



Introducing the New ERA Analysis

By Adrian Douglas

Overview

A very significant development has been made in the use of Market Force Analysis which will greatly increase its forecasting of future market trends and in particular buying and selling points. This extended analysis is called “Equilibrium Regressional Analysis” or ERA for short.

General

Market Force Analysis (MFA) has been provided commercially at our website (www.marketforceanalysis.com) for exactly one year and has proven to be a powerful method for analyzing and forecasting trends in commodity markets. By coincidence for our first anniversary at the end of November we are unveiling a major breakthrough in the application of MFA which from studies on historical data promises to bring even more accuracy to our proprietary techniques.

Market Force Analysis (MFA) is a unique approach to commodity market analysis (patent pending). An algorithm has been developed to extract supply and demand from futures market data. The difference between supply and demand is the market imbalance which is called market force, so named because it is that which drives price. It brings clarity to past market action and predicts future market trends. Because it is derived from accurate futures market data it is not subject to the errors inherent in macro-level estimates of supply and demand.

Market Force Analysis

Market Force Analysis (MFA) has three outputs

- Supply
- Demand
- Force (the difference between supply and demand)

An example chart of MFA is shown in figure 1 for gold.

Our analysis has centered on recognizing that the force remains linear over long periods of time and, in general, falls into a trend channel. “Buy” and “sell” points have been identified by the force reaching the extreme limits of the top or bottom of the channel.

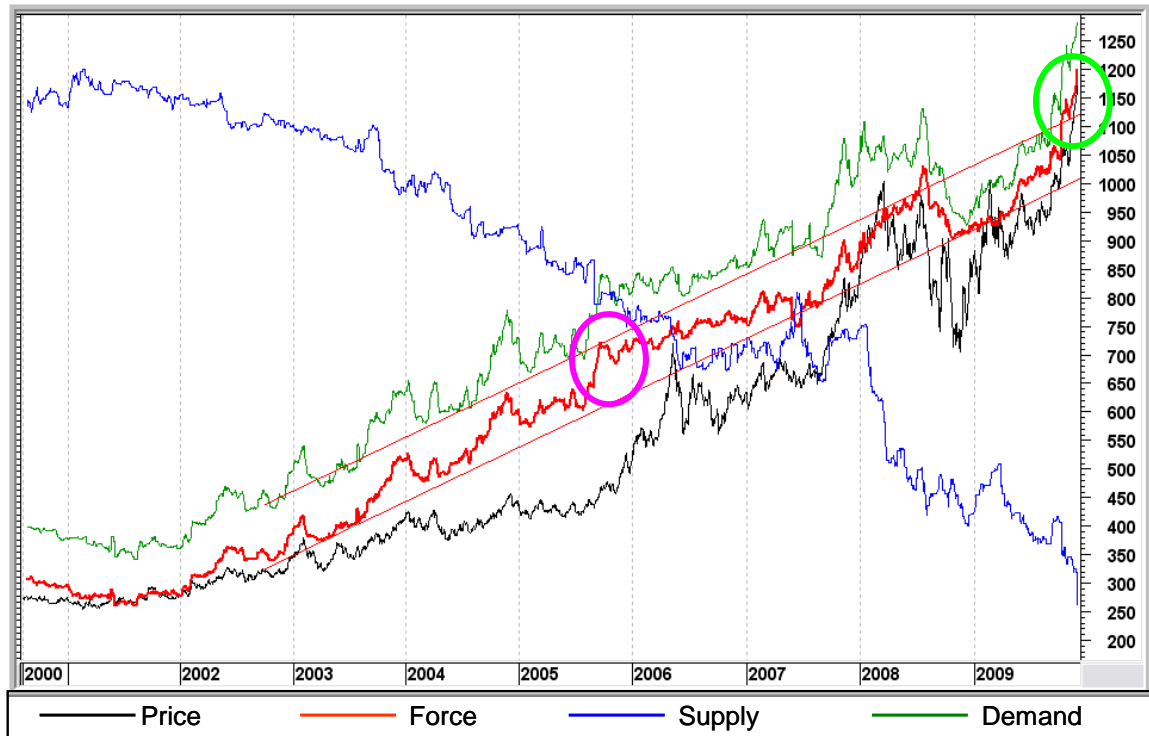


Figure 1: MARKET FORCE ANALYSIS - GOLD

Recently we questioned whether the use of this channel analysis is the best way to select the buy and sell points. For example in figure 1 the pink circle shows that a premature sell signal would have resulted in 2005 because the force reached the top of the channel early in the gold upleg. Currently the force has exited the top of the channel as shown by the green circle, which would also indicate a sell point with our established criteria. This prompted a lot of research and resulted in a very robust analysis tool which we will describe here in.

First of all let's look at economic theory of how price and supply-demand imbalance (force) should be related.

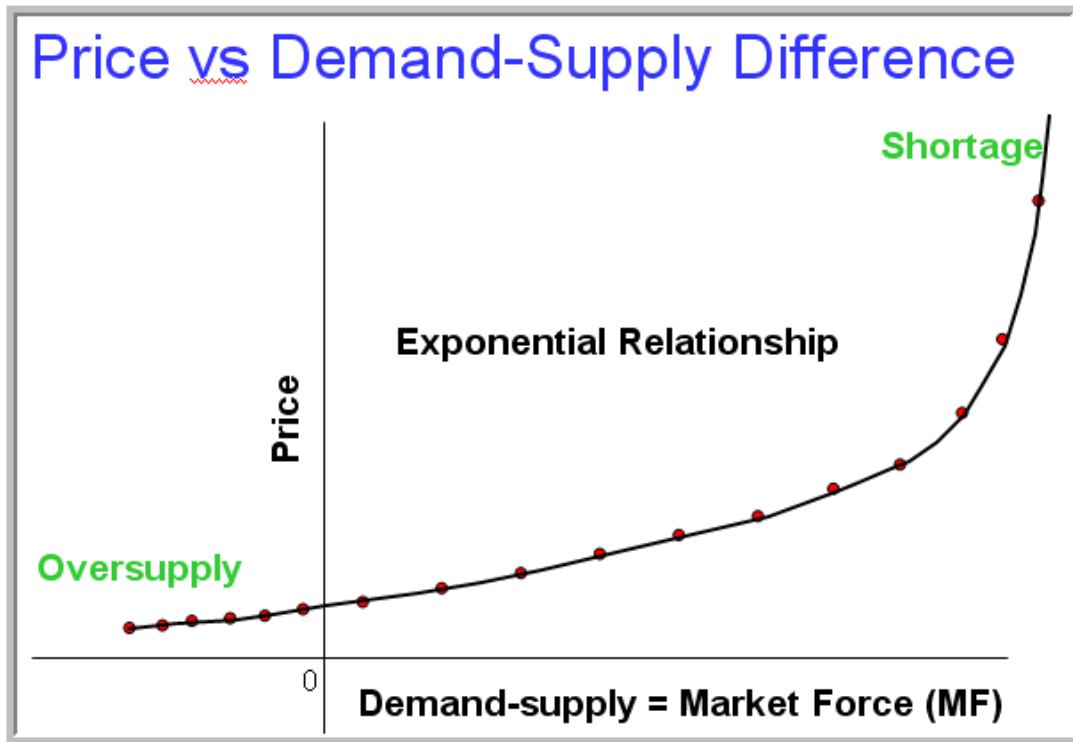


FIGURE 2

Figure 2 shows the theoretical relationship between price and demand-supply imbalance. The right-hand side of the chart (shortage) is when demand greatly exceeds supply and so price rises almost vertically. The price will tend to infinity (or a very big number) as demand massively outstrips supply. If supply is greater than demand then demand minus supply is negative and we are on the left-hand side of the chart (oversupply). In this case the price is low and will tend to a zero value price at infinite supply. Joining the two extremes we get a curve which is exponential in nature.

We would expect any commodity to follow this relationship. However, this is the 'equilibrium' relationship of price to market force. If an entity buys 100 contracts per day for 5 days it is essentially the same demand as if he bought 500 contracts on the market open on Monday but clearly the affect on price would not be the same. There are transient affects that cause perturbations of the price from the equilibrium.

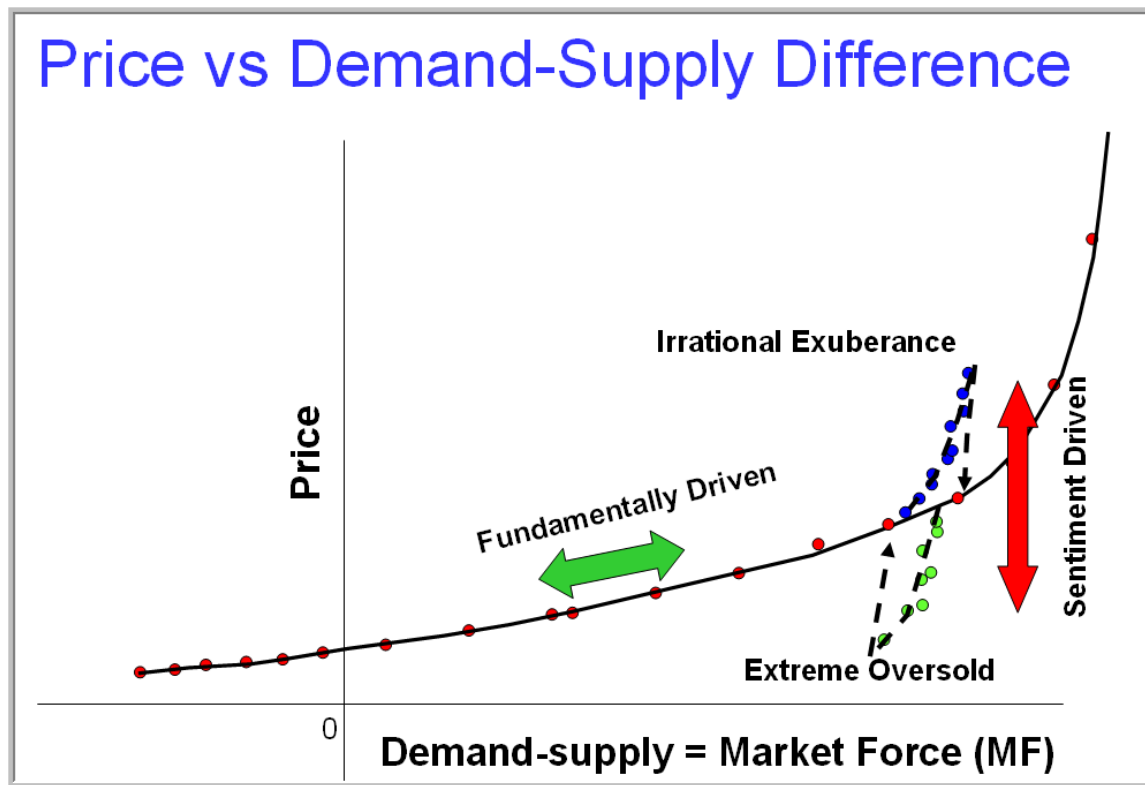


Figure 3 demonstrates market mechanics. A perfectly fundamentally driven market proceeds as shown by the green arrow. Price changes as the demand-supply imbalance changes and follows the exponential relationship. In other words the price is the equilibrium price as dictated by supply-demand imbalance. A bull market would mean the data follows the curve from left to right while a bear market would mean the data moves along the curve from right to left. The clustered blue dots show what happens with exuberant rallies as sentiment drives prices higher than the equilibrium, while extreme pessimism, as shown by the green dots, drives the price below the equilibrium price. A good analogy would be a beach ball floating on a river. The ball could be released at the river's source and it would flow down stream toward the sea or it could be pushed gently upstream toward the river's source. At any time the ball could also be pushed below water or the wind could pick it up off the water but the ball will return eventually to its equilibrium of floating on the water.

We will see that the equilibrium price is an excellent way of predicting an appropriate short term trading exit or entry point as the departure from equilibrium can only go so far before there will be an expected return to the mean equilibrium price.

Modeling Commodity Prices

Figure 4 shows a cross-plot for the gold price and market force from 2000 to 2009. The correlation is fitted with an exponential relationship (the equation is shown on the chart) as was predicted from theory. The chart looks very similar to our theoretical chart of figure 3.

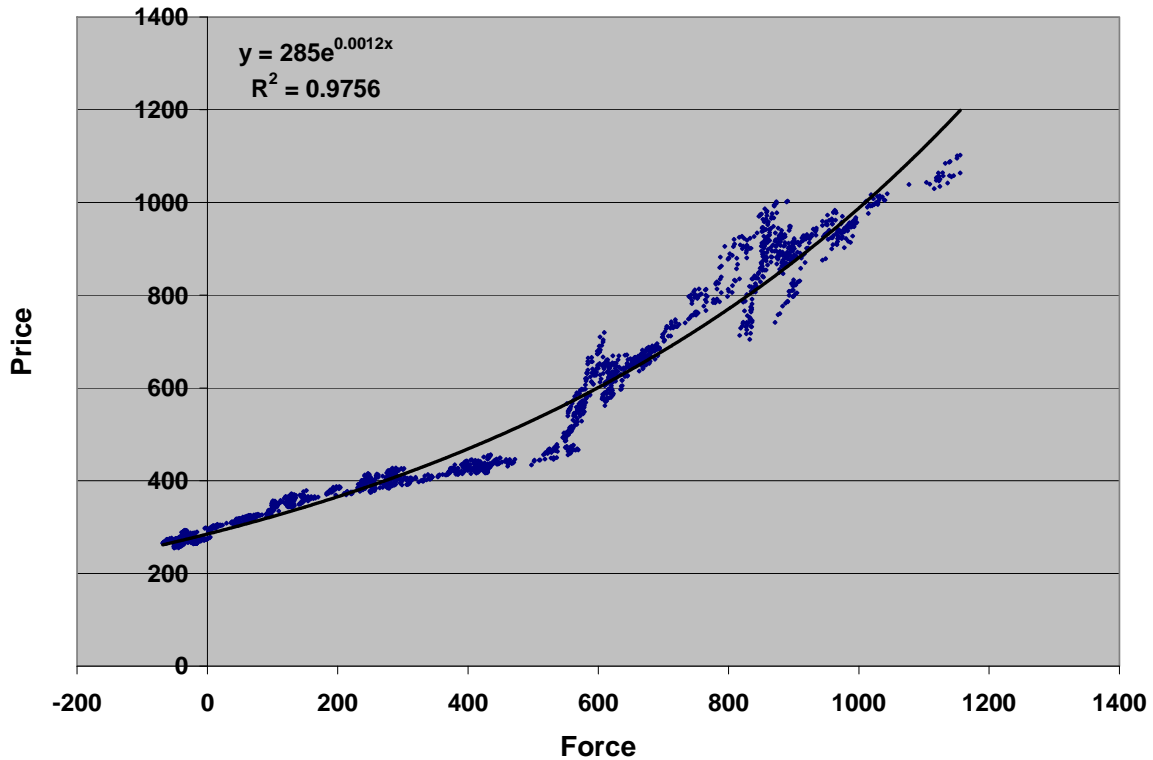


Figure 4: Gold Price versus Force Cross-plot 2000-2009

It can be seen in this actual data that there are departures to the upside and the downside from this equilibrium price relationship as theory predicted. Using the equation of this exponential relationship and the historical market force data the equilibrium gold price can be calculated. The equilibrium gold price and the actual gold price are shown in Figure 5. It can be seen that over 27 years the comparison is excellent. What is clear is that when the actual price deviates from the equilibrium it will at some point regress back to it. This is the principle of Equilibrium Regressional Analysis (ERA) to analyze and predict this very fundamental mechanism that is founded in economic theory.

While the principle has been demonstrated using gold as an example it can be seen from figure 6 that other commodities exhibit similar relationships between price and force.

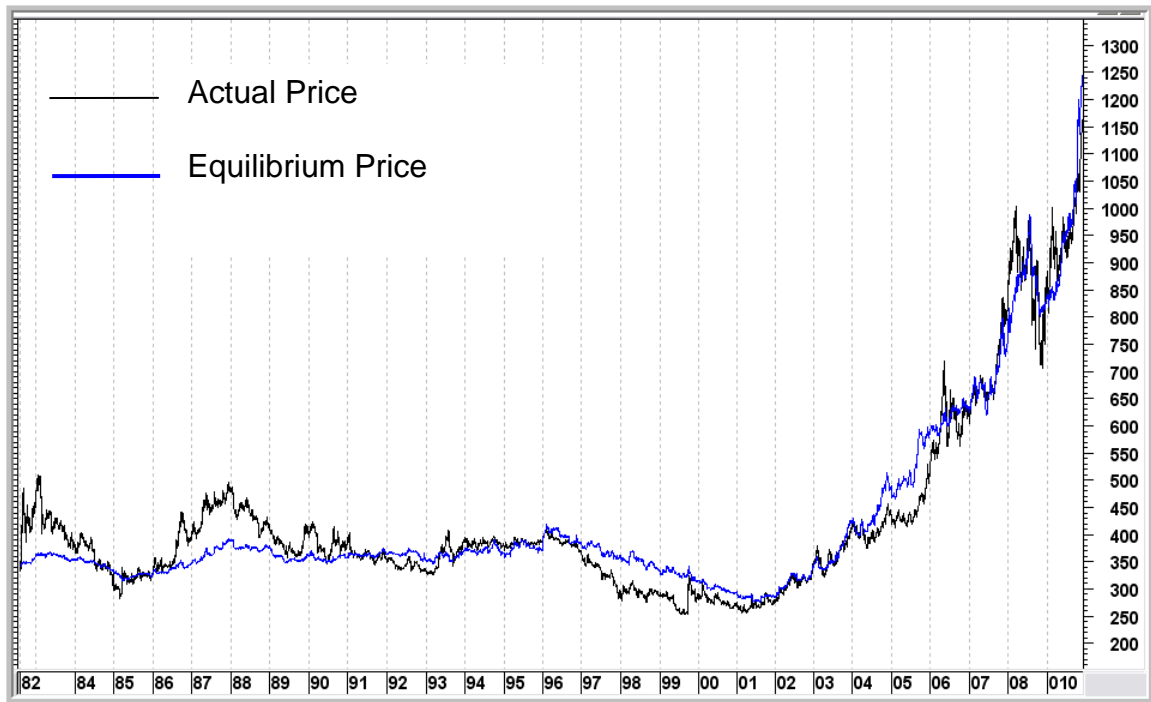


Figure 5: Actual Gold Price & Equilibrium Price 1982-2009

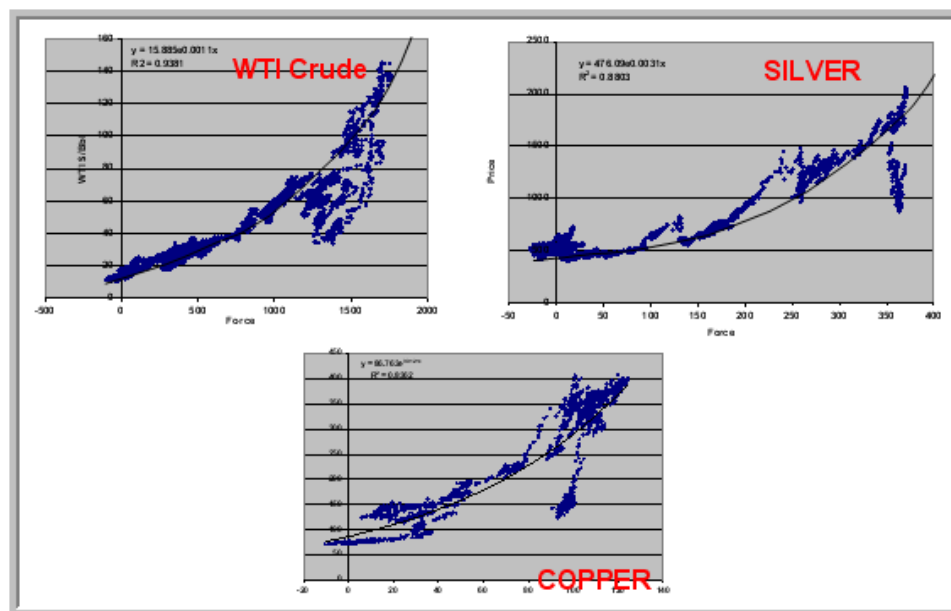


Figure 6: An exponential relationship between price and force is seen with other commodities

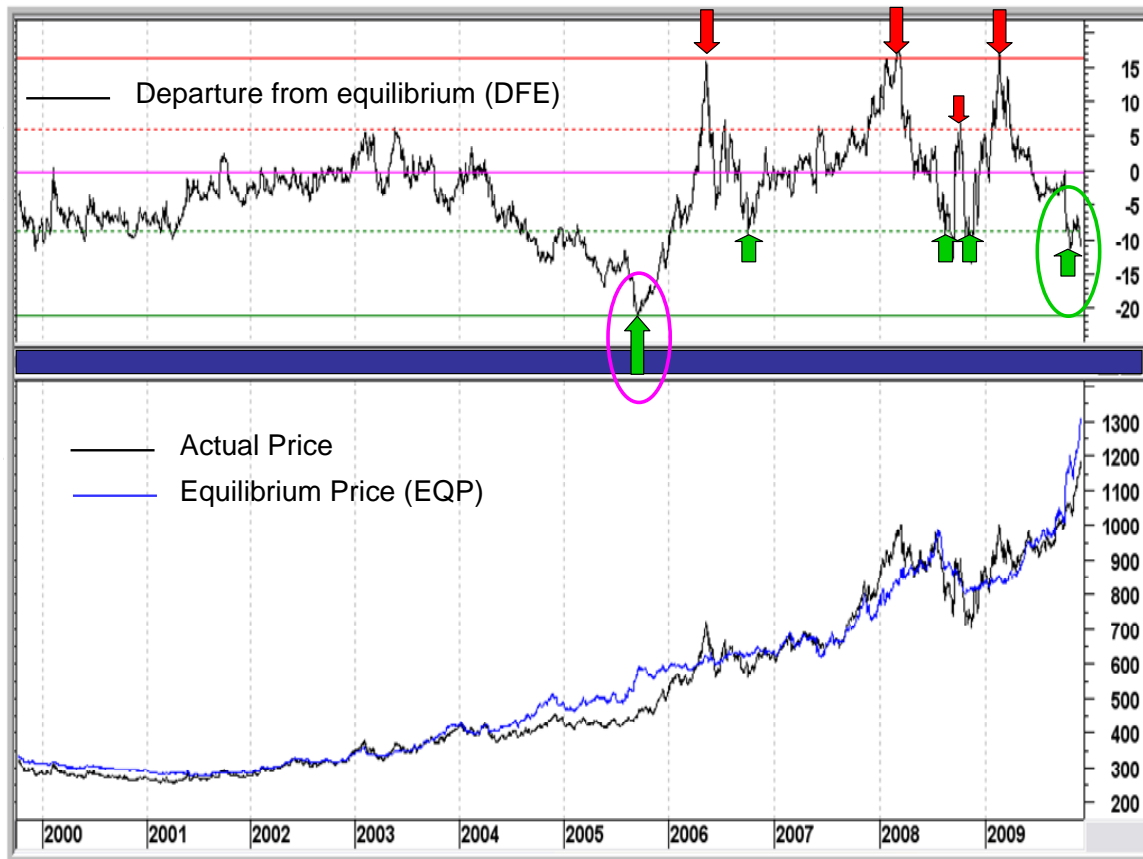


Figure 7: Departure from Equilibrium 2000-2009

The lower half of Figure 7 repeats what was shown in Figure 5 except on a zoomed-in scale of 2000-2009, which is the present bull market in gold. The upper part of the figure shows the departure from equilibrium (DFE) which is the percentage departure of the actual price from the equilibrium price (EQP). Simplistically speaking there is a “sell zone” between the solid red line and the dashed red line and a “buy zone” between the solid green line and the dashed green line. It can be seen that the major interim tops of 2006, 2008 and 2009 are easily determined as shown by the red arrows. There are also some major entry points shown with green arrows (for clarity not all buy and sell points are indicated).

Particular attention should be given to the pink and green ellipses. The pink ellipse corresponds to the same time as the pink ellipse in figure 1 where using a channel trend on MFA would have given a premature sell point. Using ERA this same point is correctly identified as an extreme buy point.

The green circle is the current data of November 2009. It is also indicating a buy point, not a sell point suggesting gold has a long way to climb before a major correction.



Figure 8: Sample of Gold ERA Forecast Chart

Forecasting future price changes is done by first of all examining the MFA chart of figure 1 (without trend channels) to determine the primary trend of the market. Then the ERA forecast chart is generated (Figure 8 shows a sample chart). The upper segment of the chart shows two proprietary oscillators. The ERA (red curve) is derived from the departure from equilibrium (DFE) explained above and the OSC1 (blue curve) is a complimentary oscillator to help confirm the short term price forecast. While our analysis techniques are multi-faceted the price forecasting essentially centers around the rise and fall of the ERA curve, while trading points are determined by it reaching extremes. The central segment of the chart shows the 15 day price forecasts. These were generated in “blind tests” on the historical data looking only at the ERA and OSC1 and without any price data. A “buy” and a “sell” trade are shown as indicated by the green and red arrows (not all likely trades are shown to maintain clarity).

The lower segment of the chart shows in bar format the actual price change in percentage terms over the same 15 day period as the corresponding forecast that is indicated by the dot vertically above each bar. In forecasting the direction of short term price moves (15 days) that were greater than 3% the ERA returned over 90% correct calls.

The track record we have achieved with our existing proprietary techniques has been extremely good but we are confident that MFA-ERA analysis will bring even more precision in identifying short term trends and the appropriate trading entry and exit points.

Adrian Douglas
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