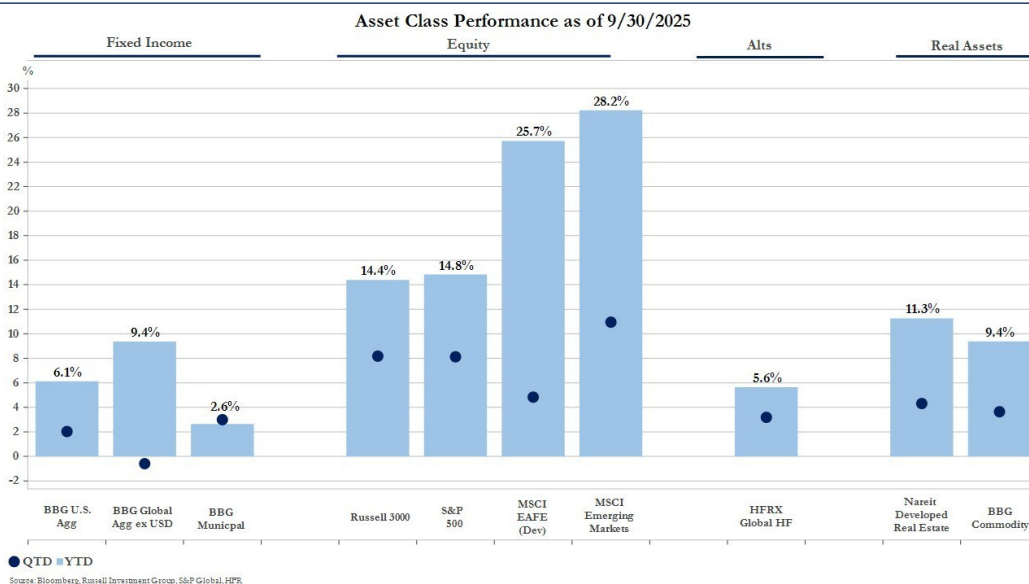




Investment Newsletter
3rd Quarter, 2025

Key Takeaways

- U.S. economic growth continues to moderate into year-end but has yet to stall, supported by resilient consumer spending buoyed by the wealth effect.
- The labor market, once a pillar of strength, has started to show clear signs of cooling with non-farm payrolls increasing by only 22,000 in August and consensus estimates for September sitting at just 50,000, while unemployment ticked up to 4.3%.
- The government shutdown is the latest in a long series of disruptive events and while the impact tends to be transient (back pay is typically made up upon reopening), it can be more consequential if sustained for an extended period or if it translates into more impactful action like layoffs.
- The Fed cut interest rates by 0.25% in September, bringing the benchmark rate to 4.00%–4.25%. One or two more small cuts are expected by year-end, but treasury rates may already be near equilibrium when factoring in current inflation and growth trends.
- Inflation has stabilized but is unlikely to rescind back to prior cycle levels barring some extreme economic shock. Ongoing dislocations from tariffs and the labor market present risks both to the upside and downside, depending on downstream reactions.
- AI infrastructure spend continues to surge with expectations for potentially trillions in capex before the end of the decade. Limited tangible, current revenue paired with an accelerated depreciation cycle for data center components (ex. GPUs, etc.) pose a meaningful risk if the expansive level of capex fails to translate into future revenue, growth, and profitability.
- Following April's rapid drawdown, 2025 turned into a supportive year for global equity markets with compelling gains in the third quarter and international stocks rising nearly 30% year-to-date. Higher prices have led to elevated valuations, especially in the U.S., potentially making markets more sensitive to future economic shocks or earnings disappointments.
- Equity market concentration levels (S&P 500 top-10 names amount to ~40% of the index) pose a continued risk advocating for extensive diversification across different segments of the public markets, as well as within private markets.
- Declining base rates and tightening spreads offered a supportive backdrop for fixed income assets in Q3. Higher starting yields at the beginning of the year offered cover for yield volatility and paved the way for a generally supportive year so far for credit.
- Rapid asset growth paired with selective defaults (ex. First Brands) have some questioning the health of the broader private credit and syndicated loan market. To date, signs of widespread stress (ex. non-accruals, PIK utilization) are at normalized levels and lower base rates could offer some relief to floating rate borrowers, although it is something we are monitoring closely.
- Tariff, policy, and geopolitical uncertainty are likely to keep markets volatile, even as recovering asset values support ongoing economic growth.
- In this type of environment, it is important to maintain broad diversification and likely appropriate for most investors to focus on protecting their portfolios from downside risks, rather than pursuing aggressive growth.



Economy

The U.S. economy remained resilient through Q3 2025, even as signs of moderating growth and new challenges emerged. According to the Atlanta Fed's most recent GDPNow forecast, real U.S. GDP growth for Q3 is tracking at 3.8%, which would mark a second consecutive quarter of positive growth after contracting -0.5% in Q1. Earlier in the year, calls for a recession in the near-term were dominating headlines, but those have recently all but disappeared as most major recession indicators, like those tracked by the National Bureau of Economic Research (NBER), are currently in expansion territory.

Consumer spending, which historically has made up about two-thirds of U.S. GDP, has remained strong year-to-date but the impact of new tariffs has only recently begun to flow through supply chains, resulting in higher input costs for import-reliant businesses and additional inflationary pressure. As margins tighten, some companies have slowed hiring or postponed expansion. This headwind is evident in manufacturing, where activity contracted for a seventh straight month in September. While the ISM Manufacturing PMI registered 49.1, a modest improvement from 48.7 in August, new orders and employment remained weak. Against this backdrop, business and investor sentiment has softened, reflecting caution around trade policy, ongoing supply chain disruptions, and broader geopolitical risks.

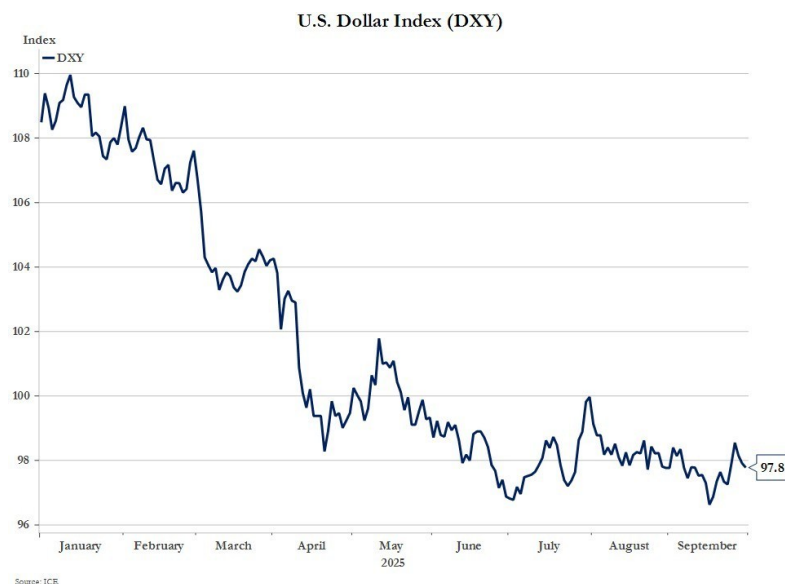
While inflation has moderated from its pandemic-era highs, it remains above the Federal Reserve's 2% target. The Personal Consumption Expenditures (PCE) Price Index rose 2.7% year-over-year in August, while core inflation (excluding food and energy) is running slightly higher at 2.9%. Shelter prices continue to run hotter than most other categories and have been a key driver keeping the overall inflation figure above the Fed's target, though modest declines in recent months show signs of progress. While tariffs have contributed to price increases for imported goods, inflation has not yet risen to the degree originally feared when President Trump first announced reciprocal tariffs back in April, and, despite remaining elevated, prices overall are showing signs of stabilization which is a positive for businesses and consumers alike.

The labor market, which had been a pillar of strength throughout 2024, is now showing clear signs of cooling. Job growth has slowed dramatically, with non-farm payrolls increasing by only 22,000 in August and consensus estimates for September sitting at just 50,000, while the unemployment rate sits at 4.3%, its highest level in nearly four years. Healthcare and social assistance sectors continue to add jobs, while other service industries and manufacturing have seen declines. In addition to tariffs and businesses remaining cautious amid macroeconomic uncertainty, the slowdown in hiring is also being partly attributed to tighter immigration policies and visas becoming more expensive. The growing impact of artificial intelligence and automation also remains an important trend and may be boosting productivity even as job growth stalls, though more data and analysis is needed to properly quantify the impact of these new technologies and the potential return on investment for the companies using them.

In response to these shifting dynamics, the Federal Reserve cut its benchmark interest rate by 0.25% in September, bringing the federal funds rate to 4.00%-4.25%. In his remarks, Fed Chair Powell cited rising downside risks to employment as the key driver of the committee's decision and signaled that further cuts may be coming if labor market weakness persists. Markets currently expect two additional rate cuts by year-end, though Powell continues to emphasize that nothing is guaranteed and future policy moves will be data-dependent, balancing the need to support growth with the goal of returning inflation to target levels.

U.S. Dollar Weakness Continues in Q3

- The U.S. Dollar Index (DXY) is down roughly ~10% year-to-date as slower growth, increasing fiscal deficits, heightened policy uncertainty, and tariff-driven shifts in global capital flows continue to act as headwinds.
- While the dollar's status as the world's dominant reserve currency remains in place, its decline has had mixed effects, boosting returns on non-U.S. equities while at the same time raising import prices and contributing to inflationary pressure.
- If the Fed continues cutting rates through the end of 2025 and beyond, narrower interest-rate differentials with other central bank policy rates and lower real yields could keep the dollar under pressure, at least in the near-term.



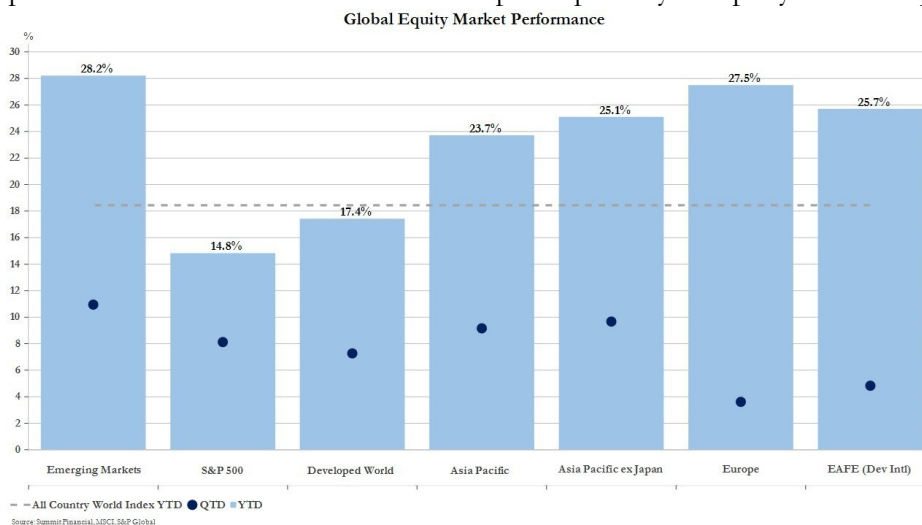
Equity Markets

Global equities advanced in the third quarter as optimism around artificial intelligence, resilient corporate earnings, and a well-telegraphed September rate cut outweighed trade policy and geopolitical risks. In the U.S., the Russell 2000 outperformed as small-cap companies, who are typically more sensitive to borrowing costs, benefited disproportionately from the rate cut, though they still trail large-caps year-to-date. Within the S&P 500, growth beat value once again, led by technology and communication services while the healthcare and consumer defensive sectors lagged.

One key risk investors are facing in U.S. markets is large-cap equity valuations. The forward P/E ratio for the S&P 500 currently sits in the top decile relative to its history and the equity risk premium is at a multi-decade low, meaning the difference between stock and risk-free Treasury returns is expected to be narrow going forward. Elevated valuations are not a bearish signal on their own, but if earnings growth falters, it could result in a sharp repricing of U.S. stocks. For now, earnings continue to exceed forecasts, and growth is projected to accelerate through year-end, though investors will be closely watching upcoming Q3 earnings reports for any signs of weakness.

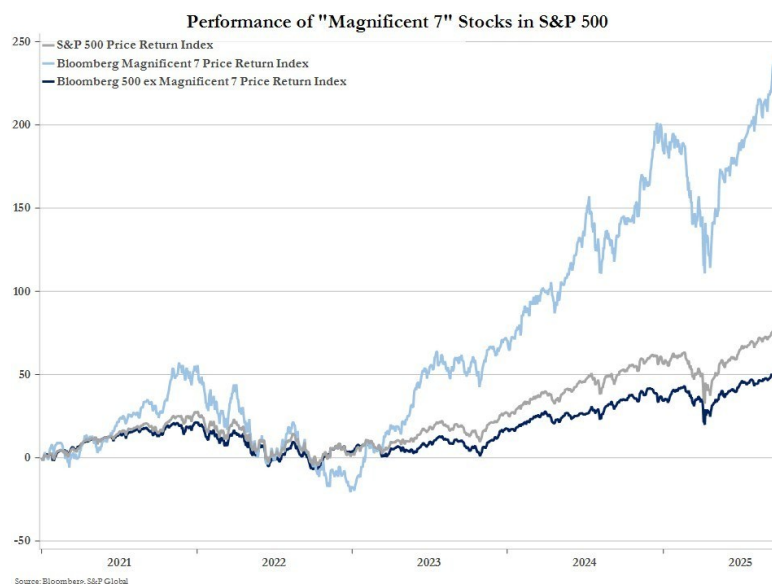
AI infrastructure spending is another potential risk that has been gaining more attention as of late. Investment in the space has surged, with expectations for potentially trillions in capex spending this decade, yet current return on investment is limited. Additionally, data-center components such as GPUs face accelerated depreciation cycles which could weigh on future earnings. If this expansive spending fails to translate into future revenue, growth, and profitability, it could become a meaningful headwind for some of the top contributors to the S&P 500's robust performance over the last few years.

Outside the U.S., international equities also trended higher alongside a weaker U.S. dollar as both developed and emerging markets were additive to portfolios. A mix of easier financial conditions, steady earnings, and relatively lower starting valuations helped sustain momentum and the outperformance versus the U.S. year-to-date. Through year-end and beyond, investors should ensure portfolios remain well diversified to help dampen any company- or U.S.-specific shocks.



Magnificent 7 Continue to Drive S&P 500

- The S&P 500 gained 8.1% in Q3, reaching new all-time highs along the way, though 45% of YTD gains have come from the Magnificent 7, highlighting concentration risk within U.S. large-cap indices.
- The Magnificent 7 trade at an aggregate P/E of 29x vs. 22x for the S&P 500, though their earnings growth has far outpaced the other 493 constituents, suggesting their premium valuations may be justified.
- The S&P 500's P/E ratio remains meaningfully above its ~17.8x historical average, partially skewed by its seven biggest names, but over half of companies raised forward EPS guidance in Q2, signaling broad optimism beyond just the AI-focused mega-caps.

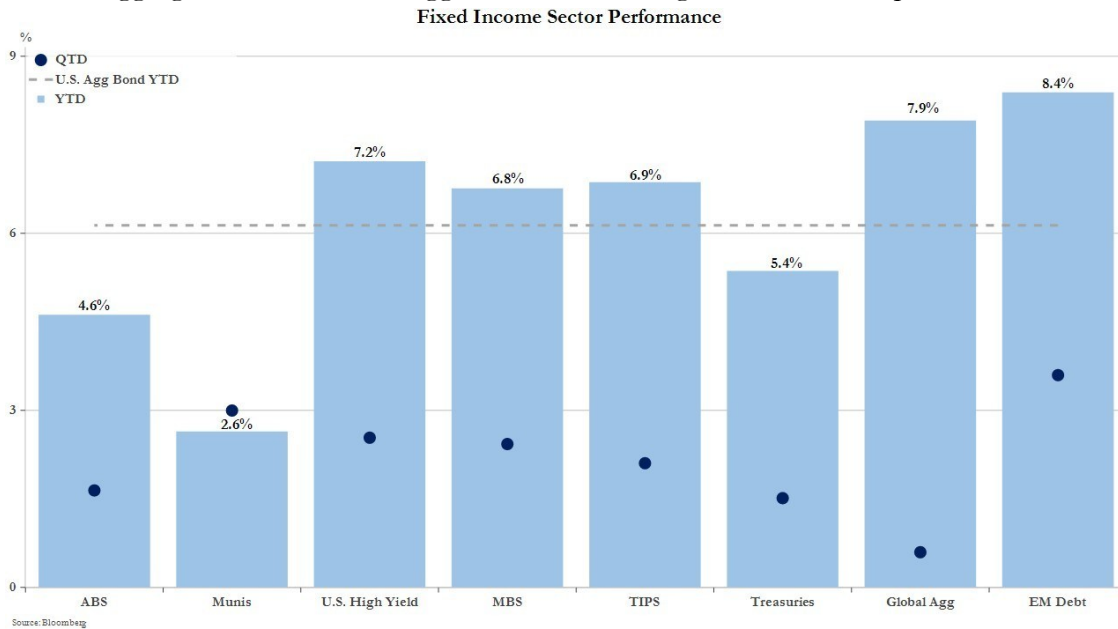


Fixed Income Markets

Fixed income markets delivered modest returns in the third quarter, supported by stronger than expected growth in the U.S. economy and business activity. While concerns about a weakening labor market persisted, they were partially offset by the recent Fed cut. The Treasury curve steepened following the rate cut, reflecting market expectations that the Fed will proactively backstop the labor market and support economic growth if needed. Corporate spreads narrowed slightly as earnings continue to grow and the impact of tariffs remains limited, though, due to lag effects, the full impact of tariffs may not be visible until the first half of 2026. Market reaction to the recent government shutdown has been muted so far, but spreads could widen significantly if the shutdown becomes prolonged. Overall, a steady economic backdrop and lower base rates continue to support fixed income assets, while a steepening curve presents opportunities to extend duration.

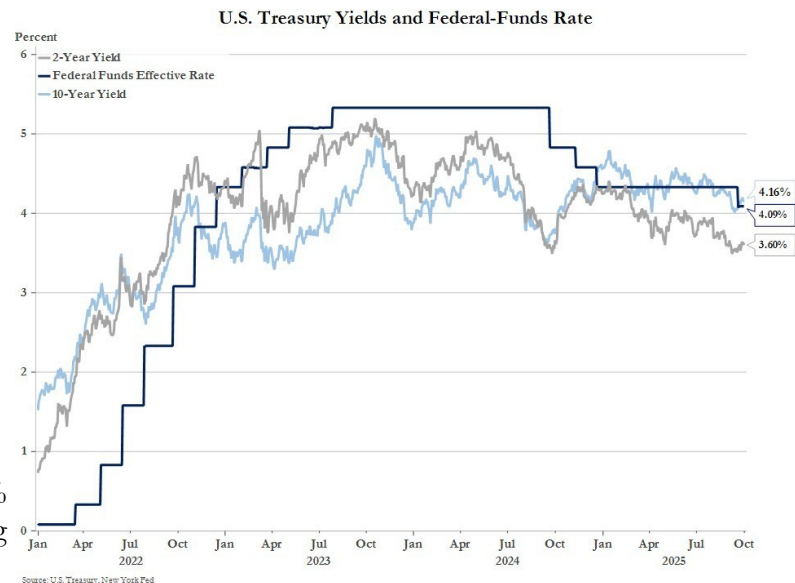
Treasury spreads remained stable throughout the third quarter, with the spread between 10- and 2-year Treasury yields staying flat at 52 bps, while the MOVE Index fell substantially, from 90.3 to 77.9, suggesting a significant improvement in investor sentiment. Inflation expectations also held steady, with 5-year forward inflation expectations moving only slightly from 2.36% to 2.34%. Both the Fed and market pricing continue to suggest that inflation from tariffs will be transitory.

Performance across fixed income sectors was generally positive. The Bloomberg U.S. Aggregate Bond Index posted a 2.03% gain in the third quarter, with spreads narrowing 10 bps to 76 bps. The Bloomberg U.S. Corporate High-Yield Index returned 2.54%, as spreads tightened by 16 bps to 280 bps. Munis reversed its trend from previous quarters, delivering 2.33% and, while municipal issuance remains elevated year-to-date, it stabilized then declined slightly in the third quarter. The Bloomberg Global Aggregate ex-U.S. Index lagged in Q3, returning -0.59% for the quarter.



Economic Growth & Inflation Revised Higher

- The Fed revised its real GDP forecasts higher for both 2025 and 2026, from 1.4% to 1.8% and 1.6% to 1.8%, respectively, reflecting firmer growth expectations. The unemployment rate forecast was unchanged at 4.3% for 2025, while the 2026 estimate was lowered slightly to 4.4%.
- Inflation projections for 2026 were revised upward, with core and headline PCE rising from 2.6% to 2.9% and 2.4% to 2.7, respectively, driven by stronger growth expectations and the potentially inflationary effects of tariffs.
- Federal fund rates are now projected to end 2025 at 3.6% and 3.4% in 2026. The futures market is currently pricing in two additional cuts this year and one more in 2026.

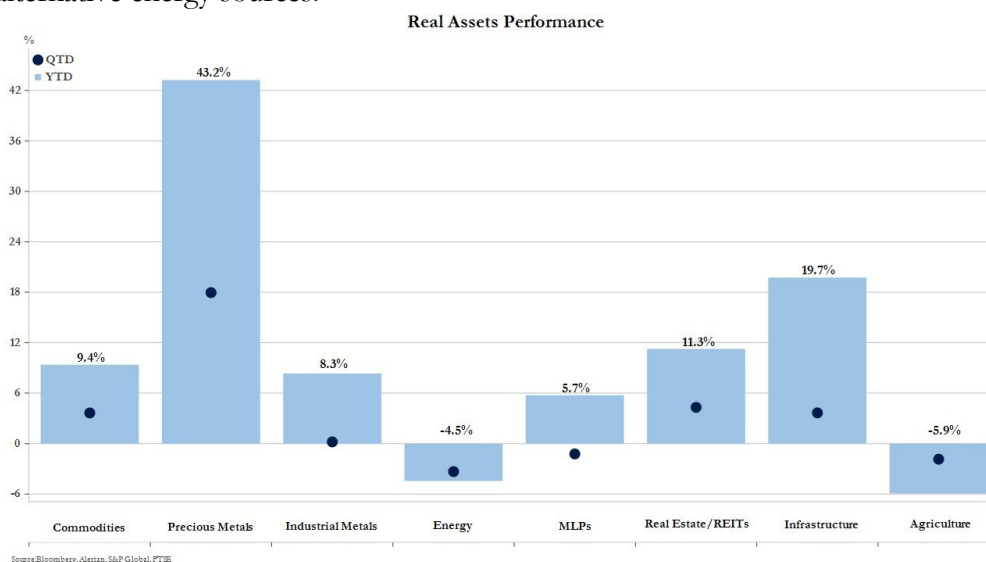


Real Assets

Real assets posted mixed results once again in the third quarter. Precious metals led the way and are now up more than 43% year-to-date after advancing 18% in Q3. Gold and silver continue to outperform, driven by heightened geopolitical tensions, increased central bank buying, and a weaker U.S. dollar, all of which boosted investor demand for safe-haven assets. Platinum and palladium also surged, delivering returns in the high-teens and illustrating broad participation and strength in the subsector.

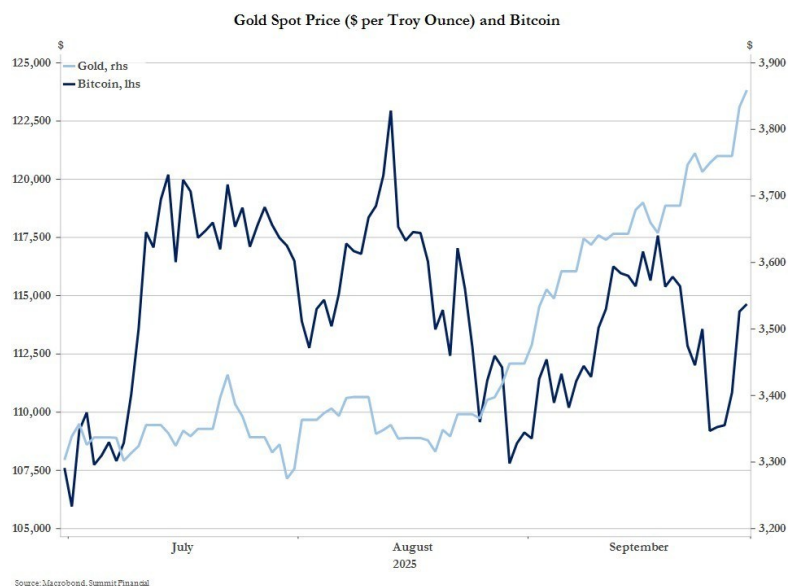
Public REITs delivered solid returns in the third quarter, supported by stabilizing transaction prices and a gradual recovery in property values. The healthcare segment remained particularly robust, reflecting ongoing demand for specialized facilities and services. The recent U.S. interest rate cut has provided additional support to the broad real estate sector by lowering borrowing costs which market participants hope will spur an increase in transaction volume. While the recovery in asset values is encouraging, investors should remain mindful of the potential for volatility should economic conditions shift, or inflationary pressures re-emerge.

Public infrastructure stocks also posted positive returns in the third quarter, buoyed by rapid digitalization and the widespread adoption of emerging technologies. The digital infrastructure segment, in particular, continues to gain momentum as data center construction accelerates to meet the explosive growth in cloud computing and artificial intelligence workloads. While infrastructure stocks remain sensitive to regulatory changes, policy uncertainty, and shifts in global capital flows, lower rates should be supportive as reduced financing costs improve the economics of long-term capital projects. In contrast, energy stocks lagged in the third quarter, declining 3.3% and extending year-to-date losses to 4.5%, as performance drivers are increasingly tied to global economic conditions, shifts in production policy, and the pace of transition toward alternative energy sources.



Gold Continues to Shine, Bitcoin Sees Volatility

- Gold prices reached record highs in Q3, marking the strongest year for the metal since 1979 and continuing a multi-year trend during which it more than doubled in value.
- Demand has intensified as investors seek safety amid volatile trade policies and geopolitical tensions, while foreign governments shifting away from USD-denominated debt further supported prices.
- Bitcoin rose 6.4% in Q3, slowing from its 30% rally in Q2, though enthusiasm over crypto-friendly regulation drove prices to a record high near \$123,000 in August before a late-quarter pullback.



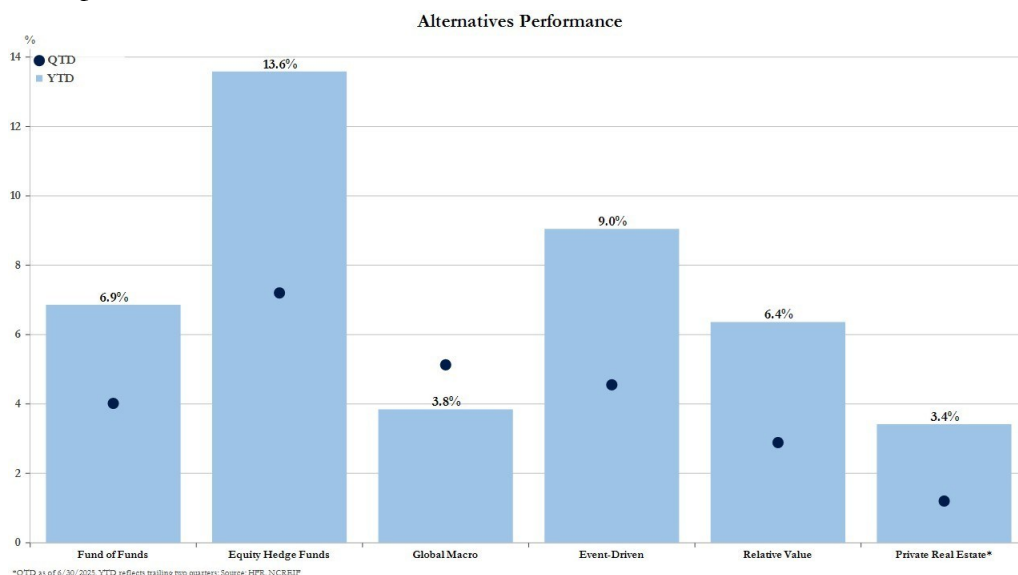
Alternatives

After grinding to a halt in Q2 following President Trump's announcement of reciprocal tariffs, private equity asset managers are starting to see signs of life in capital markets. Starting in 2022, higher interest rates and uncertainty around economic policy led to a lack of exits, which in turn meant less capital was being distributed back to private equity investors, thus limiting managers' ability to raise additional funds and launch new vintages. These headwinds have started to moderate in Q3, as the September Fed rate cut and expectations for further easing have supported deal flow by lowering valuations and borrowing costs. Another potential tailwind is that the size and concentration of dry powder, particularly among large and mega funds, points to pent-up demand that could lead to a meaningful pick-up in exit activity by year-end. Private equity exits have historically been priced at a 25% premium to holding NAV, and over \$2.7T in transactions have been announced in 2025, up more than 25% from 2024 levels, driving optimism among both GPs and LPs for solid second-half returns.

The private credit market continued to generate steady returns in the third quarter. While concerns about credit deterioration are increasing, defaults and amended PIK income remain uncommon and are mostly contained to lower-quality segments. Declining base rates have provided some relief to borrowers, but they also present a challenge for private credit lenders, as income from floating rate loans is expected to decrease. Consequently, distribution yields for private credit funds are projected to fall by as much as 1% next year. In this environment, investors should prioritize high-quality loan portfolios with lower leverage, as these are likely to experience smaller reductions in distributions.

Market conditions and performance within private real estate have diverged across geographies and subsectors over that last few years and those dynamics persisted through Q3, though the cost of capital remains the most significant factor affecting commercial real estate activity and deal flow. The uneven pace of interest rate cuts across global real estate markets has created opportunities in some regions but amplified challenges in others. In Europe, a more consistent and predictable rate-cutting cycle has led to a decline in long-term bond yields, easing valuation pressures. Conversely, in the U.S., persistent concerns around inflation and government spending have kept long rates elevated. Despite this, several constructive tailwinds are beginning to take hold. Broadly, supply is moderating, rate cuts are expected to continue, vacancies are declining, and valuations in many sectors appear to be at or near cyclical lows, leading some strategists to believe the recent bottom in real estate is behind us and performance is poised to return to target levels.

Within private infrastructure, digitalization, electrification, and supply chain restructuring remain key themes that have been driving sustained demand for capital-intensive physical infrastructure and natural resources since COVID-19, and more recently, the proliferation of artificial intelligence, started impacting economies. Data centers have been a staple in headlines recently, and for good reasons. Their electricity consumption is expected to drive a surge in demand over the next ten years and beyond after staying relatively flat for the last decade plus, implying a substantial build-out of power and grid assets will be needed. Industry experts suggest that meeting future energy demand will require an "all-of-the-above" energy mix, and cash-flow-generating real assets could be a potential source of both return and diversification in this evolving landscape. Many energy and materials providers remain attractively valued, which could also be a tailwind for the space as valuations remain stretched in other pockets of the market.



Growth	9/30/2025	6/30/2025
GDP Growth	3.8%*	3.8%
U.S. Leading Economic Indicator (YoY%)	-3.6%**	-4.0%
Unemployment Rate (%)	4.3%	4.1%
Initial Claims (Weekly as of 9/19/25, thousands)	218.0	232.0
Industrial Production (YoY%)	0.9%	0.9%
Consumer Sentiment	55.1	60.7
ISM Manufacturing Index	49.1	49.0
ISM Non-Manufacturing Index	50.0	50.8
Retail Sales (YoY%)	5.0%**	4.4%
Building Permits (mil)	1.33**	1.39

Inflation	9/30/2025	6/30/2025
Headline CPI (YoY)	2.9%**	2.7%
Core CPI (YoY)	3.1%**	2.9%
Core PCE (YoY)	2.9%**	2.8%
Forward Breakeven Inflation Expectation (5-year)	2.3%	2.4%

*GDP Now estimate as of 10/7/2025

**As of 8/30/2025

Source: Bloomberg and Federal Reserve Bank of Atlanta

Market Sentiment	9/30/2025	6/30/2025
MOVE Index	77.9	90.3
VIX Index	16.3	16.7
National Financial Conditions Index (NFCI)	-0.55	-0.51

Rates & Credit Conditions	9/30/2025	6/30/2025	10-Year Average
3-M U.S. Treasury	3.9%	4.3%	2.1%
10-YR U.S. Treasury	4.2%	4.2%	2.6%
Spreads over 10-YR U.S. Treasuries (bps)			
U.S. Corporate Investment Grade	66	76	115
U.S. Corporate High Yield	255	283	401
U.S. Municipal	-49	-27	-12

Federal Reserve Economic Projections	2025	2026	2027
Real GDP (YoY%)	1.8%	1.8%	2.0%
PCE Price Index (YoY%)	2.7%	2.7%	2.2%
Core PCE (YoY%)	2.9%	2.9%	2.3%
Unemployment %	4.3%	4.4%	4.3%

Definitions

Term	Definition
CBOE Volatility Index (VIX)	The CBOE Volatility Index (VIX) reflects the market's real-time expectation of 30-day forward-looking volatility. It is created by the Chicago Board of Options Exchange (CBOE).
National Financial Conditions Index (NFCI)	The Chicago Fed's National Financial Conditions Index (NFCI) provides a comprehensive weekly update on U.S. financial conditions in money markets, debt and equity markets, and the traditional and "shadow" banking systems
Consumer Confidence Index	The Consumer Confidence Index is a measure based on a survey administered by The Conference Board that reflects prevailing business conditions and likely developments for the months ahead. This monthly report details consumer attitude, buying intentions, vacation plans, and consumer expectations for inflation, stock prices, and interest rates.
Consumer Price Index	The Consumer Price Index (CPI) is a measure of the average change over time in the prices paid by urban consumers for a market basket of consumer goods and services.
Core Inflation	Core Inflation is a measure of economic inflation that excludes food and energy
Headline Inflation	Headline Inflation is a measure of the total economic inflation that includes food and energy prices
ISM Manufacturing Index	The ISM Manufacturing Index, also known as the purchasing managers' index (PMI), is a monthly indicator of U.S. economic activity based on a survey of executives covering all North American Industry Classification System's businesses in the manufacturing sector.
ISM Non-Manufacturing Index	The ISM Non-Manufacturing Index is a monthly indicator of U.S. economic activity based on a survey of executives covering all North American Industry Classification System's businesses in the services (or non-manufacturing) sector.
Leading economic indicators (LEI)	Leading economic indicators (LEI) are statistics that precede economic events. They predict the next phase of the business cycle.
Merrill Lynch Option Volatility Estimate Index (MOVE Index)	The MOVE index, or Merrill Lynch Option Volatility Estimate Index, is a gauge of interest rate volatility in the U.S. Treasury market. It is calculated from options prices, which reflect the collective expectations of market participants about future volatility. The index measures the implied volatility of U.S. Treasury options across various maturities
OECD Composite leading indicators (CLIs)	The OECD Composite leading indicators (CLIs), designed to anticipate turning points in economic activity relative to trend
Personal Consumption Expenditures Price Index (PCE)	Personal Consumption Expenditures Price Index (PCE) is a measure of the prices that people living in the United States, or those buying on their behalf, pay for goods and services. The PCE price index is known for capturing inflation (or deflation) across a wide range of consumer expenses and reflecting changes in consumer behavior
The Federal Funds Rate	The Federal Funds Rate is the target interest rate range at which commercial banks borrow and lend their excess reserves to each other overnight, which is set by the Federal Open Market Committee (FOMC)
Treasury Bill (T-Bill)	A Treasury Bill (T-Bill) is a short-term U.S. government debt obligation backed by the Treasury Department with a maturity of one year or less
U-3 unemployment rate	The U-3 unemployment rate is the most commonly reported rate in the United States, representing the number of unemployed people actively seeking a job
United States Industrial Production	United States Industrial production refers to the output of industrial establishments and covers sectors such as mining, manufacturing, electricity, gas and steam and air-conditioning. This indicator is measured in an index based on a reference period that expresses change in the volume of production output
Consumer Sentiment	Consumer Sentiment is represented by The University of Michigan Consumer Sentiment Index which rates the relative level of current and future economic conditions.
Building Permits	Building Permits measures the change in the number of new building permits issued by the government. Building permits are a key indicator of demand in the housing market.
Retail Sales	Retail sales are an economic metric that tracks consumer demand for finished goods. This figure is a very important data set as it is a key monthly market-moving event. Retail sales are reported each month by the U.S. Census Bureau and indicate the direction of the economy.
Industrial Production	Industrial production refers to the output of industrial establishments and covers sectors such as mining, manufacturing, electricity, gas and steam and air-conditioning. This indicator is measured in an index based on a reference period that expresses change in the volume of production output.
Initial Claims	Initial claims refers to the government report on the number of workers applying for unemployment benefits for the first time following job loss.
U.S. Dollar Index (DXY)	The U.S. Dollar Index (DXY) is an index of the value of the United States dollar relative to a basket of foreign currencies, often referred to as a basket of U.S. trade partners' currencies. The Index goes up when the U.S. dollar gains "strength" (value) when compared to other currencies.

Disclaimer

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Label	Index	Index Description
U.S. Agg	Bloomberg U.S. Aggregate Bond Index	The Bloomberg U.S. Aggregate Bond Index is a broad-based flagship benchmark that measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market. The index includes Treasuries, government-related and corporate securities, MBS (agency fixed-rate pass-throughs), ABS, and CMBS (agency and non-agency).
Global Agg ex USD	Bloomberg Global Aggregate Index	The Bloomberg Global Aggregate Index is a flagship measure of global investment grade debt from twenty-four local currency markets. This multi-currency benchmark includes Treasury, government-related, corporate, and securitized fixed-rate bonds from both developed and emerging markets issuers.
Municipal	Bloomberg Municipal Bond Index	The Bloomberg Municipal Bond Index covers the U.S. dollar-denominated long-term tax-exempt bond market. The index has four main sectors: state and local general obligation bonds, revenue bonds, insured bonds, and pre-refunded bonds.
Russell 3000	Russell 3000 Index	The Russell 3000 Index measures the performance of the largest 3,000 U.S. companies representing approximately 98% of the investable U.S. equity market. It is constructed to provide a comprehensive, unbiased, and stable barometer of the broad market and is completely reconstituted annually to ensure new and growing equities are included.
S&P 500	S&P 500 Index	The S&P 500 Index is a market capitalization-weighted index of 500 widely held stocks often used as a proxy for the stock market. It measures the movement of the largest issues. Standard and Poor's chooses the member companies for the 500 based on market size, liquidity, and industry group representation. Included are the stocks of eleven different sectors.
MSCI EAFE (Dev)	MSCI EAFE Index	The MSCI EAFE Index (Europe, Australasia, Far East) captures large- and mid-cap representation across developed markets countries around the world, excluding the U.S. and Canada. The index covers approximately 85% of the free float-adjusted market capitalization in each country.
MSCI Emerging Markets	MSCI Emerging Markets Index	The MSCI Emerging Markets Index captures large- and mid-cap representation across emerging markets countries across the world. The index covers approximately 85% of the free float-adjusted market capitalization in each country.
HFRI FoF Comp.	HFRI Fund of Funds Composite Index	The HFRI Fund of Funds Composite Index is an equally weighted hedge fund of funds benchmark composed of global constituent funds. The underlying constituents are typically diversified among multiple managers and styles to provide a comprehensive representation of the hedge fund of funds investment space.
Nareit Developed Real Estate	FTSE EPRA/NAREIT Developed Index	The FTSE EPRA/NAREIT Developed Index is designed to track the performance of listed real estate companies and REITs worldwide. Index constituents are free float-adjusted, subject to liquidity, size, and revenue screening for inclusion.
BBG Commodity	Bloomberg Commodity Index	The Bloomberg Commodity Index reflects commodity futures price movements and is calculated on an excess return basis. The index rebalances annually weighted 2/3 by trading volume and 1/3 by world production, and weight-caps are applied at the commodity, sector, and group level for diversification. The roll period typically occurs from the 6th-10th business day based on the roll schedule.
Developed World	MSCI World Index	The MSCI World Index captures large- and mid-cap representation across developed markets countries. The index covers approximately 85% of the free float-adjusted market capitalization in each country.
Asia Pacific	MSCI AC Asia Pacific Index	The MSCI AC Asia Pacific Index captures large and mid cap representation across 5 Developed Markets countries and 8 Emerging Markets countries in the Asia Pacific region. With 1,537 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.
Asia Pacific ex Japan	MSCI AC Asia Pac ex. Japan	The MSCI AC Asia Pacific ex Japan Index captures large and mid cap representation across 4 of 5 Developed Markets countries (excluding Japan) and 9 Emerging Markets countries in the Asia Pacific region. With 1,312 constituents, the index covers approximately 85% of the free float-adjusted market capitalization in each country.
Europe	MSCI Europe Index	The MSCI Europe Index captures large- and mid-cap representation across developed markets countries in Europe. The index covers approximately 85% of the free float-adjusted market capitalization across the European developed markets equity universe.
Comm. Services	S&P 500 Communication Services	The S&P 500® Communication Services comprises those companies included in the S&P 500 that are classified as members of the GICS® communication services sector.
Info Tech	S&P 500 Information Technology	The S&P 500® Information Technology comprises those companies included in the S&P 500 that are classified as members of the GICS® information technology sector.
Consumer Disc.	S&P 500 Consumer Discretionary	The S&P 500® Consumer Discretionary comprises those companies included in the S&P 500 that are classified as members of the GICS® Consumer Discretionary sector.
Industrials	S&P 500 Industrials	The S&P 500® Industrials comprises those companies included in the S&P 500 that are classified as members of the GICS® industrials sector.
Materials	S&P 500 Materials	The S&P 500® Materials comprises those companies included in the S&P 500 that are classified as members of the GICS® materials sector.
Energy	S&P 500 Energy	The S&P 500® Energy comprises those companies included in the S&P 500 that are classified as members of the GICS® energy sector.
Real Estate	S&P 500 Real Estate	The S&P 500® Real Estate comprises those companies included in the S&P 500 that are classified as members of the GICS® Real Estate sector.
Financials	S&P 500 Financials	The S&P 500® Financials comprises those companies included in the S&P 500 that are classified as members of the GICS® financials sector.
Consumer Staples	S&P 500 Consumer Staples	The S&P 500® Consumer Staples comprises those companies included in the S&P 500 that are classified as members of the GICS® consumer staples sector.
Health Care	S&P 500 Health Care	The S&P 500® Health Care comprises those companies included in the S&P 500 that are classified as members of the GICS® health care sector.
Utilities	S&P 500 Utilities	The S&P 500® Utilities comprises those companies included in the S&P 500 that are classified as members of the GICS® utilities sector.
ABS	Bloomberg US Asset-Backed Securities Index	The Bloomberg US ABS Index is a broad-based flagship benchmark that measures the investment grade, US dollar-denominated, fixed-rate taxable bond market. The index only includes ABS securities.
U.S. High Yield	Bloomberg U.S. Corporate High-Yield Index	The Bloomberg U.S. Corporate High-Yield Index measures the U.S. dollar-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 Barclays EM country definition, are excluded.
MBS	Bloomberg U.S. Mortgage-Backed Securities Index	The Bloomberg Mortgage-Backed Securities Index tracks fixed-rate agency mortgage-backed pass-through securities guaranteed by Ginnie Mae (GNMA), Fannie Mae (FNMA), and Freddie Mac (FHLMC). The index is constructed by grouping individual TBA-deliverable MBS pools into aggregates or generics based on program, coupon, and vintage.
TIPS	Bloomberg U.S. Treasury Inflation Notes 1-10 Year Index	The Bloomberg U.S. Treasury Inflation Notes 1-10 Year Index measures the performance of the U.S. Treasury Inflation-Protected Securities (TIPS) market with less than 10 years to maturity. TIPS are inflation-protected bonds (IPBs) that are issued by the U.S. Treasury. Their face value is pegged to the CPI and adjusted in step with changes in the rate of inflation.
Treasuries	Bloomberg U.S. Treasury Index	The Bloomberg U.S. Treasury Index measures U.S. dollar-denominated, fixed-rate, nominal debt issued by the U.S. Treasury. Treasury bills are excluded by the maturity constraint but are part of a separate Short Treasury Index. STRIPS are excluded from the index because their inclusion would result in double-counting.
EM Debt	Bloomberg Emerging Markets Tradeable Debt Index: Total Return	This index measures the performance of emerging market debt on a total return basis

Label	Index	Index Description
Precious Metals	Bloomberg Precious Metals Subindex	Formerly known as Dow Jones-UBS Precious Metals Subindex (DJUBSPR), the index is a commodity group subindex of the Bloomberg CI. It is composed of futures contracts on gold and silver. It reflects the return of underlying commodity futures price movements only and is quoted in USD.
Industrial Metals	Bloomberg Industrial Metals Subindex	Formerly known as Dow Jones-UBS Industrial Metals Subindex (DJUBSIN), the index is composed of futures contracts on aluminum, copper, nickel and zinc. It reflects the return of underlying commodity futures price movements only. It is quoted in USD.
Energy	Bloomberg Energy Subindex	Formerly known as Dow Jones-UBS Energy Subindex (DJUBSEN), the index is a commodity group subindex of the Bloomberg CI. It is composed of futures contracts on crude oil, heating oil, unleaded gasoline and natural gas. It reflects the return of underlying commodity futures price movements only and is quoted in USD.
MLPs	Alerian MLP Index	The Alerian MLP Index is a float-adjusted, capitalization-weighted index whose constituents earn most of their cash flow from midstream activities involving energy commodities. It tracks energy infrastructure Master Limited Partnerships (MLPs).
Real Estate/REITs	FTSE EPRA/NAREIT Developed Index	The FTSE EPRA/NAREIT Developed Index is designed to track the performance of listed real estate companies and REITs worldwide. Index constituents are free float-adjusted, subject to liquidity, size, and revenue screening for inclusion.
Infrastructure	S&P Global Infrastructure Index	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.
Agriculture	Bloomberg Agriculture Subindex	Formerly known as Dow Jones-UBS Agriculture Subindex (DJUBSAG), the index is a commodity group subindex of the Bloomberg CI. It is composed of futures contracts on coffee, corn, cotton, soybeans, soybean oil, soybean meal, sugar and wheat. It reflects the return of underlying commodity futures price movements only and is quoted in USD.
Fund of Funds	HFRI Fund of Funds Composite Index	The HFRI Fund of Funds Composite Index is an equally weighted hedge fund of funds benchmark composed of global constituent funds. The underlying constituents are typically diversified among multiple managers and styles to provide a comprehensive representation of the hedge fund of funds investment space.
Equity Hedge Funds	HFRI Equity Hedge Index	The HFRI Equity Hedge Index is an equally weighted hedge fund benchmark composed of investment managers who maintain both long and short positions, primarily in equity and equity derivative securities. Equity hedge managers typically maintain at least 50% exposure to, and may in some cases be entirely invested in, equities, both long and short.
Global Macro	HFRI Macro Index	The HFRI Macro Index is an equally weighted hedge fund benchmark composed of 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.
Event-Driven	HFRI Event-Driven Index	The HFRI Event-Driven Index is an equally weighted hedge fund benchmark composed of 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. Event-driven exposure includes a combination of sensitivities to equity markets, credit markets, and idiosyncratic, company-specific developments.
Relative Value	HFRI Relative Value Index	The HFRI Relative Value Index is an equally weighted hedge fund benchmark composed of investment managers who maintain positions in which the investment thesis is predicated on the 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 can range broadly across equity, fixed income, derivative, or other security types.
Private Real Estate	NCREIF Property Index	The NCREIF Property Index is a quarterly, unleveraged composite total return for private commercial real estate properties held for investment purposes only. Constituents include operating apartment, hotel, industrial, office, and retail properties.
U.S. Large Cap	Russell 1000 Index	The Russell 1000 Index measures the performance of the large-cap segment of the U.S. equity universe. It is a subset of the Russell 3000 Index representing approximately 90% of the total market capitalization of that index. It includes approximately 1,000 of the largest securities based on a combination of their market cap and current index membership.
U.S. Mid Cap	Russell Midcap Index	The Russell Midcap Index measures the performance of the mid-cap segment of the U.S. equity universe. The Russell Midcap Index is a subset of the Russell 1000 Index. It includes approximately 800 of the smallest securities based on a combination of their market cap and current index membership. The Russell
U.S. Small Cap	Russell 2000 Index	The Russell 2000 Index measures the performance of the small-cap segment of the U.S. equity universe. It is a subset of the Russell 3000 Index representing approximately 10% of the total market capitalization of that index. It includes approximately 2,000 of the smallest securities based on a combination of their
U.S. Core	Russell 1000 Index	The Russell 1000 Index measures the performance of the large-cap segment of the U.S. equity universe. It is a subset of the Russell 3000 Index representing approximately 90% of the total market capitalization of that index. It includes approximately 1,000 of the largest securities based on a combination of their
U.S. Value	Russell 1000 Value Index	The Russell 1000 Value Index measures the performance of the large-cap value segment of the U.S. equity universe. It includes those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.
U.S. Growth	Russell 1000 Growth Index	The Russell 1000 Growth Index measures the performance of the large-cap growth segment of the U.S. equity universe. It includes those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.
International Large Cap	MSCI All Country World ex. U.S. Index	The MSCI All Country World ex U.S. Index captures large- and mid-cap representation across developed and emerging markets countries, excluding the U.S. The index covers approximately 85% of the global equity opportunity set outside the U.S.
International Mid Cap	MSCI All Country World ex. U.S. Mid Cap Index	The MSCI ACWI ex USA Mid Cap Index captures mid cap representation across 22 Developed Markets (DM) and 24 Emerging Markets (EM) countries*. With 1,208 constituents, the index covers approximately 15% of the free float-adjusted market capitalization in each country.
International Small Cap	MSCI All Country World ex. U.S. Small Cap Index	The MSCI ACWI ex USA Small Cap Index captures small cap representation across 22 of 23 Developed Markets (DM) countries (excluding the US) and 24 Emerging Markets (EM) countries*. With 4,263 constituents, the index covers approximately 14% of the global equity opportunity set outside the US.
International Core	MSCI All Country World ex. U.S. Index	The MSCI All Country World ex U.S. Index captures large- and mid-cap representation across developed and emerging markets countries, excluding the U.S. The index covers approximately 85% of the global equity opportunity set outside the U.S.
International Value	MSCI All Country World ex. U.S. Value Index	The MSCI ACWI ex USA Value Index captures large and mid cap securities exhibiting overall value style characteristics across 22 Developed and 24 Emerging Markets countries*. The value investment style characteristics for index construction are defined using three variables: book value to price, 12-month forward
International Growth	MSCI All Country World ex. U.S. Growth Index	The MSCI ACWI ex USA Growth Index captures large and mid cap securities exhibiting overall growth style characteristics across 22 Developed Markets (DM) countries and 24 Emerging Markets (EM) countries*. The growth investment style characteristics for index construction are defined using five variables: long-term forward EPS growth rate, short-term forward EPS growth rate, current internal growth rate and long-term historical EPS growth trend and long-