COMP226: Slides 17

Momentum strategies

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Overview

- **Two example momentum strategies**
- **Stop losses and profit targets**
- **Position sizing**

Momentum strategies

- aim to exploit **continuation of a trend**
- mostly need to be implemented across a **portfolio** of markets
- often cut losers and let winners run; i.e., as suggested previously, they will have a stop loss but no profit target

We describe **two examples of simple momentum strategies**

Example 1: Triple moving average

- This is a textbook "technical analysis" system
- **Three moving averages** of price: **short**, **medium**, **long**
- Increasing timeframes: **short** < **medium** < **long**
- Trades when price movement is **consistent**

MA		MA		MA	Position
short	>	medium	>	long	long
short	<	medium	<	long	short

System is **flat** when relationship between short MA and medium MA does not match relationship between medium MA and long MA

Example 2: Relative strength

Asset classes/ industry sectors have different relationships with the business cycle. This **simple example** uses 5 Exchange-Traded Funds (ETFs):

- SPY - US stocks
- EFA - Foreign stocks
- BND - Bonds
- VNQ - Real Estate Investment Trusts (REITs)
- GSG - Commodities

Pick 3 ETFs with strongest 12 month momentum (price change) into your portfolio and weight them equally. Rebalance once every month.

Stop losses and profit targets

Stop losses and **profit targets** (discussed previously) provide a exit strategy based on the performance of the trade

Often **trailing** stop loss is used:

A trailing stop measures the loss relative to the best price (high for a long trade, low for a short trade) since the trade was entered, rather than from the entry price

Often (**but not always**) the exits are included as follows:

exit \ strategy	Momentum	Mean-reversion
Stop loss	Yes	No
Profit target	No	Yes

Position sizing

Position sizing is crucial, especially when trading in multiple markets

We saw this is the context of spread trading, where the **position ratio** measures the ratio of sizes for the two legs of the spread

Warning

If the position sizing across multiple instruments is not carefully chosen according to expected moves in those markets, then some instruments will likely dominate the performance of the portfolio

Timeframe

We have touched on the issue of timeframe in terms of the lookback of moving averages: **the longer the lookback, the longer the timeframe it targets**

Clearly **timeframe is constrained by the available data**:

- for high-frequency trading one needs order book and tick data
- daily data is not sufficient to investigate intra-day strategies

Different timeframes exhibit different pheonomena. For example, some studies show that equities exhibit momentum in the short-term and mean-reversion in the longer term.

Thus, by **targeting different timeframes** one may be able to employ a range of **different types of trading strategy**, which can be a usual form of **diversification**

Further example of strategies

See **Ernie Chan's book** [Cha13]:

- Chapter 4: Mean Reversion of Stocks and ETFs
- Chapter 5: Mean Reversion of Currencies and Futures
- Chapter 6: Interday Momentum Strategies
- Chapter 7: Intraday Momentum Strategies

Two website you may want to investigate are:

- https://www.quantopian.com/
- http://quantpedia.com/Screener

Final word

Warning

No trading strategy should be applied "off the shelf" without **careful backtesting**, which is our next topic