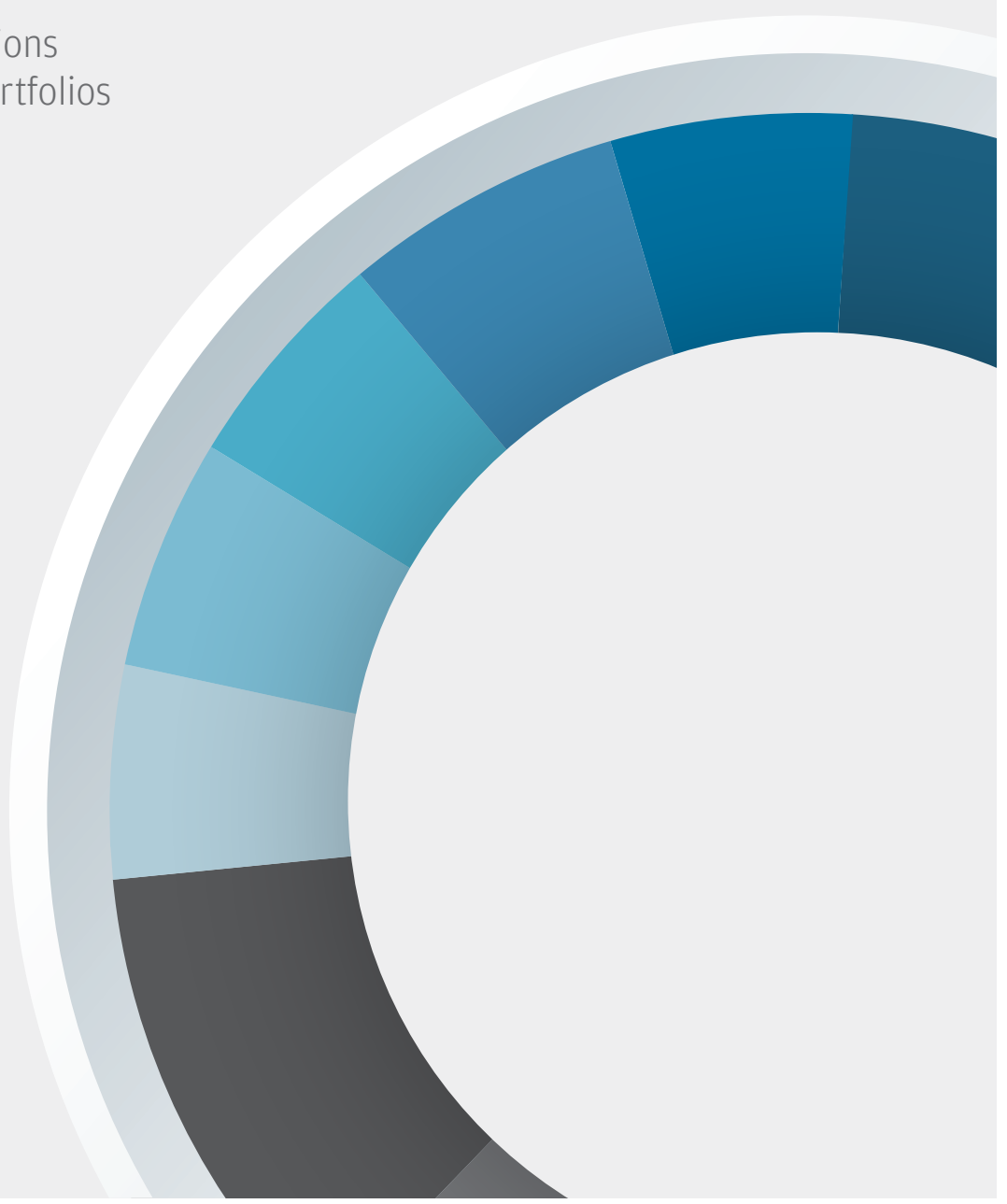


2019 Long-Term Capital Market Assumptions

23rd Annual Edition | Assumptions matrix: Sterling

Time-tested projections
to build stronger portfolios



STERLING ASSUMPTIONS

		Compound Return 2018 (%)				Annualized Volatility (%)				Arithmetic Return 2019 (%)				Compound Return 2019 (%)																																																																																																																																																																																																																																																																																																																																																																																																																																																				
FIXED INCOME	UK Cash	1.75	1.75	0.75	1.75	1.00				UK Cash	U.S. Aggregate Bonds hedged	3.75	3.82	3.75	3.00	0.18	1.00			U.S. Aggregate Bonds hedged	Euro Aggregate Bonds hedged	3.00	3.07	3.75	2.25	0.07	0.64	1.00		Euro Aggregate Bonds hedged	U.S. Inv Grade Corporate Bonds hedged	4.25	4.41	5.75	3.25	0.05	0.83	0.57	1.00	U.S. Inv Grade Corporate Bonds hedged	Euro Inv Grade Corp Bonds hedged	3.25	3.35	4.50	2.50	-0.08	0.52	0.71	0.77	1.00	Euro Inv Grade Corp Bonds hedged	U.S. High Yield Bonds hedged	3.00	3.27	7.50	2.50	-0.14	0.58	0.55	0.75	0.77	1.00	U.S. High Yield Bonds hedged	Euro Government Bonds hedged	5.25	5.57	8.25	5.00	-0.10	0.19	0.04	0.55	0.55	0.43	1.00	U.S. Leveraged Loans hedged	U.S. Government Bonds hedged	4.75	5.11	8.75	4.00	-0.19	0.07	0.10	0.48	0.64	0.48	0.89	1.00	U.S. Government Bonds hedged	U.S. Leveraged Loans hedged	4.75	5.02	7.50	4.75	-0.23	-0.08	-0.14	0.30	0.41	0.33	0.78	0.86	1.00	U.S. Leveraged Loans hedged	Euro Government Bonds hedged	2.75	2.83	4.00	2.00	0.09	0.59	0.97	0.45	0.56	0.44	-0.10	-0.05	-0.27	1.00	Euro Government Bonds hedged	UK Gilts	1.25	1.46	6.50	1.00	0.09	0.68	0.57	0.43	0.26	0.57	0.19	-0.25	-0.35	0.59	1.00	UK Gilts	UK Inflation-Linked Bonds	1.25	1.62	8.75	0.50	-0.02	0.56	0.34	0.43	0.26	0.52	0.18	0.07	0.03	0.31	0.70	1.00	UK Inflation-Linked Bonds	World Government Bonds hedged	2.50	2.62	3.00	2.25	0.20	0.81	0.83	0.52	0.39	0.44	-0.18	-0.25	-0.42	0.86	0.82	0.52	1.00	World Government Bonds hedged	World Government Bonds	2.25	2.54	9.25	1.75	0.23	0.48	0.42	0.19	0.00	0.13	-0.34	-0.42	-0.53	0.48	0.63	0.40	0.68	1.00	World Government Bonds	World ex-UK Government Bonds hedged	2.75	2.77	2.75	2.25	0.21	0.81	0.84	0.52	0.40	0.41	-0.18	-0.24	-0.42	0.87	0.77	0.48	1.00	0.67	1.00	World ex-UK Government Bonds hedged	World ex-UK Government Bonds	2.25	2.67	9.50	1.75	0.23	0.46	0.41	0.18	-0.01	0.11	-0.34	-0.42	-0.53	0.47	0.60	0.38	0.67	1.00	0.66	1.00	World ex-UK Government Bonds	Emerging Markets Sovereign Debt hedged	6.00	6.42	9.50	5.00	0.06	0.60	0.40	0.77	0.66	0.56	0.71	0.59	0.37	0.29	0.22	0.32	0.30	0.04	0.30	0.04	1.00	Emerging Markets Sovereign Debt hedged	Emerging Markets Local Currency Debt	6.00	6.56	11.00	5.50	0.18	0.46	0.33	0.46	0.37	0.37	0.30	0.19	0.02	0.30	0.32	0.38	0.37	0.49	0.37	0.49	0.64	1.00	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds hedged	5.75	6.05	8.00	5.00	0.04	0.52	0.33	0.78	0.71	0.57	0.73	0.68	0.51	0.18	0.09	0.23	0.15	-0.08	0.15	-0.08	0.89	0.53	1.00	Emerging Markets Corporate Bonds hedged																																																																																																																																												
	EQUITIES	UK All Cap	5.75	6.53	13.00	5.50	-0.15	0.09	0.05		0.38	0.44	0.45	0.66	0.65	0.51	-0.04	-0.06	0.16		-0.14	-0.12	-0.15	-0.12	0.57	0.47	0.58	UK All Cap	UK Large Cap		5.75	6.57	13.25	5.50	-0.14	0.11	0.06	0.38	0.44		0.45	0.65	0.62	0.50	-0.02	-0.04	0.18	-0.12	-0.09	-0.13		-0.09	0.57	0.49	0.57	UK Large Cap	UK Small Cap	6.00	7.10	15.50	5.75	-0.21		-0.01	-0.01	0.29	0.42	0.37	0.64	0.66	0.54	-0.11	-0.14	0.05	-0.23		-0.28	-0.24	-0.28	0.47	0.27	0.52	UK Small Cap	U.S. Large Cap	4.50	5.23	13.25	4.75	-0.17		0.06	0.07	0.20	0.28	0.30	0.46	0.39	0.31	0.03	0.07	0.25	-0.03	0.15	-0.05		0.15	0.37	0.54	0.36	U.S. Large Cap	U.S. Large Cap hedged	5.00	5.79	13.75	5.25	-0.21	-0.02	-0.04	0.25	0.38		0.31	0.68	0.64	0.54	-0.12	-0.21	0.04	-0.25	-0.34	-0.25	-0.34	0.50	0.32	0.52	U.S. Large Cap hedged	Euro Area Large Cap		6.25	7.78	18.50	6.00	-0.08	0.12	0.06	0.33	0.36	0.39	0.61	0.58	0.39	0.01	-0.04	0.18	-0.08		-0.02	-0.08	-0.02	0.58	0.54	0.55	Euro Area Large Cap	Euro Area Large Cap hedged	6.75	7.93	16.25	6.25	-0.19	-0.02	0.03	0.29	0.44	0.40		0.66	0.70	0.57	-0.05	-0.19	0.05	-0.24	-0.36	-0.24	-0.36	0.48	0.28	0.52	Euro Area Large Cap hedged	Euro area Small Cap	6.50	8.22	19.50	6.25		-0.12	0.10	0.04	0.34	0.36	0.38	0.62	0.61	0.42	-0.02	-0.08	0.15	-0.11	-0.03	-0.11	-0.03	0.56	0.50	0.56	Euro area Small Cap		Euro area Small Cap hedged	7.00	8.35	17.25	6.50	-0.23	-0.04	0.00	0.29	0.44	0.40	0.67	0.74	0.61	-0.09	-0.23	0.02	-0.27	-0.36	-0.27	-0.36		0.46	0.24	0.53	Euro area Small Cap hedged	Japanese Equity	6.00	6.78	13.25	5.50	-0.13	0.10	0.11	0.30	0.32	0.32	0.38	0.32	0.24	0.06	0.03	0.23	-0.01		0.12	-0.02	0.12	0.33	0.47	0.36	Japanese Equity	Japanese Equity hedged	6.50	7.94	18.00	6.25	-0.21	-0.20	-0.10	0.11	0.28	0.21	0.49	0.51	0.47	-0.16	-0.33		-0.05	-0.38	-0.54	-0.37	-0.54	0.26	0.10	0.35	Japanese Equity hedged	AC Asia ex-Japan Equity	7.75	9.19	18.25	7.50	-0.02	0.21	0.12	0.44	0.43	0.37	0.61	0.54	0.39	0.05		0.04	0.21	0.00	0.03	0.00	0.03	0.62	0.65	0.60	AC Asia ex-Japan Equity	Emerging Markets Equity	7.75	9.22	18.50	7.25	-0.01	0.19	0.08	0.42	0.40	0.35	0.64	0.56	0.42	0.00	0.01	0.22	-0.04	0.01	-0.04	0.02	0.65	0.69	0.62	Emerging Markets Equity	AC World Equity	5.25	6.18	13.25	5.25	-0.12	0.12	0.08	0.34	0.38	0.39	0.60	0.53	0.39	0.02	0.03	0.25	-0.05	0.08	-0.06	0.08	0.55	0.63	0.53	AC World Equity	AC World ex-UK Equity	5.25	6.16	13.25	5.25	-0.12	0.12	0.08	0.33	0.37	0.38	0.59	0.52	0.38	0.02	0.03	0.26	-0.04	0.10	-0.05	0.10	0.54	0.64	0.52	AC World ex-UK Equity	Developed World Equity	5.00	5.85	13.00	5.25	-0.14	0.11	0.08	0.31	0.36	0.38	0.58	0.51	0.38	0.02	0.03	0.25	-0.05	0.09	-0.06	0.09	0.51	0.60	0.50	Developed World Equity	Global Convertible hedged	5.25	5.65	9.25	4.75	-0.11	0.07	0.04	0.43	0.52	0.39	0.81	0.79	0.65	-0.07	-0.22	0.03	-0.24	-0.38	-0.24	-0.38	0.62	0.32	0.69	Global Convertible hedged	Global Credit Sensitive Convertible hedged	4.50	4.69	6.25	4.00
ALTERNATIVES	Private Equity	7.50	9.37	20.50	6.50	-0.25	-0.29	-0.22	0.04	0.20	0.22	0.47	0.44	0.43	-0.30	-0.30	0.10	-0.39	-0.30	-0.39	-0.29	0.34	0.13	0.42	Private Equity	U.S. Core Real Estate*	5.00		5.73	12.50	4.50	-0.52	-0.21	-0.18	-0.03	0.16	0.27	0.42	0.37	0.53	-0.25	-0.24	0.16	-0.29	-0.47	-0.29	-0.48	0.25	-0.16	0.35	U.S. Core Real Estate*	European ex-UK Core Real Estate*	5.75	6.72	14.50		5.00	-0.38	-0.41	-0.30	-0.10	0.02	0.01	0.38	0.33	0.42	-0.33	-0.45	0.03	-0.47	-0.36	-0.47	-0.36	0.16	-0.12	0.27	European ex-UK Core Real Estate*	European ex-UK Value-Added Real Estate*	8.25	10.47	22.50	6.75		-0.45	-0.46	-0.36	-0.12	0.02	0.01	0.46	0.40	0.53	-0.40	-0.51	0.00	-0.55	-0.53	-0.55	-0.53	0.20	-0.27	0.33	European ex-UK Value-Added Real Estate*	UK Core Real Estate*	5.00	6.11	15.50	4.75	-0.46		-0.39	-0.35	-0.12	-0.01	-0.04	0.44	0.37	0.56	-0.38	-0.46	-0.11	-0.50	-0.71	-0.49	-0.72	0.16	-0.51	0.30	UK Core Real Estate*	U.S. REITs	5.50	6.75	16.50	5.50	-0.13		0.30	0.22	0.36	0.34	0.43	0.46	0.34	0.22	0.19	0.27	0.39	0.22	0.23	0.21	0.23	0.43	0.55	0.32	U.S. REITs	European REITs	6.00	7.56	18.50	7.25	-0.17	0.24		0.23	0.39	0.46	0.50	0.55	0.51	0.30	0.18	0.12	0.24	0.11	0.02	0.11	0.01	0.55	0.46	0.46	European REITs	Global Infrastructure Equity	5.25	5.70	9.75	5.50	-0.11	0.23		0.14	0.28	0.12	0.18	-0.02	-0.04	-0.07	0.13	0.23	0.35	0.15	0.23	0.14	0.23	0.12	0.13	0.08	Global Infrastructure Equity	Diversified Hedge Funds hedged	4.00	4.27	7.50	4.00	-0.14	-0.12		-0.11	0.20	0.33	0.30	0.58	0.66	0.64	-0.21	-0.30	0.01	-0.37	-0.50	-0.37	-0.50	0.34	0.09	0.41	Diversified Hedge Funds hedged	Event Driven Hedge Funds hedged	4.50	4.88	9.00	4.50	-0.19	-0.13	-0.14		0.24	0.41	0.32	0.76	0.79	0.75	-0.26	-0.37	-0.03	-0.43	-0.52	-0.43	-0.51	0.45	0.18	0.55	Event Driven Hedge Funds hedged	Long Bias Hedge Funds hedged	4.50	5.07	11.00	4.50	-0.15	-0.09	-0.15		0.27	0.38	0.29	0.73	0.73	0.65	-0.25	-0.34	-0.03	-0.40	-0.48	-0.40	-0.48	0.50	0.25	0.58	Long Bias Hedge Funds hedged	Relative Value Hedge Funds hedged	4.25	4.48	7.00	4.25	-0.13	0.00	-0.06		0.38	0.49	0.39	0.83	0.85	0.84	-0.20	-0.33	0.04	-0.35	-0.51	-0.34	-0.51	0.54	0.20	0.62	Relative Value Hedge Funds hedged	Macro Hedge Funds hedged	3.50	3.81	8.00	3.50	0.20	0.19	0.20		0.27	0.21	0.25	0.15	0.16	0.04	0.16	0.15	0.18	0.17	0.09	0.17	0.09	0.23	0.21	0.20	Macro Hedge Funds hedged	Commodities*	1.50	2.48	14.25	3.00	0.02	0.11		-0.12	0.19	0.08	0.09	0.29	0.17	0.19	-0.15	-0.06	0.17	-0.08	0.11	-0.08	0.12	0.29	0.40	0.30	Commodities*	Gold*	1.75	3.37	18.50	3.25	0.18		0.44	0.20	0.29	0.08	0.14	-0.06	-0.17	-0.26	0.20	0.39	0.29	0.40	0.51	0.39	0.51	0.23	0.44	0.16	Gold*																																																													

Note: All estimates on this page are in sterling terms. Given the complex risk-reward trade-offs involved, we advise clients to rely on judgment as well as quantitative optimization approaches in setting strategic allocations to all of these asset classes and strategies. Please note that all information shown is based on qualitative analysis. Exclusive reliance on this information is not advised. This information is not intended as a recommendation to invest in any particular asset class or strategy or as a promise of future performance. Note that these asset class and strategy assumptions are passive only-they do not consider the impact of active management. References to future returns are not promises or even estimates of actual returns a client portfolio may achieve. Assumptions, opinions and estimates are provided for illustrative purposes only. They should not be relied upon as recommendations to buy or sell securities. Forecasts of financial market trends that are based on current market conditions constitute our judgment and are subject to change without notice. We believe the information provided here is reliable, but do not warrant its accuracy or completeness. This material has been prepared for information purposes only and is not intended to provide, and should not be relied on for, accounting, legal or tax advice.

Source: J.P. Morgan Asset Management; as of September 30, 2018. Alternative asset classes (including hedge funds, private equity, real estate, direct lending and infrastructure) are unlike other asset categories shown above in that there is no underlying investible index. The return estimates for these alternative asset classes and strategies are estimates of the industry average, net of manager fees. The dispersion of return among managers of these asset classes and strategies is typically significantly wider than that of traditional asset classes. *Not directly comparable to 2018 assumptions. See strategy class discussion for details. Correlation figures shown are rounded to two significant figures, which may cause a loss of information. Correlations of value-added and core real estate in their local currencies are identical since value-added local returns are scaled versions of their corresponding core real estate local returns. All returns are nominal. For reference index information, please visit our website.

PORTFOLIO INSIGHTS

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