

MSCI Asia Pacific Equity Factor Model

The next generation of the Asia Pacific Equity Factor Model suite builds on a half-century of experience constructing equity indexes and risk models for investors. Deep research, comprehensive data and computational power convene to solve modern investing’s most pressing challenges. The model introduces factors like Crowding, Machine learning and Sustainability - redefining the way models are constructed and delivered in addition to modular factor structure and advanced risk-forecasting methodologies.

New investment insights

- » Point-in-time fundamental data to facilitate more realistic back tests
- » Help your portfolios weather changing market regimes over multiple cycles with the help of adaptive factor covariance
- » Capture a more realistic representation of the underlying business activities of the companies in a portfolio with multi-industry exposures.
- » Expand your investment opportunity with new models evaluating pre-merger Special Purpose Acquisition Corporations (SPACs)
- » Assess the ‘bubblieness’ or level of crowding of stocks and portfolios with stock crowding factor
- » Understand and capture non-linear relationships between factor exposures and returns using machine learning
- » Measure the exposures of your portfolio to ESG and understand its contribution to portfolio risk and return
- » Understand the carbon intensity of your portfolio to meet your decarbonization or net zero commitments
- » Identify clusters of highly similar companies that may lead to “cluster risk” in your portfolio
- » A dynamic adjustment to industry factor exposure to capture the differences in sensitivities of stock return to industry return
- » Enhancements to existing factors including Momentum and Residual Volatility to improve handling of IPOs and Growth to improve robustness and performance.

A factor structure aligned to multiple investment horizons

Designed for	Long-Term Models	Trading Models
	<ul style="list-style-type: none"> » Active and passive asset managers » Asset owners » Sell side – Banks and Market makers » Buy Side- Hedge Funds » Fundamental and quantitative managers 	<ul style="list-style-type: none"> » Equity hedge fund managers » Quantitative asset managers » Algorithmic traders » Sell-side traders » Risk managers
Focus	<ul style="list-style-type: none"> » Designed with a focus on portfolio construction » Decompose complex portfolios into intuitive risk factors; provides managers, investors and regulators a clearer understanding of risk exposures and risk-adjusted performance » Available in Stable and Responsive variants 	<ul style="list-style-type: none"> » Most responsive model in the family with a daily forecast horizon, enabling you to swiftly adapt to market disruptions » Designed for analyzing risk in short term portfolios » Constructed for short-term trading, hedging, and daily risk monitoring

Elevate your investment process with our latest innovations

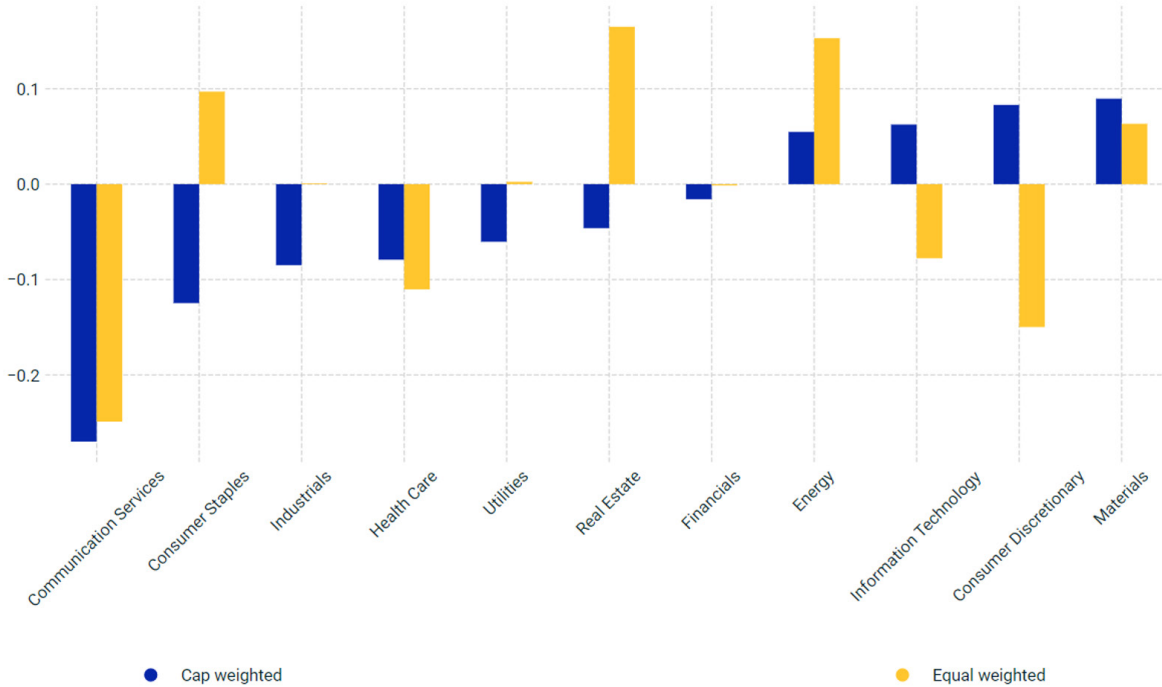
Quantify the impact of carbon emissions on portfolio returns while adjusting for other effects

Climate Index	Active (%) ¹	Sales ex. Carbon (%)	Industries (%)	Others (%) ³	Carbon(%)	Carbon (Japan) (%)
MSCI AC Asia Pacific ex Japan Climate Paris Aligned Index	0.7 ¹	-0.2	0.6	1.6	-0.1	0.0
MSCI AC Asia Pacific Climate Change Index	-1.9 ²	-0.4	-0.5	-0.9	0.0	-0.1

Sample performance attribution of active returns (Jun 2020 – Nov 2022)

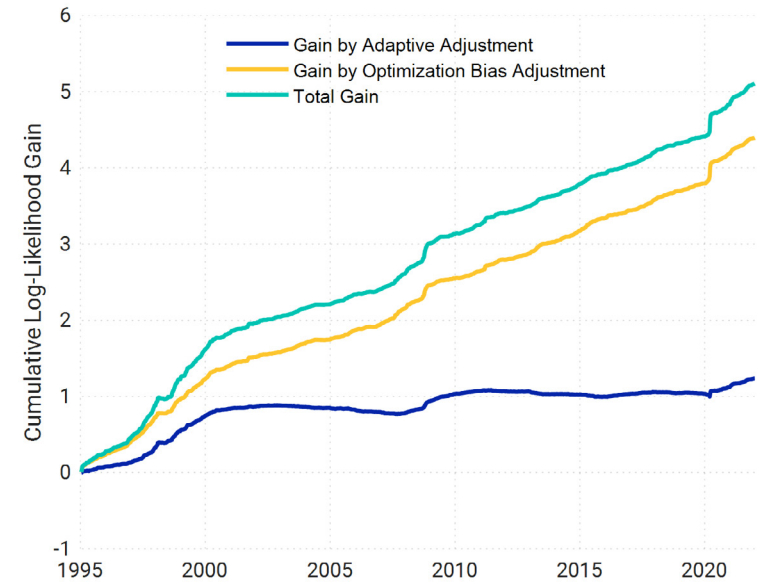
1. The active returns were calculated relative to the MSCI AC Asia Pacific ex Japan Index
2. The active returns were calculated relative to the MSCI AC Asia Pacific Index
3. Contribution from countries, currencies and stock-specific returns
4. The return attribution was based on the MSCI Asia Pacific Equity Factor Model (APACEFMLT)

Understand how bubbly are your holdings, portfolio and market segments



Asia Pacific sector Crowding as of Oct 31, 2022

Improve the forecast accuracy of factor covariance



Asia Pacific equity content set - What does it cover?

Coverage	38 Style Factors	39,000+ securities	51 industry factors
Asset Classes	Depository receipts Cross Listed securities Stocks Equity Index Futures ETFs SPACs		
Style Factors	VOLATILITY YIELD QUALITY MOMENTUM VALUE SIZE MACRO SENTIMENT GROWTH LIQUIDITY NONLINEARITY SUSTAINABILITY		



Model distribution and access

Access MSCI's models on cloud via Snowflake, through MSCI applications including BarraOne, Barra PortfolioManager, through direct data delivery (Models Direct), or through third-party vendor platforms.

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.

To learn more, please visit www.msci.com.

The information contained herein (the "Information") may not be reproduced or disseminated in whole or in part without prior written permission from MSCI. The Information may not be used to verify or correct other data, to create any derivative works, to create indexes, risk models, or analytics, or in connection with issuing, offering, sponsoring, managing or marketing any securities, portfolios, financial products or other investment vehicles. Historical data and analysis should not be taken as an indication or guarantee of any future performance, analysis, forecast or prediction. None of the Information or MSCI index or other product or service constitutes an offer to buy or sell, or a promotion or recommendation of, any security, financial instrument or product or trading strategy. Further, none of the Information or any MSCI index is intended to constitute investment advice or a recommendation to make (or refrain from making) any kind of investment decision and may not be relied on as such. The Information is provided "as is" and the user of the Information assumes the entire risk of any use it may make or permit to be made of the Information. NONE OF MSCI INC. OR ANY OF ITS SUBSIDIARIES OR ITS

OR THEIR DIRECT OR INDIRECT SUPPLIERS OR ANY THIRD PARTY INVOLVED IN MAKING OR COMPILING THE INFORMATION (EACH, AN "INFORMATION PROVIDER") MAKES ANY WARRANTIES OR REPRESENTATIONS AND, TO THE MAXIMUM EXTENT PERMITTED BY LAW, EACH INFORMATION PROVIDER HEREBY EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES, INCLUDING WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE. WITHOUT LIMITING ANY OF THE FOREGOING AND TO THE MAXIMUM EXTENT PERMITTED BY LAW, IN NO EVENT SHALL ANY OF THE INFORMATION PROVIDERS HAVE ANY LIABILITY REGARDING ANY OF THE INFORMATION FOR ANY DIRECT, INDIRECT, SPECIAL, PUNITIVE, CONSEQUENTIAL (INCLUDING LOST PROFITS) OR ANY OTHER DAMAGES EVEN IF NOTIFIED OF THE POSSIBILITY OF SUCH DAMAGES. The foregoing shall not exclude or limit any liability that may not by applicable law be excluded or limited. Privacy notice: For information about how MSCI collects and uses personal data, please refer to our Privacy Notice at <https://www.msci.com/privacy-pledge>.