

Asset Class Expected 10-Year Returns and Standard Deviations

Asset Class		Representative Index	Expected Return	Standard Deviation
Equity	U.S. Equity	Russell 3000	6.2%	15.3%
	U.S. Large Cap Equity	Russell 1000	6.1%	15.1%
	U.S. Mid Cap Equity	Russell Mid Cap	6.5%	17.0%
	U.S. Small Cap Equity	Russell 2000	7.0%	20.0%
	U.S. Micro Cap Equity	Dow Jones Wilshire U.S. Micro-Cap	6.7%	20.8%
	Global Equity	MSCI ACWI	6.3%	15.3%
	International Developed Equity	MSCI World Ex-U.S.	5.9%	16.5%
	International Small Cap Equity	MSCI World Ex-U.S. Small Cap	6.0%	17.4%
	Emerging Equity	MSCI Emerging	8.5%	20.8%
Fixed Income	U.S. Aggregate	Bloomberg Barclays U.S. Aggregate	2.3%	3.4%
	U.S. Treasury	Bloomberg Barclays U.S. Treasury	1.8%	4.2%
	U.S. Treasury Bills	Bloomberg Barclays U.S. Treasury Bills 3-6 Month	2.0%	0.5%
	U.S. Intermediate Treasury	Bloomberg Barclays U.S. Intermediate Treasury	2.0%	2.8%
	U.S. Long Treasury	Bloomberg Barclays U.S. Long Treasury	0.7%	12.0%
	U.S. Investment Grade Credit	Bloomberg Barclays U.S. Credit	2.6%	4.9%
	U.S. Intermediate Investment Grade Credit	Bloomberg Barclays U.S. Intermediate Credit	2.7%	3.5%
	U.S. Long Investment Grade Credit	Bloomberg Barclays U.S. Long Credit	2.5%	9.3%
	U.S. TIPS	Bloomberg Barclays U.S. Inflation Linked Bonds	2.3%	5.4%
	U.S. Agencies	Bloomberg Barclays U.S. Agencies	2.5%	2.8%
	U.S. MBS	Bloomberg Barclays U.S. MBS	2.6%	2.5%
	U.S. Investment Grade CMBS	Bloomberg Barclays Investment Grade CMBS	2.6%	7.2%
	U.S. Intermediate Municipal	S&P Municipal Bond Intermediate	1.9%	3.7%
	U.S. Short Municipal	S&P Municipal Bond Short	1.9%	1.6%
	U.S. High Yield	Bloomberg Barclays U.S. Corporate High Yield	4.5%	8.4%
	U.S. Bank Loans	CSFB Leveraged Loan	5.1%	5.6%
	Global Aggregate Ex-US	Bloomberg Barclays Global Aggregate Ex-USD	0.1%	7.5%
	Global Treasury Ex-US	Bloomberg Barclays Global Treasury Ex-USD	-0.2%	7.6%
	Global Corporate Ex-US	Bloomberg Barclays Global Corporate Ex-USD	1.2%	8.6%
	Emerging Markets Sovereign USD	Bloomberg Barclays EM USD Sovereign	5.3%	7.9%
	Emerging Markets Corporate USD	Bloomberg Barclays EM USD Corporate	4.7%	9.1%
	Emerging Markets Sovereign Local Currency	Bloomberg Barclays EM Local Currency Government	3.6%	10.5%
Alternatives	Absolute Return ^{1,2}	HFRX Global Hedge Fund	4.0%	5.0%
	Hedge Funds ^{1,2}	HFRI Fund Weighted Composite	4.2%	5.7%
	Hedge Funds – Equity Hedge ^{1,2}	HFRI Equity Hedge	5.0%	8.0%
	Hedge Funds – Event Driven ^{1,2}	HFRI Event Driven	4.3%	5.7%
	Hedge Funds – Macro ^{1,2}	HFRI Macro	3.8%	4.9%
	Hedge Funds – Relative Value ^{1,2}	HFRI Relative Value	3.6%	3.9%
	Hedge Funds – Managed Futures ^{1,2}	CS Managed Futures Liquid Index	4.6%	10.2%
	Commodities	Dow Jones UBS Commodities	2.1%	14.2%
	Global Natural Resources Equity	S&P Global Natural Resources Index	6.1%	20.2%
	U.S. REIT	FTSE NA REIT Equity	5.7%	21.0%
	Global REIT	FTSE EPRA/NA REIT Developed Index	5.9%	17.7%
	Energy Infrastructure	Alerian MLP Infrastructure	6.2%	19.1%
	U.S. Private Equity ^{1,2}	Cambridge Associates LLC U.S. Private Equity	8.2%	17.8%
	U.S. Core Real Estate	NCREIF ODCE Index	5.6%	8.5%

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.

Asset Class Expected Correlations

		Equity			Fixed Income										Alternatives						
		U.S. Equity	International Developed Equity	Emerging Equity	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	Global REIT	Energy Infrastructure	U.S. Private Equity	U.S. Core Real Estate
Equity	U.S. Equity	1.00	0.86	0.75	-0.10	-0.34	-0.14	0.19	0.05	-0.18	-0.11	0.69	0.20	0.42	0.43	0.71	0.44	0.73	0.55	0.96	0.27
	International Developed Equity	0.86	1.00	0.92	0.02	-0.26	-0.08	0.33	0.18	-0.06	0.00	0.75	0.45	0.62	0.66	0.76	0.57	0.78	0.55	0.82	0.27
	Emerging Equity	0.75	0.92	1.00	0.07	-0.20	-0.04	0.35	0.24	-0.01	0.03	0.72	0.45	0.63	0.69	0.71	0.58	0.72	0.51	0.71	0.26
Fixed Income	U.S. Aggregate	-0.10	0.02	0.07	1.00	0.92	0.20	0.88	0.80	0.90	0.75	0.17	0.54	0.55	0.38	0.04	-0.01	0.28	-0.02	-0.10	0.00
	U.S. Treasury	-0.34	-0.26	-0.20	0.92	1.00	0.25	0.66	0.70	0.84	0.67	-0.18	0.43	0.28	0.18	-0.21	-0.17	0.02	-0.23	-0.32	-0.09
	U.S. Treasury Bills	-0.14	-0.08	-0.04	0.20	0.25	1.00	0.06	0.14	0.27	0.10	-0.13	0.10	0.00	0.05	0.03	0.07	-0.03	0.02	-0.11	-0.09
	U.S. Investment Grade Credit	0.19	0.33	0.35	0.88	0.66	0.06	1.00	0.76	0.69	0.68	0.50	0.57	0.73	0.53	0.32	0.18	0.50	0.21	0.16	0.08
	U.S. TIPS	0.05	0.18	0.24	0.80	0.70	0.14	0.76	1.00	0.69	0.61	0.31	0.56	0.59	0.50	0.21	0.24	0.37	0.13	0.03	0.05
	U.S. MBS	-0.18	-0.06	-0.01	0.90	0.84	0.27	0.69	0.69	1.00	0.69	0.03	0.45	0.46	0.27	-0.05	-0.06	0.16	-0.07	-0.15	-0.11
	U.S. Intermediate Municipal	-0.11	0.00	0.03	0.75	0.67	0.10	0.68	0.61	0.69	1.00	0.17	0.40	0.46	0.30	0.00	-0.07	0.20	0.08	-0.11	-0.05
	U.S. High Yield	0.69	0.75	0.72	0.17	-0.18	-0.13	0.50	0.31	0.03	0.17	1.00	0.32	0.66	0.53	0.67	0.48	0.73	0.60	0.65	0.33
	Global Aggregate Ex-US	0.20	0.45	0.45	0.54	0.43	0.10	0.57	0.56	0.45	0.40	0.32	1.00	0.60	0.80	0.25	0.39	0.46	0.18	0.19	0.06
	Emerging Markets Sovereign USD	0.42	0.62	0.63	0.55	0.28	0.00	0.73	0.59	0.46	0.46	0.66	0.60	1.00	0.75	0.48	0.39	0.64	0.33	0.40	0.18
	Emerging Markets Sovereign LC	0.43	0.66	0.69	0.38	0.18	0.05	0.53	0.50	0.27	0.30	0.53	0.80	0.75	1.00	0.39	0.50	0.65	0.35	0.38	0.18
Alternatives	Absolute Return ^{1,2}	0.71	0.76	0.71	0.04	-0.21	0.03	0.32	0.21	-0.05	0.00	0.67	0.25	0.48	0.39	1.00	0.56	0.59	0.58	0.71	0.20
	Commodities	0.44	0.57	0.58	-0.01	-0.17	0.07	0.18	0.24	-0.06	-0.07	0.48	0.39	0.39	0.50	0.56	1.00	0.43	0.48	0.42	0.20
	Global REIT	0.73	0.78	0.72	0.28	0.02	-0.03	0.50	0.37	0.16	0.20	0.73	0.46	0.64	0.65	0.59	0.43	1.00	0.46	0.68	0.37
	Energy Infrastructure	0.55	0.55	0.51	-0.02	-0.23	0.02	0.21	0.13	-0.07	0.08	0.60	0.18	0.33	0.35	0.58	0.48	0.46	1.00	0.52	0.06
	U.S. Private Equity ^{1,2}	0.96	0.82	0.71	-0.10	-0.32	-0.11	0.16	0.03	-0.15	-0.11	0.65	0.19	0.40	0.38	0.71	0.42	0.68	0.52	1.00	0.22
	U.S. Core Real Estate ²	0.27	0.27	0.26	0.00	-0.09	-0.09	0.08	0.05	-0.11	-0.05	0.33	0.06	0.18	0.18	0.20	0.20	0.37	0.06	0.22	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 is 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.