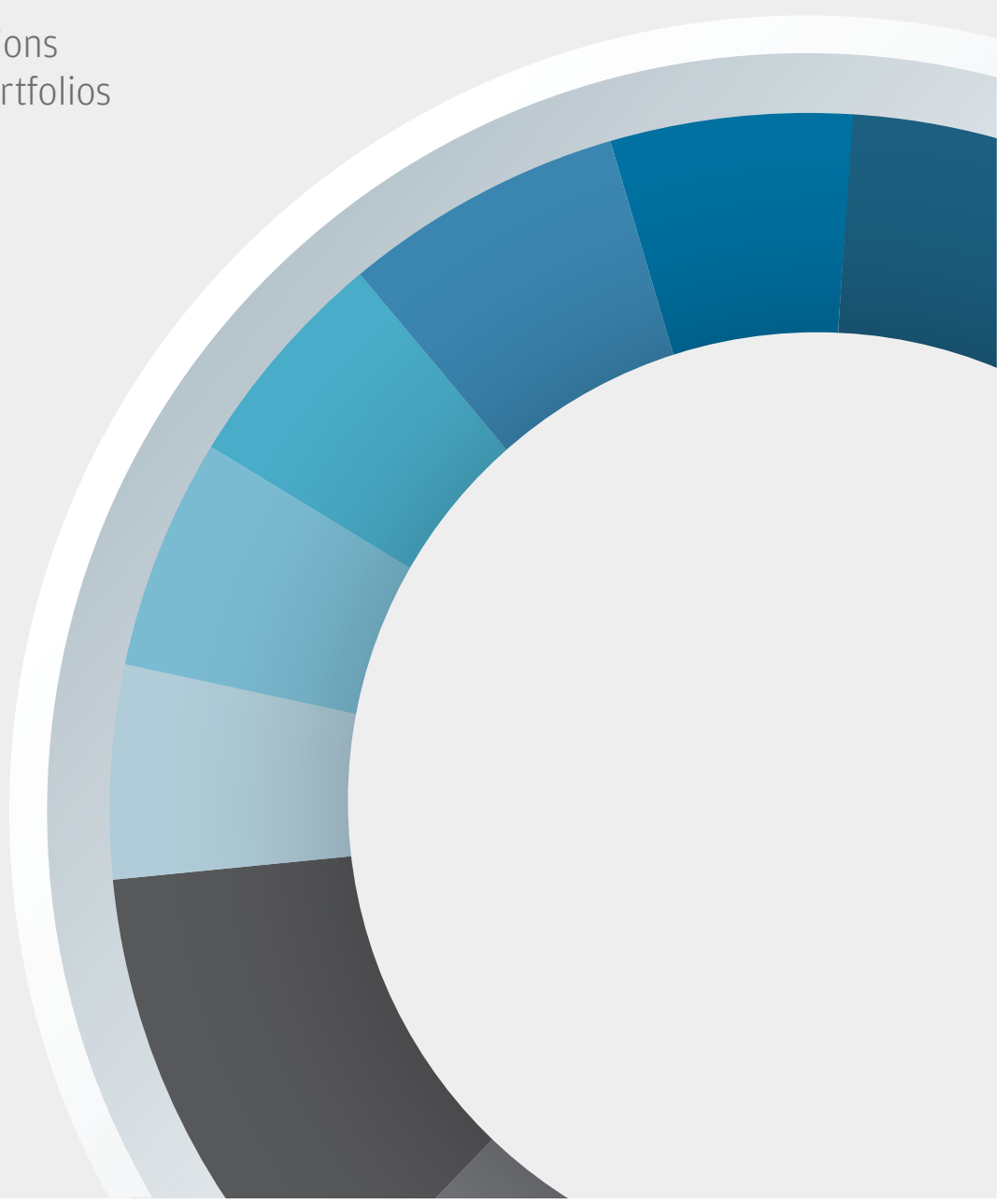


# 2018 Long-Term Capital Market Assumptions

22<sup>nd</sup> Annual Edition | Assumptions matrix: U.S. Dollar

Time-tested projections  
to build stronger portfolios



U.S. DOLLAR ASSUMPTIONS

		Compound Return 2017 (%)				Annualized Volatility				Arithmetic Return 2018 (%)				Compound Return 2018 (%)				Inflation				U.S. Cash				U.S. Intermediate Treasuries				U.S. Long Treasuries				TIPS				U.S. Aggregate Bonds				U.S. Short Duration Government/Credit				U.S. Long Duration Government/Credit				U.S. Inv Grade Corporate Bonds				U.S. Long Corporate Bonds				U.S. High Yield Bonds				U.S. Leveraged Loans				World Government Bonds hedged				World Government Bonds				World ex-U.S. Government Bonds hedged				World ex-U.S. Government Bonds				Emerging Markets Sovereign Debt				Emerging Markets Local Currency Debt				Emerging Markets Corporate Bonds			
FIXED INCOME		2.25		2.26		1.25		2.25		1.00		U.S. Cash		U.S. Intermediate Treasuries		U.S. Long Treasuries		TIPS		U.S. Aggregate Bonds		U.S. Short Duration Government/Credit		U.S. Long Duration Government/Credit		U.S. Inv Grade Corporate Bonds		U.S. Long Corporate Bonds		U.S. High Yield Bonds		U.S. Leveraged Loans		World Government Bonds hedged		World Government Bonds		World ex-U.S. Government Bonds hedged		World ex-U.S. Government Bonds		Emerging Markets Sovereign Debt		Emerging Markets Local Currency Debt		Emerging Markets Corporate Bonds																																															
		2.25	2.26	1.25	2.25	1.00	U.S. Cash	U.S. Intermediate Treasuries	U.S. Long Treasuries	TIPS	U.S. Aggregate Bonds	U.S. Short Duration Government/Credit	U.S. Long Duration Government/Credit	U.S. Inv Grade Corporate Bonds	U.S. Long Corporate Bonds	U.S. High Yield Bonds	U.S. Leveraged Loans	World Government Bonds hedged	World Government Bonds	World ex-U.S. Government Bonds hedged	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	Inflation	2.25	2.26	1.25	2.25	1.00	U.S. Cash	U.S. Intermediate Treasuries	U.S. Long Treasuries	TIPS	U.S. Aggregate Bonds	U.S. Short Duration Government/Credit	U.S. Long Duration Government/Credit	U.S. Inv Grade Corporate Bonds	U.S. Long Corporate Bonds	U.S. High Yield Bonds	U.S. Leveraged Loans	World Government Bonds hedged	World Government Bonds	World ex-U.S. Government Bonds hedged	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	U.S. Cash	2.00	2.00	0.50	2.00	0.08	1.00	U.S. Intermediate Treasuries	U.S. Long Treasuries	TIPS	U.S. Aggregate Bonds	U.S. Short Duration Government/Credit	U.S. Long Duration Government/Credit	U.S. Inv Grade Corporate Bonds	U.S. Long Corporate Bonds	U.S. High Yield Bonds	U.S. Leveraged Loans	World Government Bonds hedged	World Government Bonds	World ex-U.S. Government Bonds hedged	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	U.S. Intermediate Treasuries	3.00	3.07	3.75	2.25	-0.17	0.23	1.00	U.S. Long Treasuries	TIPS	U.S. Aggregate Bonds	U.S. Short Duration Government/Credit	U.S. Long Duration Government/Credit	U.S. Inv Grade Corporate Bonds	U.S. Long Corporate Bonds	U.S. High Yield Bonds	U.S. Leveraged Loans	World Government Bonds hedged	World Government Bonds	World ex-U.S. Government Bonds hedged	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	U.S. Long Treasuries	2.50	3.28	12.75	2.00	-0.23	0.04	0.78	1.00	TIPS	U.S. Aggregate Bonds	U.S. Short Duration Government/Credit	U.S. Long Duration Government/Credit	U.S. Inv Grade Corporate Bonds	U.S. Long Corporate Bonds	U.S. High Yield Bonds	U.S. Leveraged Loans	World Government Bonds hedged	World Government Bonds	World ex-U.S. Government Bonds hedged	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	TIPS	2.75	2.90	5.50	3.50	0.07	0.07	0.65	0.51	1.00	U.S. Aggregate Bonds	U.S. Short Duration Government/Credit	U.S. Long Duration Government/Credit	U.S. Inv Grade Corporate Bonds	U.S. Long Corporate Bonds	U.S. High Yield Bonds	U.S. Leveraged Loans	World Government Bonds hedged	World Government Bonds	World ex-U.S. Government Bonds hedged	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	U.S. Aggregate Bonds	3.25	3.32	3.75	3.00	-0.12	0.10	0.81	0.78	0.78	1.00	U.S. Short Duration Government/Credit	U.S. Long Duration Government/Credit	U.S. Inv Grade Corporate Bonds	U.S. Long Corporate Bonds	U.S. High Yield Bonds	U.S. Leveraged Loans	World Government Bonds hedged	World Government Bonds	World ex-U.S. Government Bonds hedged	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	U.S. Short Duration Government/Credit	3.50	3.52	2.00	3.25	-0.09	0.41	0.76	0.41	0.67	0.74	1.00	U.S. Long Duration Government/Credit	U.S. Inv Grade Corporate Bonds	U.S. Long Corporate Bonds	U.S. High Yield Bonds	U.S. Leveraged Loans	World Government Bonds hedged	World Government Bonds	World ex-U.S. Government Bonds hedged	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	U.S. Long Duration Government/Credit	3.25	3.68	9.50	3.25	-0.17	0.00	0.68	0.89	0.64	0.91	0.50	1.00	U.S. Inv Grade Corporate Bonds	U.S. Long Corporate Bonds	U.S. High Yield Bonds	U.S. Leveraged Loans	World Government Bonds hedged	World Government Bonds	World ex-U.S. Government Bonds hedged	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	U.S. Inv Grade Corporate Bonds	3.50	3.67	6.00	3.25	-0.12	-0.04	0.41	0.46	0.64	0.82	0.60	0.79	1.00	U.S. Long Corporate Bonds	U.S. High Yield Bonds	U.S. Leveraged Loans	World Government Bonds hedged	World Government Bonds	World ex-U.S. Government Bonds hedged	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	U.S. Long Corporate Bonds	3.75	4.23	10.00	3.75	-0.16	-0.06	0.39	0.58	0.57	0.81	0.47	0.88	0.96	1.00	U.S. High Yield Bonds	U.S. Leveraged Loans	World Government Bonds hedged	World Government Bonds	World ex-U.S. Government Bonds hedged	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	U.S. High Yield Bonds	5.25	5.59	8.50	5.75	0.12	-0.10	-0.26	-0.27	0.31	0.19	0.15	0.12	0.57	0.47	1.00	U.S. Leveraged Loans	World Government Bonds hedged	World Government Bonds	World ex-U.S. Government Bonds hedged	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	U.S. Leveraged Loans	5.00	5.28	7.75	5.00	0.32	-0.14	-0.50	-0.46	0.06	-0.07	-0.10	-0.10	0.33	0.24	0.80	1.00	World Government Bonds hedged	World Government Bonds	World ex-U.S. Government Bonds hedged	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	World Government Bonds hedged	2.50	2.54	3.00	1.75	-0.26	0.10	0.83	0.85	0.52	0.81	0.58	0.80	0.52	0.56	-0.19	-0.42	1.00	World Government Bonds	World ex-U.S. Government Bonds hedged	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	World Government Bonds	2.50	2.71	6.50	2.00	-0.01	0.13	0.66	0.48	0.66	0.71	0.68	0.59	0.58	0.54	0.17	-0.14	0.58	1.00	World ex-U.S. Government Bonds hedged	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	World ex-U.S. Government Bonds hedged	2.25	2.29	3.00	1.75	-0.27	0.07	0.71	0.75	0.43	0.72	0.50	0.72	0.50	0.54	-0.14	-0.36	0.97	0.51	1.00	World ex-U.S. Government Bonds	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	World ex-U.S. Government Bonds	2.25	2.56	8.00	2.00	0.02	0.11	0.56	0.37	0.61	0.62	0.62	0.50	0.55	0.50	0.24	-0.07	0.48	0.99	0.42	1.00	Emerging Markets Sovereign Debt	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	Emerging Markets Sovereign Debt	5.25	5.70	9.75	5.50	0.00	-0.02	0.22	0.16	0.58	0.60	0.46	0.50	0.76	0.68	0.72	0.40	0.28	0.55	0.29	0.57	1.00	Emerging Markets Local Currency Debt	Emerging Markets Corporate Bonds																																																																					
	Emerging Markets Local Currency Debt	6.25	6.94	12.25	6.50	0.12	0.12	0.15	0.02	0.46	0.41	0.41	0.31	0.56	0.48	0.61	0.30	0.14	0.59	0.13	0.43	0.14	0.46	0.89	0.73	1.00																																																																			
	Emerging Markets Corporate Bonds	5.25	5.57	8.25	5.50	0.05	-0.06	0.10	0.02	0.50	0.51	0.45	0.40	0.78	0.67	0.75	0.54	0.13	0.43	0.14	0.46	0.38	0.51	0.27	0.39																																																																				
	U.S. Muni 1-15 Yr Blend	2.50	2.55	3.25	2.50	-0.06	0.03	0.46	0.47	0.52	0.66	0.45	0.57	0.58	0.53	0.26	0.10	0.52	0.43	0.49	0.38	0.51	0.27	0.39																																																																					
	U.S. Muni High Yield	4.50	4.73	7.00	4.25	0.21	-0.12	0.00	0.06	0.31	0.30	0.08	0.27	0.41	0.34	0.43	0.54	0.11	0.10	0.13	0.11	0.43	0.23	0.39																																																																					
	U.S. Large Cap	5.50	6.41	14.00	6.25	0.05	-0.06	-0.31	-0.35	0.06	0.00	-0.04	-0.03	0.27	0.23	0.69	0.55	-0.24	0.14	-0.18	0.21	0.52	0.59	0.55																																																																					
	U.S. Mid Cap	5.75	6.93	16.00	6.75	0.07	-0.08	-0.34	-0.35	0.07	-0.01	-0.05	-0.04	0.29	0.24	0.74	0.59	-0.26	0.10	-0.20	0.17	0.52	0.58	0.56																																																																					
	U.S. Small Cap	5.75	7.35	18.75	7.00	0.04	-0.08	-0.37	-0.38	-0.02	-0.10	-0.12	-0.11	0.18	0.15	0.65	0.51	-0.29	0.03	-0.23	0.10	0.42	0.51	0.46																																																																					
	U.S. Large Cap Value	5.75	6.75	14.75	6.25	0.04	-0.07	-0.32	-0.35	0.02	-0.02	-0.05	-0.04	0.26	0.22	0.68	0.53	-0.23	0.13	-0.17	0.20	0.50	0.59	0.54																																																																					
	U.S. Large Cap Growth	5.25	6.19	14.25	6.25	0.07	-0.06	-0.32	-0.36	0.09	0.00	-0.04	-0.04	0.28	0.22	0.71	0.58	-0.26	0.12	-0.20	0.20	0.52	0.57	0.55																																																																					
	Euro area Large Cap	6.75	8.91	22.00	7.25	0.04	0.03	-0.21	-0.30	0.14	0.09	0.12	0.02	0.36	0.29	0.69	0.50	-0.19	0.32	-0.15	0.39	0.61	0.70	0.61																																																																					
	Japanese Equity	6.25	7.25	14.75	5.75	0.02	-0.09	-0.25	-0.21	0.12	0.08	0.05	0.09	0.38	0.34	0.60	0.46	-0.18	0.17	-0.14	0.23	0.49	0.57	0.55																																																																					
	Hong Kong Equity	6.50	8.39	20.50	7.50	-0.01	0.08	-0.18	-0.24	0.17	0.14	0.15	0.10	0.44	0.38	0.64	0.50	-0.15	0.23	-0.12	0.29	0.61	0.68	0.65																																																																					
	UK Large Cap	6.25	7.61	17.25	7.50	0.09	-0.01	-0.30	-0.36	0.12	0.05	0.05	0.00	0.38	0.31	0.73	0.63	-0.26	0.25	-0.20	0.33	0.60	0.66	0.64																																																																					
	EAFE Equity hedged	6.25	7.12	13.75	6.50	0.00	-0.04	-0.40	-0.35	-0.03	-0.03	-0.08	-0.02	0.31	0.27	0.69	0.61	-0.26	-0.03	-0.18	0.03	0.52	0.54	0.57																																																																					
	EAFE Equity	6.25	7.61	17.25	6.75	0.05	0.00	-0.24	-0.30	0.16	0.10	0.11	0.06	0.42	0.35	0.74	0.56	-0.20	0.31	-0.16	0.39	0.65	0.74	0.67																																																																					
	Emerging Markets Equity	8.00	10.04	21.50	9.25	0.08	0.08	-0.19	-0.26	0.25	0.14	0.18	0.08	0.44	0.36	0.73	0.55	-0.17	0.32	-0.14	0.39	0.68	0.81	0.69																																																																					
	AC Asia ex-Japan Equity	8.25	10.20	21.00	9.25	0.01	0.06	-0.18	-0.22	0.24	0.16	0.18	0.11	0.46	0.39	0.72	0.53	-0.13	0.30	-0.10	0.36	0.66	0.76	0.68																																																																					
	AC World Equity	6.00	7.10	15.50	6.75	0.06	-0.02	-0.28	-0.34	0.14	0.06	0.06	0.02	0.38	0.31	0.76	0.59	-0.23	0.25	-0.18	0.33	0.63	0.72	0.66																																																																					
	Global Convertible hedged	5.00	5.45	9.75	-	0.03	-0.04	-0.33	-0.34	0.14	0.09	0.07	0.03	0.45	0.36	0.82	0.67	-0.23	0.12	-0.16	0.19	0.64	0.62	0.71																																																																					
	Global Credit Sensitive Convertible hedged	4.25	4.44	6.25	-	0.14	-0.07	-0.12	-0.19	-0.01	-0.01	-0.03	0.01	0.19	0.18	0.28	0.33	-0.10	0.08	-0.06	0.12	0.19	0.23	0.28																																																																					
	Private Equity	7.25	9.21	21.00	8.00	0.06	-0.03	-0.25	-0.30	0.10	0.04	0.03	0.00	0.30	0.25	0.65	0.51	-0.20	0.19	-0.16	0.25	0.51	0.57	0.53																																																																					
	U.S. Direct Real Estate	5.25	5.79	10.75	5.50	-0.01	-0.02	-0.04	-0.05	0.04	0.05	0.00	0.04	0.11	0.10	0.23	0.14	0.00	0.08	0.01	0.10	0.19	0.22	0.15																																																																					
	U.S. Value Added Real Estate	6.50	7.37	13.75	7.00	-0.01	-0.03	-0.05	-0.06	0.04	0.05	0.00	0.03	0.11	0.10	0.25	0.15	-0.01	0.09	0.01	0.10	0.20	0.23	0.16																																																																					
	European Direct Real Estate	5.75	6.72	14.50	6.25	-0.03	-0.01	-0.21	-0.19	-0.08	-0.08	-0.10	-0.08	0.05	0.03	0.28	0.25	-0.16	-0.08	-0.13	-0.06	0.17	0.18	0.17																																																																					
	Asia Core Real Estate	5.50	6.07	11.00	5.50	-0.01	0.05	-0.14	-0.15	-0.02	-0.06	-0.05	-0.06	0.04	0.03	0.23	0.16	-0.12	0.05	-0.10	0.08	0.14	0.25	0.10																																																																					
	U.S. REITs	6.25	7.42	16.00	6.00	-0.05	-0.07	-0.02	0.00	0.21	0.27	0.09	0.25	0.44	0.42	0.62	0.36	0.10	0.29	0.13	0.32	0.56	0.59	0.47																																																																					
	Global Infrastructure	6.25	6.89	11.75	6.25	0.10	-0.01	-0.10	-0.11	0.03	0.00	-0.02	-0.01	0.08	0.06	0.22	0.19	-0.08	0.05	-0.06	0.07	0.16	0.19	0.16																																																																					
	Infrastructure Debt	4.25	4.41	5.75	4.25	-0.05	-0.04	0.44	0.51	0.67	0.81	0.57	0.78	0.92	0.88	0.47	0.32	0.54	0.49	0.51	0.45	0.65	0.39	0.67																																																																					
	Diversified Hedge Funds	4.25	4.52	7.50	3.50	0.19	0.08	-0.41	-0.40	0.06	-0.10	-0.07	-0.10	0.22	0.16	0.60	0.65	-0.35	-0.04	-0.29	0.02	0.36	0.39	0.44																																																																					
	Event Driven Hedge Funds	4.75	5.13	9.00	4.75	0.23	-0.02	-0.46	-0.50	0.05	-0.11	-0.06	-0.15	0.27	0.19	0.77	0.76	-0.41	0.02	-0.35	0.11	0.47	0.52	0.58																																																																					

## PORTFOLIO INSIGHTS

**J.P. MORGAN ASSET MANAGEMENT'S LONG-TERM CAPITAL MARKET ASSUMPTIONS** are developed each year by our Assumptions Committee, a multi-asset class team of senior investors and strategists from across the firm. The Committee relies on the input and expertise of a range of portfolio managers and product specialists, striving to ensure that the analysis is consistent across asset classes. As a final step in the process, the team, along with senior leaders at J.P. Morgan Asset Management, conducts a rigorous review of the proposed assumptions and their underlying rationale.

**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.



**NOT FOR RETAIL DISTRIBUTION:** This communication has been prepared exclusively for institutional/wholesale/professional clients and qualified investors only as defined by local laws and regulations.

**JPMAM Long-Term Capital Market Assumptions:** 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. Please note that all information shown is based on qualitative analysis. Exclusive reliance on the above 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. The outputs of the assumptions are provided for illustration/discussion purposes only and are subject to significant limitations. “Expected” or “alpha” return estimates are subject to uncertainty and error. For example, changes in the historical data from which it is estimated will result in different implications for asset class returns. Expected returns for each asset class are conditional on an economic scenario; actual returns in the event the scenario comes to pass could be higher or lower, as they have been in the past, so an investor should not expect to achieve returns similar to the outputs shown herein. References to future returns for either asset allocation strategies or asset classes are not promises of actual returns a client portfolio may achieve. Because of the inherent limitations of all models, potential investors should not rely exclusively on the model when making a decision. The model cannot account for the impact that economic, market, and other factors may have on the implementation and ongoing management of an actual investment portfolio. Unlike actual portfolio outcomes, the model outcomes do not reflect actual trading, liquidity constraints, fees, expenses, taxes and other factors that could impact future returns. The model assumptions are passive only—they do not consider the impact of active management. A manager’s ability to achieve similar outcomes is subject to risk factors over which the manager may have no or limited control.

The views contained herein are not to be taken as advice or a recommendation to buy or sell any investment in any jurisdiction, nor is it a commitment from J.P. Morgan Asset Management or any of its subsidiaries to participate in any of the transactions mentioned herein. Any forecasts, figures, opinions or investment techniques and strategies set out are for information purposes only, based on certain assumptions and current market conditions and are subject to change without prior notice. All information presented herein is considered to be accurate at the time of production. This material does not contain sufficient information to support an investment decision and it should not be relied upon by you in evaluating the merits of investing in any securities or products. In addition, users should make an independent assessment of the legal, regulatory, tax, credit and accounting implications and determine, together with their own professional advisers, if any investment mentioned herein is believed to be suitable to their personal goals. Investors should ensure that they obtain all available relevant information before making any investment. It should be noted that investment involves risks, the value of investments and the income from them may fluctuate in accordance with market conditions and taxation agreements and investors may not get back the full amount invested. Both past performance and yield are not a reliable indicator of current and future results.

J.P. Morgan Asset Management is the brand for the asset management business of JPMorgan Chase & Co. and its affiliates worldwide. This communication is issued by the following entities: in the United Kingdom by JPMorgan Asset Management (UK) Limited, which is authorized and regulated by the Financial Conduct Authority; in other European jurisdictions by JPMorgan Asset Management (Europe) S.à r.l.; in Hong Kong by JF Asset Management Limited, or JPMorgan Funds (Asia) Limited, or JPMorgan Asset Management Real Assets (Asia) Limited; in Singapore by JPMorgan Asset Management (Singapore) Limited (Co. Reg. No. 197601586K), or JPMorgan Asset Management Real Assets (Singapore) Pte Ltd (Co. Reg. No. 201120355E); in Taiwan by JPMorgan Asset Management (Taiwan) Limited; in Japan by JPMorgan Asset Management (Japan) Limited which is a member of the Investment Trusts Association, Japan, the Japan Investment Advisers Association, Type II Financial Instruments Firms Association and the Japan Securities Dealers Association and is regulated by the Financial Services Agency (registration number “Kanto Local Finance Bureau (Financial Instruments Firm) No. 330”); in Korea by JPMorgan Asset Management (Korea) Company Limited; in Australia to wholesale clients only as defined in section 761A and 761G of the Corporations Act 2001 (Cth) by JPMorgan Asset Management (Australia) Limited (ABN 55143832080) (AFSL 376919); in Brazil by Banco J.P. Morgan S.A.; in Canada for institutional clients’ use only by JPMorgan Asset Management (Canada) Inc., and in the United States by JPMorgan Distribution Services Inc. and J.P. Morgan Institutional Investments, Inc., both members of FINRA/SIPC.; and J.P. Morgan Investment Management Inc.

Copyright 2017 JPMorgan Chase & Co. All rights reserved.

PI-LTCMA-MUS-2018 | 10/17 | 4d03c02a80053165