IQIC - Quantitative Tools

#2: Strategy Rules

From Hypothesis to Strategy

- A **hypothesis** is a testable belief (e.g., "stocks with rising earnings tend to outperform").
- A **strategy** is the concrete set of rules that turns a hypothesis into repeatable trades.
- A true hypothesis can still fail as a strategy if the rules around it (timing, sizing, costs) are bad.
- A strategy is built from four pieces: universe, signal, entry/exit rules, and rebalancing.
- Two people can share a hypothesis and get different results depending on the strategy they build around it.

Opening the Investment Strategy

- The **universe** is the full set of assets you're allowed to trade — everything else is off-limits.
  - Examples: S&P 500 only, US equities above $1B market cap, or a specific sector.
- **Eligibility** filters narrow it further: liquidity minimums, exchange listing, no recent IPOs.
- Universe choice isn't neutral — the same signal can perform very differently across universes.
- Define your universe before your signal, so you don't cherry-pick assets that flatter your idea.

Entry and Exit Rules

- **Entry**: the exact condition that triggers a buy (e.g., "top 10% by momentum score").
- **Exit**: the rules that define when you sell; signal-based, time-based, or risk-based (stop-loss).
- Rules must be mechanical — two people following them should make the same trade.
- A strategy with entry rules but no exit rules isn't complete.
- Vague rules ("buy when it looks strong") aren't testable; precise rules ("buy when 12-month return ranks in top quintile") are.

Rebalancing Frequency

- Rebalancing **frequency** is how often you re-check and adjust the portfolio (daily → quarterly).
- Trade-off: faster rebalancing reacts quicker to changes in your signal, but also means more trades and costs more in transaction fees.
- Fast signals (momentum) suit frequent rebalancing; slow signals (value) don't need it as often.
- Rebalancing too often can hurt performance if costs outweigh the benefit.

Complete Example Strategy

Component	Rule
Universe	S&P 500
Signal	12-month price momentum
Entry	Top quintile by momentum score
Exit	Drop below 40%
Rebalance	Monthly

Strategy Rules Checklist

- ❑ Universe defined
- ❑ Signal specified
- ❑ Entry rule unambiguous
- ❑ Exit rule unambiguous
- ❑ Rebalancing justified

- ★ Reusable — students should be able to run their own idea through it.
- ★ If you can't fill every line, it's still a hypothesis, not a strategy.

Additional Resources

- Investopedia: “Trading Strategy” and “Rebalancing” overview articles
- Book: *Quantitative Trading* by Ernest Chan (intro chapters on building rule-based strategies)
- QuantConnect / QuantRocket docs — examples of coded entry/exit rules