CAIA Association Webinar

March 23rd, 2021

Topic: Alternatives: From Optional to Essential

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ALTs by J.P.Morgan Asset Management

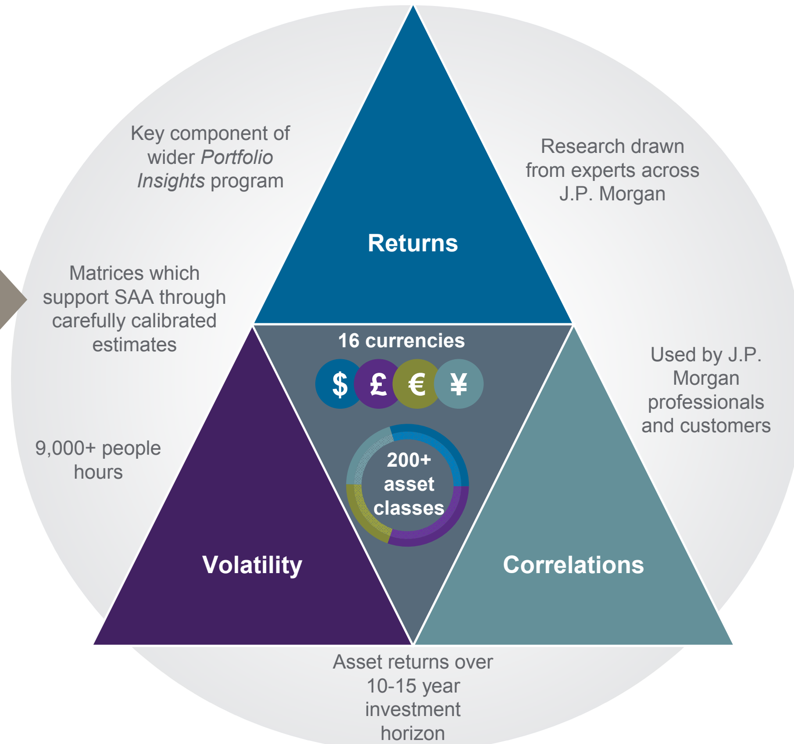
Introducing the 2021 LTCMAs

J.P. Morgan Asset Management's *Long-Term Capital Market Assumptions* provide return and volatility estimates to support portfolio investment decisions across markets and asset classes.

Firm-wide initiative

Senior management sponsorship

CIO endorsed



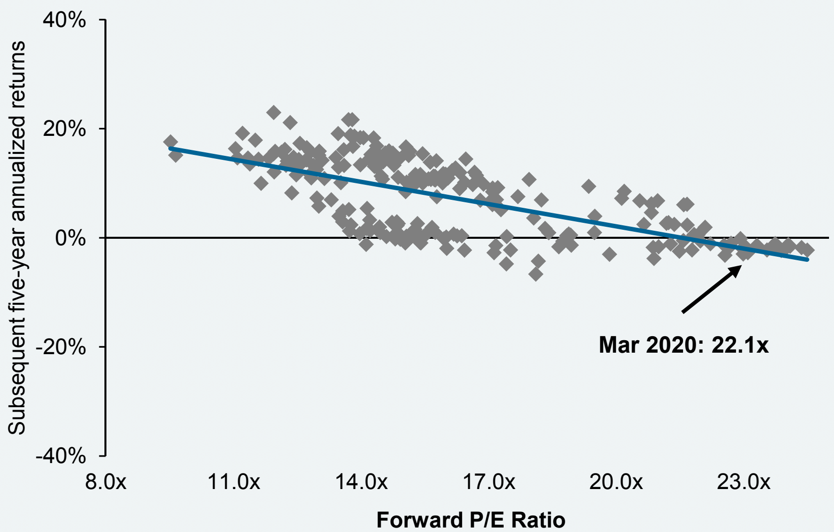
25 annual editions

- **Alts Asset Assumptions**: 28 pages
- **Alternatives Theme paper – From Optional to Essential:** 10 pages

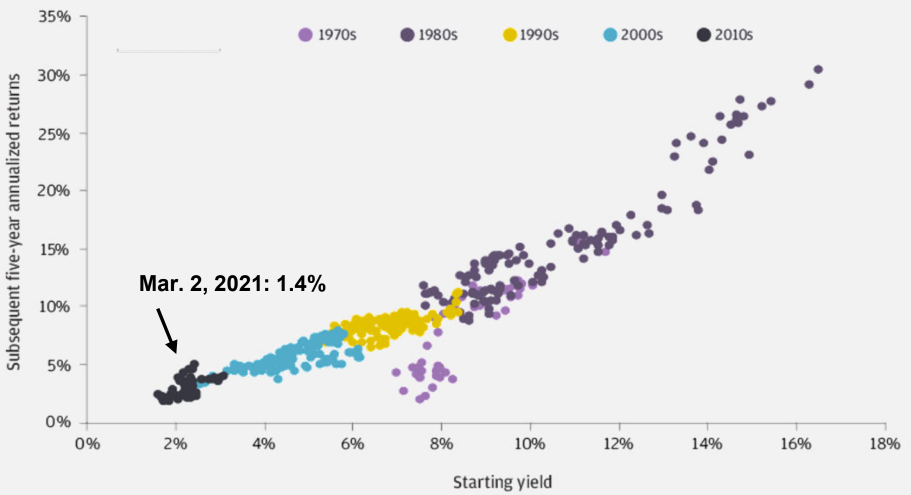
The Challenge: Diminished outlook for public equity and fixed income

High starting valuations diminish public equity outlook; low starting yields similarly constrain fixed income returns, faster normalization creates near-term volatility

Forward P/E and subsequent five-year annualized S&P 500 returns



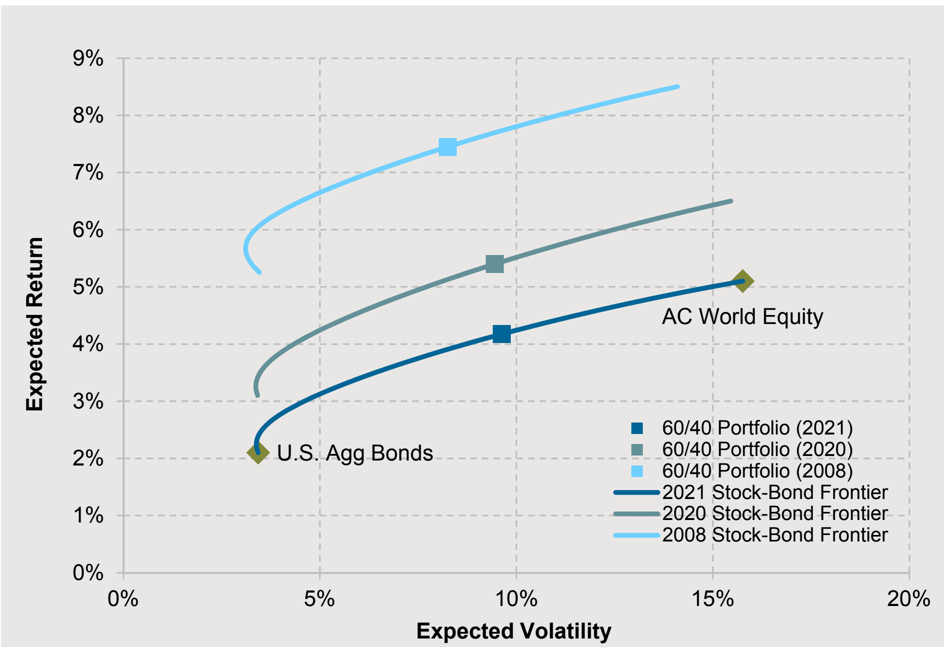
Bond yields and subsequent five-year annualized returns for the Bloomberg Barclays U.S. aggregate



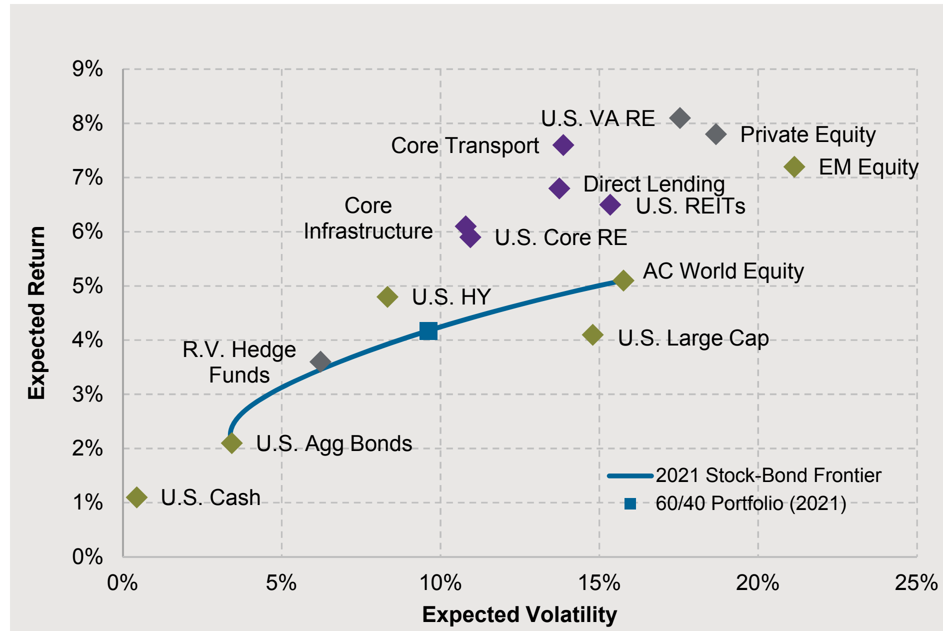
Source: Bloomberg Barclays, FactSet, Standard & Poor's, Thomson Reuters, J.P. Morgan Asset Management. Data as of 1Q 2021.

The Solution: Alternatives Provide Alpha, Income, and Diversification to a new portfolio, for a new decade

60/40 returns outlook shrinks to 4%



Alts sit above the stock-bond frontier



Source: J.P. Morgan Asset Management; estimates as of September 2020, September 2019 and 2007.

Alternative and traditional assets share the same set of functions within a portfolio

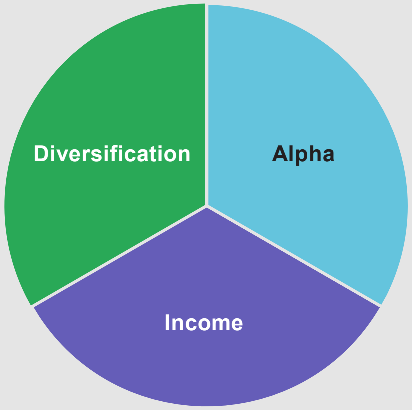
Alpha, income and diversification

DIVERSIFICATION

Examples of traditional assets/levers:
Duration premium, credit risk premium, equity risk premium

Examples of alternative assets/strategies:
Hedge funds, real assets, core alternative credit

Hedge funds
are expected to deliver
0.2x–0.6x beta
to global equity



Core real assets
are expected to deliver
2x+ yield
of Global Aggregate

ALPHA

Examples of traditional assets/levers:
Active security selection, active asset allocation

Examples of alternative assets/strategies: Private equity, distressed credit, special situations, non-core real assets, hedge funds

Private equity
is expected to deliver
2%+ premium
over public equity

INCOME

Examples of traditional assets/levers:
Government bonds, corporate bonds, equity income

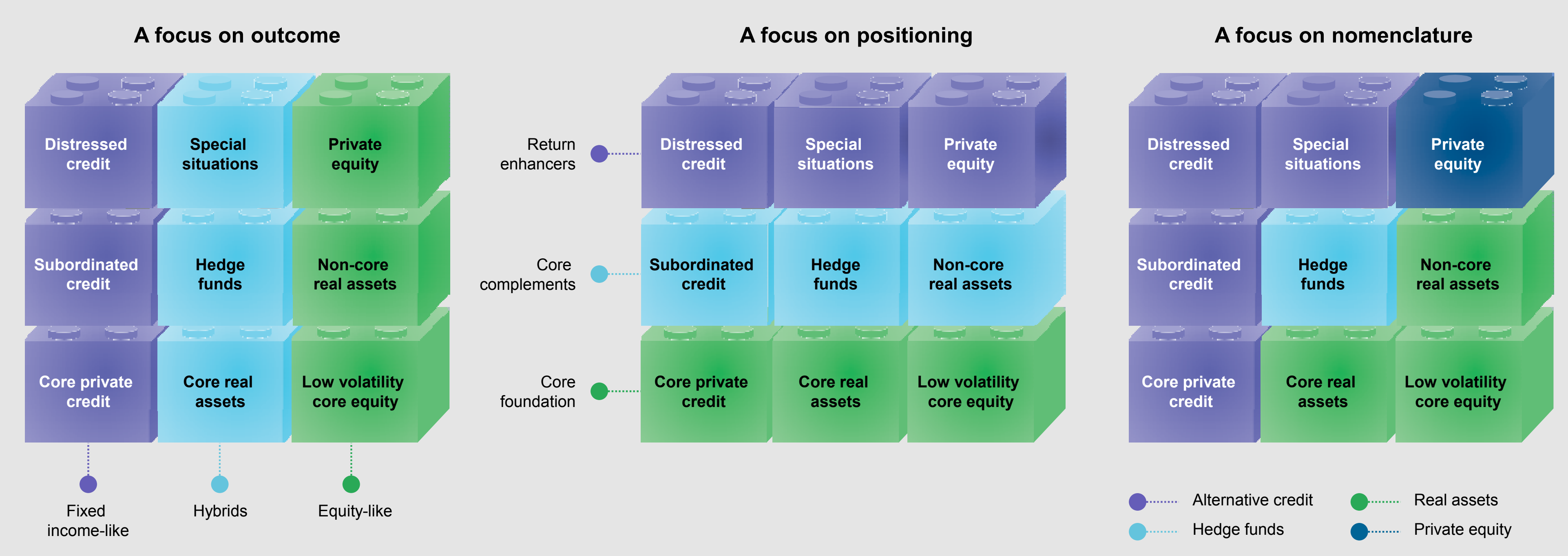
Examples of alternative assets/strategies:
Core alternative credit, core real assets

Source: J.P. Morgan Asset Management. Estimates are based on the 2021 Long-Term Capital Market Assumptions (LTCMAs); data as of September 30, 2020. Core real assets yield is calculated based on a weighted average starting NOI (after capex and depreciation) yield on a well-diversified portfolio of core real assets. Global Aggregate yield refers to the Bloomberg Barclays Global Aggregate current yield. Hedge fund beta range is calculated based on the range of hedge fund strategies covered by the LTCMAs.

Hypothetical performance results have many inherent limitations. No representation is being made that an asset class will or is likely to achieve profits or losses similar to those shown. In fact, there are frequently sharp differences between hypothetical performance results and the actual results subsequently achieved by any particular trading program. One of the limitations of hypothetical performance results is that they are generally prepared with the benefit of hindsight. In addition, hypothetical trading does not involve financial risk, and no hypothetical trading record can completely account for the impact of financial risk in actual trading.

Alternatives allocation framework: organizing and accessing alternatives according to their investment attributes

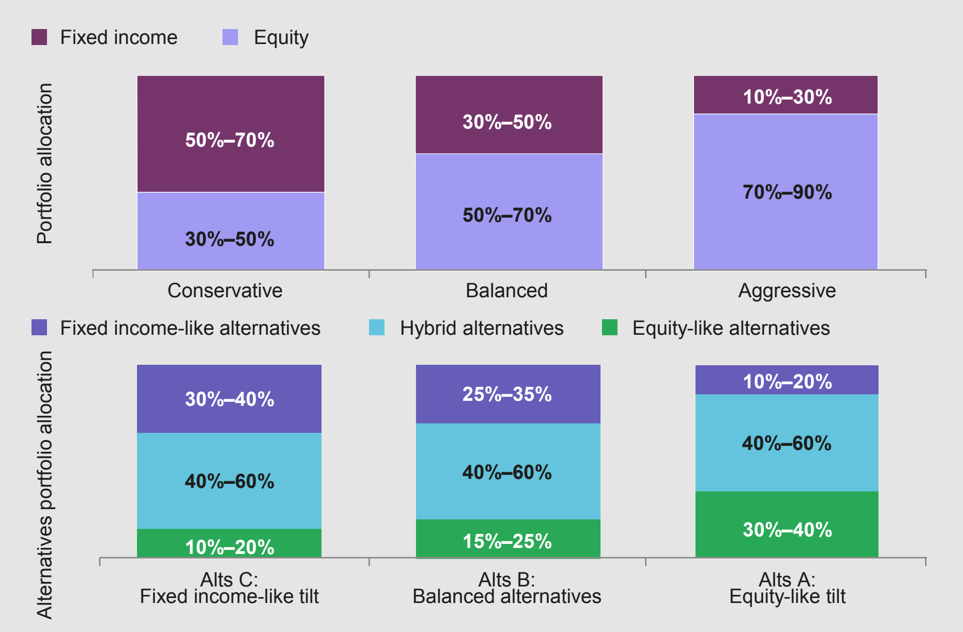
An objectives-based alternatives framework emphasizes function over standard industry nomenclature

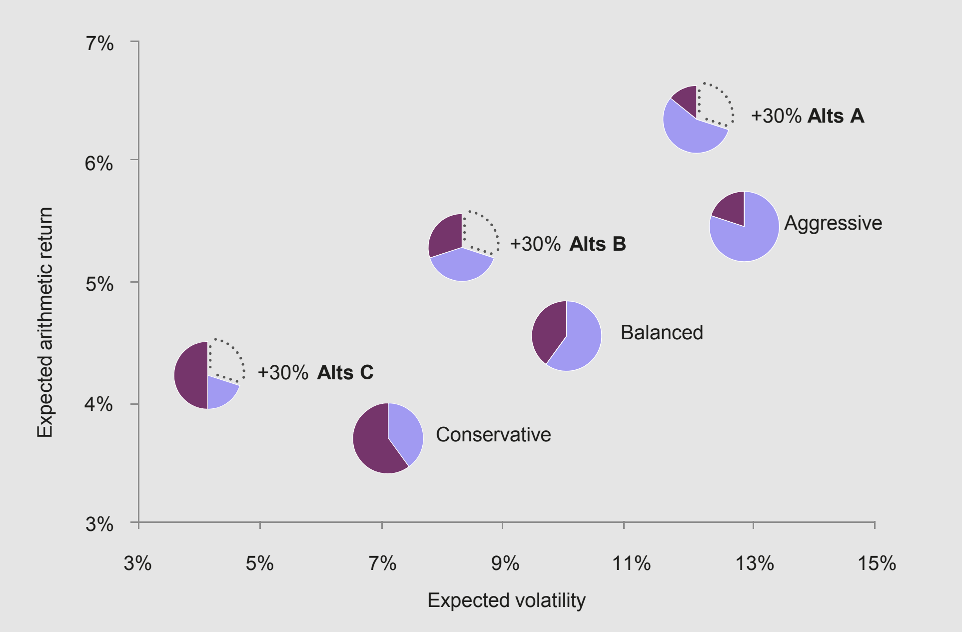


Source: J.P. Morgan Asset Management – Alternatives Investment Strategy & Solutions. For illustrative purposes only. Hedge funds – hybrid core complements – are placed at the center of the framework, as they are flexible structures that can toggle between equity- and fixed income-like and hybrid functions. While low volatility core equity is denoted as part of real assets, it may represent a broader segment of liquid equity-like core alternatives.

Objectives-based alts allocations can help improve portfolio outcomes through alignment with investors' risk-tolerance

Illustrative case study – Adding diversified alternative allocations based on investors' risk-return objectives



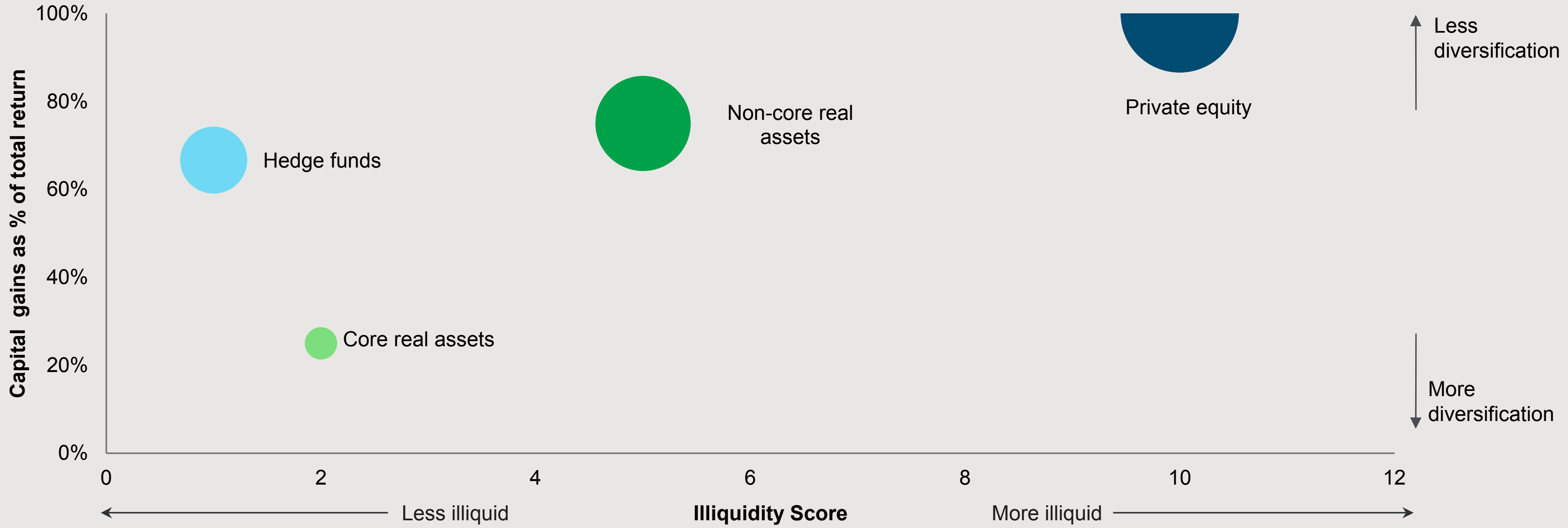


Source: J.P. Morgan Asset Management – Global Alternatives. Portfolio expected returns and volatilities are mapped via asset classes available in *2021 Long–Term Capital Market Assumptions*, USD version; data as of September 30, 2020. Mapping detail is as follows: equity – 100% AC World Equity; fixed income – 100% US Aggregate Bonds; equity–like alternatives – 100% private equity; fixed income–like alternatives – 100% direct lending; hybrid alternatives – 70%/30% real assets/hedge funds in Alts C, 80%/20% real assets/hedge funds in Alts B and 90%/10% real assets/hedge funds in Alts A. Core real assets portfolio is diversified across global core real estate, infrastructure and transport. Hedge fund portfolio is modeled as 100% diversified hedge funds. For broader definitions of equity–like alts, hybrid alts and fixed income–like alts, please refer to Exhibit 2. The 30% alternatives allocations are funded as follows: Conservative portfolio – 30%/0% equity/fixed income; balanced portfolio – 25%/5% equity/fixed income; aggressive portfolio – 20%/10% equity/fixed income.

Investment trade-offs are not equally distributed across alternatives

Standard efficient frontiers do not capture two added dimensions of risk integral to alternative investing – illiquidity and manager risk

Bubble size represents the magnitude of return dispersion between 25th and 75th percentile managers



Source: Burgiss, Cambridge Associates, HFRI, NCREIF, Preqin, J.P. Morgan Asset Management; data as of Q2 2020 for hedge funds and core real assets; data as of Q1 2020 for non-core real assets and private equity. Note: (1) Hedge funds are represented by equity long-bias funds, trailing five years. Core real assets bubble is mapped using core real estate proxy. Non-core real assets bubble is mapped using non-core real estate proxy. Private equity returns are measured using 10–year IRR. (2) Size of bubble represents the magnitude of manager dispersion between 25th and 75th percentile managers. (3) Illiquidity score is the estimated time to value realization: hedge funds – one year; core real assets – two years; non-core real assets – five years; private equity – 10 years.

ALTs by J.P.Morgan Asset Management

How are different types of institutions using alts to meet their objectives?

Alternatives are evolving from an optional to an essential portfolio component. We see expanding allocations to alternatives over the next decade by institutions of all types, each with distinct investment needs and constraints

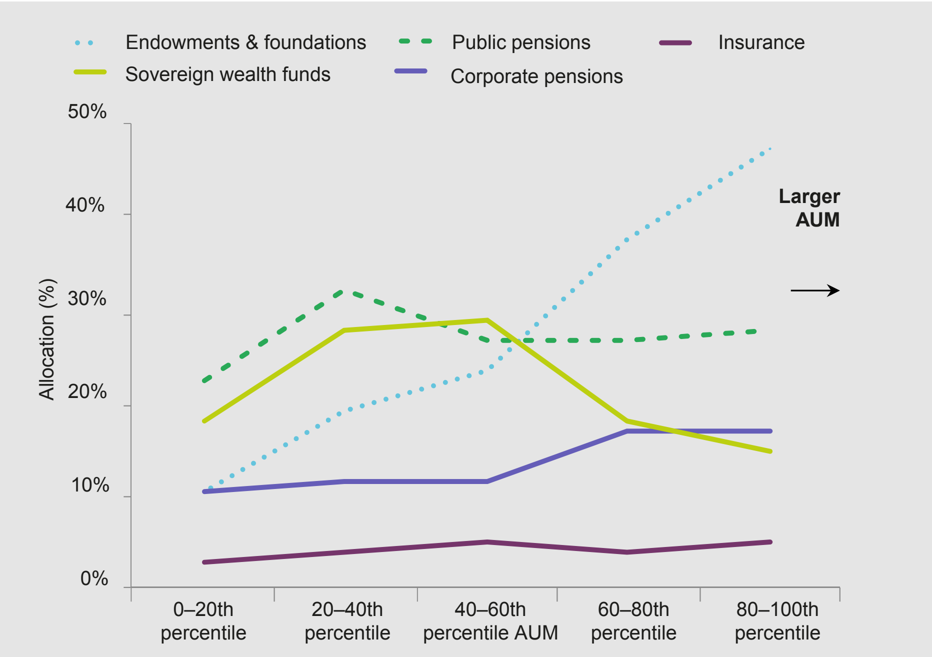
Alternative allocations, key investments and constraints by institutional investor type

	Endowments & foundations	Sovereign wealth funds	Public pensions	Corporate pensions	Insurance
Typical alternatives allocation					
Range	10%–50%	0%–40%	10%–40%	0%–30%	0%–10%
Objectives					
Total portfolio focus	Asset only with spending considerations	Asset only with wealth preservation considerations	Asset only with liability considerations	Asset & liability	Asset & liability
Alternatives focus	Growth in real returns & diversified sources of alpha	Stable yield & growth	Growth, stability & cash flow management	Growth & stability	Income, diversification
Alternatives portfolio characteristics					
Risk orientation	Equity-like	Balanced	Balanced	Balanced	Fixed income-like
Return enhancement	High	Medium – high	Medium – high	Medium	Low – medium
Income	Low – medium	Medium	Medium – high	Medium – high	Medium – high
Equity diversification	Low	Low – medium	Low – medium	Medium – high	High
Downside protection	Low	Low – medium	Low – medium	Medium	Medium – high
Alternatives key constraints					
Liquidity	Low – medium	Low – medium	Low – medium	Medium	Low
Regulatory	Low	Low	Low	Low - medium	High

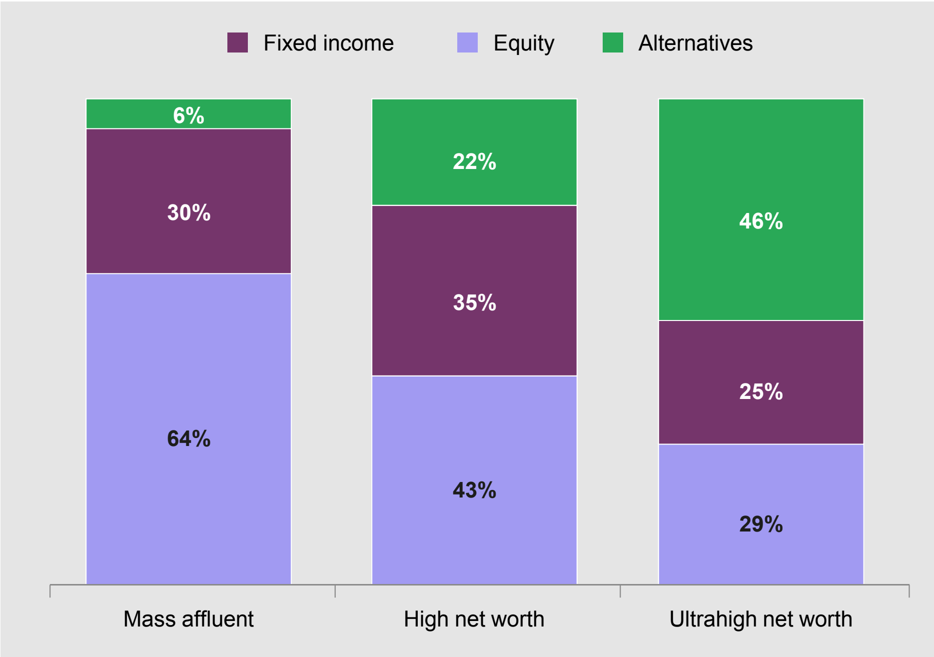
For illustrative purposes only. The information is based on a combination of actual data and a subjective view from J.P. Morgan Asset Management; data as of August 31, 2020.

Allocation trends among different investor types

Institutional alternative allocations by AUM



Where individual investors put their money



Left: Source: J.P. Morgan Asset Management, Company 10-K, Capital IQ, S&P Money Market Directories. Data as of August 31, 2020. Note: (1) Alternatives allocation is defined as asset allocation other than equity, fixed income and cash. (2) Endowments & Foundations data reflects over 750 global plans with $630 billion assets. Corporate pension data reflects over 180 U.S. plans with $1.5 trillion assets. Public pension data reflects over 136 U.S. plans with $3.5 trillion assets. Insurance data reflects over 300 U.S. plans with $5 trillion assets. Sovereign Wealth Fund data reflects over 50 global plans with $ 9.5 trillion assets. Right: Sources: KKR, Institutional Investor, J.P. Morgan Asset Management. Data are as of August 31, 2020. Note: Mass affluent is defined as an investor with $500,000-$1.5 million of investible assets. High Net Worth is defined as an investor with $10-$30 million in investible assets. Ultra High Net Worth is defined as an investor with $30 million or more in investable assets. High net worth and Ultrahigh net worth data is as of 2017. Mass affluent data is as of 2018

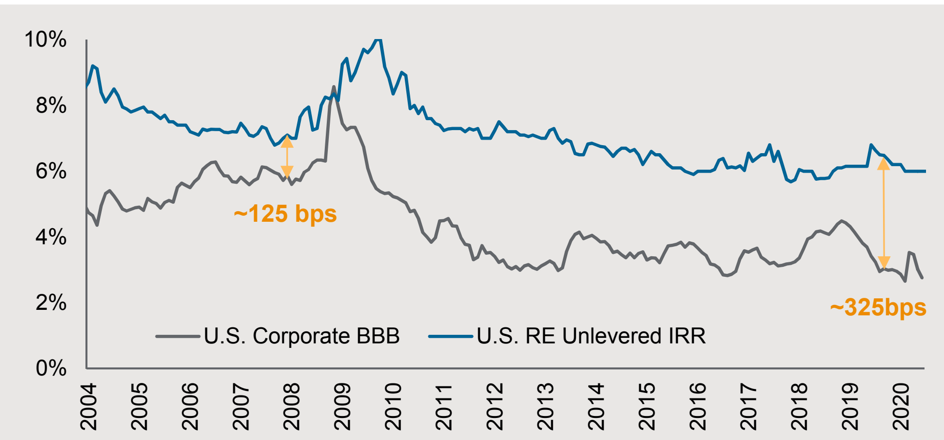
Appendix

2021 LTCMA Alternatives Assumptions

Real Assets: Stable income and diversification in a world of lower yields

%[1]	Core Real Estate (Local CCY)				Value-Added Real Estate (Local CCY)			REITS (LOCAL CCY)					Infra and Transport[2] (USD)		Commodities (USD)	
	U.S.	European ex-UK	UK	APAC	U.S.	European ex-UK	UK	U.S.	European ex-UK	UK	APAC	Global	Global Core Infrastructure	Global Core Transport	Commodities	Gold
2021	**5.90**	**5.00**	**5.90**	**6.60**	**8.10**	**7.70**	**8.40**	**6.50**	**5.90**	**6.00**	**6.40**	**6.40**	**6.10**	**7.60**	**2.30**	**2.90**
2020	5.80	5.00	5.50	6.50	7.70	7.50	7.70	6.00	5.50	6.00	6.00	6.00	6.00	N.A	2.50	3.00

U.S. real estate is better positioned than it was just prior to the GFC[3]



KEY POINTS

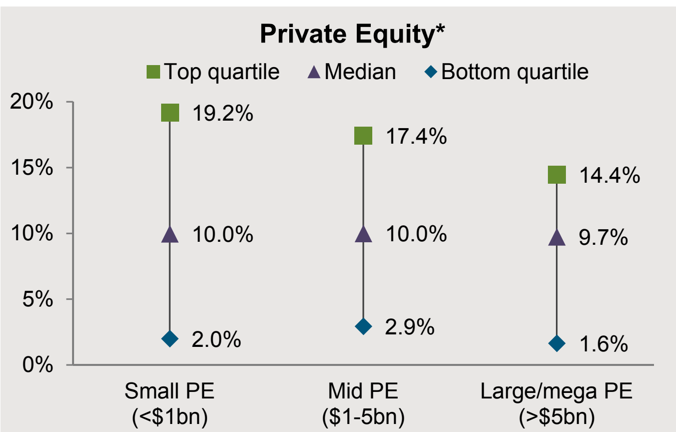
- **Global real estate:** Minimal change for core real estate across regions. Value-added risk premiums increase as we move into new cycle. Increased return projections for REITs. Rise of new property sectors
- **Global core infrastructure:** Projections in line with prior year. Expected stable returns with long-dated contracted cash flows resulting in less cyclical returns
- **Global core transport:** New addition to LTCMA 2021. Similar to core real estate and infrastructure – majority of the returns underpinned by long-term contractual cash flow with strong counterparties
- **Commodities:** Marginal reduction in returns reflecting lower collateral return expectations and less support from a falling U.S. dollar

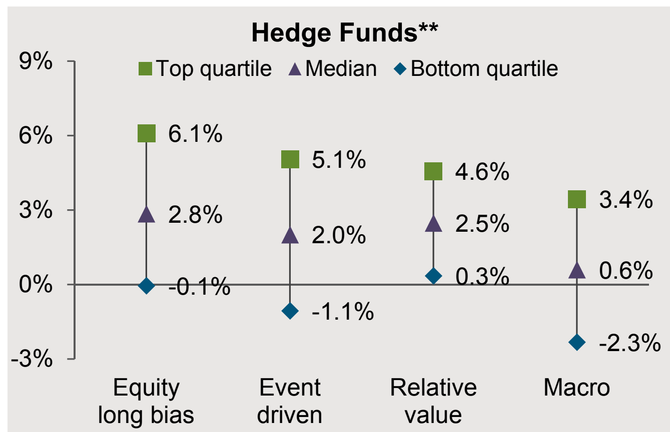
Source: (1) J.P. Morgan Asset Management; estimates as of September 30, 2019, and September 30, 2020. (2) Represents a diversified portfolios of privately held, global core equity assets. (3) Moody's Analytics, NCREIF, J.P. Morgan Asset Management; data as of June 2020.

Financial Alts: an improving environment for alpha amid a declining outlook for public markets

	Private Equity				Private Debt	Hedge Funds				
USD, %	**Small Cap**	**Mid Cap**	**Large/Mega Cap**	**Cap-Weighted[1]**	**Direct Lending**	**Equity Long Bias**	**Event Driven**	**Relative Value**	**Macro**	**Diversified[2]**
2021 LTCMAs	**7.30**	**7.40**	**8.00**	**7.80**	**6.80**	**3.40**	**3.10**	**3.60**	**2.20**	**3.30**
2020 LTCMAs	8.70	8.50	9.00	8.80	7.00	4.80	4.80	4.50	3.30	4.50

Returns by manager percentile ranking (USD)





KEY POINTS

- **Private equity**: Lower assumptions reflecting the decrease in public market returns, expect an increasingly global universe, and better environment for innovation and growth
- **Direct lending**: Reduced modestly, reflecting the headwinds of lower cash rates and higher overall credit losses, balanced by higher starting yields, credit selection remains key
- **Hedge fund:** Projections are marked lower vs. 2020 to reflect reduced public market assumptions. However, alpha is expected to improve and we observe increased sector specialization
- *Manager selection is a critical determinant of success*

Source: (Top) J.P. Morgan Asset Management, as of September 30, 2019, and September 30, 2020. (Bottom) * Burgiss Private IQ, J.P. Morgan Asset Management, data as of June 30, 2020, IRR of vintage years 2006-2019; ** Hedge Fund Research, J.P. Morgan Asset Management, data as of June 30, 2020, trailing 5 years as of June 2020;

[1] The private equity composite is AUM-weighted: 65% large cap and mega cap, 25% mid cap and 10% small cap. The regional weights for the capitalization-weighted PE composite are: U.S.: 60%; Europe: 20%; Japan: 5%; Asia ex-Japan: 15%.
[2] The diversified assumption represents the projected return for multi-strategy hedge funds.

Appendix

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ALTs by J.P.Morgan Asset Management

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