Factor construction rules matter

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Standard

Factor construction rules revisited
Factor construction rules

01 Value funds hold growth stocks according to F&F grids

02 Rapid growth in the number of stock indices

03 Value and growth weights are applied separately within size universe

04 Passive portfolios are associated with active returns using a F&F model
Practical consequences

For factor investing, asset management (risk-based allocation) and performance measurement

How can we design persistent and independent risk factors?
Practical consequences

For factor investing, asset management (risk-based allocation) and performance measurement.

How can we design persistent and independent risk factors?
Design of risk factors

Three important criteria to improve factor construction rules

Dependency
Name
Symmetry

D  N  S
Design of risk factors

Three important criteria to improve factor construction rules

<table>
<thead>
<tr>
<th>Factor construction</th>
<th># Obs</th>
<th>Mean (in %)</th>
<th>SD (in %)</th>
<th>t-stat</th>
<th>Correlation Matrix</th>
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<td>Panel A: Independent - 2x3 - NYSE</td>
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</table>
Design of risk factors

Three important criteria to improve factor construction rules

- US Stocks Universe (1994)
  - NYSE
  - Median NYSE

- US Stocks Universe (1994)
  - NYSE-NASDAQ-AMEX
  - Median NYSE-NASDAQ-AMEX

- BH (157), BL (366), BM (304), SH (1420), SL (1378), SM (1258)
- BH (732), BL (733), BM (976), SH (732), SL (733), SM (977)
Design of risk factors

Three important criteria to improve factor construction rules

Independent (3x3)

Dependent (3x3)
Practical consequences

For factor investing, asset management (risk-based allocation) and performance measurement

How can we design persistent and independent risk factors?
Consequences

Risk factors

DNS Construction rules

• Risk-based allocation
• Performance measurement
• Factor persistence
  • Diversification and efficiency
  • Time dependence and seasonality

Source: Lambert, Fays, and Hübner (2018, WP)
Consequences

Risk factors

DNS Construction rules

- Time dependence and seasonality
Thank you for your attention!

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