BNY MELLON
WEALTH MANAGEMENT

10-Year Capital Market Assumptions

Calendar Year 2021

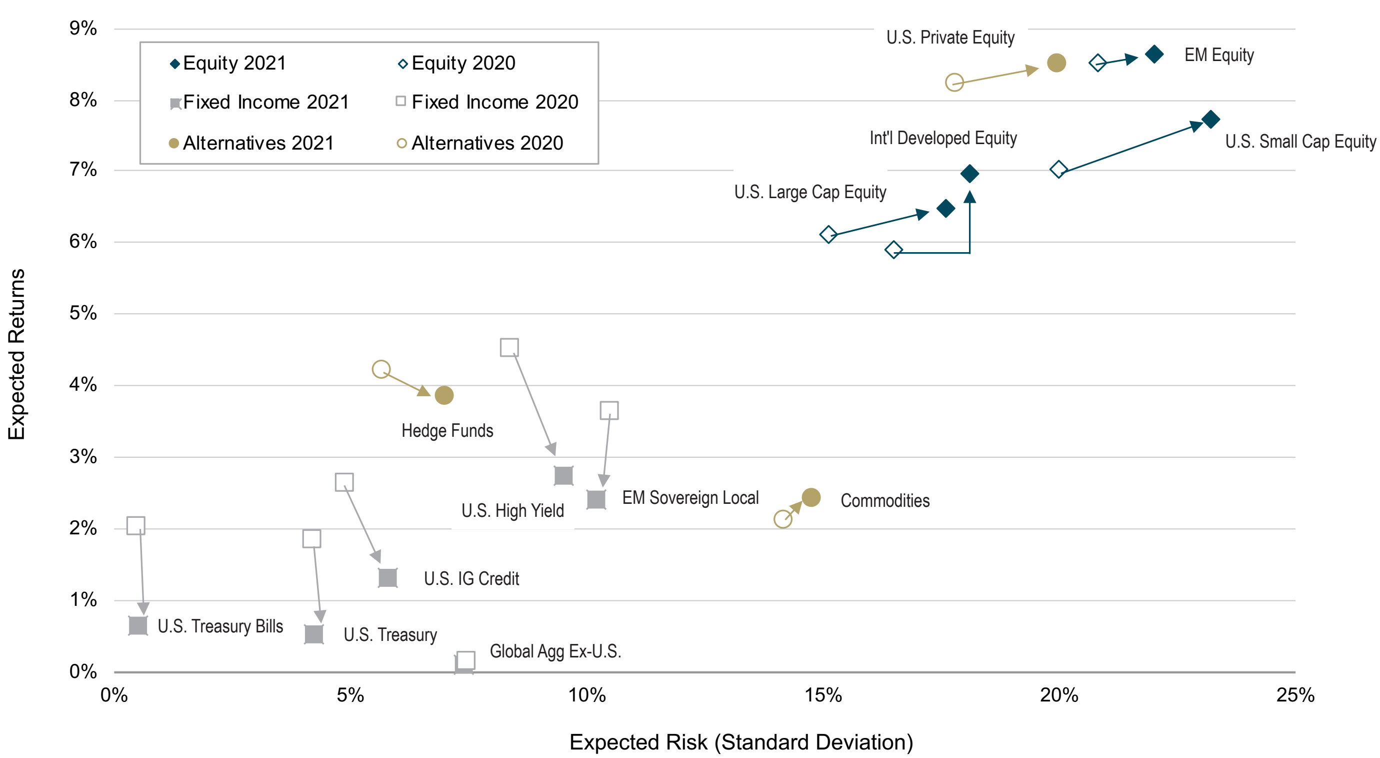
Overview

On an annual basis, BNY Mellon Investor Solutions, LLC develops capital market return assumptions for approximately 50 asset classes around the world. The assumptions are based on a 10-year investment time horizon and are intended to guide investors in developing their long-term strategic asset allocations.

Historically, the initial baseline assumptions were derived using consensus views, adjusted to reflect insights regarding global market imbalances based on research from across BNY Mellon. This year we have incorporated the macroeconomic forecasts generated by BNY Mellon Investment Management Global Economic and Investment Analysis Group, led by Chief Economist Shamik Dhar. Given the global pandemic and unprecedented amount of global monetary and fiscal stimulus deployed to support the economic recovery, we believe the incorporation of these probability-weighted forecasts will prove particularly useful given the high degree of coronavirus-related economic uncertainty.

Overall, the results of our 2021 10-year capital market assumptions are mixed depending on the asset class when compared to last year's assumptions (see Exhibit 1). We see stronger equity market returns due to higher growth rates as the economy recovers from the pandemic. Fixed income asset class returns will be extremely limited given how low global bond yields are today. Alternative asset class returns are mixed, with generally lower returns in absolute return or hedged strategies and amplified returns in private markets.

Exhibit 1: Snapshot of Risk and Return for the 2021 Capital Market Assumptions



Source: BNY Mellon Investor Solutions. Data as of November 30, 2020.

Our capital market assumptions have implications for portfolio construction, centered on the importance of diversification and a shift away from the traditional 60% S&P 500 / 40% Bloomberg Barclays U.S. Aggregate portfolio. Though an equity portfolio focused on U.S. companies has experienced strong returns over the last 10 years, we believe a more diversified equity portfolio with additional emphasis on international markets will be beneficial. Over the long term, our view is that international equities will outperform U.S. equities due to a weaker U.S. dollar and more attractive valuation levels. Diversification of style and capitalization is also important as a rotation from growth to value and large to small cap may occur as the recovery from the pandemic broadens.

It is no secret that fixed income returns around the world will be extremely challenged in the decade ahead given the historically low interest rate environment. We see many fixed income sectors returning near zero on a nominal basis and negative on a real basis. This calls into question the use of traditional fixed income as the risk anchor of a diversified portfolio. Going forward, we see a greater emphasis on non-traditional investments for risk mitigation such as absolute return, real return and hedged strategies. These strategies have the potential to generate positive real returns, provide downside protection to traditional equities and diversify against fixed income interest rate risk.

Lastly, private markets deserve a greater focus over the next 10 years. The incremental return offered through private markets will be key to boost portfolio returns and offset the impact of historically low rates. With the opportunity set continuously shifting from public to private equity, an allocation to private markets is evolving from an option to a necessity in order to achieve long-term growth objectives.

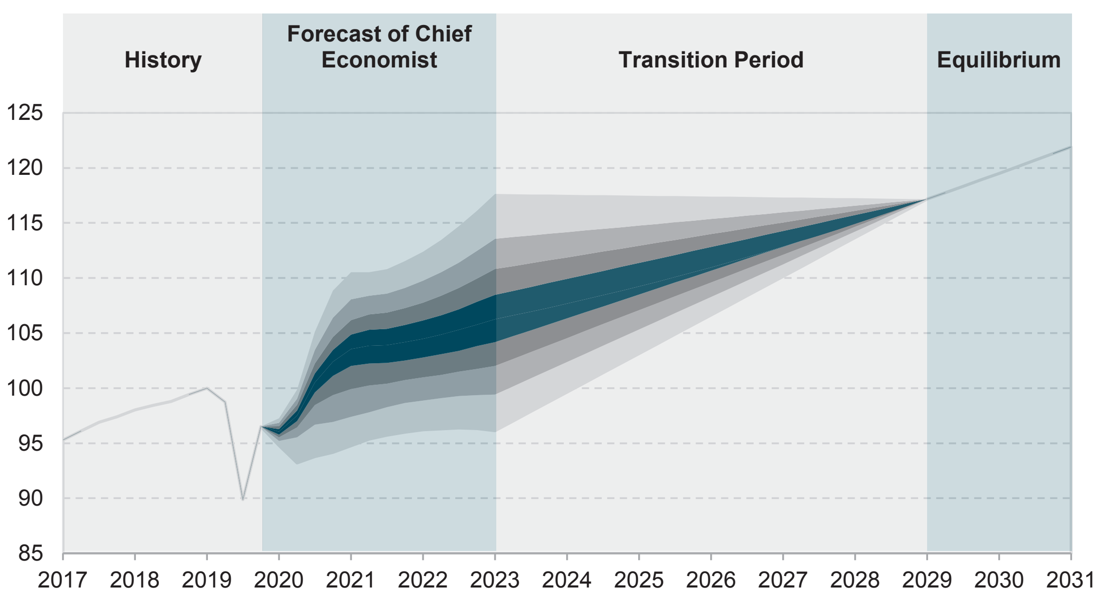
The remainder of the document outlines the assumptions in depth and provides supporting details behind the numbers. We hope you find the 2021 publication interesting and insightful.

Economic Forecast Methodology

Central to our building-block approach used for generating expected returns of major asset classes globally are our macroeconomic projections. Our long-term projections for GDP growth, inflation and short-term rates begin with three-year forecasts based on a range of outcomes developed by BNY Mellon Investment Management Chief Economist Shamik Dhar. We then assume as illustrated in Exhibit 2 that the building blocks gradually glide toward an equilibrium steady state based on long-term market consensus expectations.

Our methodology allows us to generate expected returns under multiple macroeconomic scenarios and time horizons. Though our capital market assumptions are based on a 10-year horizon, the forecast period can be adjusted to generate returns over a shorter horizon, such as five years, or an ultra long-term horizon of 30 years or more.

Exhibit 2: Historical and Projected U.S. Real GDP Illustration, 2019 Q4 = 100



Source: BNY Mellon Investor Solutions, Vantage Point Q1 2021

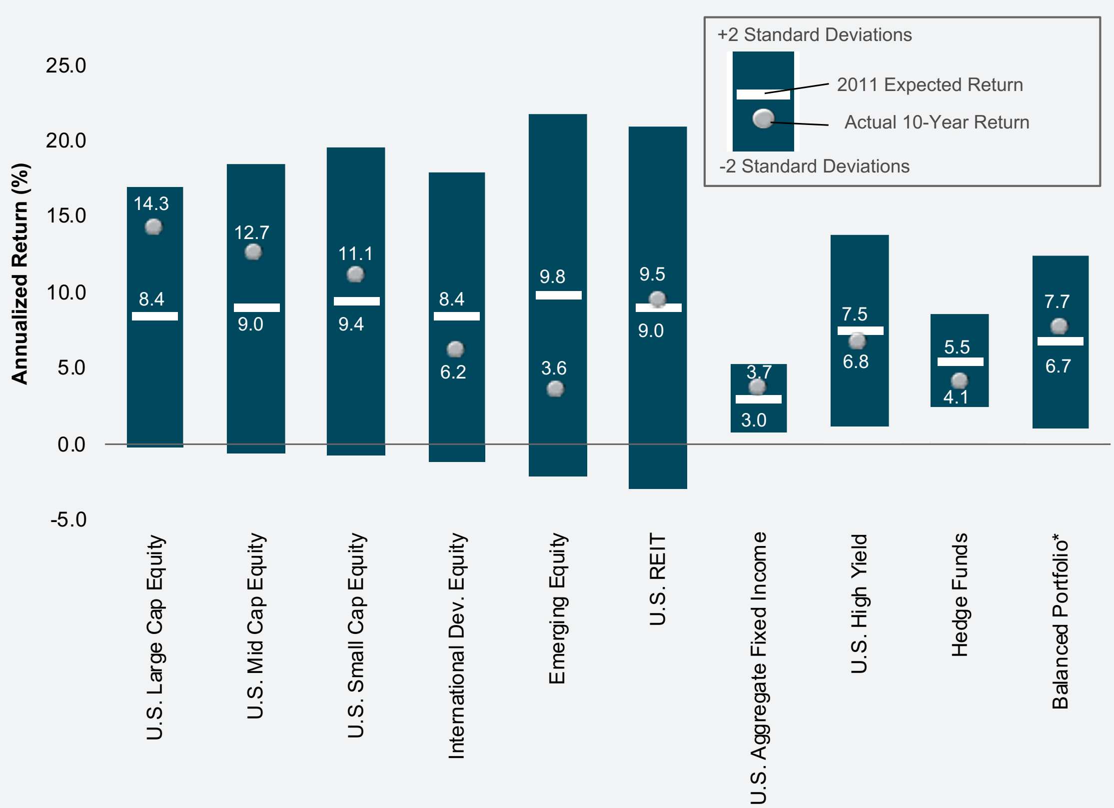
Time-Tested Approach

For decades, BNY Mellon has developed capital market return assumptions to guide our institutional and high net worth clients in structuring their long-term asset allocations. We continually look back and test our assumptions in order to examine accuracy, make adjustments and improve our methodology.

Over the past four calendar years, we have backtested our methodology and found that our 10-year projected returns were quite accurate. Exhibit 3 is a comparison of our published 2011 capital market assumptions and actual returns over the past 10 years. The white lines represent our expected returns from 10 years ago, with the top and bottom of the bars representing plus and minus two standard deviations from the expected return. Actual returns over the past 10 years are represented by the circles. As the chart demonstrates, actual returns for each asset class and a hypothetical balanced portfolio easily fell within the two standard deviation range. Actual returns for U.S. equity were generally higher than expected, and the opposite held true for international equity. Expected returns for fixed income were extremely close to actual returns. Hedge funds slightly underperformed expectations.

The analysis also demonstrates the value of diversification. A balanced portfolio of 55% equity, 30% fixed income, and 15% alternatives had an expected return of 6.7%, close to the actual return of 7.7%. Though certain asset classes — especially those with high volatility — can be challenging to predict individually, a well-diversified portfolio can be predictable over the long term.

Exhibit 3: 2011 Capital Market Assumptions vs. Actual 10-Year Returns Ending 11/30/2020



*Assumes a hypothetical balanced portfolio with weights of 20% U.S. large cap equity, 7% U.S. mid cap equity, 4% U.S. small cap equity, 16% international developed equity, 6% emerging equity, 2% U.S. REIT, 25% U.S. Aggregate fixed income, 5% U.S. high yield, and 15% hedge funds.

Source: BNY Mellon Investor Solutions, Bloomberg.

Macroeconomic Backdrop

When building capital market assumptions, we start with projections of inflation, real GDP growth, short-term interest rates and currency rates. Inflation and real GDP growth are key drivers of our expected earnings growth for equity. Projections of inflation and real cash rates are extremely influential in projecting fixed income yields and returns.

The economic projections underpinning our asset class return assumptions are based on four economic scenarios outlined in BNY Mellon Investment Management's 2021 Q1 Vantage Point. These scenarios are summarized in Exhibit 4. We develop return expectations under each of these scenarios, then probability weight the returns to determine our overall "expected" return. This approach allows us to not only analyze portfolios based on the expected case, but also to shock the portfolio under the various scenarios. We encourage you to read the latest Vantage Point to learn more about our economic projections.

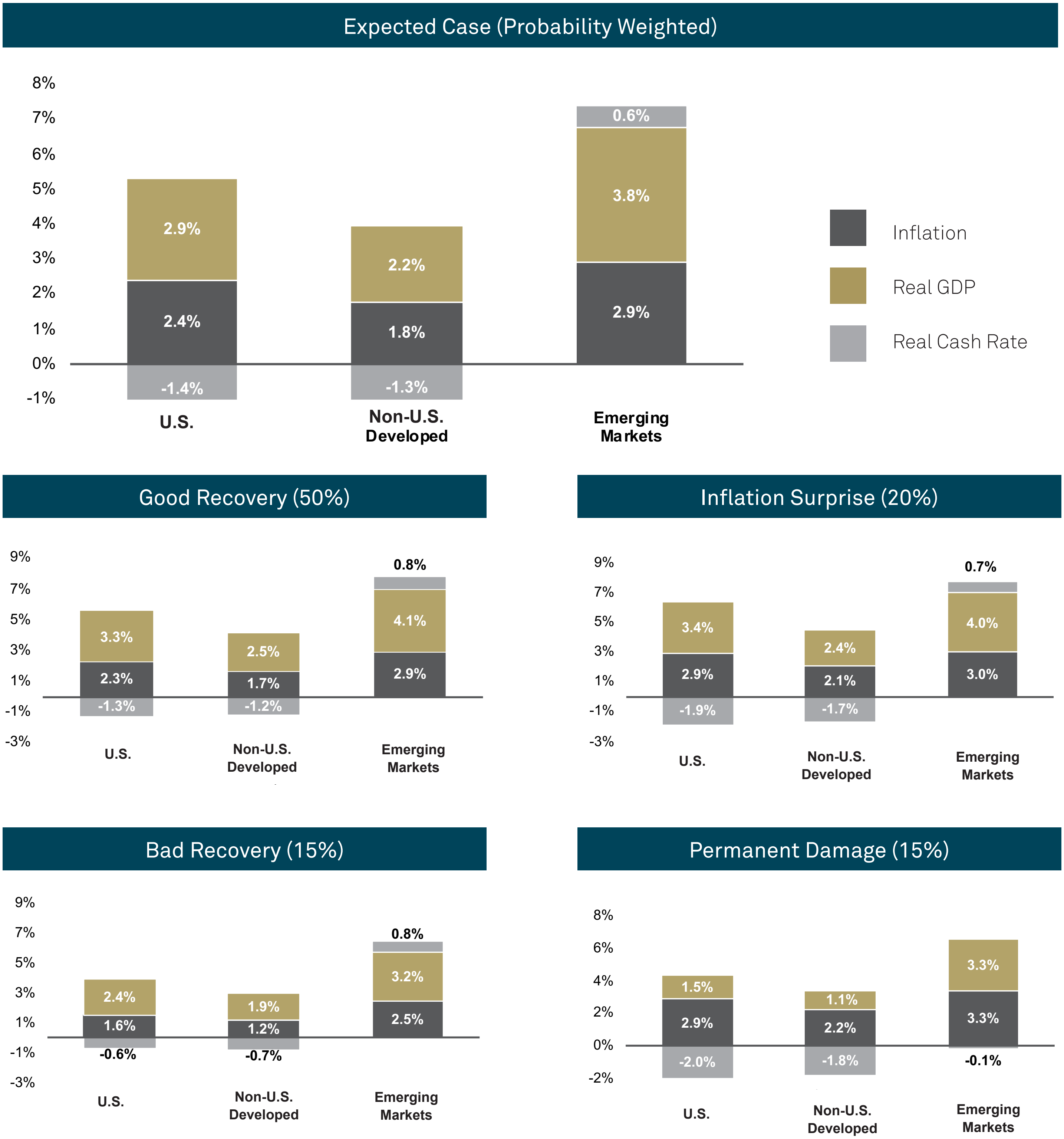
Exhibit 4: Summary of Macroeconomic Scenarios

50% Probability	20% Probability	15% Probability	15% Probability
Good Recovery	**Inflation Surprise**	**Bad Recovery**	**Permanent Damage**
• Successful global rollout of the various vaccines • Economic activity picks up very strongly in Q2 and Q3 of 2021 for US and Europe • Pent-up demand comes through and sectors most affected by lockdowns benefit • Both fiscal and monetary policy remain highly accommodative while inflation remains well contained • Non-inflationary recovery, coupled with low interest rates support a relatively broad stock market rally • The dollar weakens in this scenario, as the prospect of financial crisis recedes	• The recovery is stronger than expected with GDP quickly returning to pre-crisis levels. • Strong consumer and business sentiment • Supply remains somewhat impaired in sectors most affected by COVID-19 generating price pressures • The Fed does not tighten until late 2022, a long time after inflation reaches the 2% target • U.S. real interest rates reach historically low levels • The U.S. dollar falls initially • Eventually the Fed starts raising rates, limiting the upside for risky assets and providing a floor to the dollar	• Vaccines turn out to be less effective and more difficult to roll out • Social distancing and even lockdowns return to some economies • Lowered confidence and rising unemployment and bankruptcies • Additional rounds of QE prove less marginally impactful • Weak demand means inflation falls further • More countries are forced to consider negative rates • A flight to safety resumes – the dollar and U.S. treasuries rise while equities sell off	• Long-lasting economic damage through fundamental forces and self-fulfilling pessimism • Permanent job losses and long-term unemployment rises • The pandemic permanently changes the way people and firms form beliefs about the future, even if the vaccine proves successful • A temporary disease shock turns into a permanent hit to the level of economic activity • Higher market volatility and premiums • A generalized and prolonged flight from risk ensues, affecting all risk assets

Note: Percentages represent projected probabilities of each scenario occurring. The economic scenarios are provided by the BNY Mellon Global Economics and Investment Analysis team. Please refer to the Q1 2021 Vantage Point publication for the full analysis behind each economic scenario.

Three of the most critical economic metrics for developing our return assumptions are inflation, real GDP growth and real short-term interest rates or cash rates. Inflation and real GDP growth are key drivers of our expected earnings growth for equity. Projections of inflation and real cash rates are extremely influential in projecting fixed income yields and returns. Exhibit 5 outlines our projections for these primary buildings in the expected case and under the four macroeconomic scenarios.

Exhibit 5: 10-Year Annualized Projections of Inflation, Real GDP Growth, and Real Cash Rates

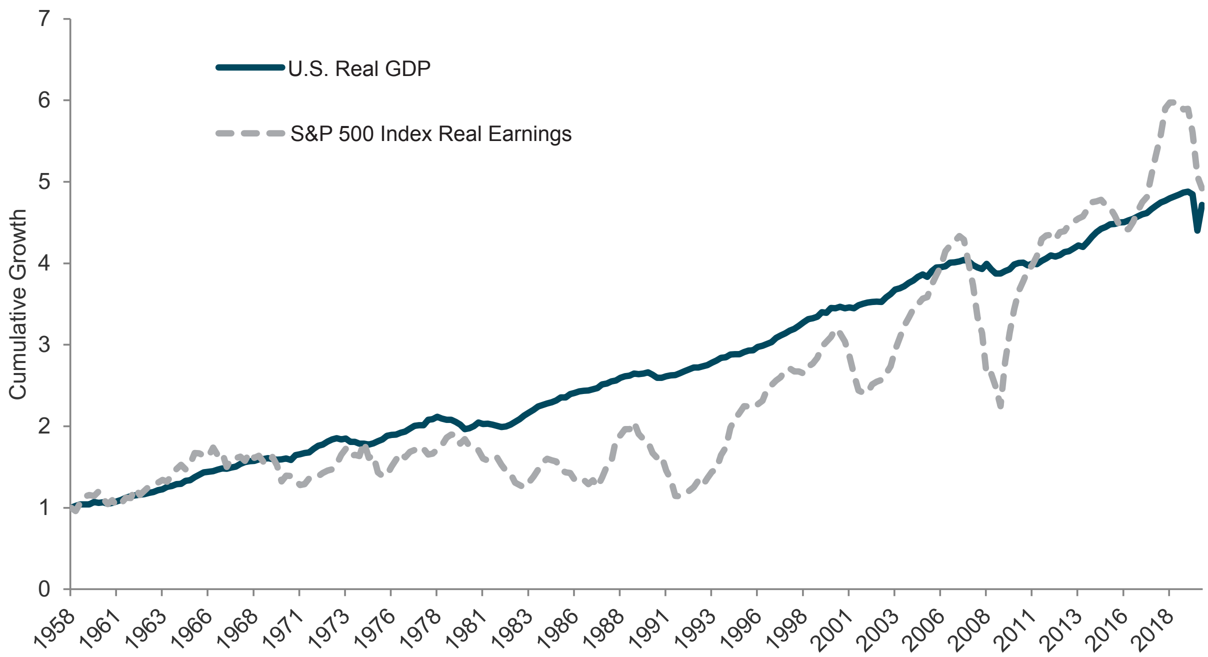


Source: BNY Mellon Investor Solutions. Data as of November 30, 2020.

Equity Markets

We develop equity assumptions using a building-block approach consisting of inflation, real earnings growth, income return, valuation adjustments and currency adjustments. As a baseline assumption, we assume real corporate earnings growth will be consistent with our projections of real GDP growth. As Exhibit 6 indicates, historically there has been a reasonably strong relationship between corporate earnings growth and GDP growth over a long-term time horizon.

Exhibit 6: U.S. GDP vs. Corporate Earnings Growth



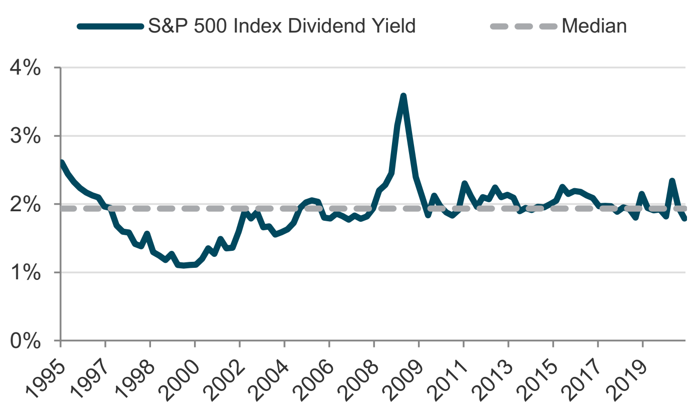
Source: BNY Mellon Investor Solutions, Bloomberg. Data as of September 30, 2020.

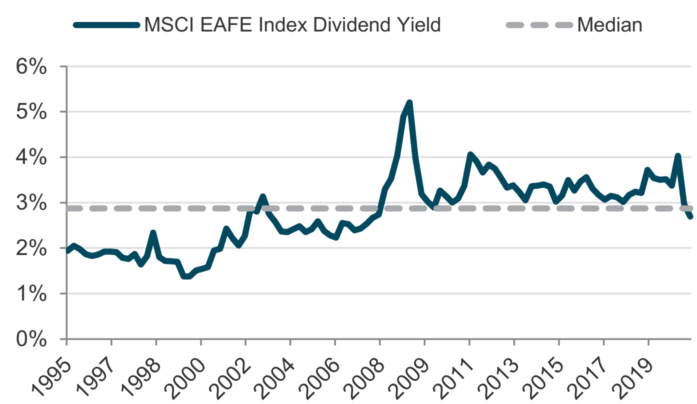
In the U.S., developed markets outside of the U.S. and emerging markets, we believe real earnings growth will be in line with our expectation of regional real GDP growth. We anticipate real earnings growth of 2.9% in the U.S., 2.2% in the developed markets outside of the U.S. and 3.8% in emerging markets.

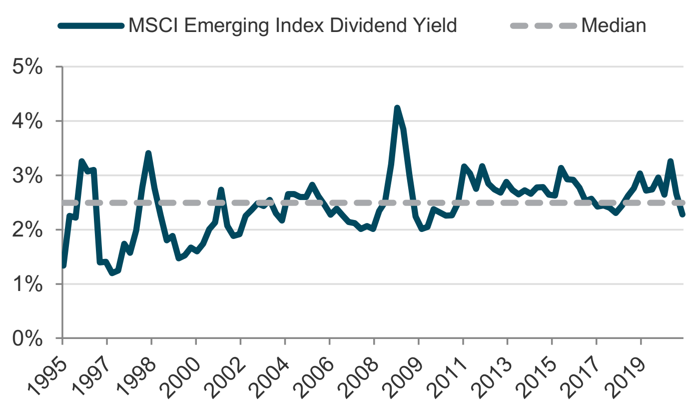
Dividend Yield

Over the next 10 years, we expect dividend yields to be a blend of historical average yields and current yields in the market. We anticipate dividend yields of 1.8% in the U.S., 2.8% in the developed markets outside of the U.S. and 2.3% in emerging markets. These figures are in line with the long-term average dividend yields as shown in Exhibit 7 and current dividend yields.

Exhibit 7: Historical Dividend Yield







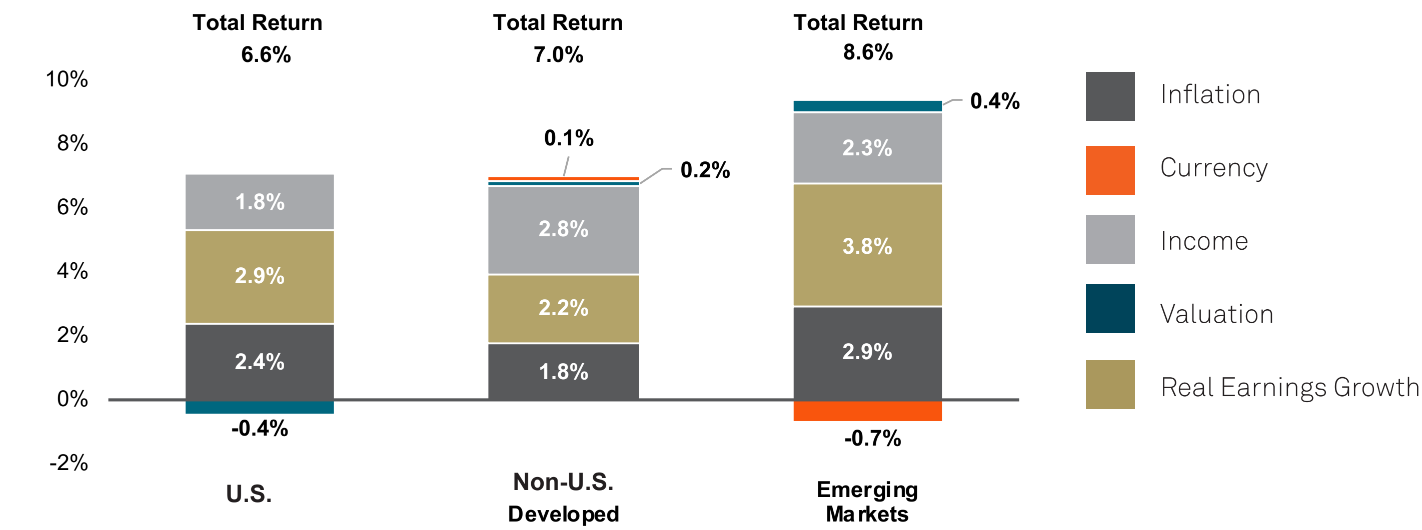
Source: BNY Mellon Investor Solutions, Bloomberg.
Data as of September 30, 2020.

Once the primary equity building blocks of inflation, real earnings growth and income are established, we then make adjustments to long-term returns for valuation and currency. Based on our four macroeconomic scenarios, we made a modest adjustment for valuation and currency shifts. Exhibit 8 illustrates the equity market building blocks and return expectations under the four macroeconomic scenarios and the probability-weighted expected case.

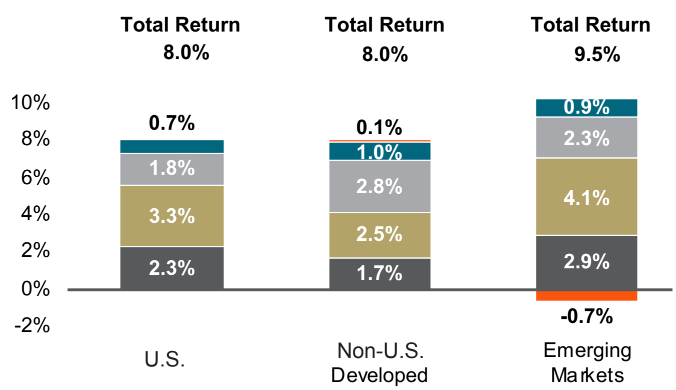
In the U.S., we see a total expected return of 6.6% consisting of 2.4% inflation, 2.9% real earnings growth, 1.8% income and a small valuation adjustment of -0.4%. For developed countries excluding the U.S., we see a total expected return of 7.0% consisting of 1.8% inflation, 2.2% real earnings growth, 2.8% income, 0.2% valuation adjustment and currency appreciation of 0.1%. For emerging markets, we see a total expected return of 8.6% consisting of 2.9% inflation, 3.8% real earnings growth, 2.3% income, 0.4% valuation adjustment and currency depreciation of 0.7%.

Exhibit 8: 10-Year Equity Market Expected Returns (in USD)

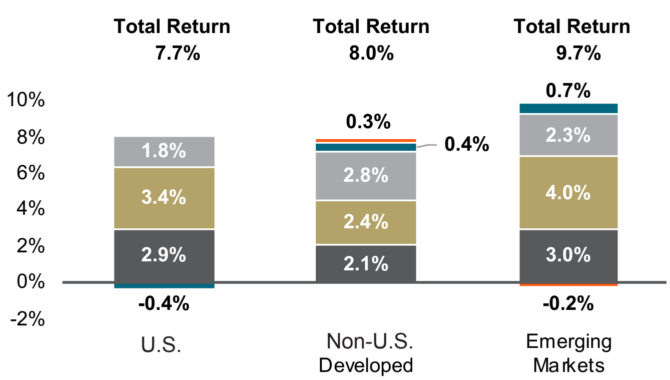
Expected Case (Probability Weighted)



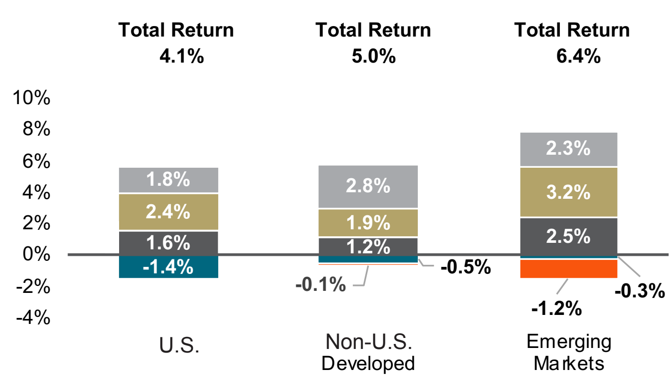
Good Recovery (50%)



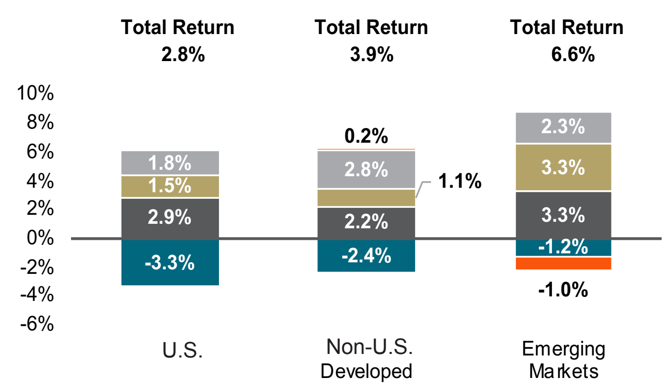
Inflation Surprise (20%)



Bad Recovery (15%)



Permanent Damage (15%)



Source: BNY Mellon Investor Solutions. Data as of November 30, 2020. Numbers may not add up due to rounding..

Fixed Income Markets

Our fixed income return assumptions are derived by analyzing current yields in the market, projecting yields based on our four macroeconomic scenarios, reducing returns due to defaults and making adjustments due to currency fluctuations.

For projecting short-term interest rates, slope of the yield curve and credit spreads in the intermediate term (three years), we rely on the projections of our Chief Economist for various macroeconomic scenarios. Beyond the intermediate term, we assume these factors will migrate to market consensus expectations or to long-term historical averages.

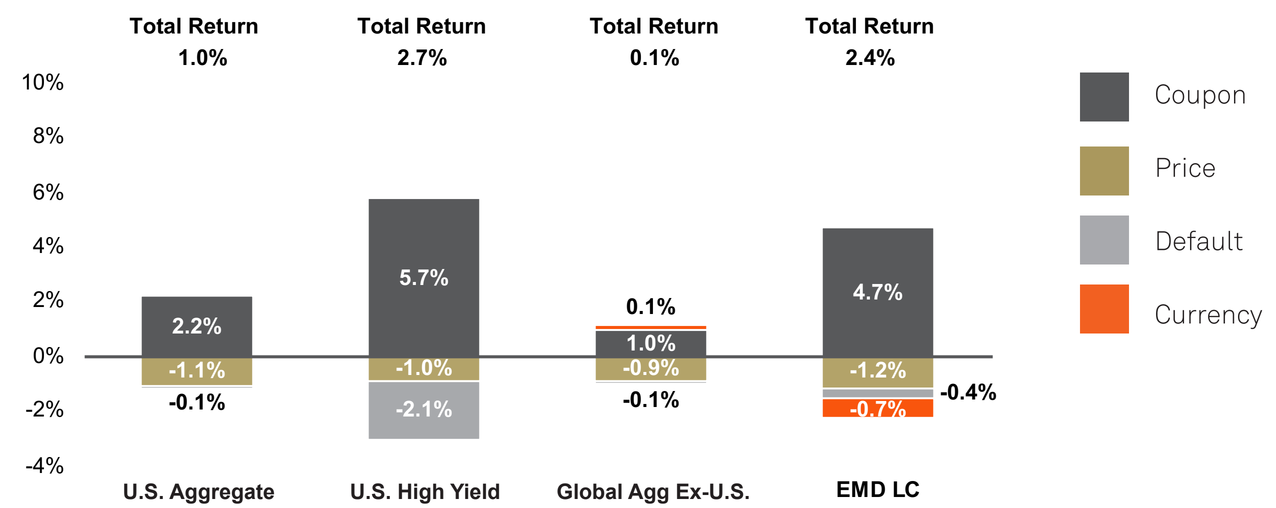
For short-term interest rates in the U.S., we see a range of 0.25% to 0.75% over the next three years depending on the macroeconomic scenario. Beyond three years, we see short-term interest rates gradually migrating to long-term consensus expectations of 1.7%. For the U.S. 10-year Treasury note, we see a range of rates over the next three years of 0.4% to 2.9% with eventual migration to a long-term rate of 2.7% in 10 years.

Regarding credit risk, we see U.S. investment-grade credit spreads in a range of approximately 100 to 250 basis points over the next three years depending on the scenario. Over the long-term, we assume credit spreads migrate to historical long-term averages that are adjusted to eliminate skewing from extreme events like the global financial crisis. For our baseline economic scenario, we assume default and recovery rates will be in line with historical long-term averages. For our pessimistic economic scenarios, we have increased default rates by as much as 50%.

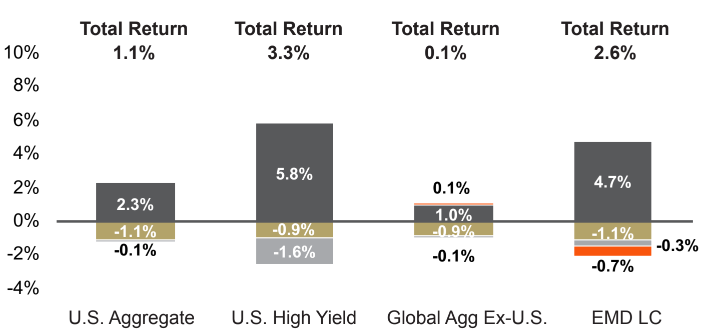
Summarized in Exhibit 9 are the results of our fixed income return projections along with underlying components of return. For U.S. Aggregate, we expect a return of 1.0% over the next 10 years. Higher yields in the future will primarily be offset by principal losses due to rising rates. For U.S. high yield, we see an expected return of 2.7%. High yield will be less susceptible to principal loss from rising rates but will face a strong headwind due to elevated defaults and tight spreads in the current environment. We see very muted returns of 0.1% for Global Aggregate Ex-U.S. due to extremely low current yields. There will be some benefit due to a weaker U.S. dollar relative to other developed currencies. The opposite holds true for emerging markets (EM) local currency, where we see a return of 2.4%. Emerging markets have the benefit of higher yields but will experience currency headwinds due to the relative strength of U.S. dollar relative to emerging market currencies.

Exhibit 9: 10-Year Fixed Income Market Expected Returns (in USD)

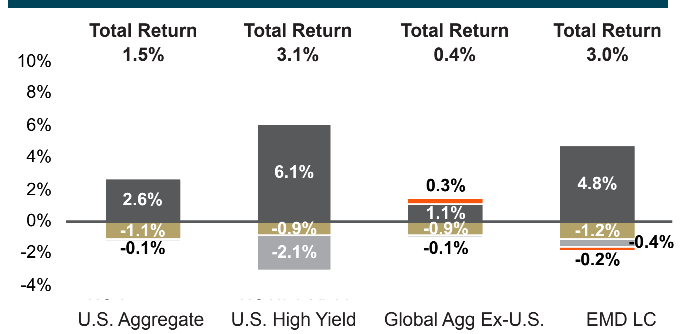
Expected Case (Probability Weighted)



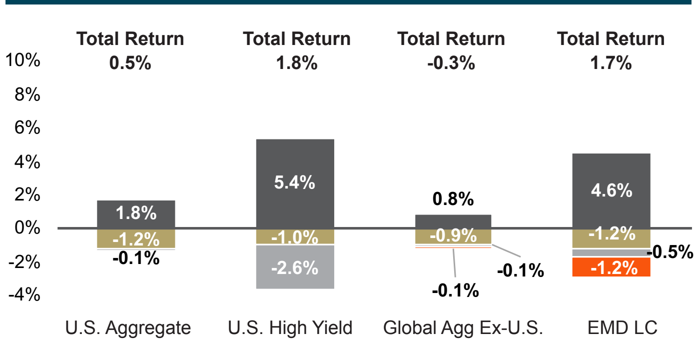
Good Recovery (50%)



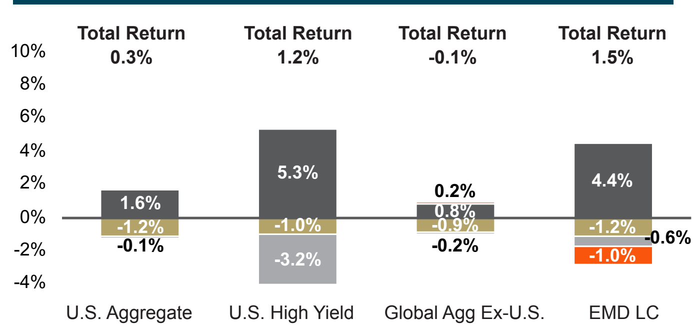
Inflation Surprise (20%)



Bad Recovery (15%)



Permanent Damage (15%)

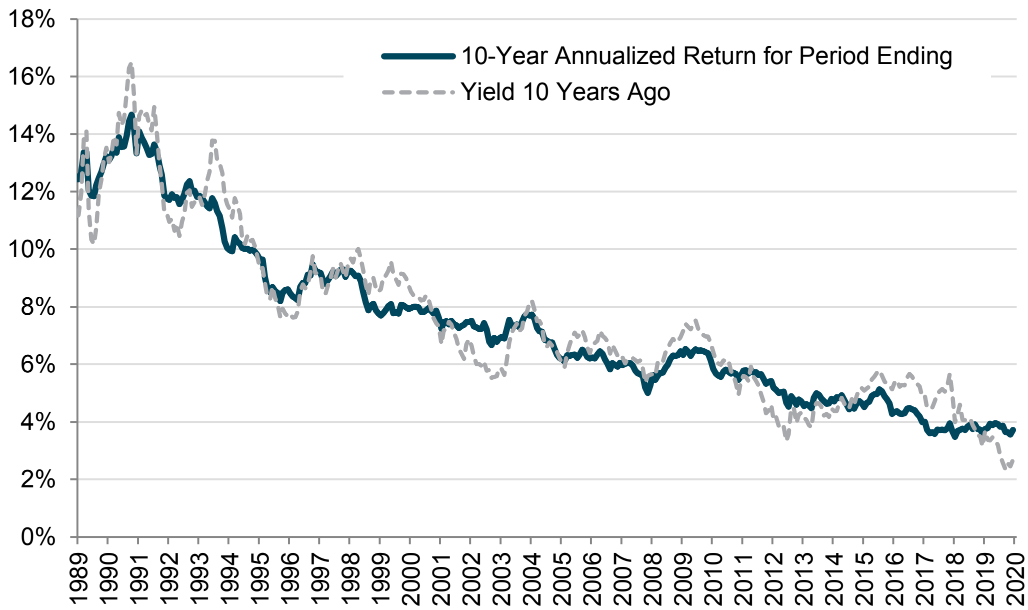


BNY Mellon Investor Solutions. Data as of November 30, 2020. Numbers may not add up due to rounding.

Comparing Fixed Income Returns to Yields

One technique to affirm our expected return assumptions for fixed income is to compare the returns to current yields in the market. Regardless of where projections indicate yields may go in the future, the current yield could be viewed as a strong indicator of future returns. To demonstrate this point, Exhibit 10 shows rolling 10-year annualized returns of the Bloomberg Barclays U.S. Aggregate index and compares those returns to the yield of the index at the beginning of the 10-year period. We have witnessed significant rate movements over the past 30 years, but the return of the U.S. bond market over 10 years is fairly consistent with the yield of the market at the start of the period. Rarely is the difference more than 1%. With current yields a bit over 1%, one should be skeptical of expected returns for U.S. bonds being significantly different than 1% based on a 10-year horizon. Our expected return for U.S. Aggregate is 1.0% over a 10-year horizon.

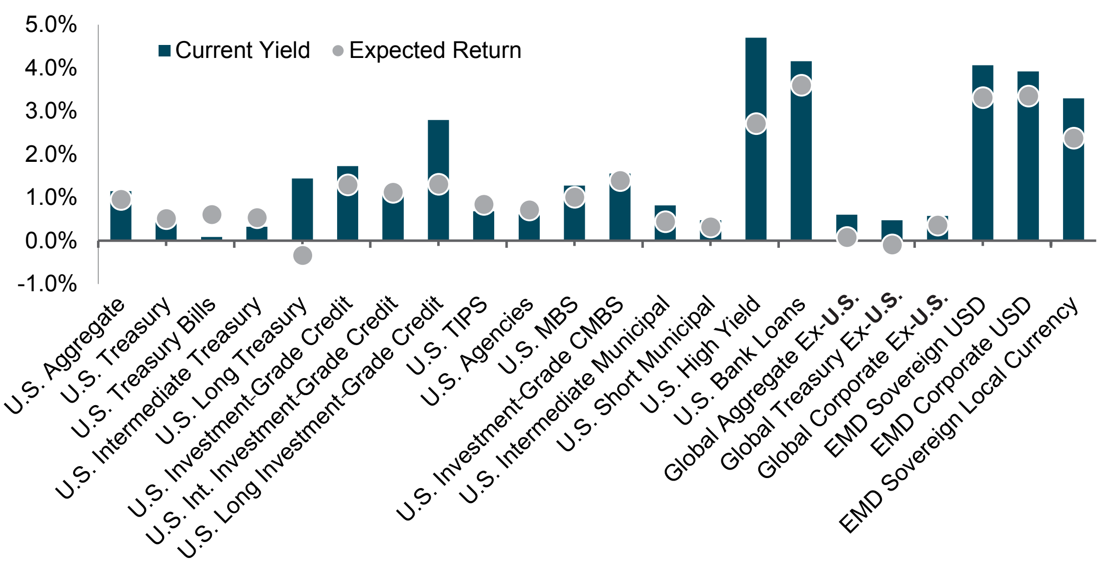
Exhibit 10: U.S. Aggregate Index Returns vs. Starting Yields



Source:BNY Mellon Investor Solutions, Bloomberg Barclays. Data as of November 30, 2020.

In Exhibit 11, we compare current yields across many fixed income sectors to our expected return assumptions. For most asset classes, the expected return is generally consistent with the current yield. One major exception is high yield fixed income, where defaults result in a return less than the current yield. Another outlier is long-duration fixed income, which is impacted the most from rising interest rates.

Exhibit 11: Current Fixed Income Yields vs. Expected Returns



Source: BNY Mellon Investor Solutions, Bloomberg Barclays. Data as of November 30, 2020.

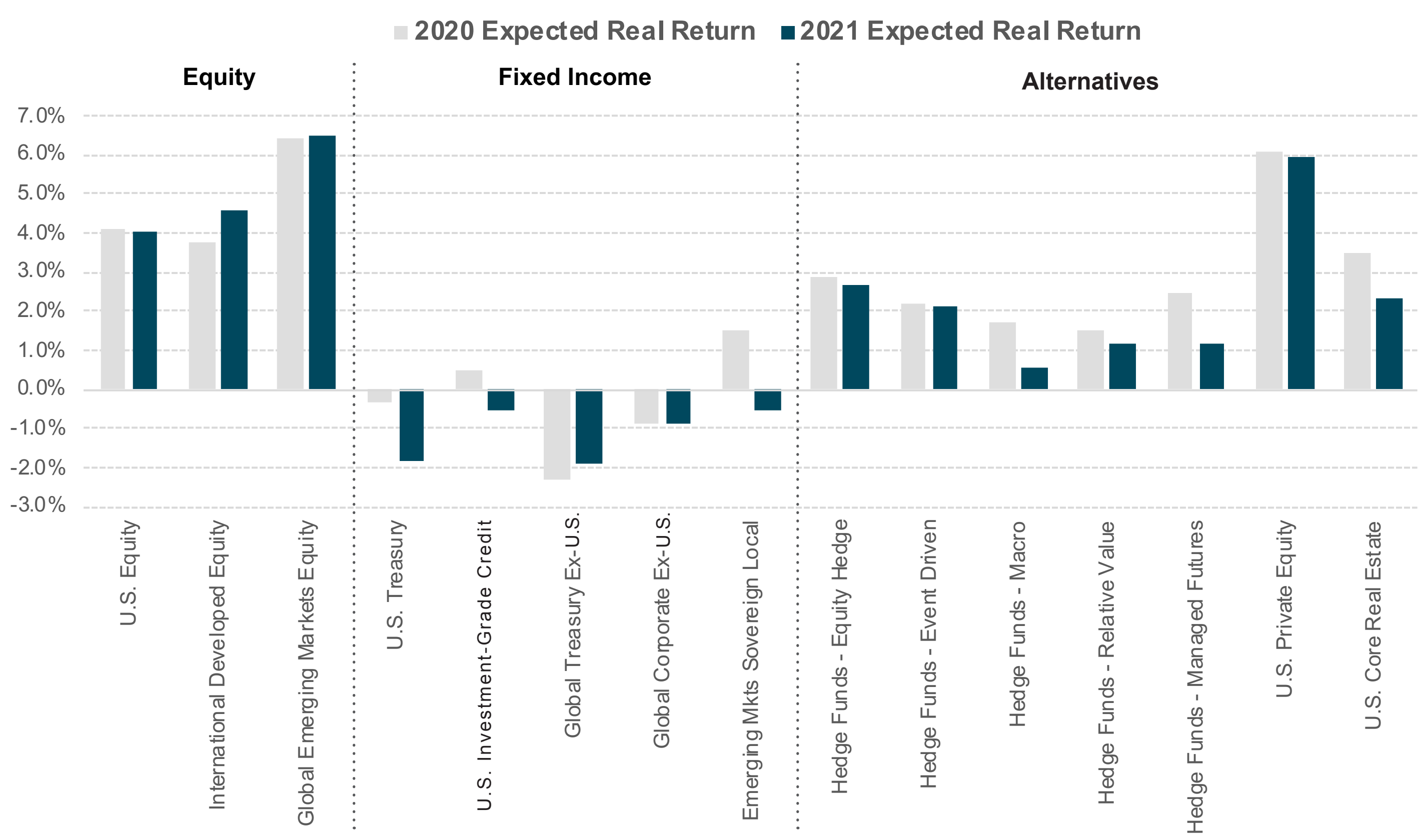
Alternatives

We believe expected returns for alternative asset classes will generally be in line with publicly traded markets on a risk-adjusted basis plus incremental return for alpha and liquidity. To calculate risk-adjusted returns, we first determine the beta of the asset class relative to public markets based on our expectations of return, standard deviations and correlations. We apply the beta to the public-market expected return to determine the expected return of the alternative asset class. For private markets, we add additional return to account for illiquidity. For hedge funds and other alpha-oriented asset classes, we add additional return to reflect the residual risk not captured by market returns. The additional return assumes an information ratio of 0.3 multiplied by the residual risk.

Exhibit 12 provides a summary of expected real returns (expected return in excess of expected inflation) for primary asset classes. The exhibit also compares how our expected real returns have changed from the 2020 assumptions to the 2021 assumptions. Though there has been a reduction in expected real return for most alternative asset classes, there is still an expectation of positive real returns. This also holds true for equity asset classes. Where we have seen a substantial shift is in fixed income. All four of the investment-grade credit or sovereign fixed income categories are expected to generate negative returns after inflation.

We point this out in our description of alternative investments because we believe alternatives may play a much greater role going forward for long-term investors. With the traditional risk anchors of fixed income generating negative real returns, investors may need to pursue hedged strategies as an alternative to fixed income. Taking advantage of liquidity premiums in areas such as private equity may also be necessary to improve equity diversification and boost returns in a low yielding environment.

Exhibit 12: Asset Class Expected Real Return



Source: BNY Mellon Investor Solutions. Data as of November 30, 2020.

Implications for Taxable Investors

All of the return assumptions highlighted in this paper are before the impact of paying taxes. Especially for individuals in higher tax brackets, the long-term reduction in return due to taxes can be substantial. Shown in Exhibit 13 is an illustration of how return expectations can be adjusted for taxes.

Exhibit 13: Illustration of After-Tax Return Assumptions

Asset Class	Pre-Tax Return	Income / Dividend	Short-Term Turnover	Long-Term Turnover	After-Tax Return	Effective Tax Rate
U.S. Large Cap Equity	6.5%	1.8%	0%	5%	5.5%	16%
U.S. Investment Grade Credit	1.3%	1.7%	0%	25%	0.8%	37%
Hedge Funds	3.8%	0.0%	100%	0%	2.4%	37%

Source: BNY Mellon Investor Solutions

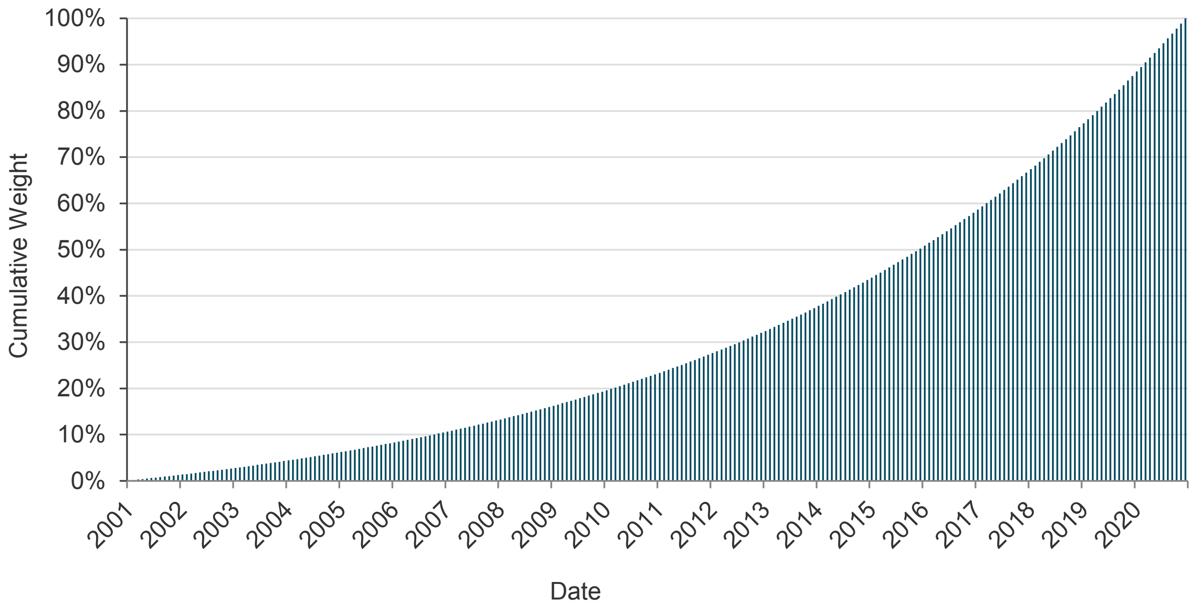
The illustration above assumes general asset class income and turnover assumptions along with the highest U.S. federal tax rates. Under these assumptions, the reduction in return from taxes is substantial for investments that pay high levels of income or have high turnover. When constructing portfolios, this exemplifies the importance of how an asset class investment is implemented. Implementation of the asset class in a tax-efficient manner is as important as selecting the proper asset class.

It is important to note the impact of taxes on a portfolio is extremely dependent on individual circumstances and cannot be broadly applied to capital market assumptions. Individual tax brackets, portfolio cost basis and specific investment characteristics of income and turnover will drive the impact of taxation. It is critical to analyze each situation individually to determine the optimal strategy.

Standard Deviations and Correlations

At a high level, our standard deviations and correlations are based on long-term historical returns with additional emphasis on near-term history. Especially with illiquid asset classes, we've made adjustments for serial correlation and smoothing of historical asset returns. For determining standard deviations and correlations, we utilized exponential weighting of the last 20 years of monthly returns (see Exhibit 14). This approach ensures an appropriate covariance matrix and smooths out results on a year-by-year basis.

Exhibit 14: Historical Weighting for Standard Deviations and Correlations



Source: BNY Mellon Investor Solutions.

Expected 10-Year Returns and Standard Deviations

	Asset Class	Representative Index	Expected Return	Standard Deviation
Equity	U.S. Equity	Russell 3000	6.6%	17.9%
	U.S. Large Cap Equity	Russell 1000	6.5%	17.6%
	U.S. Mid Cap Equity	Russell Midcap	7.0%	20.0%
	U.S. Small Cap Equity	Russell 2000	7.7%	23.2%
	U.S. Micro Cap Equity	Dow Jones Wilshire U.S. Micro-Cap	7.5%	23.9%
	Global Equity	MSCI ACWI	6.9%	17.4%
	International Developed Equity	MSCI World Ex-U.S.	7.0%	18.1%
	International Small Cap Equity	MSCI World Ex-U.S. Small Cap	7.4%	20.2%
	Global Emerging Markets Equity	MSCI Emerging	8.6%	22.0%
	U.S. REIT	FTSE NAREIT Equity	5.7%	21.5%
	Global REIT	FTSE EPRA/NAREIT Developed Index	6.5%	19.6%
Fixed Income	U.S. Aggregate	Bloomberg Barclays U.S. Aggregate	1.0%	3.4%
	U.S. Treasury	Bloomberg Barclays U.S. Treasury	0.5%	4.2%
	U.S. Treasury Bills	Bloomberg Barclays U.S. Treasury Bills 3-6 Months	0.6%	0.5%
	U.S. Intermediate Treasury	Bloomberg Barclays U.S. Intermediate Treasury	0.5%	2.8%
	U.S. Long Treasury	Bloomberg Barclays U.S. Long Treasury	-0.3%	12.3%
	U.S. Investment Grade Credit	Bloomberg Barclays U.S. Credit	1.3%	5.8%
	U.S. Intermediate Inv Grade Credit	Bloomberg Barclays U.S. Intermediate Credit	1.1%	4.0%
	U.S. Long Investment Grade Credit	Bloomberg Barclays U.S. Long Credit	1.3%	10.5%
	U.S. TIPS	Bloomberg Barclays U.S. Govt Inflation-Linked	0.9%	5.4%
	U.S. Agencies	Bloomberg Barclays U.S. Agencies	0.7%	2.9%
	U.S. MBS	Bloomberg Barclays U.S. MBS	1.0%	2.4%
	U.S. Investment Grade CMBS	Bloomberg Barclays CMBS Investment Grade	1.4%	6.9%
	U.S. Intermediate Municipal	Bloomberg Barclays Municipal Bond Intermediate (5-10)	0.4%	3.9%
	U.S. Short Municipal	Bloomberg Barclays Municipal Bond Short (1-5)	0.3%	1.7%
	U.S. High Yield	Bloomberg Barclays U.S. Corporate High Yield	2.7%	9.5%
	U.S. Bank Loans	S&P/LSTA Leveraged Loan	3.6%	7.4%
	Global Aggregate Ex-U.S.	Bloomberg Barclays Global Aggregate ex-USD	0.1%	7.4%
	Global Treasury Ex-U.S.	Bloomberg Barclays Global Treasury ex-U.S.	-0.1%	7.4%
	Global Corporate Ex-U.S.	Bloomberg Barclays Global Agg ex USD: Corporate	0.4%	9.2%
	Emerging Mkts Sovereign USD	Bloomberg Barclays EM USD Aggregate: Sovereign	3.3%	9.3%
	Emerging Mkts Corporate USD	Bloomberg Barclays: EM USD Aggregate: Corporate	3.4%	9.7%
	Emerging Mkts Sovereign Local	Bloomberg Barclays EM Local Currency Government	2.4%	10.2%
Alternatives	Absolute Return[1,2]	HFRX Global Hedge Fund	3.1%	5.3%
	Hedge Funds[1,2]	HFRI Fund Weighted Composite	3.8%	7.0%
	Hedge Funds - Equity Hedge[1,2]	HFRI Equity Hedge	5.0%	9.7%
	Hedge Funds - Event Driven[1,2]	HFRI Event-Driven	4.4%	8.0%
	Hedge Funds - Macro[1,2]	HFRI Macro	2.6%	4.7%
	Hedge Funds - Relative Value[1,2]	HFRI Relative Value	3.3%	5.6%
	Hedge Funds - Managed Futures[1,2]	Credit Suisse Managed Futures Liquid Index	3.1%	9.8%
	Commodities	Bloomberg Commodity Index	2.4%	14.8%
	Global Natural Resources Equity	S&P Global Natural Resources	6.7%	22.7%
	Energy Infrastructure	Alerian MLP	8.0%	34.0%
	U.S. Private Equity[1,2]	Cambridge Associates LLC U.S. Private Equity	8.5%	20.0%
	U.S. Core Real Estate[2]	NCREIF ODCE Index	4.3%	8.0%

1. Consistent with the Representative Index, returns are net of management fees.
2. The Representative Index is not investable. Returns are based on manager averages. Actual results may vary significantly.

Expected Correlations

		Equity				Fixed Income											Alternatives				
		U.S. Equity	International Developed Equity	Emerging Equity	Global REIT	U.S. Aggregate	U.S. Treasury	U.S. Treasury Bills	U.S. Investment Grade Credit	U.S. TIPS	U.S. MBS	U.S. Intermediate Municipal	U.S. High Yield	Global Aggregate Ex-US	Emerging Markets Sovereign USD	Emerging Markets Sovereign LC	Absolute Return	Commodities	Energy Infrastructure	U.S. Private Equity	U.S. Core Real Estate
Equity	U.S. Equity	1.00	0.88	0.77	0.78	-0.02	-0.37	-0.26	0.38	0.16	-0.21	0.05	0.75	0.29	0.55	0.48	0.80	0.52	0.66	0.97	0.22
	International Developed Equity	0.88	1.00	0.92	0.82	0.06	-0.32	-0.20	0.45	0.24	-0.12	0.12	0.78	0.48	0.67	0.68	0.82	0.63	0.60	0.86	0.26
	Emerging Equity	0.77	0.92	1.00	0.75	0.11	-0.26	-0.14	0.46	0.29	-0.06	0.12	0.75	0.51	0.66	0.72	0.76	0.64	0.53	0.74	0.25
	Global REIT	0.78	0.82	0.75	1.00	0.29	-0.11	-0.17	0.60	0.39	0.06	0.30	0.78	0.50	0.72	0.66	0.71	0.50	0.60	0.75	0.35
Fixed Income	U.S. Aggregate	-0.02	0.06	0.11	0.29	1.00	0.86	0.14	0.82	0.81	0.84	0.70	0.22	0.55	0.50	0.37	0.09	-0.03	0.11	-0.02	-0.01
	U.S. Treasury	-0.37	-0.32	-0.26	-0.11	0.86	1.00	0.29	0.45	0.63	0.82	0.50	-0.25	0.35	0.09	0.09	-0.30	-0.29	-0.26	-0.37	-0.10
	U.S. Treasury Bills	-0.26	-0.20	-0.14	-0.17	0.14	0.29	1.00	-0.11	0.05	0.30	-0.02	-0.26	0.04	-0.17	-0.02	-0.19	-0.09	-0.20	-0.24	-0.09
	U.S. Investment Grade Credit	0.38	0.45	0.46	0.60	0.82	0.45	-0.11	1.00	0.74	0.50	0.68	0.64	0.59	0.77	0.54	0.49	0.26	0.48	0.35	0.07
	U.S. TIPS	0.16	0.24	0.29	0.39	0.81	0.63	0.05	0.74	1.00	0.64	0.58	0.37	0.59	0.56	0.51	0.29	0.25	0.22	0.14	0.03
	U.S. MBS	-0.21	-0.12	-0.06	0.06	0.84	0.82	0.30	0.50	0.64	1.00	0.56	-0.04	0.40	0.28	0.22	-0.13	-0.13	-0.08	-0.19	-0.12
	U.S. Intermediate Municipal	0.05	0.12	0.12	0.30	0.70	0.50	-0.02	0.68	0.58	0.56	1.00	0.33	0.42	0.58	0.34	0.16	0.06	0.19	0.03	0.01
	U.S. High Yield	0.75	0.78	0.75	0.78	0.22	-0.25	-0.26	0.64	0.37	-0.04	0.33	1.00	0.40	0.77	0.58	0.77	0.57	0.66	0.72	0.29
	Global Aggregate Ex-U.S.	0.29	0.48	0.51	0.50	0.55	0.35	0.04	0.59	0.59	0.40	0.42	0.40	1.00	0.59	0.80	0.33	0.44	0.26	0.27	0.08
	Emerging Markets Sovereign USD	0.55	0.67	0.66	0.72	0.50	0.09	-0.17	0.77	0.56	0.28	0.58	0.77	0.59	1.00	0.72	0.62	0.50	0.50	0.53	0.19
	Emerging Markets Sovereign LC	0.48	0.68	0.72	0.66	0.37	0.09	-0.02	0.54	0.51	0.22	0.34	0.58	0.80	0.72	1.00	0.47	0.54	0.39	0.44	0.19
Alternatives	Absolute Return[1,2]	0.80	0.82	0.76	0.71	0.09	-0.30	-0.19	0.49	0.29	-0.13	0.16	0.77	0.33	0.62	0.47	1.00	0.61	0.64	0.79	0.20
	Commodities	0.52	0.63	0.64	0.50	-0.03	-0.29	-0.09	0.26	0.25	-0.13	0.06	0.57	0.44	0.50	0.54	0.61	1.00	0.43	0.51	0.22
	Energy Infrastructure	0.66	0.60	0.53	0.60	0.11	-0.26	-0.20	0.48	0.22	-0.08	0.19	0.66	0.26	0.50	0.39	0.64	0.43	1.00	0.65	0.01
	U.S. Private Equity[1,2]	0.97	0.86	0.74	0.75	-0.02	-0.37	-0.24	0.35	0.14	-0.19	0.03	0.72	0.27	0.53	0.44	0.79	0.51	0.65	1.00	0.19
	U.S. Core Real Estate[2]	0.22	0.26	0.25	0.35	-0.01	-0.10	-0.09	0.07	0.03	-0.12	0.01	0.29	0.08	0.19	0.19	0.20	0.22	0.01	0.19	1.00

1. Consistent with the Representative Index, returns are net of management fees.
2. The Representative Index is not investable. Returns are based on manager averages. Actual results may vary significantly.

Only a subset of the asset classes are shown in the matrix above. A full correlation matrix is available upon request.
For illustrative purposes only. There can be no assurance that the expected returns listed above will be achieved.

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