Investment Factor Exposures Beyond Size and Value

Timothy Strauts
Director of Quantitative Research
June 25, 2019
Agenda

- Introduction
- Methodology
- Visualizations
- Fund Analysis Using Factors
Morningstar was an early adopter of factor investing in 1992 with the release of the Style Box.
Introducing The Factor Profile

- Later this year, Morningstar will release five additional factors that will be available for all equity mutual funds and ETFs
- We seek to capture the most relevant factors that drive portfolio returns
- A tool to analyze strategic beta funds
- With these new factors you can gain new insights into active portfolio manager process
Methodology
Research


Research


Measuring Factor Exposures

- Morningstar Risk Model – Global
  - Equity coverage: 30,000+ companies; 100,000+ securities
  - Portfolio coverage: 70,000+ portfolios; 200,000+ share classes
  - Factor performance, model statistics
## Factor Correlations


<table>
<thead>
<tr>
<th>Equities</th>
<th>Size</th>
<th>Value</th>
<th>Momentum</th>
<th>Quality</th>
<th>Yield</th>
<th>Volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value</td>
<td>0.17</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Momentum</td>
<td>-0.18</td>
<td>-0.19</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality</td>
<td>-0.01</td>
<td>-0.13</td>
<td>0.08</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yield</td>
<td>-0.43</td>
<td>0.18</td>
<td>0.05</td>
<td>0.10</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Volatility</td>
<td>0.58</td>
<td>0.00</td>
<td>-0.13</td>
<td>-0.11</td>
<td>-0.55</td>
<td></td>
</tr>
<tr>
<td>Liquidity</td>
<td>-0.33</td>
<td>-0.13</td>
<td>0.05</td>
<td>-0.08</td>
<td>0.03</td>
<td>0.03</td>
</tr>
</tbody>
</table>

## Factor Correlations


<table>
<thead>
<tr>
<th>Portfolios</th>
<th>Size</th>
<th>Value</th>
<th>Momentum</th>
<th>Quality</th>
<th>Yield</th>
<th>Volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>-0.03</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Value</td>
<td>-0.10</td>
<td>-0.20</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Momentum</td>
<td>-0.05</td>
<td>-0.22</td>
<td>0.07</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Quality</td>
<td>-0.31</td>
<td>0.32</td>
<td>-0.05</td>
<td>0.04</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yield</td>
<td>0.46</td>
<td>-0.07</td>
<td>-0.12</td>
<td>-0.11</td>
<td>-0.42</td>
<td></td>
</tr>
<tr>
<td>Volatility</td>
<td>-0.09</td>
<td>-0.08</td>
<td>-0.03</td>
<td>-0.07</td>
<td>-0.06</td>
<td>0.28</td>
</tr>
</tbody>
</table>

Liquidity
Factor Performance

Source: Morningstar Inc. Data as of March 31, 2019.
Visualizations
Factor Profile

<table>
<thead>
<tr>
<th>Style</th>
<th>Yield</th>
<th>Momentum</th>
<th>Quality</th>
<th>Volatility</th>
<th>Liquidity</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Large</td>
</tr>
<tr>
<td>Growth</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Small</td>
</tr>
</tbody>
</table>
Basic View

- **Style**: Value
- **Yield**: High
- **Momentum**: High
- **Quality**: High
- **Volatility**: High
- **Liquidity**: High
- **Size**: Large

- **Growth**: Low
- **Low**: Low
- **Low**: Low
- **Low**: Low
- **Low**: Low
- **Low**: Low
- **Small**: Small
### Fund Exposure

**Style**  
- **Value**  
  - Growth

**Yield**  
- **High**  
  - Low

**Momentum**  
- **High**  
  - Low

**Quality**  
- **High**  
  - Low

**Volatility**  
- **High**  
  - Low

**Liquidity**  
- **High**  
  - Low

**Size**  
- **Large**  
  - Small

- Royce Special Equity

16
Fund versus Category Average

- **Style**
  - Value
  - Growth

- **Yield**
  - High
  - Low

- **Momentum**
  - High
  - Low

- **Quality**
  - High
  - Low

- **Volatility**
  - High
  - Low

- **Liquidity**
  - High
  - Low

- **Size**
  - Large
  - Small

- **Royce Special Equity**
- **Category Average**
Fund Historical Range

- **Style**: Value
- **Yield**: High
- **Momentum**: High
- **Quality**: High
- **Volatility**: High
- **Liquidity**: High
- **Size**: Large

- Royce Special Equity
- 5 Yr Historic Range
Combined View

- **Style**: Value
- **Yield**: High
- **Momentum**: High
- **Quality**: High
- **Volatility**: High
- **Liquidity**: High
- **Size**: Large

- Royce Special Equity
- 5 Yr Historic Range
- Category Average
## Holdings Breakdown

<table>
<thead>
<tr>
<th>Style</th>
<th>Yield</th>
<th>Momentum</th>
<th>Quality</th>
<th>Volatility</th>
<th>Liquidity</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Large</td>
</tr>
<tr>
<td>34%</td>
<td>10%</td>
<td>20%</td>
<td>69%</td>
<td>38%</td>
<td>21%</td>
<td>0%</td>
</tr>
<tr>
<td>65%</td>
<td>60%</td>
<td>47%</td>
<td>21%</td>
<td>62%</td>
<td>38%</td>
<td>0%</td>
</tr>
<tr>
<td>1%</td>
<td>30%</td>
<td>33%</td>
<td>9%</td>
<td>0%</td>
<td>40%</td>
<td>100%</td>
</tr>
<tr>
<td>Growth</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Low</td>
<td>Small</td>
</tr>
</tbody>
</table>
Individual Holdings View

- **Style Value**: Growth
- **Yield High**: Low
- **Momentum High**: Low
- **Quality High**: Low
- **Volatility High**: Low
- **Liquidity High**: Low
- **Size Large**: Small

*Individual Holdings*
Fund Analysis Using Factors
Comparing Three Momentum Funds

- **Style**
  - Value
  - Growth

- **Yield**
  - High
  - Low

- **Momentum**
  - High
  - Low

- **Quality**
  - High
  - Low

- **Volatility**
  - High
  - Low

- **Liquidity**
  - High
  - Low

- **Size**
  - Large
  - Small

- **AQR Large Cap Momentum Style**
- **iShares Edge MSCI USA Momentum Factor**
- **Alpha Architect US Quantitative Momentum**
Fund Only Targets Momentum Factor, Everything Else Has Wide Range

- **Style**: Value
- **Yield**: High
- **Momentum**: High
- **Quality**: High
- **Volatility**: High
- **Liquidity**: High
- **Size**: Large

- Circular diagram showing:
  - Growth: Low
  - Low: Low
  - Low: Low
  - Low: Low
  - Low: Low
  - Small: Low

- Alpha Architect US Quantitative Momentum
- 5 Yr Historic Range
- Category Average
Strategic Beta ETF With a Uninformative Name

Style | Yield | Momentum | Quality | Volatility | Liquidity | Size
--- | --- | --- | --- | --- | --- | ---
Value | High | High | High | High | High | Large
Growth | Low | Low | Low | Low | Low | Small

- Innovator IBD 50 ETF
- 5 Yr Historic Range
- Category Average
OUR APPROACH

The Small Company Fund invests at least 80% of its total assets in the equity securities of those companies with total operating revenues of $250 million or less at the time of the initial investment, ("small companies"). The Small Company Fund typically invests in common stocks. The Advisor seeks to build a portfolio of exceptional small companies with the wherewithal to become exceptional large companies. The Small Company Fund typically holds a portfolio of between 40 to 65 securities which the Advisor believes have the potential for growth.

A PORTFOLIO FOCUSED ON EXCEPTIONAL COMPANIES

Exceptional companies save time, lives, money or headaches or provide an exceptional value proposition to consumers. The portfolio is comprised of these organizations that have the potential to grow revenues and earnings significantly over a three-to-five-year investment time horizon and beyond.
The team uses an uncommon approach to investing in the small-growth space, generally narrowing its investment universe to firms annually earning around $250 million or less in operating revenue rather than those fitting a specific market capitalization. **The managers focus on firms with growing and durable revenue streams, strong balance sheets, and defensible competitive advantages, which typically leads to a portfolio with higher-quality characteristics.** They invest for the long haul, as evidenced by the fund's low annual turnover ratio and nearly nine-year weighted average holdings duration as of June 2018. The team aims to stay fully invested and doesn't attempt to time the market by tactically rotating into or out of cash. The group's consistent execution of this unique approach merits a Positive Process rating.
Brown Capital Small Company – Factor Profile

- **Style**
  - Value

- **Yield**
  - High

- **Momentum**
  - High

- **Quality**
  - High

- **Volatility**
  - High

- **Liquidity**
  - High

- **Size**
  - Large

- **Growth**
  - Low

- **Yield**
  - Low

- **Momentum**
  - Low

- **Quality**
  - Low

- **Volatility**
  - Low

- **Liquidity**
  - Low

- **Size**
  - Small

- Brown Capital Management Small Co
- 5 Yr Historic Range
- Category Average

---

28
**Fund With Quality in the Name That Doesn’t Own High Quality Stocks**

<table>
<thead>
<tr>
<th>Style</th>
<th>Yield</th>
<th>Momentum</th>
<th>Quality</th>
<th>Volatility</th>
<th>Liquidity</th>
<th>Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Value</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>High</td>
<td>Large</td>
</tr>
</tbody>
</table>

- **Growth**
- **Low**
- **Low**
- **Low**
- **Low**
- **Low**
- **Small**

- EquityCompass Quality Dividend
- 5 Yr Historic Range
- Category Average
American Funds Growth Fund of America

- Style: Value
- Yield: High
- Momentum: High
- Quality: High
- Volatility: High
- Liquidity: High
- Size: Large

- American Funds Growth Fund of America
- 5 Yr Historic Range
- Category Average
Janus Henderson Contrarian

Style
Value
Yield
High
Momentum
High
Quality
High
Volatility
High
Liquidity
High
Size
Large

Janus Henderson Contrarian

5 Yr Historic Range

Category Average
Conclusion

- Factor Profile will launch in late 2019
- We are not replacing or modifying the Style Box
- We do not anticipate any changes to the Morningstar Category system
- Morningstar Direct Risk Model clients will have access to a new risk model which incorporates the factors discussed today
# Morningstar Methodology

**Description**
Showcasing Morningstar’s proprietary Methodology whitepapers produced by our global team of independent Manager Research, Equity, Indexes, Fixed Income, and Credit analysts.

<table>
<thead>
<tr>
<th>Title</th>
<th>Author</th>
<th>Date</th>
</tr>
</thead>
<tbody>
<tr>
<td>Morningstar Global Risk Model Methodology</td>
<td>Morningstar</td>
<td>Yesterday</td>
</tr>
<tr>
<td>Morningstar Fee Level - US Insurance Funds</td>
<td>Morningstar</td>
<td>Jun 03 2019</td>
</tr>
<tr>
<td>Morningstar Fee Level for Funds Methodology - U.S.</td>
<td>Morningstar</td>
<td>Jun 03 2019</td>
</tr>
<tr>
<td>Morningstar Global Category Classifications - United States</td>
<td>Morningstar</td>
<td>Jun 03 2019</td>
</tr>
<tr>
<td>Morningstar Category Classification Methodology for S29 Investment Options</td>
<td>Morningstar Research</td>
<td>Jun 03 2019</td>
</tr>
<tr>
<td>Morningstar Category Definitions - HK MPF April 2019</td>
<td>Morningstar</td>
<td>Apr 29 2019</td>
</tr>
<tr>
<td>Morningstar Category Definitions - India Insurance April 2019</td>
<td>Morningstar</td>
<td>Apr 29 2019</td>
</tr>
<tr>
<td>Morningstar Category Definitions - Korea April 2019</td>
<td>Morningstar</td>
<td>Apr 29 2019</td>
</tr>
<tr>
<td>Morningstar Category Definitions - India OE</td>
<td>Morningstar</td>
<td>Apr 29 2019</td>
</tr>
<tr>
<td>Morningstar Category Definitions - Europe, Asia and South Africa April 2019</td>
<td>Morningstar</td>
<td>Apr 29 2019</td>
</tr>
<tr>
<td>Morningstar Fund Shutdown Model Methodology</td>
<td>Madison Sargs</td>
<td>Apr 15 2019</td>
</tr>
<tr>
<td>Morningstar Fixed-Income Style Box, February 2013</td>
<td>Morningstar</td>
<td>Mar 12 2019</td>
</tr>
<tr>
<td>Morningstar Lead Adjusted Return</td>
<td>Morningstar</td>
<td>Feb 05 2019</td>
</tr>
<tr>
<td>Morningstar Income and Capital Return</td>
<td>Morningstar</td>
<td>Feb 05 2019</td>
</tr>
</tbody>
</table>
Questions?