

GMMA, RAINBOW AND ANTS

By Daryl Guppy.

The Guppy Multiple Moving Average, GMMA, forms the core of the ANTS trading method. In recent weeks we have received many questions, particularly from the UK, about the difference between the GMMA and the Rainbow Oscillator, both found in MetaStock. My attention has again also been drawn to some extensive discussion on the application of GMMA to FX trading on several FX chat rooms. These are two very different indicators with very different purposes. The GMMA identifies volatility clustering and this often precedes significant trend changes.

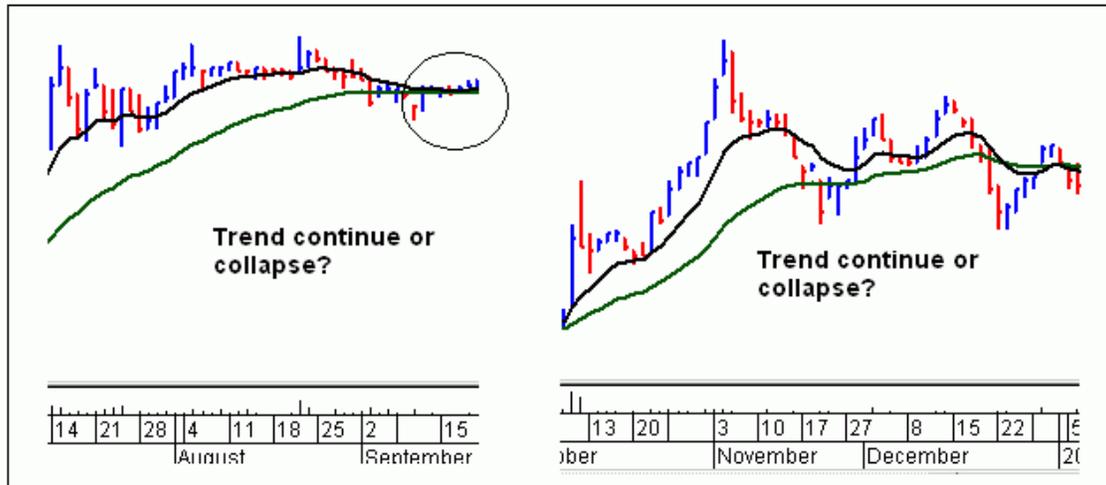
In FX trading these relationships are very significant, although it makes less sense to talk of trader and investors activity. In FX the two groups are more representative of speculative activity and forced counterparty activity as institutions are forced to take the opposite side of their client transactions. The GMMA is the foundation of ANTS but it is enhanced with the use of the ATR as a stop loss and the propriety ANTS signals.

The rainbow display is part of the search dedicated to getting the lag out of moving average crossover signals.

In 1994, I developed the Guppy Multiple Moving Average. The markets had changed and I needed to reassess my approach and analysis techniques. The GMMA was one of the changes that came about in this period. I introduced the indicator in my second book, **Trading Tactics**, in 1997. Updates for this indicator and its applications were included in **Trend Trading** and advanced techniques in **Guppy Trading**. The CD [GMMA seminars](#) produced for Pristine Training University in the US have also developed the application of this indicator. The DVD [GMMA Trend Volatility](#) updates these techniques for more volatile markets.

I also wrote an article about the GMMA for **Stocks and Commodities** magazine in 1997 and at about the same time Mal Widner also submitted an article on what he called the rainbow oscillator which included a rainbow chart display. Both the GMMA and the Rainbow Oscillator are included as templates in Metastock, and this sometimes leads to confusion. Superficially, both displays look similar, but the philosophy, construction and use of each are radically different. The easiest way to explain these differences is to compare the two displays.

In some ways I now regret identifying the GMMA as a Multiple Moving Average because many people naturally think of it as a collection of averages and immediately start looking for crossover points as a leading signal of trend change. This is a natural reaction that arises from the way we commonly use two, or three, moving averages.



Using moving averages has two significant problems. The first is that they provide little information about the strength of the trend. The GMMA is designed to overcome this problem. The second problem is that the crossover signals generated by moving averages lag the actual turning point in the market. Mal Widener's Rainbow Oscillator is designed to attempt to overcome that problem as we explain later. MACD, MACD Histogram and many other moving average based indicators also attempt to resolve this problem of lag.

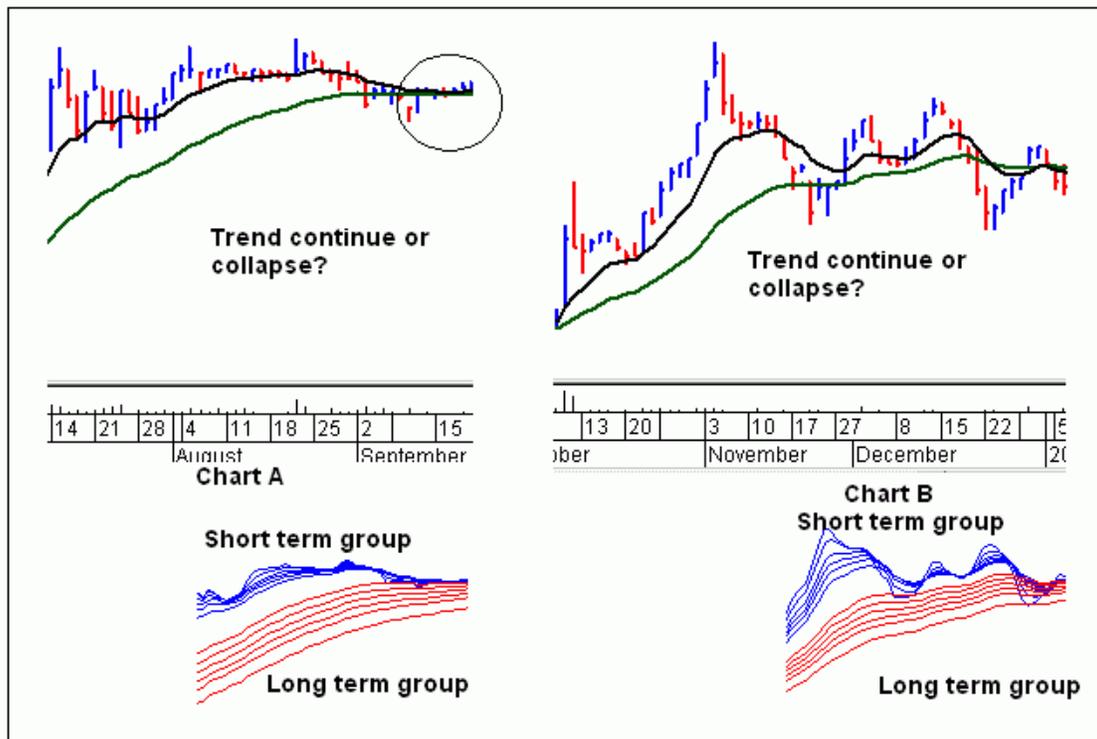
The two chart displays show a 10 and 30 day moving average combination. The moving averages by themselves do not give us enough information to decide if the trend is weakening, preparing for a rebound, or about to collapse. If we want to buy this stock, there could be an opportunity to buy on temporary trend weakness. However, although this display gives us information about the position of current prices in relation to the recent averages of price, it does not help us make a decision to buy, sell, or hold. For this we need to decide the nature of the trend.

The GMMA is constructed from two groups of moving averages, but these are used to measure and reveal a different set of relationships. Perhaps a more accurate name would be Trend Strength Indicator. The short term group reveals the activity of traders. The long term group reveals the activity of investors. The end of the GMMA display on this chart extract matches the end of the bar chart display.

In assessing trend strength we are interested in three relationships. They are:

- The nature of trading activity. This is shown by the pattern of compression and expansion in the short term group of averages.
- The nature, or strength, of investment activity. This is shown by the degree of separation or expansion in the long term group averages. A consistent spread, broadly moving parallel, confirms a strong underlying trend with consistent buying support.
- The degree of separation between the two groups. Some trends retain a fairly consistent degree of separation. These are steady trends with a low probability of sudden collapse. Others show a consistent pattern of moving apart, converging, and moving apart. These are trends constantly hammered by traders as they capture short term profits.

These trends are more fragile, and we use different trading methods to ride them.



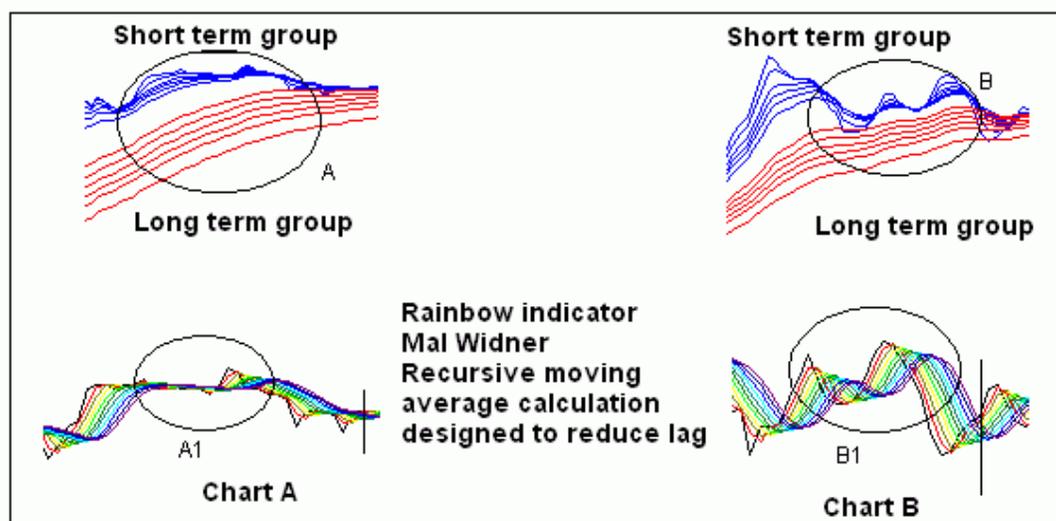
The GMMA provides information about the strength, nature and character of the trend. Our purpose here is to illustrate the differences between several indicators rather than to apply a full GMMA analysis. However, we have a single question to answer with both chart A and chart B. Is this the end of a trend, or just a rebound point?

Chart A shows the long term group are still well separated. They have started to compress slightly and move sideways, but investors are still buying. The most likely outcome is a rebound and continuation of the trend. Those who own the stock need take no action. Those who want to buy may choose to wait another few days for the rebound to develop but there is enough trend strength to make buying on the next day a good trading decision. The stop loss is tight, and placed below the long term group of averages.

Chart B shows potential trend weakness. The short term group has penetrated the long term group, but the investors have absorbed the traders' sell off. The long term group has started to expand slightly as the trader's rebound develops, and this suggests investment buying is returning to the market. Those who hold the stock will tighten stops, but there is not yet a sell signal. Note that on the display with two moving averages, there is a sell signal on the first crossover, followed quickly with a buy signal, and then even more quickly with another sell signal. The GMMA puts these moving average crossover signals into a broader context.

Those wishing to buy the stock may choose to wait for the short term group to move above the long term group and for the longer term group to start to expand.

The GMMA allows us to make better analysis about the nature of the trend, and this allows us to make a better trading decision.



Compare this analysis with the Rainbow Oscillator. It is simply not possible to reach any conclusions about the strength or nature of the underlying trend using the Rainbow Oscillator. The end point on each indicator display is the same as the end point on the original bar chart. The vertical lines on the Rainbow display match the point of the 10 and 30 day moving average crossover on the original bar charts.

Compare the clear GMMA analysis of the trend in area A and B. Traders cannot duplicate any of this analysis in areas A1 and B1 because the Rainbow oscillator is not developed to deliver this information.

The Rainbow indicator charts are constructed using a recursive moving average series. This means the original average is averaged, rather like a MACD. But the result is averaged again, and again, and again. The purpose is to smooth the direction of the trend by eliminating unnecessary detail, or noise. The objective is to shift the moving average signal point back in time to reduce the lag.

The Rainbow indicator chart is designed to be used in conjunction with an oscillator window. The Rainbow chart holds the data points and the oscillator uses these to construct a standard oscillator display. Moves below the zero line are bearish, while moves above the zero line are bullish. The recursive smoothing is designed to emphasise these relationships so the direction of the trend can be more easily established.

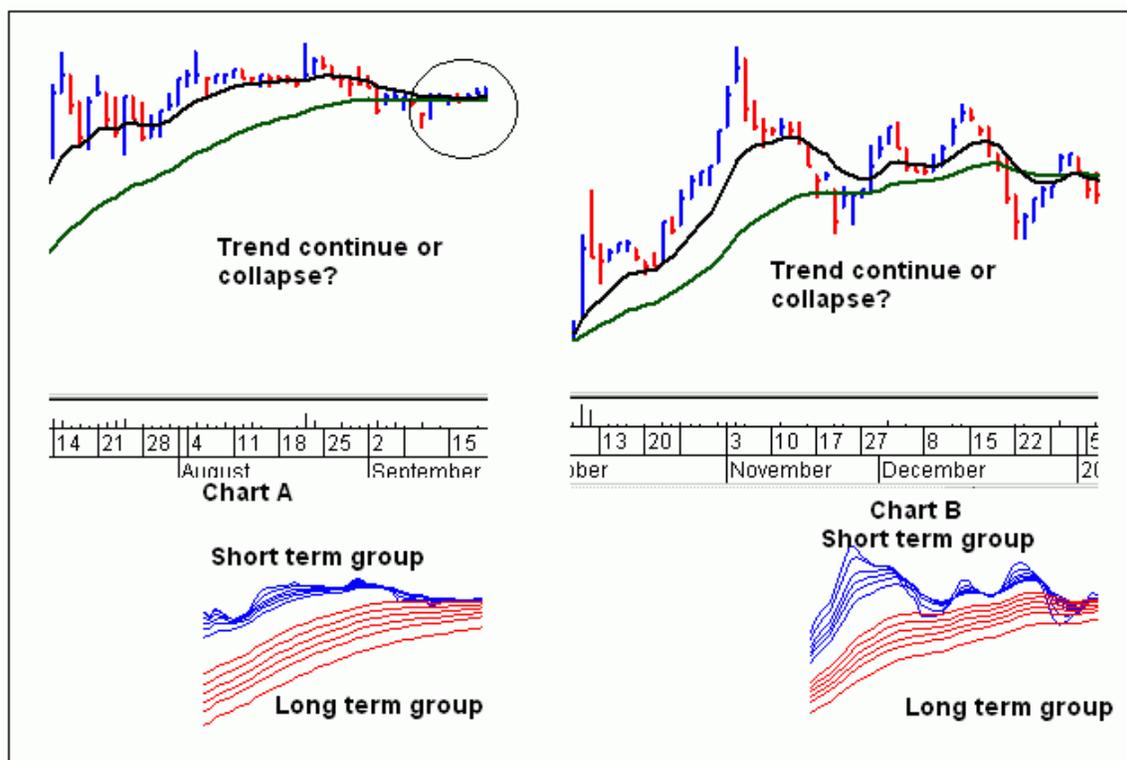
The Oscillator is used in the same way as an over bought and over sold indicator, with signals generated at the extremes and at the crossover points. The complete indicator combination aims to provide trades with a trend break signal when the trend break occurs. We will leave it to readers to decide if it is able to achieve this objective.

The essential point we want to make in these notes is that the GMMA is very different from the rainbow chart display. Superficially they look similar, but in practice they are very different. This difference comes from the purpose for which

they were designed. The GMMA is designed to tell us about the nature of the trend. The Rainbow chart is combined with the Rainbow Oscillator to shift the trend change signal point back in time. It aims to be no more than an advanced moving average crossover signal.

The formula for the GMMA is in the public domain. It is readily available from my books, on the web site, in workshops and in other publications. The GMMA is included in many charting packages, usually with permission. We do not charge any fee for including the indicator, but we do like to make sure that it is implemented correctly.

The chart extract illustrates why. The end points on the two displays are the same as on the original bar chart. The lower display uses the settings provided with a multiple moving average indicator in one charting program. The settings bear little relationship to the GMMA defaults. This distorts the relationships between each group – short and long term – and also eliminates much of the valuable information available from the relationship between the two groups.

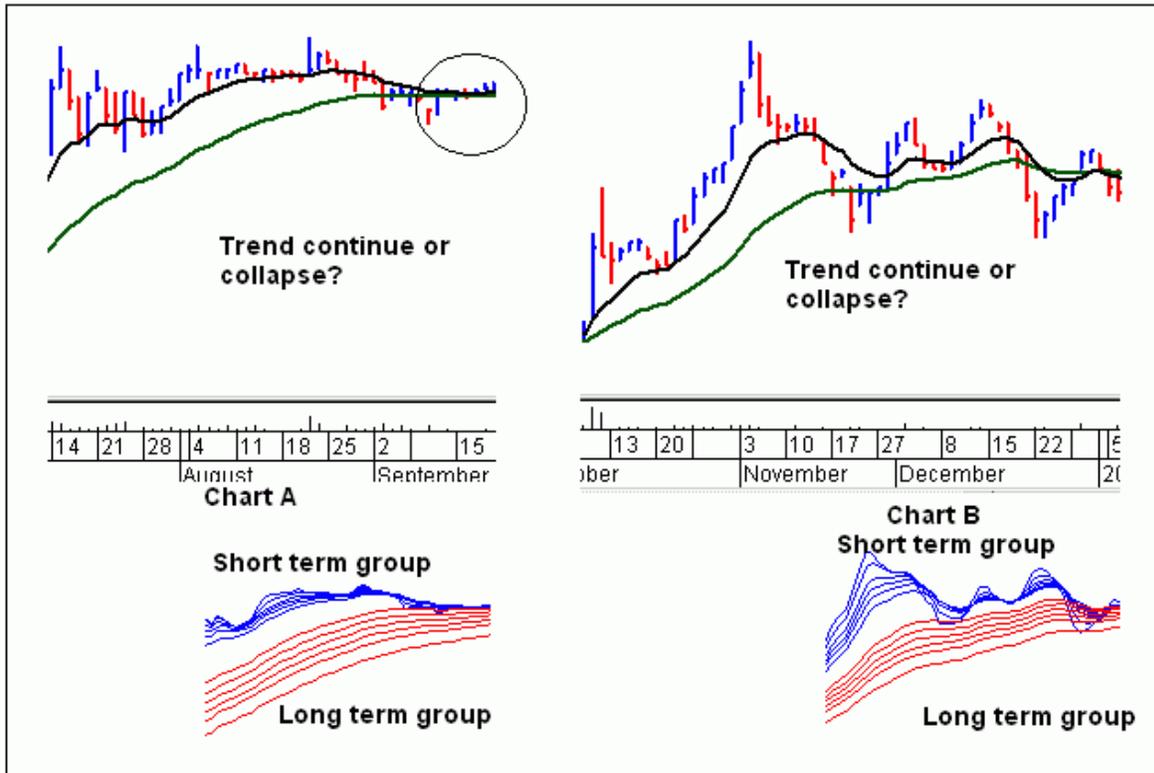


Using the GMMA we can reach an informed decision about the potential trend development at the end point in chart A and chart B. Using the lower display does not provide any useful information about trend strength or weakness.

Unfortunately, those who use the lower display assume that because it looks similar to a genuine GMMA that it is a GMMA. Then their quite reasonable conclusion is that the GMMA is not a useful indicator or trading tool.

We do suggest that if your charting program includes a GMMA or MMA indicator and that if you wish to use it as a genuine GMMA that you check the settings in the indicator. They are not complex. The short term group uses a 3, 5,

8, 10, 12 and 15 day exponentially calculated moving average. The long term group uses a 30, 35, 40, 45, 50 and 60 day exponentially calculated moving averages. These correct settings are used in programs such as Metastock, Guppy Traders Essentials, NextView, OmniTrader, Ezy Charts, Bull Charts, StockDoctor, Market Analyst and a variety of web sites and in other charting packages.



Alan Hull prefers to use these values on a weekly basis. NextView uses these values on an intraday chart. All are valid applications and extensions of the GMMA approach that are very useful in providing information about the strength and nature of the trend.

We use the GMMA to make better trading decisions. Based on Chart A, we are quite comfortable in buying into the trend on a point of trend weakness. The underlying trend is still strong. Chart B is taken from the same stock, but at a later period. Again, the GMMA gives enough information to allow the trader to hold onto his open position because there is a good probability that the trend will continue. Using the GMMA to manage this trade delivers a 68% return. This is a powerful indicator and it is discussed more fully in **Guppy Trading**. Use it well, but do not confuse it with a rainbow chart, and make sure that the indicator settings you use are consistent with the genuine GMMA.