

SSGA Long-Term Asset Class Forecasts

September 30, 2018 | Market Commentary

Summary

Fixed Income	Given the current expected path of monetary policy, our long-term US cash return reflects a slight premium over our inflation projection. Since the third quarter of 2018, the US Treasury curve continued to flatten. This is coincident with the Federal Reserve (Fed) increasing interest rates in June and September, and more anchored longer-term expectations for growth and inflation limiting the rise in longer-maturity interest rates. Our longer-term return expectations for US government bonds, US investment-grade bonds, and US corporate bonds remain unchanged at 3.1%, 3.7% and 4.5%, respectively. Our near-term return expectation for US long government bonds decreased from last quarter as our near-term expected yields moved higher in the long-maturity range. By contrast, our near-term return expectation for US long credit bonds increased from last quarter as near-term forecasted spreads in the long-maturity range declined. While our long-term return forecast for US high-yield bonds remains unchanged, our near-term return forecast decreased to 4.6% as our tactical models expect high-yield spreads to increase in the near term. Our near-term and intermediate-term return forecast for US Treasury inflation-protected securities (TIPS) increased to 1.3% and 2%, respectively, while the long-term return forecast remains unchanged.
Equities	Our long-term return forecasts for both US large-cap and developed market equities outside the US changed very slightly from last quarter, to 6.4%. As price-to-earnings (P/E) ratios for developed markets fall within our definition of reasonable valuation, we are not factoring in any expansion or contraction of this multiple over the longer term. Our long-term return forecast for emerging markets has improved slightly over the past quarter, with a forecast return of 9.9%, a 3.5% premium over developed markets. On a near-term horizon, our equity forecasts have improved from the previous quarter, with higher quantitative model scores. We are forecasting near-term returns of 5.0% for large-cap US equities, 4.2% for developed market equities outside the US and 7.0% for emerging market equities.
Alternative	We continue to expect that, over the longer term, private equity will provide a modest illiquidity premium coupled with a higher long-term risk level comparable to that of small-cap equities. Over the shorter term, our outlook for private equity improved from the previous quarter, attributable to an increase in our US small-cap return expectation. Our short-term forecast for global real estate investment trusts (REITs) has increased from last quarter, and remains lower than the global equities forecast. Our long-term return forecast for commodities has increased to 5.7%, while our short-term forecast decreased a larger amount, to 6.8%, due to decreased quantitative model scores.

There can be no assurance that developments will transpire as forecasted and that the estimates are accurate.

Our longer-term asset class forecasts are forward-looking estimates of total return generated through combined assessment of current valuation measures, economic growth, inflation prospects, yield conditions and historical risk premia. 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.

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.

Global inflation pressures continue to build after years of falling far short of central bank targets. The year-over-year gain in the core US personal consumption deflator advanced to the central bank target of 2% in May for the first time since 2012 after years of undershooting that level. The market assessment of long-term inflation expectations, as measured by the US 10-year breakeven rate, also increased to end the quarter at 2.14% compared to a yield of 2.11% at the end of the second quarter. The 3 basis points (bps) rise in breakeven yields coincides with a 17 bps quarterly

Figure 1: Forecasted Long-Term Annualised Return (%)



Source: State Street Global Advisors (SSGA) Investment Solutions Group as of 09/30/2018.

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.

increase in real yields to 0.91% and a 20 bps rise in nominal 10-year yields to 3.05% for the quarter. Our current US long-term forecast for inflation is in line with the central bank target of 2%.

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. While our long-term cash return forecast is 2.75% for the US, providing a slight premium over inflation, by design, current monetary policy priorities in many non-US developed countries are dictating that cash returns stay below expected inflation rates. We expect short-term interest rates will normalise, but without certainty on the timing, our long-term cash return forecast is 1.5% for the eurozone and 2% for the UK, reflecting a discount for the eurozone and UK on our long-term inflation projections. Our long-term cash forecast for the US has remained unchanged from the previous quarter while the short-term cash forecast has increased slightly, by 20 bps from the previous quarter, to 2.35% as the Federal Reserve (Fed) continues to normalise policy with additional rate increases. Our long-term cash forecasts for the eurozone and UK have remained unchanged from the previous quarter, while the short-term cash forecast has increased for the eurozone by 10 bps and for the UK by 20 bps. Our short-term forecasts for cash returns derive from observed policy rates, which indicate continued interest-rate increases in the US and UK. Led by the Fed, global central banks are expected to continue to progress from their longstanding accommodative stance towards monetary policy normalisation, underpinned by supportive economic data. Our projections continue to reflect a faster pace of convergence between our near-term cash return expectations and our longer-term forecasts as we anticipate another rate increase in December 2018 and three more rate increases in 2019. The European Central Bank (ECB) is expected to taper its asset purchase programme in October and conclude purchases by the end of December. The ECB is also committed to maintaining the current level of policy interest rates through the summer of 2019 and in any case for as long as necessary. We then expect the ECB to hike the refinancing rate at least once in the second half of 2019, for the first time since 2011.

Bonds

Our return forecasts for fixed income derive 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.

With continued Fed rate hiking in September, the short end of the US Treasury yield curve moved slightly upwards and, with growing bond term premium, the long end of the yield curve moved modestly higher. This led to a small flattening

in the US Treasury yield curve, with the spread on 10-year less two-year Treasuries declining to 24 bps. With our near-term policy expectations of one rate hike in December 2018 and three more rate hikes in 2019, we see continued modest flattening in the near-term expected US Treasury yield curve. Our updated longer-term return expectations for fixed income have changed very moderately. At shorter horizons we anticipate lower returns in US long government bonds by 28bps from the previous quarter due to higher expected yield at the long end of the curve over what is currently priced in the market. Among corporate bonds, while the near-term return forecasts for US short corporate and long corporate bonds have increased over the previous quarter by 10 bps and 57 bps, respectively, the short-term return forecast for US intermediate corporate bonds declined by 42 bps. We see such contrasting results between the short-term return forecasts for US intermediate corporate and long corporate bonds mainly due to movements in the near-term expected US credit spread curve as we anticipate credit spreads in the near and intermediate end of the spread curve moving higher versus the previous quarter unlike the long end of spread curve, where our expectations have toned down versus the previous quarter. Our long-term forecasts for US government and credit bonds stand at 3.1% and 4.5%, respectively.

The return forecast for eurozone government bonds is comprised of German government bonds and Italian government bonds. Our long-term return forecast for eurozone government bonds has increased slightly, by 13 bps, from the previous quarter, while our short-term return forecast has increased by 87bps, to 1.3% as the Italian government yield curve moved up across maturities given heightened political uncertainty, increasing positive carry return expectations. We do not expect the Italian government yield curve to move higher over what is currently priced in the market compared to expectations of higher upward movement last quarter. While the long-term return forecast for euro corporate bonds remains unchanged versus the previous quarter, the short-term return forecast has fallen by 27 bps. The return forecasts for euro corporate bonds and euro high-yield bonds utilise current and expected German yield curves, with due consideration of separate spread curves. Hence the increase in the near-term expected German government yield curve across maturities versus the previous quarter explains the decline in the short-term return forecast for euro corporate bonds.

Spreads on US high-yield bonds declined over the past quarter, leading to a decline in the total yield of 6.24%.¹ Similarly, high-yield spreads in Europe declined, taking the yield on the BofA Merrill Lynch Euro High Yield Index to 3.34%. We expect the current level of US high-yield bond spreads to revert back to our near-term expected spreads, which have remained anchored over the past quarter in the 5–9 years maturity range, which represents over 75% of the

Barclays US High Yield index weight. But our short-term expected default rate for US high-yield bonds increased by 60 bps, leading to decline of 133 bps in our near-term US high yield return forecast, to 4.6%.

In the near term, our inflation expectations for the US remain at 2.0% and our near-term and intermediate-term return forecasts for US TIPS have increased by 36 bps to 1.3% and 2%, respectively. Over the longest time frames, we are modeling increases in real yields, but we expect inflation protection to provide enough income to produce a long-term return on US TIPS of 3.1%.

Equities

The foundations for our long-term equity market forecasts are estimates of real return potential, derived from current dividend yields, forecast real earnings growth rates, and potential for expansion or contraction of valuation multiples. Our enhanced forecasting method now incorporates long-run average estimates of potential economic growth based on forecasted labour, capital and productivity inputs to estimate real earnings growth. Across both developed and emerging markets, variation in labour, capital and productivity levels result in region-specific differences in our estimates of real earnings growth, allowing for more region-appropriate forecasts for both developed and emerging market equities. Our return forecasts for emerging market equities and emerging Europe, the Middle East and Africa (EMEA) equities also include forecasts for Saudi Arabia equity, Qatar equity and UAE equity.

Given the current dividend yield on the S&P 500 of 1.95%² and an anticipated real earnings growth rate of roughly 2.45%, we forecast a real return of 4.40% for large-cap US equities. Combining this with our inflation forecast, we estimate long-term average equity returns of 6.42%.

The trailing five-year price/earnings ratio, defined as price divided by the average of five years of earnings, for the S&P 500 increased slightly from last quarter to 25.38,³ a level that is somewhat elevated although not extreme relative to historical precedent. We are therefore not factoring in any expansion or contraction of this multiple over the long term. Our expectations for long-term real earnings growth and intermediate-term real earnings growth are slowly converging, with the long-term real earnings growth forecast currently at 2.45%.

Over the long term, we expect US mid-cap and small-cap markets each to earn a modest premium of 0.25% to 0.50%, respectively over large-cap stocks. Non-US small cap and emerging markets should both provide higher earnings growth rates than developed large-cap markets and we therefore project that these asset classes will earn higher returns. It is important to note that we are not incorporating currency fluctuations as part of our forecasts. Over the long term, the effects of short-term currency fluctuations

should cancel out, producing a limited impact on returns. Furthermore, for our forecasts to be useful globally, we want to avoid a US-centric bias.

On a one-year horizon, our forecasts for large-cap US equities increased by 68 bps and by 55 bps for global developed equities from last quarter, owing to evolution in our tactical quantitative alpha models. We are forecasting one-year returns of 5.0% for large-cap US equities and 4.2% for developed equity markets outside the US.

Advanced Beta

The four advanced beta factors begin with the MSCI World universe and are then reweighted toward selected factors. These factors include value-tilted, quality-tilted, managed volatility (minimum variance) and an equal-weighted portfolio (to capture the historical 'small-cap' premium). Empirically, exposure to valuation, quality, low volatility and small size have generated positive excess returns over the cap-weighted index; we continue to expect there will be a premium to owning these factors over the long term.

Over a one- to three-year forecast horizon, we look to see how cheap each factor is relative to its own history. Specifically, we focus on book/price spreads for each factor and relate that to their subsequent returns. We find that valuation ratios are useful for forecasting market returns. Using these relationships, we forecast a short-term return premium of 1.4% for the value-tilted portfolio, 1.3% for the quality-tilted portfolio, 1.1% for the minimum-variance portfolio and 1.8% for the equal-weighted portfolio.

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^{4,5} the annual rate of return of private equity funds over the long term appears to be largely in line with that of listed equities, with outperformance relative to listed equities before fees, but relative underperformance after fees. Some more recent academic studies⁶ find better results, especially for buyout funds. Before fees, we believe that an average private equity fund can outperform small-cap listed equities by perhaps 0.5% over the long run. All else equal, this makes our long-term forecast for private equities not considerably different to our projections for small-cap stocks, but we also consider additional factors, including financial conditions and capital availability. Because private equity firms have enjoyed available and affordable capital, and have recently realised record-high valuation multiples, our return forecast continues to reflect a more competitive return environment. Since private equity funds tend to use ample leverage and are often much less liquid than publicly traded investments, we rate the long-term risk level of private equity as higher than that of small-cap equities.

REITs

REITs have historically earned returns between bonds and stocks due to their stable income streams and potential for capital appreciation. Our long-term forecasts for US and global REITs are 5.7% and 5.5%, respectively, and reflect the current rising yield environment. In the shorter term, the outlook for REITs from our expected return models has improved, with returns of 3.7% and 3.0% forecast for US and global REITs, respectively, mainly due to improvement in our quantitative tactical model scores. While the appeal of their income features seems likely to foster some continued support, the asset class may face headwinds from an extension of the current rising interest rate environment.

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 commodities 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. Our long-term return forecast for commodities is 5.7%.

¹ FactSet, September 30, 2018.

² FactSet, September 30, 2018.

³ FactSet, September 30, 2018.

⁴ Phalippou, Ludovic and Olivier Gottschalg, 2009, "the Performance of Private Equity Funds". *Review of Financial Studies*, vol. 22, no 4 (April) : 1747–1776.

⁵ Kaplan, Steven N, and Antoinette Schoar. 2005. "Private equity Performance: Returns, Persistence and Capital Flows." *Journal of Finance*, vol. 60, no 4 (August): 1791–1823.

⁶ Robert Harris, Tim Jenkinson, and Steven Kaplan. 2014. "Private Equity Performance: What Do We Know?" *Journal of Finance*, vol. 69, no 5: 1851–1882.

Figure 2: SSGA Tactical/Strategic Asset Allocation Returns Forecasts

As of September 2018

Asset Class	Short-term 1 Year Return (%)	Intermediate-term 3-5 Years Return (%)	Long-term 10+ Years Return (%)	Long-term Risk (Std Dev) (%)
Global Equities (ACWI)	5.0	6.8	6.8	14.4
Global Equities (ACWI) ex US	4.9	7.2	7.2	15.3
Global Developed (World)	4.7	6.4	6.4	14.4
Global Developed ex US	4.2	6.2	6.4	15.2
Global Developed ex US Small Cap	4.8	7.0	7.1	16.0
US Large-Cap Equities	5.0	6.5	6.4	14.9
US Mid-Cap Equities	4.9	6.7	6.7	17.3
US Small-Cap Equities	3.8	7.0	6.9	18.8
Europe Equities	4.4	6.8	7.0	15.8
Eurozone Equities	4.0	6.5	6.6	19.6
Pacific Equities	3.5	4.8	5.0	17.9
Emerging Markets (EM) Equities	7.0	10.3	9.9	21.2
EM Asia Equities	7.2	10.3	9.9	22.3
EM EMEA Equities	6.3	10.6	10.1	20.3
EM Latin America Equities	6.4	9.5	9.6	28.1
Global Equal Weighted Equities	6.5	8.2	6.9	15.3
Global Value Tilted Equities	6.1	7.8	6.8	14.7
Global Minimum Variance Equities	5.8	7.5	6.9	10.7
Global Quality Tilted Equities	6.0	7.7	6.9	13.6
Global Government Bonds	1.1	1.1	2.0	3.7
Global Corporate Bonds	2.1	1.9	3.8	7.3
Non-US Government Bonds	0.7	0.6	1.7	3.6
Non-US Corporate Bonds	1.0	1.3	2.9	3.7
US Government Bonds	2.1	2.5	3.1	4.9
US Investment-Grade Bonds	2.4	2.9	3.7	4.3
US High-Yield Bonds	4.6	4.7	5.5	8.7
US TIPS	1.3	2.0	3.1	6.6
US Long Treasury STRIPS Bonds	2.2	1.6	2.9	24.3
Euro Government Bonds	1.3	1.2	2.5	4.6
Euro Corporate Bonds	0.1	0.7	2.8	3.8
Euro High Yield Bonds	1.8	2.2	4.7	12.6
Japanese Government Bonds	-0.1	-0.3	0.4	4.0
Japanese Corporate Bonds	0.7	0.5	1.0	2.1
UK Government Bonds	0.1	0.4	2.0	7.3
UK Corporate Bonds	1.7	2.0	3.7	6.9
Emerging Markets Bonds (Hard Currency)	4.7	5.4	6.7	13.6
Global Real Estate (REITs)	3.0	5.2	5.5	18.1
Commodities	6.8	5.3	5.7	15.2
Hedge Funds	5.4	6.1	6.1	5.7
Private Equity	4.8	7.5	7.4	24.9
US Cash	2.4	2.7	2.8	1.0
UK Cash	0.8	1.6	2.0	1.2
Eurozone Cash	-0.3	0.4	1.5	1.1

The forecasted returns are annual arithmetic averages based on SSGA's Investment Solutions Group September 30, 2018 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 5-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.

Glossary

Basis Point (bps) A unit of measure for interest rates, investment performance, pricing of investment services and other percentages in finance. One basis point is equal to one-hundredth of 1 percent, or 0.01%.

Bloomberg Barclays US 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.

Book to Price (B/P) Ratio A valuation metric that takes the ratio of the book value of a company per share to its share price.

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.

Price-to-Earnings Multiple, or P/E Ratio A valuation metric that uses the ratio of the company's current stock price versus its earnings per share.

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.

Smart Beta A rules-based investment strategy that seeks to capture specific factors in the marketplace that active managers have historically relied on to outperform. These include value, size, low volatility, quality and momentum.

US 3 Month Libor (Cash) Libor, or the London Interbank Offered Rate, is equivalent to the federal funds rate, or the interest rate one bank charges another for a loan. It is used as a reference figure for corporate financial transactions and, increasingly, for consumer loans as well.

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

The value of the debt securities may increase or decrease as a result of the following: market fluctuations, increases in interest rates, inability of issuers to repay principal and interest or illiquidity in the debt securities markets; the risk of low rates of return due to reinvestment of securities during periods of falling interest rates or repayment by issuers with higher coupon or interest rates; and/or the risk of low income due to falling interest rates. To the extent that interest rates rise, certain underlying obligations may be paid off substantially slower than originally anticipated and the value of those securities may fall sharply. This may result in a reduction in income from debt securities income.

Increase in real interest rates can cause the price of inflation-protected debt securities to decrease. Interest payments on inflation-protected debt securities can be unpredictable.

Investing in REITs involves certain distinct risks in addition to those risks associated with investing in the real estate industry in general. Equity REITs may be affected by changes in the value of the underlying property owned by the REITs, while mortgage REITs may be affected by the quality of credit extended. REITs are subject to heavy cash flow dependency, default by borrowers and self-liquidation. REITs, especially mortgage REITs, are also subject to interest rate risk (i.e., as interest rates rise, the value of the REIT may decline).

Investing in commodities entail significant risk and is not appropriate for all investors. Commodities investing entail significant risk as commodity prices can be extremely volatile due to wide range of factors. A few such factors include overall market movements, real or perceived inflationary trends, commodity index volatility, international, economic and political changes, change in interest and currency exchange rates.

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