

Essence of the Cross Section

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September 2025

The Factor Zoo

- Hundreds of proposed signals predict stock returns (size, value, momentum, etc.).
- Problem: Whatever you sort on, looks important.
- Question: Which signals really matter?

Flipping the Question

Traditional approach

Sort stocks by characteristics → compare returns.

My approach

Sort stocks by returns → compare characteristics.

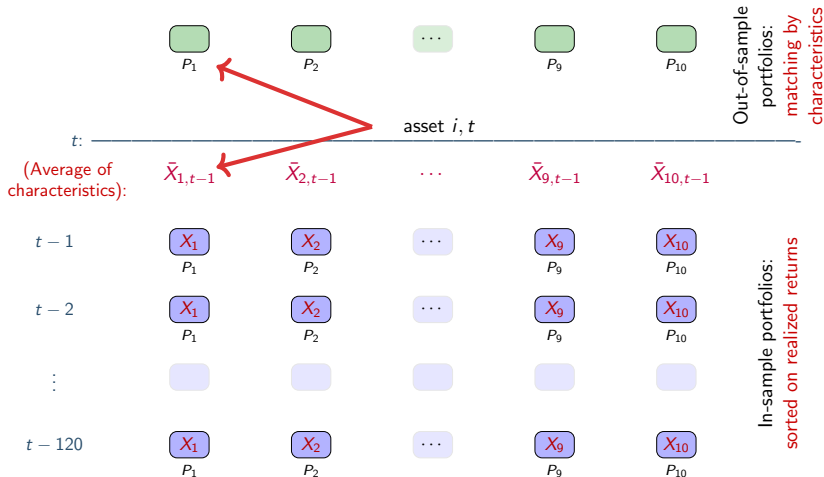
Reverse-engineering expected returns.

Method in Two Steps

1. **In-sample:** Sort stocks by realized returns (return-sorted portfolios).
2. **Out-of-sample:** Use firm characteristics to construct portfolios that mimic these return-sorted portfolios.

Realized returns embed information from *all* signals.

My asset classifications in a nutshell



Why This Matters?

- **Goal:** Get as close as possible to sorting on expected returns (true risk exposures).
- **Why start from returns?** Many drivers are unseen; realized returns summarize them all.
- **What I do:** Sort on returns in-sample, then use characteristics to find the *closest* look-alike portfolios out-of-sample to the return-sorted portfolios.
- **So what?** A clear ranking of which traits separate low vs. high expected returns, and better test assets.

How Well Does It Work?

- Very well.
- Out-of-sample long-short portfolio:
 - Monthly alpha $\approx 2.4\%$ ($t = 14.5$).
 - Annualized Sharpe ratio > 2 .
 - Equally-weighted? SR above 3.7.
- Outperforms:
 - Prominent machine learning methods.
 - Any single-characteristic sort.

What Really Drives Returns?

- **Price-based characteristics dominate:**
 - Momentum, reversals, announcement returns, volatility, industry returns.
- Fundamentals matter, but less.
- **Losers and winners look surprisingly alike:**
 - Both are small, young, illiquid, volatile.
 - What separates them is a handful of price-based signals.
- Nonlinearities and interactions add further power.

The Essence

Instead of chasing one signal at a time, reverse-engineer from realized returns.

The winners: price-based characteristics.

That is the essence of the cross section.

Thank you!

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