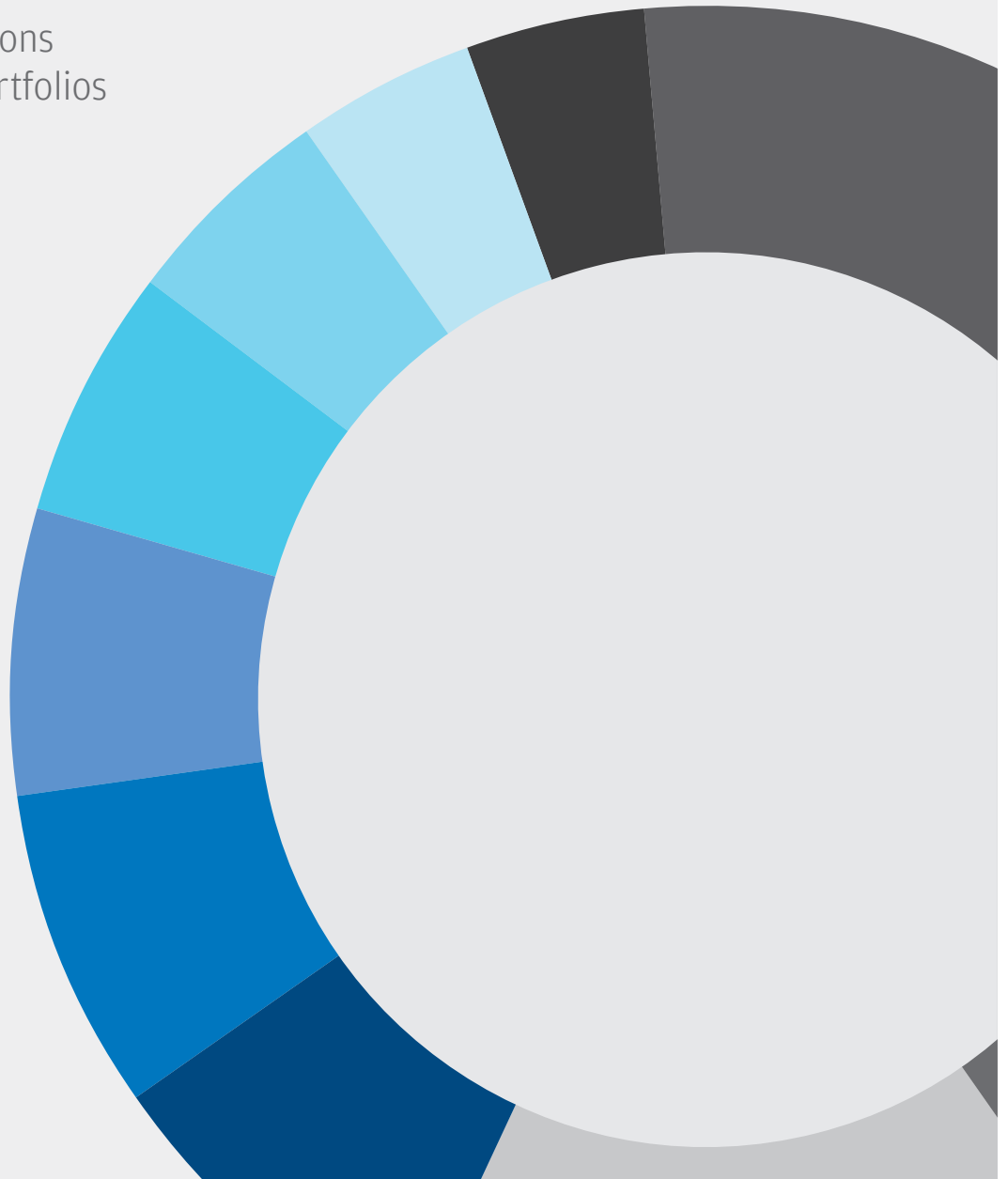


# 2022 Long-Term Capital Market Assumptions

26<sup>th</sup> Annual Edition | Assumptions matrix: Canadian dollar

Time-tested projections  
to build stronger portfolios



COMPOUND RETURN 2021 (%)																				
ANNUALIZED VOLATILITY (%)																				
ARITHMETIC RETURN 2022 (%)																				
COMPOUND RETURN 2022 (%)																				
					Canadian Inflation	Canadian Cash	Canadian Universe Bonds	Canadian Long Term Universe Bonds	Canadian Inflation-Linked Bonds	U.S. Intermediate Treasuries hedged	U.S. Aggregate Bonds hedged	U.S. High Yield Bonds hedged	U.S. Leveraged Loans hedged	World Government Bonds hedged	World Government Bonds	World ex-U.S. Government Bonds hedged	Emerging Markets Sovereign Debt hedged	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds hedged	
FIXED INCOME	Canadian Inflation	1.90	1.91	1.38	1.80	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Canadian Cash	1.50	1.50	0.40	1.10	-0.16	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Canadian Universe Bonds	2.50	2.57	3.90	1.80	-0.07	0.19	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Canadian Long Term Universe Bonds	1.90	2.18	7.63	0.90	-0.04	0.07	0.96	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	Canadian Inflation-Linked Bonds	2.00	2.29	7.74	1.10	0.04	0.04	0.73	0.77	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	U.S. Intermediate Treasuries hedged	2.30	2.34	2.84	1.50	-0.06	0.27	0.63	0.53	0.32	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	U.S. Aggregate Bonds hedged	2.80	2.86	3.65	2.10	-0.05	0.19	0.82	0.76	0.54	0.78	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	U.S. High Yield Bonds hedged	4.10	4.42	8.23	4.80	0.06	-0.13	0.10	0.14	0.31	-0.28	0.19	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	U.S. Leveraged Loans hedged	4.90	5.19	7.87	5.10	0.19	-0.24	-0.06	0.00	0.16	-0.51	-0.05	0.81	1.00	1.00	1.00	1.00	1.00	1.00	1.00
	World Government Bonds hedged	2.20	2.25	3.13	1.40	-0.10	0.19	0.78	0.72	0.44	0.82	0.82	-0.16	-0.36	1.00	1.00	1.00	1.00	1.00	1.00
	World Government Bonds	1.80	2.24	9.50	1.00	-0.11	0.20	0.59	0.50	0.28	0.64	0.45	-0.43	-0.50	0.65	1.00	1.00	1.00	1.00	1.00
	World ex-U.S. Government Bonds hedged	2.10	2.15	3.08	1.30	-0.13	0.18	0.75	0.69	0.44	0.64	0.73	-0.07	-0.25	0.95	0.56	1.00	1.00	1.00	1.00
	Emerging Markets Sovereign Debt hedged	5.40	5.79	9.08	5.20	0.04	-0.07	0.39	0.42	0.43	0.11	0.48	0.71	0.44	0.22	-0.17	0.27	1.00	1.00	1.00
	Emerging Markets Local Currency Debt	5.40	5.81	9.29	4.40	0.04	0.14	0.50	0.46	0.39	0.28	0.44	0.27	0.07	0.38	0.40	0.41	0.55	1.00	1.00
	Emerging Markets Corporate Bonds hedged	5.00	5.33	8.30	4.70	0.10	-0.11	0.32	0.35	0.35	0.00	0.42	0.76	0.58	0.10	-0.24	0.16	0.89	0.47	1.00
EQUITIES	Canadian Large Cap	5.40	6.13	12.49	6.20	0.15	-0.11	0.03	0.10	0.25	-0.33	0.04	0.67	0.62	-0.23	-0.49	-0.14	0.51	0.14	0.59
	U.S. Large Cap	3.60	4.30	12.14	3.30	0.03	-0.22	0.15	0.21	0.22	-0.28	-0.02	0.46	0.44	-0.12	-0.07	-0.03	0.29	0.31	0.35
	U.S. Large Cap hedged	4.20	5.25	15.00	4.10	0.06	-0.20	-0.01	0.05	0.16	-0.34	0.01	0.71	0.59	-0.23	-0.51	-0.14	0.52	0.18	0.56
	U.S. Mid Cap	3.80	4.70	13.84	3.60	0.05	-0.22	0.13	0.20	0.23	-0.32	0.00	0.58	0.54	-0.16	-0.16	-0.06	0.35	0.31	0.42
	U.S. Small Cap	3.90	5.18	16.57	3.80	0.03	-0.20	0.05	0.11	0.17	-0.34	-0.07	0.52	0.47	-0.21	-0.22	-0.11	0.26	0.24	0.33
	European Large Cap	5.90	6.86	14.40	5.60	0.06	-0.15	0.15	0.18	0.24	-0.23	0.08	0.60	0.49	-0.13	-0.13	-0.05	0.50	0.45	0.53
	UK Large Cap	4.50	5.28	12.85	6.70	0.05	-0.19	0.07	0.12	0.19	-0.32	0.00	0.57	0.54	-0.20	-0.20	-0.11	0.44	0.35	0.50
	Japanese Equity	6.20	6.94	12.62	5.70	-0.08	-0.15	0.17	0.20	0.14	-0.18	0.02	0.30	0.27	-0.08	0.07	-0.03	0.21	0.36	0.28
	Chinese Domestic Equity	7.70	11.04	27.88	6.70	-0.02	0.07	0.05	0.08	0.03	-0.14	0.02	0.21	0.18	-0.05	-0.11	-0.01	0.18	0.11	0.24
	Developed World Equity	4.30	4.96	11.86	4.10	0.03	-0.19	0.18	0.23	0.26	-0.28	0.04	0.57	0.51	-0.13	-0.11	-0.04	0.42	0.40	0.47
	Developed World Equity hedged	4.90	5.83	14.15	4.80	0.06	-0.19	-0.01	0.05	0.15	-0.38	0.00	0.73	0.63	-0.25	-0.53	-0.15	0.53	0.20	0.59
	AC World Equity	4.50	5.15	11.78	4.30	0.04	-0.19	0.19	0.24	0.28	-0.28	0.06	0.60	0.53	-0.13	-0.13	-0.04	0.45	0.44	0.51
	EAFE Equity	6.00	6.77	12.92	5.70	0.04	-0.15	0.19	0.22	0.26	-0.24	0.09	0.59	0.49	-0.11	-0.09	-0.03	0.49	0.49	0.54
	EAFE Equity hedged	6.30	7.20	13.97	6.10	0.05	-0.17	-0.03	0.02	0.11	-0.41	-0.02	0.70	0.62	-0.25	-0.53	-0.14	0.51	0.21	0.57
	AC Asia ex-Japan Equity	6.50	7.60	15.52	6.30	0.02	-0.08	0.21	0.24	0.32	-0.16	0.16	0.60	0.45	-0.05	-0.17	0.00	0.53	0.47	0.58
Emerging Markets Equity	6.40	7.49	15.46	6.40	0.10	-0.09	0.17	0.21	0.33	-0.21	0.13	0.65	0.51	-0.10	-0.23	-0.03	0.59	0.52	0.63	
ALTERNATIVES	Private Equity	7.60	8.75	15.94	7.00	0.02	-0.17	-0.06	0.01	0.11	-0.45	-0.23	0.47	0.48	-0.39	-0.21	-0.29	0.38	0.32	0.42
	U.S. Core Real Estate	5.30	5.79	10.19	5.10	0.23	-0.44	-0.25	-0.16	-0.09	-0.29	-0.20	0.28	0.39	-0.26	-0.32	-0.26	0.08	-0.12	0.20
	Global Core Infrastructure	5.60	6.02	9.48	5.30	-0.09	-0.08	0.13	0.15	0.09	-0.03	-0.01	-0.03	0.03	0.00	0.29	0.01	0.05	0.27	0.01
	Global Core Transport	6.90	7.70	13.22	6.80	0.06	-0.08	-0.06	-0.07	-0.15	0.15	-0.06	-0.32	-0.23	0.09	0.24	0.01	-0.38	-0.12	-0.34
	U.S. REITs	5.20	6.05	13.51	5.70	-0.02	-0.17	0.33	0.37	0.35	0.03	0.28	0.47	0.30	0.20	0.05	0.26	0.39	0.40	0.35
	Diversified Hedge Funds hedged	3.80	4.02	6.75	3.30	0.18	-0.22	-0.05	0.04	0.16	-0.43	-0.09	0.62	0.66	-0.33	-0.52	-0.24	0.44	0.06	0.52
	Event Driven Hedge Funds hedged	3.40	3.75	8.54	3.10	0.17	-0.24	-0.12	-0.05	0.13	-0.48	-0.09	0.77	0.76	-0.39	-0.58	-0.29	0.49	0.12	0.60
	Long Bias Hedge Funds hedged	3.50	4.04	10.68	3.40	0.12	-0.17	-0.06	-0.01	0.15	-0.42	-0.03	0.75	0.68	-0.34	-0.58	-0.25	0.53	0.16	0.62
	Relative Value Hedge Funds hedged	4.00	4.19	6.27	3.60	0.20	-0.21	-0.05	0.01	0.19	-0.44	0.00	0.84	0.86	-0.32	-0.57	-0.22	0.58	0.17	0.67
	Macro Hedge Funds hedged	2.90	3.19	7.77	2.20	-0.03	0.09	0.13	0.15	0.22	0.06	0.16	0.20	0.08	0.11	-0.10	0.14	0.25	0.06	0.21
	Commodities	2.10	2.88	12.78	1.50	0.27	-0.10	0.00	0.02	0.20	-0.11	-0.02	0.25	0.26	-0.19	-0.03	-0.17	0.18	0.24	0.24
	Gold	2.50	3.74	16.20	2.10	0.01	0.13	0.38	0.35	0.23	0.48	0.39	-0.18	-0.28	0.40	0.42	0.32	0.08	0.24	0.05

# CANADIAN DOLLAR ASSUMPTIONS

Note: All estimates on this page are in Canadian dollar 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, 2021. Alternative asset classes (including hedge funds, private equity, real estate, direct lending, transportation 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. 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. For equity and fixed income assumptions we assume current index regional weight in composite indices with multiple countries/regions. All returns are nominal. The return forecasts of composite and hedged assets are computed using unrounded return and rounded to the nearest 10bp at the final stage. In some cases this may lead to apparent differences in hedging impact across assets, but this is purely due to rounding. For the full opportunity set, please contact your J.P. Morgan representative.

U.S. Large Cap hedged	U.S. Mid Cap	U.S. Small Cap	European Large Cap	UK Large Cap	Japanese Equity	Chinese Domestic Equity	Developed World Equity	Developed World Equity hedged	AC World Equity	EAFE Equity	EAFE Equity hedged	AC Asia ex-Japan Equity	Emerging Markets Equity	Private Equity	U.S. Core Real Estate	Global Core Infrastructure	Global Core Transport	U.S. REITS	Diversified Hedge Funds hedged	Event Driven Hedge Funds hedged	Long Bias Hedge Funds hedged	Relative Value Hedge Funds hedged	Macro Hedge Funds hedged	Commodities	Gold
1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
0.80	0.93	0.66	0.93	0.57	0.16	0.26	0.85	0.87	0.95	0.85	1.00	0.66	0.67	0.28	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
0.76	0.71	0.66	0.93	0.57	0.16	0.26	0.85	0.87	0.95	0.85	1.00	0.66	0.67	0.28	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
0.75	0.71	0.62	0.93	0.57	0.16	0.26	0.85	0.87	0.95	0.85	1.00	0.66	0.67	0.28	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
0.71	0.71	0.62	0.93	0.57	0.16	0.26	0.85	0.87	0.95	0.85	1.00	0.66	0.67	0.28	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
0.41	0.57	0.50	0.59	0.57	0.16	0.26	0.85	0.87	0.95	0.85	1.00	0.66	0.67	0.28	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
0.23	0.22	0.18	0.24	0.24	0.16	0.26	0.85	0.87	0.95	0.85	1.00	0.66	0.67	0.28	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
0.83	0.92	0.83	0.91	0.86	0.68	0.26	0.85	0.87	0.95	0.85	1.00	0.66	0.67	0.28	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
0.98	0.80	0.75	0.81	0.78	0.49	0.25	0.85	0.87	0.95	0.85	1.00	0.66	0.67	0.28	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
0.84	0.91	0.82	0.92	0.87	0.67	0.30	0.99	0.87	1.00	0.84	0.85	1.00	0.66	0.67	0.28	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00
0.75	0.79	0.69	0.98	0.92	0.72	0.26	0.94	0.81	0.95	0.72	0.66	1.00	0.67	0.28	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
0.88	0.74	0.68	0.85	0.82	0.57	0.26	0.82	0.95	0.84	0.85	1.00	0.66	0.67	0.28	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
0.61	0.59	0.52	0.69	0.63	0.43	0.50	0.67	0.65	0.74	0.72	0.66	1.00	0.67	0.28	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
0.67	0.61	0.53	0.73	0.67	0.41	0.43	0.69	0.71	0.76	0.75	0.70	0.96	0.67	0.28	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
0.55	0.69	0.63	0.69	0.69	0.46	0.43	0.73	0.59	0.74	0.70	0.59	0.64	0.67	0.28	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
0.24	0.26	0.22	0.18	0.25	0.17	0.01	0.22	0.23	0.22	0.18	0.24	0.15	0.16	0.28	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
-0.06	0.07	0.01	0.20	0.21	0.23	-0.02	0.18	-0.05	0.18	0.21	-0.04	0.14	0.16	0.40	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
-0.32	-0.17	-0.15	-0.16	-0.19	-0.08	-0.19	-0.18	-0.32	-0.22	-0.19	-0.28	-0.36	-0.36	-0.06	0.48	0.28	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00	1.00
0.54	0.71	0.66	0.56	0.49	0.40	0.00	0.65	0.52	0.64	0.58	0.49	0.40	0.40	0.34	0.49	0.06	0.16	1.00	0.23	0.87	0.94	1.00	0.31	0.29	1.00
0.71	0.59	0.51	0.61	0.63	0.35	0.33	0.62	0.75	0.65	0.62	0.73	0.57	0.64	0.67	0.26	0.03	-0.25	0.23	1.00	0.23	0.87	0.94	1.00	0.31	0.29
0.81	0.66	0.64	0.68	0.69	0.36	0.29	0.67	0.85	0.70	0.67	0.81	0.61	0.68	0.63	0.26	-0.08	-0.31	0.33	0.87	1.00	0.23	0.87	0.94	1.00	0.31
0.87	0.69	0.66	0.70	0.68	0.37	0.31	0.71	0.90	0.74	0.70	0.84	0.70	0.77	0.63	0.16	-0.05	-0.40	0.33	0.87	0.94	1.00	0.23	0.87	0.94	1.00
0.71	0.58	0.52	0.61	0.64	0.33	0.29	0.59	0.77	0.63	0.62	0.76	0.61	0.68	0.59	0.31	-0.03	-0.31	0.30	0.85	0.93	0.87	1.00	0.31	0.29	1.00
0.28	0.12	0.04	0.24	0.24	0.05	0.11	0.20	0.29	0.22	0.23	0.26	0.26	0.31	0.27	-0.16	-0.04	-0.22	0.04	0.54	0.33	0.41	0.31	1.00	0.29	1.00
0.22	0.26	0.19	0.30	0.37	0.11	0.06	0.29	0.21	0.31	0.31	0.17	0.28	0.36	0.48	0.23	0.19	-0.07	0.09	0.38	0.38	0.36	0.38	0.29	1.00	1.00
-0.34	-0.26	-0.32	-0.22	-0.23	-0.22	0.04	-0.25	-0.37	-0.24	-0.22	-0.41	-0.10	-0.09	-0.14	-0.21	0.15	0.03	-0.12	-0.16	-0.28	-0.23	-0.23	0.24	0.24	1.00


**PORTFOLIO INSIGHTS**

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**A wide range of investors** use our capital market assumptions to ensure that investment policies and decisions are based on real-world, consistent views and can be tested under a variety of market scenarios.



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