NOVA SCHOOL OF BUSINESS & ECONOMICS

Hedge Funds

Trading I

Gonçalo Sommer Ribeiro

Trading
Definition

Objective: try to **time the market in the short run** (yearly, monthly, weekly, daily, hourly, minute, second, nano-second…)

1) Very difficult: **EMH =** prices follow a random walk (supposedly)
2) Look for small inefficiencies and keep on doing continuous research to find new patterns: **AMH** (Adaptative Market Hypothesis) means every explorable opportunity will fade away as more agents explore it
3) More frequent in **illiquid**, **discontinuous**, **volatile**, **irrational** markets, but … **transaction costs** tend to eat up most of performance. Balancing act.

Think **different** and **simple** (avoid over-fitting)

Info Sharpe ≈ 1 is good, while > 2 is probably wrong

Trading

Trading Styles

1) Opportunistic x **Systematic**

2) Subjective x **Quantitative**

3) **Technical x Fundamental x Other**

Technical analysis principles are:

1) All info is in the prices

2) Prices reflect sentiment

3) Patterns repeat themselves

- **Trend Following** – Rate-of-Change (RoC), MA, slope, breakouts, etc
- **Mean Reversion** – Range Trading, Bollinger bands, MACD, Fibonacci*, RSI** (overbought / oversold), etc
- **Other Patterns –** supports x resistances, rectangles, triangles, head and shoulders, double tops / bottoms, etc

(see TECH on Bloomberg for details)

* Phi = 1.618, Golden Ratio, Fibonacci series
** Speed of movement

Fundamental analysis principles are:

1) Use more data than just prices
2) Accounting data and Macro data
3) Try to assess real value of assets

- **Value** – PE, PCF, DY, P/B, Leverage, Ev/Ebitda, ROE, Accruals, Intangibles, etc
- **Growth** – PEG, Price to Sales, PS Growth, Asset Growth, Earning Announcements, etc
  Also, qualitative changes – New Products, New Management, Disruptive Innovations, etc – usually more difficult to model
- **Macro** – CPI, GDP, Unemployment, Budget Deficit, Current Account, M3, etc – use Lag?
- **Other** – Interest Rates, Yield Curve Slope, FX Rates, Sentiment, etc

<u>Miscellaneous types of analysis</u>:

1) Anything that can be backtested – usually based on data/big data followed by data analysis

- **Market Anomalies** – SIM, DOM, Elections, Lunar Phases, Rainy days, Night & Day return patterns, Football Results, Daily Patterns, Holiday Periods, etc
- **Artificial Intelligence** – Neural Networks, Pattern Recognition / Optimization, Genetic Algorithms, Hidden Markov Models, Dynamic Time Warping, etc
- **Physics** – Climate models, Earthquakes, Fluid Dynamics, Fractals, etc
- **Alternative Data** – Market Data, Data Scraping, Trading pit noise, News reading, Google, Social Networks (Twitter, Facebook, etc)

Trading
Trading Styles
What Analysis works better?

- **Fundamentals** look better: most people are more comfortable with them

"In the ***short term*** *the market is a voting machine, in the* ***long term*** *it is a weighting machine."* Benjamin Graham

- **Technical** look a bit naive

  But they are easier to use, and helpful to measure sentiment and to access repetitive market conditions

  Sometimes they become a "self full-filing prophecy"

"Markets can stay ***irrational*** *longer than you can stay solvent."* John M Keynes

- **Other analysis** is more complex, less explored but if easily testable is quickly explored

Back test everything – search for good Sharpe ratio + stable profile = good trading system

Trading
Conclusions

- Beware of **over-fitting** → compare In Sample with Out of Sample

"If you torture the data long enough it will confess anything." Ronald Coase

- Pay attention to **transaction costs** (fees + bid-ask)

- **Diversify** to minimize impact of:

1) Model mis-specification
2) Market pattern changes

Ex. MODvg, Dom, Night&Day