LIZ ADAMS

Getting Into The Game

The DMI Stochastic

When a trend has already begun, does that mean it's too late to get in? Not necessarily. This trading technique can help you get into a trend so you don't have to miss trading opportunities.

by Barbara Star, PhD

Computer charting software that allows traders to create their own custom studies and formulas opens the door to a world of experimentation that could lead to the development of a new trading indicator. But it isn't always necessary to go to those lengths in order to find useful trading tools. Sometimes simply combining the components of one well-known indicator

with another is enough to create a type of synergy that can enhance trading.

For several years, one of my templates for short-term trading has included something I call the *DMI stochastic*, which I use mainly to identify potential entries into an existing trend. The template consists of a trend-identifying oscillator based on indicators from J. Welles Wilder's directional movement index (DMI) and also a momentum indicator derived from that oscillator. Together, they offer two indicators that capture three powerful technical analysis basics: trend, momentum, and support/resistance. While not as reliable for intraday trading, they work well in 60-minute, end-of-day (EOD), and weekly time frames. This article shows how to create and apply these indicators using EOD charts.
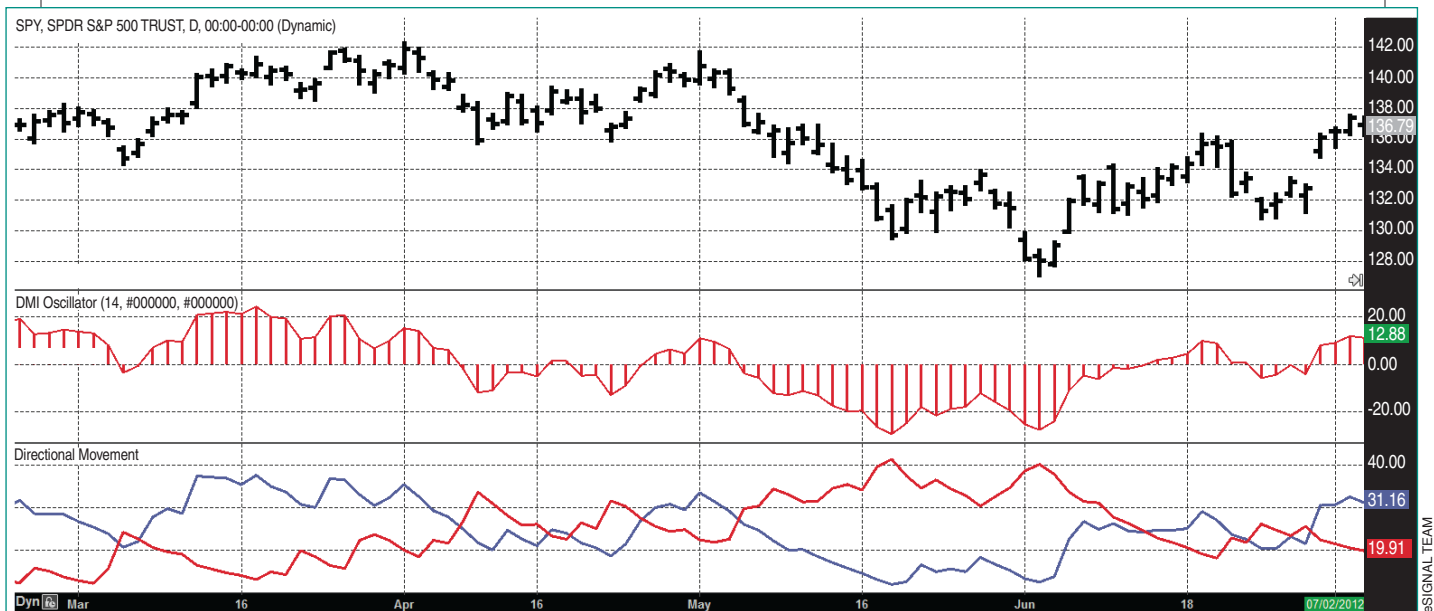
FIGURE 1: SPY WITH DIRECTIONAL INDICATORS. The lower panel of this chart displays the 14-period plus and minus directional indicators as they are usually plotted in charting software. The middle panel shows a 14-period DMI oscillator in histogram form that crosses above and below a zero line.

DMI OSCILLATOR

Within the suite of indicators that make up Wilder's directional movement index (DMI) are the plus directional movement indicator (+DI) and the minus directional movement indicator (-DI). They provide the foundation for the more widely recognized average directional index (ADX). Whereas the ADX offers information about the strength of price movement but not its direction, the +DI and -DI furnish information about the positive or negative direction of price movement over a period of time.

Wilder provides complete information about the function and construction of all the components that make up the directional movement index in his 1978 book, *New Concepts In Technical Trading Systems*. In general, the plus and minus components of the DMI focus on that portion of the current bar's trading range that is outside the range of the previous price bar. If it is higher, it is considered to be positive (+) and if it is lower, it is labeled negative (-). These values are divided by the true range and averaged over time, usually 14 periods. A move by the +DI above the -DI indicates that positive or upward price direction has overtaken negative or downward price direction. Conversely, when +DI falls below -DI, declining price either from selling pressure or lack of upward price momentum is taking control. Potential changes in direction or trend occur when the lines intersect.

Charting programs display them as lines that cross and often crisscross above and below each other as seen in the bottom panel of Figure 1. However, I prefer to display directional movement and the points at which the lines cross as an oscillator. This is achieved by subtracting the minus directional movement indicator value from the plus directional movement value. The resulting oscillator crosses above and below a zero line, which I then change from a line form to a histogram as seen in the panel just below the price chart.

Displaying the oscillator this way does not change either the numeric values or the place where the plus and minus DI cross; it is only a matter of visual preference. The zero line of the oscillator represents the point at which the +DI and the -DI intersect. For me, the histogram reduces some of the noise created by the fluctuating lines and makes it easier to avoid false changes of price direction. It also presents a clear picture of increasing and decreasing price momentum.

THE SETTINGS

My template changes the lookback period of the plus and minus DI from the usual default of 14 bars to 10. So for the remainder of this article, the DMI seen on the charts will be a 10-period +DI minus a 10-period -DI plotted in a histogram format. To more clearly outline the high and low oscillator changes, I plot a one-period moving average of the DMI itself as a solid line that overlays the histogram. In the template, the price bars are blue when the DMI is above zero and red when it is below the zero line. (See sidebar "DMI Oscillator" at our website at http://www.traders.com/Documentation/FEEDbk_docs/2013/01/StarSB1.html.)

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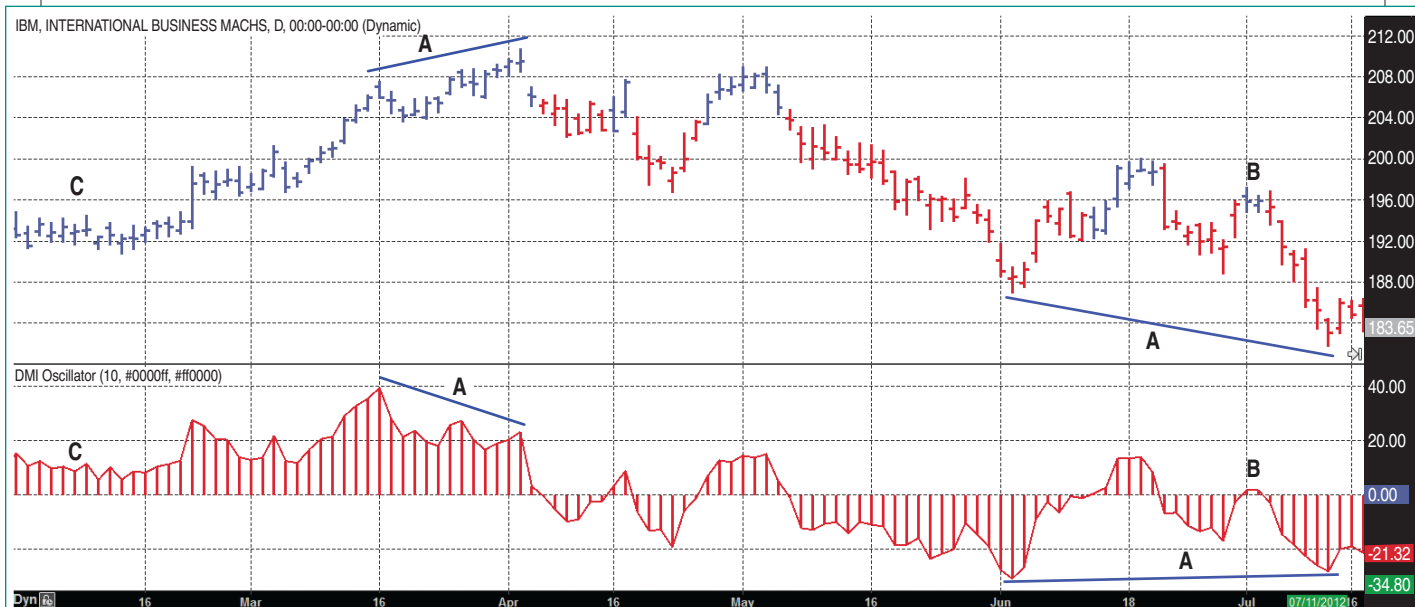
FIGURE 2: IBM AND THE DMI OSCILLATOR. In my template, the DMI oscillator uses a 10-bar lookback period and colors the price bars blue when the oscillator is above the zero line and red when it is below. By itself the DMI oscillator provides information about price direction, price corrections, consolidations, expansions, and divergences.

FOLLOW PRICE DIRECTION

By itself, the DMI provides considerable information. As seen in the IBM chart (Figure 2), the colored bars that identify the position of the oscillator in relation to its zero line clearly display price direction, corrections, and transitions to a new trend.

The DMI is sensitive to price movement. When the oscillator is above zero but losing upward momentum, a consolidation or pullback is usually taking place. And if price continues its upward climb but the oscillator makes lower highs, look for a bearish divergence. Or if the oscillator is below zero and moving up but price continues its decline, then look for a bullish divergence.

Divergences warn of a potential reversal. In the chart, an "A" identifies the places where a bullish and a bearish divergence took place.

The area around the zero line often acts as support or resistance. Trend continuations occur when the oscillator moves to the zero line (or penetrates it briefly) and rebounds from it to continue in the direction of the original trend. This was the case at "B" in early July during a price decline. The oscillator moved up to the zero line where it met resistance and then rolled over as price continued its downward spiral. The reversal from the zero line was easy to recognize because price bars turned from blue to red.

The area in the vicinity of the zero line also helps identify price consolidations, which exhibit sideways or rangebound behavior in quiet markets. "C" on the left side of the chart is a good example. Very often during sideways price action, the DMI oscillator remains within the +10 and -10 zone on its histogram.

ADD THE DMI STOCHASTIC

The DMI stochastic uses the basic formulation for a 10,3,3 stochastic oscillator found in most charting packages but replaces the closing price of the price bar with the value of the 10-period DMI oscillator. The overbought and oversold levels are different also. They occur at the 10 and 90 levels instead of the more usual 20 and 80 levels. The DMI stochastic is much faster and less smooth than a stochastic based on price. However, it reaches extremes quickly, which allows for timely entries and exits.
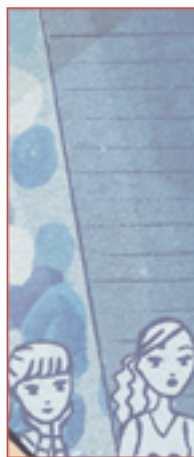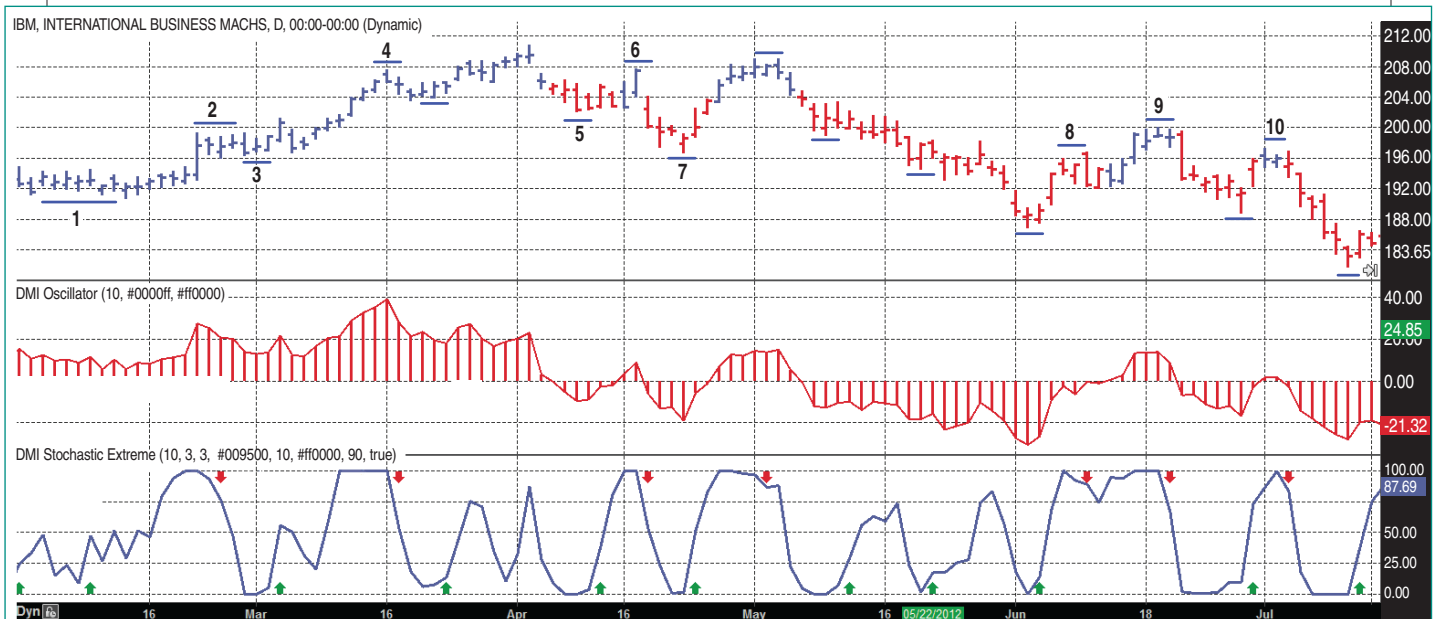
FIGURE 3: DMI OSCILLATOR AND DMI STOCHASTIC. The DMI stochastic is based on the values of the DMI oscillator. Arrows point to reversals from oversold and overbought at the locations where extremes have been reached and are changing direction. Short horizontal lines were placed above and below price levels that correspond with the DMI stochastic to show how the extremes also help identify support and resistance levels.

Figure 3 shows the DMI stochastic in the panel below the DMI oscillator. Arrows point to the reversals from oversold and overbought levels at the locations where extremes have been reached and are changing direction.

Even though the primary function of the DMI stochastic is to register changes in momentum, the extremes help spot price support and resistance areas. These enable the trader to see breakouts and even changes in trend. (See sidebar "DMI Stochastic Extreme" at our website at http://www.traders.com/Documentation/FEEDbk_docs/2013/01/StarSB2.html.)

To better illustrate that point, I placed small horizontal lines on the chart below the price levels that correspond to oversold extremes and above the price levels at which the DMI stochastic registered overbought extremes. These help provide a better directional sense of the price swings as well as areas of potential support and resistance.

One example of support occurred following the sideways price move seen in February at point 1 when price made a short up move (point 2), which sent the DMI stochastic to an overbought extreme. The shallow pullback near the beginning of March at point 3 produced a DMI stochastic decline to an oversold level and marked an area of potential support. Price held that support and broke out above point 2, which led to a nice price move into the middle of March (point 4), where the DMI stochastic once again reached overbought levels.

In another example, the transition from uptrend to downtrend occurred in May, with the break below the April price lows. The April low on the stochastic at point 5 did provide support for a price rally in late April that retested the old highs (point 6). But support at point 5 was soon broken to the downside. Subsequent price rallies at points 8, 9, and

10 were counter the trend that found resistance in the area of points 5 and 7.

TRADING WITH THE DMI STOCHASTIC

Rather than trade in the direction of every arrow, the strategy presented here is to find one or more entry points into a trending market. The most efficient way to find those entry points is to trade in the direction indicated by the DMI oscillator and use the DMI stochastic to suggest points of entry. When the DMI oscillator is above zero and the price bars are blue, use pullbacks to the oversold area on the DMI stochastic for potential entries in anticipation of continued rising price. Use

FIGURE 4: ENTRIES ON AMGEN. The DMI stochastic is useful for finding entries in a trending market. The green arrows on the price chart point to profitable trades in a rising market by entering on oversold extremes when the DMI oscillator is above zero and price bars are colored blue.

the oversold level as support and place initial stops below the price areas that correspond to those support levels.

The chart of Amgen (AMGN) in Figure 4 illustrates when to enter and when to avoid entry using this technique as prices are rising. An "X" was placed above the price bars in May to indicate that no entry should be taken because the price bars were red at the same time the stochastic reached its low extreme and produced an up arrow.

A slightly different scenario occurred at the X over the price bars in June. At that time, the price bars were blue and the DMI oscillator rose above the zero line, but the DMI stochastic had not reached its lower extreme, so no up arrow was generated. The first green arrow seen under the price bar occurred after a

pullback that briefly turned the price bars red as price formed a small double bottom and then turned blue along with an up arrow in the DMI stochastic. The horizontal line above price is to remind traders that even though a potential entry has been given, price was still in a trading range and might not be able to push through its upper resistance level.

By using only the up arrows as entries while the DMI oscillator was above zero and the bars were blue, traders who may have missed the initial thrust or who wished to add to their positions would have been able to enter profitable trades on the DMI stochastic pullbacks later in June and again in July.

In a downtrending market like that seen in Figure 5, the DMI oscillator is below its zero line and price bars are red. The red arrows that appear when the DMI stochastic has reached the upper extremes point to the potential entries. The odds favor waiting for red bars to confirm the downward move and for price to break support rather than initiate a trade to the downside while the bars are blue.

Generally, during pullbacks in a strong uptrend, the price bars remain blue despite the DMI stochastic falling from an overbought to an oversold range. And if red bars do occur, they usually only last for a few bars before returning to blue. During strong downtrends, price bars remain red and only briefly

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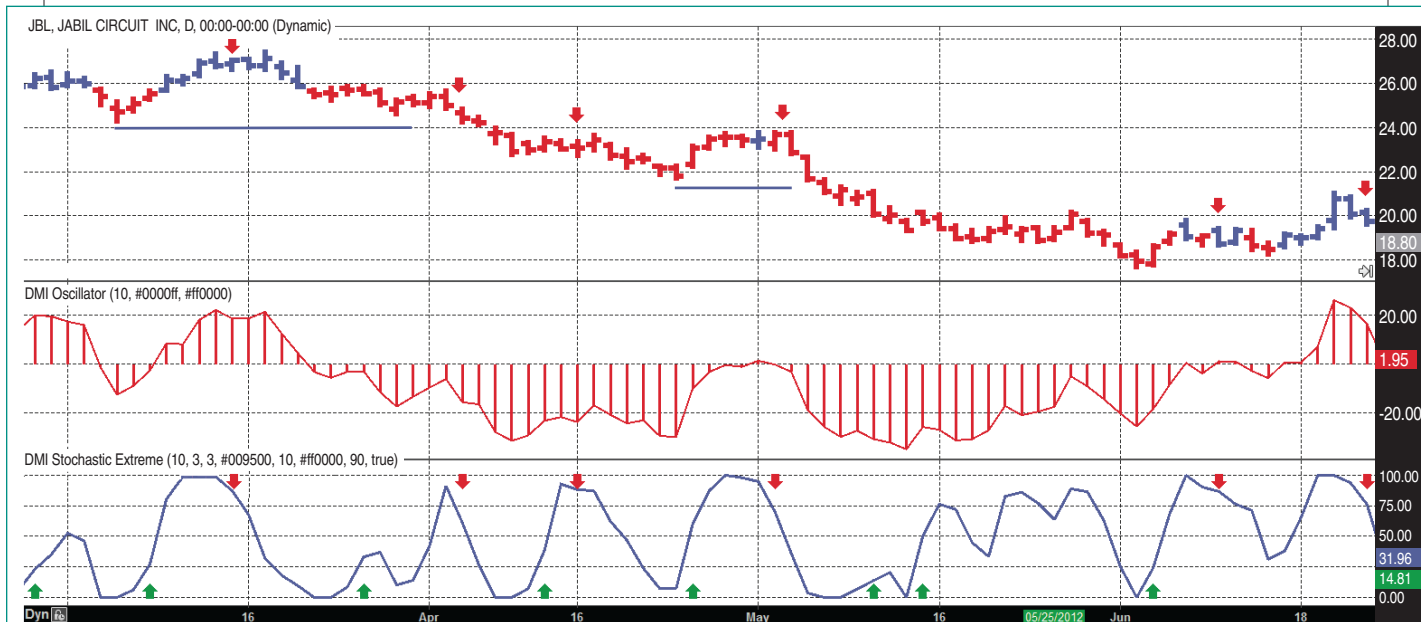
FIGURE 5: ENTRIES IN A DECLINING MARKET. Rather than try to catch a top on JBL, it is usually better to wait for a red arrow on an overbought DMI stochastic when the DMI oscillator is below zero, the price bars are red, and price has broken below a recent support level, as depicted by the horizontal lines in March and April.

turn blue during some rallies that take the DMI stochastic to overbought levels.

REVERSAL ALERTS
Unfortunately, not all directional changes in price take place at the upper and lower extremes of the DMI stochastic. Some price movements create partial changes, causing the DMI stochastic to flip back and forth during its journey. Sometimes, the stochastic never reaches an extreme. Three such instances can be seen on the chart of Bed, Bath and Beyond

(BBBY) during March and April 2012 in Figure 6. (See sidebar "Reversal Alerts" at our website at http://www.traders.com/Documentation/FEEDbk_docs/2013/01/StarSB3.html.)

To address that issue, I developed reversal alerts to identify all changes in the DMI stochastic, not just those that occurred at the extremes. The reversal alerts were created by applying a simple moving average to the DMI stochastic. The alerts appear as diamonds above or below price whenever the DMI stochastic crosses a three-period moving average of itself.

However, the reversal alerts occur so frequently that they

FIGURE 6: BBBY WITH REVERSAL ALERTS. The diamond reversal alerts monitor all shifts in direction by the DMI stochastic. This makes it possible to identify points between the extremes as well as to both the extremes. Three examples are seen in this chart of BBBY.

FIGURE 7: COUNTERTREND TRADE. Countertrend opportunities arise when the DMI oscillator levels rise above +20 or fall below -20. The DMI stochastic arrows that follow or point to declines or rallies may appeal to more aggressive short-term traders.

would not be profitable to use for initiating trades. Instead, I suggest using them to warn of potential directional change when already in a trade and for adjusting stop-loss levels.

Because the DMI stochastic reversal alerts appear with every shift and turn, they will also occur at stochastic extremes as well. This often offers the advantage of an early warning prior to an actual directional change signaled by the arrows.

COUNTERTREND OPPORTUNITIES

Even though the main reason for using the DMI stochastic is to find entries in an existing trend, in some cases it also holds an appeal for those traders who like to pick up a point or two on countertrend moves.

Normally, the probabilities favor long trades when price bars are blue and the DMI stochastic flashes a green arrow, and short trades when the bars are red and a red arrow appears on the DMI stochastic. But when values on the DMI oscillator reach +20 or above, a short decline or sideways price action often takes place on the blue price bars at the next red arrow on the DMI stochastic. When the DMI oscillator reaches or exceeds -20 and the price bars are red, a short-term rally or sideways price action frequently occurs at the next green arrow on the stochastic.

The chart of Halliburton (HAL) in Figure 7 illustrates countertrend opportunities. Dashed horizontal lines are placed at the +20 and -20 levels of the DMI oscillator. The red and green arrows on the price chart indicate the areas at which the DMI oscillator was above +20 and below -20. The price chart includes a 20-period simple moving average mainly to put into better perspective the direction and amount of each countertrend price decline or rally.

Most countertrend trades are short-lived with small profits at best. Occasionally, though, what begins as a countertrend trade with a reversion to the mean turns into a trend reversal. This occurred after the second red arrow on price when blue bars turned into red bars as the DMI oscillator fell below its zero line.

It is during those times that countertrend trading brings larger profits. In general, countertrend trades are best suited for the more advanced trader who knows how to quickly move into and out of a trade.

JUMP INTO THE TREND

Sometimes, traders miss the beginning of a trend and then stand on the sidelines, not knowing where or when to enter as they watch price (and profits) pass them by. As trading tools, the DMI oscillator and DMI stochastic together offer a rapid method for assessing price direction and identifying a technique for jumping into an existing trend.

While the DMI stochastic is not a trading system, it can help move traders off the sidelines and into the game.

Barbara Star is a retired university professor. She is a past vice president of the Market Analysts of Southern California and led a MetaStock users group for many years. Her articles and software reviews have been published in Technical Analysis of STOCKS & COMMODITIES *since 1991. Currently, she trades part-time and provides individual instruction and consultation to those interested in the technical analysis of the financial markets. Star lives in Woodland Hills, CA, and can be reached at 818 224-4070 or by email at star4070@aol.com.*

SUGGESTED READING

Wilder, J. Welles [1978]. *New Concepts In Technical Trading Systems*, Trend Research.

‡eSignal (charts, data, and studies)

See our Traders' Tips section beginning on page 65 for commentary and implementation of Barbara Star's technique in various technical analysis programs. Accompanying program code can be found in the Traders' Tips area of Traders.com.

The three sidebars referred to in this article can be found at **Traders.com** *at the URLs noted.*

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