Long-Term Asset Class Forecasts

March 31, 2016

Summary

Fixed Income	Given the current expected path of monetary policy, our long term cash return continues to reflect a modest premium on our long term inflation projection. US 10-year government bond yields fell substantially in the first quarter and our longer-term return expectations for fixed income have been adjusted lower accordingly. Our one-year bond forecasts have changed slightly; US TIPS fell the most, relative to our projections three months ago, reflecting the most current available market yield data.
Equities	Our long-term equity outlook has decreased since the end of December. As P/E ratios remain broadly consistent with historical norms, we are not factoring in any expansion or contraction of this multiple over the longer term. On a one-year horizon, our US equity forecasts increased since the end of the fourth quarter. We are forecasting one-year returns of 2.6% for large-cap US equities, and 4.2% in local currency terms for developed equity markets outside the US.
Alternative	We continue to expect over the longer term private equity will provide a modest illiquidity premium. Our short-term forecast for US REITS increased and Global REITs stayed the same based on our updated tactical view on the asset class. Our long-term return forecast for commodities has remained fairly stable at 5.6%.

by Daniel Farley, CFA, CIO, *Investment Solutions Group*

Our longer-term forecasts are forward-looking estimates of total return generated through combined assessment of current valuation measures, income payouts, economic growth, and inflation prospects, as well as historical risk premia. We also include shorter-term return forecasts that incorporate output from our tactical asset allocation models. Outlined below is the process we use to arrive at our return forecasts for the major asset classes, including modifications to our process for forecasting equity returns. Beginning this quarter we are incorporating country- specific information for our Global Developed ex US equity forecasts. In addition for this quarterly release, annualized return forecasts are calculated for three horizons: short (1 year), intermediate (3–5 years), and long- term (10+ years) rather than at five discrete horizons.

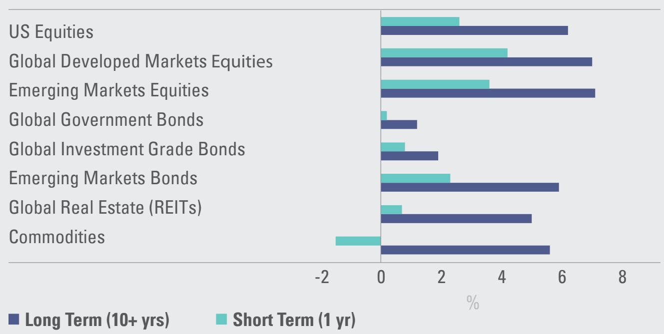
Inflation

The starting point for our nominal asset class return projections is an inflation forecast. We incorporate both consensus 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.

Long-term developed market government yields fell sharply across regions during the first quarter reflecting a flight to safety as growth assets declined early in the quarter and commitments by major central banks to increase future government bond purchases. The Federal Open Market Committee (FOMC) refrained from any additional interest rate increases in the first quarter of 2016, following an initial December 2015 increase, citing global economic and financial developments as risks to economic growth in the US. In the first quarter, ten-year US nominal yields fell by 47 basis points, while real yields at similar maturities fell by 60 basis points. The net result was an increase in long-term US inflation expectations, which rose slightly to 1.6%[1] as of the end of the quarter.

The near-term inflation outlook remained subdued in the first quarter as commodity prices continued to decline to multi-year lows early in the quarter before recovering. We continue to remain in a highly accommodative central bank environment, and anticipate that supportive policy coupled with the FOMC's revised forecast for just two rate increases this year will eventually lead to greater upward pressure on consumer prices. Our current US long-term forecast for inflation is 2.1 %.

Figure 1: Long-Term Annualized Return



Source: State Street Global Advisors (SSGA) Investment Solutions Group as of 3/31/2016.
Forecasted returns are based upon estimates and reflect subjective judgments 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.

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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 by design, current monetary policy priorities are dictating that cash returns stay below expected inflation rates. We expect that short-term interest rates will normalize, but without certainty on the timing, our long-term cash return forecast is 2.2 % for the US and 2.1% for the Eurozone, reflecting a premium for the Eurozone on our long-term inflation projections. Both of our long-term cash forecasts are the same as the forecast in the fourth quarter of 2015. Our short-term forecasts for cash returns derive from observed interbank rates, which indicate some policy tightening in the US in the near future and continued policy support in most non-US developed countries. Due to the still accommodative stance of global central banks, we continue to model a suppressed pace of convergence between our near-term cash return expectations and our longer-term forecasts.

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 averages. For corporate bonds, we also analyze credit spreads and their term structures, with separate assessments of investment-grade and high-yield bonds.

Our updated longer-term return expectations for fixed income reflect only modest adjustments from the prior quarter, as increased reinvestment income still plays a large role over the long term. In general, at shorter horizons we anticipate limited returns from bonds given low initial yields and some limited anticipated rise in rates. As is the case with our cash return forecasts, our bond return models continue over the next several years to incorporate a suppressed pace of convergence to higher longer-term yields that we expect at more distant horizons.

Spreads on high-yield bonds ended the first quarter lower. The yield on the Barclays U.S. High Yield Index fell to 8.20%[2] at the end of March, 59 basis points below the level observed at the end of the fourth quarter. Corresponding yields in Europe fell slightly by 23 basis points. Our short-term return projection for US high-yield bonds increased to 7.7%. Over the longer haul, we are projecting a 6.5% return for US High Yield, less than the fourth quarter of 2015, reflecting expected long term reinvestment effects.

In the near term, we expect real yields to match the behavior of nominal yields and rise modestly. Our resulting one-year return forecast for US TIPS is 2.1%. Still, to the extent that developed-world central banks remain supportive of economies and markets, they may seek to keep real yields depressed. Over the longest time frames, we are modeling increases in real yields, but we expect that inflation protection will provide enough income to produce a long-term return on US TIPS of 2.7%.

Equities

Our long-term equity forecasts begin with expectations for developed market large capitalization stocks. The foundation for these forecasts are estimates of real return potential, derived from current dividend yields, real earnings growth rates, and potential for expansion or contraction of valuation multiples. Our forecasting method incorporates long run estimates of potential economic growth based on forecast labor and capital inputs to estimate real earning growth. Across developed markets, variation in labor, capital and productivity result in region-specific differences in our estimates for real earnings growth, allowing for a more region appropriate forecasts for European and Asia Pacific equities.

Since the current dividend yield on the S&P 500® is 2.29%[3] and we anticipate a real earnings growth rate of roughly 1.84%, we forecast a real return of 4.14% for large cap US equities. Combining this with our inflation forecast, we see long-term equity returns in the 6.1% range.

The trailing price/earnings ratio for the S&P 500 rose from last quarter to 16.65x,[4] a level that remains fairly consistent with historical averages. We are therefore not factoring in any expansion or contraction of this multiple over the long haul. We expect real earnings may grow at a pace slower than long-term historical averages. To envision a meaningful multiple expansion from current levels, we would like to see greater caution in earnings growth expectations, consistent with the economic environment. In the absence of this kind of conservatism, we do not feel an upward adjustment in our longer-term equity forecast is appropriate.

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 making an explicit currency call as part of our non-US forecasts. Over the long term, the effects of short-term currency fluctuations should cancel out, producing 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 and global developed equities increased by about 100 basis points. We are forecasting one-year returns of 2.6% for large-cap US equities and 4.2% in local currency terms for developed equity markets outside the US.

Smart Beta

The four smart beta strategies begin with the MSCI World universe and are then reweighted toward certain factors. These strategies include value-tilted, quality-tilted, managed volatility (minimum variance), and an equal-weighted portfolio (to capture the small-cap effect). Empirically, exposure to valuation, quality, low volatility and small size have generated positive excess return 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 long-term return premium of 1.2% for the value-tilted portfolio, 0.80% for the quality-tilted portfolio, -0.10% for the minimum-variance portfolio, and -0.50% 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[5 6] the annualized 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. Before fees, we believe that an average private equity fund can outperform large-cap listed equities by perhaps 0.5% over the long run. All else equal, this makes our long-term forecast for private equities reasonably comparable to our projections for small capitalization 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 realized 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 5.3% and 5.0% respectively, reflective of the current low yield environment. In the shorter term, our expected return models suggest that REITs look slightly less attractive, however the appeal of their income features seems likely to foster continued support for the asset class despite expected rate increases.

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 a commodities investor include how commodities are held (e.g. physically, synthetically, or via futures) and the various construction methodologies of different commodity benchmarks. Our shorter term forecasts are based on the approach and weightings used in the Bloomberg Commodity Index, which reflects investing through futures. 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 realize a negative premium. Our long-term return forecast for commodities is 5.6%.

1 FactSet as of 3/31/2016.

2 Ibid.

3 Ibid.

4 Ibid.

5 Phalippou, Ludovic and Olivier Gottschalg, 2009, “the Performance of Private Equity Funds”. Review of Financial Studies, vol. 22, no 4 (April) : 1747-1776.

6 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.

Figure 2: SSGA Tactical/Strategic Asset Allocation Forecasts

	Short- Term	Intermediate- Term	Long-Term	
Asset Class	1 Year (%)	3–5 Years (%)	10+ Years (%)	Long-term Risk (Std Dev) (%)
US Large-cap	2.6	6.2	6.1	16.5
US Mid-cap	2.3	6.4	6.4	18.5
US Small-cap	2.6	6.7	6.6	20.5
Global Developed ex US	4.2	6.9	7.0	16.5
Euro	4.7	7.2	6.9	18.0
Europe	5.3	7.7	7.6	16.5
Asia-Pacific	2.0	4.9	5.5	17.5
Global ex US Small Cap	4.1	7.6	7.8	20.5
Global Developed (World)	3.3	6.5	6.5	16.5
Global Equities (ACWI)	3.3	6.5	6.5	17.5
ACWI ex USA	4.1	6.9	7.0	18.0
Emerging Markets Equities	3.6	7.2	7.1	21.5
EM Asia	3.7	7.2	7.1	22.5
EM LatAm	2.8	7.2	7.1	23.5
EM EMEA	3.8	7.2	7.1	20.5
Global Value Tilted	4.5	7.7	7.1	17.0
Global Quality Tilted	4.1	7.3	7.2	15.0
Global Equal Weighted	2.8	6.0	7.2	18.0
Global Minimum Variance	3.2	6.4	7.1	13.0
US Government Bonds	1.4	1.0	2.0	5.0
US Investment Grade Bonds	2.1	1.9	2.9	5.5
US TIPS	2.1	2.2	2.7	6.5
US High Yield Bonds	7.7	6.8	6.5	12.5
Non-US Government Bonds	-0.4	-0.6	0.7	5.5
Eurozone Government Bonds	-0.5	-1.1	0.8	5.0
UK Government Bonds	1.3	0.6	2.0	6.0
Japanese Government Bonds	-0.7	-0.4	0.2	3.5
Non-US Corporate Bonds	0.2	0.0	1.4	6.0
Eurozone Corporate Bonds	0.2	-0.4	1.5	5.0
UK Corporate Bonds	3.1	2.5	3.9	7.0
Japanese Corporate bonds	-0.7	-0.3	0.4	4.0
Global Government Bonds	0.2	-0.1	1.2	4.5
Global Investment Grade Bonds	0.8	0.6	1.9	6.0
Euro High Yield Bonds	2.6	1.7	4.6	12.5
Emerging Markets Bonds	2.3	2.7	5.9	11.0
Hedge Funds (market neutral)	3.1	4.8	5.3	7.0
Global Real Estate (REITs)	0.7	3.9	5.0	20.0
Private Equity	2.6	5.9	7.0	25.0
Commodities	-1.5	3.8	5.6	18.0
US Cash	0.6	1.9	2.2	1.5
UK Cash	0.6	2.1	2.5	1.5
EMU Cash	-0.2	1.6	2.1	1.5

Source: State Street Global Advisors (SSGA) Investment Solutions Group as of 3/31/2016.

The forecasted returns are based on SSGA's Investment Solutions Group's March 31, 2016 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 annualized 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 54%. 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.

Definitions

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.

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.

REITs 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.

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.

Tactical asset allocation models Illustrate a dynamic approach to asset management that emphasizes exposure to asset classes that are poised to enhance returns or control drawdowns.

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Asset Allocation is a method of diversification which positions assets among major investment categories. Asset Allocation may be used in an effort to manage risk and enhance returns. It does not, however, guarantee a profit or protect against loss.

Investing in high yield fixed income securities, otherwise known as junk bonds, is considered speculative and involves greater risk of loss of principal and interest than investing in investment grade fixed income securities. These Lower-quality debt securities involve greater risk of default or price changes due to potential changes in the credit quality of the issuer.

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.

Currency Risk is a form of risk that arises from the change in price of one currency against another. Whenever investors or companies have assets or business operations across national borders, they face currency risk if their positions are not hedged.

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.

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).

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

Bonds generally present less short-term risk and volatility than stocks, but contain interest rate risk (as interest rates rise bond prices usually fall); issuer default risk; issuer credit risk; liquidity risk; and inflation risk. These effects are usually pronounced for longer-term securities. Any fixed income security sold or redeemed prior to maturity may be subject to a substantial gain or loss

Investing in foreign domiciled securities may involve risk of capital loss from unfavorable fluctuation in currency values, withholding taxes, from differences in generally accepted accounting principles or from economic or political instability in other nations.

Investments in emerging or developing markets may be more volatile and less liquid than investing in developed markets and may involve exposure to economic structures that are generally less diverse and mature and to political systems which have less stability than those of more developed countries.

Government bonds and corporate bonds generally have more moderate short-term price fluctuations than stocks, but provide lower potential long-term returns.

Diversification does not ensure a profit or guarantee against loss.

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

Investments in mid/small-sized companies may involve greater risks than in those of larger, better known companies.

Investing in futures is highly risky. Futures positions are considered highly leveraged because the initial margins are significantly smaller than the cash value of the contracts. The smaller the value of the margin in comparison to the cash value of the futures contract, the higher the leverage. There are a number of risks associated with futures investing including but not limited to counterparty credit risk, currency risk, derivatives risk, foreign issuer exposure risk, sector concentration risk, leveraging and liquidity risks.

Derivative investments may involve risks such as potential illiquidity of the markets and additional risk of loss of principal.

Investing involves risk including the risk of loss of principal.

Index returns are unmanaged and do not reflect the deduction of any fees or expenses. Index returns reflect all items of income, gain and loss and the reinvestment of dividends and other income.

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