Replication: Factor Momentum

Based on Arnott, Clements, Kalesnik, Linnainmaa (2021)

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October 23, 2025

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- Replication Results

Factor vs. Industry Momentum Performance

Methodology:

- Implement 1-month formation, 1-month holding momentum strategy.
- Applied to 17 Fama-French industry portfolios and selected JKP factors.
- Long assets above median prior return, short assets below median.
- Equal-weighted within long/short legs, rebalanced monthly.
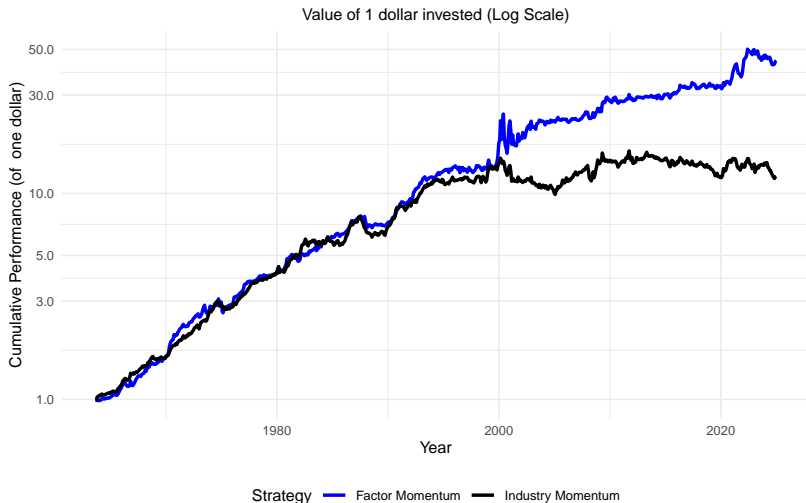- Sample: July 1963 - December 2024 (USA Data).

Figure: Cumulative Performance (Log Scale), July 1963 - Dec 2020

Factor Correlation Heatmap

Analysis:

- Correlation calculated among the selected JKP factors used in the factor momentum strategy.
- Helps understand the relationships between the factors being timed.

Upper Triangular Correlation Heatmap

Figure: Upper Triangular Correlation Heatmap of Selected US Equity Factors
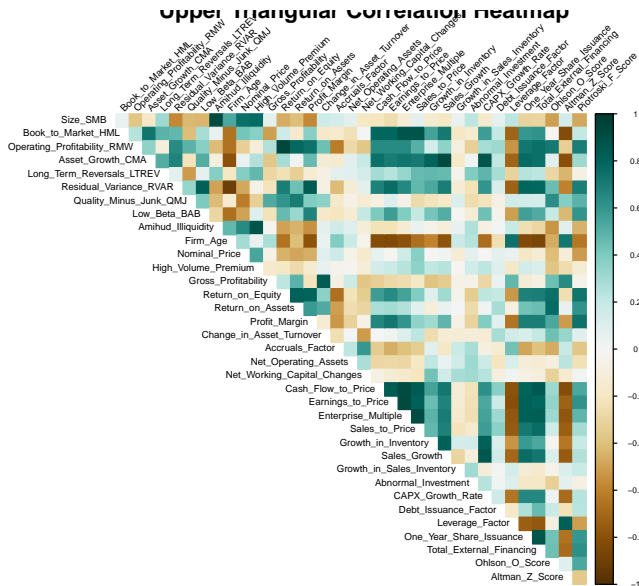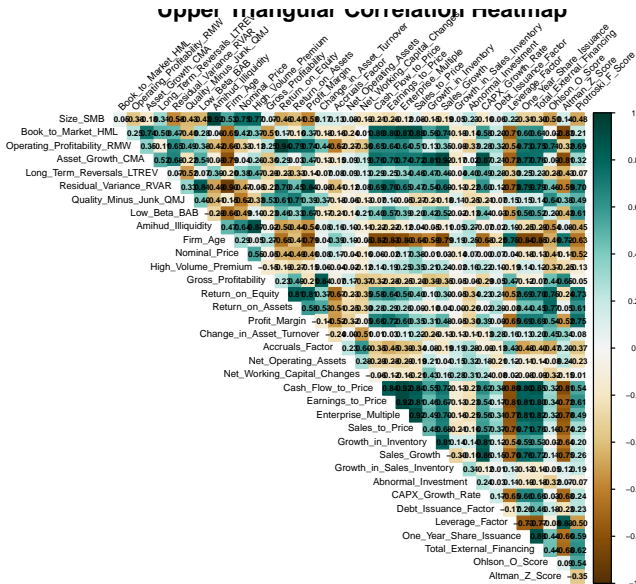
Key Findings & Conclusion

- **Replication Findings:**
  - Both industry and factor momentum strategies generated positive returns over the 1963-2020 period.
  - The cumulative performance plot visually suggests factor momentum was significantly stronger and more persistent, especially in later years, mirroring Figure 1 in Arnott et al. (2021).
  - Factor correlations vary, indicating diversification benefits within the factor universe itself.
- **Connection to Arnott et al. (2021):**
  - The paper argues that factor momentum *subsumes* industry momentum. While this R code doesn't perform the formal spanning regressions from the paper (Table 4), the performance difference is suggestive.
  - Arnott et al. show that momentum concentrates in high-eigenvalue principal component factors derived from industry-neutral factors. Our analysis uses the raw JKP factors directly.