

## G91-1055-A



## Using Moving Averages to Effectively Analyze Trends

This fifth of a nine NebGuide series is designed to show how trend lines can assist producers and others in analyzing the market's technical side.

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What is the objective in using moving averages?

Technical analysts construct a moving average of price to provide a better market timing indicator than the traditional straight-line method. The idea is to smooth out daily price fluctuation to get a clear view of the market trend. **The moving average** is a method for averaging near-term prices in relation to long-term prices. This technique should not be confused with the oscillators described in NebGuide No. 8 in this series, *G91-1058, Using the RSI and Other Oscillators to Analyze the Market*.

Oscillators are designed to measure the underlying strength of a price move, using a different set of mathematical calculations than those used for moving averages.

**The moving average** is an arithmetic average that provides up-to-date indications of market activity by reflecting only the most recent inputs into the market. The moving average is a tool, like bar charts that can help predict when a trend is going up or down.

Many traders use the moving average to determine when to make a trade. It reduces the effects of cycles, seasonal variations and irregular movements, giving the investor a better idea of the underlying supply and demand strength in the market. It is easier to see these trends using moving averages as each day's individual price is muted.

The moving average can be computed using any number of days, weeks or months. Any desired price can be used for the calculation, such as the high, low, close, the average of the high and the low or any other

combination. Producers should use the inputs that fit their personal marketing plan.

Calculations for a moving average are simple and straightforward. For example, in calculating a 10 day moving average, add the 10 most recent closing prices and divide the sum by 10. On the following day drop the last price in the series, add the current price and again divide the sum by 10. On each succeeding day, repeat the calculation.

The entries on the chart represent the 10 most current days, so the average moves through time. See *Table I* for an illustration of this concept.

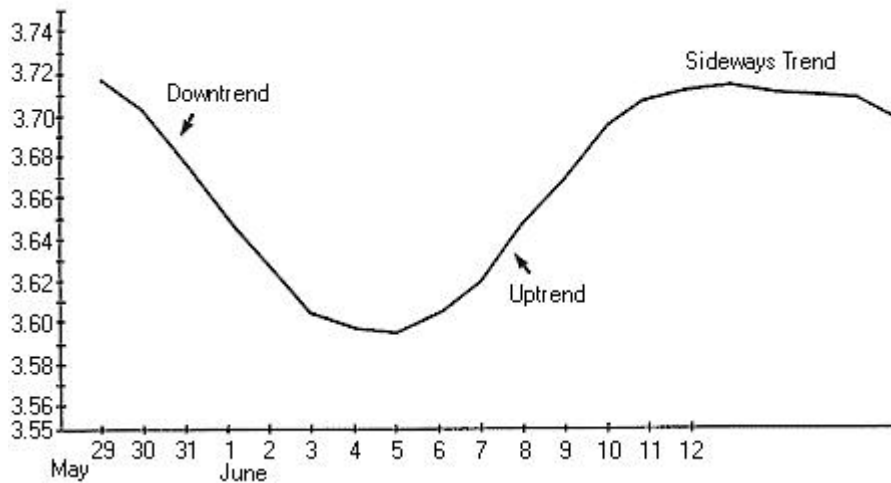
**Table I.**

**Calculation of 10 Day Moving  
Average  
July Wheat**

<b>Date</b>	<b>Closing Price</b>	<b>Moving Average</b>
May 15	\$3.7225	
16	3.7700	
17	3.7700	
18	3.7850	
19	3.7975	
22	3.8250	
23	3.7200	
24	3.7575	
25	3.6450	
26	3.6025	
29	3.5300	3.7175
30	3.5925	3.7027
31	3.5075	3.6772
June 1	3.5425	3.6510
2	3.5500	3.6272

As each day's moving average is plotted and connected, a fluctuating trend line that follows the price line develops. *Figure 1*, using a 10-day average for wheat, shows this trend. As illustrated in *Figure 1*, the moving average shows when prices begin to move consistently in one direction. The trend is upward when buying pressure is stronger than selling pressure, or when daily prices are higher than the moving average. The trend is downward when selling pressure is stronger than buying pressure, or daily prices

are below the moving average.



**Figure 1.**

This makes the moving average a measure of selling versus buying pressure without showing daily price swings. If the price crosses the moving average, a signal sounds that the trend may be changing direction; changing market exposure may be an appropriate action.

It is important to note that the moving average lags behind the daily prices. ***The moving average will not signal a direction change until after the daily prices have changed.***

The longer the time period the greater the lag, making a shorter average more sensitive to price changes. Longer time periods smooth out the average to a greater degree. This means that using a shorter moving average may signal a producer or trader to enter or exit the market sooner, but you run a greater risk of false signals. The longer time span reduces the chance of false signals, but the signal may come after a large part of the trend already has occurred.

At times, a single moving average does not give accurate or timely signals, particularly in choppy markets. Many analysts use more than one moving average together to help ease this problem.

If two moving averages are used, the shorter moving average gives the signals while the longer one defines the trend. If three moving averages are used, the signal is given when the middle average crosses the long average. In this case the shortest signal helps curtail false signals, as it should be higher than the middle average for a buy signal and lower than the middle average for a sell signal. (See [Figure 2.](#))

Three moving averages also may be used in another way to reduce false signals. For example, assume a rising market. The shortest average will be above the middle average and the middle average will be above the longest average. As prices fall, the short average crosses through both the middle and long averages from above. This is a signal the markets are changing direction.

In an opposite example, assume a falling market. The shortest average will be under the middle average and the middle average will be under the longest average. When the prices begin to rise, the short average cuts through the middle and long averages from below. Again, this is a signal of a changing market.

Variations include using something other than the closing price, such as the opening or an average of the

open and the close or any combination thereof. Some analysts say quicker, more accurate signals are derived using these methods. Other analysts use the moving averages in combination with a bar chart or other technical tool. Traders need to adopt a moving average strategy that fits the special needs of each operation.

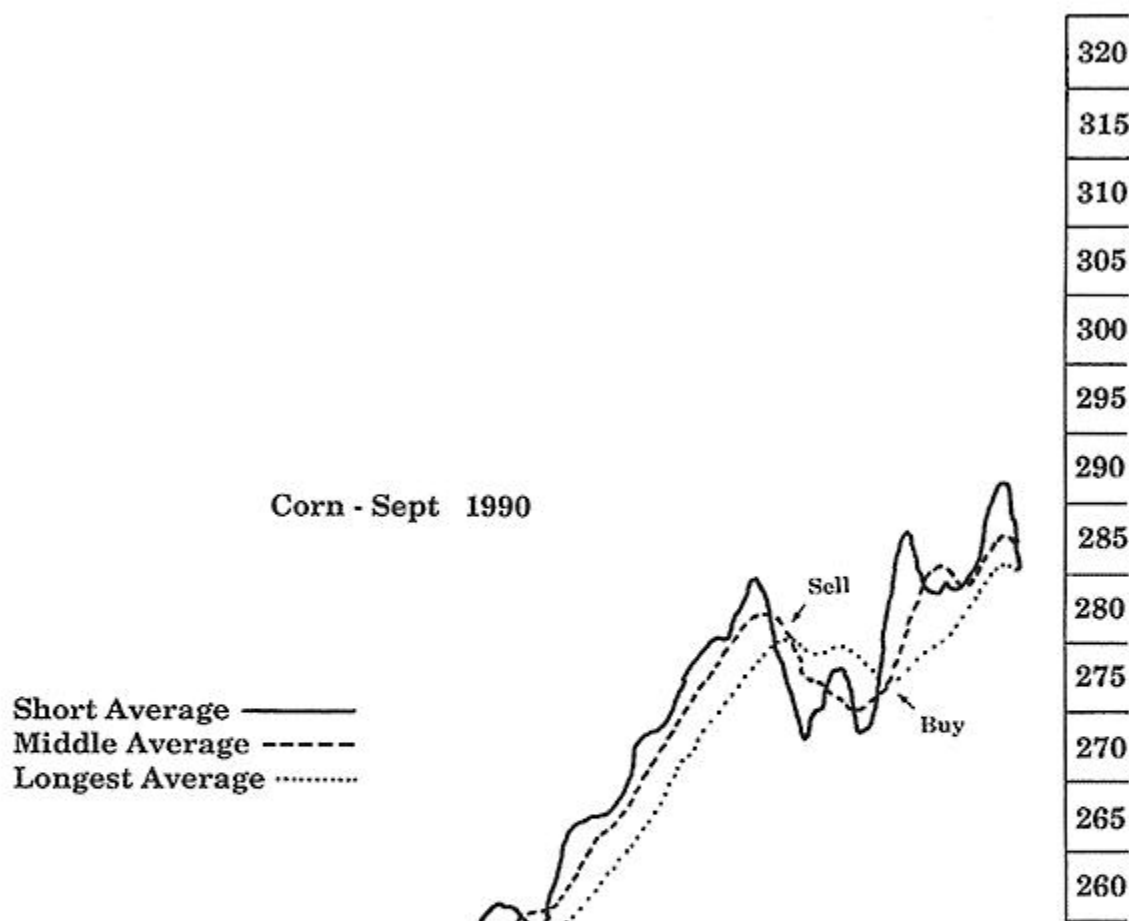
## Conclusion

Certain points are worth remembering when working with moving averages. There are no set number of days for moving averages that are considered the most reliable; personal preference guides the selection. The longer the time span plotted, the less sensitive the computed moving average. This is a good idea for producers who do not want to enter the market many times in a year. ***The moving average is a follower and is not designed to catch the beginning or end of a move.***

The moving average will never be 100 percent correct, and will nearly always be out of phase with the market in choppy, sideways markets where there is a great deal of price fluctuation.

Even with the above warnings, the moving average is an easy-to-use indicator of market trends. Knowing these trends gives the producer or speculator a greater chance of success in the commodities market. When used in conjunction with other technical charts, and recognizing its limitations, the moving average can be a powerful tool in technical analysis.

One thing to remember: the nature of both trend lines and charts make interpretation subjective. Two analysts can view the same chart and find two entirely different patterns and trend lines.



**Figure 2.**



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