

The Fisher Indicator

Forex-Breakout-System

With extracts from the article "The Inverse Fisher Transform" by John Ehlers

This article may at first appear very technical, but once you understand how the Fisher indicator works, and what it shows, you'll increase your success in timing your trade.

The purpose of technical indicators is to help with your timing decisions to buy or sell.

Hopefully, the signals are clear and unequivocal. However, more often than not your decision to pull the trigger is accompanied by crossing your fingers. Even if you have placed only a few trades you know the drill...

We've made it easier for you with this custom indicator...



The rules for the fisher are basically...

- Only Buy when the Bars are Green (below the zero line and rising)
- Only Sell when the Bars are Red (above the zero line and falling)
- Move to break-even when the bars are yellow, and manage your trailing stops.

How the Fisher works...

In this article I will show you a way to make your oscillator-type indicators make clear black-or-white indication of the time to buy or sell. I will do this by using the Inverse Fisher Transform to alter the Probability Distribution Function (PDF) of your indicators. In the past I have noted that the PDF of price and indicators do not have a Gaussian, or Normal, probability distribution. A Gaussian PDF is the familiar bell-shaped curve where the long “tails” mean that wide deviations from the mean occur with relatively low probability. The Fisher Transform can be applied to almost any normalized data set to make the resulting PDF nearly Gaussian, with the result that the turning points are sharply peaked and easy to identify.

The Fisher Transform is defined by the equation:

$$1. \quad y = 0.5 * \ln((1+x) / (1-x))$$

Whereas the Fisher Transform is expansive, the Inverse Fisher Transform is compressive. The Inverse Fisher Transform is found by solving equation 1 for x in terms of y. The Inverse Fisher Transform is:

$$2. \quad x = (e^{2y}-1) / (e^{2y}+1)$$

How the Fisher looks...

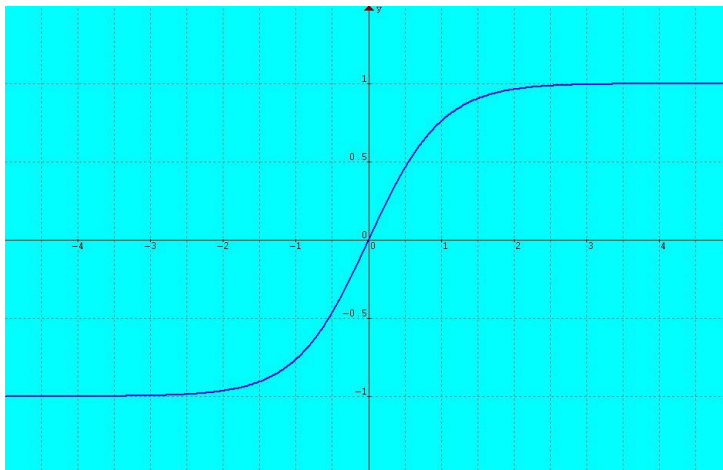


Figure 1. Transfer Response of the Inverse Fisher Transform Compresses the Output to be between -1 and +1

One of the more popular technical indicators is a Stochastic RSI. This indicator starts by taking an RSI of price. Then, a Stochastic of that RSI is taken to limit the output to be between 0 and 100. Translating and scaling, this is mathematically the same as varying between -1 and $+1$.

This is just the kind of maximum swing suited for the Inverse Fisher Transform. I used a 10 bar weighted moving average to compute and smooth the value and ultimately remove some spurious trading signals. There is no magic in this average. It could have fewer bars to have less lag or it could be an Exponential Moving Average. Its function is just to be a smoother



The transform is calculated as the variable and then plotted. The code also plots output reference lines at -0.5 and $+0.5$.

The Inverse Fisher Transform has even wider potential applications. Since the transformed waveform is limited to the range between -1 and $+1$, total energy in the wave is limited. I am particularly intrigued that convergence is guaranteed in some linear predictive algorithms when the energy in the wave is limited. Thus research may reveal still more exciting new results for traders.

More importantly, for the present, I have shown how using the Inverse Fisher Transform can let you have greater confidence (and perhaps uncross your fingers) when you place your trades.

For more information on the trading system we use, go to

www.forex-breakout-system.com

Happy trading

Dave.