Systematic\_Testing\_of\_Indicator\_Part2\_LongTerm\_181111TM

**PART 2: LONG-TERM (ALIGNMENT) INDICATOR**

A comprehensive unconventional indicator is currently being developed to represent the application of the Apiary Alignment Strategy combined with various other aspects of Fractal Price Behavior. The design and testing of this indicator is being undertaken in two parts, the first of which was documented previously. The second part, as documented here, covers periods of up to whichever is the lesser of the maximum amount of data available or 16,000 bars using a single timeframe.

The Long-Term part of the custom-designed indicator is described now. Its logic included:

1. The direction of the prevailing trend, determined over each of a series of successively increasing time intervals, and then aggregated to give a measure of net trend direction and stability.
2. Momentum, as defined by trend slope normalized by ATR to allow compatibility over all financial securities, calculated for each interval.
3. R-squared = square of the correlation coefficient between price and a linear ramp, and as such a measure of “smoothness” of the trend slope.
4. Momentum and R-squared were multiplied together to give a “roughness-adjusted” normalized slope for each of the considered periodicities, which were then averaged together to give an average value of Adjusted Slope.
5. Where items a) and d) were consistent, the direction of both was determined and the individual direction components were aggregated for all of the time period sub-intervals.
6. The resulting direction and strength measures were then used to generate Buy / Sell / Hold signals.

This indicator provides one possible measure of “trend alignment” consistent with Apiary’s “Alignment Strategy”. Note that a range of other alternative indicator calculation methods are of course possible.

As per the Part1 = Short Term component of the planned composite indicator, testing was based not only on FX pairs but also on other financial securities as well, consistent with Stridsman’s concept that: “… whether a strategy is market specific or not, it is still a good idea to make sure that it works in as many markets as possible”. (Reference: Thomas Stridsman, “Trading Systems That Work: Building and Evaluating Effective Trading Systems”, McGraw-Hill, 2001).

The results obtained for the Long-Term “Alignment” Indicator, as presented below, were found to be significantly different and generally better compared to those for the Short-Term component of the indicator that was described previously.

As previously, total number of securities tested = 100, consisting of exactly the same selection of 50 stocks, 20 stock market indices, 15 futures contracts, and 15 FX currency pairs. Each of these 100 securities was again tested using two different variations of exits using only indicator rules (not TP or other stops). Results were again defined as either “success” = profitable result (excluding transaction costs), or “unsuccessful” = un-profitable, i.e. loss-making. The current results are summarized below.

Stock Indices: success rate = 90% (compared to 70-80% for the Short-Term indicator).

Stocks (US & Aust): success rate = 72% to 94% (compared to 58% for the Short-Term indicator).

Futures: success rate = 53% (compared to 33% to 47% for the Short-Term indicator).

FX Currencies: success rate = 27 to 67% (compared to 27% for the Short-Term indicator).

We see that, for ALL types of financial securities considered (indices, stocks, futures, FX) the results with the Long-Term Alignment indicator considered here are at least as good and generally significantly better than the results obtained earlier with the Short-Term indicator which considered mainly just the fractal-type roughness of the price series in the short-term.

For all securities, the performance of the Long-Term indicator is clearly better-than-random, and in the case of stocks and stock indices it is excellent. This strongly suggests that this longer-term indicator provides excellent potential value even on a stand-alone basis. For currencies, the results were found to be highly variable depending on whether the exit was determined by the end of the indicator’s Buy/Sell signal or by the end of the Hold Long / Hold Short signal, with latter (i.e. exit at the end of the Hold signal) appearing to be generally the better choice.

Recall that with the Short-Term indicator applied to FX (as documented previously), results appeared favorable only in the case of JPY pairs, which was a surprising result. With the Long-Term indicator, as described here, this anomalous behavior regarding JPY is less pronounced.

Specifically it was observed that results with the Long-Term (Alignment type) indicator are as follows:

1. Consistently NEGATIVE (i.e. un-profitable) for the following FX pairs: AUDUSD, EURAUD, EURCAD, GBPUSD, USDCAD irrespective of whether exit was made on the Buy/Sell signal or on the end of the Hold signal.
2. Consistently POSITIVE (i.e. profitable) for the following FX pairs: EURUSD and USDCHF irrespective of whether exit was made on the Buy/Sell signal or on the end of the Hold signal.
3. Sometimes positive and sometimes negative for the remaining FX pairs: EURGBP, EURJPY, GBPJPY, NZDJPY, NZDUSD, USDJPY, XAGUSD depending on whether exit was made on the Buy/Sell signal or on the end of the Hold signal, but with exit on the end of the Hold signal generally being the better of the two choices.

Conclusions and comparison of results:

The short-term part of the indicator, when tested alone (as described in separate document previously), appeared to be clearly favorable for trading Stock Indices, and for FX although ONLY for JPY pairs.

The long-term part of the indicator, consistent with Apiary’s “Alignment” paper, when tested alone, was successful in 75% of all 200 cases. These results were in general significantly better than those for the short-term part of the indicator.

Notwithstanding the generally good results overall, there was a considerable range of outcomes for FX pairs, with only EURUSD and USDCHF being unambiguously favorable, and all pairs involving JPY being at least partially favorable.

For those FX pairs that were NOT favorable, it must be noted that this test was for the indicator ONLY, not for a full trading system. Entry & exits were based on the indicator signals ALONE, without using entry, trailing or TP stops.

Note that actual returns have deliberately NOT been reported here, but only “favorable” = profitable, or “not favorable” = unprofitable = loss-producing, as we are currently testing only the viability of the indicator alone, rather than the function of a full trading system.

Based on results so far, both Part1 (Short-Term) and Part 2 (Long-Term) indicator components appear to be potentially viable and to deserve further consideration. The next step will therefore be the combination of both the Short-Term (Part1) and the Longer-Term (Part 2 = Alignment) components of the indicator as planned.