NORTHERN TRUST

Capital Market Assumptions

10-YEAR OUTLOOK: 2025 EDITION

RELEASED JANUARY 2025

Every year, Northern Trust's Capital Market Assumptions Working Group develops forward-looking, historically aware forecasts on global economic activity and financial market returns. We analyze historical relationships between asset classes and drivers of asset class returns, and we develop forward-looking investment themes to inform how those relationships and return drivers may change in the future.

All this comes together to form our long-term strategic asset allocations, which are used by institutional and individual investors worldwide.

CAPITAL MARKET ASSUMPTIONS

10-YEAR OUTLOOK: 2025 EDITION

Over the next decade, adoption of artificial intelligence, new energy sources and adjustment of trade partners will underly divergent paths in economic growth globally. We expect single digit global equity returns, lower cash yields, rising credit spreads and inflation that remains in check. Download our Capital Market Assumptions 10-Year Outlook: 2025 Edition to explore our asset class return forecasts and long-term investment themes.

Our Capital Market Assumptions 10-year market outlook provides insight into the forces shaping the investing landscape for the coming years. These three key themes drive our outlook and inform asset allocation for the next 10 years.

Three key themes have emerged for our 10-year outlook.

1

AI-Enabled Productivity
Artificial intelligence's (AI) adoption and advancement rates may counter declining productivity resulting from demographic shifts. Our confidence lies in AI's longer term productivity boost versus shorter term adoption.

2

Navigating the Energy Transition
Global energy demand continues to increase, along with the desire for energy independence. These will require global economies to navigate a robust set of options, innovations, and finance mechanisms to meet demands. How countries access or generate energy supply over the next decade will be critical in longer term GDP, climate and investment impacts.

3

Globalization: Bent, Not Broken
Globalization may have slowed but it has not reversed. Geopolitical tensions are morphing supply chains and trade pacts, likely leading to risks and opportunities over the next decade. This may present investors with the opportunity to be increasingly selective.

10-YEAR ASSET CLASS OUTLOOK

Our 10-year themes identify the trends we see affecting the markets and economy over the next decade, providing the foundation for our asset class outlooks.

As companies invest in artificial intelligence (AI), we expect **AI-Enabled Productivity** to enhance economic growth, especially in the U.S. AI should help countries combat shifting demographic trends that potentially damage productivity while also boosting economic growth. We expect countries to utilize technological developments as they are **Navigating the Energy Transition,** where they seek to create robust and rapid solutions to accommodate surging energy demand, establish energy security and meet commitments to mitigate climate change.

To enable these solutions, countries will likely closely examine global trade and supply chain opportunities and risks in a more politically fragmented world. However, we don't expect this to derail global trade. We see **Globalization: Bent, Not Broken,** albeit possibly realigned, as an ongoing force for global economic expansion.

Fixed Income

Interest rates and credit spread expectations are the foundation for our fixed income forecasts. We expect lower cash yields, steeper yield curves and rising credit spreads (though still staying below historical averages) to shape market returns over the next decade.

Equities

Divergence in the performance of U.S. and non-U.S. developed markets has been prevalent over the past 15 years, and we expect that U.S. equity markets will continue to outperform. While we forecast U.S. outperformance, we expect single-digit 10-year returns for all developed equity markets.

Real Assets

Growing global energy demand along with AI-enabled productivity should provide ongoing support for strategic allocations to real assets and as a hedge against higher inflation. As interest rates trend lower, we expect that Global Real Estate companies will begin to benefit from increased deal activity and increased demand for a variety of property types.

Alternatives

Private investments are poised to offer attractive returns relative to the public equity and bond markets in the next decade. In a declining interest rates environment, we expect more demand for private credit to support an increase in merger and acquisition (M&A) activity. AI-enabled productivity and technological advances should support low double-digit growth in the private equity and venture capital space.

FIXED INCOME

OUTLOOK: RISING CREDIT SPREADS

We expect lower cash yields, steeper yield curves and rising credit spreads (though still staying below historical averages) to shape fixed-income market returns over the next decade.

We anticipate that slow-to-moderate economic growth will persist and that inflation should stay largely in check. Short-term rates are likely to decline early in the 10-year investment horizon, followed by a modest yield-curve steepening later.

Cash and Inflation-Linked Securities

We expect cash yields globally to decline amid a rate-cutting cycle across many countries. The exception is Japan, where the central bank has been increasing the policy rate out of negative territory and we believe that to continue. Our forecast is for contained inflation with inflation-linked bond returns aligned closely to those of similar duration Treasurys.

Corporate Bonds

With a backdrop of generally stable, albeit slow-to-moderate global economic growth and solid credit fundamentals expectations over the next 10 years , we expect investment grade corporate bond returns to outpace similar maturity Treasurys. It is likely that high yield bonds will continue to offer a meaningful premium over Treasurys with default rate levels consistent with those experienced in the last 10 years.

3.6%

GLOBAL INVESTMENT GRADE BONDS ANNUALIZED RETURN FORECAST

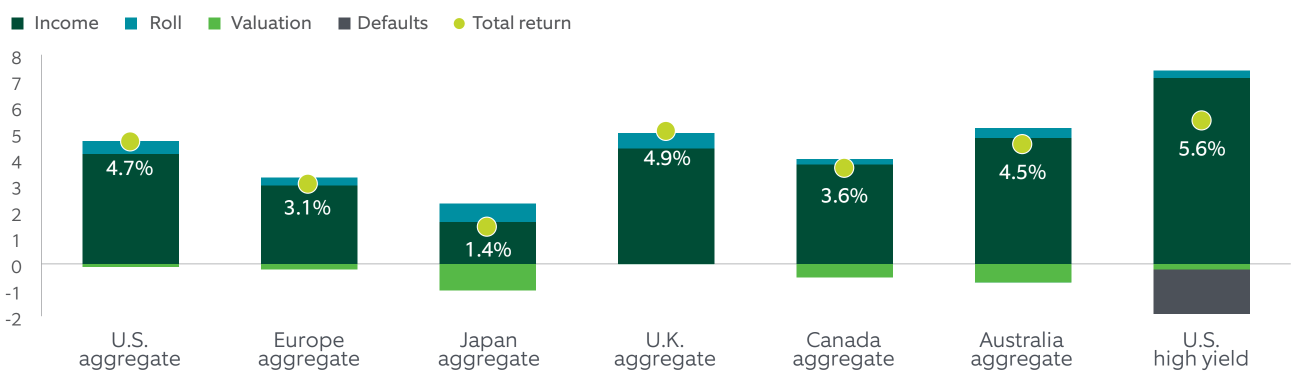
5.6%

U.S. HIGH YIELD BONDS ANNUALIZED RETURN FORECAST

EXHIBIT 1: FINDING INCOME GLOBALLY

We expect upward sloping yield curves to offer positive roll contributions while rate increases offset the impact from lower valuations.

Northern Trust 10-Year Annualized Fixed Income Return Forecasts (%)



Source: Northern Trust, Factset, as of September 30, 2024. "Agg." means the aggregate bond market, which may include investment-grade corporate bonds, mortgages and government bonds. Income return calculated as yield to worst, which is the yield on a callable bond, where the issuer may pay off a bond before its maturity date, that assumes a bond is called at the earliest opportunity. Please see index proxies and important forecast disclosures on pages 9 and 16. It is not possible to invest directly in any index.

EQUITIES

OUTLOOK: CONTINUED U.S. OUTPERFORMANCE

Divergence in the performance of U.S. and non-U.S. developed markets has been prevalent over the past 15 years, and we expect that U.S. equity markets will continue to outperform. We base this on increasing structural differences in sector composition and economic growth of the U.S. versus other developed markets. While we forecast U.S. outperformance, we expect single-digit 10-year returns for all developed equity markets.

We project small-cap stocks to benefit from a strong U.S. economy, a push for re-shoring and a declining interest rate backdrop. When factoring in dividend yield contribution, small caps should marginally outperform large caps but still remain in single-digit return territory.

Developed Markets ex-U.S.

We expect returns of developed ex-U.S. equities to lag those of the U.S. for the coming 10-year period. While their price-to-earnings multiples have been attractive, our outlook for slower economic growth doesn't support any significant expansion in these markets. However we may see some profit margin expansion supported by AI-Enabled Productivity and lower interest rates, though we believe it will fall shy of revenue growth.

Emerging Markets

Emerging markets have delivered lower returns versus developed markets since the Global Financial Crisis, despite what we view as solid sales growth, profit margins, valuations and dividend yields. Heavy share issuance, most notably in China, has offset those strong fundamentals, suppressing stock performance, and we expect this trend to continue.

7.5%

U.S. EQUITIES ANNUALIZED RETURN FORECAST

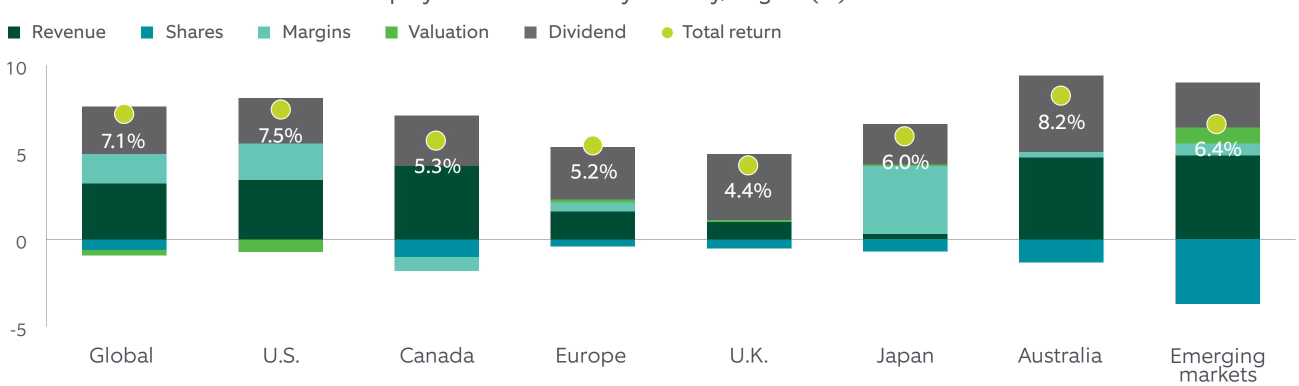
5.8%

DEVELOPED MARKETS EX-U.S. ANNUALIZED RETURN FORECAST

EXHIBIT 2: DECENT BUT DILUTED

We expect decent returns supported by revenue growth and dividends, but muted by share issuance in some cases.

Northern Trust 10-Year Annualized Equity Return Forecast by Country/Region (%)



Source: Northern Trust Asset Management. "Shares" means the effect on equity returns from share issuance or repurchases. Index performance returns do not reflect any management fees, transaction costs or expenses. Forecast as of September 30, 2024. Please see index proxies and important forecast disclosures on pages 9 and 16. It is not possible to invest directly in any index.

REAL ASSETS

OUTLOOK: SUPPORTIVE COMMODITY DEMAND

The industry term "real assets" is clumsy. The primary real assets (global natural resources, real estate and listed infrastructure) are financial instruments; as such, they aren't technically real assets. But they do play key roles in the investment portfolio. Natural resources can provide protection against unexpected inflation, while real estate and listed infrastructure offer additional risk exposures for additional portfolio diversification and higher yields than traditional equities.

6.6%

GLOBAL LISTED INFRASTRUCTURE ANNUALIZED RETURN FORECAST

Natural Resources

Continued strong fundamentals (persistent cash flows, tight commodity markets, stronger balance sheets and lower capital expenditures) should support natural resources as a hedge against higher inflation and escalation of conflicts around the world. We believe valuations are attractive versus global equities and are optimistic about the sector's revenue per share growth relative to other segments in the Real Assets category.

Global Listed Infrastructure

We expect infrastructure companies are to benefit from both AI-enabled productivity and growing global power demand — specifically the global utility sector. With the retirement of coal plants in developed markets and the increased investment into natural gas, nuclear and renewable energy, we're bullish on earnings growth potential. We forecast a mid-to slightly higher single-digit annualized return over the next 10 years.

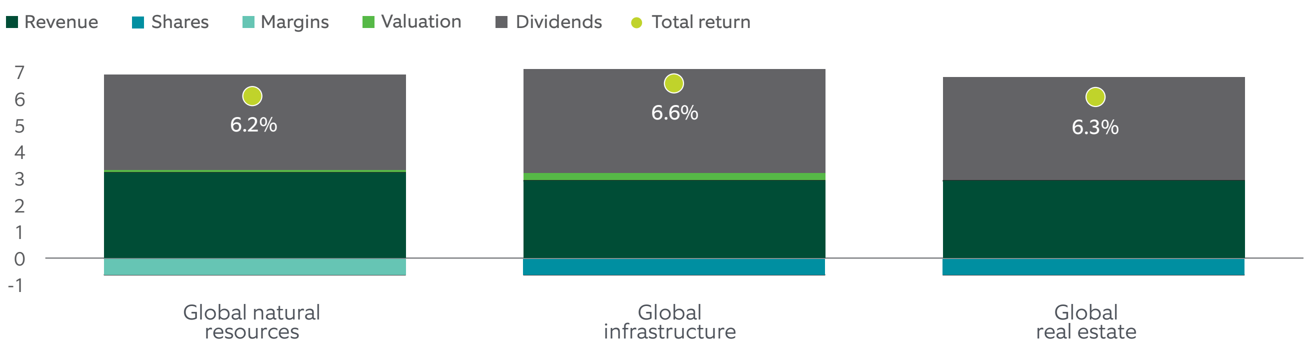
Global Real Estate

We are constructive on the 10-year outlook for global real estate based on expectations for falling interest rates. Deal volume may increase and commercial real estate prices may be buoyed as borrowing costs fall. We are forecasting mid-single-digit returns in this category.

EXHIBIT 3: INFLATION HEDGES

Real assets should provide support amid unexpected inflation and global political risks.

Northern Trust 10-Year Annualized Real Asset Return Forecast (%)



Source: Northern Trust Asset Management, Bloomberg. Forecasts are as of September 30, 2024. Please see index proxies and important forecast disclosures on pages 9 and 16. It is not possible to invest directly in any index.

ALTERNATIVES

OUTLOOK: ADDITIONAL GROWTH POTENTIAL

Private investments, we believe, are poised to offer attractive returns relative to the equity and bond markets in the next decade. We forecast a declining interest rate environment and more demand for private credit to support M&A activity. AI-generated productivity and technological advances should support growth in the private equity and venture capital space.

8.4%

PRIVATE CREDIT ANNUALIZED RETURN FORECAST

10.1%

PRIVATE EQUITY ANNUALIZED RETURN FORECAST

Private Credit

Private credit likely will continue to capture market share in the lower middle market as traditional bank lenders' appetite for smaller businesses wanes. We also expect declining interest rates will provide a tailwind for M&A activity, especially for private equity sponsors that continue to sit on record levels of reserve capital. We forecast high single-digit returns and premium over our high yield bond annualized return expectations.

Private Equity and Venture Capital

In the next decade, we believe private equity will generate strong outperformance of public equities, as we expect declining interest rates coupled with strong performance from portfolio companies. AI-Enabled productivity and other technological innovations are likely to further support this segment. We forecast low double-digit annualized returns for private equity and venture capital combined with a meaningful premium over our global equity forecast.

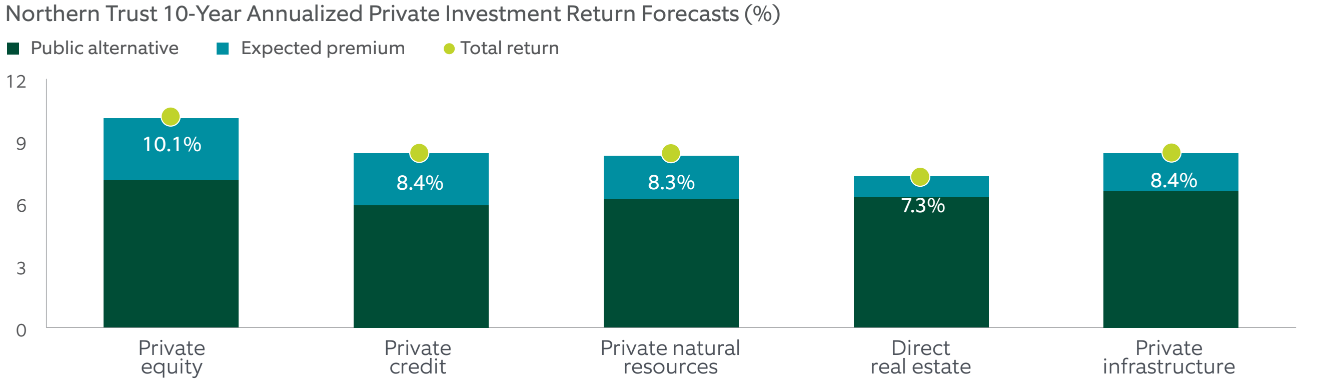
Hedge Funds

In the next decade we expect a slightly more positive environment for hedge funds. Our most promising forecast is for macro funds, which invest in equities, fixed income, currencies and commodities based on economic variables and capital flows. Relative value funds could also take advantage of arbitrage opportunities that stem from geopolitical tensions. Overall, we are predicting mid-single-digit returns for the asset class in the next 10 years.

EXHIBIT 4: PRIVATE EQUITY LEADS

Excitement over the possibilities of AI-Enabled Productivity will likely continue to trigger increasing investment in venture capital.

Northern Trust 10-Year Annualized Private Investment Return Forecasts (%)



Source: Northern Trust Asset Management, Bloomberg. Forecasts are as of September 30, 2024. Please see index proxies and important forecast disclosures on pages 9 and 16. It is not possible to invest directly in any index.

EXHIBIT 5: DETAILED 10-YEAR ASSET CLASS RETURN FORECASTS

All Returns in % Annualized				Long-Term Return Forecast by CMA Year						10-Year Actual Return
		Asset Class	Proxy Index	2025	2024^	2023	2022	2021*	2019	
FIXED INCOME	U.S.	Cash	3-Month U.S. T-Bill	3.3	2.9	2.8	0.3	0.1	1.1	1.7
FIXED INCOME	U.S.	Inflation Linked	Bloomberg U.S. TIPS	4.0	4.4	3.4	2.2	2.4	2.6	2.5
FIXED INCOME	U.S.	Investment Grade	Bloomberg U.S. Aggregate	4.7	4.7	3.7	2.4	2.3	3.0	1.8
FIXED INCOME	U.S.	High Yield	Bloomberg U.S. High Yield	5.6	6.7	7.4	3.5	5.5	5.0	5.0
FIXED INCOME	U.S.	Municipal	Bloomberg Municipal	4.0	3.6	3.2	2.0	2.6	2.4	2.5
FIXED INCOME	Canada	Cash	3-Month Canada T-Bill	3.0	2.4	3.3	0.2	0.2	0.7	1.6
FIXED INCOME	Canada	Inflation Linked	FTSE Canada Real Return Bond	2.5	3.5	3.5	2.0	2.2	2.0	1.9
FIXED INCOME	Canada	Investment Grade	FTSE Canada Universe	3.6	4.2	3.9	2.4	1.9	2.6	2.3
FIXED INCOME	Canada	High Yield	BofAML Canadian High Yield	5.6	6.0	6.0	3.8	5.2	4.5	5.3
FIXED INCOME	Europe	Cash	3-Month German Bunds	2.1	1.5	0.3	-0.4	-0.5	-0.3	0.5
FIXED INCOME	Europe	Inflation Linked	Bloomberg Euro Inf. Linked	3.0	2.0	2.2	1.0	1.5	1.0	3.3
FIXED INCOME	Europe	Investment Grade	Bloomberg Euro Aggregate	3.1	3.4	2.1	1.0	1.0	1.2	0.5
FIXED INCOME	U.K.	Cash	3-Month Gilts	3.5	2.6	2.1	0.2	0.1	0.3	1.2
FIXED INCOME	U.K.	Inflation Linked	Bloomberg Inflation Linked Gilt	3.2	4.0	3.3	1.0	1.3	2.2	0.8
FIXED INCOME	U.K.	Investment Grade	Bloomberg Sterling Aggregate	4.9	4.9	2.9	1.5	1.3	2.2	0.8
FIXED INCOME	Japan	Cash	3-Month JGB	0.8	0.3	0.1	-0.1	-0.1	-0.1	0.0
FIXED INCOME	Japan	Inflation Linked	Bloomberg Inflation Linked JGB	1.5	0.0	0.1	0.2	0.5	0.2	0.4
FIXED INCOME	Japan	Investment Grade	Bloomberg Japanese Aggregate	1.4	0.2	0.3	0.2	0.2	0.2	0.1
FIXED INCOME	Aus.	Cash	3-Month Australian Gov't Bond	4.0	3.0	3.2	0.3	0.2	0.8	2.0
FIXED INCOME	Aus.	Inflation Linked	Bloomberg Inflation Linked Aus	4.2	4.0	N/A	N/A	N/A	N/A	3.1
FIXED INCOME	Aus.	Investment Grade	Bloomberg Global Agg Australia	4.5	4.2	3.7	1.5	1.2	2.2	2.8
FIXED INCOME	Global	Inflation Linked	Bloomberg Global Inflation Linked	3.3	3.6	2.9	0.5	1.8	2.0	2.5
FIXED INCOME	Global	Investment Grade	Bloomberg Global Aggregate	3.6	3.7	2.7	1.5	1.6	2.1	2.3
FIXED INCOME	Global	High Yield	Bloomberg Global High Yield	5.9	7.2	7.5	4.0	5.6	4.8	5.0
EQUITIES	Developed markets	U.S.	MSCI USA IMI	7.5	6.3	6.0	4.3	4.7	5.7	12.9
EQUITIES	Developed markets	U.S. Small Cap	Russell 2000	9.6	7.5	7.3	5.3	5.8	7.0	8.8
EQUITIES	Developed markets	Canada	MSCI Canada IMI	5.3	6.9	6.6	5.2	4.5	4.5	8.0
EQUITIES	Developed markets	Europe	MSCI Europe ex U.K. IMI	5.2	6.0	6.1	4.7	5.4	6.0	8.2
EQUITIES	Developed markets	U.K.	MSCI U.K. IMI	4.4	6.8	7.5	6.2	5.6	7.4	6.1
EQUITIES	Developed markets	Japan	MSCI Japan IMI	6.0	6.0	6.3	4.1	3.8	4.5	9.6
EQUITIES	Developed markets	Australia	MSCI Australia IMI	8.2	7.2	6.4	4.7	5.8	5.7	9.0
EQUITIES	Region	Developed Markets	MSCI World IMI	7.1	6.3	6.2	4.5	4.8	5.7	11.1
EQUITIES	Region	Emerging Markets	MSCI Emerging Markets IMI	6.4	5.9	5.8	5.3	5.4	6.1	7.1
EQUITIES	Region	Global Equities	MSCI AC World IMI	7.1	6.3	6.1	4.6	4.9	5.8	10.6

EXHIBIT 5: DETAILED 10-YEAR ASSET CLASS RETURN FORECASTS

All Returns in % Annualized				Long-Term Return Forecast by CMA Year						10-Year Actual Return
		Asset Class	Proxy Index	2025	2024^	2023	2022	2021*	2019	
REAL ASSETS	Global	Natural Resources	S&P Global Natural Resources	6.2	7.9	7.3	5.0	3.6	6.1	5.2
REAL ASSETS	Global	Listed Real Estate	MSCI ACWI IMI Core Real Estate	6.3	8.3	6.8	5.1	6.3	6.3	6.0
REAL ASSETS	Global	Listed Infrastructure	S&P Global Infrastructure	6.6	6.4	6.0	5.5	5.8	5.8	7.3
ALTERNATIVES	Global	Private Natural Resources	Cambridge Assoc. Natural Resources	8.3	9.4	9.3	7.0	4.6	8.1	2.4
ALTERNATIVES	Global	Private Real Estate	Cambridge Assoc. Real Estate	7.3	9.7	9.8	8.0	8.4	10.0	7.8
ALTERNATIVES	Global	Private Infrastructure	Cambridge Assoc. Infrastructure	8.4	9.4	9.0	8.5	8.8	7.7	9.7
ALTERNATIVES	Global	Private Equity	Cambridge Assoc. Private Equity	10.1	9.6	9.6	7.6	7.9	7.7	13.7
ALTERNATIVES	Global	Venture Capital	Cambridge Assoc. Venture Capital	11.6	10.8	11.0	8.5	8.9	N/A	14.7
ALTERNATIVES	Global	Buyout	Cambridge Assoc. Buyout	9.5	9.4	9.5	7.3	7.6	N/A	13.7
ALTERNATIVES	Global	Growth	Cambridge Assoc. Growth	11.0	10.2	10.3	8.0	8.4	N/A	13.0
ALTERNATIVES	Global	Private Credit	Cambridge Assoc. Private Credit	8.4	6.9	6.5	6.0	7.6	6.8	7.7
ALTERNATIVES	Global	Hedge Funds	HFRI Fund Weighted	5.5	4.5	5.4	2.9	2.6	3.7	5.1
ALTERNATIVES	Global	HF-Equity Hedge	HFRI Equity Hedge	5.4	5.0	4.9	3.3	2.2	3.2	6.1
ALTERNATIVES	Global	HF-Relative Value	HFRI Relative Value	5.6	5.8	6.0	3.5	3.2	4.0	4.2
ALTERNATIVES	Global	HF-Macro	HFRI Macro	6.0	5.6	5.1	3.5	2.3	3.6	3.2
ALTERNATIVES	Global	HF-Event Driven	HFRI Event Driven	5.1	4.9	6.2	3.3	3.3	5.0	5.2

Source: Northern Trust Asset Management. ^Starting with the 2024 edition, we changed the long-term investment horizon to 10 years from five years. *The naming convention was changed to the forward year starting with the 2021 edition, which was published in 2020. For each CMA edition, the long term forecast period is as follows: 2025 (9/30/2025 to 9/30/2034), 2024 (6/30/2023 to 6/30/2033), 2023 (6/30/2022 to 6/30/2027), 2022 (6/30/2021 to 6/30/2026), 2021 (6/30/2020 to 6/30/2025), 2019 (6/30/2019 to 6/30/2024). Forecasts listed here represent total return forecasts for primary asset classes, annualized using geometric averages. Forecasted returns are based on estimates and reflect subjective judgments and assumptions. They are not necessarily indicative of future performance, which could differ substantially. 10-year actual returns are listed in local currency (with the exception of real assets, which are in USD) and annualized for the 10-year period ending 9/30/2024. Past performance does not guarantee future results. Index performance returns do not reflect any management fees, transaction costs or expenses. It is not possible to invest directly in any index. Indexes are the property of their respective owners, all rights reserved. Please see important forecast disclosures on page 16.

ABOUT NORTHERN TRUST

Northern Trust is a preeminent global financial institution that provides asset servicing, investment management and wealth management services for institutions, high-net-worth individuals and families. For more than 130 years, our success has been anchored in one purpose: to serve as our clients' most trusted financial partner, guarding and growing their assets as though they are our own.

We manage more than more than $1.6 trillion (as of December 31, 2024) in assets for our clients. We earn their trust by staying true to our steadfast fiduciary heritage and providing exceptional service tailored to each client's specific needs. Our market-leading technological capabilities allow us to deliver the highest level of service to our clients with speed and precision.

Explore Our Full 10-Year Outlook

Looking for more detail? **Visit our website and download the full paper today to access:**

- Three pivotal investment themes poised to drive market performance over the next decade.
- Detailed performance and growth projections across asset classes, backed by in-depth rationale.
- Actionable insights and forecasts to guide asset allocation decisions for both short- and long-term horizons.

INDEX DEFINITIONS

3-Month U.S. T-Bill: The FTSE 3 Month US T-Bill Index Series is intended to track the daily performance of 3-month US Treasury bill.

Bloomberg U.S. Inflation-linked 1-10 Year Notes: The Bloomberg U.S. Treasury Inflation Notes: 1-10 Year Index measures the performance of the US Treasury Inflation Protected Securities (TIPS) market with less than 10 years to maturity. Federal Reserve holdings of US TIPS are not index eligible and are excluded from the face amount outstanding of each bond in the index. To be included in the index, securities must have at least one and up to, but not including ten years to maturity.

Bloomberg Global Inflation-linked US TIPS: The Bloomberg US Treasury Inflation-Linked Bond Index (Series-L) measures the performance of the US Treasury Inflation Protected Securities (TIPS) market. Federal Reserve holdings of US TIPS are not index eligible and are excluded from the face amount outstanding of each bond in the index.

Bloomberg U.S. Aggregate: The Bloomberg US Aggregate Bond Index is a broad-based flagship benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, fixed-rate agency MBS, ABS and CMBS (agency and non-agency). Provided the necessary inclusion rules are met, US Aggregate-eligible securities also contribute to the multi-currency Global Aggregate Index and the US Universal Index.

Bloomberg U.S. High Yield: The Bloomberg US Corporate High Yield Bond Index measures the USD-denominated, high yield, fixed-rate corporate bond market. Securities are classified as high yield if the middle rating of Moody's, Fitch and S&P is Ba1/BB+/BB+ or below. Bonds from issuers with an emerging markets country of risk, based on the indices' EM country definition, are excluded. The US Corporate High Yield Index is a component of the US Universal and Global High Yield Indices.

Bloomberg Municipal: The Bloomberg Municipal Bond: Index is a flagship measure of the US municipal tax-exempt investment grade bond market. Included in the index are securities from all 50 US States and four other qualifying regions (Washington DC, Puerto Rico, Guam, and the Virgin Islands). The index includes state and local general obligation bonds and revenue bonds. All bonds in the Municipal Bond Index are tax exempt and hence are not eligible for other indices that include taxable bonds, such as the Bloomberg U.S. Aggregate.

Bloomberg Municipal 1-10: The Bloomberg Municipal 1-10 Year Blend 1-12 Year Index Year Blend measures the performance of short and intermediate 1-12 Year Index components of the Municipal Bond Index — an unmanaged, market value-weighted index which covers the U.S. investment grade, tax-exempt bond market.

3-Month Canada T-Bill: The FTSE Canada Treasury Bill Index Series consists of benchmarks to track the performance of Government of Canada Treasury Bills, with separate indices for 1-month, 2-month, 3-month, 6-month, and 1-year T-Bills. Each index is designed to reflect the performance of a portfolio that only owns a single security, the current on the run T-Bill for the relevant term, switching into the new T-Bill at each auction.

FTSE Canada Real Return Bond: The FTSE Canada Real Return Bond Index is designed to be a broad measure of the performance of Canadian inflation indexed bonds issued in Canadian Dollars.

FTSE Canada Universe: The FTSE Canada Universe Bond Index is designed to track the performance of the investment-grade, fixed-rate, government and corporate bonds denominated in Canadian Dollars (CAD). The index includes securities issued by entities incorporated both in Canada and outside of Canada.

BofAML Canadian High Yield: This index tracks the performance of the U.S. Dollar and Canadian Dollar denominated below investment grade corporate debt publicly issued by Canadian Issuers in the Canadian or U.S. domestic markets.

3-Month German Bunds: JP Morgan GBI Index that tracks German Gov issues short term debt securities with a maturity of three months.

Bloomberg Euro Inf. Linked: The Bloomberg Euro Government Inflation-Linked Bond Index measures the performance of the Bloomberg World Government Inflation-Linked Bond (WGILB) index from European Union member states that also participate in the European Monetary Union.

INDEX DEFINITIONS

Bloomberg Euro Aggregate: The Bloomberg Euro Aggregate Bond Index is a broad-based flagship benchmark that measures the investment grade, euro-denominated, fixed-rate bond market, including treasuries, government-related, corporate and securitized issues. Inclusion is based on currency denomination of a bond and not country of risk of the issuer. The Euro Aggregate is a component of other flagship indices, such as the multi-currency Global Aggregate Index and Pan-European Aggregate Index.

3-Month Gilts: JP Morgan GBI Index that tracks performance of UK government bonds (gilts) with a maturity of 3 months.

Bloomberg Inflation Linked Gilt: The index is designed to measure the performance of a segment of the UK Gov bond (Gilts) market comprised of inflation-linked fixed income securities.

Bloomberg Sterling Aggregate: The Bloomberg Barclays Sterling Aggregate Bond Index is a flagship benchmark that measures the investment grade, sterling-denominated, fixed-rate bond market, including treasuries, government-related, corporate and securitized issues. Inclusion is based on the currency denomination of a bond, not country of risk of the issuer. The Sterling Aggregate is a component of other Bloomberg Barclays flagship indices such as the multi-currency Global Aggregate and Pan-European Aggregate Indices.

3-Month JGB: JP Morgan Index that tracks performance of Japanese government bonds with a maturity of 3 months.

Bloomberg Inflation Linked JGB: The index is designed to measure the performance of a segment of the Japanese bond market comprised of inflation-linked fixed income securities.

Bloomberg Japanese Aggregate: The Japanese Aggregate Index contains fixed-rate investment-grade securities denominated in Japanese yen and registered as domestic bond. The index is composed primarily of local currency sovereign debt but also includes government-related, corporate, and securitized bonds. The Japanese Aggregate Index is a subset of the Asian-Pacific Aggregate and the Global Aggregate Index in its entirety.

3-Month Australia Gov't Bond: JP Morgan GBI Index that tracks performance of Australian government bonds with a maturity of 3 months.

Bloomberg Inflation Linked Australia: The index is designed to measure the performance of a segment of the Australian bond market comprised of inflation-linked fixed income securities.

Bloomberg Global Agg Australia: The Bloomberg Global Aggregate Australia Index contains fixed-rate investment-grade securities denominated in Australian dollar and registered as domestic bond. The index is composed primarily of local currency sovereign debt but also includes government-related, corporate, and securitized bonds. The Bloomberg Global Agg Australia Index is a subset of the Asian-Pacific Aggregate and the Global Aggregate Index in its entirety.

Bloomberg Global Inflation Linked: The Bloomberg Global Inflation Linked Index measures the performance of investment-grade, government inflation-linked debt from 12 different developed market countries. Investability is a key criterion for inclusion of markets in this index, and it is designed to include only those markets in which a global government linker fund is likely and able to invest. Markets tracked by the index include the United Kingdom, Australia, Canada, Sweden, United States, France, Italy, Japan, Germany, New Zealand, Denmark, and Spain.

Bloomberg Global Aggregate: The Bloomberg Global Aggregate Index is a flagship measure of global investment grade debt from twenty-eight local currency markets. This multi-currency benchmark includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging markets issuers. There are four regional aggregate benchmarks that largely comprise the Global Aggregate Index: the US Aggregate, the Pan-European Aggregate, the Asian-Pacific Aggregate, and the Canadian Aggregate Indices. The Global Aggregate Index also includes Eurodollar, Euro-Yen, and 144A Index-eligible securities, and debt from five local currency markets not tracked by the regional aggregate benchmarks (CLP, COP, MXN, PEN, and ILS).

Bloomberg Global High Yield: The Bloomberg Global High Yield Index is a multi-currency flagship measure of the global high yield debt market. The index represents the union of the US High Yield, the Pan-European High Yield, and Emerging Markets (EM) Hard Currency High Yield Indices. The high yield and emerging markets sub-components are mutually exclusive. Until January 1, 2011, the index also included CMBS high yield securities. The Global High Yield Index is a component of the Multiverse Index, along with the Global Aggregate, Euro Treasury High Yield, and EM Local Currency Government indices.

INDEX DEFINITIONS

MSCI USA IMI: The MSCI USA Investable Market Index (IMI) is designed to measure the performance of the large, mid and small cap segments of the US market. With 2,319 constituents, the index covers approximately 99% of the free float-adjusted market capitalization in the US.

Russell 2000: The Russell 2000® Index measures the performance of the small-cap segment of the US equity universe. The Russell 2000 Index is a subset of the Russell 3000® Index which is designed to represent approximately 98% of the investable US equity market. It includes approximately 2,000 of the smallest securities based on a combination of their market cap and current index membership. The Russell 2000 is constructed to provide a comprehensive and unbiased small-cap barometer and is completely reconstituted annually to ensure larger stocks do not distort the performance and characteristics of the true small-cap opportunity set.

MSCI Canada IMI: The MSCI Canada Investable Market Index (IMI) is designed to measure the performance of the large, mid and small cap segments of the Canada market. With 279 constituents, the index covers approximately 99% of the free float-adjusted market capitalization in Canada.

MSCI Europe ex U.K. IMI: The MSCI Europe ex UK IMI Index is an equity index which captures large, mid and small cap representation across 14 of 15 Developed Market (DM) countries in Europe* excluding the UK. With 973 constituents, the index is comprehensive, covering approximately 99% of the free float-adjusted market capitalization in each country.

MSCI U.K. IMI: The MSCI United Kingdom Investable Market Index (IMI) is designed to measure the performance of the large, mid and small cap segments of the UK market. With 298 constituents, the index covers approximately 99% of the free float-adjusted market capitalization in the UK.

MSCI Japan IMI: The MSCI Japan Investable Market Index (IMI) is designed to measure the performance of the large, mid and small cap segments of the Japan market. With 1,020 constituents, the index covers approximately 99% of the free float-adjusted market capitalization in Japan.

MSCI Australia IMI: The MSCI Australia Investable Market Index (IMI) is designed to measure the performance of the large, mid and small cap segments of the Australia market. With 230 constituents, the index covers approximately 99% of the free float-adjusted market capitalization in Australia.

MSCI World IMI: The MSCI World Investable Market Index (IMI) captures large, mid and small cap representation across 23 Developed Markets countries*. With 5,374 constituents, the index is comprehensive, covering approximately 99% of the free float-adjusted market capitalization in each country.

MSCI Emerging Markets IMI: The MSCI Emerging Markets Investable Market Index (IMI) captures large, mid and small cap representation across 24 Emerging Markets (EM) countries*. With 3,266 constituents, the index covers approximately 99% of the free float-adjusted market capitalization in each country.

MSCI AC World IMI: The MSCI ACWI Investable Market Index (IMI) captures large, mid and small cap representation across 23 Developed Markets (DM) and 24 Emerging Markets (EM) countries*. With 8,640 constituents, the index is comprehensive, covering approximately 99% of the global equity investment opportunity set.

S&P Global Natural Resources: The index includes 90 of the largest publicly-traded companies in natural resources and commodities businesses that meet specific investability requirements, offering investors diversified and investable equity exposure across 3 primary commodity-related sectors: agribusiness, energy, and metals & mining.

MSCI ACWI IMI Core Real Estate: The MSCI ACWI IMI Core Real Estate Index is a free float-adjusted market capitalization index that consists of large, mid and small-cap stocks across 23 Developed Markets (DM) and 24 Emerging Markets (EM) countries* engaged in the ownership, development and management of specific core property type real estate. The index excludes companies, such as real estate services and real estate financing companies, that do not own properties.

S&P Global Infrastructure: The S&P Global Infrastructure Index is designed to track 75 companies from around the world chosen to represent the listed infrastructure industry while maintaining liquidity and tradability. To create diversified exposure, the index includes three distinct infrastructure clusters: energy, transportation, and utilities.

INDEX DEFINITIONS

Cambridge Assoc. Natural Resources The Cambridge Associates LLC Natural Resources Index is a horizon calculation based on data compiled from 377 natural resources funds, (including 80 energy upstream & royalties, 180 US private equity energy, 71 Ex US private equity energy, and 46 timber funds), including fully liquidated partnerships, formed between 1986 and 2016. Private indexes are pooled horizon IRR calculations, net of fees, expenses, and carried interest.

Cambridge Assoc. Real Estate The Cambridge Associates LLC Real Estate index is a horizon calculation based on data compiled from 1,021 real estate funds (including opportunistic and value-added real estate funds), including fully liquidated partnerships, formed between 1986 and 2017.

Cambridge Assoc. Infrastructure The Cambridge Associates LLC Infrastructure Index is a horizon calculation based on data compiled from 93 infrastructure funds, including fully liquidated partnerships, formed between 1993 and 2015. Private indexes are pooled horizon internal rate of return (IRR) calculations, net of fees, expenses, and carried interest.

Cambridge Assoc. Private Equity The Cambridge Associates LLC Private Equity Index® is a horizon calculation based on data compiled from 1,468 US private equity funds (buyout, growth equity, private equity energy and subordinated capital funds), including fully liquidated partnerships, formed between 1986 and 2017.

Cambridge Assoc. Venture Capital The Cambridge Associates LLC Venture Capital Index® is a horizon calculation based on data compiled from 1,807 US venture capital funds (1,161 early stage, 210 late & expansion stage, and 436 multi-stage funds), including fully liquidated partnerships, formed between 1981 and 2018.

Cambridge Assoc. Buyout The Cambridge Associates LLC US Buyout Index is a horizon calculation based on data compiled from 2,123 buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

Cambridge Assoc. Growth The Cambridge Associates LLC US Growth Equity Index is a horizon calculation based on data compiled from 2,123 buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2018.

Cambridge Assoc. Private Credit The Cambridge Associates Private Credit Index contains the historical performance records of 180+ private investment fund managers and 737 institutional quality funds raised between 1986 and 2024. These funds have a total capitalization of USD $760 billion.

INDEX DEFINITIONS

HFRI Fund Weighted: The HFRI Fund Weighted Composite Index is a global, equal-weighted index of single-manager funds that report to HFR Database. Constituent funds report monthly net of all fees performance in US Dollar and have a minimum of $50 Million under management or $10 Million under management and a twelve (12) month track record of active performance. The HFRI Fund Weighted Composite Index does not include Funds of Hedge Funds.

HFRI Equity Hedge: Investment Managers who maintain positions both long and short in primarily equity and equity derivative securities. A wide variety of investment processes can be employed to arrive at an investment decision, including both quantitative and fundamental techniques; strategies can be broadly diversified or narrowly focused on specific sectors and can range broadly in terms of levels of net exposure, leverage employed, holding period, concentrations of market capitalizations and valuation ranges of typical portfolios. EH managers would typically maintain at least 50% exposure to, and may in some cases be entirely invested in, equities, both long and short.

HFRI Relative Value: Investment Managers who maintain positions in which the investment thesis is predicated on realization of a valuation discrepancy in the relationship between multiple securities. Managers employ a variety of fundamental and quantitative techniques to establish investment theses, and security types range broadly across equity, fixed income, derivative or other security types. Fixed income strategies are typically quantitatively driven to measure the existing relationship between instruments and, in some cases, identify attractive positions in which the risk adjusted spread between these instruments represents an attractive opportunity for the investment manager. RV position may be involved in corporate transactions also, but as opposed to ED exposures, the investment thesis is predicated on realization of a pricing discrepancy between related securities, as opposed to the outcome of the corporate transaction.

HFRI Macro: Investment Managers which trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets. Managers employ a variety of techniques, both discretionary and systematic analysis, combinations of top down and bottom up theses, quantitative and fundamental approaches and long and short term holding periods. Although some strategies employ RV techniques, Macro strategies are distinct from RV strategies in that the primary investment thesis is predicated on predicted or future movements in the underlying instruments, rather than realization of a valuation discrepancy between securities. In a similar way, while both Macro and equity hedge managers may hold equity securities, the overriding investment thesis is predicated on the impact movements in underlying macroeconomic variables may have on security prices, as opposes to EH, in which the fundamental characteristics on the company are the most significant are integral to investment thesis.

HFRI Event Driven: Investment Managers who maintain positions in companies currently or prospectively involved in corporate transactions of a wide variety including but not limited to mergers, restructurings, financial distress, tender offers, shareholder buybacks, debt exchanges, security issuance or other capital structure adjustments. Security types can range from most senior in the capital structure to most junior or subordinated, and frequently involve additional derivative securities. Event Driven exposure includes a combination of sensitivities to equity markets, credit markets and idiosyncratic, company specific developments. Investment theses are typically predicated on fundamental characteristics (as opposed to quantitative), with the realization of the thesis predicated on a specific development exogenous to the existing capital structure.

IMPORTANT INFORMATION

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Capital Market Assumption (CMA) model expected returns do not show actual performance and are for illustrative purposes only. They do not reflect actual trading, liquidity constraints, fees, expenses, taxes and other factors that could impact the future returns. Stated return expectations may differ from an investor's actual result. The assumptions, views, techniques and forecasts noted are subject to change without notice.

CMA model expected returns are based on IPC forecasted returns and reflect Northern Trust's Investment Policy Committee's forward-looking annual capital market assumptions. The Capital Market Assumptions Working Group, a subset of IPC members, publishes its assumptions as a white paper report. Forecasted returns are annual returns (geometric basis). The model cannot account for the impact that economic, market and other factors may have on the implementation and ongoing management of an actual investment strategy. Model outcomes do not reflect actual trading, liquidity constraints, fees, expenses, taxes and other factors that could impact future returns. The model assumptions are passive only. References to expected returns are not promises or even estimates of actual returns an investor may achieve. The assumption, views, techniques and estimates set out are provided for illustrative purposes only. Forecasts of financial market trends that are based on current market conditions constitute the CMA Working Group judgment and are subject to change without notice. "Expected" or "alpha" return estimates are subject to uncertainty and error. The ability to achieve similar outcomes is subject to risk factors over which Northern Trust may have no or limited control.

Past performance is not a guarantee of future results. Performance returns and the principal value of an investment will fluctuate. Performance returns contained herein are subject to revision by NTAM. Comparative indices shown are provided as an indication of the performance of a particular segment of the capital markets and/or alternative strategies in general. Index performance returns do not reflect any management fees, transaction costs or expenses. It is not possible to invest directly in any index. Net performance returns are reduced by investment management fees and other expenses relating to the management of the account. Gross performance returns contained herein include reinvestment of dividends and other earnings, transaction costs, and all fees and expenses other than investment management fees, unless indicated otherwise. For U.S. NTI prospects or clients, please refer to Part 2a of the Form ADV or consult an NTI representative for additional information on fees.

Forward-looking statements and assumptions are NTAM's current estimates or expectations of future events or future results based upon proprietary research and should not be construed as an estimate or promise of results that a portfolio may achieve. Actual results could differ materially from the results indicated by this information.

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