ADX breakout scanning

ADX breakouts can signal momentum setups as well as exit conditions for intraday and swing traders.

BY KEN CALHOUN

Spotting volatility breakouts that are likely to continue can be daunting. The Average Directional Movement Index (ADX) — an indicator that measures trend strength — can help. The ADX is unique because it can work as a "leading indicator" that reveals the strength of a market's trend before a breakout move occurs. (For background on the indicator, see "Calculating the ADX.")

The main ADX line is typically displayed along with two other lines — the Directional Movement Indicators (+DMI and -DMI) — and the three can be used together to help reveal strong trends. The main ADX line ranges from zero to 100 (the higher the reading, the stronger the trend) and usually fluctuates between 10 and 50. Readings below 20 reflect trendless conditions — consolidations that should be avoided.

An ADX above 40 indicates a strong trend or breakout is in progress, and price is likely to continue in the direction of the current trend. Because the ADX measures trend strength rather

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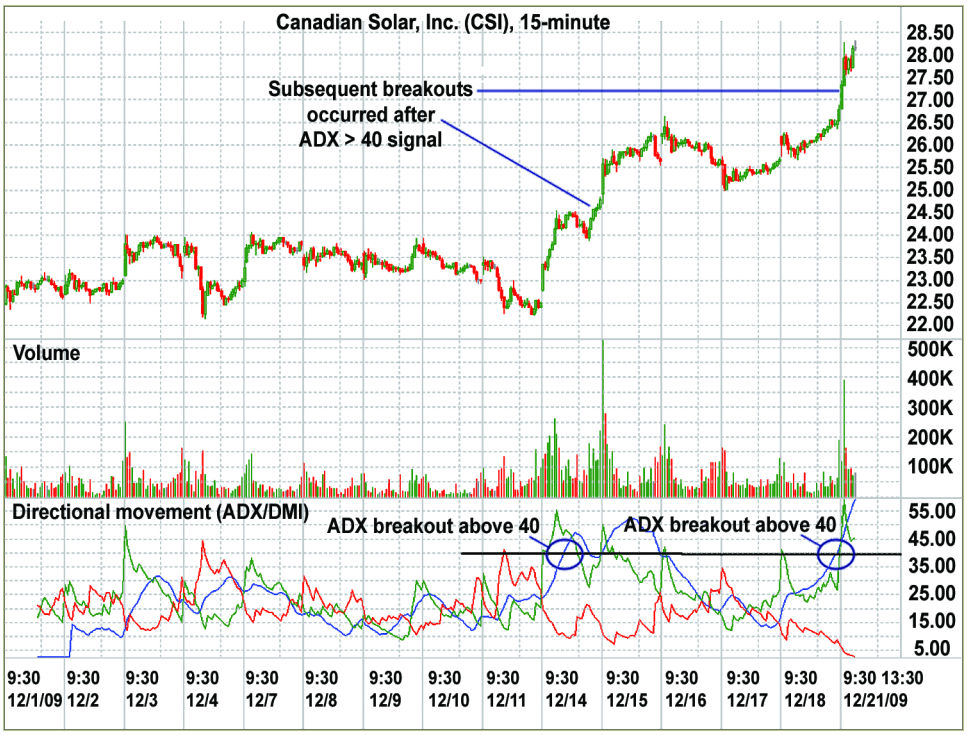
FIGURE 1: AFTER ADX > 40



Scanning charts for situations in which the ADX is poised to break out above 40 can help identify momentum trades.

Source: eSignal

KC *For more information about the following concepts, go to "Key concepts" on p. 87.*

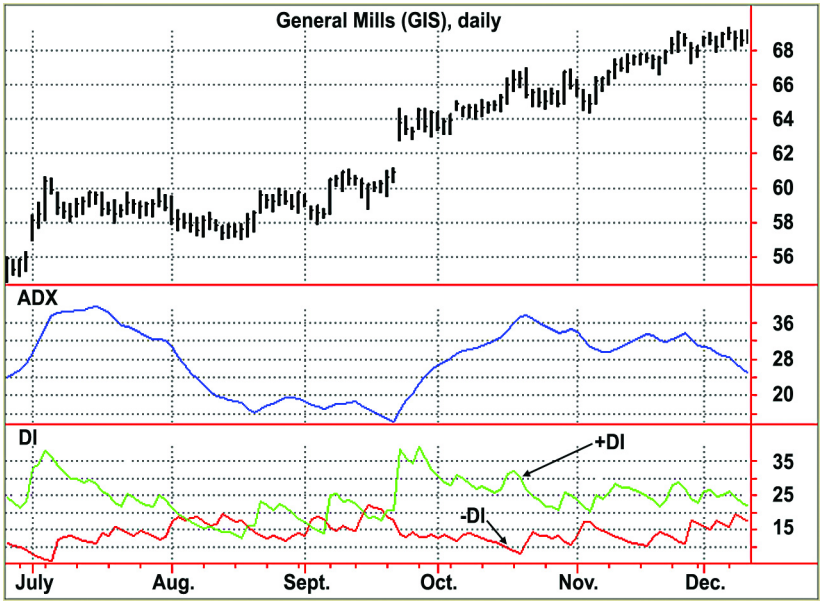
- *Cup formation*
- *Shooting star*

Calculating the ADX

The ADX is an indicator that measures trend strength rather than direction. The higher the ADX value, the stronger the trend, regardless of whether the market is going up or down. The indicator was developed on daily data, but it can be applied to any time frame.

Although the ADX concept is straightforward, its calculation is rather lengthy. The indicator was designed by Welles Wilder and is described in detail in his book *New Concepts in Technical Trading Systems* (Trend Research, 1978). Although it's included in most analysis, it's important to understand how any indicator works.

FIGURE A: ADX WITH DM



Source: TradeStation

Calculation

1. Calculate the positive or negative directional movement (+DM and -DM) for each bar in the desired look-back period.

   Bars that make higher highs and higher lows than the previous bar have positive DM. Bars that make lower highs and lower lows than the previous bar have negative DM. If a bar has both a higher high and a lower low than the previous bar, it has positive DM if its high is above the previous high by more than its low is below the previous low, and negative DM if the opposite is true.

   An inside bar (a bar that trades within the range of the previous bar) has no directional movement, nor does a bar with a high above the previous high by the same amount the low is below the previous low.

2. If a bar has positive DM, the absolute value of the distance between today's high and yesterday's high is added to the +DM running total calculated over a given look-back period (i.e., 20 bars, 30 bars, etc.). Similarly, if a bar has negative DM movement, the absolute value of the distance between today's low and yesterday's low is added to the -DM running total over the look-back period. The absolute value is used so both +DM and -DM are positive values.

3. Calculate the sum of the true ranges for all bars in the look-back period. Unlike the standard high-minus-low range calculation, true range accounts for the gaps that can occur between price bars, and thus provides a more accurate reflection of price movement from bar to bar. True range is the greatest (absolute) distance between the following:

   a. Today's high and today's low.
   b. Today's high and yesterday's close.
   c. Today's low and yesterday's close.

4. Calculate the Directional Indicators (+DI and -DI) by dividing the running totals of +DM and -DM by the sum of the true ranges.

5. Calculate the directional index (DX) by measuring the absolute value of the difference between the +DI value and the -DI value, dividing that by the sum of the +DI and -DI values, and multiplying by 100.

6. To create the ADX, calculate a moving average of the DX over the same period as the look-back period used in the other calculations.

   Figure A shows an example of the ADX, along with the +DI (green) and -DI (red) lines. (The DI lines are typically referred to as the "DMI" lines.) The ADX line moved lower as the stock's trading range extended in the summer of 2009, but the indicator turned higher as an uptrend established itself, especially as price gapped upward in late September. Notice the ADX peaked in mid-to-late October even though the stock continued to rally.

— Active Trader Staff

than direction, the ADX line will move up sharply during sell-offs as well as up moves.

Crossovers of the DMI lines are not important; rather, it's critical to see the ADX breakout above 40 and do so above both +DMI and -DMI lines at the same time.

In Figure 1 (p. 41), for example, strong breakouts occurred when the ADX broke out above 40 on Dec. 14 and 18. This is the single most valuable use of the ADX indicator: as a leading indicator on multi-day charts to help spot potential breakout continuations after an ADX reading above 40 occurs.

Trade entry and exit

One of the key advantages of the ADX is its usefulness for both intraday and swing trading. To use the ADX for swing-trade entries (overnight to several weeks), look for situations during the past two trading sessions where it is in the process of breaking out above 40, and the underlying stock is also making a new 15-day high.

In Figure 2, the ADX broke out above 40, followed by a bullish cup breakout confirmation signal that occurred above the $5 whole-number resistance level, leading to a 20-percent

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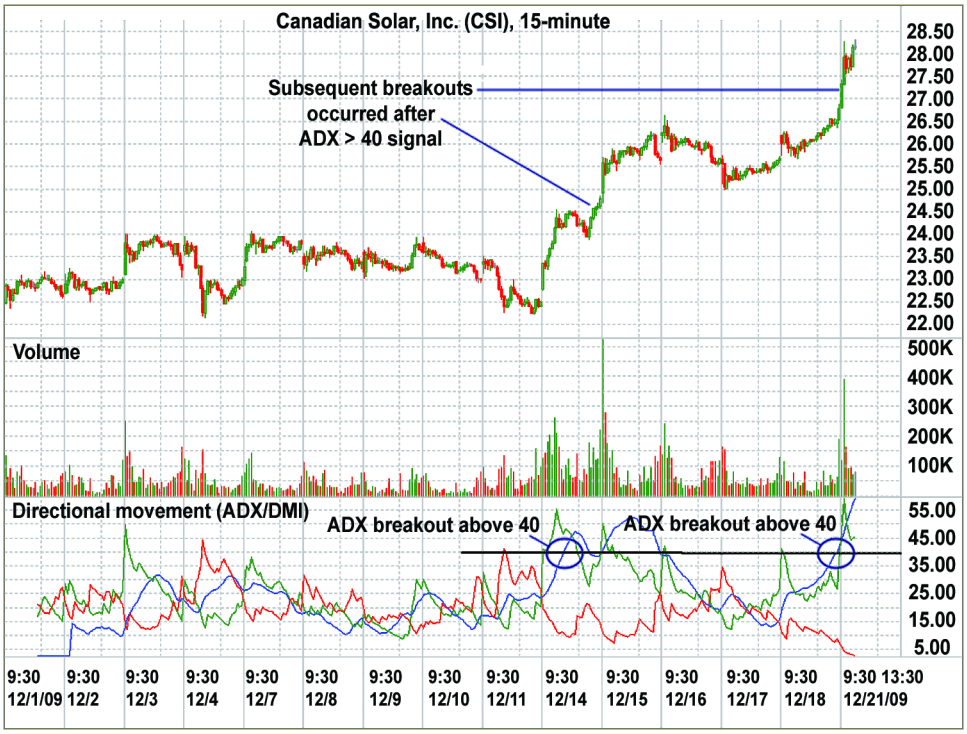
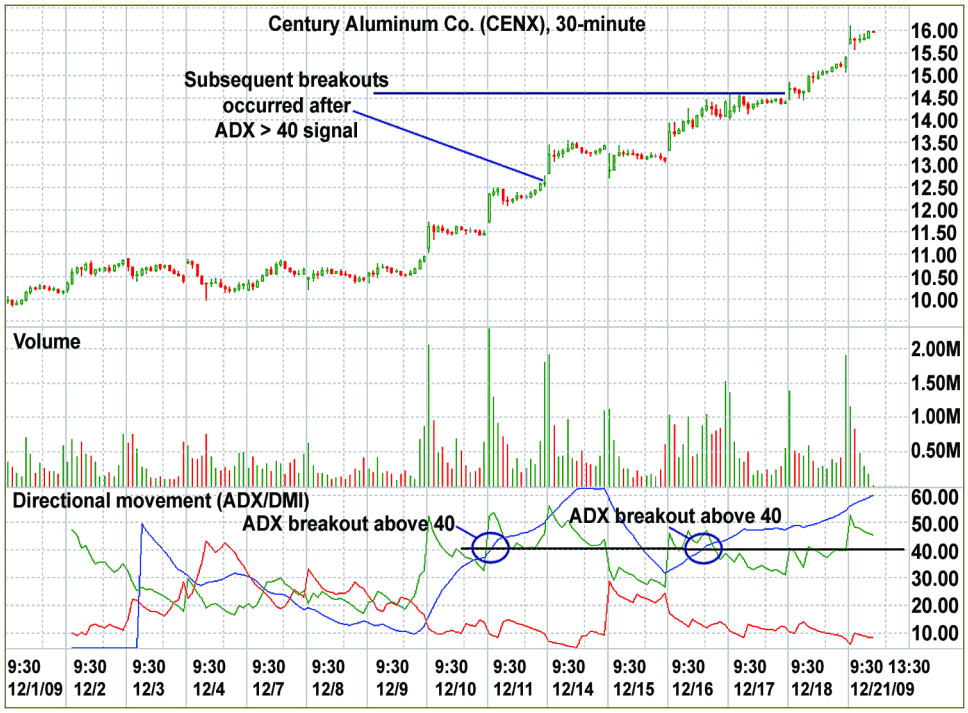
FIGURE 2: PATTERN CONFIRMATION



The ADX breakout was supported by a price breakout out of a cup formation and above a whole-number price level.

Source: eSignal

FIGURE 3: MULTIPLE ENTRIES



The signal to exit the first long trade came when the ADX fell back below 40 on Dec. 15.

Source: eSignal

gain in the stock within two trading sessions. Avoid initiating new entries until after the ADX breaks above 40, because the trend typically won't gain momentum until after the indicator reaches that level.

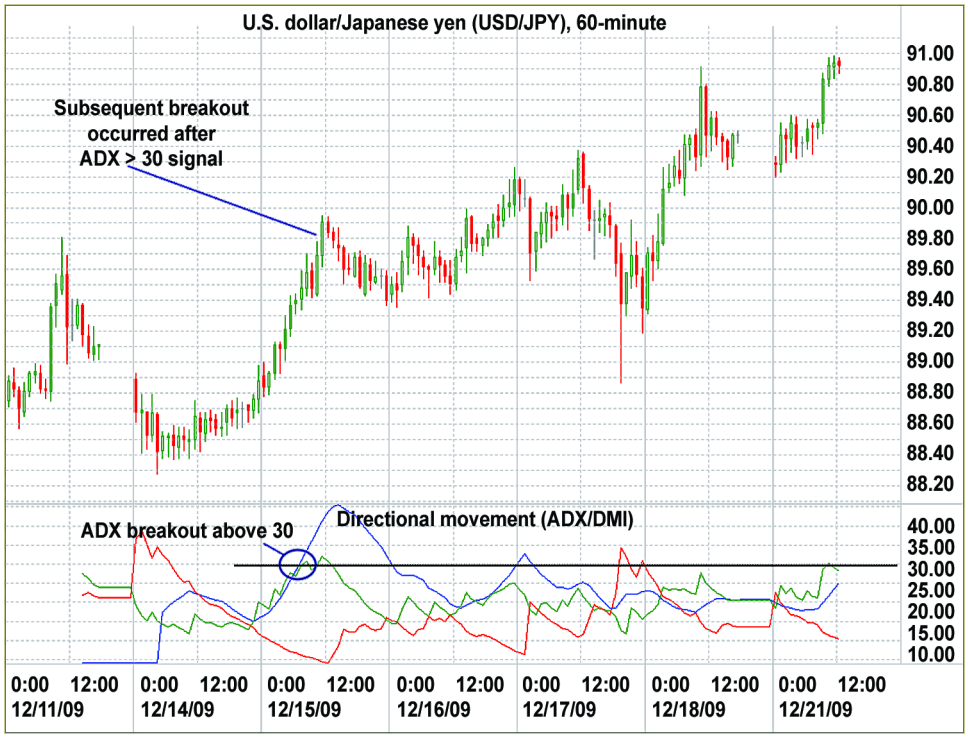
Different techniques can be used to exit long positions, including shooting-star candle patterns, which are bearish reversal signals. Set the stop-loss just below the real body of the candle (using a 15-minute chart).

Another approach is to trail a very close stop (e.g., 0.50 for swing trades, 0.20 for intraday trades), once the ADX starts to reverse and move back below 40. In Figure 2, the trend stopped shortly after the ADX dropped back under 40 on Dec. 16, at which point the stock consolidated for two more days.

Figure 3 (p. 43) shows an example of multiple breakouts occurring after the ADX broke out above 40. In this case, the signal to exit the initial long trade occurred when the ADX dropped back below 40 on Dec. 15, re-entering once it pushed back above 40 the following day (Dec. 16), after which the stock continued to move upward.

To minimize stop placement, a maximum 1.5-point stop can be used on multi-day swing trades in trending stocks that are continuing upward.

FIGURE 4: FOREX EXAMPLE



The dollar/yen rate moved higher after the ADX breakout above 30.

Source: eSignal

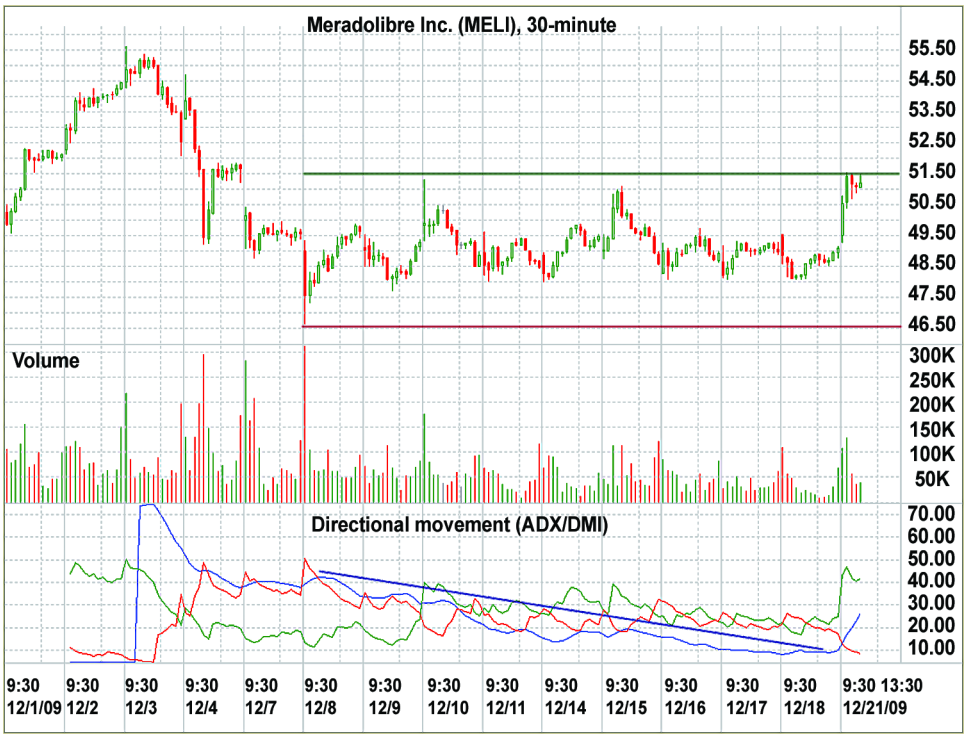
FIGURE 5: SHORT MOMENTUM

The ADX can also signal short side setups.

Source: eSignal

Breakout traders must avoid taking trades when the ADX is trending downward, which indicates consolidation.

FIGURE 6: AVOIDING CONSOLIDATIONS



A downtrending ADX indicates consolidation — a poor environment for a momentum trade.

Source: eSignal

Forex examples

A few minor adjustments are needed to use the ADX indicator appropriately in the popular currency pairs. The most important adjustment is to consider putting on a small-lot trade when the ADX first moves above 30, then adding to the position when the ADX breaks out above 40. Also, use a 60-minute chart for currency-pair trading spanning seven days.

In Figure 4, the U.S. dollar/Japanese yen (USD/JPY) pair moved higher in the days following the ADX breakouts above 30 on Dec. 15. When the ADX is under 30, everything is considered "underwater;" once the ADX breaks above 30, currency pairs often finally break free of their trading ranges for continuation plays during the next day or two.

Because the ADX is a volatility indicator, and not a directional indicator, when it breaks out to new highs it can signal the underlying currency pair will break down to new lows, as shown in Figure 5. Each time the ADX pushed above 30, the market broke down to new lows.

Managing risk

Over-trading choppy, directionless markets results in repeated stop-outs. Using the ADX as a scanning tool helps avoid false breakouts and weak trade entries by identifying the markets with the strongest trends and highest volatility.

Breakout traders must avoid taking trades when the ADX is trending downward, which indicates consolidation. For example, in Figure 6 the ADX trended lower from 40 to 10 from Dec. 7 to Dec. 18, indicating it wouldn't be a good period to trade, which was correct. Only when the ADX started to pick up, as it did on Dec. 21, should the stock be considered a potential trade candidate (once the ADX breaks out above 40).

Conversely, for those who trade within ranges — buying support and selling resistance within a box or "channel" — the ADX can be used to manage trades within the range, exiting when it breaks above 40, indicating a new trend is established and the range is no longer valid.

For information on the author see p. 9.

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