2024 LONG-TERM CAPITAL MARKETS OUTLOOK

MACKENZIE Investments

ORANGE BOOK

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Introduction

Mackenzie is pleased to present its 2024 Long-term Capital Markets Outlook (The Orange Book), which provides our expectations for the average return for equities and fixed income over the coming decade.

Our long-term capital market assumptions are developed by the Mackenzie Multi-Asset Strategies Team, led by Nelson Arruda, Senior Vice President and Portfolio Manager, and supported by Jules Boudreau, Senior Economist.

The Team has deep expertise across a broad range of strategies including:

- Multi-asset portfolios.
- Dynamic currency hedging, based on valuation, sentiment and macro conditions.
- Liquid alternative strategies that include global macro, commodities and currencies.
- Market neutral equity factor portfolios.

Members of the Multi-Asset Strategies Team frequently engage with institutional investors across Canada on strategic and tactical asset allocation, as well as currency management. They also work within academic partnerships to produce thought leadership.

The following return estimates are intended to help the reader look past short-term market movements.

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For higher returns, look abroad

1. **Long-term expected returns dip slightly after jumping a year ago.**
2. **Diversification potential looks more promising than ever.**
3. **Currency valuations diverge across developed markets.**

- A diversified currency-hedged 60/40 portfolio is expected to return 6.8% over the next 10 years, with a standard deviation of 10.1%.
- We don’t expect the stock-bond correlation to remain as high as it has been over the past two years, but also don’t expect a return to the deeply negative correlation we saw in the 2010s.
- After outperforming in 2023, large-cap US stocks have lower expected returns than other equity markets.
- Euro area bonds are an attractive relative buy over the medium term, with the European economy likely unable to withstand current elevated rates.
- Even after sliding in the fourth quarter of 2023, the US dollar remains broadly overvalued vs. other developed market currencies.
- The outperformance of a traditional 60/40 portfolio relative to our forecast is highly dependent on the return to a Goldilocks environment of solid growth and low inflation.

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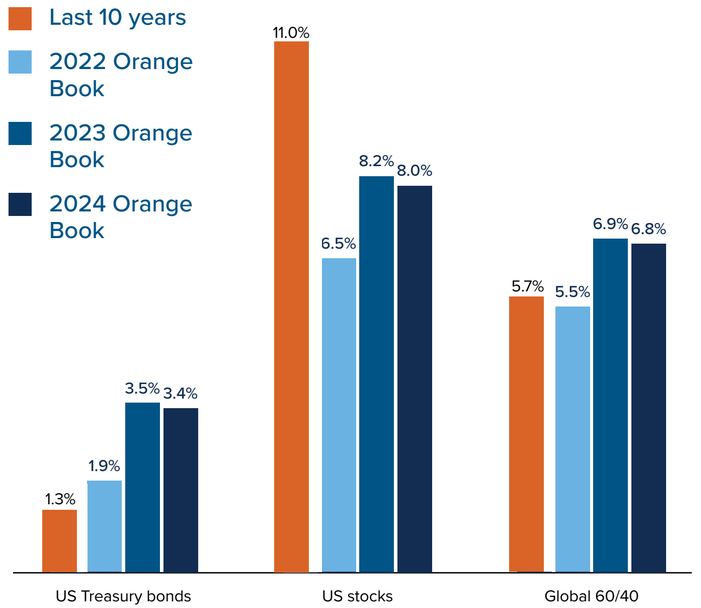
Expected returns vs. realized returns

In general, our return expectations for bonds are much higher than recent realized returns. Over the last two years, as global central banks hiked interest rates in reaction to economic overheating, the price of bonds plummeted. As a result, future expected returns on bonds are much higher than they were a few years ago.

On the other hand, we expect US stocks to offer lower returns over the next 10 years than they did over the previous 10 years. After dropping in 2022, the S&P 500 recovered much of its losses in 2023. This leaves the US index somewhat more expensive than other global benchmarks, even after accounting for US stocks' structural premium over international and emerging market stocks.

Given the increase in our estimates for the expected returns of bonds and equity markets over the last two years, especially ex-US, we expect a globally diversified 60/40 portfolio to offer a higher return over the next 10 years than it did over the past decade.

Expected annualized returns as published in recent editions of the Orange Book compared to realized returns over the past ten years



Expected geometric returns are shown on a nominal basis, before fees for all asset classes. We hedge the currency exposure of all assets. The global 60/40 portfolio splits the fixed income and equity weights based on the relative asset class weights of Swinkels et al. (2022), "The Global Multi-Asset Market Portfolio".The 2022 Orange Book used data as of November 30, 2021. The 2023 Orange Book used data as at November 30, 2022. The 2024 Orange Book uses data as at December 31, 2023.

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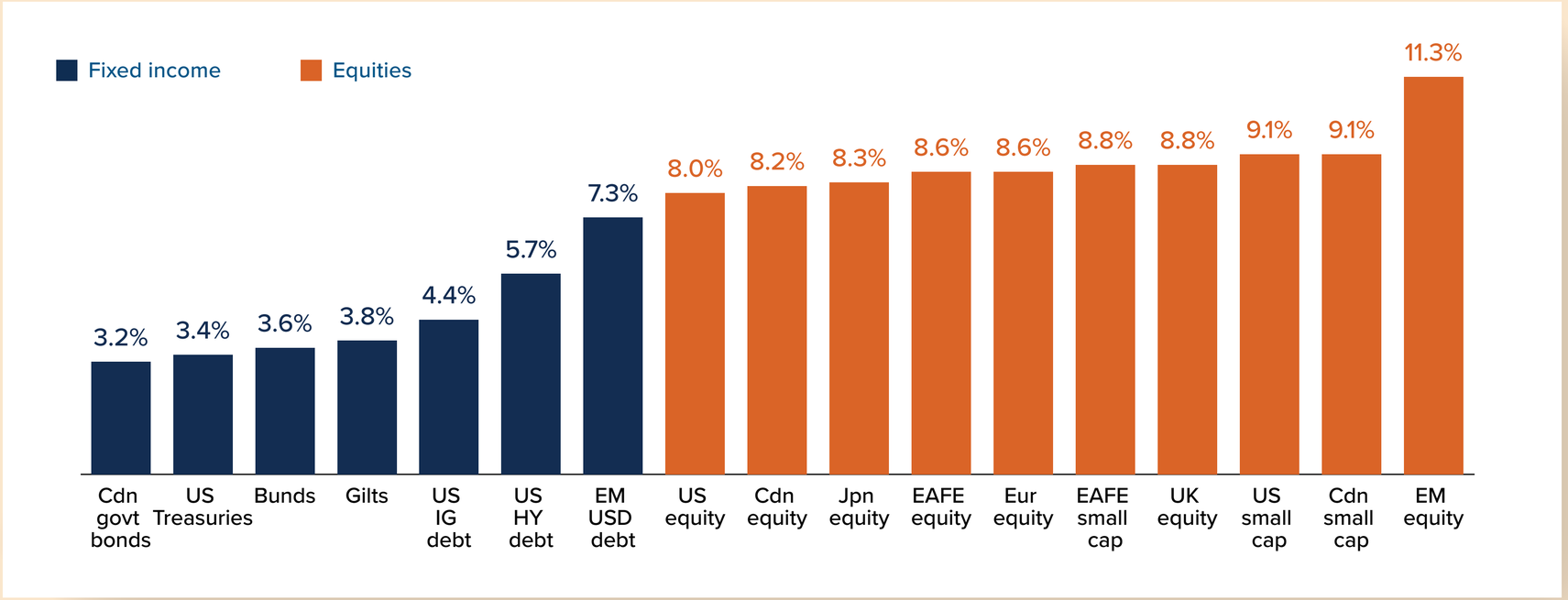
Ten-year expected returns (hedged)

After rising in last year's edition of the Orange Book, long-term expected returns dip slightly in the 2024 edition. After a massive bond rally in the final months of 2023, risk-free rates ended the year lower than they started it. However, long-term expected returns for government bonds remain much higher than they were prior to the recent global inflationary shock.



Expected geometric returns are shown on a nominal basis, before fees for all asset classes. We hedge the currency exposure of all assets. Developed-market sovereign bond returns shown here reflect the expected return to investing in constant-maturity, 10-year government bond. Active views based on our value, macro and sentiment models play a greater role in shaping expected returns over a five-year horizon than a 10-year horizon. Estimated using data as at December 31, 2023.

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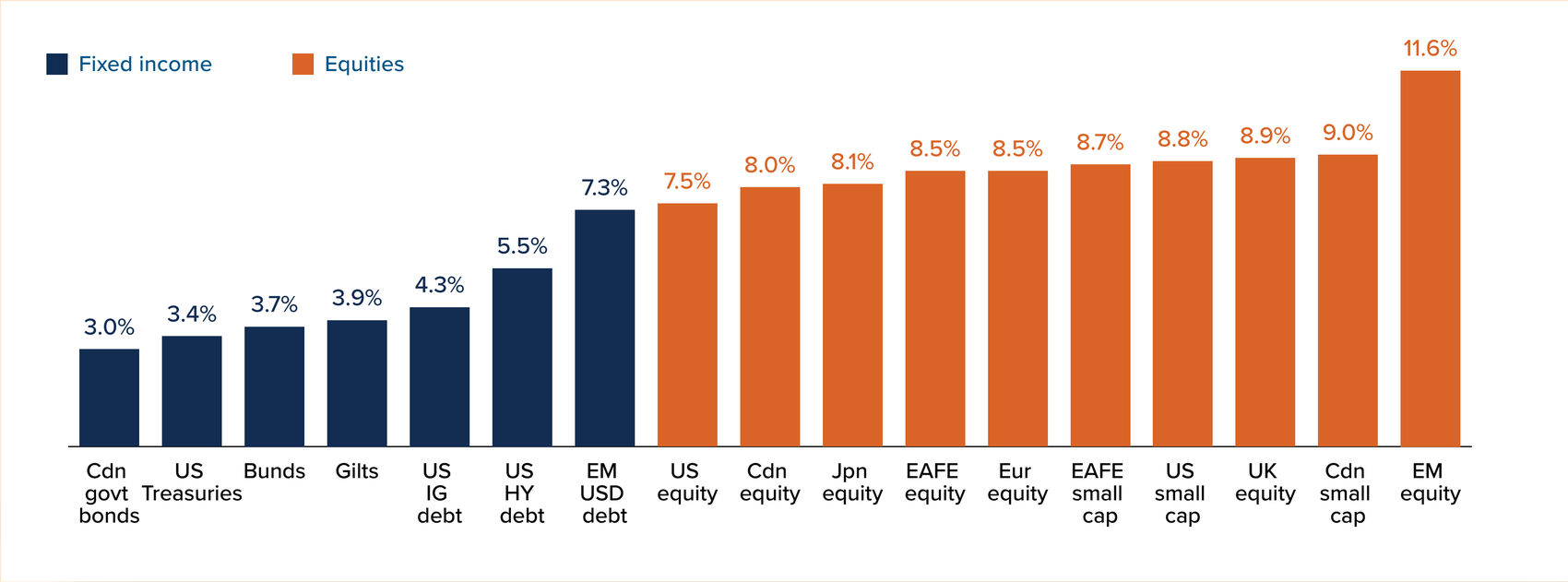
Five-year expected returns (hedged)

After outperforming in 2023, expected returns for US large cap stocks slightly trail those of other major international equity indices on a hedged basis. Non-US equities' prospects would be even brighter when including our views on currencies.

Euro area bonds are an attractive relative buy over the medium term, with the European economy likely unable to withstand current elevated rates.



Expected geometric returns are shown on a nominal basis, before fees for all asset classes. We hedge the currency exposure of all assets. Our active views tend to have more weight over a five-year horizon than over 10 years. Estimated using data as at December 31, 2023.

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Expected asset class volatility and correlations

In the 2010s, the return correlation between US stocks and US Treasuries averaged -0.4, the lowest number for a decade in modern financial history. Since the start of the 2020s, the average stock-bond correlation jumped to 0.3. We don't expect a return to the record low correlation of the 2010s, given higher expected inflation volatility, partly driven by pro-cyclical fiscal deficits, partly by a slight de-anchoring of inflation expectations.

	Volatility	US Treasuries	Cdn govt bonds	Bunds	Gilts	US IG debt	US HY debt	EM USD debt	Chn govt bonds	US equity	Cdn equity	Jpn equity	UK equity	Eur equity	EM equity	US small cap	Cdn small cap	EAFE small cap	EAFE equity
US Treasuries	6.0%	1.0																	
Cdn govt bonds	5.8%	0.8	1.0																
Bunds	5.4%	0.7	0.7	1.0															
Gilts	6.2%	0.7	0.7	0.8	1.0														
US IG debt	6.5%	0.7	0.6	0.6	0.5	1.0													
US HY debt	9.7%	0.0	0.1	0.1	0.1	0.6	1.0												
EM USD debt	12.4%	0.3	0.3	0.3	0.3	0.6	0.7	1.0											
Chn govt bonds	4.6%	0.1	0.2	0.2	0.2	0.0	-0.2	-0.2	1.0										
US equity	17.5%	0.0	0.0	0.0	0.1	0.4	0.7	0.6	-0.1	1.0									
Cdn equity	14.9%	-0.1	0.0	0.0	0.0	0.4	0.6	0.6	-0.2	0.8	1.0								
Jpn equity	18.3%	-0.2	-0.2	-0.2	-0.1	0.2	0.5	0.4	-0.3	0.6	0.5	1.0							
UK equity	15.2%	-0.1	0.0	0.0	0.1	0.3	0.5	0.5	0.0	0.7	0.7	0.5	1.0						
Eur equity	17.2%	-0.1	-0.1	0.0	0.0	0.3	0.6	0.5	-0.1	0.8	0.7	0.6	0.8	1.0					
EM equity	23.3%	0.0	0.0	-0.1	0.0	0.4	0.6	0.7	-0.2	0.7	0.7	0.6	0.6	0.6	1.0				
US small cap	21.2%	-0.1	-0.1	0.0	0.0	0.3	0.7	0.5	-0.1	0.9	0.8	0.6	0.6	0.7	0.7	1.0			
Cdn small cap	19.9%	-0.1	0.0	0.0	0.0	0.4	0.6	0.6	-0.2	0.7	0.8	0.5	0.6	0.5	0.7	0.7	1.0		
EAFE small cap	15.6%	-0.2	0.0	-0.1	0.0	0.3	0.6	0.5	-0.2	0.7	0.7	0.8	0.7	0.7	0.7	0.7	0.7	1.0	
EAFE equity	13.2%	-0.2	-0.1	-0.1	0.0	0.3	0.6	0.6	-0.2	0.8	0.7	0.8	0.8	0.9	0.7	0.8	0.6	0.9	1.0

Expected monthly annualized volatility and monthly returns correlations.

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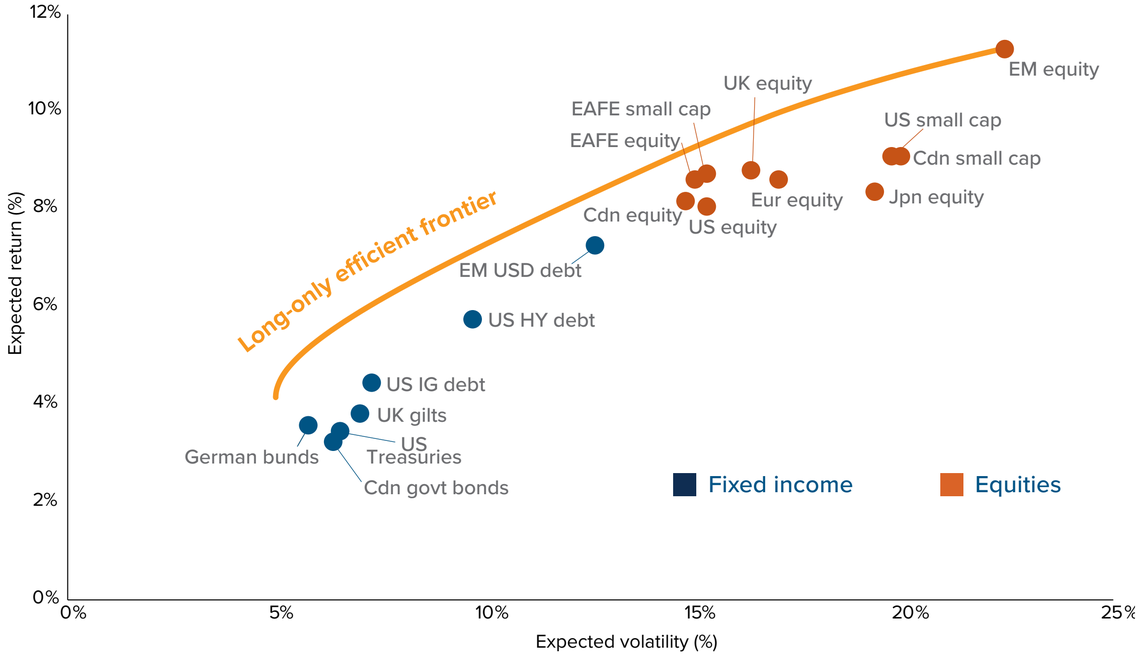
Ten-year expected returns vs. risk

Even when including our active views, the most important driver of the dispersion between various assets' expected returns is their relative estimated risk.

With the expected long-term return on most assets rising over the past two years, the efficient frontier has shifted higher.

Based on our current estimates, an optimal, diversified 60/40 portfolio can achieve a 10-year average return around 7%.



Expected annualized geometric returns are shown on a nominal basis, before fees for all asset classes. We hedge the currency exposure of all assets. These are contrasted with each asset's expected monthly annualized volatility. The efficient frontier is restricted to long-only portfolios.

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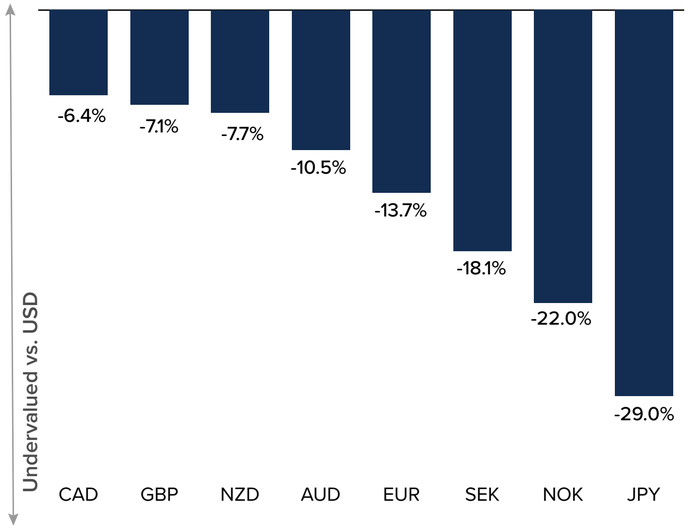
Currency valuations

Even after sliding in the fourth quarter of 2023, the US dollar remains broadly overvalued versus other developed market currencies. We forecast US dollar depreciation over the coming decade, although we don't expect the reversion to fair value to occur immediately. The same macro forces that pushed the US dollar higher over the past two years — US growth exceptionalism, high global rates and geopolitical risks — will put a floor under the US dollar's value in the shorter term.

The Canadian dollar is also overvalued versus the average G10 currency. Given declining productivity and depressed investment, Canadian economic fundamentals have weakened over the past decade. The United Kingdom is in the same basket.

At the other end of the spectrum, the Japanese yen is uniquely cheap after depreciating sharply over the past two years. While global interest rates were surging, the Bank of Japan kept its policy rate in negative territory, as the only major central bank to resist rate hikes. With other global economies beginning to cool, and the Bank of Japan preparing to exit its negative rate scheme amid firming growth and inflation, the yen is well positioned to appreciate towards its long-term fair value.

Deviations of developed market exchange rates from our estimate of their long-term fair value against the US dollar



These measures of over- and undervaluation incorporate four of our assessments of long-term and medium-term currency valuation. We assess valuations based on a proxy for absolute purchasing power parity, real effective exchange rates, a behavioural terms-of-trade adjusted currency valuation model, and another behavioural model that adjusts balance-of-payments outcomes based on structural economic factors. Estimated using data as at December 31, 2023.

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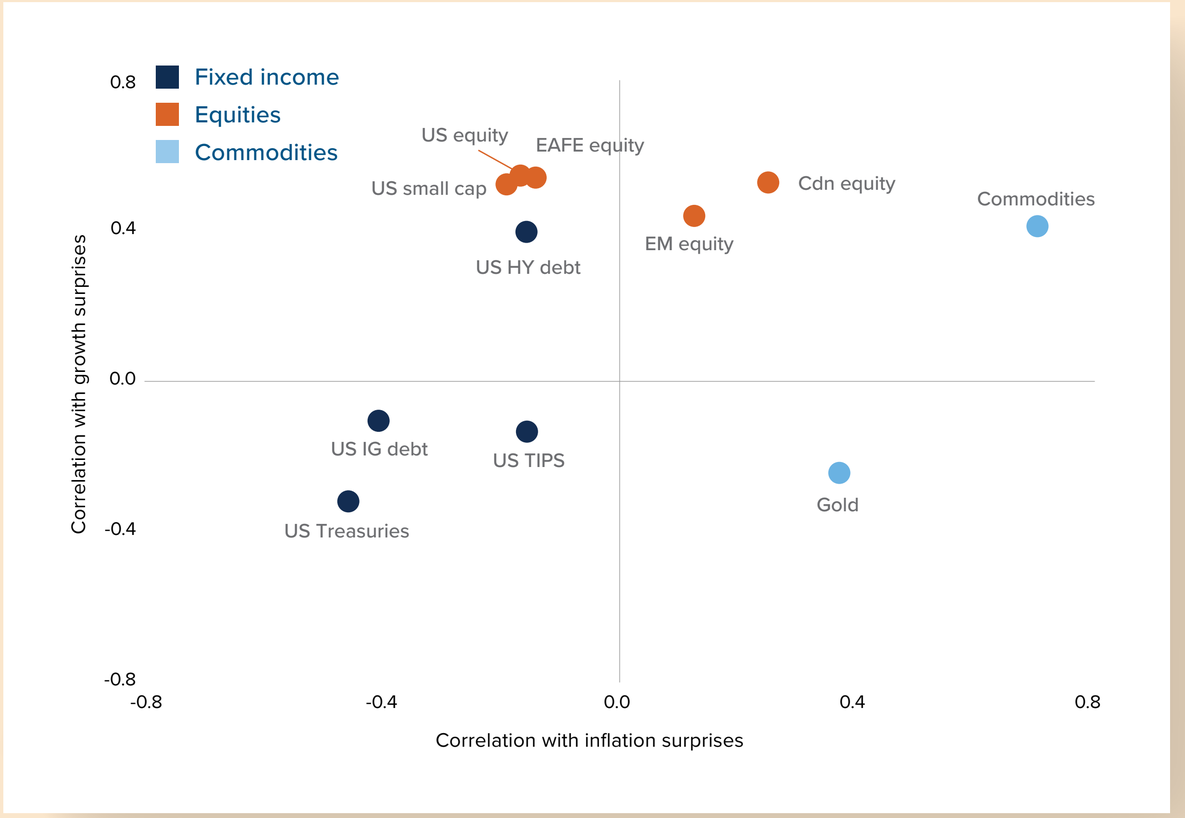
Correlations to macroeconomic surprises

Asset classes are sensitive to changes in the US economy.

Stocks tend to benefit from better-than-expected growth, while fixed income tends to underperform in that scenario. This makes bonds a great hedge for a stock portfolio in a recession.

On the other hand, we should expect both US equities and US bonds to be negatively impacted by an inflationary shock in the US. We saw such a scenario play out in 2022, when balanced portfolios had one of their worst years ever.



See the methodology section at the end of this document for details around the methodology.

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Macro scenarios and returns

By combining our long-term expected returns with our estimates of macro factor exposures, we can infer the performance of asset classes in different economic scenarios. For example, in a soft landing, characterized by small surprises in growth (positive) and inflation (negative), we'd expect a global 60/40 portfolio to return approximately 12%. On the other hand, if the US economy were to be hit by a recession, the same portfolio would return approximately -6%.

Types of surprises	Positive growth	Positive inflation	Goldilocks	Recession	Stagflation
Shock to growth expectations (standard deviations)	+1	no shock	+1	-3	-1
Shock to inflation expectations (standard deviations)	no shock	+1	-1	no shock	+2
US Treasuries	1.4%	-0.1%	5.0%	9.7%	-1.6%
US TIPS	2.6%	2.8%	4.0%	9.0%	3.0%
US IG debt	3.4%	1.0%	7.0%	8.3%	-1.4%
US HY debt	9.5%	2.9%	12.2%	-5.7%	-3.6%
US equity	16.3%	3.3%	20.5%	-18.8%	-9.7%
Cdn equity	15.3%	10.3%	12.3%	-16.9%	5.3%
EAFE equity	-15.9%	4.2%	19.4%	-17.0%	-7.6%
EM equity	19.9%	8.4%	22.0%	-17.9%	3.1%
US small cap	19.4%	2.5%	23.3%	-24.0%	-14.3%
Gold	-2.3%	10.9%	10.1%	19.3%	24.1%
Commodities	9.9%	19.9%	-6.8%	-17.3%	29.8%

Expected annualized geometric returns are shown on a nominal basis, before fees for all asset classes. We hedge the currency exposure of all assets. The global 60/40 portfolio splits the fixed income and equity weights based on the relative asset class weights of Swinkels et al. (2022).

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How we estimate expected returns

Long-term expected asset return = **Risk-free rate** + **Excess return**

Risk-free rates are determined from the current yield curve and reflect the central bank's policy interest rate, expected inflation and growth.

Excess returns compensate investors for bearing risk and can vary as investors' risk appetite fluctuates with economic and financial conditions.

Excess return = **Risk premium** + **Expected active return**

Risk premiums represent a systematic source of excess return linked to the asset class's volatility, and its correlation to the global capital market portfolio and other compensated factors.

Expected active returns are anticipated shifts in the asset return from its long-term risk premium. Expected active returns reflect proprietary insights about valuation, macro conditions and investor sentiment.

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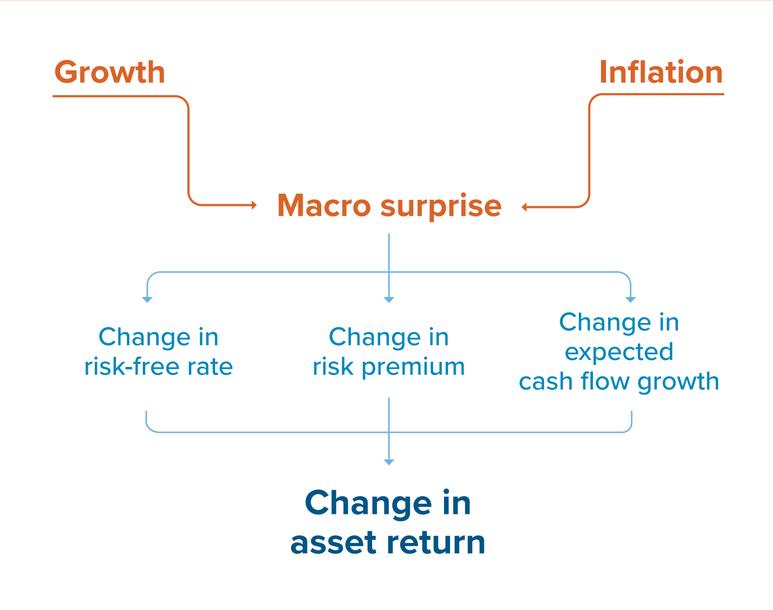
Macroeconomic factors

Long-term expected returns are mainly explained by risk free rates, unconditional (i.e., long-term) risk premiums and starting valuations. But a large portion of realized expected returns are driven by macroeconomic shocks. For example, China's demand slowdown, commodity oversupply and USD strength were the primary explanation driving the disappointing realized EM equity returns in the 2010s.

While changes in these macro trends are always difficult to forecast with certainty, we can estimate the conditional response of asset returns given a macroeconomic shock. This framework for conditional returns, or scenario analysis, can be of use to investors seeking to understand the magnitude of macro risk exposures in their portfolios, help size an active view about macro factors[1] or inform asset allocation for investors with future liabilities linked to macro factors (such as inflation-adjusted pension payouts).

To capture causality, our model uses macro "surprises" — shocks to consensus forecasts of macro variables — rather than current readings of the variables.[2] This framework reflects the intuition that while macro views contribute modestly to long-term unconditional expected returns, macro surprises can and do drive a large portion of realized returns over a cycle.



1 See Bergeron, Kritzman and Sivitsky. "Asset Allocation and Factor Investing: An Integrated Approach", The Journal of Portfolio Management, Vol. 44, Issue 4, Quantitative Special Issue 2018.

2 We use an average of two methods: errors in forecasts from the Survey of Consumer forecasters (as in Thapar et al. (2021), "When Stock-Bond Diversification Fails") and changes in the one-year ahead growth and inflation forecasts from Consensus Economics.

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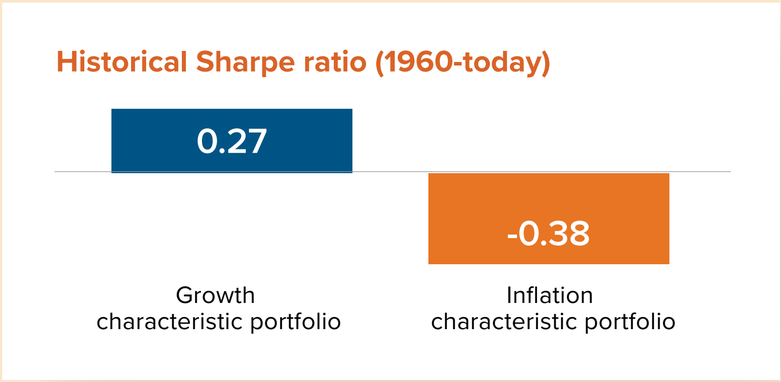
Portfolios of macro factors

In addition to monitoring a portfolio's macro exposures and preventing unwanted risk concentrations, macro factor betas allow investors to explicitly implement macro views in their portfolio. Suppose an investor thinks economic growth will be higher than the market expects. By including a growth factor in the covariance risk matrix, they can size the growth exposure based on their conviction and risk budget. The same framework can be employed to hedge an inflation-sensitive liability, such as pension benefits.

We can also construct a long-short "characteristic" portfolio to represent a pure unit exposure to a macro factor. For example, the returns on the inflation characteristic portfolio on a given day represent shocks to the market's inflation expectations.

The returns of the growth and inflation characteristic portfolios give a hint as to the compensation investors should expect for taking on macro risks. Consumption-based asset pricing theory suggests that assets whose returns exhibit higher correlations with consumption shocks should have higher expected returns. Given consumer utility is positively correlated to growth and negatively to inflation, we would expect a growth characteristic portfolio to have a positive risk-adjusted return and an inflation characteristic portfolio to have a negative risk-adjusted return — that is to say, investors must "pay for inflation protection". Historical returns support the theory:

The characteristic portfolios for growth and inflation can also act as higher frequency proxies for economic surprises. Economic indicators move slowly and changes in investors' expectations of growth and inflation cannot be observed directly. The returns on the growth and inflation characteristic portfolios can be seen as real-time proxies for shocks to expectations, providing useful information about market expectations as implied by current asset prices.



Calculations by the Multi-Asset Strategies Team. The unit characteristic portfolios for growth and inflation are constructed by optimizing the exposure to the macro factor: $h_f = \frac{\Sigma^{-1} f}{f' \Sigma^{-1} f}$ where Σ is the asset covariance matrix and $f = [f_1, \ldots, f_N]$ is a vector representing each asset's exposure to a given macro factor.

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