A Technical Analyses

A technical analyses of countertrend, momentum based indicators that move above and below a horizontal axis that represents neutral market momentum.

Oscillators are often used as short term counter trend reversal indicators - they help to determine when a market is in an overbought or oversold condition. When the oscillator reaches an upper extreme, the market is overbought. When the oscillator line reaches a lower extreme, the market is oversold. Oscillators are useful in a horizontal or sideways market where a clear trend is not evident.

Increasing momentum reflects a powerful price trend, while weakening suggests a possible trend reversal. Momentum Oscillators intend to identify these reversal points - and are used in both long and short term timeframes.

The group of technical indicators, which were selected for Non-Ferrous Metals price analyses movement includes:

Simple Moving Average, Moving Average Convergence Divergence (MACD), Relative Strength Index (RSI) and Welders RSI, Directional Movement indicators (ADX and TI).
§1 Simple (SMA) and Exponential (EMA) Moving Averages

A simple moving average (SMA) is the unweighted mean of the previous \( n \) data points. For example, a 10-day simple moving average of closing price is the mean of the previous 10 days' closing prices. If those prices are \( p_1 \) to \( p_n \) then the formula is

\[
SMA = \frac{p_1 + p_2 + \cdots + p_n}{n}
\]

When calculating successive values, a new value comes into the sum and an old value drops out, meaning a full summation each time is unnecessary.

\[
SMA_{today} = SMA_{yesterday} - \frac{p_1}{n} + \frac{p_{n+1}}{n}
\]

In technical analysis there are various popular values for \( n \), like 10, 20, 30, 40, 60, 90, 200 days. For Metals we will use 12 and 30 days.

### LME DATA, Cash and 3 Month, and Moving Averages

<table>
<thead>
<tr>
<th>Date</th>
<th>LME DATA 3 month official</th>
<th>Average Cash</th>
<th>12 days 3m avg</th>
<th>30 days 3m avg</th>
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<td>05 Nov, 07</td>
<td>2 601.00</td>
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<td>2 540.06</td>
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<td>2 582.00</td>
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<td>2 534.96</td>
<td>2 493.67</td>
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<td>2 527.46</td>
<td>2 488.98</td>
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<td>2 451.21</td>
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<td>2 440.05</td>
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<td>2 451.89</td>
<td>2 483.20</td>
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<td>2 504.00</td>
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<td>2 454.21</td>
<td>2 472.80</td>
</tr>
</tbody>
</table>

12 and 30 days Moving Averages are among the most Simple technical indicators, though they can give clear and easy to understand picture where is the market direction now.

The period selected depends on the kind of movement one is concentrating on, such as intermediate, or long term. In any case moving average levels are interpreted as support in a rising market, or resistance in a falling market.

Each moving average provides a different interpretation of what the commodity price will do. The longer the time spans, the less sensitive the moving average will be to daily price. So, moving averages are used to emphasize the direction of the trend and smooth out price and volume fluctuations (the noise).

In all cases a moving average lags behind the latest price action, simply from the nature of its smoothing. An SMA can lag to an undesirable extent, and can be influenced too much by old prices dropping out of the average. This is addressed by giving extra weight to recent prices, as in the WMA and EMA below.

One characteristic of the SMA is that if the data has a periodic fluctuation, then applying an SMA of that period will eliminate that variation (the average always containing one complete cycle). But a perfectly regular cycle is rarely encountered in economics or finance.
Exponential Moving Average smooth the price curve for better trend identification. Unlike the SMA, EMA places greater importance on recent data.

Formula:

Take current price and multiply it by a constant, C. Take previous period’s EMA and multiply it by 1 minus that constant, C. Add the two values together.

$$EMA = C \times \left( \text{Price}_{\text{current}} \right) + (1 - C) \times \left( \text{EMA}_{\text{previous period}} \right)$$

If you are calculating your first EMA value where there is no previous day's EMA, use SMA instead.

The formula for deriving the value of the constant, C is:

$$C = \frac{2}{\text{(# of periods + 1)}}$$

§2 Moving Average Convergence / Divergence (MACD)
The MACD is similar in concept to the line oscillator. In fact, the buy/sell indicators are identical. The difference is the MACD uses exponential moving averages versus the simple moving averages used in the line oscillator study.

Gerald Appel is credited with developing this study. His trading rules are simple. You buy when the oscillator crosses above the slower exponential moving average of the oscillator. Conversely, you sell when the oscillator crosses from above to below the exponential moving average of the oscillator. Lastly, divergence is possible with the MACD. The ideal signal would show divergence, clearly break a dominant trend line, and display the crossing of the MACD lines.

After testing many patterns we accept MACD indicator as "the difference between 12-day and 26-day exponential moving averages." However, the indicator is really the difference between 0.15 and 0.075 exponential moving averages (whereas, when expressed in decimal form, the 12- and 26-day exponential moving averages are actually 0.153846 and 0.076923 exponential moving averages).

Computation of MACD
The formula is as follows:

\[ \text{OSC}_t = (\text{EMA}_1 - \text{EMA}_2) \]
- \( \text{OSC}_t \) is the oscillator for the current period; \( \text{EMA}_1 \) is the first exponential moving average;
- \( \text{EMA}_2 \) is the second exponential moving average.

\[ \text{EMA}_{\text{osc}}_t = \text{EMA}_{\text{osc}}_{t-1} + (k \times (\text{OSC}_t - \text{EMA}_{\text{osc}}_{t-1})) \]
- \( \text{EMA}_{\text{osc}}_t \) is the exponential moving average of the oscillator;
- \( \text{OSC}_t \) is the oscillator for the current interval;
- \( \text{EMA}_{\text{osc}}_{t-1} \) is the exponential moving average of the oscillator for the previous interval;
- \( k \) is the exponential smoothing constant.

\[ \text{DIFF}_t = \text{OSC}_t - \text{EMA}_{\text{osc}}_t. \]

Since the second value, \( \text{EMA}_{\text{osc}}_t \), is an exponential moving average, it rises and falls more slowly than the oscillator. Hence, the two lines generate crossover points. **These crossover points are the signals for TREND Change.**

If the study is displayed as a histogram, each value for the lines is calculated as: \( \text{DIFF}_t = \text{OSC}_t - \text{EMA}_{\text{osc}}_t. \) **DIFFt is the difference between the oscillator for the current interval and the exponential moving average of the oscillator.**

In our link “SIGNALS” DIFFS IS DISPLAYED UNDER INDICATOR NAME MACD, I.E. DIFFt = MACD .

The result for COMPUTATION for some hypothetical DATA is given below for illustration of the formulas. In the top window, the black line is the 26 day MA and the white line is the 12 day MA. In the bottom window the blue line is the difference between the black and white lines. The red line is the 9 day, exponential moving average of the blue line. The red and green graphs are actually what is called the histogram, and is a visual representation of the distance between the blue and red lines. The values on the HISTOGRAM are called MACD in our DATA presentation tables and are calculated daily at our SIGNAL page. MACD values are used for trend change indication and locating BOTTOMS and TOPS of the prices.
The theory being that when the blue line crosses the red line to the up side, it is bullish. MACD change its sign from "+" to "-", signaling trend change to upside, which shall be reflected by red triangle sign in column MACD of the SIGNALS page.

When the blue line crosses the red line to the downside it is bearish and shall be reflected by the green triangle. MACD change its sign from "+" to "-", signaling trend change to downside.

There can be some problem with this theory on its own, because for some markets it is very common to find crossovers happening quite regularly in a sideways market, and the buy and sell signals will see you whipsawed in and out of the market with losses.

One of the primary benefits of MACD is that it incorporates aspects of both trend indicator and momentum indicator in one. As a trend-following indicator, it will not be wrong for very long. The use of moving averages ensures that the indicator will eventually follow the movements of the underlying security. By using exponential moving averages, as opposed to simple moving averages, some of the lag has been taken out.

Broadly speaking, a widening gap indicates strengthening momentum and a shrinking gap indicates weakening momentum. Usually a change in the MACD-Histogram will precede any changes in trend.

A slant divergence forms when there is a continuous and relatively smooth move in one direction (up or down) to form the divergence. Slant divergences generally cover a shorter time frame than divergences formed with two peaks or two troughs. A slant divergence can contain some small bumps (peaks or troughs) along the way. The world of technical analysis is not perfect and there are exceptions to most rules and hybrids for many signals.

A peak-trough divergence occurs when at least two peaks or two troughs develop in one direction to form the divergence. A series of two or more rising troughs (higher lows) can
form a positive divergence and a series of two or more declining peaks (lower highs) can form a negative divergence. Peak-trough divergences usually cover a longer time frame than slant divergences. On a daily chart, a peak-trough divergence can cover a time frame as short as two weeks or as long as several months.

Usually, the longer and sharper the divergence is, the better any ensuing signal will be. Short and shallow divergences can lead to false signals and whipsaws. In addition, it would appear that peak-trough divergences are a bit more reliable than slant divergences. Peak-trough divergences tend to be sharper and cover a longer time frame than slant divergences.

MACD-Histogram Benefits

The main benefit of the MACD-Histogram is its ability to anticipate MACD signals. Divergences usually appear in the MACD-Histogram before MACD moving average crossovers. Armed with this knowledge, traders and investors can better prepare for potential trend changes.

Our system identifies the MAXIMUMS and the MINIMUMS of the MACD, which theoretically signals for BOTTOMS and the TOPS of the price.

MACD-Histogram Drawbacks

The MACD-Histogram is an indicator of an indicator or a derivative of a derivative. MACD is the first derivative of the price action of a security and the MACD-Histogram is the second derivative of the price action of a security. As the second derivative, the MACD-Histogram is further removed from the actual price action of the underlying security. The further removed an indicator is from the underlying price action, the greater the chances of false signals. Keep in mind that this is an indicator of an indicator. MACD-Histogram should not be compared directly with the price action of the underlying security.

Because MACD-Histogram was designed to anticipate MACD signals, there may be a temptation to jump the gun. The MACD-Histogram should be used in conjunction with other aspects of technical analysis. This will help to alleviate the temptation for early entry. Another means to guard against early entry is to combine weekly signals with daily signals. There will of course be more daily signals than weekly signals. However, by using only the daily signals that agree with the weekly signals, there will be fewer daily signals to act on. By acting only on those daily signals that are in agreement with the weekly signals, you are also assured of trading with the longer trend and not against it.

Be careful of small and shallow divergences. While these may sometimes lead to good signals, they are also more apt to create false signals. One method to avoid small divergences is to look for larger divergences with two or more readily identifiable peaks or troughs. Compare the peaks and troughs from past action to determine significance. Only peaks and troughs that appear to be significant should warrant attention.

Our system identifies the MAXIMUMS and the MINIMUMS of the MACD values at histogram, which theoretically signals for BOTTOMS and the TOPS of the price.
## LME - Aluminum Signals

<table>
<thead>
<tr>
<th>Date</th>
<th>LME DATA</th>
<th>Averages</th>
<th>RSI/MACD</th>
<th>ADX indicators</th>
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<td>3m avg</td>
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<td>RSI</td>
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<td>ADX</td>
<td>MACD</td>
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<td></td>
<td></td>
<td>+DI</td>
<td>-DI</td>
<td>WRSI 35/65</td>
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<td>67.9</td>
<td>29.9</td>
<td>36</td>
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</tbody>
</table>

This how the page looks
(Data is provided for 2 months)

Upward trend indicator

BUY or SELL signals
§3 Relative Strength Index (RSI) and Wielders RSI

The RSI is another J. Welles Wilder, Jr. trading tool. The main purpose of the study is to measure the market’s strength and weakness. A high RSI, above 70, suggests an overbought or weakening bull market. Conversely, a low RSI, below 30, implies an oversold market or dying bear market.

While you can use the RSI as an overbought and oversold indicator, it works best when a failure swing occurs between the RSI and market prices. For example, the market makes new highs after a bull market setback, but the RSI fails to exceed its previous highs.

Another use of the RSI is divergence. Market prices continue to move higher/lower while the RSI fails to move higher/lower during the same time period. Divergence may occur in a few trading intervals, but true divergence usually requires a lengthy time frame, perhaps as much as 20 to 60 trading intervals.

Selling when the RSI is above 70/75 or buying when the RSI is below 30/35 can be an expensive trading system. A move to those levels is a signal that market conditions are ripe for a market top or bottom. It does not indicate a top or a bottom. A failure swing or divergence accompanies your best trading signals.

The RSI exhibits chart formations as well. Common bar chart formations readily appear on the RSI study. They are trendlines, pennants, flags, head and shoulders, double tops and bottoms, and triangles. In addition, the study can highlight support and resistance zones.

Parameters:

Period (14) - the number of bars, or period, used to calculate the study.

Range (100) - the distance between the upper and lower threshold lines.

Computation

The RSI computations are not difficult, but they are tedious. You first calculate the difference between the current closing price and the previous closing price. The general formula is:

\[ \text{DIF}_t = \text{Close}_t - \text{Close}_{t-1} \]

If that difference is a positive value, it is an up period - the current close is higher than previous close. If the difference is negative, it is a down period - the current close is below the previous close. The indicator maintains the DIF value for a series of UP and DOWN days. The DOWN value is always a positive number for all computations. It is the absolute value of a negative DIF.
The worksheet below shows the calculations needed to create a 9 period RSI.

<table>
<thead>
<tr>
<th>Day</th>
<th>Current Close</th>
<th>Previous Close</th>
<th>Dif</th>
<th>Up</th>
<th>Down</th>
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<tbody>
<tr>
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<td>+20</td>
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<td>0</td>
</tr>
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<td>7460</td>
<td>+10</td>
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<tr>
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<td>+10</td>
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<td>0</td>
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<tr>
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<tr>
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<td>7455</td>
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<td></td>
<td>Totals</td>
<td></td>
<td></td>
<td>60</td>
<td>35</td>
</tr>
</tbody>
</table>

You now compute the up and down averages, which are calculated as follows:

\[
Ut = \frac{(UP1 + ... + UPi)}{n}
\]

\[
Dt = \frac{(DOWN1 + ... + DOWNn)}{n}
\]

Ut is the up average for the current period.

Dt is the down average for the current period.

UPn is the UP value for the nth period.

DOWNn is the DOWN value for the nth period.

n is the number of periods for the RSI.

Now, use the values from the worksheet. The up average is:

\[
U = \frac{60}{9}
\]

= 6.67

and the down average is:

\[
D = \frac{35}{9}
\]

= 3.89

The general formula for the RSI is:

\[
RSIt = \left( \frac{UT}{UT + DT} \right) \times 100
\]
If you use the above values and place them in the formula, it appears as follows:

\[
RSI = \left( \frac{6.67}{6.67 + 3.89} \right) \times 100
\]

\[
= 63.16
\]

Assume the market continues the downward trend. The next DIF value is -15, which sets the UP value to 0, zero, and the DOWN value to 15. Calculate the next up and down average by using Wilder's accumulative moving average technique. The formulae are:

\[
UT = \left( \frac{(UT-1 \times (n-1)) + UP_t}{n} \right)
\]

\[
= \left( \frac{(6.67 \times (9 -1)) + 0}{9} \right)
\]

\[
= 5.93
\]

\[
DT = \left( \frac{(DT-1 \times (n-1)) + DOWN_t}{n} \right)
\]

\[
= \left( \frac{(3.89 \times (9 -1)) + 15}{9} \right)
\]

\[
= 5.12
\]

The value for the new RSI equals the following:

\[
RSI = \left( \frac{5.93}{5.93 + 5.12} \right) \times 100
\]

\[
= 53.67
\]

The software continues these calculations for the entire data series. When you complete the calculations, the RSI study displays on the screen. The indicator calculates a new value for the study whenever prices change.

RSI varies from 0 to 100. Values around 50 (from 40 to 60) indicate for the balanced market. The raise of the indicator towards 70 and above indicates oversold situation and vice versa, the drop – to 30 and below indicates overbought situation.

Wilder’s relative strength indicator WRSI is based on the observation that a stock that is advancing will tend to close nearer to the high of the day than the low. The reverse is true for declining stocks. So, WRSI gives more weight to the last day of the range, compared to RSI, which gives equal weight to all dates in the range.

This indicator has evolved into several forms, but Wilder’s RSI is generally regarded as the most useful. The oscillator is same indexed from 0 to 100, and like all oscillators it indicates overbought and oversold readings.

As per our testing results on historical data of Metal Prices, give preference to WRSI versus RSI in more volatile market conditions, when future data is independent on previous data. (ADX/TI indicators show no distinctive trend). RSI is more preferable for “whip saw”, weak or “no trend” market conditions.
The system will automatically generate for WRSI/RSI “BUY” signal, which theoretically indicates the Bottom OR the “SELL” signal, which is indication for the TOP.

### Generated Technical Signals for Buy (B) and Sell (S)

<table>
<thead>
<tr>
<th>Date</th>
<th>3 month official</th>
<th>average Cash</th>
<th>WRSI 35/65</th>
<th>RSI 29/69</th>
<th>MAC D B/S</th>
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<td>-</td>
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<td>2 504.00</td>
<td>2 441.50</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

**Notes:**
- **WRSI parameters:** Sell at 65, Buy at 35
- **RSI parameters:** Sell at 70, Buy at 50
§4 THE DIRECTIONAL MOVEMENT INDICATORS

The ADX indicator is actually a suite of indicators meant to measure whether or not the asset under study is in a trending mode. It is a fairly slow indicator and one must be careful in applying it because it takes time to adjust to market moves. Whipsaws are possible, and in fact likely if the market is in a wide trading range.

The components of the index are:

DIRECTIONAL MOVEMENT (+DM and -DM) -- This indicator represents the largest part of today's move that is outside the previous day's range. So, for example, if yesterday's price range was 18-22 and today's is 17-24, then +DM is two and -DM for the day is zero. On an inside day, there is no directional movement. This system does not care where the close is, so in the example above, even if the close was on the low, the directional movement is considered to be positive because the largest part of today's range is above the previous session's range. Note that -DM is always positive, so if today's range is 17-20 and yesterday's was 19-19 1/2, then -DM is two and +DM is zero.

DIRECTIONAL MOVEMENT INDICES (+DI and -DI) -- This indicator is computed by using the daily +DM and -DM discussed above and taking a ratio with the daily true range. The daily true range is the largest of the following: The absolute value of:

A. The distance from today's high to today's low.
B. The distance from today's high to yesterday's close.
C. The distance from today's low to yesterday's close.

What the true range does is adjust for gaps by, in essence, adding them back into today's trading range. We then compute today's +DI and -DI as the ratio of the DM's to the daily true range (TR), so:

+DI = +DM/TR and -DI = -DM/TR

This indicator tells you how powerful today's move was in comparison to the day's range. On a day in which prices gap higher and close at the high, that day's +DI would be 1.00. Remember, on an inside day, both DI's will be zero, and if there is positive directional movement, then there can be no negative directional movement.

SMOOTHED DI's -- These are computed by taking a 14-day moving average of the individual DI's (exponential moving averages are preferred, but it does not make that much of a difference).

DIRECTIONAL INDICATOR (DX) -- This is the ratio of the difference between the smoothed +DI and -DI and the total directional movement. That is:

DX = [+DI(14) - -DI(14)] / [+DI(14) + -DI(14)]

Note: in our WEB site we call DX – TI, which stand for Trend Indicator.

At our WEB site we give the values for +DI,-DI, TI=DX and ADX.
LME - Aluminum Signals

<table>
<thead>
<tr>
<th>Date</th>
<th>3 month average official</th>
<th>Cash</th>
<th>12 days 3m avg</th>
<th>30 days 3m avg</th>
<th>WRSI</th>
<th>RSI</th>
<th>MACD</th>
<th>+DI</th>
<th>-DI</th>
<th>TI Dir.c change</th>
<th>ADX WRSI</th>
<th>RSI 35/65</th>
<th>RSI 29/69</th>
<th>MACD B/S</th>
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</thead>
<tbody>
<tr>
<td>05 Nov, 07</td>
<td>2 601.00</td>
<td>2 527.67</td>
<td>2 540.00</td>
<td>2 500.33</td>
<td>69.7</td>
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<td>8.01</td>
<td>32</td>
<td>6.6</td>
<td>25.4</td>
<td>30.4</td>
<td>-</td>
<td>B</td>
<td></td>
</tr>
<tr>
<td>02 Nov, 07</td>
<td>2 582.00</td>
<td>2 516.00</td>
<td>2 534.96</td>
<td>2 493.67</td>
<td>66.6</td>
<td>67.9</td>
<td>6</td>
<td>37.8</td>
<td>7.9</td>
<td>29.0</td>
<td>36.4</td>
<td>S</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

Note: +DI(14) is the 14-day smoothed positive directional movement index and -DI(14) is the 14-day smoothed negative directional movement index. These are the standard numbers.

AVERAGE DIRECTIONAL INDEX (ADX) -- This is just the smoothed DX (again, typically a 14-day exponential smoothing factor).

WHAT DOES ADX TELL YOU?

The ADX is a trend following system. The average directional movement index, or ADX, determines the market trend. When used with the up and down directional indicator values, +DI and -DI, the DMI is an exact trading system.

The standard interpretation for using the ADX is to establish a long position whenever the +DI crosses above the -DI. You reverse that position, liquidate the long position and establish a short position, when the -DI crosses above the +DI.

In our custom charts the ADX is the red line, the -DI is the green line and the +DI is the purple line.

In addition to the crossover rules, you must also follow the extreme point rule. When a crossover occurs, use the extreme price as the reverse point. For a short position, use the high made during the trading interval of the crossover. Conversely, reverse a long position using the low made during the trading interval of the crossover.

You maintain the reverse point, the high or low, as your market entry or exit price even if the +DI and the -DI remain crossed for several trading intervals. This is supposed to keep you from getting whipsawed in the market.
For some traders, the most significant use of the ADX is the turning point concept. First, the ADX must be above both DI lines. When the ADX turns lower, the market often reverses the current trend. The ADX serves as a warning for a market about to change direction. The main exception to this rule is a strong bull market during a blow-off stage. The ADX turns lower only to turn higher a few days later.

According to the developer of the DMI, you should stop using any trend following system when the ADX is below both DI lines. The market is in a choppy sidewise range with no discernible trend.

Also remember that this is a very slow indicator, so it is not going to turn at tops or bottoms. Some analysts use ADX as a secondary indicator to tell whether there is a trend. The classic rules are that a move past 20 in ADX says that the trend is real and that moves above 40 should be treated suspiciously and might mean that the move is stretched. Some people get into a directional move on a run past 20 in ADX.

Alexander Elder, in his book Trading for a Living suggests going with the trend whenever ADX breaks from a low level and from beneath both directional lines and then ratchets up four points -- this is a sign that a new trend is starting. He also warns that when ADX is above both DI lines, then the trend is ahead of itself. He suggests getting out of a trade when ADX turns lower from such a position.

Many analysts use ADX to see the direction of the three lines as compared to the current trend. When ADX starts to turn from an extreme level, then that can be a warning of a change in the trend for the next several months. ADX is never a determinant in my thinking because it is such a slow-moving indicator.

### “4 Steps” Process for Understanding Prices Movements

#### STEP 1 (Some practical hints for ADX/TI movements interpreting)

<table>
<thead>
<tr>
<th>Value</th>
<th>Direction</th>
<th>Interpretation</th>
<th>Actions</th>
</tr>
</thead>
<tbody>
<tr>
<td>15-25</td>
<td>UP</td>
<td>Trend possible start</td>
<td>Since trend is not known, watch TI</td>
</tr>
<tr>
<td>25-45</td>
<td>UP</td>
<td>Definite trending, likely to continue</td>
<td>Trade in direction of trend</td>
</tr>
<tr>
<td>&gt;45</td>
<td>UP</td>
<td>Watch for trend turning point</td>
<td>Leave position fast once trend reverse, watch TI</td>
</tr>
<tr>
<td>45-30</td>
<td>DOWN</td>
<td>Trend changed or changing</td>
<td>Leave position fast once trend reverse, watch TI</td>
</tr>
<tr>
<td>30-20</td>
<td>DOWN</td>
<td>Consolidation, whipsaw market</td>
<td>Cover short positions</td>
</tr>
<tr>
<td>&lt;20</td>
<td>DOWN</td>
<td>Low volatility, short swings, no trend</td>
<td>Since trend is not known, leave positions fast</td>
</tr>
</tbody>
</table>
The testing on Metal prices historical data shows that the best timing for determining the Market near bottom is expected to be:

- When ADX from its high (45-60) start to decline, and Ti will change its sign (from ‘+’ to ‘-’), showing trend direction change;
- When ADX start steadily to increase from levels 15-25 and TI change its sign from + to -, signaling market change from “whip saw” to “raising” pattern.
The Chart below illustrates this point of view.

### “4 Steps” Process for Understanding Prices Movements

**STEP 1 (Example of ADX/TI interpretation)**

<table>
<thead>
<tr>
<th>Ti change from</th>
<th>Ti change from</th>
<th>Ti change from</th>
<th>Ti change from</th>
</tr>
</thead>
<tbody>
<tr>
<td>-3 to +5</td>
<td>+0.3 to -1.1</td>
<td>+10.6 to -2.5</td>
<td>-10.7 to 2.0</td>
</tr>
<tr>
<td>ADX=20</td>
<td>ADX=14.3</td>
<td>ADX=32.5</td>
<td>ADX=20.5</td>
</tr>
</tbody>
</table>

**Page: Rules**
§ 5 Acknowledgements

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