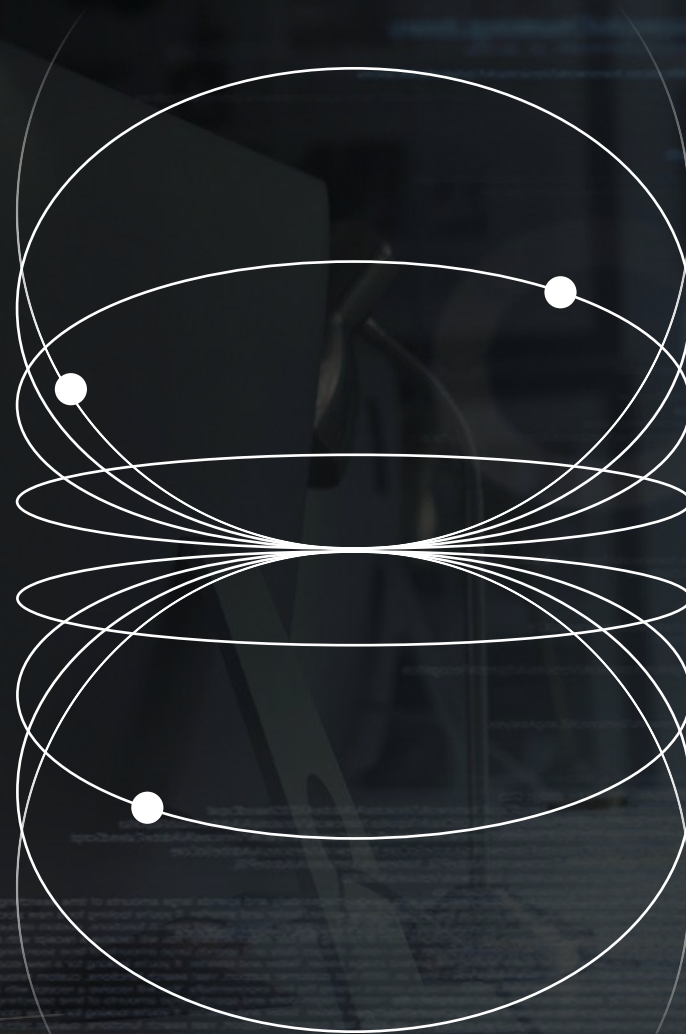




MSCI Analytics GAuS User Group

September 2026

Frankfurt 22nd / Zürich 23rd



Agenda

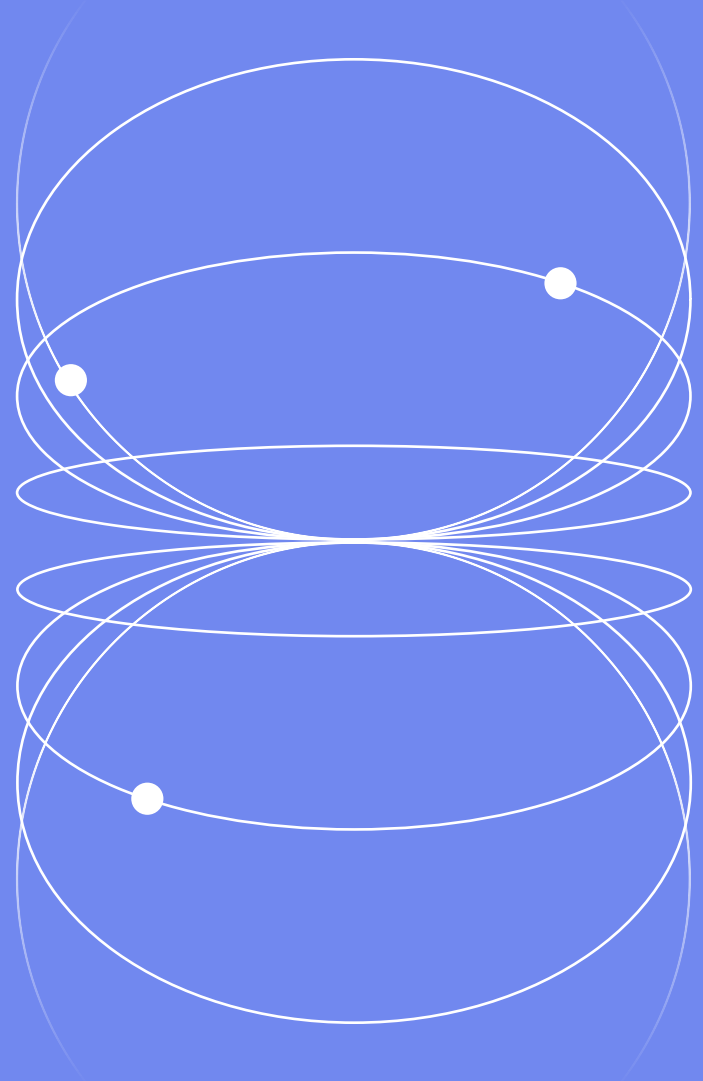
- 10:30 Registration
- 11:00 **Welcome Remarks**
Triphonas Kyriakis, Managing Director - Global Head of Enterprise Risk and Performance, MSCI Analytics
- 11:10 **When Geopolitics Meets Economics: Implications for Portfolio Risk**
Thomas Verbraken, Executive Director - MSCI Research
- 12:00 **Scenario Lab: From Macro Narrative to Risk Propagation and Communication**
Sam Rubandhas, Managing Director - EMEA Head of Product Specialists, MSCI Analytics
- 13:00 Lunch Break
- 13:45 **Latest Product updates and outlook**
Thomas Moser, Executive Director - Global Product Manager, MSCI Analytics
- 14:45 Networking Coffee Break
- 15:15 **Technology in Action: MCPs, AI Tools and the Next Generation of User Experience**
Luca Pizzolotto, Vice President - EMEA Analytics Product Manager, MSCI
- 16:15 Drinks & Networking
- 17:00 End

Welcome Remarks

Triphonas Kyriakis

Managing Director at MSCI Product Management

Global Head of Enterprise Risk and Performance



Section 1

When Geopolitics Meets Economics: Implications for Portfolio Risk

Thomas Verbraken

Executive Director - MSCI Research

Geopolitics lost to AI, and the cushion thinned

A NARROW RALLY

Geopolitics barely dented the rally, but the gains came from very few places

- Two industry groups drove 76% of the gain
- The AI infrastructure winners fell hardest in July

AI BEYOND EQUITIES

AI exposure is now priced in credit, and portfolio income

- Hyperscaler bonds moved with their own equity

HIGHER RATES, THINNER CUSHION

Real yields are at 19-year highs and the equity risk premium is near zero

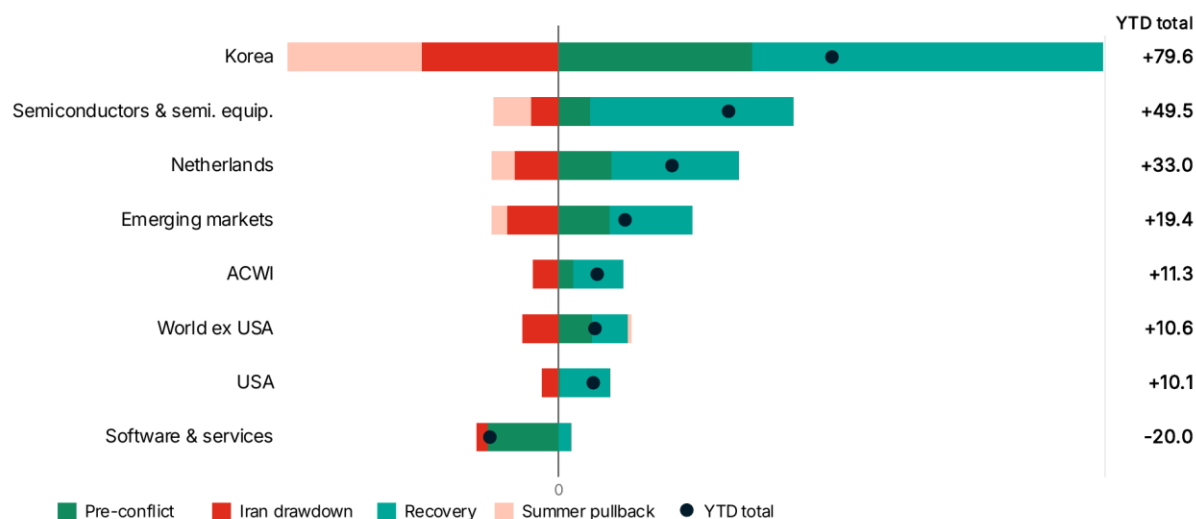
- The whole rise in yields was real, not inflation
- Bonds now add to portfolio risk

Source: MSCI Research. See ["Investment Trends in Focus: Midyear Update 2026"](#) MSCI Research Insights, July 2026.

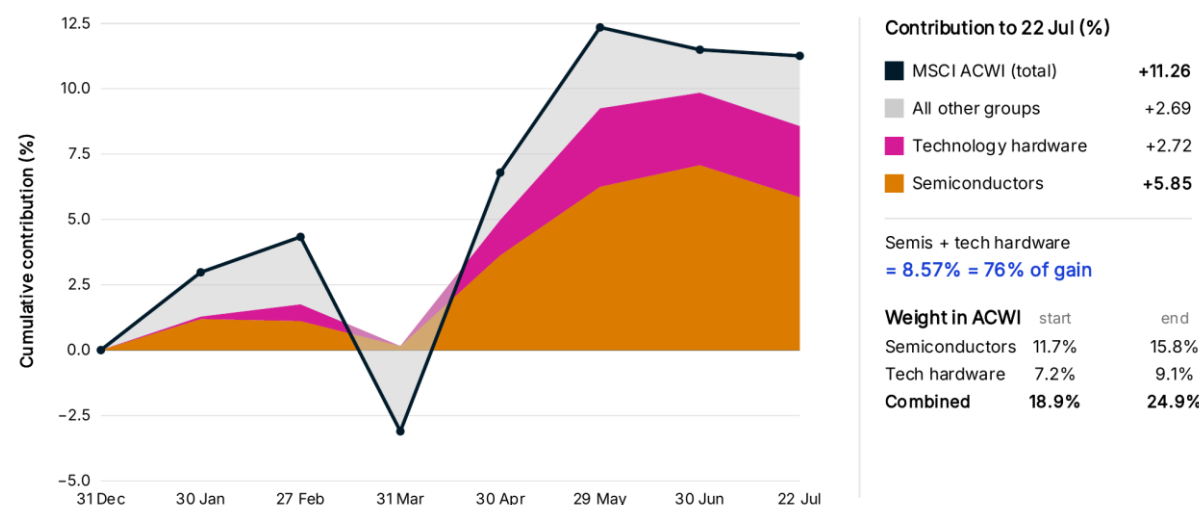
AI infrastructure produced almost all of the 2026 gain

- Korea (+79.6%) and semiconductors (+49.5%) led global markets while software and services fell 20%, all within the same index
- Earnings, not multiples, drove ACWI IMI's 11.3% gain, but semiconductors and technology hardware contributed 76% of it, lifting their combined weight from 18.9% to 24.9%

Market of extremes: AI infrastructure vs. the rest



Two industry groups drove three-quarters of first-half equity gains

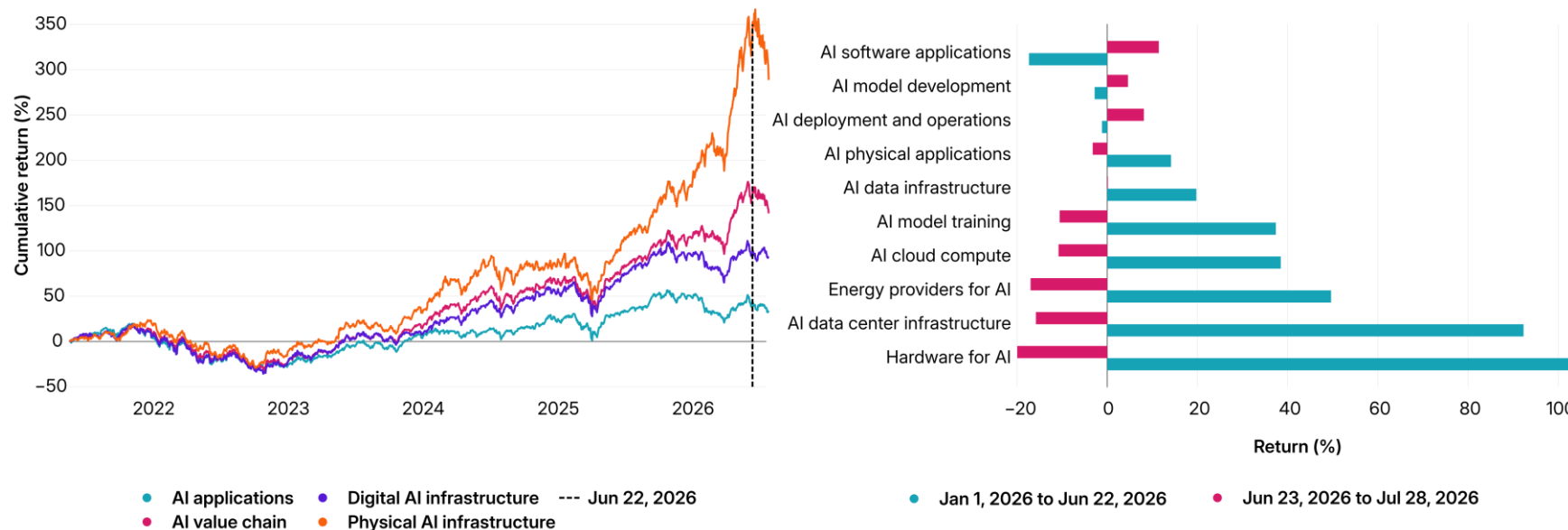


Source: MSCI Research. Left: contribution by period for MSCI country, region and GICS® industry-group indexes; periods are Dec. 31, 2025–Feb. 27, Feb. 27–March 31, March 31–June 30 and June 30–July 22, 2026; weights are index weights at the start and end of the period. Returns are gross in USD. GICS is the industry-classification standard jointly developed by MSCI and S&P Dow Jones Indices. See ["Investment Trends in Focus: Midyear Update 2026,"](#) MSCI Research Insights, July 2026. Past performance — whether actual, back tested or simulated — is no indication or guarantee of future performance.

Summer pullback: Rotation within the AI trade, not exit from it

- Hardware for AI rose about 106% to June 22 then fell about 20% in five weeks; data centers rose about 92% then gave back 15%, while software applications gained about 11%
- The layers that led the multiyear rerating carried the highest beta and momentum, and took the sharpest drawdowns

The biggest AI winners became biggest losers

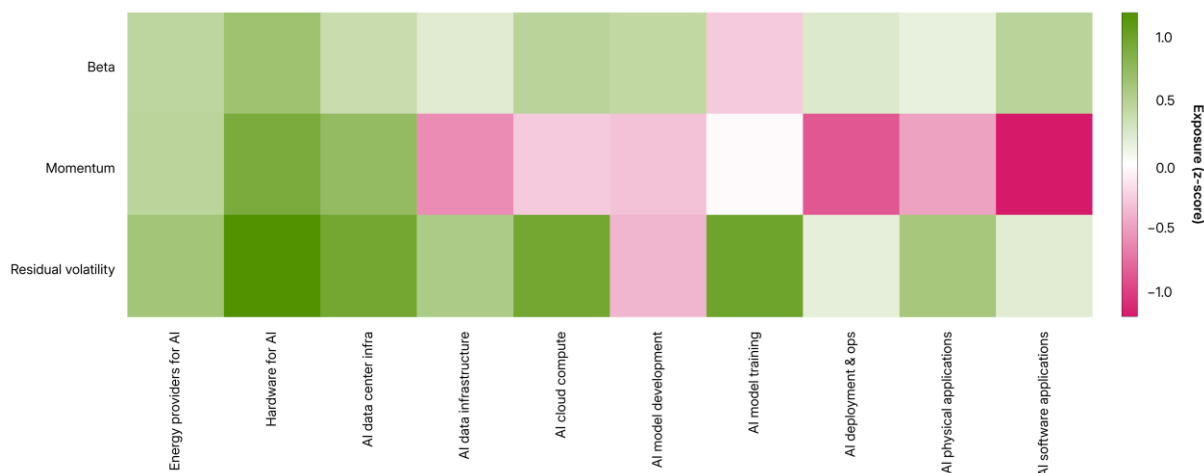


Source: MSCI Research. Gross returns in USD based on the MSCI ACWI IMI "AI Value Chain Indexes, which organize AI-related business activity into three layers (physical AI infrastructure, digital AI infrastructure, AI applications) and 10 components, scored using segment revenue and company-news attention. Left: cumulative returns through July 28, 2026. Right: component returns for Jan. 1–June 22, 2026 and June 23–July 28, 2026. See ["Markets in Focus: A Crowded Trade Unwinds, but the AI Growth Story Does Not,"](#) MSCI Research, Aug. 14, 2026. Past performance — whether actual, back tested or simulated — is no indication or guarantee of future performance.

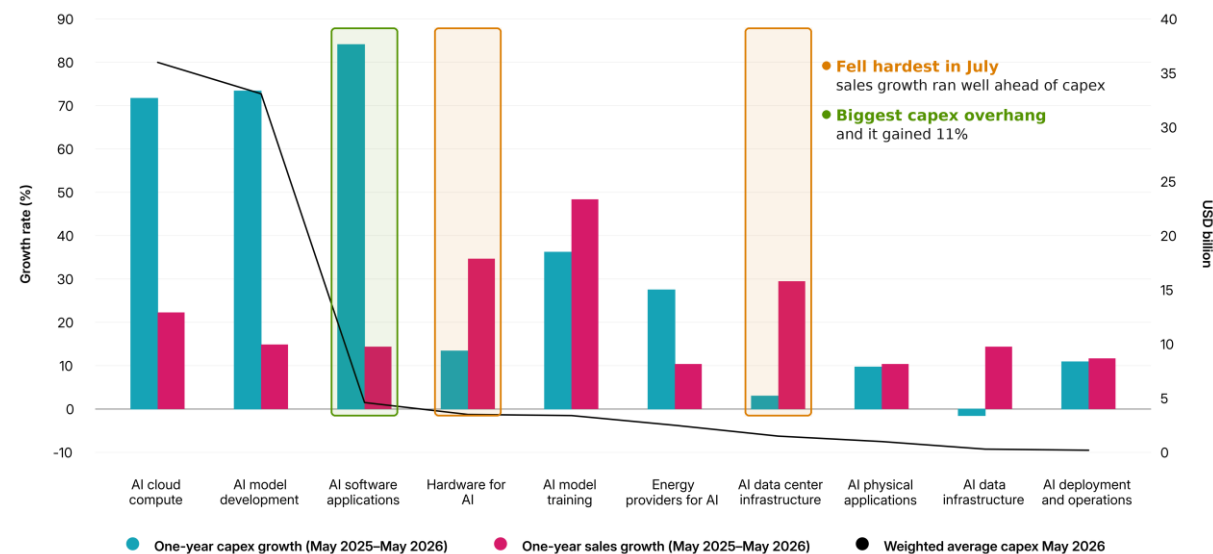
Momentum exposure, not capex, explains who got hit

- As of June 22, before the drawdown, hardware, data centers and energy providers were the only components carrying positive momentum exposure. The digital and applications layers were flat or negative, and that was what cushioned them
- The hardest-hit segments grew sales far faster than capex: hardware 35% against 13%, data centers 30% against 3%. Software applications, with the largest capex overhang on the chart, gained 11%

Momentum is what split the value chain in two



The capex overhang isn't where the sell-off hit hardest

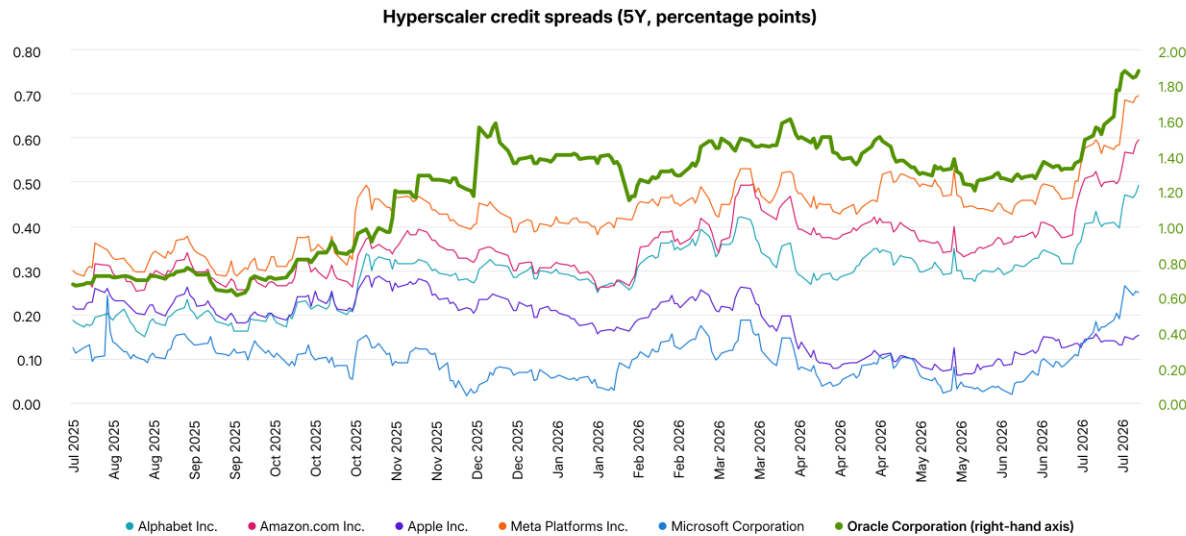


Source: MSCI Research. Left: factor exposures (z-scores) by AI value-chain component as of June 22, 2026, using the MSCI Global Equity Factor Trading Model (EFMGEMTR). Right: one-year capex and sales growth (May 2025 to May 2026) by component, with the black line showing weighted average capex in US dollars on the right-hand axis; highlighting added for emphasis. MSCI Fundamental Data Methodology, trailing 12 months; capex values do not capture off-balance-sheet financing arrangements such as special-purpose vehicles. Beta-factor crowding stood at 1.5 standard deviations at end-June, and between June 22 and July 28, 2026 beta fell 6.4% in the U.S., 7.4% in Korea and 4.0% in Taiwan, indicating global repositioning rather than a country-specific event. See ["Markets in Focus: A Crowded Trade Unwinds, but the AI Growth Story Does Not,"](#) MSCI Research, Aug. 14, 2026.

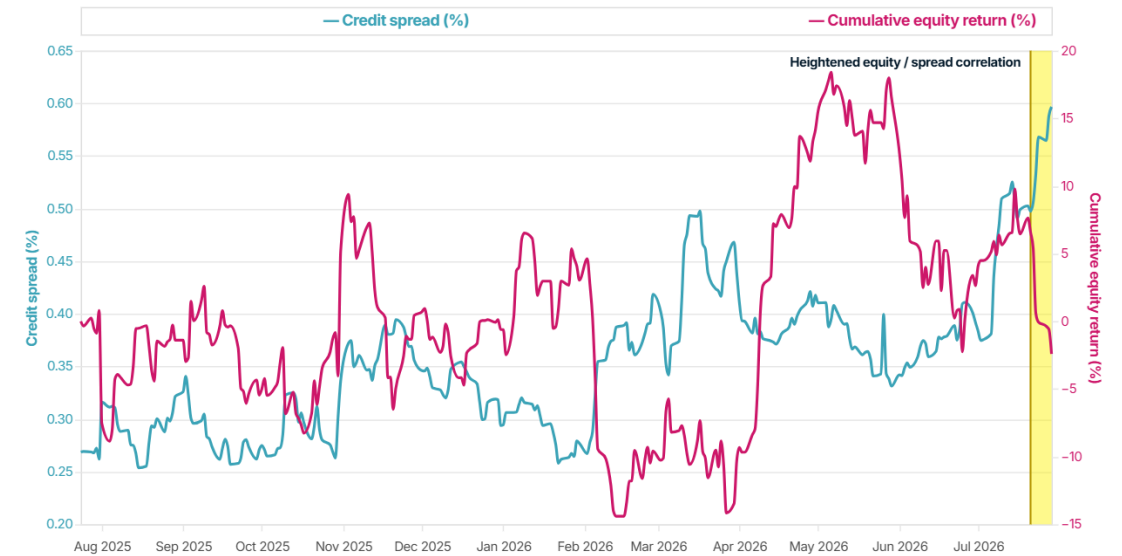
Top-rated credit has started trading like equity

- Credit barely moved: hyperscaler balance sheets keep default risk extremely remote, with Oracle the exception on already-elevated spreads
- But the two markets began moving together. The correlation turned sharply negative for every hyperscaler except Apple, which is more typical of high yield than of top-rated investment grade

Credit spreads have reacted modestly to the AI sell-off



Amazon: correlation up sharply since July 21

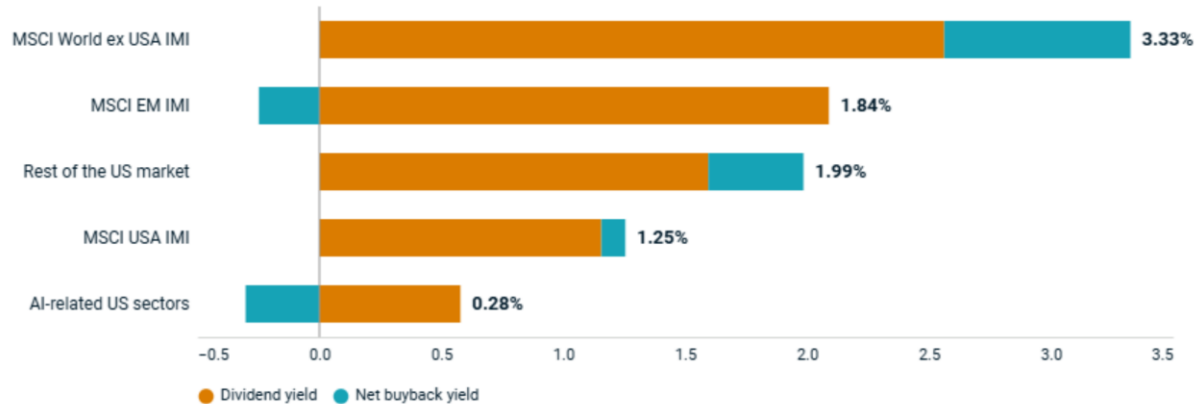


Source: MSCI Research. Left: five-year credit spreads, in percentage points, for Alphabet, Amazon.com, Apple, Meta Platforms, Microsoft and Oracle (right-hand axis), July 2025–July 2026. Right: Amazon.com credit spread (basis points over Treasury, left axis) against cumulative equity return (right axis), trailing 12 months; yellow shading marks the period from July 21, 2026 onward. The same pattern holds for every hyperscaler except Apple. Earnings releases from Alphabet and Tesla on July 23, 2026 triggered the sell-off in tech stocks on concerns about AI spending and negative free cash flow, followed by Meta Platforms on July 29. Hyperscalers are Alphabet, Amazon.com, Apple, Meta Platforms, Microsoft and Oracle. See [“What Has the AI Sell-Off Looked like for Credit?”](#), MSCI Research, July 30, 2026. Past performance — whether actual, back tested or simulated — is no indication or guarantee of future performance.

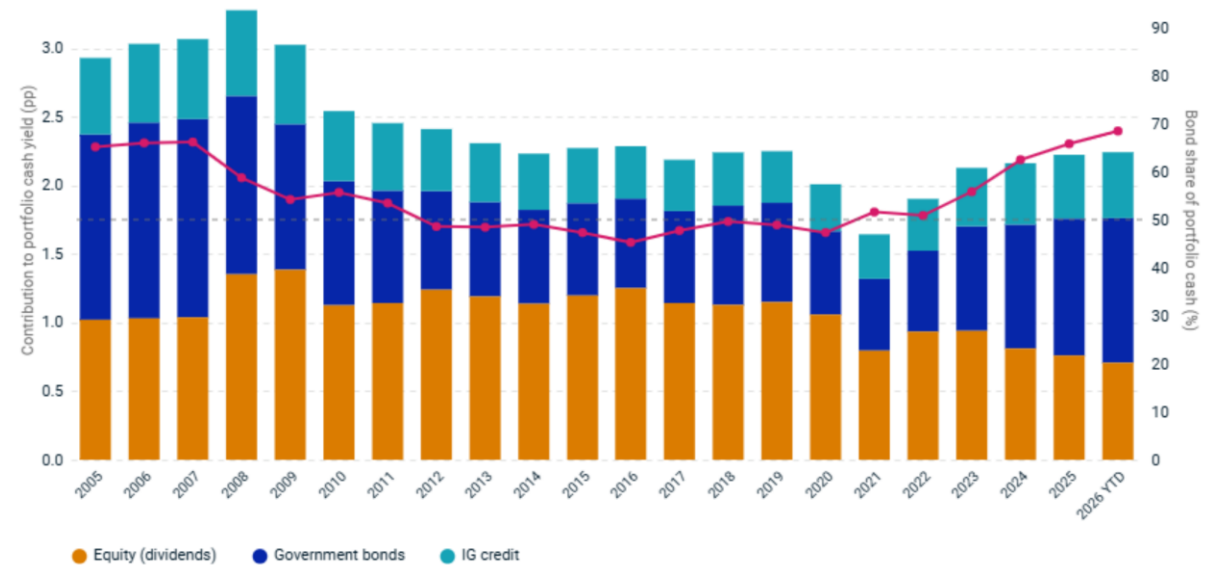
Multi-asset income has become a bond story

- AI capex has pushed US total yield to its 15th percentile since 2005, and the compression sits with the sectors building AI capacity
- Coupons reset the other way after 2022, so bonds now supply roughly 70% of a balanced portfolio's cash from 40% of its capital, a 21-year high

US equity payout squeeze sits with the AI sectors



Bond share of multi-asset cash is at a two-decade high

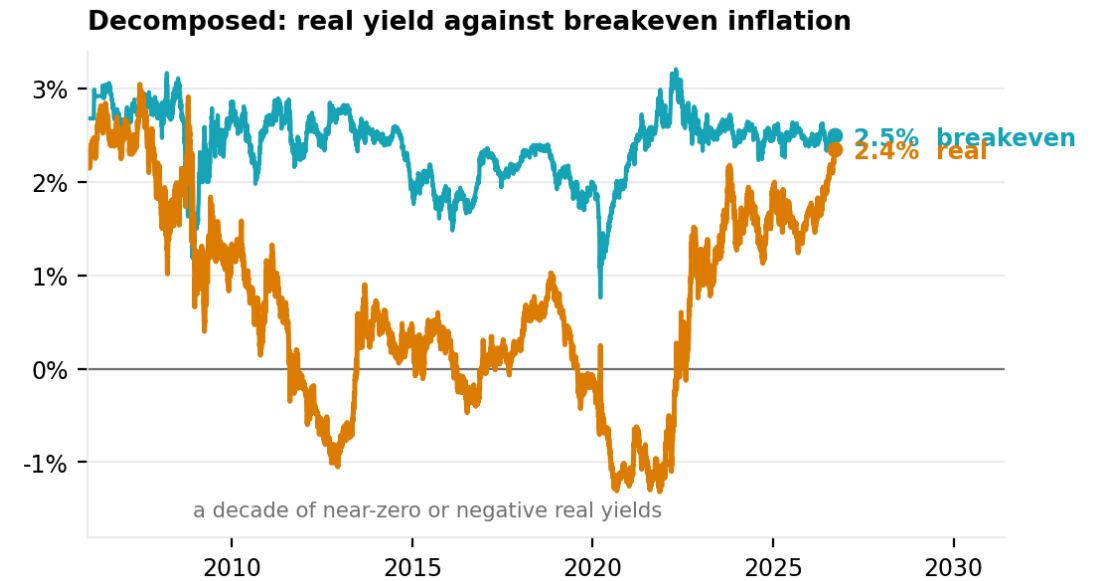
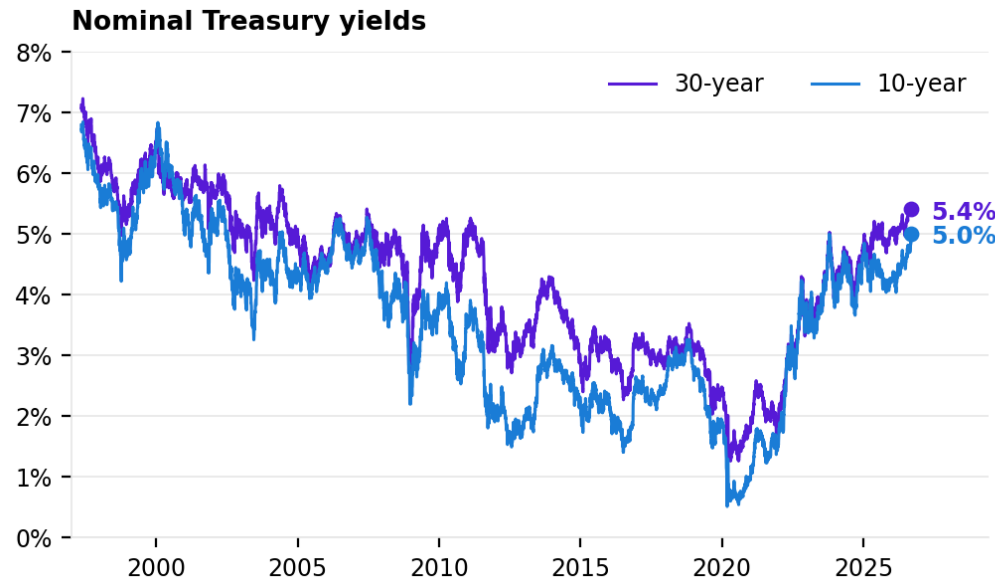


Source: MSCI Research. Left: dividend and net buyback yield as of July 31, 2026 for the MSCI USA IMI, MSCI World ex USA IMI and MSCI EM IMI; AI-related US sectors are information technology and communication services. Right: contribution of each sleeve, in percentage points, to the cash yield of an illustrative 60% equity / 30% government bond / 10% IG credit mix on an income-only (dividends) basis, 2005–2026 YTD; the line on the right axis is the bond sleeve's share of that cash, against a long-run average of 54.5%. Equity cash yield for MSCI USA IMI blended with the current yield of the MSCI U.S. Government Bond and MSCI USD IG Corporate Bond Indexes. Roughly 66% of Treasury par and 56% of credit par has been issued since 2022, so the coupon reset is unfinished. See "Multi-Asset Income Has Become a Bond Story," MSCI Research, forthcoming. Past performance — whether actual, back tested or simulated — is no indication or guarantee of future performance.

The whole rise in yields has come from real rates

- At 5% the 10-year is back to July 2007 levels and the 30-year, at 5.4%, has not been here since June 2007
- Breakeven inflation has barely moved, holding a 2.2% to 3.2% range for five years. Real yields did all the work, from minus 0.9% in 2020-21 to 2.4% today

US Treasury yields and their real / breakeven split

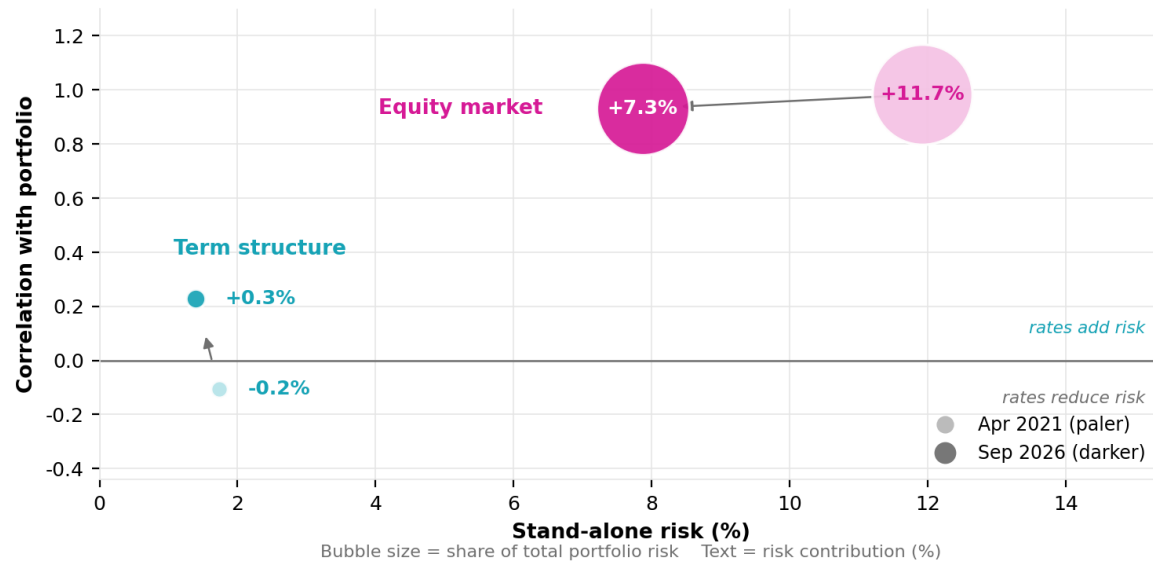


Source: MSCI Research. Left: constant-maturity US Treasury par yields, daily, May 1997 to Sept. 14, 2026. Right: 10-year real yield and 10-year breakeven inflation, daily, January 2006 to Sept. 14, 2026. Breakeven inflation is the nominal yield less the real yield of the same tenor. Ten-year real yields averaged -0.9% across 2020-21, 1.6% across 2024-25 and 1.8% year to date; 10-year breakeven inflation averaged 2.1%, 2.5% and 2.5% over the same three periods. Past performance — whether actual, back tested or simulated — is no indication or guarantee of future performance.

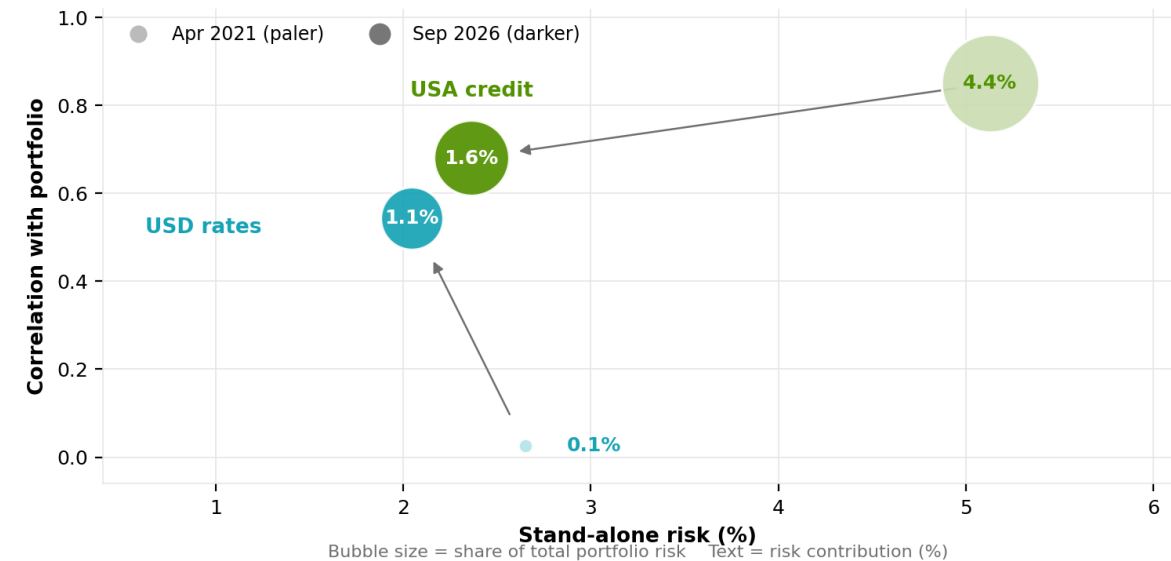
The rates factor now adds risk in both portfolios

- In a 60/40 the term-structure factor flipped from diversifying to additive: contribution from -18 bps to +32 bps
- In high yield, rate risk rose from 7 bps to 111 bps and is now 39% of risk. Both moves are correlation, not volatility

60/40 equity and US government bonds



USD high-yield corporate bonds

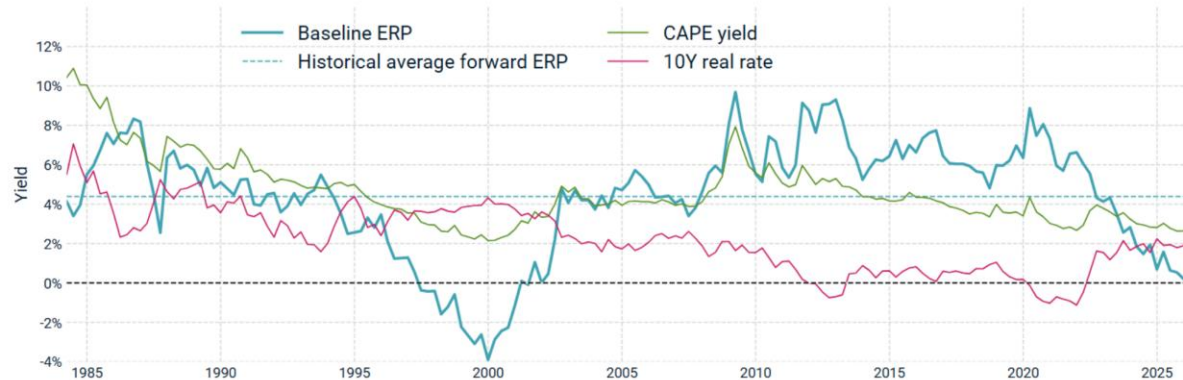


Source: MSCI Research. X-sigma-rho risk decompositions, April 2021 against September 2026, estimated with the MSCI Multi-Asset Class Factor Model (MAC.S calibration). Left: a 60% MSCI USA IMI / 40% MSCI US Government Bond Index portfolio decomposed into its equity market and term-structure factors; total portfolio risk fell from 11.66% to 8.51% and stand-alone term-structure risk from 1.73% to 1.40%. Right: a USD high-yield bond portfolio decomposed into USD rates and USA credit spreads. USD high-yield bonds are proxied by the MSCI USD High Yield Corporate Bond Index; stand-alone rate risk fell from 2.65% to 2.05% while its correlation with the portfolio rose from 0.03 to 0.54, and total portfolio risk was 4.55% against 2.82%. See "When Regimes Shift: Three Lenses for Managing Regime Shifts in Multi-Asset-Class Portfolios," MSCI Research Insight, May 2026. Past performance — whether actual, back tested or simulated — is no indication or guarantee of future performance.

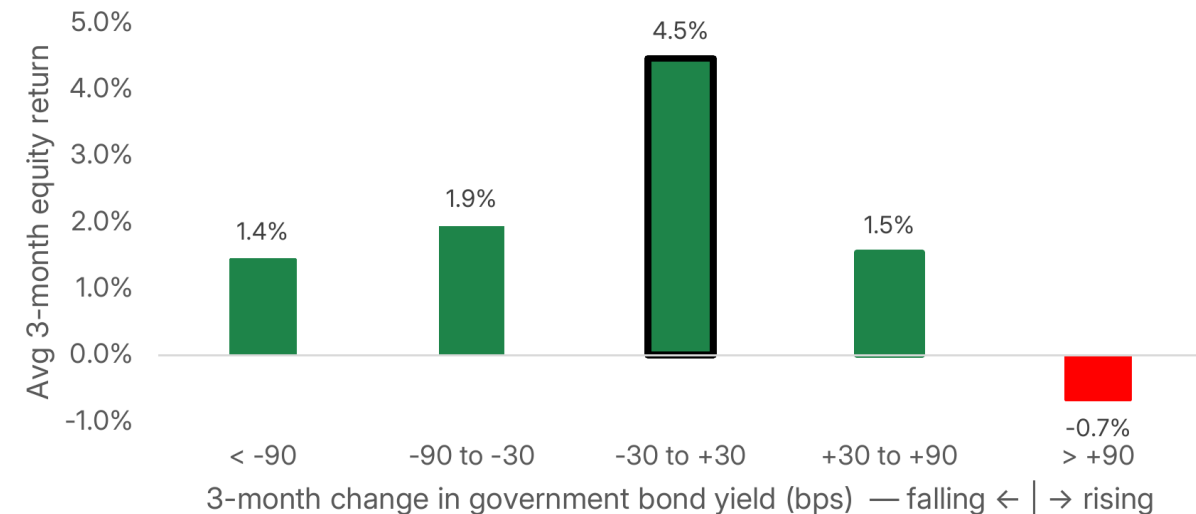
A thinning risk premium leaves little room for error

- MSCI's forward equity risk premium for the US has compressed to its lowest level since the dot-com era, far below its roughly 4% long-run average, driven by AI-lifted multiples and the climb in real rates off deeply negative pandemic lows
- Equity returns have averaged +4.5% a quarter when the 10-year was broadly stable but -0.7% when it rose more than 90 bp; this year's largest three-month move was about 60 bp

Forward ERP has compressed to the low end of its four-decade range



Quarters with sharp yield rises averaged an equity loss



Source: MSCI Research. Left: data from March 31, 1984 to March 31, 2026. MSCI's forward ERP reflects the expected return premium needed to reconcile market prices with macro fundamentals; a low premium corresponds to high market prices relative to future cash flows and suggests both lower long-term returns. For more detail see The MSCI Macro-Finance Model. Right: average gross USD quarterly return of the MSCI ACWI IMI (MSCI World before May 1994) grouped by the change in the 10-year government yield, non-overlapping calendar quarters, 1970 to June 2026; yields from MSCI fixed-income data (U.S. 10-year Treasury notes from FRED before 1998). See ["Investment Trends in Focus: Midyear Update 2026,"](#) MSCI Research Insights, July 2026. Past performance — whether actual, back tested or simulated — is no indication or guarantee of future performance.

Three lenses for navigating market volatility

REAL TIME

Monitoring

What has changed?

GRANULAR

Structural
Intelligence

Where does it concentrate?

FORWARD-LOOKING

Scenario
analysis

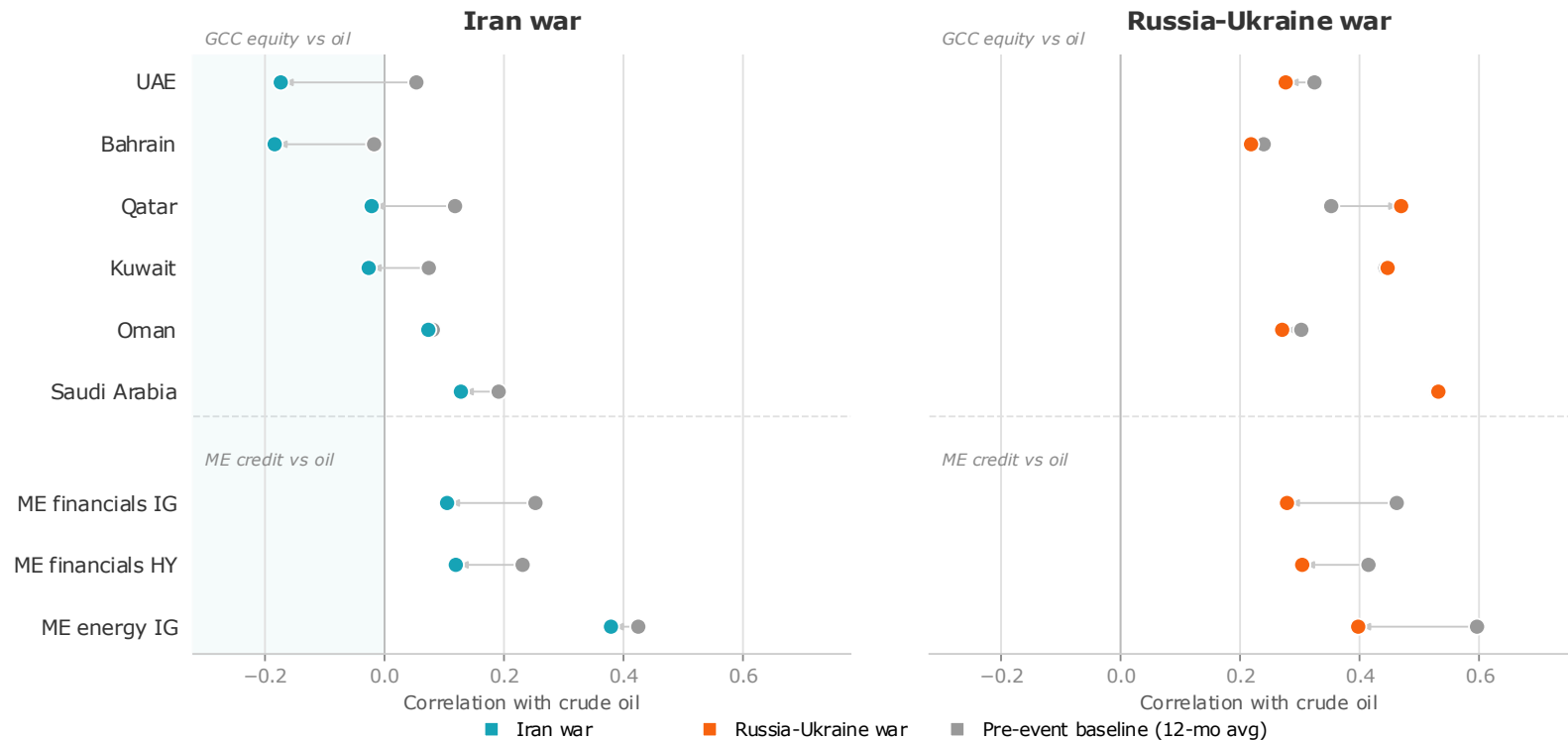
What does it mean for portfolios?

We apply these three lenses to the Iran conflict

Local conflict fractured the oil-equity relationship

→ In four of six GCC countries, oil-equity correlations turned negative, the opposite of the Russia-Ukraine pattern, when rising oil lifted the region

GCC equity and credit decoupled from oil prices

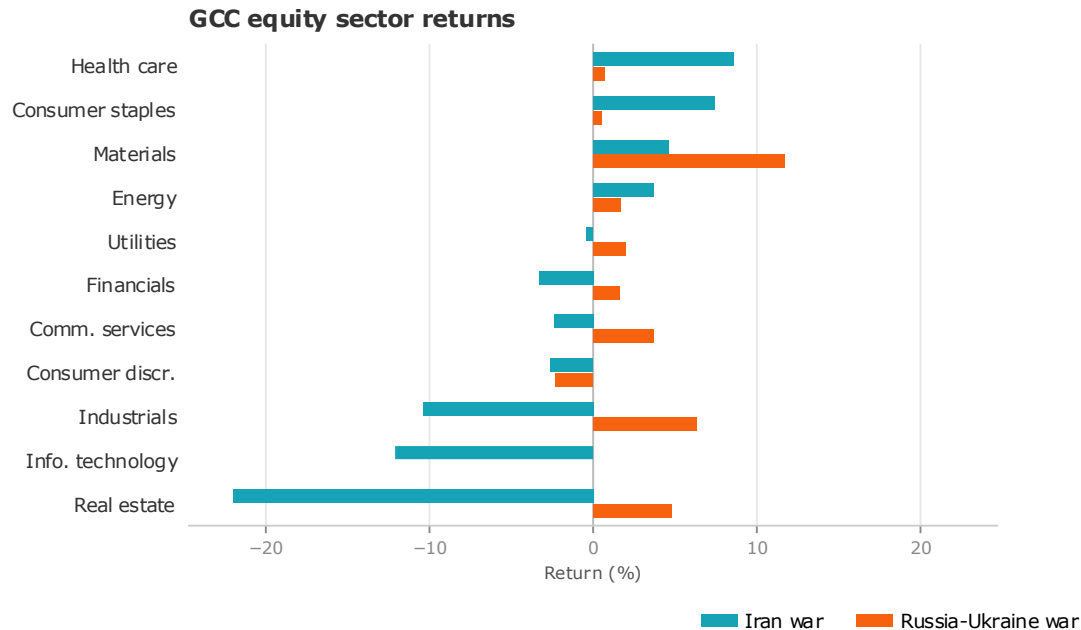


[MSCI Research](#). Correlation of GCC equity country factors and EM Middle East credit factors with crude oil. Baseline is the 12-month pre-event average; event-end is three weeks after the start of the war. A positive correlation reflects co-movement of asset prices. Correlation is estimated with a 30-day half-life for volatility and one year for correlation. Source: MSCI Multi-Asset Class Factor Model and MSCI Custom Covariance

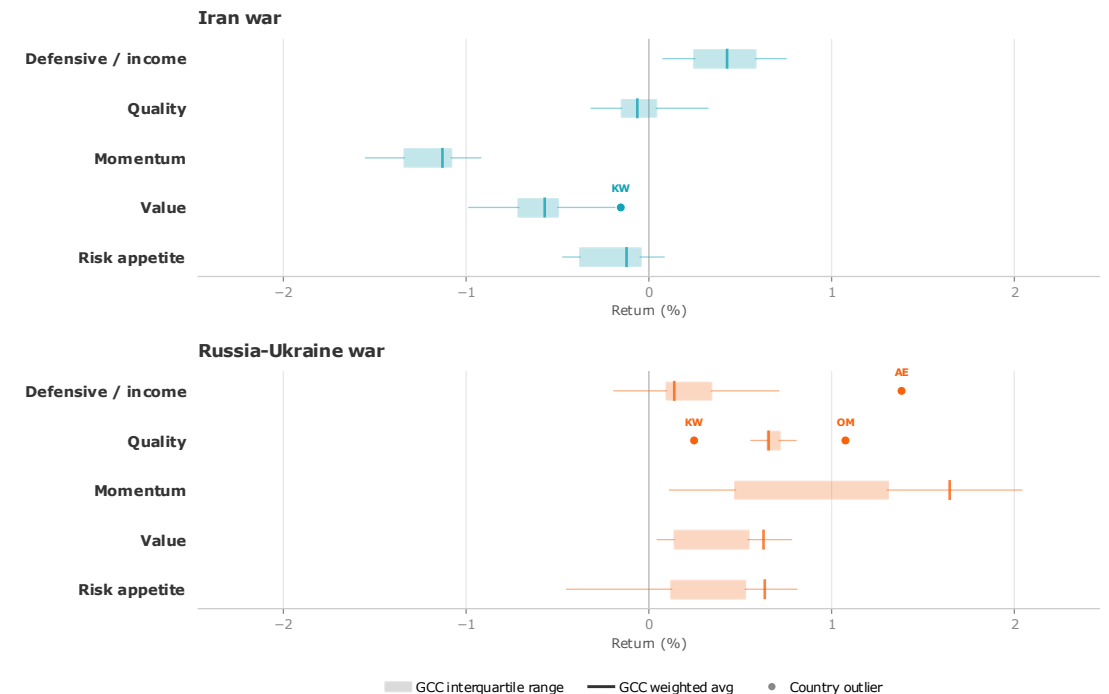
Iran conflict split GCC sectors

- The initial market reaction in GCC countries was a rotation, not a blanket sell-off: Real estate, IT and industrials sold off; energy and health care held up
- Momentum now weakest factor, while it was the strongest during Russia-Ukraine; defensive/income factors resilient

Market rotation rather than sell-off



Momentum reversed from strongest to weakest factor

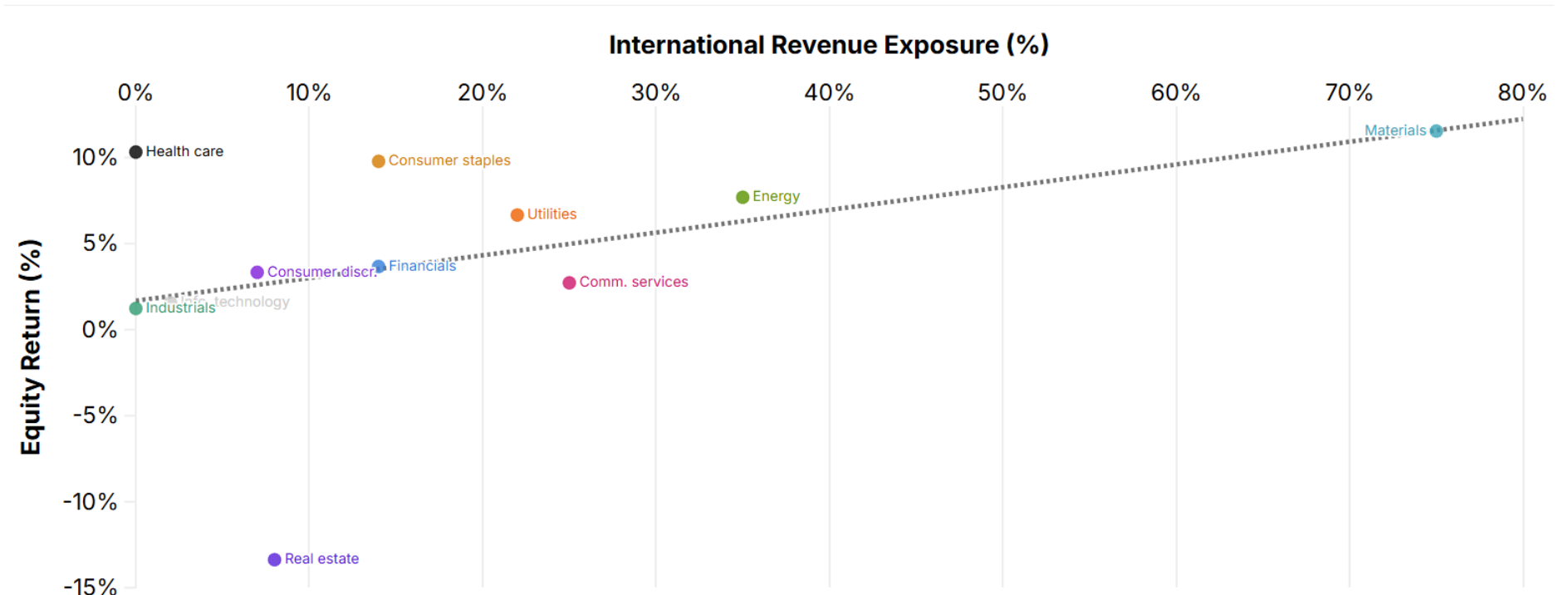


MSCI Research. Left: GCC country and sector returns based on the MSCI GCC Countries Combined Index and GICS. The MSCI GCC Countries Combined Index includes Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the UAE. Right: Thematic style-factor returns for the first three weeks after event onset. Box shows interquartile range across the six GCC countries. Factor returns are from the MSCI's Barra® MAC Factor Risk Model, grouped into five thematic categories. Returns measured between Feb. 23 and March 16, 2022, for the Russia-Ukraine war and between Feb. 27 and March 20, 2026, for the Iran war.

Hardest-hit sectors tended to have least international revenue

Revenue exposure explained the sector dispersion in GCC equities

- About 80% of GCC equity revenue is domestic: Sectors with the smallest international footprint tended to take the biggest hit
- Revenue data turned the monitoring signal into an actionable explanation

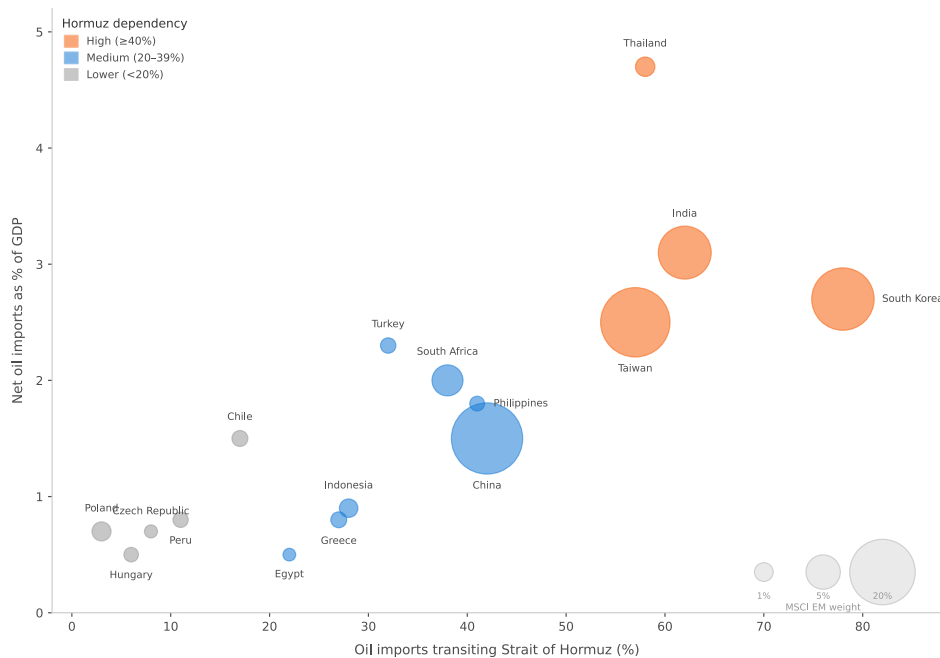


[MSCI Research](#). MSCI Index data, Equity return based on GCC Countries combined index performance between Feb 27 - April 16. International revenue exposure as of Feb 27, 2026. Past performance is not indicative of future results.

Supply-chain exposure traces the shock beyond the Gulf

→ China, Korea, India and Taiwan, the four largest EM constituents, are the most oil-import dependent. Asian petrochemicals, utilities and manufacturing face first-order disruption through Hormuz

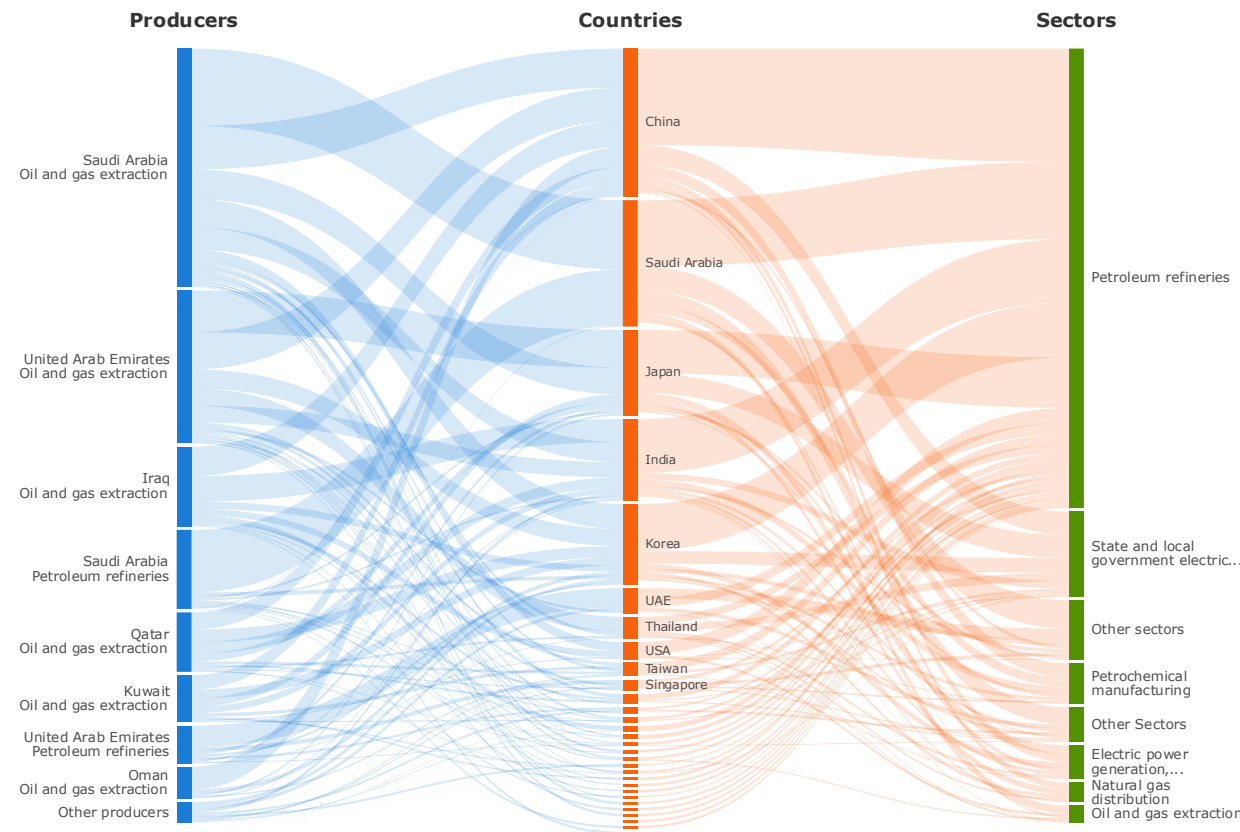
EM Asia's largest index constituents are the most exposed



MSCI Research. Left: Data as of 2024-2025. Bubble size equals MSCI EM Index weight as of Feb. 27, 2026. EIA estimates that 84% of the crude oil and condensate and 83% of the liquefied natural gas that moved through the Strait of Hormuz went to Asian markets in 2024. Source: IEA, EIA, IMF, Nomura. Right: Data as of Feb. 27, 2026. The left side shows the source — oil and gas extraction and petroleum-refining capacity concentrated in Iran, Iraq and GCC countries; the middle shows destination markets; the right side shows industries within those economies facing first-order exposure. Nodes and flows represent estimated share of input or output. Hover over the nodes to highlight the connected links. Based on MSCI supply-chain data.



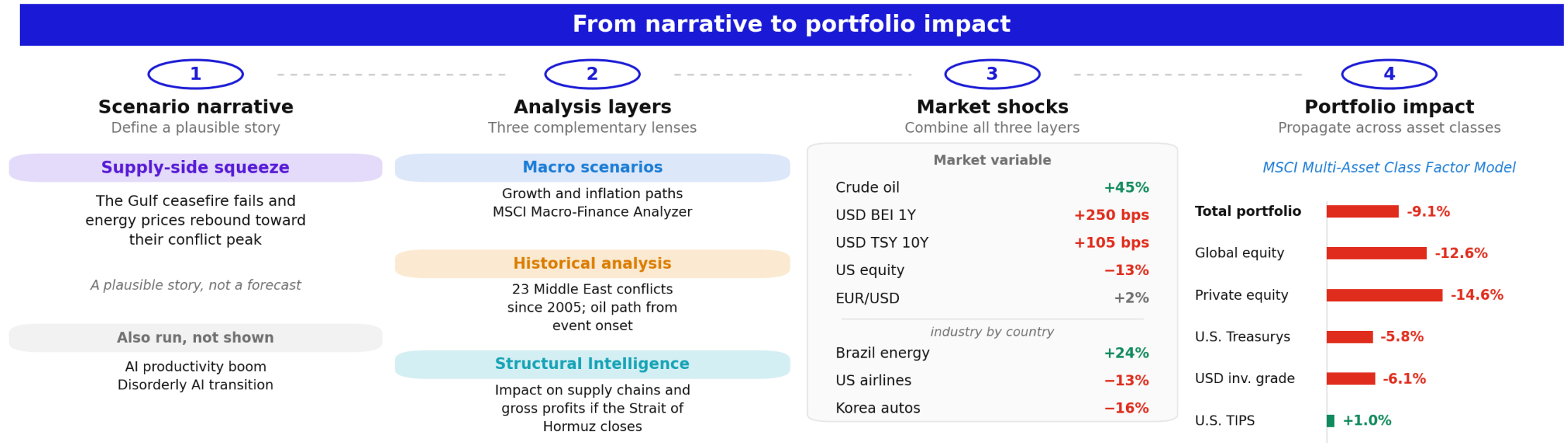
Gulf oil flows through the Strait of Hormuz to Asia-Pacific industries



From narrative to portfolio impact: the Iran stress test

→ The narrative defines the event, three analysis layers inform the shocks, and the shocks are propagated across mandates and asset classes

Four steps, and where each number comes from

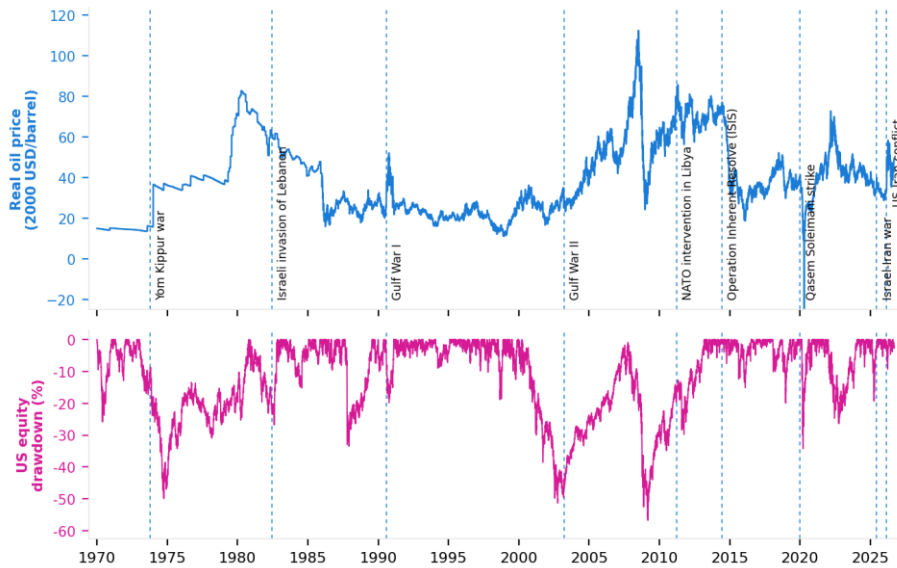


Source: MSCI Research. Schematic of the scenario-analysis workflow populated with the supply-side squeeze. Macro paths from the MSCI Macro-Finance Analyzer; historical analysis based on 23 Middle East conflicts since 2005; supply-chain impact derived from MSCI Supply Chain Intelligence. Market shocks are a selection of the full shock set; portfolio impact is propagated through the MSCI Multi-Asset Class Factor Model, in USD, for a global diversified composite. Scenario data as of July 1, 2026. See "When Regimes Shift: Three Lenses for Managing Regime Shifts in Multi-Asset-Class Portfolios," MSCI Research Insight, May 2026. See "Macro Scenarios in Focus: Assessing Portfolio Resilience to AI and Geopolitical Risks," MSCI Research, July 2026.

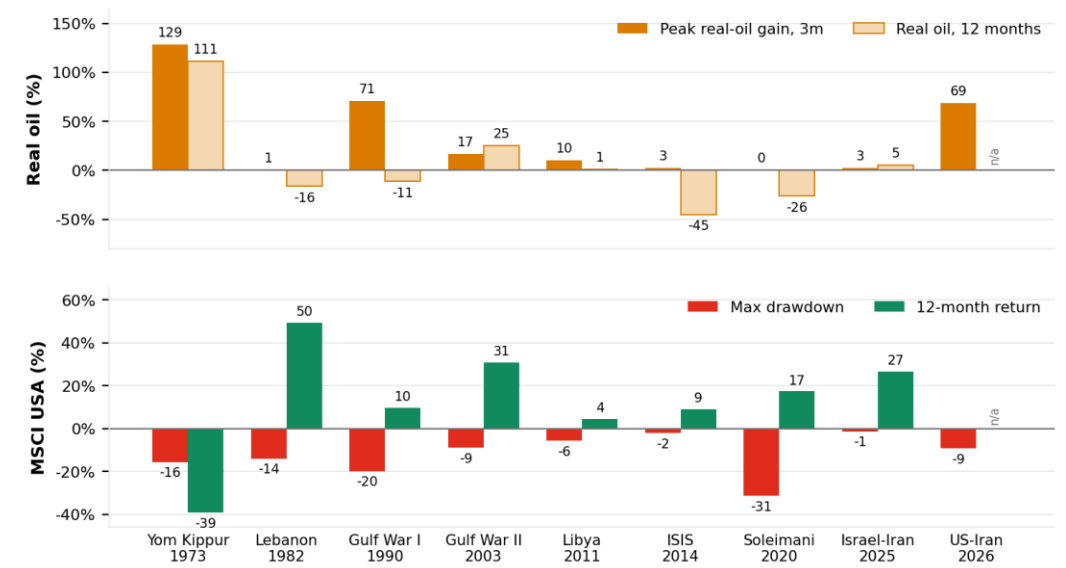
Middle East conflicts through a historical lens

- Equities recovered within 12 months after every conflict except 1973, when the oil shock fed an existing stagflation
- Only three events pushed real oil more than 50% higher: 1973, Gulf War I and this one. After Gulf War I the surge fully unwound within a year

Oil-price surges tended to fade after these



Real oil and US equity around past conflicts

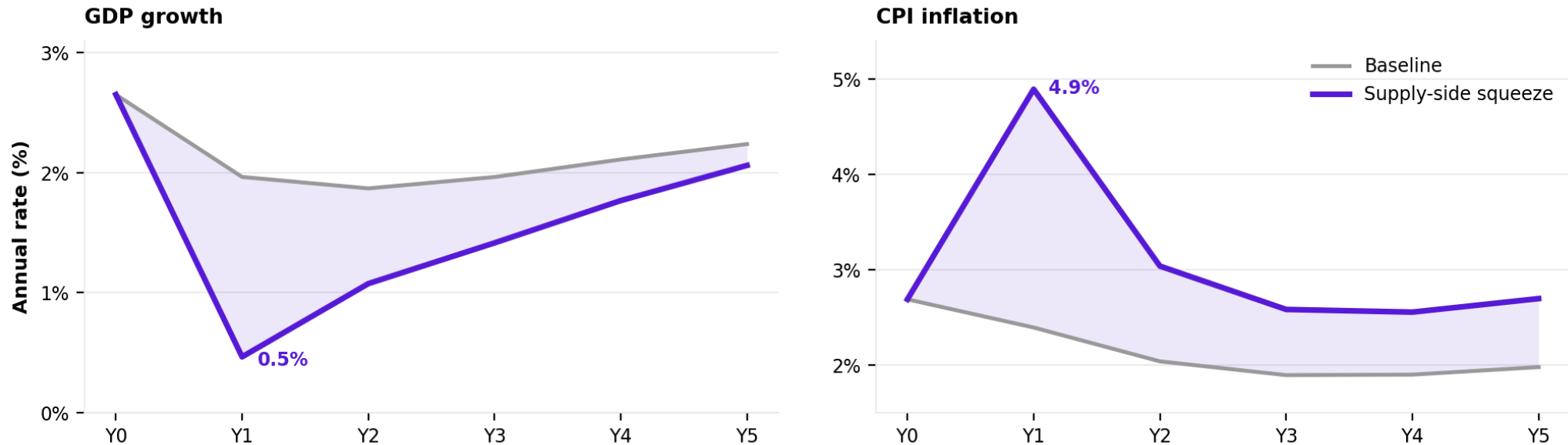


Source: MSCI Research, U.S. Energy Information Administration, U.S. Bureau of Labor Statistics retrieved from FRED, Federal Reserve Bank of St. Louis. Real oil price is WTI deflated by the Consumer Price Index for All Urban Consumers, expressed in January 2000 USD. US equity drawdown and returns are based on the MSCI USA Index. Data between January 1970 and September 2026. Right: peak real-oil gain is the highest cumulative real-oil return within three months of the event; max drawdown runs from the peak in the three months before the event to the trough in the three months after it; 12-month figures are not yet available for the 2026 conflict. See "When Regimes Shift: Three Lenses for Managing Regime Shifts in Multi-Asset-Class Portfolios," MSCI Research Insight, May 2026. Past performance — whether actual, back tested or simulated — is no indication or guarantee of future performance.

The macro layer: a supply-side squeeze

- Energy prices rebound toward their conflict peak: inflation jumps to 4.9% and growth falls to 0.5%, against baseline growth of 2.0% and inflation of 2.4%
- Five years on, inflation is still 0.7 points above baseline and the short rate 0.9 points higher. The shock does not fully unwind

Growth and inflation: baseline against the supply-side squeeze

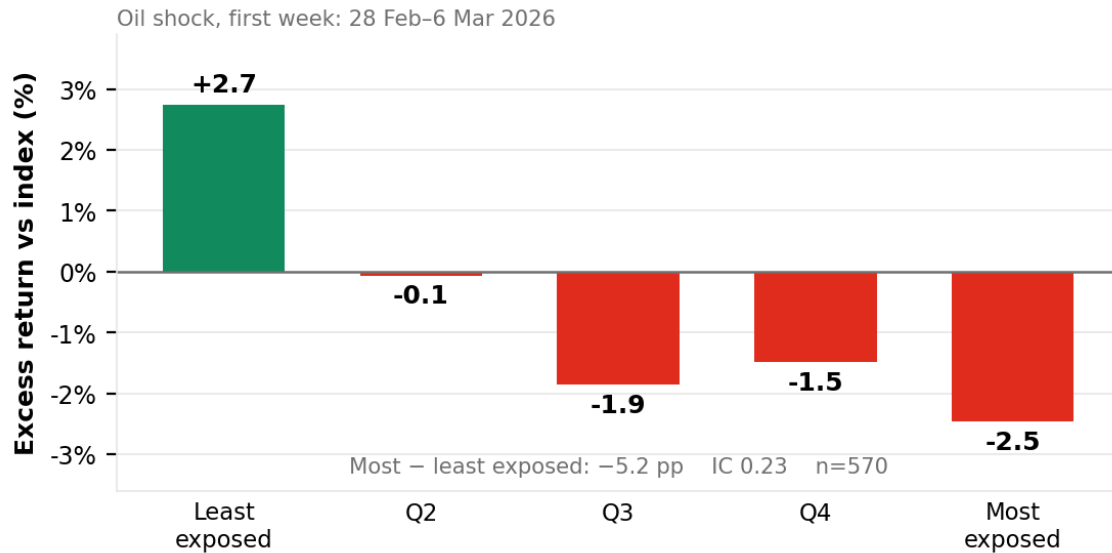


Source: MSCI Research. Annual US GDP growth and CPI inflation paths generated with the MSCI Macro-Finance Analyzer using the MSCI baseline scenario as of March 31, 2026, shown for the baseline and the supply-side squeeze, in which the Gulf ceasefire fails and energy prices rebound toward their conflict peak. Shading marks the gap between the two paths. The nominal short rate ends the horizon at 5.5% under the squeeze against 4.7% in the baseline. Y0 is the first observation and each subsequent label marks one year. These are not forecasts but hypothetical narratives of different macroeconomic scenarios. The scenario set was constructed in July 2026 on the premise of a fragile Persian Gulf ceasefire. See "Macro Scenarios in Focus: Assessing Portfolio Resilience to AI and Geopolitical Risks," MSCI Research, July 2026.

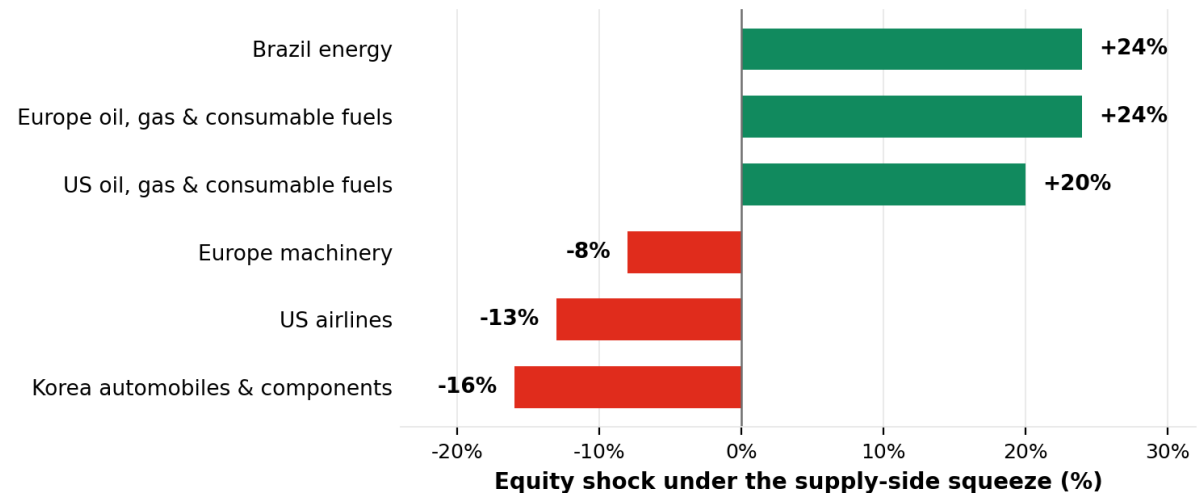
Structural Intelligence data sharpens the equity shock

- Ranked by Hormuz supply-chain impact, the most-exposed sub-portfolios trailed the least exposed by 5.2 points in the first week of the oil shock
- That is what shapes the equity shock: a 33-point spread between Brazilian energy and Korean autos inside one scenario

Most Hormuz-exposed firms underperformed



Industry shocks under the supply-side squeeze

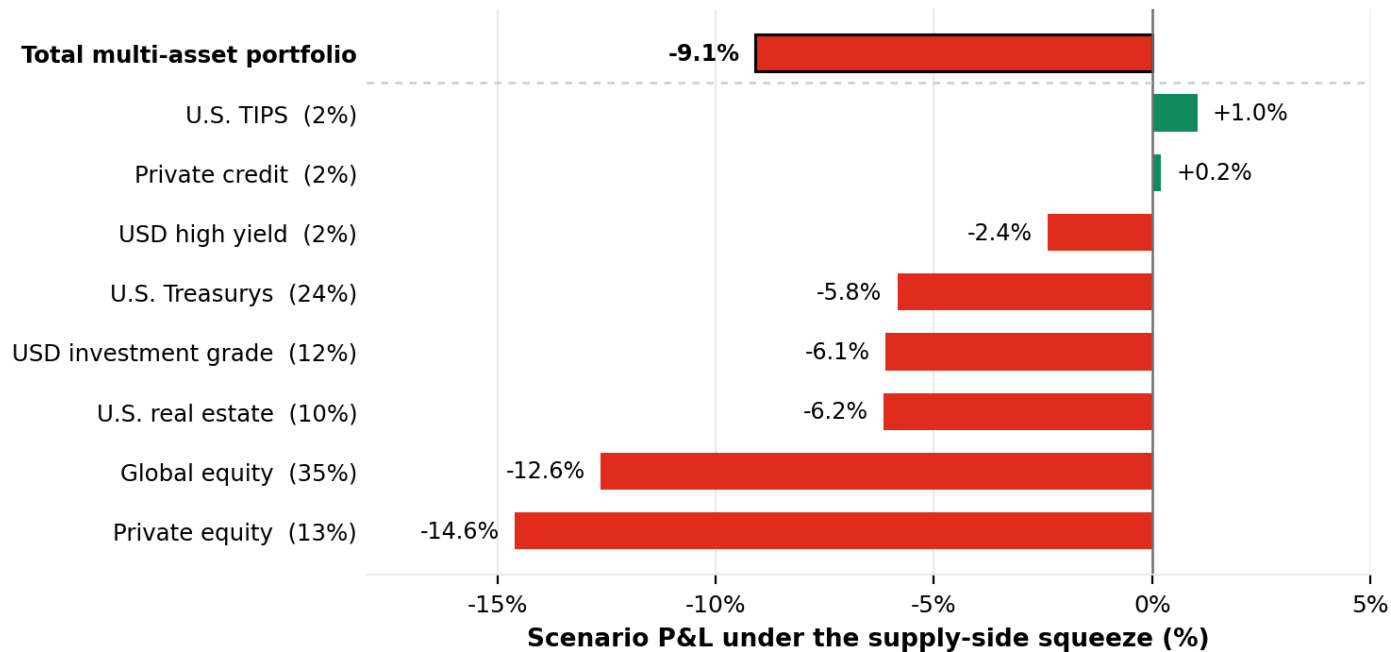


Source: MSCI Research. Left: average systematic excess return versus the index for 570 country-by-GICS-industry sub-portfolios of the MSCI ACWI IMI, sorted into quintiles by the modelled impact on supply chains and gross profits if the Strait of Hormuz closes, measured over the first week of the oil shock (Feb. 28 to March 6, 2026); information coefficient 0.23. The signal is derived from MSCI Supply Chain Intelligence, and because it is a gross-profit impact the most negative values are the most exposed. Right: industry-by-country equity shock assumptions, shaped using metrics derived from MSCI Supply Chain Intelligence, which measure the impact on a company's supply chains and gross profits if the Strait of Hormuz closes. The broad US equity shock in the same scenario is -13%, with crude oil +45%, one-year breakeven inflation +250 bps and the 10-year Treasury yield +105 bps. See "Macro Scenarios in Focus: Assessing Portfolio Resilience to AI and Geopolitical Risks," MSCI Research, July 2026.

The squeeze leaves few places to hide

- The portfolio loses 9.1%: equities, credit, Treasuries and real estate all fall together, with only TIPS and private credit positive
- Treasuries lose 5.8% in the same move that costs global equity 12.6%. In this regime the bond sleeve amplifies rather than cushions

Portfolio impact under the supply-side squeeze



Source: MSCI Research. Supply-side squeeze P&L by asset class, in USD, for a global diversified composite portfolio propagated through the MSCI Multi-Asset Class Factor Model; sleeve weights are in brackets and the composite is the weighted sum. Private equity and private credit are stressed alongside public holdings. Scenario data as of July 1, 2026; the set was built on the premise of a fragile Persian Gulf ceasefire. For comparison, the same portfolio returns +2.8% under the AI productivity boom and -1.6% under the disorderly AI transition. See "Macro Scenarios in Focus: Assessing Portfolio Resilience to AI and Geopolitical Risks," MSCI Research, July 2026.

The same scenario, very different industry outcomes

- Within a scenario that costs the US market 14%, passenger airlines lose 32% and semiconductors 29% while oil and gas gains 23%
- Software loses only 10%, against 26% in the AI transition scenario. The two regimes punish almost opposite parts of the market

Industry-by-country P&L under the supply-side squeeze (local currency)

USA	-29	-32	-26	-25	-17	-10	-18	17	23	-14
CAN		-16	-16		-12	-11	-9	10	12	-7
DEU	-22	-23	-10	-16	-20	-9	2		11	-13
JPN	-28	-5	-22	-10	-16	-6	2	-7	14	-11
IND	-9	-10	-10	-10	-9	-9	-6		-1	-7
	Semiconductors	Passenger airlines	Electronic equip.	Automobiles	Machinery	Software	Independent power	Energy equip. & svcs	Oil, gas & fuels	COUNTRY TOTAL

Source: MSCI Research. Scenario P&L by GICS industry and country under the supply-side squeeze, in local currency, propagated through the MSCI Multi-Asset Class Factor Model; blank cells indicate the industry is not represented in that country's index and the country total is the local-currency index return. Selected industries and countries shown; health care technology, pharmaceuticals, consumer finance and IT services are omitted for clarity. Scenario data as of July 1, 2026. Currency effects are excluded; the scenario also assumes the yen depreciates 3.4% and the won 2.9% against the dollar while the euro appreciates 2.0%. See "Macro Scenarios in Focus: Assessing Portfolio Resilience to AI and Geopolitical Risks," MSCI Research, July 2026. Past performance — whether actual, back tested or simulated — is no indication or guarantee of future performance.

Conclusion

MONITORING

- The rates factor flipped from diversifying to additive in a 60/40 portfolio
- Rate risk is now 39% of a high-yield portfolio's total risk
- Top-rated credit began moving with its own equity

STRUCTURAL INTELLIGENCE DATA

- The AI value chain isolated a repricing that sector classifications missed
- Revenue data explained the GCC sector rotation
- Supply chains traced Hormuz risk to EM Asia's largest weights

SCENARIO ANALYSIS

- A thin risk premium leaves little cushion if real rates rise further
- Under a supply-side squeeze bonds fall with equities instead of offsetting them
- Structural Intelligence data helps calibrate scenario shocks, industry by industry

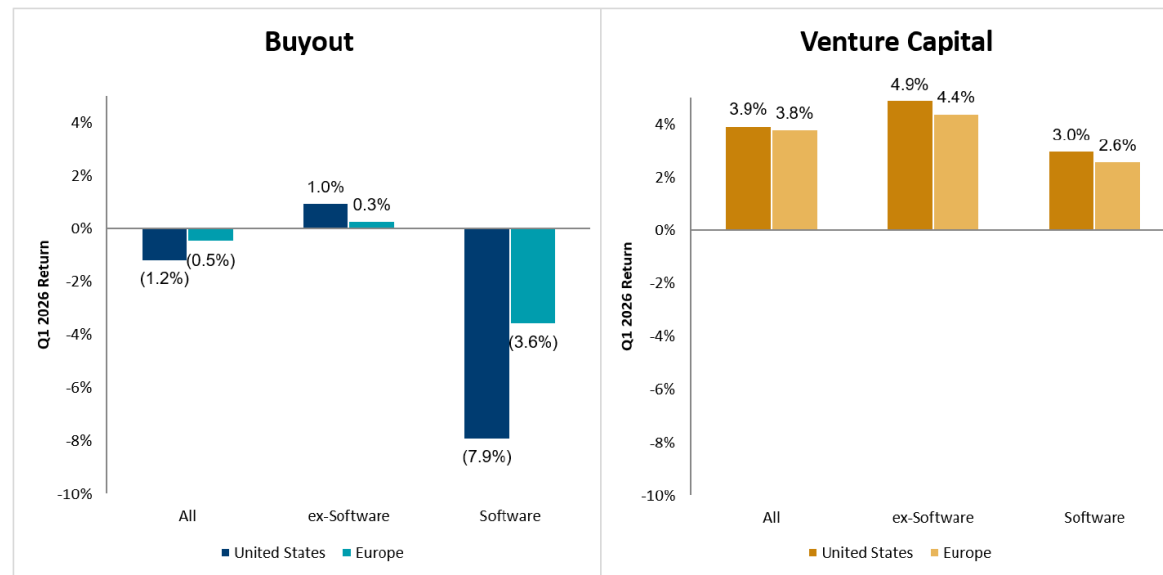
Run in parallel, the three lenses price a shock before the next allocation decision

Appendix

Software is written down in buyout, bid up in venture

- Buyout software fell 7.9% in the US and 3.6% in Europe in Q1 2026, while buyout ex-software was positive
- The divide is vintage, not sector: pre-AI legacy software is being written down in buyout books while AI-native businesses command untested venture premiums

Not all software is equal

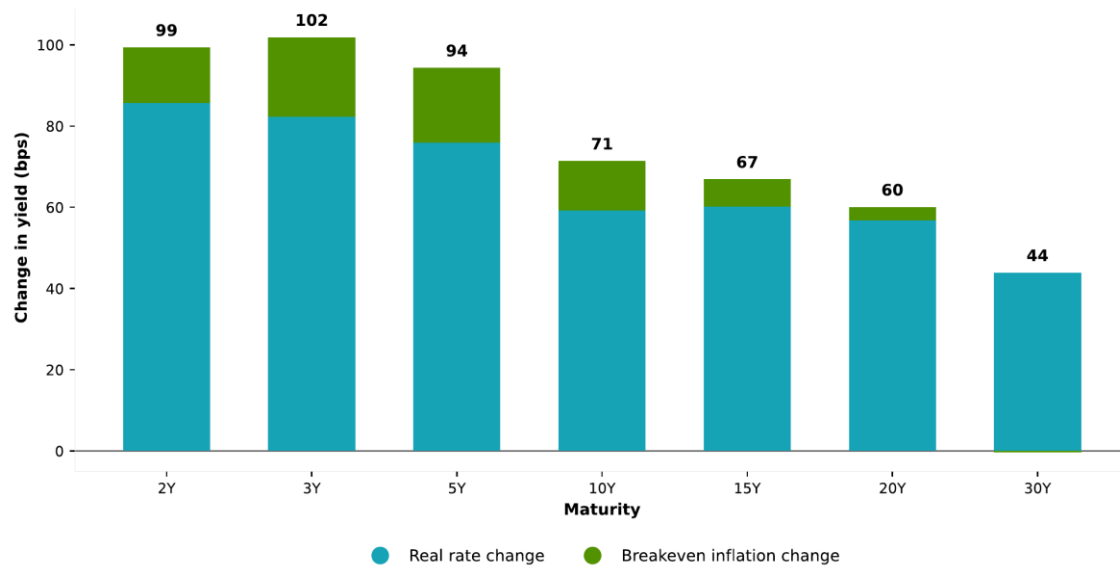


Source: MSCI Private Capital Solutions. Q1 2026 time-weighted rate of return for holdings-level indexes of the MSCI Buyout and Venture Capital Indexes. U.S. figures are USD-denominated; European figures are EUR-denominated. "Software" refers to the MSCI software sub-industry classification within information technology. In aggregate, global buyout funds fell 1% in the quarter while global venture-capital funds returned better than 5%. See "[Investment Trends in Focus: Midyear Update 2026](#)," MSCI Research Insights, July 2026. Past performance — whether actual, back tested or simulated — is no indication or guarantee of future performance.

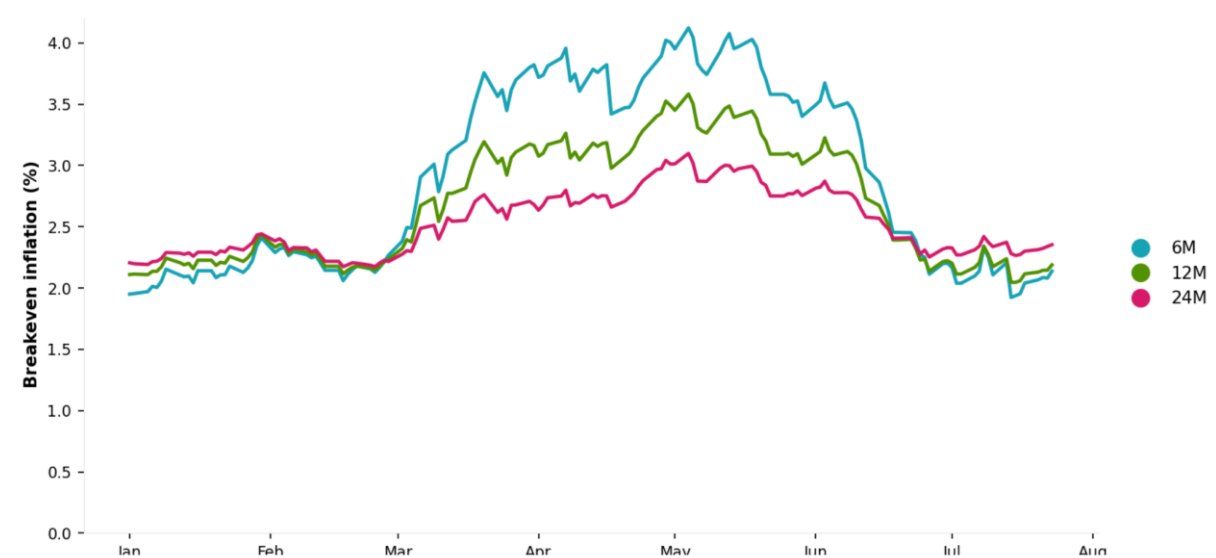
This year repriced the same way: real, not inflation

- Of the two-year's 99 bp rise from the Feb. 27 low, 86 bp came from real rates and only 14 bp from breakeven inflation. The 30-year rose just 44 bp, leaving 2s10s and 2s30s near their tightest of the year
- Breakeven inflation round-tripped with the oil spike, peaking in May and back near 2% by July. A real-rate-led bear flattening is the signature of policy held restrictive, not of a term-premium shock

Real rates drove the 2026 bear flattening



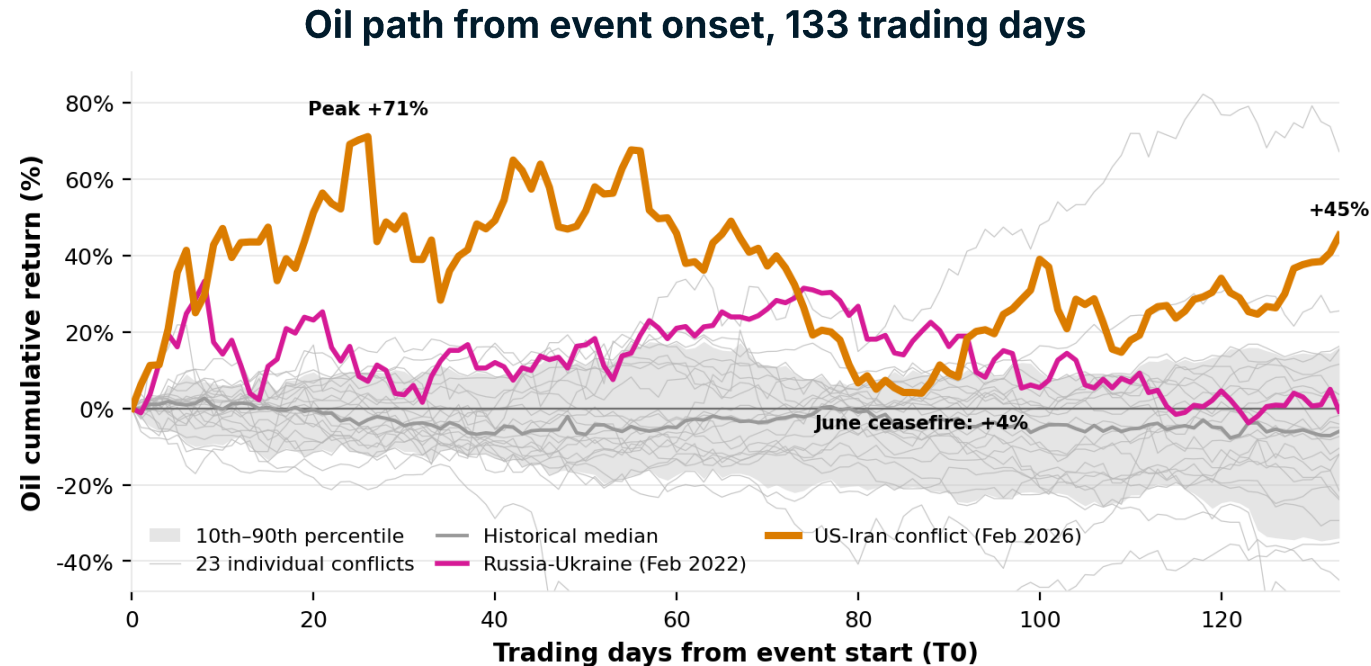
A round trip in inflation expectations, not a regime shift



Source: MSCI Fixed Income Curves, MSCI Research. Left: change in yield by maturity between Feb. 27 and July 23, 2026, decomposed into the change in real rate and the change in breakeven inflation. Right: U.S. Treasury breakeven inflation rate at the six-, 12- and 24-month tenors between Jan. 1 and July 23, 2026. Breakeven-inflation curves are calibrated using prices on U.S. nominal Treasuries and U.S. Treasury inflation-protected securities; the real rate is the nominal Treasury rate minus the breakeven-inflation rate of the same tenor. See ["Investment Trends in Focus: Midyear Update 2026,"](#) MSCI Research Insights, July 2026.

Six months on, this oil shock still has not unwound

- Across the 23 Middle East conflicts since 2005 the oil move faded within a month: the historical median is back at zero by day 20 and below it thereafter
- This one peaked 71% higher, fell back to +4% on the June ceasefire, then re-escalated to +45%. Russia-Ukraine had fully unwound by then



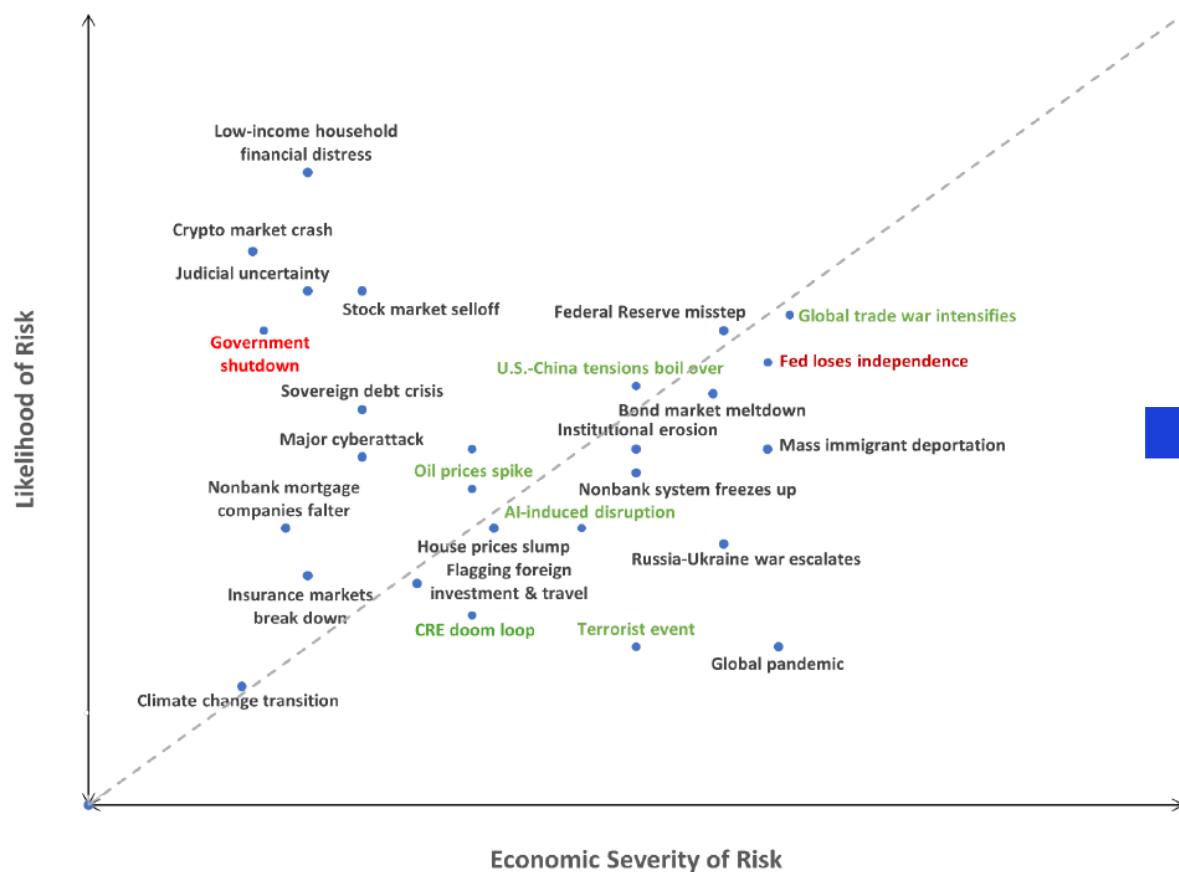
Source: MSCI Research, U.S. Energy Information Administration. Cumulative WTI return from event start (T0). Light grey lines are the 23 individual Middle East conflicts since 2005; the shaded band is their 10th to 90th percentile and the darker grey line their median. Two individual paths run outside the plotted range, the Soleimani window because it reaches the negative WTI prices of April 2020. Shown alongside the Russia-Ukraine invasion (Feb. 24, 2022) and the US-Iran conflict (Feb. 27, 2026), the latter covering the 133 trading days to Sept. 9, 2026. WTI spliced from internal data to June 16, 2025 and DCOILWTICO thereafter. See "When Regimes Shift: Three Lenses for Managing Regime Shifts in Multi-Asset-Class Portfolios," MSCI Research Insight, May 2026.

Scenario Lab: From Macro Narrative to Risk Propagation and Communication

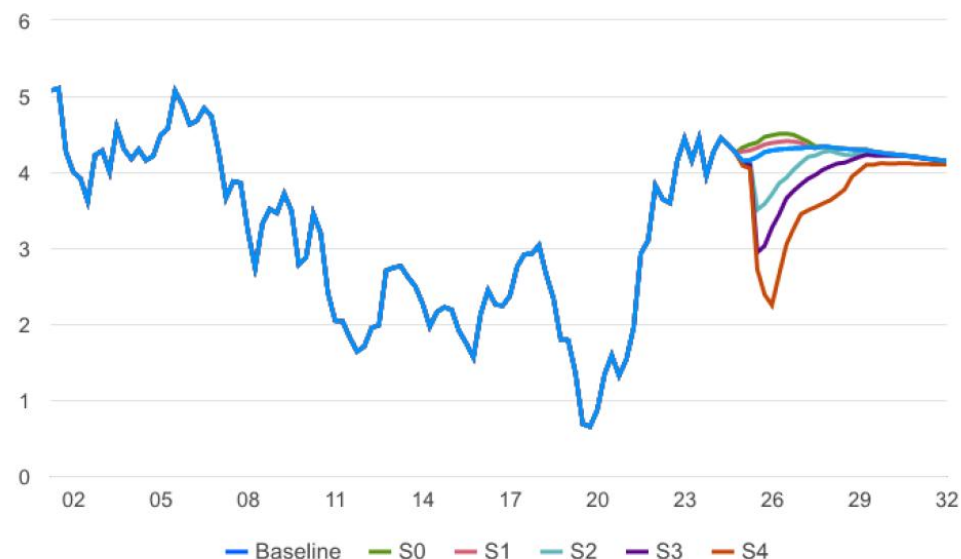
Sam Rubandhas

Managing Director - EMEA Head of Product Specialists, MSCI Analytics

World defined by Macroeconomic Scenarios



United States 10-Yr Government Bond Yield, % p.a., NSA



From narrative to validated portfolio impact



THE CHALLENGE

Scenario analysis is crucial tool for understanding portfolio risk in fast-moving markets

- Designing credible scenarios is time-consuming and technically demanding
- Multiple tools and reports needed to get from headline to portfolio impact



STRESS TEST

Workflow that guides you through stress test design, as if an expert were sitting next to you

- Describe a scenario in your own words, mapped to risk factors automatically



BEYOND RISK TEAM

Bringing scenario analysis to stakeholders beyond the Risk team

- Results with confidence bounds and historical context
- Flexible visualization and data distribution for actionable insights
- Narrative accessible across various stakeholders in the investment process

Approach and Methodology

4-step process translating macro narratives into quantifiable portfolio-level risk impacts across market, credit, liquidity, and counterparty risk exposures
Use interactive dashboarding across stakeholders: evaluate portfolio fit, benchmark scenario against historical episodes, and analyze confidence bounds on stress test estimates.

1

Macro Scenario Generation

Macro scenarios generated via Oxford Economics GEM are fed into MSCI's Macro Finance Analyzer, with scenario quality assessment.

2

Macro Scenario Translation

Macro Finance Analyzer translates Macro Scenarios to shocks on granular factors, BarraOne Factor Model shocks and RiskManager market-observable factor shocks.

3

Granular Factor Scenario Generation

Based on granular factors shocks, generate granular factor scenarios, with scenario quality assessment.

4

Portfolio Risk Impact

Assess impact of scenarios across Market, Credit, Funding & Market Liquidity, Counterparty Credit Exposure, and Asset Allocation profiles and exposures.

Four catalysts behind 80 years of US equity drawdowns

34 US equity drawdowns over 10% since 1946. Catalyst type drives both the depth of the drop and the time to recover.

MACROECONOMIC

Avg -25% drop; ~22 months end-to-end

- Recessions, credit cycle, tight policy
- 1946 postwar transition
- 1973 oil crisis (64-mo recovery outlier)
- 2008 global financial crisis

FUNDAMENTAL

Avg -20% drop; ~14 months end-to-end

- Valuation reset, earnings revised
- 1961 Kennedy Slide
- 1983 valuation reset
- 2000 dot-com bubble

LEVERAGE / LIQUIDITY

Avg -17% drop; ~7 months end-to-end

- Microstructure cascades, forced selling
- 1980 Hunt Brothers silver squeeze
- 1998 LTCM collapse
- 2018 volatility spike

NONECONOMIC

Avg -17% drop; ~3 months end-to-end

- Exogenous shocks, hard to anticipate
- 1950 Korean War
- 2001 9/11 attacks
- 2020 COVID-19 pandemic

Macro events deepest and longest; noneconomic fastest

Catalyst	Max drawdown	Drawdown speed	Peak to bottom	Bottom to recovery
Macroeconomic	~ -25%	~ 4% / month	~ 10 months	~ 12 months
Fundamental	~ -20%	~ 4% / month	~ 6 months	~ 8 months
Leverage / liquidity	~ -17%	~ 16% / month	~ 2 months	~ 5 months
Noneconomic	~ -17%	~ 24% / month	~ 1 month	~ 2 months

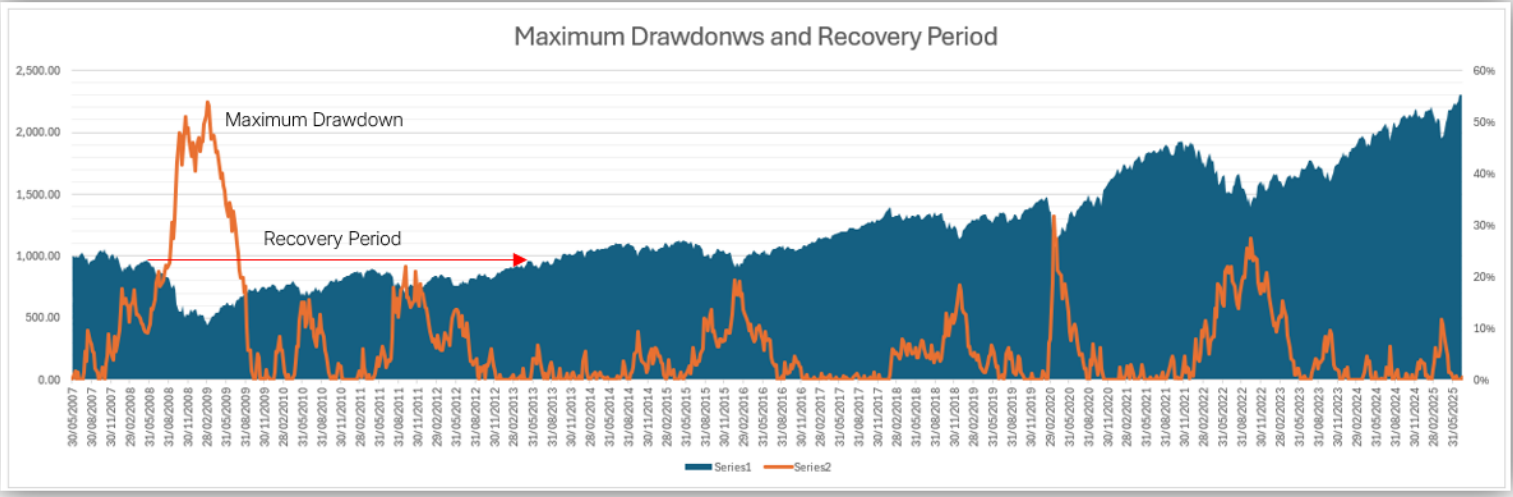
Source: MSCI Research, Bookstaber, Verbraken, Szikszai, Nov 2024 — averages across 34 US equity drawdowns >10% since 1946

Articulate Impact of Scenario



Risk Exposure

Identifying vulnerability to potential losses due to specific risk factors



COVID-19 market disruption

1 portfolio

MARKET REACTION Crude Oil 1M -57.8% (-10.2sigma), USD SOFR OIS 10Y -61.9% (-3.2sigma)

2020-02-19 to 2020-04-07 | 2m

PORTFOLIO

ACWI

MSAWIF_AD

PATH



STRESS DRIVERS

Ret -20.5% DD -13.5%

Vol 0.0pp Corr 0.00

RECOVERY 6m

SCORE

32

WATCH

Geopolitical shocks

1 portfolio

MARKET REACTION Gold 12M +35.9% (+20.7sigma), USD SOFR OIS 10Y +156.4% (+17.6sigma)

2022-02-24 to 2025-02-01 | 2.9y

PORTFOLIO

ACWI

MSAWIF_AD

PATH



STRESS DRIVERS

Ret +27.4% DD -21.4%

Vol +1.3pp Corr 0.00

RECOVERY 17m

SCORE

24

WATCH

Start from third-party macro forecasts

MACRO NARRATIVE TRANSLATOR

Macro Narrative Translator

A trainable engine that infers Macro Finance Analyzer shock inputs from a macro scenario expressed as a set of standard economic variables. Enter or load a scenario, run inference, review the drivers, then push the result into the Macro Scenario tab.

INFERENCE ENGINE

Elasticity blend model (v0 · baseline)

19 inputs → 10 outputs

trained on 144 quarters (1988–2024)

engine: heuristic v0

▸ Methodology & assumptions

LOAD A SCENARIO:

Latest actual (baseline)

Stagflation

Deep recession

Soft landing

Macro scenario inputs

19 features · editable · extensible

ACTIVITY, LABOUR & PRICES

Nonfarm payrolls, YoY

0.93%

Commercial RE prices, YoY

-2.22%

S&P 500, YoY

28.30%

Unemployment rate

4.02%

Imports of goods, YoY

8.90%

Residential house prices, YoY

4.00%

Non-oil commodity index, YoY

1.14%

Household real income, YoY

1.26%

Exports of goods, YoY

0.66%

GROWTH, INFLATION, RATES & FX

Year 1 growth rate (%)

2.38%

10-Year average growth rate (%)

2.30%

Year 2 inflation rate (%)

3.97%

Energy real price (2015 USD)

47.73idx

2-Year treasury yield (%)

5.43%

Year 2 growth rate (%)

2.38%

Year 1 inflation rate (%)

3.97%

10-Year inflation rate (%)

2.95%

Currency Index

100.00idx

10-Year treasury yield (%)

4.44%

Inferred MFA shock inputs

engine: Elasticity blend model (v0)

MFA INPUT	BASELINE	SHOCK	APPLIED
Year 1 growth rate (%)	2.38 →	+0.31	2.69
Year 2 growth rate (%)	2.38 →	+0.35	2.73
10-Year average growth rate (%)	2.30 →	+0.05	2.35
Year 1 inflation rate (%)	3.97 →	+0.13	4.10
Year 2 inflation rate (%)	3.97 →	+0.06	4.03
10-Year inflation rate (%)	2.95 →	-0.03	2.92
Energy real price (2015 USD)	47.73 →	+1.91	49.64
Currency Index	100.00 →	+0.00	100.00
2-Year treasury yield (%)	5.43 →	+0.32	5.75
10-Year treasury yield (%)	4.44 →	-0.06	4.38

Send to Macro Scenario →

Prefills the ten shock fields on the Macro Scenario tab and switches to it.

Bring in macro forecasts from providers such as Oxford Economics and translate them into MSCI's Macro Finance Model.

Disclaimer: The dashboard is still in development and provided for illustrative and discussion purposes only. There is no guarantee that it will be developed into or offered as a commercial product or service.

MSCI



Information Classification: GENERAL

37

Macro narrative to granular factor shocks

MACRO SCENARIO DESIGN & DIAGNOSTIC

Macro Finance Analyzer

Define a baseline and macro shock scenario and then refine your scenarios using Scenario Diagnostics.

Inputs

Create your definition of baseline and macro shock scenarios.

ANALYSIS DATE

COUNTRY

2026-03-31

Euro Area

Get Baseline

Baseline Scenario

Macro Shock Scenario

YEAR 1 GROWTH RATE SHOCK (%)

YEAR 2 GROWTH RATE SHOCK (%)

10-YEAR AVG GROWTH RATE SHOCK (%)

YEAR 1 INFLATION SHOCK (%)

YEAR 2 INFLATION SHOCK (%)

10-YEAR INFLATION SHOCK (%)

ENERGY REAL PRICE SHOCK (%)

EXCHANGE RATE SHOCK (%)

2-YEAR TREASURY YIELD SHOCK (%)

10-YEAR TREASURY YIELD SHOCK (%)

-1.60

-2.10

-0.58

2.80

3.20

1.18

18.50

4.80

2.13

1.38

Apply

Reset

STAGFLATION

SCENARIO

This is a severe stagflation scenario.

Macro shocks

Realized shock by variable.

Year 1 growth rate

Year 2 growth rate

10-year average growth

Year 1 inflation

Year 2 inflation

10-year average inflation

Real Energy price

Currency Index

2-year treasury yield

10-year treasury yield

Equity risk premium

-1.60 pp

-2.10 pp

-0.58 pp

+2.80 pp

+3.20 pp

+1.18 pp

+18.50

+4.80

+2.13 pp

+1.38 pp

+1.85 pp

INSTANTANEOUS MAHALANOBIS

MULTI-TEMPORAL MAHALANOBIS

SEVERITY READ

2.87

2.41

Severe

Factor shocks

Propagated factor-level shocks by asset class.

Factor Shocks

Market Observable Shocks

EQUITY — COUNTRY MARKETS

top 5 by shock 5

KR Country

CX Market Equity

TW Market Equity

JP Country

ID Country

+11.41%

+10.35%

+8.43%

+8.17%

+5.91%

US TREASURY CURVE

top 5 by shock 5

US CORPORATE CREDIT SPREADS

top 5 4

COMMODITIES — SPOT SHIFT

top 5 5

FX MAJORS VS USD

top 5 5

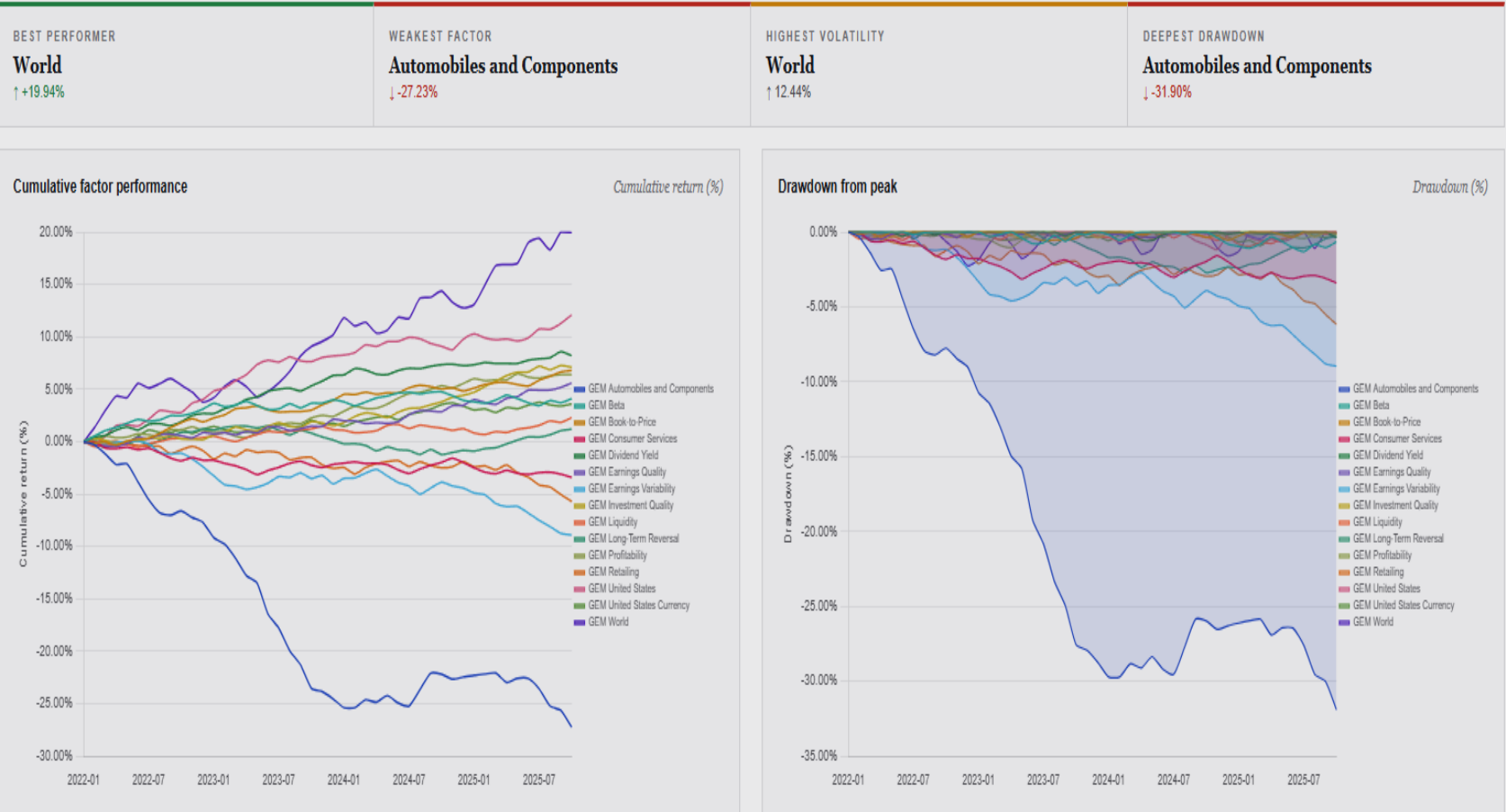
US EQUITY RISK INDICES

top 5 5

Input your Macro narrative into MSCI's Macro Finance Analyzer and translate them to shocks on granular factors.

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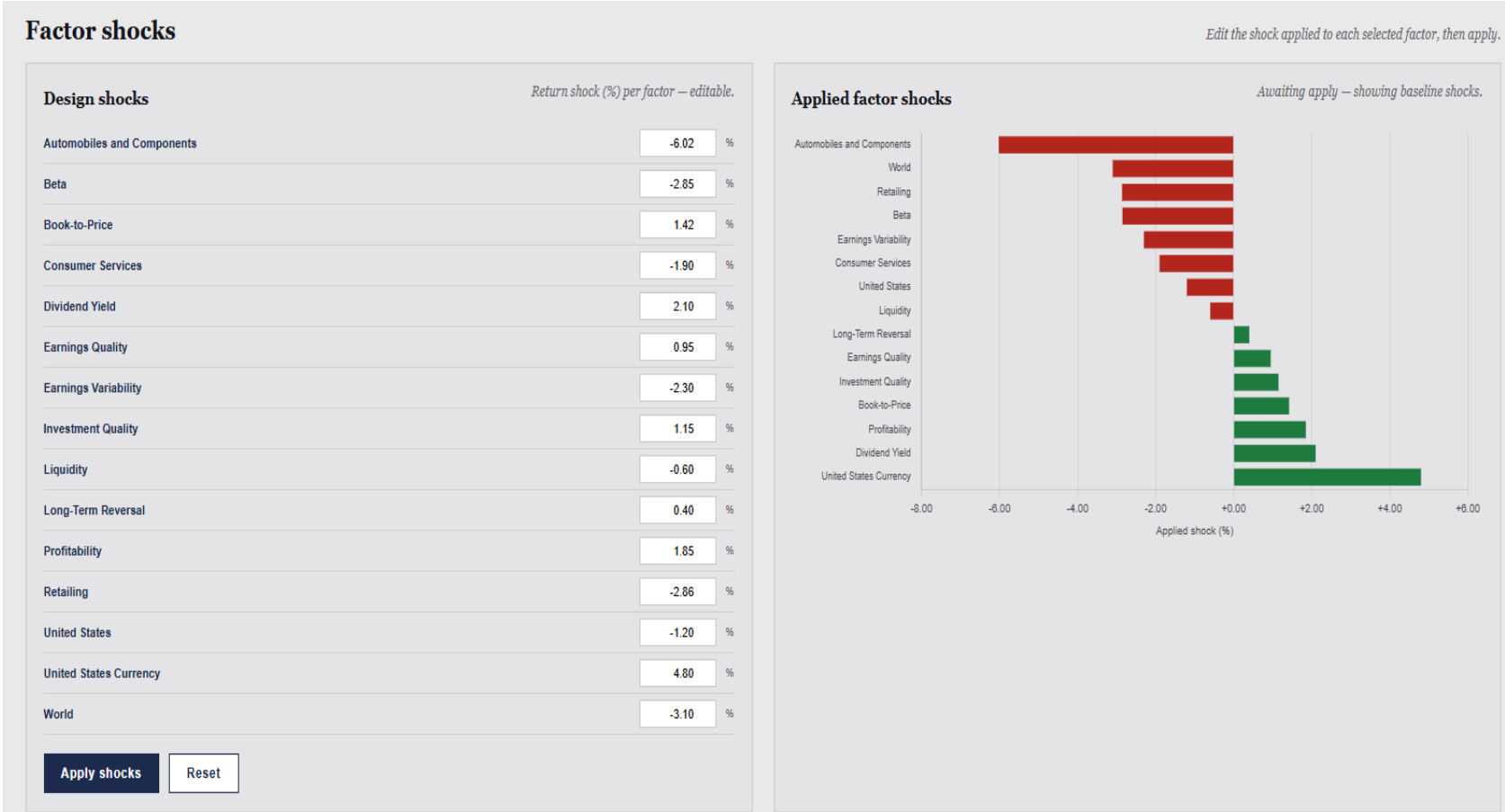
Understand historical factor data



Explore how risk factors have behaved through past market regimes, using historical data to ground and validate the scenario.

Disclaimer: The dashboard is still in development and provided for illustrative and discussion purposes only. There is no guarantee that it will be developed into or offered as a commercial product or service.

Finalize granular factor scenarios



Enhancing Scenario Quality



Portfolio Fit — 69%

The scenario covers a fair amount of the portfolio's risk, but there's room to tighten the estimate. Adding a factor or two could help.

There are market-wide factors this portfolio is exposed to that your scenario doesn't include. Adding factors can close the gap.

[See which factors could help →](#)



Historical Context — Very rare

Only 44 out of 4690 historical episodes of this type were this large.



Shock Consistency — 1.01

The factor movements in your scenario are consistent with how they've historically moved together.



Factor Overlap — 1.18

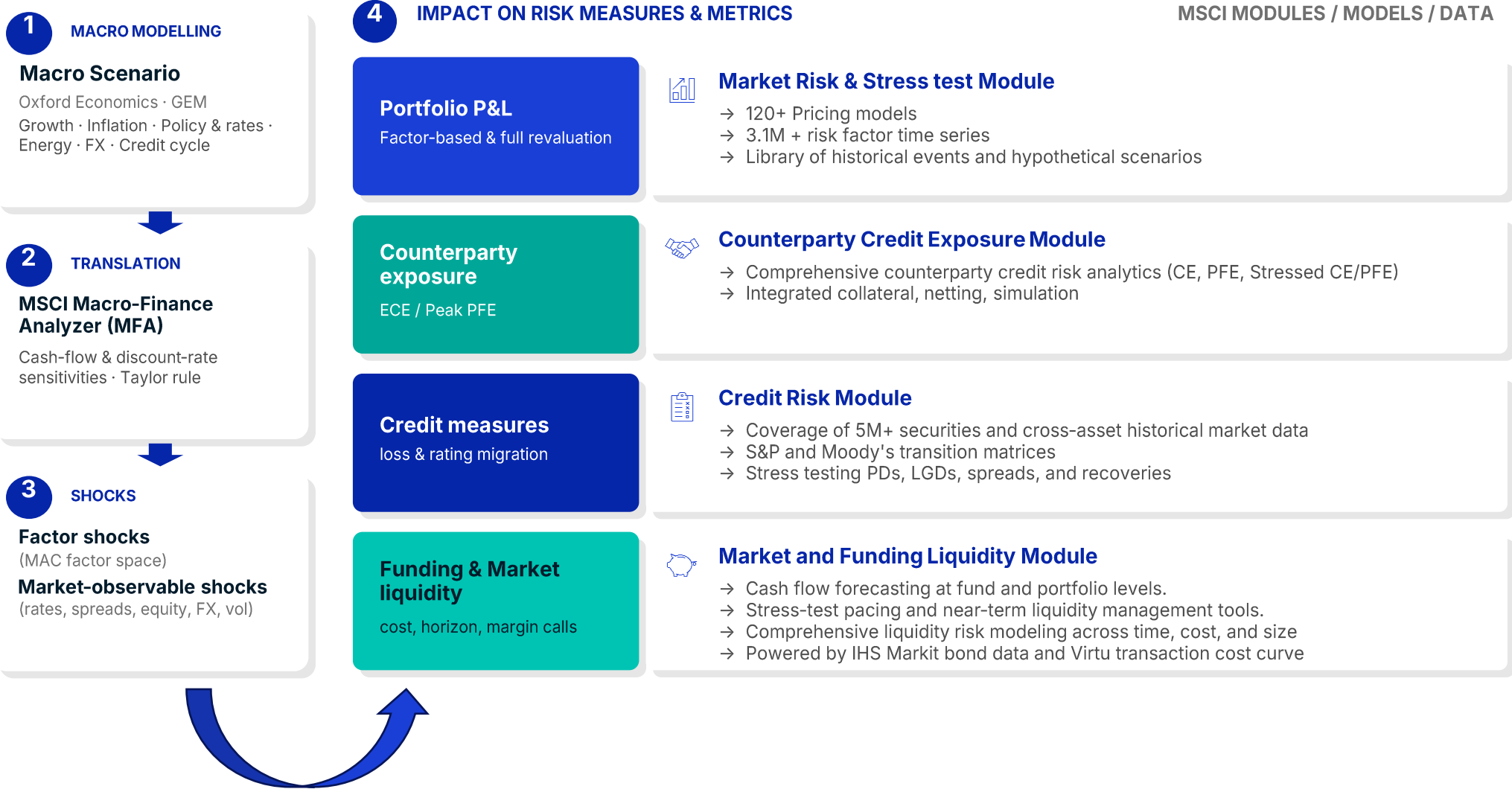
All the factors in your scenario are sufficiently independent from each other.



Sub-Portfolio Fit — 69%

All sub-portfolios are adequately explained by the scenario factors.

Macro Stress-Testing Flow



Scenario Analysis: Deep Dive

Scenario Results

Export



HEADLINE

This 21-day scenario points to a materially negative outcome for World ex US equity, with an estimated loss of -17.59%, and while that estimate is reasonably solid, the scenario still misses some broader market drivers that could further refine the picture.

KEY FINDINGS

- The central estimate is a -17.59% portfolio impact, with a confidence range from -26.17% to -9.02%, so the downside signal is strong even allowing for uncertainty.
- For context, this is a very rare shock set: it ranks in the top 0.92% of historical 21-day episodes, with only 44 out of 4690 periods showing a move this large.
- The scenario is internally coherent: the factor moves are consistent with how markets have historically moved together, so this does not look like an unrealistic combination of shocks.
- Factor overlap is not a concern here. The shocked drivers are sufficiently independent, so the decomposition is not being distorted by overlapping signals.
- The main limitation is coverage, not noise: the scenario explains a fair amount of the portfolio's behavior, but its portfolio fit is 69.26%, which suggests some important broad market exposures are still outside the current factor set.

STRESS TEST PRECISION

The estimated impact is -17.59%, with a confidence range from -26.17% to -9.02%, which is reasonably tight relative to the size of the move. Portfolio fit is 69.26%, meaning the scenario captures much of the risk but not all of it; the gap appears to come from missing broad market drivers rather than stock-specific noise.

RECOMMENDATION

Refine the scenario by adding the strongest missing market driver first — EUR Europe Equity stands out as the best next candidate — because that is the most likely way to improve portfolio fit and tighten confidence in the result without introducing factor overlap.

Macroeconomic Scenarios

Stagflation Shock — Executive Summary

Persistent stagflation: the most severe of the six scenarios tested (Mahalanobis 2.87). Growth below trend, inflation above target, rates +150bps.

The book is resilient in normal conditions but materially exposed to this scenario. Portfolio worst-case P&L -26.68%. Info Tech close behind at -24.89%; Energy most resilient at -10.45%. The sharpest single move is counterparty exposure, up +133.7% — may require immediate attention. Credit VaR rises +15.6% under 50% spread widening, concentrated in sovereigns and supranationals. Liquidity provides the main buffer: 73.8% of the book is liquid within six months, giving ample room to fund obligations without forced selling. Allocation analysis flags rotation into resilient industries, with total risk at 18.9%.

KEY TOPICS TO CONSIDER

- 1. Is a -26.68% worst-case P&L within your risk appetite and policy limits under a stagflation scenario?
- 2. Is the +133.7% counterparty exposure spike manageable within near-dated limits?
- 3. Does the 73.8% six-month liquidity coverage support your commitment pacing and cash-flow obligations under stress?

Stagflation across portfolios

P&L (%) by portfolio

	SEVERITY	P&L	LOSS SIZE	WHERE THE STRESS LANDS (MF·FL·ML·CR·CP·AL)					
Portfolio	2.93	-26.68%		MF	FL	ML	CR	CP	AL
Info Tech	2.90	-24.89%		MF	FL	ML	CR	CP	AL
Benchmark	2.85	-20.38%		MF	FL	ML	CR	CP	AL
Financials	2.83	-19.42%		MF	FL	ML	CR	CP	AL
Health Care	2.79	-15.74%		MF	FL	ML	CR	CP	AL
Energy	2.72	-10.46%		MF	FL	ML	CR	CP	AL

The selected scenario applied to every portfolio, ranked by exposure. The six-bar strip shows where each portfolio takes the stress; lower-beta sleeves (Energy, Health Care) stay greener, while Portfolio and Info Tech light up red.

Portfolio across scenarios

P&L (%) by scenario

	SEVERITY	P&L	LOSS SIZE	WHERE THE STRESS LANDS (MF·FL·ML·CR·CP·AL)					
Stagflation	2.93	-26.68%		MF	FL	ML	CR	CP	AL
Rates shock	2.36	-20.39%		MF	FL	ML	CR	CP	AL
Credit widening	2.09	-18.05%		MF	FL	ML	CR	CP	AL
Liquidity freeze	1.92	-16.47%		MF	FL	ML	CR	CP	AL

The selected portfolio under every scenario. Each row shows the severity score, the P&L and its loss-size bar, and a six-bar strip showing which domains the stress lands in — Market factor (MF), Funding liquidity (FL), Market liquidity (ML), Credit (CR), Counterparty (CP), Allocation (AL). Taller, redder bars = harder hit.

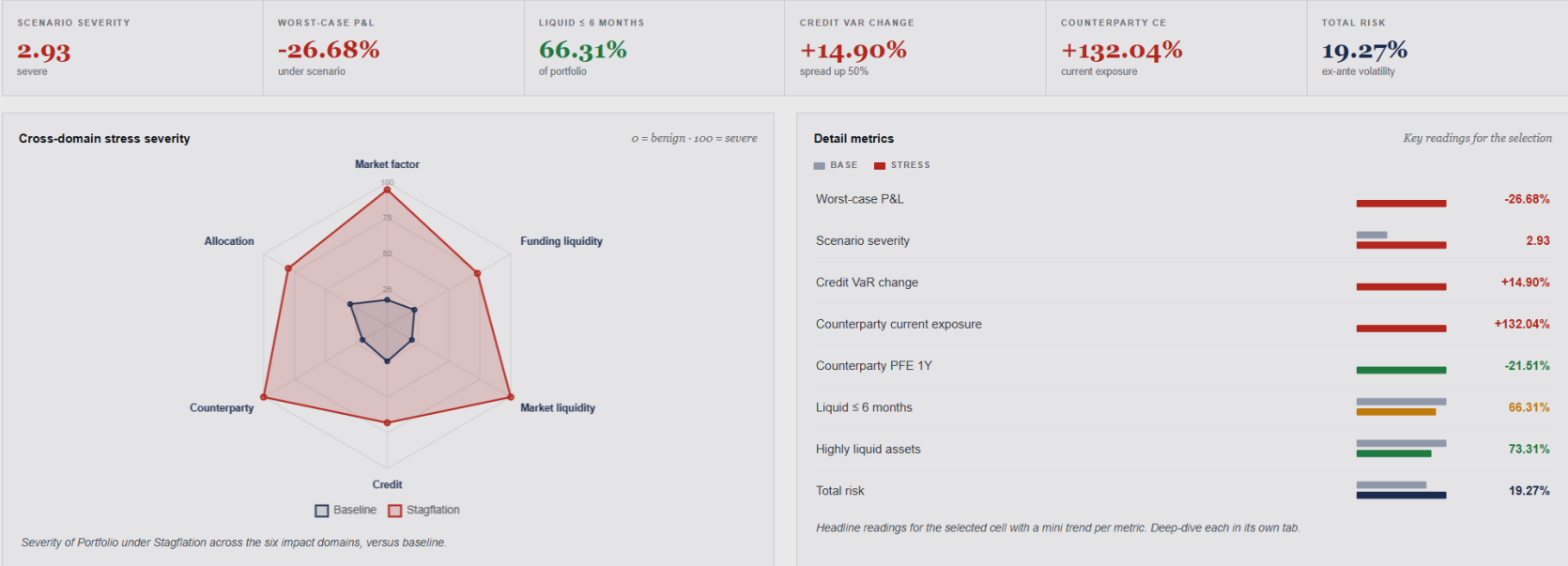
Scenario Analysis: Communication

Macroeconomic Scenarios: Detailed View

Macro scenario Severe stagflation; Mahalanobis 2.87 (instantaneous), 2.41 (path). ELEVATED Open tab →	Factor exposure World and Automobiles factors drive the widest dispersion; deepest drawdown -31.90%. ELEVATED Open tab →	Market factor shock Selected portfolio P&L -26.7%, ranked most exposed of six. HIGH Open tab →
Funding liquidity Peak funding need in 2025; 73.8% of portfolio liquid within six months. MANAGEABLE Open tab →	Market liquidity 80.69% highly liquid; the book can fund obligations from liquid assets without forced sales. ELEVATED Open tab →	Credit Spread-up-50% raises VaR +15.6%, concentrated in sovereigns and supranationals. HIGH Open tab →
Counterparty Current exposure +133.7% under stress; short-horizon PFE the binding measure. HIGH Open tab →	Allocation Rotation out of demand-cyclicals into resilient names; YTD -7.5%, total risk 18.9%. ELEVATED Open tab →	Overall Stagflation stress transmits broadly; liquidity provides the main buffer. HIGH

Selected: Portfolio × Stagflation

Detail for the highlighted matrix cell.



Cross-domain stress severity

o = benign · 100 = severe

Severity of Portfolio under Stagflation across the six impact domains, versus baseline.

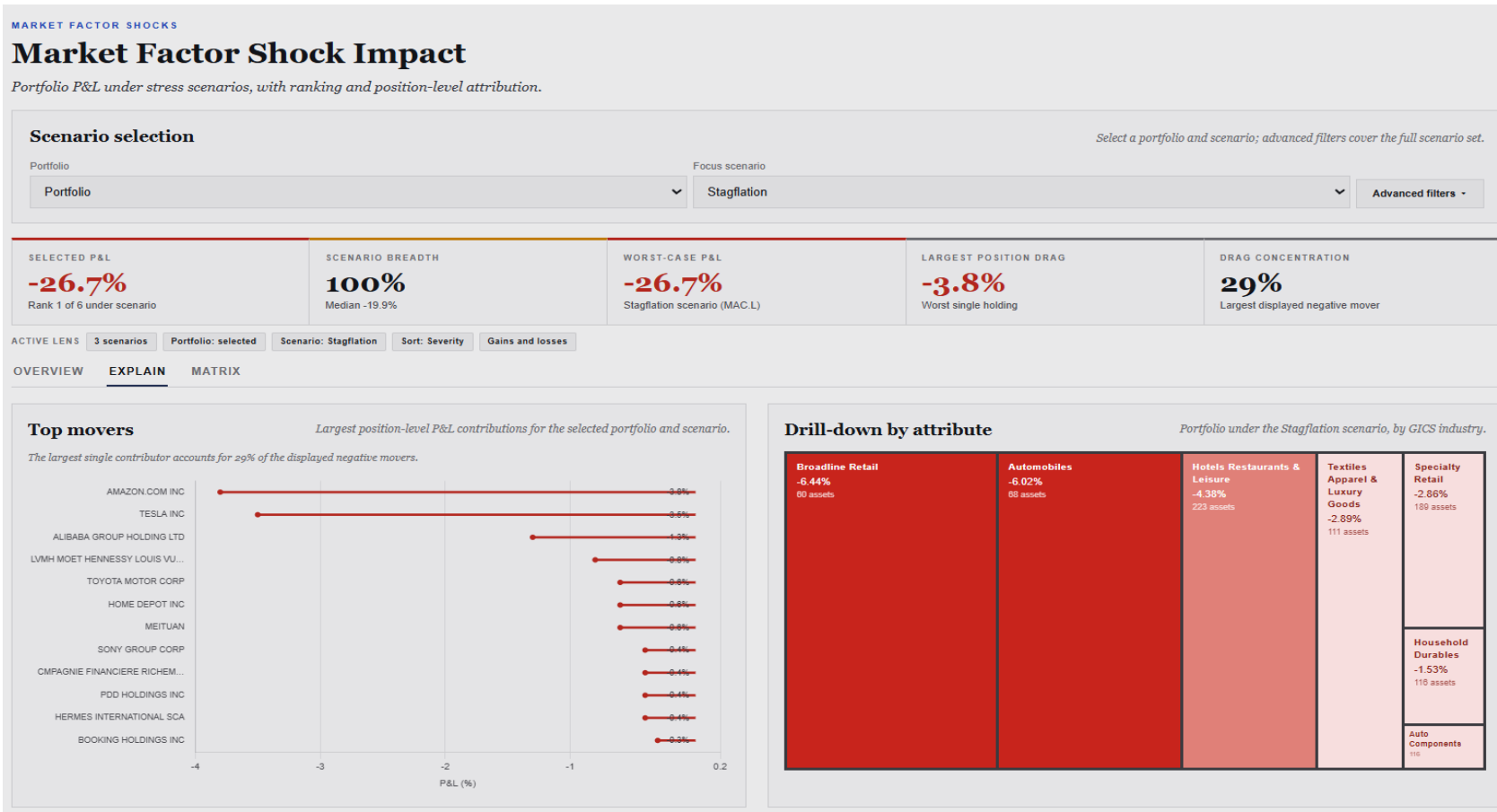
Detail metrics

Key readings for the selection

	BASE	STRESS
Worst-case P&L		-26.68%
Scenario severity	2.93	
Credit VaR change		+14.90%
Counterparty current exposure		+132.04%
Counterparty PFE 1Y	-21.51%	
Liquid ≤ 6 months	66.31%	
Highly liquid assets	73.31%	
Total risk	19.27%	

Headline readings for the selected cell with a mini trend per metric. Deep-dive each in its own tab.

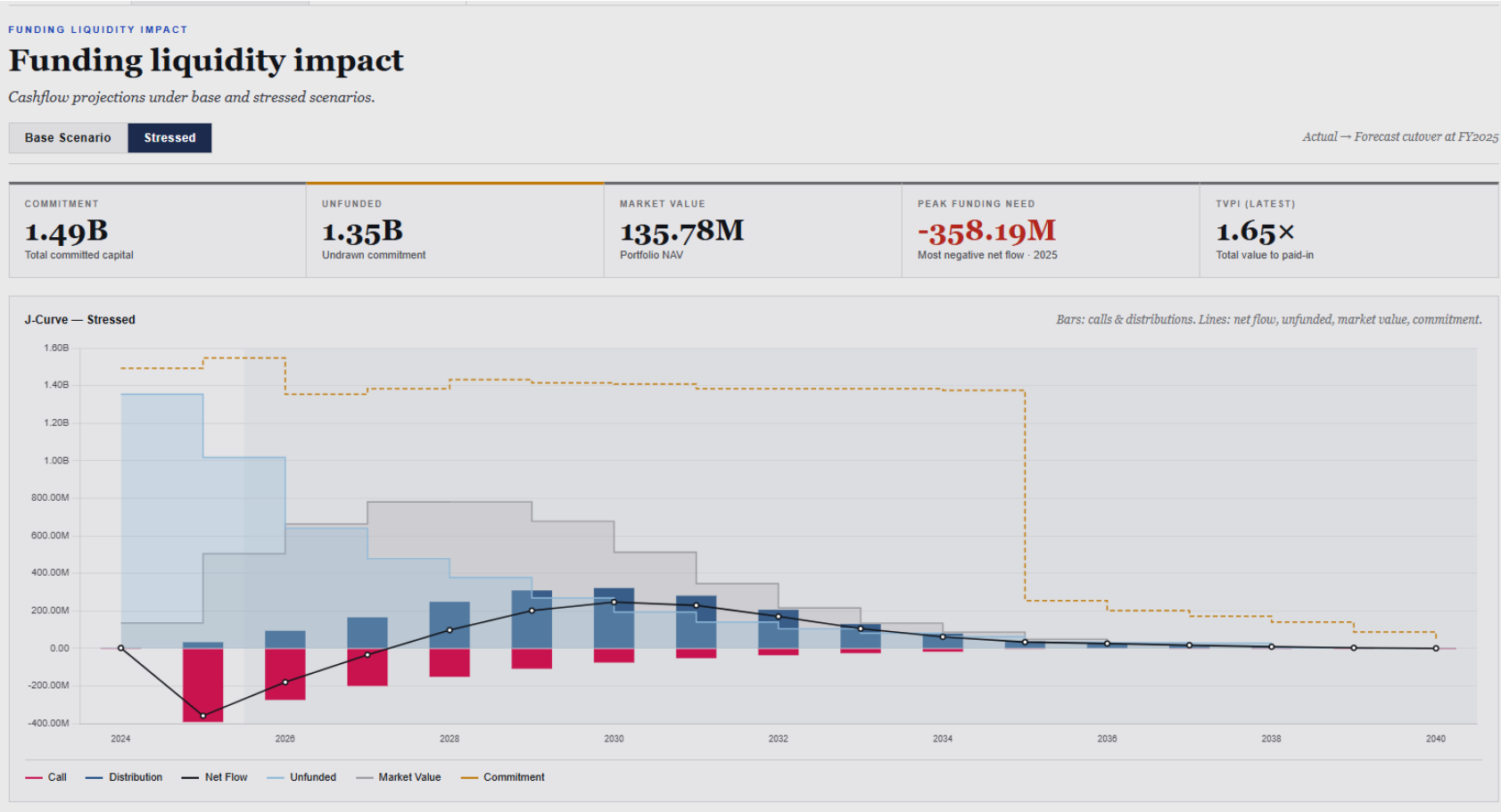
Compute Market factor shock Impact



Apply the factor shocks to compute the portfolio's market impact across positions and exposures.

Disclaimer: The dashboard is still in development and provided for illustrative and discussion purposes only. There is no guarantee that it will be developed into or offered as a commercial product or service.

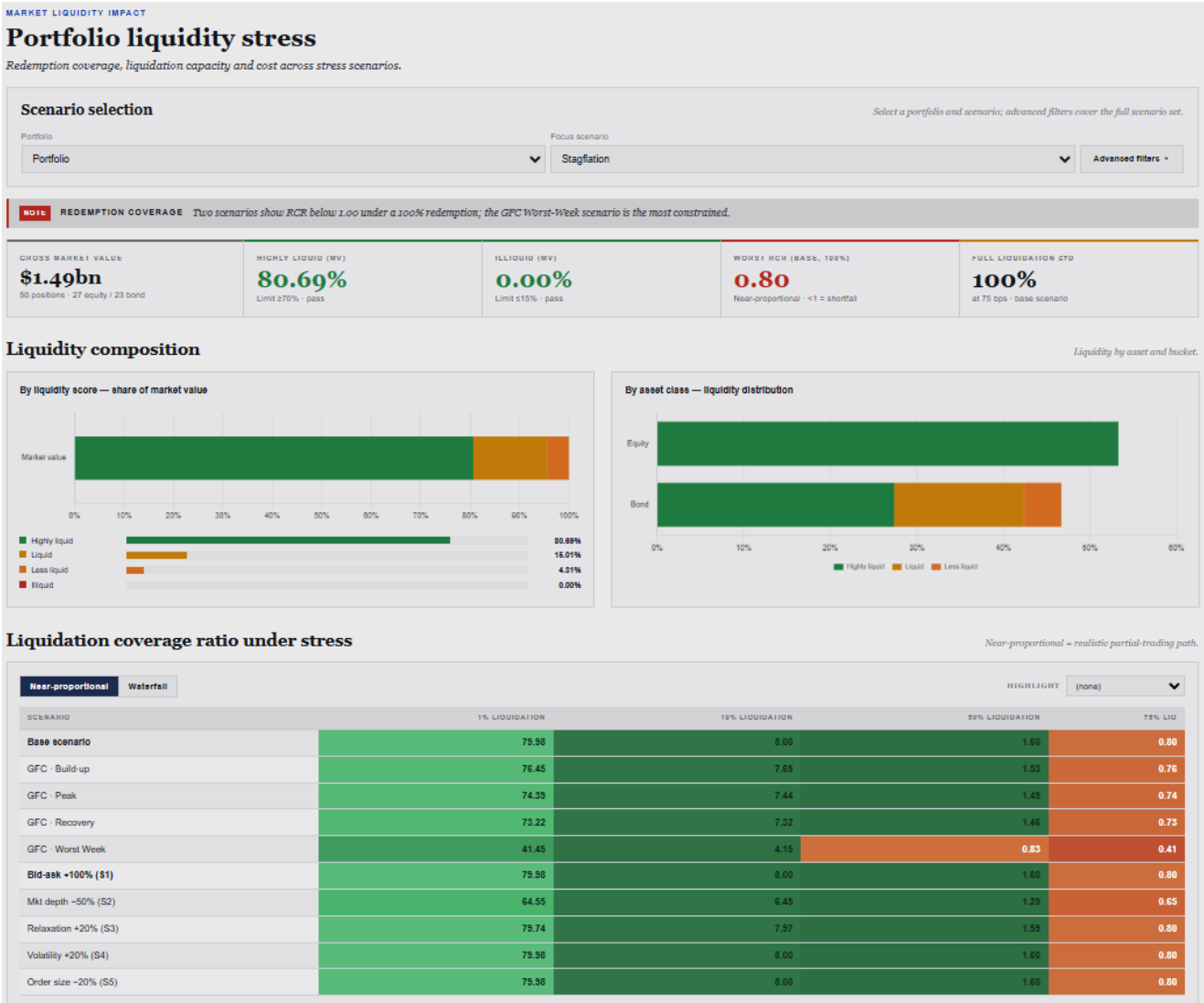
Funding liquidity impact



Assess funding liquidity under normal and stress scenario conditions.

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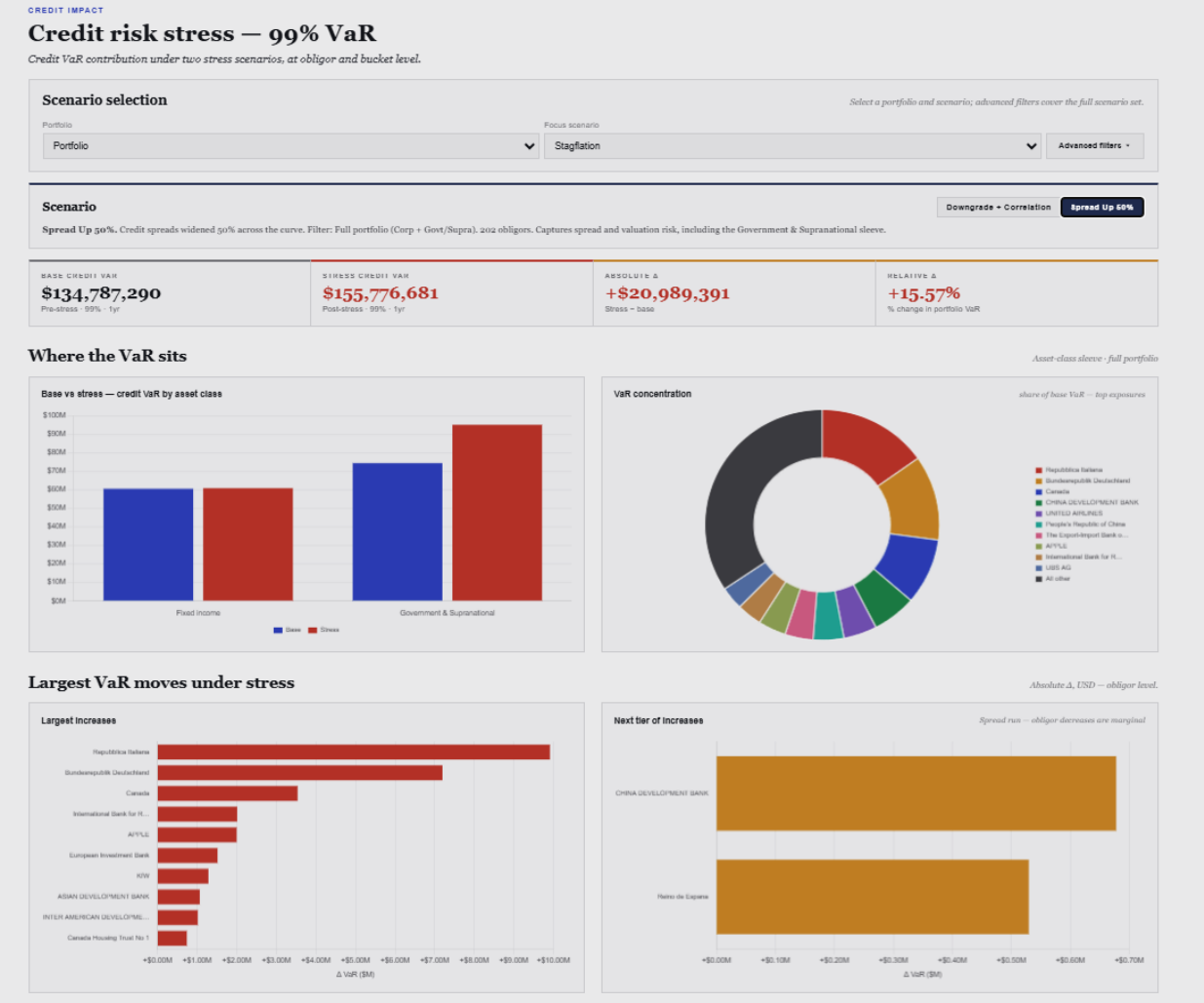
Market Liquidity Impact



Measure how the scenario affects market liquidity across various dimensions.

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Credit Impact

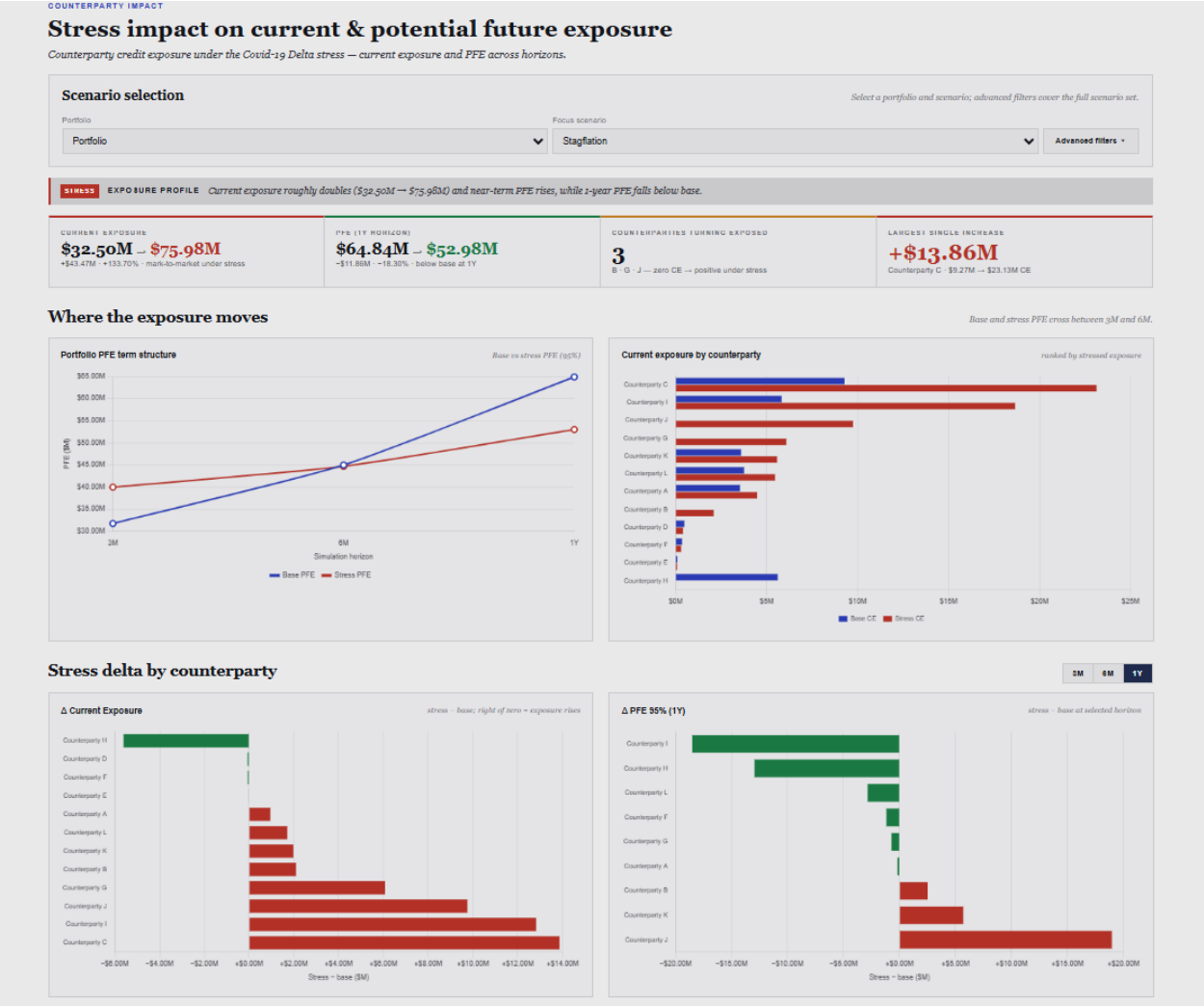


Evaluate the scenario's effect on credit exposures and issuer risk across the portfolio.

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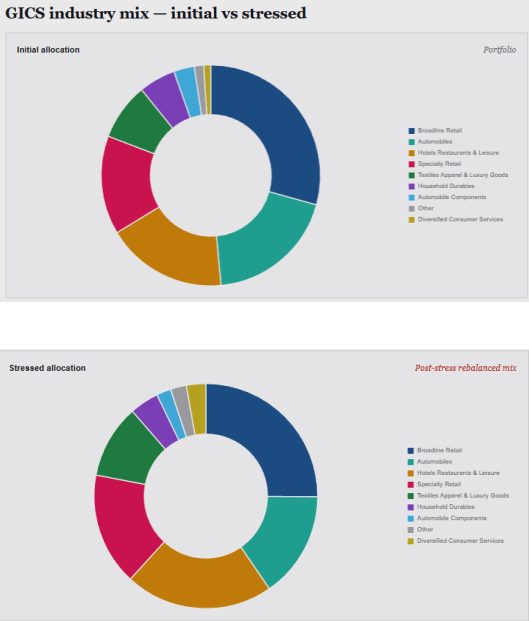
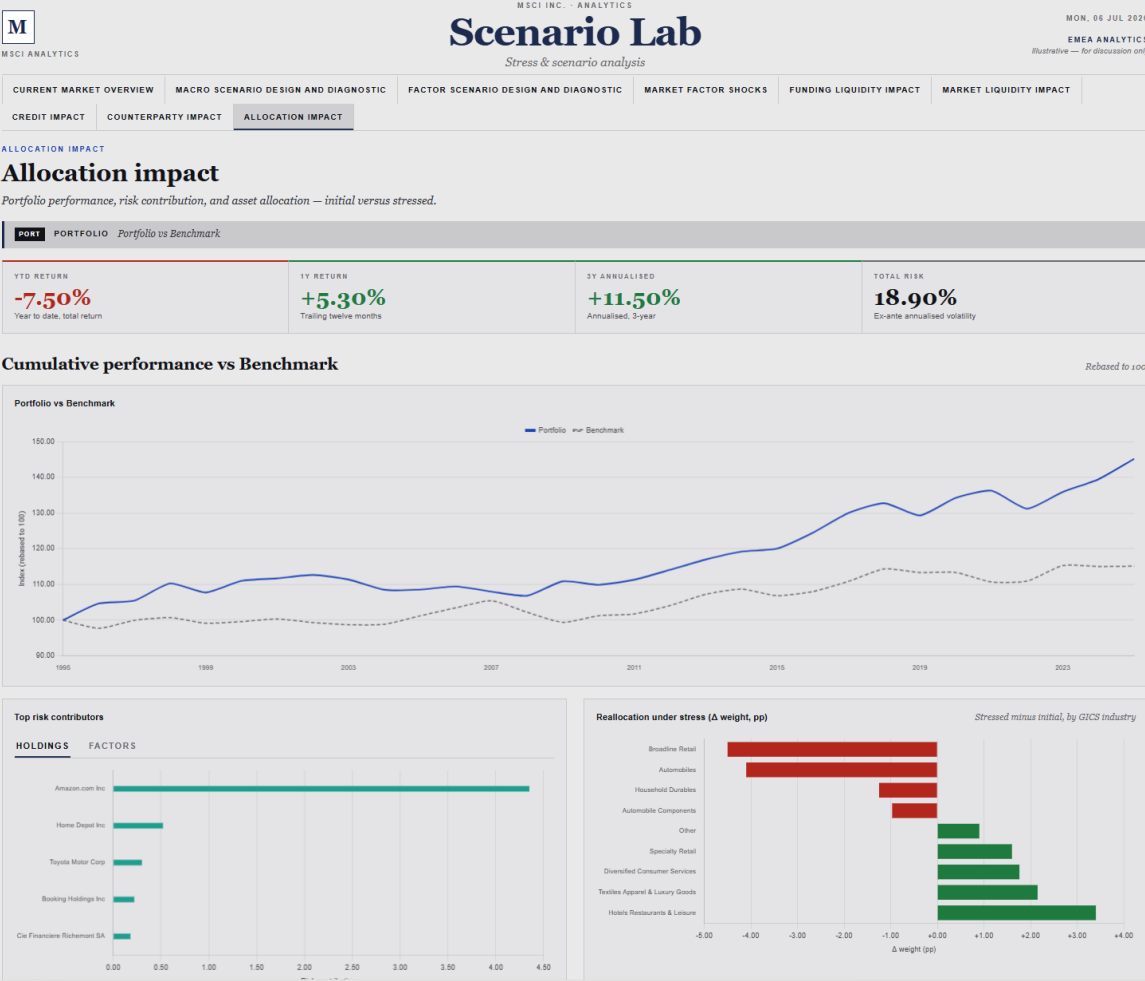
Counterparty Impact



Quantify counterparty credit exposure under the scenario to analyze concentration and potential default risk.

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Evaluate the impact of macro narrative on portfolio allocation



Compare initial versus stressed asset allocation, with portfolio performance, top risk contributors and reallocation under a scenario.

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Q & A

Latest Product updates and outlook

Thomas Moser

Executive Director - Global Product Manager, MSCI Analytics

Released to you in the last 18 months

Making MSCI your **preferred provider** for risk and return.



Cover your full portfolio with front office quality

- **Private assets** The new Private Credit Factor Model adds **30 new factors**, measuring private credit as rigorously as public markets. That gives you **one clear view of total portfolio risk**.
- **Structured credit** Coverage now spans bespoke CDOs, principal only tranches and US, Danish and JPY MBS, so you **manage more of your credit book in one place**, on analytics that meet the requirements of your front office.
- **Rates & inflation** Expanded key rate and sovereign spread factors sharpen your view of curve and spread risk across more markets, for **better hedging and cleaner attribution**.
- **FX & equity derivatives** Average rate FX forwards, fixed share equity swaps and daily resets are modelled to front office standards, so **pricing and risk match how your desks trade**.



Serve the full range of risk and return use cases

- **Market regime analysis** Build your own covariance and see how your portfolio behaves across the regimes you choose, so you can **act before the regime turns**.
- **Deeper attribution** Multi portfolio attribution and credit versus non credit spread show where return and risk come from, so you **explain performance with confidence**.
- **Liquidity** New DyCE equity estimates and competing liquidity capture how your book really trades, so you **plan exits realistically**.
- **Counterparty credit risk** Fuller margining with MTA, dynamic Independent Amount and the ISDA allocated approach makes exposure and xVA **match how your agreements work**.
- **For banks** A new Asset and Liability Management module adds Net Interest Income, Economic Value of Equity and Interest Rate Risk in the Banking Book, alongside FRTB updates.

ALREADY AVAILABLE TO YOU

Coming to you, looking for your feedback as we develop

A first look at what is next. **Tell us what matters most** for your portfolios.



Cover your full portfolio with front office quality

- **New Private Equity Model (PEQ3)** PEQ3 brings private equity into the same factor framework as public assets, replacing smoothed NAV with desmoothed, factor based risk. You see **the true risk of private equity, next to the rest of your portfolio.**
- **CDX Index Volatility** New volatility analytics for CDX credit indices let you measure and trade credit volatility directly, so you **capture a dimension of credit risk you cannot see today.**
- **More in progress** We are considering further investment in better analytics for CLOs and Canadian MBS. **Tell us where to go next and we can build it with you.**



Serve the full range of risk and return use cases

- **Signal Lab** A research grade library of MSCI signals to build, customize, backtest and deploy, without owning the data plumbing. **Go from idea to live signal far faster.**
- **Custom Model Services** Tailor an existing Barra model to your process, validated by MSCI Research and delivered through your existing channels. **Your convictions, with Barra rigour.**
- **Enhanced stress testing** Stress portfolios for macroeconomic shifts, AI exposure, geopolitical risk and energy transition, so you **see tomorrow's risks before they reach your book.**

Don't just hear it, see it: four live demos

Run live by Uwe and Martin · use case extensions in action



Fast Grouping in Performance Attribution

Analyze your portfolios interactively intra day, not only at the end of the day.



Market Regime Analysis using Custom Covariance

Stress how your portfolio behaves across the market regimes you define.



Interest, Credit and FX Hedging for Fixed Income

Enable your fixed income PMs to hedge with front office quality models.



Asset and Liability Management for Banks

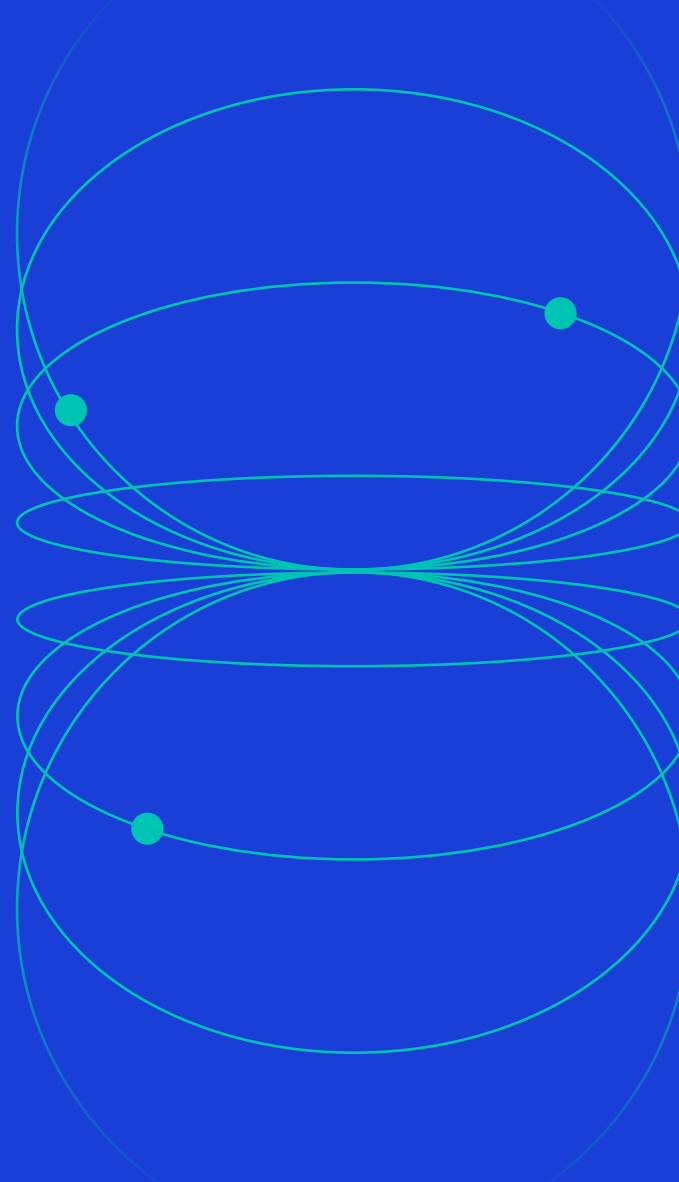
Provide Net Interest Income and Economic Value of Equity reporting to your banking clients.



The MSCI ALM Module

NII and EVE, reinvestment logic, the bankDeposit model, and its regulatory context

Martin Herzberger



IRRBB – a supervisory reporting requirement

The requirement

Two lenses on the same risk

- Basel's IRRBB standard (BCBS d368) sets the global baseline
- EBA/GL/2022-14 implements it for EU banks, plus CSRBB
- Both mandate measuring earnings AND value impact
- EVE (Economic Value of Equity), NII (Net interest rate income)
- Results must be disclosed to the regulator

How it's tested

Prescribed shocks, both statistics

- EVE: parallel up/down, steepener, flattener, short-rate shocks
- NII: parallel up/down shocks over the earnings horizon
- Six EVE shocks plus two NII shocks per EBA Annex III
- Outlier thresholds trigger closer supervisory review

New - Two statistics from the same balance sheet

NII - Net Interest Income

The earnings view

- Interest earned minus interest paid, over a horizon
- Requires the balance sheet to evolve over time
- Inseparable from reinvestment as a result
- Breaks down by time point, currency, position
- can be stressed according to regulatory requirements

EVE - Economic Value of Equity

The value view

- Present value of all assets minus all liabilities
- Run-off assumption - today's balance sheet only
- No simulation needed, calculated directly
- Consistent with standard RiskServer valuation
- can be stressed according to regulatory requirements

VS

New - Bank Deposit Model

Bank Deposit Details*

Maturity Date*12/31/2030

+ Term*

Contract Rate*2.75

Index*Sofr

Interest Formula*index - 50

Floor*0.00

☒ Reset Frequency

Time Period Value*1.00

Time Period Unit*M

☒ Beta Vector-999,0:0.4; 0,100:0.55; 100,999

Deposit Type*Interest-Bearing

☐ Day Count Convention

☐ Compounding Frequency

Field	What it does	New?
Maturity Date	Effective maturity used in projections - behavioral, not contractual	Yes - behavioural
Index	Reference rate the deposit tracks (e.g. SOFR)	Yes - choice field
Interest Formula	How the rate derives from the index, e.g. "index - 50"	Yes - new syntax
Floor	Minimum rate the formula can produce	Yes - behavioural guardrail
Beta Vector	Model's behavior – regulatory requirement	Yes - core new field

New - Re-Investment Logic

Name:
ALM_Sample_UG

[TAGS](#) ▶
[SHARING](#) ▶

Risk Settings 1D Horizon Setting [martin.grziska@risk... ▼] [Manage Risk Settings](#)

ALM Settings Demo_LikeForLike [martin.grziska@risk... ▼] [Manage ALM Settings](#)

likeForLike

Roll forward identically

- Maturing position is replaced with the same terms
- Same structure, tenor profile, and risk character
- Fits segments expected to keep doing the same business
- Needs a matching instrument to exist as a target

newInstrument

Reinvest into a defined target

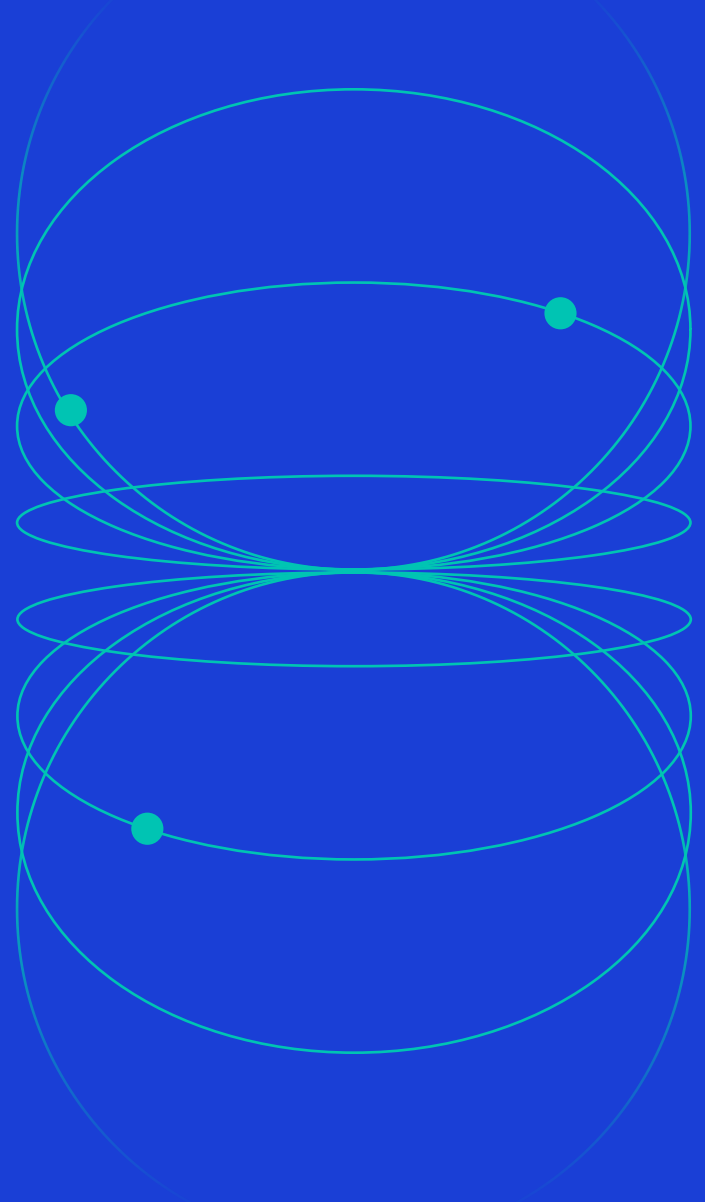
- Maturing position replaced by an explicitly defined instrument
- Lets the bank model a deliberate shift in strategy or mix
- Equally valid as a first choice, not just a fallback
- Target defined once per segment via targetSpecification

VS



The MSCI Hedge Calculator

Martin Herzberger



MSCI Hedge Calculator — what it's useful for

What it does

Turns a bond portfolio into a sized hedge

- Reads live key-rate exposure per currency and tenor bucket
- Auto-generates standard OIS hedge candidates (2Y/5Y/10Y/30Y)
- Solves hedge notionals to offset DV01 bucket by bucket
- Books the result straight onto the portfolio (Export to Portfolio)

Why it matters to you

Faster, auditable interest-rate hedging

- Cuts manual DV01-matching from spreadsheets to minutes
- Same bucket logic regulators expect for IRRBB (EVE) reporting
- One workspace for sizing, scenario-testing and booking
- Consistent methodology across currencies and desks

<https://ssa.uat.msci.com/>

Portfolio

→ Add either securities by ISIN or import positions / portfolios straight from RiskManager

Portfolio - New view

As-of Date: 2026-09-16

INPUTS

- > General Inputs
- > Instruments Settings
- > Analytics Settings
- > Hedging Settings
- > Market Scenario
- > Historical Scenario
- > Stored Scenario
- > Scenario Settings
- > Admin

☐ Only Calculate Displayed Analytics

Main IR Swaps × OIS × Currency Swaps × Options × CDS Index × CDS × Inflation Swap × FX Forward × FX Option × Preissue × Cash/Spot × Bond Futures ×

Drag here to set row groups

		Common Inputs		Option and Futures Inputs		Name
		Identifier *	Amount *	Market Quote	Contract Size	
—	☐	DE0001102481	1,000,000,000.00			GERMANY, FEDERAL REPUBLIC OF (GOVERNMENT) 08/15/2050
—	☐	ES0000012067	1,000,000,000.00			SPAIN, KINGDOM OF (GOVERNMENT) 3.15 04/30/2035
—	☐	NL0015002F72	1,000,000,000.00			NETHERLANDS, KINGDOM OF THE (GOVERNMENT) 2.5 07/15/2035
—	☐	IT0005358806	1,000,000,000.00			ITALY, REPUBLIC OF (GOVERNMENT) 3.35 03/01/2035
—	☐	FR001400X8V5	1,000,000,000.00			FRANCE, REPUBLIC OF (GOVERNMENT) 3.2 05/25/2035

Hedging Settings Screen

Portfolio - New view

As-of Date: 2026-09-16

INPUTS

- > General Inputs
- > Instruments Settings
- > Analytics Settings
- ▼ **Hedging Settings**
 - Use Case: Interest Rate Hedging
 - Currency Drilldown: EUR
 - Country Drilldown: Select...
 - Duration Profile
- > Market Scenario
- > Historical Scenario
- > Stored Scenario
- > Scenario Settings
- > Admin

☐ Only Calculate Displayed Analytics

Calculate Selected

Calculate All

- Expand **Hedging Settings** in the left sidebar
- Set Use Case = "Interest Rate Hedging"
- Set Currency Drilldown (here "EUR")
- A new **Hedge Workspace** tab appears → click on it
- Click **"Populate"**
- Click **"Size Hedges"**
- Four sized hedge candidates with Summary Portfolio / Hedge / Net rows after Size Hedges.

Portfolio - New view

As-of Date: 2026-09-16

📅

INPUTS

> General Inputs

> Instruments Settings

> Analytics Settings

> Hedging Settings

Use Case

Interest Rate Hedging

Currency Drilldown

EUR

Country Drilldown

Select...

Duration Profile

Hedge Workspace

Main

IR Swaps ×

OIS ×

Currency Swaps ×

Options ×

CDS Index ×

CDS ×

Inflation Swap ×

FX Forward ×

FX Option ×

Preissue ×

Cash/Spot ×

Bond Futures ×

Summary

PV (base,T+0)

DV01 2Y

DV01 5Y

DV01 10Y

DV01 30Y

Portfolio

4,804,402,929.825

80,742.923

976,150.858

2,467,026.317

742,596.596

Live

4,804,402,929.825

80,742.923

976,150.858

2,467,026.317

742,596.596

Imported (RM4)

0.000

0.000

0.000

0.000

0.000

Hedge

-3.160

0.028

0.064

0.128

0.166

Net

4,804,402,932.985

80,742.894

976,150.794

2,467,026.189

742,596.430

🔄 Populate

+ Add

🗑 Delete

OIS

Inflation Swap

FX Forward

Bond Futures

☑

:

Identifier

:

Hedge Amount *

Receive Rate (%)

:

PV (base,T+0)

DV01 2Y

DV01 5Y

DV01 10Y

DV01 30Y

☑

:

EUR 2Y OIS

:

64,626,063.57

2.8806

:

-0.534

0.022

0.000

0.000

0.000

☑

:

EUR 5Y OIS

:

-1,532,742,477.27

2.9743

:

-1.096

0.002

0.050

0.000

0.000

☑

:

EUR 10Y OIS

:

-2,617,418,847.92

3.1595

:

-1.298

0.002

0.007

0.087

0.000

☑

:

EUR 30Y OIS

:

-447,146,754.06

3.3254

:

-0.233

0.002

0.007

0.040

0.166

Recalculated 4 hedge candidates before sizing...

Hedging Settings Screen

→ Expand **Hedging Settings** in the left sidebar

Set Use Case = "Interest Rate Hedging"

Set Currency Drilldown (here "EUR")

→ A new **Hedge Workspace** tab appears -> click on it

→ Click **"Populate"**

→ Click **"Size Hedges"**

→ Click on **"Export Hedges"** -> "Export to Portfolio"

→ Go to "Main" tab

Portfolio - EUR Govt Bonds 1bn Portfolio

As-of Date: 2026-09-16

Hedge Workspace | Main | IR Swaps × | OIS × | Currency Swaps × | Options × | CDS Index × | CDS × | Inflation Swap × | FX Forward × | FX Option × | Preissue × | Cash/Spot × | Bond Futures ×

Summary

	PV (base,T+0)	DV01 2Y	DV01 5Y	DV01 10Y	DV01 30Y
Portfolio	4,804,402,929.825	80,742.923	976,150.858	2,467,026.317	742,596.596
Live	4,804,402,929.825	80,742.923	976,150.858	2,467,026.317	742,596.596
Imported (RM4)	0.000	0.000	0.000	0.000	0.000
Hedge	-3.160	0.028	0.064	0.128	0.166
Net	4,804,402,932.985	80,742.894	976,150.794	2,467,026.189	742,596.430

Populate + Add Delete

OIS | Inflation Swap | FX Forward | Bond Futures

	Identifier	Hedge Amount *	Receive Rate (%)	PV (base,T+0)	DV01 2Y	DV01 5Y	DV01 10Y	DV01 30Y
☒	EUR 2Y OIS	64,626,064.06	2.8806	-0.534	0.022	0.000	0.000	0.000
☒	EUR 5Y OIS	-1,532,742,459.50	2.9743	-1.096	0.002	0.050	0.000	0.000
☒	EUR 10Y OIS	-2,617,418,820.55	3.1595	-1.298	0.002	0.007	0.087	0.000
☒	EUR 30Y OIS	-447,146,749.67	3.3254	-0.233	0.002	0.007	0.040	0.166

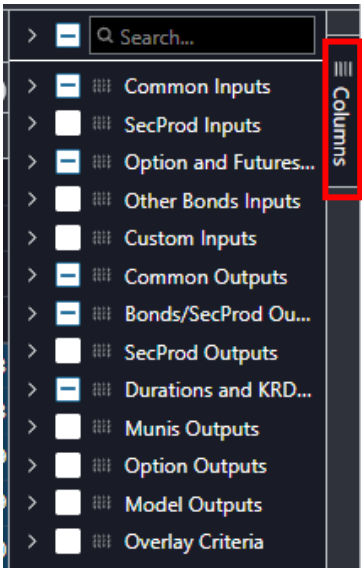
Export Hedges | **Size Hedges**

Main Tab After Export

→ See portfolio and hedges

Hedge Workspace																		Main		IR Swaps		OIS		Currency Swaps		Options		CDS Index		CDS		Inflation Swap		FX Forward		FX Option		Preissue		Cash/Spot		Bond Futures			
+ Add		⬇ Import		⬆ Export		🗑 Remove												🔄 Overrides		💾 Save View																									
📄 Drag here to set row groups																																													
		Common Inputs			Option and Futures Inputs			Common Outputs										Bonds/SecProd Outputs																											
		Identifier *	Amount *	Market Quote	Contract Size	Name	Currency	Maturity Date	Unit Price (local)	Unit Price (base)	FX Rate	PV (base,T=0)	Accrued Interest	Modified Duration	Convexity	Yield	A-Spread	OAS (bp)	DTS																										
		EUR_2Y_OIS	64,626,064.06			[Start 20260916] 20280916 Swap Pay EUR ESTR Receive 2.88062112%	EUR	20280916	-0.463	-0.534	1.154	4,855,859,426.011	32,725,939.424		0.055						Dr																								
		EUR_5Y_OIS	-1,532,742,459.50			[Start 20260916] 20310916 Swap Pay EUR ESTR Receive 2.9743212%	EUR	20310916	-0.950	-1.096	1.154	16,795,985.253	0.000		0.258																														
		EUR_10Y_OIS	-2,617,418,820.55			[Start 20260916] 20360916 Swap Pay EUR ESTR Receive 3.15954675%	EUR	20360916	-1.125	-1.298	1.154	33,965,584.685	0.000		0.851																														
		EUR_30Y_OIS	-447,146,749.67			[Start 20260916] 20560916 Swap Pay EUR ESTR Receive 3.32540184%	EUR	20560916	-0.202	-0.233	1.154	1,040,105.880	0.000		4.685																														
		NL001500272	1,000,000,000.00			NETHERLANDS, KINGDOM OF THE (GOVERNMENT) 2.5 07/15/2035	EUR	20350715	92.305	92.305	1.154	1,069,999,685.896	4,452,054.795	7.684	0.713	3.529	6.036	6.933	2.388																										
		ES0000012067	1,000,000,000.00			SPAIN, KINGDOM OF (GOVERNMENT) 3.15 04/30/2035	EUR	20350430	95.027	95.027	1.154	1,110,303,743.528	12,168,493.151	7.282	0.657	3.836	37.773	37.873	2.864																										
		IT0005358806	1,000,000,000.00			ITALY, REPUBLIC OF (GOVERNMENT) 3.35 03/01/2035	EUR	20350301	94.080	94.080	1.154	1,087,155,623.974	1,573,204.420	7.234	0.629	4.187	78.071	76.819	5.671																										
		FR00140008V5	1,000,000,000.00			FRANCE, REPUBLIC OF (GOVERNMENT) 3.2 05/25/2035	EUR	20350525	92.112	92.112	1.154	1,074,375,405.404	10,169,863.014	7.281	0.664	4.305	84.315	82.659	6.277																										
		DE0001102481	1,000,000,000.00			GERMANY, FEDERAL REPUBLIC OF (GOVERNMENT) 08/15/2050	EUR	20500815	40.096	40.096	1.154	462,568,471.023	0.000	23.016	5.737	3.896	0.273	0.000	0.000																										

→ Customize view for additional stats etc on the right "Columns"



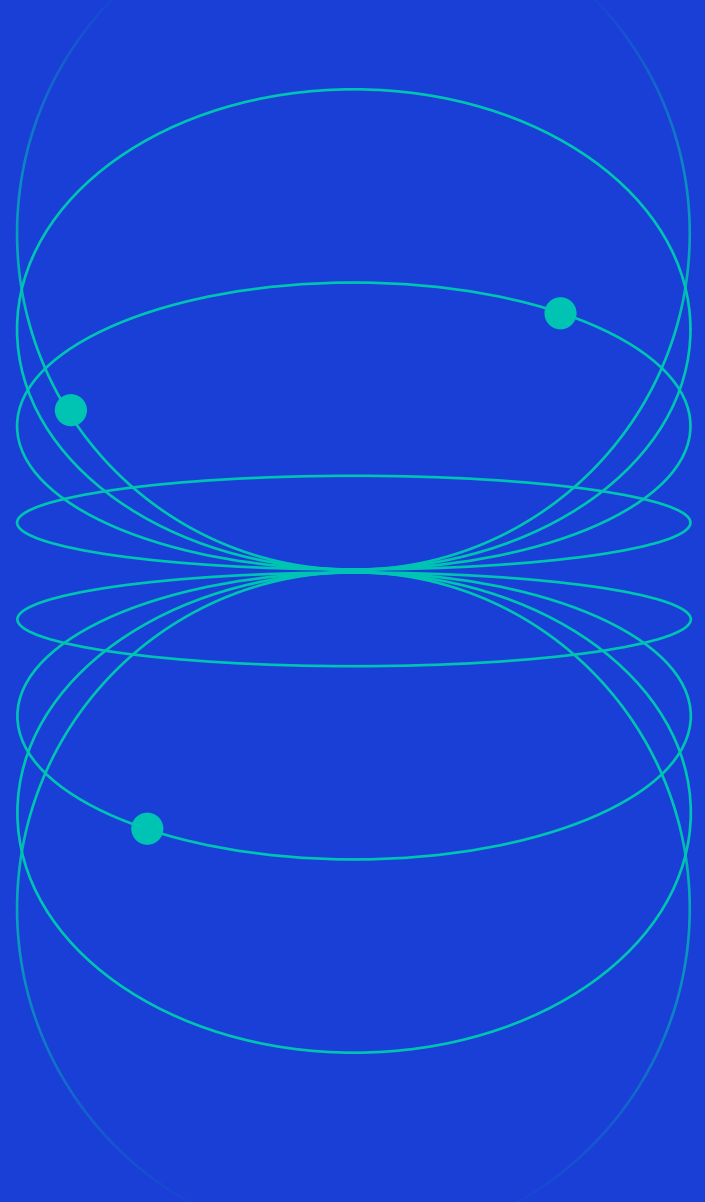
Search...
Common Inputs
SecProd Inputs
Option and Futures...
Other Bonds Inputs
Custom Inputs
Common Outputs
Bonds/SecProd Ou...
SecProd Outputs
Durations and KR...
Munis Outputs
Option Outputs
Model Outputs
Overlay Criteria



Thank You

Questions

[Contact](#)



Technology in Action: MCPs, AI Tools and the Next Generation of User Experience

Luca Pizzolotto

Vice President - EMEA Analytics Product Manager, MSCI

Agenda →

New User Experience: new delivery methods

→ 01 MSCI MCP

→ 02 MSCI Barra BDT Assistant

→ 03 MSCI Portfolio Risk Calculator

MSCI MCP

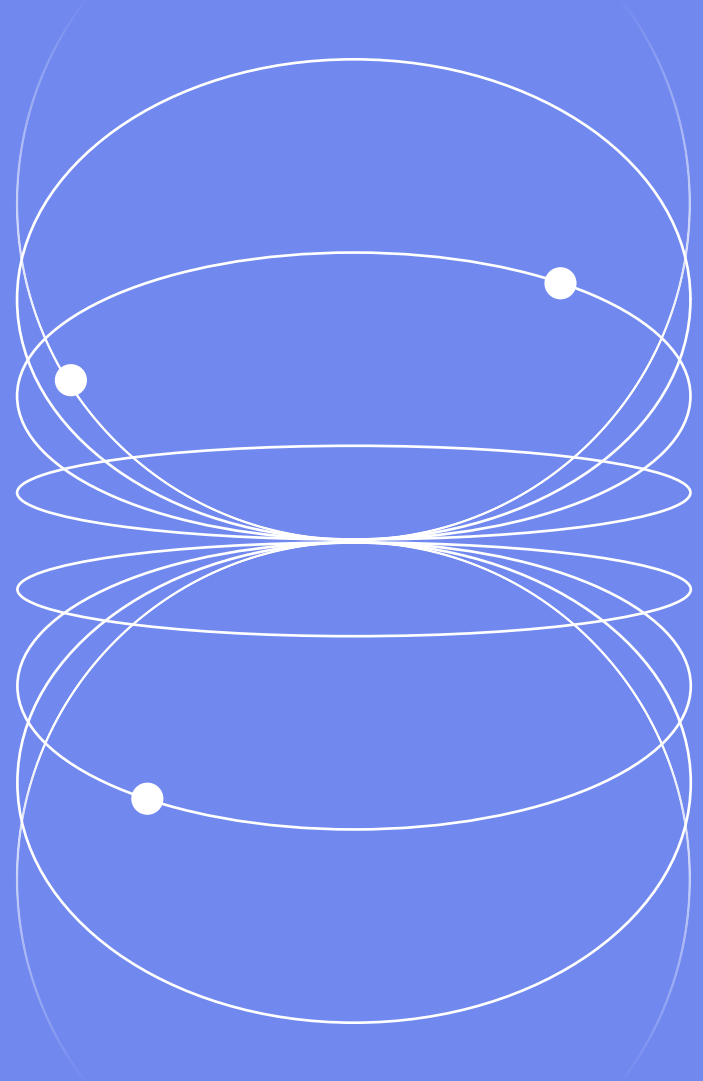
Luca Pizzolotto, Andrea Salfner

MSCI Portfolio Insights MCP

Factor Models MCP

Open Optimizer MCP

Signal Library



Transforming investment management with AI

MSCI AI Agentic architecture to bring everything together

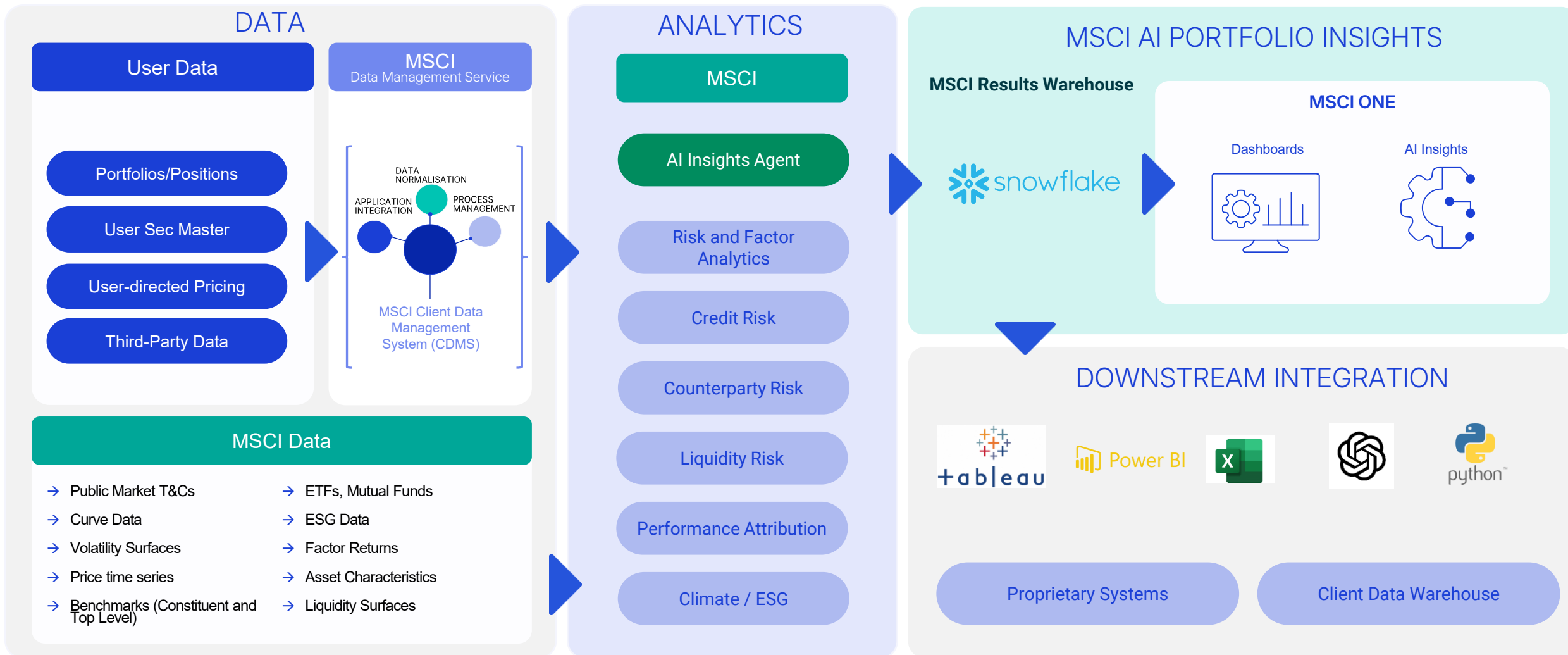
AI Ready Data and Services

- Extend MSCI's Content and Services to be AI ready
- A modular, ever-expanding MCP framework. New tools added continuously, each component available and composable with the broader ecosystem
- Unlock workflow automation and easier integration of MSCI tools

Integrated workflows

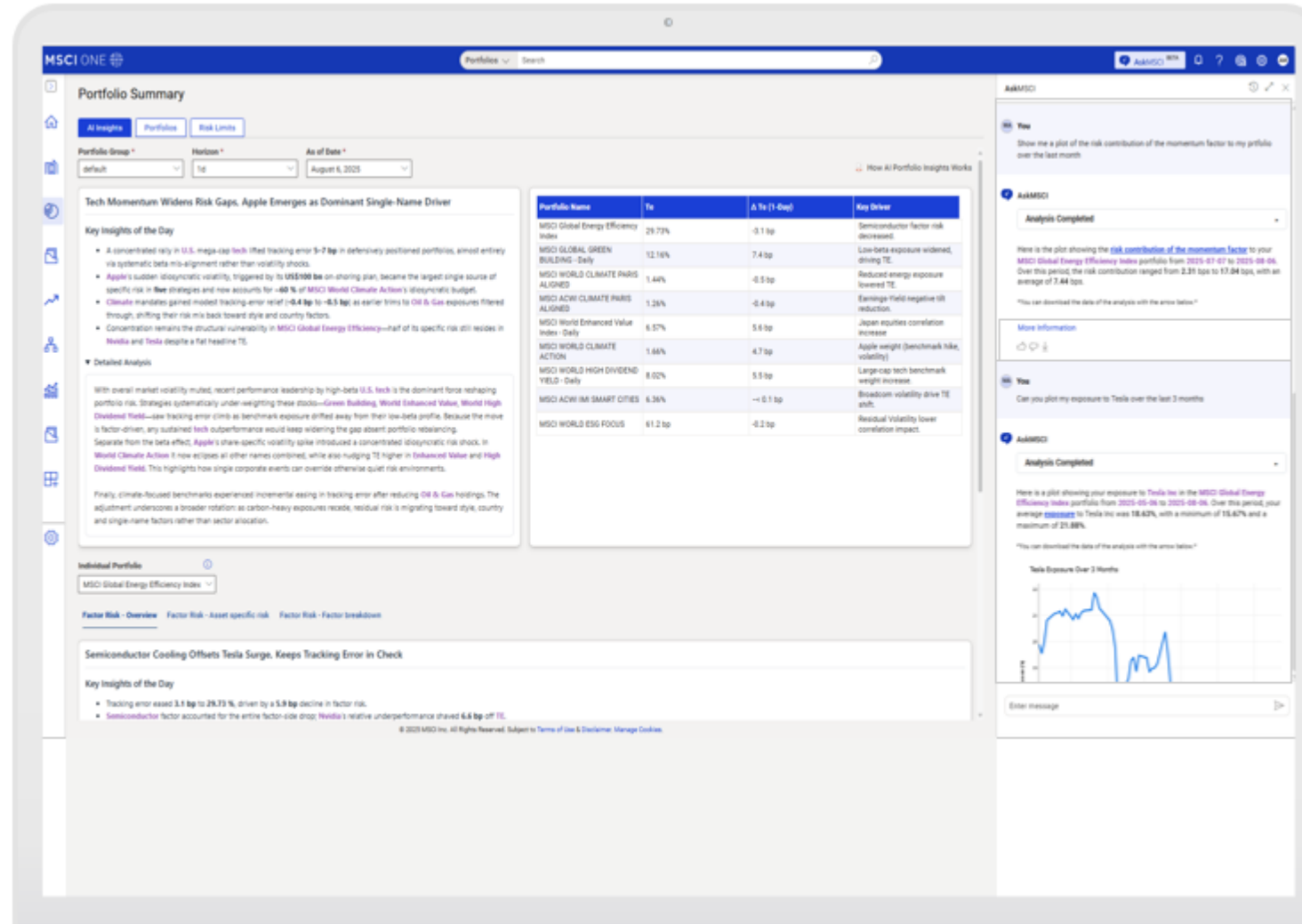
- MSCI-managed enterprise workspace — shared tools, knowledge and infrastructure.
- Governed, deterministic outputs and quality guarantees are easier to achieve
- Ask in plain language, get technical workflows — focus on the what, not the how.

MSCI AI Portfolio Insights Delivery



Modern AI technology: Cutting through the noise

- **AI Agent integration** allows users to ask follow-up questions in natural language — turning insights into conversations and action steps instantly
- **AI-generated narratives** explain key drivers of change across portfolios — helping you understand what changed and why
- **Automated Anomaly Detection** supports prioritization for the portfolios that exhibit the largest changes day to day
- **Portfolio and Issuer-level Summaries** surface granular risk contributors and sentiment shifts, helping teams move from detection to diagnosis faster



Factor models MCP

Natural-language access to factor model data, methodology, and analytics — bridging technical complexity and practitioner questions

1 Factor performance & analytics

Query how factors perform historically, recently, or at a point in time — with interpretation, drivers, and outliers.

2 Factor & descriptor knowledge

Ask what any factor or descriptor measures, how it's constructed, and what an exposure implies for a portfolio.

3 Cross-model intelligence

Compare the same concept (e.g., Momentum) across GEMLT, EFMGEM, USFAST — construction, weighting, behavior.

4 Methodology & model design

Deep questions on covariance estimation, descriptor selection, estimation universe — mechanics plus rationale and trade-offs.

5 Security-level exposures

Retrieve and interpret factor exposures for any security at a point in time — what the numbers mean for risk profile.

6 Portfolio-level risk analysis

Submit positions and get plain-language risk analysis — top active risks, factor concentrations, exposures.

7 Programmatic access support

Guidance and code generation for common workflows like extracting exposures for a list of securities.

Core value

Factor model expertise, made conversational — for PMs, quant researchers, and developers alike. Fast, accurate, well-interpreted answers with no tooling barrier.

Conversational access to portfolio optimization

An MCP server connecting MSCI's portfolio construction capabilities to any LLM — build, run, and interpret portfolios through natural language.

Autonomous workflow execution

- Sets up and runs portfolio jobs without having to write code
- Resolves portfolio and risk model IDs automatically by accessing the database
- Delivers summarized results without manual intervention

Transparent decision support

- Interprets results and diagnoses infeasibilities, turning outputs into actionable insights
- Helps understand construction trade-offs and constraints.
- Bridges the gap between analytics and investment decisions.

Accelerate onboarding

- Addresses product and methodology questions without contacting MSCI support
- No specialized technical knowledge required
- Reduces time to first result

Signal library

Curated data modules

Research-backed datasets across many domains including factors, macro, thematics, etc



Signal customization

Customize signals leveraging MSCI's production engines, rigorous QA processes and proprietary methodologies



Client insight & data

Clients' unique IP, proprietary data, and perspectives

→ Signals and customization of signals

→ Index construction

→ Custom models

→ Standard models

The problem

In today's data-driven markets, gaining an edge requires more than intuition – it demands high-quality, actionable signals

- **Alpha is harder to find:** traditional models miss idiosyncratic risk and broader investment opportunities
- **Diversification requires non-traditional signals:** investors need sources of return that are uncorrelated, validated and ready to deploy– not raw data they have to clean themselves
- **Greater Risk transparency:** matching your risk framework to your investment philosophy brings additional risk insight and understanding of stock specific dimensions that standard models don't uncover

The solution

Signal Library provides new research-backed investment signals and signal customization tools for clients looking to gain an edge.

- **Build alpha models** using research validated signal inputs unavailable elsewhere
- Stress test portfolios by simulating events and market shocks, before they happen
- **Construct portfolios** with higher conviction by tilting toward designed signals with full transparency
- **Explain performance** with attribution connecting signals directly to portfolio outcomes
- Monitor risk in real time by tracking sensitivities and identifying vulnerabilities as they emerge.

Signal library – data modules

Module Name	Description
FactorLab	Enhance your risk and return models and factor investing strategies using the latest factor data and research, designed for easy integration into your investment strategy.
Peer-Reviewed Signals	Institutional-grade investment signals grounded in peer-reviewed research and developed through an AI agentic pipeline .
Thematics	Identify & curate secular trends that potentially transform global economies, drive innovation and redefine business models.
Crowding	Evaluate timely data and analytics to see how the rest of the market is positioned and learn which stocks or factors have amassed large groups of investors, as well as which ones have fallen out of favor
Sustainability	Leverage sustainability data and advanced analytics to enhance financial decision-making, manage material risks and uncover opportunities
Event-Driven	Capture transient risks, companies’ exposure to it and its impact on risk and return
Micro-industries	Highly granular classification of companies

Product Features

Feature	Description
Signal Customization	Create new signals using existing market data or existing signals or modify parameters of existing ones to create custom versions.
User Imported Signals	Load user data, alpha factors or custom factors to then perform statistical analysis, calculate factor returns or even build a new factor
Signal Performance and Statistics	Signal Returns, volatilities
Statistical Analysis	Standardization (Global, Local, etc), Windsorization, Correlations, Orthononalization
Factor Portfolios	Create a factor portfolio of a signal (using other signals or models)
Real-Time Signal Returns	Receive real time signal returns on user and standard signals

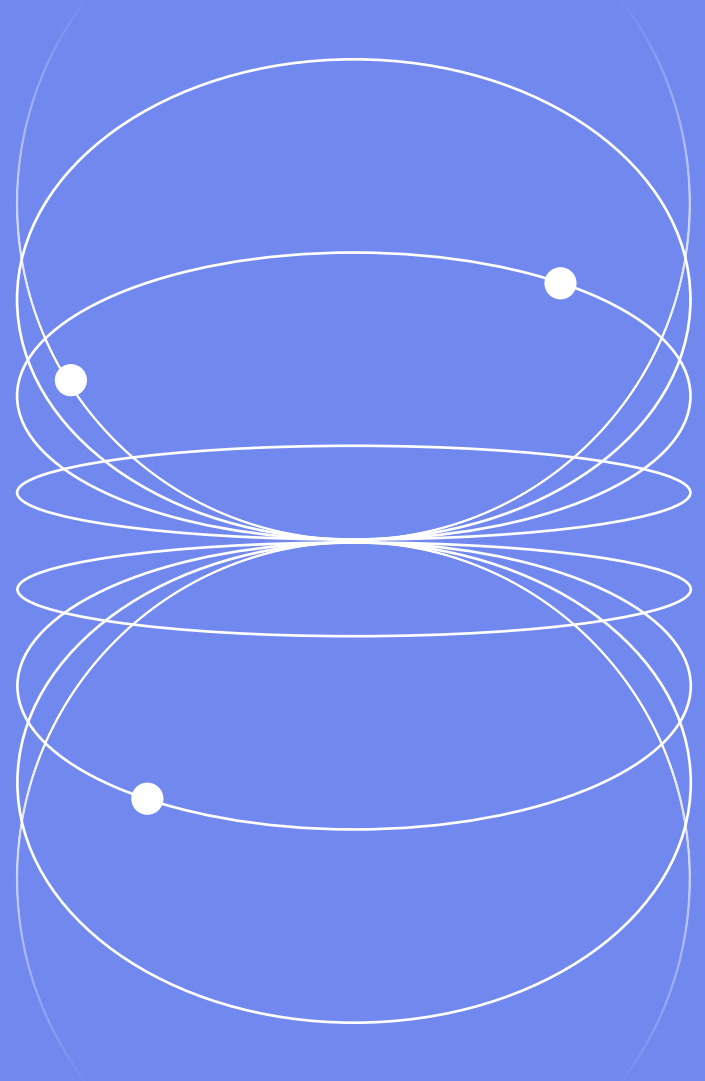
Delivery channels

API: RESTful API for programmatic data access and analytics
Snowflake: Data sharing for seamless integration
BarraOne/BPM: Embedded access within existing MSCI platforms
Optimizer/QIS: Build and backtest rules-based or optimized strategies and portfolios

AI-Agents integration through MCP Natively accessible to AI Agents through MCPs as a first-class distribution channel focused on three capabilities: Resources: API documents, research notes, user guides, methodology papers, schemas, etc built for AI Agents consumption and integration Tools: Executable functions to allow the AI-Agent take action on behalf of the user. Data access and product features Prompts: Research, coverage and product knowledge embedded into the MCP aligning technical implementation with client and industry language and standards
--

MSCI Barra BDT Assistant

Andreas Buerger



BDT Python Assistant — General Release

2025

First introduced to clients as a concept preview



2026

October release— production-ready for client use

Turns BarraOne BDT SOAP API tasks into verified, client-ready Python — grounded in real examples and MSCI's official Developer's Toolkit Guide.

Portfolio Imports

by holdings, value, or weight

Stress Testing and Optimization

MAC scenarios & optimization

Risk & PA Exports

VaR, backtests, attribution



Autonomous workflow execution

- Sets up and runs portfolio jobs without having to write code
- Delivers summarized results without manual intervention



Transparent decision

- Interprets results and diagnoses infeasibilities, turning outputs into actionable insights
- Helps understand construction trade-offs and constraints.
- Bridges the gap between analytics and investment decisions.



Run It & See Results

- Addresses product and methodology questions without contacting MSCI support
- No specialized technical knowledge required
- Reduces time to first result

Use-Case 1: Create a Portfolio, define a stress test and run it

1 Create the Portfolio

Positions imported by weight in one call — the assistant builds the request and polls the job to completion.



2 Define the Stress Test

Let the bot know which kind of stress test you want to do



3 Run it and see the results

Export set created, submitted, and polled — stress results downloaded and ready to review.



VALIDATED END-TO-END

Tested against a live BarraOne export — no manual step in between.

Use Case 2: Automated Risk Check & Rebalance

1 Export the Risk Report

Submits the existing Total_Risk export set via SubmitExportJob, polls the job, and downloads the result — no manual pull from the BarraOne UI.



2 Check Against the Threshold

Parses the downloaded CSV and evaluates every holding's Total Risk — flags the portfolio the moment a position breaches the limit.



3 Auto-Trigger the Rebalance

If breached, submits the existing Total_Risk optimization profile via SubmitOptimizationJob against the portfolio and polls it to completion.

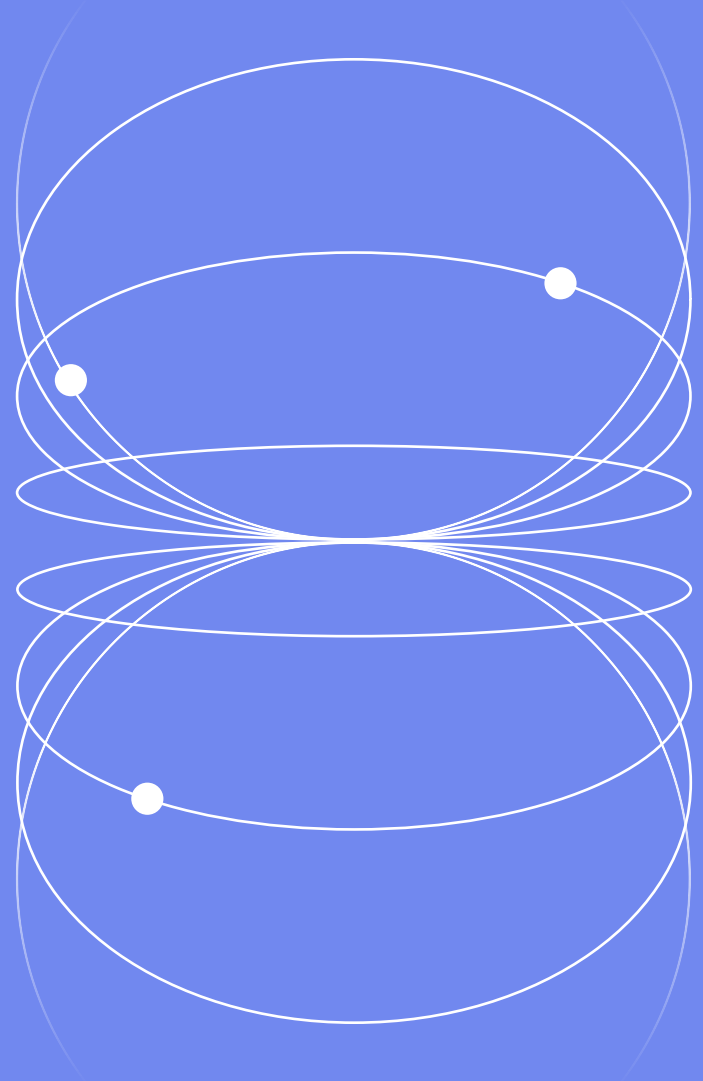


VALIDATED END-TO-END

Tested against a live BarraOne export — no manual step in between.

MSCI Portfolio Risk Calculator

Luca Pizzolotto

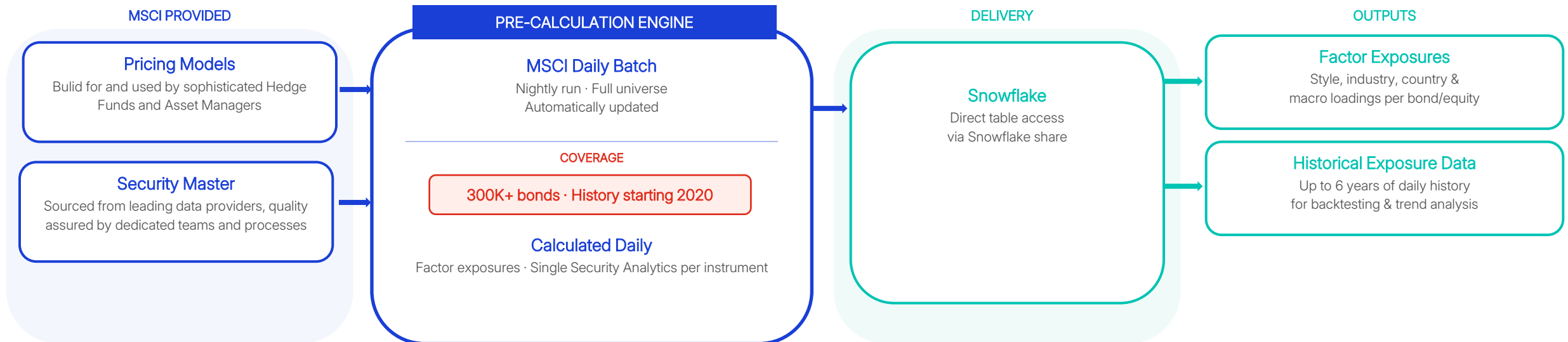


Pre-Calculated Exposures

MSCI delivers pre-calculated exposures for 300,000+ instruments, giving clients instant access to risk insights without the need to build or run models. With flexible delivery via Snowflake and API, clients can quickly integrate these analytics into portfolio construction, risk management, and historical analysis workflows.

Key highlights

- Daily pre-calculated exposures across 300K+ instruments remove the need for model infrastructure and reduce operational overhead.
- Broad coverage across government and corporate bonds ensures consistent portfolio risk analysis
- Outputs aligned with MSCI RiskManager and BarraOne ensure consistency across workflows
- Multi-year history supports backtesting and time series analysis

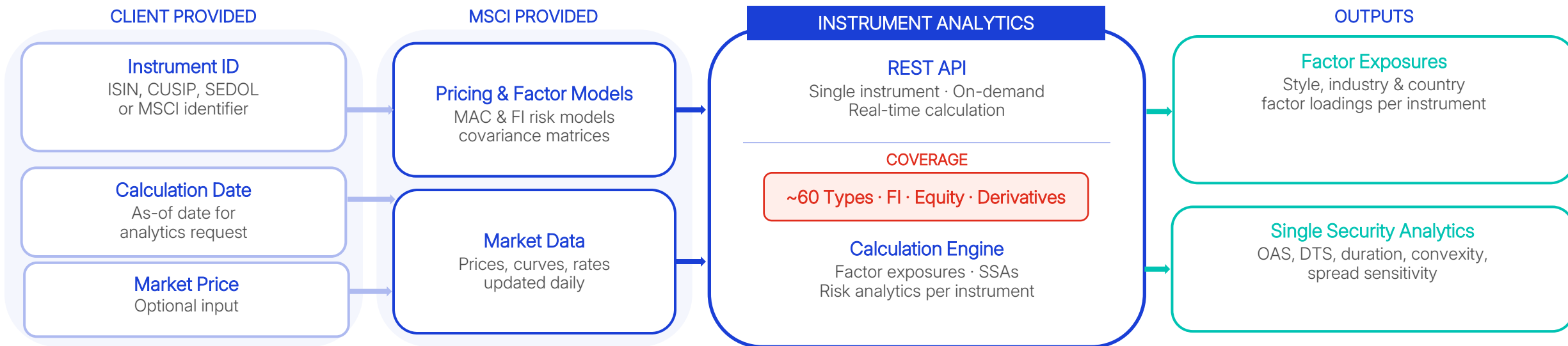


Instrument Analytics

MSCI Instrument Analytics delivers on-demand factor exposures, single security analytics, and risk metrics for individual instruments through a single API call. Covering 60+ instrument types, including bonds, munis, securitized products, equities, and derivatives- it enables clients to integrate consistent, intraday risk insights directly into trading, hedging, and portfolio construction workflows.

Key highlights

- On-demand analytics via a single API call (instrument ID + date + market price) provide instant access to exposures and risk metrics without running full portfolio calculations. Instrument-level precision allows real-time use in trading, hedging, and security selection decisions.
- Returns a comprehensive set of analytics including factor exposures (style, industry, country) and single security analytics (OAS, duration, convexity),
- Synchronous API responses with standardized JSON output enable easy integration into trading systems, OMS, and quant workflows.

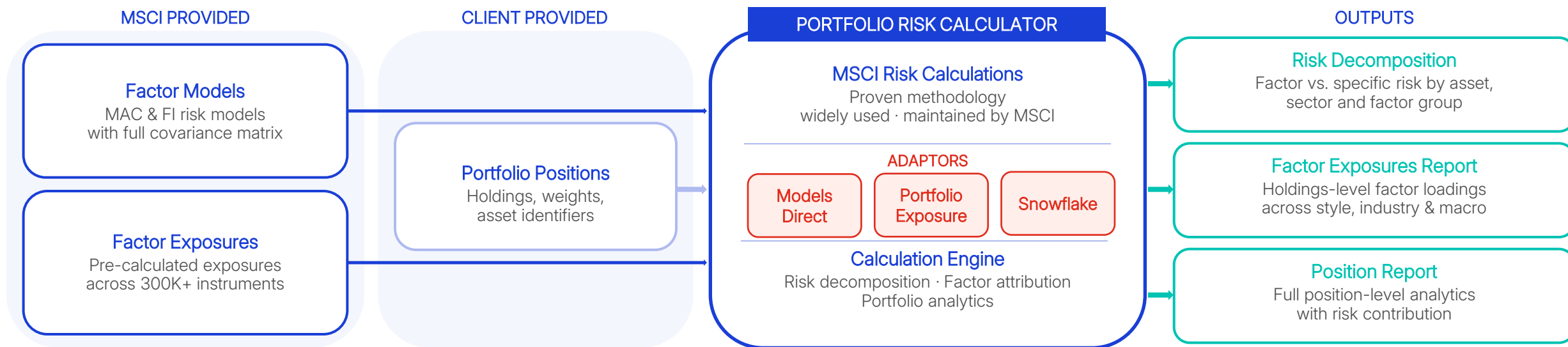


Portfolio risk calculator

MSCI's Portfolio Risk Calculator brings its core risk analytics engine directly into your environment, enabling clients to run validated risk calculations without moving sensitive portfolio data. This plug-and-play library eliminates the need to build in-house risk engines while supporting seamless integration into existing workflows.

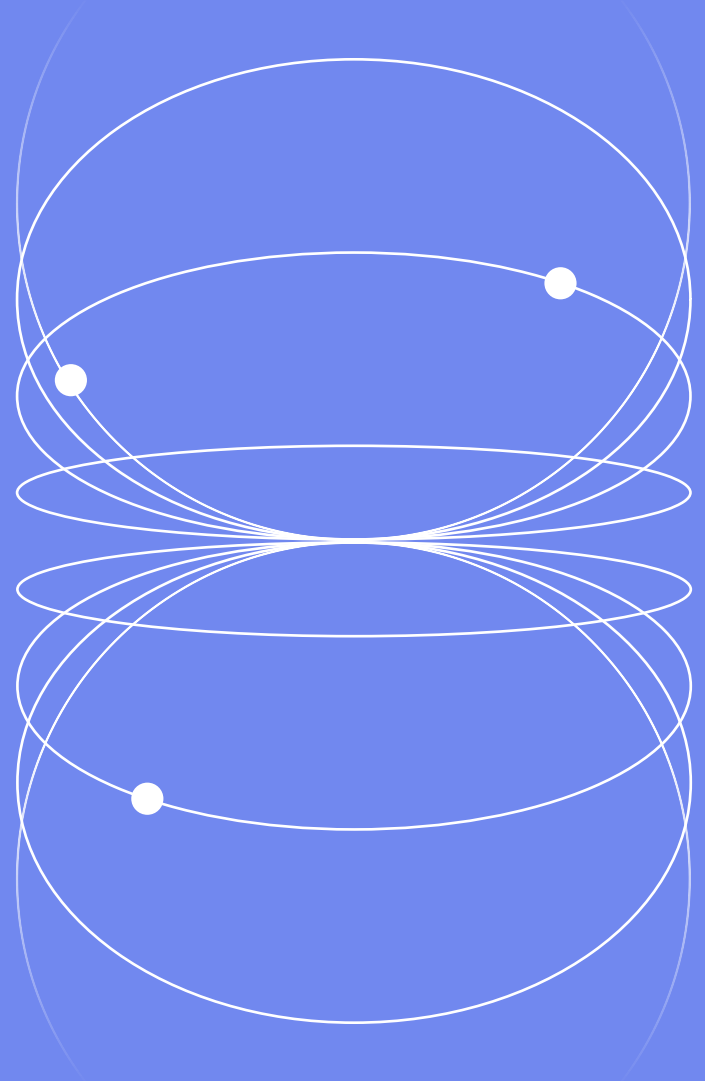
Key highlights

- Run MSCI's risk analytics directly within your infrastructure, ensuring data control and sovereignty.
- Leverage MSCI-proven models and methodologies without the cost and complexity of building in-house.
- Compute risk metrics such as factor exposures, risk attribution and VaR on demand, including intraday.
- Integrate easily via REST APIs and libraries, compatible with Python, Java, and C++ environments.
- Plug-and-play adaptors enable quick adoption across MSCI factor models and datasets.
- Automatic model updates ensure access to the latest analytics without manual maintenance.



Final Remarks

Luca Pizzolotto



Next Generation of User Experience

As we invest in new ways for clients to engage with and interrogate our tools and data, we remain equally committed to strengthening our existing solutions, Risk Manager Local Install being a key example:

1. **Chrome Compatibility & Modernization:** We've updated the platform to run smoothly and reliably on Chrome
2. **Core Technology upgrades:**
 - **Java Upgrade:** We upgraded the platform's core engine in stages — all the way to Java 25 — unlocking significant gains in performance, security, and long-term reliability
 - **Server Upgrade:** We upgraded to the latest web server technology, fully compatible with our existing deployment process — meaning a smoother upgrade with no added complexity for our teams
 - **Testing Infrastructure:** We built new automated testing that compares different versions, strengthening our validation process for every future upgrade

We want to hear from you. What more can we do to help? What new ways should we be delivering our products? What pain points can we help you solve next?

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