03. Investor Profile, Portfolio Strategy & Story Framework

2. Portfolio Strategy

2.1 Investor Profile

Investor Type	Risk	Horizon	Objective	Typical Stock Types
1. **Cautious allocator**	Low	Medium-long	Capital preservation, low drawdown	Staples, ETFs, large caps
2. **Tactical swing trader**	Medium	Short-medium	Capture short-term inefficiencies	Blue chips, mid-caps
3. **Speculative growth seeker**	High	Short	Ride strong trends, tolerate drawdowns	Tech, crypto, biotech

- **Creating Investor Profile**
  - **Risk-averse**, but **not too conservative**
  - Willing to take **calculated risk** for higher returns
  - Values **risk-adjusted performance** (Sharpe, drawdown, volatility)
- Interested in **adaptive**, semi-active strategies

  - Our strategy design is motivated by Campbell & Viceira (2002), who distinguish long-term conservative investors from risk-seeking tactical investors. We assign signals and stocks accordingly to reflect those preferences.

  - Our strategies operate over short horizons (daily data), but the signals are based on economic features that Campbell & Viceira (2002) show are relevant for long-term investors. Thus, while we don't explicitly optimize a long-horizon portfolio, the selected signals remain theoretically justifiable.

  - Our investor exhibits **CRRA preferences** with a **low coefficient of relative risk aversion** \sigma, implying a relatively **risk-tolerant** behavior. They are willing to engage in dynamic trading strategies and accept moderate drawdowns in exchange for higher expected returns."

- **Investor Preferences**
  - 1. **Theoretical foundation**
    - we assume the investor follows a CRRA utility function with DARA behavior (Arrow, 1971; Pratt, 1964). - **Original Papers to cite**
  - 2. **Risk preferences**
    - This implies consistent risk aversion across different wealth levels, but increasing willingness to bear risk as wealth grows."
  - 3. **Implication for strategy**
    - Accordingly, we evaluate trading strategies not only based on returns but also risk-adjusted performance (e.g. Sharpe ratio, VaR), and diversify across signals with different volatility profiles."

    - We assume that the investor follows a utility function exhibiting **Constant Relative Risk Aversion (CRRA)** and **Decreasing Absolute Risk Aversion (DARA)**, as is standard in intertemporal asset allocation (Campbell & Viceira, 2002; Arrow, 1971; Pratt, 1964). These preferences imply that the investor is consistently risk-averse but willing to bear greater absolute

risk as wealth increases. A detailed discussion of this utility framework and the underlying Arrow–Pratt risk measures can be found in the author's prior work on risk preferences

- Ready-to-go text

  - We assume our representative investor follows a **Constant Relative Risk Aversion (CRRA)** utility function and exhibits **Decreasing Absolute Risk Aversion (DARA)** — a standard preference structure in intertemporal portfolio choice (Campbell & Viceira, 2002; Arrow, 1971; Pratt, 1964).This means:
  - The investor is **risk-averse**: they prefer safer outcomes to risky ones with equal expected value
  - They are willing to take **more absolute risk** as their wealth increases (DARA).
  - But their **risk appetite in relative terms** (e.g. risking 5% of wealth) stays constant (CRRA).
    These preferences are commonly represented by a **power utility function**:
    $$u(w) = \frac{w^{1-\sigma}}{1-\sigma}, \quad \sigma > 0$$

  where σ is the coefficient of relative risk aversion. For $\sigma = 1$, the function becomes logarithmic: $u(w) = \ln(w)$.
- This investor behavior justifies:
  - Evaluating strategies using **risk-adjusted metrics** (e.g., Sharpe ratio, drawdown, volatility)
  - Using signals with different volatility and performance characteristics
  - Allocating dynamically, depending on asset-specific risk-return profiles
  - In line with this profile, our signals are interpreted as **active risk management tools** that reflect the investor's willingness to adapt their exposure to changing market conditions while preserving long-term risk preferences.

2.2 Story Framework

Question	Example Answer (for TSLA)
What kind of stock is this?	High-growth, volatile, often driven by news and sentiment
What investor trades it?	Speculators or momentum traders
What's the market inefficiency here?	Price tends to overshoot → possible trend persistence
Which signal matches this behavior?	Momentum or trend-following signal like SMA crossover
Why now / in this regime?	Recent uptrend, tech sector rotation, strong earnings

Strategy Types

Strategy Type	Description	Risk Level	Best For	Comments
Moving Average Crossover	Buys when short MA > long MA (trend signal)	Medium	Trend-following stocks (e.g. TSLA)	Already implemented
Relative Strength Index (RSI)	Mean-reversion strategy: Buy when oversold, sell when overbought	Medium	Stable stocks (e.g. Unilever)	Risk-controlled entries
Volatility Filter (ATR-based)	Trade only during high or low volatility regimes	Medium–High	Biotech, crypto, small caps	Can be tuned to be safer
Momentum Ranking	Rank top-performing assets and invest in best 2–3	Medium	Sectors or ETF baskets	Good for sector rotation
Z-score Strategy	Mean-reversion based on standard deviations from historical mean	Medium	Low-volatility stocks	Uses risk/volatility logic directly

Strategy Type	Description	Risk Level	Best For	Comments
Breakout Strategy	Enter when price breaks above resistance or support	Higher risk	High-beta stocks, news-driven	Can be filtered with volume
Dual Momentum	Combines absolute and relative momentum across assets	Medium	Indexes, sector ETFs	Very strong empirical support

Our investor aims to maximize the Sharpe ratio while maintaining moderate risk exposure. We use **daily trading signals**, which are well-suited for this objective: they allow for timely reaction to price changes and dynamic portfolio adjustment. Since transaction costs are not included in this simulation, we focus on the **raw performance of signal logic**. In a real-world setting, higher-frequency signals would need to be evaluated against trading frictions.

"We selected [signal] for [stock] because it exhibits [behavior], and the signal's logic is designed to capture [opportunity]. This fits our investor's profile of [risk tolerance] and goal of [return metric, e.g., maximizing Sharpe]."