Forecast
Multi-Asset Solutions

Q2 2023

Long-Term Asset Class Forecasts

Our longer-term asset class forecasts are forward-looking estimates of total return and risk premia, generated through a combined assessment of current valuation measures, economic growth, inflation prospects, ESG considerations, yield conditions as well as historical price patterns. We also include shorter-term return forecasts that incorporate output from our multi-factor tactical asset allocation models. Outlined below is the process we use to arrive at our return forecasts for the major asset classes.

For a copy of the latest quarterly investment commentary from the Investment Solutions Group, please reach out to your State Street representative.

Inflation

The starting point for our nominal asset class return projections is an inflation forecast. We incorporate both estimates of long-term inflation and the inflation expectations implied in current bond yields. US Treasury Inflation-Protected Securities (TIPS) provide a market observation of the real yields that are available to investors. The difference between the nominal bond yield and the real bond yield at longer maturities furnishes a marketplace assessment of long-term inflation expectations.

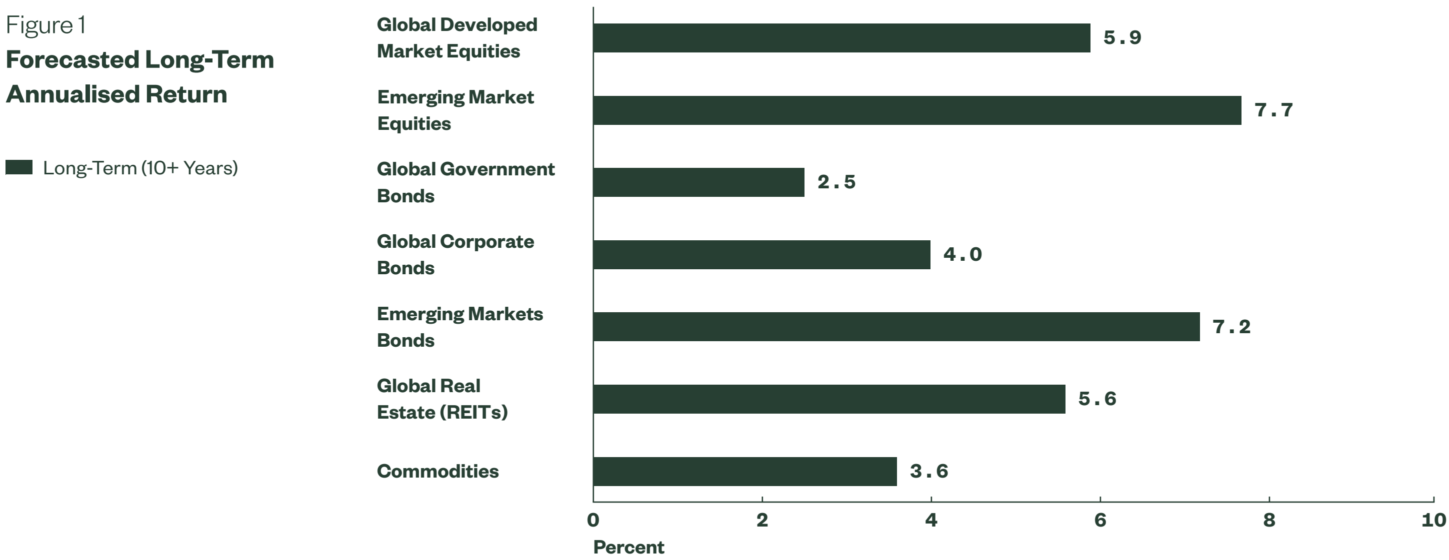
Cash

Our long-term forecasts for global cash returns incorporate what we view as the normal real return that investors can expect to earn over time. Historically, cash investors have earned a modest premium over inflation but we also take current and forward-looking global central bank policy rates into consideration in formulating our cash forecast.

Bonds

Our return forecasts for fixed income are derived from current yield conditions together with expectations as to how real and nominal yield curves will evolve relative to historical precedent. We then build our benchmark forecasts from discrete analysis of relevant maturities. For corporate bonds, we also analyse credit spreads and their term structures, with separate assessments of investment grade and high yield bonds. We also take into account the default probability for high yield bonds in the foreseeable future.

Figure 1
Forecasted Long-Term Annualised Return



Source: State Street Global Advisors Investment Solutions Group as of 03/31/2023.
Forecasted returns are based upon estimates and reflect subjective judgements and assumptions. These results were achieved by means of a mathematical formula and do not reflect the effect of unforeseen economic and market factors on decision-making. The forecasted returns are not necessarily indicative of future performance, which could differ substantially.

Equities

Our long-term equity market return forecasts combine estimates of real return potential, derived from historical and current dividend yields, forecasted real earnings growth rates, expected share issuance or buyback yield, and potential for expansion or contraction of valuation multiples. Our way of estimating real earnings growth rates incorporates forecasts of GDP levels. Across both developed and emerging markets, variations in labour, capital and productivity levels result in region-specific differences in the GDP estimates, allowing for more region-appropriate forecasts for both developed and emerging market equities.

Another important feature of our equity forecasts is that they include elements of ESG through leveraging State Street Global Advisors' R-Factor scores. Improvements in a country's aggregated and normalised R-Factor scores are used to incrementally reduce its risk expectations within the forecast and the other way around.

Smart Beta

Smart Beta forecasts are developed using MSCI World index forecasts as a starting point and adding expected alpha and beta adjustments as appropriate.

Private Equity

Our long-term forecast for private equity is based upon past performance patterns of private equity funds relative to listed equity markets and our extrapolation of these performance patterns on a forward basis. According to several academic studies[1,2,3] the annual rate of return of private equity funds over the long term appears to be largely in line with that of listed equities after appropriate adjustments for leverage are made. Private equity funds seem to have been outperforming relative to listed equities before fees, but generally in line with them (on a leverage-adjusted basis) after fees.

REITs

Real Estate Investment Trusts (REITs) have historically earned returns between bonds and stocks due to their stable income streams and potential for capital appreciation. Hence, we model it as a blend of two approaches. The first approach is to apply the average historical spread of the yields over Treasuries to forecast the expected return. The second approach is to account for inflation and long-term capital appreciation with the current dividend yield.

Commodities

Our long-term commodity forecast is based on the level of world GDP, as a proxy for consumption demand, as well as on our inflation outlook. Additional factors affecting the returns to commodity investors include how commodities are held (e.g., physically, synthetically, or via futures) and the various construction methodologies of different commodity benchmarks. Futures-based investors have the potential to earn a premium by providing liquidity and capital to producers seeking to hedge market risk. This premium is greatest when the need for hedging is high, driving commodities to trade in backwardation, with future prices that are lower than spot prices. When spot prices are lower, however, the market is said to be in contango, and futures investors may realise a negative premium.

Long Horizon Risk

We believe that over the long term, prices are anchored to some sort of a slow-moving, fundamentals-anchored process, while in the short term, these same prices cycle quasi-randomly around such anchors. Thus, the returns on most financial assets can be effectively separated into a long-term component linked to economic fundamentals and a transient part linked to “excess volatility” or other noise. Such property of asset returns rhythms nicely with the investors’ need to balance strategic portfolio optimality with the short-term risk control. With that in mind, we expanded our Long-Term Return Forecasts to include long-horizon risk estimates alongside ordinary, short-horizon ones.

Figure 2
SSGA Asset Class Return Forecasts
As of March 31, 2023

Asset Class	Benchmark	Short Term 1 Year (%)	Intermediate Term 3–5 Years (%)	Long Term 10+ Years (%)	Long-Horizon Risk (Std Dev) (%)	Long-term Risk (Std Dev) (%)
Global Equities (ACWI)	MSCI ACWI	6.9	6.4	6.1	4.6	14.5
Global Developed (World)	**MSCI World**	**6.7**	**6.2**	**5.9**	**4.6**	**14.6**
US Large Cap	S&P 500	6.5	6.1	5.9	4.6	15.5
US Mid Cap	S&P MidCap 400	6.9	6.4	6.1	5.2	18.6
US Small Cap	S&P Small Cap 600	7.2	6.6	6.4	5.6	20.3
Europe	MSCI Europe	8.4	6.6	6.1	4.7	14.7
Euro	MSCI Euro	8.3	6.2	5.7	5.4	17.6
Developed Pacific	MSCI Pacific	5.3	5.5	5.2	5.5	15.7
Australian Equities	MSCI Australia	7.3	7.4	7.7	4.5	14.3
New Zealand Equities	MSCI New Zealand	5.4	4.9	4.9	4.5	15.0
Global Value Tilted	MSCI World Value Weighted	6.5	5.9	5.6	5.1	15.9
Global Quality Tilted	MSCI World Quality	6.9	6.3	6.1	3.7	13.5
Global Momentum Tilted	MSCI World Momentum	7.9	7.3	7.0	5.0	14.9
Global Minimum Variance	MSCI World Minimum Vol	7.1	6.6	6.3	3.3	10.7

Asset Class	Benchmark	Short Term 1 Year (%)	Intermediate Term 3–5 Years (%)	Long Term 10+ Years (%)	Long-Horizon Risk (Std Dev) (%)	Long-term Risk (Std Dev) (%)
Emerging Markets (EM)	**MSCI EM**	**7.8**	**8.3**	**7.7**	**6.1**	**17.2**
EM Asia	MSCI EM Asia	7.5	8.0	7.3	6.5	18.6
EM EMEA	MSCI EM EMEA	6.9	7.0	8.0	6.1	17.5
EM Latin America	MSCI EM Latin America	12.5	12.7	11.6	5.9	19.3
Global Government Bonds	**BofA Global Government Bond Index**	**3.0**	**2.7**	**2.5**	**1.3**	**4.2**
Global Corporate	**Barclays Global Aggregate Corporate**	**4.6**	**3.9**	**4.0**	**2.3**	**8.5**
Non-US Government Bonds	Citi WGBI NonUSD	2.4	2.2	2.1	1.3	4.2
Non-US Corporate Bonds	BofA Merrill Lynch Global Large Cap Corporate Ex/ Barclays Global Agg x — Corporate	4.1	3.7	3.6	3.2	12.1
US Government Bond	Barclays US Aggregate Government	4.7	4.0	3.5	1.4	5.2
US Investment Grade Bond	Barclays US Agg Bond	4.8	4.3	4.0	1.4	4.8
US High Yield Bond	BofA US High Yield	10.4	6.7	5.7	3.4	9.6
Euro Government Bonds	BofA Euro Government	3.2	3.2	3.0	1.8	5.7
Euro Corporate Bonds	BofA Merrill Lynch Euro Corporate	4.2	3.6	3.5	1.6	5.1
Euro High Yield Bonds	BofA Euro High Yield	6.2	5.8	5.4	4.0	10.7
Australian Government Bonds	BofA Merrill Lynch Australia Government	4.0	3.4	3.2	1.6	5.4
Australian Corporate Bonds	BofA Merrill Lynch Australia Corporate	4.9	4.6	4.5	1.2	3.5
New Zealand Government Bonds	ICE BofA Merrill Lynch New Zealand Government	5.8	4.8	4.4	1.6	4.8
Japanese Government Bonds	Citi Japanese GBI JPY	0.1	0.1	0.2	0.8	2.8
Japanese Corporate Bonds	BofA Japan Corporate	0.3	0.4	0.6	0.4	1.5
UK Government Bonds	Citi UK GBI GBP	4.5	4.1	3.8	2.4	8.6
UK Corporate Bonds	BofA UK Corporate	5.6	5.3	5.0	2.5	8.7
Emerging Markets Bonds	**JPM EMBI Plus**	**5.2**	**6.0**	**7.2**	**3.1**	**10.1**
Global Real Estate (REITs)	**FTSE EPRA/ NAREIT Developed**	**4.8**	**5.7**	**5.6**	**6.7**	**17.9**
Commodities	**Bloomberg Commodity**	**2.7**	**3.2**	**3.6**	**6.0**	**17.1**
Hedge Funds	HFRI Fund of Funds Composite Index	7.3	5.9	5.6	2.2	5.5
Private Equity	Burgiss Private Equity	8.2	8.0	7.6	7.6	11.2
Core Private Credit	Burgiss Private Senior Debt	—	—	6.0	4.6	7.7
Opportunistic Private Credit	Burgiss Private Distressed Debt	—	—	10.7	7.3	11.5

Asset Class	Benchmark	Short Term 1 Year (%)	Intermediate Term 3–5 Years (%)	Long Term 10+ Years (%)	Long-Horizon Risk (Std Dev) (%)	Long-term Risk (Std Dev) (%)
Direct Real Estate — US	Burgiss Real Estate	—	—	7.3	8.8	10.5
US Cash	BofA 3 Month T-Bill	4.7	2.7	2.4	0.4	0.6
Australian Cash	JP Morgan Cash Index Australia (3 Month)	3.7	2.8	2.5	0.6	0.8
New Zealand Cash	JP Morgan Cash Index New Zealand (3 Month)	5.0	3.4	2.8	0.7	0.8
US Inflation	—	—	2.4	2.2	—	—
Australian Inflation	—	—	1.7	2.2	—	—
New Zealand Inflation	—	—	1.9	2.0	—	—

Source: The forecasted returns are annual arithmetic averages based on State Street Global Advisors' Investment Solutions Group March 31, 2023 forecasted returns and long-term standard deviations. The forecasted performance data is reported on a gross of fees basis. Additional fees, such as the advisory fee, would reduce the return. For example, if an annualised gross return of 10% was achieved over a five-year period and a management fee of 1% per year was charged and deducted annually, then the resulting return would be reduced from 61% to 53%. The performance includes the reinvestment of dividends and other corporate earnings and is calculated in the local (or regional) currency presented. It does not take into consideration currency effects. The forecasted performance is not necessarily indicative of future performance, which could differ substantially.
Please reach out to your representative in case of any further questions on our forecasts or methodologies.
Note: Forecasts apply to the listed primary benchmarks and other asset class benchmarks as long as they are substantially similar.
Note: Private asset forecasted returns are Net of Fees, Public asset forecasted returns are Gross of Fees.

Endnotes

1 L'Her, Jean-Francois, Rossita Stoyanova, Kathryn Shaw, William Scott, and Charissa Lai. "A Bottom-Up Approach to the Risk-Adjusted Performance of the Buyout Fund Market." *Financial Analyst Journal,* Vol. 72, No. 4, pp. 36–48 (2016).

2 Phalippou, Ludovic. "Performance of Buyout Funds Revisited." *Review of Finance,* vol. 18, no. 1 (January): 189–218 (2014).

3 Alexander Rudin and Daniel Farley. February 2022. "Public and private equity returns: different or same?" *Journal of Portfolio Management,* Volume 48, No.3.

About State Street Global Advisors

Our clients are the world's governments, institutions and financial advisors. To help them achieve their financial goals we live our guiding principles each and every day:

- Start with rigor
- Build from breadth
- Invest as stewards
- Invent the future

For four decades, these principles have helped us be the quiet power in a tumultuous investing world. Helping millions of people secure their financial futures. This takes each of our employees in 29 offices around the world, and a firm-wide conviction that we can always do it better. As a result, we are the world's fourth-largest asset manager* with US $3.62 trillion† under our care.

* Pensions & Investments Research Center, as of December 31, 2021.
† This figure is presented as of March 31, 2023 and includes approximately $65.03 billion USD of assets with respect to SPDR products for which State Street Global Advisors Funds Distributors, LLC (SSGA FD) acts solely as the marketing agent. SSGA FD and State Street Global Advisors are affiliated. Please note all AUM is unaudited.

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Information Classification: General

Glossary

Bloomberg Barclays U.S. Corporate High Yield Index A fixed-income benchmark of US dollar-denominated, high-yield and fixed-rate corporate bonds. 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' emerging markets country definition, are excluded.

Commodities A generic, largely unprocessed, good that can be processed and resold. Commodities traded in the financial markets for immediate or future delivery include grains, metals, and minerals.

Credit Spreads The spread between Treasury securities and non-Treasury securities that are identical in all respects except for quality rating.

Dividend Equities and Dividend Yield Equity securities that pay dividends. A dividend is a distribution of a portion of a company's earnings, decided by the board of directors, to a class of its shareholders. Dividends can be issued as cash payments, as shares of stock, or other property. Equity, also known as stock, is a type of security that signifies ownership in a corporation and represents a claim on part of the corporation's assets and earnings. The dividend yield is the ratio of the dividend paid per share of issued equity over the share price.

Inflation An overall increase in the price of an economy's goods and services during a given period, translating to a loss in purchasing power per unit of currency. Inflation generally occurs when growth of the money supply outpaces growth of the economy. Central banks attempt to limit inflation, and avoid deflation, in order to keep the economy running smoothly.

MSCI World Index The MSCI World Index is a free-float weighted equity index. It includes about 1,600 stocks from developed world markets, and does not include emerging markets.

Nominal Bond Yield The annual income that an investor receives from a bond divided by the par value of the security. The result, stated as a percentage, is the same as the rate of interest the security pays.

Private Equity An umbrella term for large amounts of money raised directly from accredited individuals and institutions and pooled in a fund that invests in a range of business ventures.

Real Interest Rates, or Real Yields An interest rate that takes into consideration the actual or expected inflation rate, which is the actual amount of yield an investor receives. The real rate is the calculation of the "nominal" interest rate minus the inflation rate as follows: Real Interest Rate = Nominal Interest Rate – Inflation.

REITs (Real Estate Investment Trusts) Publicly traded companies that pool investors' capital to invest in a variety of real estate ventures, such as apartment and office buildings, shopping centers, medical facilities, industrial buildings, and hotels.

Tactical Asset Allocation Models Illustrate a dynamic approach to asset management that emphasises exposure to asset classes that are designed to enhance returns or control drawdowns.

Yield Curve (e.g., US Treasury Curve) A graph or line that plots the interest rates or yields of bonds with similar credit quality but different durations, typically from shortest to longest duration. When the yield curve is said to be "flat," it means the difference in yields between bonds with shorter and longer durations is relatively narrow. When the yield curve is said to be "steep," it means the difference in yields between bonds with shorter and longer durations is relatively wide.

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Investments in small and mid-sized companies may involve greater risks than in those of larger, better known companies, but may be less volatile than investments in smaller companies.

Companies with large market capitalisations go in and out of favour based on market and economic conditions. Larger companies tend to be less volatile than companies with smaller market capitalisations. In exchange for this potentially lower risk, the value of the security may not rise as much as companies with smaller market capitalisations.

Hedge funds are typically unregulated private investment pools made available to only sophisticated investors who are able to bear the risk of the loss of their entire investment. An investment in a hedge fund should be viewed as illiquid and interests in hedge funds are generally not readily marketable and are generally not transferable. Investors should be prepared to bear the financial risks of an investment in a hedge fund for an indefinite period of time. An investment in a hedge fund is not intended to be a complete investment program, but rather is intended for investment as part of a diversified investment portfolio.

The views expressed in this commentary are the views of the SSGA Investment Solutions Group through the period ended March 31, 2023 and are subject to change based on market and other conditions. The opinions expressed may differ from those of other SSGA investment groups that use different investment philosophies.

Equity securities may fluctuate in value and can decline significantly in response to the activities of individual companies and general market and economic conditions.