The MSCI Multi-Asset Class Factor Model

MAC Tier 1

The MSCI MAC Factor Model provides high to low granularity in looking at systematic strategy factors through an integrated and consistent framework.

Better manage total portfolio investment objectives

Investors are seeking outcome-oriented strategies to help balance risk profiles with return targets. The MSCI MAC Factor Model provides insight into factor-based asset allocation to target key drivers of risk and return. The MAC model allows for the identification of systematic strategies in equities, fixed income, commodities, and currencies and improves communication of portfolio exposures at different levels of granularity for different audiences.

MAC Tier 1 - Set Strategic Allocation

Tier 1 factors describe the most important drivers of the markets and provide a platform for the factor-based asset-allocation framework. They provide a lens for strategic asset allocation and are designed for board level reporting.

Tier 1 in the MSCI Multi-Asset Class Factor Model

9 top level factors to attribute the key drivers of global risk and return across the investible marketplace

Available in multiple horizons from ultra-short to extra-long

Helps communicate investment strategies at the board level
Tier 1 Factors

Tier 1 factors support factor-based strategic asset allocation and explain the relationship between global disparate markets.

- **Equity**
  - Largest driver of total returns of many portfolios
- **Interest Rates**
  - Represents a shift in nominal government interest rates in the home currency
- **Credit**
  - Reflects the aggregate behavior of credit spreads, with a sign convention aligned with bond returns
- **Inflation**
  - Defined as breakeven inflation, which is the (typically negative) spread between real and nominal interest rates
- **Commodities**
  - A large portion of the return to private equity is driven by the fund’s Equity exposures
- **Currency**
  - Large source of risk for many institutional investors
- **Private Equity**
  - Consists of an aggregate of Global Private Real Estate and Private Agriculture (Farmland and Timberland)

Tier 1 Factor Correlations (as of May 29, 2020)

<table>
<thead>
<tr>
<th></th>
<th>Equity</th>
<th>USA Credit</th>
<th>USD Rates</th>
<th>Foreign Currency</th>
<th>USD Inflation</th>
<th>Commodities</th>
<th>Real Estate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Equity</td>
<td>0.74</td>
<td>-0.38</td>
<td>-0.32</td>
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<tr>
<td>USA Credit</td>
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<td>0.22</td>
<td>0.11</td>
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<tr>
<td>USD Rates</td>
<td>-0.71</td>
<td>-0.66</td>
<td>0.50</td>
<td>-0.26</td>
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<tr>
<td>Foreign Currency</td>
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<td>-0.30</td>
<td>0.41</td>
<td>-0.67</td>
<td>0.44</td>
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<tr>
<td>USD Inflation</td>
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<td>0.57</td>
<td>-0.13</td>
<td>0.15</td>
<td>-0.47</td>
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<tr>
<td>Commodities</td>
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<td>Real Estate</td>
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</tbody>
</table>

Source: The MSCI Multi-Asset Class Factor Model (MAC).

Note: The MAC model adopts the following sign conventions for rates, inflation and credit factors. For rates factors, positive returns correspond to positive Treasury-bond returns and negative interest-rate changes; for inflation factors, positive returns correspond to positive returns of inflation-linked bonds (everything else equal) and negative changes in inflation expectation; and for credit factors, positive returns correspond to positive credit-asset returns (everything else equal) and negative changes in credit spreads.

About MSCI

MSCI is a leading provider of critical decision support tools and services for the global investment community. With over 50 years of expertise in research, data and technology, we power better investment decisions by enabling clients to understand and analyze key drivers of risk and return and confidently build more effective portfolios. We create industry-leading research-enhanced solutions that clients use to gain insight into and improve transparency across the investment process.

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