



Research

# Capital Market Assumptions: A Comprehensive Global Approach for the Next 20 Years

We believe that asset returns over the next 20 years will be lower than their long-term averages, with stocks outperforming bonds and emerging markets generating the highest returns.

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## KEY TAKEAWAYS

- Our long-term capital market assumption for U.S. equities is below long-term average returns due to lower growth potential and higher starting valuations.
- Emerging-market stocks represent the most attractive area for public market return expectations due to favorable growth prospects and better starting valuations.
- Fixed income return expectations are higher than last year due to higher starting bond yields.
- Higher-than-expected inflation would likely hurt most equity and fixed income returns, with long-duration nominal fixed income facing the most risk from higher inflation.
- If productivity growth were to surprise to the upside, we would expect stock and bond returns to be higher than our baseline expectations, with stocks likely benefiting the most.

## Expectations based on our 2023 capital market assumptions<sup>1</sup>

### U.S. Equities

- For U.S. stocks, we expect a 3.9% annualized real return through 2042, nearly half the 7.3% average since 2003 and far below the 7.1% advance since 1926. Our 20-year real return estimate increased from 3.0% in 2022. Risk-adjusted return estimates remain lower than their historical norms.
- Valuations for U.S. stocks remain elevated compared with the rest of the world. We believe they will converge closer to those of other developed markets over time.
- However, if productivity growth were to pick up, stocks would benefit from higher earnings and a stronger valuation backdrop.

### U.S. Bonds

- We expect bond markets to produce a real return of 2.1% annualized over the next 20 years, vs. 2.0% a year historically (since 1926). This estimate rose from 1.9% in 2022, largely influenced by higher yields that increased the attractiveness of new bond investments.
- One meaningful risk is that higher-than-expected inflation over the next two decades could reduce the returns of long-duration nominal fixed-income assets, such as 30-year Treasury bonds.

## EXHIBIT 1: EM equities have the highest real return potential over the long term.

Fidelity Secular CMA Return and Volatility Estimates

ASSET CLASS	REAL RETURNS	NOMINAL RETURNS	VOLATILITY
EM Equity	5.4%	8.1%	24%
Global Equities (ex-U.S.)	3.9%	6.6%	19%
U.S. Equities	3.9%	6.6%	17%
U.S. High Yield	3.7%	6.4%	12%
DM Equities (ex-U.S.)	3.4%	6.1%	19%
Commodities (BCOM)	2.6%	5.3%	21%
Developed non-U.S. Bonds USD Hedged	2.3%	5.0%	6%
U.S. Bonds (Agg)	2.1%	4.8%	7%
U.S. TIPS	1.9%	4.6%	9%
Municipal Bonds	1.8%	4.5%	8%
Developed non-U.S. Sovereign Debt USD Hedged	1.7%	4.4%	6%
U.S. 10-Year Treasury Bond	1.5%	4.2%	9%
U.S. 30-Year Treasury Bond	1.0%	3.7%	12%
U.S. Cash	0.6%	3.3%	3%

**Our CMAs are forward-looking estimates but are not presented as investment recommendations or guarantees of actual future performance.**

Volatility: Standard deviation of returns. See appendix for index details. Real returns are geometric annualized average return expectations over 20 years, adjusted for inflation. Source: Fidelity Investments (AART), as of 4/30/23.

## Emerging-Market Equities

- Emerging equities may represent the most promising area in the public markets, due to our expectations for higher real GDP growth and low starting valuations.
- We anticipate a 5.4% real return for emerging markets in the next 20 years, compared with a 6.4% real return over the past two decades.

## Developed-Market Equities (ex-U.S.)

- We expect most non-U.S. developed countries, including Japan and several in Western Europe, to lag the real GDP growth of the U.S. through 2042, mainly due to weaker demographics. This is expected to keep earnings growth subdued relative to the U.S. and emerging markets.

- Return estimates for developed-equity markets outside the U.S. are 3.4% in real terms over the next 20 years, lagging U.S. stocks. We expect a diminished return for developed non-U.S. markets versus the long-term historical average, and slightly higher volatility compared with the U.S., based on a higher concentration of more-cyclical sectors. Also, we expect the dollar to weaken over the next 20 years, supporting the returns of non-U.S. assets.

## U.S. Bonds vs. U.S. Stocks

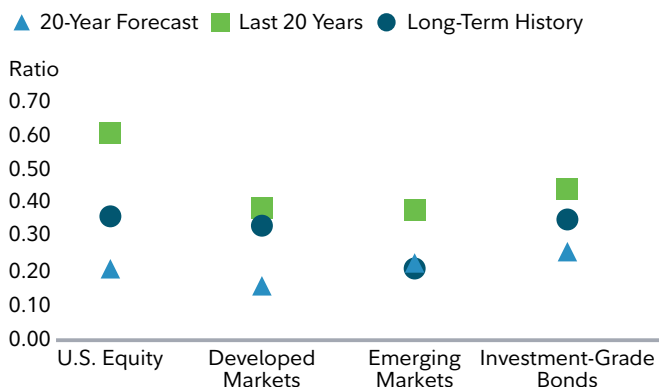
We expect the lower return environment will result in less attractive risk-adjusted returns for global equities compared with the historical average, with Sharpe ratios remaining relatively even across core stock and bond categories (Exhibit 2).

### EXHIBIT 2: Risk-adjusted return estimates for equities are now lower than their historical levels.

Historical and Forecasted Geometric Average Returns

REAL GEOMETRIC ANNUALIZED AVG RETURNS	20-YEAR FORECAST	LAST 20 YEARS	LONG-TERM HISTORY
U.S. Equity	3.9%	7.3%	7.1%
Developed Markets (ex-U.S.)	3.4%	4.9%	5.3%
Emerging Markets	5.4%	6.4%	4.3%
Investment-Grade Bonds	2.1%	0.6%	2.0%
Cash	0.6%	-1.3%	0.4%

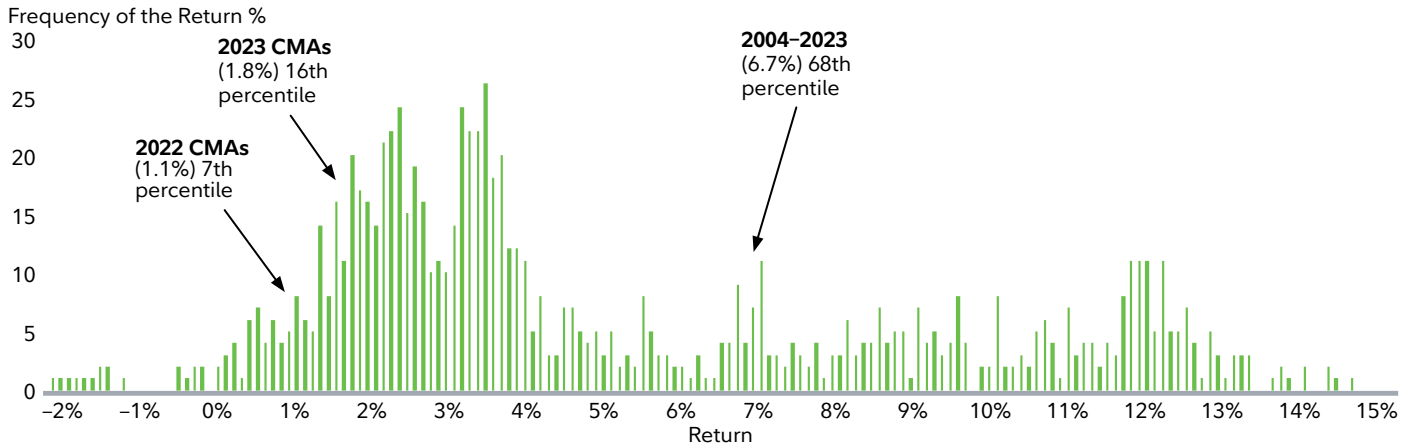
Historical and Forecasted Sharpe Ratios



Real annualized returns calculated as geometric average returns. Long-term history: since 1926. Sharpe ratio compares portfolio returns above the risk-free rate relative to overall portfolio volatility, with a higher Sharpe ratio implying better risk-adjusted returns. Past performance is no guarantee of future results. You cannot invest directly in an index. Asset-class total returns are represented by indexes from the following sources: Fidelity Investments, MSCI, Bloomberg Finance L.P. Source: Fidelity Investments proprietary analysis of historical asset class returns, as of 4/30/23.

**EXHIBIT 3: Over the next 20 years, we expect U.S. equities to outperform bonds by a smaller margin than they did during the past 20 years.**

U.S. Equity Excess Returns over Investment-Grade Bonds (1926–2023)



Past performance is no guarantee of future results. U.S. Equities—Dow Jones U.S. Total Stock Market Index; Investment-Grade Bonds—Bloomberg U.S. Aggregate Bond Index. Source: Fidelity Investments (AART), as of 4/30/23.

Our forecasts estimate a 1.8% gap between the real returns of U.S. equities and U.S. investment-grade bonds. Our estimate is currently in the 16th percentile relative to history, higher than last year but significantly lower than the previous two decades (Exhibit 3).

**Scenario analysis: Other factors could lead to higher or lower returns**

Our CMAs are 20-year estimates. We acknowledge a range of outcomes can influence returns, volatility levels, and asset correlations. In the next few exhibits, we illustrate how realized returns can differ from our forecasts and explore some of the key factors driving the differences. These scenarios include shifts in growth and inflation regimes.

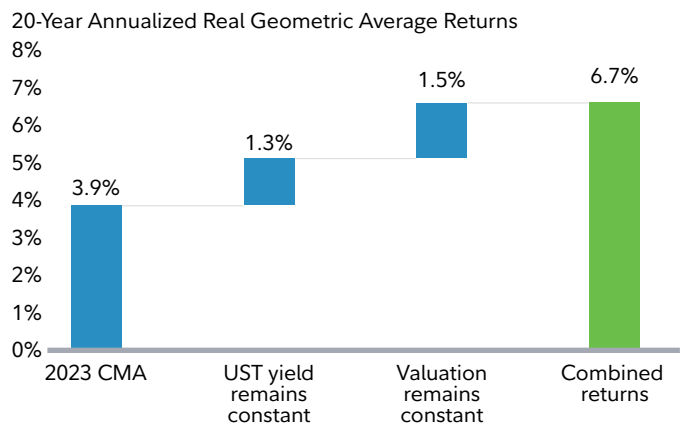
Exhibit 4 illustrates how varied yield and valuation scenarios could lead to higher U.S. equity returns over the next two decades. For example, if interest rates (U.S. Treasury yields) remain at roughly 2023 levels over the next 20 years, U.S. equities would gain an additional 1.3% per year, as a lower interest expense would boost earnings.

If valuations do not revert lower, as they do in our estimates, equity returns would be 1.5% higher on an annual basis.

While these factors are correlated and may not result in a real U.S. equity return of 6.7%, this example is meant to emphasize how different macro scenarios could lead to varied outcomes.

**EXHIBIT 4: Varied yield and valuation scenarios could result in different realized U.S. equity returns.**

U.S. Equity CMA Yield and Valuation Scenarios



Source: Fidelity Investments, as of 4/30/23.

### The impact of inflation on returns

Inflation is a prime example of how varying yield and valuation trajectories can impact our CMAs (Exhibit 5). High and unexpected inflation tends to weigh on the real returns of both stocks and bonds—especially bonds.

- Within fixed income categories, higher inflation often corresponds with more inflation uncertainty, which tends to increase nominal bond yields and bring down real returns.
- On the equity side, the upward pressure that inflation puts on interest rates can drag on returns by bringing down valuations, increasing interest expense, and reducing the incentive to use leverage. All three factors can dampen profit margins and earnings potential.

### The impact of productivity on returns

We have also modeled CMAs under different productivity scenarios, which we discuss in our paper, “A Strategic Allocator’s Guide to Productivity and Profits.” We see potential for an upside scenario to productivity

driven by higher capital spending linked to recent breakthroughs in artificial intelligence technologies, the necessity of addressing climate change and the energy transition, and geopolitical regionalization efforts including reshoring, onshoring, and near-shoring.

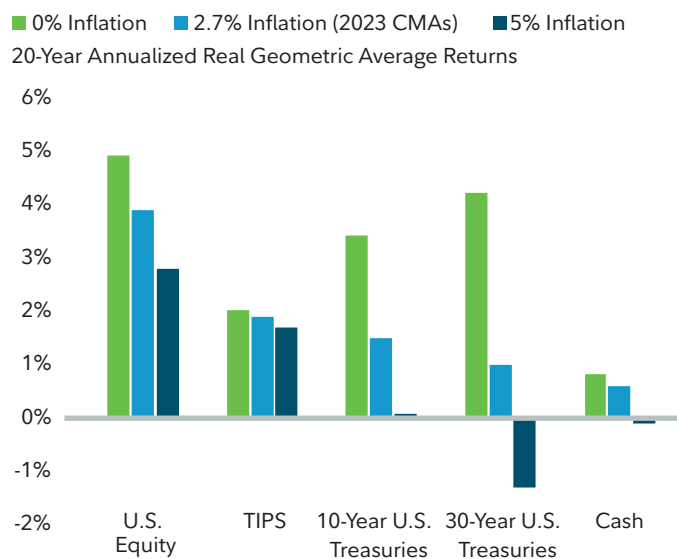
Under this scenario, we assume the U.S. returns to peak capex growth rates of 50% of EBITDA, resulting in a 0.5% average productivity increase per year, which corresponds with a 0.5% annual real GDP increase over the next 20 years.

Both equities and bonds would benefit under this scenario with equities seeing the largest positive impact. (Exhibit 6).

- An increase in productivity would have a positive impact on equity earnings. It would also lower inflation, resulting in higher equity valuations.
- Fixed income categories would also benefit from higher productivity due to a combination of higher real GDP and lower inflation, which would increase real yields.

**EXHIBIT 5: High inflation is a drag on real returns, especially for nominal fixed income.**

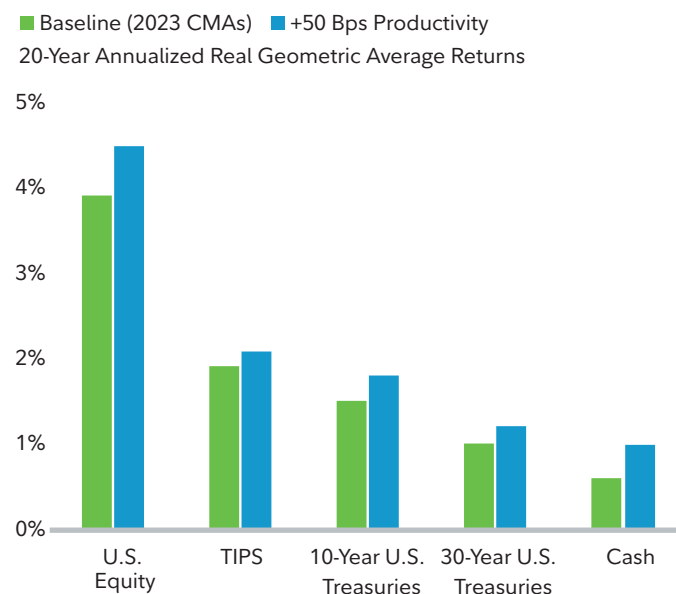
Asset Class CMA Inflation Scenarios



Source: Fidelity Investments as of 4/30/23.

**EXHIBIT 6: High productivity would raise real returns, especially for equity.**

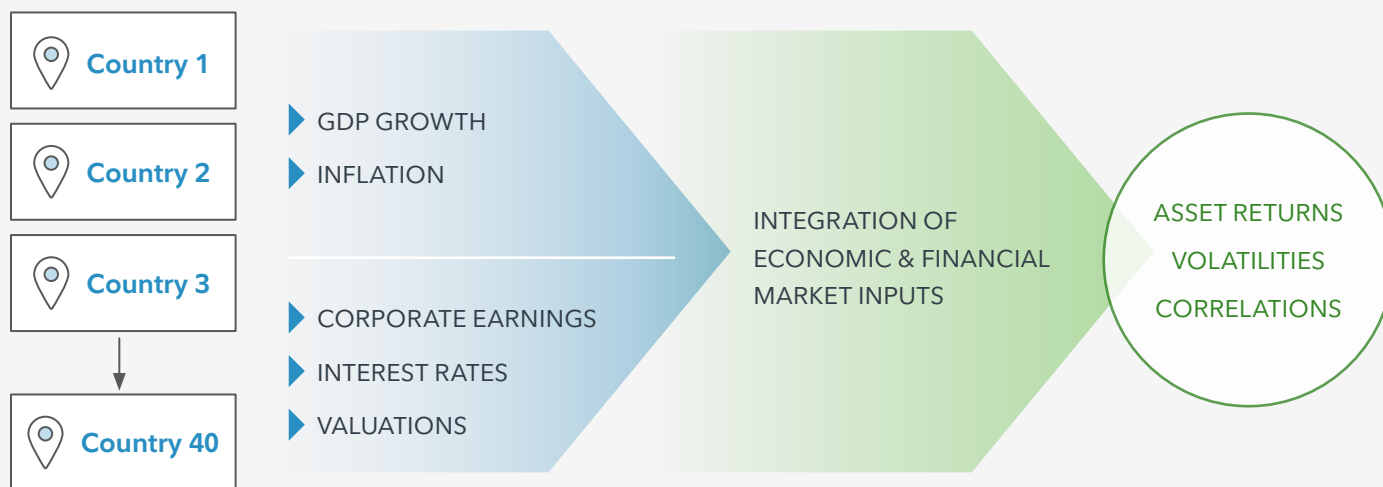
Asset Class CMA Productivity Scenario



Source: Fidelity Investments as of 4/30/23.

## Fidelity CMA process details

**EXHIBIT 7: Our CMA process is global, forward-looking, and dynamic.**



For illustrative purposes only. Source: Fidelity Investments (AART).

### Details of our CMA framework and philosophy

Product and investment decisions reflect an asset manager's views of a client goals, needs, and sensitivities, as well as views on the expected performance of different assets across the capital markets. For example, the amount of retirement income in a liquid payout solution depends on the asset manager's views and decisions on the portfolio's allocation, expected returns and volatility, and client needs. The following section provides greater detail regarding our methodology for estimating asset-class returns and volatility.

#### Our beliefs

Long-term capital market assumptions (CMAs) can serve as valuable inputs for investment decisions. These assumptions can help financial advisors position their clients to reach their long-term goals; assist institutional money managers in making strategic asset allocation decisions; and aid pension fund managers in creating assumptions on equity returns and interest rates in supporting their decisions for managing defined benefit plans.

Our CMA framework focuses on the specifics of how economic and financial market inputs influence asset returns over long periods of time (Exhibit 7). While other

approaches assume the connection between GDP growth and asset returns is either perfect or nonexistent, our framework is built on the following beliefs:

- There is a principal relationship between economic trends and asset-class performance.
- By deriving country-specific assumptions, we generate estimates that are global and adaptive across diverse economies and asset categories.

#### What makes our CMAs different

We focus on a 20-year horizon to build our secular (long-term) CMAs to align with investment planning and portfolio construction considerations.

While secular CMAs are intended primarily for strategic allocation decisions, we develop other types of forecasts for shorter-horizon decisions. As an example, our business cycle research focuses on economic trends, which form a basis for return and volatility patterns over shorter time horizons to add value through active asset allocation. (See our "Quarterly Market Update" and "Business Cycle Update" series for more details.)

We develop 20-year forecasts because asset returns often deviate significantly from long-term historical averages, providing opportunity for forward-looking estimates to add to an investment process. Since 1926,

20-year real (inflation-adjusted) equity market returns have averaged 7.1%, but have ranged from 0% to 14% due to differences in the economic growth and inflation landscape, valuations, and the interest rate environment.

We believe our CMA research process provides a better sense of whether the next 20 years will be on the high or low end of historical outcomes. We therefore incorporate the core themes of global GDP growth with a deep consideration of the current capital market composition.

**A global perspective**

Lastly, by adapting to today’s global environment, in which developing countries account for a growing share of the world economy and the investment universe, our approach avoids the limitations of backward-looking data that can be dominated by the history of the U.S. and other developed markets.

Our multidimensional, scalable approach—based on fundamentals such as growth, earnings, and valuation—

can be applied to diverse economies to provide the building blocks for CMAs at the country, sector, and sub-asset-class level. The 20-year time horizon is flexible enough to capture shifts in the economic and market landscape but stable enough to serve as assumptions for long-term investment strategies.

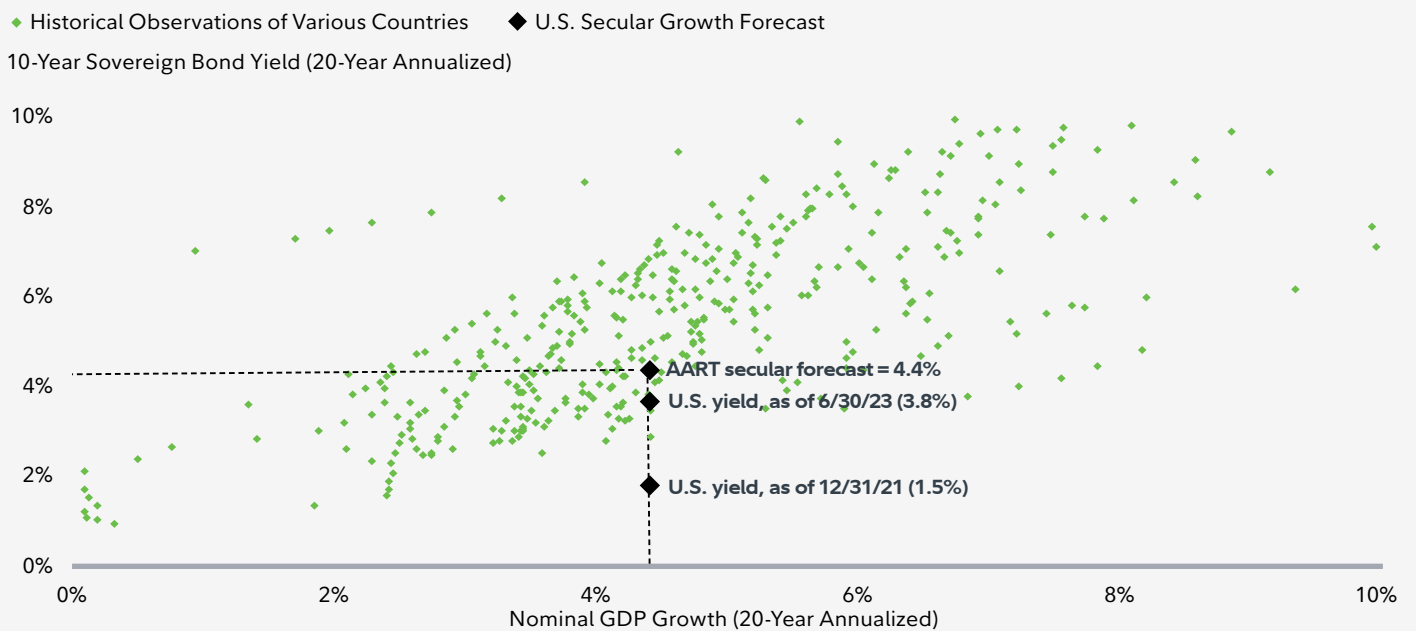
By focusing on the specifics of how GDP growth and assets returns are related—and how they differ—our approach avoids the overly simplistic assumptions of some CMA frameworks.

**Our forward-looking approach**

A dynamic blending of market composition, profit margins, interest rates, debt levels, inflation, and our first-in-class GDP growth forecasts can produce a thoughtful forward-looking view that limits the dependence on historical averages. The basis for our asset return assumptions is our 20-year forecast of gross domestic product (GDP) growth for the 40 largest countries in the MSCI All Country World Index,

**EXHIBIT 8: Government bond yields and GDP growth have been highly correlated over the long term.**

Nominal GDP Growth vs. Sovereign Bond Yields, 1985–2023



GDP: Gross Domestic Product. Source: Official country estimates, Haver Analytics, Bloomberg Finance L.P., Fidelity Investments (AART), as of 4/30/23.

described in the Fidelity article, “Secular Outlook for Global Growth: the Next 20 Years.” Our forecasts are based on a panel approach that synthesizes trends across multiple countries. We believe this approach makes our forecasts more robust than those derived from individual country data.

## Return assumptions: A blend of economic and financial measures

Our secular rate outlook is based on the strong relationship between GDP and bond yields, since faster-growing economies are supported by more productive investment that justifies higher borrowing costs. Empirically, there have been deviations from this relationship during financial booms and subsequent busts, but over longer time horizons, higher rates of nominal GDP growth have generally coincided with higher interest rates.

### Fixed income

We base our fixed income return expectations on the assumption that sovereign—or government—bond yields will gravitate toward the rate of nominal economic growth in the long term. Specifically, we assume that the yield on 10-year U.S. Treasury bonds will converge nonlinearly to our nominal GDP forecast of 4.4% annually over a 20-year time horizon (Exhibit 8).

**Government bonds:** We believe falling bond prices will be a drag on future returns as yields rise over time, with longer-duration bonds expected to produce the lowest returns.<sup>2</sup> As yields rise, positive returns from higher coupon income—in addition to roll-down returns achieved as bonds mature along a positively sloped yield curve—could help offset the price depreciation, resulting in our estimate of 1.5% annualized real return for a constant maturity 10-year Treasury note and 1.0% for a constant maturity 30-year Treasury bond.<sup>3</sup>

**Investment-grade bonds:** The returns to credit-sensitive bonds are a function of both the “risk-free” rate calculated for government bonds and the additional return potentially generated by the credit spread, which compensates investors for the uncertainty and default risk of corporate bonds.<sup>4</sup> We also adjust returns to match the duration of the investment-grade bond universe, which is around 6.5 years.<sup>5</sup> Using these

assumptions, we arrived at our estimate of a 2.1% return for the Bloomberg Aggregate Bond Index over the next 20 years.<sup>6</sup> (Exhibit 1).

**Cash/Short-term debt:** Given our estimated government bond yields, we then calculate term premia to forecast potential returns of short-maturity government securities.<sup>7</sup> We form a forward-looking view of the yield curve by linking our term premia expectations to country-specific histories and the uncertainty about future growth and inflation, as reflected in the dispersion of forecasts among market observers. Due to the very short duration of cash, price depreciation from rising yields will be minimal, while the convergence to higher yields over time can increase coupon returns. Our resulting real return estimate for cash is low, but still positive at 0.6%.

### Equities

Corporate earnings growth is the bedrock of our forward equity view. We model future earnings growth by linking GDP growth and financial market inputs and then incorporate a forward-looking valuation estimate that is not based on historical averages.

**Earnings:** We base our earnings expectations on GDP growth prospects adjusted for the industry mix of the equity market, to reflect the productivity rates specific to the universe of publicly traded companies, rather than the productivity rate of the overall economy. For example, the equity market-capitalization weight of the highly productive U.S. technology sector significantly exceeds its weight in GDP, which implies that the productivity of the equity market exceeds overall economic productivity.<sup>8</sup> Also, interest rates and leverage are a significant driver of earnings growth. For example, higher leverage increases the return on equity while lower interest rates reduce interest costs, and provide a boost to earnings expectations. Recently, rising longer-term market yields have reduced our assumptions for equities.

**Valuations:** We develop estimates based on the key drivers of a country’s cyclically adjusted price-to-earnings (CAPE) multiple, such as market composition, growth, and inflation, rather than assuming that valuations will revert to historical averages. For instance, higher inflation rates tend to increase



uncertainty and risk premia, resulting in lower valuations. Also, a larger weight of high-valuation industries such as technology boosts valuations. For the U.S., we expect the CAPE to average 20x over the next 20 years, which is above its long-term average of 17x earnings. In the aggregate, our worldwide valuation estimates for the next 20 years are higher than historical averages, reflecting the increased importance of high-productivity industries and continued credibility of global central banks in containing inflationary pressures.

Whether a country's equity market return will be boosted or hindered by repricing back to this long-

term trend also depends on starting valuations.<sup>9</sup> The CAPE for the U.S. stock market was 28x earnings, well above our long-term expectations as of April 30, 2023 (Exhibit 9). In developed markets, excluding the U.S., equity valuations were lower but still expensive relative to our expectations.

**Equity return expectations:** Overall, we expect domestic and non-U.S. equities to have lower returns over the next 20 years as a result of slower global growth and elevated valuations. That said, we expect the dollar to weaken over the next 20 years, supporting the returns of non-U.S. assets. We expect emerging-market equities to outperform the returns of developed-market equities, including the U.S. (Exhibit 1).

### Volatility and correlations

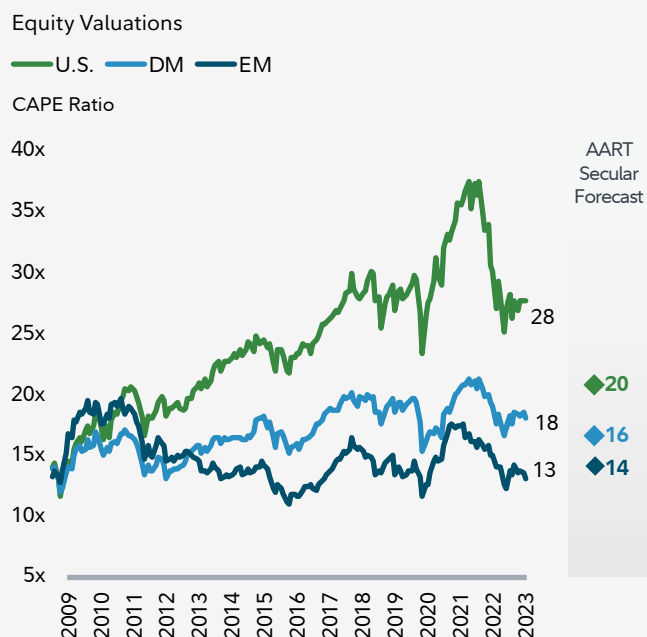
We built a forward-looking process for forecasting volatilities and correlations using a regime-based simulation engine.<sup>10</sup> We use historical data to simulate return paths starting from a secular and cyclical state most closely resembling the current environment. As of April 2023, our starting secular state is low growth and a mix of high and low inflation. We take a core set of asset classes with relatively reliable historical data beginning in the 1950s and identify these core assets as factors. For non-core asset classes, we can estimate factor exposures and calculate a covariance matrix using 20-year simulations of the secular state, beginning from today's starting conditions and using a transition matrix to account for the potential transitions to a different growth or inflation regime.

In contrast, most attempts at portfolio optimization are conducted using asset correlations that are calculated from past historical returns, for which there is limited history for newer asset classes such as emerging-market equities and global sovereign debt.

We believe there are shortcomings to this approach, as asset correlations can change over time. During the past 60 years, the 20-year correlation between U.S. equities and investment-grade bonds ranged from -0.1 to 0.4. At a given point in time, whether inflation or growth is the more dominant factor will influence correlations.

**EXHIBIT 9: We expect U.S. equity valuations to converge lower over the next 20 years.**

Equity Valuations



DM: Developed markets. EM: Emerging markets. Price-to-earnings (P/E) ratio (or multiple): Stock price divided by earnings per share, which indicates how much investors are paying for a company's earnings power. Cyclically adjusted earnings are 10-year averages adjusted for inflation. Source: FactSet, countries' statistical organizations, MSCI, Fidelity Investments (AART), as of 4/30/23.

## Conclusions

Following are some of our key findings when comparing our return, volatility, and correlation estimates:

- We expect stocks to have lower real returns relative to the last 20 years and versus their long-term histories, with bonds expected to have real returns in line with historical averages.
- We anticipate risk-adjusted returns for the U.S., developed markets, and emerging markets to be lower than the last two decades.
- Under the different scenarios we ran to explore the impact of inflation and productivity on our CMAs, we continue to expect stocks to outperform bonds.

As with any financial planning or portfolio construction process, comparing relative returns across asset categories is essential. Although we expect asset returns will be lower than they have been historically, our base case is for equities to outperform bonds over the next 20 years.

## Appendix

Asset classes shown in Exhibit 1 are represented by the following indexes: Emerging-Market Stocks—MSCI Emerging Markets Index; Global Equities ex. U.S.—MSCI All Country World Index (ACWI) ex USA Index; Developed Market ex. U.S. Equities—MSCI World ex USA Index; U.S. Equities—Dow Jones U.S. Total Stock Market Index; U.S. High-Yield Bonds—ICE Bank of America (BofA) U.S. High Yield Index; Investment-Grade Bonds—Bloomberg U.S. Aggregate Bond Index; Developed Market Non-U.S. Bonds USD Hedged—Bloomberg Global Aggregate ex USD Total Return Index Value Hedged USD; Municipal Bonds—Bloomberg Municipal Bond Index; U.S. TIPS—Bloomberg U.S. Treasury Inflation Protected Notes; Developed Market Non-U.S. Sovereign Debt USD Hedged—Bloomberg Global Treasury DM ex U.S. 30% EUR 10% Country Cap Total Return Index Hedged USD; U.S. Cash/ Short-Term—Bloomberg 1-3 Month US Treasury Bill Index.

### Index Definitions

**Bloomberg Global Aggregate ex USD Total Return Index Value Hedged USD** measures the performance of global investment-grade debt from 24 local currency markets. It is a multi-currency index that includes fixed-rate treasury, government-related, corporate, and securitized bonds from developed- and emerging-market issuers while excluding U.S.-denominated debt.

**Bloomberg Global Treasury DM ex U.S. 30% EUR 10% Country Cap Total Return Index Hedged USD** measures the total return of fixed-rate, local currency government debt of investment-grade developed-market countries (excluding the United States), hedged to USD. The index maintains 30% exposure to eurozone countries and includes a 10% country cap.

**Bloomberg Commodity Index** measures the performance of the commodities market. It is calculated on an excess return basis and reflects commodity futures price movements.

**Bloomberg 1–3 Month US Treasury Bill Index** is designed to measure the performance of public obligations of the U.S. Treasury that have a remaining maturity of greater than or equal to 1 month and less than 3 months.

**Bloomberg Municipal Bond Index** is a market value-weighted index of investment-grade municipal bonds with maturities of one year or more.

**Bloomberg U.S. Aggregate Bond Index** is an unmanaged, market value-weighted performance benchmark for investment-grade fixed-rate debt issues, including government, corporate, asset-backed, and mortgage-backed securities with maturities of at least one year.

**Bloomberg U.S. Treasury Inflation Protected Notes Index** is a market value-weighted index that measures the performance of inflation-protected securities issued by the U.S. Treasury.

**Consumer Price Index (CPI)** is an inflationary indicator that measures the change in the cost of a fixed basket of products and services, including housing, electricity, food, and transportation.

**Dow Jones U.S. Total Stock Market Index<sup>SM</sup>** is a full market capitalization-weighted index of all equity securities of U.S.-headquartered companies with readily available price data.

**ICE BofA U.S. High Yield Index** is a market capitalization-weighted index of U.S. dollar-denominated, below-investment-grade corporate debt publicly issued in the U.S. market.

**MSCI ACWI (All Country World Index) ex USA Index** is a market capitalization-weighted index designed to measure investable equity market performance for global investors of large and mid cap stocks in developed and emerging markets, excluding the United States.

**MSCI Emerging Markets (EM) Index** is a market capitalization-weighted index designed to measure the investable equity market performance for global investors in emerging markets.

**MSCI<sup>®</sup> Europe, Australasia, Far East Index (EAFE)** is an unmanaged, market capitalization-weighted index designed to represent the performance of developed stock markets outside the U.S. and Canada.

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### Endnotes

<sup>1</sup> Past performance is not a guarantee of future results. All historical performance data quoted is as of 4/30/23, unless otherwise noted.

<sup>2</sup> Duration estimates a bond's change in price given a change in interest rates, assuming a parallel shift in the yield curve (neither steepening nor flattening).

<sup>3</sup> The roll-down return is the gain (loss) caused by a falling (rising) yield when a bond approaches its maturity date. Therefore, as bonds approach their maturity date, they should roll down the positively sloped yield curve to a lower yield, creating a gain.

<sup>4</sup> Treasury securities are considered "risk free" because they are backed by the full faith and credit of the U.S. government.

<sup>5</sup> As of Apr. 30, 2023.

<sup>6</sup> The composition of the combined investment-grade bond portfolio has a similar weighting of government and corporate bonds as the Bloomberg U.S. Aggregate Bond Index. Investment-grade bonds are bonds rated BBB-/Baa3/BBB- or higher by Standard & Poor's/Moody's/Fitch.

<sup>7</sup> The term premium is the excess yield that investors require to commit to holding a long-term bond instead of a series of shorter-term bonds.

<sup>8</sup> Source: Bureau of Economic Analysis, Haver Analytics, Fidelity Investments (AART) as of Apr. 30, 2023.

<sup>9</sup> We define current valuations as today's cyclically adjusted P/E ratio, or the Shiller CAPE, which is the ratio of today's stock market index price divided by the average of the last 10 years of operating earnings per share.

<sup>10</sup> Correlation measures interdependencies between two random variables, with coefficients indicating perfect negative correlation at -1, absence of correlation at 0, and perfect positive correlation at +1.



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*Fidelity Thought Leadership Vice President Michael Tarsala provided editorial direction for this article.*

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