CAPITAL MARKET ASSUMPTIONS

2019

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Capital Market Assumptions: Five-Year Market Outlook, January 2019

The T. Rowe Price Capital Market Assumptions leverage the expertise of our global investment platform.

PRICE PERSPECTIVES | 2019

In-depth analysis and insights to inform your decision-making.

We are pleased to present the first annual publication of the T. Rowe Price Capital Market Assumptions. While capital market assumptions (CMAs) have been integral to our research and multi-asset portfolio design processes for many years, our decision to publish our views is a reflection of global client demand for an additional lens into our investment perspectives and insights.

Our CMAs reflect five-year forecasts for 25 asset classes under five distinct macroeconomic scenarios: baseline, early recession, late recession, bull market, and conditioned on history. We selected a five-year time horizon to address investor interest in near- to medium-term asset class returns. Offering a range of economic scenarios provides investors with flexibility to analyze asset allocations under multiple regimes to better inform return expectations.

CMAs are best understood as forecasts for the central tendency of forward returns. They do not seek to predict actual or realized returns, as there is bound to be material variation around this central tendency for any given historical or future period. For this reason, T. Rowe Price's approach to portfolio construction relies on the use of multiple methods of optimization and robustness checks.

Our baseline forecast incorporates the insights of senior portfolio managers and analysts across our Equity, Fixed Income, and Multi-Asset Divisions. We believe this interdisciplinary approach to developing capital market assumptions, which captures both fundamental and quantitative insights, delivers the best thinking of T. Rowe Price. We intend on updating the CMAs on an annual basis.

We encourage questions and comments. Please feel free to contact your T. Rowe Price relationship contact and/or the regional representative listed below.

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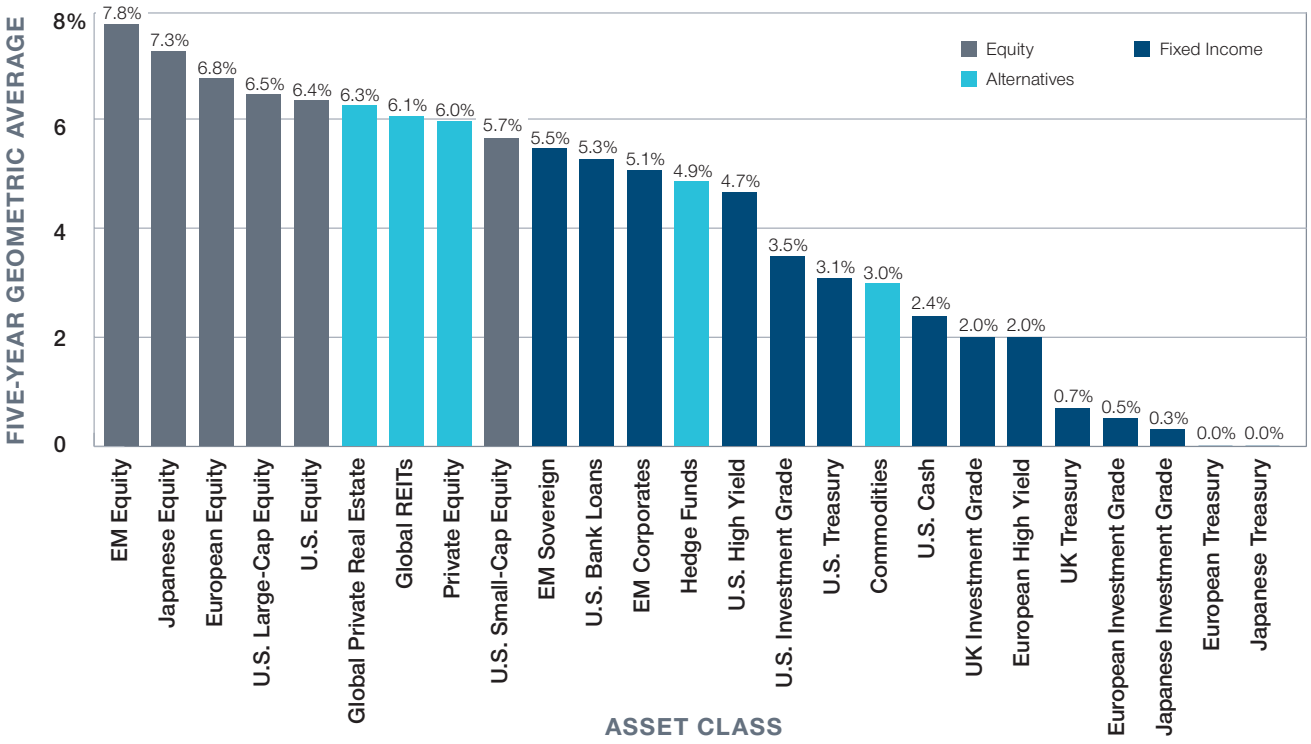
FIVE-YEAR ANNUALIZED EXPECTED RETURNS



ANNUALIZED FORECAST AND HISTORICAL NOMINAL RETURNS

ASSET CLASS	2019 5-YEAR RETURN FORECAST	HISTORICAL 5-YEAR RETURNS, ENDED				
		2018	2017	2016	2015	2014
U.S. Equity	6.4%	7.9%	15.6%	14.7%	12.2%	15.6%
U.S. Large-Cap Equity	6.5	8.2	15.7	14.7	12.4	15.6
U.S. Small-Cap Equity	5.7	4.4	14.1	14.5	9.2	15.5
European Equity	6.8	3.7	9.9	11.3	8.9	9.4
Japanese Equity	7.3	4.3	17.6	17.9	13.2	11.2
EM Equity	7.8	1.9	4.6	1.5	-4.6	2.0
U.S. Cash	2.4	0.6	0.2	0.1	0.0	0.1
U.S. Treasury	3.1	2.0	1.3	1.2	2.9	3.9
U.S. IG	3.5	3.3	3.5	4.1	4.5	6.5
U.S. High Yield	4.7	3.8	5.8	7.4	5.0	9.0
U.S. Bank Loans	5.3	3.4	4.3	5.4	3.7	5.7
UK Treasury	0.7	5.5	4.5	4.7	5.8	7.2
UK IG	2.0	5.5	6.3	8.4	7.2	8.9

ASSET CLASS	2019 5-YEAR RETURN FORECAST	HISTORICAL 5-YEAR RETURNS, ENDED				
		2018	2017	2016	2015	2014
European Treasury	0.0%	3.7%	4.0%	6.1%	6.2%	6.1%
European IG	0.5	2.7	3.4	5.6	4.9	6.0
European High Yield	2.0	3.7	6.5	10.6	8.7	11.4
Japanese Treasury	0.0	2.0	2.2	2.5	2.3	2.6
Japanese IG	0.3	0.7	0.9	1.0	0.1	0.5
EM Sovereign	5.5	4.2	3.8	5.4	5.1	7.3
EM Corporates	5.1	4.4	4.6	5.9	4.5	6.8
Hedge Funds	4.9	-0.6	2.1	1.6	-0.7	1.0
Private Equity	6.0	10.8	13.6	12.8	12.4	15.6
Commodities	3.0	-14.5	-12.2	-13.1	-15.2	-6.5
Global Private Real Estate	6.3	8.9	10.2	10.9	12.2	12.1
Global REITs	6.1	8.3	9.8	12.0	11.9	16.9

Sources: T. Rowe Price, Russell Investments, MSCI, Bloomberg Barclays, S&P, JP Morgan, HFR, Cambridge Associates, NCREIF, and FTSE. January 2019. See Appendix for a representative list of indexes. This information is not intended to be investment advice or a recommendation to take any particular investment action. The forecasts contained herein are for illustrative purposes only and are not guarantees of future results. Forecasts are based on subjective estimates about market environments that may never occur. See Important Information in the Appendix. **Past performance is not a reliable indicator of future results.**

VOLATILITIES AND CORRELATIONS

Volatility and Correlation Matrix

		EQUITY						FIXED INCOME													ALTERNATIVES					
		U.S. Equity	U.S. Large-Cap Equity	U.S. Small-Cap Equity	European Equity	Japanese Equity	EM Equity	U.S. Cash	U.S. Treasury	U.S. IG	U.S. High Yield	U.S. Bank Loans	UK Treasury	UK IG	European Treasury	European IG	European High Yield	Japanese Treasury	Japanese IG	EM Sovereign	EM Corporates	Hedge Funds	Private Equity	Commodities	Global Private Real Estate	Global REITs	VOLATILITY
EQUITY	U.S. Equity	1.00																									16.0
	U.S. Large-Cap Equity	1.00	1.00																								15.8
	U.S. Small-Cap Equity	0.95	0.93	1.00																							19.7
	European Equity	0.89	0.89	0.87	1.00																						17.1
	Japanese Equity	0.67	0.66	0.67	0.69	1.00																					20.4
	EM Equity	0.78	0.78	0.73	0.77	0.57	1.00																				22.9
FIXED INCOME	U.S. Cash	-0.11	-0.11	-0.11	-0.05	-0.08	0.13	1.00																			0.8
	U.S. Treasury	-0.58	-0.58	-0.56	-0.55	-0.62	-0.40	0.14	1.00																		4.8
	U.S. IG	0.19	0.20	0.12	0.20	-0.04	0.38	-0.12	0.45	1.00																	5.4
	U.S. High Yield	0.75	0.75	0.71	0.70	0.44	0.78	-0.14	-0.42	0.49	1.00																10.4
	U.S. Bank Loans	0.61	0.61	0.58	0.60	0.49	0.66	-0.12	-0.56	0.28	0.88	1.00															9.3
	UK Treasury	-0.43	-0.43	-0.41	-0.40	-0.56	-0.36	-0.05	0.83	0.40	-0.34	-0.46	1.00														6.0
	UK IG	0.43	0.43	0.39	0.45	0.22	0.46	-0.22	0.16	0.79	0.54	0.40	0.32	1.00													6.4
	European Treasury	-0.30	-0.29	-0.32	-0.25	-0.33	-0.20	-0.11	0.67	0.47	-0.18	-0.29	0.69	0.38	1.00												4.3
	European IG	0.38	0.38	0.33	0.37	0.22	0.47	-0.24	0.14	0.79	0.59	0.44	0.16	0.83	0.55	1.00											3.9
	European High Yield	0.71	0.71	0.66	0.70	0.48	0.73	-0.18	-0.47	0.45	0.93	0.88	-0.38	0.54	-0.09	0.66	1.00										14.0
	Japanese Treasury	-0.26	-0.26	-0.32	-0.33	-0.52	-0.24	-0.04	0.64	0.40	-0.17	-0.31	0.67	0.23	0.54	0.23	-0.22	1.00									2.4
	Japanese IG	0.01	0.02	-0.05	-0.02	-0.17	0.07	0.03	0.36	0.52	0.16	0.03	0.32	0.41	0.37	0.44	0.15	0.56	1.00								1.4
	EM Sovereign	0.50	0.50	0.43	0.48	0.12	0.70	-0.03	0.04	0.68	0.76	0.51	0.06	0.59	0.21	0.67	0.68	0.15	0.26	1.00							8.2
	EM Corporates	0.58	0.58	0.51	0.56	0.30	0.75	-0.10	-0.11	0.70	0.89	0.76	-0.12	0.68	0.08	0.77	0.85	0.03	0.31	0.87	1.00						7.3
ALTERNATIVES	Hedge Funds	0.75	0.75	0.73	0.71	0.67	0.81	0.07	-0.52	0.25	0.77	0.75	-0.53	0.36	-0.33	0.38	0.71	-0.39	0.01	0.51	0.67	1.00					8.8
	Private Equity	0.76	0.76	0.74	0.75	0.60	0.71	0.15	-0.51	0.04	0.59	0.54	-0.43	0.26	-0.39	0.15	0.51	-0.33	-0.12	0.34	0.43	0.76	1.00				21.0
	Commodities	0.38	0.38	0.36	0.32	0.31	0.48	0.09	-0.38	0.08	0.49	0.54	-0.46	0.13	-0.37	0.17	0.39	-0.27	0.01	0.30	0.44	0.58	0.40	1.00			25.8
	Global Private Real Estate	0.38	0.38	0.36	0.34	0.28	0.38	0.03	-0.38	-0.10	0.48	0.48	-0.37	0.11	-0.29	0.08	0.47	-0.22	-0.11	0.26	0.39	0.53	0.54	0.45	1.00		17.6
	Global REITs	0.71	0.70	0.75	0.64	0.40	0.57	-0.04	-0.20	0.37	0.65	0.53	-0.11	0.60	-0.00	0.53	0.60	-0.00	0.17	0.51	0.59	0.54	0.57	0.27	0.48	1.00	21.5

Sources: T. Rowe Price, Russell Investments, MSCI, Bloomberg Barclays, S&P, JP Morgan, HFR, Cambridge Associates, NCREIF, and FTSE. January 2019. See Appendix for a representative list of indexes. This information is not intended to be investment advice or a recommendation to take any particular investment action. The forecasts contained herein are for illustrative purposes only and are not guarantees of future results. Forecasts are based on subjective estimates about market environments that may never occur. See Important Information in the Appendix. **Past performance is not a reliable indicator of future results.**

Process Description

The foundation of our CMAs is a survey provided to a wide range of senior T. Rowe Price portfolio managers, economists, and analysts across our Equity, Fixed Income, and Multi-Asset Divisions. The survey requests forecasts for many inputs: gross domestic product (GDP) growth, inflation, commodity prices, equity valuations, earnings growth, fixed income yields, slopes of yield curves, and spread levels. Respondents are asked to offer insights for their respective area of expertise and are invited to add thoughts for other categories. After all surveys are collected, baseline forecasts are developed for each asset class. The Capital Markets Assumptions Governance Committee then reviews the results for internal consistency and reasonableness.

Correlations and Volatility

Empirical research has shown that over short time horizons (days and months), volatility regimes tend to cluster—i.e., today's volatility environment is highly correlated to that which investors are likely to experience in the near future. However, these results are less conclusive over longer time horizons. Similarly, certain asset classes, like emerging market debt, have experienced significant structural declines in volatility over the past decade, while others, like developed market investment-grade debt, recently have increased in volatility as the duration of the asset class extended in a low interest rate environment.

The volatility and correlation matrix shown is based on 15 years of historical data, making adjustments as necessary to reflect recent developments within each asset class. We "unsmooth" return histories of alternative asset classes, which have significant auto-correlation, to better reflect the economic volatility of the underlying assets.

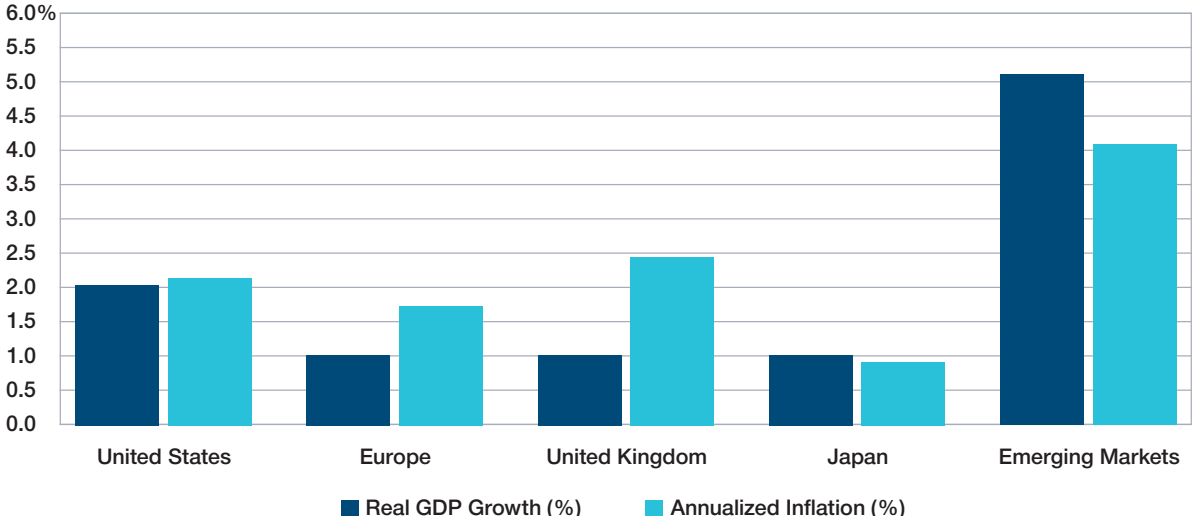
Currency Treatment

All return forecasts are made in local currency, except emerging market asset classes, which are based in U.S. dollars. Corporate and sovereign emerging market debt is frequently issued in U.S. dollars and is quoted as a spread to U.S. Treasuries, making the U.S. dollar an appropriate base currency for emerging market forecasts. For emerging market equity, the expected earnings forecast incorporates the translation impact from the local currency into the U.S. dollar.

COMMENTARY ON BASELINE FORECASTS

A confluence of disruptive market forces, many of which had been looming on the horizon for some time, punctuated 2018, including slowing global growth, tightening monetary policy, and geopolitical uncertainty. While we acknowledge the heightened volatility of the last several months, we believe the underlying global economic environment remains favorable as we enter our five-year projection period. With positive real GDP growth, inflation, and rising interest rates underpinning our projected returns, the baseline forecasts reflect a low probability of recession in the short term. This backdrop may make 2019 a good entry point for investors with a multiyear time horizon.

MACROECONOMIC FORECASTS FOR BASELINE RESULTS



Equity

We remain sanguine on the prospect for attractive equity returns. The fading headwind from U.S. monetary policy and reduced tensions on trade could boost returns in the U.S. and emerging markets. Also, European fiscal policy should be more stimulative over the next several years as the European Central Bank slowly reverses years of market intervention. In Japan and the emerging markets, we expect a more robust economic environment fueled by a supportive developed market. However, a deceleration in U.S. corporate earnings growth is likely, given that the tailwind from tax reform is behind us.

Fixed Income

Given the current backdrop of slow but positive economic growth and low interest rates, our baseline five-year return forecasts for many fixed income sectors are low relative to historical return averages. Our baseline forecasts for developed markets are based on a bear market steepener, due to higher growth, inflation, and term premia expectations lifting long-duration yields at a faster pace than short-term rates.

We expect spreads to widen slightly for most credit markets from current levels, with the notable exception of EM debt. Given the recent widening of the market caused by trade tensions, our base case calls for EM spreads to remain relatively unchanged from current levels.

Alternatives

Generally speaking, 2018 was a difficult year for most major alternative asset sectors. Real estate encountered a housing slowdown across U.S., Australian, and Canadian markets after years of impressive growth. Commodities, particularly within energy-related areas, saw double-digit price declines. Hedge fund performance, while widely varied based on strategy and investment approach, was challenged overall.

T. Rowe Price's baseline expectation is for a moderation in REIT performance given the 2018 corrections. We expect low returns from commodities, restrained by weak energy prices due to improving extraction efficiency and subdued real economic growth. Our expectations for private assets include a slight liquidity premium but do not offer dramatically higher expectations than public equity markets.

While we acknowledge the heightened volatility of the last several months, we believe the underlying global economic environment remains favorable as we enter our five-year projection period.

Scenarios

FIVE-YEAR SCENARIO ANNUALIZED RETURNS

	ASSET CLASS	BASELINE	EARLY RECESSION	LATE RECESSION	BULL MARKET	CONDITIONED ON HISTORY
EQUITY	U.S. Equity	6.4%	4.1%	2.7%	9.0%	6.7%
	U.S. Large-Cap Equity	6.5	4.1	2.7	9.0	6.8
	U.S. Small-Cap Equity	5.7	3.7	2.7	10.1	6.6
	European Equity	6.8	3.0	2.4	13.3	5.3
	Japanese Equity	7.3	1.1	1.5	10.7	5.5
	EM Equity	7.8	3.8	2.0	19.0	8.7
FIXED INCOME	U.S. Cash	2.4	1.8	2.5	2.2	1.8
	U.S. Treasury	3.1	4.6	4.0	3.4	3.5
	U.S. IG	3.5	4.8	3.5	3.8	4.4
	U.S. High Yield	4.7	3.3	2.1	6.7	6.2
	U.S. Bank Loans	5.3	4.4	2.8	4.6	5.1
	UK Treasury	0.7	3.9	3.1	2.0	3.0
	UK IG	2.0	2.5	1.7	2.7	3.8
	European Treasury	0.0	1.3	2.0	1.5	2.3
	European IG	0.5	1.5	1.3	1.7	2.4
	European High Yield	2.0	1.8	1.2	5.0	5.1
	Japanese Treasury	0.0	1.0	0.7	-0.1	0.9
	Japanese IG	0.3	0.5	0.5	0.1	0.6
	EM Sovereign	5.5	4.6	2.3	8.6	6.9
	EM Corporates	5.1	4.4	3.4	5.4	6.0
ALTERNATIVES	Hedge Funds	4.9	1.3	2.1	4.8	3.2
	Private Equity	6.0	3.9	3.0	14.2	7.8
	Commodities	3.0	-0.5	0.6	11.1	0.8
	Global Private Real Estate	6.3	2.7	3.3	10.3	6.0
	Global REITs	6.1	4.5	3.9	11.9	7.9

Source: T. Rowe Price. January 2019. This information is not intended to be investment advice or a recommendation to take any particular investment action. The forecasts contained herein are for illustrative purposes only and are not guarantees of future results. Forecasts are based on subjective estimates about market environments that may never occur. See Important Information in the Appendix. **Past performance is not a reliable indicator of future results.**

In addition to the baseline scenario presented thus far, we have constructed four additional sets of capital market assumptions, each representing a particular methodology and/or economic environment. Analyzing current and potential portfolio designs across a range of economic and return regimes allows investors to better understand a particular portfolio's ability to meet their objectives. We believe that considering portfolio designs across multiple regimes is necessary for aligning investor objectives and asset allocation.

Baseline—Results from the survey responses and Capital Markets Assumptions Governance Committee processes. Does not correspond to a specific macroeconomic environment, historical period, or forced correlation structure.

Early Recession—Reflects a five-year period with a recession occurring within the first two years.

Late Recession—Reflects a five-year period with a recession occurring within the last two years.

Bull Market—Reflects a five-year period with no recession occurring.

Conditioned on History—Reflects return expectations, conditioned on historical returns, volatility, and correlations from January 1989 through December 2018.

Methodology for Generating Scenarios—The scenario-generation process begins with the Capital Markets Assumptions Governance Committee selecting historical periods best representing each scenario. For example, for the Early Recession scenario, a five-year historical period that reflects that scenario is chosen. Historical real returns for each asset class from that time period are used to calculate average returns, volatilities, and correlations for the asset classes. The historical average real returns from that time period are then blended with the Baseline real returns. This is done using a Bayesian approach that effectively shrinks the Baseline returns toward the historical period returns in a way that is consistent with the asset class covariance structure from that time period and roughly reflects an equal degree of confidence between our Baseline returns and the historical average returns from the historical period. This results in a set of real average returns for a given scenario that is then combined with our inflation expectations to create a set of nominal returns.

For each scenario, the returns from this process then form the starting point for Capital Markets Assumptions Governance Committee oversight. The Capital Markets Assumptions Governance Committee may make adjustments to a scenario's returns based on qualitative judgment. This is particularly relevant for asset classes where we believe structural changes suggest that historical periods are not fully reflective of the asset class's forward-looking behavior.

Using a Mahalanobis distance measure, our Baseline assumptions are most consistent with the Late Recession scenario.

We believe that considering portfolio designs across multiple regimes is necessary for aligning investor objectives and asset allocation.

Fixed Income

Basic Model

We decompose fixed income sector returns into three components: the average yield over the five-year period, the average roll-down yield over the five-year period, and the average annual return due to changes in valuation of the five-year period:

Return = average yield + roll-down + valuation change

These three components are calculated from the following inputs: current yield, forecast yield, and current duration for a given asset class.

Current Yield

The current yield is calculated using linear interpolation—matching the yield on the appropriate sovereign yield curve for the maturity that matches the current duration of the sector. For spread sectors, the current option-adjusted spread is added to the yield of the sovereign maturity that matches the duration of the spread sector.

Forecast Yield

The forecast yield is calculated similar to the current yield, with the inputs provided by the survey results. For a non-Treasury index (e.g., credit), the five-year spread forecast from our survey is then added to the forecast sovereign yield.

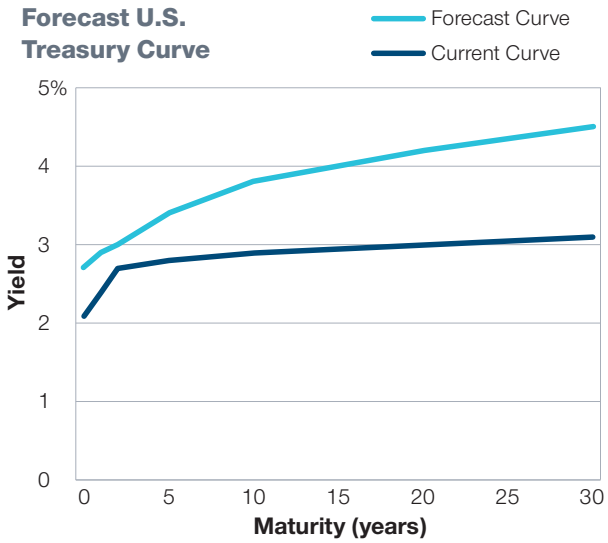
Current Duration

The current duration is used in two ways: first, to find current yield through duration-matching to the sovereign curve, as discussed above. Second, it is used to calculate the average annual roll-down yield and return due to valuation change. These calculations assume the sector will maintain a constant duration throughout the subsequent five-year period. Our research shows that this assumption, while not perfect, is reasonable since modified durations typically vary within +/- one year over rolling five-year windows.

Average Yield

The average yield is the simple average of the current yield and the forecast yield five years forward, incorporating expectations for spread capture ratios in non-Treasury asset classes:

Average yield = (current yield + forecast yield) / 2



Change in Yield

The change in yield is the annual average change from the current yield to the five-year forecast yield:

Yield change = (forecast yield – current yield) / 5

Roll-Down Return

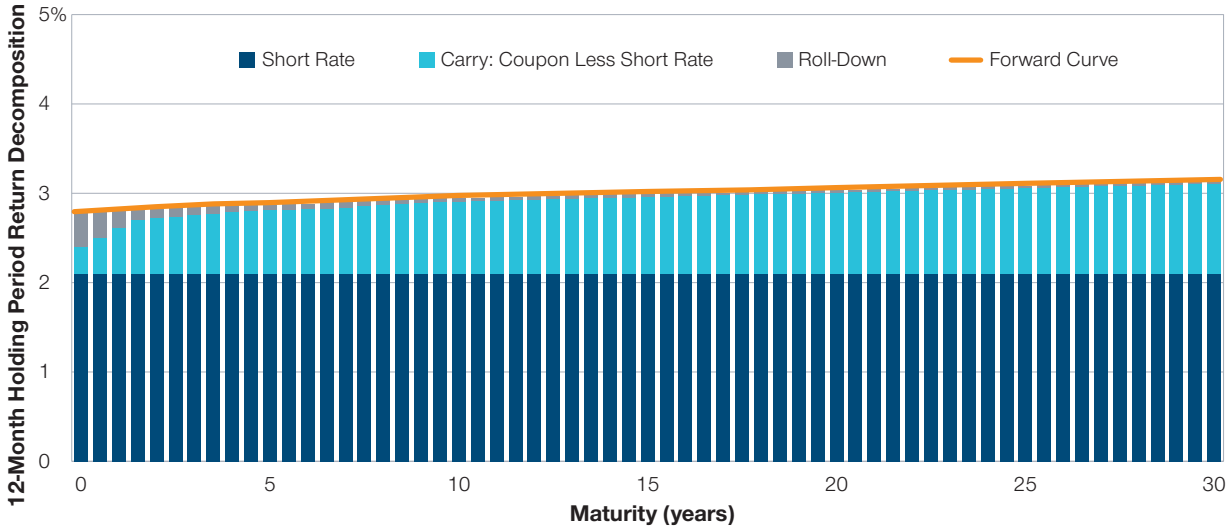
The roll-down return is earned through rebalancing each year to maintain a constant duration. The return is due to the convergence of a bond's end-of-period yield to the beginning-of-period yield of an equivalent bond with a one-year shorter maturity. Thus, we estimate the roll-down return as follows:

1. First, we use the same estimation methods as for the current and forecast rolled-down yields, except that we interpolate to the maturity points on the current and future yield curves that are one year less than the current average maturity of the index.

2. Second, we estimate the average rolled-down yield over the five-year period as the simple average of the current and forecast rolled-down yields from step 1:

Average rolled-down yield = (current rolled-down yield + forecast rolled-down yield) / 2

Carry and Roll-Down for Government Bonds



3. Third, we calculate the average annual change in yield due to rolling down the curve (roll-down change):

Average roll-down change = (average rolled-down yield – average yield) / 5

4. Last, we multiply the current duration by the roll-down change to get the average annual return to the index from rolling down the yield curve:

Average roll-down return = current duration x average roll-down change

Valuation Change

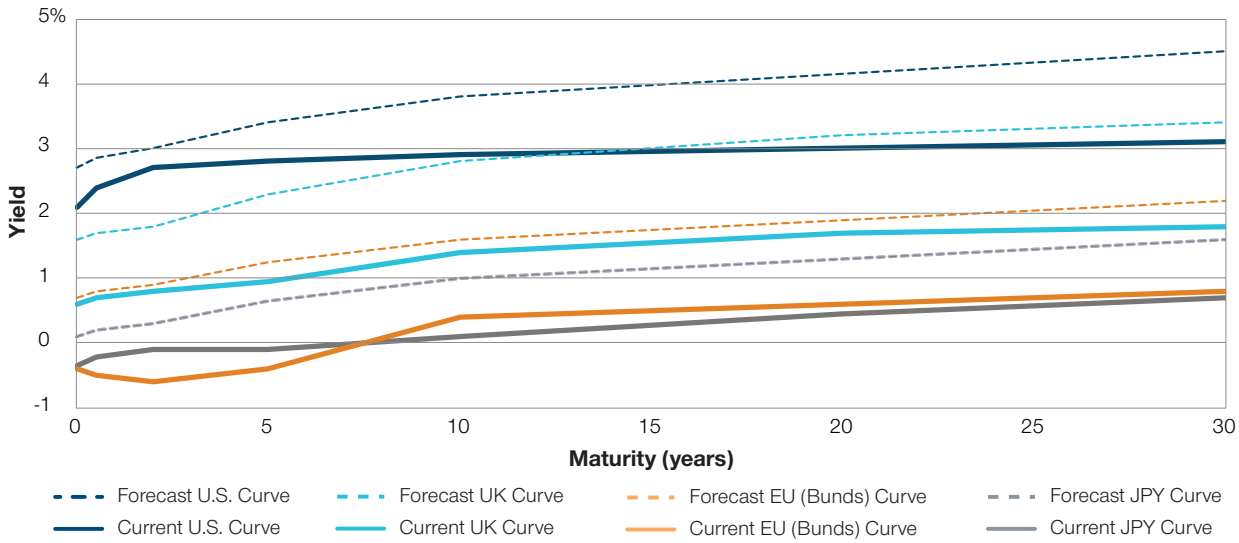
Valuation change has two components: the return due to changes in the level of the underlying sovereign curve and the return due to changes in the spread over the sovereign curve:

Average level change return = current duration x yield change

Comment on Durations

We use analytical modified adjusted durations to ascertain the correct point on the yield curve for interpolation. However, we use empirical durations for valuation change return estimation so that we can ensure that we can cleanly separate the duration due purely to level changes in the underlying sovereign curve and changes in spread levels for a sector.

Global Yield Curves



Framework for Determining Baseline Return Assumptions

Equities

The capital market assumptions for equities provide return forecasts for the U.S., Europe, Japan, and emerging markets. U.S. returns are further broken out by large-cap and small-cap returns. Our survey process leverages the knowledge and expertise of our global equity portfolio manager and analyst teams via forecasts for each market. We blend the survey results with market data to develop our equity market assumptions.

Survey Data:

1. Expected Inflation—Headline consumer price index annualized over next five years
2. Real Earnings per Share (EPS) Growth—Arithmetic average over the next five years
3. Future Price to Earnings (P/E)—Multiple in five years' time

Market Data:

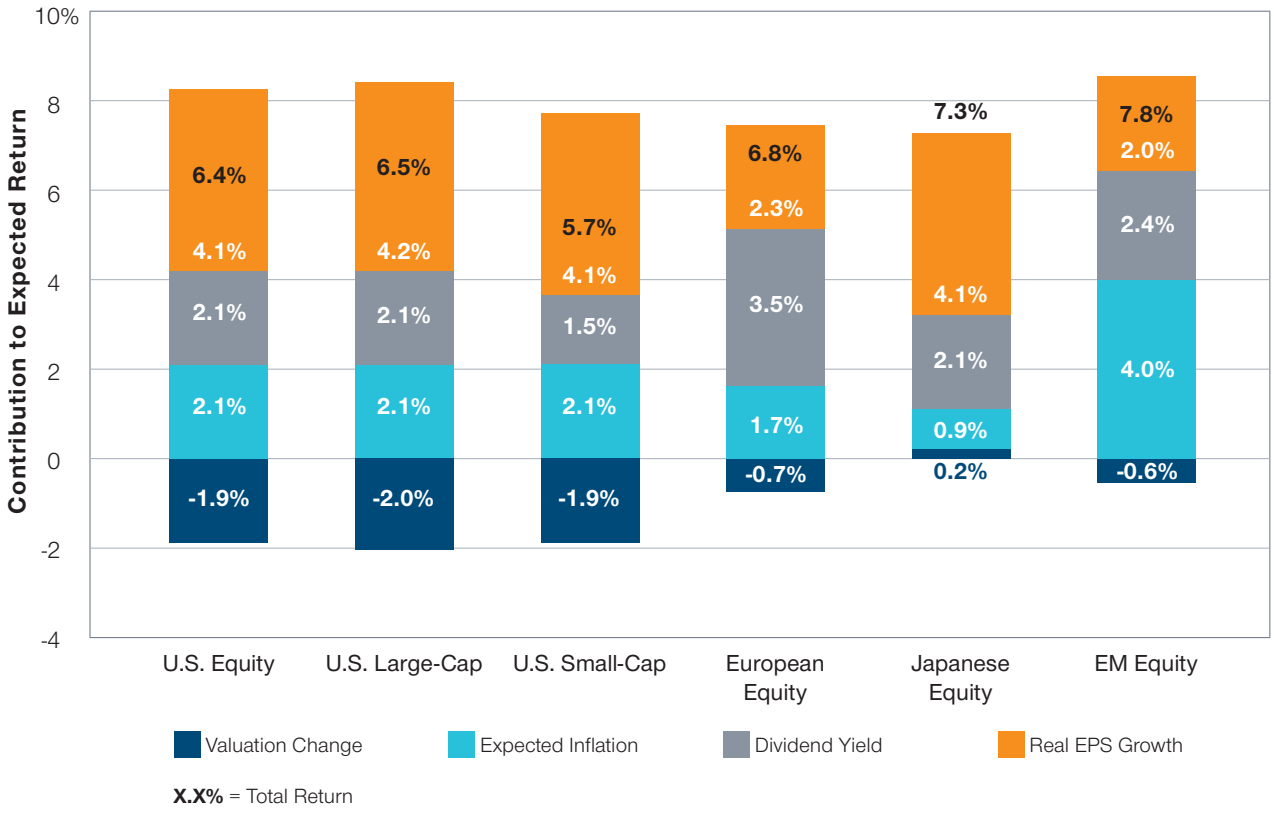
1. Dividend Yield—Historical average percentage yield
2. Current Price to Earnings—Last 12-month P/E

For each equity asset class, the above inputs are used to calculate expected average annual returns, according to the equation:

Expected Inflation + Real EPS Growth + Dividend Yield + ΔValuation

Where annual ΔValuation for each of the next five years is given by: $\left(\frac{\text{Future P/E}}{\text{Current P/E}}\right) \times \frac{1}{5}$

Equity Market Expected Returns From 2019 to 2024 (in Local Currency, Except EM, Which Is in USD)



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Impact of Buybacks and New Issuance

Two components purposefully absent from our equity return model are share buybacks and net issuance. When companies buy their own stock, the remaining outstanding shares each represent a larger ownership percentage and should, therefore, appreciate in price. However, the positive effects of share buybacks are offset by initial and secondary stock offerings. Published academic literature has been inconclusive on the net effect at the market level.

In favor of a negative buyback effect, on the order of -2% per year, William Bernstein and Rob Arnott argue that share issuances and initial public offerings have consistently outpaced buybacks. Their observation that the market capitalizations of global stock markets consistently grow faster than the price level of indexes following the same markets supports this argument. On the other side of the debate, Philip Straehl and Roger Ibbotson have argued for a positive buyback effect on the order of +1.5%, based on aggregating net issuance at the individual company level divided by beginning market capitalization for all stocks in the S&P 500 from 1970–2014.

Rather than align directly with either side of the debate, we have chosen a middle ground by assuming no net change in return due to buybacks and new issuance.

Framework for Determining Baseline Return Assumptions

Alternatives

To forecast the returns of the alternative asset classes, we use a factor regression model with the following premiums used as the predictive variables:

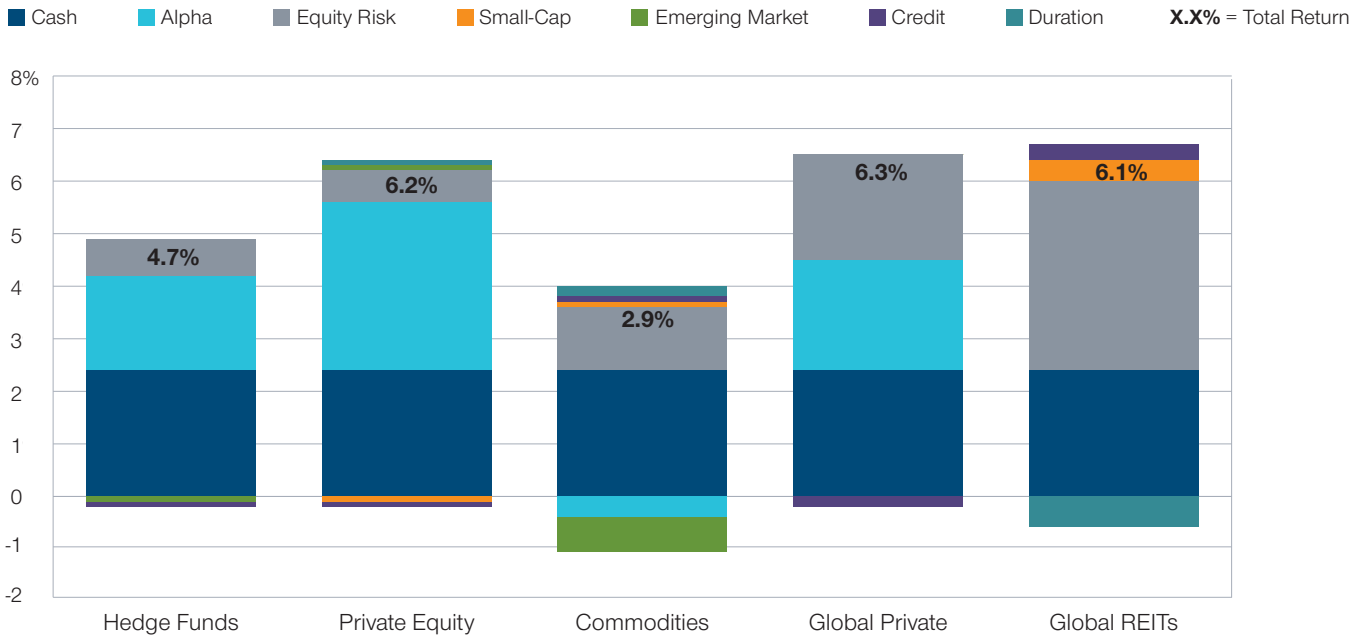
- Equity risk premium
- Small-cap premium
- Emerging market premium
- Credit premium
- Duration premium
- Alpha

Asset classes such as hedge funds and private equity/real estate have a non-negligible active management component that is a foundational portion of the asset class's value proposition. We use data starting in 2002 to help quantify this component of the expected return.

Based on our survey results, we quantify each premium as shown below and apply each asset class's historical beta to the premiums to calculate an expected return.

Premiums	Forecast Value Over Next 5 Years
Equity risk	4.0%
Small-cap	-0.7%
Emerging market	1.4%
Credit	-0.4%
Duration	-0.4%

Component of Expected Return



Source: T. Rowe Price. January 2019. This information is not intended to be investment advice or a recommendation to take any particular investment action. The forecasts contained herein are for illustrative purposes only and are not guarantees of future results. Forecasts are based on subjective estimates about market environments that may never occur. See Important Information in the Appendix.

Commodities

In addition to the factor model described above, for commodities we also use gold and oil forecasts from our sector specialists as inputs into our estimates. Generally, we are bearish on commodities, as supply/demand imbalances in oil have continued to place downward pressure on the asset class. Energy and energy-related materials make up nearly 60% of the S&P GSCI Index, which is therefore significantly influenced by energy prices. Our investors forecast the average spot price in five years for a barrel of Brent crude oil and an ounce of gold as $61 and $1,270, respectively.

APPENDIX

Acknowledgments

The following investment professionals make up the T. Rowe Price Capital Markets Assumptions Governance Committee:

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APPENDIX

Reference Indexes

	ASSET CLASS	REPRESENTATIVE INDEX
EQUITY	U.S. Equity	Russell 3000
	U.S. Large-Cap Equity	Russell 1000
	U.S. Small-Cap Equity	Russell 2000
	European Equity	MSCI Europe
	Japanese Equity	MSCI Japan
	EM Equity	MSCI Emerging Markets
FIXED INCOME	U.S. Cash	Bloomberg Barclays 1–3M Treasury Bills
	U.S. Treasury	Bloomberg Barclays U.S. Treasury
	U.S. IG	Bloomberg Barclays U.S. Aggregate Corporate
	U.S. High Yield	Bloomberg Barclays U.S. Corporate High Yield
	U.S. Bank Loans	S&P/LSTA Leveraged Performing Loan
	UK Treasury	Bloomberg Barclays UK Gilts
	UK IG	Bloomberg Barclays UK Aggregate Corporate
	European Treasury	Bloomberg Barclays EUR Treasury
	European IG	Bloomberg Barclays EUR Aggregate Corporate
	European High Yield	Bloomberg Barclays EUR High Yield
	Japanese Treasury	Bloomberg Barclays Japanese Treasury
	Japanese IG	Bloomberg Barclays Japanese Aggregate Corporate
	EM Sovereign	JP Morgan EMBI Global Diversified
	EM Corporates	JP Morgan CEMBI
ALTERNATIVES	Hedge Funds	HRFX Global Hedge Fund Index
	Private Equity	Cambridge Associates LLC U.S. Private Equity
	Commodities	S&P GSCI
	Global Private Real Estate	NCREIF Property
	Global REITs	FTSE EPRA/NAREIT Developed

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Key Risks and Important Information

Key Risks

Forecasts are based on subjective estimates about market environments that may never occur. Some of the factors that could impact these forecasts include, but are not limited to:

Political and economic conditions
Performance of financial markets
Interest rate levels
Changes to laws or regulations

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