratios are made by combining up and down volume, and analyzing them separately can give a slightly different perspective on trends and their strength. The next section carries this idea further.

## Upside/Downside Volume Oscillator

Upside Volume and Downside Volume can be a valuable analysis tool when they are examined separately, but combining these pieces of data into an oscillator creates a versatile technical tool that can be used for overbought/oversold conditions, showing divergences and giving positive or negative market signals on zero-line crossovers.

### Formulation

The computation of this oscillator is very simple:

Current day's advancing volume – current day's declining volume

This computation is identical to the cumulative volume, except that the daily results are not added to a running total. That creates a volatile data stream good for identifying short-term overbought or oversold conditions as well as divergences. This oscillator can be created with either NYSE or Nasdaq exchange data.

### Identifying Overbought/Oversold Conditions

In the S&P 500 plot in Chart 8.85, note how earlier in the uptrend spikes above 1.2 billion shares in the oscillator usually resulted in consolidations

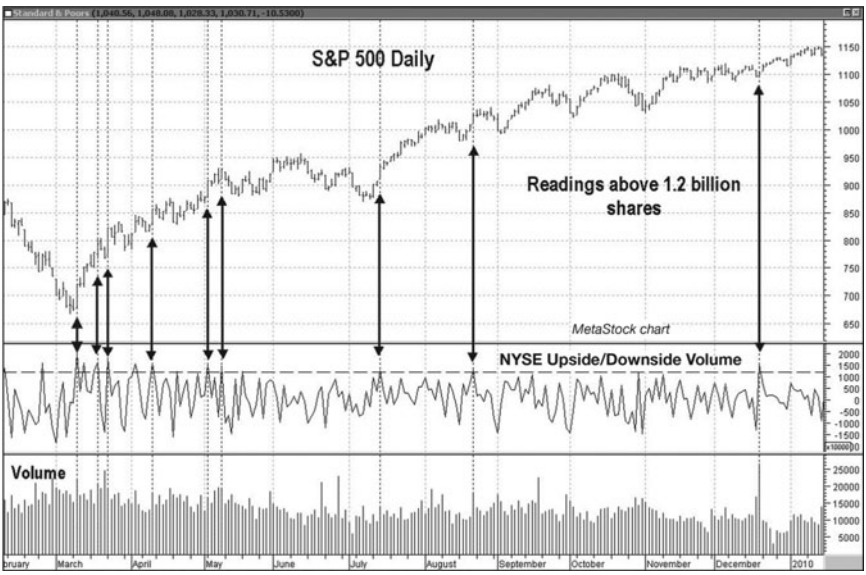


**Chart 8.85** Upside/Downside Volume Oscillator, Overbought Conditions, S&P 500 Daily

*Source:* MetaStock

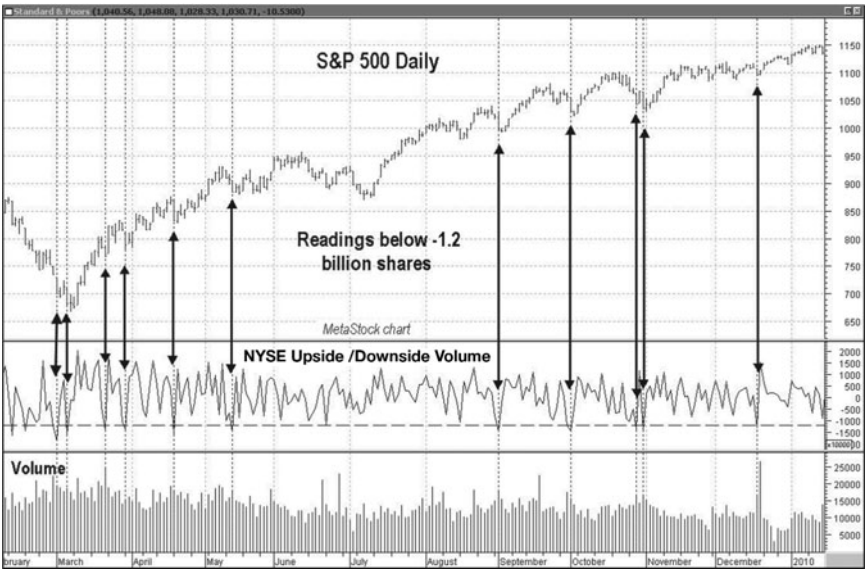


**Chart 8.86** Upside/Downside Volume Oscillator, Oversold Conditions, S&P 500 Daily

*Source*: MetaStock

or pullbacks, but as the trend regained strength, they signaled continuation moves. The way the oscillator reacts to overbought levels can give insight as to the strength of the trend being analyzed. The oscillator also reflects oversold conditions in the market. In Chart 8.86 of the S&P 500, note how oscillator readings below negative 1.2 billion shares coincide with short-term market lows in the uptrend.

## Divergences

The Upside/Downside Volume Oscillator also shows divergences that can alert traders to trend corrections that may be ready to unfold. The Nasdaq Composite shown in Chart 8.87 shows a positive divergence, as price continues lower while the oscillator makes a series of higher lows. This shows latent market strength, as buyers are more active than sellers. Once the divergence was resolved, the Nasdaq Composite rose almost 20 percent in less than three months.

The S&P 500 plotted in Chart 8.88 shows a negative divergence (i.e., price made higher highs but the oscillator made lower highs) from March through May 2008. This gave traders a warning that the brief uptrend was corrective and that the downtrend would resume.

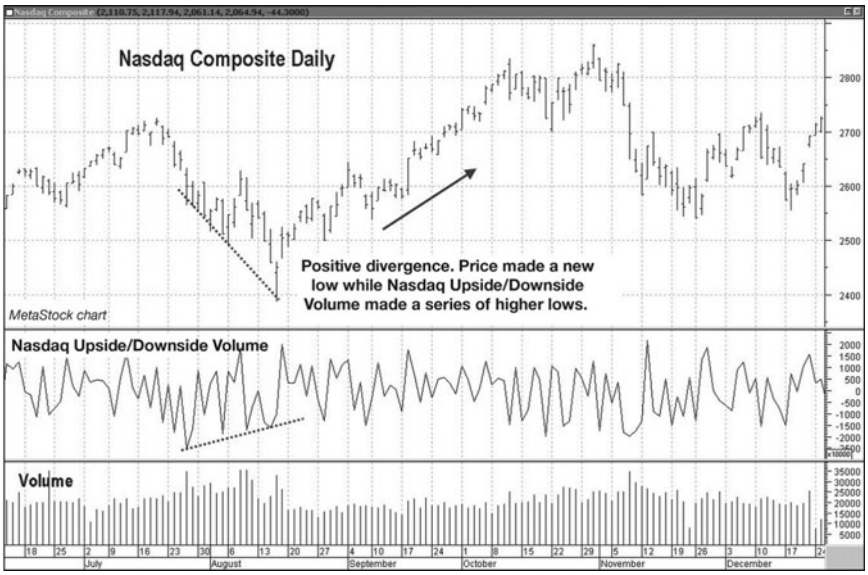


**Chart 8.87** Upside/Downside Volume Oscillator, Positive Divergence, Nasdaq Composite Daily

*Source*: MetaStock

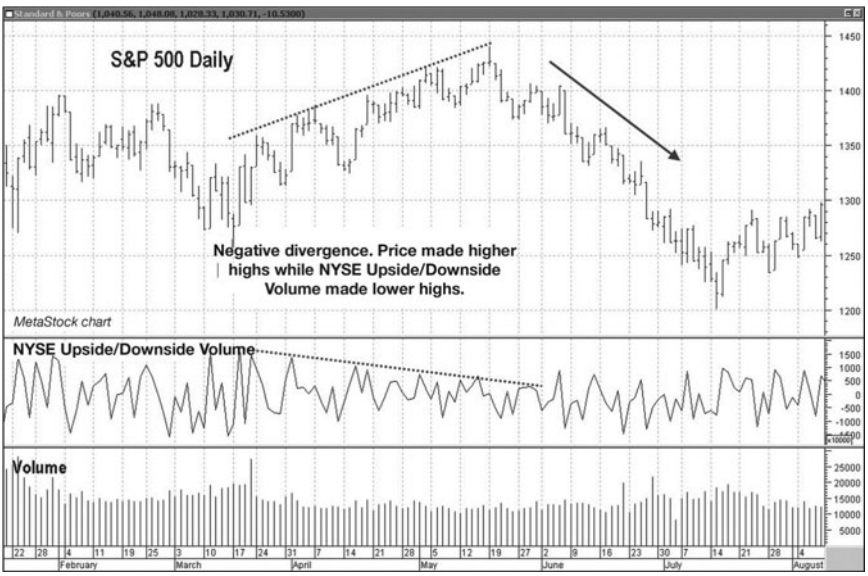


**Chart 8.88** Upside/Downside Volume Oscillator, Negative Divergence, S&P 500 Daily

*Source*: MetaStock

## Trends and Market Signals

The Upside/Downside Volume Oscillator is also a great tool when smoothed with a 20-day simple moving average. This allows the indicator to better show trends and also give great positive and negative market signals when it crosses the zero line. The Nasdaq Composite in Chart 8.89 shows a 20-day simple moving average of the oscillator with positive market signals (i.e., the MA crosses above the zero line) and negative ones (i.e., the MA crosses below the zero line), which signal times to buy and sell, respectively.

The 20-day moving average of the oscillator can also be plotted as a histogram, which better shows its characteristics during uptrends and downtrends. Note in the Nasdaq Composite as shown in Chart 8.90 how the oscillator made lower highs and lower lows during the down market of 2008. It then made a series of higher highs and higher lows during the up market of 2009. Plotting the oscillator as a histogram can give an at-a-glance look at the market, showing whether buyers or sellers are in control.

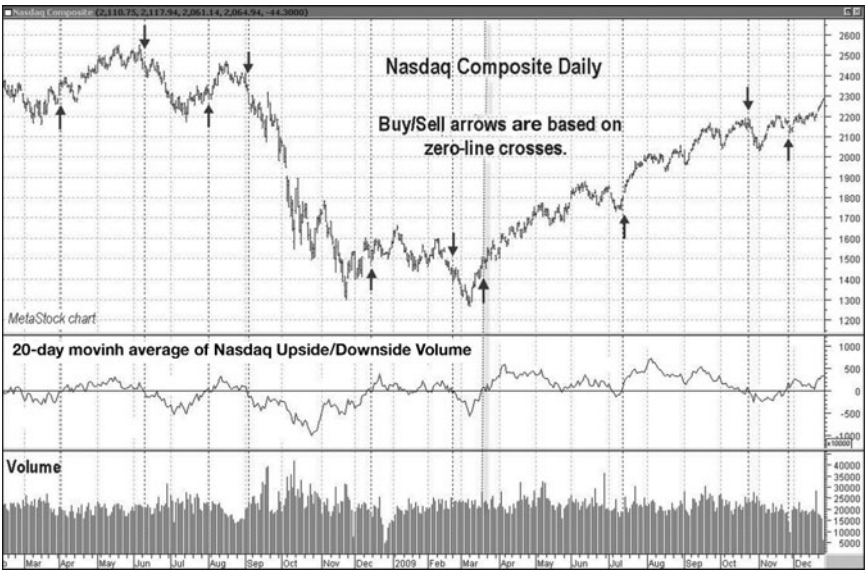


**Chart 8.89** Upside/Downside Volume Oscillator, 20-Day Moving Average, Zero-Line Crosses, Nasdaq Composite Daily

*Source*: MetaStock

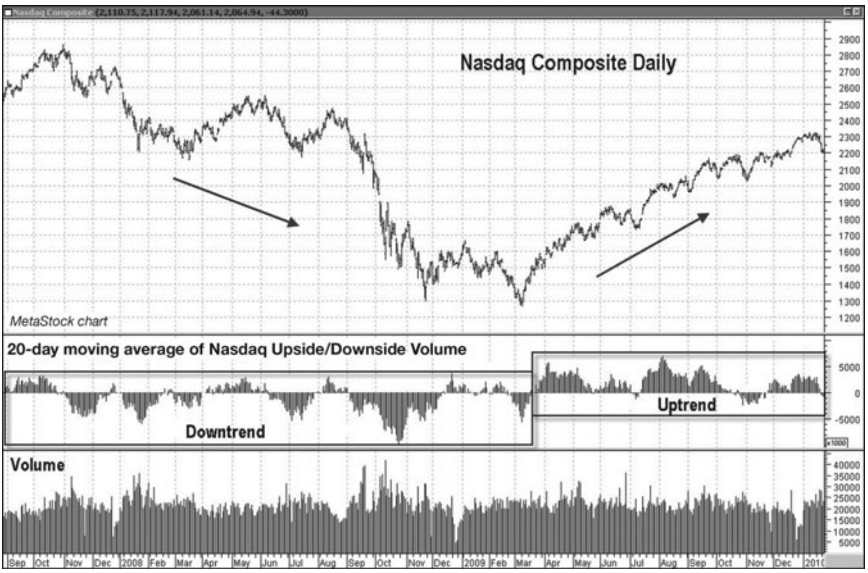


**Chart 8.90** Upside/Downside Volume Oscillator, 20-Day Moving Average with Histogram, Nasdaq Composite Daily

*Source*: MetaStock

## Trade Setup

The following example uses the 20-day moving average of the Nasdaq Upside/Downside Volume Oscillator in conjunction with price movements to generate a trade setup and entry. Note in Chart 8.91 that price had been declining into July 2006, while the 20-day moving average of the Nasdaq Upside/Downside Volume Oscillator had been making higher lows, showing a positive divergence. Prices stabilized throughout the remainder of July and into August, showing a drop in selling pressure. A downsloping resistance line could be drawn that connects the high points of the decline, which will be part of our trade entry trigger, along with a cross upward through the zero line in the oscillator.

## Trade Entry

Remember, the positive divergence is one piece of the puzzle. In order to enter a trade, price needs to confirm that a trend change is likely to be underway. This happens when price closes above the resistance line along with the 20-day moving average of the Nasdaq Upside/Downside Volume

identify trends and provide confirmation of, or spot, divergences. The solution we present here is how to best enhance your current trading system using volume indicators. If we were to take a simplistic view, most trading systems are based upon trading in the direction of the trend, including consolidations and continuations, or against the trend, recognizing divergences and reversal patterns. In our previous discussions, we discussed how to identify the trend and how to confirm the health and strength of a trend, and we looked at different trading patterns that might signal setups for us. Now we view the indicators in different trading environments so that you can get a feel for how they might actually look in your trading system. Many of the trading examples use divergences as an illustration. However, as we all know, there are as many ways to trade as there are traders.

## Accumulation/Distribution

The Accumulation/Distribution line measures whether traders are *accumulating* (i.e., buying, on a net basis) or *distributing* (i.e., selling, on a net basis) shares by combining price momentum with volume. This indicator is most effective before turning points, as *volume precedes price*. In many cases, volume patterns change before price turns, which shows a change in trader sentiment. Volume-based indicators catch these changes in sentiment, suggesting that a change in trend could be imminent. This line should not be confused with the accumulation/distribution index originally developed by Larry Williams.

The Accumulation/Distribution line was taken several steps further when the innovative market technician Marc Chaikin set out to improve upon the very popular On-Balance Volume indicator (OBV). Whereas OBV accumulated volume based on the relationship from one day's closing price to the next, Chaikin wanted to quantify the close as to whether the period's action was positive or negative. His methodology compared the close to the midpoint of the range in order to determine whether the period's action was positive or negative.

### Formulation

The Accumulation/Distribution line is actually computed in two parts. First, the formula finds the *close location value*, or CLV:

$$\text{CLV} = [(\text{close} - \text{low}) - (\text{high} - \text{close})] / (\text{high} - \text{low})$$

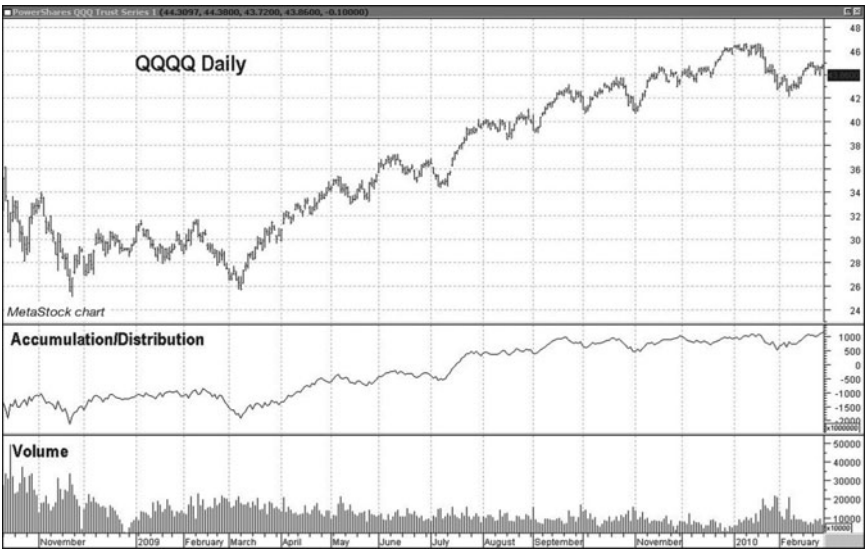


**Chart 9.1** Accumulation/Distribution, Nasdaq 100 Trust ETF (QQQQ)

*Source*: MetaStock

The CLV can have a maximum value of 1 if price closes at its high for the period, and it can have a minimum value of −1 if price closes at its low for the period. Any close above the midpoint of the period will have a value greater than zero, and any close below the midpoint of the period will have a value less than zero. If price closes at the exact midpoint of the period, the value will be zero

Next, the formula calculates the Accumulation/Distribution (A/D) value for the period as follows:

$$\text{A/D line} = \text{yesterday's A/D value} + (\text{CLV} \times \text{period volume})$$

The Accumulation/Distribution indicator is a cumulative indicator, meaning that each day's reading is simply added to or subtracted from the previous day's total. This running total methodology allows a trader to spot systematic accumulation or distribution of shares and is most useful for spotting divergences. Chart 9.1 shows a plot of Accumulation/Distribution for the Nasdaq 100 Trust ETF (QQQQ).

## Accumulation

In Chart 9.2, notice the range-bound trade of Amazon.com (AMZN) from June through September 2009 as depicted by the horizontal lines.

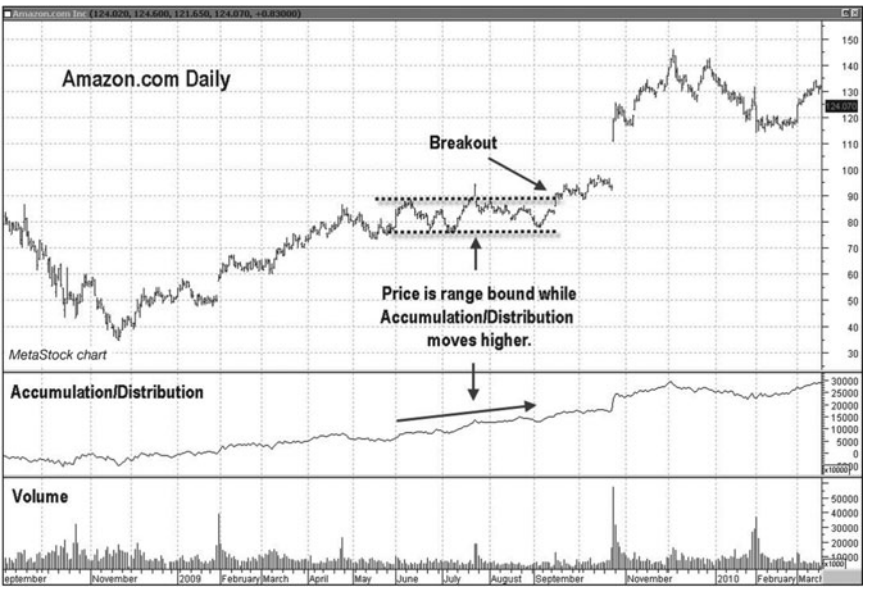


**Chart 9.2** Accumulation/Distribution, Positive Accumulation, Amazon.com

*Source*: MetaStock

Next, look in the lower frame, which shows Accumulation/Distribution rising during the same time period. That shows accumulation of shares, which ultimately resulted in an upside breakout in September.

## Distribution

In Chart 9.3, note how the price of Microsoft (MSFT) rallied to a high in April 2008, then began to move lower. Price declined into July, where it consolidated until August. Note that while price was in its two-month range, Accumulation/Distribution was still moving lower, indicating distribution. The downside break that followed in September and October 2008 continued into March 2009.

## Trend Confirmation

The Accumulation/Distribution indicator is an excellent tool for revealing and confirming the strength of a move in price. In Chart 9.4, the iShares High Yield Corporate Bond ETF (HYG) put in a significant bottom in March 2009. Following that bottom, HYG rallied 47 percent into early 2010. The Accumulation/Distribution indicator showed that volume was indeed supporting the price action as HYG pushed higher throughout 2009.

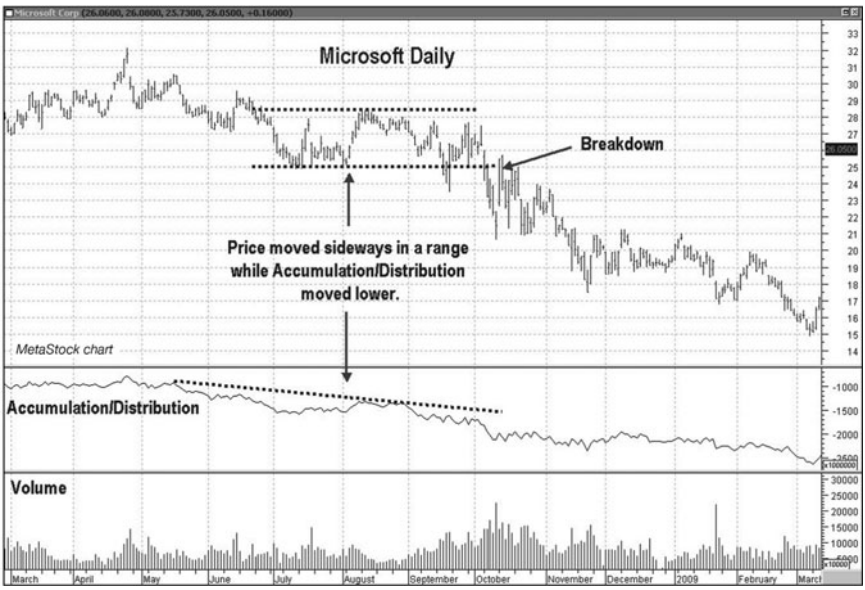


**Chart 9.3** Accumulation/Distribution, Negative Distribution, Microsoft Corp.

*Source*: MetaStock

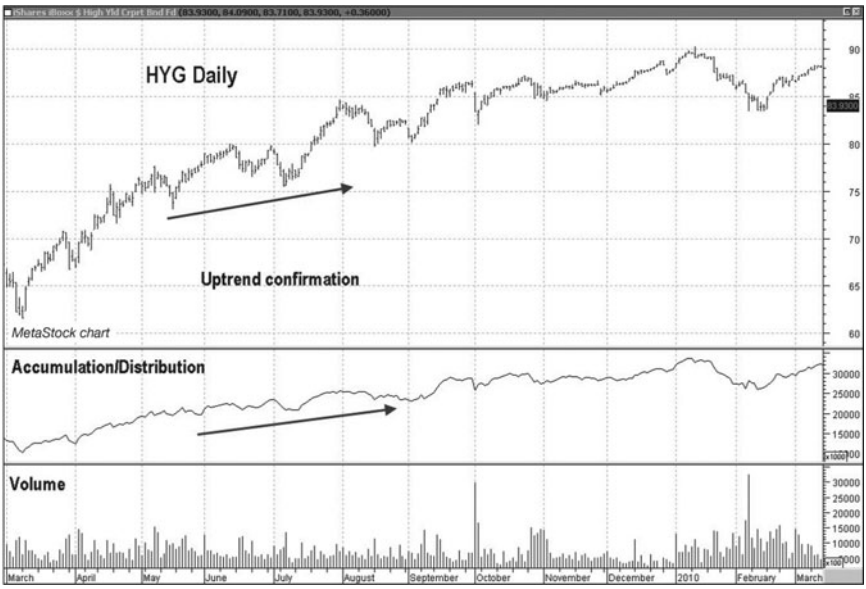


**Chart 9.4** Accumulation/Distribution, Uptrend Confirmation, iShares High Yield Corporate Bond ETF

*Source*: MetaStock

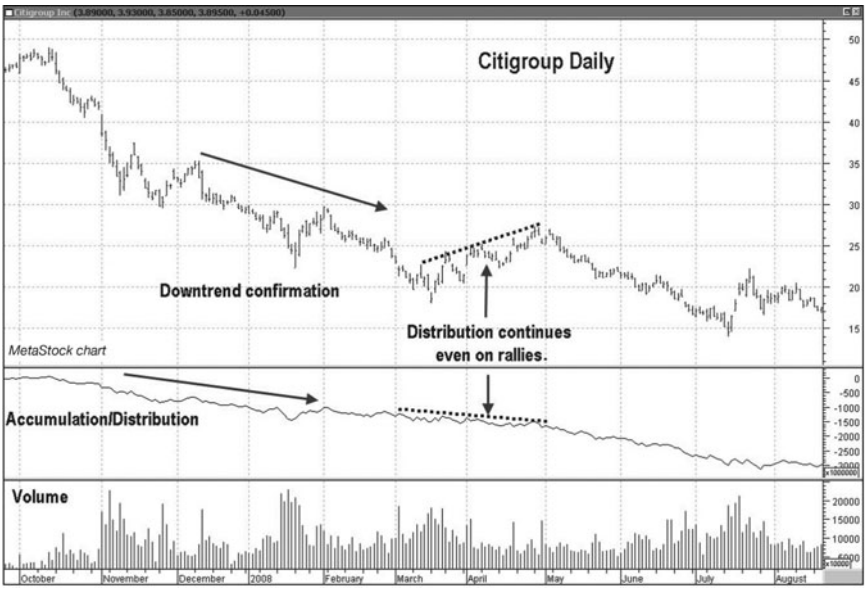


**Chart 9.5** Accumulation/Distribution, Downtrend Confirmation, Citigroup

*Source*: MetaStock

The market top in the fall of 2007 was caused in large part by problems in the financial sector. In Chart 9.5, Citigroup (C) saw intense distribution following that top. Citigroup had actually topped in December 2006 (not shown), but real selling pressure did not develop until October 2007, when the broader market headed south. Note how Accumulation/Distribution confirmed Citigroup's downtrend, continuing to make lower highs even as Citigroup's price rallied from March to May 2008. This is a great example to show how Accumulation/Distribution can keep a trader from buying into false corrections.

## Trade Setup

Up until now, all of the examples shown using Accumulation/Distribution have been using a daily time frame. The trade example in the following paragraphs will illustrate the usefulness and versatility of the Accumulation/Distribution indicator in an intraday time frame.

The example of the E-Mini S&P 500 futures contract in Chart 9.6 shows the use of Accumulation/Distribution in a 60-minute time frame from May 31 through June 20, 2010. When spotting divergences with the indicator, it is wise to be patient and wait for price confirmation before entering a trade.

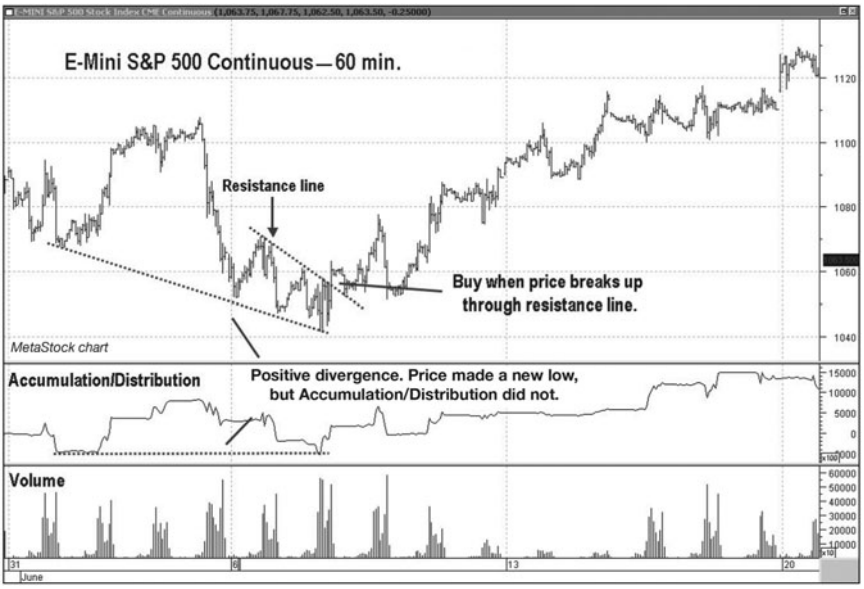


**Chart 9.6** Accumulation/Distribution, Positive Divergence Trade Setup, E-Mini S&P 500 Contract

*Source*: MetaStock

The trade setup takes the form of a positive divergence between price and the Accumulation/Distribution indicator. Note how price makes a series of new lows into June 8, while the indicator holds its previous low. That is a sign of latent buying pressure, which should provide good fuel for the next rally. A buy could have been executed when price broke up through the downsloping resistance line drawn across the high prices made on June 6 to 8.

## Trade Entry

As price declined into its June 8, 2010, low, Accumulation/Distribution was holding its prior low made on June 1. Also note that price action became choppy and volatile coming into the low. That was a sign that buyers were coming in to absorb the selling. The choppiness of the trade made it possible to draw a shorter-term resistance line, which would provide more timely entry on a resistance line break. Chart 9.7 shows that the downsloping resistance line was penetrated on June 8, giving a clear buy signal. The initial protective stop should have been placed below the June 8 low of 1041.25.

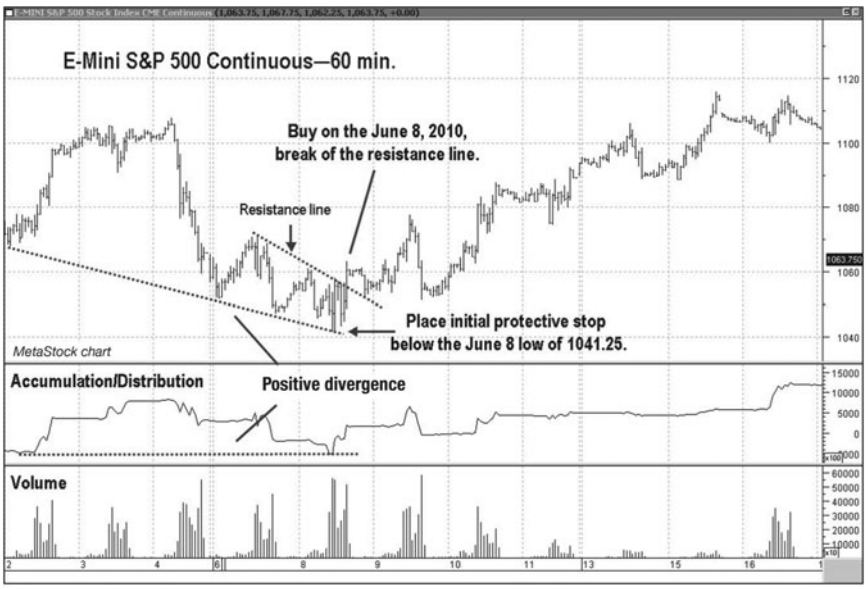


**Chart 9.7** Accumulation/Distribution, Positive Divergence Trade Entry, E-Mini S&P 500 Contract

*Source*: MetaStock

## Trader Tips

Accumulation/Distribution is an indicator that tracks trends well. It is effective for the following:

- Providing confirmation in trending situations, showing that price and volume are in sync
- Alerting traders to potential trend changes when price trend and the indicator diverge
- Showing the general flow of money into or out of a security and monitoring whether volume is increasing as the trend moves higher on increased buying pressure or lower on increased selling pressure, demonstrating whether buyers or sellers are in control

The following are some disadvantages of using Accumulation/Distribution:

- The Accumulation/Distribution indicator does not address gaps. As it focuses on the closing price in relation to its own range for the period, it does not consider the relationship of closing prices

from one period to the next. For example, if price gaps higher but closes poorly in its range, a negative reading for that period in the indicator would be produced.

- Since price is the predominant value in computing Accumulation/Distribution, good price closes on tepid volume may not show a slowing trend as readily as poor price closes in the period's range. For this reason, it is more difficult to detect smaller changes in the trend.

## Equivolume

Equivolume is an indicator system that compares price and volume and plots them together as one piece of data. Equivolume was developed by renowned market technician Richard W. Arms Jr., creator of the ARMS Index, and is discussed in his book *Volume Cycles in the Stock Market*.

Equivolume combines price and volume and plots it in a single box. Instead of plotting volume separately at the bottom of the chart, its inclusion in the price plot gives a trader both the price and volume action of the time period in a single box. It displays the importance of volume in its relationship to price. The height of the box represents the high and low of the time period plotted. The width of the box represents the volume relative to the total shares traded over that time period. The heavier the volume, the wider the box. Typically, wider boxes that penetrate support or resistance are very important, as the width of those boxes shows how much conviction was behind the breakout or price move.

Box width is calculated using what Arms refers to as a normalized value of volume. It is achieved by dividing the actual volume for the period by the total of all volume displayed on the chart. The width of each box plotted is based on a percentage of total volume, with 100 equaling the total of all percentages.

Equivolume is a great tool for identifying breakouts and broad market reversals. Figure 9.1 shows some common Equivolume shapes and their meanings. Chart 9.8 shows an actual plot of Equivolume for the Nasdaq 100 Trust ETF (QQQQ).

### Trend Reversals

Equivolume is also a great tool for recognizing individual stock trend reversals. The shape of the box stands out clearly when there is a change in sentiment. Chart 9.9 shows by the width of the box how volume for Cisco Systems (CSCO) increased off the February 2008 low.

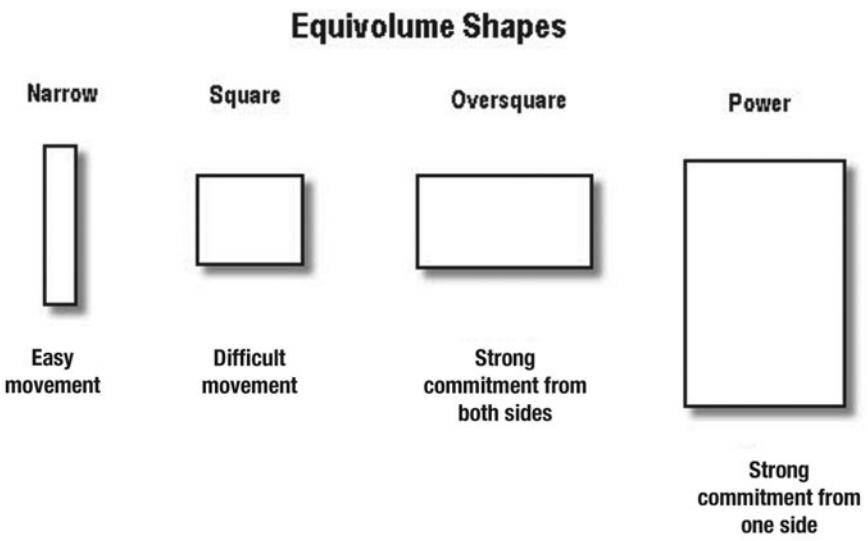


**Figure 9.1** Equivolume Box Shapes


**Chart 9.8** Equivolume Diagram, Nasdaq 100 Trust ETF (QQQQ)

*Source:* MetaStock

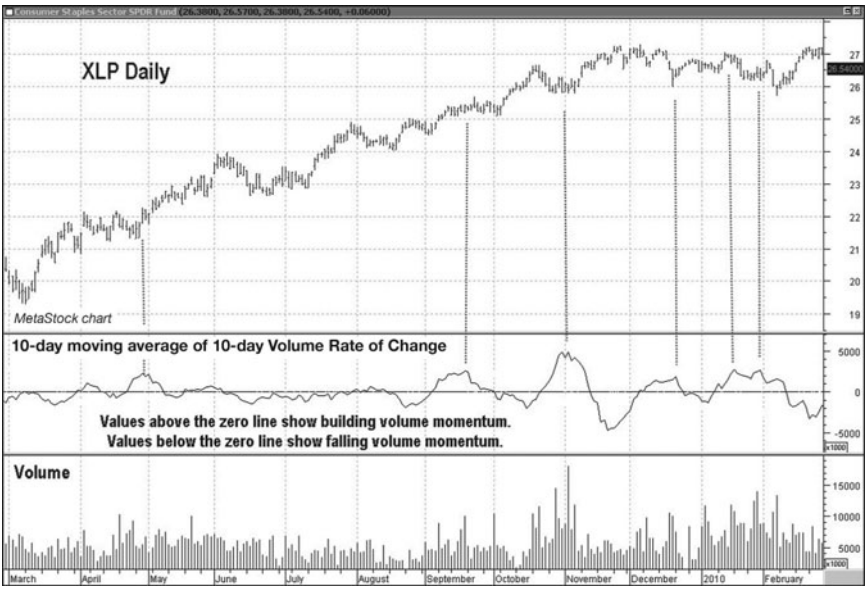


**Chart 9.85** Volume Rate of Change, 10-Day Moving Average, Confirming Volume Momentum, S&P Consumer Select Staples SPDR ETF

*Source*: MetaStock

The reason that VROC isn't classified as an oscillator, however, is that center-line crossovers rarely give clear-cut signals. Also, zero-line crossovers in the VROC have nothing to do with price direction, only the momentum of volume itself. Chart 9.85 is the same time frame of the S&P Consumer Select Staples SPDR ETF (XLP) as Chart 9.84, but this time VROC is smoothed into a 10-day moving average. Note how the peaks and troughs stand out a bit more and also how there are fewer zero-line crosses compared to the raw (unsmoothed) version.

## Volume Rate of Change with Other Indicators

Because VROC is a great indicator for marking turning points, a good pairing would be with an Overbought/Oversold Oscillator. As price enters overbought or oversold territory, spikes in the VROC can be used to show that the short-term extreme in price is ready to reverse.

Chart 9.86 shows a 25-day VROC paired with a 10-day Williams %R. As stated earlier, Williams %R is simply a raw Stochastic plotted on an inverse scale. A buy setup occurs when Williams %R enters the oversold zone (less than −80) and VROC spikes higher in relation to its recent

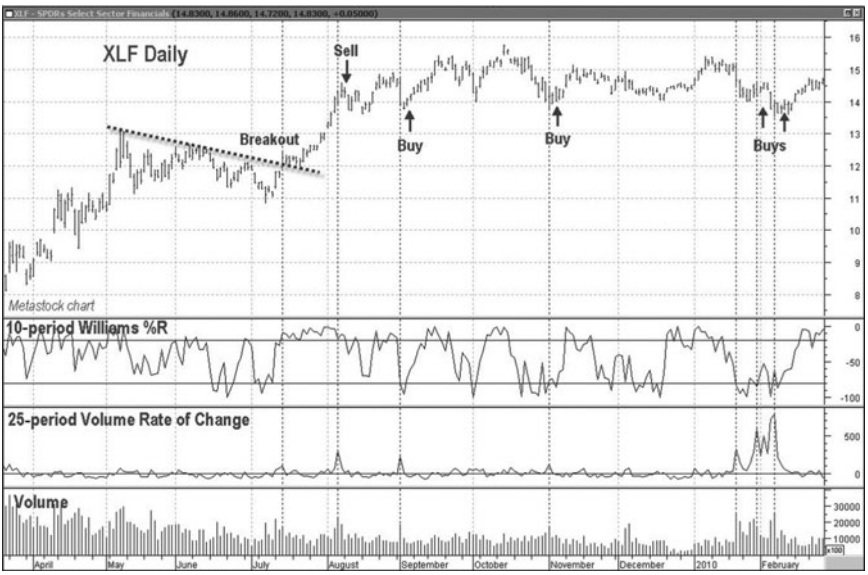


**Chart 9.86** The 25-Day Volume Rate of Change with Williams %R Oscillator, S&P SPDR Financial ETF

*Source*: MetaStock

values. A buy is triggered when the Williams %R crosses up out of the oversold zone (greater than −80). A short-sell setup occurs when Williams %R enters the overbought zone (greater than −20) and VROC spikes in relation to its recent values. A short sell is triggered when Williams %R reverses lower out of overbought territory (less than −20). The S&P SPDR Financial ETF (XLF) in Chart 9.86 shows a breakout on the left-hand side of the chart followed by an assortment of buy and sell signals.

## Trade Setup

VROC can give a longer-term look at volume trends when it is set to look at longer time frames. Chart 9.87 shows a divergence between price and volume in the U.S. Dollar Index in the fall of 2008. Note that as price moved higher off its September low, VROC was making lower highs. The decrease in volume is also visible in the plot of volume in the bottom pane of Chart 9.87. With the lack of supportive volume, it was just a matter of patience in waiting for price to violate its uptrend support line and reverse lower.

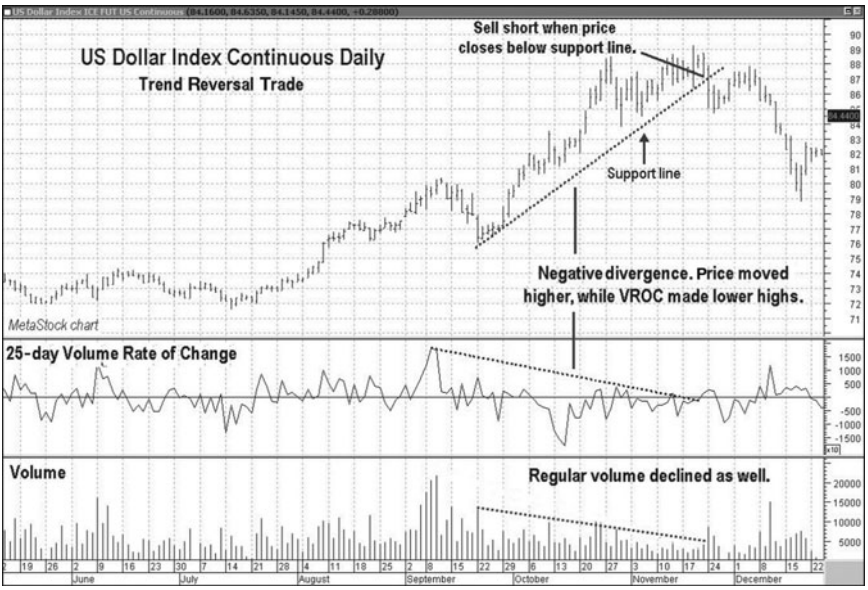


**Chart 9.87** The 25-Day Volume Rate of Change, Negative Divergence Trade Setup, U.S .Dollar Index

*Source*: MetaStock

## Trade Entry

Looking at the same chart in more detail in Chart 9.88, we see that both VROC and volume showed that supportive volume was not present on the move higher off the September 2008 lows; it was just a matter of time before the trend reversed. The violation of the upsloping support line would be the signal that the uptrend was at an end. On November 24, 2008, price closed below its support line, which would have triggered a short trade. The initial protective stop should have been placed over the November 19 high of 89.25. Even more patience was required after applying the trade, however, as price consolidated for nine more trading days before beginning its descent in earnest. Also note how VROC spiked once the selling resumed after the nine-day consolidation period.

## Trader Tips

Volume Rate of Change is an indicator that alerts traders to changes in volume characteristics that can indicate imminent changes in price. The VROC can be used for the following:

- Showing when a short-term change of direction is likely

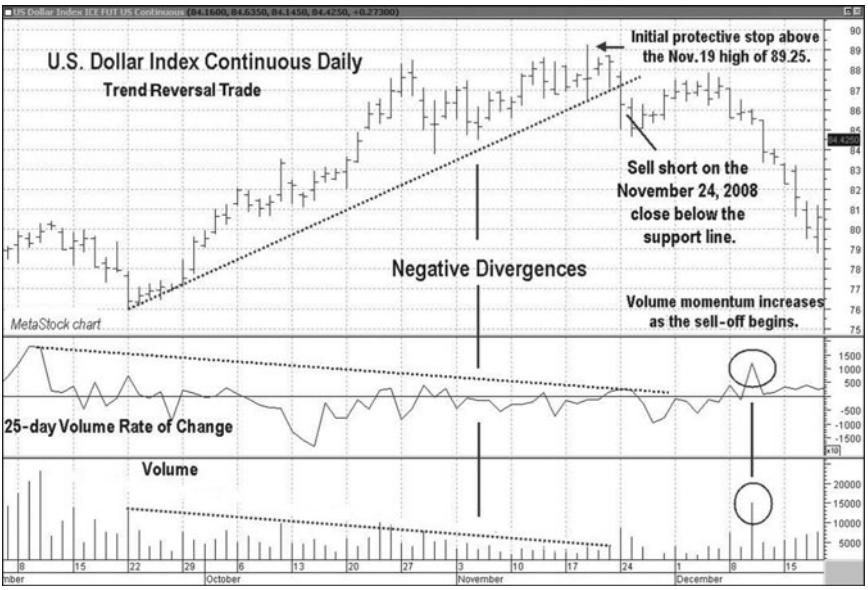


**Chart 9.88** The 25-Day Volume Rate of Change, Negative Divergence Trade Entry, U.S. Dollar Index

*Source*: MetaStock

- Confirming breakouts over resistance or breakdowns below support
- Showing when trend resumption out of a pullback is likely

One drawback of VROC, especially in raw or unsmoothed form, is that its volatile nature sometimes can make it misleading.

## Additional Techniques for Assessing Trends Using Indicators

There are several techniques that we have found useful as applied to volume indicators to assess trends. Here we discuss detrending an indicator, normalizing volume by translating volume in comparison to a chosen baseline, normalizing an indicator, and using volume indicators to confirm candlestick patterns.

### Detrending an Indicator

Another way we like to display a volume trending indicator is by detrending it. Centered detrending, refined by market technician Steven Achilles, is often used as an alternative format to display price and price-based indicators. Here we apply this technique to cumulative volume indicators.

Detrending converts an indicator into an oscillator format (see Chapter 10) and can be used to create companion oscillators for those indicators that tend to trend closely with price. This technique allows for easier identification of shorter-term high- and low-cycle points than does the trending indicator format. In an oscillator format, overbought and oversold areas and price divergences can also be more easily observed. The detrending of an indicator is accomplished by the following expression:

Indicator close value – simple moving average ($n$/2+1 days ago)

In using the detrending formula, select a time frame ($n$) that you wish to use and calculate a simple moving average for that time frame. Take the indicator close value and subtract from it the simple moving average $n$/2+1 days ago. We chose a 20-day moving average in our example, since financial market cycles often fluctuate within a 20-day trading range. Longer- or shorter-term traders can set their moving averages accordingly. Note that, when plotted, the centered detrended oscillator will be shifted to the left $n$/2+1, and there will always be an empty or undefined space on the right side of the chart where the indicator plot ends. Chart 9.89 is an example of a detrended Accumulation/Distribution Line using a 20-day moving average. In our example, 11 trading day bars are missing. Notice also how the

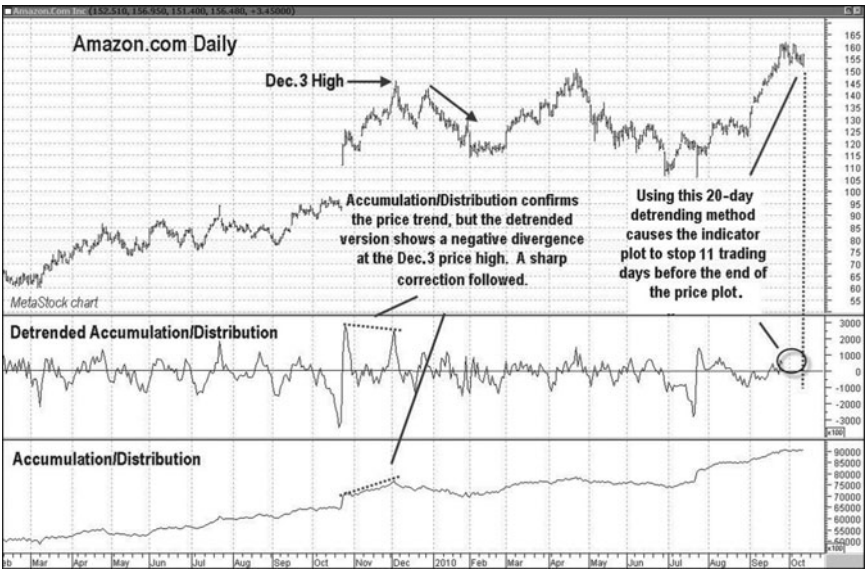


**Chart 9.89** Accumulation/Distribution, Raw and Detrended 20-Day Version, Amazon.com

*Source*: MetaStock

same indicator displayed in a different format can capture different subsets of information. Detrending removed the trending characteristics of the indicator, making it more sensitive to the conditions within a 20-day trading cycle. Where the Accumulation/Distribution Line continued to trend, the detrended oscillator displayed the momentum cycle of shorter-term tops and bottoms, which often coincide with highs and lows in price. This can allow traders to glean important characteristics of both the higher- and lower-degree trend. The detrended oscillator, unlike the trending indicator, generated a negative divergence from the price high in our example, which was an important signal for the decline that followed. This technique lends itself well to Volume Analysis in the futures market, where patterns are by their nature historical and cyclical. When detrending an indicator, take time to familiarize yourself with its characteristics. Some cumulative volume indicators discussed in this chapter will be more adaptive to displaying different subsets of information with greater or lesser degrees of accuracy. Displaying the indicator and its companion detrended oscillator on the same chart with volume is a preferred format for this process. As we have seen, by identifying cyclical tops and bottoms within the higher- and lower-degree trend, traders can anticipate where the next trend reversal may occur and trade accordingly.

## Normalizing Volume

Normalized volume is simply a way of displaying volume so that the scale is consistent from security to security or sector to sector. If your trading strategy requires a specific level of volume in order to initiate a trade and you are comparing securities or sectors, this will allow an apples-to-apples comparison. This particular approach was suggested by veteran technician John Bollinger. Here a standard normalization of trading volume gets its own examination.

Normalization allows for easier comparison between issues on the same relative scale to quickly compare volume totals relative to their own average. Divide today's volume by whatever moving average of volume values your trading requires, multiplying by 100. For example, Volume Analysis is often done by comparing daily volume totals across issues using a 20-day or 50-day moving average

## Formulation

This is the formula for normalizing volume: (Replace *n* with the moving average length of your choice.)

$$\text{NV} = (\text{today's volume} / n \text{ period moving average of volume}) \times 100$$

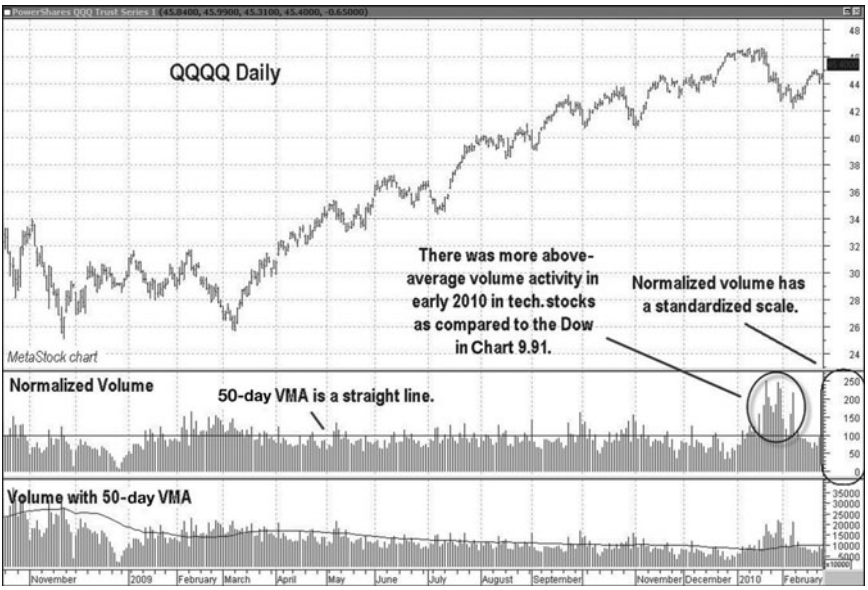


**Chart 9.90** Normalized Volume with 50-Day VMA at 100 Baseline, Nasdaq 100 Trust ETF

*Source*: MetaStock

## Translating Volume in Comparison to Its Normalized Volume Baseline

Chart 9.90 gives a plot of the Nasdaq 100 Trust ETF (QQQQ) with Normalized Volume with a separate plot of volume with a simple 50-day volume moving average. Note how the 50-day VMA is plotted across the Normalized Volume chart as a straight line at the 100 level; this is the normalized base level for the indicator, as described below.

On an NV chart, if volume comes in for the day under the *n* average, the reading will be less than 100. If it comes in above average, the reading will exceed 100. If volume comes in at 10 percent above average, the daily volume reading will be 110 (110 percent of the 50-day average); if it is 10 percent below average, the reading will be 90 (90 percent of the 50-day average); and so forth. The example of the DJIA in Chart 9.91 shows how much easier it is to compare the daily relationship between volume and its 50-day moving average with such an indicator/oscillator.

It's also worth looking at the Normalized Volume plotted alongside raw volume at a shorter 10-day moving average of that volume. The result is a more sensitive read on volume behavior. Chart 9.92 shows the DJIA over the same period as before. Underneath the price plot are two volume plots:

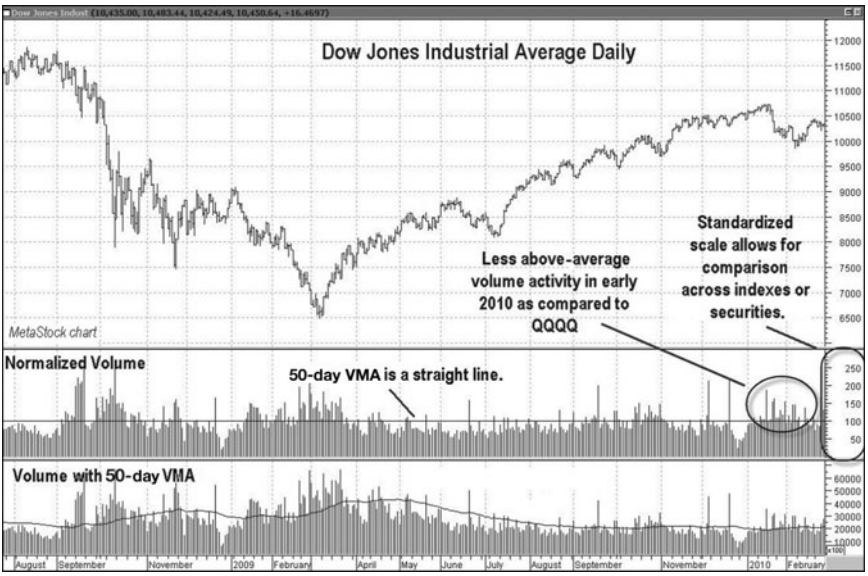


**Chart 9.91** Normalized Volume Sector Comparison with 50-Day VMA at 100 Baseline, DJIA Daily

*Source*: MetaStock

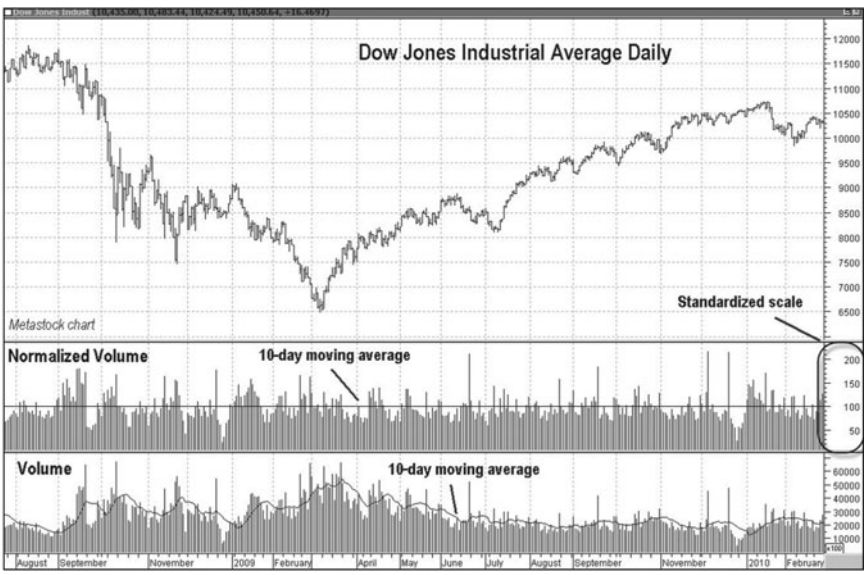


**Chart 9.92** Normalized Volume with 10-Day VMA at 100 Baseline, DJIA Daily

Source: MetaStock

One is a plot of daily volume with its 10-day simple moving average, and the other is 10-day Normalized Volume.

When examining volume relative to its moving average it is necessary to know not only whether or not volume was above average but also by how much or how little it varied from that average. While the plot of volume with its 10-day VMA shows volume compared to its average, it isn't easy to figure out by how much it exceeded or trailed the average just by looking at the chart. The plot of Normalized Volume in Chart 9.92, on the other hand, clearly displays in easily quantifiable terms how that day's volume exceeded the average. It is like converting raw data to percentage terms. Was the value over 100? If so, it exceeded average: If the day's value was 105, it was 5 percent above average; if 110, it was 10 percent above average; and so on. If a 10-day average is too volatile, a 20-day average can be used. An example of the same period for the DJIA as the previous charts is shown in Chart 9.93. This time it has a 20-day simple moving average on volume along with a plot of 20-day normalized volume.

## An Apples-to-Apples Comparison

Normalization allows for quicker comparisons between potential trades. For example, suppose a trader watching sectors A and B wanted to buy the

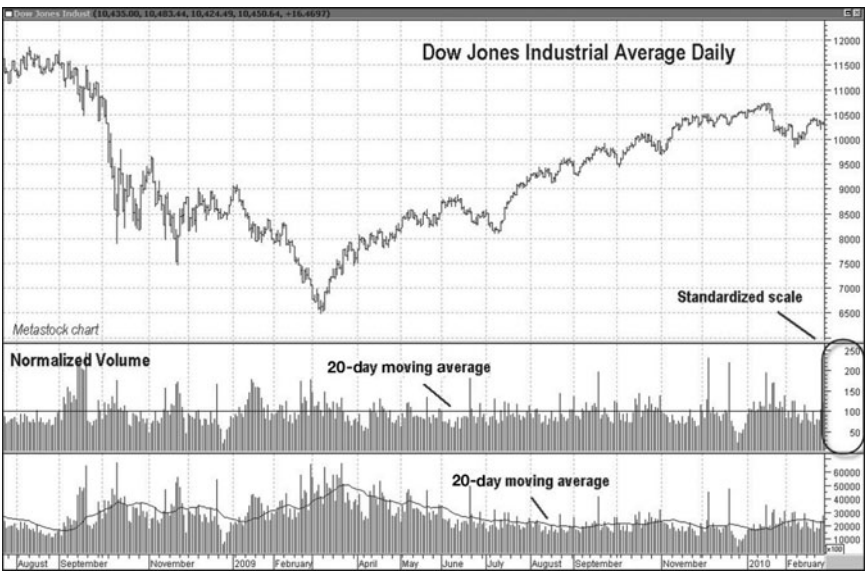


**Chart 9.93** Normalized Volume with 20-Day VMA at 100 Baseline, DJIA Daily

*Source*: MetaStock