



Guide to the Markets[®]

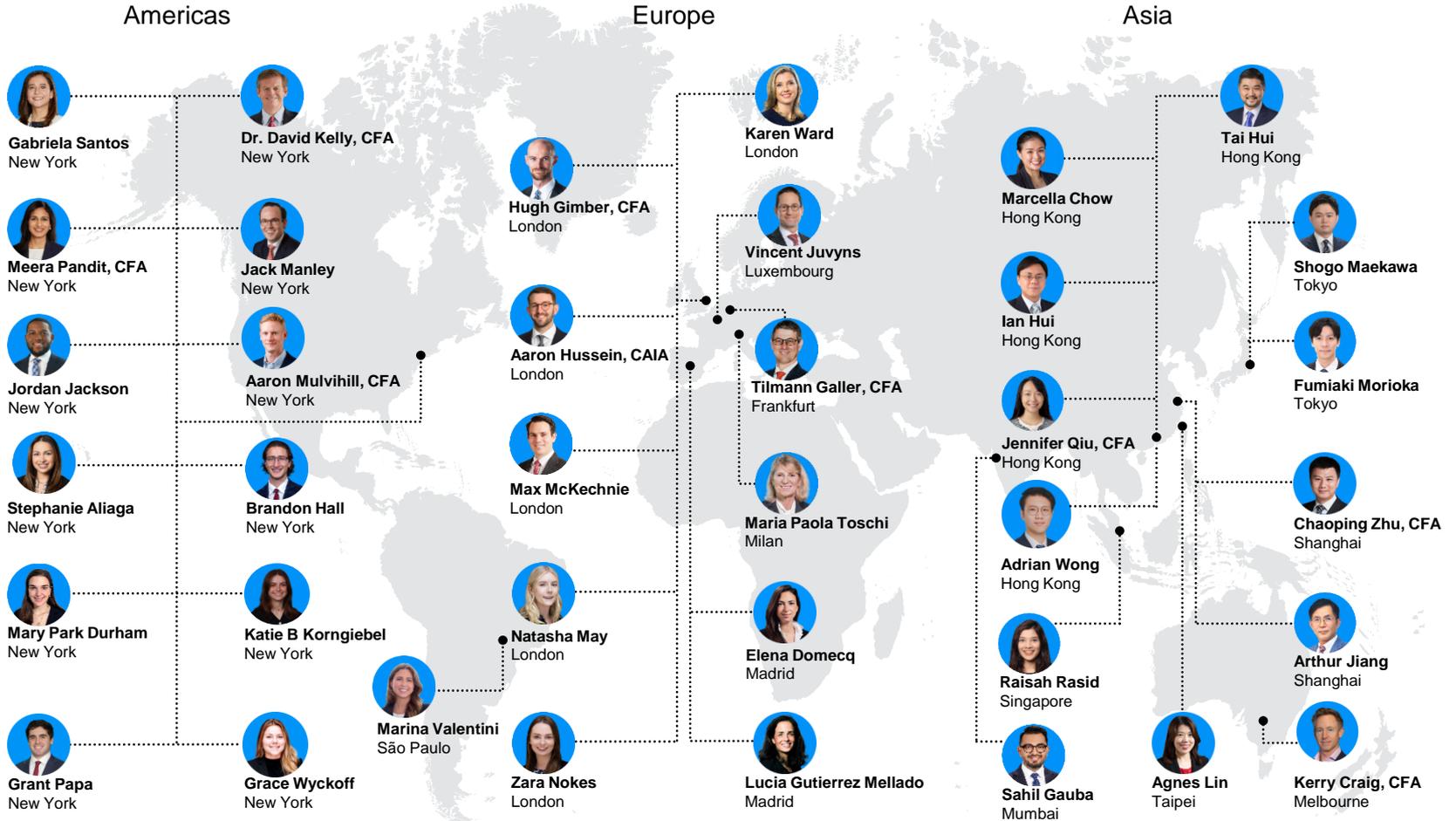
U.S. | 1Q 2025

As of December 31, 2024





Global Market Insights Strategy Team





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S&P 500 Index at inflection points

GTM

U.S.

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Equities

S&P 500 Price Index



Source: Compustat, FactSet, Federal Reserve, Refinitiv Datastream, Standard & Poor's, J.P. Morgan Asset Management. Dividend yield is calculated as consensus estimates of dividends for the next 12 months, divided by most recent price, as provided by Compustat. Forward price-to-earnings ratio is a bottom-up calculation based on IBES estimates and FactSet estimates since January 2022. Returns are cumulative and based on S&P 500 Index price movement only, and do not include the reinvestment of dividends. Past performance is not indicative of future returns.

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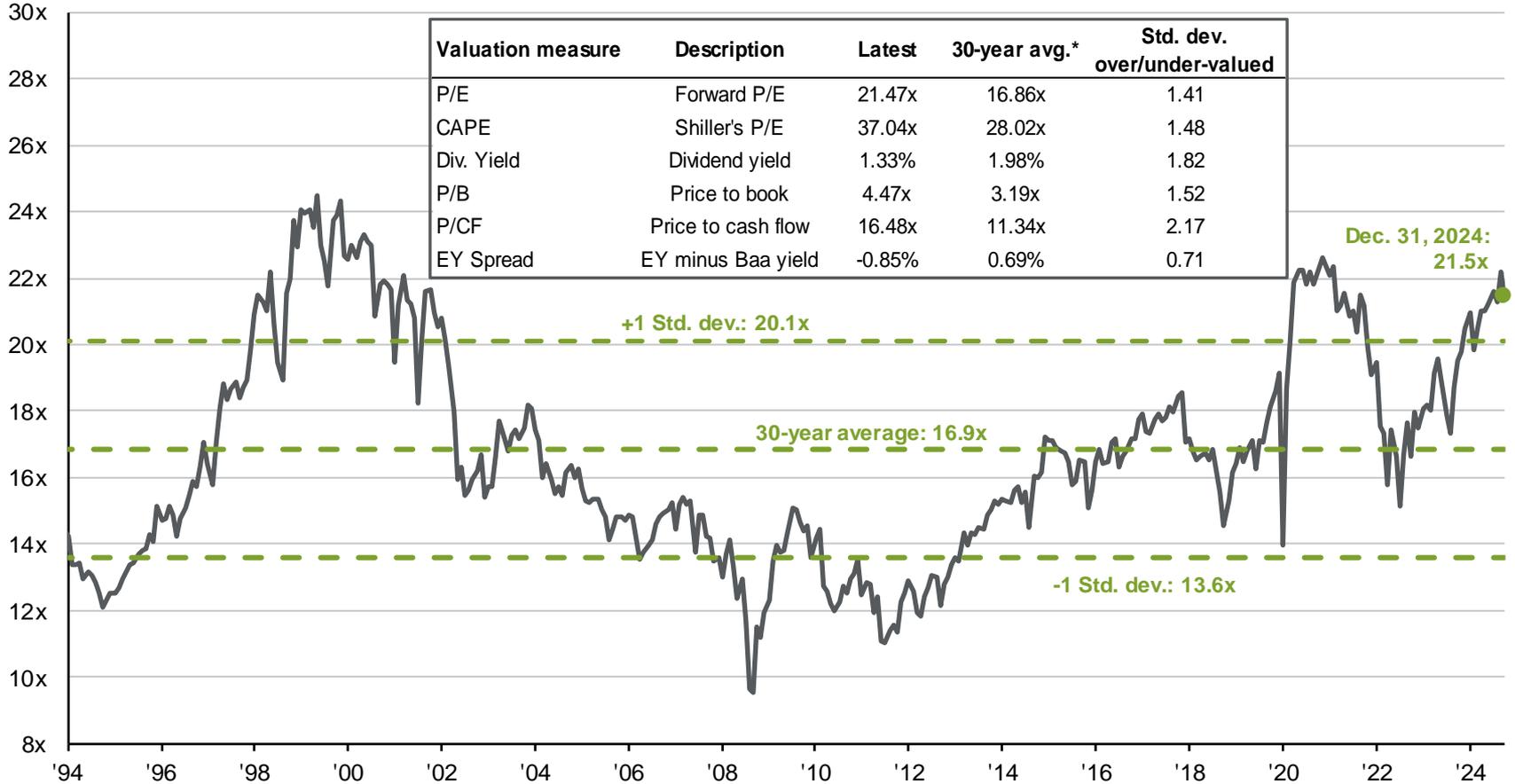
J.P.Morgan
ASSET MANAGEMENT



S&P 500 valuation measures

Equities

S&P 500 Index: Forward P/E ratio



Source: FactSet, FRB, Refinitiv Datastream, Robert Shiller, Standard & Poor's, Thomson Reuters, J.P. Morgan Asset Management.
 Price-to-earnings is price divided by consensus analyst estimates of earnings per share for the next 12 months as provided by IBES since March 1994 and by FactSet since January 2022. Average P/E and standard deviations are calculated using 30 years of history. Shiller's P/E uses trailing 10-years of inflation-adjusted earnings as reported by companies. Dividend yield is calculated as the next 12-months consensus dividend divided by most recent price. Price-to-book ratio is the price divided by book value per share. Price-to-cash flow is price divided by NTM cash flow. EY minus Baa yield is the forward earnings yield (consensus analyst estimates of EPS over the next 12 months divided by price) minus the Bloomberg US corporate Baa yield since December 2008 and interpolated using the Moody's Baa seasoned corporate bond yield for values beforehand. Std. dev. over-/under-valued is calculated using the average and standard deviation over 30 years for each measure. *Averages and standard deviations for dividend yield and P/CF are since November 1995 due to data availability.

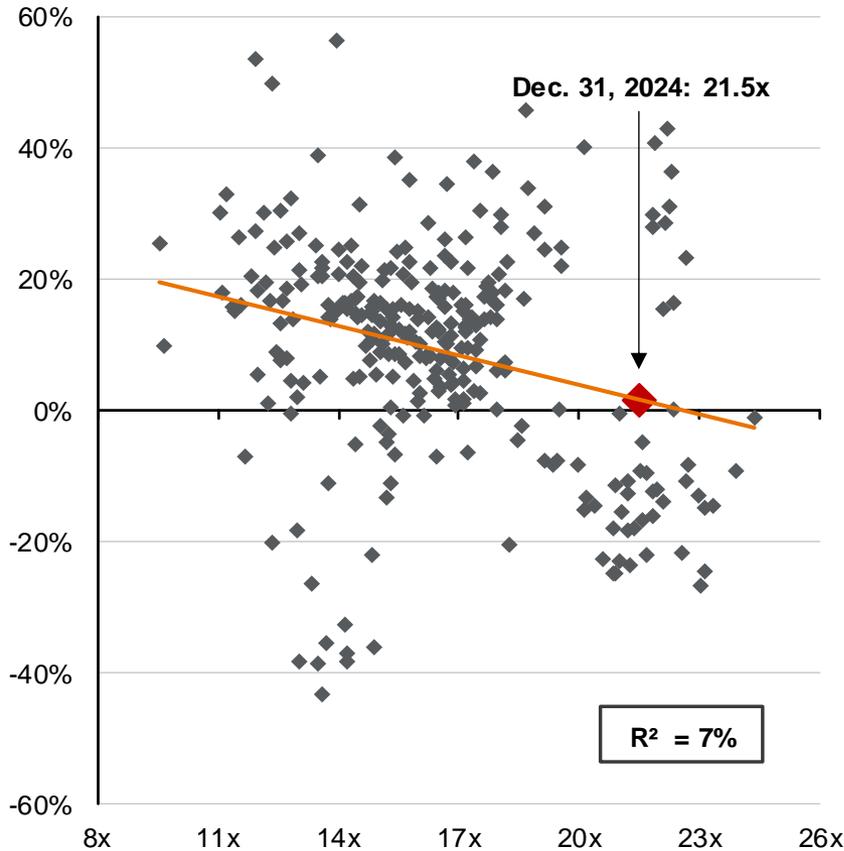


P/E ratios and equity returns

Equities

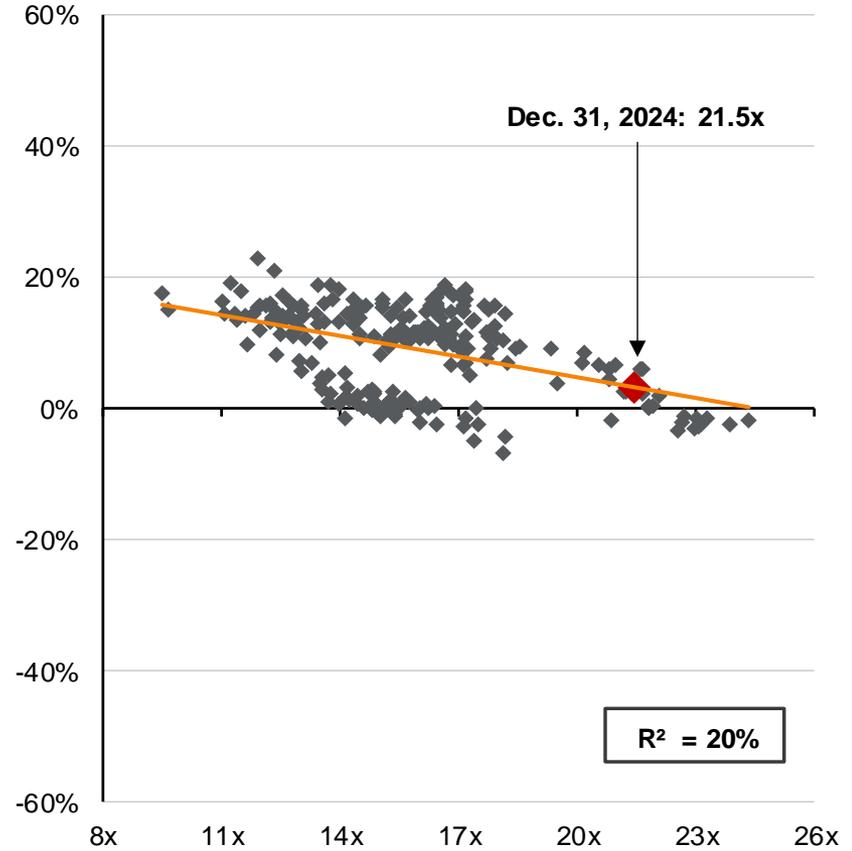
Forward P/E and subsequent 1-yr. returns

S&P 500 Total Return Index



Forward P/E and subsequent 5-yr. annualized returns

S&P 500 Total Return Index



Source: FactSet, Refinitiv Datastream, Standard & Poor's, Thomson Reuters, J.P. Morgan Asset Management. Returns are 12-month and 60-month annualized total returns, measured monthly, beginning 12/31/1999. R^2 represents the percent of total variation in total returns that can be explained by forward price-to-earnings ratios. Price-to-earnings is price divided by consensus analyst estimates of earnings per share for the next 12 months as provided by IBES since May 1999 and by FactSet since January 2022. *Guide to the Markets - U.S.* Data are as of December 31, 2024.

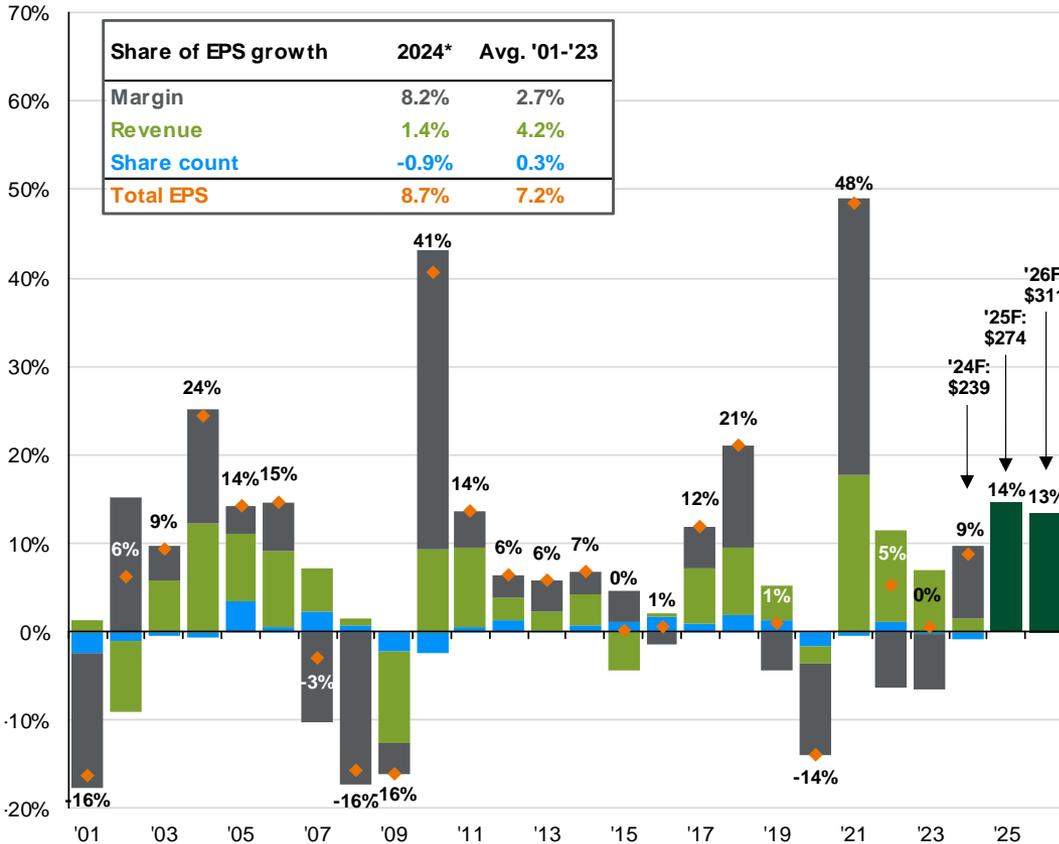


Sources of earnings growth and profit margins

Equities

S&P 500 year-over-year pro forma EPS growth

Annual growth broken into changes in revenue, profit margin and share count



S&P 500 profit margins

Quarterly earnings/sales



Source: Compustat, FactSet, Standard & Poor's, J.P. Morgan Asset Management.
 Historical EPS levels are based on annual pro forma earnings per share. *2024, 2025 and 2026 EPS growth are based on consensus analyst estimates for each calendar year. Past performance is not indicative of future returns.
 Guide to the Markets – U.S. Data are as of December 31, 2024.



Earnings, buybacks and dividends by sector

Equities

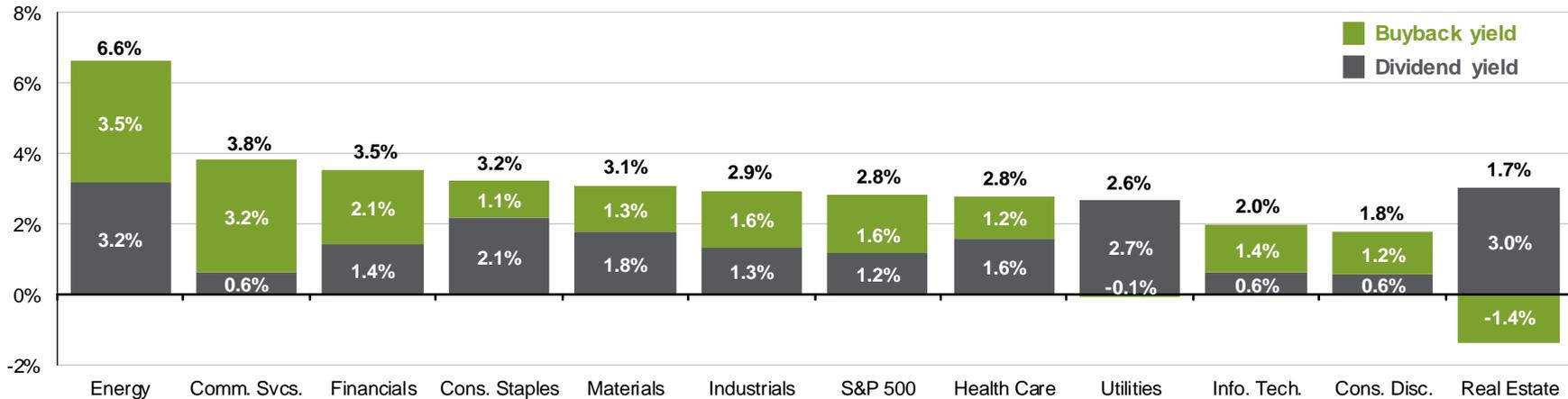
S&P 500 sector pro forma EPS growth

Year-over-year

	Weight*	2022				2023				2024				2025			
		1Q	2Q	3Q	4Q	1Q	2Q	3Q	4Q	1Q	2Q	3Q	4QF	1QF	2QF	3QF	4QF
Tech.	32%	14%	1%	-1%	-9%	-8%	4%	14%	23%	25%	20%	8%	15%	17%	20%	30%	20%
Financials	14%	-19%	-21%	-18%	-13%	-5%	-2%	12%	-21%	9%	17%	7%	38%	6%	2%	7%	15%
Health Care	10%	15%	8%	0%	-4%	-15%	-27%	-18%	-15%	-25%	19%	14%	13%	42%	13%	14%	17%
Cons. Disc.	11%	-29%	-16%	7%	-19%	38%	48%	38%	27%	21%	10%	8%	11%	10%	7%	8%	16%
Comm. Services	9%	-1%	-21%	-23%	-26%	-14%	20%	44%	44%	42%	8%	26%	23%	9%	33%	5%	13%
Industrials	8%	38%	33%	20%	40%	24%	12%	9%	4%	2%	-3%	-11%	-4%	10%	10%	30%	19%
Cons. Staples	6%	8%	2%	1%	1%	3%	8%	7%	6%	6%	4%	4%	0%	0%	5%	6%	9%
Energy	3%	282%	301%	140%	58%	19%	-49%	-34%	-23%	-24%	0%	-28%	-29%	-12%	-3%	15%	21%
Utilities	2%	27%	-4%	-8%	10%	-23%	-3%	10%	31%	28%	21%	-2%	-2%	9%	3%	16%	11%
Materials	2%	47%	17%	-12%	-18%	-20%	-24%	-16%	-21%	-21%	-8%	-11%	2%	7%	8%	29%	27%
Real Estate	2%	19%	6%	11%	8%	-1%	5%	-1%	3%	6%	0%	2%	2%	1%	3%	6%	7%
S&P 500		10%	7%	3%	-3%	-1%	-4%	6%	4%	6%	11%	5%	11%	11%	11%	15%	17%

Total shareholder yield by sector

Last 12-months dividends and buybacks minus issuance divided by market cap



Source: FactSet, J.P. Morgan Asset Management. Forecasts reflect analyst expectations. Heatmap shading applies a range of -20% (deep red), 0% (yellow) and +20% (deep green). *% of S&P 500 market capitalization. Guide to the Markets – U.S. Data are as of December 31, 2024.

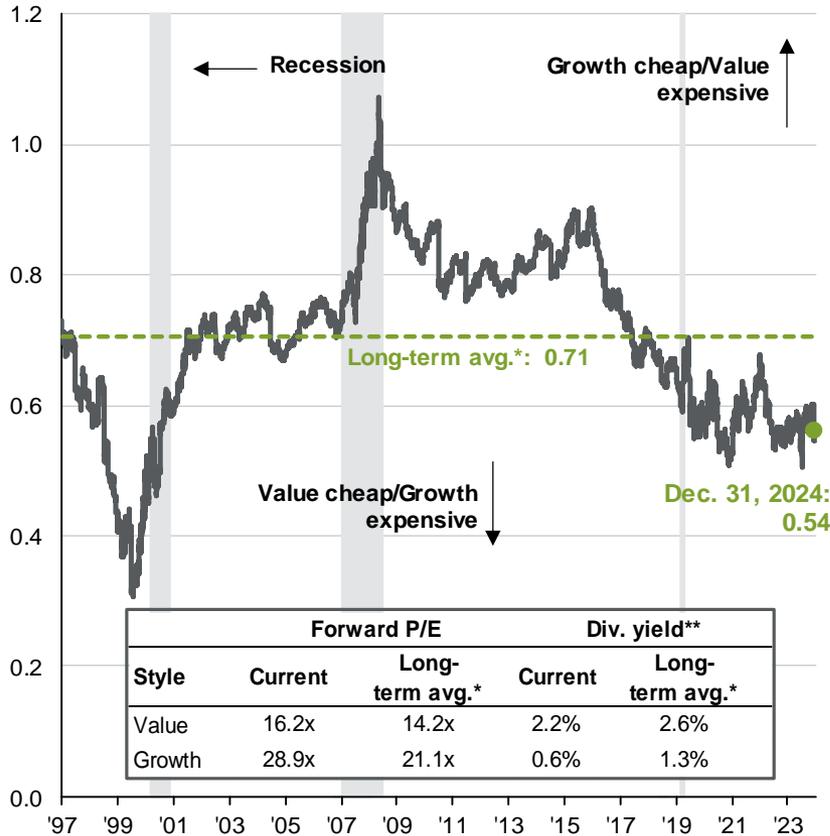


Value vs. Growth: Valuations and interest rates

Equities

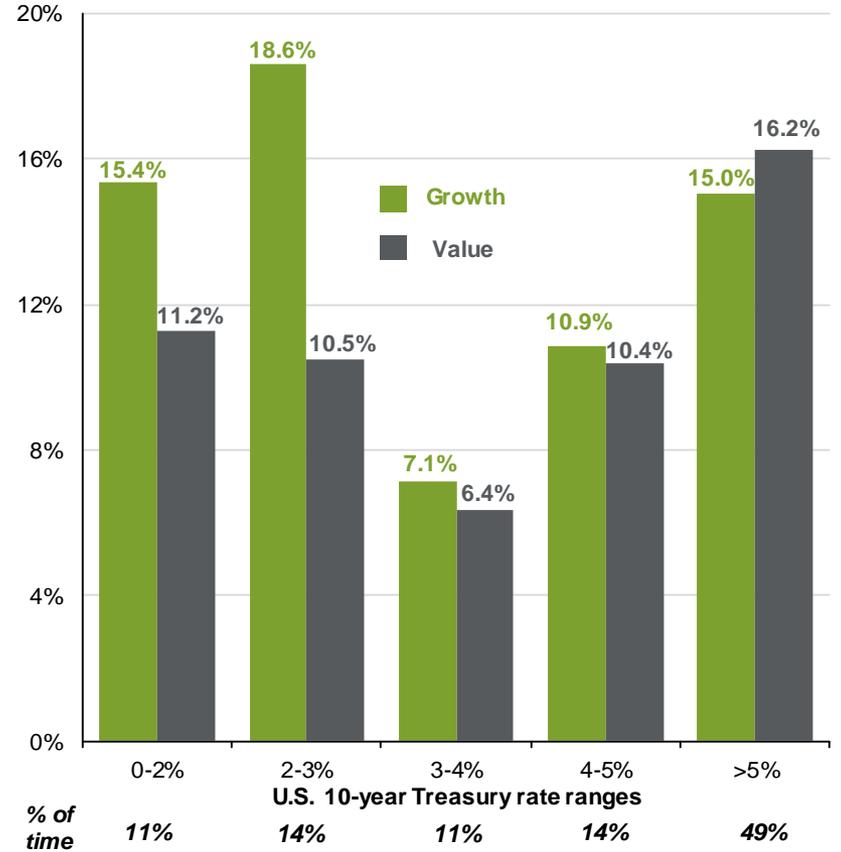
Value vs. Growth relative valuations

Rel. fwd. P/E ratio of Value vs. Growth, 1997 - present



Value vs. Growth in different interest rate environments

Annualized total return by 10-year Treasury rate ranges, 1979 - present



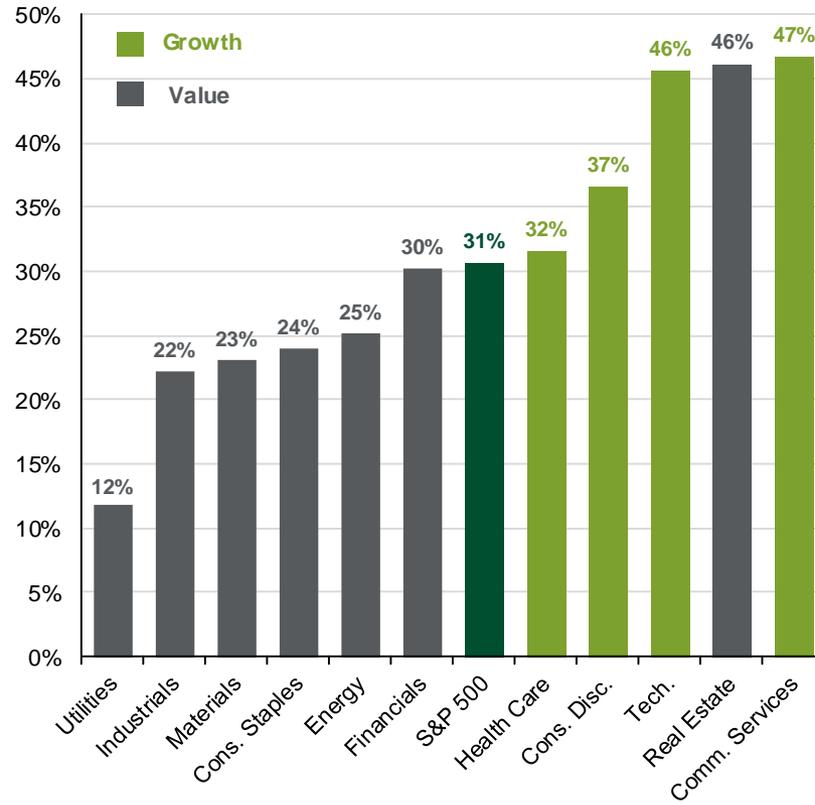
Source: FactSet, FTSE Russell, NBER, J.P. Morgan Asset Management. Growth is represented by the Russell 1000 Growth Index and Value is represented by the Russell 1000 Value Index. (Left) *Long-term averages are calculated monthly since December 1997. **Dividend yield is calculated as the next 12-month consensus dividend divided by most recent price. (Right) Returns are calculated by annualizing the average monthly performance during each interest rate range. Guide to the Markets – U.S. Data are as of December 31, 2024.



Value vs. Growth: Cash, R&D and capex

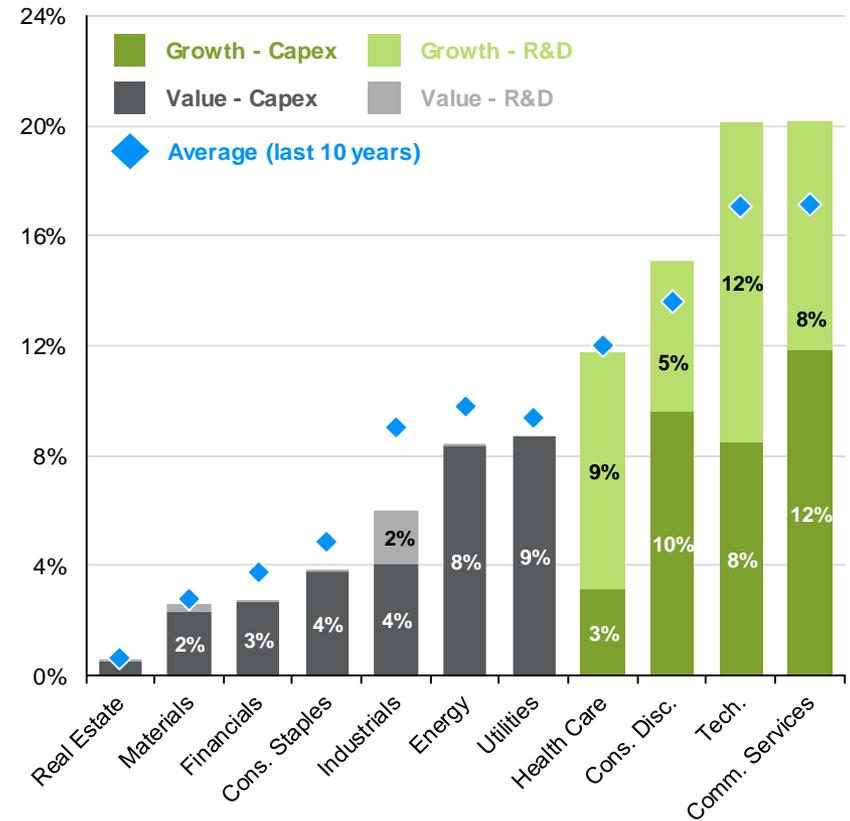
Equities

Corporate cash as a % of current assets by sector 2Q24



Research & development and capex by sector

Share of total S&P 500 R&D and capex by sector, current vs. average



Source: Compustat, FactSet, J.P. Morgan Asset Management. (Left) Current assets are assets that can be converted into cash within a 12-month time frame. Current assets includes items such as cash and cash equivalents, marketable securities, accounts receivable, inventory and other short-term investments. (Right) Research and development (R&D) and capital expenditure (capex) data are through 9/30/2024. Guide to the Markets – U.S. Data are as of December 31, 2024.



S&P 500: Index concentration and valuations

Equities

P/E ratio of the top 10 and remaining stocks in the S&P 500

Next 12 months, 1996 - present



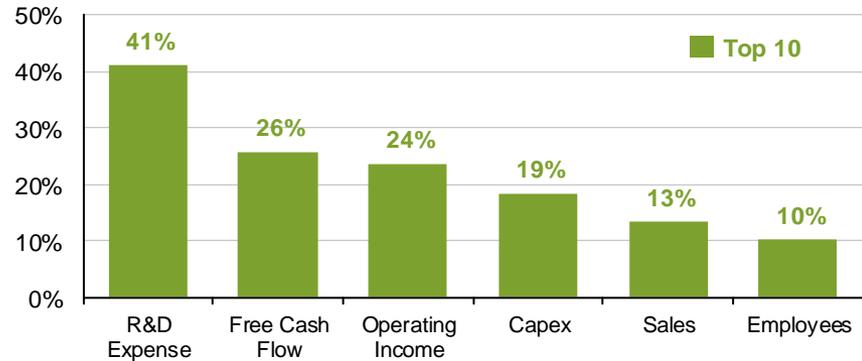
Weight of the top 10 stocks in the S&P 500

% of market capitalization of the S&P 500



Economic concentration in the S&P 500

% of S&P 500 metric, 3Q24



Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management. The top 10 S&P 500 companies are based on the 10 largest index constituents at the beginning of each quarter. As of 12/31/2024, the top 10 companies in the index were AAPL (7.6%), NVDA (6.6%), MSFT (6.3%), AMZN (4.1%), GOOGL/GOOG (4.0%), META (2.6%), TSLA (2.3%), AVGO (2.2%), BRK.B (1.7%) and JPM (1.4%). The remaining stocks represent the rest of the 492 companies in the S&P500.

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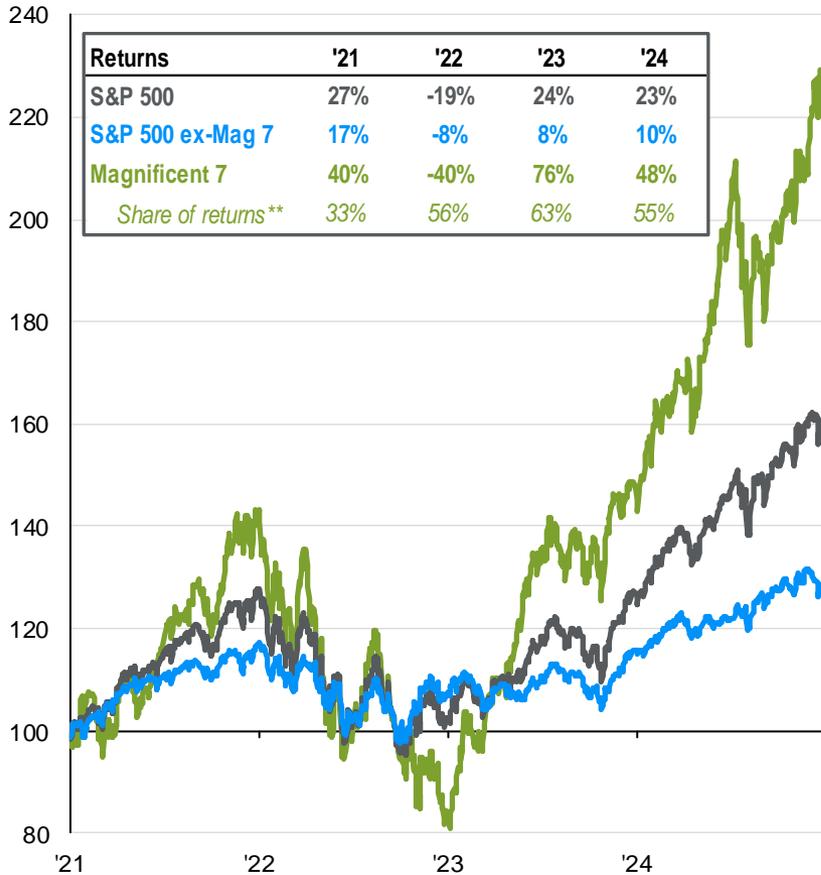


Magnificent 7 performance and earnings dynamics

Equities

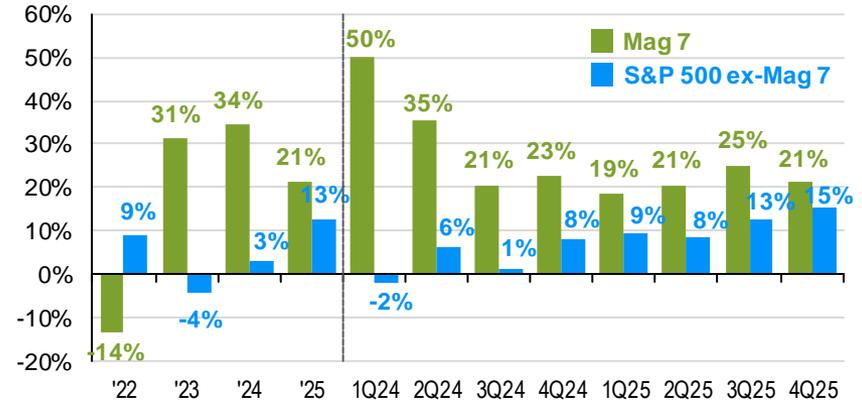
Performance of “Magnificent 7” stocks in S&P 500*

Indexed to 100 on 1/1/2021, price return



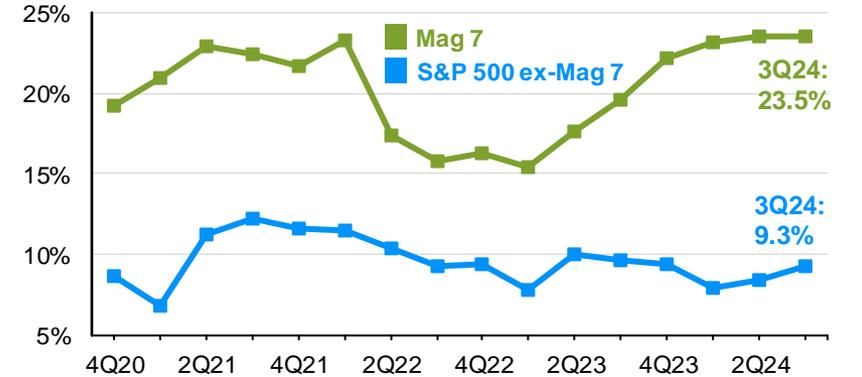
Earnings growth

Pro forma EPS, estimates 4Q24 onwards, y/y



Profit margins

Quarterly earnings/sales



Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management.

*Magnificent 7 includes AAPL, AMZN, GOOG, GOOGL, META, MSFT, NVDA and TSLA. Earnings estimates for 2024 and 2025 are forecasts based on consensus analyst expectations. **Share of returns represent how much each group contributed to the overall return. Numbers are always positive despite negative performance in 2022.

Guide to the Markets – U.S. Data are as of December 31, 2024.

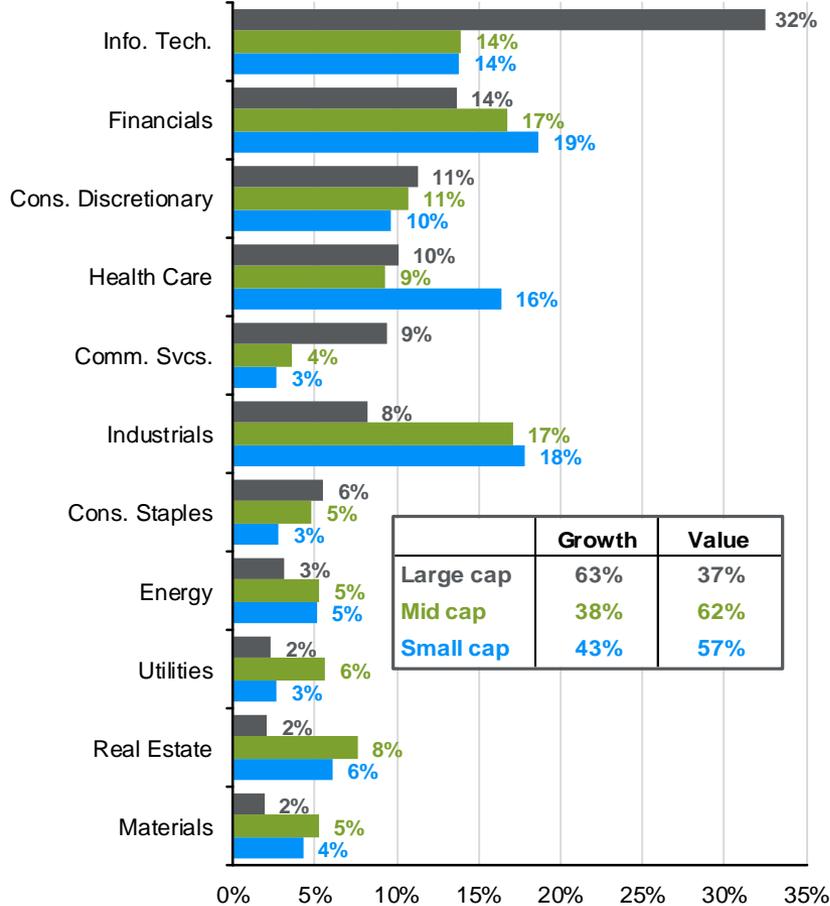


Small caps, mid caps and large caps

Equities

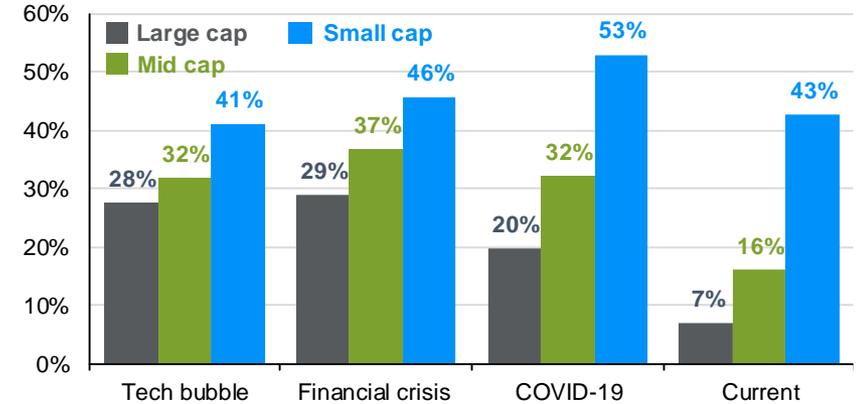
Sector composition

% of index market capitalization



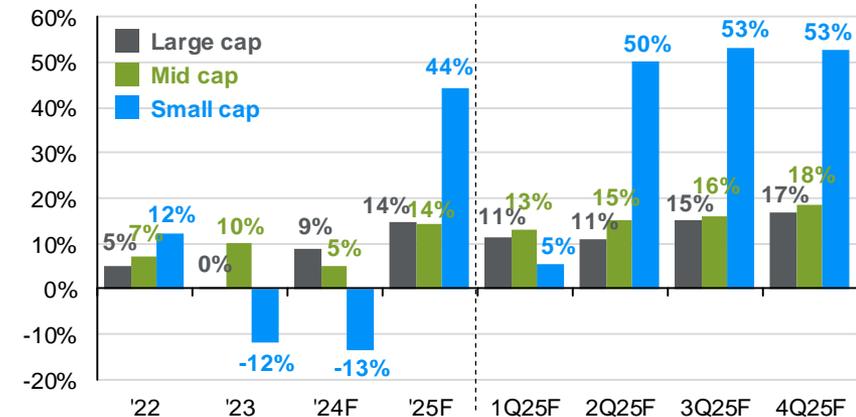
Percent of unprofitable companies

Pro forma EPS



Earnings growth

Pro forma EPS, y/y



Source: Compustat, FactSet, FTSE Russell, NBER, J.P. Morgan Asset Management.
 The S&P 500 is used for large cap. The Russell Mid Cap is used for mid cap. The Russell 2000 is used for small cap. Data for the percent of unprofitable companies in each index are from the following quarters: Tech bubble = 4Q01, Financial crisis = 4Q08, COVID-19 = 1Q20 and Current = 3Q24.

Guide to the Markets – U.S. Data are as of December 31, 2024.



Returns and valuations by style

GTM

U.S.

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10-year annualized

	Value	Blend	Growth
Large	8.5%	13.1%	16.8%
Mid	8.1%	9.6%	11.5%
Small	7.1%	7.8%	8.1%

YTD

	Value	Blend	Growth
Large	14.4%	25.0%	33.4%
Mid	13.1%	15.3%	22.1%
Small	8.1%	11.5%	15.2%

Since market peak (January 2022)

	Value	Blend	Growth
Large	17.4%	28.5%	33.9%
Mid	12.1%	12.2%	13.7%
Small	4.6%	2.5%	-0.5%

Since market low (October 2022)

	Value	Blend	Growth
Large	42.3%	70.1%	96.2%
Mid	39.6%	46.8%	64.2%
Small	31.6%	36.6%	41.1%

Current P/E vs. 20-year avg. P/E

	Value	Blend	Growth
Large	16.2 / 13.8	21.5 / 15.9	28.9 / 19.3
Mid	15.4 / 14.5	17.4 / 16.4	28.2 / 20.8
Small	17.2 / 16.8	24.2 / 21.5	39.5 / 25.7

Current P/E as % of 20-year avg. PE

	Value	Blend	Growth
Large	117.2%	135.4%	149.9%
Mid	105.8%	105.9%	135.2%
Small	102.3%	112.7%	153.9%

Source: FactSet, Refinitiv Datastream, Russell Investment Group, Standard & Poor's, J.P. Morgan Asset Management.

All calculations are cumulative total return, including dividends reinvested for the stated period. Since market peak represents period from January 3, 2022, to December 31, 2024. Since market low represents period from October 12, 2022, to December 31, 2024. Returns are cumulative returns, not annualized. For all time periods, total return is based on Russell style indices except for the large blend category, which is based on the S&P 500 Index. Past performance is not indicative of future returns. The price-to-earnings is a bottom-up calculation based on the most recent index price, divided by consensus estimates for earnings in the next 12 months (NTM) and is provided by FactSet Market Aggregates and J.P. Morgan Asset Management.

Guide to the Markets – U.S. Data are as of December 31, 2024.



Returns and valuations by sector

GTM U.S. 15

Equities

	Energy	Materials	Financials	Industrials	Cons. Disc.	Tech.	Comm. Services*	Real Estate	Health Care	Cons. Staples	Utilities	S&P 500 Index	
S&P weight	3.2%	1.9%	13.6%	8.2%	11.3%	32.5%	9.4%	2.1%	10.1%	5.5%	2.3%	100.0%	Weight
Russell Growth weight	0.4%	0.6%	6.5%	4.2%	15.9%	48.6%	13.3%	0.5%	6.6%	3.3%	0.2%	100.0%	
Russell Value weight	6.7%	4.2%	23.1%	14.7%	6.2%	9.3%	4.4%	4.7%	14.2%	7.9%	4.6%	100.0%	
Russell 2000 weight	5.1%	4.3%	18.7%	17.8%	9.7%	13.8%	2.7%	6.1%	16.3%	2.8%	2.7%	100.0%	
QTD	-2.4	-12.4	7.1	-2.3	14.3	4.8	8.9	-8.5	-10.3	-3.3	-5.5	2.4	Return (%)
YTD	5.7	0.0	30.6	17.5	30.1	36.6	40.2	5.0	2.6	14.9	23.4	25.0	
Since market peak (January 2022)	67.7	0.1	29.4	32.3	13.6	53.3	30.6	-12.0	3.7	14.8	17.6	28.5	
Since market low (October 2022)	14.9	28.4	66.6	61.6	70.4	129.9	116.4	29.6	17.2	28.4	32.6	70.1	
Beta to S&P 500	1.2	1.1	1.1	1.1	1.2	1.1	1.0	0.9	0.7	0.6	0.5	1.0	β
Correl. to Treas. yields	-0.2	-0.6	-0.4	-0.6	-0.5	-0.6	-0.6	-0.8	-0.7	-0.6	-0.5	-0.7	ρ
Foreign % of sales	37.2	52.2	28.2	33.1	35.5	56.4	48.9	17.7	34.1	39.3	1.0	41.6	%
NTM earnings growth	4.1%	17.6%	8.3%	18.9%	11.5%	22.8%	14.5%	3.8%	20.3%	5.1%	8.5%	14.5%	EPS
20-yr avg.	100.4%	12.8%	20.5%	13.7%	16.7%	12.1%	12.0%	6.8%	8.1%	7.3%	4.6%	10.9%	
Forward P/E ratio	13.6x	18.3x	16.6x	21.6x	28.6x	28.9x	19.4x	17.1x	16.6x	20.8x	17.3x	21.5x	P/E
20-yr avg.	13.4x	15.2x	12.7x	16.4x	19.9x	18.2x	18.9x	17.2x	15.1x	17.6x	15.8x	15.9x	
Buyback yield	3.5%	1.3%	2.1%	1.6%	1.2%	1.4%	3.2%	-1.4%	1.2%	1.1%	-0.1%	1.7%	Bbk
20-yr avg.	1.9%	1.0%	0.5%	2.4%	2.5%	3.0%	1.9%	-1.4%	1.9%	1.8%	-0.7%	1.9%	
Dividend yield	3.5%	2.0%	1.6%	1.5%	0.7%	0.6%	0.9%	3.8%	1.9%	2.6%	3.2%	1.3%	Div
20-yr avg.	2.8%	2.3%	2.3%	2.2%	1.4%	1.2%	1.1%*	3.7%	1.9%	2.9%	3.8%	2.0%	

Source: FactSet, Refinitiv Datastream, Russell Investment Group, Standard & Poor's, J.P. Morgan Asset Management. All calculations are cumulative total return, not annualized, including dividends for the stated period. Since market peak represents period from January 3, 2022, to December 31, 2024. Since market low represents period from October 12, 2022, to December 31, 2024. Correlation to Treasury yields are trailing 2-year monthly correlations between S&P 500 sector price returns and 10-year Treasury yield movements. Next 12 months (NTM) earnings growth is the percent change in next 12-months earnings estimates compared to last 12-months earnings provided by brokers. Forward P/E ratio is a bottom-up calculation based on the most recent S&P 500 Index price, divided by consensus estimates for earnings in the next 12 months (NTM), and is provided by FactSet Market Aggregates and J.P. Morgan Asset Management. Buyback yield is net of share issuance and is calculated as last 12-months net buybacks divided by market cap. Dividend yield is calculated as the next 12-months consensus dividend divided by most recent price. Beta calculations are based on 10-years of monthly price returns for the S&P 500 and its sub-indices. *Communication Services (formerly Telecom) averages and beta are based on 5-years of data. Past performance is not indicative of future returns.

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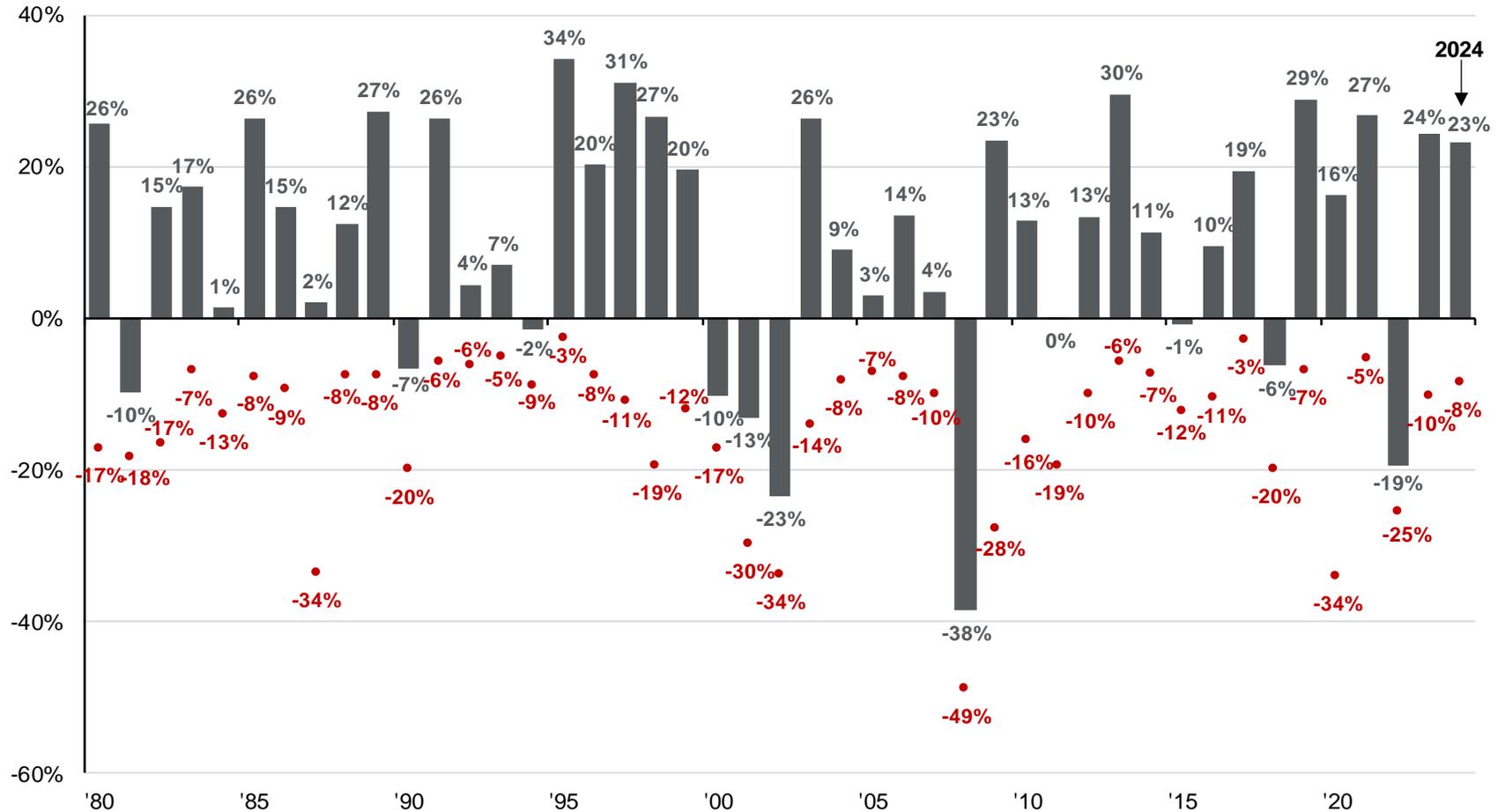


Annual returns and intra-year declines

Equities

S&P intra-year declines vs. calendar year returns

Despite average intra-year drops of 14.1%, annual returns were positive in 34 of 45 years



Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management.

Returns are based on price index only and do not include dividends. Intra-year drops refers to the largest market drops from a peak to a trough during the year. For illustrative purposes only. Returns shown are calendar year returns from 1980 to 2024, over which time period the average annual return was 10.6%.

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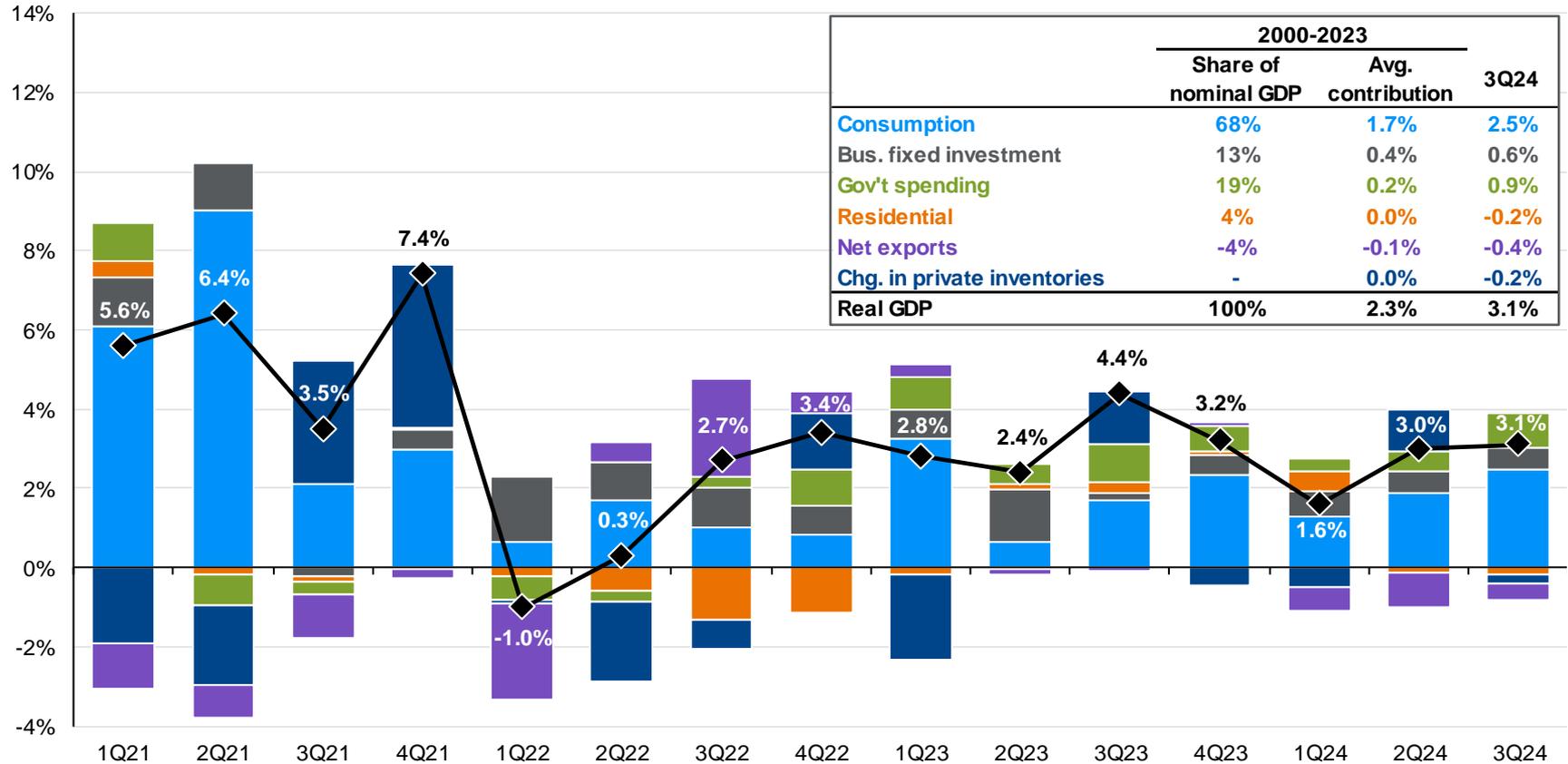


Components of GDP growth

Economy

Contributors to real GDP growth

Quarter-over-quarter, seasonally adjusted annualized rate



Source: BEA, FactSet, J.P. Morgan Asset Management. Guide to the Markets – U.S. Data are as of December 31, 2024.

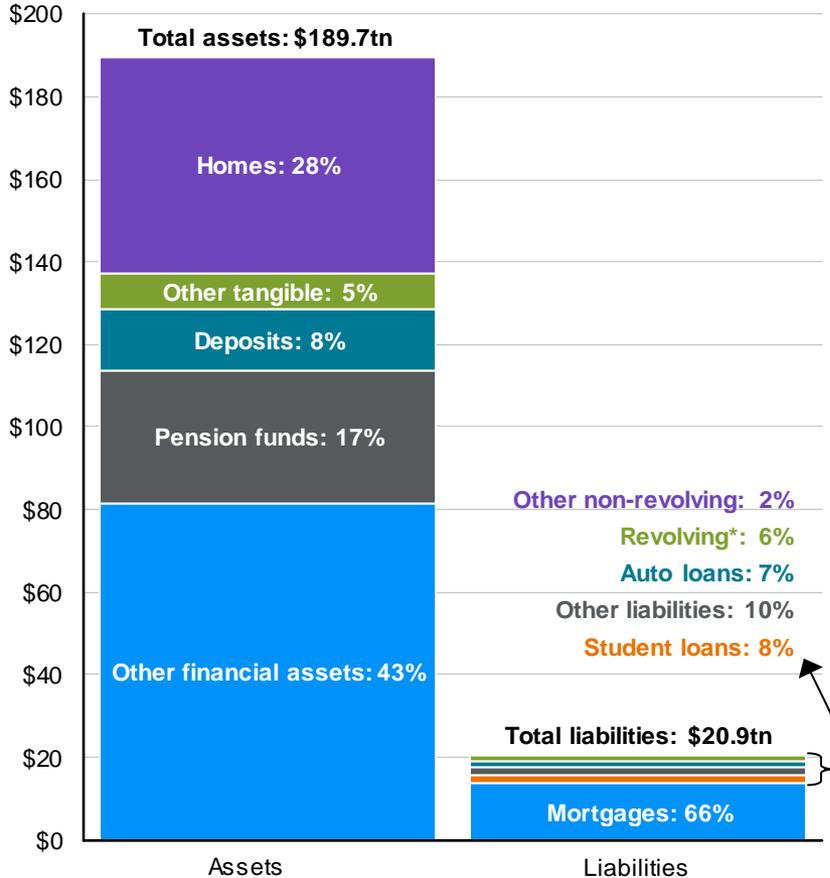


Consumer finances

Economy

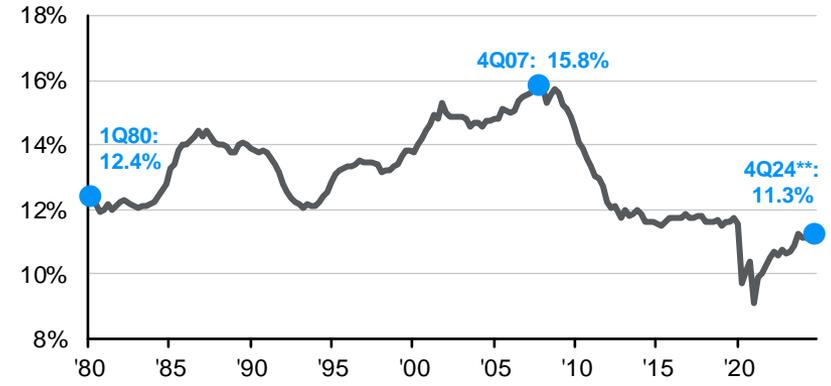
Consumer balance sheet

3Q24, USD trillions, not seasonally adjusted



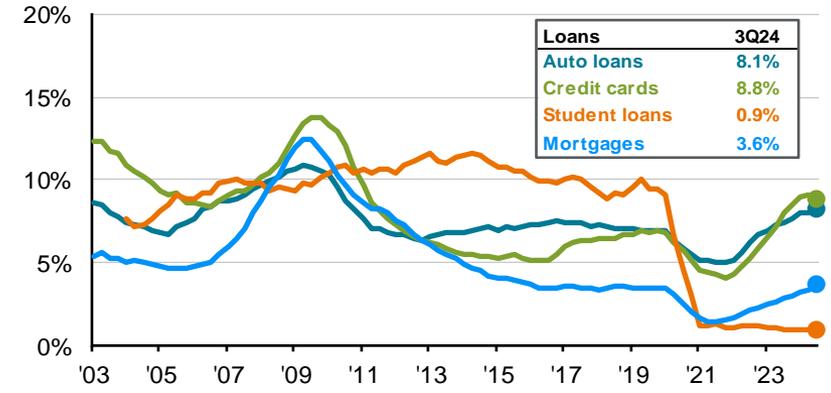
Household debt service ratio

Debt payments as % of disposable personal income, SA



Flows into early delinquencies

% of balance delinquent 30+ days



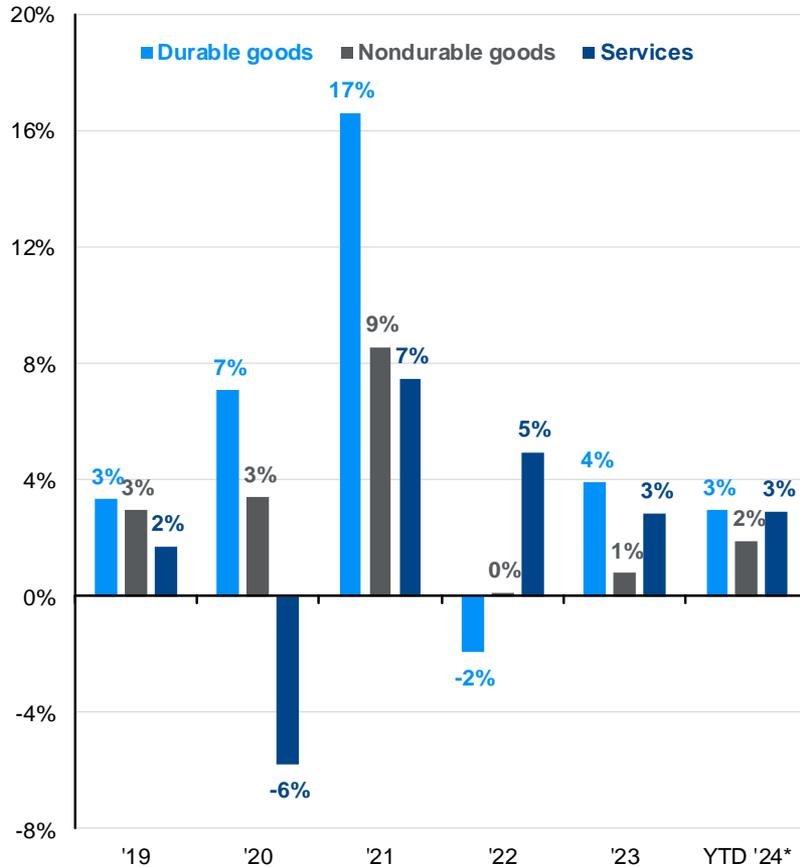
Source: FactSet, FRB, J.P. Morgan Asset Management; (Top and bottom right) BEA. Data include households and nonprofit organizations. SA – seasonally adjusted. *Revolving includes credit cards. Values may not sum to 100% due to rounding. **4Q24 figures for debt service ratio are J.P. Morgan Asset Management estimates. Household debt service ratio data from 1Q80 to 4Q04 are J.P. Morgan Asset Management estimates. Due to the moratorium on delinquent student loan payments being reported to credit bureaus, missed federal student loan payments will not be reported until 4Q24. Guide to the Markets – U.S. Data are as of December 31, 2024.



Consumer spending and saving

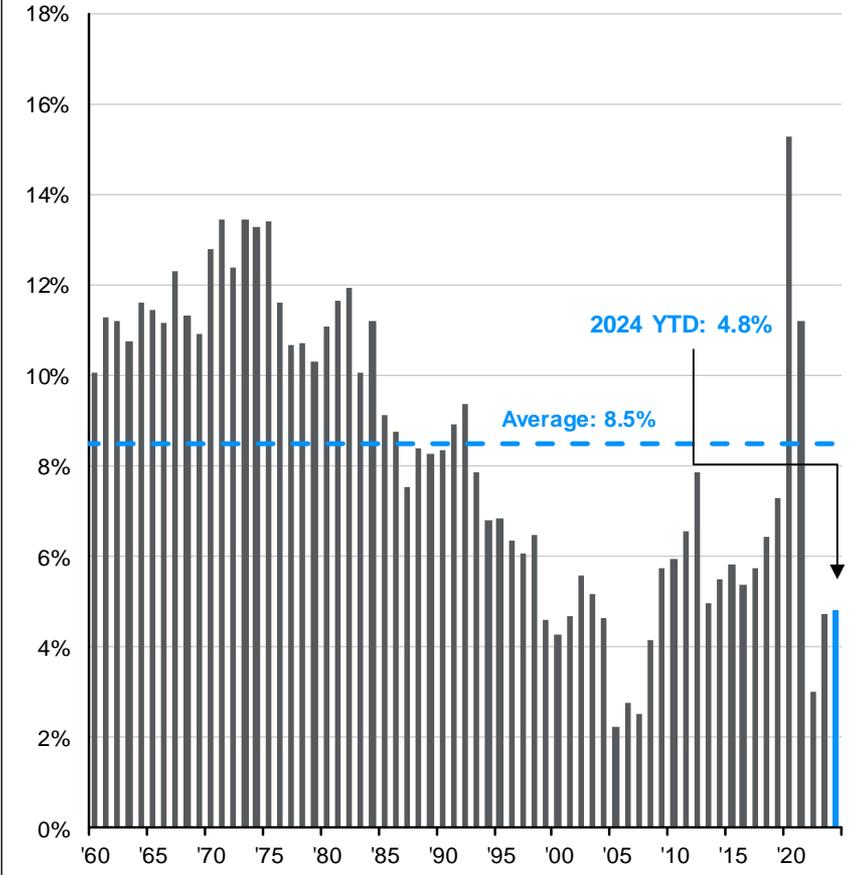
Real consumer spending by expenditure category

Y/y % change, average level of spending



Personal saving rate

Personal savings as a % of disposable personal income, annual

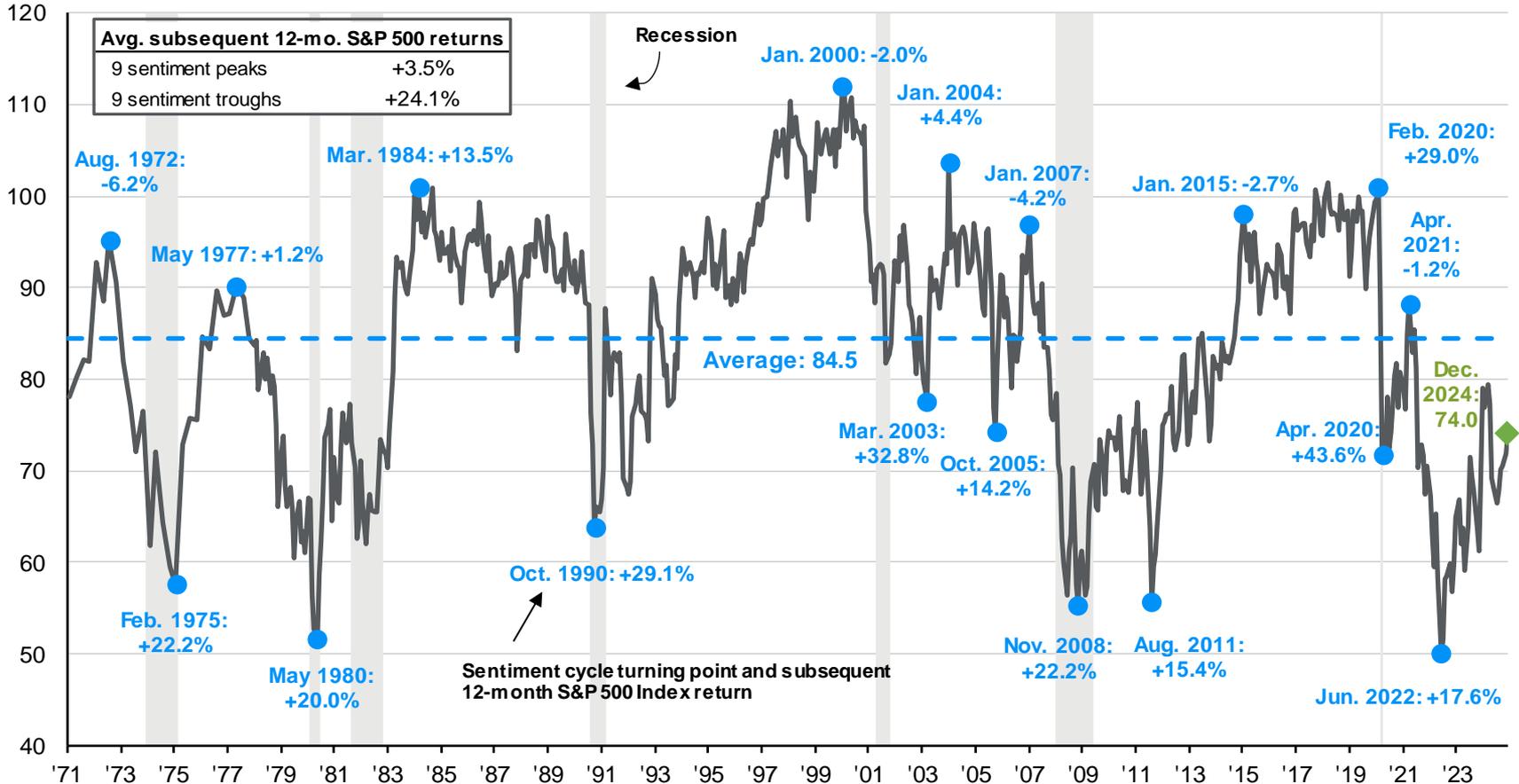


Source: BEA, Federal Reserve, J.P. Morgan Asset Management. *YTD figure for 2024 reflects the year-over-year % change in the average level of spending during the first eleven months of 2024 relative to the average level of spending during the first eleven months of 2023. Guide to the Markets – U.S. Data are as of December 31, 2024.



Consumer confidence and the stock market

Consumer Sentiment Index and subsequent 12-month S&P 500 returns



Source: FactSet, Standard & Poor's, University of Michigan, J.P. Morgan Asset Management. Peak is defined as the highest index value before a series of lower lows, while a trough is defined as the lowest index value before a series of higher highs. Subsequent 12-month S&P 500 returns are price returns only starting from the end of the month and excluding dividends. Past performance is not a reliable indicator of current and future results. Guide to the Markets – U.S. Data are as of December 31, 2024.

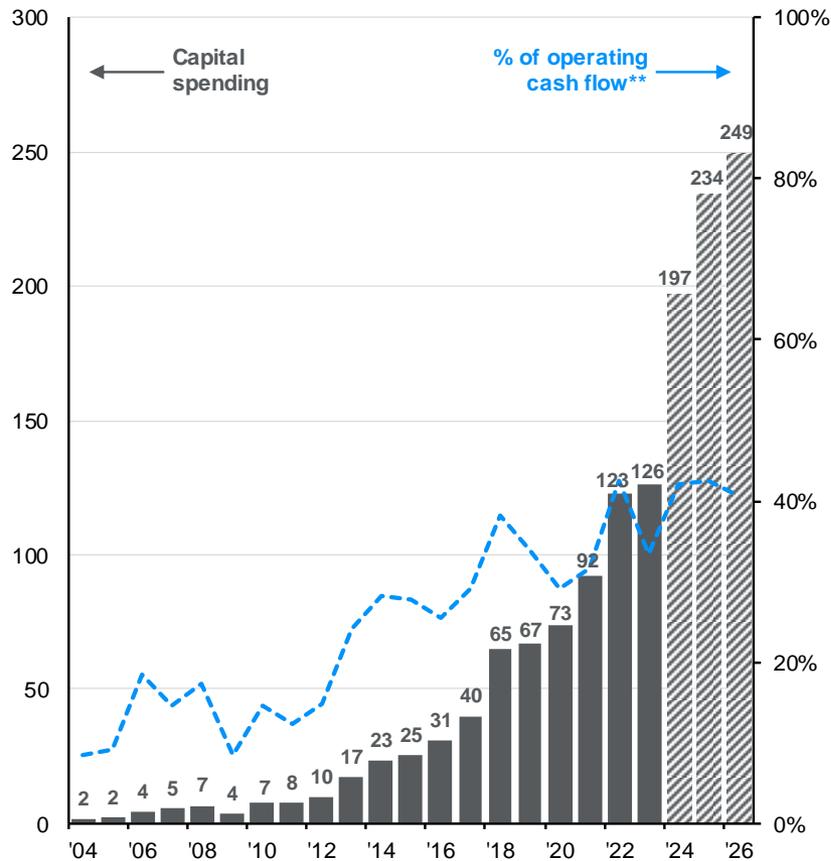


Tech-driven capital spending

Economy

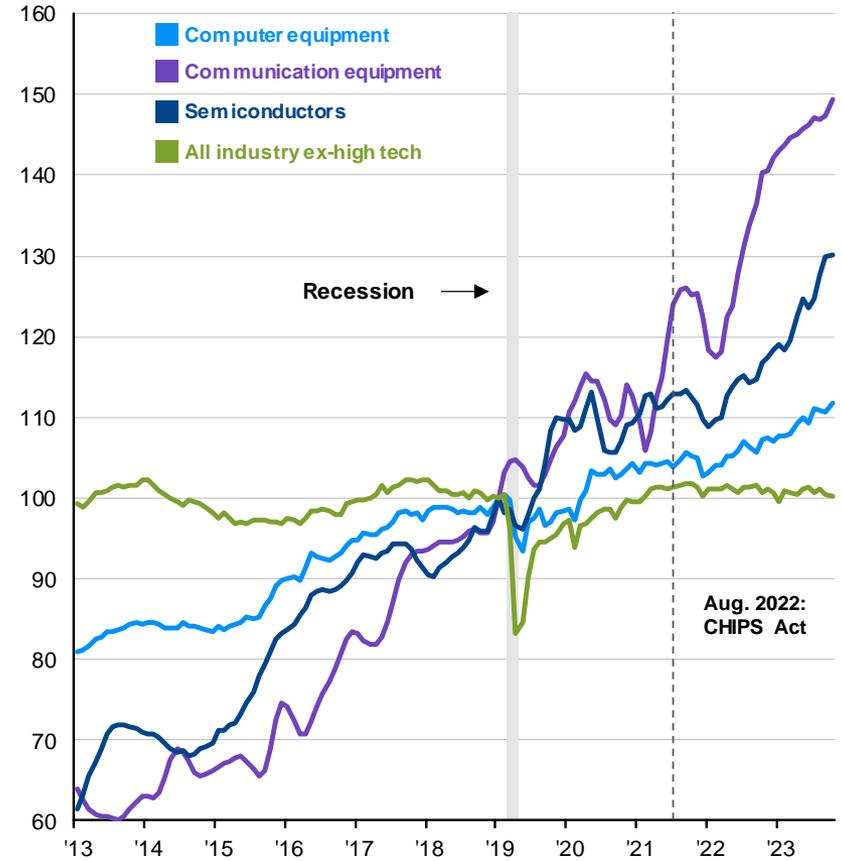
Capex from the major AI hyperscalers*

USD billions; Alphabet, Amazon (AWS), Meta, Microsoft, Oracle



U.S. industrial production of high tech industries

Indexed to 100 in Jan. 2020



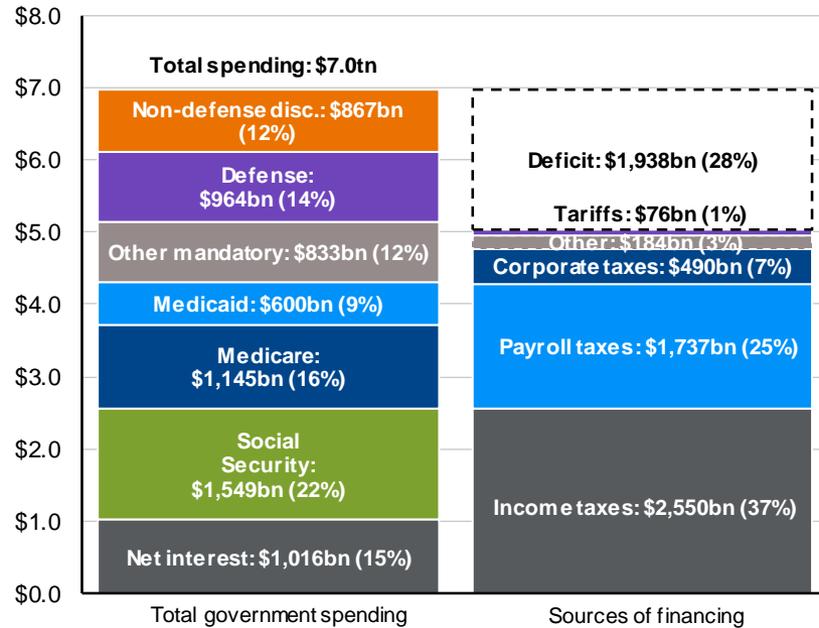
Source: J.P. Morgan Asset Management; (Left) Bloomberg; (Right) Federal Reserve Board. Data for 2024, 2025 and 2026 reflects consensus estimates. Capex shown is company total, except for Amazon, which reflects an estimate for AWS spend (2004 to 2012 are J.P. Morgan Asset Management estimates and 2012 to current are Bloomberg consensus estimates). *Hyperscalers are the large cloud computing companies that own and operate data centers with horizontally linked servers that, along with cooling and data storage capabilities, enable them to house and operate AI workloads. **Reflects cash flow before capital expenditures in contrast to free cash flow, which subtracts out capital expenditures. *Guide to the Markets – U.S.* Data are as of December 31, 2024.



Federal finances

The 2025 federal budget

USD trillions

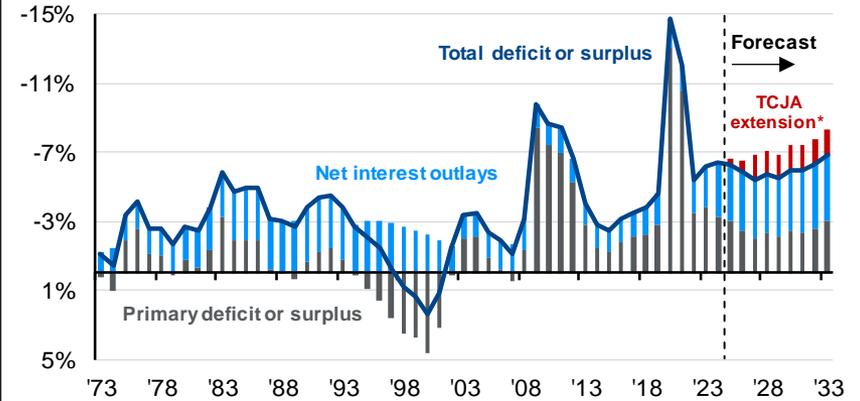


CBO's Baseline economic assumptions

	2024	'25-'26	'27-'28	'29-'34
Real GDP growth	2.9%	2.0%	1.7%	1.8%
10-year Treasury	4.5%	4.0%	3.6%	4.0%
Headline inflation (CPI)	3.2%	2.4%	2.2%	2.2%
Unemployment	3.8%	4.0%	4.3%	4.5%

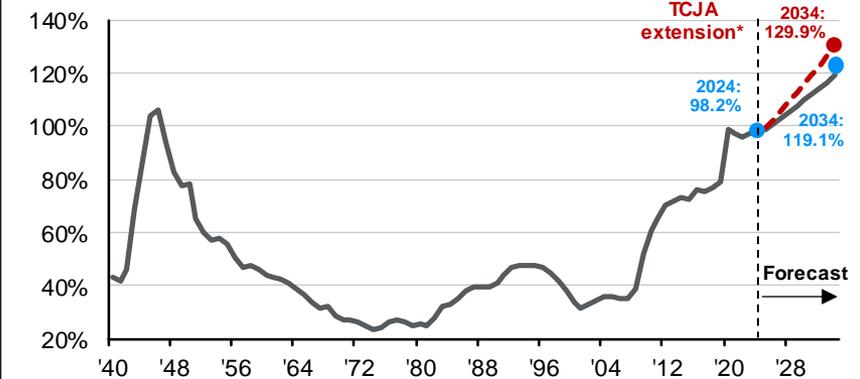
Federal deficit and net interest outlays

% of GDP, 1973-2034, CBO Baseline Forecast



Federal net debt (accumulated deficits)

% of GDP, 1940-2034, CBO Baseline Forecast, end of fiscal year



Source: CBO, J.P. Morgan Asset Management; (Left) Numbers may not sum to 100% due to rounding; (Top and bottom right) BEA, Treasury Department. Estimates are from the Congressional Budget Office (CBO) June 2024 An Update to the Budget Outlook: 2024 to 2034. "Other" spending includes, but is not limited to, health insurance subsidies, income security and federal civilian and military retirement. Years shown are fiscal years. All CBO estimates are adjusted by JPMAM to reflect GDP revisions resulting from the 2024 annual update of the National Economic Accounts. *Adjusted by JPMAM to include estimates from the CBO May 2024 report "Budgetary Outcomes Under Alternative Assumptions About Spending and Revenues" on the extension of TCJA provisions. Forecasts are not a reliable indicator of future performance. Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecasts, projections or other forward-looking statements, actual events, results or performance may differ materially from those reflected or contemplated. Guide to the Markets - U.S. Data are as of December 31, 2024.

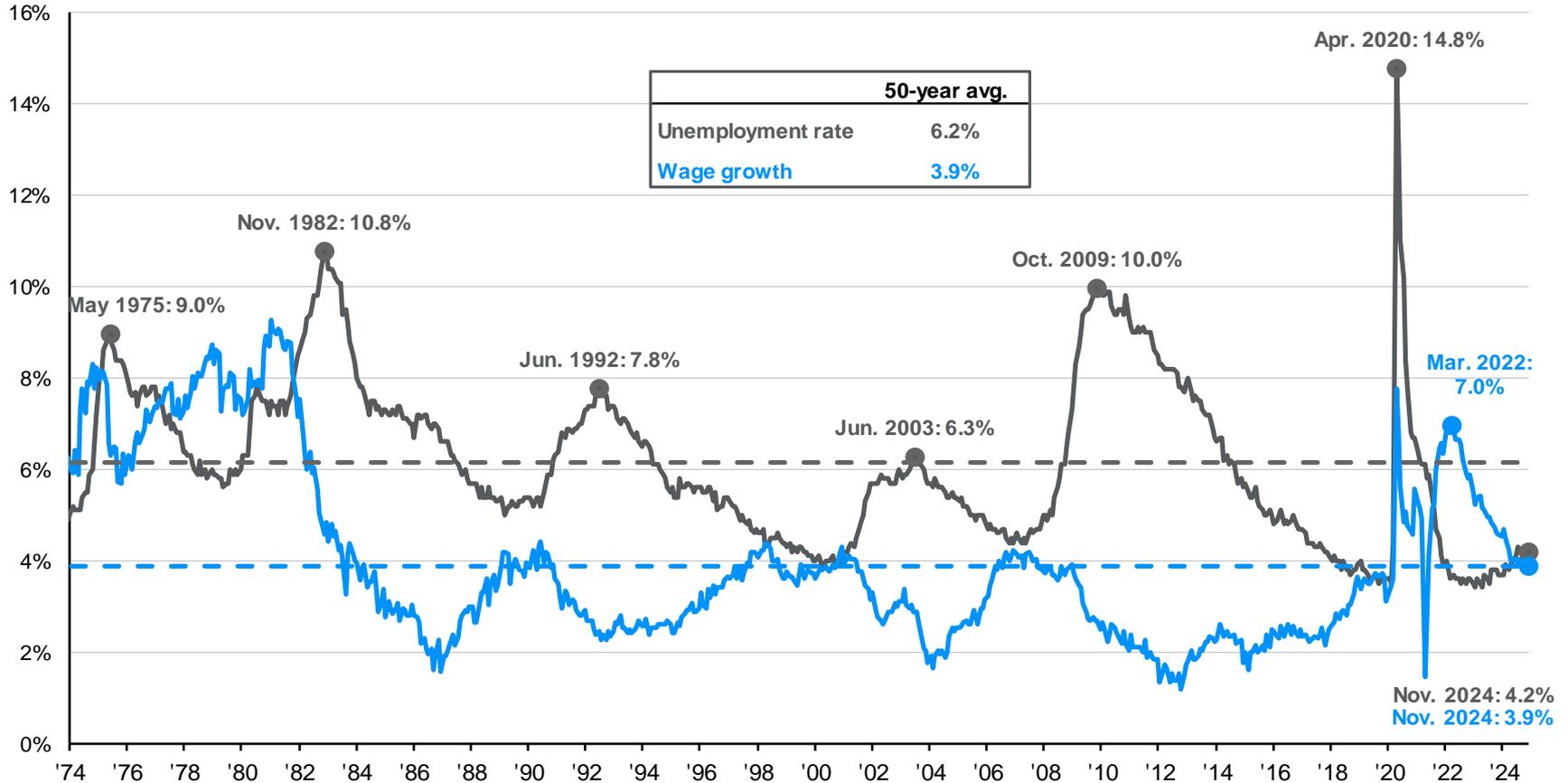


Unemployment and wages

Economy

Civilian unemployment rate and year-over-year wage growth

Private production and non-supervisory workers, seasonally adjusted, percent



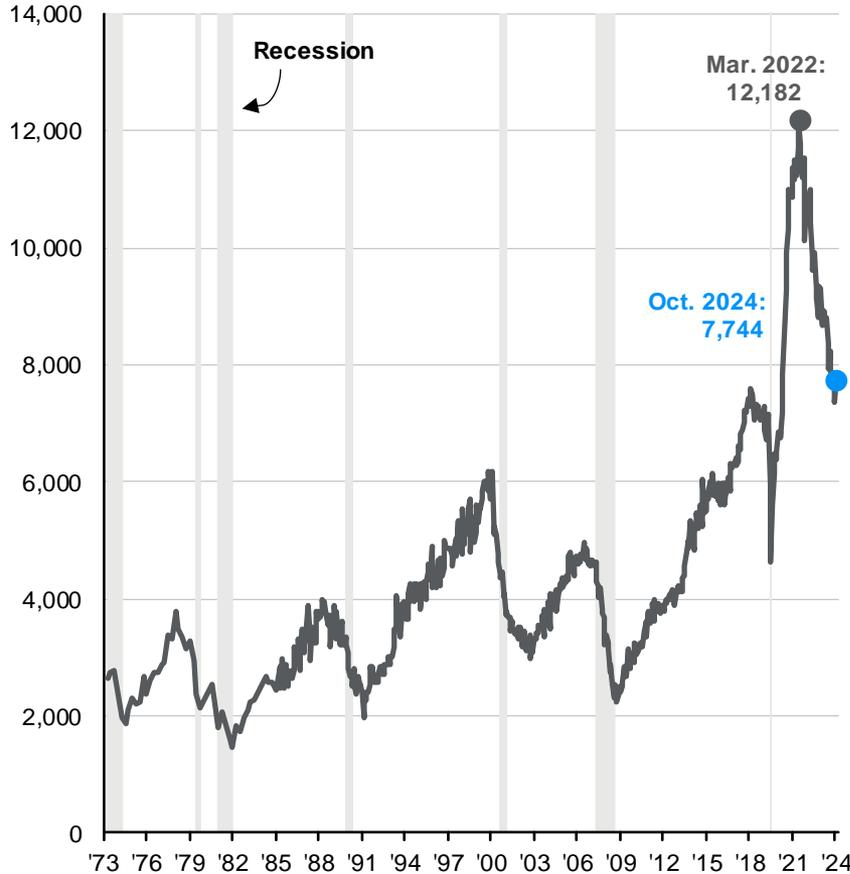
Source: BLS, FactSet, J.P. Morgan Asset Management. Private production and non-supervisory jobs represent just over 80% of total private nonfarm jobs.
Guide to the Markets – U.S. Data are as of December 31, 2024.



Labor demand

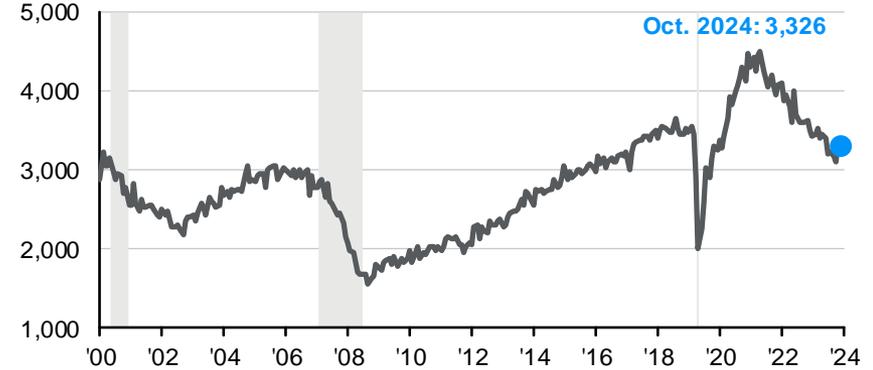
JOLTS job openings*

Total job openings, thousands, seasonally adjusted



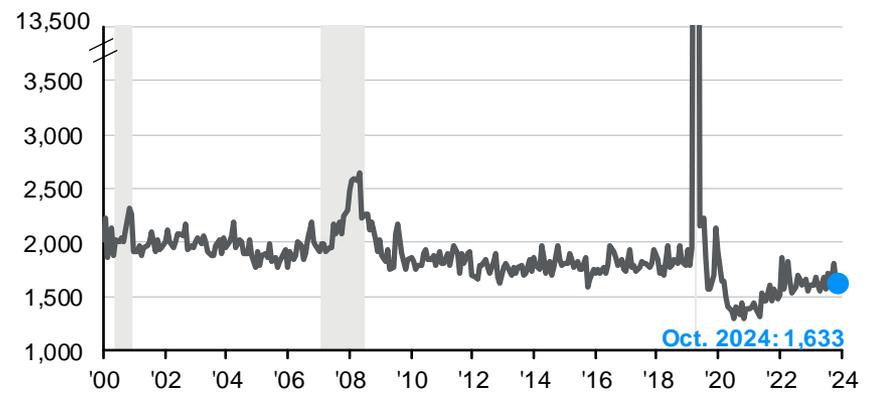
JOLTS quits

Total nonfarm quits, thousands, seasonally adjusted



JOLTS layoffs

Total nonfarm layoffs, thousands, seasonally adjusted



Source: U.S. Department of Labor, J.P. Morgan Asset Management. *JOLTS job openings from February 1974 to November 2000 are J.P. Morgan Asset Management estimates. Guide to the Markets – U.S. Data are as of December 31, 2024.

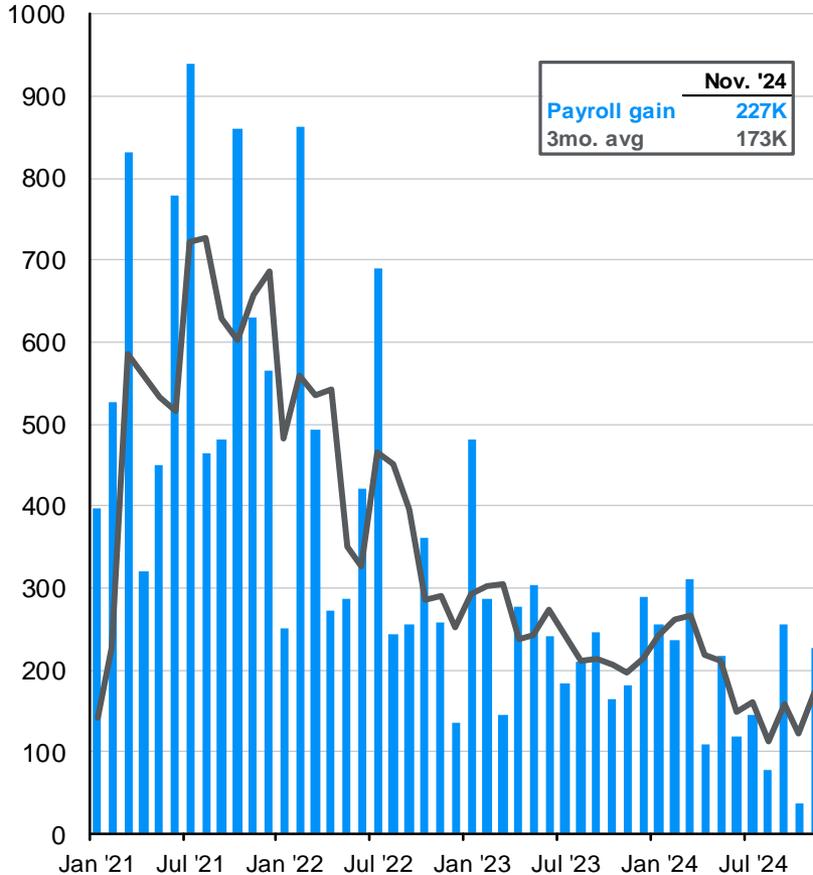


Labor supply

Economy

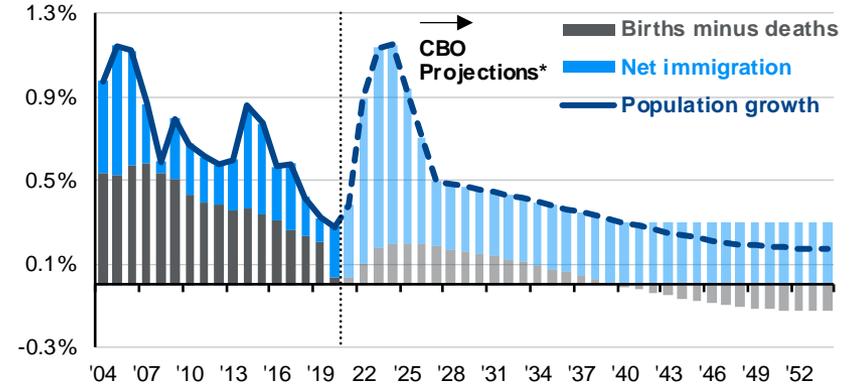
Nonfarm payroll gains

Month-over-month change and 3mo. moving average, SA



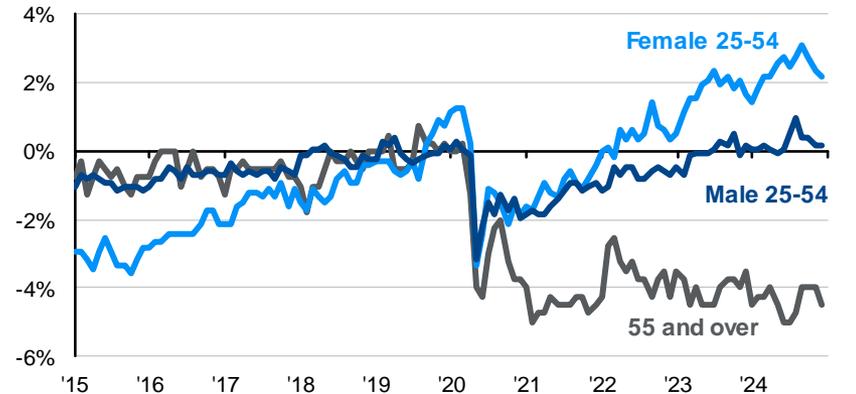
Sources of population growth

Contribution to annual percentage change



Labor force participation rate changes

% change since 2019 average, SA



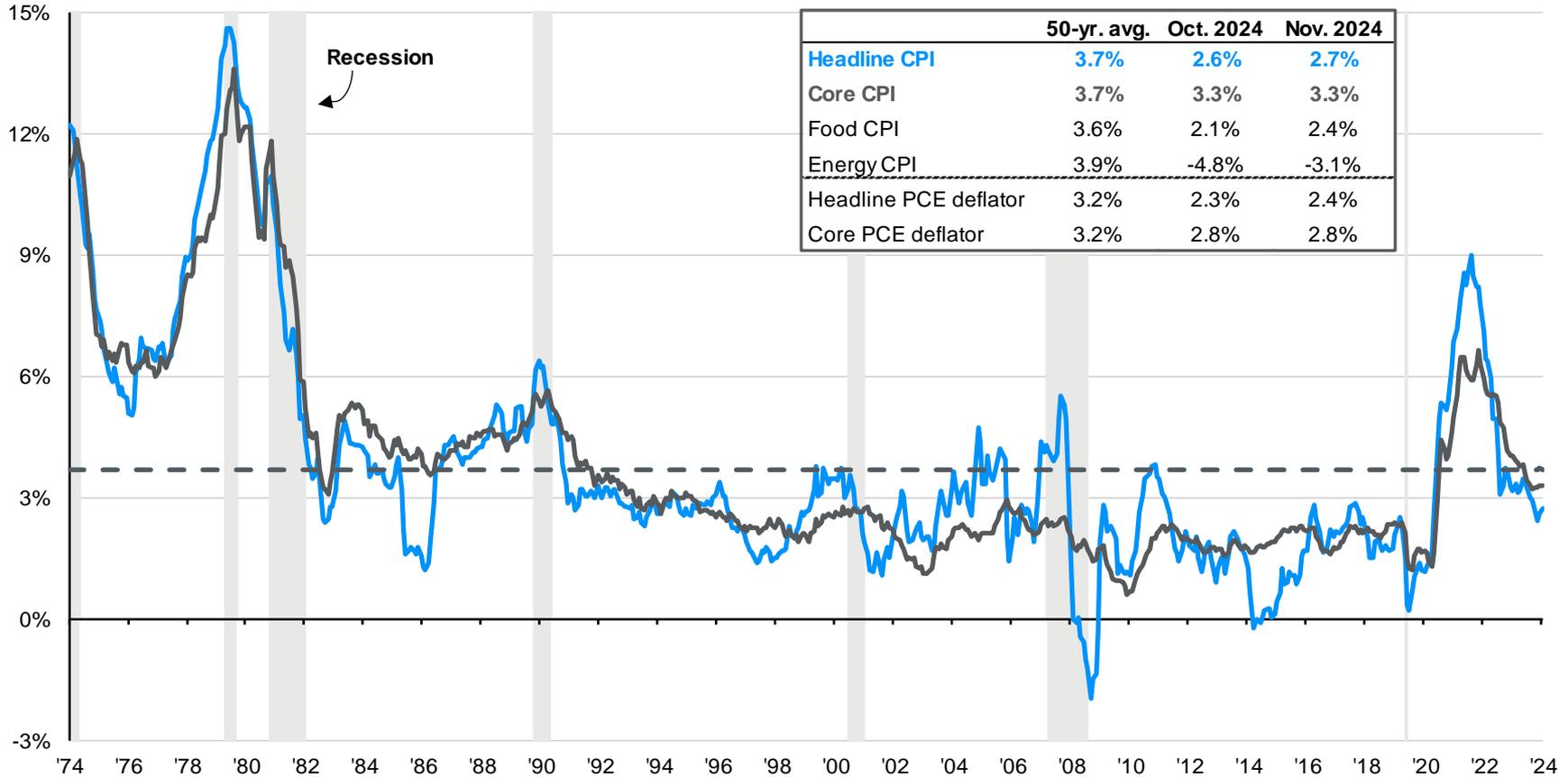
Source: BLS, CBO, FactSet, J.P. Morgan Asset Management.
 *Projections are from the Congressional Budget Office (CBO) Demographic Outlook: 2024 to 2054.
 Guide to the Markets – U.S. Data are as of December 31, 2024.



Inflation

CPI and core CPI

% change vs. prior year, seasonally adjusted



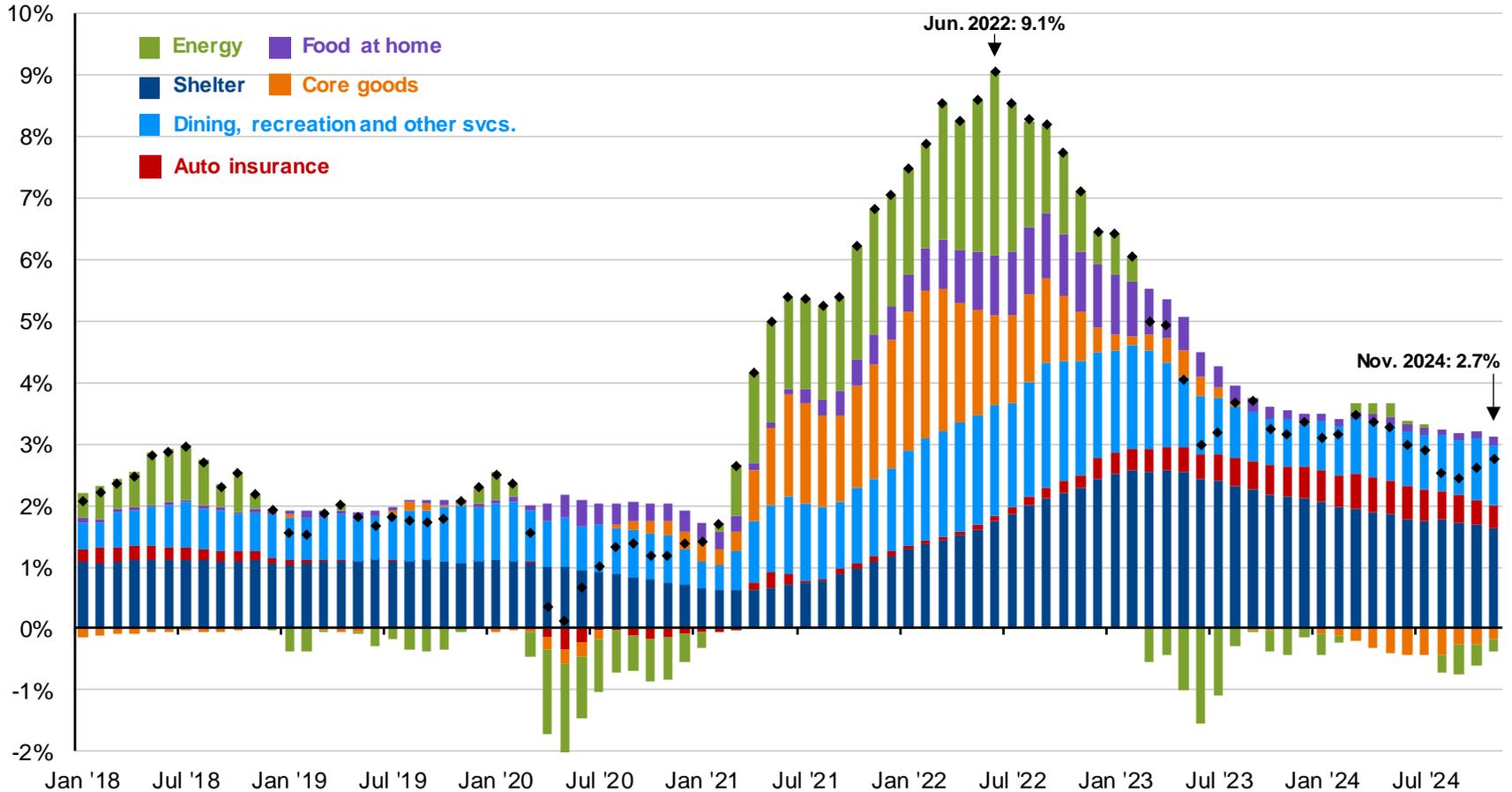
Source: BLS, FactSet, J.P. Morgan Asset Management.
 CPI used is CPI-U and values shown are % change vs. one year ago. Core CPI is defined as CPI excluding food and energy prices. The Personal Consumption Expenditure (PCE) deflator employs an evolving chain-weighted basket of consumer expenditures instead of the fixed-weight basket used in CPI calculations.
 Guide to the Markets – U.S. Data are as of December 31, 2024.



Inflation components

Contributors to headline CPI inflation

Contribution to y/y % change in CPI, non-seasonally adjusted



Source: BLS, FactSet, J.P. Morgan Asset Management. Contributions mirror the BLS methodology on Table 7 of the CPI report. Values may not sum to headline CPI figures due to rounding and underlying calculations. "Shelter" includes owners' equivalent rent, rent of primary residence and home insurance. "Food at home" includes alcoholic beverages. Guide to the Markets - U.S. Data are as of December 31, 2024.



Oil markets

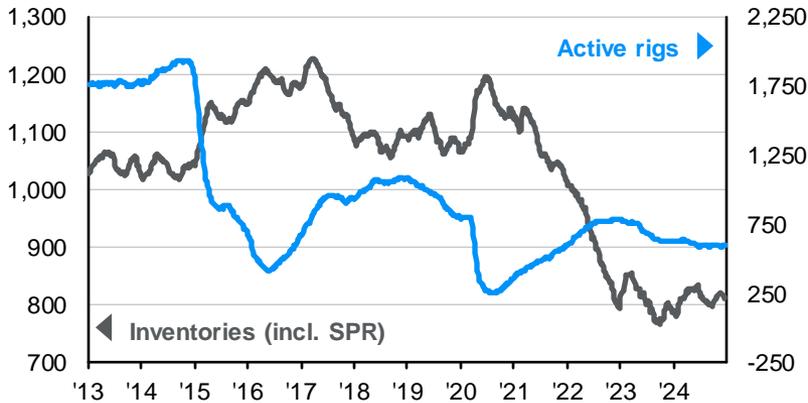
Change in production and consumption of liquid fuels

Production, consumption and inventories, millions of barrels per day

Production	'19	'20	'21	'22	'23	'24*	'25*	'19-'25
U.S.	19.5	18.6	19.0	20.4	22.0	22.7	23.1	18.1%
OPEC	33.1	29.4	30.4	32.9	32.2	32.1	32.2	-2.6%
Russia	11.5	10.5	10.8	11.0	10.9	10.5	10.5	-8.7%
Global	100.2	93.8	95.7	100.2	102.0	102.6	104.2	4.0%
Consumption	'19	'20	'21	'22	'23	'24*	'25*	'19-'25
U.S.	20.5	18.2	19.9	20.0	20.3	20.3	20.5	0.0%
China	14.0	14.4	15.5	15.4	16.4	16.5	16.7	19.5%
India	4.9	4.5	4.7	5.1	5.3	5.5	5.8	18.3%
Global	100.9	91.7	97.6	100.0	102.1	103.0	104.3	3.4%
Inventory Change	'19	'20	'21	'22	'23	'24*	'25*	'19-'25
	-0.6	2.1	-1.8	0.1	-0.1	-0.4	-0.1	

U.S. crude oil inventories and rig count**

Million barrels, number of active rigs



Price of oil

WTI crude, nominal prices, USD/barrel



Source: J.P. Morgan Asset Management; (Top and bottom left) EIA; (Right) FactSet; (Bottom left) Baker Hughes.

*Forecasts are from the December 2024 EIA Short-Term Energy Outlook and start in 2024. **U.S. crude oil inventories include the Strategic Petroleum Reserve (SPR). Liquid fuels include crude oil, natural gas, biodiesel and fuel ethanol. Active rig count includes both natural gas and oil rigs. WTI crude prices are continuous contract NYM prices in USD.

Guide to the Markets – U.S. Data are as of December 31, 2024.

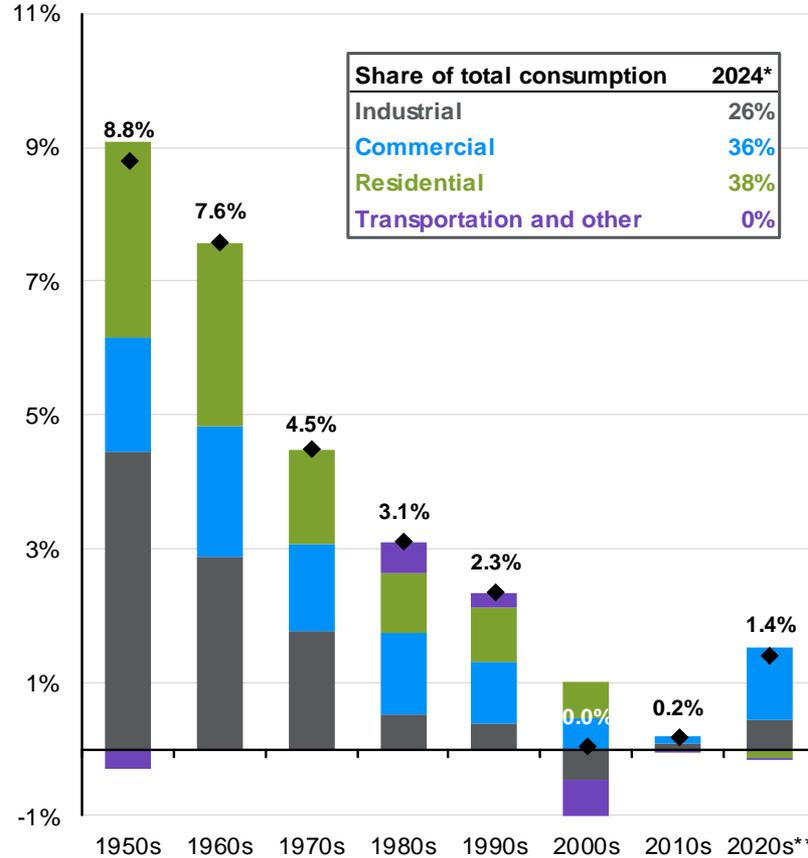


Electricity consumption

Economy

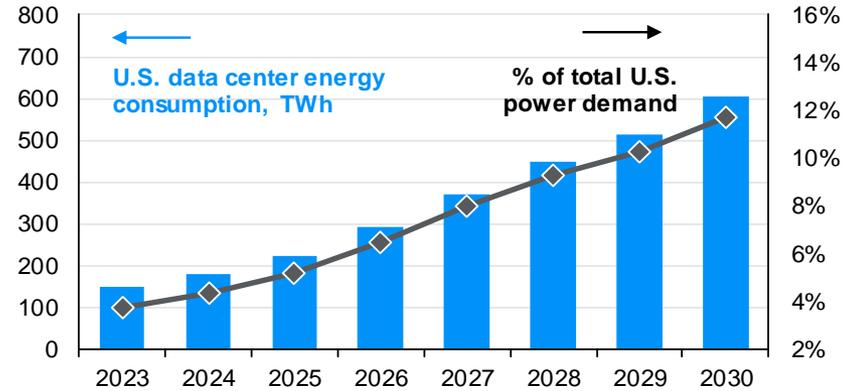
U.S. electricity consumption growth

10yr ann. growth rate, retail sales to major end-use sectors



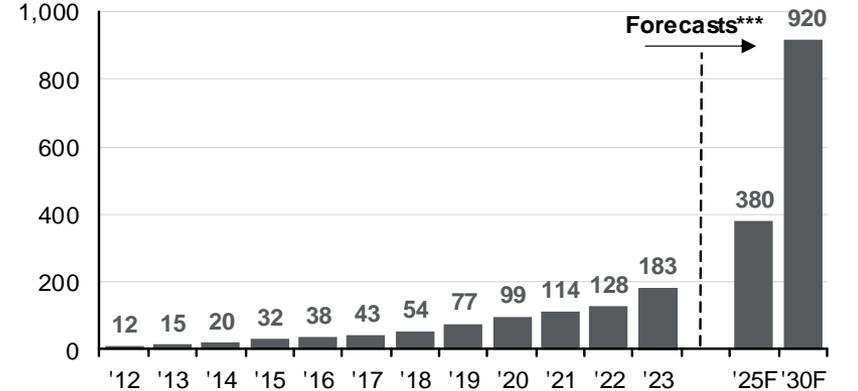
Data center expected growth in electricity demand

U.S. data center energy consumption, projections through 2030



Number of electric vehicle charging points in the U.S.

Thousands



Source: J.P. Morgan Asset Management; (Left and bottom right) EIA; (Top right) McKinsey & Company. The transportation, industrial, residential and commercial sectors are called end-use sectors because they consume electricity produced by and purchased from the electric power sector. The industrial sector primarily uses electricity to operate machinery and facilities (i.e. heat processing, cooling); the commercial sector primarily uses electricity for computers and office equipment, space heating, air conditioning and lighting; and residential usage is concentrated in air conditioning. Petroleum is the main U.S. transportation energy source, and electric vehicles are included in this data. End-use sector contribution to total consumption growth is calculated by taking each sector's annualized consumption growth multiplied by its average share of total consumption for each decade. *Calculations are based on year-to-date data through October 2024. **2020s electricity consumption growth is calculated through year-end 2023. Due to data availability, consumption growth for the 1950s is calculated from 12/31/1950 to 12/31/1959. ***Forecasts are from the International Energy Agency (IEA) - Global EV Outlook 2024 and are made assuming its "STEPS" outlook. The State Policies Scenario (STEPS) outlook from the IEA does not assume governments will meet announced policy goals and instead looks at what the IEA considers feasible given current progress. Guide to the Markets - U.S. Data are as of December 31, 2024.



Dollar drivers

The U.S. dollar

U.S. Dollar Index



The U.S. trade balance

Current account balance, % of GDP



Developed markets interest rate differentials

Difference between U.S. and international 10-year yields*



Source: FactSet, J.P. Morgan Asset Management; (Left) ICE; (Top right) BEA; (Bottom right) BIS.

Currencies in the DXY Index are: British pound, Canadian dollar, euro, Japanese yen, Swedish krona and Swiss franc. *Interest rate differential is the difference between the 10-year U.S. Treasury yield and a basket of the 10-year yields of each major trading partner (Australia, Canada, Eurozone, Japan, Sweden, Switzerland and UK). Weights in the basket are calculated using the 10-year average of total government bonds outstanding in each region.

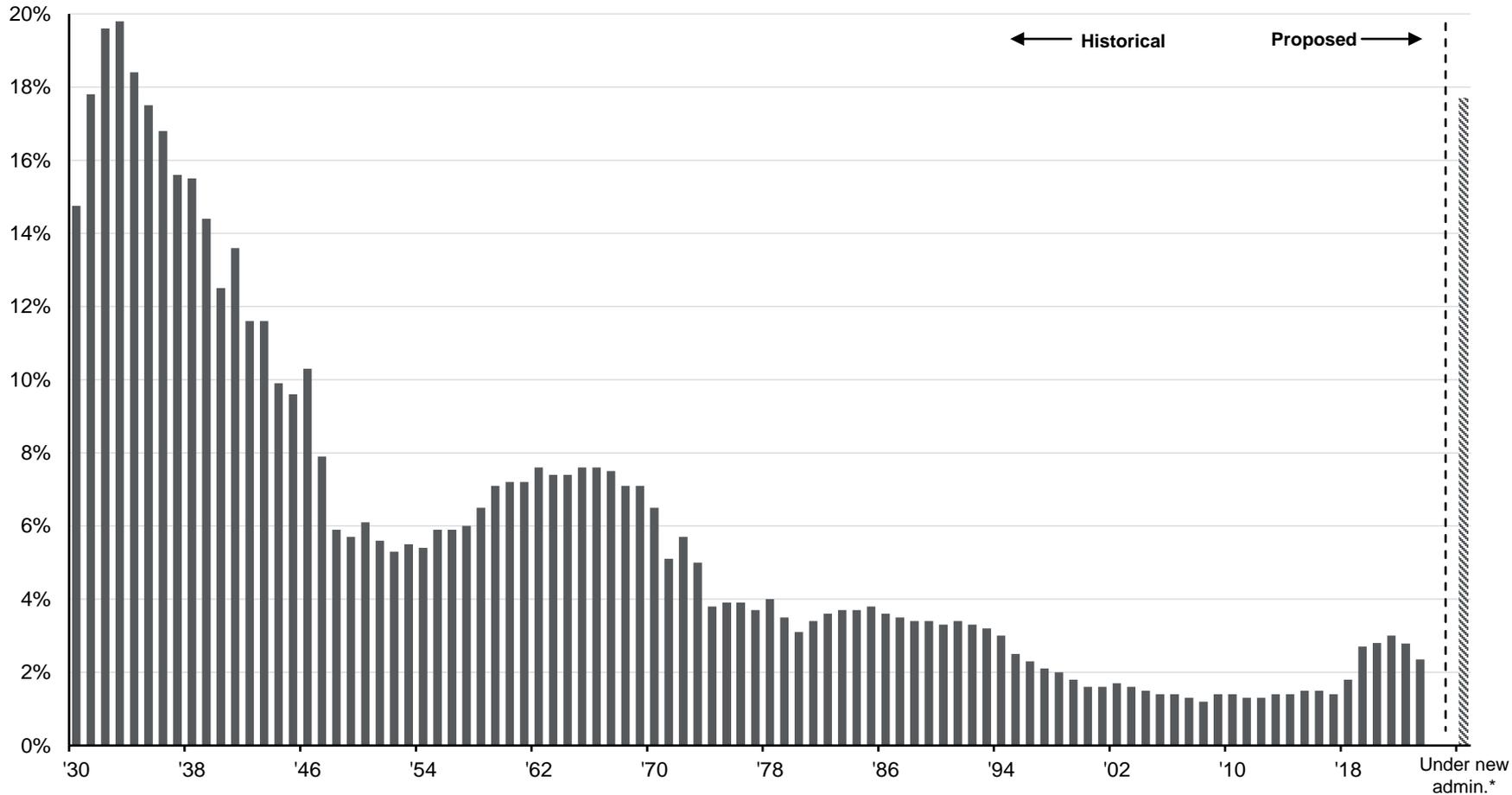
Guide to the Markets – U.S. Data are as of December 31, 2024.



Tariffs on U.S. imports

Average tariff rate on U.S. goods imports for consumption

Duties collected / value of total goods imports for consumption



Source: Tax Foundation, United States International Trade Commission, U.S. Department of Commerce, J.P. Morgan Asset Management. Imports for consumption: goods brought into a country for direct use or sale in the domestic market. *Estimate is by the Tax Foundation as of October 2024 and assumes a 20% universal tariff as well as a 60% tariff on Chinese imports. May not be updated as of the latest announcements regarding tariffs and U.S. trade policy and is subject to change. Forecasts are based on current data and assumptions about future economic conditions. Actual results may differ materially due to changes in economic, market and other conditions. *Guide to the Markets – U.S.* Data are as of December 31, 2024.

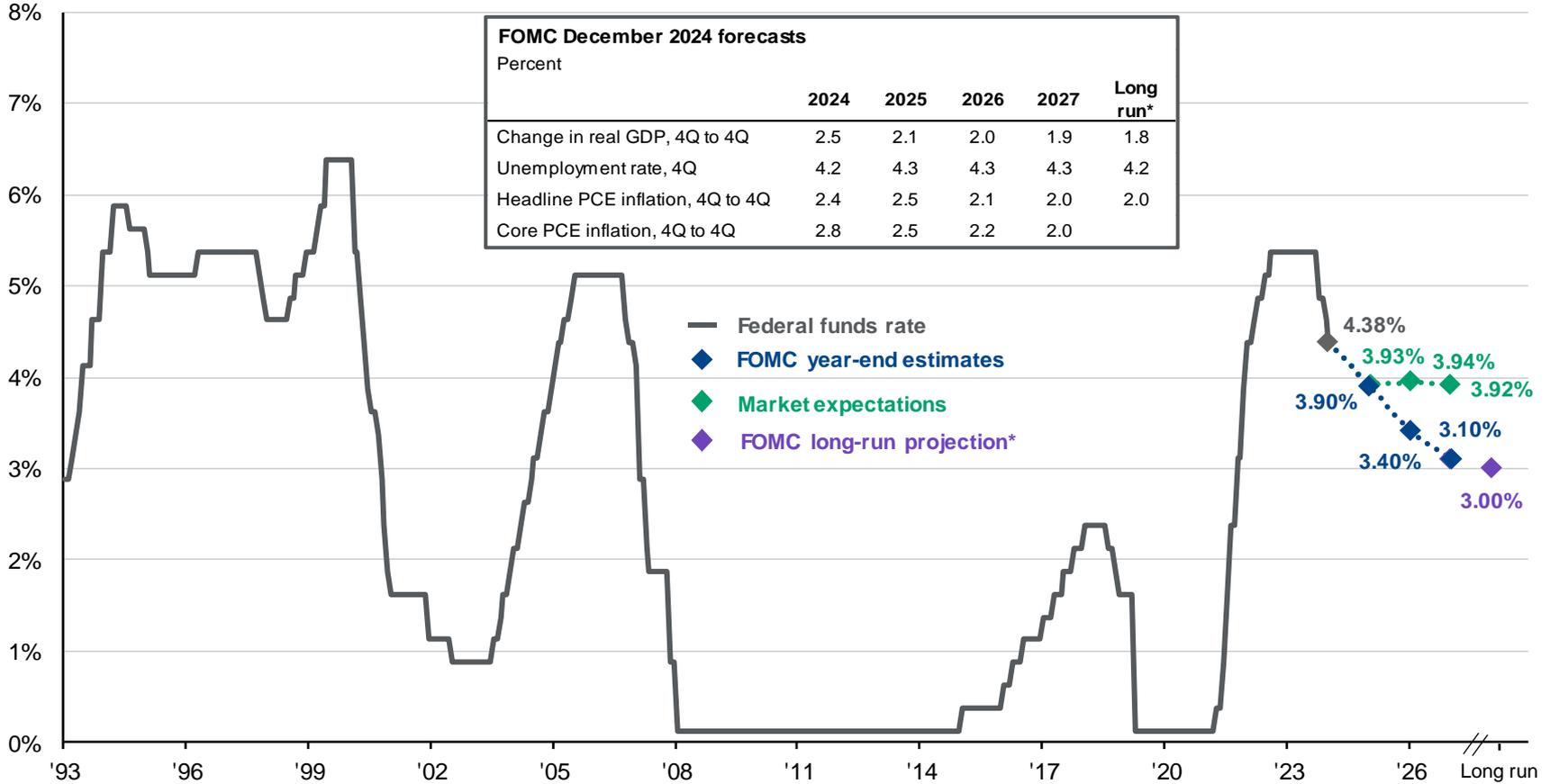


The Fed and interest rates

Fixed Income

Federal funds rate expectations

FOMC and market expectations for the federal funds rate



Source: Bloomberg, FactSet, Federal Reserve, J.P. Morgan Asset Management.

Market expectations are based off of USD Overnight Index Swaps. *Long-run projections are the rates of growth, unemployment and inflation to which a policymaker expects the economy to converge over the next five to six years in absence of further shocks and under appropriate monetary policy. Forecasts are not a reliable indicator of future performance. Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Given the inherent uncertainties and risks associated with forecasts, projections or other forward-looking statements, actual events, results or performance may differ materially from those reflected or contemplated. *Guide to the Markets – U.S.* Data are as of December 31, 2024.

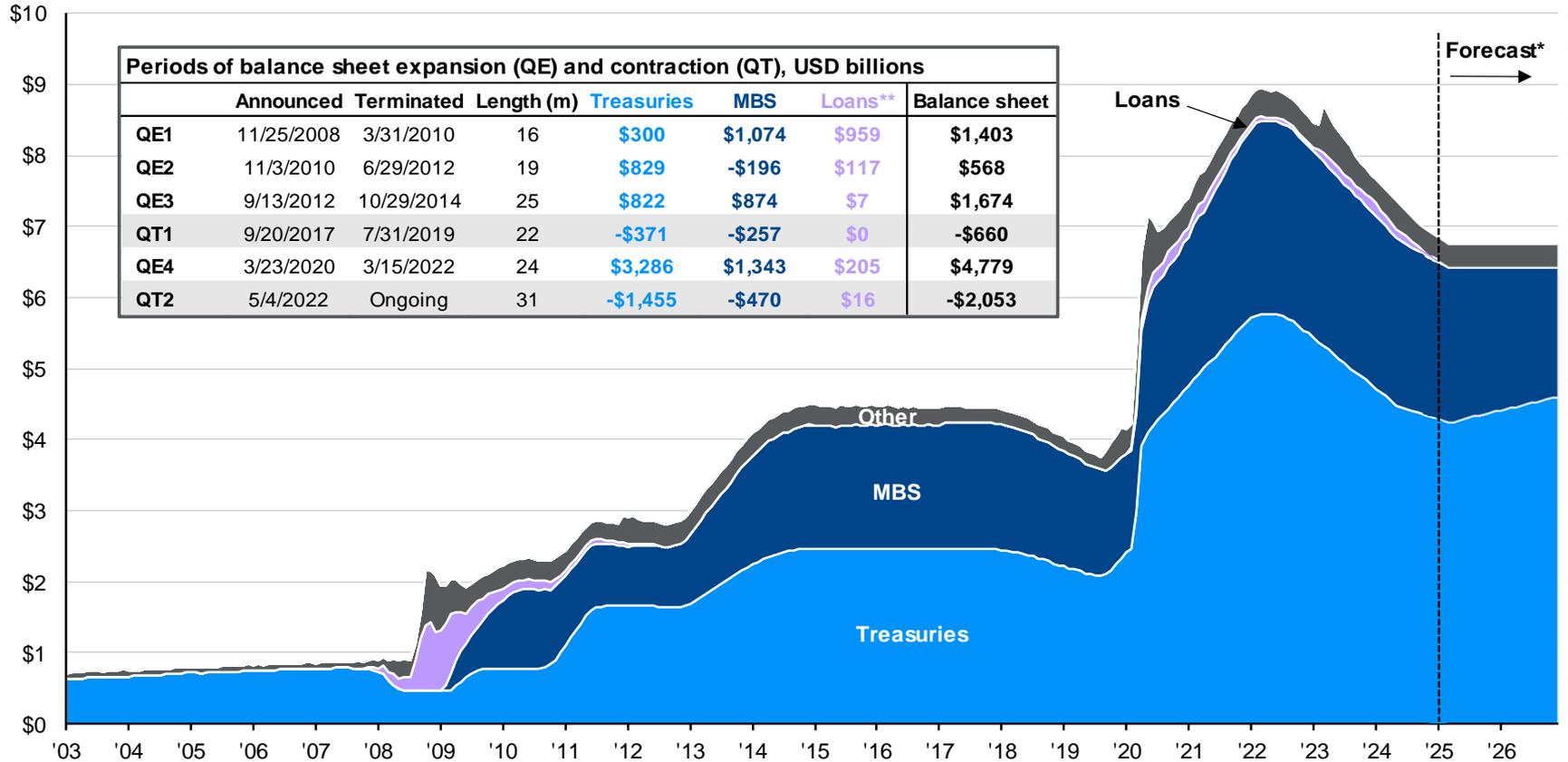


The Federal Reserve balance sheet

Fixed Income

The Federal Reserve balance sheet

USD trillions



Source: FactSet, Federal Reserve, J.P. Morgan Investment Bank, J.P. Morgan Asset Management.

Total Fed assets represents total assets on the Federal Reserve's balance sheet excluding eliminations from consolidation. *The Federal Reserve began balance sheet run-off (quantitative tightening) in June 2022. Beginning in June 2024, the committee slowed the pace of QT to a cap of \$25bn for Treasuries and \$35bn for MBS. The forecast assumes this pace is maintained through March 2025. Thereafter, we assume the committee will conclude QT and purchase securities in the amount to keep the balance sheet level. We also assume the committee will allow MBS securities to continue to mature and reinvest maturing MBS and Treasuries into Treasury only securities to maintain a stable balance sheet. The forecast does not include the active selling of securities from the committee. **Loans include liquidity and credit extended through facilities established as a result of a financial or systemic crisis. Loan amount in the table represents the peak facility usage on the Fed's balance sheet during the defined periods of quantitative easing, the minimum facility usage during periods of quantitative tightening and facility usage at the most recent month-end for the current period. Other includes primary, secondary and seasonal loans, other credit extensions, repurchase agreements, foreign currency reserves, liquidity swaps, gold and other assets. Forecasts are not a reliable indicator of future performance. Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and serve as an indication of what may occur. Analysis is based on month-end data.

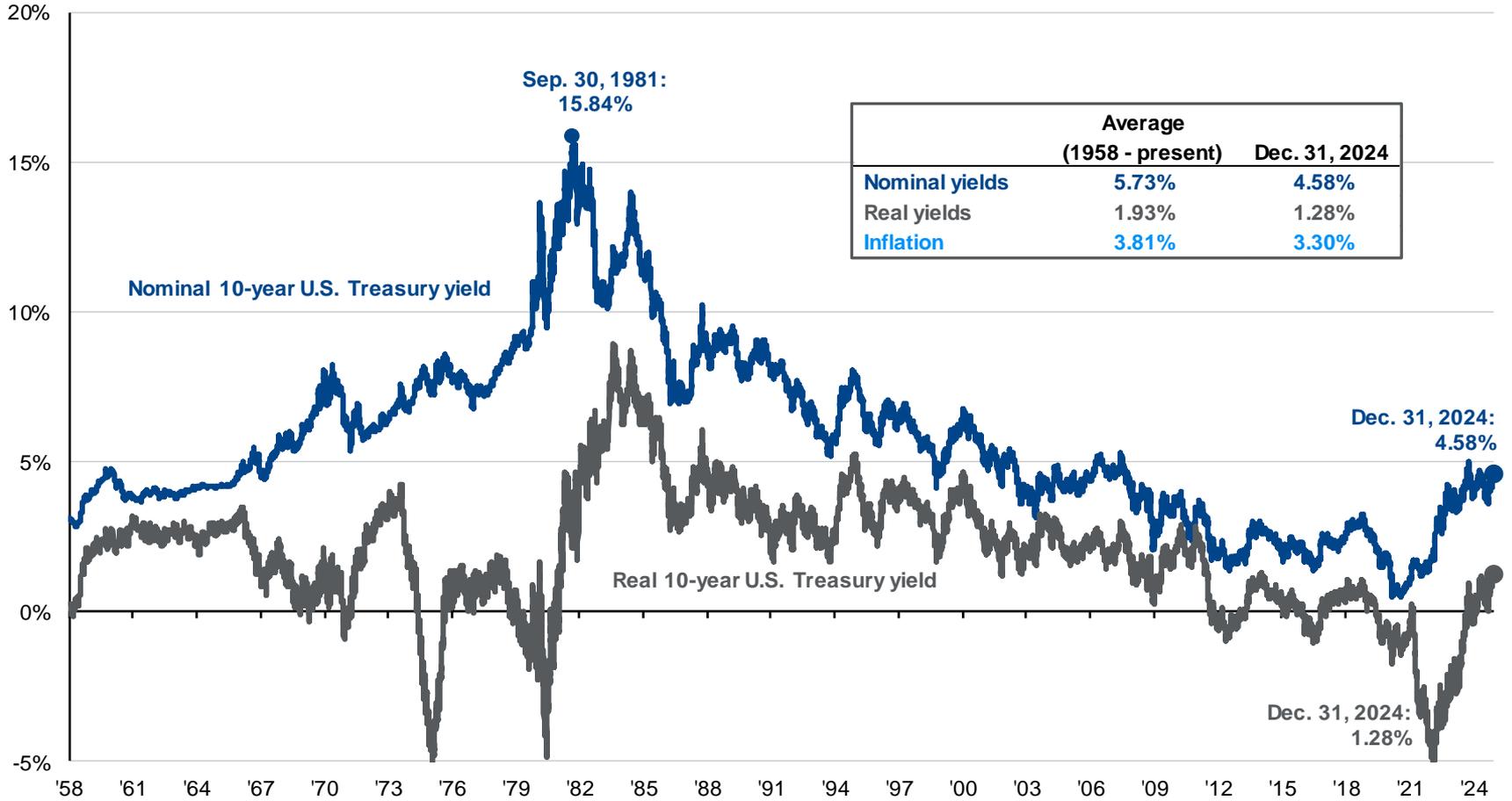
Guide to the Markets - U.S. Data are as of December 31, 2024.



Interest rates and inflation

Fixed Income

Nominal and real U.S. 10-year Treasury yields



Source: BLS, FactSet, Federal Reserve, J.P. Morgan Asset Management.

Real 10-year Treasury yields are calculated as the daily Treasury yield less year-over-year core CPI inflation for that month. For the current month, we use the prior month's core CPI figures until the latest data are available.

Guide to the Markets – U.S. Data are as of December 31, 2024.



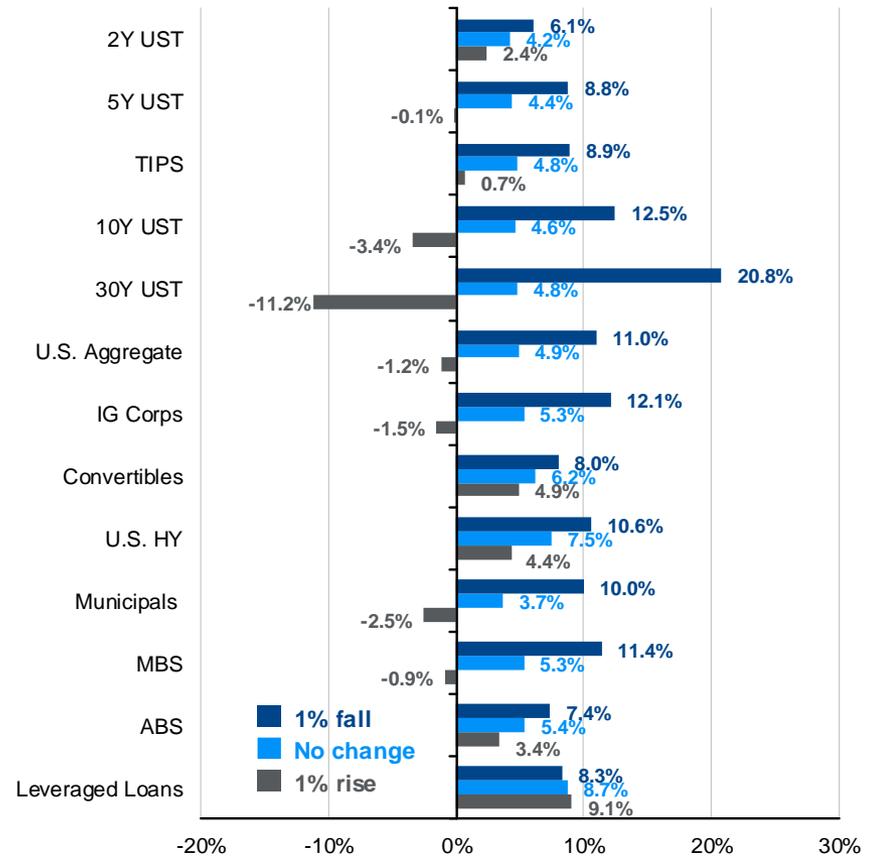
Fixed income market dynamics

Fixed Income

U.S. Treasuries	Yield		Return	Avg. Maturity	Correlation to 10-year	Correlation to S&P 500
	12/31/2024	12/31/2023	2024			
2-Year	4.25%	4.23%	3.79%	2 years	0.75	0.00
5-Year	4.38%	3.84%	1.19%	5	0.94	-0.02
TIPS	2.13%	1.72%	1.84%	7.1	0.73	0.33
10-Year	4.58%	3.88%	-1.73%	10	1.00	-0.07
30-Year	4.78%	4.03%	-8.09%	30	0.93	-0.11
Sector						
U.S. Aggregate	4.91%	4.53%	1.25%	8.4	0.90	0.25
IG Corps	5.33%	5.06%	2.13%	10.5	0.69	0.47
Convertibles	6.22%	7.26%	10.95%	-	-0.04	0.86
U.S. HY	7.49%	7.59%	8.19%	4.7	0.09	0.79
Municipals	3.74%	3.22%	1.05%	13.6	0.74	0.26
MBS	5.27%	4.68%	1.20%	7.8	0.81	0.26
ABS	5.38%	5.65%	6.81%	2.3	0.42	0.22
Leveraged Loans	8.68%	10.59%	9.33%	4.7	-0.22	0.62

Fixed income returns in different interest rate scenarios

Total return, assumes a parallel shift in the yield curve



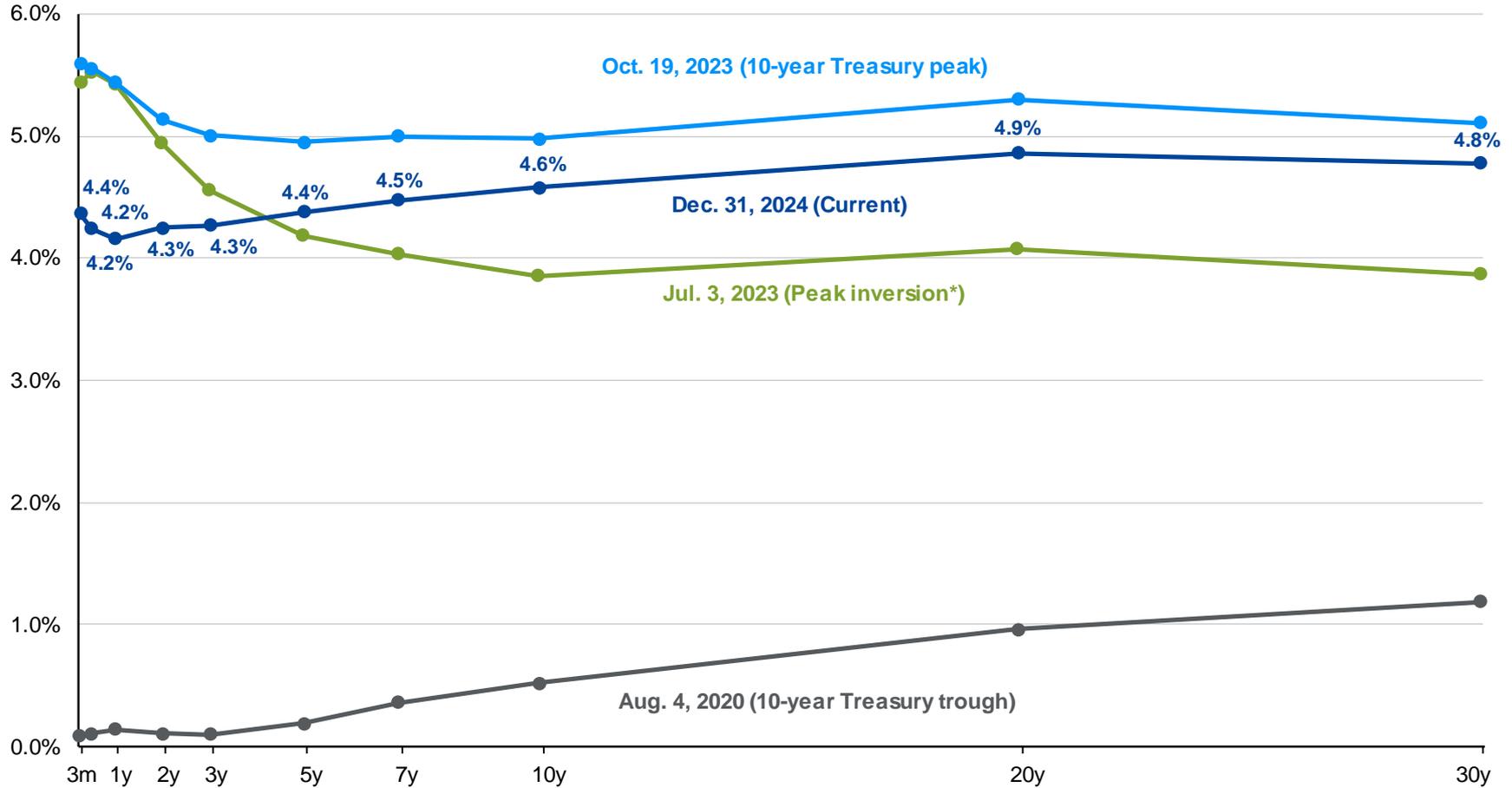
Source: Bloomberg, FactSet, Federal Reserve Bank of Cleveland, Standard & Poor's, U.S. Treasury, J.P. Morgan Asset Management. Sectors shown above are provided by Bloomberg unless otherwise noted and are represented by – U.S. Aggregate; MBS: U.S. Aggregate Securitized - MBS; ABS: J.P. Morgan ABS Index; IG Corporates: U.S. Corporates; Municipals: Muni Bond; High Yield: Corporate High Yield; Leveraged Loans: J.P. Morgan Leveraged Loan Index; TIPS: Treasury Inflation-Protected Securities; Convertibles: U.S. Convertibles Composite. Convertibles yield is as of most recent month-end and is based on U.S. portion of Bloomberg Global Convertibles Index. Yield and return information based on bellwethers for Treasury securities. Yields shown for TIPS are real yields. TIPS returns consider the impact that inflation could have on returns by assuming the Cleveland Fed's 1-year inflation expectation forecasts are realized. Sector yields reflect yield-to-worst. Leveraged loan yields reflect the yield to 3Y takeout. Correlations are based on 15-years of monthly returns for all sectors. ABS returns prior to June 2012 are sourced from Bloomberg. Past performance is not indicative of future results.
 Guide to the Markets – U.S. Data as of December 31, 2024.



Yield curve

Fixed Income

U.S. Treasury yield curve



Source: FactSet, Federal Reserve, J.P. Morgan Asset Management. Analysis references data back to 2020. *Peak inversion is measured by the spread between the yield on a 10-year Treasury and 2-year Treasury.
 Guide to the Markets – U.S. Data are as of December 31, 2024.

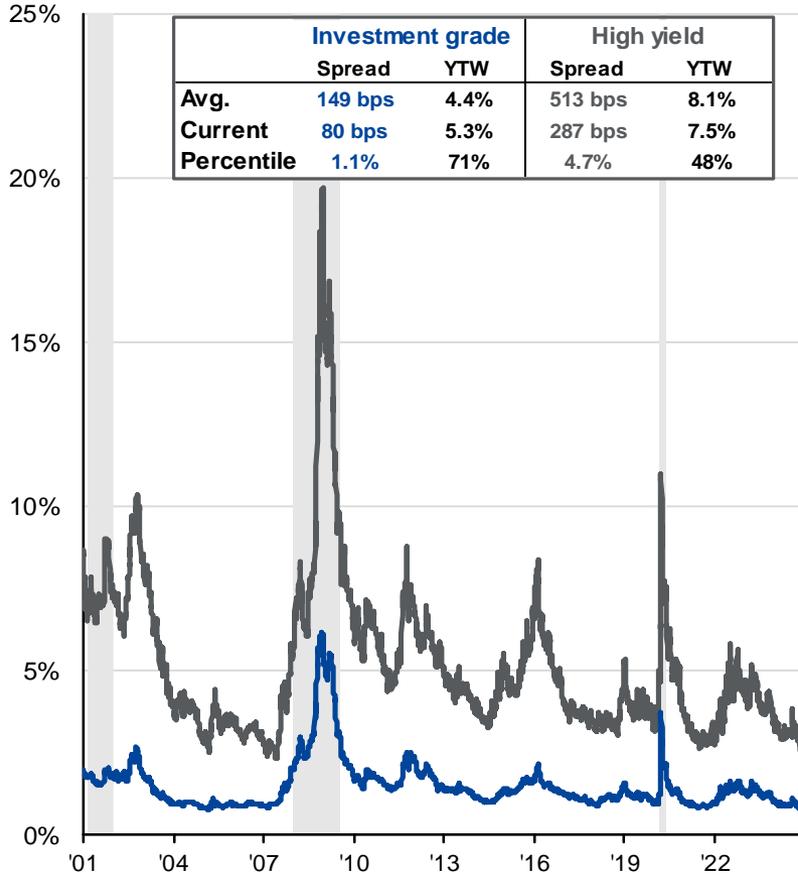


Credit market dynamics

Fixed Income

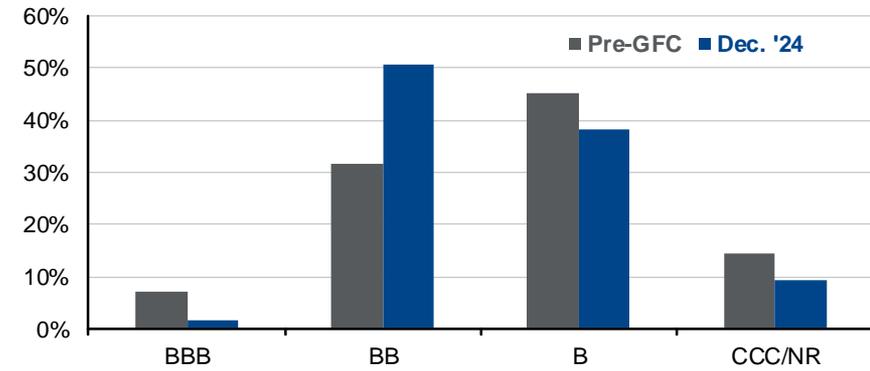
Corporate credit spreads

Option-adjusted spread, 2001 - present



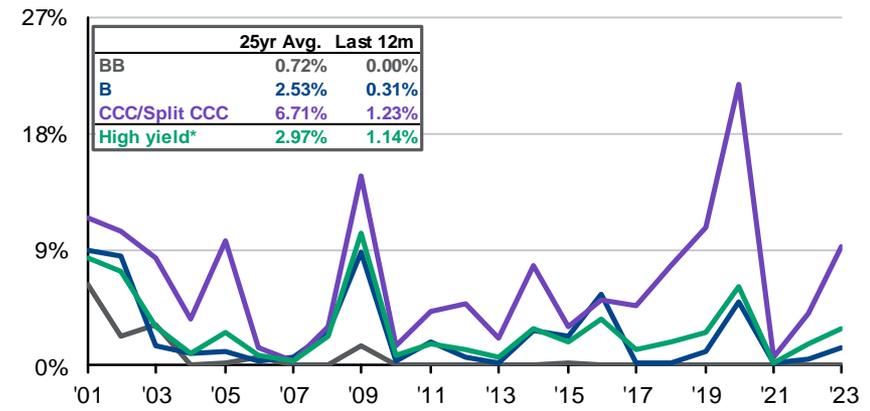
U.S. high yield by credit rating

%, J.P. Morgan Domestic High Yield Index



U.S. high yield default rates

By credit rating



Source: Bloomberg, J.P. Morgan Research, J.P. Morgan Asset Management.

(Left): U.S. Investment Grade: Bloomberg U.S. Corporate Investment Grade Index; U.S. High Yield: Bloomberg U.S. Aggregate Corporate High Yield Index. (Right): Last 12-month default rates are as of most recent month for which data are available. Default rates shown by crediting rating do not include distressed exchanges and are grouped by rating 12 months prior to default. Bond ratings include distressed split ratings. "NR" stands for not rated. Pre-GFC reflects data as of December 2007. *Aggregate high yield default rate data do include distressed exchanges.

Guide to the Markets – U.S. Data are as of December 31, 2024.

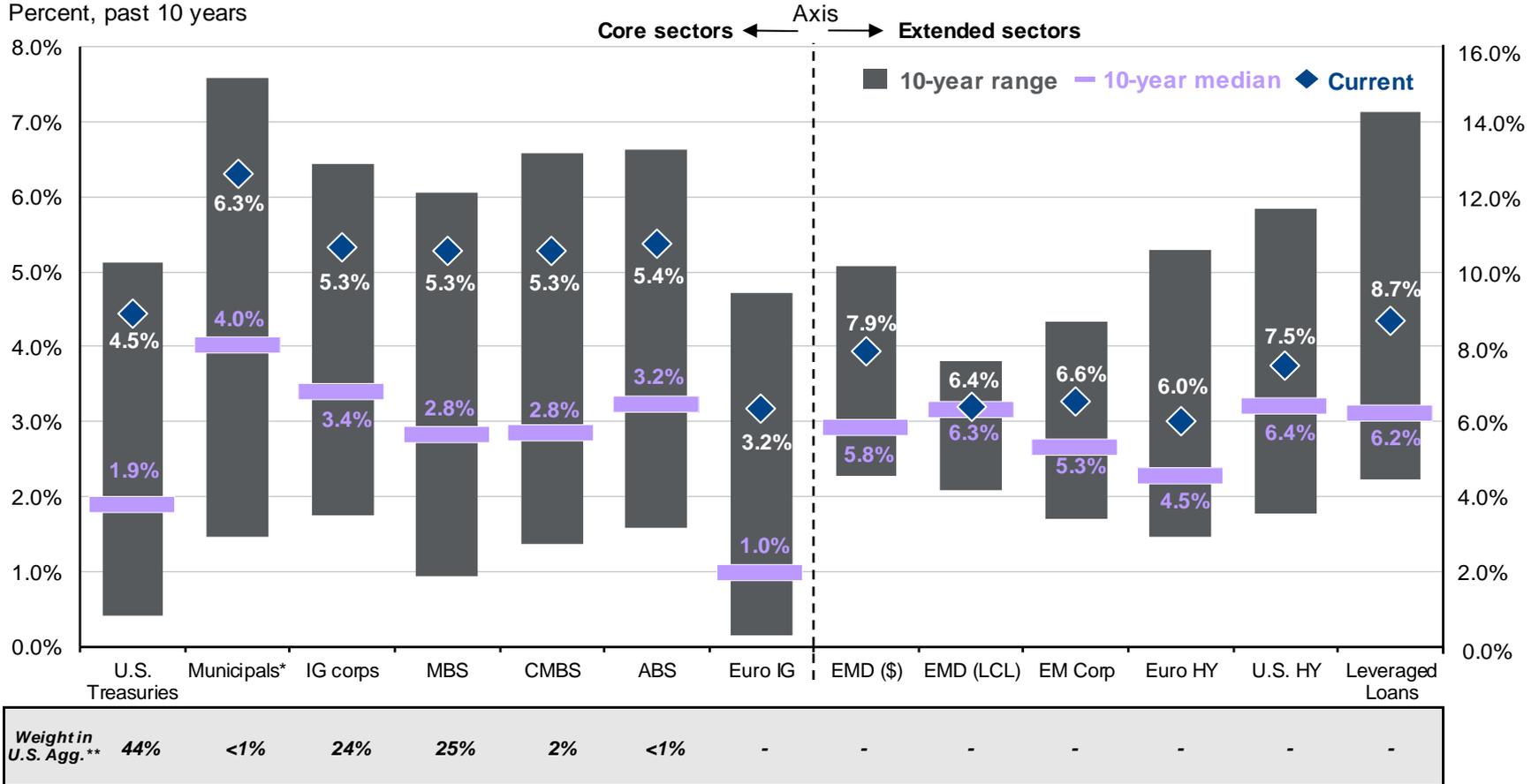


Fixed income yields

Fixed Income

Yield-to-worst across fixed income sectors

Percent, past 10 years



Source: Bloomberg, FactSet, J.P. Morgan Credit Research, J.P. Morgan Asset Management

Indices used are Bloomberg except for ABS, emerging market debt and leveraged loans: ABS: J.P. Morgan ABS Index; CMBS: Bloomberg Investment Grade CMBS Index; EMD (USD): J.P. Morgan EMIGLOBAL Diversified Index; EMD (LCL): J.P. Morgan GBI-EM Global Diversified Index; EM Corp.: J.P. Morgan CEMBI Broad Diversified; Leveraged Loans: JPM Leveraged Loan Index; Euro IG: Bloomberg Euro Aggregate Corporate Index; Euro HY: Bloomberg Pan-European High Yield Index. Yield-to-worst is the lowest possible yield that can be received on a bond apart from the company defaulting and considers factors like call provisions, prepayments and other features that may affect the bonds' cash flows. *All sectors shown are yield-to-worst except for Municipals, which is based on the tax-equivalent yield-to-worst assuming a top-income tax bracket rate of 37% plus a Medicare tax rate of 3.8%. **Sectors shown may not exactly match all sectors represented in the Bloomberg U.S. Aggregate Index. Sector level weights are shown, and index constituents may not match.

Guide to the Markets – U.S. Data are as of December 31, 2024.



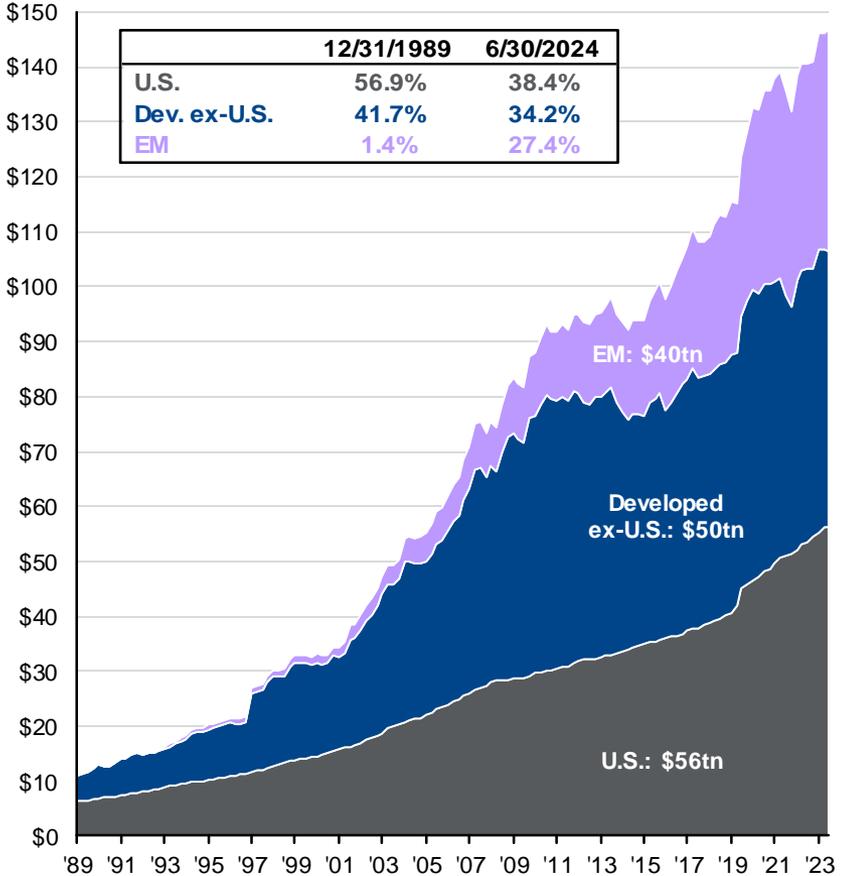
Global fixed income

Fixed Income

Aggregates	Yield		2024 Return		Duration	Correlation to U.S. 10yr
	12/31/2024	12/31/2023	Local	USD		
U.S.	4.91%	4.53%	1.25%	1.25%	6.1 years	0.92
Gbl. ex-U.S.	2.85%	2.87%	-	-3.53%	6.9	0.67
Japan	1.26%	0.76%	-2.37%	-12.42%	8.9	0.69
Germany	2.70%	2.73%	2.59%	-3.83%	6.2	0.59
UK	4.66%	4.10%	-1.82%	-3.54%	7.7	0.58
Italy	3.11%	3.40%	5.43%	-1.17%	6.2	0.47
China	1.64%	2.62%	8.20%	5.13%	6.2	0.54
Sector						
Euro Corp.	3.18%	3.56%	4.74%	-1.82%	4.4 years	0.45
Euro HY	6.03%	7.35%	9.14%	2.31%	3.2	0.06
EMD (USD)	7.86%	7.84%	-	6.54%	6.0	0.39
EMD (LCL)	6.39%	6.19%	5.35%	-2.38%	5.3	0.29
EM Corp.	6.56%	6.81%	-	7.63%	5.0	0.29

Global bond market

USD trillions



Source: J.P. Morgan Asset Management; (Left) Bloomberg, FactSet; (Right) BIS.
 Fixed income sectors shown above are provided by Bloomberg and are represented by the global aggregate for each country except where noted. EMD sectors are represented by the J.P. Morgan EMBIG Diversified Index (USD), the J.P. Morgan GBI EM Global Diversified Index (LCL) and the J.P. Morgan CEMBI Broad Diversified Index (Corp). European Corporates are represented by the Bloomberg Euro Aggregate Corporate Index and the Bloomberg Pan-European High Yield Index. Sector yields reflect yield-to-worst. Correlations are based on 10-years of monthly returns for all sectors. Past performance is not indicative of future results. Countries included in the emerging market debt calculation are those represented in the J.P. Morgan EMB Index suite for which the BIS has data. Global bond market regional breakdown may not sum to 100% due to rounding.
 Guide to the Markets – U.S. Data are as of December 31, 2024.



Municipal finance

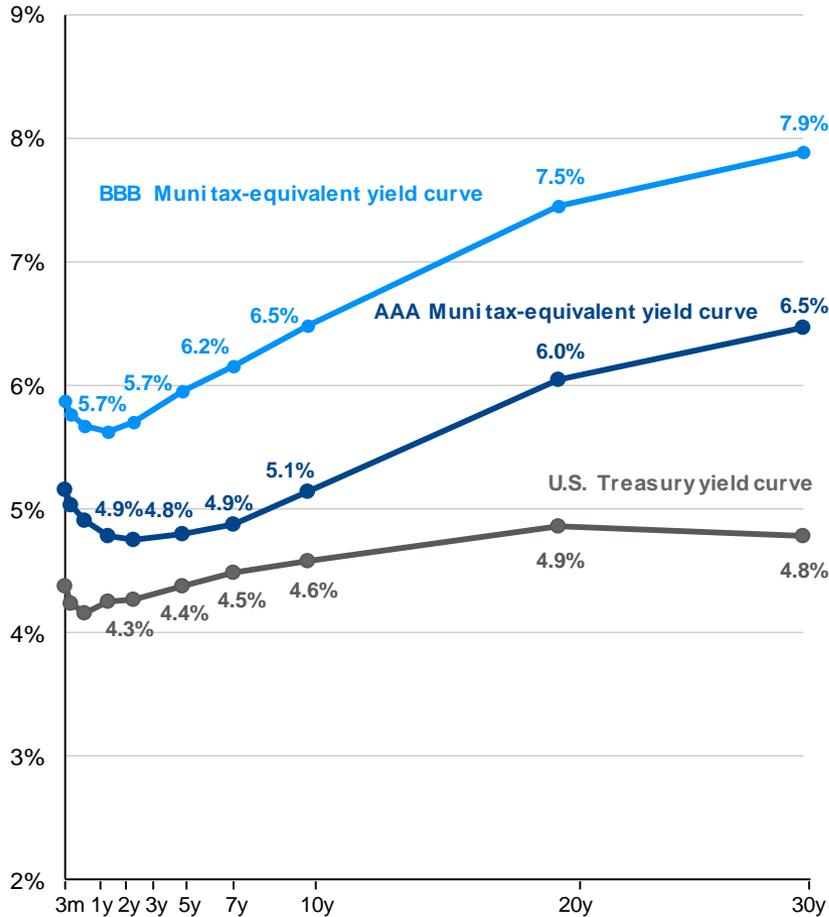
GTM

U.S.

40

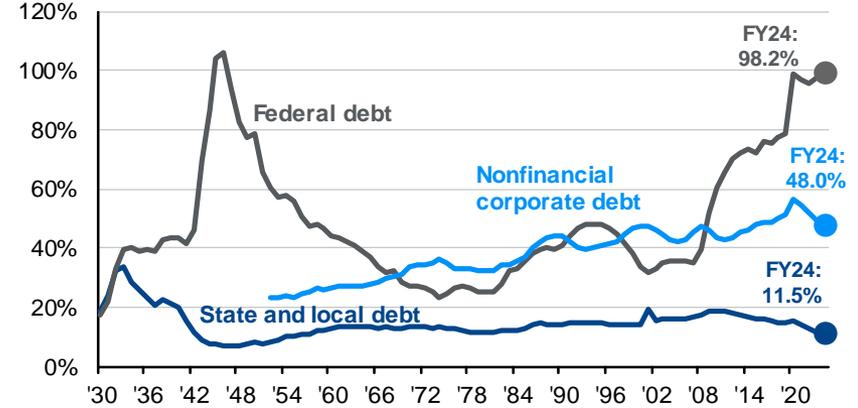
Fixed Income

Muni tax-equivalent and Treasury yield curves



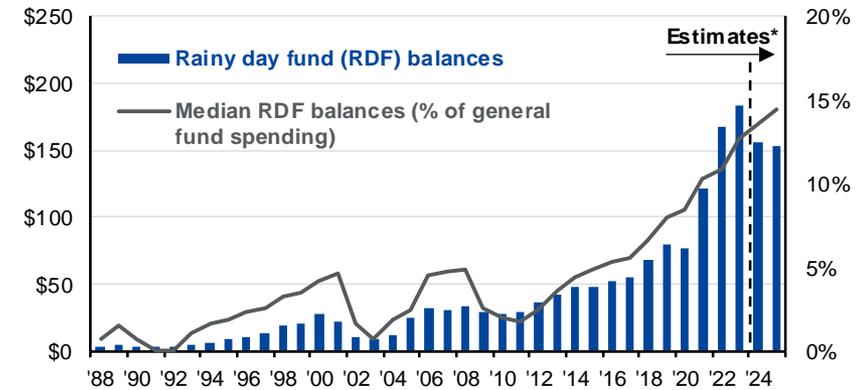
State and local, federal and corporate debt

% of GDP, 1930-2024, end of fiscal year



State Rainy Day Fund balances

USD billions, 1988-2025, fiscal year



Source: J.P. Morgan Asset Management; (Left) Bloomberg, FactSet, Federal Reserve, S&P Global; (Top right) Census Bureau, Congressional Budget Office (CBO), Federal Reserve; (Bottom right) NASBO Fiscal Survey of States Fall 2024. Municipal tax-equivalent yields are calculated based on municipal bond curves for each credit rating according to S&P Global and assume a top-income tax bracket rate of 37% plus a Medicare tax rate of 3.8% for a total tax rate of 40.8%. State and local debt are based on the Census Bureau's Annual Survey of State and Local Government Finances. A rainy day fund, also known as a budget stabilization fund or reserve fund, is a collection of funds that local governments use to prepare for financial emergencies and future stability. *Estimates are sourced from NASBO's Fall 2024 Fiscal Survey of States. Figures for FY 2024 are preliminary while figures for FY 2025 are projected based on states' enacted budgets. *Guide to the Markets* – U.S. Data are as of December 31, 2024.

J.P.Morgan
ASSET MANAGEMENT

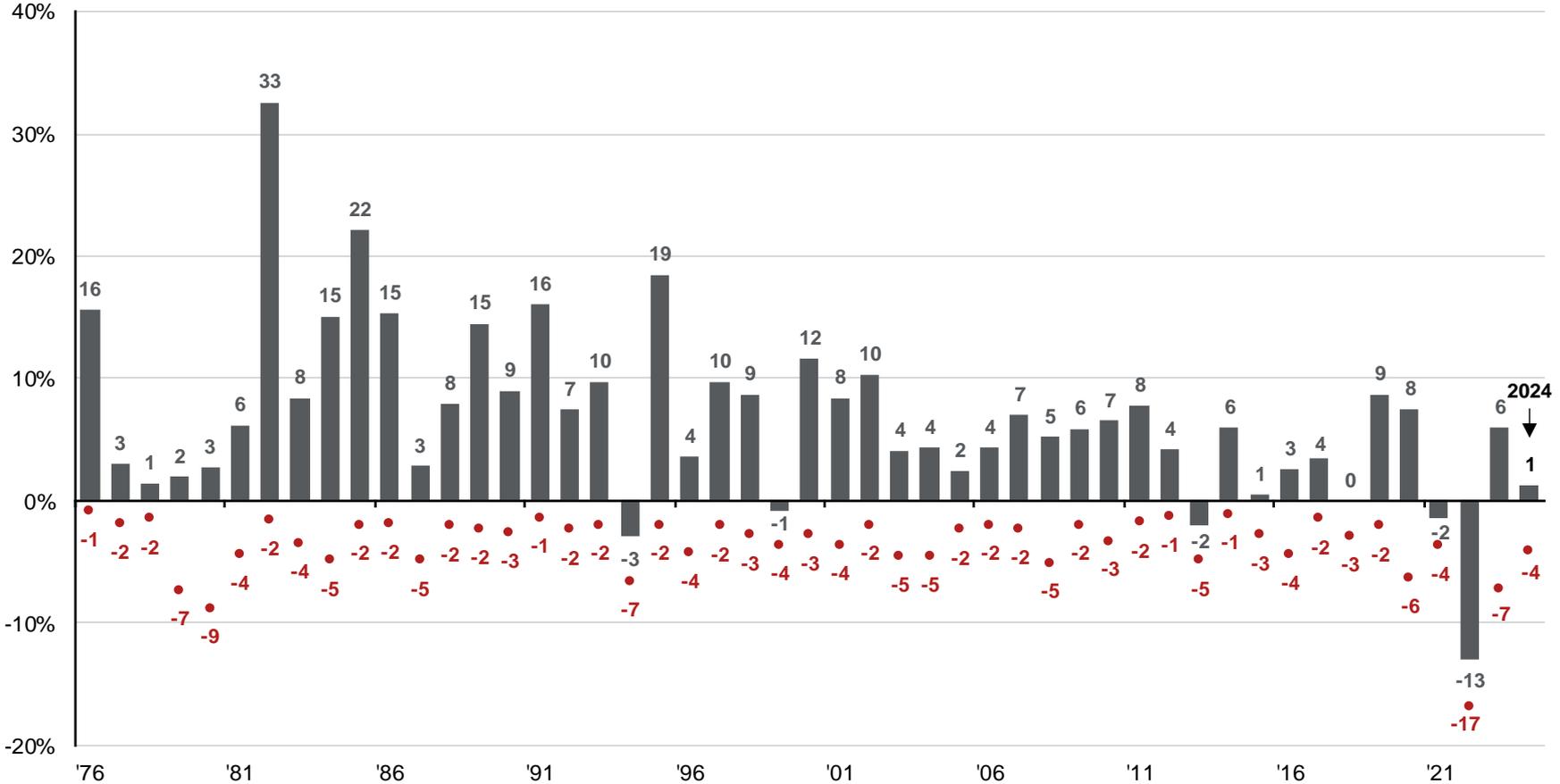


Bloomberg U.S. Agg. annual returns and intra-year declines

Fixed Income

Bloomberg U.S. Aggregate intra-year declines vs. calendar year returns

Despite average intra-year drops of 3.5%, annual returns were positive in 44 of 49 years



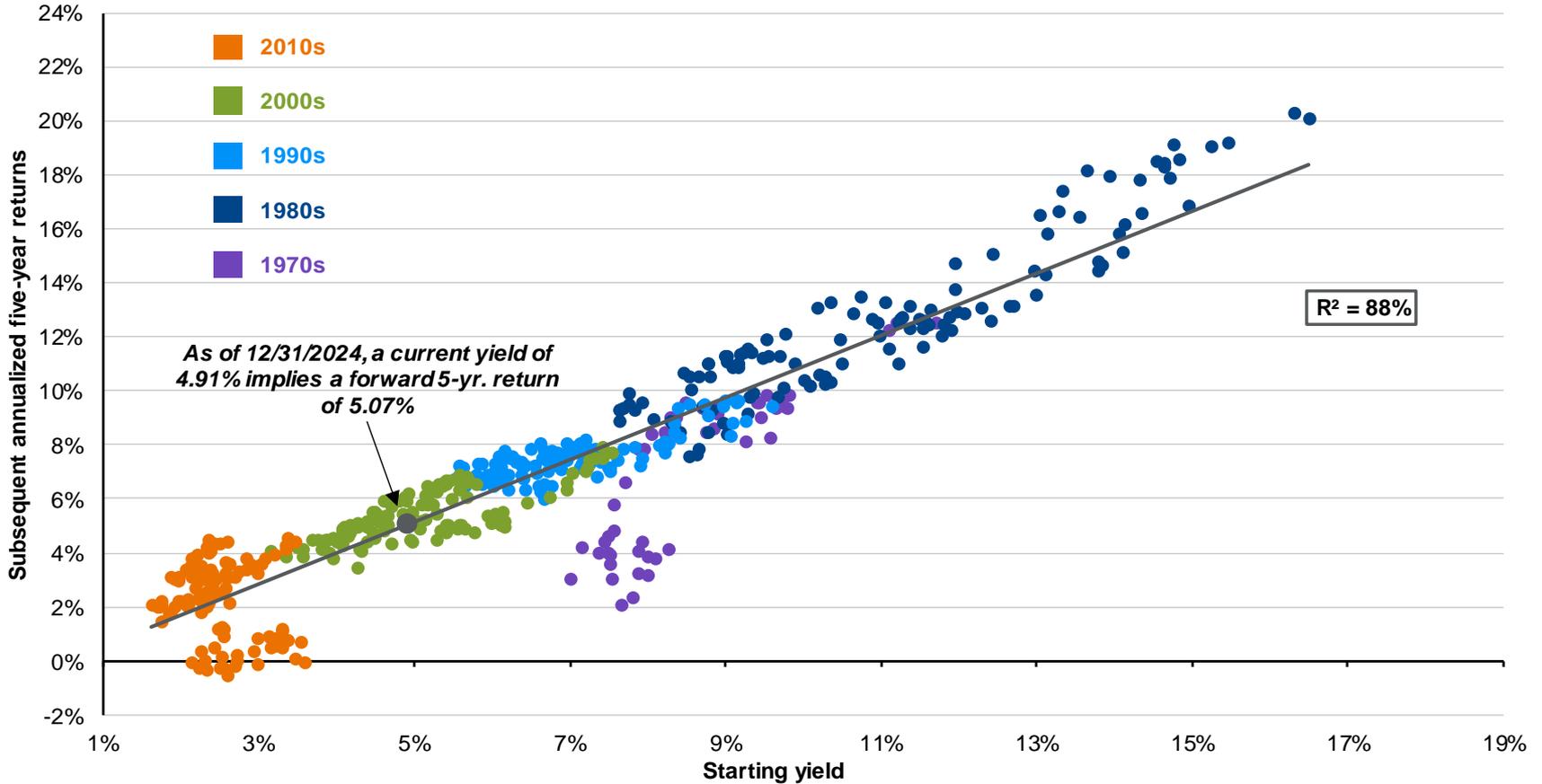
Source: Bloomberg, FactSet, J.P. Morgan Asset Management. Returns are based on total return. Intra-year drops refers to the largest market drops from a peak to a trough during the year. For illustrative purposes only. Returns shown are calendar year returns from 1976 to 2024, over which time period the average annual return was 6.5%. Returns from 1976 to 1989 are calculated on a monthly basis; daily data are used afterward. *Guide to the Markets – U.S.* Data are as of December 31, 2024.



Fixed income yields and forward returns

Yield-to-worst and subsequent 5-year annualized returns

Bloomberg U.S. Aggregate Total Return Index



Source: Bloomberg, FactSet, J.P. Morgan Asset Management. Returns are 60-month annualized total returns, measured monthly, beginning 1/31/1976. R^2 represents the percent of total variation in total returns that can be explained by yields at the start of each period. *Guide to the Markets – U.S.* Data are as of December 31, 2024.



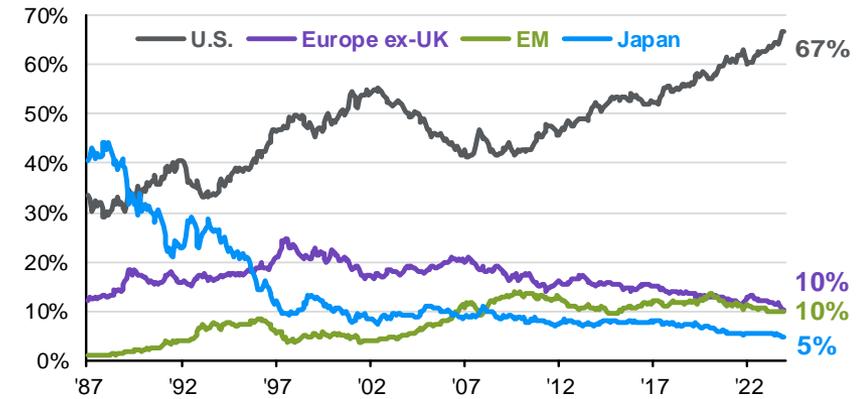
Global equity markets

International

Returns	2024		2023		15-years	
	Local	USD	Local	USD	Ann.	Beta
Regions						
U.S. (S&P 500)	-	25.0	-	26.3	13.9	1.0
AC World ex-U.S.	13.2	6.1	14.7	16.2	5.2	1.0
EAFE	11.8	4.3	16.8	18.9	5.7	1.0
Europe ex-UK	8.1	1.0	17.3	22.7	6.0	1.1
Emerging markets	13.7	8.1	10.3	10.3	3.4	1.0
Selected Countries						
Japan	21.2	8.7	29.0	20.8	6.3	0.8
United Kingdom	9.5	7.5	7.7	14.1	4.9	1.0
France	1.8	-4.6	18.1	22.3	5.8	1.2
Canada	23.0	12.7	13.3	16.4	5.9	1.1
Germany	18.4	11.0	19.8	24.0	5.7	1.3
China	19.8	19.7	-10.6	-11.0	2.5	0.9
Taiwan	44.3	35.1	31.1	31.3	12.0	1.0
India	15.7	12.4	22.0	21.3	6.9	0.9
Brazil	-11.4	-29.5	22.7	33.4	-2.5	1.3

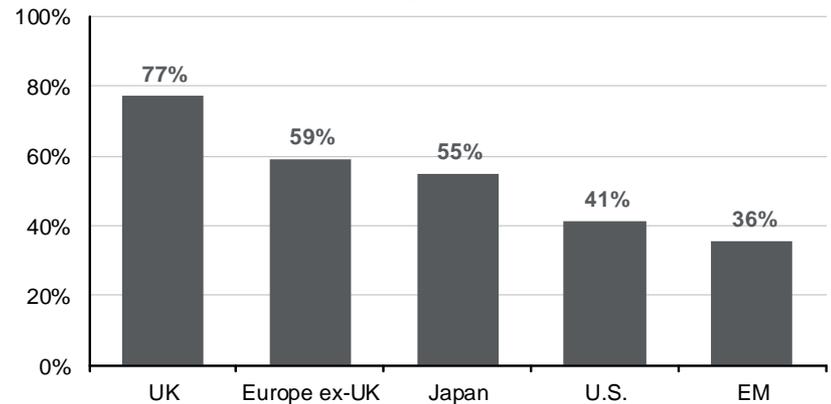
Share of global market capitalization

% weight in the MSCI All Country World Index, USD, monthly



Revenue exposure vs. country of listing

% of total revenue derived from foreign countries



Source: FactSet, MSCI, Standard & Poor's, J.P. Morgan Asset Management. (Left) All return values are MSCI Total Return Index (Gross) data. 15-year history based on USD returns. 15-year return and beta figures are calculated using a rolling 12-month time period ending with the previous month-end. Beta is for monthly returns relative to the MSCI All Country World Index. Annualized volatility is calculated as the standard deviation of quarterly returns multiplied by the square root of four. Chart is for illustrative purposes only. Please see disclosure page for index definitions. Past performance is not a reliable indicator of current and future results. (Bottom right) Revenue exposure data are as of the previous quarter-end. *Guide to the Markets - U.S.* Data are as of December 31, 2024.

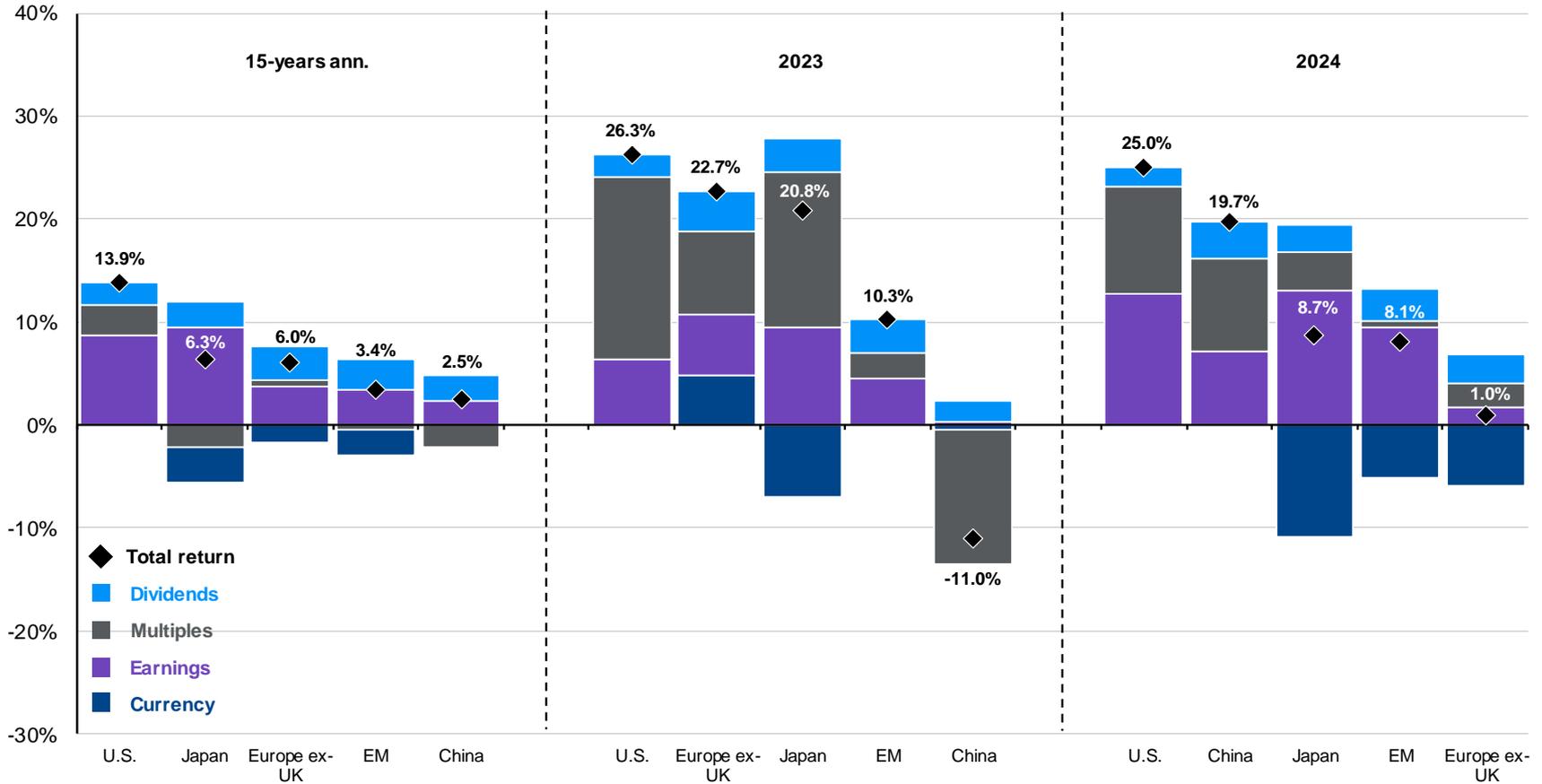


Global equity return composition

International

Sources of global equity returns*

Total return, USD



Source: FactSet, MSCI, Standard & Poor's, J.P. Morgan Asset Management.
 15-years ann. is a rolling 15-year period ending with the previous month-end. All return values are MSCI Gross Index data, except the U.S., which is the S&P 500. *Multiple expansion is based on the forward P/E ratio, and EPS growth outlook is based on NTMA earnings estimates. Chart is for illustrative purposes only. Past performance is not indicative of future results.
 Guide to the Markets – U.S. Data are as of December 31, 2024.

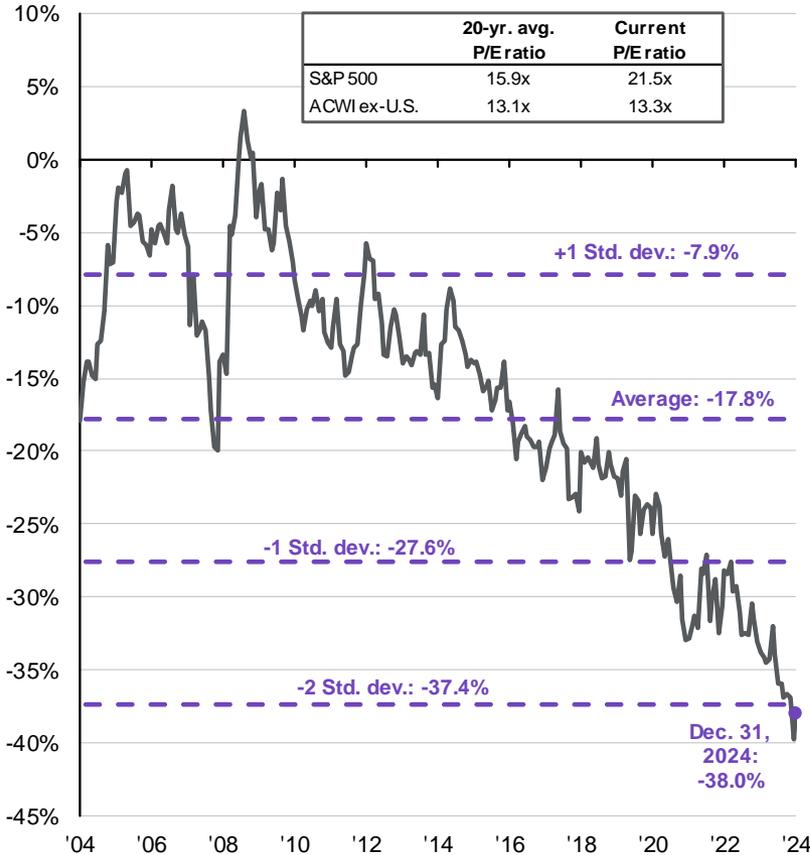


International valuations

International

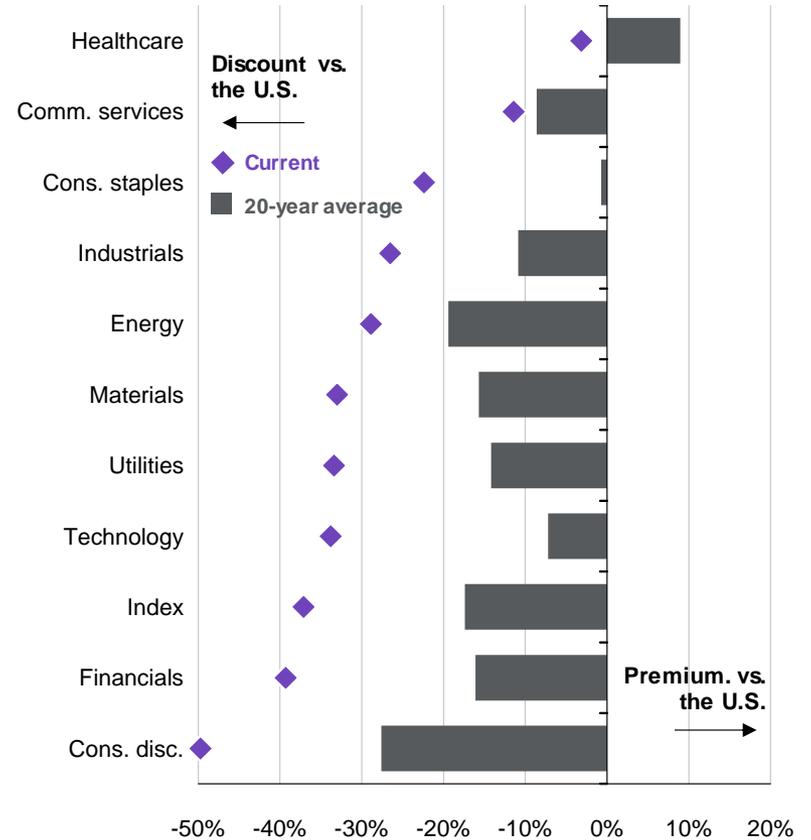
International: Price-to-earnings discount vs. U.S.

MSCI All Country World ex-U.S. vs. S&P 500, next 12 months



International: Price-to-earnings discount vs. the U.S. by sector

MSCI All Country World ex-U.S. minus S&P 500, next 12 months



Source: FactSet, MSCI, Standard & Poor's, J.P. Morgan Asset Management. Guide to the Markets – U.S. Data are as of December 31, 2024.

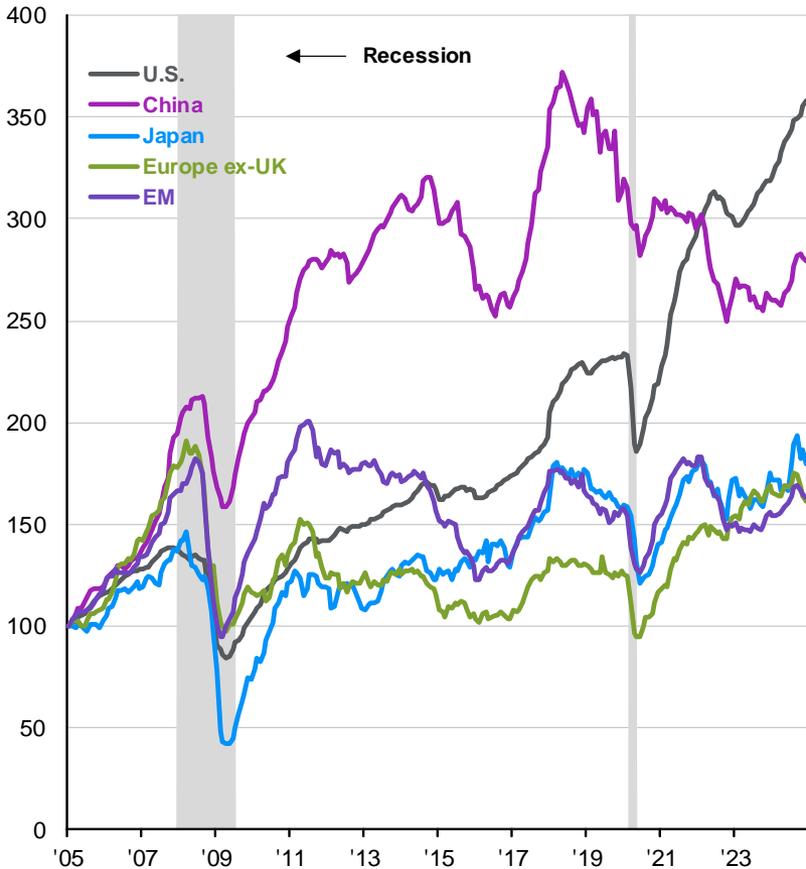


Global equity earnings and valuations

International

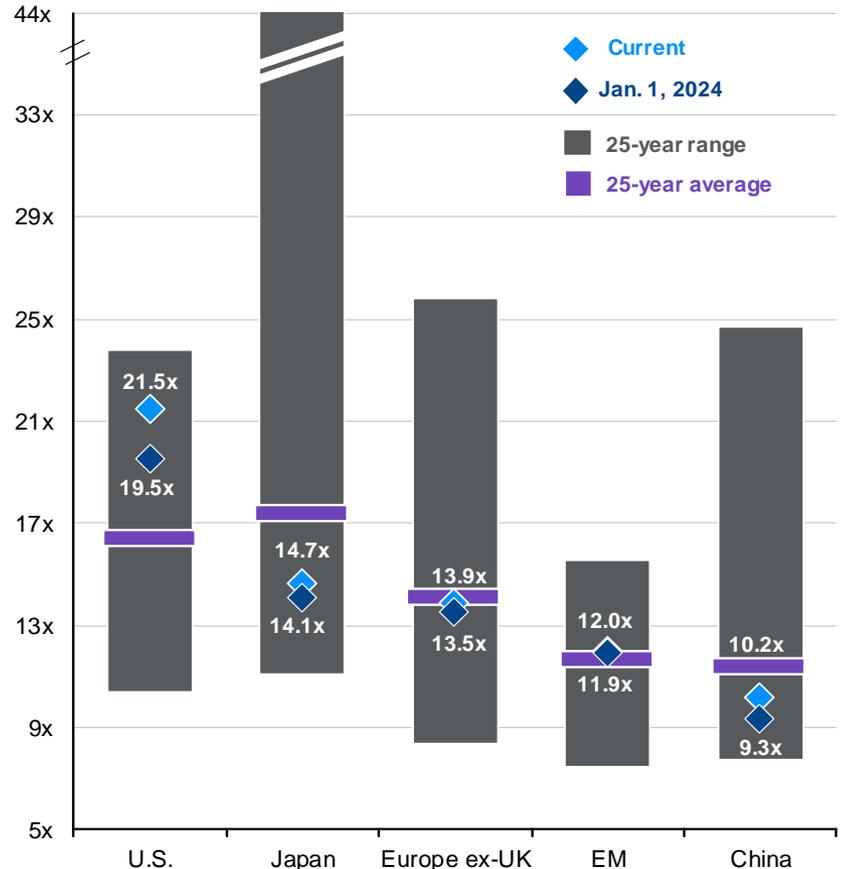
Global earnings estimates

Jan. 2005 = 100, next 12 months consensus estimates, U.S. dollars



Global valuations

Current and 25-year next 12 months price-to-earnings ratio



Source: FactSet, MSCI, Standard & Poor's, J.P. Morgan Asset Management. (Left) Next 12 months consensus estimates are based on pro-forma earnings and are in U.S. dollars. (Right) The purple bars for EM and China show 20-year averages due to a lack of available data. Past performance is not a reliable indicator of current and future results. *Guide to the Markets – U.S.* Data are as of December 31, 2024.

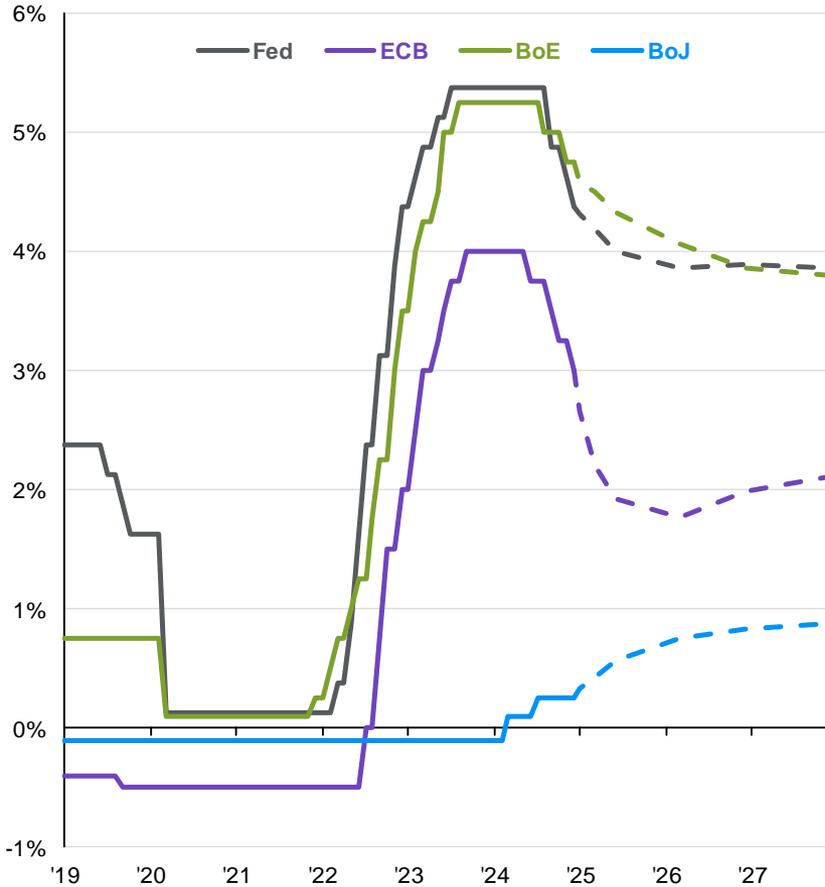


Interest rates and international developed markets

International

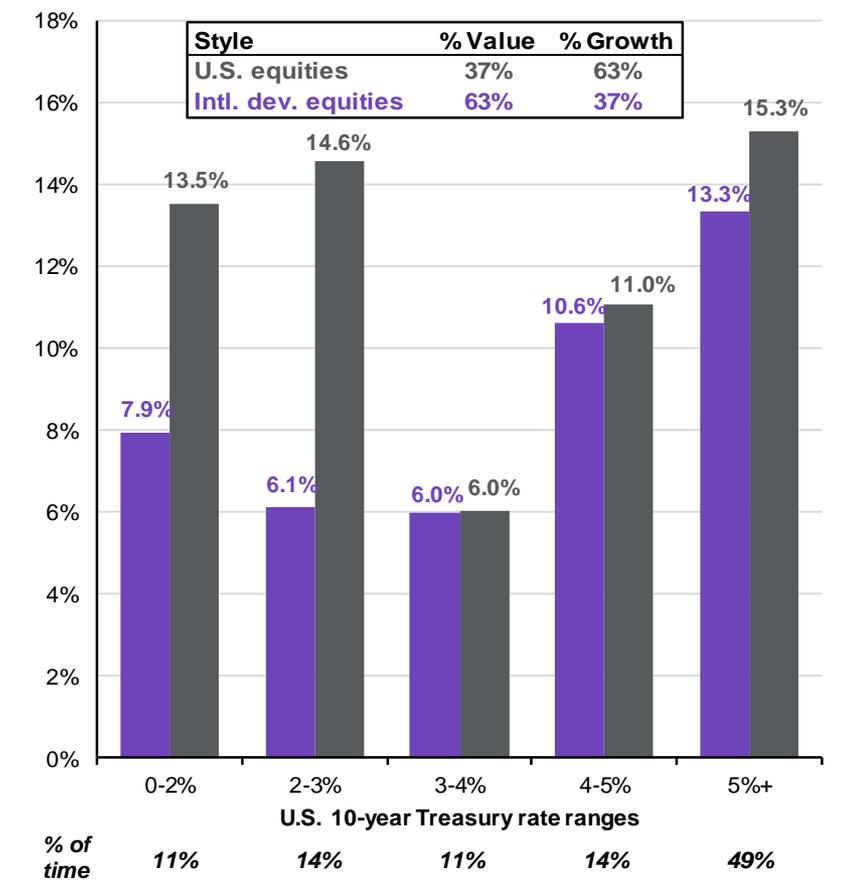
Historical policy rates and forward curves

Target policy rates and market implied forward rates



Equity performance in different interest rate environments

Annualized total return by 10-year Treasury rate ranges, USD, 1979 - present



Style	% Value	% Growth
U.S. equities	37%	63%
Intl. dev. equities	63%	37%

Source: J.P. Morgan Asset Management. (Left) Bank of England (BoE), Bank of Japan (BoJ), BIS, Bloomberg, European Central Bank (ECB), Federal Reserve System (Fed), J.P. Morgan Global Economic Research. Implied policy rates are sourced from Bloomberg and are derived from Overnight Index Swaps. Forecasts, projections and other forward-looking statements are based upon current beliefs and expectations. They are for illustrative purposes only and are not a reliable indicator of future performance. Given the inherent uncertainties and risks associated with forecasts, projections or other forward-looking statements, actual events, results or performance may differ materially from those reflected or contemplated. (Right) FactSet, MSCI, Standard & Poor's. U.S. = S&P 500 Index, Intl. dev. = MSCI EAFE Index. Growth includes Communication Services, Health Care, Information Technology and Consumer Discretionary. Value includes Financials, Industrials, Materials, Real Estate, Utilities, Energy and Consumer Staples. Guide to the Markets – U.S. Data are as of December 31, 2024.

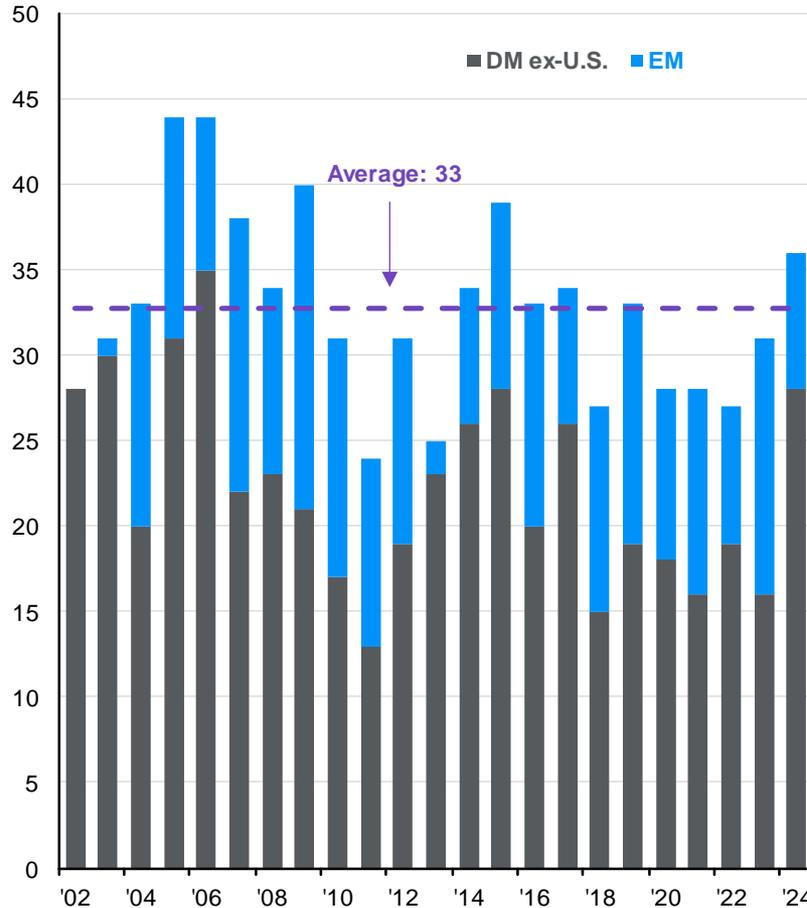


Global market performance and concentration

International

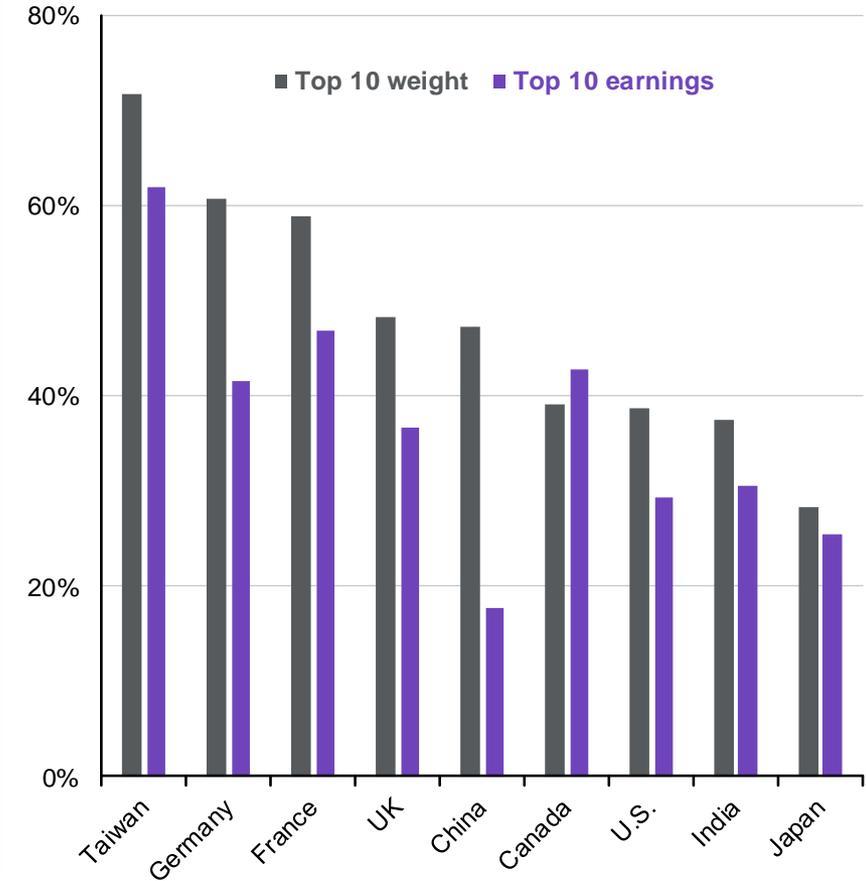
Top 50 performing companies globally

of companies listed internationally, MSCI All Country World Index



Weight of market cap and earnings for top 10 stocks

% of market capitalization, as of latest month-end, LTM earnings



Source: FactSet, MSCI, J.P. Morgan Asset Management. (Left) Graph was made by ranking all the companies in the MSCI All Country World Index by performance on a yearly basis and determining the top 50 performers using their total return in USD. Companies are listed in no particular order. Excluded companies whose market capitalization does not make up at least 0.01% of the MSCI All Country World Index in the year listed. (Right) Standard & Poor's. Uses last 12-month earnings. Different share classes for the same company are grouped together. *Guide to the Markets – U.S.* Data are as of December 31, 2024.

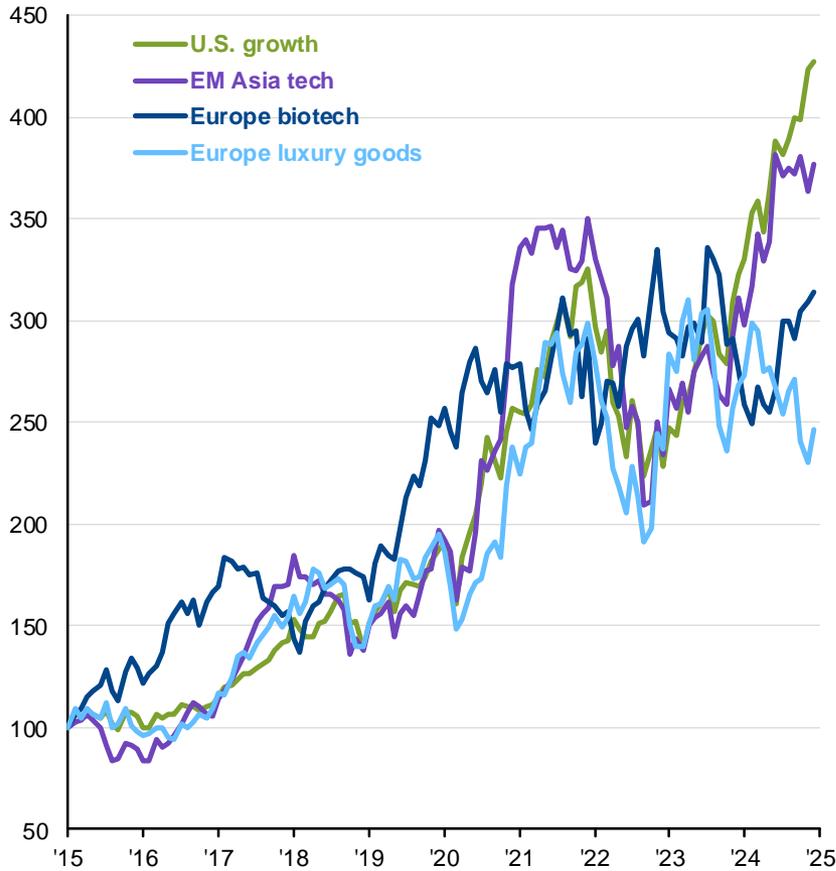


International market secular themes and trends

International

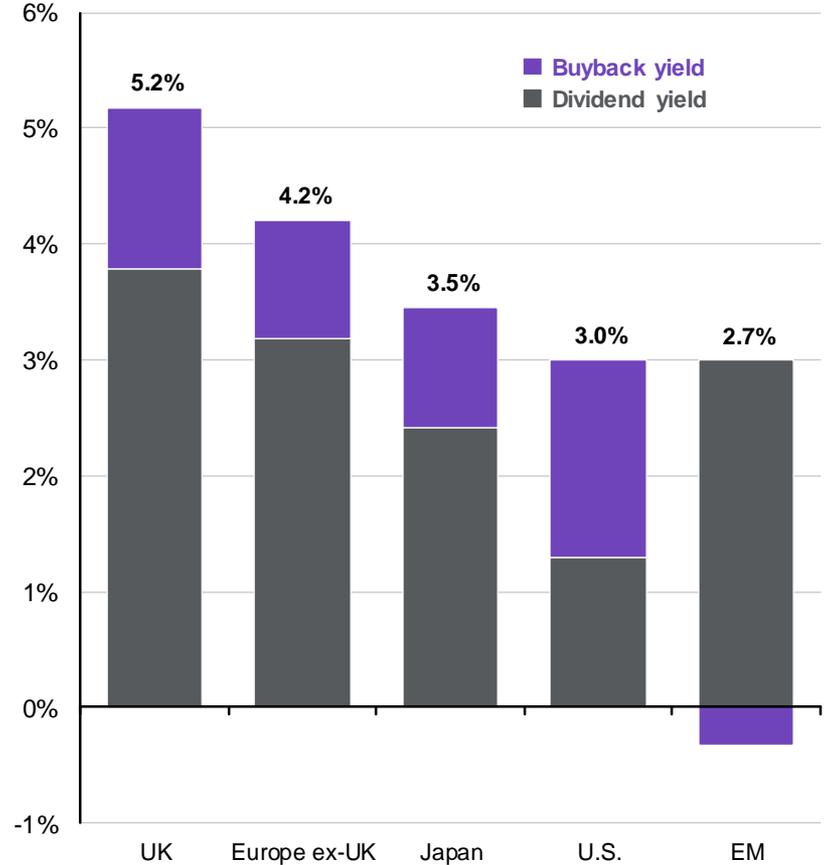
International growth sectors vs. U.S. growth

Jan. 2015 = 100, total return, U.S. dollars



Buyback and dividend yields

Previous quarter-end*



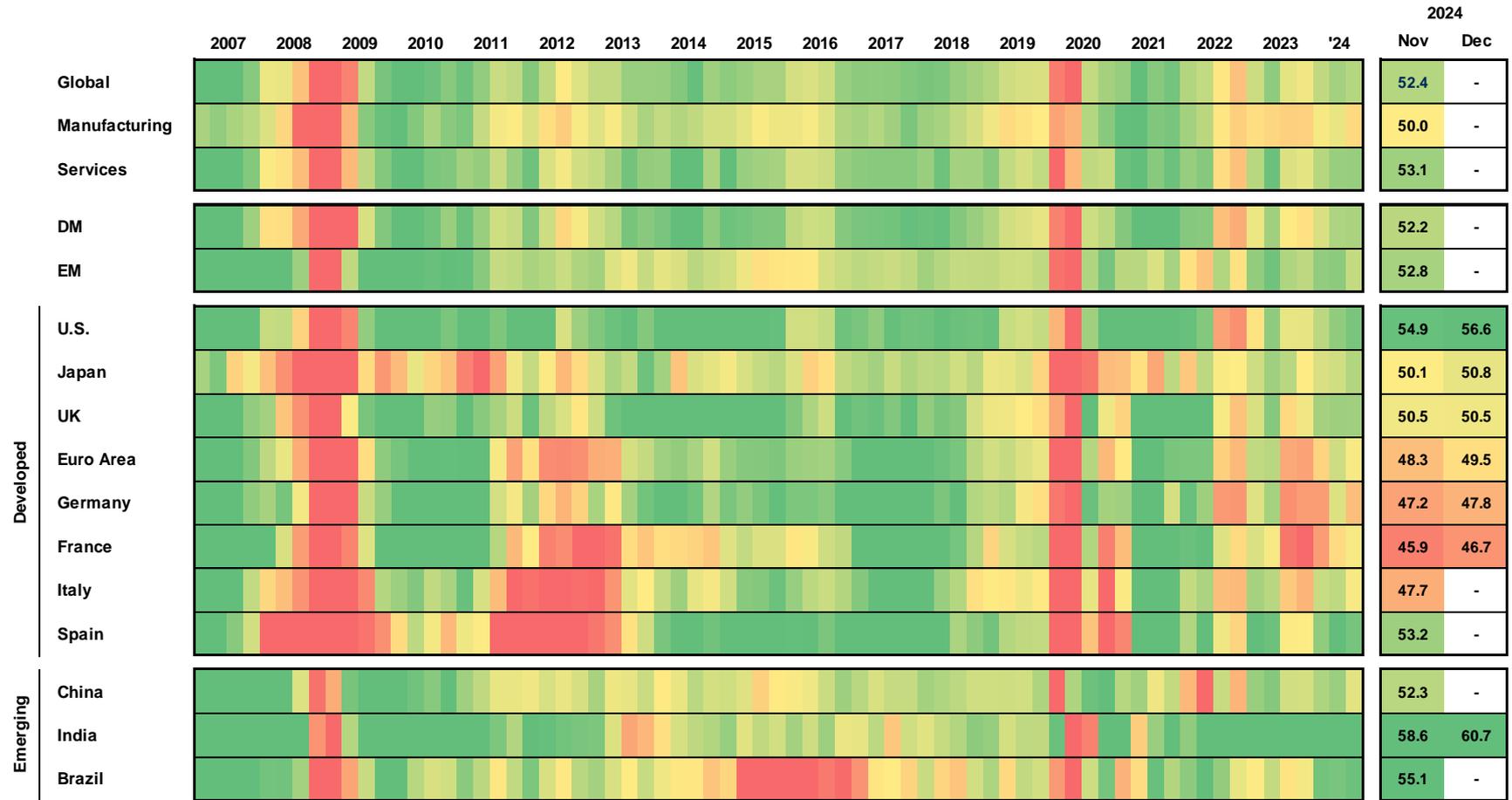
Source: MSCI, J.P. Morgan Asset Management. (Left) Bloomberg, Russell. EM Asia tech: MSCI EM Asia Information Technology Index, European Luxury Goods: MSCI Europe Textiles Apparel and Luxury Goods Index, U.S. growth: Russell 1000 Growth Index, Europe biotech: MSCI Europe Biotechnology Index. (Right) *Total yield for S&P 500 is as of the latest available. Bloomberg, FTSE, Standard & Poor's. U.S.: S&P 500, Europe ex-UK: MSCI Europe ex-UK, UK: FTSE 100, EM: MSCI EM, Japan: TOPIX. Net buyback yield adjusts for share issuance. Past performance is not a reliable indicator of current and future results.

Guide to the Markets – U.S. Data are as of December 31, 2024.



Global economic activity momentum

Global Composite (manufacturing & services combined) Purchasing Managers' Index, quarterly



International

Source: J.P. Morgan Economic Research, Standard & Poor's, J.P. Morgan Asset Management.
 The Composite PMI includes both manufacturing and services sub-indices. Heatmap colors are based on PMI relative to the 50 level, which indicates acceleration or deceleration of the sector, for the period shown. Heatmap is based on quarterly averages, except for the two most recent figures, which are single month readings. Data for the U.S. are back-tested and filled in for 2007-2009. Data for Japan are back-tested and filled in for the first two quarters of 2007. DM and EM represent developed markets and emerging markets, respectively.
 Guide to the Markets – U.S. Data are as of December 31, 2024.

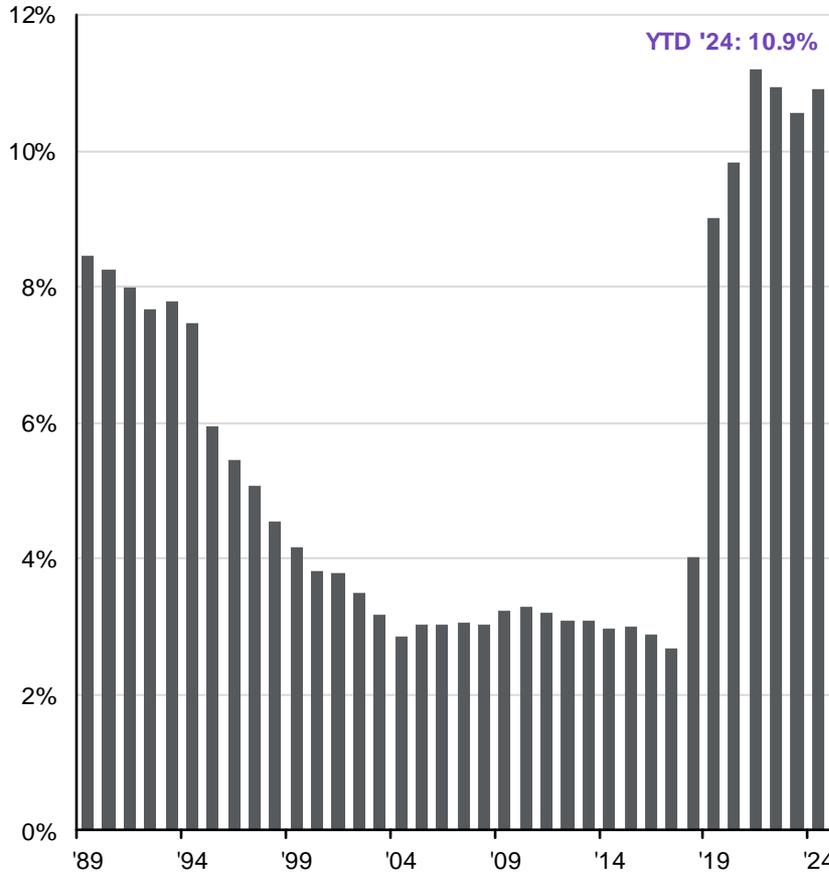


Global trade patterns

International

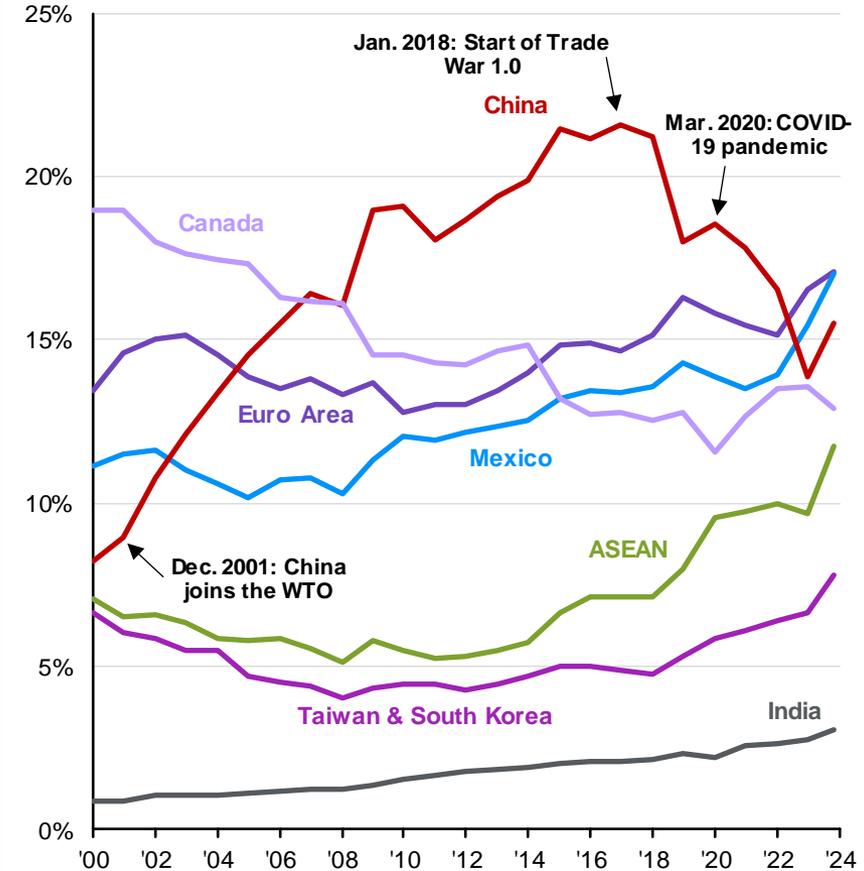
Average tariff rate on U.S. goods imports from China

Duties collected / value of total goods imports for consumption



U.S. goods imports by country

% of total U.S. goods imports, annual and YTD 2024



Source: J.P. Morgan Asset Management. (Left) United States International Trade Commission. Imports for consumption: goods brought into a country for direct use or sale in the domestic market. YTD 2024 is through October 2024 (latest available). (Right) FactSet, U.S. Census Bureau. ASEAN: Indonesia, Malaysia, Philippines, Singapore, Thailand and Vietnam. Other ASEAN countries excluded due to a lack of available data. Annotations are approximate. YTD 2024 is through October 2024 (latest available). *Guide to the Markets – U.S.* Data are as of December 31, 2024.

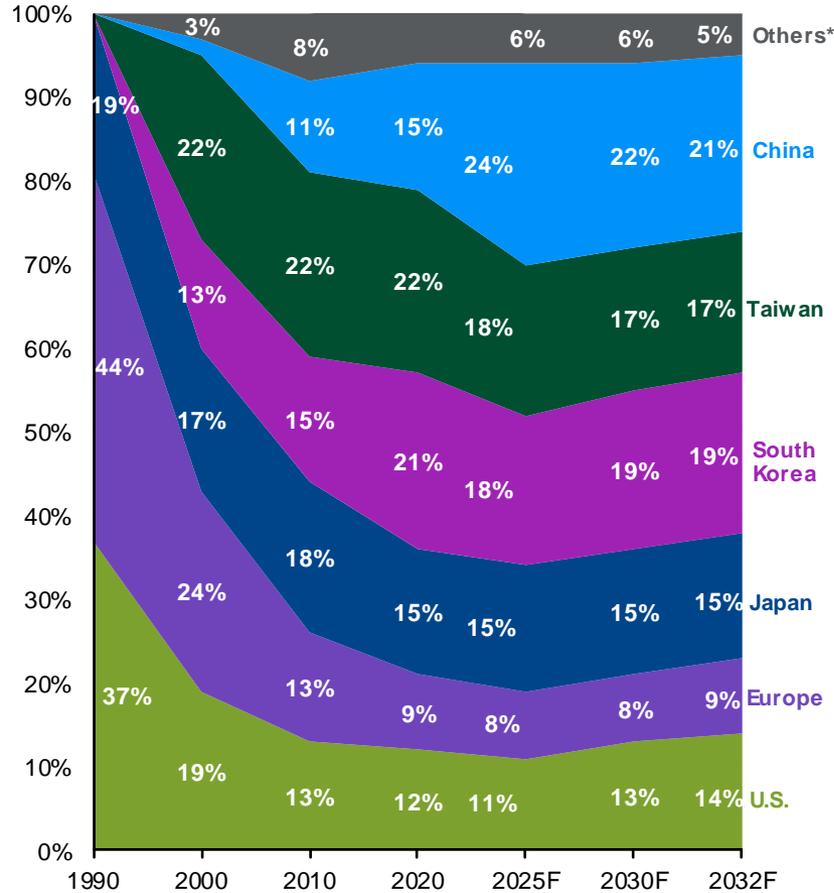


Global technology supply chains

International

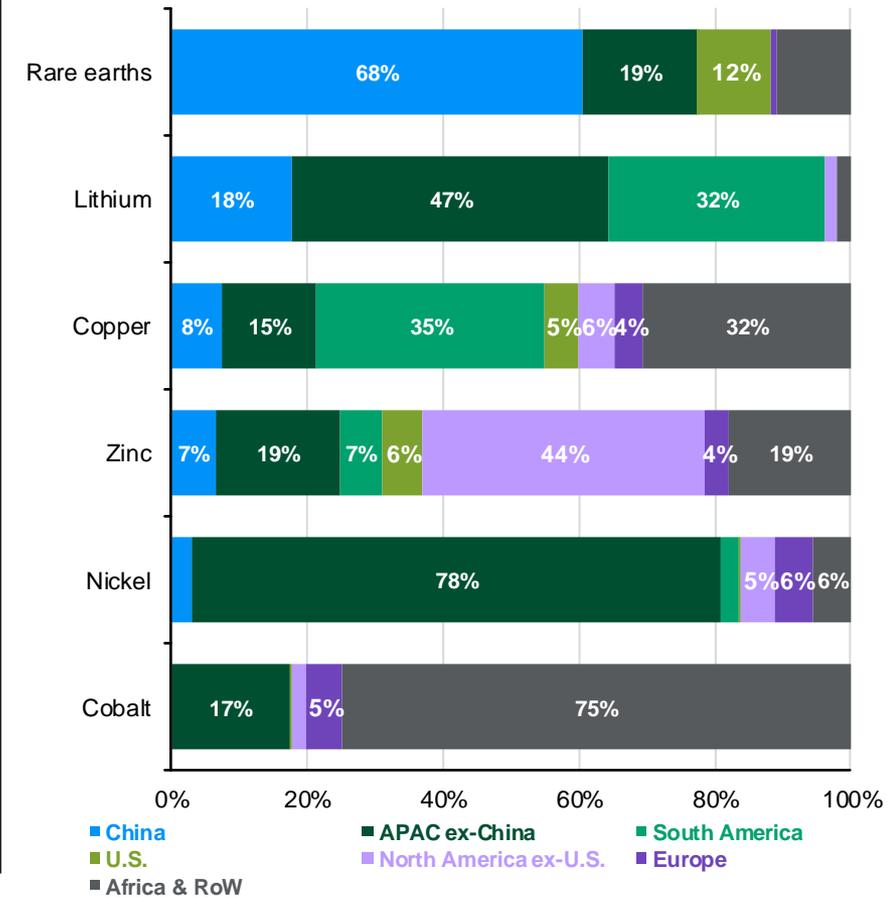
Semiconductor production by location

% global share



Mining production by location

% global share, 2023



Source: J.P. Morgan Asset Management. (Left) VLSI Research Projection, SEMI May 2024 update, BCG analysis. All values shown in 8" equivalents; excludes capacity below 5 kwpm or less than 8". *Others includes Israel, Singapore and the rest of the world. Numbers may not add up to 100 due to rounding. Forecasts are based on current data and assumptions about future economic conditions. Actual results may differ materially due to changes in economic, market and other conditions. (Right) Mineral Commodity Summaries 2024, U.S. Geological Survey. U.S. excluded from lithium mining production to protect company information. China's rare earths production shows the production quota and does not include undocumented production. Guide to the Markets – U.S. Data are as of December 31, 2024.



Correlations and volatility

Alternatives

	U.S. Large Cap	EAFE	EME	Bonds	Corp. HY	Munis	Currency.	EMD	Comdty.	REITs	Hedge funds	Private equity	Gold	Ann. Volatility
U.S. Large Cap	1.00	0.90	0.80	0.32	0.86	0.42	-0.47	0.75	0.40	0.77	0.82	0.76	0.24	16%
EAFE		1.00	0.90	0.35	0.86	0.50	-0.62	0.81	0.40	0.67	0.80	0.76	0.30	16%
EME			1.00	0.33	0.83	0.43	-0.70	0.80	0.45	0.56	0.75	0.75	0.41	18%
Bonds				1.00	0.44	0.88	-0.47	0.69	-0.29	0.54	-0.02	0.15	0.64	5%
Corp. HY					1.00	0.50	-0.53	0.89	0.43	0.71	0.76	0.72	0.35	9%
Munis						1.00	-0.51	0.75	-0.25	0.63	0.09	0.28	0.51	5%
Currencies							1.00	-0.65	-0.30	-0.34	-0.28	-0.56	-0.61	5%
EMD								1.00	0.17	0.68	0.54	0.59	0.55	8%
Commodities									1.00	0.23	0.64	0.59	0.13	17%
REITs										1.00	0.55	0.63	0.28	18%
Hedge funds											1.00	0.74	0.09	5%
Private equity												1.00	0.12	0%
Gold													1.00	13%

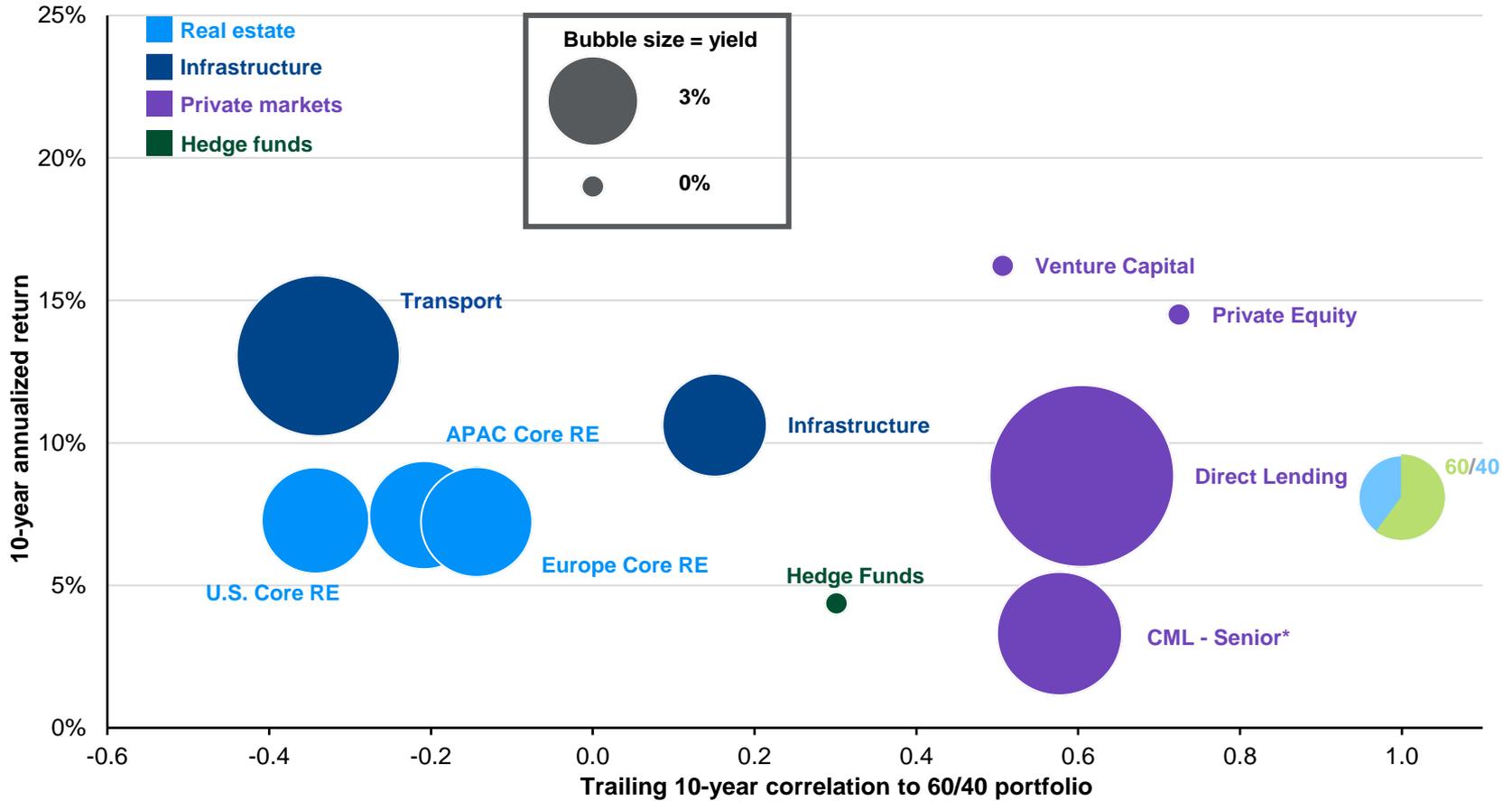
Source: Bloomberg, Burgiss, Credit Suisse/Tremont, FactSet, Federal Reserve, MSCI, Standard & Poor's, J.P. Morgan Asset Management. Indices used – Large Cap: S&P 500 Index; Currencies: Federal Reserve Trade-Weighted Dollar; EAFE: MSCI EAFE; EME: MSCI Emerging Markets; Bonds: Bloomberg Aggregate; Corp HY: Bloomberg Corporate High Yield; EMD: Bloomberg Emerging Market; Comdty.: Bloomberg Commodity Index; REITs: NAREIT All Equity Index; Hedge funds: CS/Tremont Hedge Fund Index; Private equity: Time weighted returns from Burgiss; Gold: Gold continuous contract (\$/oz). Private equity data are reported on a one- to two-quarter lag. All correlation coefficients and annualized volatility are calculated based on quarterly total return data for period from 12/31/2014 to 9/30/2024, except for Private equity, which is based on the period from 9/30/2014 to 6/30/2024. This chart is for illustrative purposes only. *Guide to the Markets – U.S.* Data are as of December 31, 2024.



Alternatives: Correlations, returns and yields

Correlations, returns and yields

10-year correlations and 10-year annualized total returns, 3Q14 – 2Q24



Alternatives

Source: Burgiss, Cliffwater, FactSet, Gilberto-Levy, HFRI, MSCI, NCREIF, J.P. Morgan Asset Management. Correlations are based on quarterly returns over the past 10 years from 3Q14-2Q24. 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 1Q14-4Q23. Indices and data used for alternative asset class returns and yields are as described on pages 12, 13 and 17 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.

This slide comes from our [Guide to Alternatives](#).

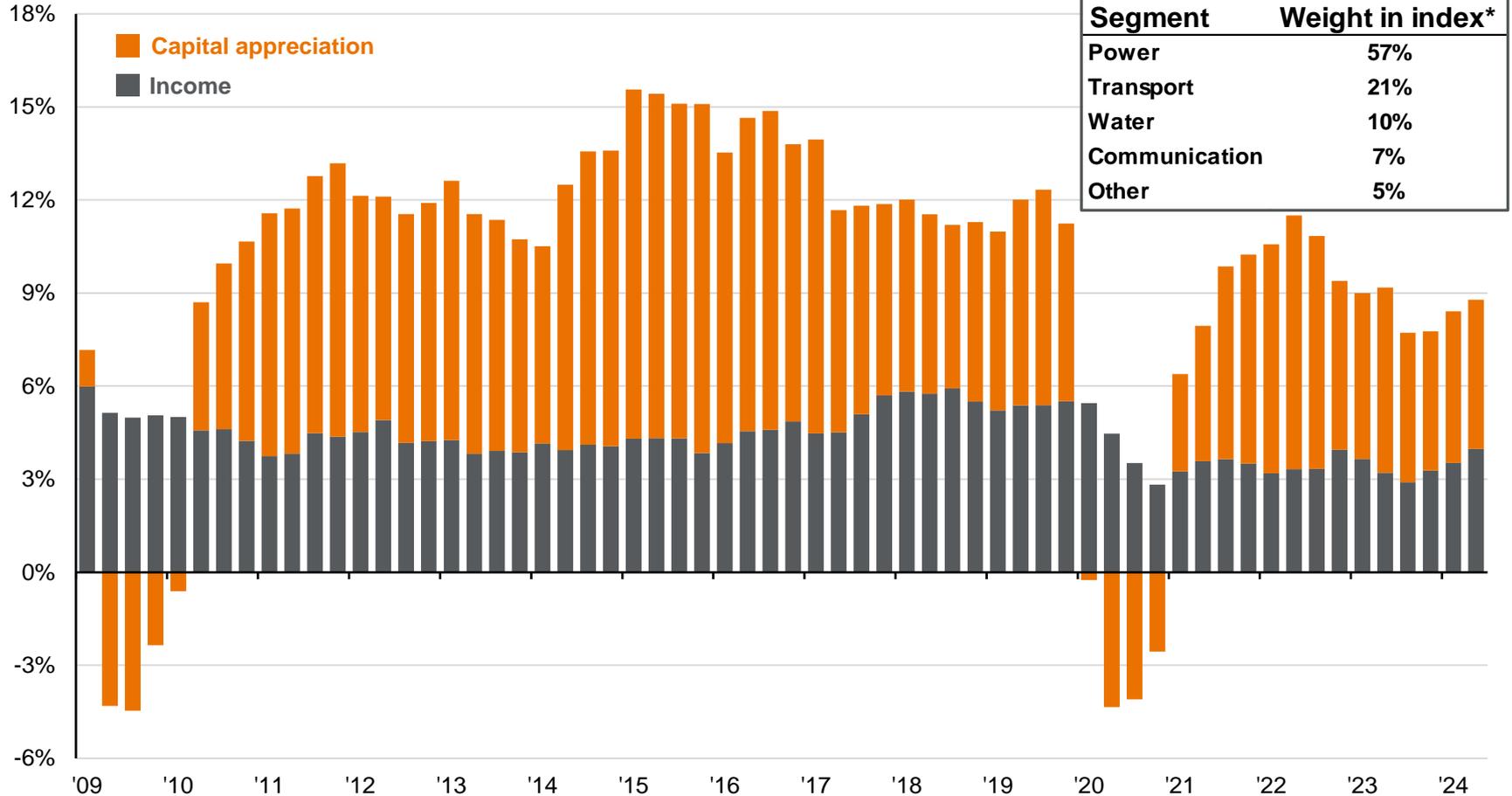
Guide to the Markets – U.S. Data are as of December 31, 2024.



Sources of global infrastructure returns

Global core infrastructure returns

1Q09-2Q24, rolling 4-quarter returns from income and capital appreciation



Alternatives

Source: MSCI, J.P. Morgan Asset Management.

Infrastructure returns represented by the MSCI Global Quarterly Infrastructure Asset Index. Data show rolling one-year returns from income and capital appreciation. *Weights are based on enterprise value. Past performance is not indicative of future results. Alternative investments carry more risk than traditional investments and are recommended only for long-term investment. Some alternative investments may be highly leveraged and rely on speculative investments that can magnify the potential for loss or gain. Diversification does not guarantee investment returns or eliminate the risk of loss.

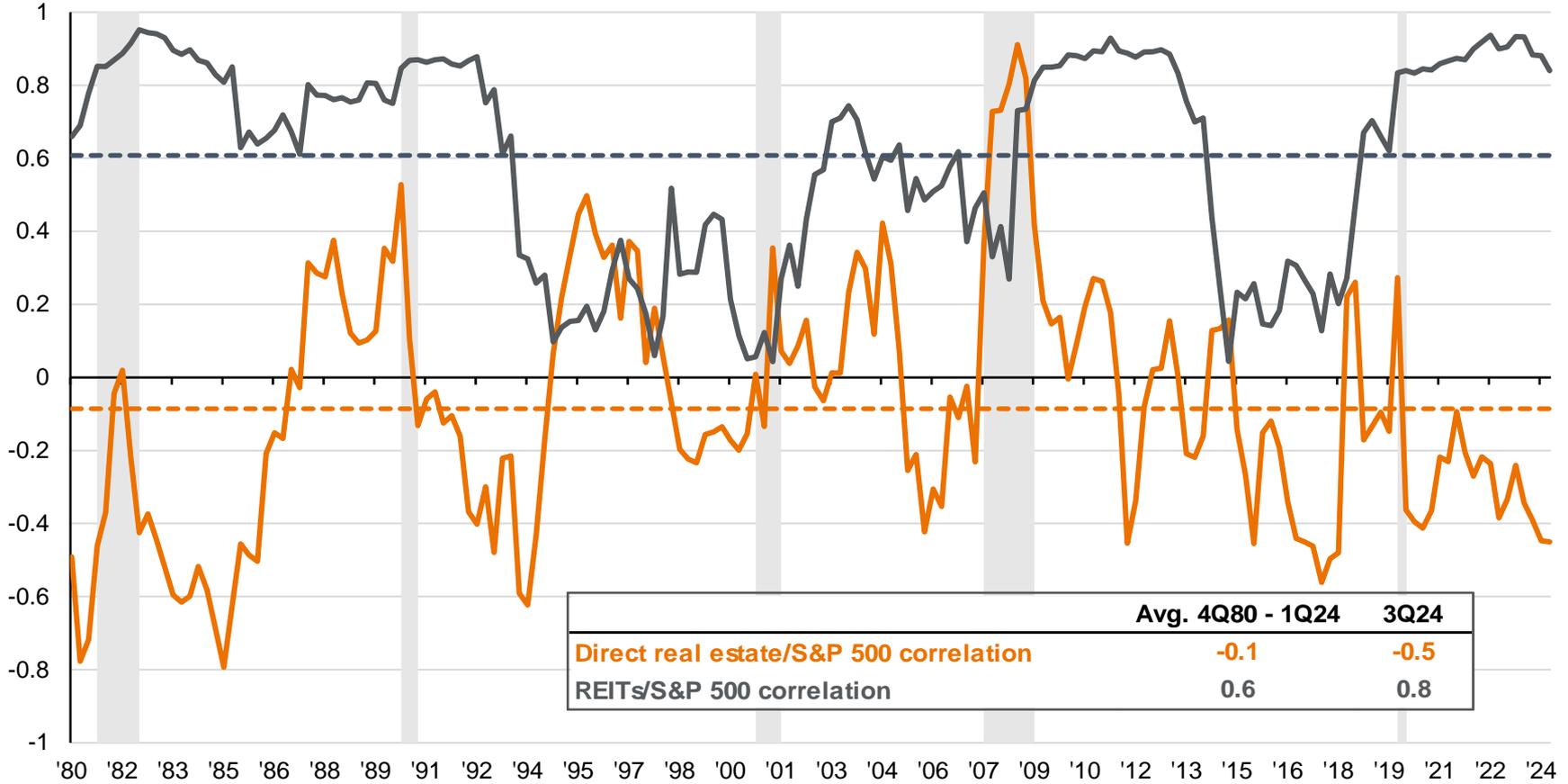
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U.S. REITs and direct real estate

U.S. REITs, direct real estate and equities

12-quarter rolling correlations, total return



Alternatives

Source: NAREIT, NCREIF, Standard & Poor's, FactSet, J.P. Morgan Asset Management.
 Real estate investment trusts (REITs). Indices do not include fees or operating expenses and are not available for actual investment. Past performance is not necessarily a reliable indicator for current and future performance.
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 Guide to the Markets – U.S. Data are as of December 31, 2024.



U.S. public vs. private equity

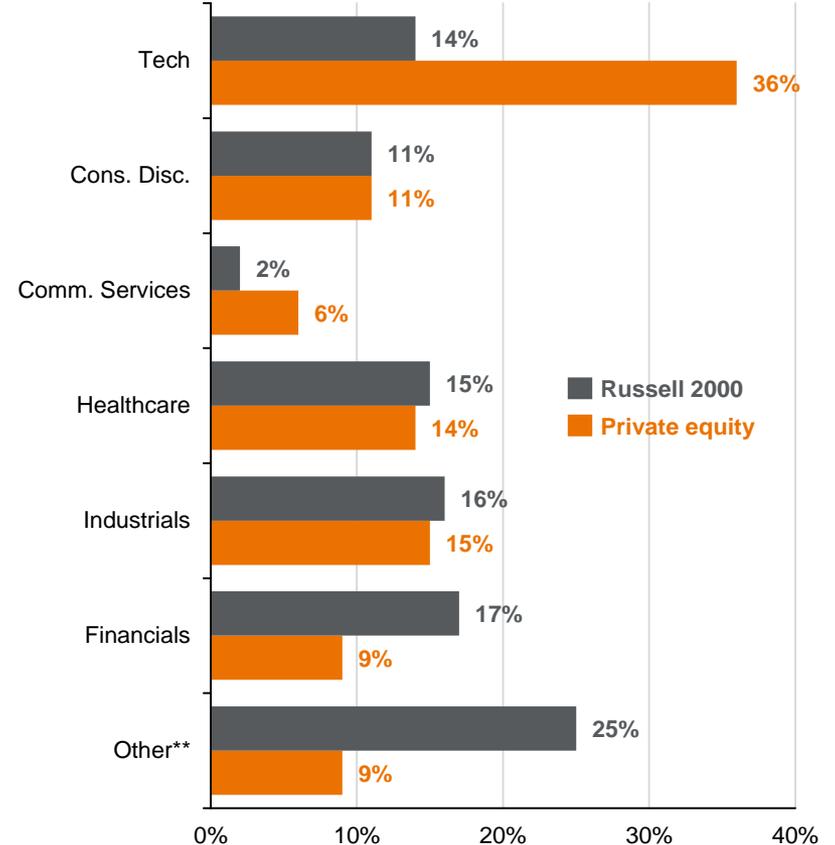
Number of listed U.S. companies* and market cap.

Number, S&P 500 market capitalization in USD trillions

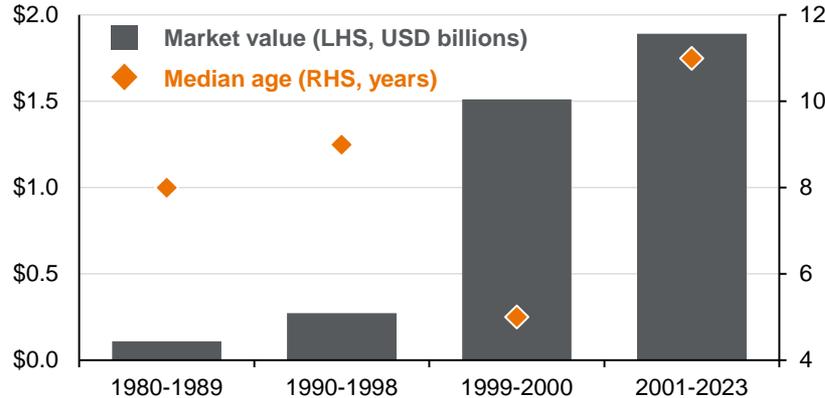


Private equity vs. small cap sector weights

2023



Average market value and median age at IPO



Alternatives

Sources: Cambridge Associates, Jay Ritter, Russell, University of Florida, 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.

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 Guide to the Markets – U.S. Data are as of December 31, 2024.

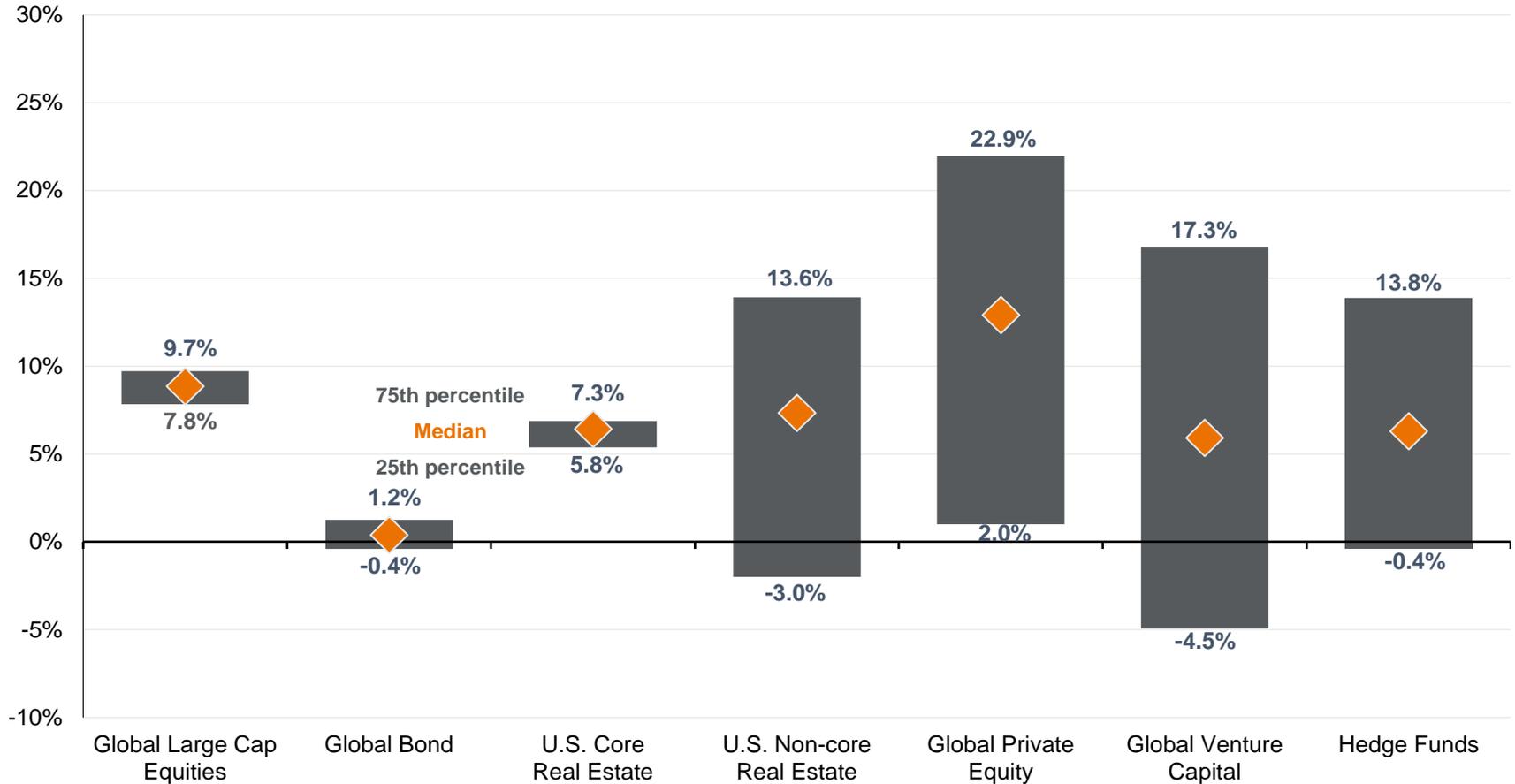


Alternatives and manager selection

Alternatives

Public and private manager dispersion

Based on returns from 4Q14 – 3Q24*



Source: Burgiss, Morningstar, NCREIF, 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 3Q 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 2Q 2024. U.S. Fund Global Equities and Bonds are comprised of U.S.-domiciled mutual funds and ETFs.

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Guide to the Markets – U.S. Data are as of December 31, 2024.



Asset class returns

2010-2024		2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
Ann.	Vol.															
Large Cap 13.9%	Small Cap 20.6%	REITs 27.9%	REITs 8.3%	REITs 19.7%	Small Cap 38.8%	REITs 28.0%	REITs 2.8%	Small Cap 21.3%	EM Equity 37.8%	Cash 1.8%	Large Cap 31.5%	Small Cap 20.0%	REITs 41.3%	Comdty. 16.1%	Large Cap 26.3%	Large Cap 25.0%
Small Cap 10.3%	EM Equity 17.9%	Small Cap 26.9%	Fixed Income 7.8%	High Yield 19.6%	Large Cap 32.4%	Large Cap 13.7%	Large Cap 1.4%	High Yield 14.3%	DM Equity 25.6%	Fixed Income 0.0%	REITs 28.7%	EM Equity 18.7%	Large Cap 28.7%	Cash 1.5%	DM Equity 18.9%	Small Cap 11.5%
REITs 9.4%	REITs 16.8%	EM Equity 19.2%	High Yield 3.1%	EM Equity 18.6%	DM Equity 23.3%	Fixed Income 6.0%	Fixed Income 0.5%	Large Cap 12.0%	Large Cap 21.8%	REITs -4.0%	Small Cap 25.5%	Large Cap 18.4%	Comdty. 27.1%	High Yield -12.7%	Small Cap 16.9%	Asset Alloc. 10.0%
Asset Alloc. 7.2%	DM Equity 16.5%	Comdty. 16.8%	Large Cap 2.1%	DM Equity 17.9%	Asset Alloc. 14.9%	Asset Alloc. 5.2%	Cash 0.0%	Comdty. 11.8%	Small Cap 14.6%	High Yield -4.1%	DM Equity 22.7%	Asset Alloc. 10.6%	Small Cap 14.8%	Fixed Income -13.0%	Asset Alloc. 14.1%	High Yield 9.2%
High Yield 5.9%	Comdty. 16.1%	Large Cap 15.1%	Cash 0.1%	Small Cap 16.3%	High Yield 7.3%	Small Cap 4.9%	DM Equity -0.4%	EM Equity 11.6%	Asset Alloc. 14.6%	Large Cap -4.4%	Asset Alloc. 19.5%	DM Equity 8.3%	Asset Alloc. 13.5%	Asset Alloc. -13.9%	High Yield 14.0%	EM Equity 8.1%
DM Equity 5.7%	Large Cap 15.1%	High Yield 14.8%	Asset Alloc. -0.7%	Large Cap 16.0%	REITs 2.9%	Cash 0.0%	Asset Alloc. -2.0%	REITs 8.6%	High Yield 10.4%	Asset Alloc. -5.8%	EM Equity 18.9%	Fixed Income 7.5%	DM Equity 11.8%	DM Equity -14.0%	REITs 11.4%	Comdty. 5.4%
EM Equity 3.4%	Asset Alloc. 10.4%	Asset Alloc. 13.3%	Small Cap -4.2%	Asset Alloc. 12.2%	Cash 0.0%	High Yield 0.0%	High Yield -2.7%	Asset Alloc. 8.3%	REITs 8.7%	Small Cap -11.0%	High Yield 12.6%	High Yield 7.0%	High Yield 1.0%	Large Cap -18.1%	EM Equity 10.3%	Cash 5.3%
Fixed Income 2.4%	High Yield 9.4%	DM Equity 8.2%	DM Equity -11.7%	Fixed Income 4.2%	Fixed Income -2.0%	EM Equity -1.8%	Small Cap -4.4%	Fixed Income 2.6%	Fixed Income 3.5%	Comdty. -11.2%	Fixed Income 8.7%	Cash 0.5%	Cash 0.0%	EM Equity -19.7%	Fixed Income 5.5%	REITs 4.9%
Cash 1.2%	Fixed Income 4.7%	Fixed Income 6.5%	Comdty. -13.3%	Cash 0.1%	EM Equity -2.3%	DM Equity -4.5%	EM Equity -14.6%	DM Equity 1.5%	Comdty. 1.7%	DM Equity -13.4%	Comdty. 7.7%	Comdty. -3.1%	Fixed Income -1.5%	Small Cap -20.4%	Cash 5.1%	DM Equity 4.3%
Comdty. -1.0%	Cash 0.9%	Cash 0.1%	EM Equity -18.2%	Comdty. -1.1%	Comdty. -9.5%	Comdty. -17.0%	Comdty. -24.7%	Cash 0.3%	Cash 0.8%	EM Equity -14.2%	Cash 2.2%	REITs -5.1%	EM Equity -2.2%	REITs -24.9%	Comdty. -7.9%	Fixed Income 1.3%

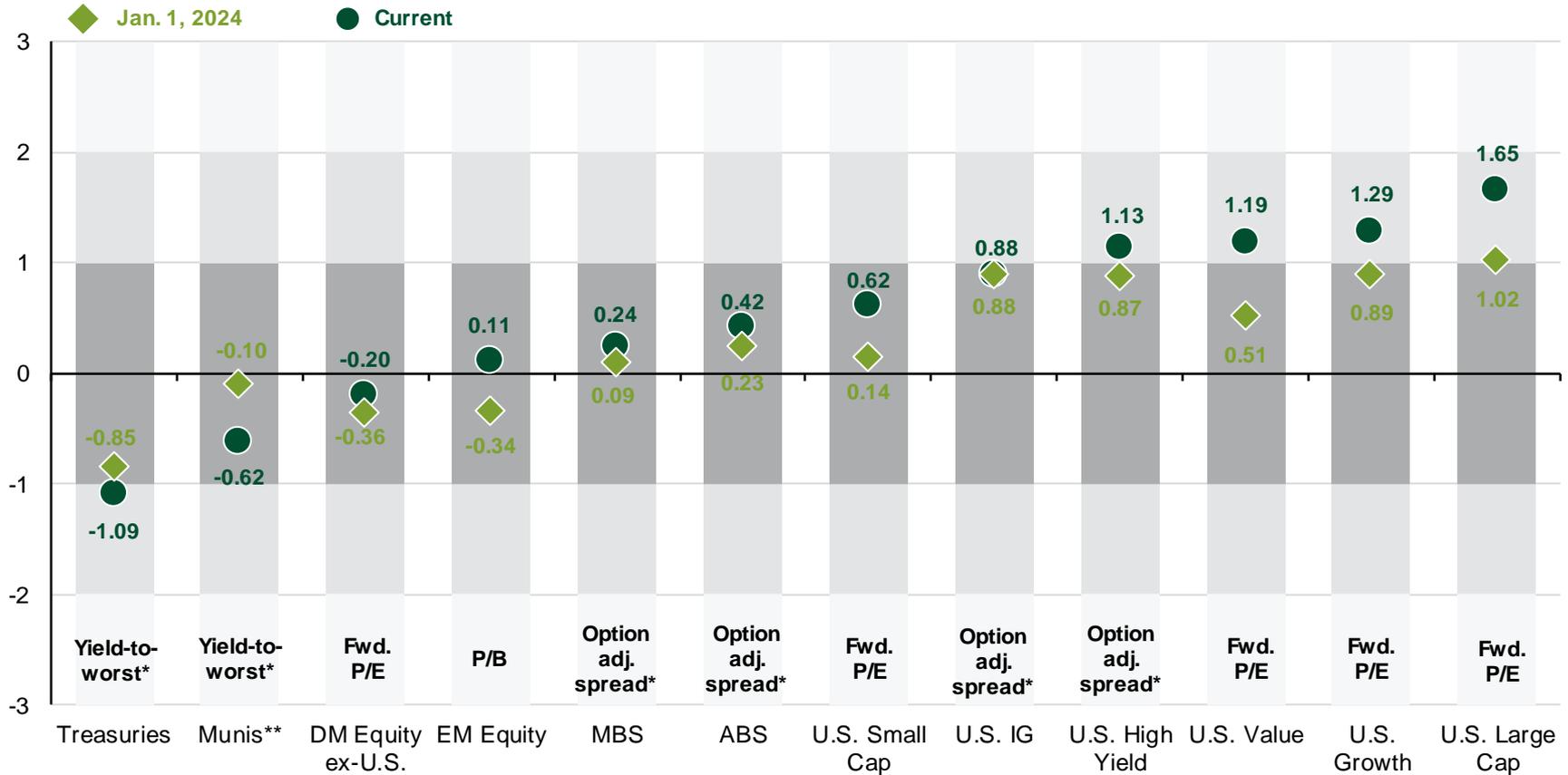
Source: Bloomberg, FactSet, MSCI, NAREIT, Russell, Standard & Poor's, J.P. Morgan Asset Management. Large cap: S&P 500, Small cap: Russell 2000, EM Equity: MSCI EME, DM Equity: MSCI EAFE, Comdty: Bloomberg Commodity Index, High Yield: Bloomberg Global HY Index, Fixed Income: Bloomberg U.S. Aggregate, REITs: NAREIT Equity REIT Index, Cash: Bloomberg 1-3m Treasury. The "Asset Allocation" portfolio assumes the following weights: 25% in the S&P 500, 10% in the Russell 2000, 15% in the MSCI EAFE, 5% in the MSCI EME, 25% in the Bloomberg U.S. Aggregate, 5% in the Bloomberg 1-3m Treasury, 5% in the Bloomberg Global High Yield Index, 5% in the Bloomberg Commodity Index and 5% in the NAREIT Equity REIT Index. Balanced portfolio assumes annual rebalancing. Annualized (Ann.) return and volatility (Vol.) represents period from 12/31/2009 to 12/31/2024. Please see disclosure page at end for index definitions. All data represents total return for stated period. The "Asset Allocation" portfolio is for illustrative purposes only. Past performance is not indicative of future returns. Guide to the Markets - U.S. Data are as of December 31, 2024.



Valuations monitor

Asset class valuations

Z-scores based on 25-year average valuation measures



Investing Principles

Source: Bloomberg, BLS, CME, FactSet, MSCI, Russell, Standard & Poor's, J.P. Morgan Asset Management.

U.S. Large Cap: S&P 500, U.S. Small Cap: Russell 2000, EM Equity: MSCI EME, DM Equity: MSCI EAFE, U.S. Value: Russell 1000 Value, U.S. Growth: Russell 1000 Growth, U.S. High Yield: Bloomberg U.S. Aggregate Corporate High Yield Index, U.S. IG: Bloomberg U.S. Corporate Investment Grade Index, Treasuries: Bloomberg U.S. Aggregate Government – Treasury, Munis: Bloomberg Municipal Bond, ABS: Bloomberg U.S. Aggregate Securitized – ABS, MBS: Bloomberg U.S. Aggregate Securitized – MBS. *Yield-to-worst and option-adjusted spreads are inversely related to fixed income prices. **Munis yield-to-worst is based on the tax-equivalent yield-to-worst assuming a top-income tax bracket rate of 37% plus a Medicare tax rate of 3.8%.

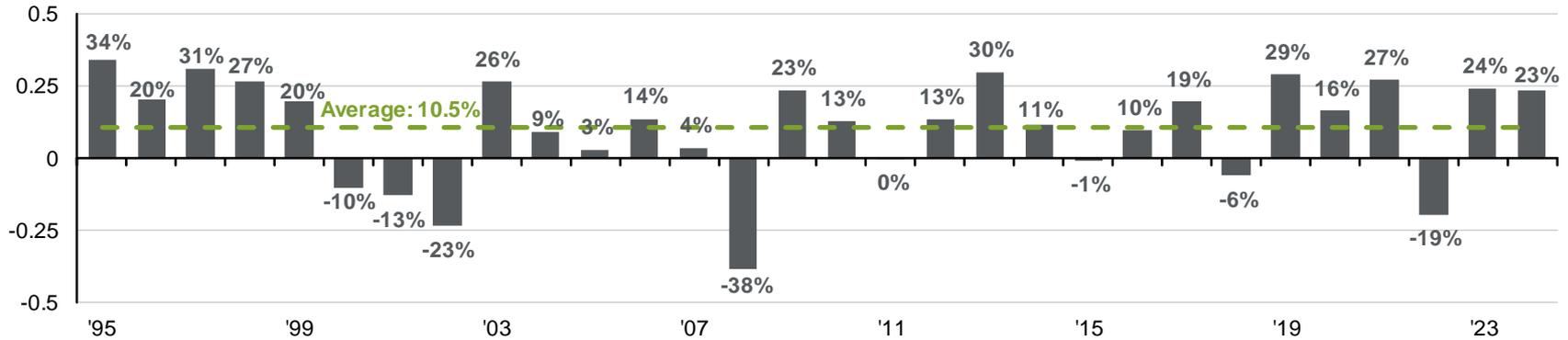
Guide to the Markets – U.S. Data are as of December 31, 2024.



Single-stock volatility and equity market returns

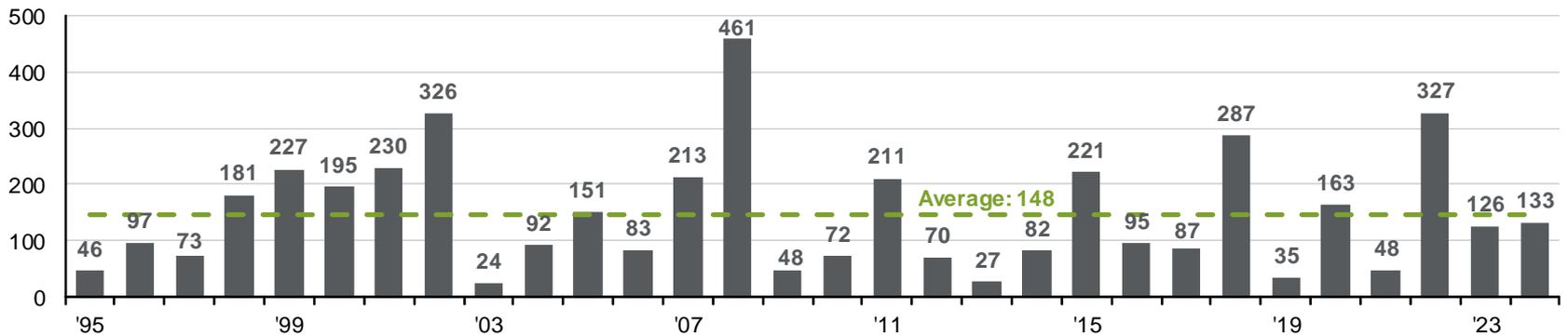
S&P 500 calendar year price returns

1995–2024



Number of S&P 500 stocks that ended the year down 5% or more

1995–2024



Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management. Guide to the Markets – U.S. Data are as of December 31, 2024.



Investing at all-time highs

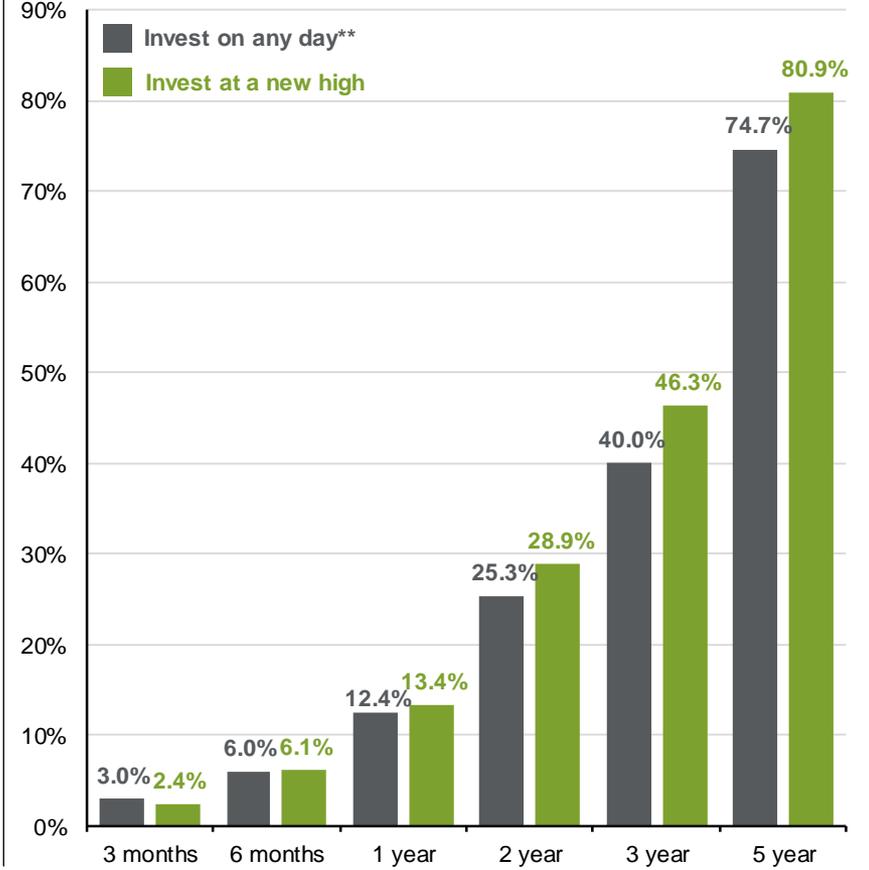
All-time highs and market floors

S&P 500 price index, daily, 1950–today



Average cumulative S&P 500 total returns

Jan. 1, 1988–Dec. 31, 2024



Investing Principles

Source: FactSet, Standard & Poor's, J.P. Morgan Asset Management.

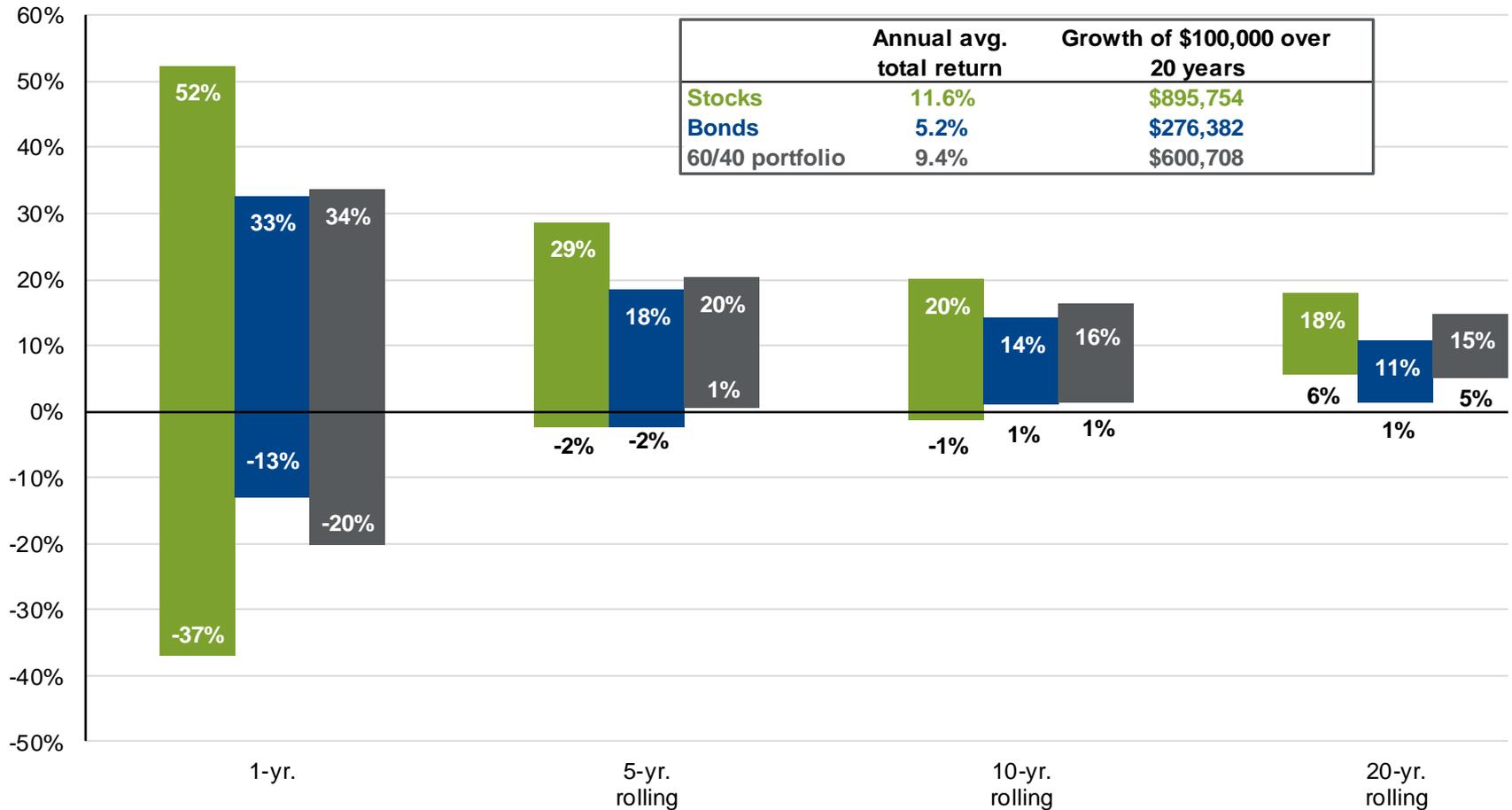
(Left) *Market floor is defined as an all-time high from which the market never fell more than 5%. (Right) ***"Invest on any day" represents average of forward returns for the entire time period whereas "Invest at a new high" represents average of rolling forward returns calculated from each new S&P 500 high for the subsequent 3-months, 6-months, 1-year, 2-year and 3-year intervals, with data starting 1/1/1988 through 12/31/2024. Guide to the Markets – U.S. Data are as of December 31, 2024.



Time, diversification and the volatility of returns

Range of stock, bond and blended total returns

Annual total returns, 1950–2024



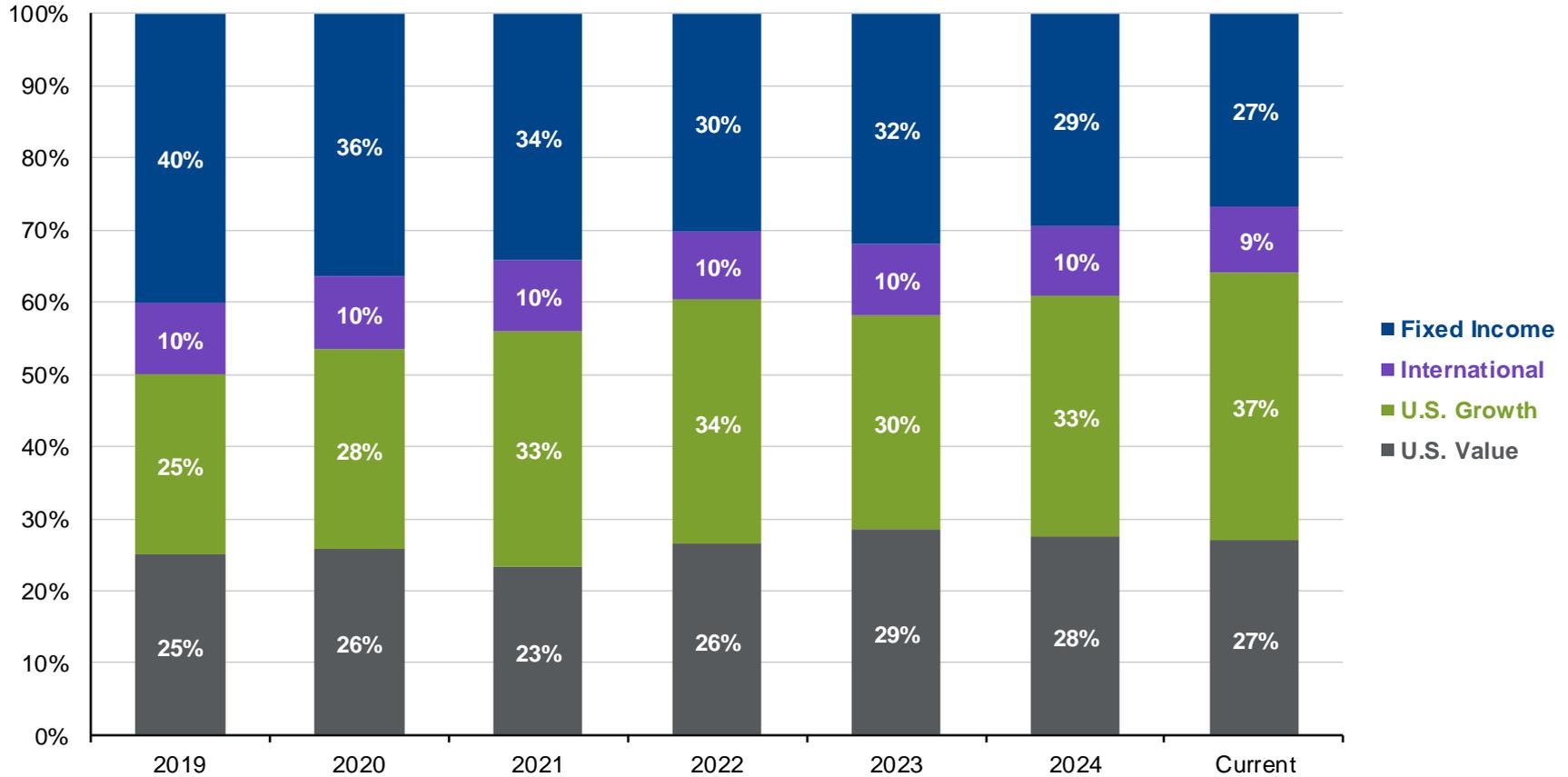
Source: Bloomberg, FactSet, Federal Reserve, Standard & Poor's, Strategas/Ibbotson, J.P. Morgan Asset Management. Returns shown are based on calendar year returns from 1950 to 2024. Bonds represent Strategas/Ibbotson for periods prior to 1976 and the Bloomberg Aggregate thereafter. Growth of \$100,000 is based on annual average total returns from 1950 to 2024. Guide to the Markets – U.S. Data are as of December 31, 2024.



60/40 portfolio drift

60/40 portfolio composition by asset class

Start of 2019 to current, no rebalancing



Investing Principles

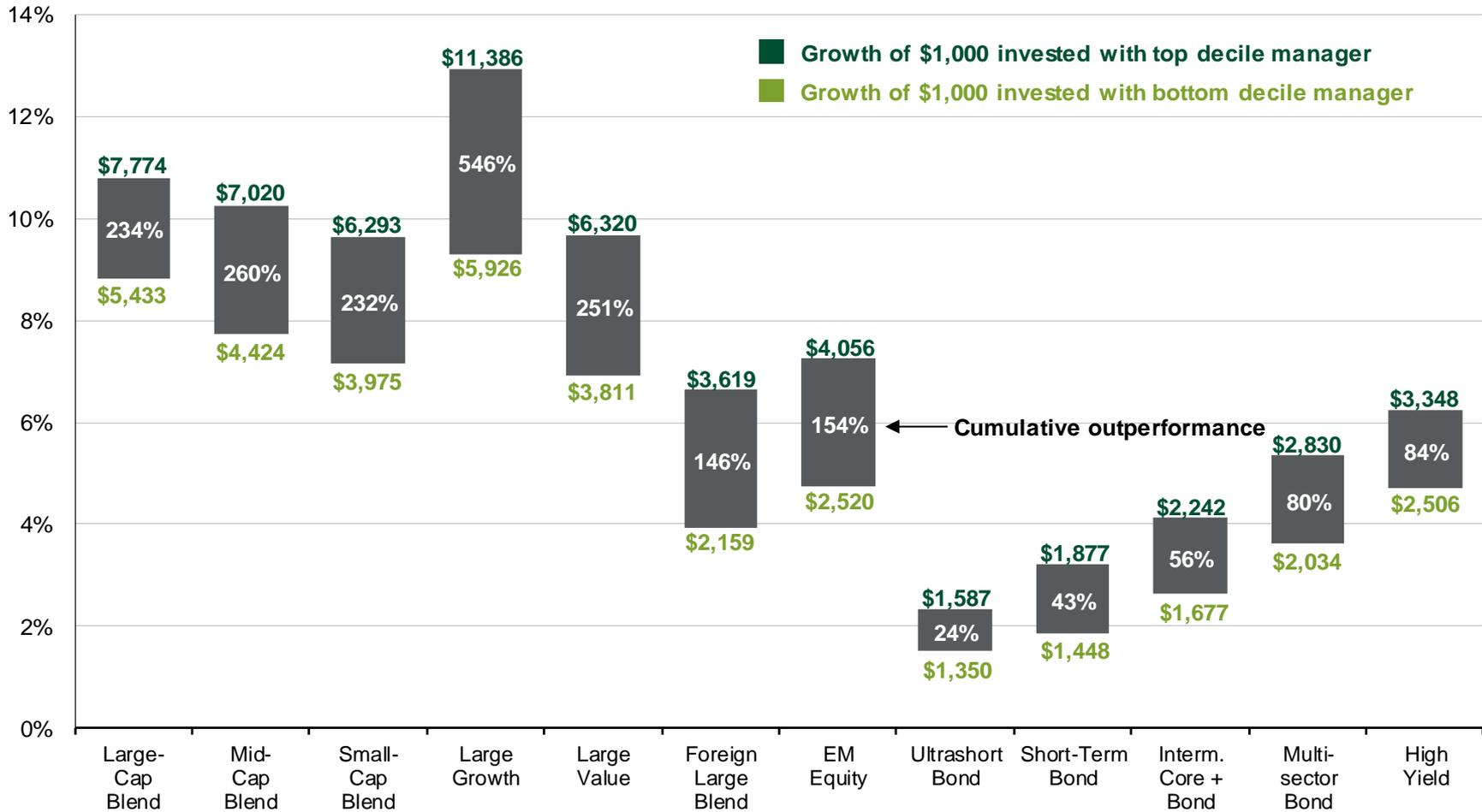
Source: Bloomberg, FactSet, MSCI, Russell, Standard & Poor's, J.P. Morgan Asset Management. Standard asset allocation at the start of 2019 assumes 60% weight to global equities and 40% to U.S. fixed Income. U.S. Value: Equal-weighted Russell 1000 Value and Russell 2000 Value, U.S. Growth: Equal-weighted Russell 2000 Value and Russell 2000 Growth, International: MSCI ACWI ex-US, Fixed Income: 10% Bloomberg Global HY Index and 30% Bloomberg U.S. Aggregate. Past performance is not indicative of future returns. Guide to the Markets – U.S. Data are as of December 31, 2024.



Manager dispersion

20-year manager return dispersion and growth of capital

By asset type, annualized total returns, growth of \$1,000 invested 20 years ago*



Source: Morningstar, J.P. Morgan Asset Management.

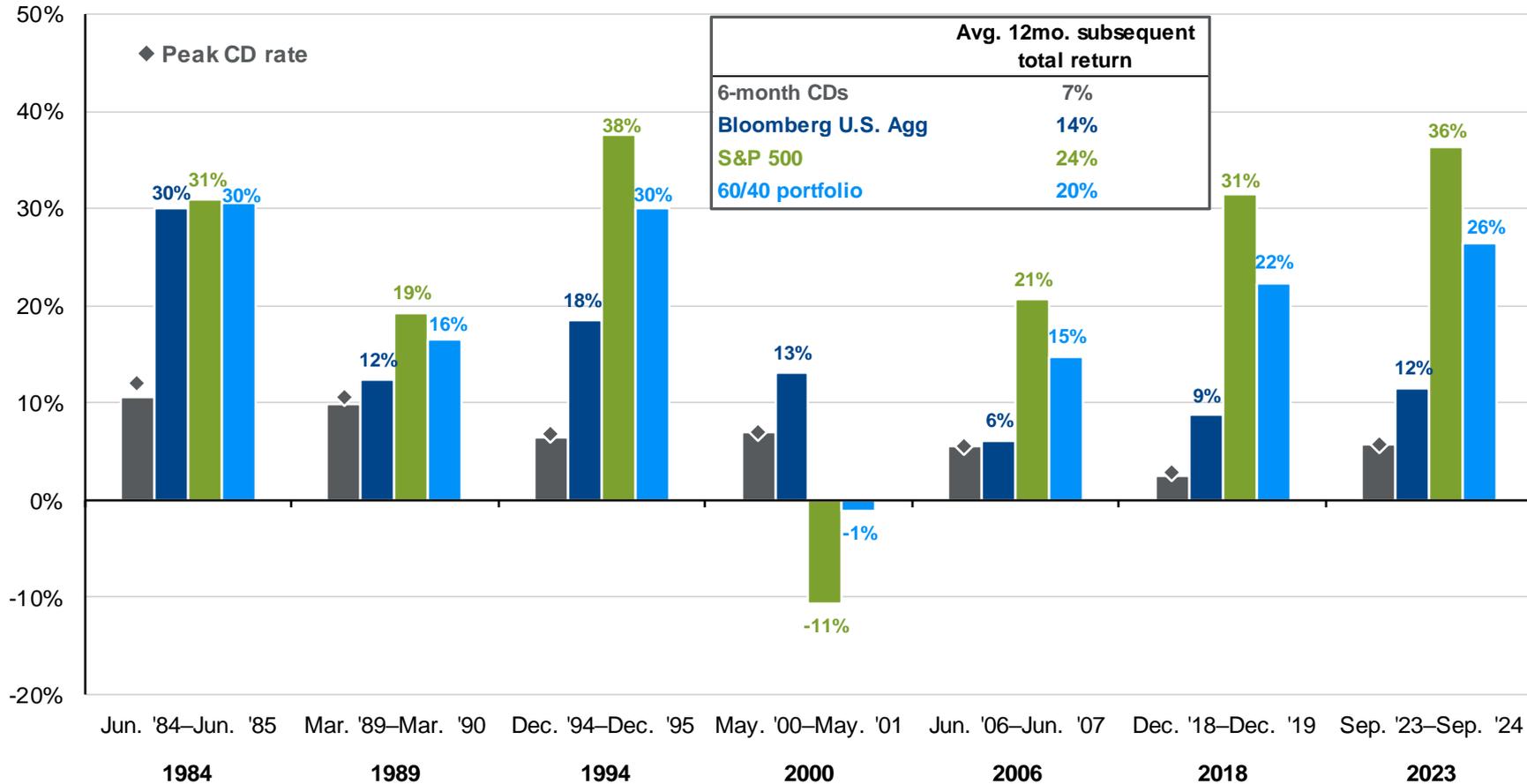
*Represents average annual portfolio return dispersion between the 10th and 90th percentile over a 20-year period for each Morningstar category, including mutual funds and ETFs. Returns are updated monthly and reflect data through 11/30/2024. This information is for illustrative purposes only, does not reflect actual investment results, is not a guarantee of future results and is not a recommendation. Guide to the Markets – U.S. Data are as of December 31, 2024.



CD rates and other investment opportunities

Investment opportunities outside of CDs

Peak 6-month certificate of deposit (CD) rate during previous rate hiking cycles and subsequent 12-month total returns



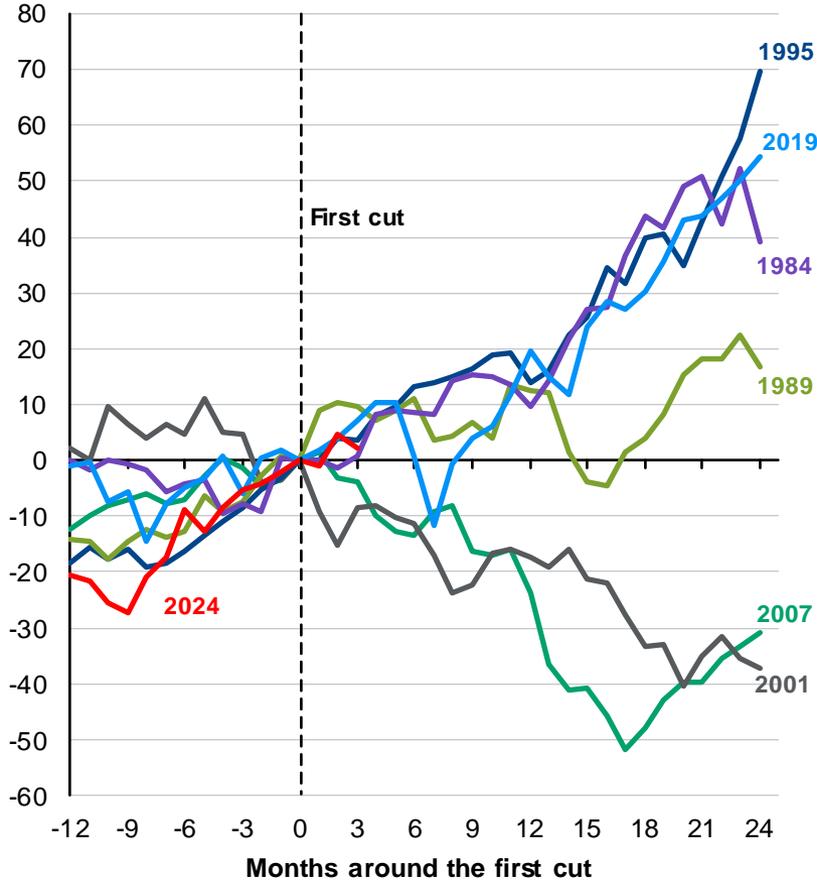
Source: Bloomberg, FactSet, Federal Reserve, Standard & Poor's, J.P. Morgan Asset Management. The 60/40 portfolio is 60% invested in S&P 500 Total Return Index and 40% invested in Bloomberg U.S. Aggregate Total Return Index. The analysis references the month in which the month-end 6-month CD rate peaked during previous rate hiking cycles. CD rate data prior to 2013 are sourced from the Federal Reserve, whereas data from 2013 onward are sourced from Bloomberg. CD subsequent 12-month return calculation assumes reinvestment at the prevailing 6-month rate when the initial CD matures. *Guide to the Markets – U.S.* Data are as of December 31, 2024.



Market returns around the start of Fed cutting cycles

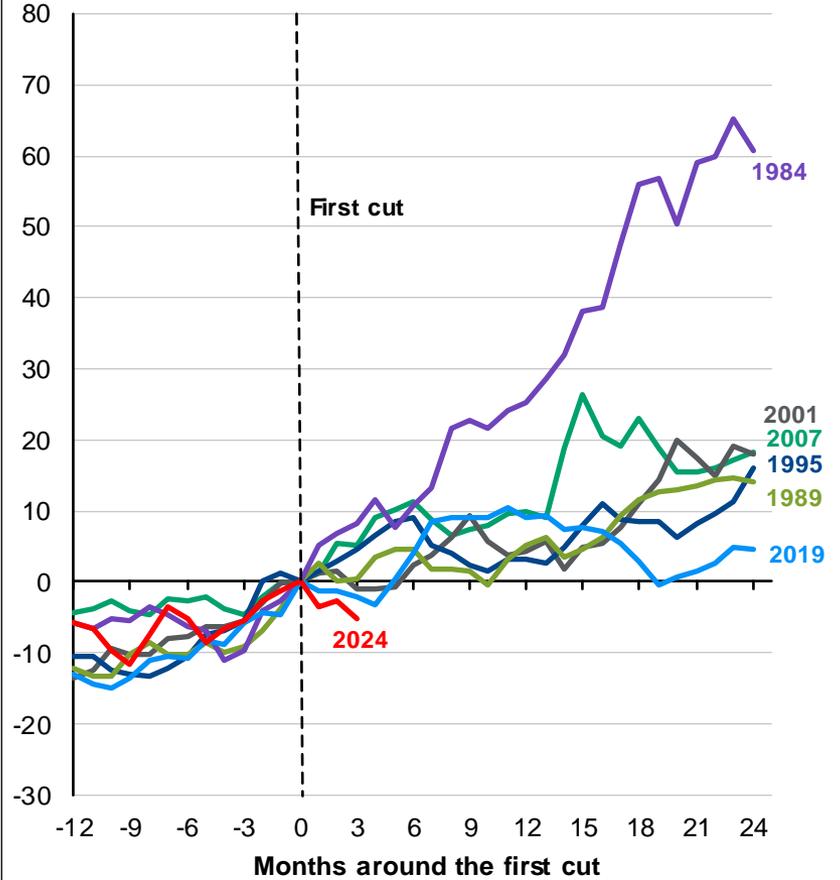
S&P 500 returns around the start of Fed cutting cycles

%, price return, indexed to zero at the first cut



U.S. 10-yr returns around the start of Fed cutting cycles

%, total return, indexed to zero at the first cut

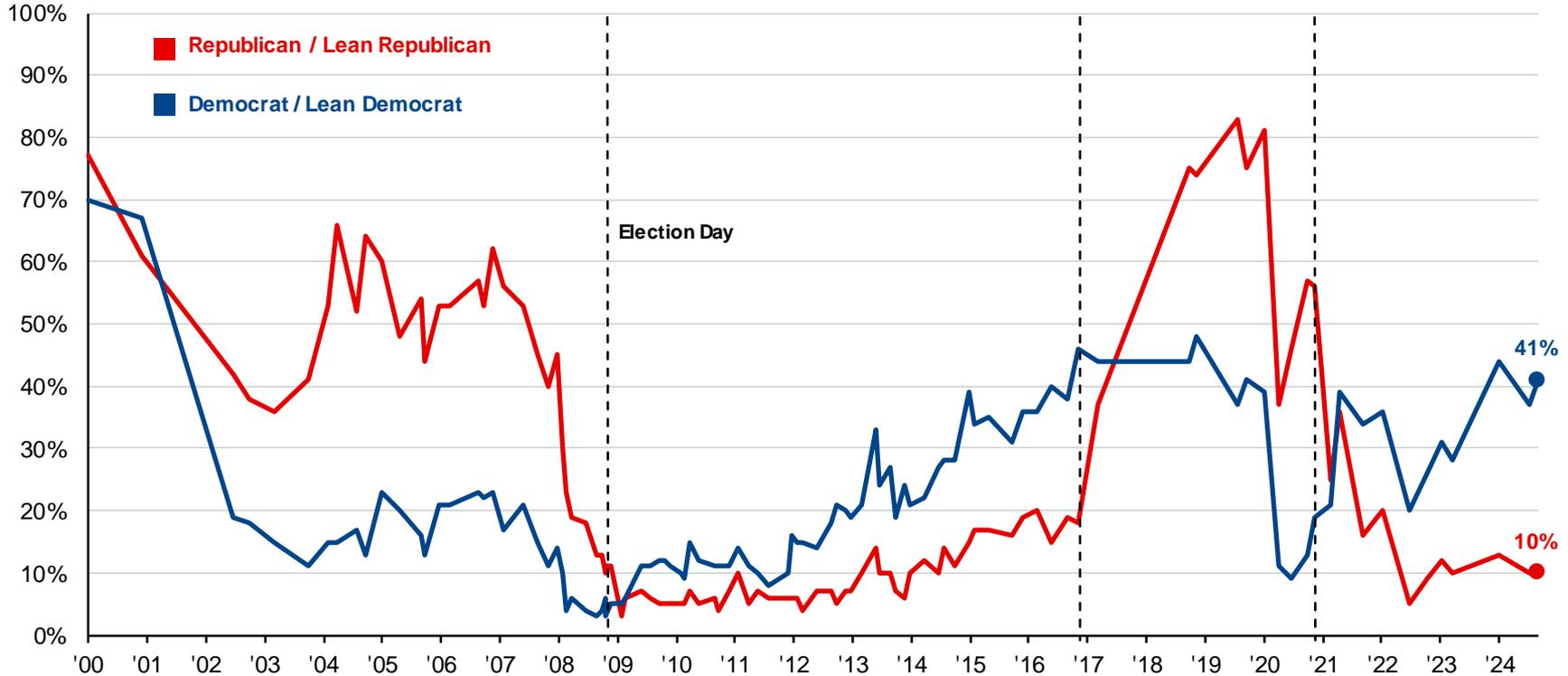


Source: FactSet, Federal Reserve, LSEG Datastream, S&P Global, J.P. Morgan Asset Management. Past performance is not a reliable indicator of current and future results. Excludes 1998 episode due to the short length of the cutting cycle and economic context for the cuts. Guide to the Markets – U.S. Data are as of December 31, 2024.



Consumer confidence by political affiliation

Percentage of Republicans and Democrats who rate national economic conditions as excellent or good



Administration	Bush	Obama	Trump	Biden
Dates in office	Jan. '01–Jan. '09	Jan. '09–Jan. '17	Jan. '17–Jan. '21	Jan. '21–Jan. '25
S&P 500 return	-4.5%	16.3%	16.0%	13.0%
Real GDP growth	1.9%	2.2%	1.8%	3.1%

Source: Pew Research Center, J.P. Morgan Asset Management. The survey was last conducted in September 2024. Pew Research Center asks the question: "Thinking about the nation's economy, How would you rate economic conditions in this country today... as excellent, good, only fair, or poor?" S&P 500 returns are average annualized total returns between presidential inauguration dates and are updated monthly. *Guide to the Markets* – U.S. Data are as of December 31, 2024.



J.P. Morgan Asset Management – Index definitions

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All indexes are unmanaged and an individual cannot invest directly in an index. Index returns do not include fees or expenses.

Equities:

The **Dow Jones Industrial Average** is a price-weighted average of 30 actively traded blue-chip U.S. stocks.

The **MSCI ACWI (All Country World Index)** is a free float-adjusted market capitalization weighted index that is designed to measure the equity market performance of developed and emerging markets.

The **MSCI EAFE Index (Europe, Australasia, Far East)** is a free float-adjusted market capitalization index that is designed to measure the equity market performance of developed markets, excluding the US & Canada.

The **MSCI Emerging Markets Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance in the global emerging markets.

The **MSCI Europe Index** is a free float-adjusted market capitalization index that is designed to measure developed market equity performance in Europe.

The **MSCI Pacific Index** is a free float-adjusted market capitalization index that is designed to measure equity market performance in the Pacific region.

The **Russell 1000 Index**® measures the performance of the 1,000 largest companies in the Russell 3000.

The **Russell 1000 Growth Index**® measures the performance of those Russell 1000 companies with higher price-to-book ratios and higher forecasted growth values.

The **Russell 1000 Value Index**® measures the performance of those Russell 1000 companies with lower price-to-book ratios and lower forecasted growth values.

The **Russell 2000 Index**® measures the performance of the 2,000 smallest companies in the Russell 3000 Index.

The **Russell 2000 Growth Index**® measures the performance of those Russell 2000 companies with higher price-to-book ratios and higher forecasted growth values.

The **Russell 2000 Value Index**® measures the performance of those Russell 2000 companies with lower price-to-book ratios and lower forecasted growth values.

The **Russell 3000 Index**® measures the performance of the 3,000 largest U.S. companies based on total market capitalization.

The **Russell Midcap Index**® measures the performance of the 800 smallest companies in the Russell 1000 Index.

The **Russell Midcap Growth Index**® measures the performance of those Russell Midcap companies with higher price-to-book ratios and higher forecasted growth values. The stocks are also members of the Russell 1000 Growth index.

The **Russell Midcap Value Index**® measures the performance of those Russell Midcap companies with lower price-to-book ratios and lower forecasted growth values. The stocks are also members of the Russell 1000 Value index.

The **S&P 500 Index** is widely regarded as the best single gauge of the U.S. equities market. The index includes a representative sample of 500 leading companies in leading industries of the U.S. economy. The **S&P 500 Index** focuses on the large-cap segment of the market; however, since it includes a significant portion of the total value of the market, it also represents the market.

Fixed income:

The **Bloomberg 1-3 Month U.S. Treasury Bill Index** includes all publicly issued zero-coupon US Treasury Bills that have a remaining maturity of less than 3 months and more than 1 month, are rated investment grade, and have \$250 million or more of outstanding face value. In addition, the securities must be denominated in U.S. dollars and must be fixed rate and non convertible.

The **Bloomberg Global High Yield Index** is a multi-currency flagship measure of the global high yield debt market. The index represents the union of the US High Yield, the Pan-European High Yield, and Emerging Markets (EM) Hard Currency High Yield Indices. The high yield and emerging markets sub-components are mutually exclusive. Until January 1, 2011, the index also included CMBS high yield securities.

The **Bloomberg Municipal Index**: consists of a broad selection of investment-grade general obligation and revenue bonds of maturities ranging from one year to 30 years. It is an unmanaged index representative of the tax-exempt bond market.

The **Bloomberg US Dollar Floating Rate Note (FRN) Index** provides a measure of the U.S. dollar denominated floating rate note market.

The **Bloomberg US Corporate Investment Grade Index** is an unmanaged index consisting of publicly issued US Corporate and specified foreign debentures and secured notes that are rated investment grade (Baa3/BBB or higher) by at least two ratings agencies, have at least one year to final maturity and have at least \$250 million par amount outstanding. To qualify, bonds must be SEC-registered.

The **Bloomberg US High Yield Index** covers the universe of fixed rate, non-investment grade debt. Eurobonds and debt issues from countries designated as emerging markets (sovereign rating of Baa1/BBB-/BBB+ and below using the middle of Moody's, S&P, and Fitch) are excluded, but Canadian and global bonds (SEC registered) of issuers in non-EMG countries are included.

The **Bloomberg US Mortgage Backed Securities Index** is an unmanaged index that measures the performance of investment grade fixed-rate mortgage backed pass-through securities of GNMA, FNMA and FHLMC.

The **Bloomberg US TIPS Index** consists of Inflation-Protection securities issued by the U.S. Treasury.

The **J.P. Morgan Emerging Market Bond Global Index (EMBI)** includes U.S. dollar denominated Brady bonds, Eurobonds, traded loans and local market debt instruments issued by sovereign and quasi-sovereign entities.

The **J.P. Morgan Domestic High Yield Index** is designed to mirror the investable universe of the U.S. dollar domestic high yield corporate debt market.

The **J.P. Morgan Corporate Emerging Markets Bond Index Broad Diversified (CEMBI Broad Diversified)** is an expansion of the **J.P. Morgan Corporate Emerging Markets Bond Index (CEMBI)**. The CEMBI is a market capitalization weighted index consisting of U.S. dollar denominated emerging market corporate bonds.

The **J.P. Morgan Emerging Markets Bond Index Global Diversified (EMBI Global Diversified)** tracks total returns for U.S. dollar-denominated debt instruments issued by emerging market sovereign and quasi-sovereign entities: Brady bonds, loans, Eurobonds. The index limits the exposure of some of the larger countries.

The **J.P. Morgan GBI EM Global Diversified** tracks the performance of local currency debt issued by emerging market governments, whose debt is accessible by most of the international investor base.

The **U.S. Treasury Index** is a component of the U.S. Government index.



J.P. Morgan Asset Management – Definitions

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Other asset classes:

The **Alerian MLP Index** is a composite of the 50 most prominent energy Master Limited Partnerships (MLPs) that provides investors with an unbiased, comprehensive benchmark for the asset class.

The **Bloomberg Commodity Index** and related sub-indices are composed of futures contracts on physical commodities and represents twenty two separate commodities traded on U.S. exchanges, with the exception of aluminum, nickel, and zinc

The **Cambridge Associates U.S. Global Buyout and Growth Index®** is based on data compiled from 1,768 global (U.S. & ex-U.S.) buyout and growth equity funds, including fully liquidated partnerships, formed between 1986 and 2013.

The **CS/Tremont Hedge Fund Index** is compiled by Credit Suisse Tremont Index, LLC. It is an asset-weighted hedge fund index and includes only funds, as opposed to separate accounts. The Index uses the Credit Suisse/Tremont database, which tracks over 4500 funds, and consists only of funds with a minimum of US\$50 million under management, a 12-month track record, and audited financial statements. It is calculated and rebalanced on a monthly basis, and shown net of all performance fees and expenses. It is the exclusive property of Credit Suisse Tremont Index, LLC.

The **HFRI Monthly Indices (HFRI)** are equally weighted performance indexes, utilized by numerous hedge fund managers as a benchmark for their own hedge funds. The HFRI are broken down into 4 main strategies, each with multiple sub strategies. All single-manager HFRI Index constituents are included in the HFRI Fund Weighted Composite, which accounts for over 2200 funds listed on the internal HFR Database.

The **NAREIT EQUITY REIT Index** is designed to provide the most comprehensive assessment of overall industry performance, and includes all tax-qualified real estate investment trusts (REITs) that are listed on the NYSE, the American Stock Exchange or the NASDAQ National Market List.

The **NFI-ODCE**, short for NCREIF Fund Index -Open End Diversified Core Equity, is an index of investment returns reporting on both a historical and current basis the results of 33 open-end commingled funds pursuing a core investment strategy, some of which have performance histories dating back to the 1970s. The NFI-ODCE Index is capitalization-weighted and is reported gross of fees. Measurement is time-weighted.

Definitions:

Investing in **alternative assets** involves higher risks than traditional investments and is suitable only for sophisticated investors. Alternative investments involve greater risks than traditional investments and should not be deemed a complete investment program. They are not tax efficient and an investor should consult with his/her tax advisor prior to investing. Alternative investments have higher fees than traditional investments and they may also be highly leveraged and engage in speculative investment techniques, which can magnify the potential for investment loss or gain. The value of the investment may fall as well as rise and investors may get back less than they invested.

Bonds are subject to interest rate risks. Bond prices generally fall when interest rates rise.

Investments in **commodities** may have greater volatility than investments in traditional securities, particularly if the instruments involve leverage. The value of commodity-linked derivative instruments may be affected by changes in overall market movements, commodity index volatility, changes in interest rates, or factors affecting a particular industry or commodity, such as drought, floods, weather, livestock disease, embargoes, tariffs and international economic, political and regulatory developments. Use of leveraged commodity-linked derivatives creates an opportunity for increased return but, at the same time, creates the possibility for greater loss.

Derivatives may be riskier than other types of investments because they may be more sensitive to changes in economic or market conditions than other types of investments and could result in losses that significantly exceed the original investment. The use of derivatives may not be successful, resulting in investment losses, and the cost of such strategies may reduce investment returns.

Distressed Restructuring Strategies employ an investment process focused on corporate fixed income instruments, primarily on corporate credit instruments of companies trading at significant discounts to their value at issuance or obliged (par value) at maturity as a result of either formal bankruptcy proceeding or financial market perception of near term proceedings.

Investments in **emerging markets** can be more volatile. The normal risks of investing in foreign countries are heightened when investing in emerging markets. In addition, the small size of securities markets and the low trading volume may lead to a lack of liquidity, which leads to increased volatility. Also, emerging markets may not provide adequate legal protection for private or foreign investment or private property.

The price of **equity securities** may rise, or fall because of changes in the broad market or changes in a company's financial condition, sometimes rapidly or unpredictably. These price movements may result from factors affecting individual companies, sectors or industries, or the securities market as a whole, such as changes in economic or political conditions. Equity securities are subject to "stock market risk" meaning that stock prices in general may decline over short or extended periods of time.

Equity market neutral strategies employ sophisticated quantitative techniques of analyzing price data to ascertain information about future price movement and relationships between securities, select securities for purchase and sale. Equity Market Neutral Strategies typically maintain characteristic net equity market exposure no greater than 10% long or short.

Global macro strategies trade a broad range of strategies in which the investment process is predicated on movements in underlying economic variables and the impact these have on equity, fixed income, hard currency and commodity markets.

International investing involves a greater degree of risk and increased volatility. Changes in currency exchange rates and differences in accounting and taxation policies outside the U.S. can raise or lower returns. Some overseas markets may not be as politically and economically stable as the United States and other nations.

There is no guarantee that the use of **long and short positions** will succeed in limiting an investor's exposure to domestic stock market movements, capitalization, sector swings or other risk factors. Using long and short selling strategies may have higher portfolio turnover rates. Short selling involves certain risks, including additional costs associated with covering short positions and a possibility of unlimited loss on certain short sale positions.

Merger arbitrage strategies which employ an investment process primarily focused on opportunities in equity and equity related instruments of companies which are currently engaged in a corporate transaction.

Mid-capitalization investing typically carries more risk than investing in well-established "blue-chip" companies. Historically, mid-cap companies' stock has experienced a greater degree of market volatility than the average stock.

Price to forward earnings is a measure of the price-to-earnings ratio (P/E) using forecasted earnings. **Price to book value** compares a stock's market value to its book value. **Price to cash flow** is a measure of the market's expectations of a firm's future financial health. **Price to dividends** is the ratio of the price of a share on a stock exchange to the dividends per share paid in the previous year, used as a measure of a company's potential as an investment.

Real estate investments may be subject to a higher degree of market risk because of concentration in a specific industry, sector or geographical sector. Real estate investments may be subject to risks including, but not limited to, declines in the value of real estate, risks related to general and economic conditions, changes in the value of the underlying property owned by the trust and defaults by borrower.

Relative Value Strategies maintain positions in which the investment thesis is predicated on realization of a valuation discrepancy in the relationship between multiple securities.

Small-capitalization investing typically carries more risk than investing in well-established "blue-chip" companies since smaller companies generally have a higher risk of failure. Historically, smaller companies' stock has experienced a greater degree of market volatility than the average stock.



J.P. Morgan Asset Management – Risks & disclosures

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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.

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

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