Market Insights

Principles of Alternatives Investing®

3Q 2024

As of August 31, 2024

J.P.Morgan
ASSET MANAGEMENT

Principles of Alternatives Investing

Why Alts?

1. Elevated valuations in public markets point to muted future returns
2. Stock-bond correlation doesn’t sufficiently diversify when inflation is a threat
3. The income on a 60/40 portfolio is low relative to history
4. Alternatives can improve portfolio risk and return

Which Alts?

1. Different alternatives can enhance different portfolio attributes
2. Private markets are growing and dominated by growth companies
3. Private credit is providing a growing proportion of financing
4. Hedge funds can diversify traditional stock/bond portfolios
5. Real assets offer attractive level of income
6. Diversification within alternatives can improve the risk/reward tradeoff

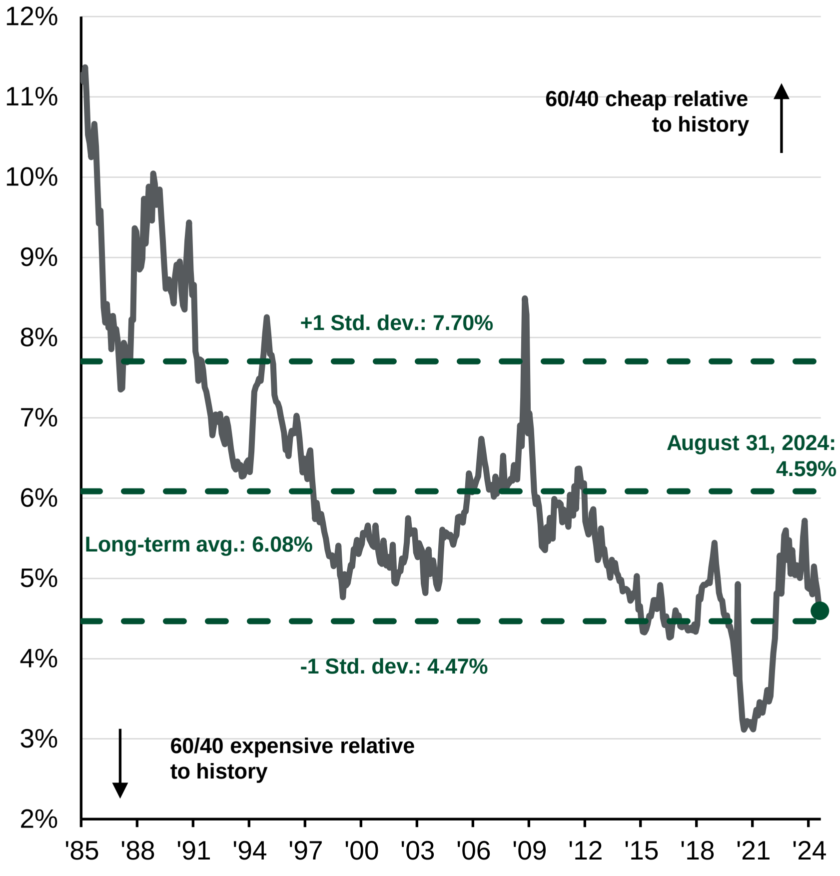
Who Alts?

1. Manager selection matters a lot more in private markets

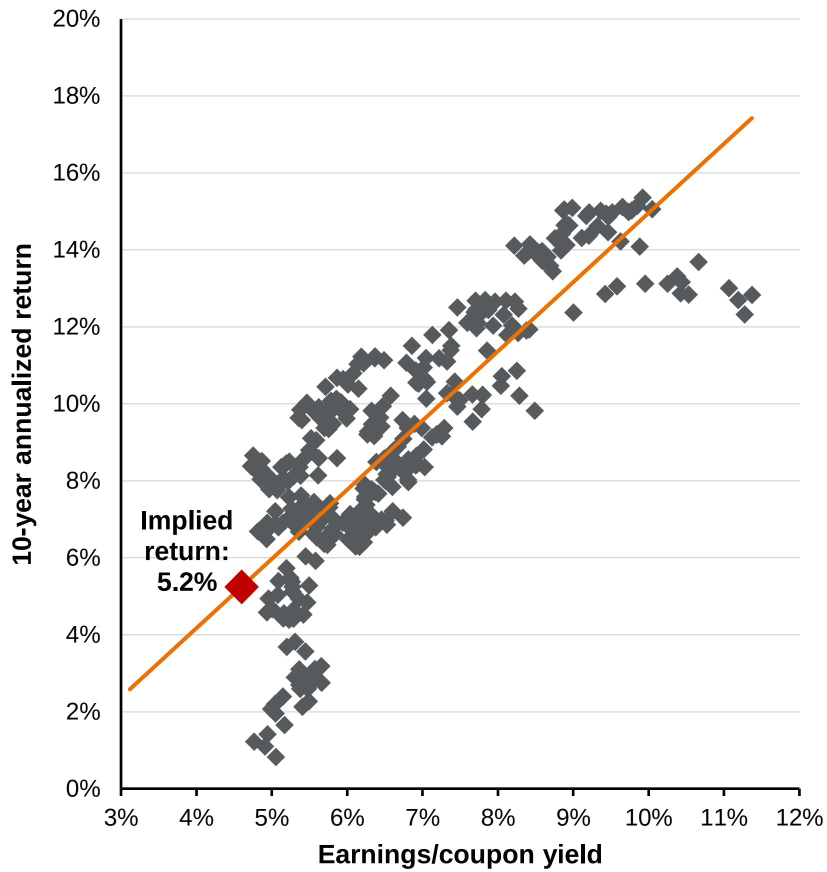
J.P.Morgan
ASSET MANAGEMENT

Elevated valuations in public markets point to muted future returns

Earnings/coupon yield on a 60/40 portfolio
Blended S&P 500 forward E/P ratio and Bloomberg U.S. Agg. YTW



60/40 earnings/coupon yield and subsequent 10-year annualized returns: Jan. 1985 – Aug. 2014



Source: Standard & Poor's, Bloomberg, IBES, FactSet, Thomas Reuters J.P. Morgan Asset Management. Valuation is calculated by summing 60% weight to earnings yield on stocks (inverse of forward P/E) and a 40% weight to the yield-to-worst on the U.S. Aggregate. Earnings yield is the forward earnings yield (consensus analyst estimates of EPS over the next 12 months divided by price) as provided by IBES since December 1984 and by FactSet since January 2022. Percentages may not sum due to rounding. Returns are based on a 60% weighting in the S&P 500 Total Return Index and a 40% weighting in the U.S. Aggregate Total Return index. 60/40 is rebalanced annually. Returns are 120-month annualized total returns, measured monthly, beginning December 31, 1984.
Data are based on availability as of August 31, 2024.

J.P.Morgan
ASSET MANAGEMENT

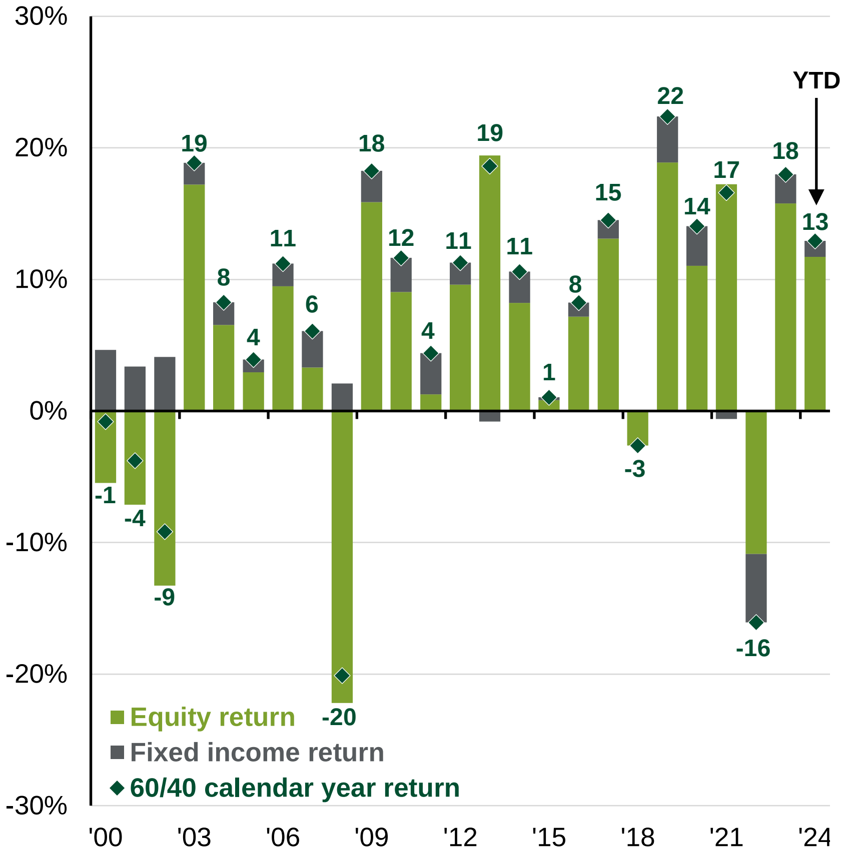
Alternatives in portfolios

Stock-bond correlation doesn't sufficiently diversify when inflation is a threat

GTA | MI | 5

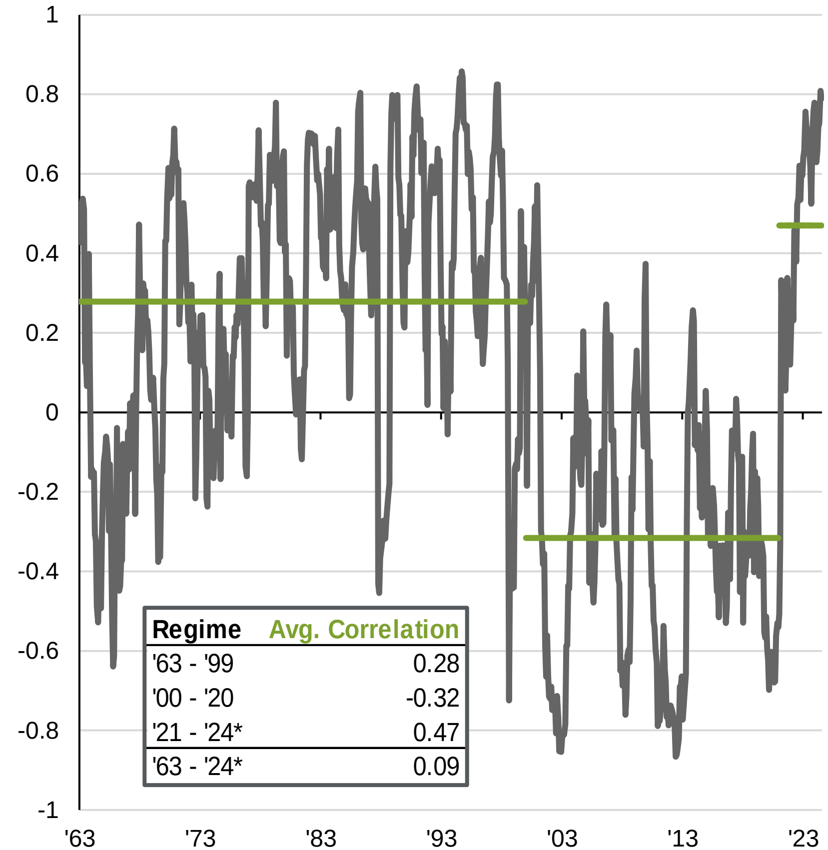
60/40 annual return decomposition

%, total return



S&P 500 / U.S. 10-year Treasury correlation

Rolling 12-month correlation based on monthly total returns



Regime	Avg. Correlation
'63 - '99	0.28
'00 - '20	-0.32
'21 - '24*	0.47
'63 - '24*	0.09

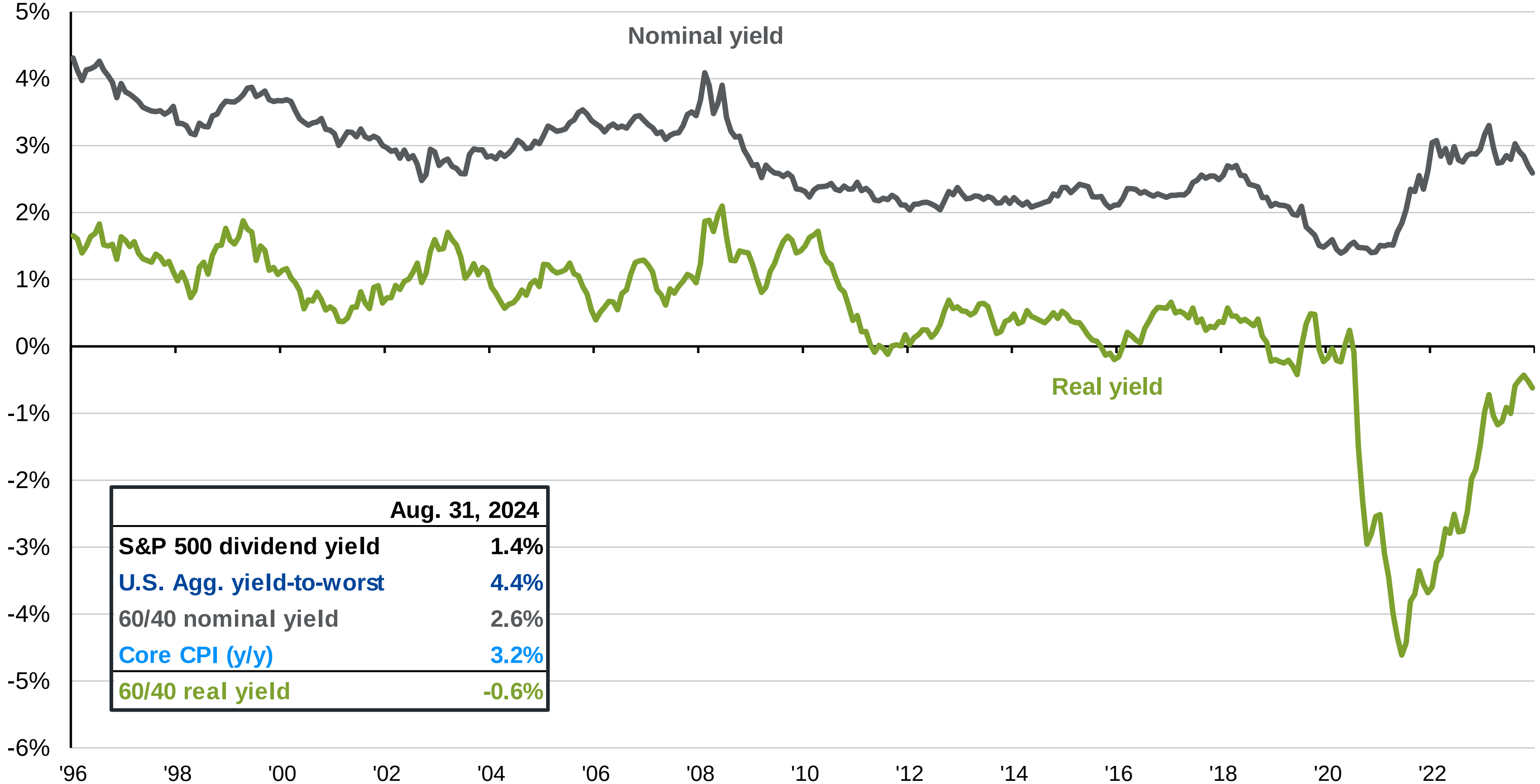
Source: Bloomberg, Haver Analytics, FactSet, LSEG, Standard & Poor's, J.P. Morgan Asset Management.
(Left) The 60/40 portfolio is 60% invested in the S&P 500 Total Return Index and 40% invested in the Bloomberg U.S. Aggregate Total Return Index.
*2024 correlations are through 2Q24.
Data are based on availability as of August 31, 2024.

J.P.Morgan ASSET MANAGEMENT

The income on a 60/40 portfolio is low relative to history

60/40 portfolio real yield

60/40 portfolio yield minus the y/y % change in core CPI, monthly



	Aug. 31, 2024
S&P 500 dividend yield	**1.4%**
U.S. Agg. yield-to-worst	**4.4%**
60/40 nominal yield	**2.6%**
Core CPI (y/y)	**3.2%**
60/40 real yield	**-0.6%**

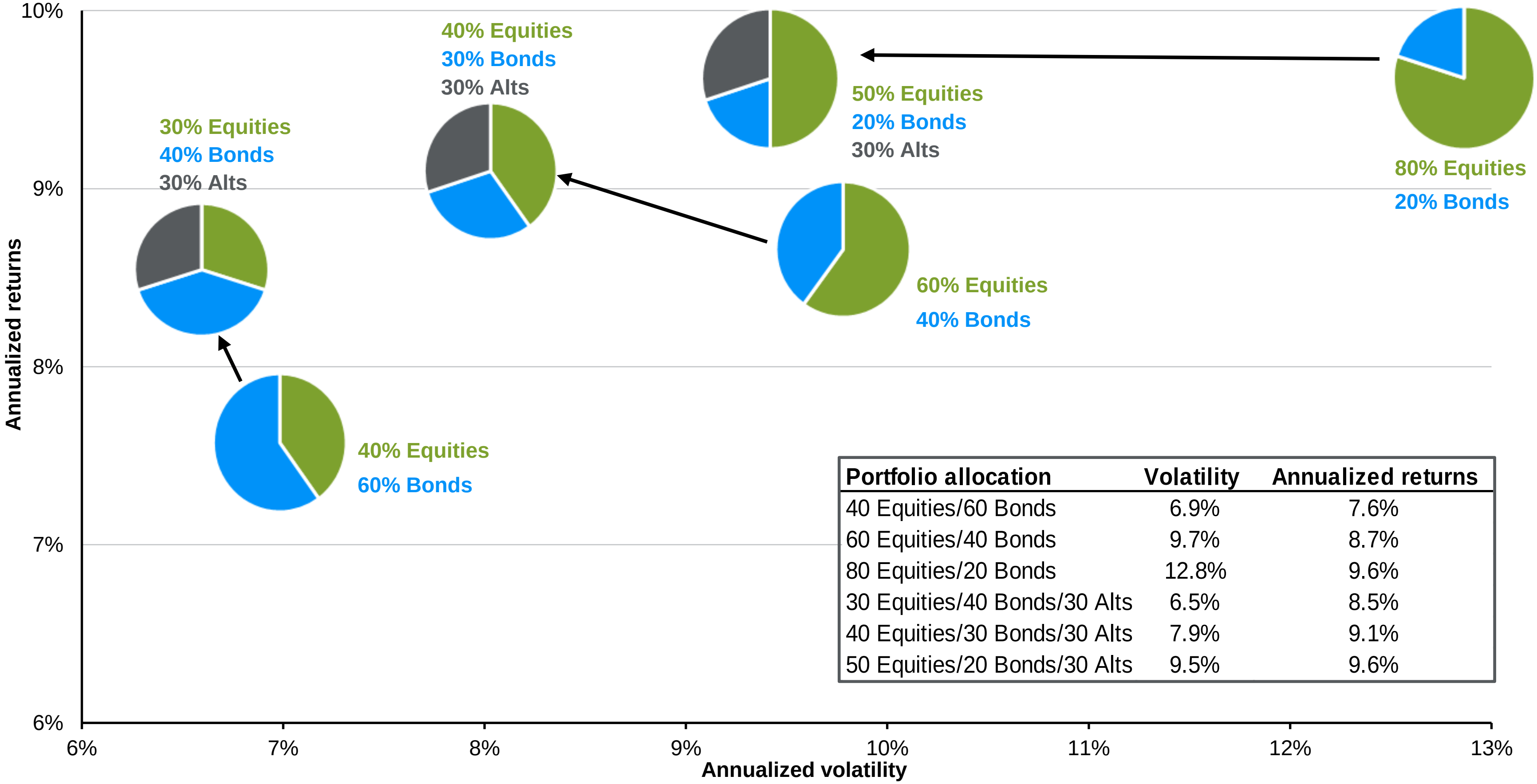
Source: Bloomberg, FactSet, Standard & Poor's, J.P. Morgan Asset Management. 60/40 portfolio nominal yield is calculated by taking the sum of the S&P 500's dividend yield and the yield-to-worst of the Bloomberg U.S. Aggregate multiplied by their respective weights in the portfolio. Analysis is based on month-end data. For the current month, we use the prior month's core CPI figures until the latest data are available.
Data are based on availability as of August 31, 2024.

J.P.Morgan
ASSET MANAGEMENT

Alternatives can improve portfolio risk and return

Alternatives and portfolio risk/return

Annualized volatility and returns, 1Q90 – 1Q24



Portfolio allocation	Volatility	Annualized returns
40 Equities/60 Bonds	6.9%	7.6%
60 Equities/40 Bonds	9.7%	8.7%
80 Equities/20 Bonds	12.8%	9.6%
30 Equities/40 Bonds/30 Alts	6.5%	8.5%
40 Equities/30 Bonds/30 Alts	7.9%	9.1%
50 Equities/20 Bonds/30 Alts	9.5%	9.6%

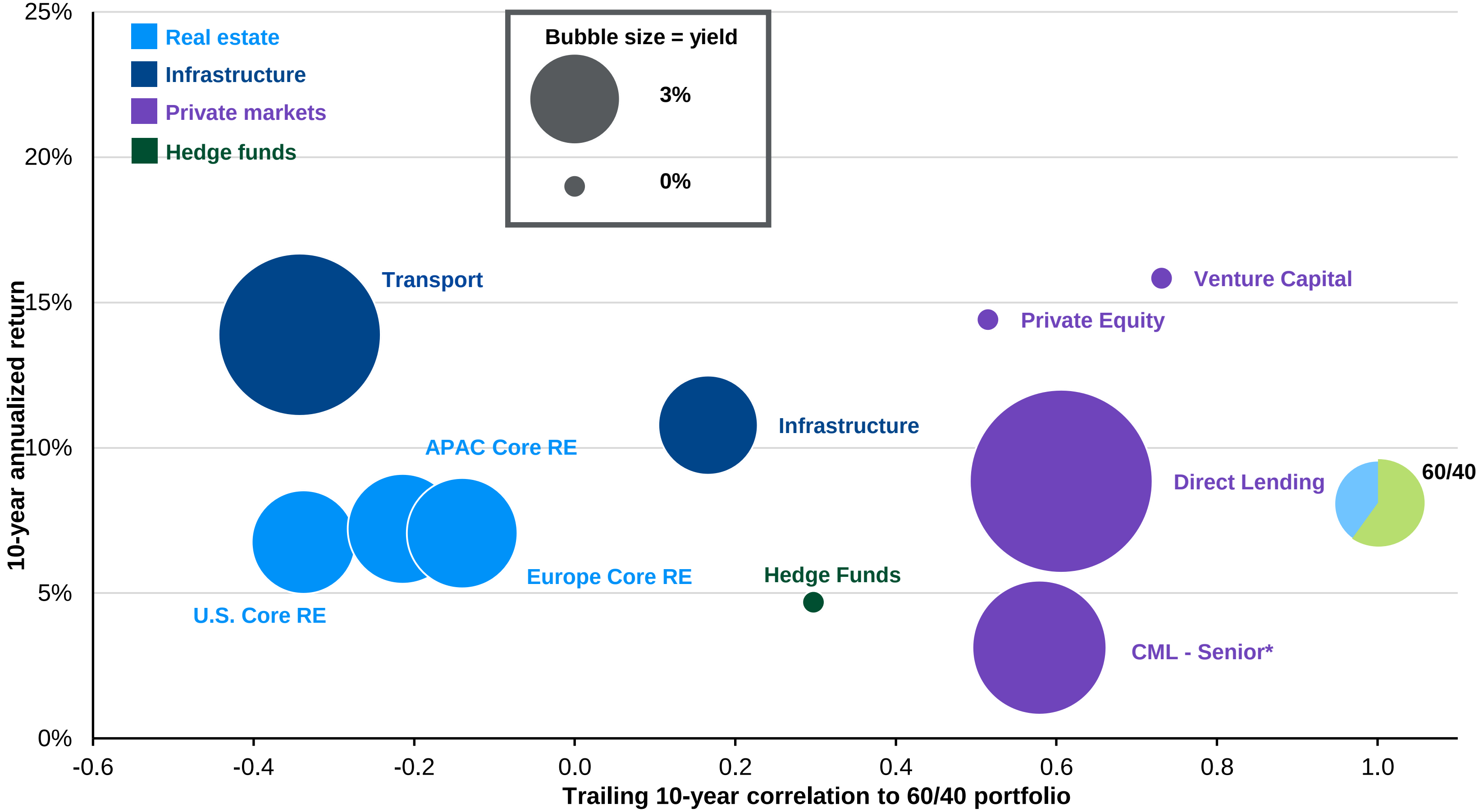
Source: Bloomberg, Burgiss, HFRI, NCREIF, Standard & Poor's, FactSet, J.P. Morgan Asset Management. Alts include hedge funds, real estate, and private equity, with each receiving an equal weight. Portfolios are rebalanced at the start of the year. Equities are represented by the S&P 500 Total Return Index. Bonds are represented by the Bloomberg U.S. Aggregate Total Return Index. Volatility calculated as the annualized standard deviation of quarterly returns.
Data are based on availability as of August 31, 2024.

J.P.Morgan ASSET MANAGEMENT

Different alternatives can enhance different portfolio attributes

Correlations, returns and yields

10-year correlations and 10-year annualized total returns, 2Q14 – 1Q24

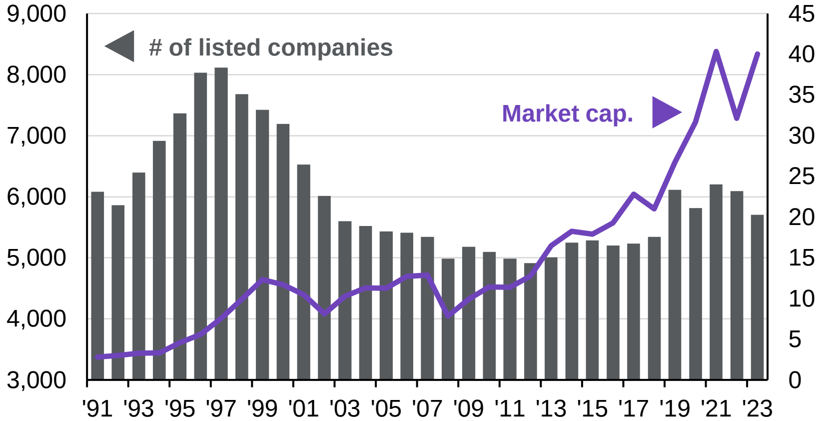


Source: Burgiss, Cliffwater, Gilberto-Levy, HFRI, MSCI, NCREIF, FactSet, J.P. Morgan Asset Management. Correlations are based on quarterly returns over the past 10 years from 2Q14-1Q24. A 60/40 portfolio is comprised of 60% stocks and 40% bonds. Stocks are represented by the S&P 500 Total Return Index. Bonds are represented by the Bloomberg U.S. Aggregate Total Return Index. 10-year annualized returns are calculated from 2Q14-1Q24. Indices and data used for alternative asset class returns and yields are as described on pages 12, 13, and 16 of the *Guide to Alternatives*. Yields are based on latest available data as described on page 10 of the *Guide to Alternatives*. *CML is commercial mortgage loans. Data are based on availability as of August 31, 2024.

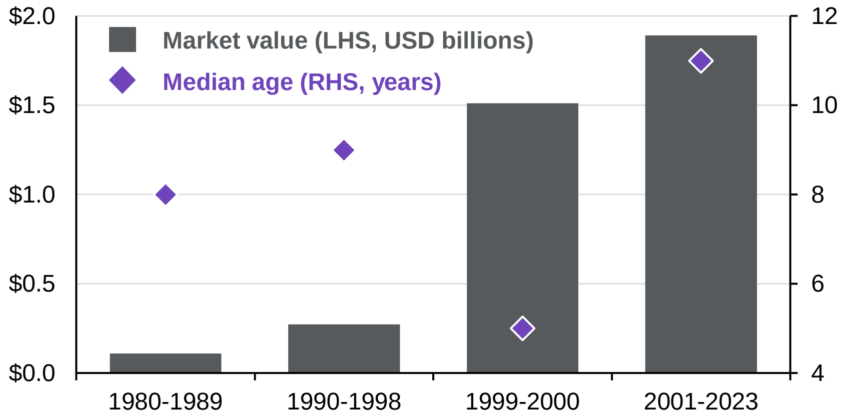
J.P.Morgan ASSET MANAGEMENT

Private markets are growing and dominated by growth companies

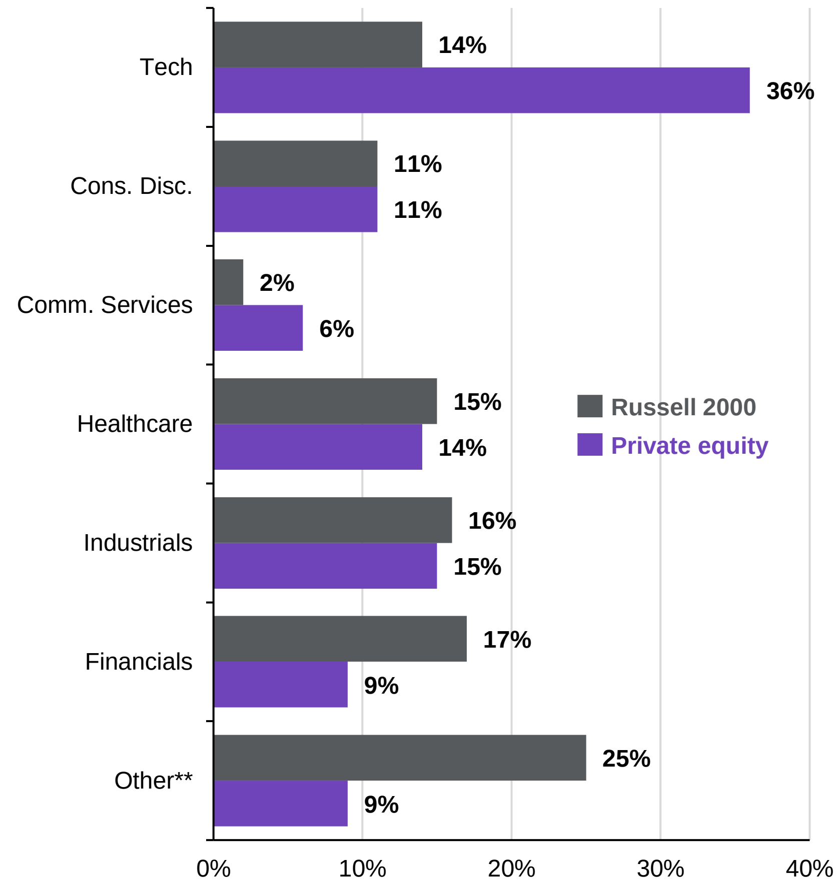
Number of listed U.S. companies* and market cap.
Number, S&P 500 market capitalization in USD trillions



Average market value and median age at IPO



Private equity vs. small cap sector weights
2023



Sources: Cambridge Associates, Jay Ritter, University of Florida, Russell, World Federation of Exchanges, J.P. Morgan Asset Management.
(Top left) *Number of listed U.S. companies is represented by the sum of number of companies listed on the NYSE and the NASDAQ. (Bottom left) Average market value is calculated by dividing the total market value at first closing price by the total number of IPOs for each period. The sample is IPOs with an offer price of at least $5, excluding ADRs, unit offers, closed-end funds, REITs, natural resource limited partnerships, small best efforts offers, banks and S&Ls and stocks not listed on CRSP (CRSP includes Amex, NYSE and NASDAQ stocks). (Right) **Other includes real estate, utilities and energy. Percentages may not sum due to rounding. Sector weights are as of December 31, 2023.
Data are based on availability as of August 31, 2024.

J.P.Morgan
ASSET MANAGEMENT

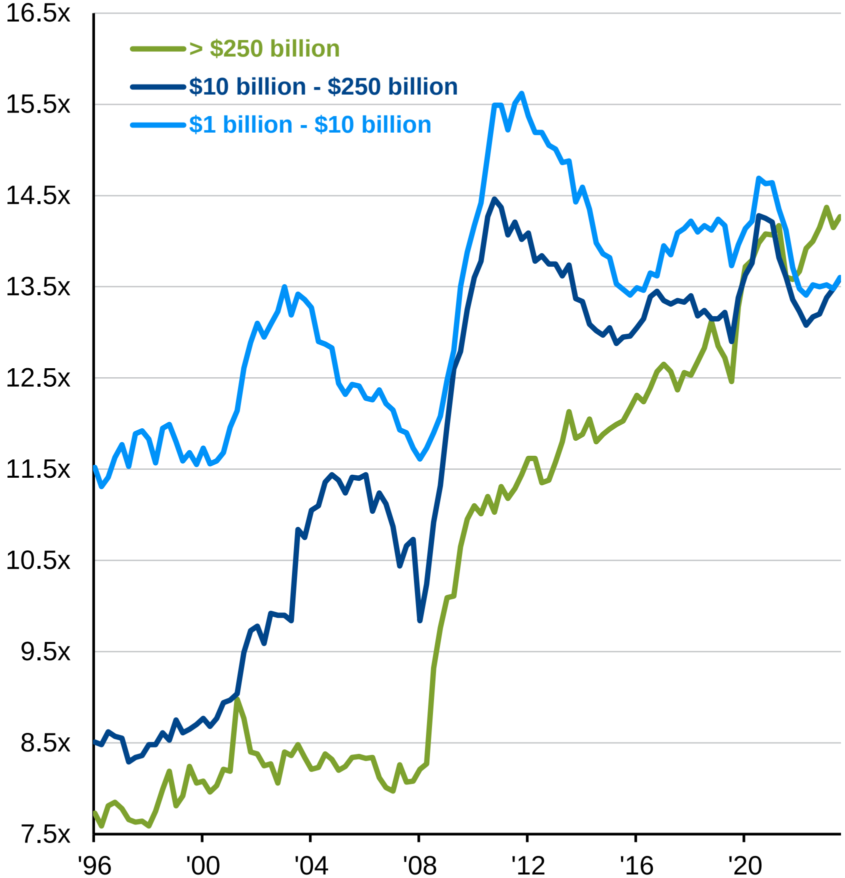
Private credit

Private credit is providing a growing proportion of financing

GTA | MI | 67

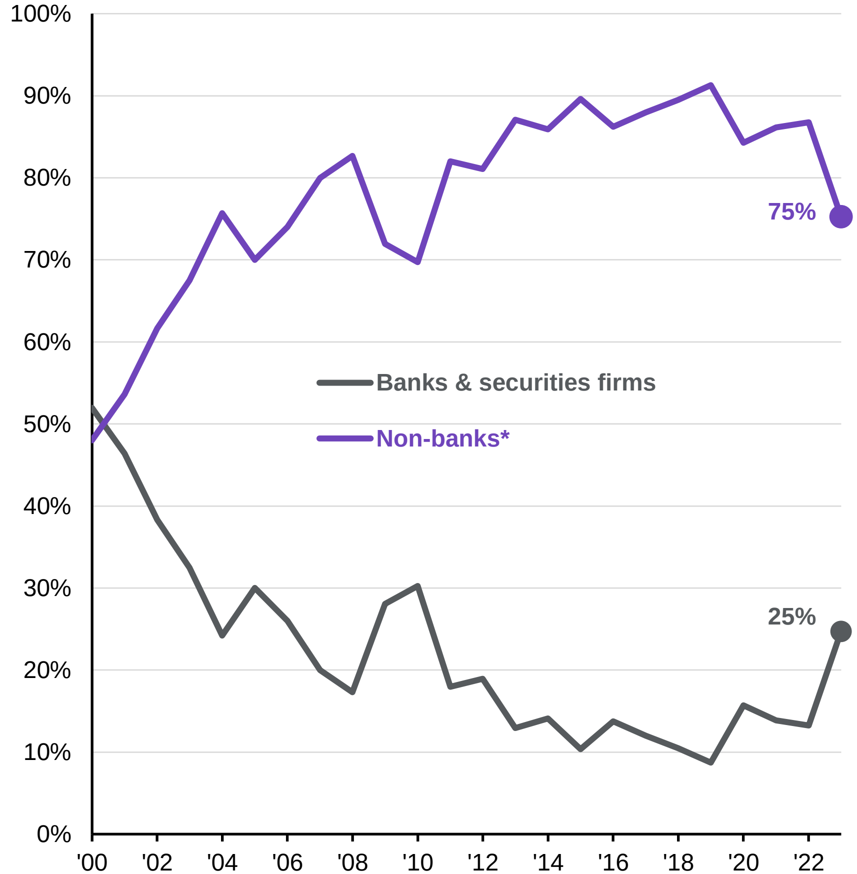
Tier 1 risk-based capital ratios by bank asset size

Percentage, quarterly, 4Q96 – 1Q24



Primary market sources of financing

New-issue market for broadly syndicated loans, 1999 – 2022

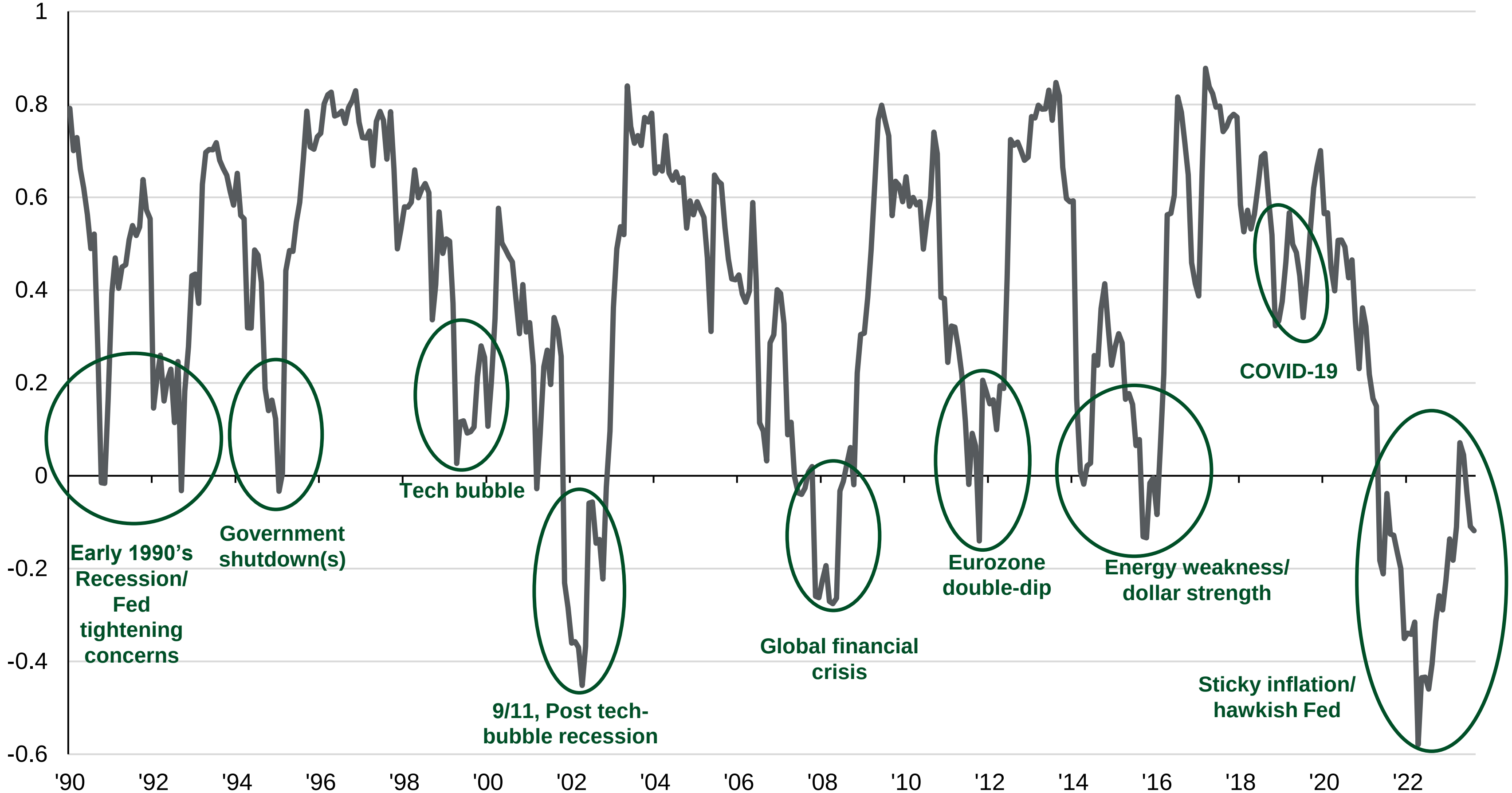


Source: FDIC, LCD, PitchBook, J.P. Morgan Asset Management. Broadly syndicated loans are the most common type of leveraged loans and represent lending to below investment grade companies by institutional investors (banks and non-banks). Broadly syndicated loans are senior secured. *Non-bank includes institutional investors and finance companies.
Data are based on availability as of August 31, 2024.

J.P.Morgan ASSET MANAGEMENT

Hedge funds can diversify traditional stock/bond portfolios

Hedge fund correlation with a 60/40 stock-bond portfolio*
Monthly, rolling 12 months

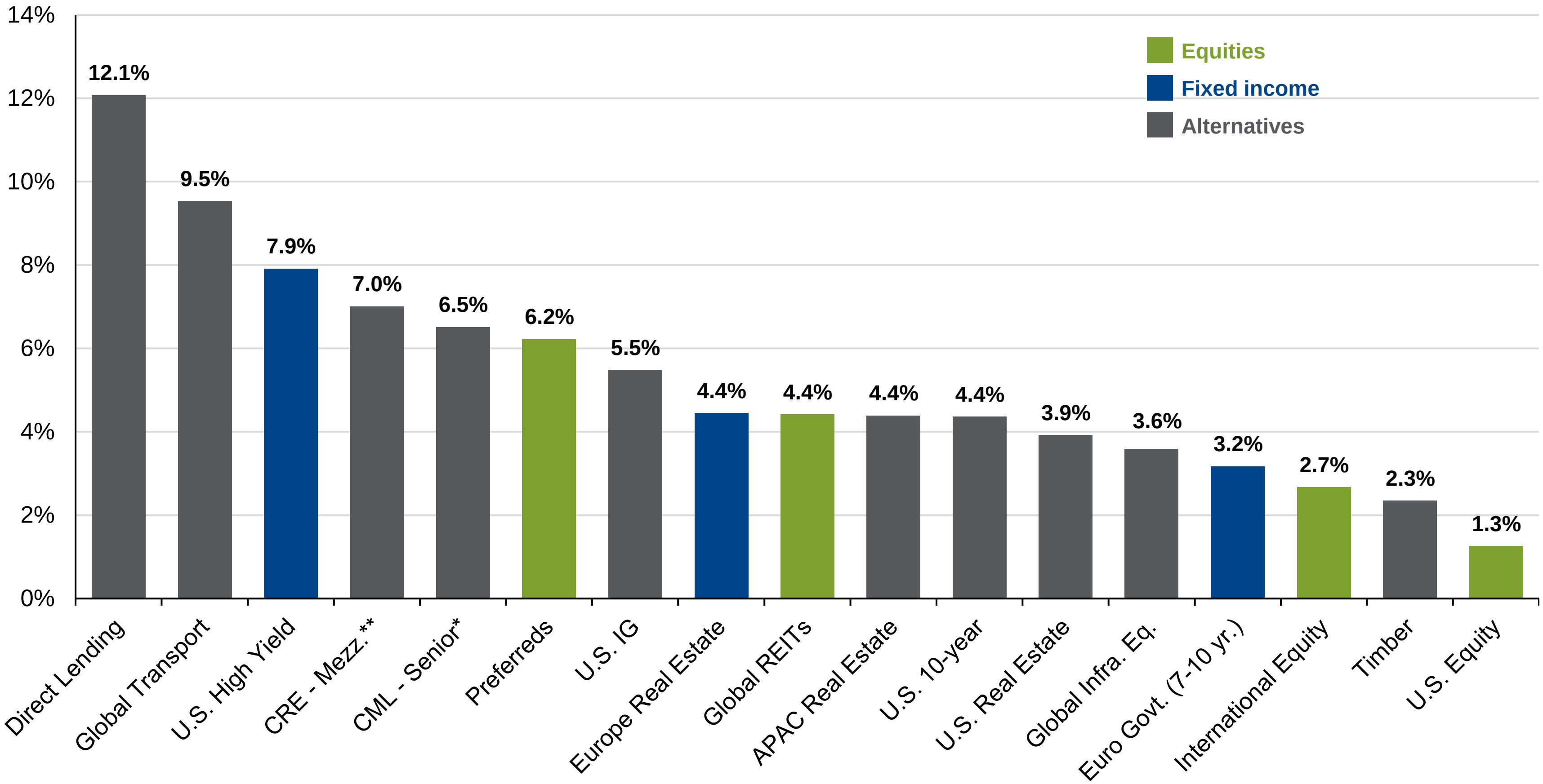


Source: HFRI, Standard & Poor's, Bloomberg, FactSet, J.P. Morgan Asset Management.
*60/40 portfolio is 60% S&P 500 and 40% Bloomberg U.S. Aggregate. Hedge funds are represented by HFRI Macro.
Data are based on availability as of August 31, 2024.

Real assets offer attractive levels of income

Asset class yields

Percent



Source: BAML, Bloomberg, Clarkson, Cliffwater, Drewry Maritime Consultants, Federal Reserve, FTSE, MSCI, NCREIF, FactSet, Wells Fargo J.P. Morgan Asset Management. *CML is commercial mortgage loans. **CRE – Mezz is mezzanine commercial real estate debt. Equities and fixed income yields are as of 8/31/2024. Alternative yields are as of 3/31/2024, except U.S. Real Estate, Timber, and Global Transport, which are as of 6/30/2024, CRE- Mezz, which is as of 8/31/2024, and Direct Lending, which is as of 12/31/2023. CML – Senior: Market-capitalization weighted average for all mortgages in the Gilberto-Levy Commercial Mortgage Index as of quarter-end 1Q24. Mezzanine commercial mortgage loans yield is derived from a J.P. Morgan Survey and U.S. Treasuries of a similar duration. Global Transport: Levered yields for transport assets calculated as the difference between charter rates (rental income), operating expenses, debt amortization and interest expenses, as a percentage of equity value, and are based on a historical 15-year average. Yields for each of the sub-vessel types are calculated and respective weightings are applied to arrive at the current levered yields for Global Transportation; Preferreds: BAML Hybrid Preferred Securities; Direct Lending: Cliffwater Direct Lending Index; U.S. High Yield: Bloomberg U.S. Aggregate Corporate High Yield; Global Infrastructure: MSCI Global Private Infrastructure Asset Index; U.S. Real Estate: NCREIF Property Index – ODCE; Global REITs: FTSE NAREIT Global REITs; International Equity: MSCI AC World ex-U.S.; U.S. 10-year: 10-year U.S. Treasury yield; U.S. Equity: MSCI USA, Europe Real Estate: Market weighted-avg. of MSCI Global Property Fund Indices – U.K. & Cont. Europe; Asia Pacific (APAC) core real estate: MSCI Global Property Fund Index – Asia-Pacific. Euro Govt. (7-10 yr.): Bloomberg Euro Aggregate Government – Treasury (7-10Y); Timber: NCREIF Timberland Index (U.S.) – EBITDA Return.
Data are based on availability as of August 31, 2024.

J.P.Morgan ASSET MANAGEMENT

Diversification *within* alternatives can improve the risk/return tradeoff

2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	YTD '24*	2014-2023	
											Ann.	Vol.**
Venture Capital 26.0%	Transport 16.2%	Infra. 14.2%	Private Equity 23.1%	Venture Capital 21.3%	Venture Capital 20.4%	Venture Capital 58.4%	Venture Capital 49.7%	Transport 23.5%	Transport 16.0%	Transport 10.2%	Venture Capital 16.2%	Venture Capital 13.2%
Infra. 13.9%	Infra. 15.5%	Transport 13.4%	Transport 20.2%	Infra. 11.6%	Private Equity 16.9%	Private Equity 24.3%	Private Equity 37.5%	Infra. 9.7%	Direct Lending 12.1%	Hedge Funds 5.6%	Private Equity 14.6%	Transport 10.2%
U.S. Core RE 12.5%	Venture Capital 15.1%	Private Equity 12.4%	Venture Capital 14.8%	Europe Core RE 9.9%	Infra. 11.5%	Asset Allocation 12.0%	U.S. Core RE 22.2%	U.S. Core RE 7.5%	Private Equity 9.8%	Direct Lending 3.0%	Transport 13.1%	Private Equity 8.5%
Europe Core RE 12.3%	U.S. Core RE 15.0%	Direct Lending 11.2%	Asset Allocation 12.2%	APAC Core RE 9.4%	Europe Core RE 9.4%	Transport 10.6%	Asset Allocation 19.3%	APAC Core RE 6.9%	Infra. 8.1%	Infra. 2.6%	Infra. 10.7%	U.S. Core RE 5.5%
Asset Allocation 11.2%	Europe Core RE 12.8%	APAC Core RE 10.5%	Infra. 12.2%	Private Equity 9.0%	Asset Allocation 9.2%	Hedge Funds 8.9%	Transport 18.8%	Direct Lending 6.3%	CML - Senior* 5.6%	Asset Allocation 2.2%	Asset Allocation 9.7%	Hedge Funds 5.4%
Private Equity 10.0%	APAC Core RE 11.8%	U.S. Core RE 8.8%	APAC Core RE 11.6%	Asset Allocation 8.7%	Direct Lending 9.0%	CML - Senior* 6.3%	Europe Core RE 14.2%	Europe Core RE 4.6%	Hedge Funds 4.5%	Venture Capital 1.5%	Direct Lending 8.8%	Europe Core RE 4.2%
Direct Lending 9.6%	Asset Allocation 10.4%	Asset Allocation 8.5%	Europe Core RE 9.8%	U.S. Core RE 8.3%	CML - Senior* 8.1%	Direct Lending 5.5%	Hedge Funds 13.9%	Asset Allocation 2.4%	Asset Allocation 3.4%	Private Equity 1.2%	APAC Core RE 7.5%	CML - Senior* 4.0%
APAC Core RE 9.4%	Private Equity 9.4%	Europe Core RE 8.1%	Direct Lending 8.6%	Direct Lending 8.1%	APAC Core RE 6.6%	Europe Core RE 4.8%	Direct Lending 12.8%	Private Equity -1.5%	Venture Capital -2.1%	Europe Core RE 0.5%	U.S. Core RE 7.3%	Infra. 3.4%
CML - Senior* 7.4%	Direct Lending 5.5%	Hedge Funds 3.2%	Hedge Funds 8.5%	Transport 7.7%	Hedge Funds 5.6%	U.S. Core RE 1.2%	APAC Core RE 12.0%	Hedge Funds -2.8%	APAC Core RE -2.5%	CML - Senior* 0.3%	Europe Core RE 7.2%	Asset Allocation 3.0%
Transport 6.9%	CML - Senior* 2.7%	CML - Senior* 2.9%	U.S. Core RE 7.6%	CML - Senior* 2.6%	U.S. Core RE 5.3%	Infra. 0.2%	Infra. 10.5%	CML - Senior* -9.0%	Europe Core RE -5.0%	APAC Core RE -0.3%	Hedge Funds 4.4%	Direct Lending 2.9%
Hedge Funds 4.3%	Hedge Funds -0.2%	Venture Capital 0.6%	CML - Senior* 5.7%	Hedge Funds -1.2%	Transport -0.5%	APAC Core RE 0.1%	CML - Senior* 1.9%	Venture Capital -20.6%	U.S. Core RE -12.0%	U.S. Core RE -2.4%	CML - Senior* 3.3%	APAC Core RE 2.7%

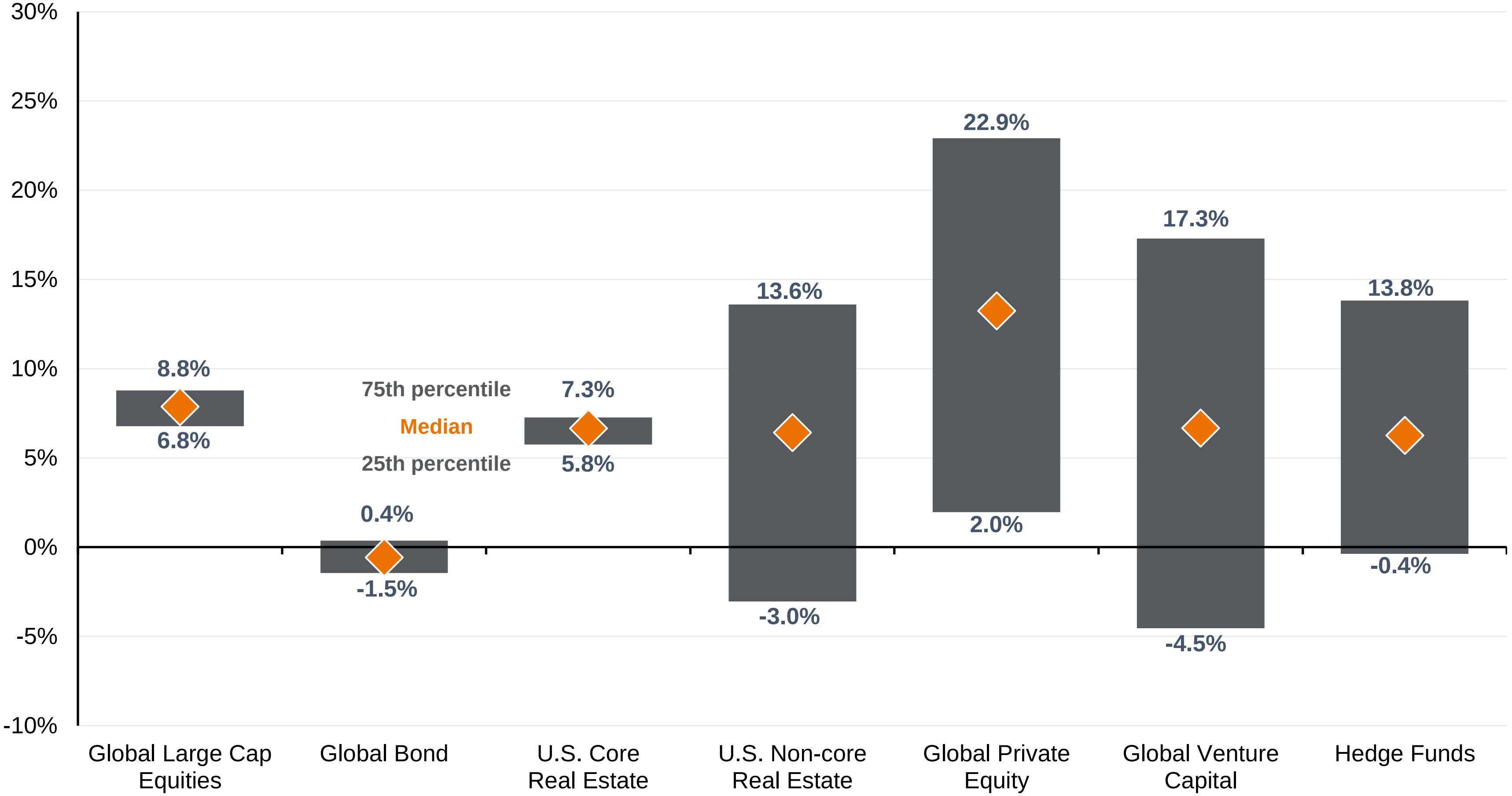
Source: Burgiss, Cliffwater, Gilberto-Levy, HFRI, MSCI, NCREIF, FactSet, J.P. Morgan Asset Management. *CML is commercial mortgage loans. CML – Senior: Gilberto-Levy Commercial Mortgage Performance Index. Private Equity and Venture Capital are internal rates of return from Burgiss. Hedge funds: HFRI Fund Weighted Composite. Transport returns are derived from a J.P. Morgan Asset Management index. U.S. Core RE: NCREIF Property Index – Open End Diversified Core Equity component. Europe Core Real Estate: MSCI Global Property Fund Index – Continental Europe. Asia Pacific (APAC) Core Real Estate: MSCI Global Property Fund Index – Asia-Pacific. Direct Lending: Cliffwater Direct Lending Index. Global infrastructure (Infra.): MSCI Global Private Infrastructure Asset Index. Commercial Mortgage Loans: Gilberto-Levy Commercial Mortgage Performance Index. The "Asset Allocation" portfolio assumes an evenly weighted portfolio consisting of the above alternatives. Annualized return (Ann.) and volatility (Vol.) represents the period from 3/31/2013 to 12/31/2023. *2024 data is through March 31, 2024. **Volatility calculated as the annualized standard deviation of quarterly returns.
Data are based on availability as of August 31, 2024.

J.P.Morgan ASSET MANAGEMENT

Manager selection matters a lot more in private markets

Public and private manager dispersion

Based on returns from 2Q14 – 2Q24*



Source: Burgiss, NCREIF, Morningstar, PivotalPath, J.P. Morgan Asset Management.
Global large cap equities and global bond are based on the world large stock and world bond categories, respectively. *Manager dispersion is based on annual returns over a 10-year period ending 2Q 2024 for Hedge Funds, U.S. Core Real Estate, U.S. Fund Global Equities and U.S. Fund Global Bonds. Non-core Real Estate, Global Private Equity and Global Venture Capital are represented by the 10-year horizon internal rate of return (IRR) ending 1Q 2024. U.S. Fund Global Equities and Bonds are comprised of U.S.-domiciled mutual funds and ETFs.
Data are based on availability as of August 31, 2024.

J.P.Morgan ASSET MANAGEMENT

J.P. Morgan Asset Management – Definitions

Real estate

Base rent – The gross revenue from rental payments.

Capitalization rate (Cap rate) – The rate of return on a real estate investment property defined as the net operating income from the property divided by the current market price of the property.

Cap rate spread – The difference between the cap rate and a Treasury security with the same maturity.

Core real estate – High quality properties in primary markets with high occupancy rates, credit-worthy tenants and long leases.

Effective rent – Base rent less rental concessions and tenant improvements.

Gross absorption – Space that became physically occupied in a specific period.

Mezzanine debt – Financing that is half-way between equity and debt by which the lender can convert to equity if the loan is not paid on time or in full.

Net absorption – Space that became physically occupied minus space that was physically vacated in a specific period.

Net absorption rate – Net absorption during a specific period divided by space available to lease at the start of that period.

Occupancy rate – The percentage of available space that is occupied.

Real estate prime yield – The real estate yield on a property at a prime location.

Real estate net operating income – Income after operating expenses but before interest, taxes, capital spending, depreciation and amortization.

Real estate yields – Annual income divided by total investment. Note that annual income, unlike NOI, does deduct interest costs so that real estate yields should be lower than cap rates.

Real estate yield spread – The difference between the yields and a Treasury security with the same maturity.

Vacancy rate – The percentage of available space that is unoccupied.

Private equity

Buyout fund – Private equity fund that focuses on taking a majority stake or full control of mature, undervalued.

Called capital – The amount of capital wired to a fund that is “drawn down” over time as the general partner selects investments.

Committed capital – The specific amount of capital that a limited partner is obliged to provide to a closed-end fund for investments. The capital commitment is “drawn down” or “called” over time, meaning a portion of the commitment must be wired to the closed-end fund by a set date.

Corporate mergers and acquisition (M&A)– The consolidation of companies through financial transactions.

Dry powder – The amount of capital that has been committed to a private capital fund minus the amount that has been called by the general partner for investment.

Earnings before interest, taxes, depreciation and amortization (EBITDA) – A broad measure of the cash profit generated by a company’s operations.

Enterprise value (EV)– The total value of a company including equity and debt.

General partner (GP) – The managing partner of a lmited partnership. The general partner is managed by the asset management team responsible for making fund investments (i.e., the intermediary between investors with capital and businesses seeking capital to grow).

Growth fund – Private equity fund that targets firms with the potential for scalable and renewed growth.

Initial public offering (IPO) – When shares of a private company are made available to the public for the first time.

Internal rate of return (IRR) – The dollar-weighted internal rate of return. This return considers the daily timing of cash flows and cumulative fair stated value, as of the end of the reported period.

Leveraged buyout (LBO) – The acquisition of another company using a significant amount of debt to finance the acquisition. **Limited partner (LP)** – An investor in a Limited Partnership, which is a form of legal entity used for certain hedge funds, private equity funds and real estate funds.

Middle market – Companies having revenues between $10 million and $1 billion.

Multiple of invested capital (MOIC) – Calculation performed by adding the remaining (reported) value and the distributions received (cash out) and subsequently dividing that amount by the total capital contributed.

Net asset value (NAV) – This is the current fair stated value for each of the investments, as reported by the administrator of the fund.

Private equity – Equity capital invested in a private company through a negotiated process.

Sponsor-backed acquisition – Acquisition of a company by a private equity firm.

Secondary fund – Private equity funds that purchase existing assets from a primary private equity fund.

Venture capital – A specialized form of private equity, characterized chiefly by high-risk investment in new or young companies following a growth path in technology and other value-added sectors.

J.P.Morgan
ASSET MANAGEMENT

J.P. Morgan Asset Management – Definitions

Private credit

Amend and extend – A technique that allows an issuer to delay part of its loan maturity or amend existing terms through an amendment rather than a refinancing.

Covenant-lite loans – A type of financing that is issued with fewer restrictions on the borrower regarding collateral, level of income, and loan payment terms, and fewer protections for the lender, including financial maintenance tests that measure the debt-service capabilities of the borrower.

Direct lending – A loan made by an investor or non-bank lender to a company.

Distressed debt – The securities of a company that has either defaulted, is under bankruptcy protection or is in financial distress and is moving towards default or bankruptcy in the near future.

Hedge-adjusted yield – The yield on a foreign currency denominated asset minus the cost of hedging the asset back into U.S. dollars. For assets countries with short-term rates that are lower than U.S. rates, the hedge-adjusted yield will be lower than the yield denominated in foreign currency.

Leveraged loan – A commercial loan provided by a group of lenders that is either: 1) rated BB+ or lower, 2) not rated or rated BBB- or higher and has a base rate spread of 125 bps or higher and is secured by a first or second lien. This loan is structured, arranged and administered by one or several banks, and is then syndicated to other institutional investors. As such, this market is often referred to as the broadly syndicated loan market.

Mezzanine commercial real estate debt – Loan finance that is half-way between equity and secured debt, either unsecured or with junior access to security. A mezzanine fund is a fund focusing on mezzanine financing.

Net IRR – The dollar-weighted internal rate of return, net of management fees and carried interest generated by the fund. This return considers the daily timing of all cash flows and the cumulative fair stated value, as of the end of the reported period.

Non-sponsored loan – Credit provided to a business that is *not* wholly-owned or majority-owned by a private equity firm or another financial sponsor.

Payment-in-kind (PIK) – An interest payment in which the borrower makes an interest payment in forms other than cash. This includes, but is not limited to, a type of debt whose interest payments come in the form of additional debt accrued onto existing debt.

Performing loans – Loans that are not in default.

Private credit – Nonbank corporate credit provided through bilateral agreements or small “club deals” outside the realm of public securities or commercial banks. This definition excludes bank loans, broadly syndicated loans, and funding provided through publicly traded assets such as corporate bonds.

Sponsored loan – Credit provided by a non-bank lender to a business that is either wholly-owned or majority-owned by a private equity firm or another financial sponsor.

Syndicated loan - A loan extended by a group of financial institutions, often referred to as a loan syndicate, to a single borrower.

Hedge funds

Distressed securities – funds that invest in debt and equity securities of firms in reorganization or bankruptcy.

Long/short (L/S) equity – funds that involve long and/or short positions in equity securities deemed to be under- or overvalued, respectively. Exposures to sectors, geographies, and market capitalizations are often flexible and will change over time.

Merger arbitrage/event-driven - funds that invest in opportunities created by significant corporate transactions and events which tend to alter a company’s financial structure or operating strategy.

Opportunistic/Macro - funds that involve investments in a wide variety of strategies and instruments, which often have a directional stance based on the manager’s global macroeconomic views.

Relative Value/Arbitrage – funds that involve the simultaneous purchase and sale of similar securities to exploit pricing differentials. Strategies in this sector offer potential to generate consistent returns while minimizing directional risk.

J.P.Morgan
ASSET MANAGEMENT

J.P. Morgan Asset Management – Risks & disclosures

The Market Insights program provides comprehensive data and commentary on global markets without reference to products. Designed as a tool to help clients understand the markets and support investment decision-making, the program explores the implications of current economic data and changing market conditions.

For the purposes of MiFID II, the JPM Market Insights and Portfolio Insights programs are marketing communications and are not in scope for any MiFID II / MiFIR requirements specifically related to investment research. Furthermore, the J.P. Morgan Asset Management Market Insights and Portfolio Insights programs, as non-independent research, have not been prepared in accordance with legal requirements designed to promote the independence of investment research, nor are they subject to any prohibition on dealing ahead of the dissemination of investment research.

This document is a general communication being provided for informational purposes only. It is educational in nature and not designed to be taken as advice or a recommendation for any specific investment product, strategy, plan feature or other purpose 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 examples used are generic, hypothetical and for illustration purposes only. 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 financial professional, if any investment mentioned herein is believed to be appropriate to their personal goals. Investors should ensure that they obtain all available relevant information before making any investment. 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, but no warranty of accuracy is given and no liability in respect of any error or omission is accepted. 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 yields are not reliable indicators 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.

To the extent permitted by applicable law, we may record telephone calls and monitor electronic communications to comply with our legal and regulatory obligations and internal policies. Personal data will be collected, stored and processed by J.P. Morgan Asset Management in accordance with our privacy policies at https://am.jpmorgan.com/global/privacy.

This communication is issued by the following entities:

In the United States, by J.P. Morgan Investment Management Inc. or J.P. Morgan Alternative Asset Management, Inc., both regulated by the Securities and Exchange Commission; in Latin America, for intended recipients' use only, by local J.P. Morgan entities, as the case may be. In Canada, for institutional clients' use only, by JPMorgan Asset Management (Canada) Inc., which is a registered Portfolio Manager and Exempt Market Dealer in all Canadian provinces and territories except the Yukon and is also registered as an Investment Fund Manager in British Columbia, Ontario, Quebec and Newfoundland and Labrador. 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 Asia Pacific ("APAC"), by the following issuing entities and in the respective jurisdictions in which they are primarily regulated: JPMorgan Asset Management (Asia Pacific) Limited, or JPMorgan Funds (Asia) Limited, or JPMorgan Asset Management Real Assets (Asia) Limited, each of which is regulated by the Securities and Futures Commission of Hong Kong; JPMorgan Asset Management (Singapore) Limited (Co. Reg. No. 197601586K), this advertisement or publication has not been reviewed by the Monetary Authority of Singapore; JPMorgan Asset Management (Taiwan) Limited; 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 Australia, to wholesale clients only as defined in section 761A and 761G of the Corporations Act 2001 (Commonwealth), by JPMorgan Asset Management (Australia) Limited (ABN 55143832080) (AFSL 376919). For all other markets in APAC, to intended recipients only.

For U.S. only: If you are a person with a disability and need additional support in viewing the material, please call us at 1-800-343-1113 for assistance.

Google assistant is a trademark of Google Inc.

Amazon, Alexa and all related logos are trademarks of Amazon.com, Inc. or its affiliates.

Prepared by: David Kelly, Meera Pandit, Aaron Hussein, Sahil Gauba, May Park Durham and Brandon Hall.

Unless otherwise stated, all data are as of August 31, 2024 or most recently available.

Guide to Alternatives

JP-GTA | 09t0221105163453

J.P.Morgan
ASSET MANAGEMENT