Prudence-Behavioural Framework - Fundamentals vs Statistics

There are 2 main types of strategies. One revolves around fundamentals. The other revolves around statistics and patterns.

We now introduce the Prudence-Behavioural Framework to understand these strategies. This framework allows us to better understand our trading ideas.

The 2 types of strategies in our framework are 1) Market Prudence and 2) Behavioural.

Market Prudence

Market Prudent: Market prudent trading strategies are based on an identifiable, falsifiable and fundamental market inefficiencies.

We have been talking about this for a long time so we shan't elaborate much.

Examples

- Use image processing algorithms to analyse satellite images of corn farms. Predict harvest numbers and trade accordingly.
- Prices of gold futures traded at different prices on different exchanges. Buy the cheaper one and sell the higher one.
- Knowledge of major accident at an important factory. Short the stock before the news spread.
- Trade by analysing patterns of buyers and sellers using information from the limit order book

Pros

- Better trade management – Know when to modify, shut down or leave our trading robots as it is. (For manual trading: Know when to increase our sizing, when to cut etc). More on this in a later lecture.
- Proactive – Better trade management will also mean we can be more proactive in our trading. We can foresee risks and act before disasters or prosperous events happen.
- Faster feedback loop – It is easier to tell if a strategy is working or not.

- Better trading psychology – This happens as we are more in control (though note that in trading, there are probably still many things out of our control).
- Less false positives – Ideas based on some market fundamentals usually work
- Higher sizing – Better trade management will increase the expected return per trade. This allows us to risk more.

Cons

- Requires more domain expertise – Difficult to find ideas without domain expertise in more specific asset classes and workings of the market.
- Smaller universe of strategies – Can't take risk where reason of the trade is not falsifiable.

Behavioural

Behavioural: Behavioural strategies are based on relationships and statistical patterns.

This is something new. Many students sent me queries on trading ideas. Most of them inquire on ideas that fall under the behavioural type.

We don't particularly endorse behavioural type strategies as it is difficult to trade manage (we will talk about trade management in a later lecture), easily misunderstood and abused. Mis-usage usually involves identifying patterns and correlations that do not exist - spurious correlation[1]!

However, if executed effectively, it can be quite profitable

Examples

- Correlation trades. Using a leading product/data to proxy the behaviour of the product you are trading.
- Cointegration trades. Trade the mean reversion tendencies on multiple products.
    - Betting that a large group of securities (usually of similar country, sector or characteristics) will behave in a mean reversion[2] manner. This is known as a statistical arbitrage (aka StatArb) strategy[3].
- Analysing buying and selling patterns on the order book.
- General market patterns. Trending and mean-reversion. (Not recommended unless coupled with market prudence. See mixed type below)

Pros

- Slightly easier to find ideas – Possible to mine data for ideas as opposed to requiring specific domain expertise
- Larger universe of strategies – We can design and deploy strategies where reason of the trade is not falsifiable.

Cons

- Trade management difficulty – We still know when to modify, shut down or leave our trading robots as it is. But this knowledge relies on numbers and statistics based on our backtests. Since the past is not a good predictor of the future, this might be a dangerous game.
- Reactive – We are sitting ducks. We can only react when the performance or certain aspects of our strategies do not match up to our backtests.

[1] https://en.wikipedia.org/wiki/Spurious_relationship
[2] https://en.wikipedia.org/wiki/Mean_reversion_(finance)
[3] https://en.wikipedia.org/wiki/Statistical_arbitrage

- Lower feedback loop – If your strategy runs over a long duration, it might take years before you know if you are doing well/badly or just lucky/unlucky.
- Poorer trading psychology – Having little control over what's happening will exacerbate bad psychological factors like fear, greed and hope.
- More false positives – We're susceptible to spurious patterns in the market. We might also tend to over-rely on the past. Things change constantly in the markets. These changes might render your backtests irrelevant and you might not realise it.
- Lower sizing – Because of more uncertainty and less control, your expected return of each trade is lower. Thus, your trading size should be lower.

Mixed Type

Strategies don't have to be strictly market prudent or behavioural. It could be a mix. Here are some examples:

Predominantly Market Prudent (with some behavioural aspects)

Market Prudence: Prices of gold futures traded at different prices on different exchanges. Buy the cheaper one and sell the higher one.

Behavioural: However, the prices don't converge after an hour. The usual behaviour is a convergence after a few minutes. We might have missed something. There might be something detrimental or uncertain happening behind the scenes. Thus, we close the trade and re-analyse.

Predominantly Behavioural (with some market prudent aspects)

Behavioural: Trade the mean reversion tendencies on 5 utility stocks in the same country.

Market Prudence: One of the stock diverges much more than usual. We research and realise they just got caught for accounting fraud. This is outside of the scope of our model. We then have to decide to cut this trade, leave it or change our sizing in some ways.