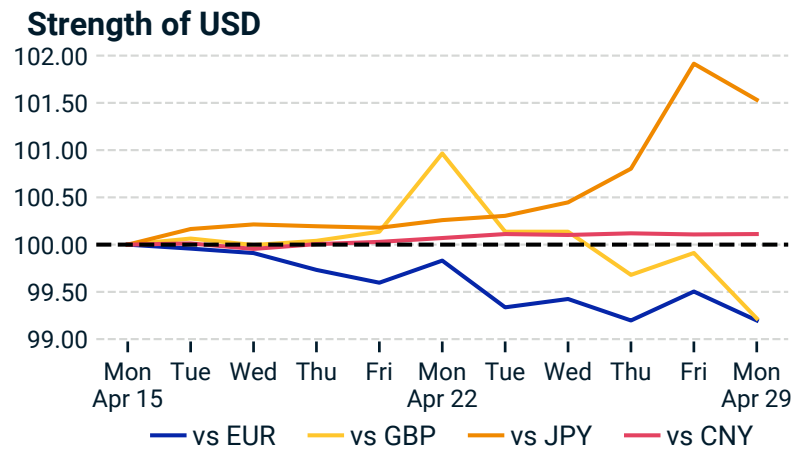
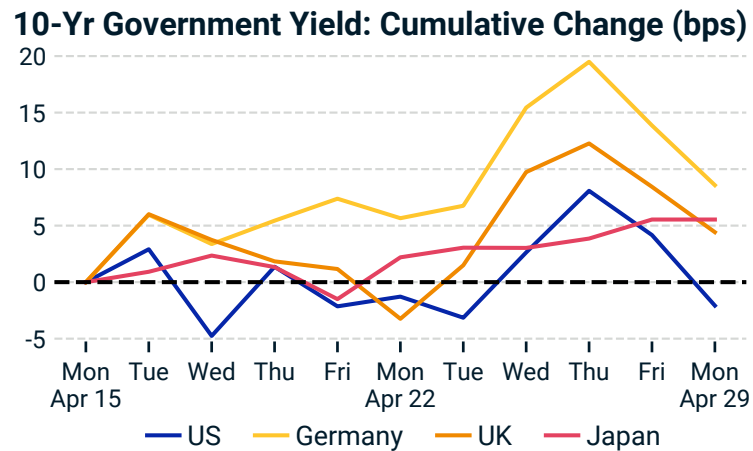
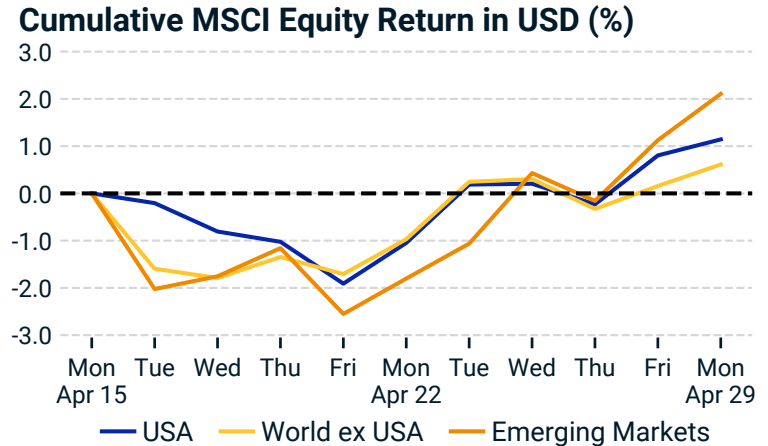
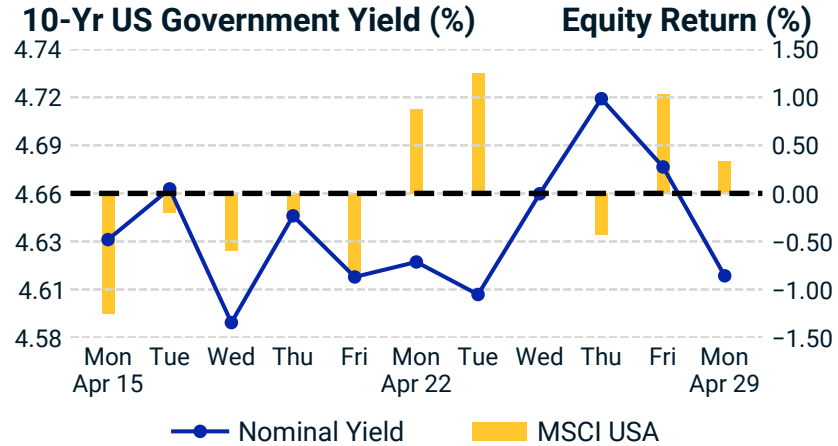


Daily Fixed-Income Insights

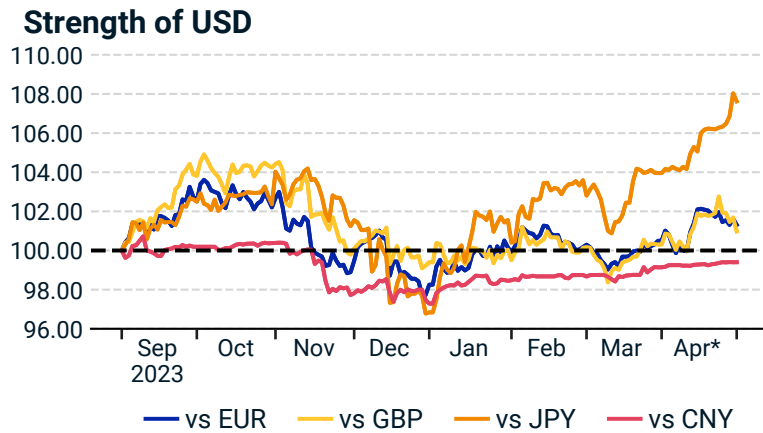
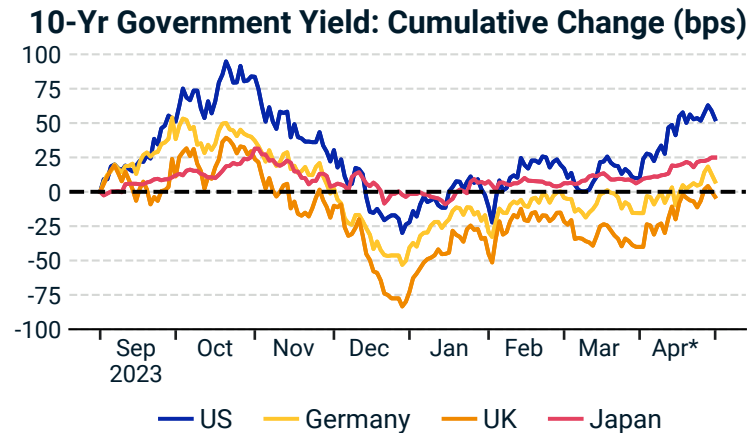
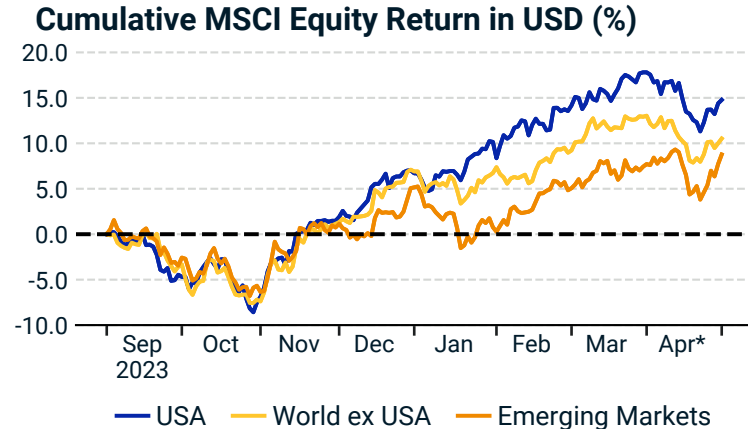
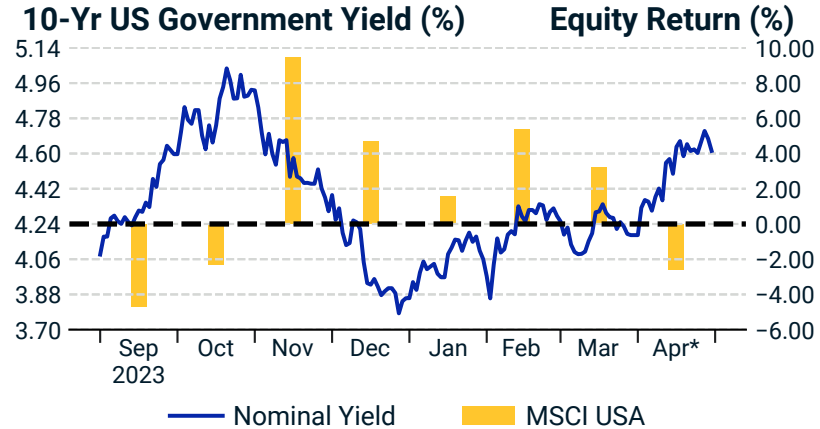
April 29, 2024 (market close)

Daily Trends in Yields, Equity Returns, FX



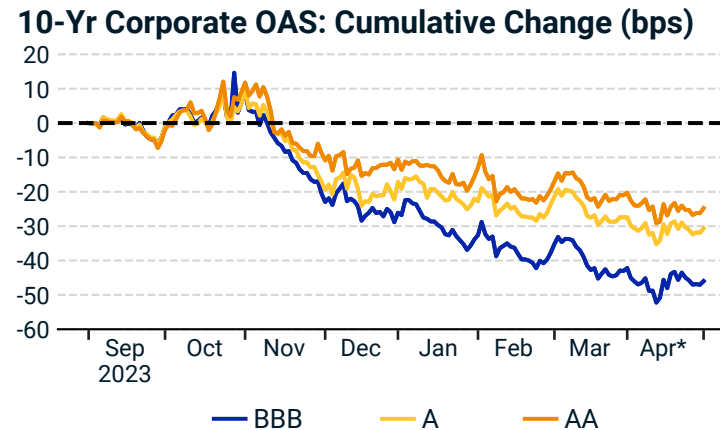
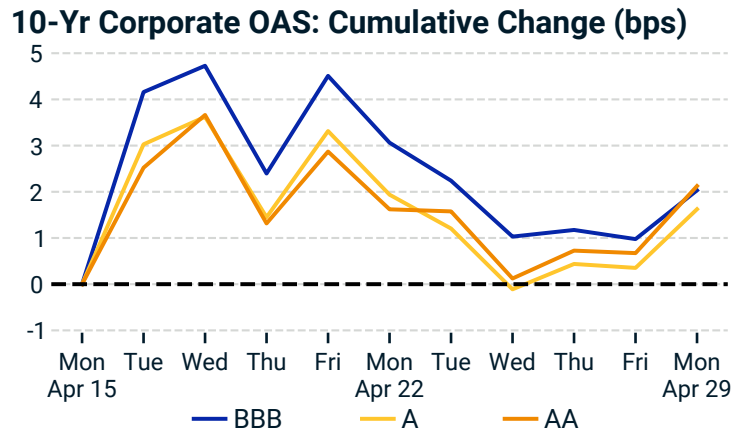
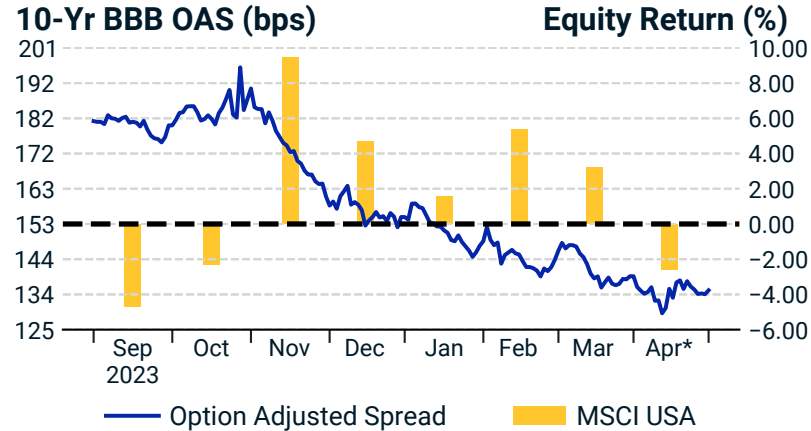
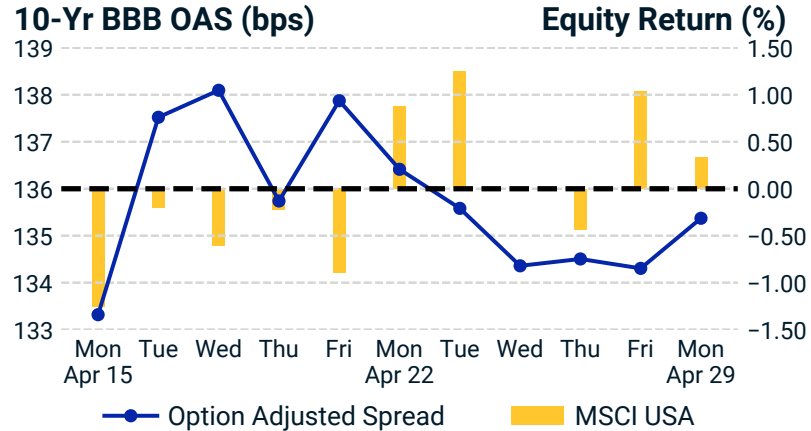
*See Appendix for data sources

Monthly Trends in Yields, Equity Returns, FX



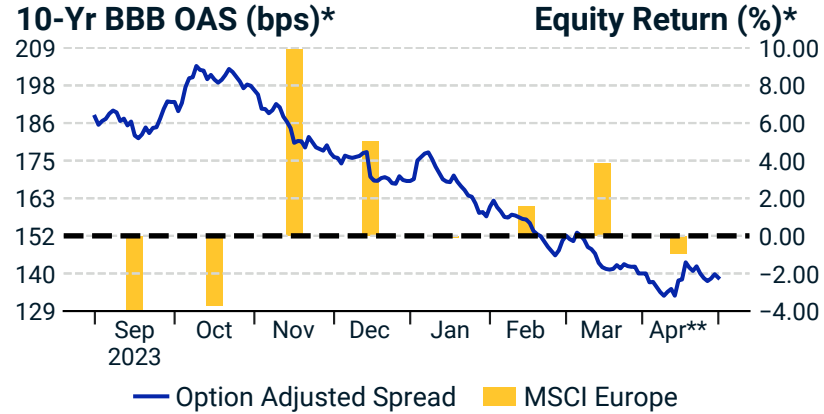
*As of April 29
 **See Appendix for data sources

Daily & Monthly US Corporate Spreads vs Equities

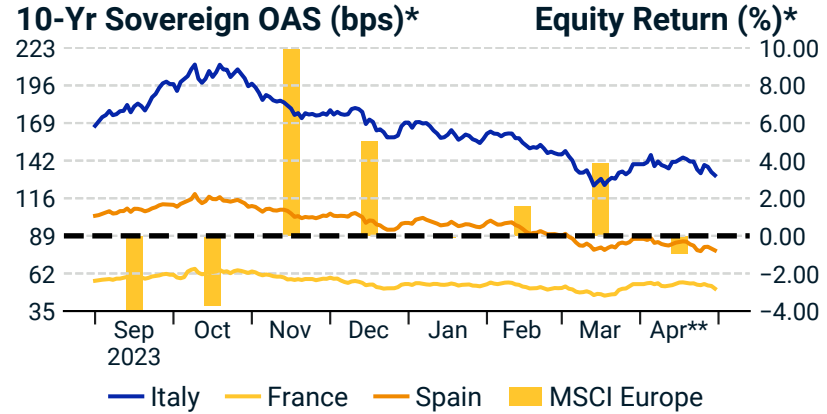


*As of April 29
**See Appendix for data sources

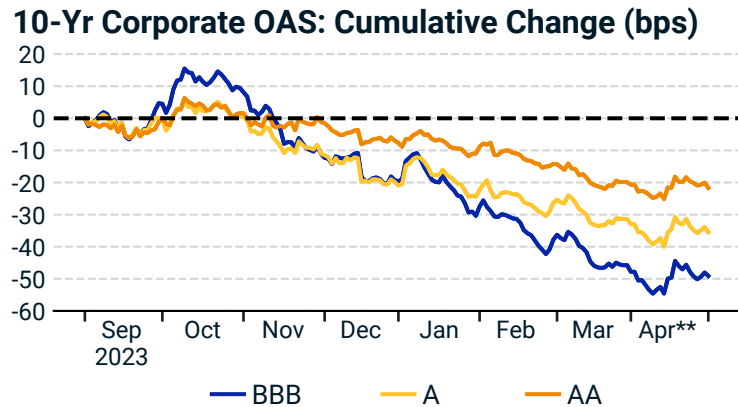
Euro Corporate and Sovereign Spreads vs Equities



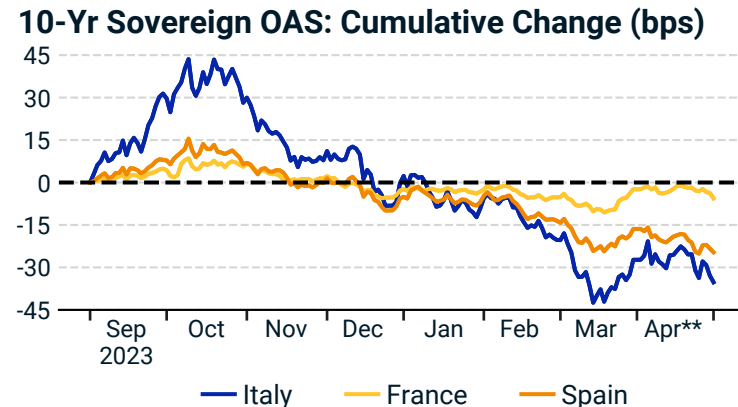
*Option Adjusted Spread in basis points to German government curve.
Equity return expressed in USD



*Option Adjusted Spread in basis points to German government curve.
Equity return expressed in USD

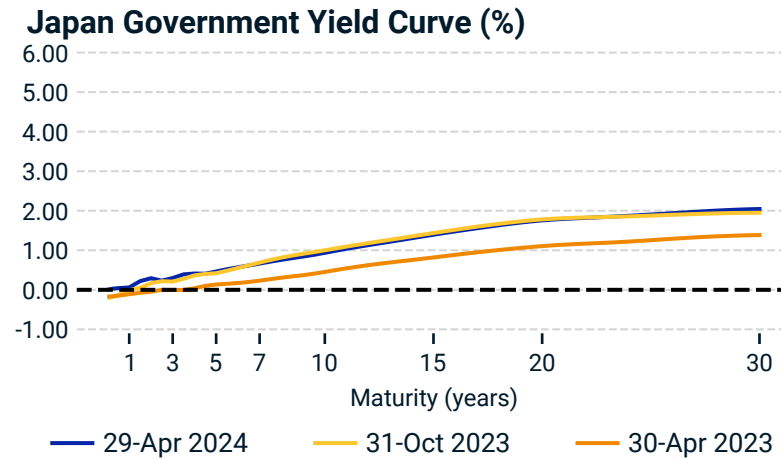
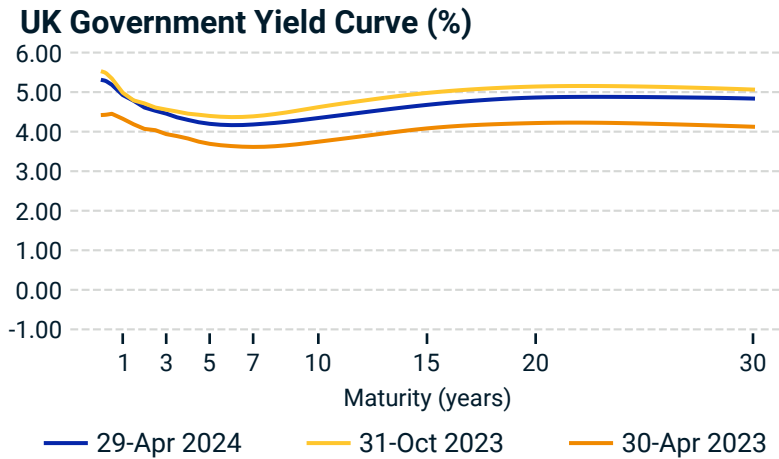
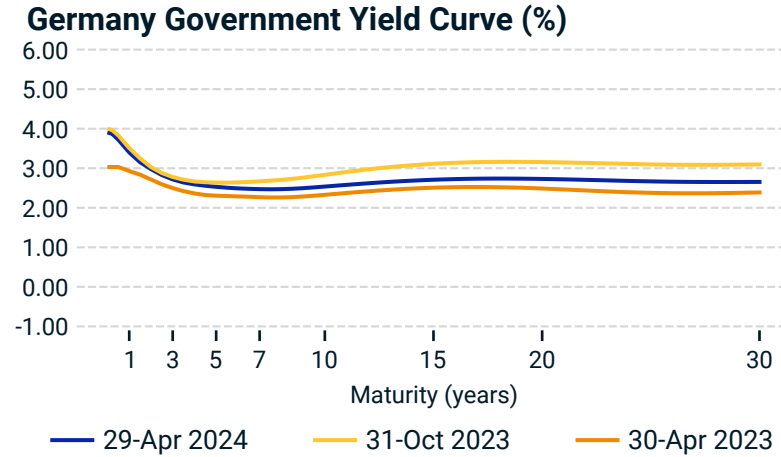
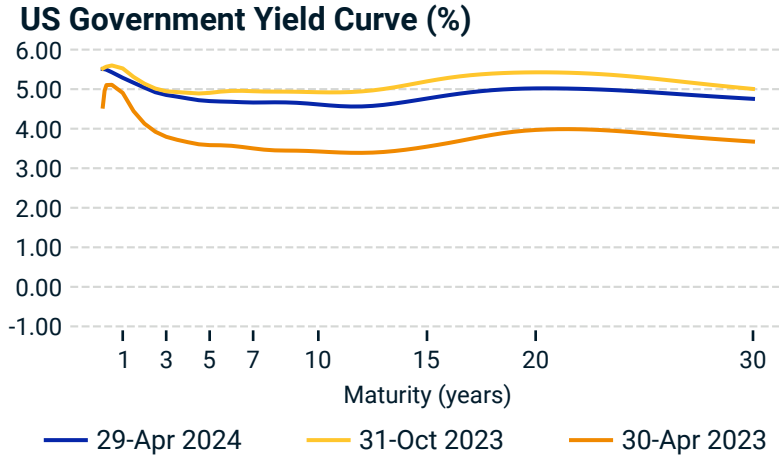


**As of April 29
***See Appendix for data sources



Drilldown: G4 Government Bonds and Rates

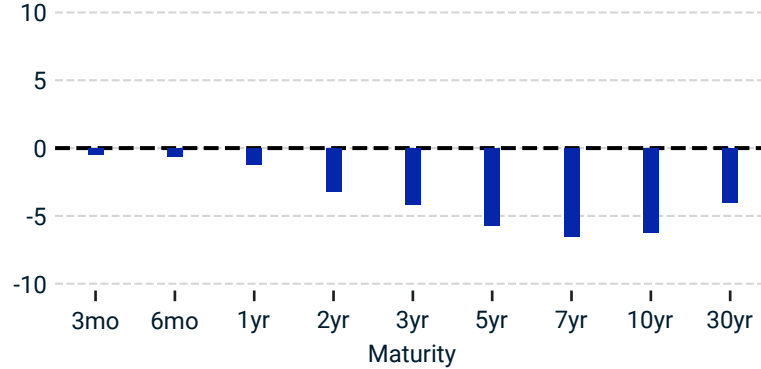
Government Nominal Yield Curves



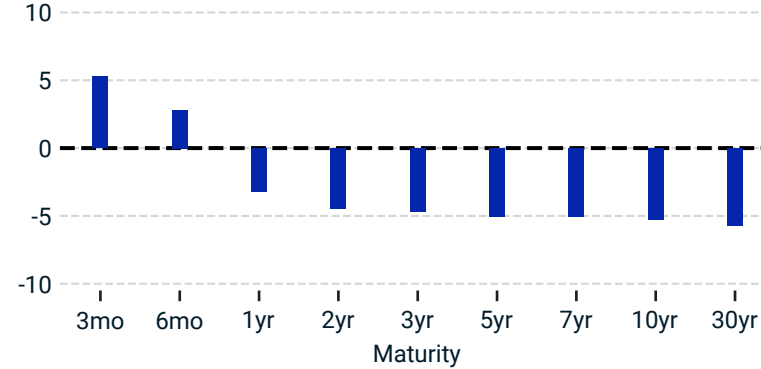
*See Appendix for data sources

Government Yields: 1-Day Changes (Nominal)*

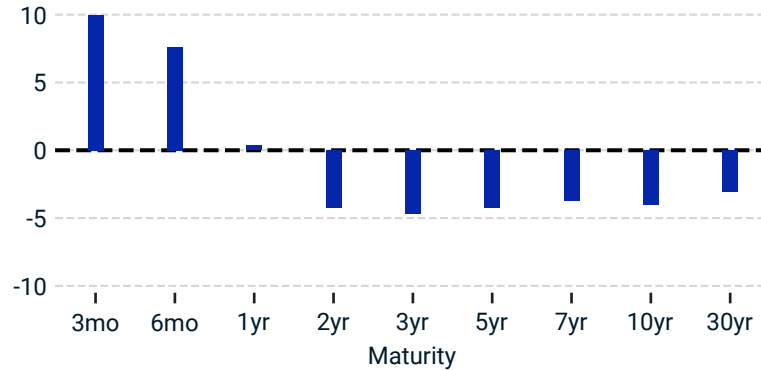
US Change (bps)



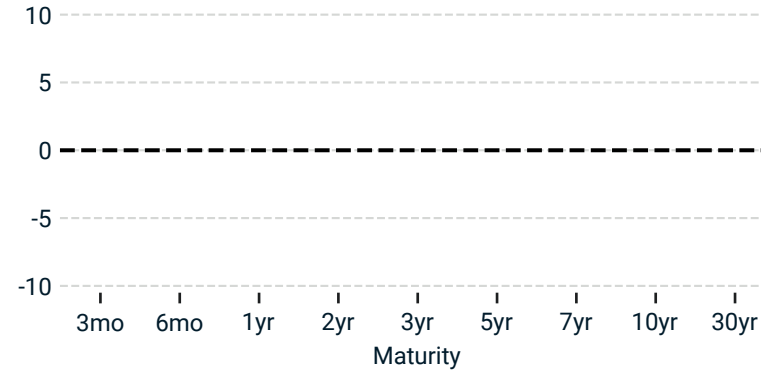
Germany Change (bps)



UK Change (bps)



Japan Change (bps)

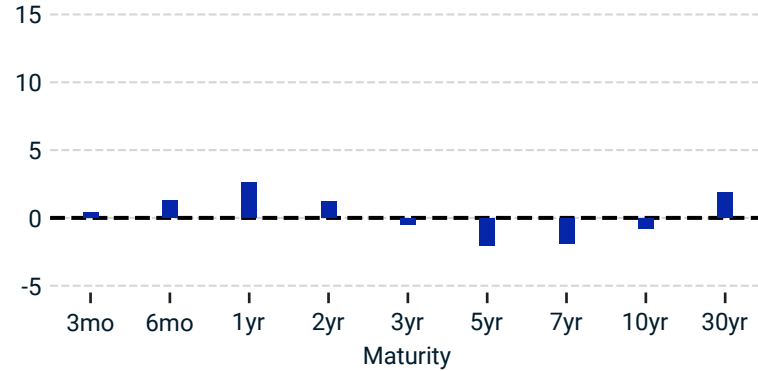


*Change from Apr 26 to Apr 29

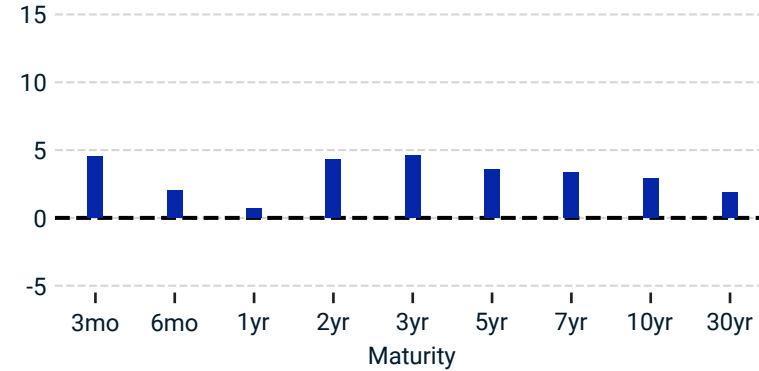
**See Appendix for data sources.

Government Yields: 1-Week Changes (Nominal)*

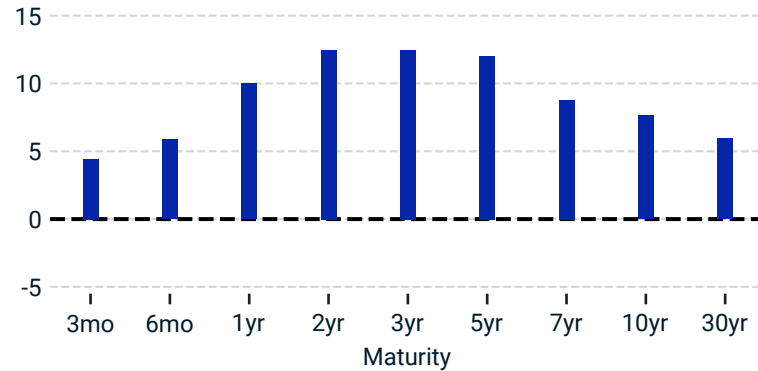
US Change (bps)



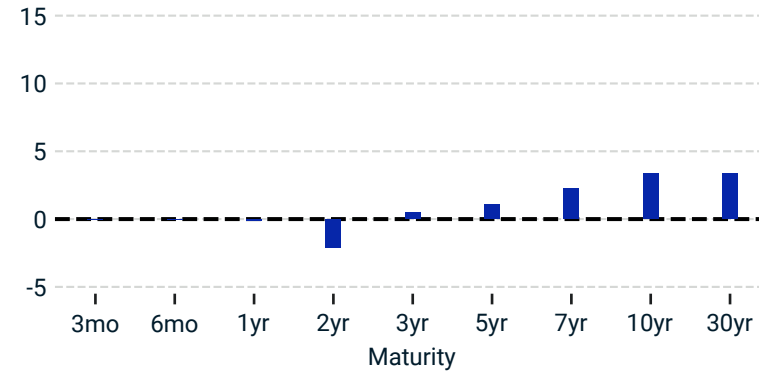
Germany Change (bps)



UK Change (bps)



Japan Change (bps)

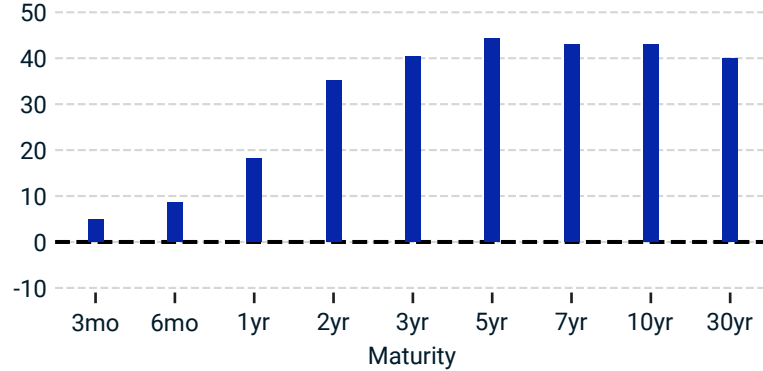


*Change from Apr 22 to Apr 29

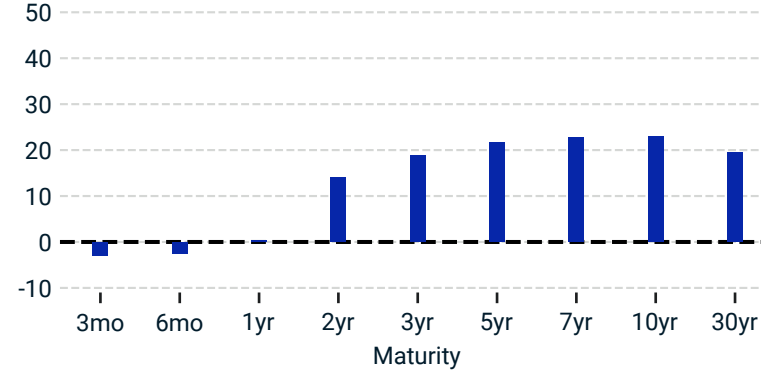
**See Appendix for data sources

Government Yields: 1-Month Changes (Nominal)*

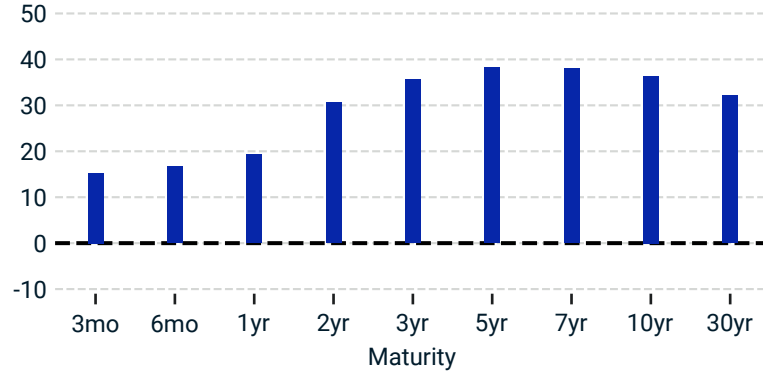
US Change (bps)



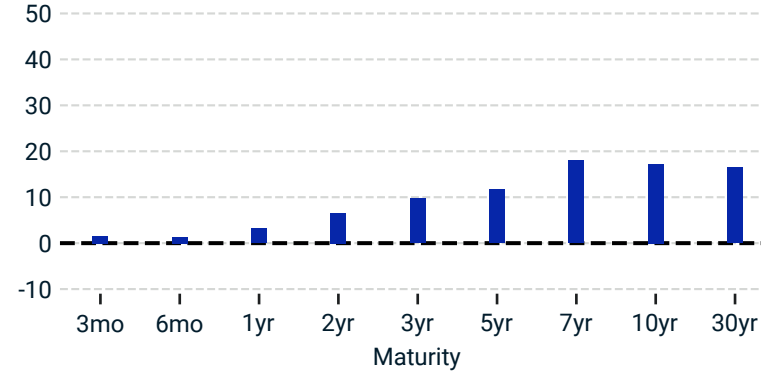
Germany Change (bps)



UK Change (bps)



Japan Change (bps)

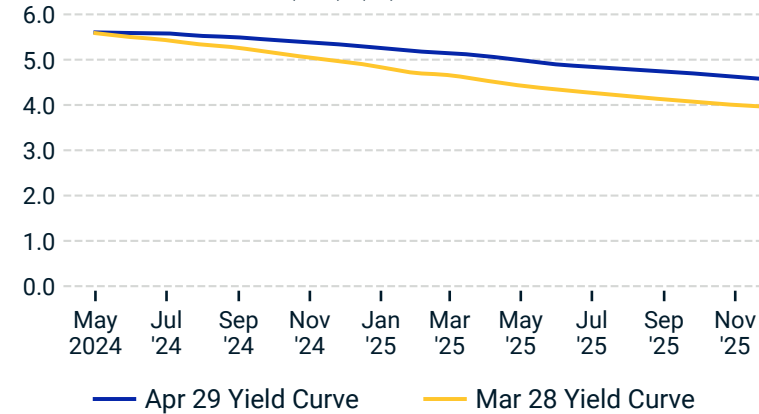


*Change from Mar 29 to Apr 29

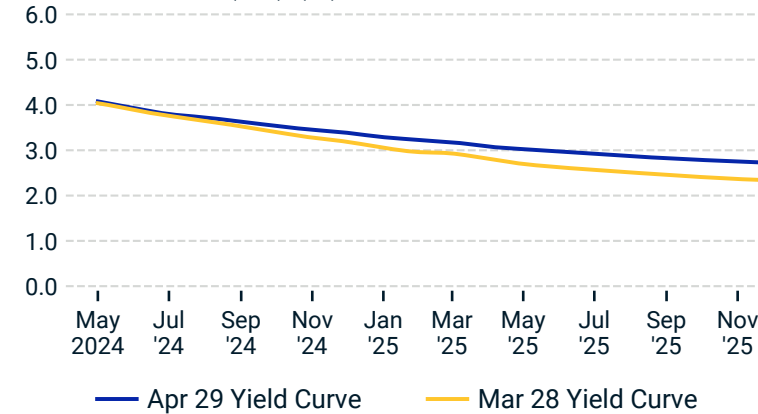
**See Appendix for data sources

1-Month Forward Rates on Futures and Overnight Index Swaps

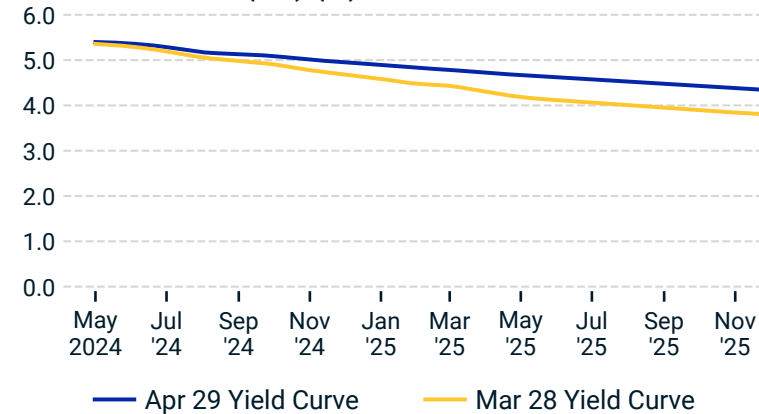
USD SOFR Futures (SP) (%)



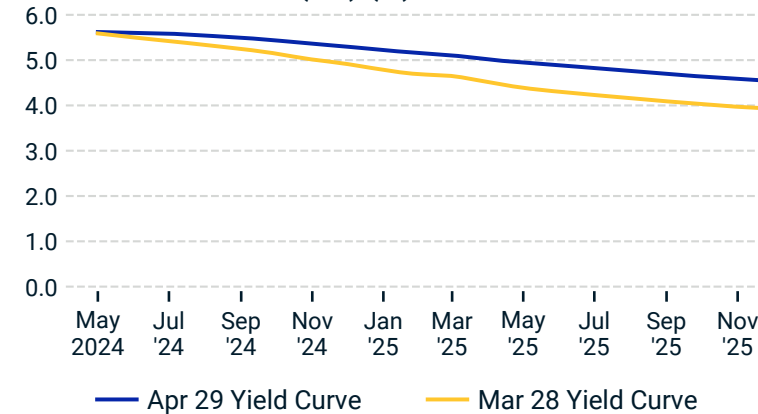
EUR ESTR OIS (SP) (%)



GBP SONIA OIS (SP) (%)

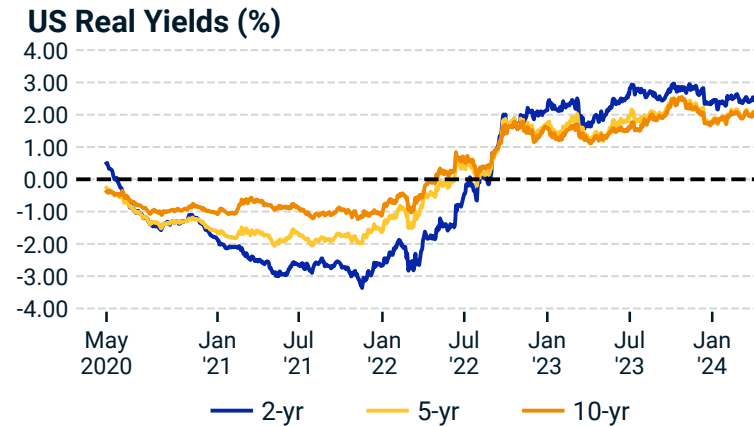
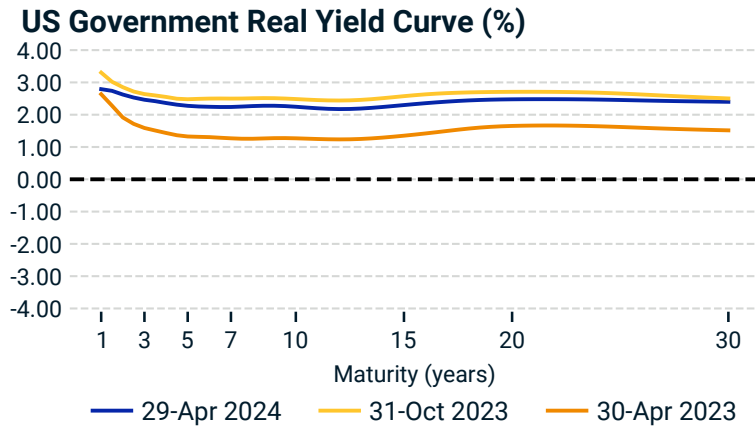
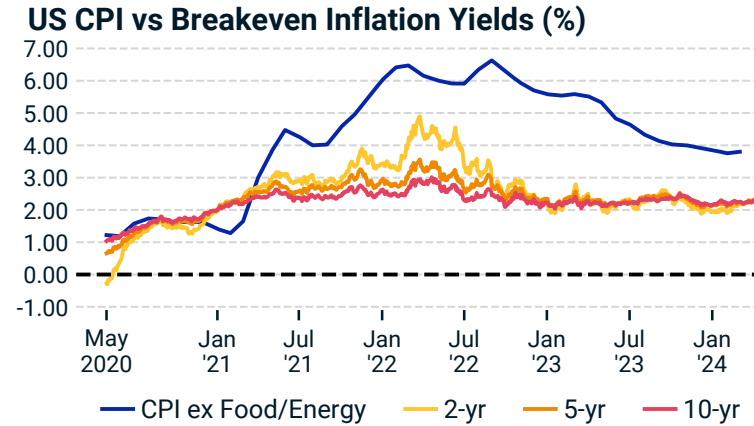
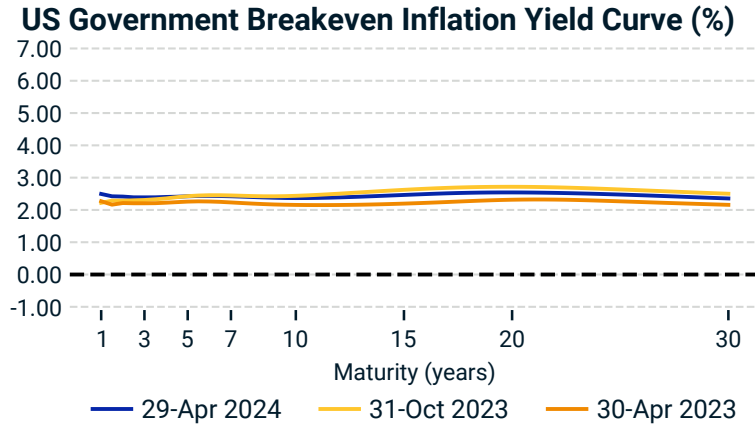


USD Fed Funds OIS (SP) (%)



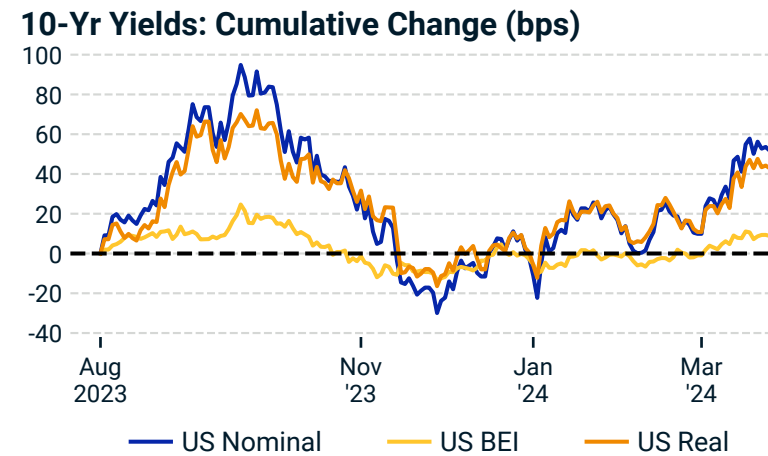
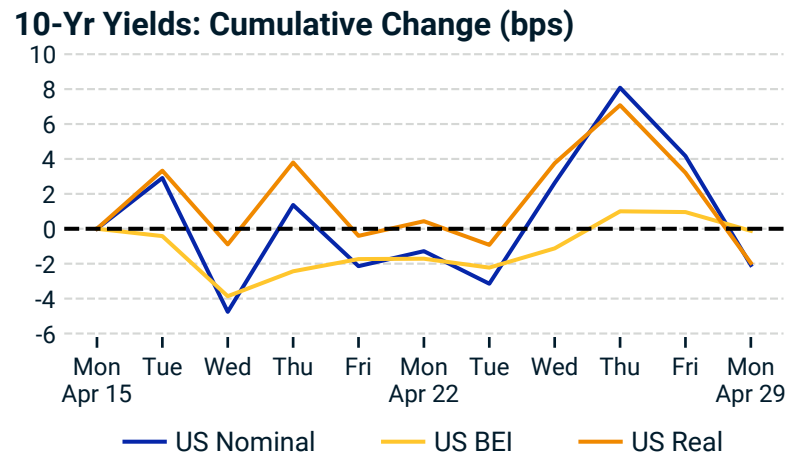
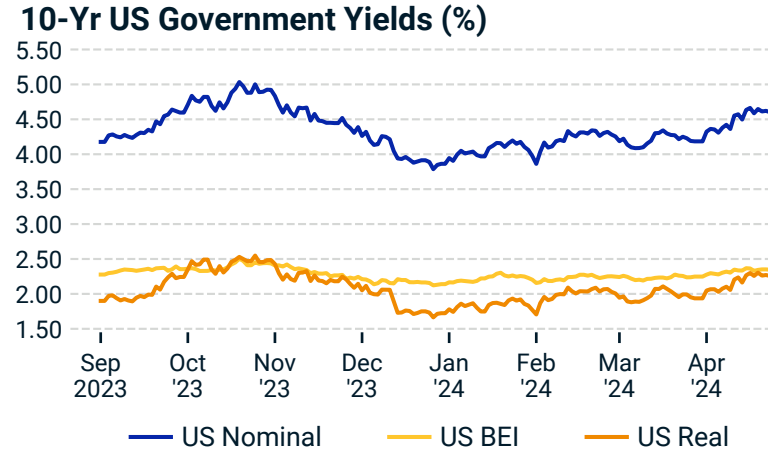
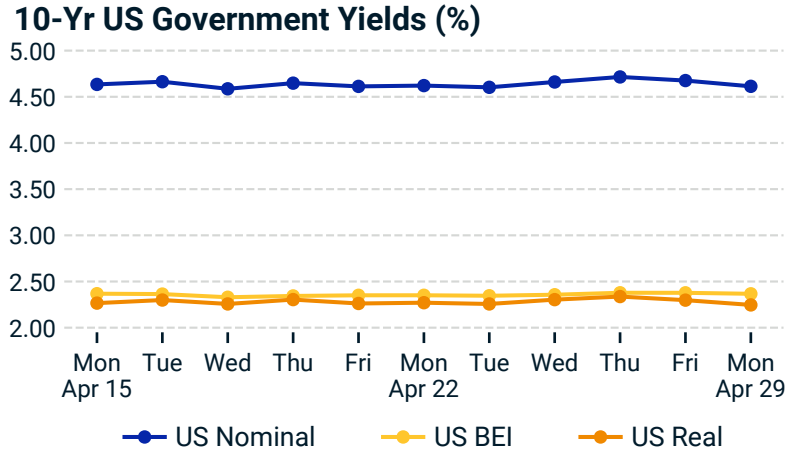
*See Appendix for data sources

US Breakeven Inflation and Real Yields



**See Appendix for data sources

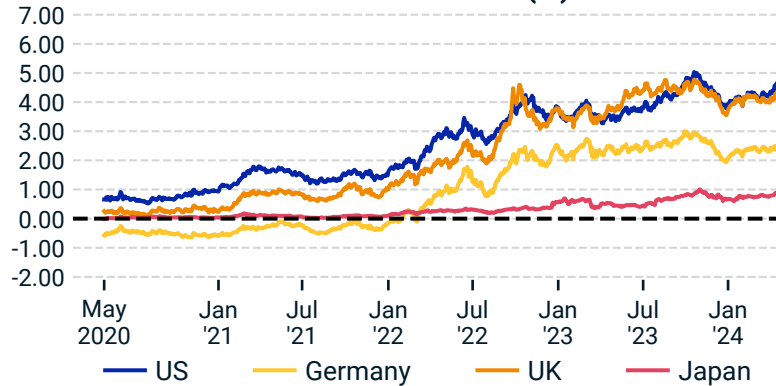
US Government Yields: Nominal, Real and BEI



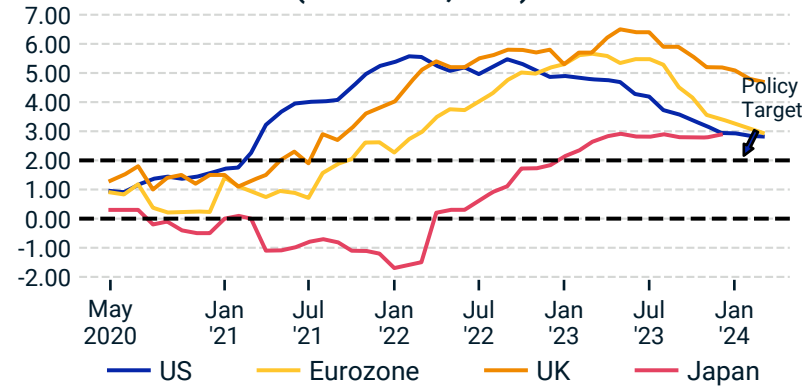
*See Appendix for data sources

4-Year Trends in Government Yields and Inflation

10-Yr Government Nominal Yields (%)

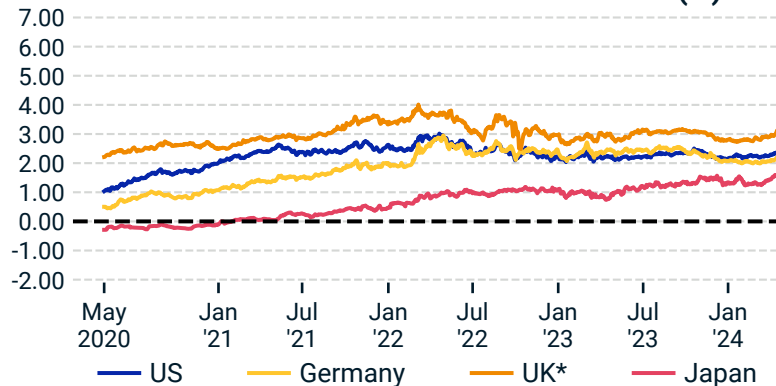


Realized Inflation (12-Month, in %)



*US: PCE ex Food/Energy; Eurozone: HICP ex Food/Energy/Alcohol/Tobacco
UK: CPIH ex Food/Energy/Alcohol/Tobacco; Japan: CPI ex Food/Energy

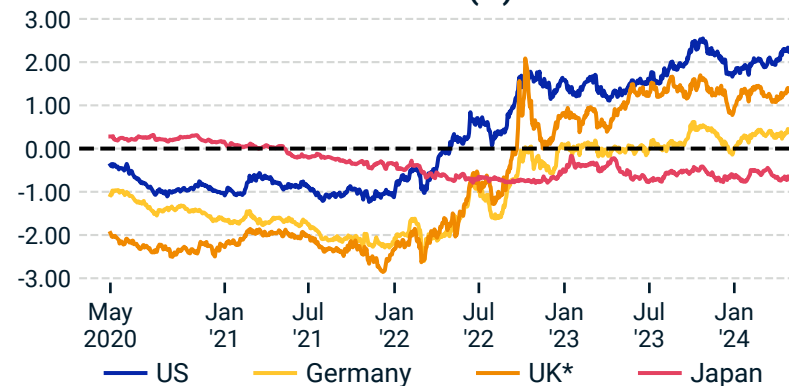
10-Yr Government Breakeven Inflation Yields (%)



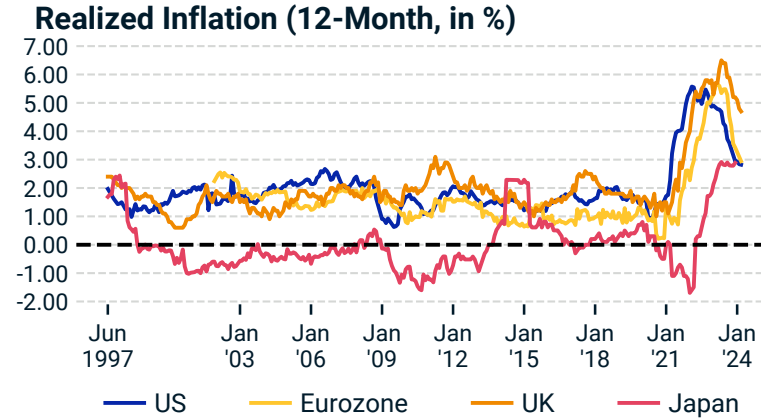
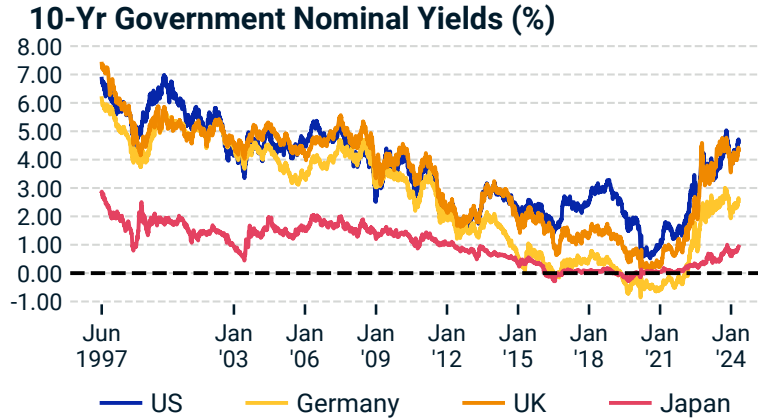
*UK breakeven inflation and real yields are adjusted to reflect historical differences between the Retail Price Index (RPI) and the Consumer Price Index (CPI)

**See Appendix for data sources

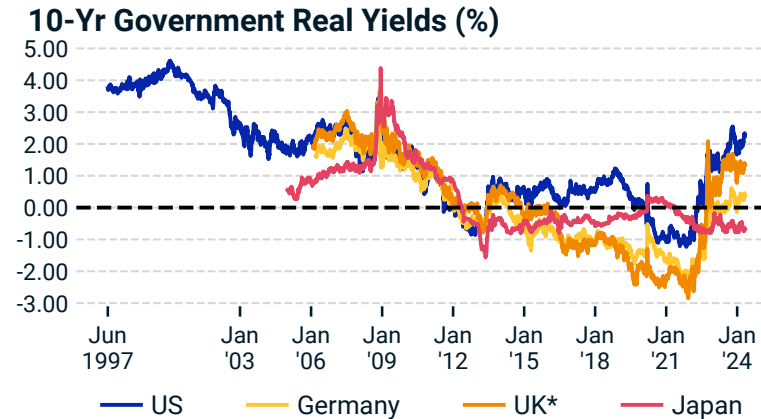
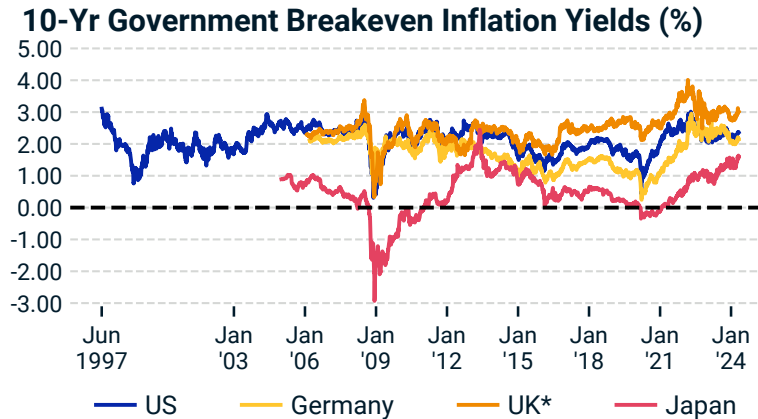
10-Yr Government Real Yields (%)



Long-Run Trends in Yields and Inflation



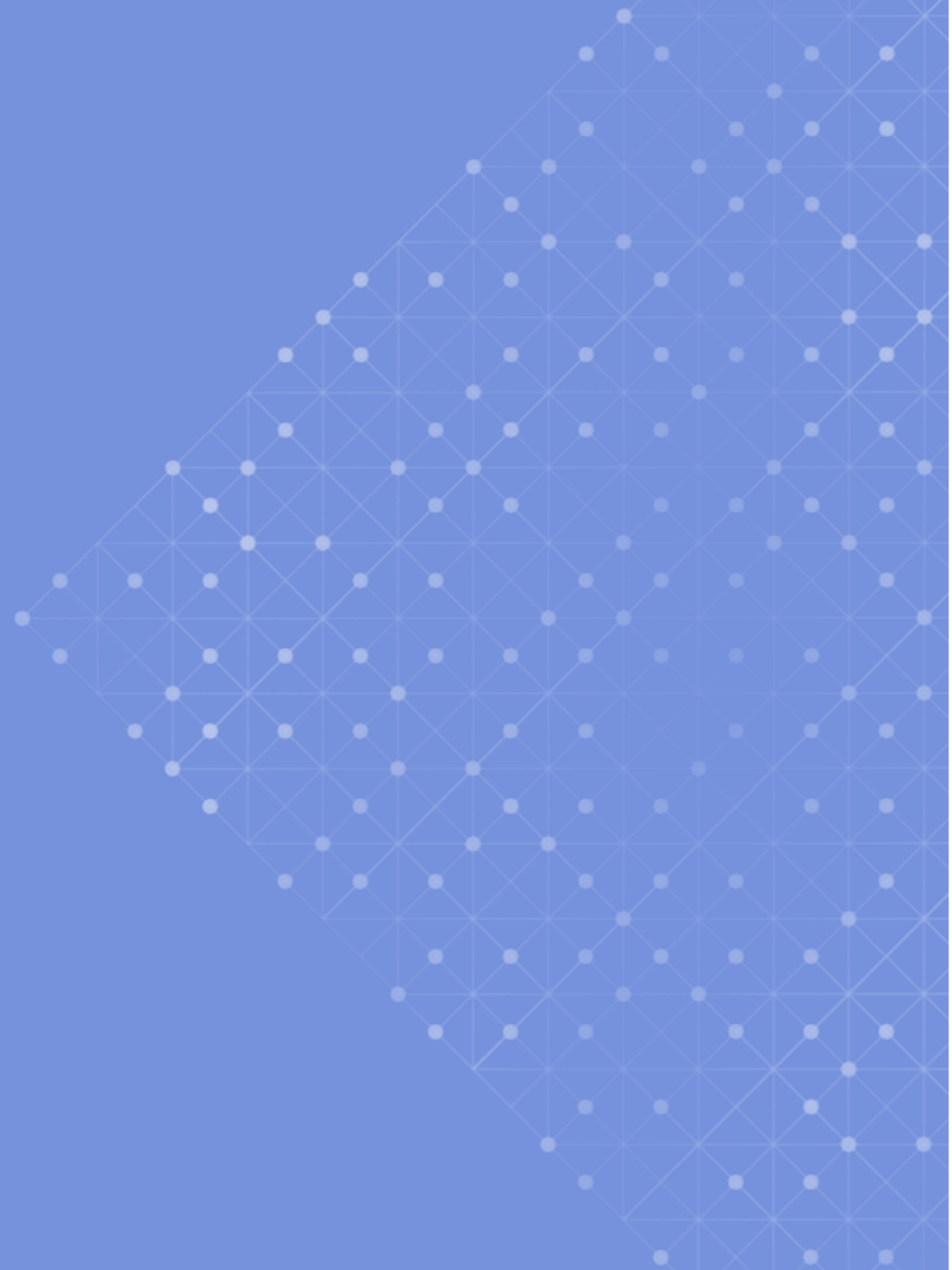
*US: PCE ex Food/Energy; Eurozone: HICP ex Food/Energy/Alcohol/Tobacco
 UK: CPIH ex Food/Energy/Alcohol/Tobacco; Japan: CPI ex Food/Energy



*UK breakeven inflation and real yields are adjusted to reflect historical differences between the Retail Price Index (RPI) and the Consumer Price Index (CPI)

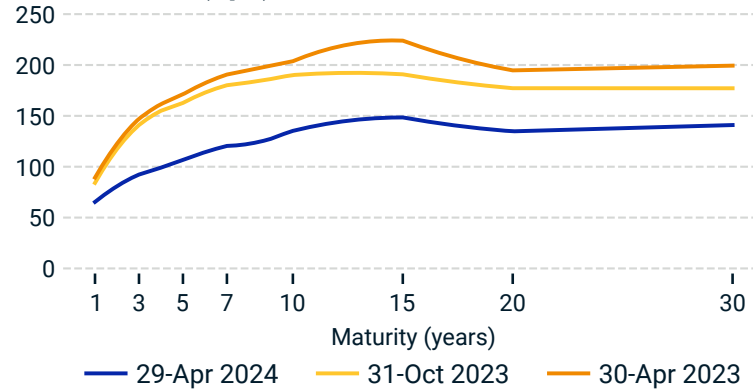
**See Appendix for data sources

Drilldown: Credit

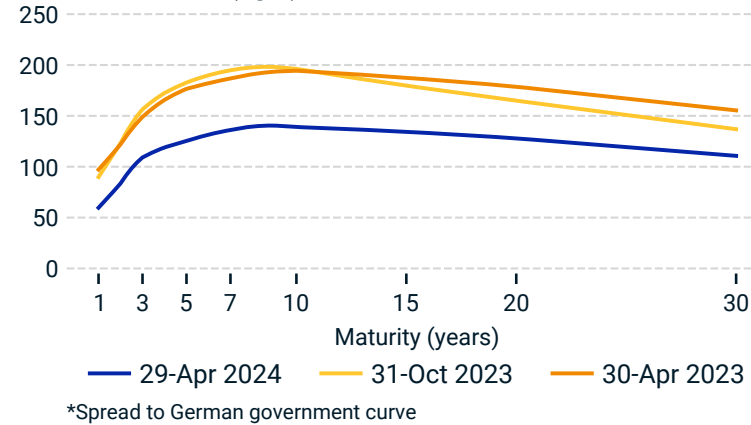


Spread Term Structure: BBB Corporates & Sovereigns

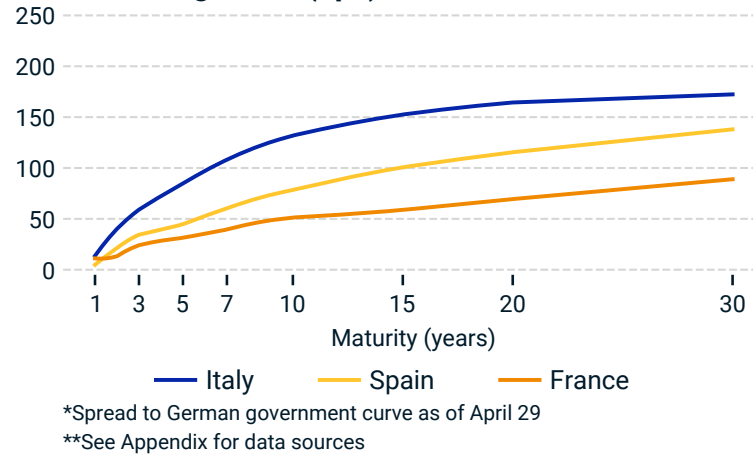
US BBB OAS (bps)



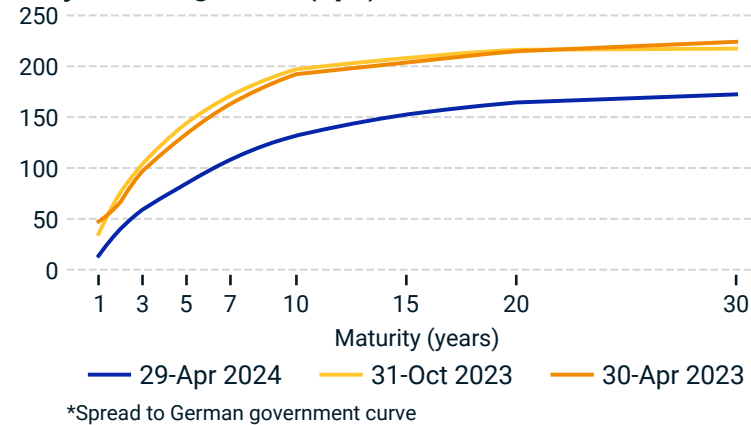
Euro BBB OAS (bps)*



Euro Sovereign OAS (bps)*

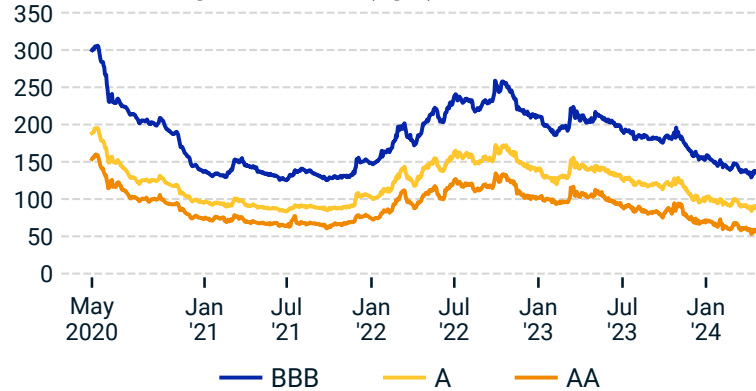


Italy Sovereign OAS (bps)*

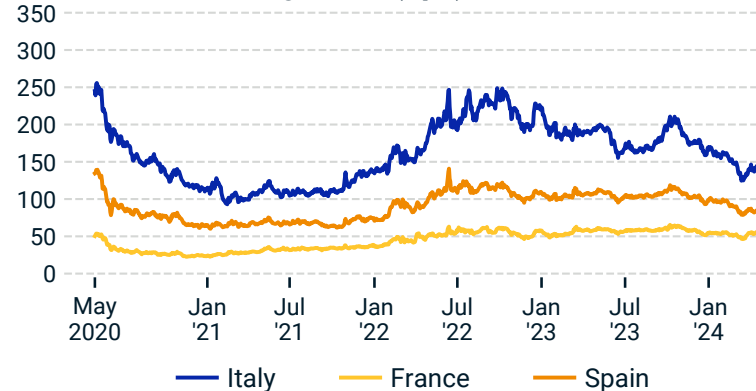


4-Year Spread Trends on Corporates & Euro / EM Sovereigns

10-Yr US Corporate OAS (bps)



10-Yr Euro Sovereign OAS (bps)*



*Spread to German government curve

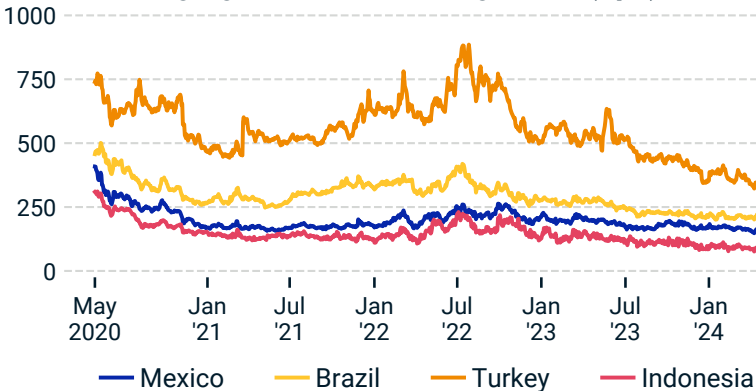
10-Yr Euro OAS (bps)*



*Spread to German government curve

**See Appendix for data sources

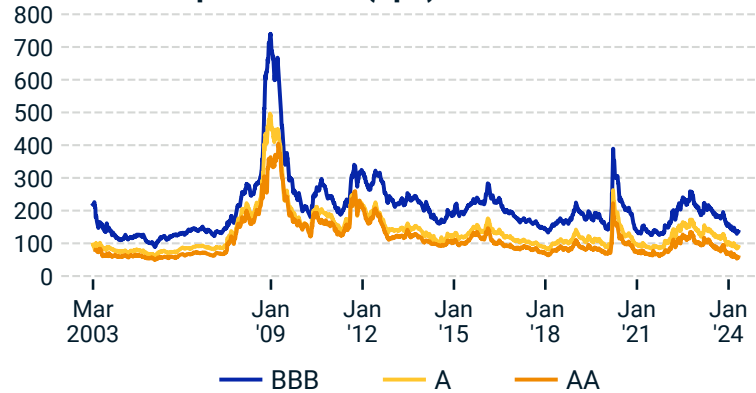
10-Yr Emerging Markets Sovereign OAS (bps)*



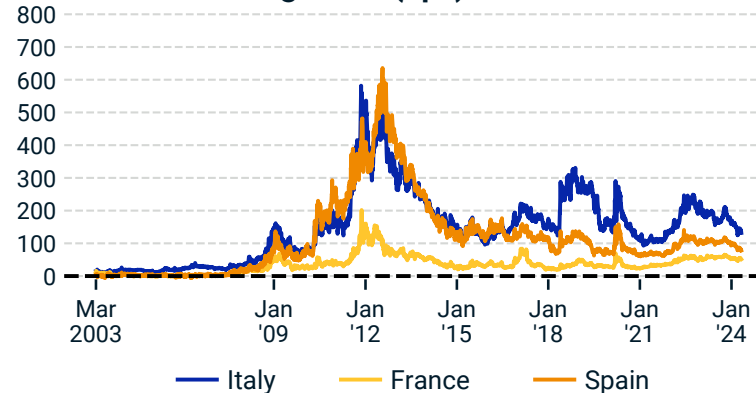
*Spread to US Treasury curve

Long-Run Trends in Spreads

10-Yr US Corporate OAS (bps)

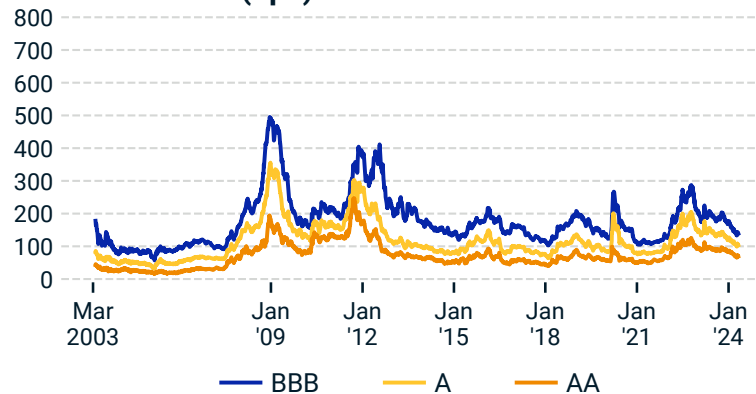


10-Yr Euro Sovereign OAS (bps)*



*Spread to German government curve

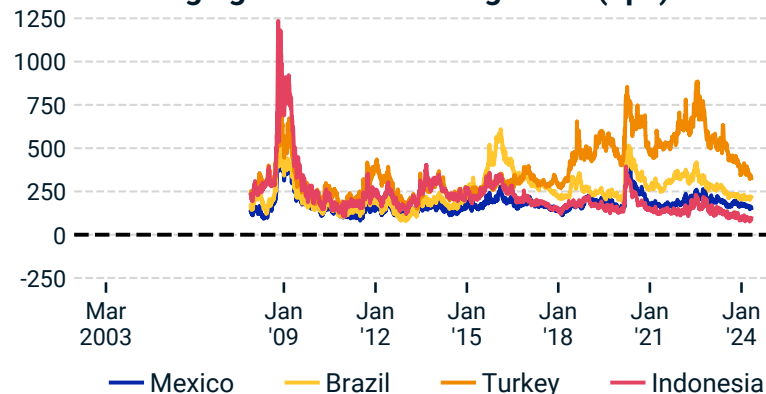
10-Yr Euro OAS (bps)*



*Spread to German government curve

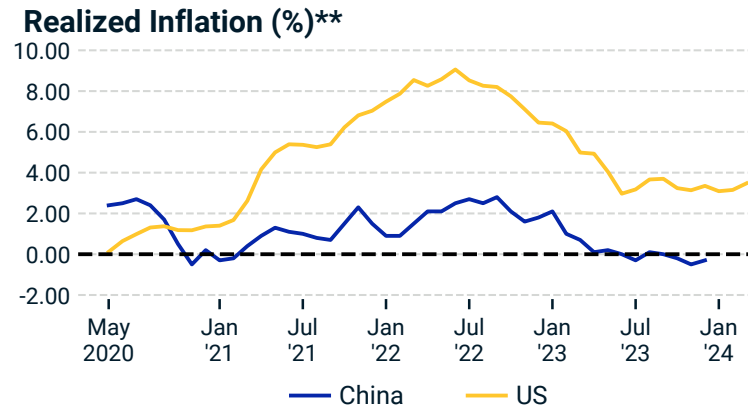
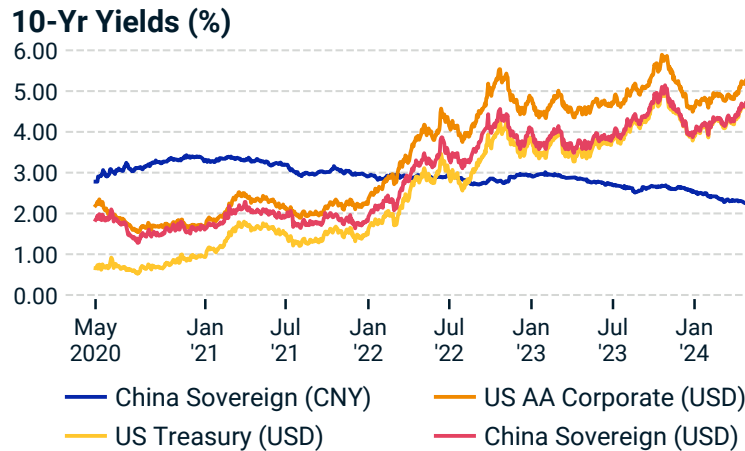
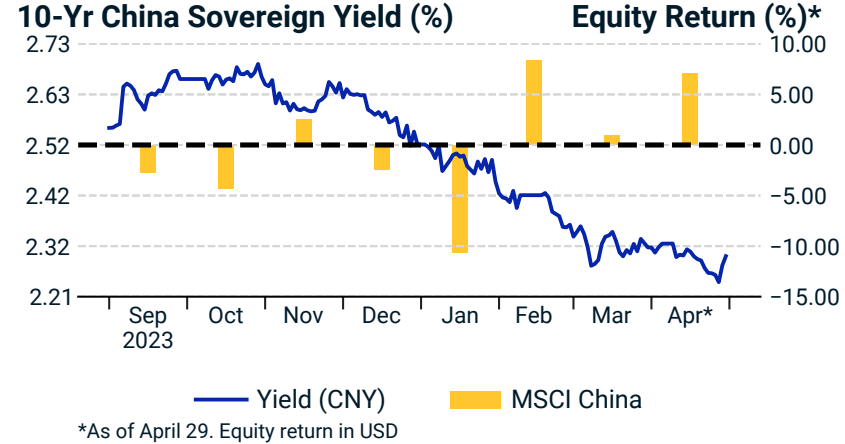
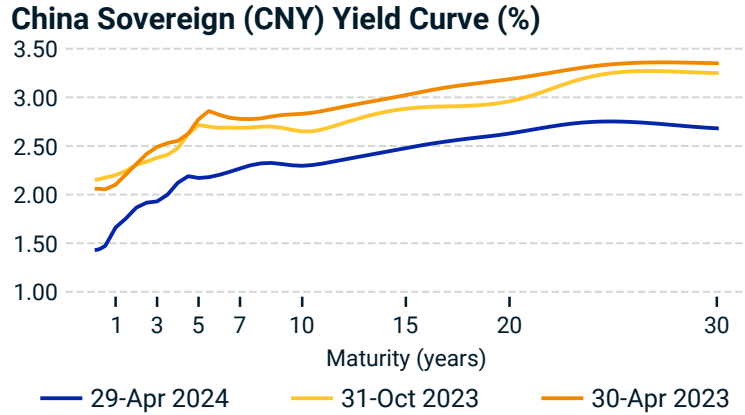
**See Appendix for data sources

10-Yr Emerging Markets Sovereign OAS (bps)*



*Spread to US Treasury curve

China Government Bond Drilldown



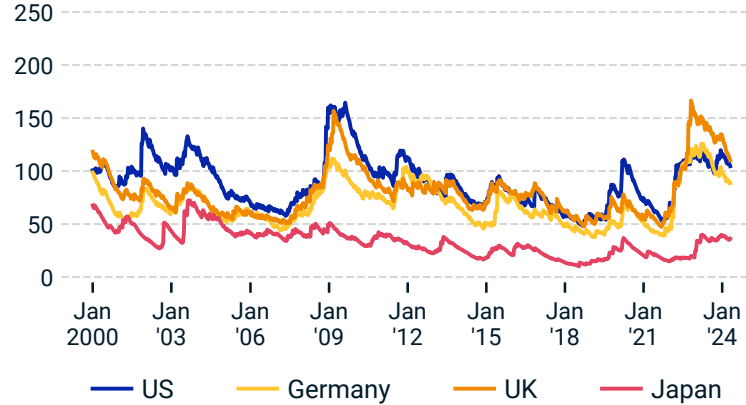
***See Appendix for data sources

**China inflation (yoy) -0.3% as of Dec 2023
Inflation measured by All Items CPI includes food and energy prices

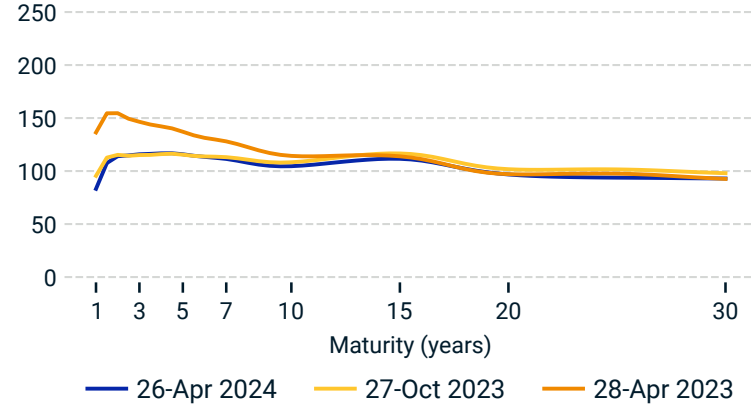
Volatilities, Correlations, FX

Trends in Yield and Return Volatilities

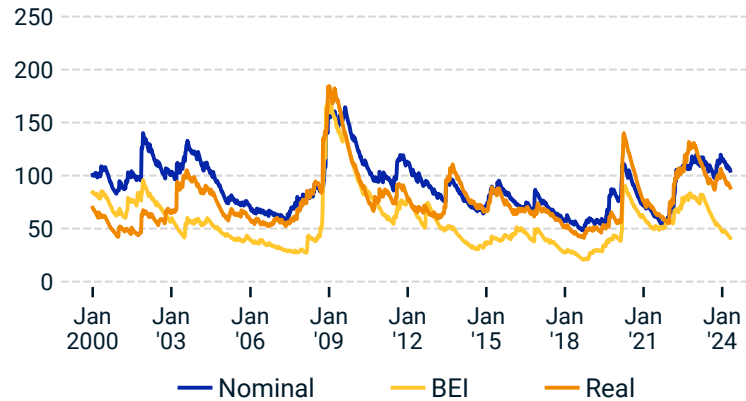
10-Yr Government Nominal Yield Volatility (bps)*



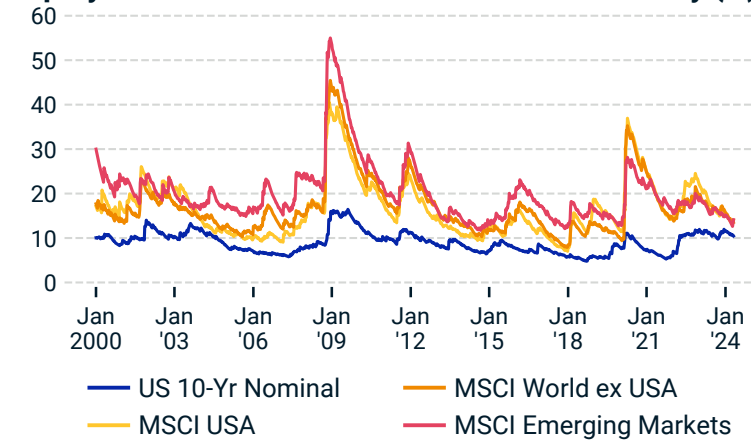
US Nominal Yield Volatility Curve (bps)*



10-Yr US Yield Volatility (bps)*



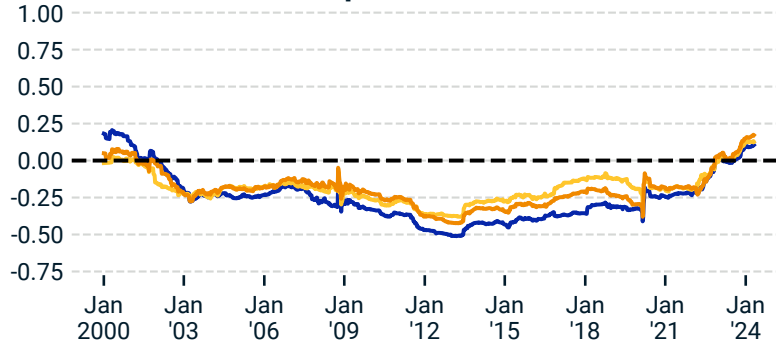
Equity and 10-Yr US Government Return Volatility (%)*



*Realized volatility using exponential time decay with half life of 18-weeks
 **See Appendix for data sources

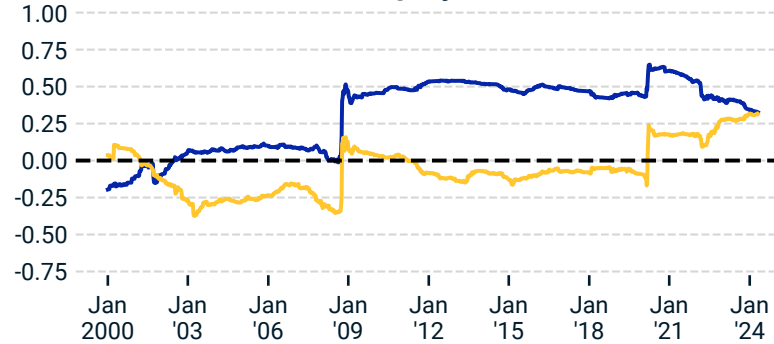
Trends in Correlations and Yield Curve Slope

Return Correlations: Equities & 10-Yr US Government*



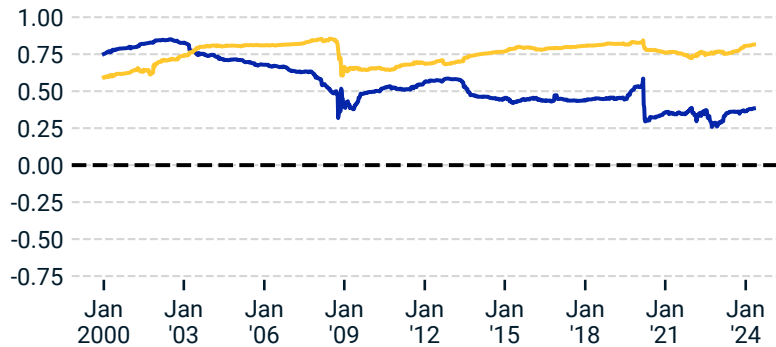
10-Yr Nominal vs: — MSCI USA — MSCI World ex USA
— MSCI Emerging Markets

Return Correlations: US Equity & 10-Yr US Real, BEI*



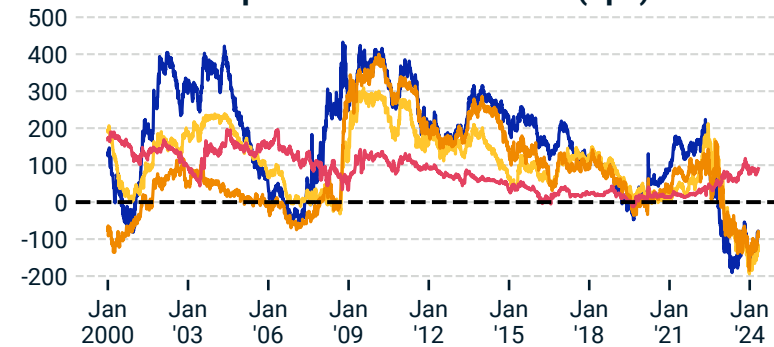
MSCI USA vs: — 10-Yr Government BEI
— 10-Yr Government Real

Yield Correlations: 10-Yr US Government*



10-Yr Nominal vs: — 10-Yr BEI — 10-Yr Real

Yield Curve Slope: 10-Yr less 3-Month (bps)



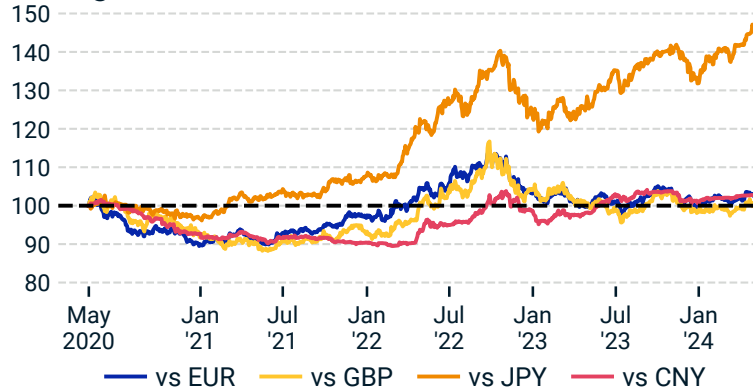
— US — Germany — UK — Japan

*Realized correlation using exponential time decay with half life of 2-years

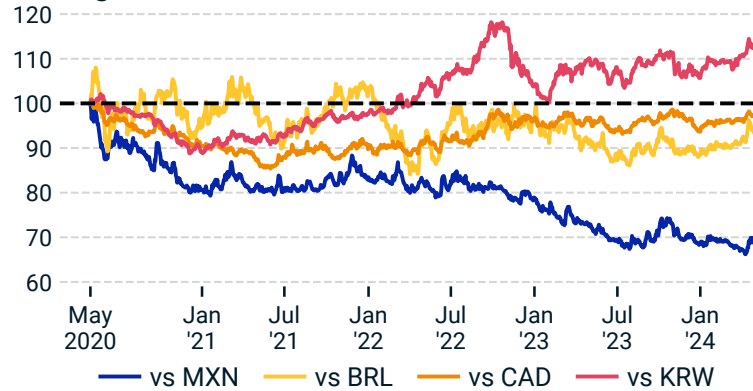
**See Appendix for data sources

FX Trends

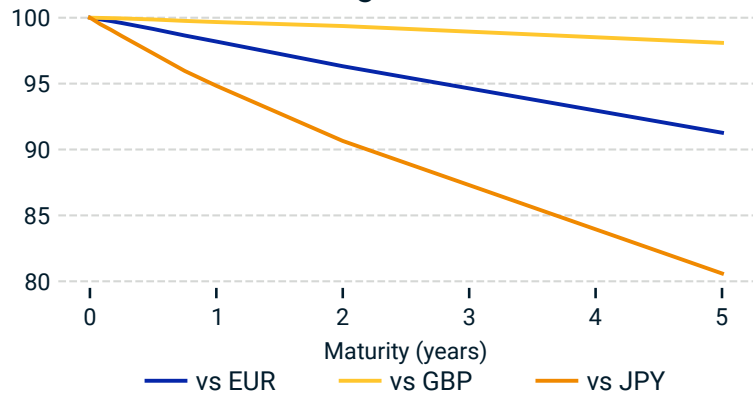
Strength of US Dollar



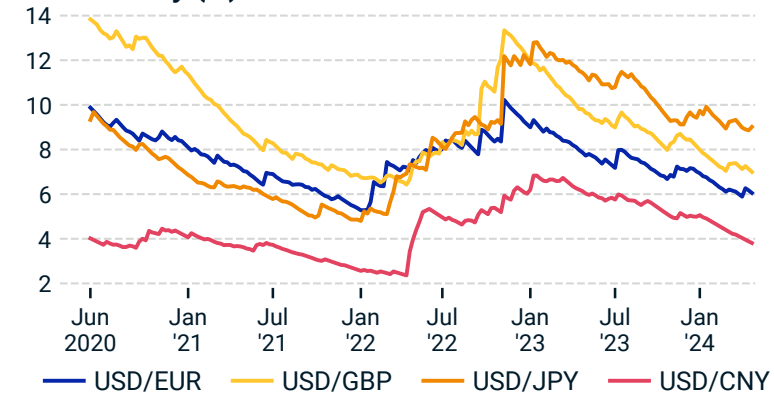
Strength of US Dollar



FX Forward Curve: Strength of US Dollar*



FX Volatility (%)**



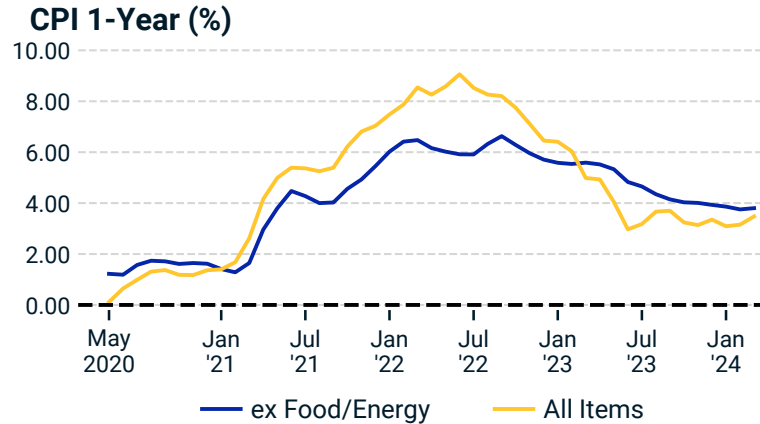
*As of April 29

***See Appendix for data sources

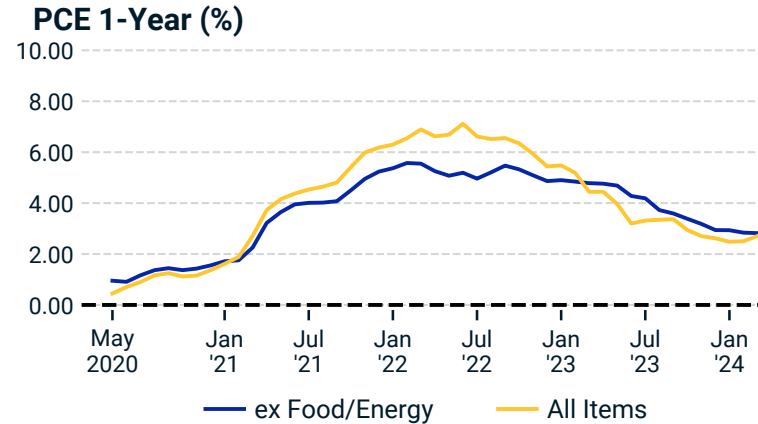
**Realized volatility using exponential time decay with half life of 18-weeks

Historical Inflation and GDP

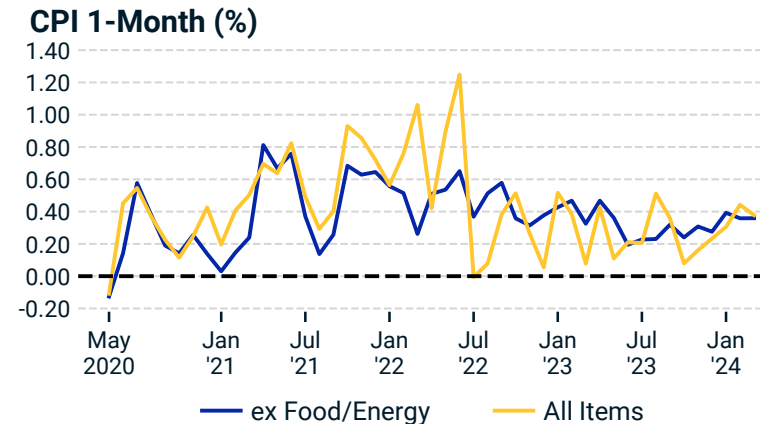
US Inflation: Annual and Monthly (CPI and PCE)



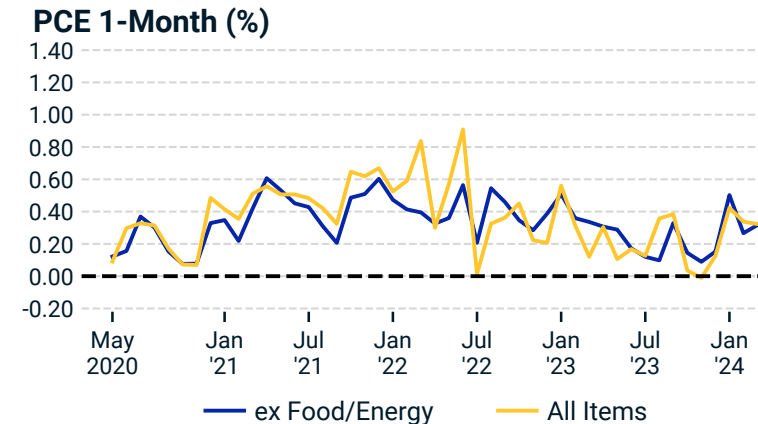
*As of Mar 2024: 3.8 for ex Food/Energy and 3.5 for All Items



*As of Mar 2024: 2.8 for ex Food/Energy and 2.7 for All Items



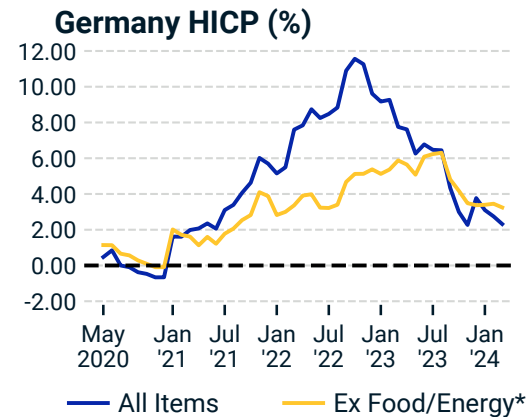
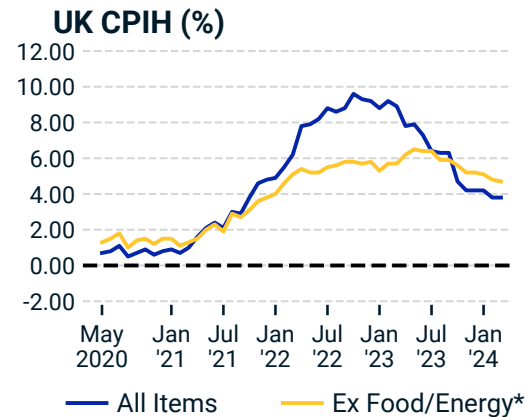
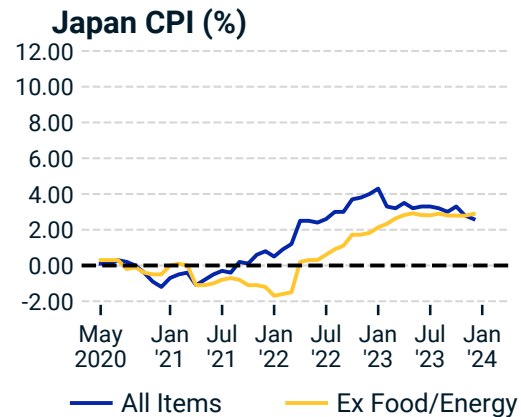
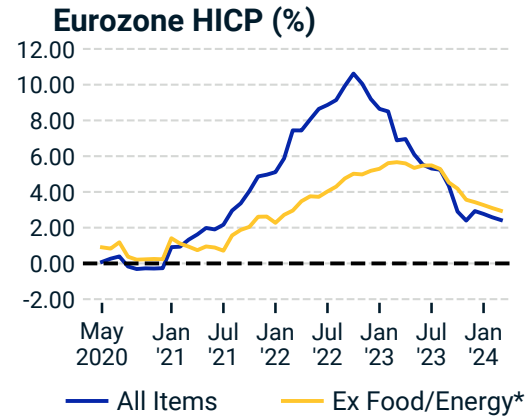
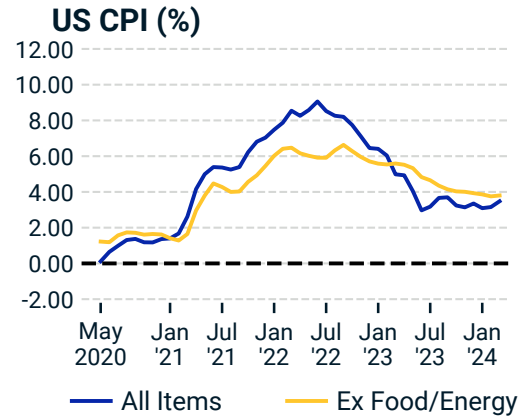
*As of Mar 2024: 0.4 for ex Food/Energy and 0.4 for All Items



*As of Mar 2024: 0.3 for ex Food/Energy and 0.3 for All Items

**See Appendix for data sources

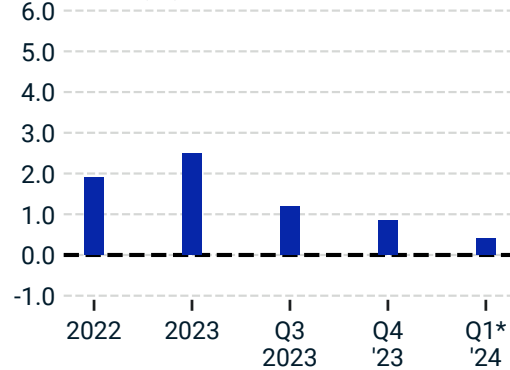
Global Inflation: Annual



*Also excludes Alcohol and Tobacco
 **See Appendix for data sources

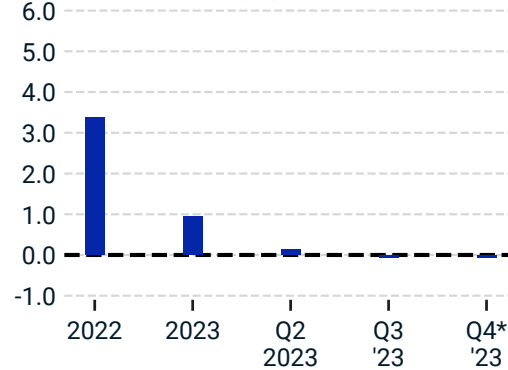
GDP

US GDP (%)



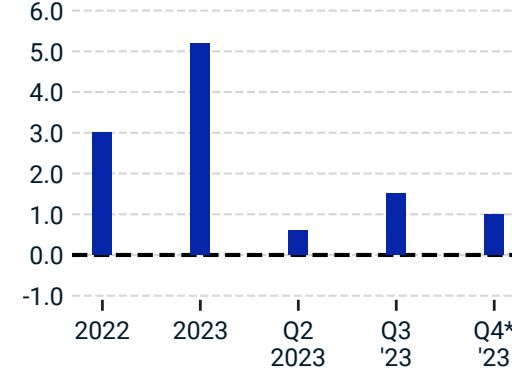
*Most recent quarterly GDP: 0.4

Eurozone GDP (%)



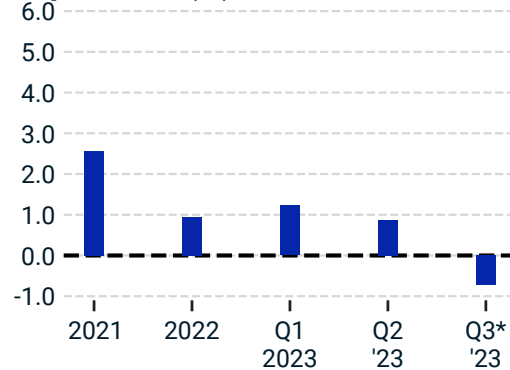
*Most recent quarterly GDP: -0.1

China GDP (%)



*Most recent quarterly GDP: 1.0

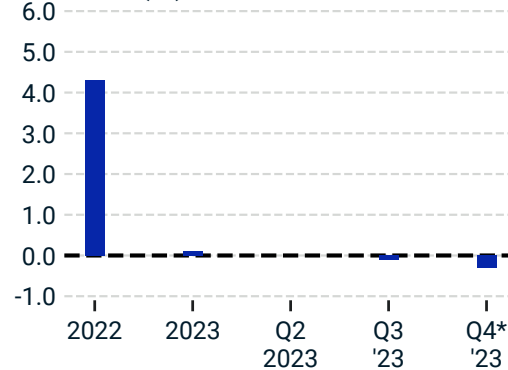
Japan GDP (%)



*Most recent quarterly GDP: -0.7

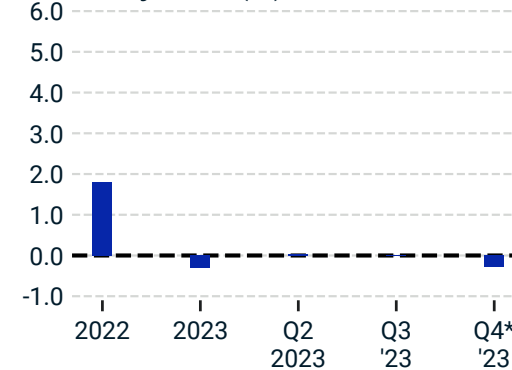
**See Appendix for data sources

UK GDP (%)



*Most recent quarterly GDP: -0.3

Germany GDP (%)



*Most recent quarterly GDP: -0.3

Appendix

Data Sources

Yields and Spreads

MSCI zero coupon yield and spread curves

Indexes

MSCI USA Index, MSCI World ex USA Index, MSCI Europe Index, MSCI China, MSCI Emerging Market Index

Relative Strength of Currencies

MSCI

Inflation and GDP

OECD, Eurostat, UK Office of National Statistics, Cabinet Office of Japan, US Bureau of Economic Analysis, US Bureau of Labor Statistics, National Bureau of Statistics China

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.

Contact us

AMERICAS		EUROPE, MIDDLE EAST & AFRICA		ASIA PACIFIC	
Americas	+ 1 888 588 4567 *	Cape Town	+ 27 21 673 0100	China North	10800 852 1032 *
Atlanta	+ 1 404 551 3212	Frankfurt	+ 49 69 133 859 00	China South	10800 152 1032 *
Boston	+ 1 617 532 0920	Geneva	+ 41 22 817 9777	Hong Kong	+ 852 2844 9333
Chicago	+ 1 312 675 0545	London	+ 44 20 7618 2222	Mumbai	+ 91 22 6784 9160
Monterrey	+ 52 81 1253 4020	Milan	+ 39 02 5849 0415	Seoul	00798 8521 3392 *
New York	+ 1 212 804 3901	Paris	0800 91 59 17 *	Singapore	800 852 3749 *
San Francisco	+ 1 415 836 8800			Sydney	+ 61 2 9033 9333
São Paulo	+ 55 11 3706 1360			Taipei	008 0112 7513 *
Toronto	+ 1 416 628 1007			Thailand	0018 0015 6207 7181 *
* = toll free msci.com clientservice@msci.com esgclientservice@msci.com				Tokyo	+ 81 3 5290 1555

Notice & Disclaimer

This document and all of the information contained in it, including without limitation all text, data, graphs, charts (collectively, the "Information") is the property of MSCI Inc. or its subsidiaries (collectively, "MSCI"), or MSCI's licensors, direct or indirect suppliers or any third party involved in making or compiling any Information (collectively, with MSCI, the "Information Providers") and is provided for informational purposes only. The Information may not be modified, reverse-engineered, reproduced or disseminated in whole or in part without prior written permission from MSCI. All rights in the Information are reserved by MSCI and/or its Information Providers.

The Information may not be used to create derivative works or to verify or correct other data or information. For example (but without limitation), the Information may not be used to create indexes, databases, risk models, analytics, software, or in connection with the issuing, offering, sponsoring, managing or marketing of any securities, portfolios, financial products or other investment vehicles utilizing or based on, linked to, tracking or otherwise derived from the Information or any other MSCI data, information, products or services.

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 THE INFORMATION PROVIDERS MAKES ANY EXPRESS OR IMPLIED WARRANTIES OR REPRESENTATIONS WITH RESPECT TO THE INFORMATION (OR THE RESULTS TO BE OBTAINED BY THE USE THEREOF), AND TO THE MAXIMUM EXTENT PERMITTED BY APPLICABLE LAW, EACH INFORMATION PROVIDER EXPRESSLY DISCLAIMS ALL IMPLIED WARRANTIES (INCLUDING, WITHOUT LIMITATION, ANY IMPLIED WARRANTIES OF ORIGINALITY, ACCURACY, TIMELINESS, NON-INFRINGEMENT, COMPLETENESS, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE) WITH RESPECT TO ANY OF THE INFORMATION.

Without limiting any of the foregoing and to the maximum extent permitted by applicable law, in no event shall any Information Provider 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, including without limitation (as applicable), any liability for death or personal injury to the extent that such injury results from the negligence or willful default of itself, its servants, agents or sub-contractors.

Information containing any historical information, data or analysis should not be taken as an indication or guarantee of any future performance, analysis, forecast or prediction. Past performance does not guarantee future results.

The Information should not be relied on and is not a substitute for the skill, judgment and experience of the user, its management, employees, advisors and/or clients when making investment and other business decisions. All Information is impersonal and not tailored to the needs of any person, entity or group of persons.

None of the Information constitutes an offer to sell (or a solicitation of an offer to buy), any security, financial product or other investment vehicle or any trading strategy.

It is not possible to invest directly in an index. Exposure to an asset class or trading strategy or other category represented by an index is only available through third party investable instruments (if any) based on that index. MSCI does not issue, sponsor, endorse, market, offer, review or otherwise express any opinion regarding any fund, ETF, derivative or other security, investment, financial product or trading strategy that is based on, linked to or seeks to provide an investment return related to the performance of any MSCI index (collectively, "Index Linked Investments"). MSCI makes no assurance that any Index Linked Investments will accurately track index performance or provide positive investment returns. MSCI Inc. is not an investment adviser or fiduciary and MSCI makes no representation regarding the advisability of investing in any Index Linked Investments.

Index returns do not represent the results of actual trading of investible assets/securities. MSCI maintains and calculates indexes, but does not manage actual assets. Index returns do not reflect payment of any sales charges or fees an investor may pay to purchase the securities underlying the index or Index Linked Investments. The imposition of these fees and charges would cause the performance of an Index Linked Investment to be different than the MSCI index performance.

The Information may contain back tested data. Back-tested performance is not actual performance, but is hypothetical. There are frequently material differences between back tested performance results and actual results subsequently achieved by any investment strategy.

Constituents of MSCI equity indexes are listed companies, which are included in or excluded from the indexes according to the application of the relevant index methodologies. Accordingly, constituents in MSCI equity indexes may include MSCI Inc., clients of MSCI or suppliers to MSCI. Inclusion of a security within an MSCI index is not a recommendation by MSCI to buy, sell, or hold such security, nor is it considered to be investment advice.

Data and information produced by various affiliates of MSCI Inc., including MSCI ESG Research LLC and Barra LLC, may be used in calculating certain MSCI indexes. More information can be found in the relevant index methodologies on www.msci.com.

MSCI receives compensation in connection with licensing its indexes to third parties. MSCI Inc.'s revenue includes fees based on assets in Index Linked Investments. Information can be found in MSCI Inc.'s company filings on the Investor Relations section of www.msci.com.

MSCI ESG Research LLC is a Registered Investment Adviser under the Investment Advisers Act of 1940 and a subsidiary of MSCI Inc. Except with respect to any applicable products or services from MSCI ESG Research, neither MSCI nor any of its products or services recommends, endorses, approves or otherwise expresses any opinion regarding any issuer, securities, financial products or instruments or trading strategies and MSCI's products or services are not 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. Issuers mentioned or included in any MSCI ESG Research materials may include MSCI Inc., clients of MSCI or suppliers to MSCI, and may also purchase research or other products or services from MSCI ESG Research. MSCI ESG Research materials, including materials utilized in any MSCI ESG Indexes or other products, have not been submitted to, nor received approval from, the United States Securities and Exchange Commission or any other regulatory body.

Any use of or access to products, services or information of MSCI requires a license from MSCI. MSCI, Barra, RiskMetrics, IPD and other MSCI brands and product names are the trademarks, service marks, or registered trademarks of MSCI or its subsidiaries in the United States and other jurisdictions. The Global Industry Classification Standard (GICS) was developed by and is the exclusive property of MSCI and S&P Global Market Intelligence. "Global Industry Classification Standard (GICS)" is a service mark of MSCI and S&P Global Market Intelligence.

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>.