AKJ Quantitative and Systematic Trading

Modular, systematic discovery of the inception of a trend

A Brief Introduction

By combining proprietary indicators that highlight momentum, directional movement and cyclical patterns within individual instruments, and identifying specific patterns within tick data to affirm these patterns, we aim to pinpoint the **inception of trends across multiple asset classes and time frames** and predict the trend length and profitability of each potential trade according to the specific market trend and volatility patterns.

The goal of this model is to achieve consistent absolute returns and protect capital, while obtaining low volatility performance returns during a wide range of economic and market environments.

The Proprietary Components

The major components of the model, their functions and their interactions are explained below.

- ***Momentum Indicator*** -gauges the current strength of the stock relative to its past performance and identifies potential reversal or significant inflection points. The indicator is used on its own rather than looking for divergence patterns and is very similar to the Relative Strength Index. By removing noise from the signal, we get a clear picture of the direction and strength of the trend.
- ***Cyclical Indicator-*** measures the relationship between price and moving average. More specifically, it measures the normal deviations from that average so that we can identify where a stock is in its current cycle given a specific time frame. When viewed in combination with the other modules, it can provide additional confirmation of a trend.
- ***Directional Indicator-*** provides signals for price breaks from a trading range. Based on the DMI indicator by Welles Wilder, this signal is smoothed and presented with minimal lag, allowing very quick detection of market direction.
- ***Tick Data Analysis*** detects abnormal trading activity in the instrument by keeping track of data such as average trade size, average bid-ask spread and money flow. Current data is compared to past data in order to quickly identify abnormal activity (i.e., someone aggressively acquiring or selling the instrument). The data is weighted to give greater value to the most recent activity and is compared to the instrument's peers and the general market to ensure that the abnormal activity can be attributed to the instrument itself.
- ***Technical Analysis Filter*** identifies and monitors common technical levels such as the 50 day moving average and 200 day moving average. Positions are either changed or not traded as appropriate according to where the levels are in relation to the trading signal. Other levels, such as pivot points for the day, are highlighted in order to monitor potential volume spikes at these specific levels. Also included within this filter are expected dates of Earnings, Results and Ex-Dividend dates.
- ***Overall Market Directional Filter*** sits above the other modules and anticipates the overall short term market direction. The direction of trades and length of anticipated trend for each instrument are dictated by the expected trend in the overall market. The module is based on index option prices that are relevant to the individual instrument. A strip

of strike prices, including out of the money puts and calls, is used to incorporate information from the volatility skew. A derivative of this calculation is then used to establish where the market is in terms of its expected short term cycle.

- ***Volatility Calculations for Exits and Stop Losses*** Once the potential trades for the session have been discovered and the entry point decided, each trade is assigned three staged exit points and a Stop-Loss. Each of these points is calculated using historic volatility calculations for the instrument and the market as a whole with a view to optimising the length of the trade.

  All these factors are combined according to your criteria for markets and time frame to produce a daily list of potential trades that suit your individual portfolio or trading style.

Selecting Trades

You will be issued with a list of potential trades based on time frame and market criteria. Then it's up to you. You can trade the entire portfolio or pick out the trades you prefer.

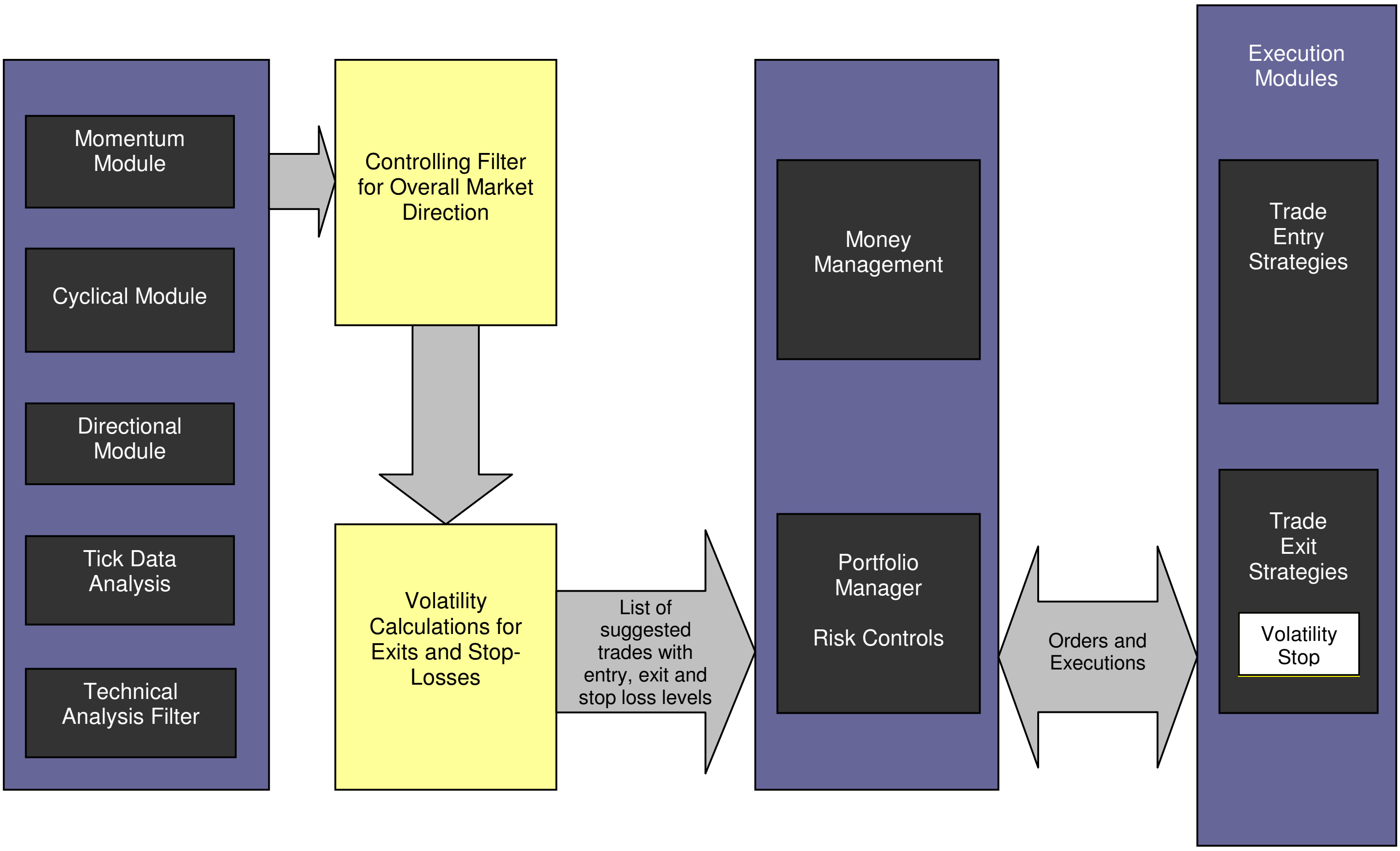
Portfolio and Risk Management

Risk management for this model can be adapted to any portfolio size, as it is based on the efficient allocation of the maximum amount of capital possible during each trading period. Adjustments can be made according to the risk profile of each individual trade (where risk is defined by historic volatility for each instrument and more recent volatility figures are given more weighting then more distant volatility numbers). Essentially, the trades with a higher potential loss receive less capital allocation than those trades with a lower potential loss.

Therefore, overall money management is an outcome of balancing ratios between realized and unrealized profits and losses to lower the overall volatility of returns.

Optimization and back-testing

We optimize the parameters within the model over time using technology. During back testing, we ensure conditions are as realistic as possible by accounting for feasibility of the model in different markets, removing biases of assumed execution prices and incorporating realistic trading costs. As with all systems, we subject all results to ongoing rigorous and critical statistical analysis.


Momentum Module
Cyclical Module
Directional Module
Tick Data Analysis
Technical Analysis Filter
Controlling Filter for Overall Market Direction
Volatility Calculations for Exits and Stop-Losses
List of suggested trades with entry, exit and stop loss levels
Money Management
Portfolio Manager
Risk Controls
Orders and Executions
Execution Modules
Trade Entry Strategies
Trade Exit Strategies
Volatility Stop