Guide to the Markets®

U.S. | 3Q 2023
As of June 30, 2023

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Page reference

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S&P 500 Index at inflection points

S&P 500 Price Index

Characteristic	3/24/2000	10/9/2007	2/19/2020	1/3/2022	10/12/2022	6/30/2023
Index Level	1,527	1,565	3,386	4,797	3,577	4,450
P/E Ratio (fwd.)	25.2x	15.1x	19.2x	21.4x	15.2x	19.1x
Dividend Yield	1.4%	1.9%	1.9%	1.3%	1.9%	1.6%
10-yr. Treasury	6.2%	4.7%	1.6%	1.6%	3.9%	3.8%

Jan. 3, 2022
P/E (fwd.) = 21.4x
4,797

Jun. 30, 2023
P/E (fwd.) = 19.1x
4,450

+114%

−25%

+24%

Feb. 19, 2020
P/E (fwd.) = 19.2x
3,386

Oct. 12, 2022
P/E (fwd.) = 15.2x
3,577

+401%

−34%

Mar. 23, 2020
P/E (fwd.) = 13.3x
2,237

Mar. 24, 2000
P/E (fwd.) = 25.2x
1,527

Oct. 9, 2007
P/E (fwd.) = 15.1x
1,565

+106%

−49%

+101%

−57%

Dec. 31, 1996
P/E (fwd.) = 15.9x
741

Oct. 9, 2002
P/E (fwd.) = 14.1x
777

Mar. 9, 2009
P/E (fwd.) = 10.4x
677

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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Equities

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S&P 500 valuation measures

S&P 500 Index: Forward P/E ratio

Valuation measure	Description	Latest	25-year avg.*	Std. dev. Over-/under-Valued
P/E	Forward P/E	19.13x	16.79x	0.71
CAPE	Shiller's P/E	30.79x	27.81x	0.47
Div. Yield	Dividend yield	1.59%	1.98%	1.15
P/B	Price to book	3.84x	3.10x	0.91
P/CF	Price to cash flow	14.74x	11.24x	1.59
EY Spread	EY minus Baa yield	-0.54%	0.31%	0.45

+1 Std. dev.: 20.10x

25-year average: 16.79x

-1 Std. dev.: 13.47x

Jun. 30, 2023: 19.13x

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P/E ratios and equity returns

Equities

Forward P/E and subsequent 1-yr. returns
S&P 500 Total Return Index

Jun. 30, 2023: 19.1x

R² = 5%
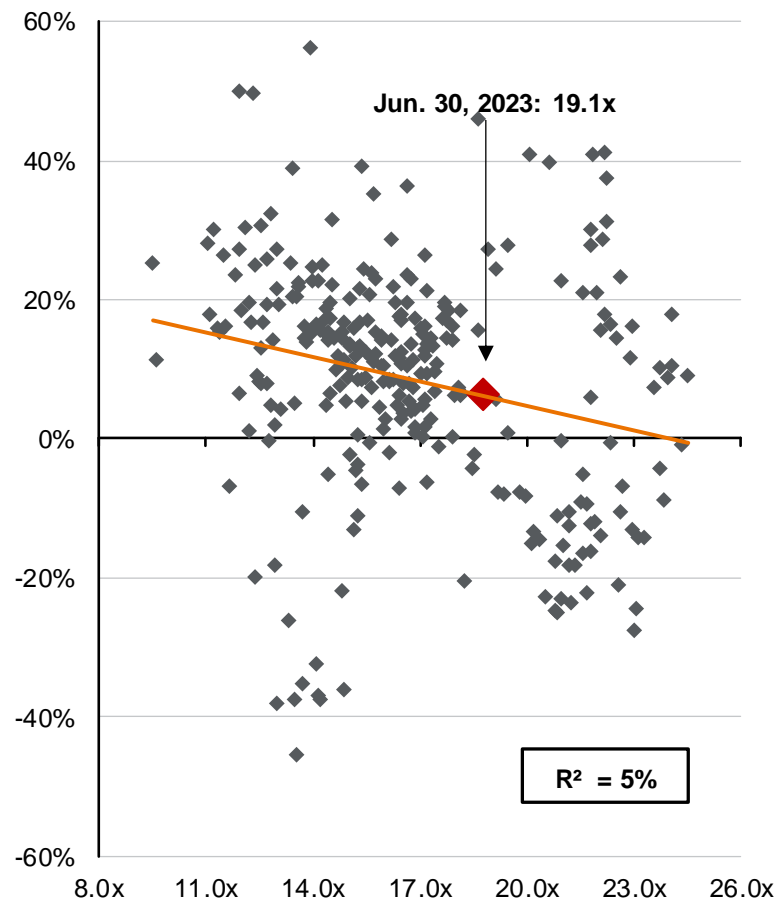
Forward P/E and subsequent 5-yr. annualized returns
S&P 500 Total Return Index

Jun. 30, 2023: 19.1x

R² = 33%
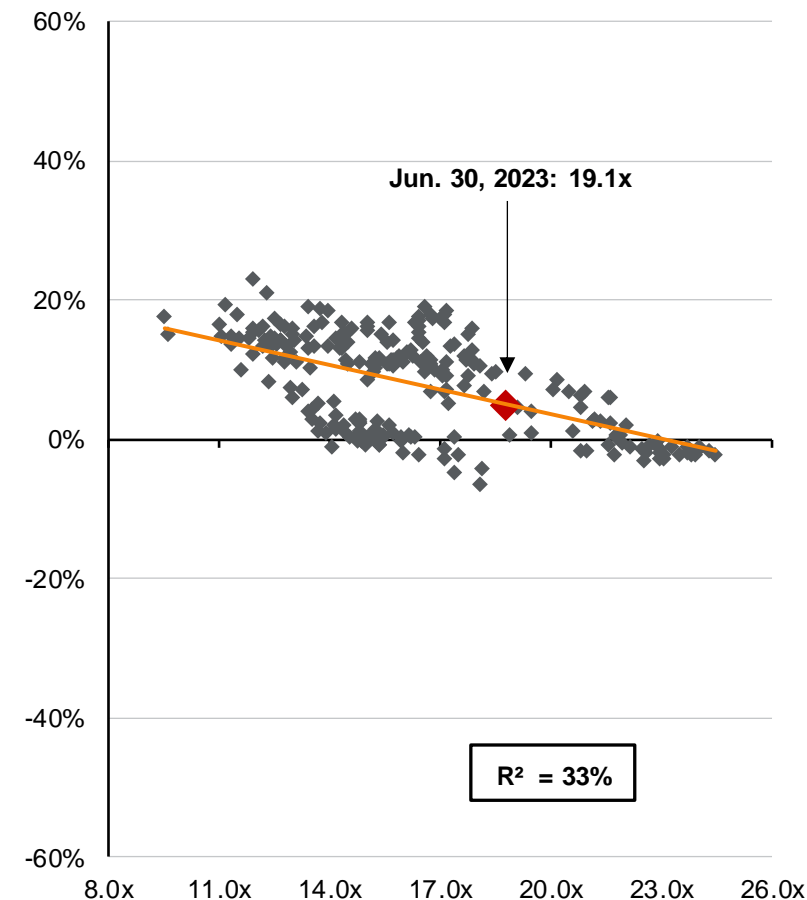
Source: FactSet, Refinitiv Datastream, Standard & Poor's, Thomson Reuters, J.P. Morgan Asset Management.
Returns are 12-month and 60-month annualized total returns, measured monthly, beginning 5/31/1998. R² represents the percent of total variation
in total returns that can be explained by forward price-to-earnings 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 February 1998 and by FactSet since January 2022.
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S&P 500: Valuation dispersion

Equities

Valuation dispersion between the 20th and 80th percentile of S&P 500 stocks
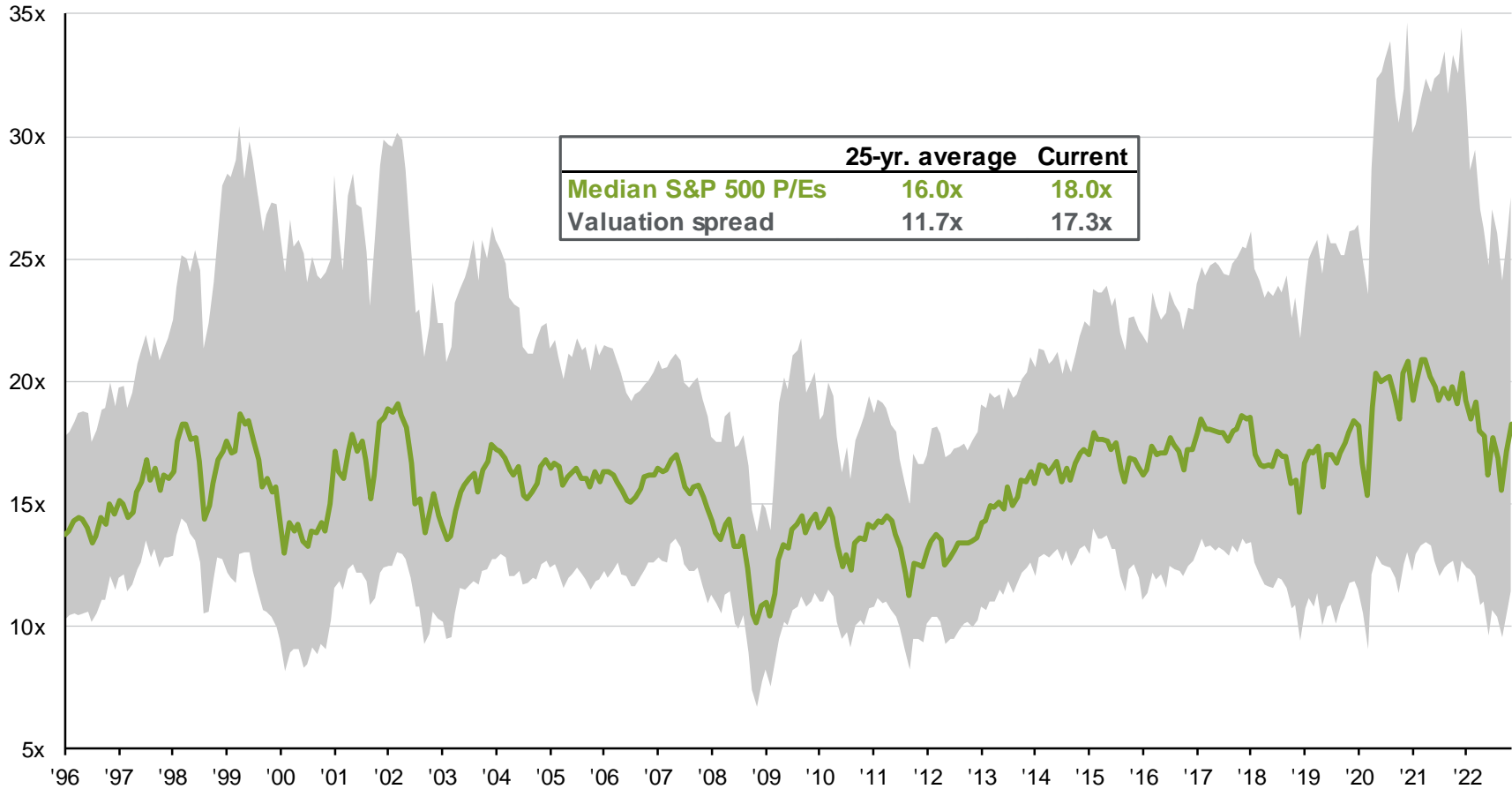
	25-yr. average	Current
Median S&P 500 P/Es	16.0x	18.0x
Valuation spread	11.7x	17.3x

Source: Compustat, FactSet, Standard & Poor's, J.P. Morgan Asset Management.
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Corporate earnings and sources of earnings growth

S&P 500 earnings per share
Index annual operating earnings, USD

Legend:
- Consensus analyst estimates
- Earnings recessions
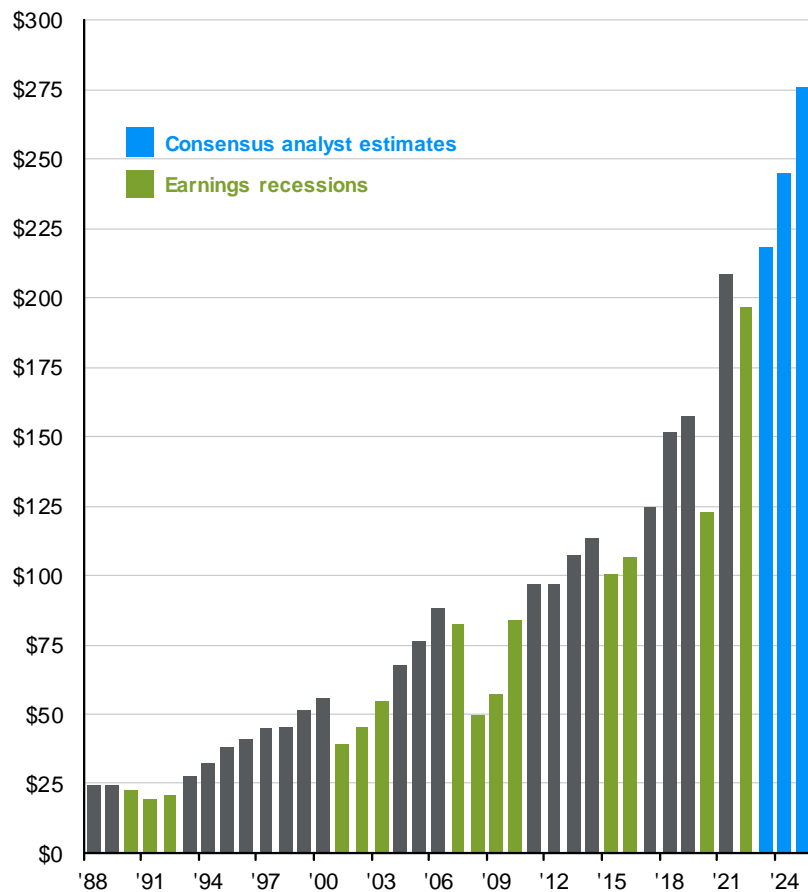
S&P 500 year-over-year operating EPS growth
Annual growth broken into revenue, changes in profit margin & changes in share count

Share of EPS growth	2023*	Avg. '01-'22
Margin	8.1%	4.1%
Revenue	2.4%	4.0%
Share count	0.2%	0.3%
Total EPS	10.8%	8.4%
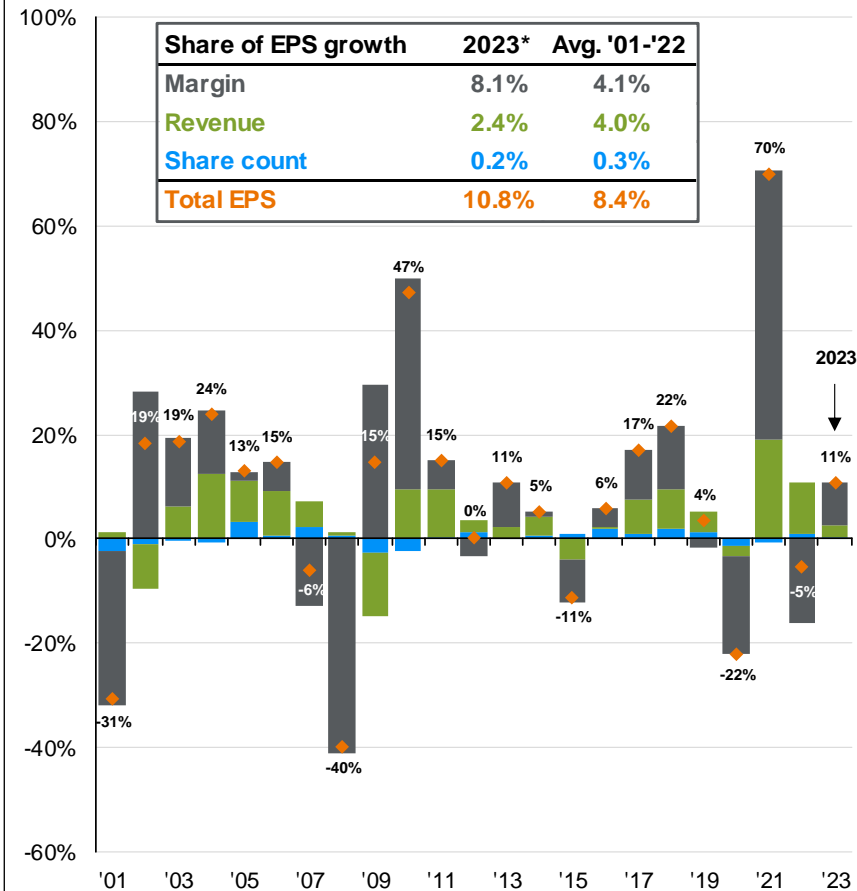
Source: Compustat, FactSet, Standard & Poor's, J.P. Morgan Asset Management.
Historical EPS levels are based on annual operating earnings per share. *2023 earnings estimates are based on estimates from Standard & Poor's and FactSet Market Aggregates. Percentages may not sum due to rounding. Past performance is not indicative of future returns.
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Profit margins

Equities

S&P 500 profit margins
Quarterly operating earnings/sales

1Q23:
11.6%*

Recession
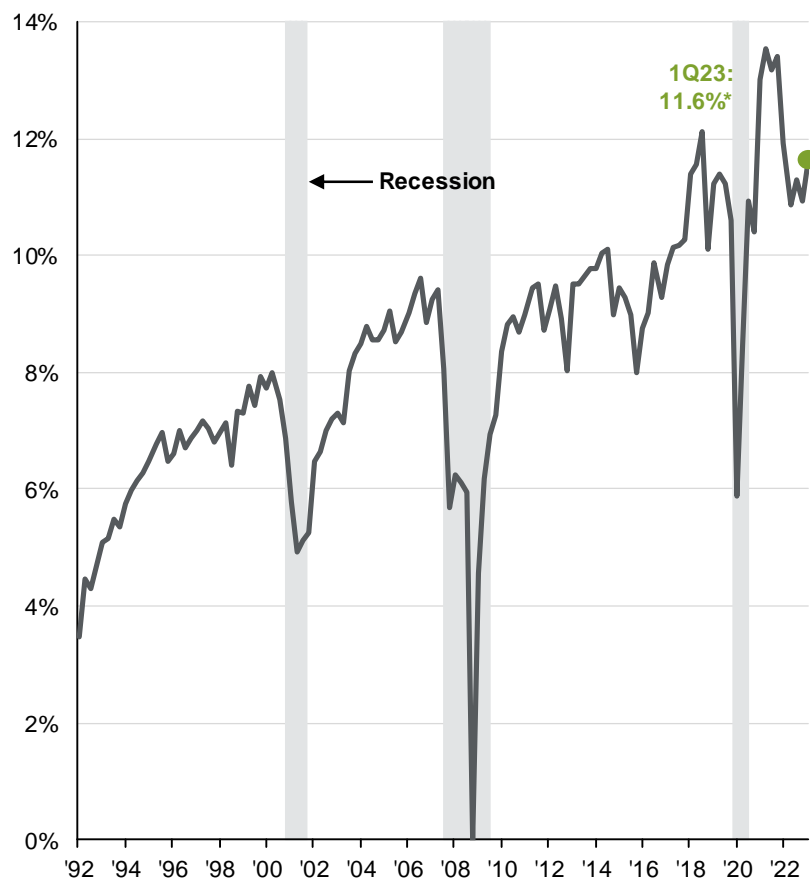
S&P 500 operating margins by sector
Current operating margins versus historical range**

Range since 4Q10
1Q23*

S&P 500
Real Estate
Utilities
Comm. Services
Tech.
Financials
Health Care
Cons. Staples
Cons. Disc.
Industrials
Materials
Energy
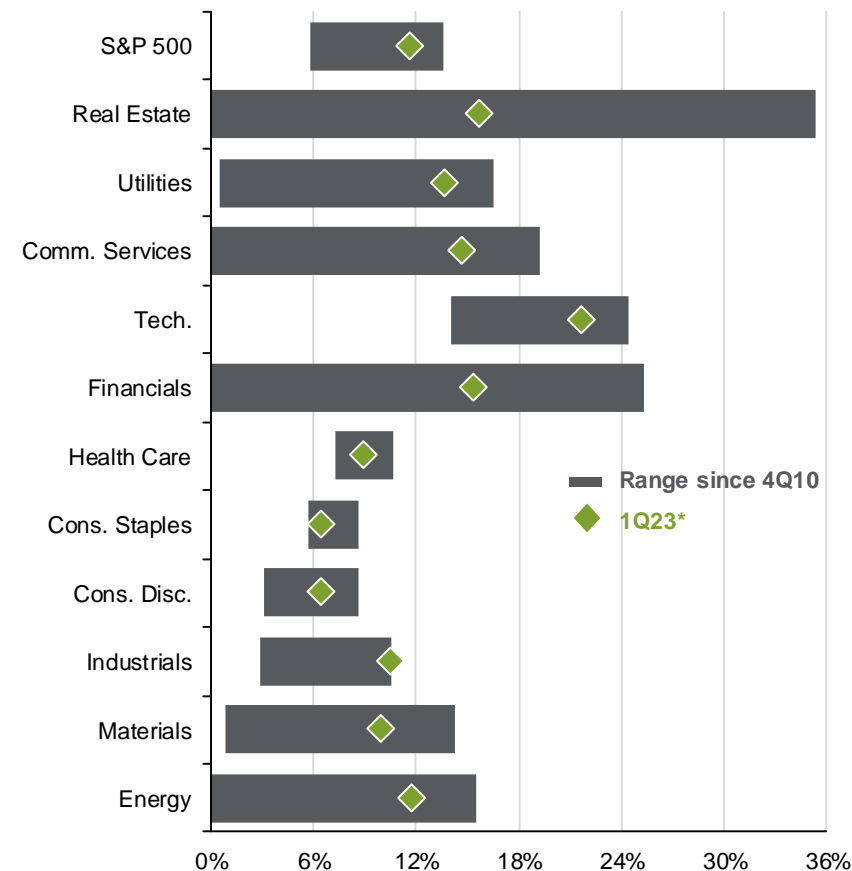
Source: Compustat, FactSet, NFIB, Standard & Poor's, J.P. Morgan Asset Management. Past performance is not indicative of future returns.
*Current 1Q23 profit margin is a preliminary estimate. **Quarters with negative operating margins are not shown, with zero set as the lower bound for troughs.
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Equities

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

← Recession

Growth cheap/Value expensive ↑

Long-term avg.*:0.71

Value cheap/Growth expensive ↓

Jun. 30, 2023: 0.54

Style	Forward P/E		Div. yield**	
	Current	Long-term avg.*	Current	Long-term avg.*
Value	14.48x	14.09x	2.40%	2.59%
Growth	27.01x	20.79x	0.82%	1.34%

S&P 500 operating leverage by sector
Impact on operating income from a 1% rise in revenues

Sector	Leverage
Energy	8.4x
Real Estate	1.9x
Materials	1.7x
Financials	1.6x
Utilities	1.5x
Health Care	1.3x
Industrials	1.3x
Cons. Disc.	1.1x
Comm. Services	0.9x
Tech.	0.7x
Cons. Staples	-0.2x

■ Value
■ Growth

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S&P 500: Index concentration, valuations and earnings

Equities

P/E ratio of the top 10 and remaining stocks in the S&P 500
Next 12 months, 1996 - present

	Current	Average	% of avg.
Top 10	**29.3x**	**20.1x**	**145%**
Remaining stocks	17.8x	15.7x	113%
S&P 500	**19.1x**	**16.5x**	**116%**
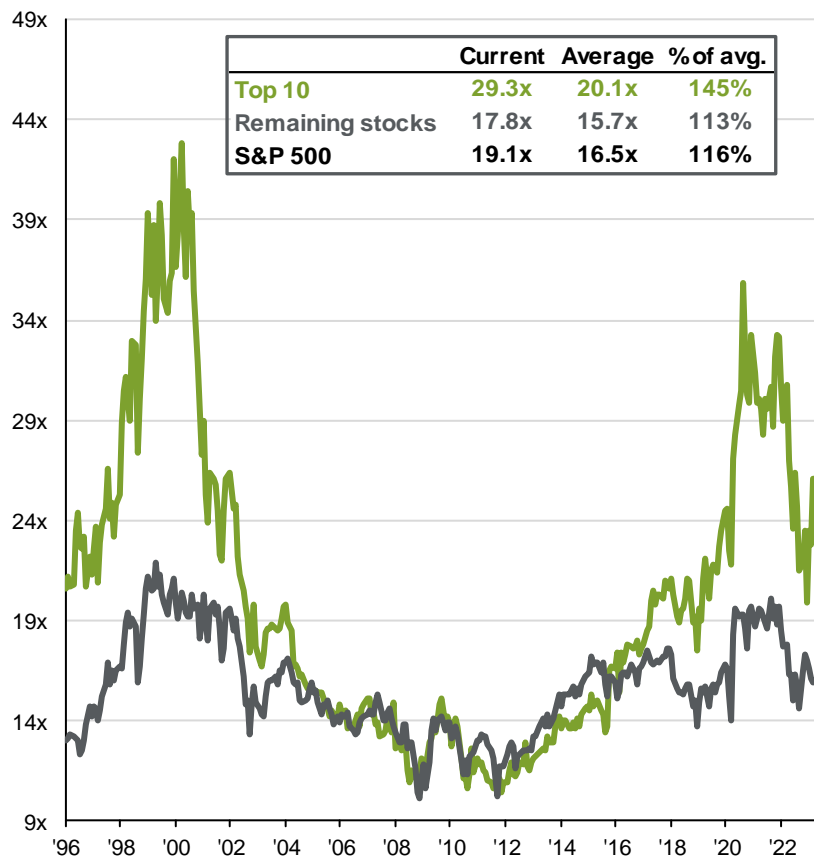
Weight of the top 10 stocks in the S&P 500
% of market capitalization of the S&P 500

Jun. 30, 2023: 31.7%
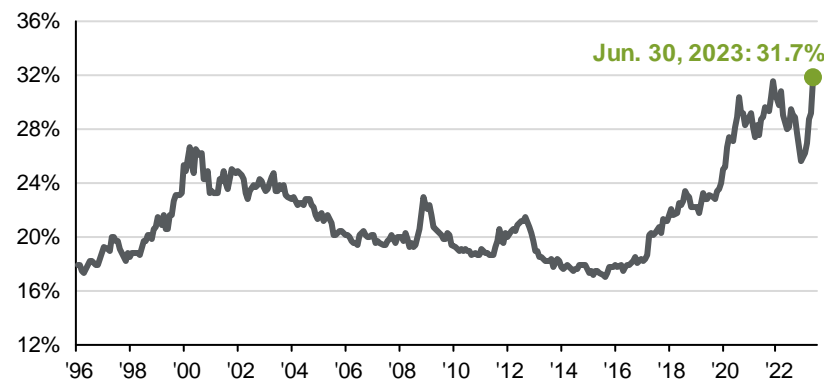
Earnings contribution of the top 10 in the S&P 500
Based on last 12 months' earnings

Jun. 30, 2023: 21.5%

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 month. As of 5/31/2023, the top 10 companies in the index were AAPL (7.5%), MSFT (7.0%), AMZN (3.1%), NVDA (2.7%), GOOGL (2.1%), GOOG (1.8%), Meta (1.7%), BRK.B (1.7%), TLSA (1.6%), UNH (1.3%) and XOM (1.2%). The remaining stocks represent the rest of the 494 companies in the S&P 500.
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Small cap vs. large cap stocks

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Equities

Sector composition
% of index market capitalization

Sector	Large cap	Small cap
Info. Tech.	28.3%	13.7%
Health Care	13.4%	16.9%
Financials	12.4%	15.1%
Cons. Discretionary	10.7%	10.6%
Industrials	8.5%	17.4%
Comm. Svcs.	8.4%	2.5%
Cons. Staples	6.7%	3.4%
Energy	4.1%	6.8%
Utilities	2.6%	3.0%
Materials	2.5%	4.6%
Real Estate	2.5%	6.1%
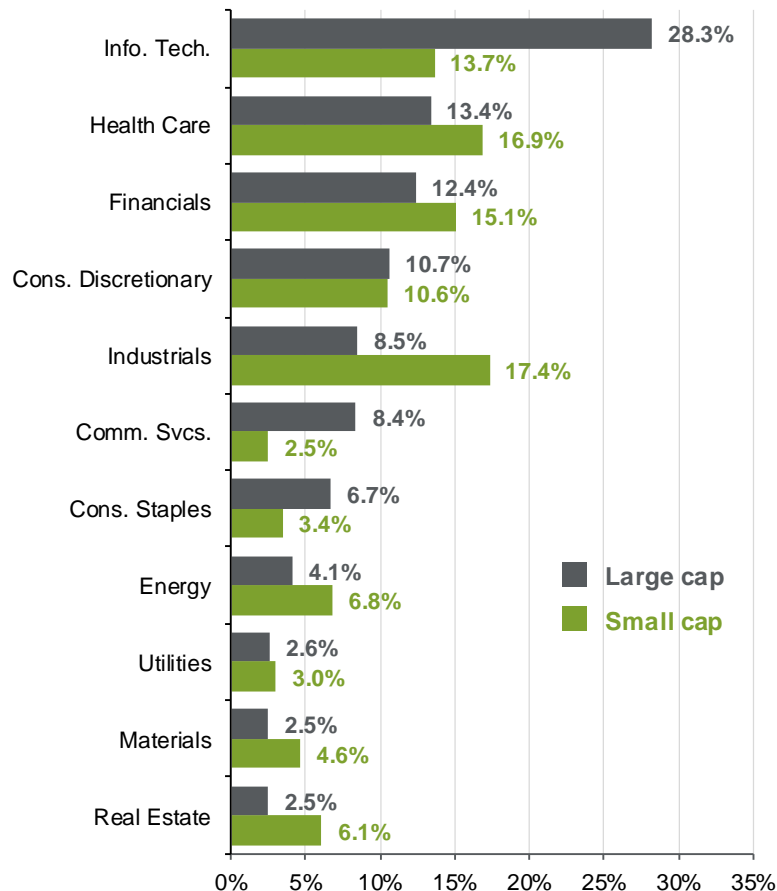
Percent of unprofitable companies in the Russell 2000
1Q98 – 1Q23, pro-forma EPS

1Q23: 45.5%
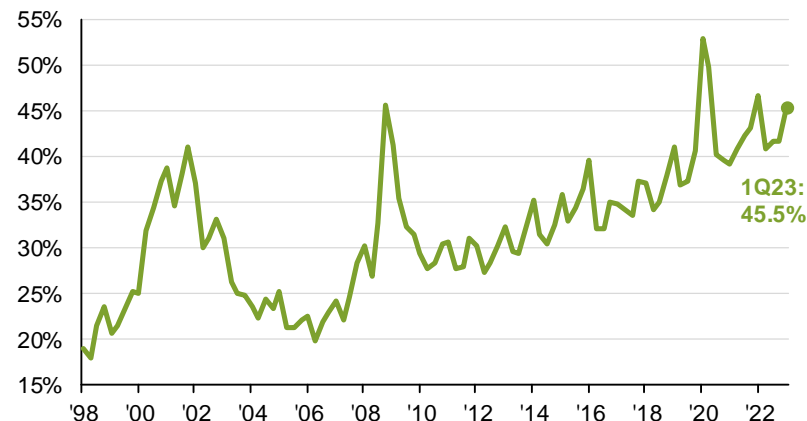
Interest rate coverage ratio
EBIT/interest expense on debt, monthly, LTM, 1998-present

Large cap — June 2023: 9.2x
Small cap — June 2023: 2.4x
Average: 6.3x
Average: 2.1x
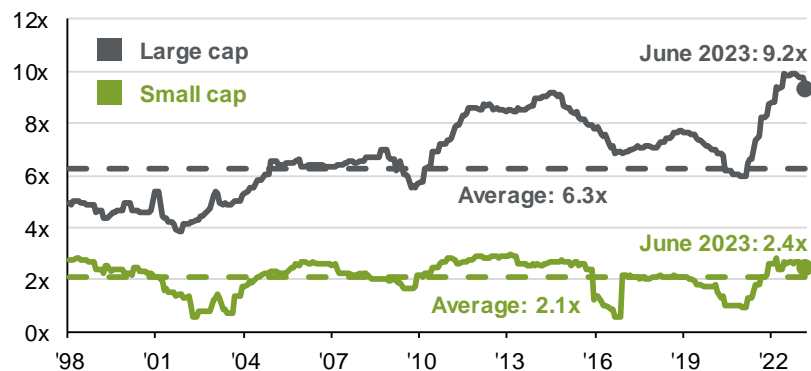
Source: Compustat, FactSet, FTSE Russell, NBER, J.P. Morgan Asset Management.
The S&P 500 is used for large cap and the Russell 2000 is used for small cap.
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Returns and valuations by style

10-year annualized

	Value	Blend	Growth
Large	9.2%	12.9%	15.7%
Mid	9.0%	10.3%	11.5%
Small	7.3%	8.3%	8.8%

YTD

	Value	Blend	Growth
Large	5.1%	16.9%	29.0%
Mid	5.2%	9.0%	15.9%
Small	2.5%	8.1%	13.6%

Since market peak (February 2020)

	Value	Blend	Growth
Large	23.5%	38.8%	47.9%
Mid	22.6%	24.6%	21.4%
Small	20.2%	16.6%	10.2%

Since market low (March 2020)

	Value	Blend	Growth
Large	99.8%	109.7%	115.7%
Mid	116.7%	108.6%	88.8%
Small	111.3%	96.5%	79.0%

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

	Value	Blend	Growth
Large	14.5 / 13.7	19.1 / 15.5	27.0 / 18.7
Mid	14.3 / 14.5	16.4 / 16.4	26.0 / 20.4
Small	14.9 / 16.8	21.2 / 21.4	36.9 / 22.9

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

	Value	Blend	Growth
Large	105.7%	123.1%	144.2%
Mid	98.6%	100.4%	127.6%
Small	89.0%	99.3%	160.9%

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 2/19/2020 to 6/30/2023. Since market low represents period from 3/23/2020 to 6/30/2023. 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 June 30, 2023.

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Returns and valuations by sector

	Energy	Materials	Financials	Industrials	Cons. Disc.	Tech.	Comm. Services*	Real Estate	Health Care	Cons. Staples	Utilities	S&P 500 Index	
S&P weight	**4.1%**	**2.5%**	**12.4%**	**8.5%**	**10.7%**	**28.3%**	**8.4%**	**2.5%**	**13.4%**	**6.7%**	**2.6%**	**100.0%**	Weight
Russell Growth weight	0.5%	0.7%	6.4%	6.0%	16.0%	43.3%	10.7%	1.0%	11.0%	4.4%	0.1%	100.0%	
Russell Value weight	7.9%	4.8%	20.1%	13.5%	5.3%	9.0%	5.1%	4.9%	15.8%	8.4%	5.2%	100.0%	
Russell 2000 weight	6.8%	4.6%	15.1%	17.4%	10.5%	13.7%	2.5%	6.1%	16.9%	3.4%	3.0%	100.0%	
QTD	-0.9%	3.3%	5.3%	6.5%	14.6%	17.2%	13.1%	0.3%	3.0%	0.5%	-2.5%	8.7%	Return
YTD	-5.5%	7.7%	-0.5%	10.2%	33.1%	42.8%	36.2%	1.5%	-1.5%	1.3%	-5.7%	16.9%	
Since market peak (February 2020)	76.3%	47.4%	16.8%	35.7%	30.6%	77.1%	15.6%	-7.8%	35.4%	28.9%	4.3%	38.8%	
Since market low (March 2020)	300.0%	130.7%	104.7%	132.7%	91.3%	157.2%	61.8%	48.7%	87.8%	69.7%	62.0%	109.7%	
Beta to S&P 500	1.3	1.1	1.1	1.1	1.2	1.1	1.0*	0.8	0.8	0.6	0.5	1.0	β
Correl. To Treas. Yields	0.0	-0.5	-0.3	-0.5	-0.6	-0.7	-0.8	-0.6	-0.4	-0.4	-0.5	-0.6	ρ
Foreign %of sales	37.8	55.2	21.3	32.3	34.3	57.6	42.8	15.9	35.7	42.0	1.8	39.5	%
NTM earnings growth	-15.1%	-6.9%	4.1%	13.1%	21.1%	8.4%	17.4%	2.5%	-0.9%	6.1%	7.4%	6.1%	EPS
20-yr. avg.	**99.9%**	**15.4%**	**20.7%**	**14.1%**	**17.0%**	**13.1%**	**10.3%***	**6.8%**	**8.1%**	**7.7%**	**4.4%**	**11.1%**	
Forward P/E ratio	10.7x	17.5x	13.4x	18.8x	26.9x	27.6x	17.2x	16.6x	17.2x	20.0x	17.0x	19.1x	P/E
20-yr. avg.	**13.6x**	**14.8x**	**12.5x**	**16.3x**	**19.3x**	**17.9x**	**18.7x***	**16.8x**	**15.0x**	**17.4x**	**15.5x**	**15.5x**	
Buyback yield	5.0%	2.4%	2.8%	2.5%	1.9%	2.0%	4.1%	-1.7%	1.6%	1.2%	-1.1%	2.2%	Bbk
20-yr. avg.	**1.7%**	**0.9%**	**0.4%**	**2.2%**	**2.4%**	**3.0%**	**1.6%**	**-1.4%**	**2.0%**	**1.8%**	**-0.8%**	**1.8%**	
Dividend yield	3.4%	2.0%	2.0%	1.8%	0.9%	0.9%	0.9%	3.9%	1.8%	2.7%	3.5%	1.6%	Div
20-yr. avg.	**2.8%**	**2.4%**	**2.3%**	**2.2%**	**1.4%**	**1.2%**	**1.2%**	**3.9%**	**1.9%**	**2.8%**	**3.9%**	**2.1%**	

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 2/19/2020 to 3/31/2023. Since market low represents period from 3/23/2020 to 3/31/2023. 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 backtested data by JPMAM. Past performance is not indicative of future returns.
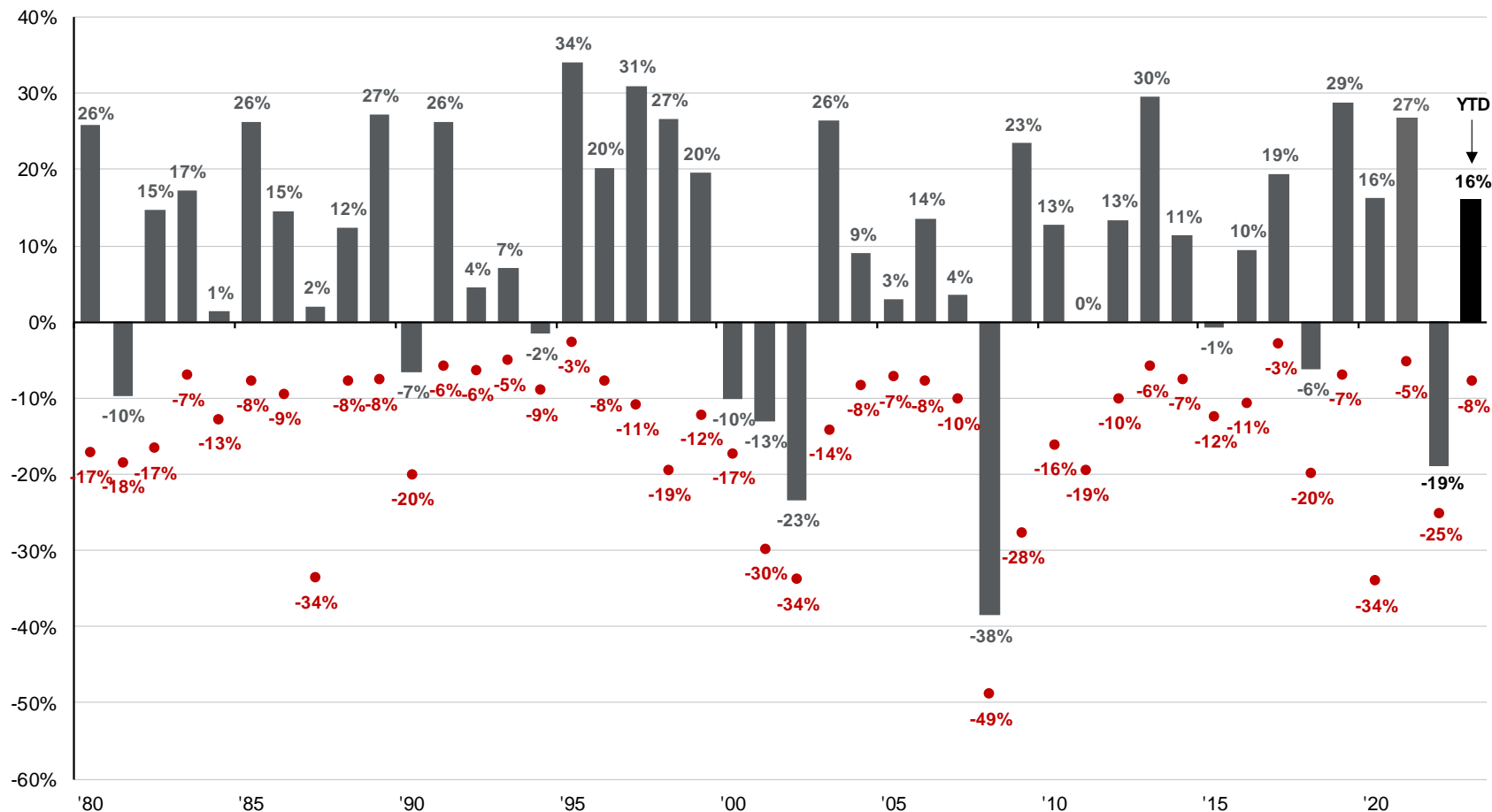*Guide to the Markets – U.S.* Data are as of June 30, 2023.

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Equities

S&P intra-year declines vs. calendar year returns
Despite average intra-year drops of 14.3%, annual returns were positive in 32 of 43 years
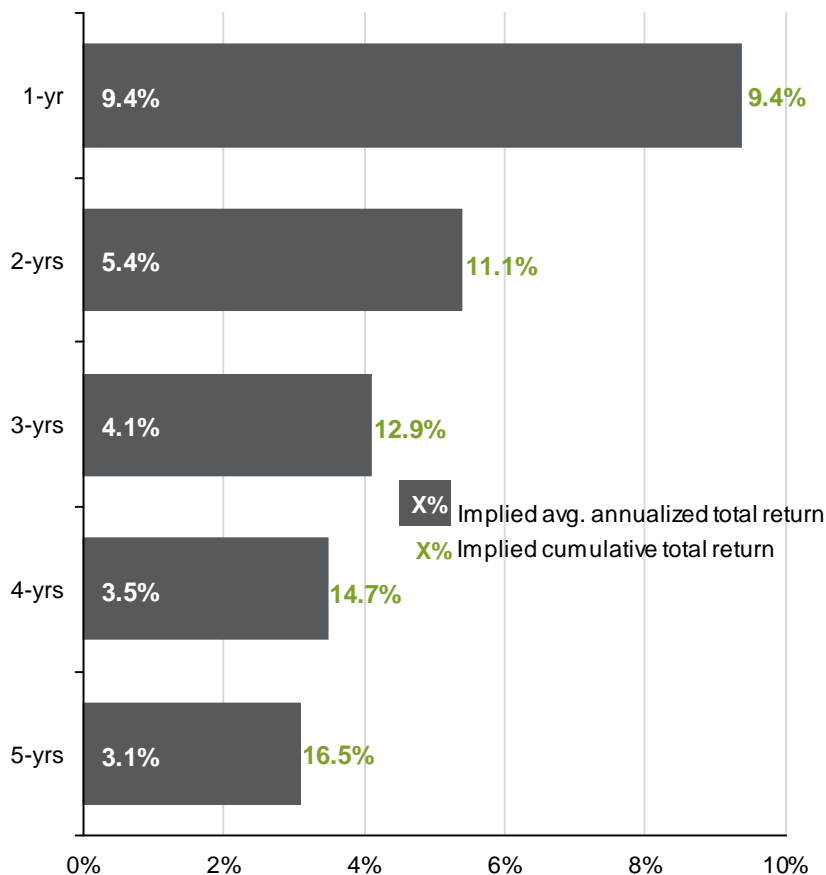
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Equity scenarios: Bull, bear and in-between

Equities

Return needed to reach January 2022 peak of 4,797
S&P 500 level as of 6/30/2023 is 4,450

Period	Implied avg. annualized total return	Implied cumulative total return
1-yr	9.4%	9.4%
2-yrs	5.4%	11.1%
3-yrs	4.1%	12.9%
4-yrs	3.5%	14.7%
5-yrs	3.1%	16.5%

X% Implied avg. annualized total return
X% Implied cumulative total return

Bull and bear markets

Bull markets			Bear markets		
Bull begin date	Bull return	Duration (months)	Market peak	Bear return*	Duration (months)*
Jul 1926	152%	37	Sep 1929	-86%	32
Mar 1935	129%	23	Mar 1937	-60%	61
Apr 1942	158%	49	May 1946	-30%	36
Jun 1949	267%	85	Aug 1956	-22%	14
Oct 1960	39%	13	Dec 1961	-28%	6
Oct 1962	76%	39	Feb 1966	-22%	7
Oct 1966	48%	25	Nov 1968	-36%	17
May 1970	74%	31	Jan 1973	-48%	20
Mar 1978	62%	32	Nov 1980	-27%	20
Aug 1982	229%	60	Aug 1987	-34%	3
Oct 1990	417%	113	Mar 2000	-49%	30
Oct 2002	101%	60	Oct 2007	-57%	17
Mar 2009	401%	131	Feb 2020	-34%	1
Mar 2020	114%	21	Jan. 2022**	-25%	9
Averages	**162%**	**51**	**-**	**-41%**	**20**

Source: FactSet, NBER, Robert Shiller, Standard & Poor's, J.P. Morgan Asset Management. (Left) The current peak of 4,797 was observed on 1/3/2022. (Right) *A bear market is defined as a 20% or more decline from the previous market high. The related market return is the peak to trough return over the cycle. Bear and bull returns are price returns. **The bear market beginning in January 2022 is currently ongoing, with the "bear return" and duration for this period calculated from the January 2022 market peak through the current trough in October 2022. Averages for the bear market return and duration do not include figures from the current cycle.
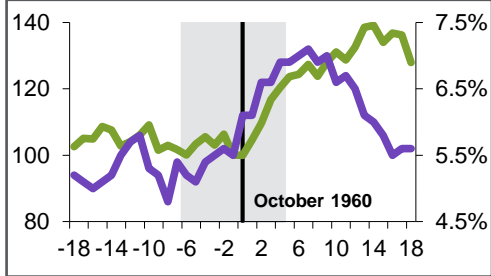*Guide to the Markets – U.S.* Data are as of June 30, 2023.

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Market inflection points, recessions and the unemployment rate

Equities

April 1960 – February 1961

October 1960

December 1969 – November 1970

June 1970
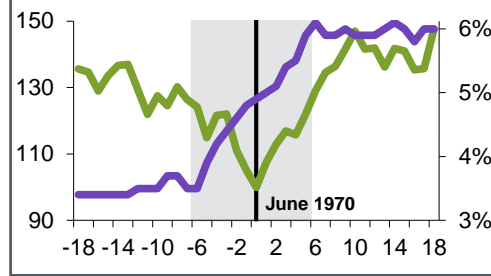
November 1973 – March 1975

September 1974
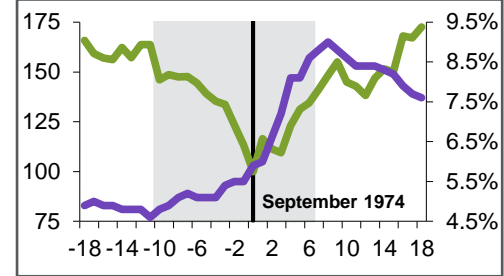
January 1980 – July 1980
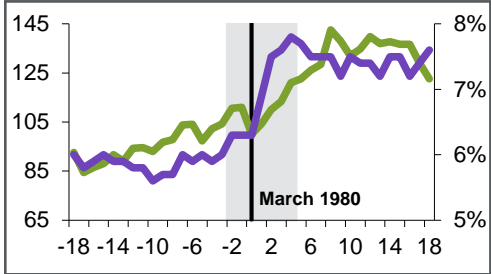
March 1980

July 1981 – November 1982
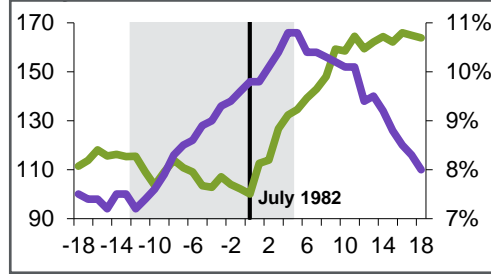
July 1982

July 1990 – March 1991

October 1990
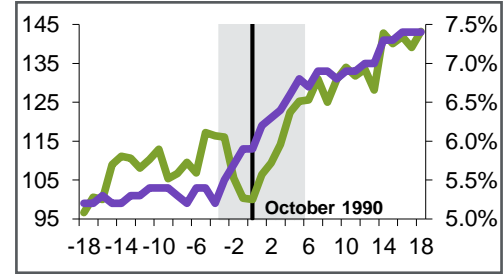
March 2001 – November 2001

October 2002
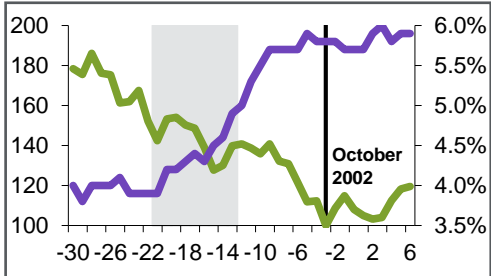
December 2007 – June 2009

February 2009
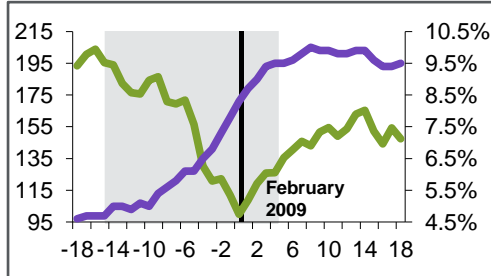
March 2020 – April 2020

March 2020
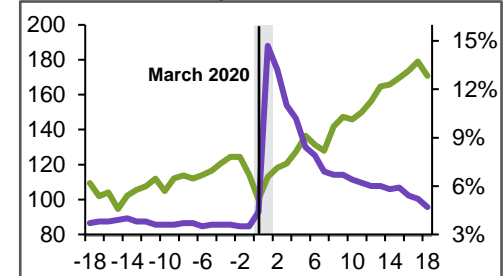
Legend:
— Unemployment Rate
— S&P 500 Total Return
▨ Recession
▮ Market Low

Source: BLS, Ibbotson, J.P. Morgan Asset Management. Time zero represents the numeric low of the S&P 500 Total Return Index associated with the recessionary period defined by the shaded gray area; data shown in months. S&P 500 Index is rebased to 100 at time zero.
Guide to the Markets – U.S. Data are as of June 30, 2023.

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Economic growth and the composition of GDP

Real GDP
Trillions of chained (2012) dollars, seasonally adjusted at annual rates

GDP (%)	2Q22	3Q22	4Q22	1Q23
Q/Q saar	-0.6	3.2	2.6	2.0
Y/Y	1.8	1.9	0.9	1.8
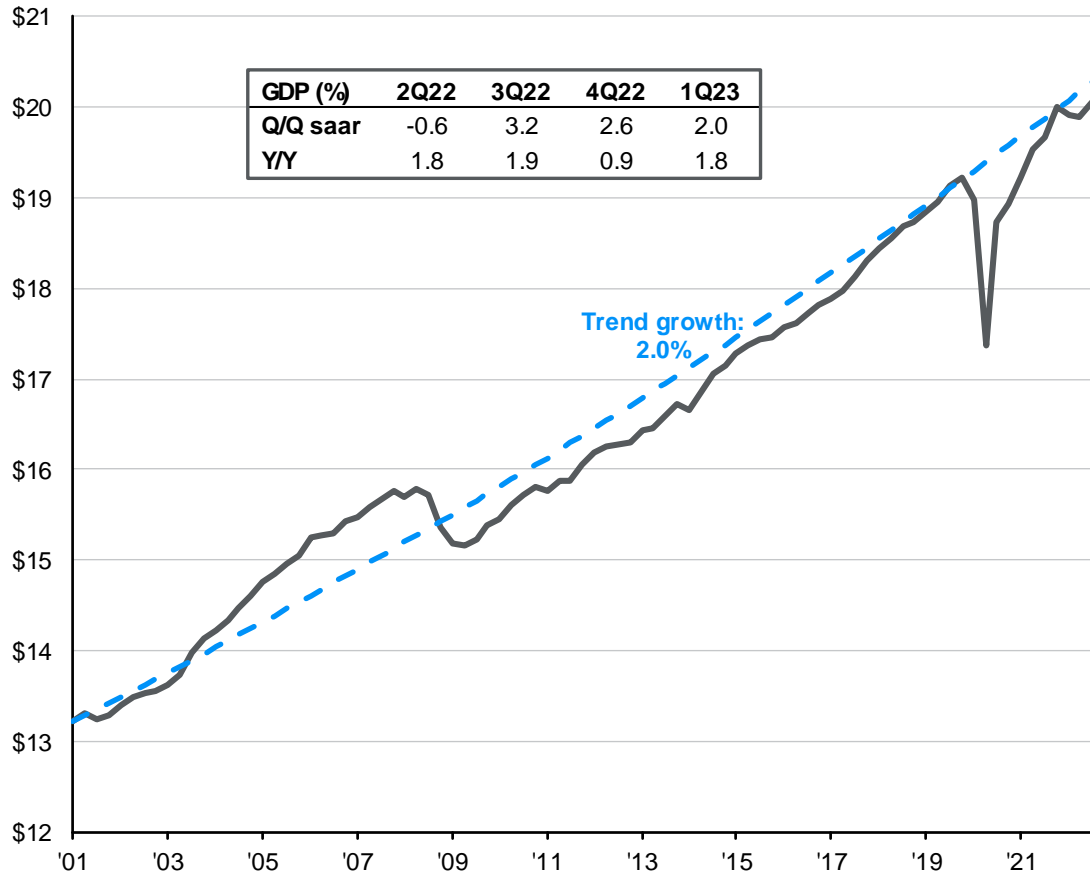
Trend growth: 2.0%

Components of GDP
1Q23 nominal GDP, USD trillions

- 3.9% Housing
- 13.4% Investment ex-housing
- 17.5% Gov't spending
- 68.3% Consumption
- -3.0% Net exports
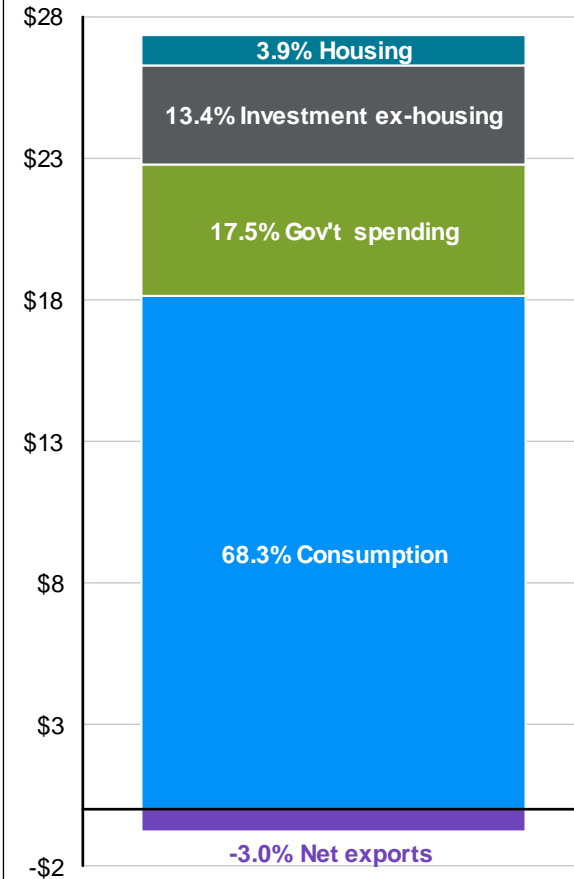
Source: BEA, FactSet, J.P. Morgan Asset Management. Values may not sum to 100% due to rounding. Trend growth is measured as the average annual growth rate from business cycle peak 1Q01 to business cycle peak 4Q19.
Guide to the Markets – U.S. Data are as of June 30, 2023.

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Economy

Recession determinants

Variables used by the NBER in making recession determination*
% change month-over-month

% change, last six months

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Economy

Economy

Residential investment as a % of GDP
Quarterly, seasonally adjusted

Recession

Average: 4.4%

1Q23: 3.9%
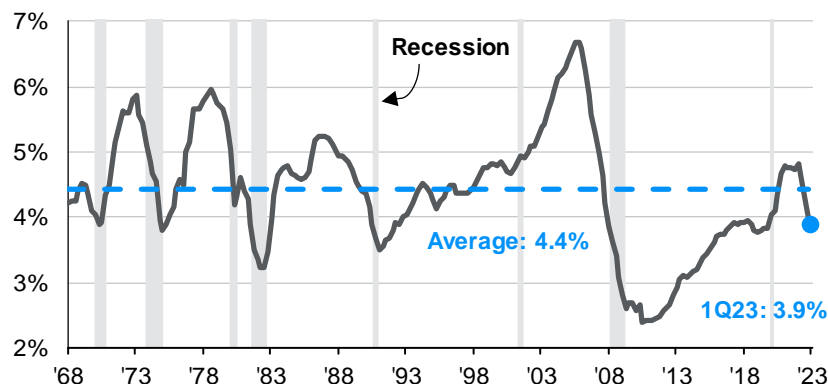
Business fixed investment as a % of GDP
Quarterly, seasonally adjusted

1Q23: 13.3%

Average: 12.8%
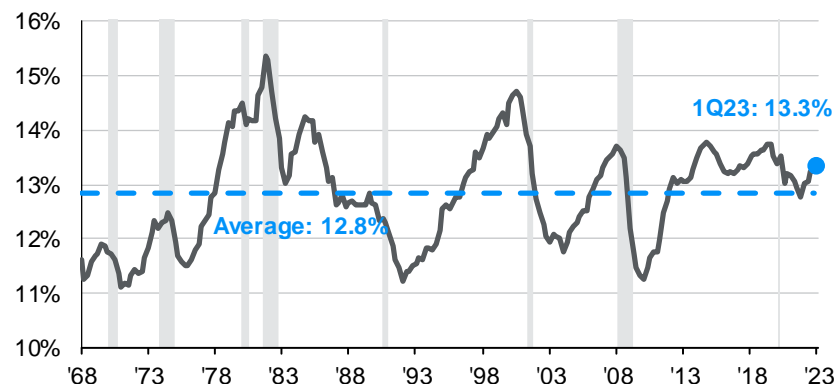
Light vehicle sales
Mil vehicles, seasonally adjusted ann. rate

Average: 14.8m

May 2023: 15.0m
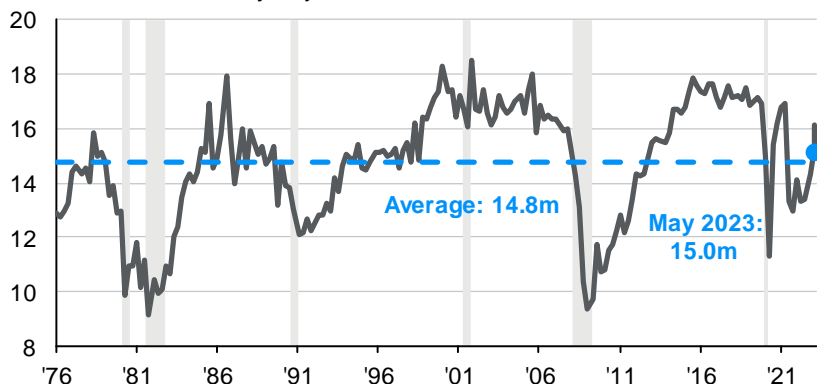
Total business inventory/sales ratio
Days of sales, monthly, seasonally adjusted

Average: 43.0 days

Apr. 2023: 42.6 days
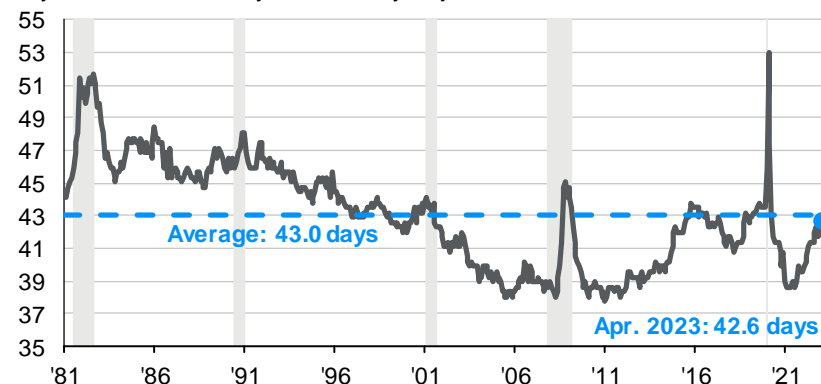
Source: BEA, Census Bureau, FactSet, J.P. Morgan Asset Management. Data for light vehicle sales is quarterly apart from the latest monthly data point.
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Economy

Profit growth and capital expenditures
Year-over-year %

Operating EPS**

Nominal capital expenditures*
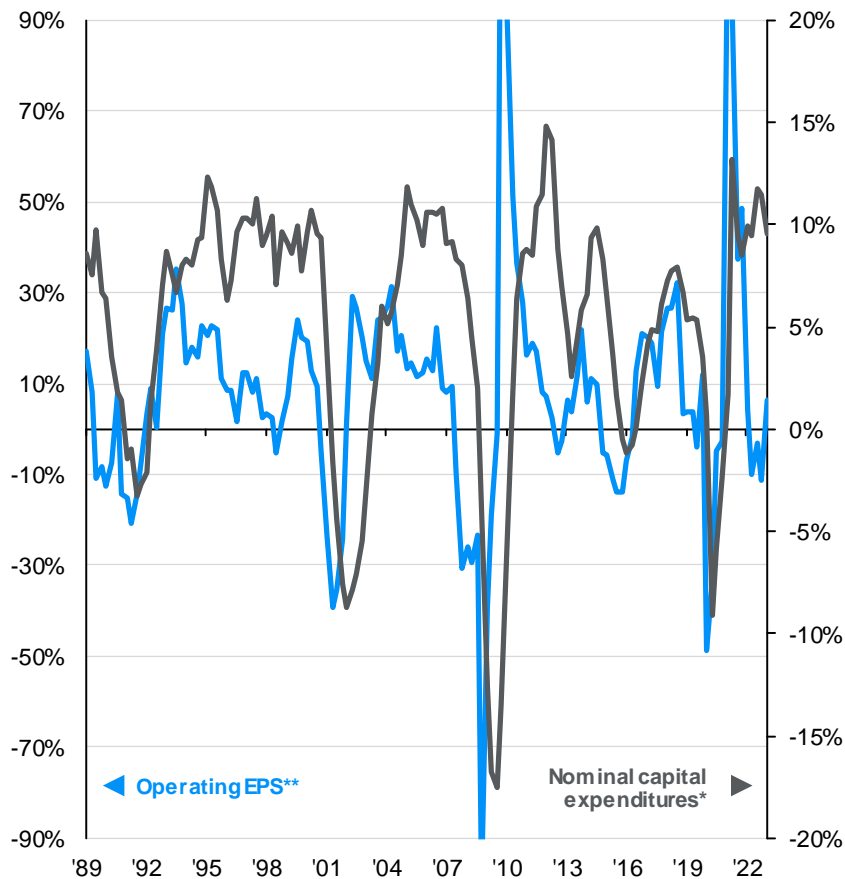
Capital spending intentions over the next 6 months
Average of regional Fed surveys***, diffusion index, quarterly, SA

Regional Fed surveys, future capex intentions

Real nonresidential private fixed investment, y/y%

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Economy

Housing inventories
Inventory of new and existing single family homes for sale, thous, SA*

Average: 2,379

May 2023: 1,319

Single-family housing starts
Seasonally adjusted annual rate (SAAR), thous houses

Average: 1,015

May 2023: 997

Rental vacancy rate
Percent

Average: 7.3%

1Q23: 6.4%
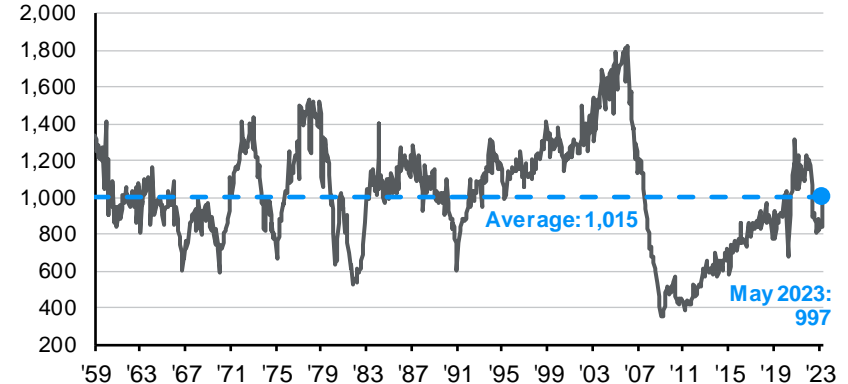
Multi-family housing starts
Total multi-family, SAAR, thous houses

May 2023: 634

Average: 418
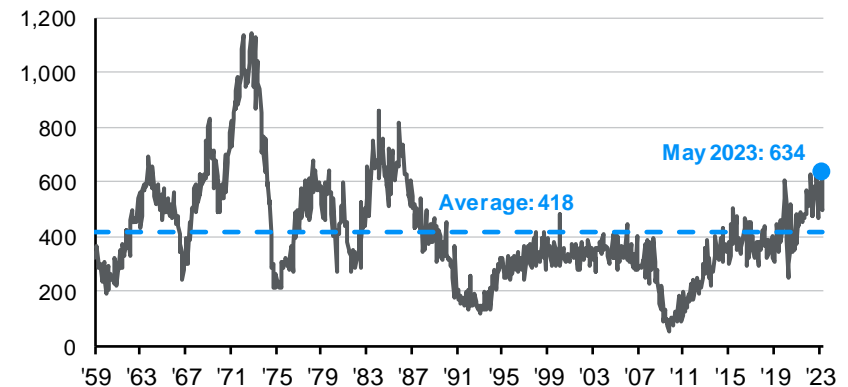
Source: U.S. Census Bureau, U.S. National Association of Realtors, J.P. Morgan Asset Management. *Inventory of new and existing single family homes for sale is seasonally adjusted by J.P. Morgan Asset Management.
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Federal finances

The 2023 federal budget
CBO Baseline forecast, USD trillions

Total spending: $6.2tn

Other: $834bn (13%)

Net int.: $640bn (10%)

Non-defense disc.: $932bn (15%)

Defense: $891bn (14%)

Social Security: $1,336bn (21%)

Medicare & Medicaid: $1,588bn (26%)

Borrowing: $1,410bn (23%)

Other: $251bn (4%)

Social insurance: $1,562bn (25%)

Corporate: $475bn (8%)

Income: $2,523bn (41%)

Total government spending | Sources of financing
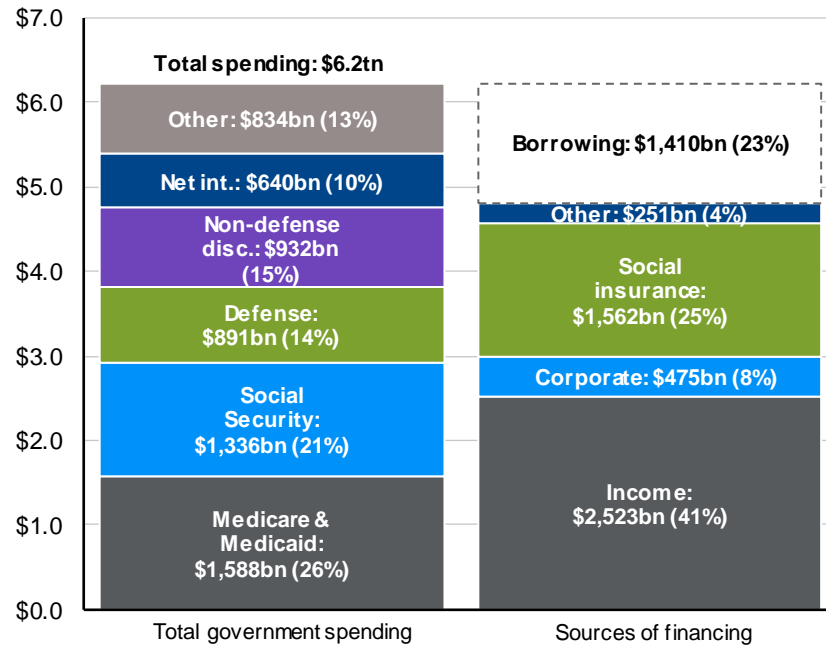
CBO's Baseline economic assumptions

	2023	'24-'25	'26-'27	'28-'33
Real GDP growth	0.3%	1.9%	2.4%	1.9%
10-year Treasury	3.8%	3.8%	3.8%	3.8%
Headline inflation (CPI)	5.7%	2.8%	2.1%	2.2%
Unemployment	4.3%	4.9%	4.5%	4.5%

Federal deficit and net interest outlays
% of GDP, 1973-2033, CBO Baseline Forecast

Forecast

Total deficit or surplus

Net interest outlays

Primary deficit or surplus
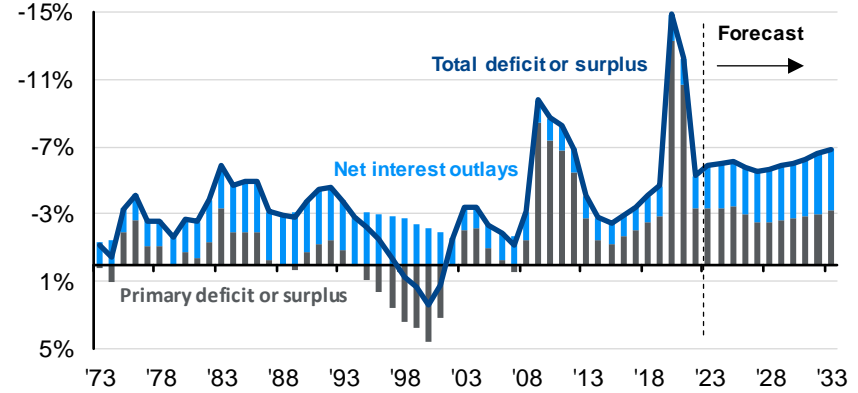
Federal net debt (accumulated deficits)
% of GDP, 1940 – 2033, CBO Baseline Forecast, end of fiscal year

2033: 118.2%

2023: 98.0%

Forecast
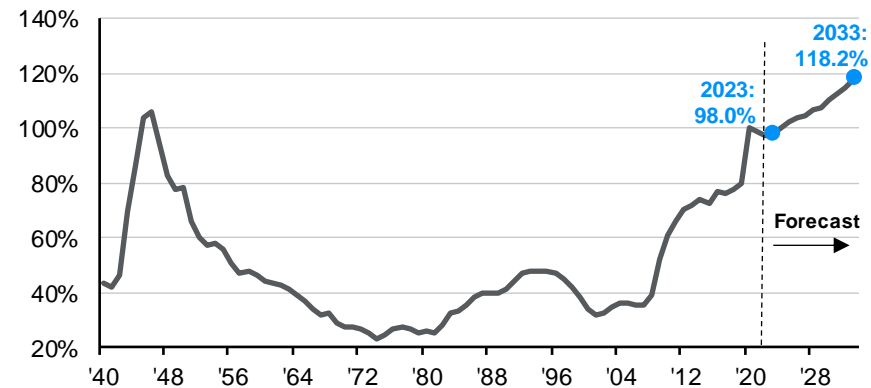
Source: CBO, J.P. Morgan Asset Management; (Top and bottom right) BEA, Treasury Department.
Estimates are based on the Congressional Budget Office (CBO) February 2023 Update to the Budget and Economic Outlook. Other spending includes, but is not limited to, health insurance subsidies, income security and federal civilian and military retirement. Note: Years shown are fiscal years. 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.
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Economy

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Consumer finances

Economy

Consumer balance sheet
1Q23, USD trillions, not seasonally adjusted

3Q07 Peak	**$85.1tn**
1Q09 Low	**$73.7tn**

Total assets: $168.5tn

Homes: 27%

Other tangible: 5%

Deposits: 9%

Pension funds: 18%

Other non-revolving: 2%
Revolving*: 6%
Auto loans: 7%
Other liabilities: 10%
Student debt: 9%

Other financial assets: 41%

Total liabilities: $19.6tn

Mortgages: 66%

Assets | Liabilities
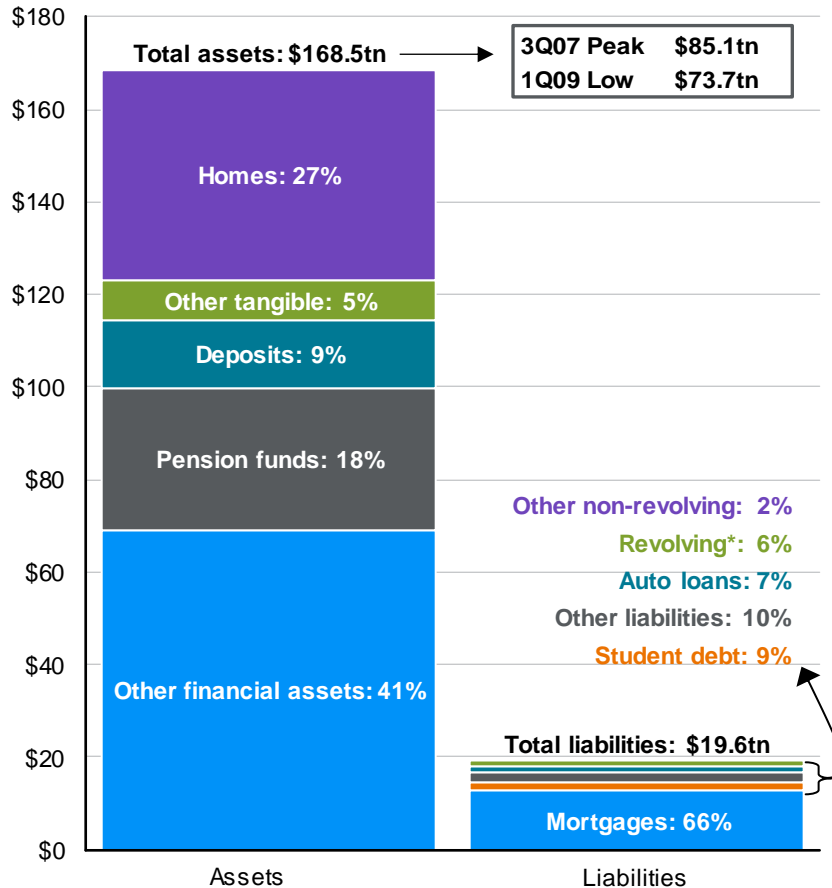
Household debt service ratio
Debt payments as % of disposable personal income, SA

4Q07: 13.2%

1Q80: 10.6%

2Q23**: 9.7%
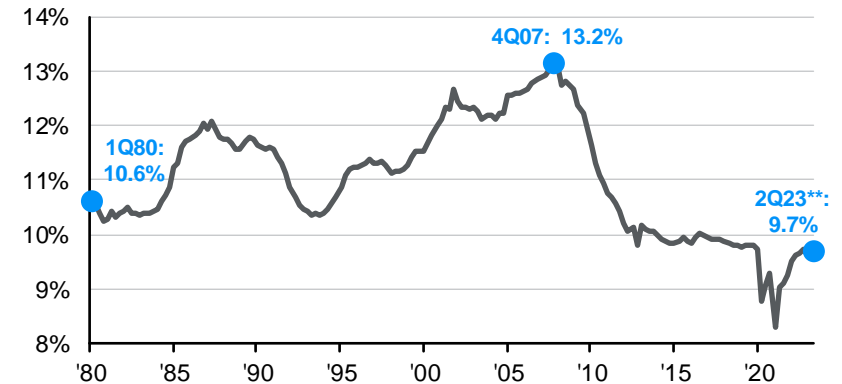
Flows into early delinquencies
% of balance delinquent 30+ days

Loans	1Q23
Auto	**6.9%**
Credit card	6.5%
Student loan	**1.1%**
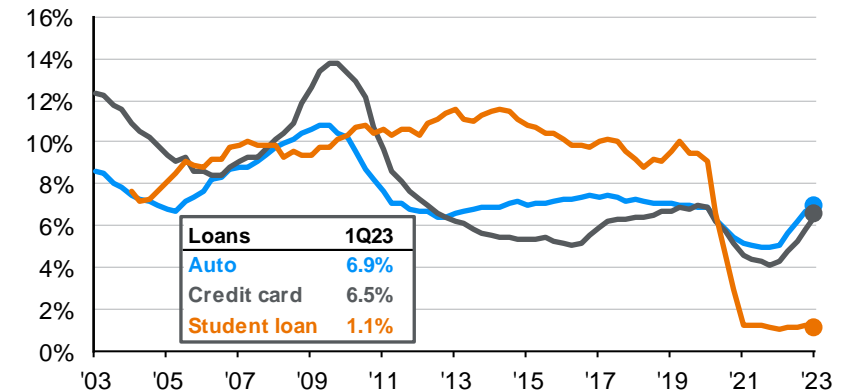
Source: FactSet, FRB, J.P. Morgan Asset Management; (Top and bottom right) BEA.
Data include households and nonprofit organizations. SA – seasonally adjusted. *Revolving includes credit cards. Values may not sum to 100%
due to rounding. **2Q23 figures for debt service ratio are J.P. Morgan Asset Management estimates.
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Economy

Personal saving rate
Personal savings as a % of disposable personal income, annual

2023 YTD: 4.3%

Average: 8.9%
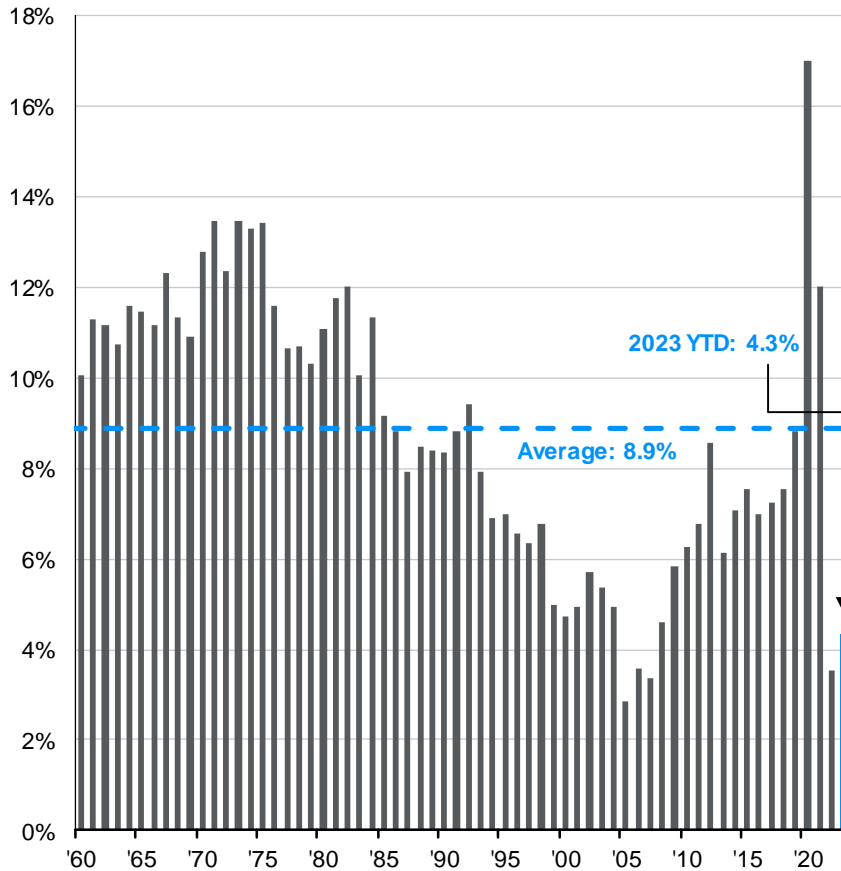
Household excess savings
Trillions of USD

Peak excess savings: $2.1tn

Personal savings

Excess savings remaining: $0.8tn
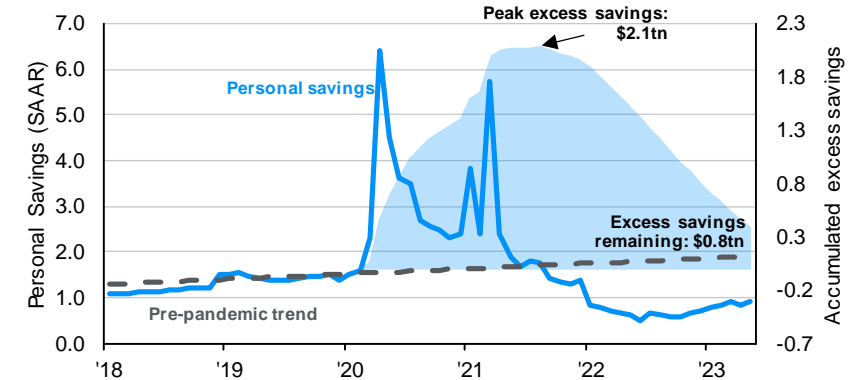
Pre-pandemic trend

Revolving consumer credit outstanding
% of disposable income, SAAR

Apr. 2023: 6.3%

Source: BEA, Federal Reserve, J.P. Morgan Asset Management. From March 2020 to August 2021, consumers amassed a peak $2.1 trillion in excess savings relative to the pre-pandemic trend. Since August 2021, consumers have drawn down on those excess savings, with the remaining reflected in the chart annotation.
Guide to the Markets – U.S. Data are as of June 30, 2023.

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Economy

Asset exposure by bank size
% of total loans and leases, domestically chartered commercial banks

Large — **Top 25 banks by domestic assets**
- Other**: 19%
- Commercial real estate: 13%
- Consumer: 21%
- Residential real estate*: 24%
- C&I: 23%

Small — **All banks outside top 25**
- Other**: 7%
- Commercial real estate: 44%
- Consumer: 10%
- Residential real estate*: 21%
- C&I: 17%
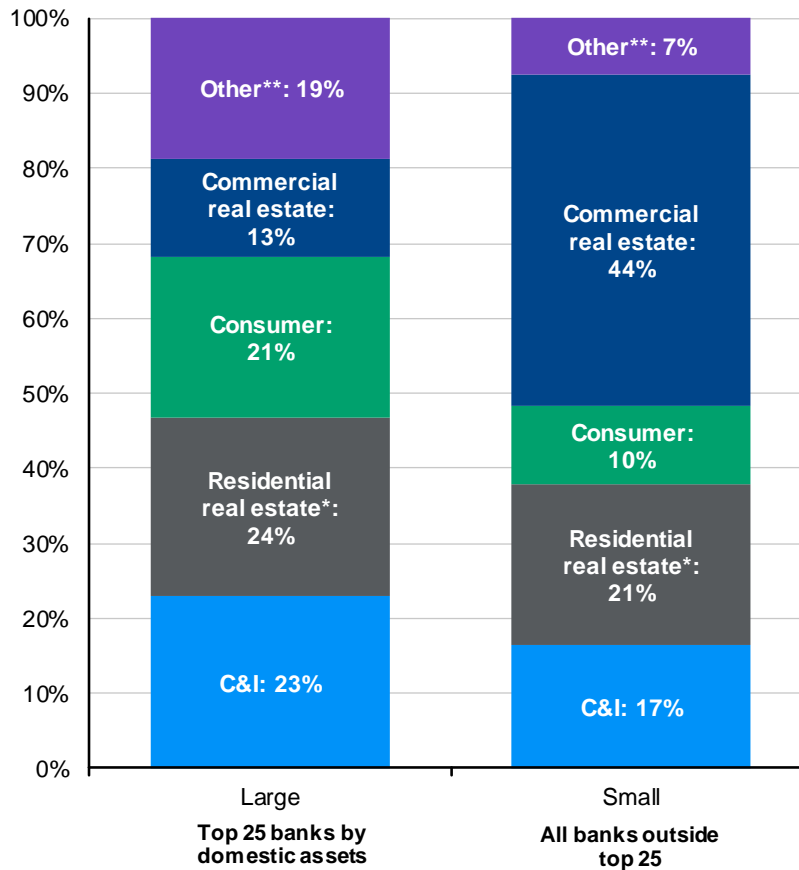
Important market interest rates
Monthly

	Jun. 2023
3-month T-bill	5.3%
Government money market fund	4.9%
Bank 6-month CD	2.2%
Bank savings account	0.4%
Bank interest checking account	0.1%
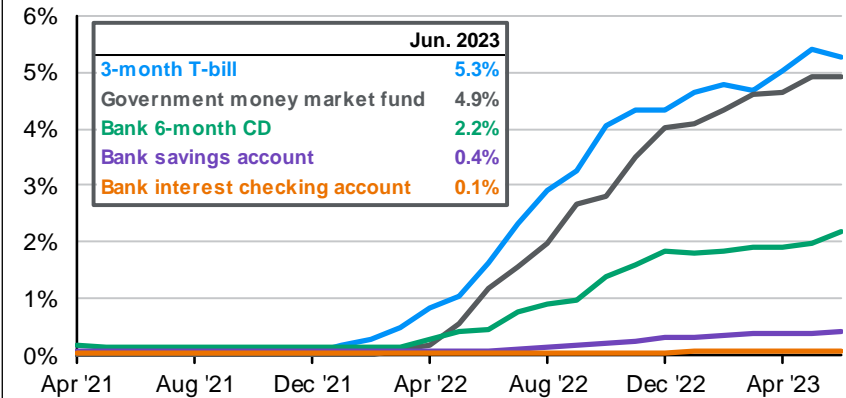
Bank deposits by bank size
Trillions of USD

Large banks / Small banks
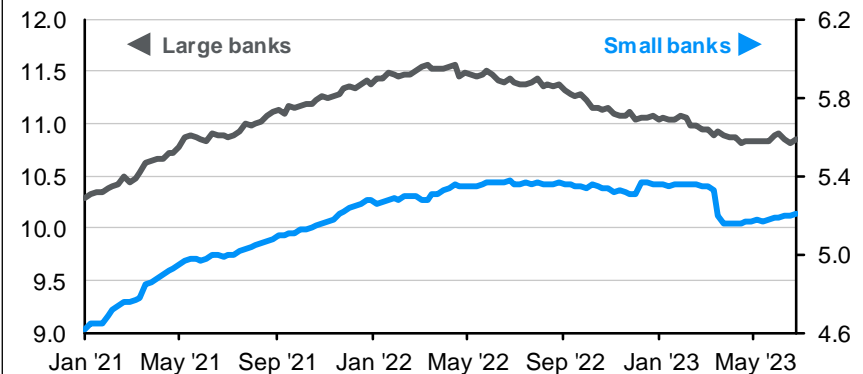
Source: Bankrate, Bloomberg, Crane Data, FDIC, Federal Reserve, J.P. Morgan Asset Management. Bank asset exposure is based on the monthly H.8 report by the Federal Reserve. Large banks are defined as the top 25 domestically chartered commercial banks ranked by domestic assets while small banks are defined as all other domestically chartered commercial banks. *Residential real estate includes residential real estate loans, revolving home equity loans and closed-end real estate loans. **Other includes loans for purchasing or carrying securities, loans to finance agricultural production, loans to foreign governments and foreign banks, obligations of states and political subdivisions, loans to nonbank depository institutions, unplanned overdrafts, loans not elsewhere classified, and lease financing receivables. (Top right) Bank rates reflect FDIC national rates, which are defined as the average of rates paid by all insured depository institutions and credit unions for which data is available, weighted by each institution's share of domestic deposits.
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Consumer Sentiment Index and subsequent 12-month S&P 500 returns

Avg. subsequent 12-mo. S&P 500 returns	
9 sentiment peaks	+3.5%
9 sentiment troughs	+24.1%

Jan. 2000: -2.0%

Jan. 2004: +4.4%

Aug. 1972: -6.2%

Feb. 2020: +29.0%

Jan. 2007: -4.2%

Mar. 1984: +13.5%

Jan. 2015: -2.7%

Apr. 2021: -1.2%

May 1977: +1.2%

Average: 85.0

Mar. 2003: +32.8%

Oct. 2005: +14.2%

Feb. 1975: +22.2%

Oct. 1990: +29.1%

Apr. 2020: +43.6%

Nov. 2008: +22.2%

Aug. 2011: +15.4%

Jun. 2023: 64.4

May 1980: +20.0%

Sentiment cycle turning point and subsequent 12-month S&P 500 Index return

Jun. 2022: +17.6%
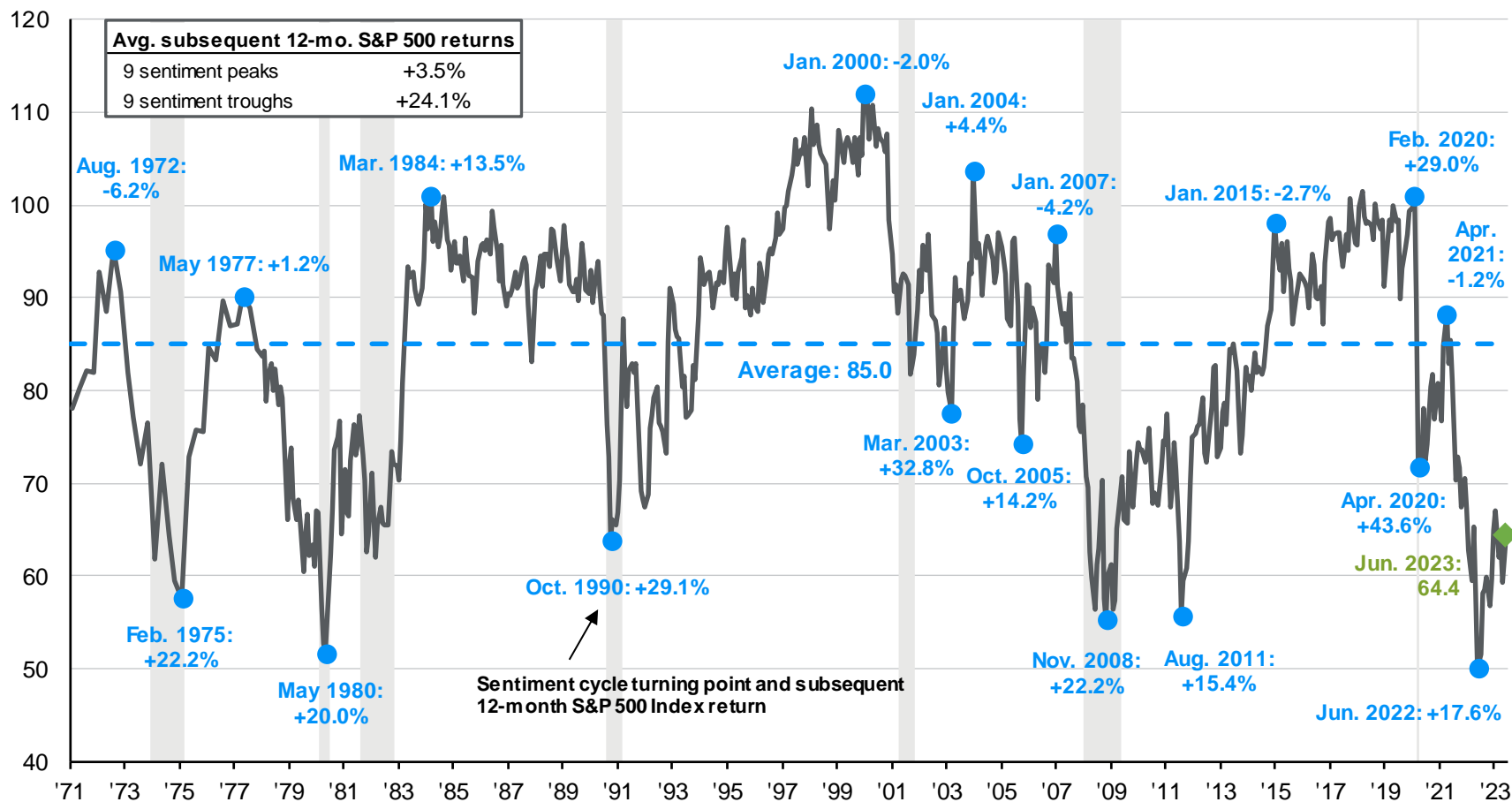
Source: FactSet, Standard & Poor's, University of Michigan, J.P. Morgan Asset Management.
Peak is defined as the highest index value before a series of lower lows, while a trough is defined as the lowest index value before a series of higher highs. Subsequent 12-month S&P 500 returns are price returns only starting from the end of the month and excluding dividends. Past performance is not a reliable indicator of current and future results.
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Economy

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Labor demand

Economy

JOLTS job openings*
Total job openings, thousands, seasonally adjusted

Recession

Mar. 2022:
12,027

Apr. 2023:
10,103
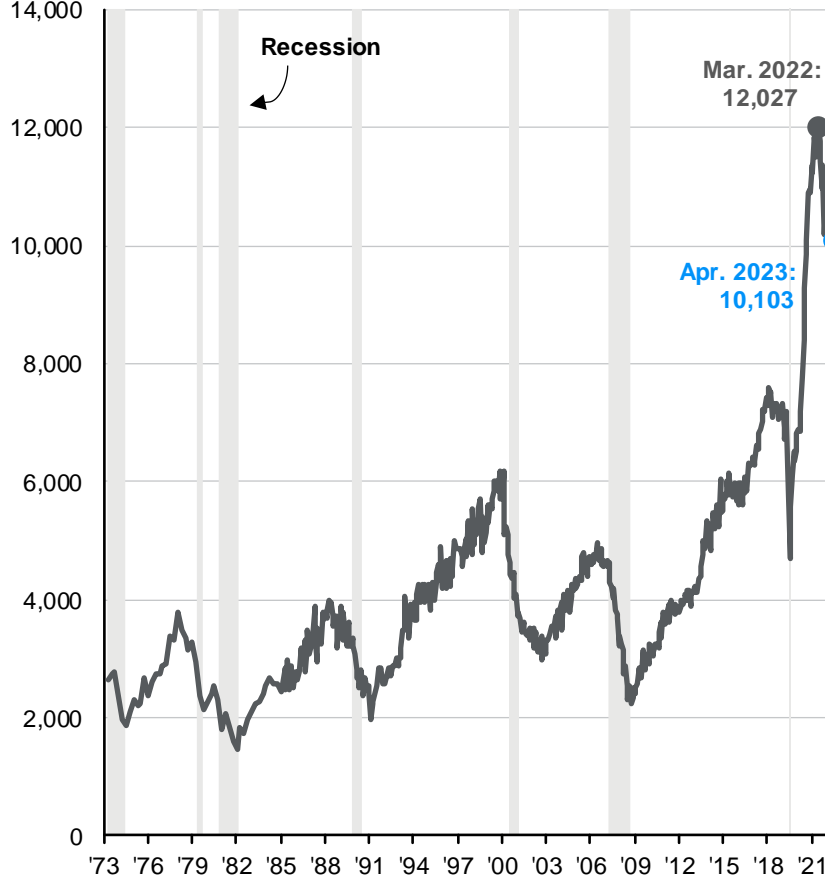
JOLTS quits
Total nonfarm quits, thousands, seasonally adjusted

Apr. 2023: 3,793
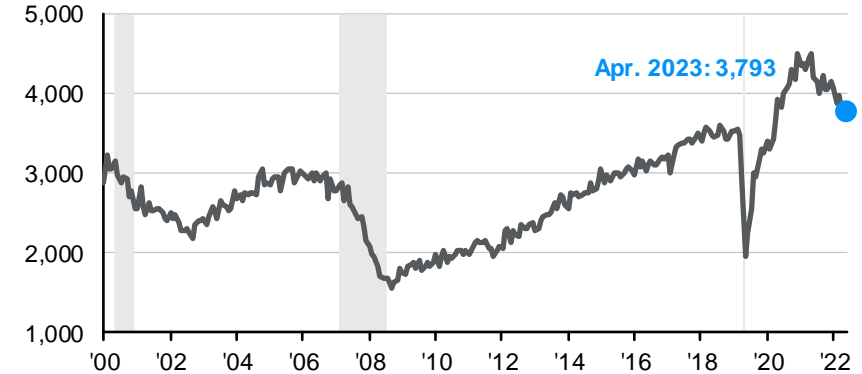
JOLTS layoffs
Total nonfarm layoffs, thousands, seasonally adjusted

Apr. 2023: 1,581
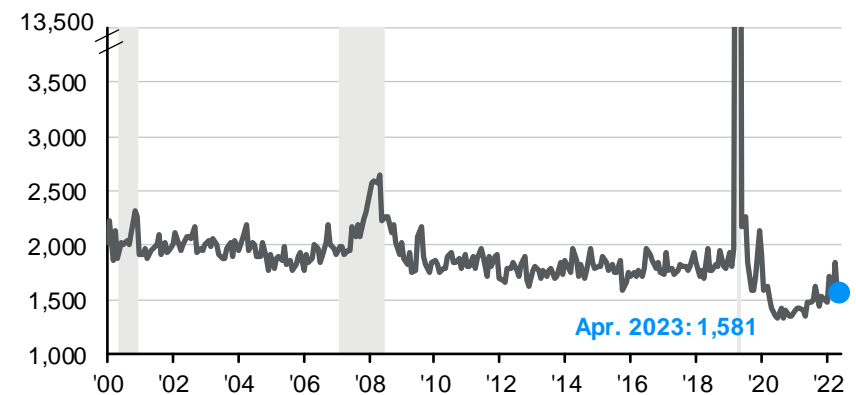
Source: U.S. Department of Labor, J.P. Morgan Asset Management. *JOLTS job openings from February 1974 to November 2000 are J.P. Morgan Asset Management estimates.
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Labor market dashboard

## Nonfarm payroll gains
Month-over-month change and 3mo. rolling average, SA

	May '23
Payroll gain	339K
3mo. avg	283K
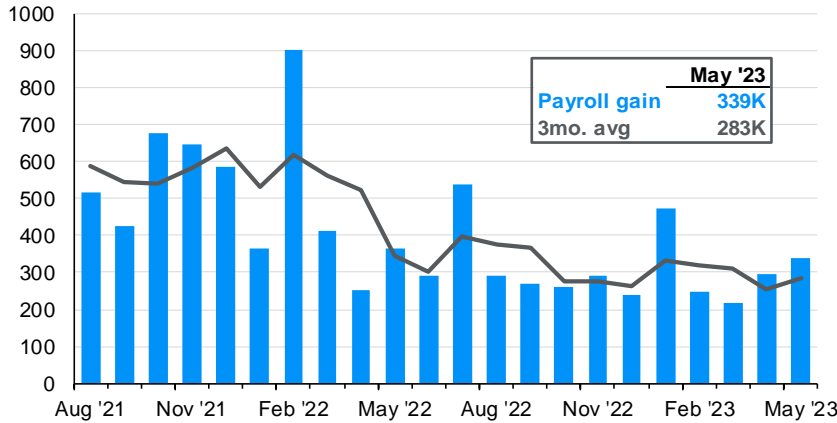
Labor force participation
% of civilian noninstitutional population, SA

25-54 Years

55+ Years
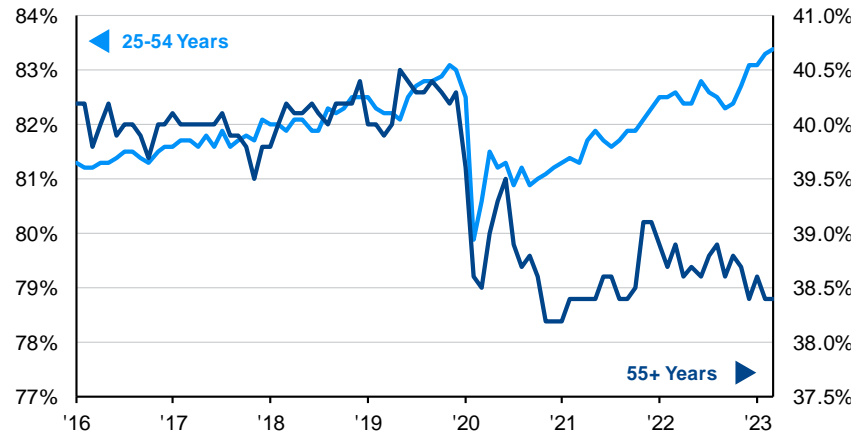
Key labor market indicators

Initial jobless claims
Continuing jobless claims
Challenger layoffs
Jobs plentiful vs. hard to get
ISM services employment
ISM manufacturing employment
Small business hiring plans (incr-decr)
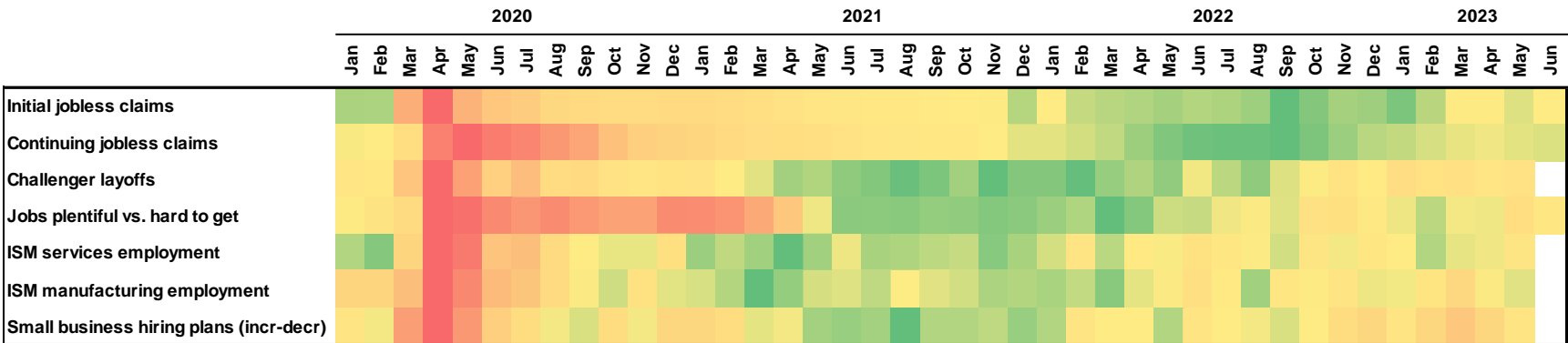
Source: BLS, Conference Board, FactSet, ISM, NFIB, J.P. Morgan Asset Management. Heatmap shading is relative to the time period shown. For jobless claims and layoffs, red reflects higher values and green reflects lower values. For ISM employment PMIs, shading is centered at a 50 level, with values above 50 indicating acceleration (shaded green) and below 50 indicating deceleration (shaded red) of employment. For jobs plentiful vs hard to get and small business hiring plans, red reflects low survey values and green reflects high values.
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Economy

Unemployment and wages

Civilian unemployment rate and year-over-year wage growth
Private production and non-supervisory workers, seasonally adjusted, percent

	50-year avg.
Unemployment rate	6.2%
Wage growth	4.0%

Apr. 2020: 14.7%

Nov. 1982: 10.8%

Oct. 2009: 10.0%

May 1975: 9.0%

Jun. 1992: 7.8%

Jun. 2003: 6.3%

May 2023: 5.0%

May 2023: 3.7%
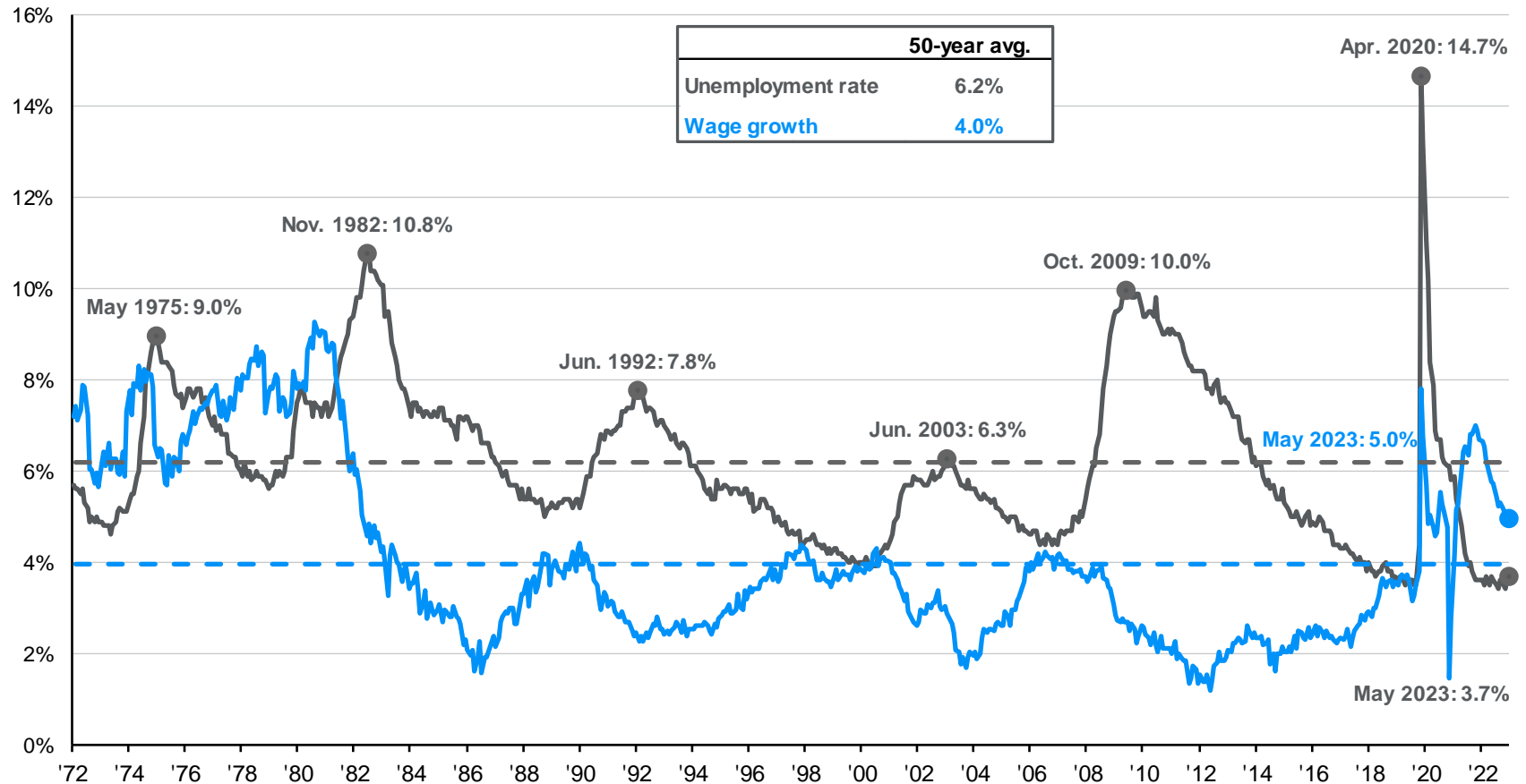
Source: BLS, FactSet, J.P. Morgan Asset Management. Private production and non-supervisory jobs represent just over 80% of total private nonfarm jobs.
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Economy

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CPI and core CPI

% change vs. prior year, seasonally adjusted

	50-yr. avg.	Apr. 2023	May 2023
Headline CPI	**3.9%**	**5.0%**	**4.1%**
Core CPI	**3.9%**	**5.5%**	**5.3%**
Food CPI	3.9%	7.6%	6.7%
Energy CPI	4.6%	-4.9%	-11.3%
Headline PCE deflator	3.4%	4.3%	3.8%
Core PCE deflator	3.4%	4.7%	4.6%
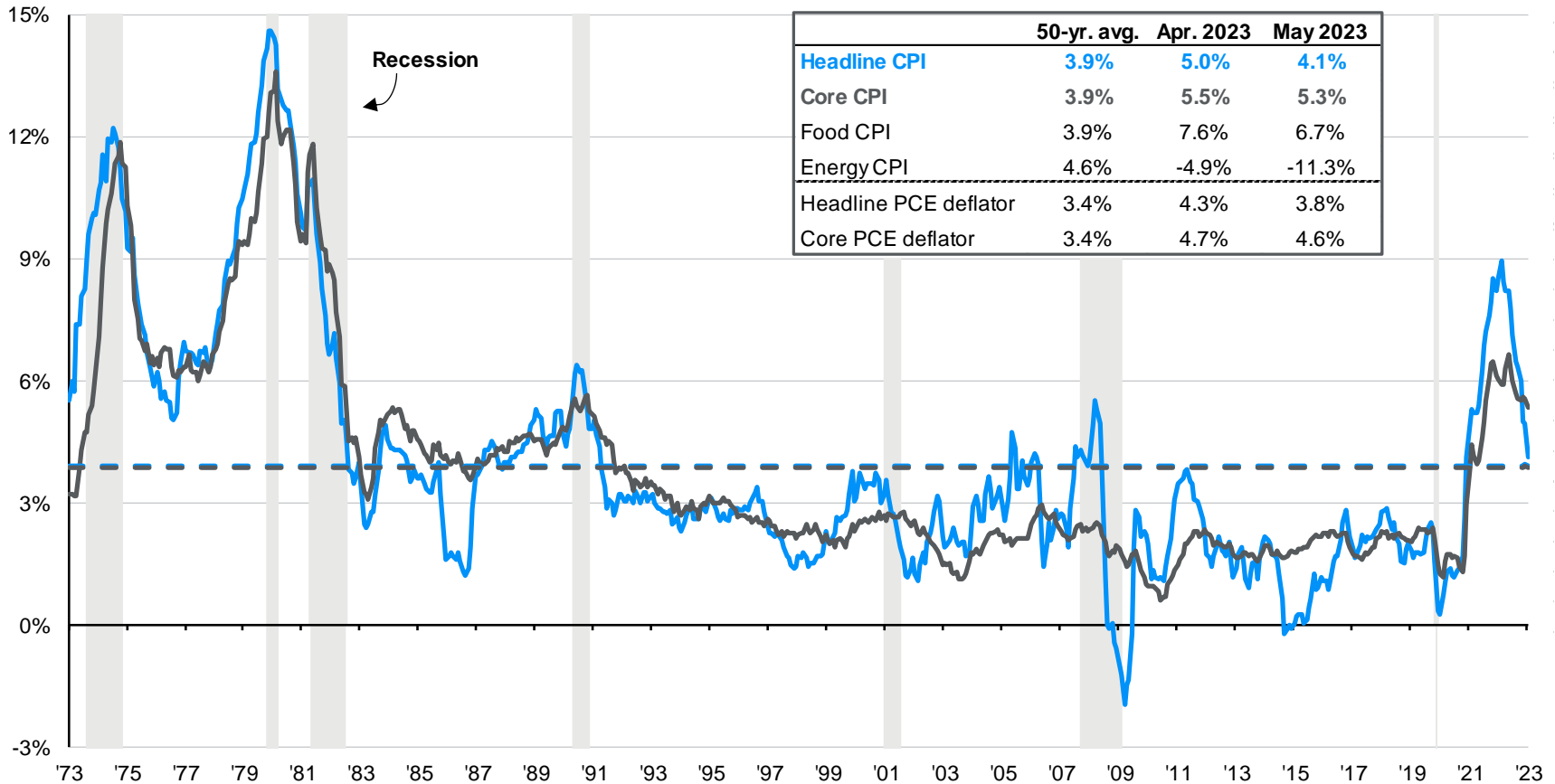
Source: BLS, FactSet, J.P. Morgan Asset Management.
CPI used is CPI-U and values shown are % change vs. one year ago. Core CPI is defined as CPI excluding food and energy prices. The Personal Consumption Expenditure (PCE) deflator employs an evolving chain-weighted basket of consumer expenditures instead of the fixed-weight basket used in CPI calculations.
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Inflation heatmap

Consumer Price Index, components
m/m % change, seasonally adjusted

	Weight	2021 Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	May	2022 Jun	Jul	Aug	Sep	Oct	Nov	Dec	Jan	Feb	Mar	Apr	2023 May
Headline CPI, y/y	100.0	5.3%	5.2%	5.2%	5.4%	6.2%	6.9%	7.2%	7.6%	8.0%	8.5%	8.2%	8.5%	8.9%	8.4%	8.2%	8.2%	7.8%	7.1%	6.4%	6.3%	6.0%	5.0%	5.0%	4.1%
Core CPI, y/y	79.6	4.4%	4.2%	3.9%	4.0%	4.6%	5.0%	5.5%	6.1%	6.4%	6.5%	6.1%	6.0%	5.9%	5.9%	6.3%	6.6%	6.3%	6.0%	5.7%	5.5%	5.5%	5.6%	5.5%	5.3%
Core svcs. ex-housing PCE, y/y*	-	4.2%	4.4%	4.4%	4.3%	4.4%	5.0%	5.0%	4.9%	4.8%	4.7%	4.5%	4.5%	4.6%	4.0%	4.2%	4.5%	4.7%	4.4%	4.3%	4.7%	4.8%	4.6%	4.7%	4.6%
Headline CPI, m/m	100.0	0.8%	0.4%	0.4%	0.4%	0.9%	0.8%	0.8%	0.6%	0.7%	1.0%	0.4%	0.9%	1.2%	0.0%	0.2%	0.4%	0.5%	0.2%	0.1%	0.5%	0.4%	0.1%	0.4%	0.1%
Core CPI, m/m	79.6	0.7%	0.3%	0.2%	0.3%	0.7%	0.6%	0.7%	0.6%	0.5%	0.3%	0.5%	0.6%	0.6%	0.3%	0.6%	0.6%	0.3%	0.3%	0.4%	0.4%	0.5%	0.4%	0.4%	0.4%
Core svcs. ex-housing PCE, m/m*	-	0.4%	0.5%	0.3%	0.2%	0.2%	0.6%	0.5%	0.2%	0.3%	0.5%	0.3%	0.3%	0.6%	-0.1%	0.5%	0.5%	0.4%	0.3%	0.4%	0.6%	0.3%	0.3%	0.4%	0.2%
Energy	6.9	1.5%	1.7%	2.8%	1.5%	3.6%	2.6%	2.4%	0.8%	2.7%	8.2%	-1.0%	3.4%	6.9%	-4.7%	-3.9%	-1.7%	1.7%	-1.4%	-3.1%	2.0%	-0.6%	-3.5%	0.6%	-3.6%
Gasoline	3.3	2.5%	2.5%	4.5%	1.5%	4.1%	4.2%	3.8%	-0.3%	4.7%	13.2%	-3.1%	3.2%	10.3%	-8.1%	-8.4%	-4.2%	3.4%	-2.3%	-7.0%	2.4%	1.0%	-4.6%	3.0%	-5.6%
Electricity	2.5	0.0%	0.2%	0.7%	1.0%	1.6%	0.7%	0.9%	2.7%	-0.3%	1.7%	0.9%	1.3%	1.5%	1.5%	1.2%	0.8%	0.5%	0.5%	1.3%	0.5%	0.5%	-0.7%	-0.7%	-1.0%
Utility Gas	0.8	1.2%	2.0%	1.6%	2.2%	6.7%	0.5%	0.1%	2.0%	0.6%	2.5%	7.2%	7.5%	-3.8%	3.5%	2.2%	-3.7%	-3.4%	3.5%	6.7%	-8.0%	-7.1%	-4.9%	-2.6%	
Food	13.5	0.7%	0.6%	0.4%	0.9%	0.9%	0.8%	0.6%	0.8%	1.0%	0.9%	0.8%	1.1%	1.0%	1.1%	0.8%	0.8%	0.7%	0.6%	0.4%	0.5%	0.4%	0.0%	0.0%	0.2%
Food at home	8.7	0.8%	0.5%	0.4%	1.2%	1.0%	1.0%	0.6%	0.9%	1.3%	1.3%	0.9%	1.3%	1.0%	1.3%	0.8%	0.7%	0.5%	0.6%	0.5%	0.4%	0.3%	-0.3%	-0.2%	0.1%
Food away from home	4.8	0.7%	0.8%	0.4%	0.5%	0.8%	0.6%	0.6%	0.7%	0.4%	0.3%	0.6%	0.7%	0.9%	0.7%	0.9%	0.9%	0.9%	0.5%	0.4%	0.6%	0.6%	0.6%	0.4%	0.5%
Core goods	21.3	1.9%	0.3%	0.3%	0.3%	1.3%	1.1%	1.4%	0.9%	0.3%	-0.4%	0.1%	0.6%	0.6%	0.1%	0.4%	0.0%	-0.1%	-0.2%	-0.1%	0.1%	0.0%	0.2%	0.6%	0.6%
Apparel	2.6	0.6%	0.0%	0.3%	-0.5%	1.0%	0.7%	0.9%	0.7%	0.6%	0.3%	-0.1%	0.4%	0.7%	-0.1%	0.3%	0.0%	-0.2%	0.1%	0.2%	0.8%	0.0%	0.3%	0.3%	0.3%
New vehicles	4.3	1.6%	1.4%	1.2%	1.3%	1.5%	1.6%	1.8%	0.3%	0.1%	0.1%	0.4%	0.6%	0.5%	0.5%	0.8%	0.7%	0.6%	0.5%	0.6%	0.2%	0.2%	0.4%	-0.2%	-0.1%
Used cars	2.6	9.1%	-0.4%	-1.3%	-0.5%	3.1%	3.2%	3.9%	1.4%	-0.6%	-3.6%	-0.7%	1.9%	0.5%	-0.8%	-0.2%	-1.1%	-1.7%	-2.0%	-2.0%	-1.9%	-2.8%	-0.9%	4.4%	4.4%
Medical care commod	1.5	-0.4%	0.2%	-0.2%	0.3%	0.6%	0.1%	0.0%	0.9%	0.3%	0.2%	0.1%	0.3%	0.4%	0.6%	0.2%	-0.1%	0.0%	0.2%	0.1%	1.1%	0.1%	0.6%	0.5%	0.6%
Core services	58.3	0.3%	0.3%	0.1%	0.2%	0.4%	0.4%	0.4%	0.4%	0.5%	0.6%	0.6%	0.6%	0.6%	0.4%	0.6%	0.8%	0.5%	0.5%	0.6%	0.5%	0.6%	0.4%	0.4%	0.4%
Shelter	34.6	0.4%	0.5%	0.2%	0.4%	0.4%	0.5%	0.4%	0.3%	0.6%	0.5%	0.5%	0.6%	0.6%	0.6%	0.7%	0.7%	0.7%	0.6%	0.8%	0.7%	0.8%	0.6%	0.4%	0.6%
Rent of primary res.	7.5	0.2%	0.2%	0.3%	0.4%	0.4%	0.4%	0.4%	0.5%	0.6%	0.4%	0.6%	0.6%	0.8%	0.7%	0.7%	0.8%	0.7%	0.8%	0.8%	0.7%	0.8%	0.5%	0.6%	0.5%
OER	25.4	0.3%	0.3%	0.3%	0.4%	0.4%	0.4%	0.4%	0.5%	0.5%	0.5%	0.5%	0.6%	0.7%	0.6%	0.7%	0.8%	0.6%	0.7%	0.8%	0.7%	0.7%	0.5%	0.5%	0.5%
Medical care services	6.5	-0.1%	0.1%	0.2%	0.0%	0.6%	0.5%	0.5%	0.5%	0.1%	0.6%	0.5%	0.4%	0.7%	0.4%	0.7%	0.8%	-0.4%	-0.5%	0.3%	-0.7%	-0.7%	-0.5%	-0.1%	-0.1%
Transportation services	5.9	0.9%	-0.8%	-0.7%	-0.9%	0.0%	1.2%	0.5%	0.7%	1.1%	2.1%	2.2%	1.6%	1.8%	-0.4%	1.0%	1.9%	0.6%	0.3%	0.6%	0.9%	1.1%	1.4%	-0.2%	0.8%

Economy

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Inflation components

Contributors to headline CPI inflation

Contribution to y/y % change in CPI, non-seasonally adjusted
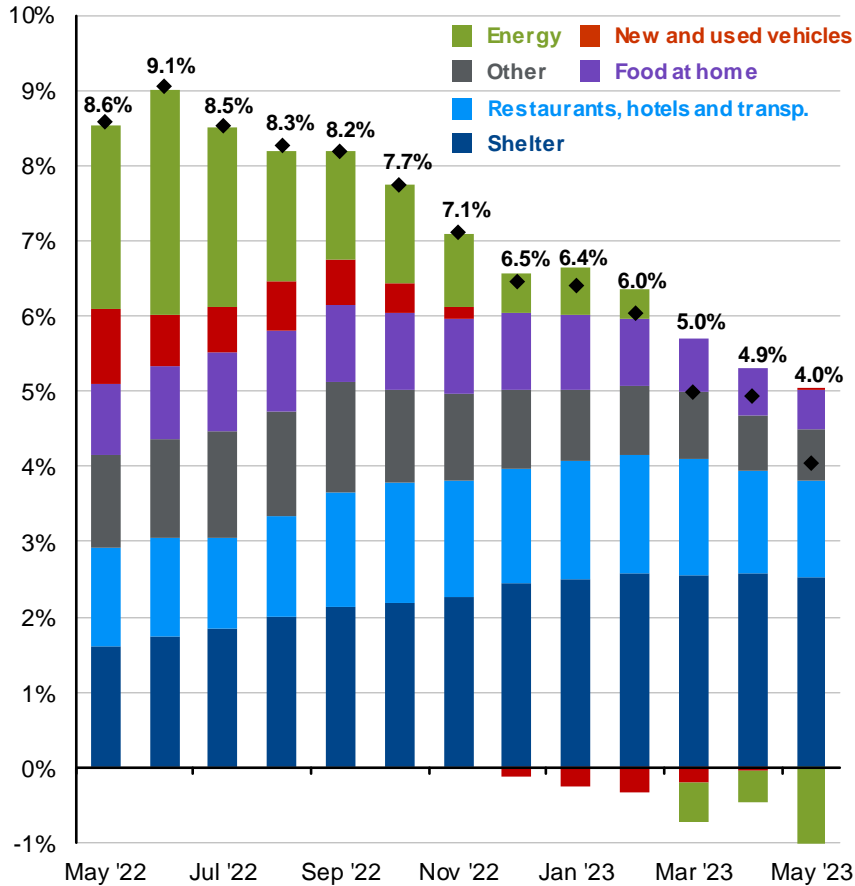
Contributors to core services ex-shelter CPI inflation*

Contribution to y/y % change in custom CPI index, non-seasonally adj.
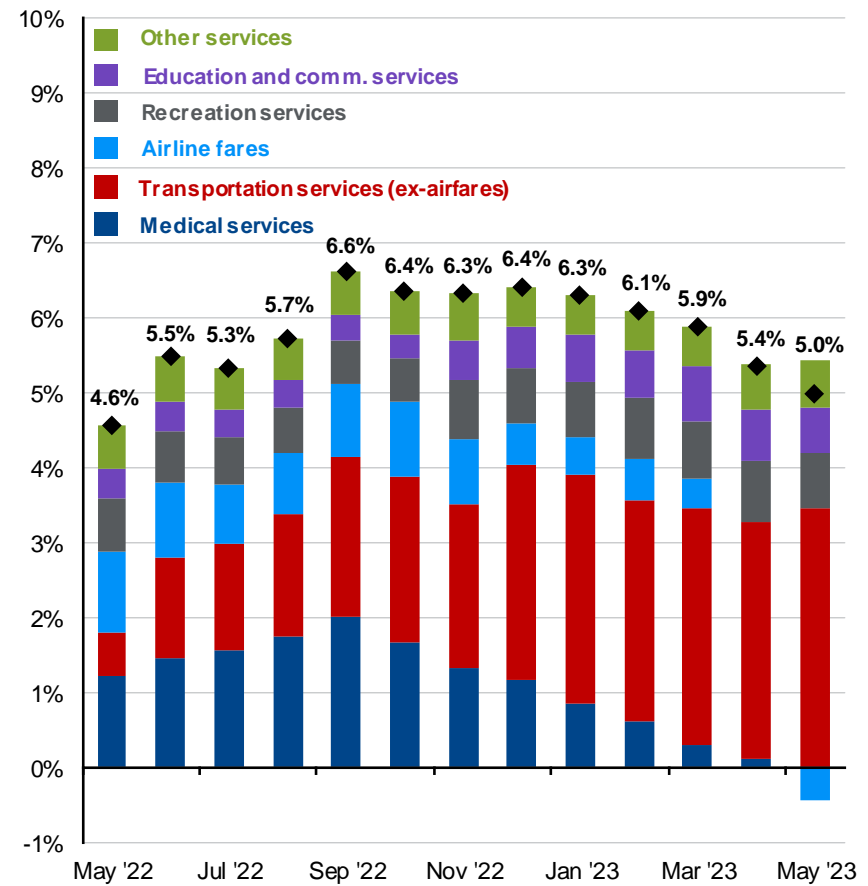
Source: Bureau of Labor Statistics, FactSet, J.P. Morgan Asset Management. Contributions mirror the BLS methodology on Table 7 of the CPI report. Values may not sum to headline CPI figures due to rounding and underlying calculations. *Core services ex-shelter CPI is a custom index using CPI components created by J.P. Morgan Asset Management. Left: "Shelter" includes owners' equivalent rent and rent of primary residence; "Other" primarily reflects household furnishings, apparel, education and communication services, medical care services and other personal services. Right: "Transportation services" primarily includes leased cars and trucks, motor vehicle insurance and motor vehicle maintenance and repair. Airline fares are broken out from transportation services.
Guide to the Markets – U.S. Data are as of June 30, 2023.

Economy

Dollar drivers

The U.S. dollar
U.S. Dollar Index

Sep. 2022: 112.1

Jun. 30, 2023: 102.9

The U.S. trade balance
Current account balance, % of GDP

1Q23: -3.3%

Developed markets interest rate differentials
Difference between U.S. and international 10-year yields*

Jun. 30, 2023: 1.6%
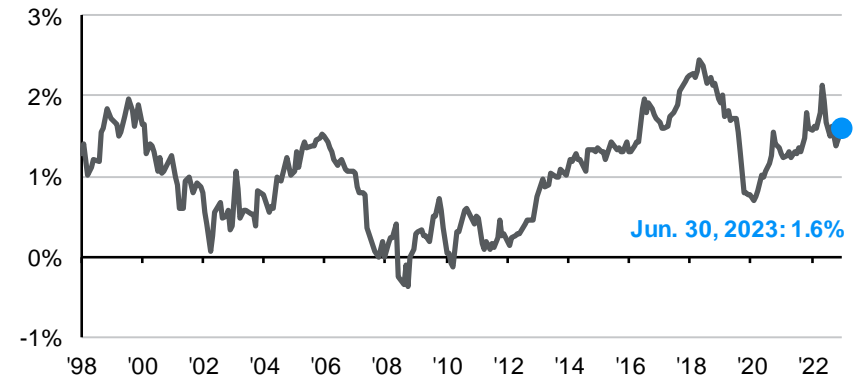
Source: J.P. Morgan Asset Management; (Left) FactSet, ICE; (Top right) Bureau of Economic Analysis, FactSet; (Bottom right) Tullett Prebon. Currencies in the DXY Index are: British pound, Canadian dollar, euro, Japanese yen, Swedish krona and Swiss franc. *Interest rate differential is the difference 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.
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Oil markets

Economy

Change in production and consumption of liquid fuels
Production, consumption and inventories, millions of barrels per day

Production	2019	2020	2021	2022	2023*	Growth since '19
U.S.	19.5	18.6	19.0	20.2	21.3	8.8%
OPEC	34.6	30.7	31.7	34.2	33.5	-3.2%
Russia	11.5	10.5	10.8	10.9	10.7	-6.7%
Global	**100.3**	**93.9**	**95.7**	**99.9**	**101.4**	**1.1%**
Consumption						
U.S.	20.5	18.2	19.9	20.3	20.4	-0.5%
China	14.0	14.4	15.3	15.2	16.0	13.8%
Global	**100.9**	**91.6**	**97.1**	**99.4**	**101.0**	**0.1%**
Inventory Change	-0.6	2.3	-1.4	0.4	0.4	

U.S. crude oil inventories and rig count**
Million barrels, number of active rigs
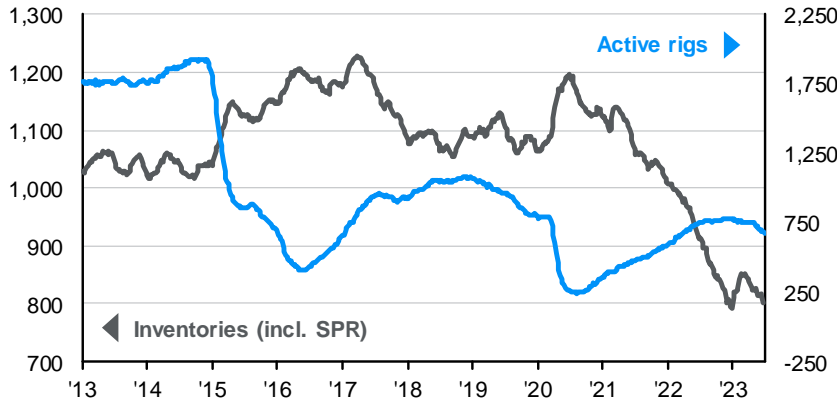
Price of oil
WTI crude, nominal prices, USD/barrel

Source: J.P. Morgan Asset Management; (Top and bottom left) EIA; (Right) FactSet; (Bottom left) Baker Hughes.
*Forecasts are from the June 2023 EIA Short-Term Energy Outlook and start in 2023. **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 June 30, 2023.

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35

The Fed and interest rates

Fixed Income

Federal funds rate expectations
FOMC and market expectations for the federal funds rate

FOMC June 2023 forecasts Percent	2023	2024	2025	Long run*
Change in real GDP, 4Q to 4Q	1.0	1.1	1.8	1.8
Unemployment rate, 4Q	4.1	4.5	4.5	4.0
Headline PCE inflation, 4Q to 4Q	3.2	2.5	2.1	2.0
Core PCE inflation, 4Q to 4Q	3.9	2.6	2.2	

Legend:
- Federal funds rate
- ◆ FOMC year-end estimates
- ◆ Market expectations
- ◆ FOMC long-run projection*

Chart data labels: 5.13%, 5.60%, 5.38%, 4.60%, 4.16%, 3.94%, 3.40%, 2.50%
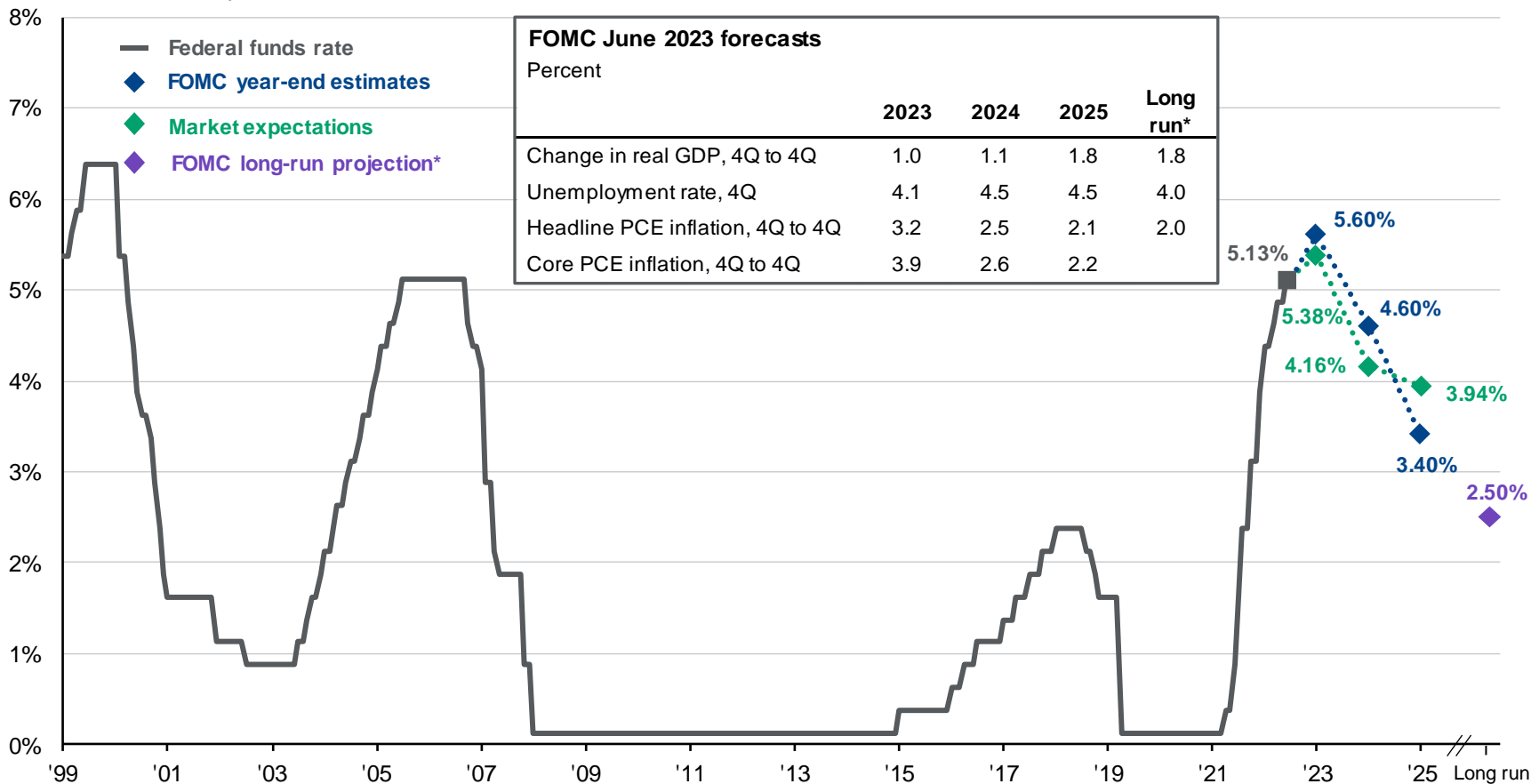
Source: Bloomberg, FactSet, Federal Reserve, J.P. Morgan Asset Management.
Market expectations are based off of the respective Federal Funds Futures contracts for December expiry. *Long-run projections are the rates of growth, unemployment and inflation to which a policymaker expects the economy to converge 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.
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Interest rates and inflation

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

Sep. 30, 1981:
15.84%

Nominal 10-year U.S. Treasury yield

Real 10-year U.S. Treasury yield

Jun. 30, 2023:
3.81%

Jun. 30, 2023:
-1.52%

	Average	
	(1958 - present)	**Jun. 30, 2023**
Nominal yields	**5.76%**	**3.81%**
Real yields	2.09%	-1.52%
Inflation	**3.68%**	**5.33%**

Fixed Income
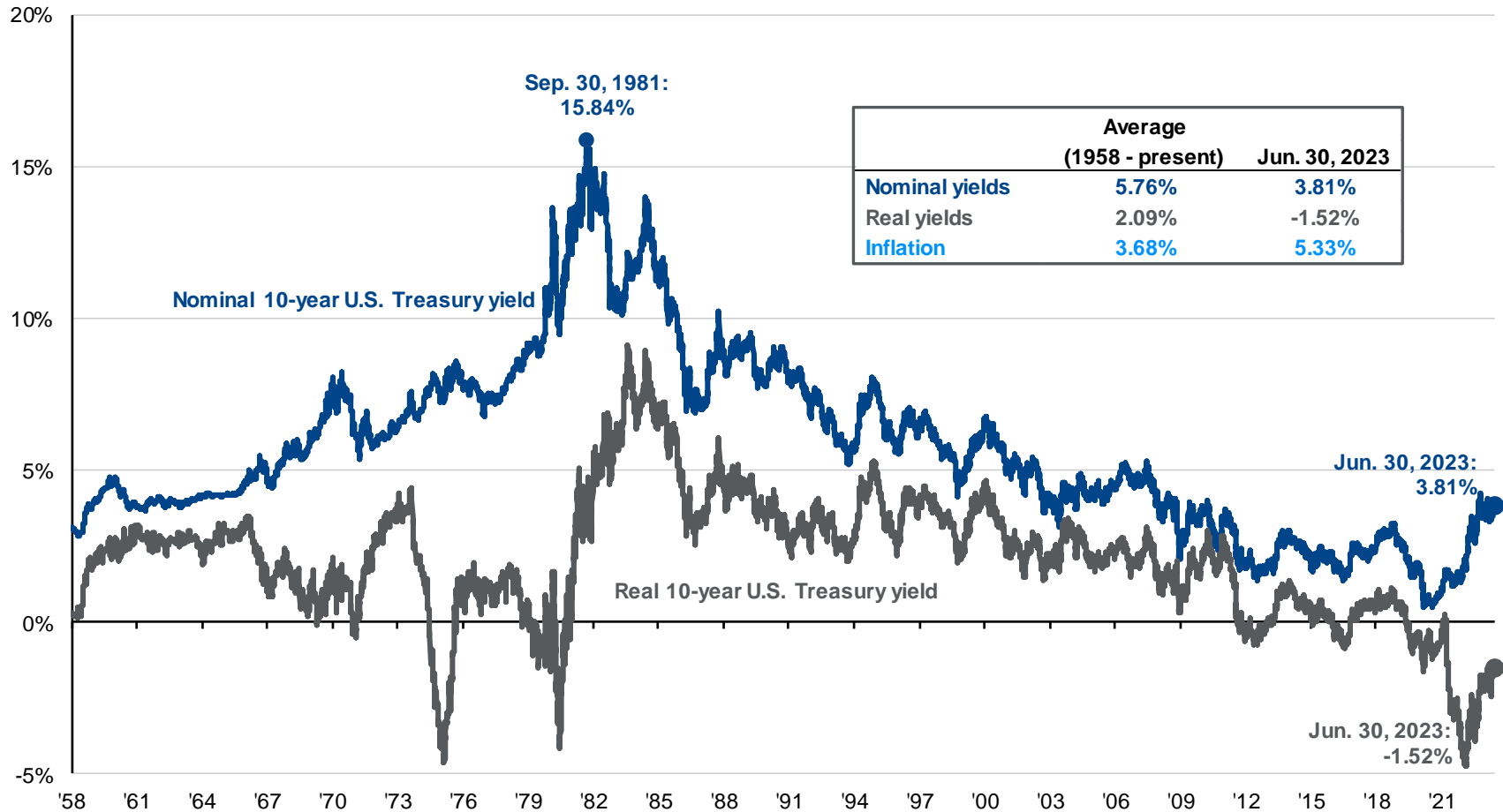
Source: BLS, FactSet, Federal Reserve, J.P. Morgan Asset Management.
Real 10-year Treasury yields are calculated as the daily Treasury yield less year-over-year core CPI inflation for that month. For the current month, we use the prior month's core CPI figures until the latest data is available.
Guide to the Markets – U.S. Data are as of June 30, 2023.

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Fixed income market dynamics

Fixed Income

U.S. Treasuries	Yield		Return			
	6/30/2023	12/31/2022	2023 YTD	Avg. Maturity	Correlation to 10-year	Correlation to S&P 500
2-Year	4.87%	4.41%	0.56%	2 years	0.73	-0.15
5-Year	4.13%	3.99%	0.66%	5	0.93	-0.13
10-Year	3.81%	3.88%	1.78%	10	1.00	-0.13
10-Year TIPS*	1.60%	1.53%	2.21%	10	0.78	0.31
30-Year	3.85%	3.97%	3.49%	30	0.93	-0.17
Sector						
U.S. Aggregate	4.81%	4.68%	2.09%	8.6	0.86	0.22
IG Corps	5.48%	5.42%	3.21%	11.1	0.54	0.47
Convertibles	7.87%	7.58%	8.39%	-	-0.13	0.87
U.S. HY	8.50%	8.96%	5.38%	5.1	-0.09	0.74
Municipals	3.52%	3.55%	2.67%	13.1	0.54	0.21
MBS	4.78%	4.71%	1.87%	7.8	0.78	0.14
ABS	6.17%	5.89%	2.38%	3.5	0.07	0.08
Leveraged Loans	11.16%	11.41%	6.54%	2.4	-0.33	0.60

Impact of a 1% rise or fall in interest rates

Total return, assumes a parallel shift in the yield curve

	1% fall	1% rise
2Y UST	6.8%	3.0%
5Y UST	8.6%	-0.3%
10Y UST	12.0%	-4.3%
10Y TIPS	11.0%	-6.9%
30Y UST	21.4%	-13.7%
U.S. Aggregate	11.1%	-1.5%
IG Corps	12.6%	-1.7%
Convertibles	10.2%	6.4%
U.S. HY	12.0%	5.0%
Municipals	9.6%	-2.5%
MBS	10.8%	-1.3%
ABS	8.3%	2.8%
Leveraged Loans	13.6%	8.7%

Source: Bloomberg, FactSet, 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; Corporates: U.S. Corporates; Municipals: Muni Bond; High Yield: Corporate High Yield; Leveraged Loans: J.P. Morgan Leveraged Loan Index; 10-Year TIPS: Bloomberg 10-Year TIPS On-The-Run Index; 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. Sector yields reflect yield-to-worst. Convertibles yield is based on U.S. portion of Bloomberg Global Convertibles. Correlations are based on 15-years of monthly returns for all sectors unless stated otherwise. Past performance is not indicative of future results. *10-Year TIPS yields and calculations are based on on-the-run real yields. 10-Year TIPS correlations are based on monthly returns since 2011 due to data availability.
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Yield curve

U.S. Treasury yield curve
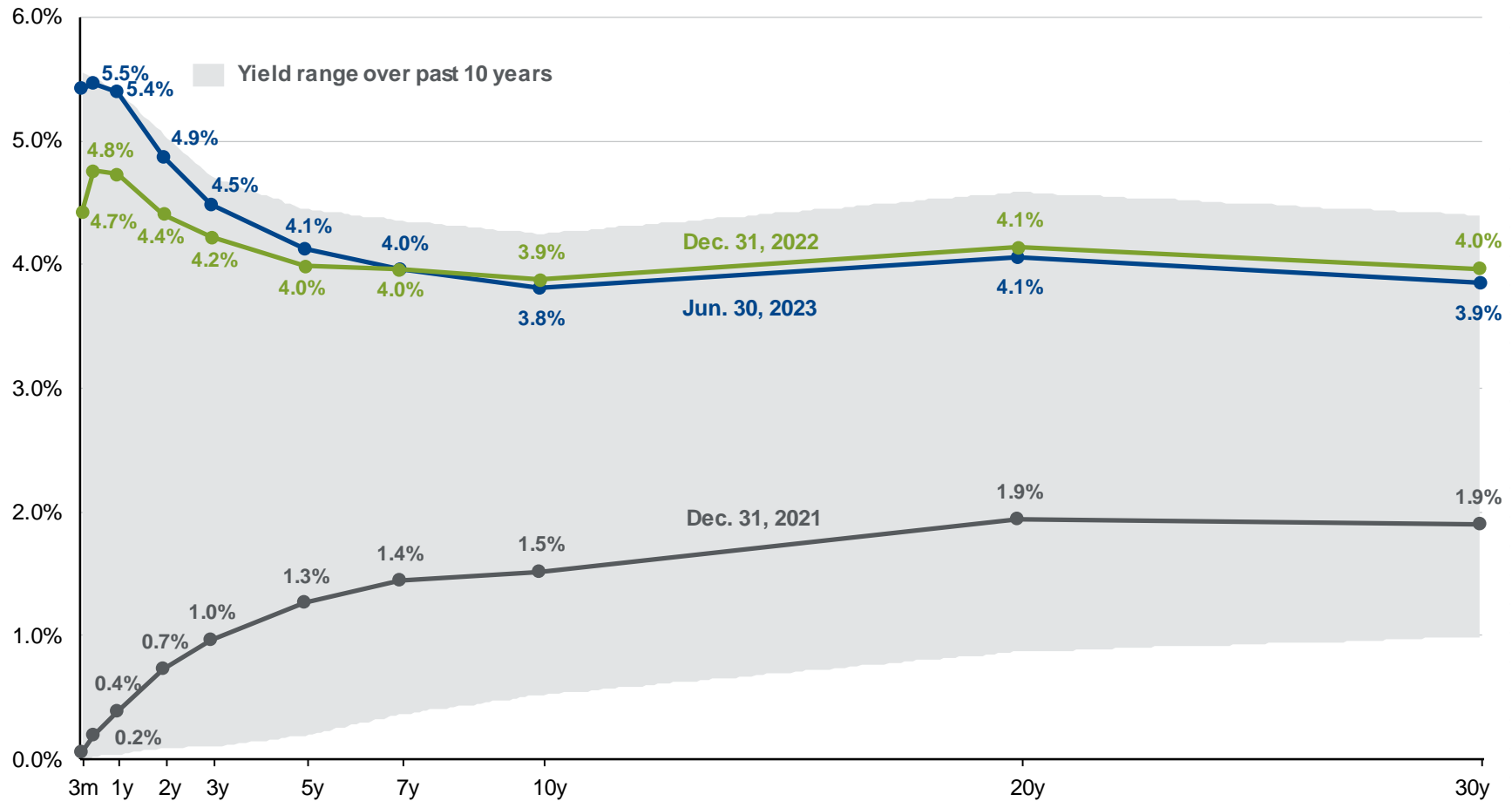
Source: FactSet, Federal Reserve, J.P. Morgan Asset Management.
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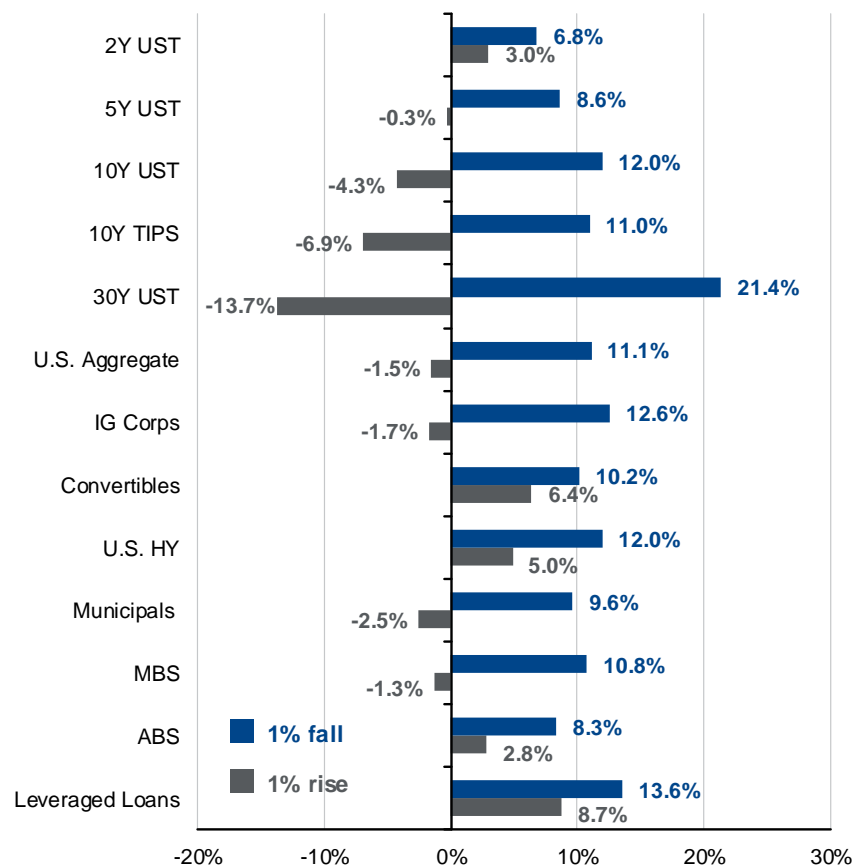
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Fixed Income

High yield bonds

Fixed Income

Default rate and spread-to-worst

Percent

	Long-run avg.	Jun. 30, 2023
Default rate	**3.55%**	**2.41%**
Spread-to-worst	**5.68%**	**4.34%**
Recovery rate	**40.20%**	**32.40%**

Recession →
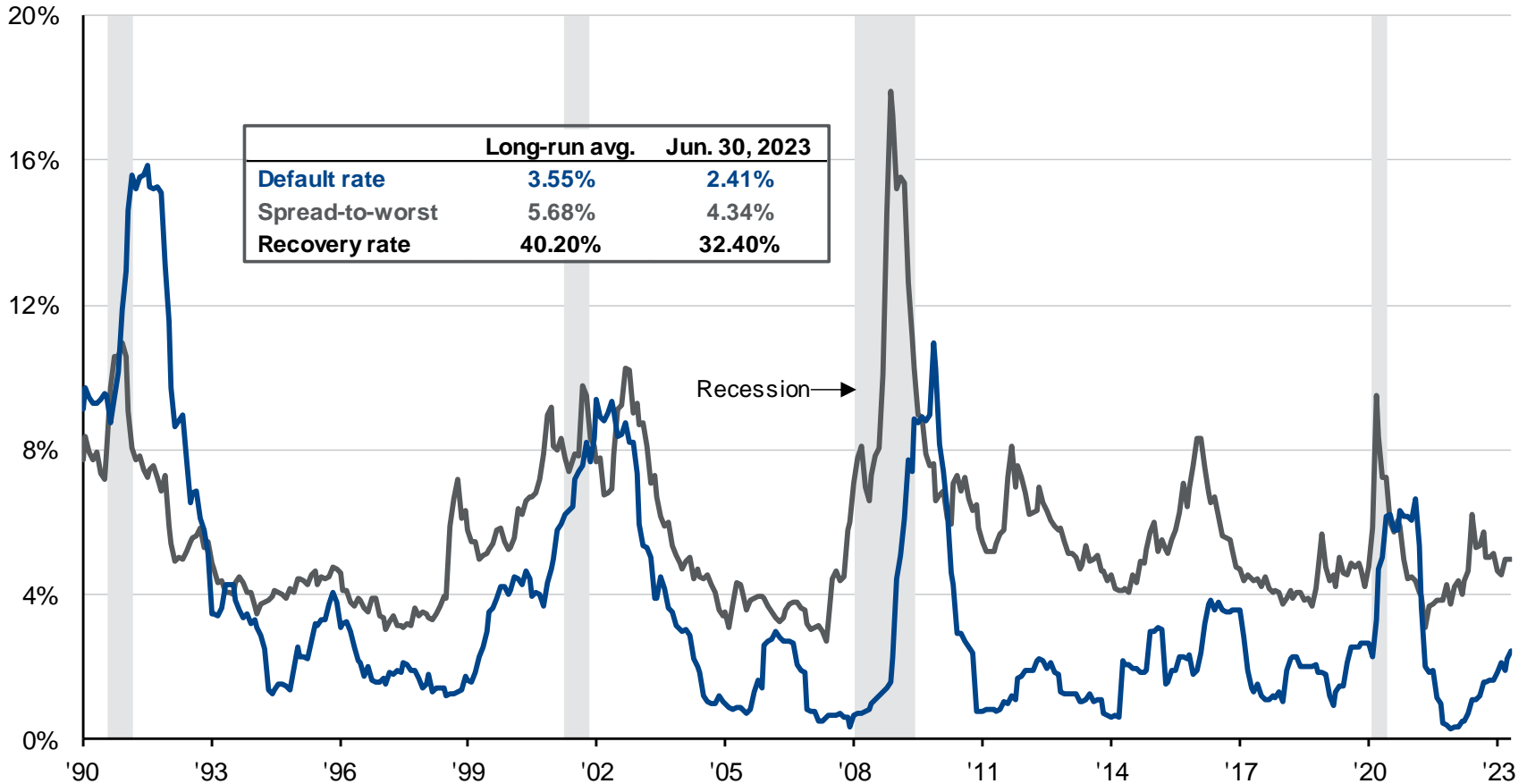
Source: J.P. Morgan Global Economic Research, J.P. Morgan Asset Management.
Long-run average is based on monthly historical data beginning in January 1990. Default rates are defined as the par value percentage of the total market trading at or below 50% of par value and include any Chapter 11 filing, prepackaged filing or missed interest payments. The default rate is an LTM figure (last 12 months) and tracks the % of defaults over the period. Recovery rates are based on the price of the defaulted bonds or loans 30 days post the default date. Default and recovery rates are as of most recent month-end. Spread-to-worst indicated are the difference between the yield-to-worst of a bond and yield-to-worst of a U.S. Treasury security with a similar duration. High yield is represented by the J.P. Morgan Domestic High Yield Index.
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Fixed income valuations

Fixed Income

Yield-to-worst across fixed income sectors
Percent, past 10 years

Axis

Legend: ■ 10-year range — 10-year median ◆ Current

Sector	Current	Median
U.S. Treasuries	4.4%	1.5%
Municipals*	6.0%	3.9%
IG corps	5.5%	3.2%
MBS	4.8%	2.8%
ABS	5.5%	1.7%
Euro IG	4.4%	1.0%
EMD ($)	8.4%	5.7%
EMD (LCL)	6.3%	6.4%
EM Corp	7.2%	5.1%
Euro HY	8.3%	4.5%
U.S. HY	8.5%	6.1%
Leveraged Loans	11.2%	5.8%
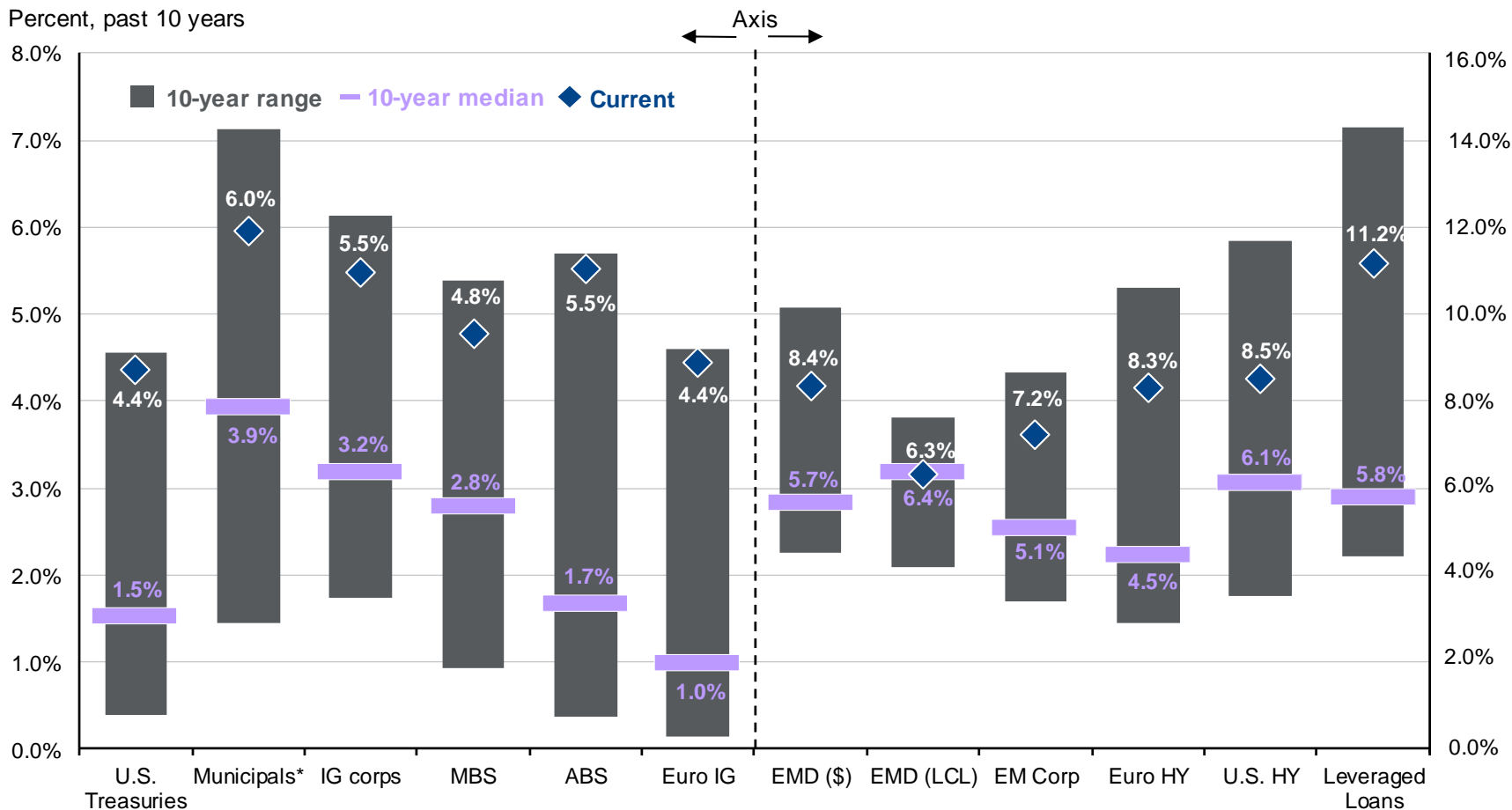
Source: Bloomberg, FactSet, J.P. Morgan Credit Research, J.P. Morgan Asset Management. Indices used are Bloomberg except for emerging market debt and leveraged loans: EMD (USD): J.P. Morgan EMIGLOBAL Diversified Index; EMD (LCL): J.P. Morgan GBI-EM Global Diversified Index; EM Corp.: J.P. Morgan CEMBI 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. 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%.
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Developed market monetary policy

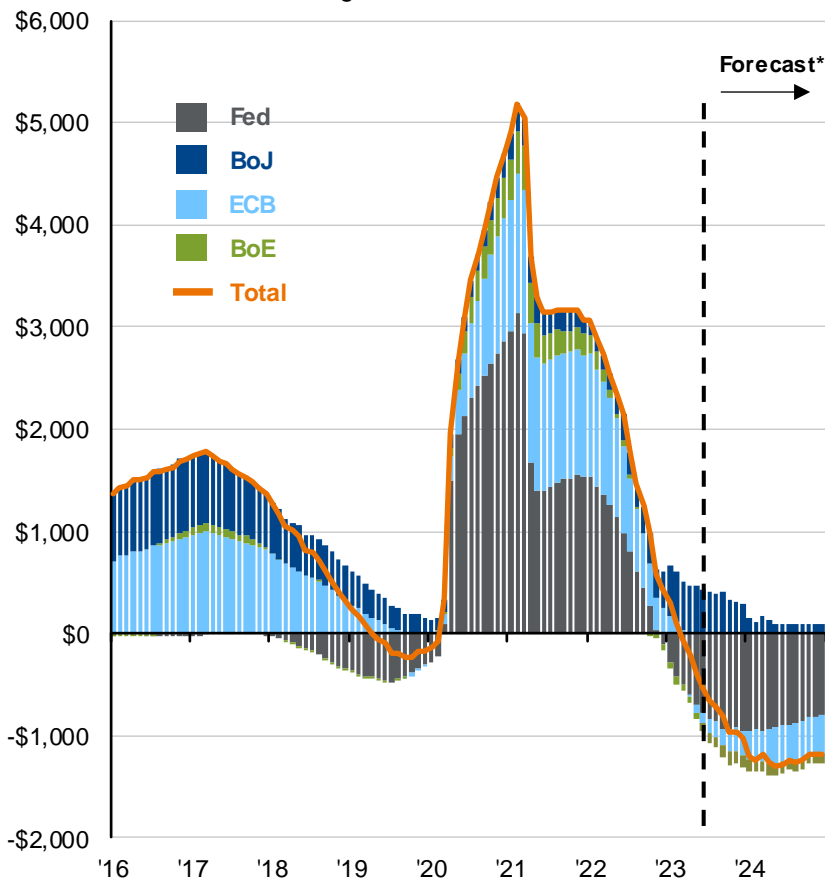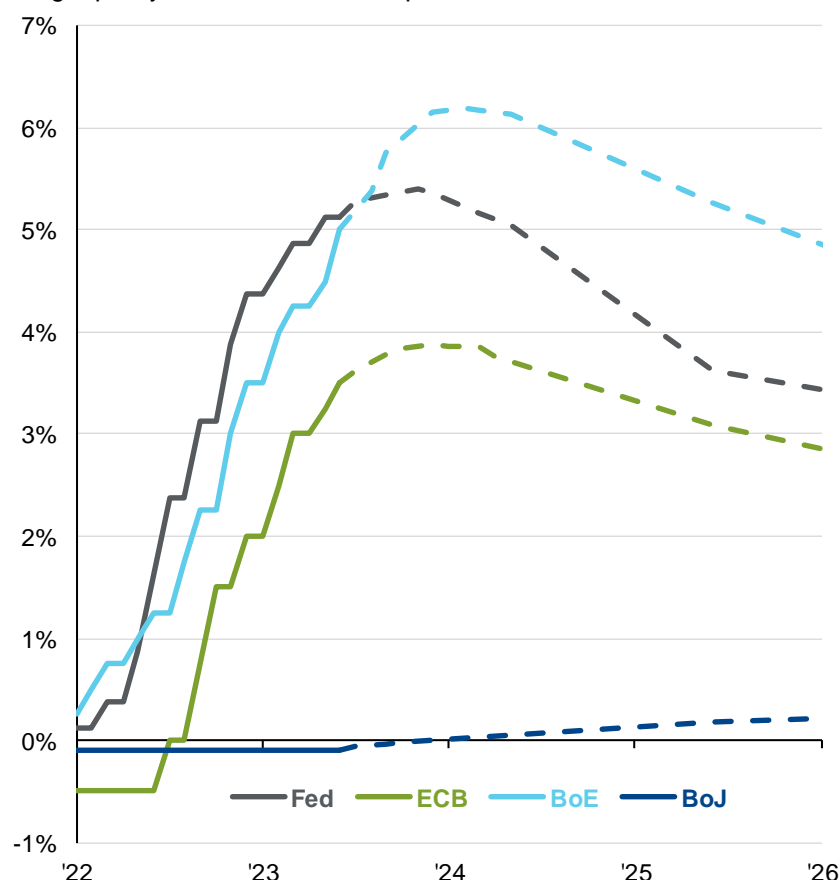## Developed market central bank bond purchases
USD billions, 12-month rolling flow

Historical policy rates and forward curves
Target policy rates and market implied forward rates

Source: BIS, Bloomberg, FactSet, J.P. Morgan Asset Management; (Left) Bank of England (BoE), Bank of Japan (BoJ), European Central Bank (ECB), Federal Reserve System (Fed), J.P. Morgan Global Economic Research. *DM bond purchase forecasts are internal assumptions based on government bond purchases as outlined in the most recent monetary policy announcements from the BoE, BoJ, ECB and Federal Reserve through December 2024. Implied policy rates are sourced from Bloomberg and are derived from monthly Overnight Index Swaps around central bank policy meeting dates. 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.
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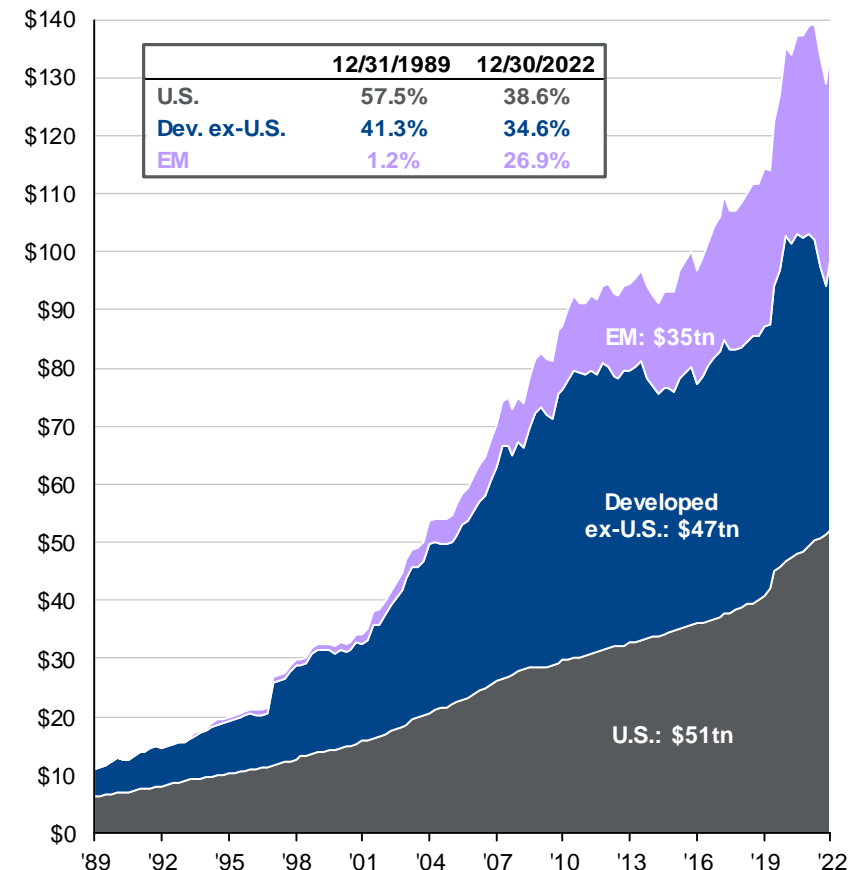
Fixed Income

Aggregates

	Yield		2023 Return			
Aggregates	**6/30/2023**	**12/31/2022**	**Local**	**USD**	**Duration**	**Correlation to U.S. 10yr**
U.S.	4.81%	4.68%	2.09%	2.09%	6.3 years	0.91
Gbl. ex-U.S.	3.22%	3.13%	-	0.98%	7.10	0.58
Japan	0.60%	0.75%	3.14%	-5.84%	9.40	0.62
Germany	3.35%	3.22%	1.47%	3.73%	6.20	0.49
UK	4.99%	4.29%	-3.13%	2.38%	8.00	0.49
Italy	3.99%	4.10%	4.32%	6.64%	6.10	0.36
China	2.74%	2.94%	2.91%	-1.52%	5.90	0.55
Sector						
Euro Corp.	4.44%	4.32%	2.18%	4.46%	4.5 years	0.42
Euro HY	8.29%	8.32%	4.79%	7.12%	3.10	0.01
EMD (USD)	8.36%	8.55%	-	4.09%	6.00	0.31
EMD (LCL)	6.32%	6.86%	5.73%	7.79%	5.00	0.20
EM Corp.	7.23%	7.28%	-	3.64%	4.90	0.22

Global bond market
USD trillions

	12/31/1989	12/30/2022
U.S.	57.5%	38.6%
Dev. ex-U.S.	41.3%	34.6%
EM	1.2%	26.9%

EM: $35tn

Developed ex-U.S.: $47tn

U.S.: $51tn

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. Global bond market regional breakdown may not sum to 100% due to rounding.
Guide to the Markets – U.S. Data are as of June 30, 2023.

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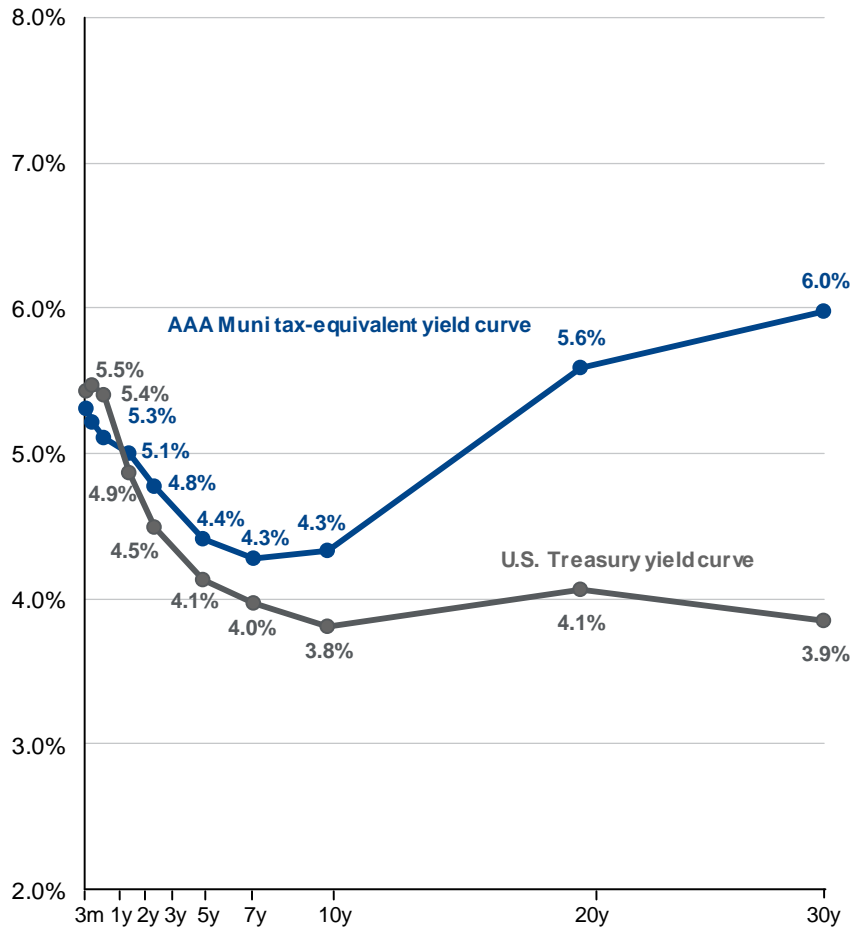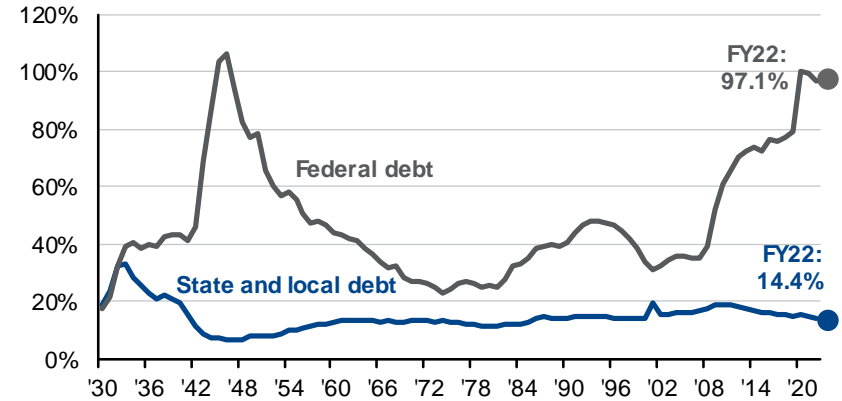ASSET MANAGEMENT

Municipal finance

Fixed Income

Muni tax-equivalent and Treasury yield curves

AAA Muni tax-equivalent yield curve

6.0%

5.6%

5.5%
5.4%
5.3%
5.1%
4.9%
4.8%
4.5%
4.4%
4.3%
4.3%
4.1%
4.0%
3.8%

U.S. Treasury yield curve

4.1%

3.9%

State and local and federal net debt
% of GDP, 1930-2022, end of fiscal year

FY22:
97.1%

Federal debt

State and local debt

FY22:
14.4%

Muni and corporate default rates
% of issuers defaulting within 10 years, 1970-2021

■ Municipals
■ Corporates

49.0%

33.4%

23.7%

14.8%
16.7%

0.0% 0.3% | 0.0% 0.8% | 0.1% 2.0% | 1.1% 3.4% | 3.4%

Aaa Aa A Baa Ba B Caa-C
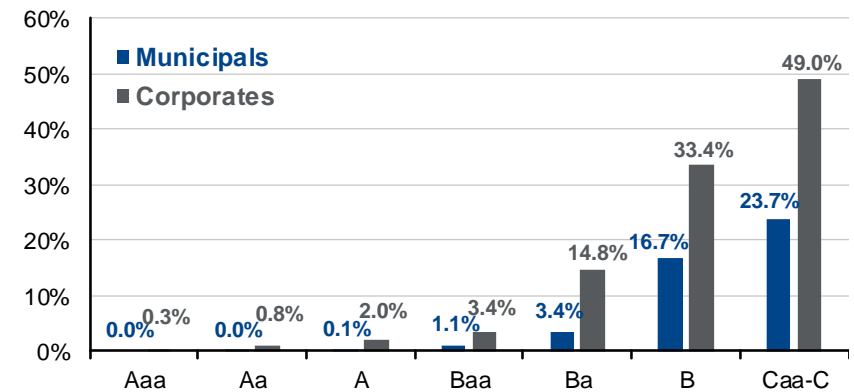
Source: J.P. Morgan Asset Management; (Left) Bloomberg, FactSet, Federal Reserve, S&P Global. (Top right) Census Bureau, Congressional Budget Office (CBO); (Bottom right) Moody's U.S. Public Finance: U.S. municipal bond defaults and recoveries, 1970 to 2021. Municipal tax-equivalent yield is calculated based on an AAA-rated municipal bond curve and assumes 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. Municipal and corporate default rates are the average cumulative default rate over a 10-year horizon as calculated by Moody's using data from issuances through 2012.
Guide to the Markets – U.S. Data are as of June 30, 2023.

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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 3.3%, annual returns positive in 42 of 47 years
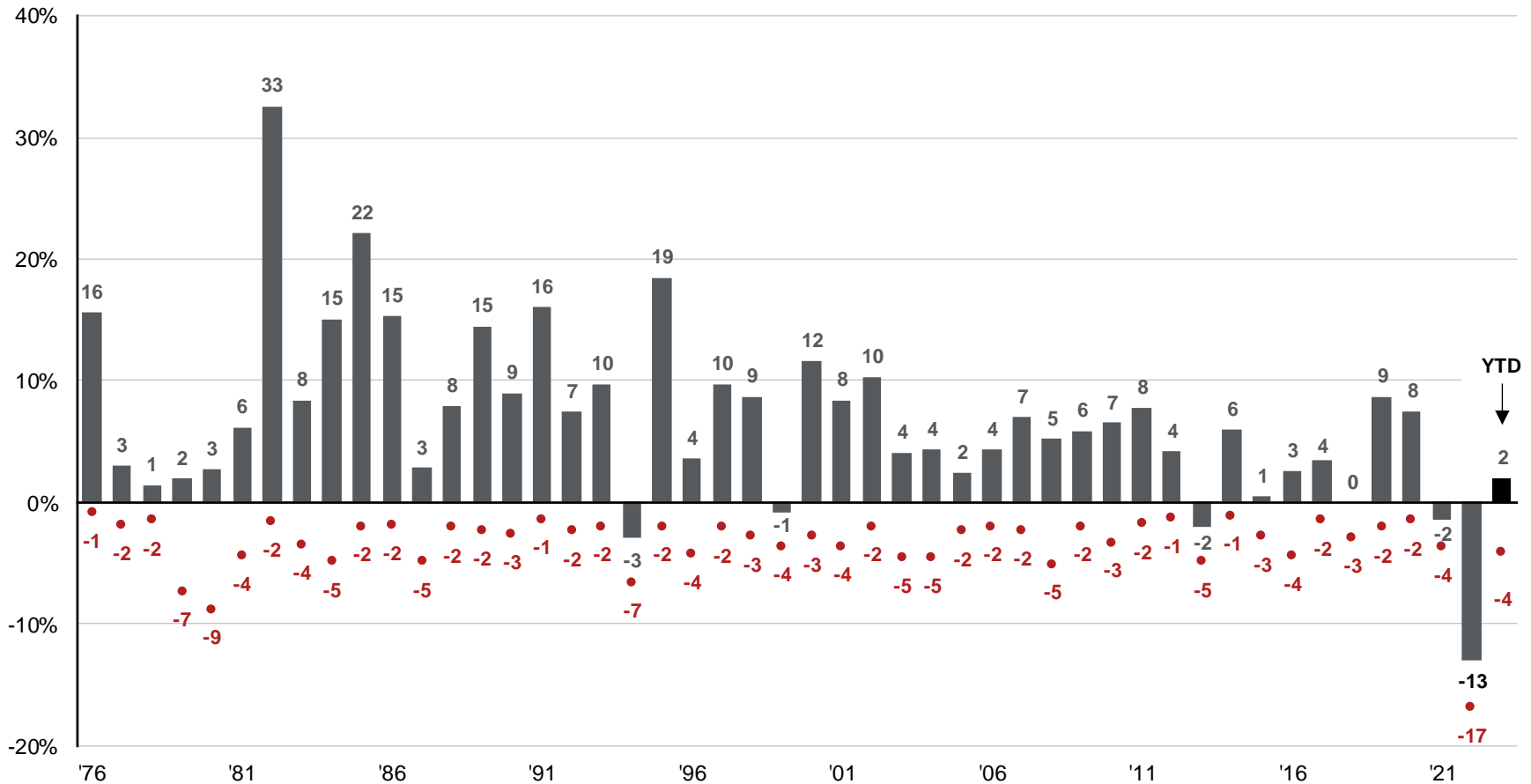
Source: Bloomberg, FactSet, J.P. Morgan Asset Management.
Returns are based on total return. Intra-year drops refers to the largest market drops from a peak to a trough during the year. For illustrative purposes only. Returns shown are calendar year returns from 1976 to 2022, over which time period the average annual return was 6.6%. 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 June 30, 2023.
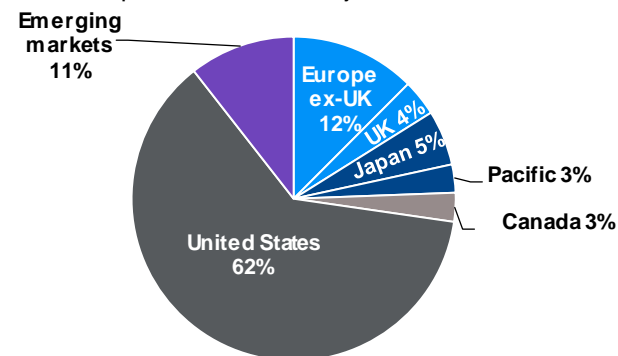
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Global equity markets

International

Returns	2023		2022		15-years	
	Local	**USD**	**Local**	**USD**	**Ann.**	**Beta**
Regions						
U.S. (S&P 500)	-	16.9	-	-18.1	8.8	0.9
AC World ex-U.S.	10.1	9.9	-9.2	-15.6	2.0	1.0
EAFE	12.6	12.1	-6.5	-14.0	2.3	1.0
Europe ex-UK	13.8	16.0	-12.2	-17.3	2.4	1.2
Emerging markets	5.8	5.1	-15.2	-19.7	1.0	1.1
Selected Countries						
Japan	24.0	13.2	-4.1	-16.3	2.5	0.7
United Kingdom	2.6	8.4	7.2	-4.8	1.4	1.0
France	16.5	19.1	-6.9	-12.7	2.8	1.2
Canada	6.1	8.6	-5.8	-12.2	3.0	0.7
Germany	16.2	18.8	-16.5	-21.6	0.9	1.3
China	-4.3	-5.4	-20.6	-21.8	0.6	1.0
India	4.4	5.3	3.0	-7.5	2.4	1.2
Korea	19.4	14.6	-24.4	-28.9	1.6	1.3
Brazil	7.0	17.1	8.6	14.6	-2.1	1.4

Weights in MSCI All Country World Index
% global market capitalization, float adjusted

Emerging markets 11%
Europe ex-UK 12%
UK 4%
Japan 5%
Pacific 3%
Canada 3%
United States 62%

Revenue exposure vs. country of listing
% of total revenue from home countries

	UK	Europe ex-UK	Japan	U.S.	EM
	20%	35%	47%	59%	66%
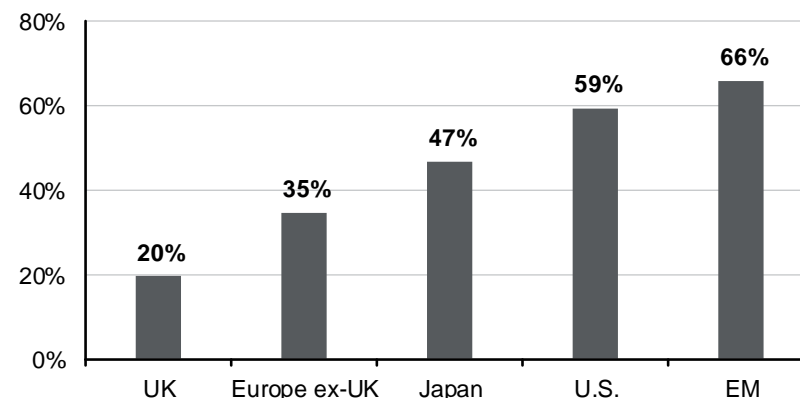
Source: FactSet, Federal Reserve, MSCI, Standard & Poor's, J.P. Morgan Asset Management. All return values are MSCI Gross Index data. 15-year history based on USD returns. 15-year return and beta figures are calculated for the time period 12/31/2007 to 12/31/2022. Beta is for monthly returns relative to the MSCI AC World Index. Annualized volatility is calculated as the standard deviation of quarterly returns multiplied by the square root of 4. 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. Revenue exposure vs. country of listing is as of 3/31/2023.
Guide to the Markets – U.S. Data are as of June 30, 2023.
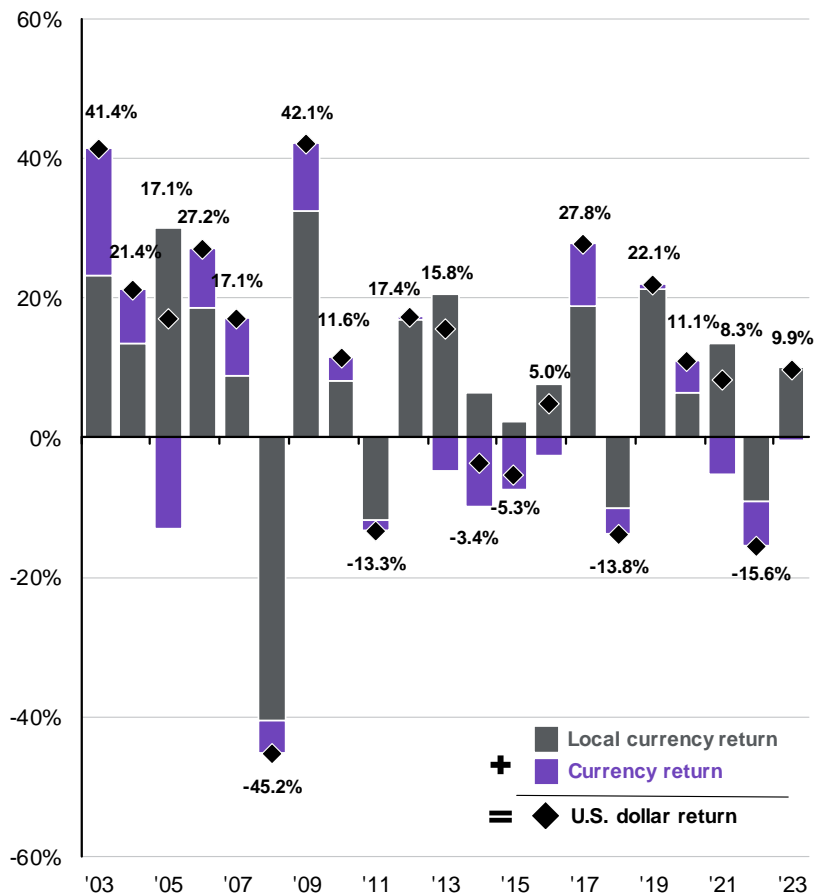
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Currency and international equity returns

U.S. dollar and relative international equity returns
Real broad effective exchange rate, MSCI World ex-U.S. vs. S&P 500*

International

Mar. 1985: +33%

Subsequent cumulative relative out/underperformance of international equity vs. U.S. equity through following peak/trough

Feb. 2002: +71%

Oct. 2022: 7%**

Oct. 1978: -85%

Aug. 1992: -157%

Jul. 2011: -225%

Currency impact on international returns
MSCI All Country World ex-U.S. Index, total return

Legend:
- Local currency return (gray)
- + Currency return (purple)
- = U.S. dollar return (black diamond)

Data labels: 41.4%, 21.4%, 17.1%, 27.2%, 17.1%, -45.2%, 42.1%, 11.6%, -13.3%, 17.4%, 15.8%, -3.4%, -5.3%, 5.0%, 27.8%, -13.8%, 22.1%, 11.1%, 8.3%, -15.6%, 9.9%

Source: MSCI, J.P. Morgan Asset Management; (Left) J.P. Morgan Global Economic Research.
*U.S. dollar is the J.P. Morgan Global Economic Research real broad effective exchange rate (CPI) indexed to 100 in 1974. Relative international equity returns are cumulative, total returns in U.S. dollars and are calculated as MSCI World ex.-U.S. minus S&P 500 for each period of U.S. dollar peak/trough. **Data since Oct. 2022 represents the relative outperformance to the latest month end. Past performance is not a reliable indicator of current and future results. *Guide to the Markets – U.S.* Data are as of June 30, 2023.
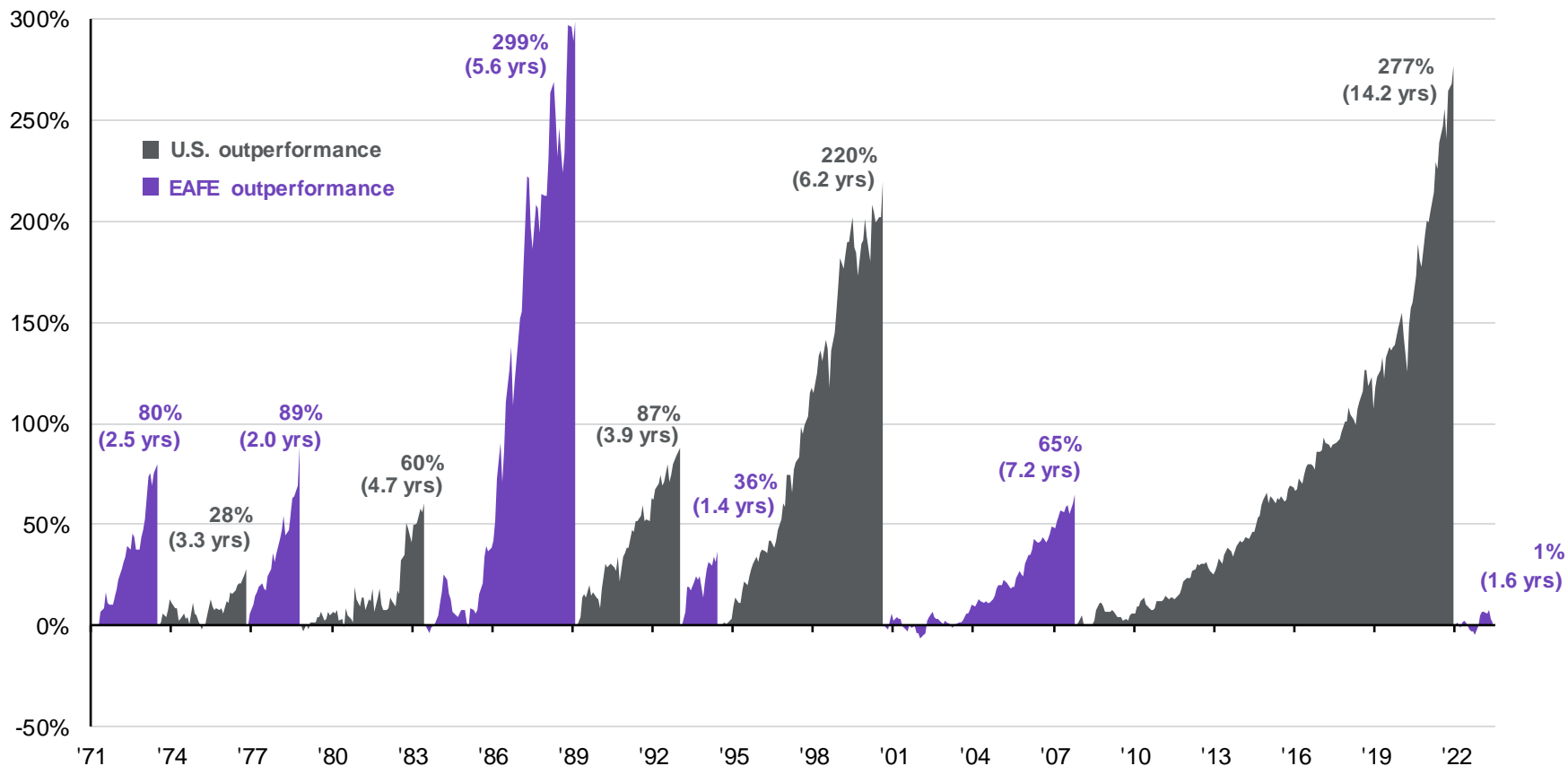
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MSCI EAFE and MSCI USA relative performance
U.S. dollar, total return, cumulative outperformance

International

- ■ U.S. outperformance
- ■ EAFE outperformance

80% (2.5 yrs)
28% (3.3 yrs)
89% (2.0 yrs)
60% (4.7 yrs)
299% (5.6 yrs)
87% (3.9 yrs)
220% (6.2 yrs)
36% (1.4 yrs)
65% (7.2 yrs)
277% (14.2 yrs)
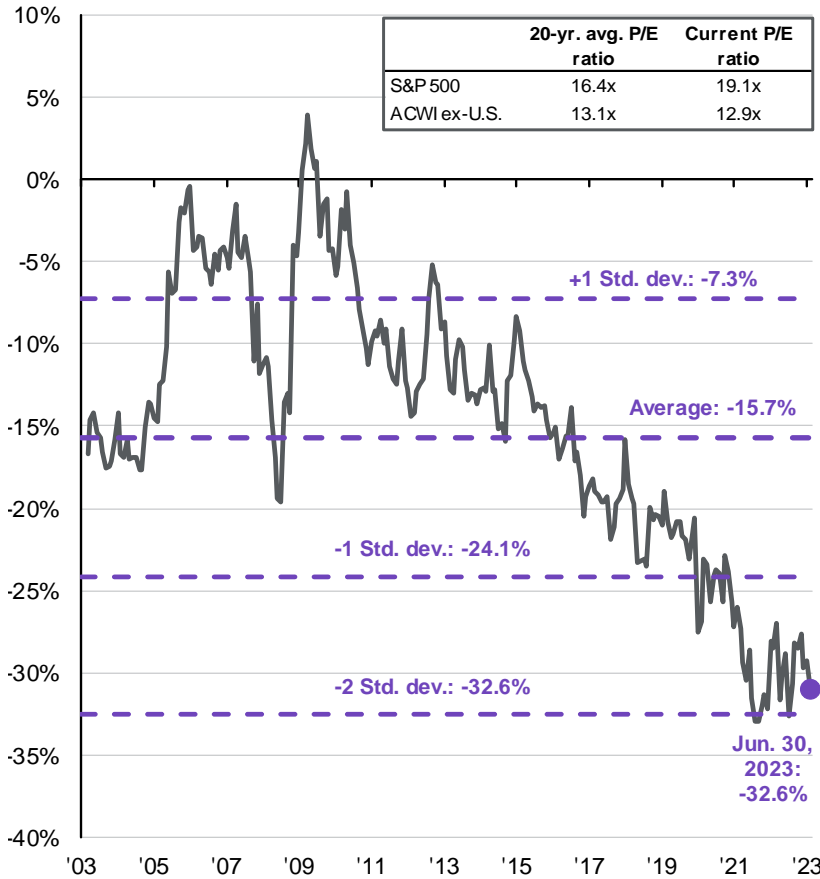1% (1.6 yrs)

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International valuations and dividend yields

International: Price-to-earnings discount vs. U.S.
MSCI All Country World ex-U.S. vs. S&P 500, next 12 months

	20-yr. avg. P/E ratio	Current P/E ratio
S&P 500	16.4x	19.1x
ACWI ex-U.S.	13.1x	12.9x

+1 Std. dev.: -7.3%

Average: -15.7%

-1 Std. dev.: -24.1%

-2 Std. dev.: -32.6%

Jun. 30, 2023: -32.6%

International: Difference in dividend yields vs. U.S.
MSCI All Country World ex-U.S. minus S&P 500, next 12 months

+2 Std. dev.: 1.7%

+1 Std. dev.: 1.4%

Average: 1.2%

-1 Std. dev.: 1.0%

Jun. 30, 2023: 1.7%

International

Source: FactSet, MSCI, Standard & Poor's, J.P. Morgan Asset Management.
Guide to the Markets – U.S. Data are as of June 30, 2023.

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International
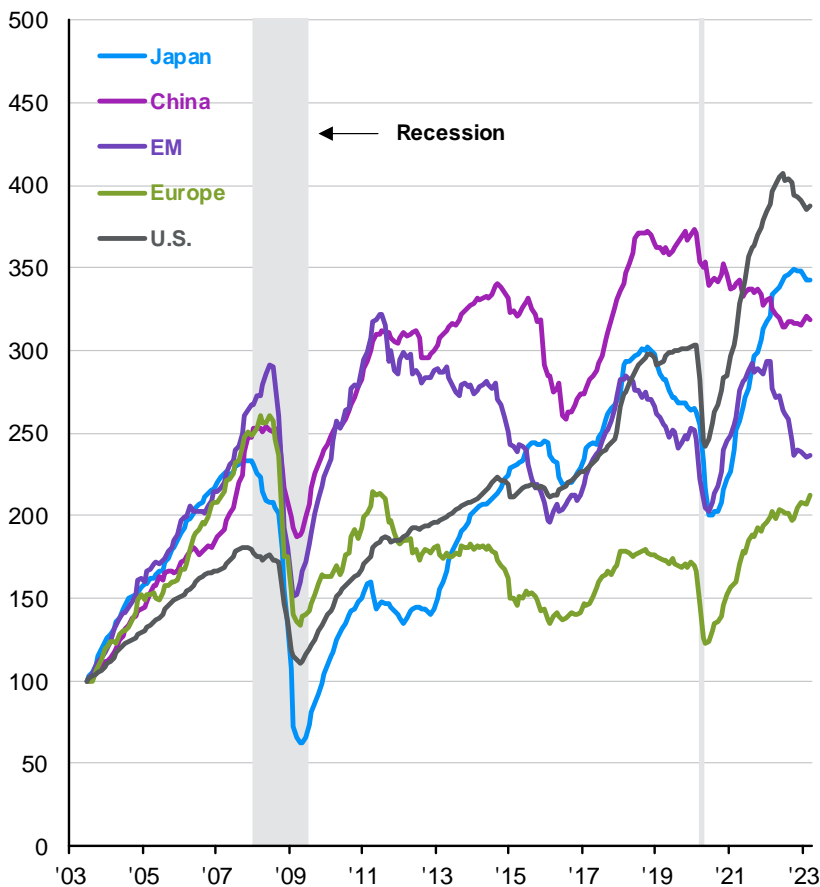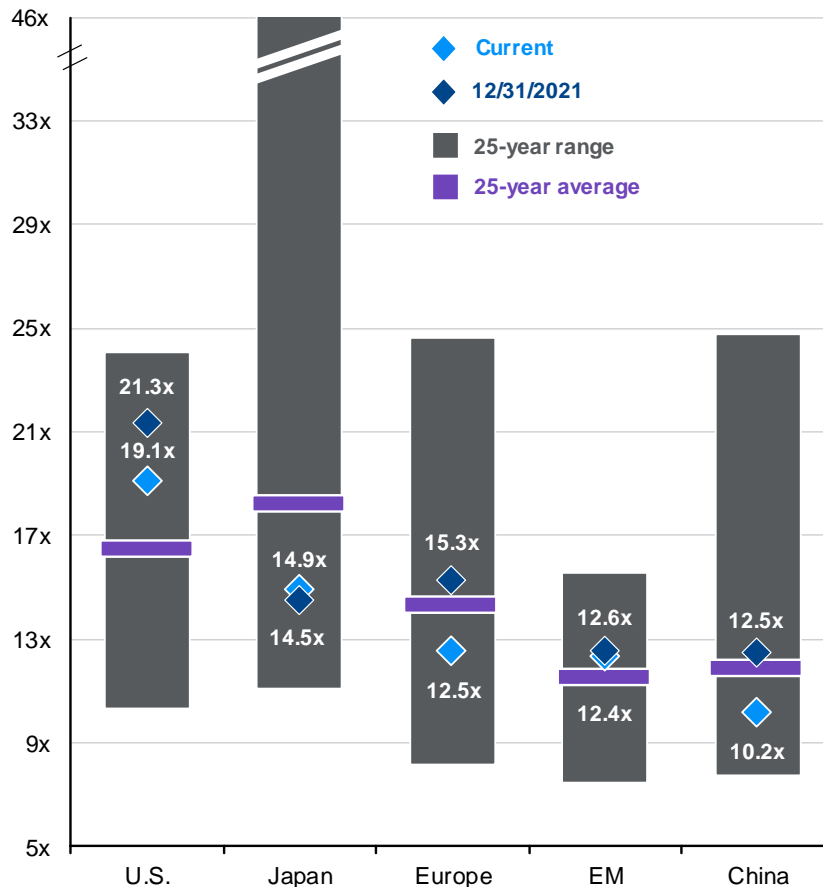
Global earnings estimates
Jun. 2003 = 100, next 12 months consensus estimates, U.S. dollars

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

Source: FactSet, MSCI, Standard & Poor's, Thomson Reuters, J.P. Morgan Asset Management.
Next 12 months consensus estimates are based on pro-forma earnings and are in U.S. dollars. MSCI Europe includes the eurozone as well as countries not in the currency bloc, such as Norway, Sweden, Switzerland and the UK (which collectively make up 44% of the overall index). The purple lines 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 June 30, 2023.

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International markets: Value vs. Growth

International

Regional and style leadership
Sep. 2000 = 100, total return, U.S. dollars

Index	%Tech	%Cyclicals*
MSCI ACWI ex-U.S.	12%	47%
S&P 500	28%	27%
Global Value	10%	47%
Global Growth	37%	18%

2008 - 2021:
U.S. outperformed International: 274%

2000 - 2007:
International outperformed U.S.: 81%

Growth outperformed Value: 143%

Value outperformed Growth: 52%
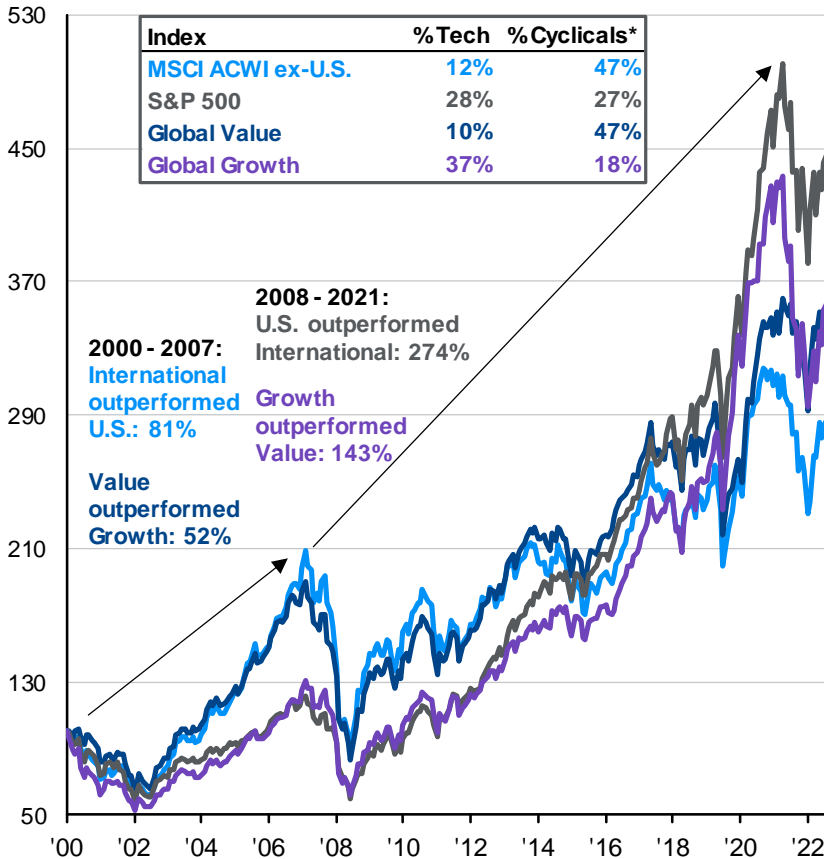
International growth sectors vs. U.S.
Total return, U.S. dollar, Dec. 31, 2014 = 100

- Europe Renewable Energy
- Europe Biotech
- Asia Tech ex-Japan
- Europe Luxury Goods
- U.S. Growth
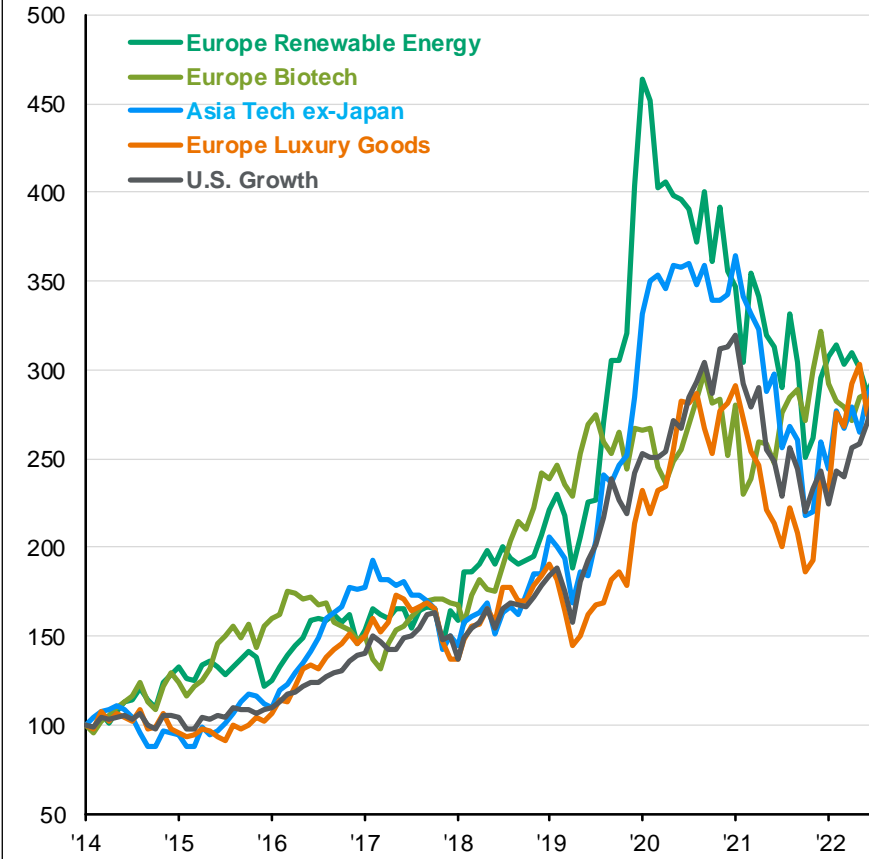
Source: Bloomberg, FactSet, MSCI, Russell, Societe Generale, J.P. Morgan Asset Management.
(Left) *"Cyclicals" are defined as Energy, Financials, Industrials and Materials. Global Growth and Global Value are represented by the corresponding MSCI AC World indices. (Right) Asia ex-Japan Tech: MSCI AC Asia ex-Japan Information Technology, European Luxury Goods: MSCI Europe Textiles, Apparel and Luxury Goods, U.S. Growth: Russell 1000 Growth, European Renewable Energy: Societe Generale European Renewable Energy, Europe Biotech: MSCI Europe Biotechnology.
Guide to the Markets – U.S. Data are as of June 30, 2023.
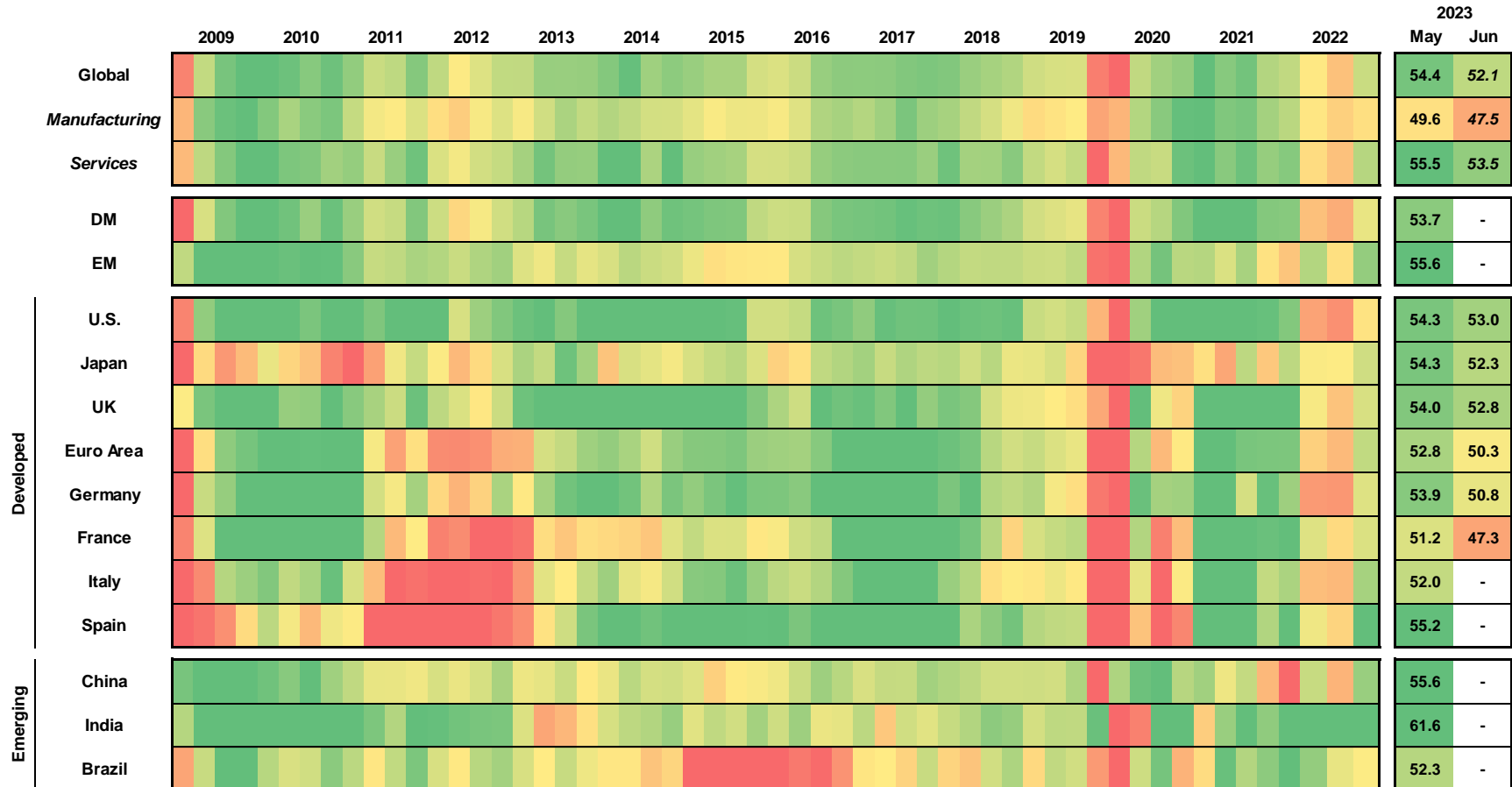
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Global economic activity momentum

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

	2023 May	2023 Jun
Global	54.4	52.1
Manufacturing	49.6	47.5
Services	55.5	53.5
DM	53.7	-
EM	55.6	-
U.S.	54.3	53.0
Japan	54.3	52.3
UK	54.0	52.8
Euro Area	52.8	50.3
Germany	53.9	50.8
France	51.2	47.3
Italy	52.0	-
Spain	55.2	-
China	55.6	-
India	61.6	-
Brazil	52.3	-

Source: Standard & Poor's, J.P. Morgan Asset Management.
The Composite PMI includes both manufacturing and services sub-indices. The June global, manufacturing, and services figures are estimates by J.P. Morgan Asset Management. Heatmap colors are based on PMI relative to the 50 level, which indicates acceleration or deceleration of the sector, for the time 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 2009. DM and EM represent developed markets and emerging markets, respectively.
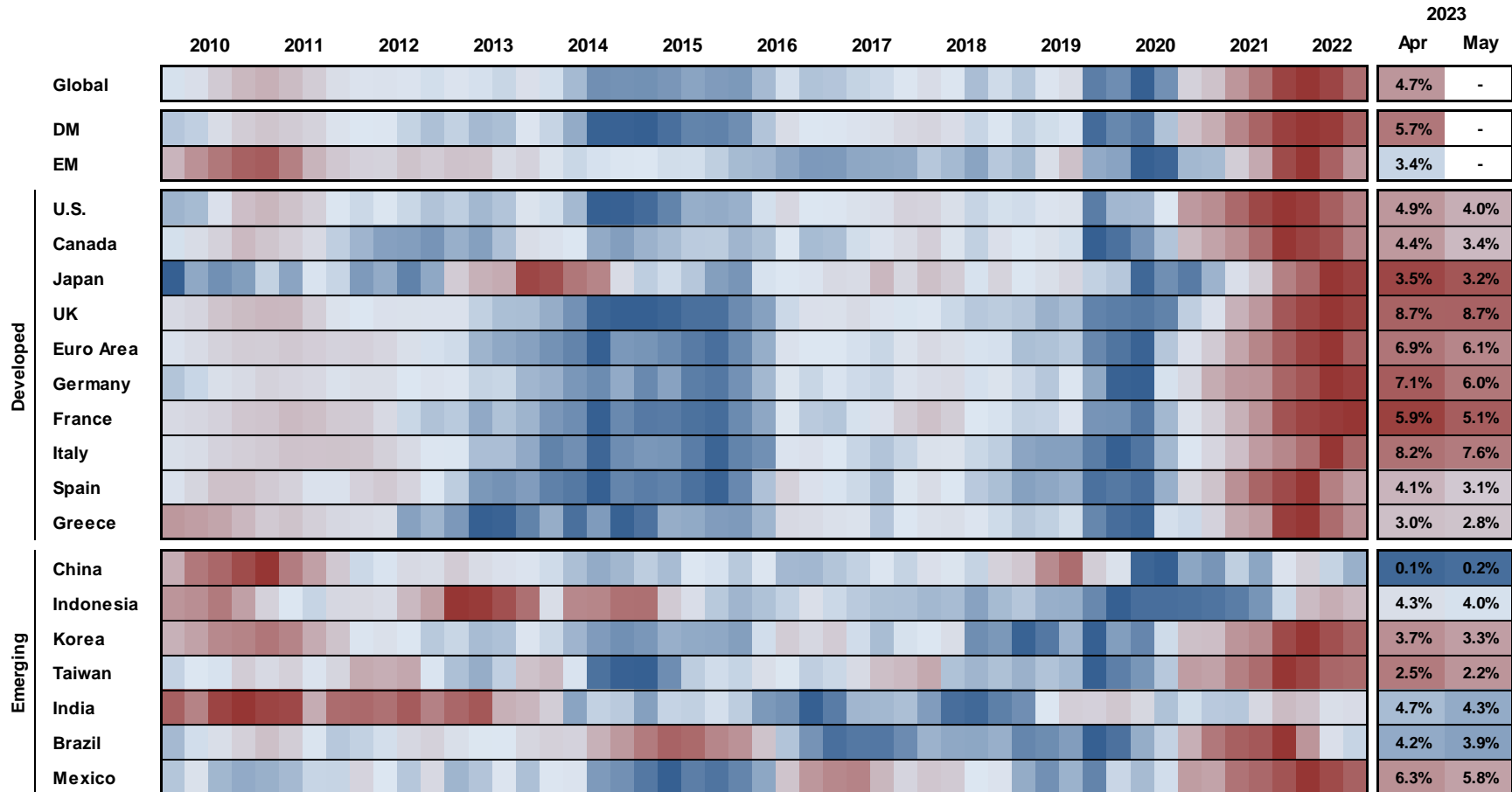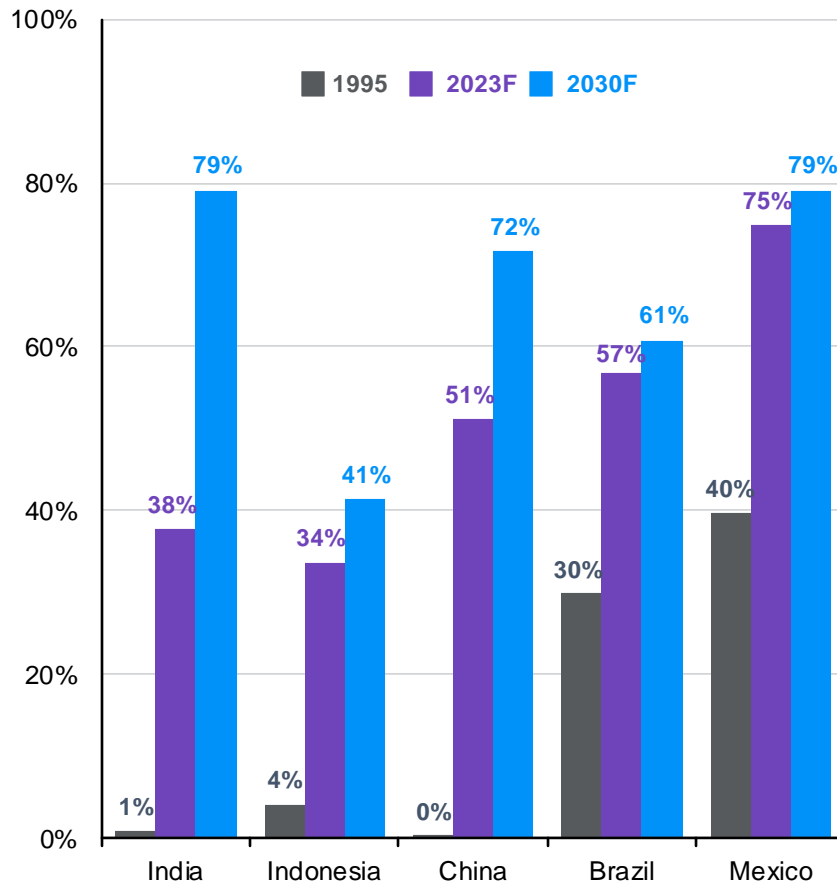*Guide to the Markets – U.S.* Data are as of June 30, 2023.

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Global inflation

Year-over-year headline inflation by country and region, quarterly

		2023 Apr	May
Global		4.7%	-
DM		5.7%	-
EM		3.4%	-
U.S.		4.9%	4.0%
Canada		4.4%	3.4%
Japan		3.5%	3.2%
UK		8.7%	8.7%
Euro Area		6.9%	6.1%
Germany		7.1%	6.0%
France		5.9%	5.1%
Italy		8.2%	7.6%
Spain		4.1%	3.1%
Greece		3.0%	2.8%
China		0.1%	0.2%
Indonesia		4.3%	4.0%
Korea		3.7%	3.3%
Taiwan		2.5%	2.2%
India		4.7%	4.3%
Brazil		4.2%	3.9%
Mexico		6.3%	5.8%

Heatmap column headers (years): 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017, 2018, 2019, 2020, 2021, 2022

Row groups: **Developed** (U.S., Canada, Japan, UK, Euro Area, Germany, France, Italy, Spain, Greece); **Emerging** (China, Indonesia, Korea, Taiwan, India, Brazil, Mexico)

Source: Bank of Mexico, DGBAS, Eurostat, FactSet, Federal Reserve, IBGE, India Ministry of Statistics & Programme Implementation, Japan Ministry of Internal Affairs & Communications, Korean National Statistical Office, Melbourne Institute, National Bureau of Statistics China, Statistics Canada, Statistics Indonesia, UK Office for National Statistics (ONS), J.P. Morgan Asset Management. Heatmap is based on quarterly averages, with the exception of the two most recent figures, which are single month readings. Colors determined by percentiles of inflation values over the time period shown. Deep blue = lowest value, light blue = median, deep red = highest value. DM and EM represent developed markets and emerging markets, respectively.
Guide to the Markets – U.S. Data are as of June 30, 2023.

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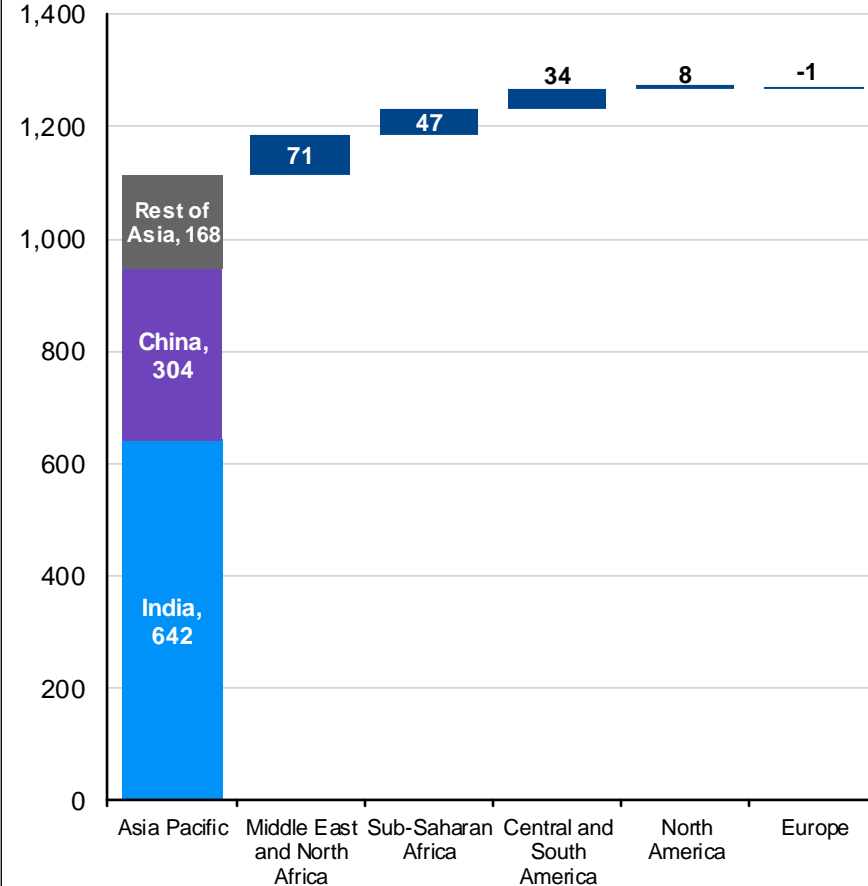ASSET MANAGEMENT

The emergence of the EM middle class

International

Growth of the middle class
Percent of total population

Legend: ■ 1995 ■ 2023F ■ 2030F

- India: 1% (1995), 38% (2023F), 79% (2030F)
- Indonesia: 4% (1995), 34% (2023F), 41% (2030F)
- China: 0% (1995), 51% (2023F), 72% (2030F)
- Brazil: 30% (1995), 57% (2023F), 61% (2030F)
- Mexico: 40% (1995), 75% (2023F), 79% (2030F)

Regional contribution to middle class growth: 2023 to 2030
Millions of people

- Asia Pacific: India, 642; China, 304; Rest of Asia, 168
- Middle East and North Africa: 71
- Sub-Saharan Africa: 47
- Central and South America: 34
- North America: 8
- Europe: -1

Source: Brookings Institution, J.P. Morgan Asset Management. Estimates for regional contribution are from Kharas, Homi. The Unprecedented Expansion of the Global Middle Class, An Update. Brookings Institution, 2017. Middle class is defined as households with per capita incomes between USD 11 and USD 110 per person per day in 2011 PPP terms. 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 June 30, 2023.

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International

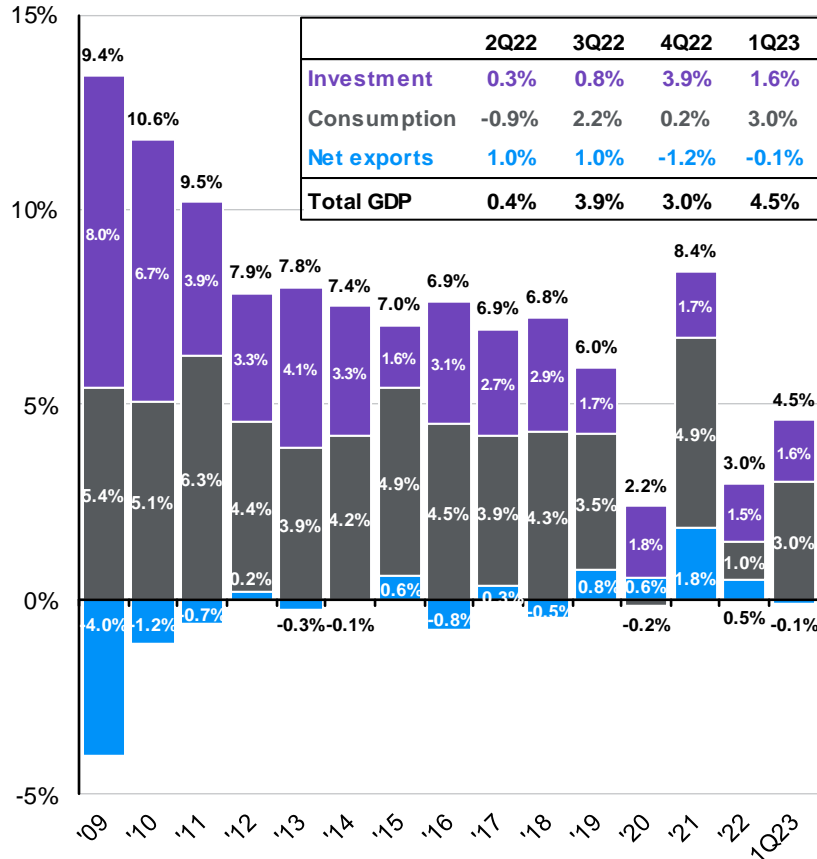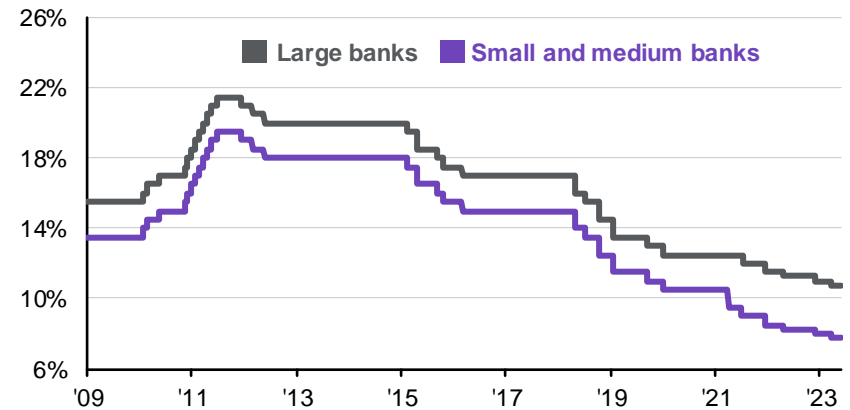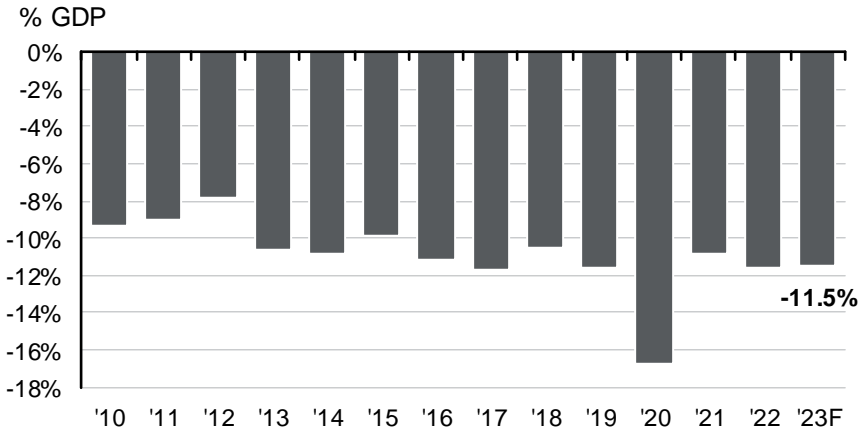## China real GDP contribution
Year-over-year % change for GDP, contribution to GDP for components

	2Q22	3Q22	4Q22	1Q23
Investment	0.3%	0.8%	3.9%	1.6%
Consumption	-0.9%	2.2%	0.2%	3.0%
Net exports	1.0%	1.0%	-1.2%	-0.1%
Total GDP	0.4%	3.9%	3.0%	4.5%

Monetary stimulus: Reserve requirement ratio

Fiscal stimulus: Fiscal deficit*
% GDP

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Eurozone economy

Eurozone unemployment rate and wage growth
Year-over-year

Unemployment rate ◄   Wage growth ►

1Q23: 4.3%

Apr. 2023: 6.5%
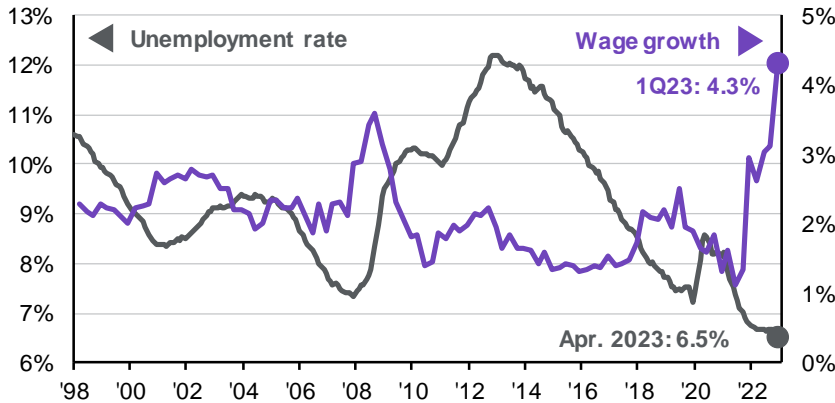
Eurozone interest rate and inflation expectations
5y5y swaps

Interest rate expectations

Inflation expectations

Government capital spending
Year-over-year change, 3-year moving average

Forecast*

France
Italy
Spain

Source: Bloomberg, ECB, European Commission, FactSet, Organization for Economic Co-operation and Development (OECD), J.P. Morgan Asset Management. (Top left) Wage growth is based on negotiated wages. (Bottom left) These series represent measures of expected inflation and interest rates (on average) over the five-year period that begins five years from today. *Forecast is OECD.
Guide to the Markets – U.S. Data are as of June 30, 2023.
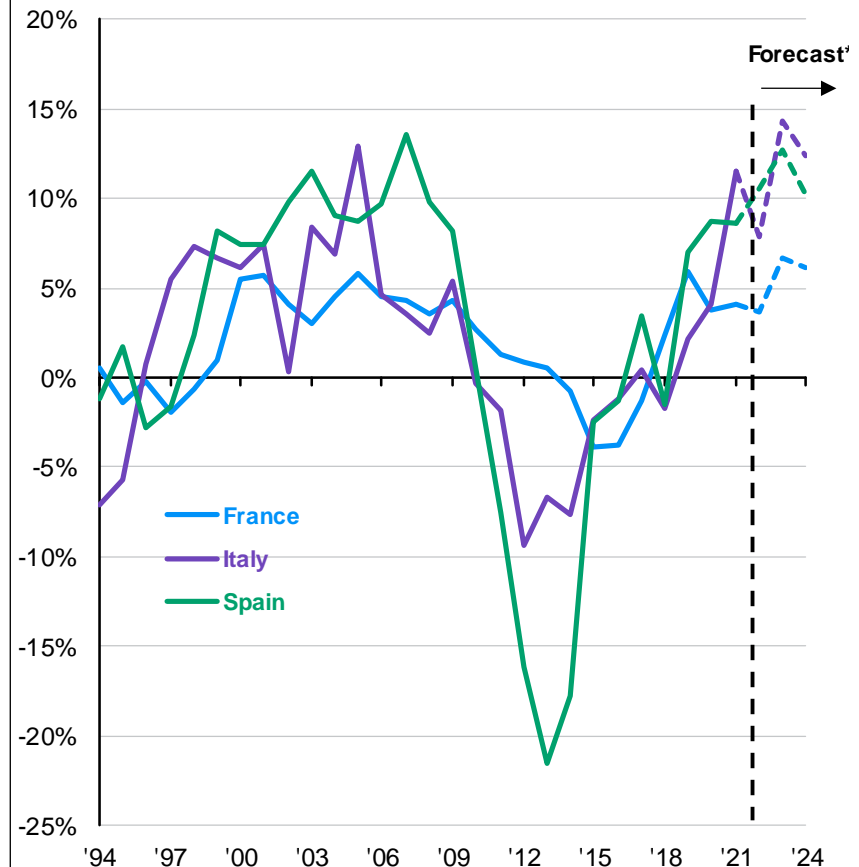
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Correlations and volatility

Alternatives

	U.S. Large Cap	EAFE	EME	Bonds	Corp. HY	Munis	Currcy.	EMD	Cmdty.	REITs	Hedge funds	Private equity	Gold	Ann. Volatility
U.S. Large Cap	1.00	0.88	0.79	0.26	0.87	0.35	-0.46	0.72	0.41	0.76	0.83	0.80	0.11	15%
EAFE		1.00	0.89	0.28	0.85	0.43	-0.63	0.77	0.45	0.61	0.80	0.79	0.24	15%
EME			1.00	0.31	0.83	0.44	-0.69	0.80	0.49	0.54	0.77	0.77	0.39	18%
Bonds				1.00	0.38	0.85	-0.35	0.66	-0.21	0.42	-0.02	0.13	0.58	4%
Corp. HY					1.00	0.46	-0.50	0.87	0.50	0.69	0.79	0.75	0.29	8%
Munis						1.00	-0.39	0.75	-0.13	0.54	0.13	0.26	0.51	4%
Currencies							1.00	-0.59	-0.41	-0.22	-0.31	-0.56	-0.56	6%
EMD								1.00	0.27	0.64	0.56	0.60	0.51	8%
Commodities									1.00	0.34	0.64	0.58	0.29	17%
REITs										1.00	0.60	0.61	0.20	16%
Hedge funds											1.00	0.80	0.03	5%
Private equity												1.00	0.09	8%
Gold													1.00	15%

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Portfolio diversification

Alternatives and portfolio risk/return
Annualized volatility and returns, 1989 – 3Q22

30% Equities
40% Bonds
30% Alts

40% Equities
30% Bonds
30% Alts

50% Equities
20% Bonds
30% Alts

80% Equities
20% Bonds

60% Equities
40% Bonds

40% Equities
60% Bonds

Portfolio allocation	Volatility	Annualized returns
40 Equities/60 F.I.	6.84%	7.25%
60 Equities/40 F.I.	9.70%	8.16%
80 Equities/20 F.I.	12.83%	8.94%
30 Alts/30 Equities/40 F.I.	6.55%	8.41%
30 Alts/40 Equities/30 F.I.	8.02%	8.87%
30 Alts/50 Equities/20 F.I.	9.56%	9.30%
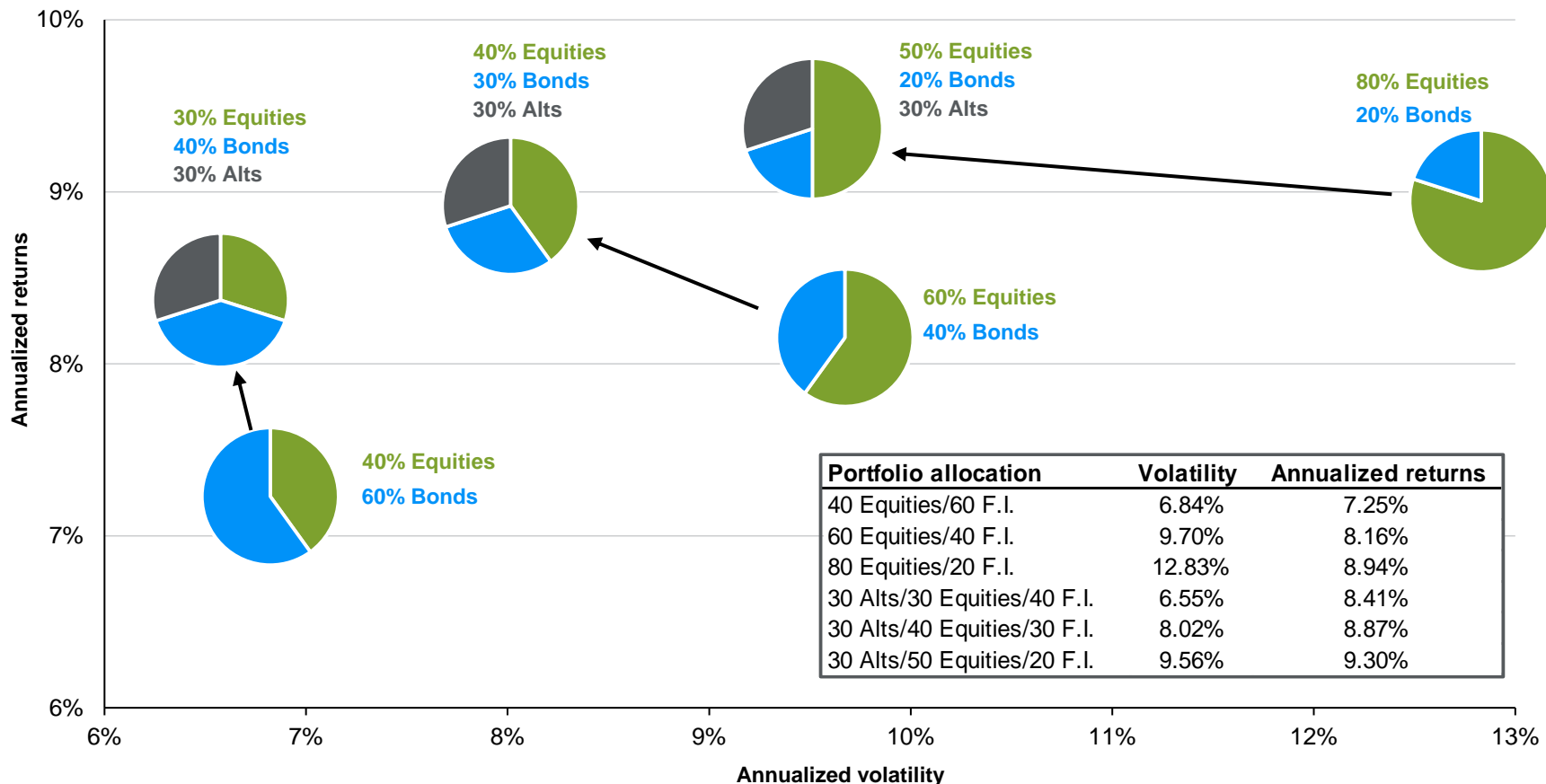
Source: Bloomberg, Burgiss, FactSet, HRFI, NCREIF, Standard & Poor's, J.P. Morgan Asset Management. Alts include hedge funds, real estate and private equity, with each receiving an equal weight. Portfolios are rebalanced at the start of the year. This slide comes from our Guide to Alternatives.
Guide to the Markets – U.S. Data are as of June 30, 2023.

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Alternatives

U.S. real estate dynamics

U.S. real estate cap rate spreads
Transaction based, spread to 10y UST, 4-quarter rolling average

Average: 2.8%

Mar. 2023:
1.2%
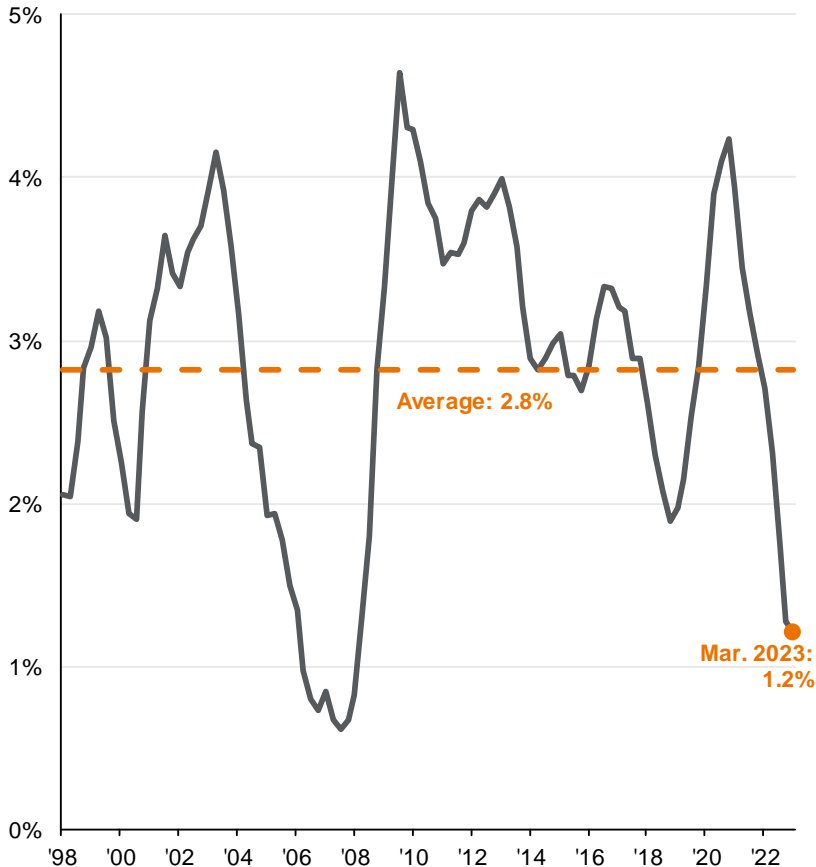
U.S. vacancy rates by property type
Percent

Apartment   Office
Industrial   Retail

Alternatives
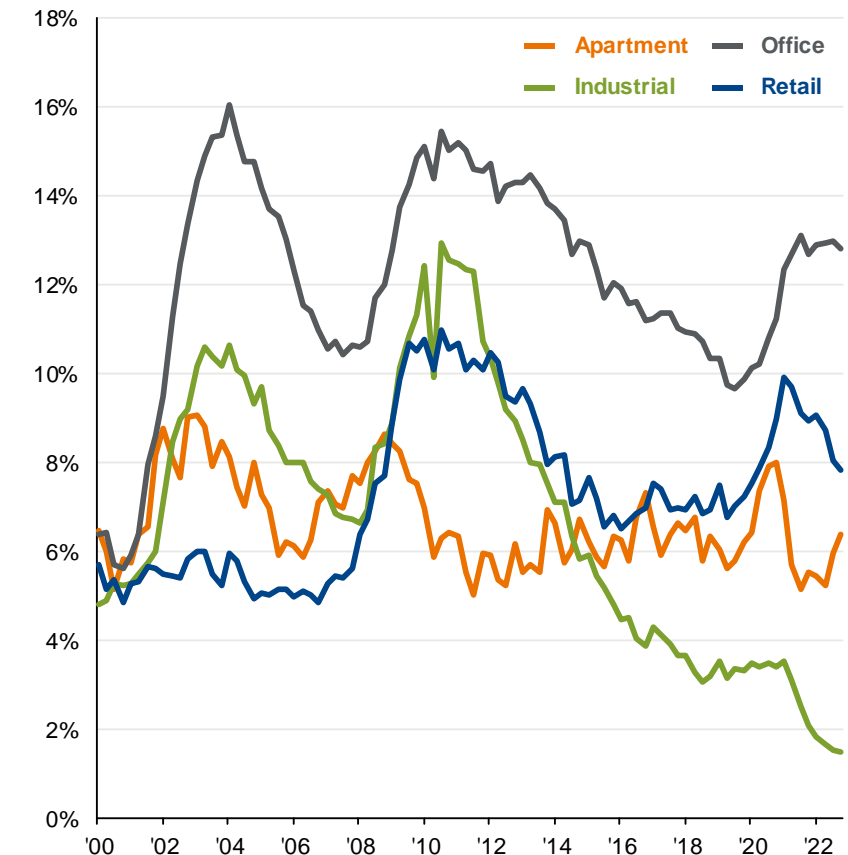
Source: NAREIT, NCREIF, Statista, J.P. Morgan Asset Management.
The cap rate, which is computed as the net operating income over sales price, is the rate of return on a real estate investment property. Vacancy rate data is as of 12/31/2022. This slide comes from our Guide to Alternatives.
Guide to the Markets – U.S. Data are as of June 30, 2023.
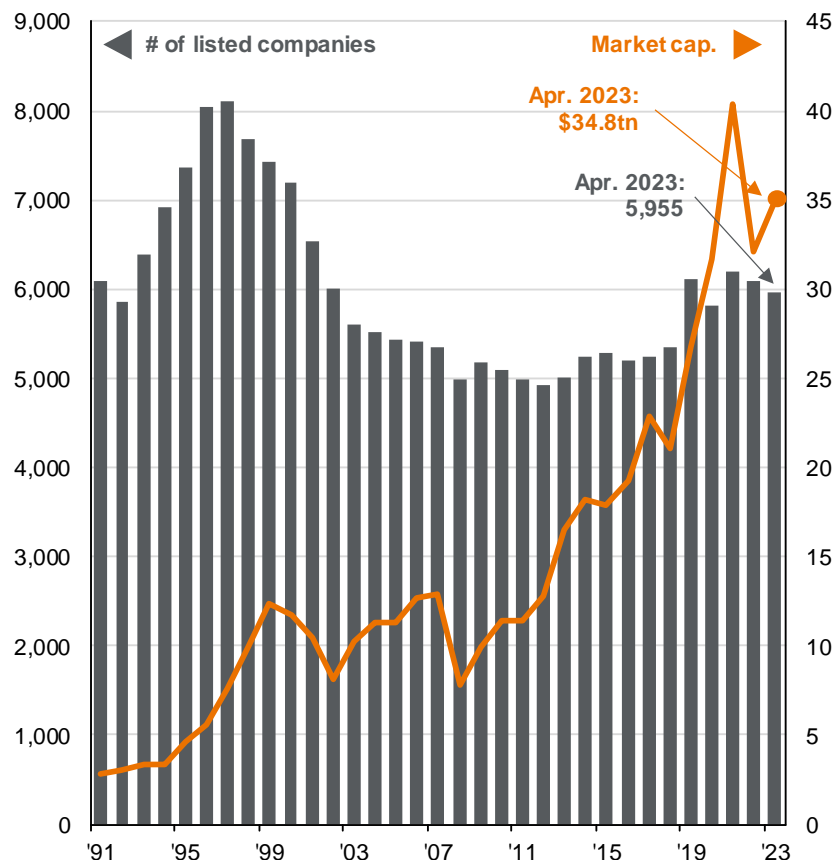
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U.S. public vs. private equity

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

◀ # of listed companies   Market cap. ▶

Apr. 2023: $34.8tn

Apr. 2023: 5,955

Private vs. public equity sector weights

Sector	Russell 2000	U.S. private equity
Tech	12.1%	35.8%
Health Care	20.6%	16.5%
Industrials	14.5%	13.2%
Cons. Disc.	15.3%	11.0%
Financials	14.6%	7.6%
Comm. Services	2.0%	6.3%
Other**	14.3%	2.8%

■ Russell 2000
■ U.S. private equity

Alternatives

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Alternatives

Equity, interest rate and foreign exchange volatility
Z-score, 4-week moving average, 2007 - present

Legend: FX, Interest rate, Equity
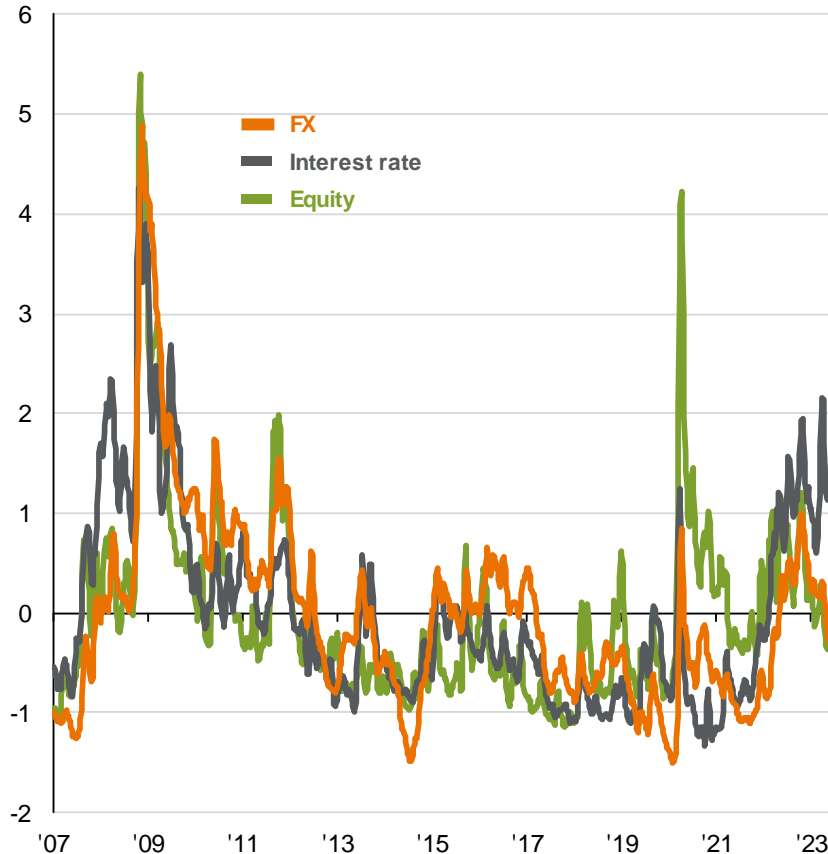
Hedge funds and volatility
Average monthly hedge fund returns by VIX level, 1990 - present

VIX level	Total	Alpha	Beta
10-15	1.1%	0.6%	0.5%
15-20	0.8%	0.5%	0.3%
20-25	1.1%	0.7%	0.4%
25-30	-0.1%	0.2%	-0.3%
30-35	-0.3%	0.1%	-0.4%
>35	-1.0%	-0.4%	-0.7%

Legend: Alpha, Beta

Source: CBOE, FactSet, HFRI, ICE BofA, J.P. Morgan Index Research, MSCI, J.P. Morgan Asset Management. (Left) Equity volatility is represented by the VIX Index, interest rate volatility is represented by the MOVE Index and foreign exchange volatility is represented by the J.P. Morgan Global FX Volatility Index. (Right) Historical beta is based on regression analysis, where the HFRI is the dependent variable and the MSCI AC World Index is the independent variable. Monthly VIX reading is an average. Numbers may not sum to 100% due to rounding. This slide comes from our Guide to Alternatives.
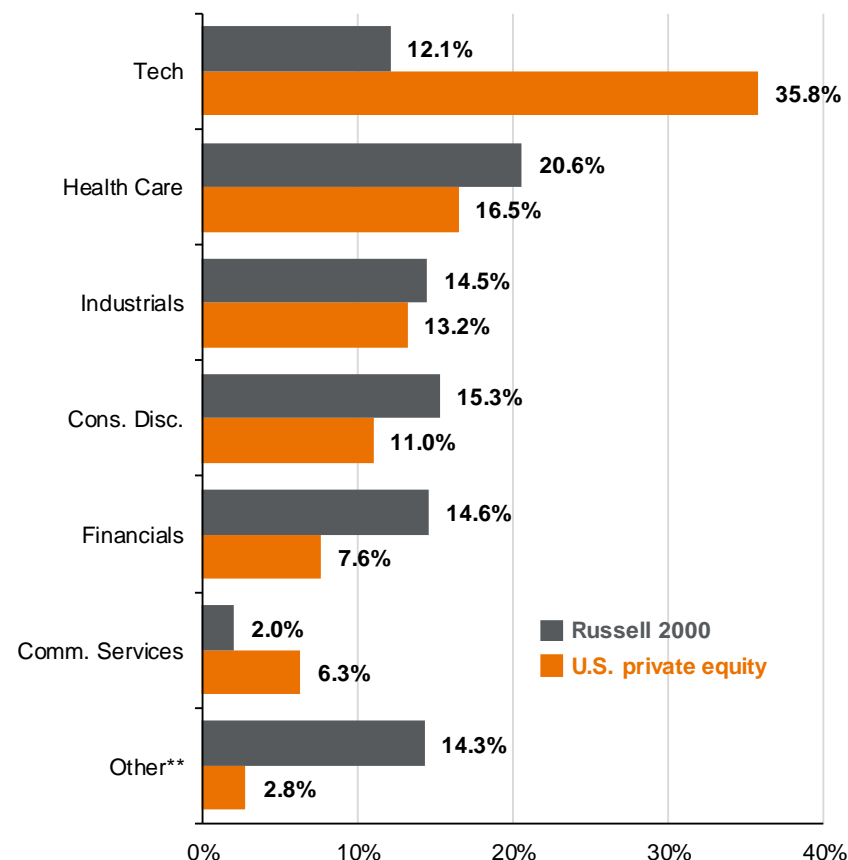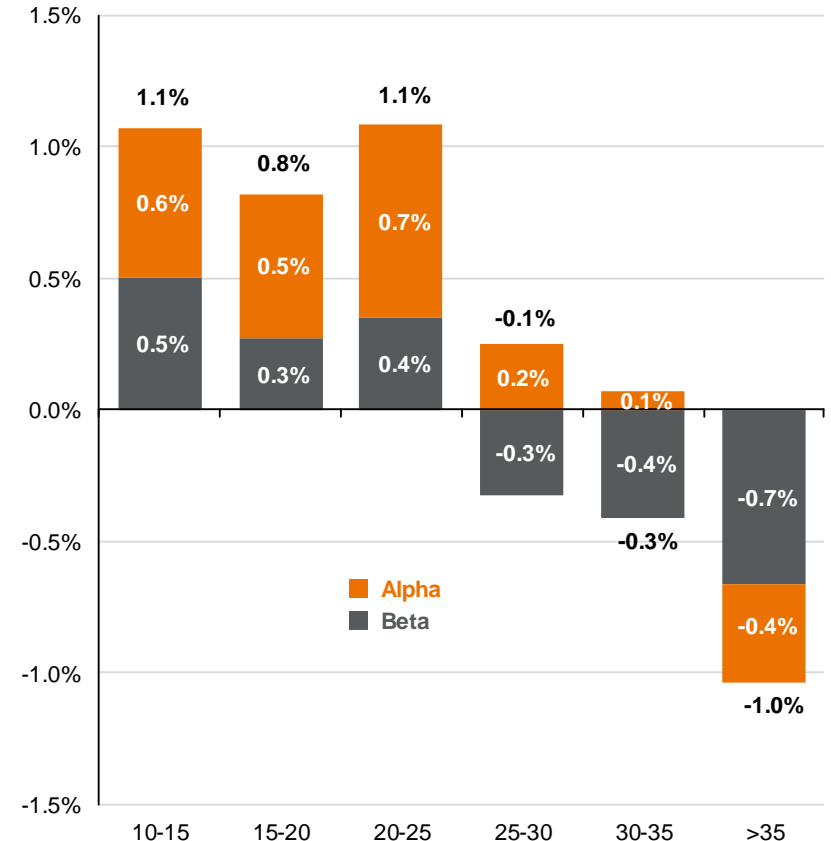*Guide to the Markets – U.S.* Data are as of June 30, 2023.

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	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	YTD	2008 - 2022 Ann.	Vol.
1	Fixed Income 5.2%	EM Equity 79.0%	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 16.9%	Large Cap 8.8%	REITs 23.4%
2	Cash 1.8%	High Yield 59.4%	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 12.1%	Small Cap 7.2%	Small Cap 23.2%
3	Asset Alloc. -25.4%	DM Equity 32.5%	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 8.1%	REITs 6.6%	EM Equity 23.0%
4	High Yield -26.9%	REITs 28.0%	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. 7.8%	Asset Alloc. 6.1%	Comdty. 20.2%
5	Small Cap -33.8%	Small Cap 27.2%	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 5.2%	High Yield 5.4%	DM Equity 20.0%
6	Comdty. -35.6%	Large Cap 26.5%	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%	EM Equity 5.1%	Fixed Income 2.7%	Large Cap 17.7%
7	Large Cap -37.0%	Asset Alloc. 25.0%	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%	REITs 3.0%	DM Equity 2.3%	High Yield 13.0%
8	REITs -37.7%	Comdty. 18.9%	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%	Cash 2.3%	EM Equity 1.0%	Asset Alloc. 12.4%
9	DM Equity -43.1%	Fixed Income 5.9%	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%	Fixed Income 2.1%	Cash 0.6%	Fixed Income 4.2%
10	EM Equity -53.2%	Cash 0.1%	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. -7.8%	Comdty. -2.6%	Cash 0.4%

Investing Principles

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Asset class valuations
Z-scores based on 25-year average valuation measures*

◆ 12/31/2021   ● Current

	Yield-to-worst**	Yield-to-worst**	Fwd. P/E	P/B	Yield-to-worst**	Fwd. P/E	Fwd. P/E	Spread-to-worst**	Fwd. P/E	Fwd. P/E
12/31/2021	1.00	1.22	0.10	0.42	1.98	0.51	1.13	0.94	1.50	1.49
Current	-0.94	-0.65	-0.50	-0.46	-0.33	0.05	0.23	0.68	0.82	0.95
	Treasuries	U.S. Core Bond	DM Equity ex-U.S.	EM Equity	Munis***	U.S. Small Cap	U.S. Value	U.S. High Yield	U.S. Large Cap	U.S. Growth

Investing Principles
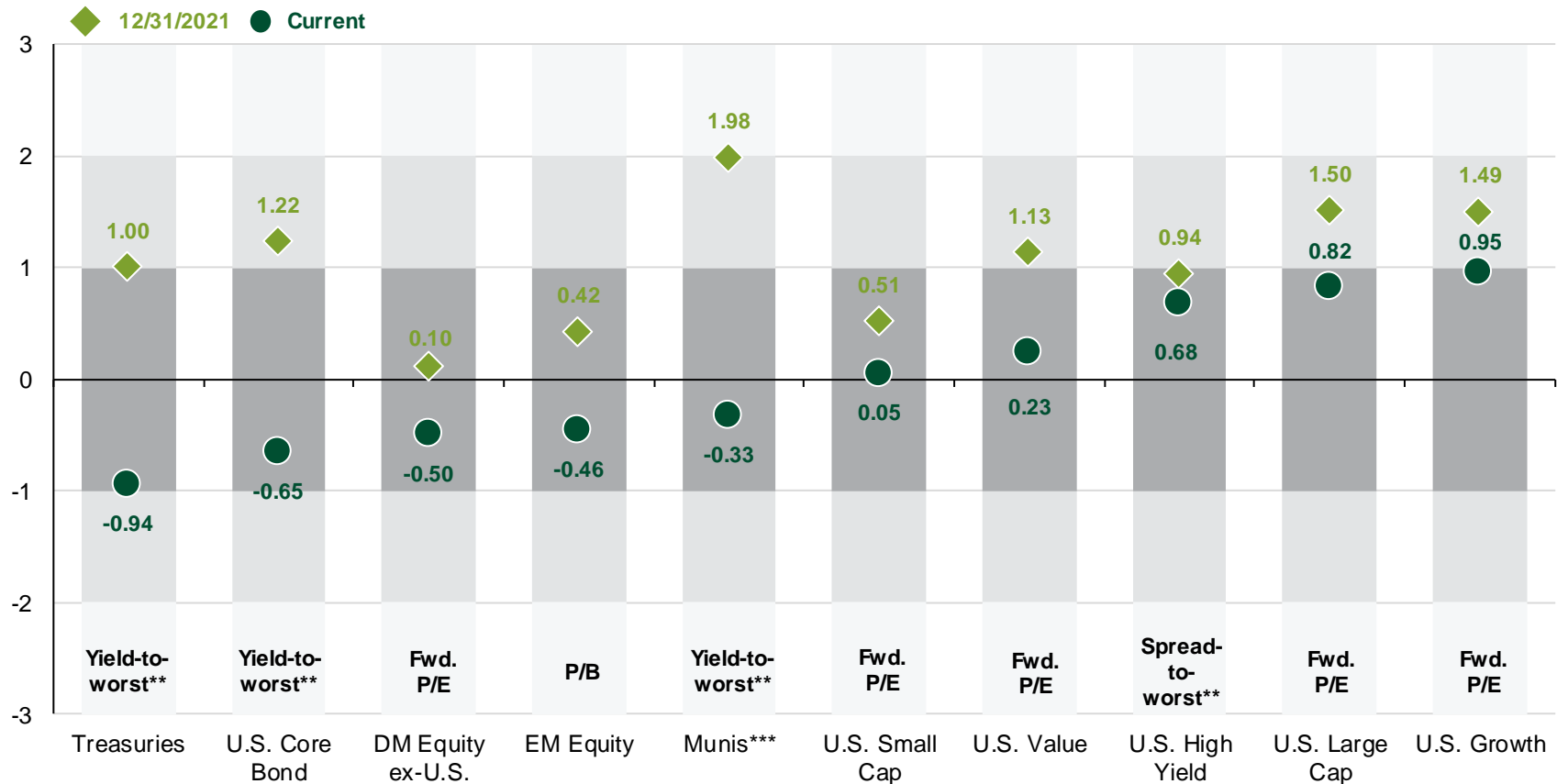
Source: Bloomberg, BLS, CME, FactSet, MSCI, Russell, Standard & Poor's, J.P. Morgan Asset Management.
U.S. Large Cap: S&P 500, U.S. Small Cap: Russell 2000, EM Equity: MSCI EME, DM Equity: MSCI EAFE, U.S. Value: Russell 1000 Value, U.S. Growth: Russell 1000 Growth, U.S. High Yield: J.P. Morgan Domestic High Yield Index, U.S. Core Bond: Bloomberg US Aggregate, Treasuries: Bloomberg U.S. Aggregate Government – Treasury, Munis: Bloomberg Municipal Bond. *Averages for U.S. High Yield and U.S. Small Cap are since January 1999 and November 1998, respectively, due to limited data availability. **Yield-to-worst and spread-to-worst 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 June 30, 2023.
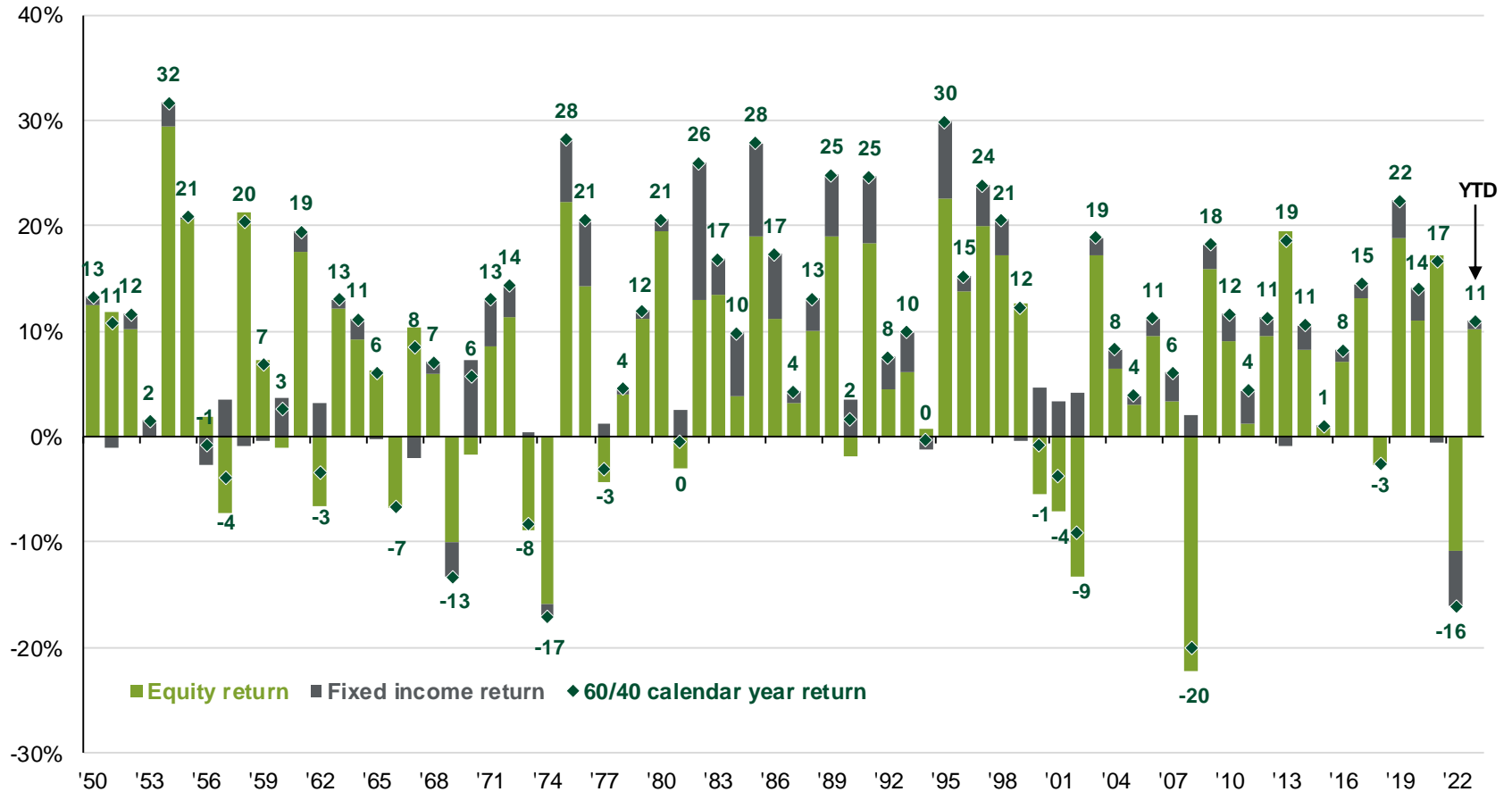
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60/40 annual returns

60/40 annual return decomposition
Total returns, 1950 – present

Equity return ■ Fixed income return ◆ 60/40 calendar year return

Source: Bloomberg, FactSet, Ibbotson/Strategas, Robert Shiller, Standard & Poor's, Yale University, 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. S&P 500
returns from 1950 to 1970 are estimated using the Shiller S&P Composite. U.S. fixed income total returns from 1950 to 1975 are estimated using data
from Strategas/Ibbotson. The portfolio is rebalanced annually.
Guide to the Markets – U.S. Data are as of June 30, 2023.

Investing Principles

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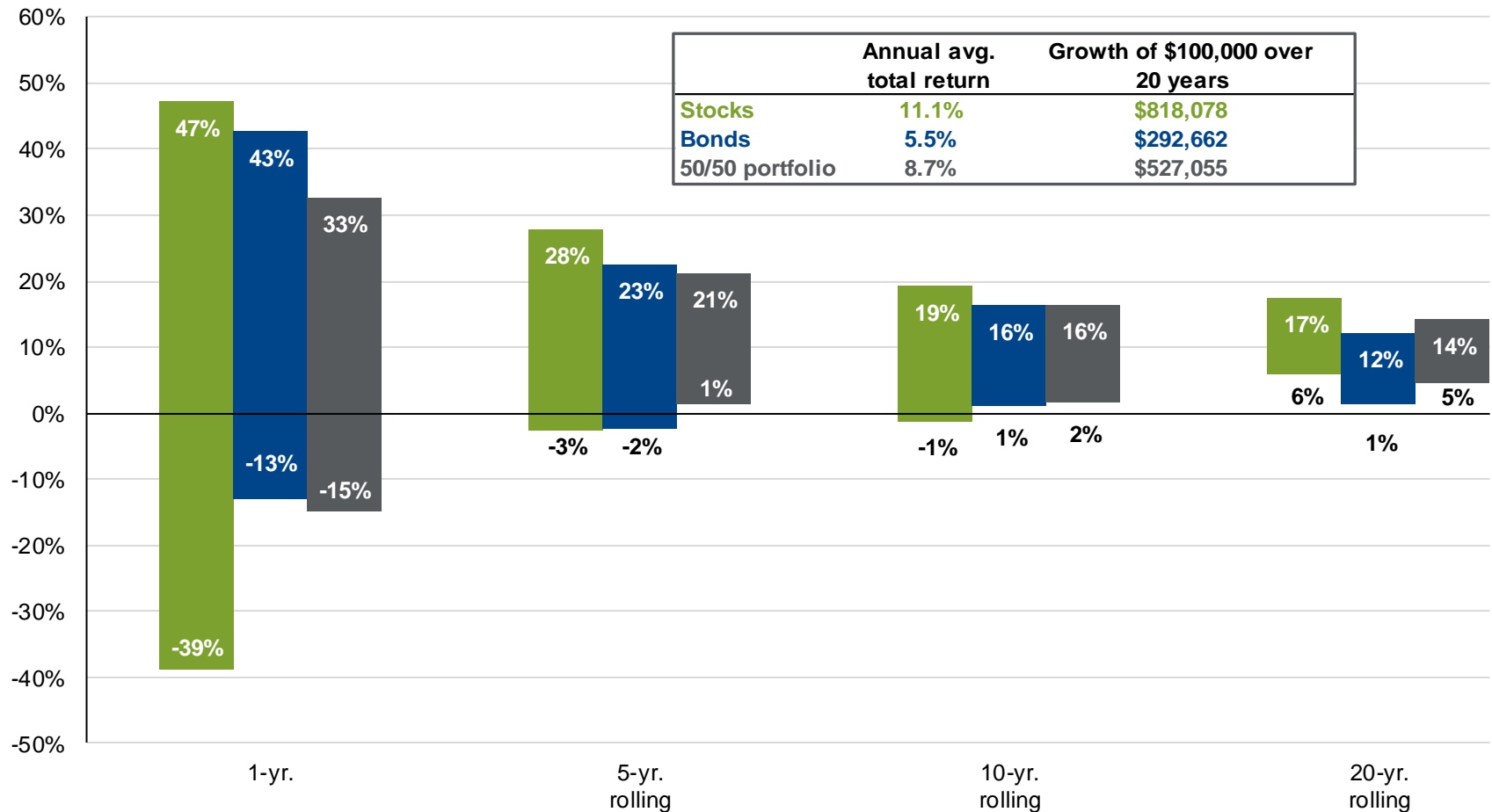
Time, diversification and the volatility of returns

Range of stock, bond and blended total returns
Annual total returns, 1950-2022

	Annual avg. total return	Growth of $100,000 over 20 years
Stocks	**11.1%**	**$818,078**
Bonds	**5.5%**	**$292,662**
50/50 portfolio	8.7%	$527,055

Investing Principles

Source: Bloomberg, FactSet, Federal Reserve, Robert Shiller, Strategas/Ibbotson, J.P. Morgan Asset Management.
Returns shown are based on calendar year returns from 1950 to 2021. Stocks represent the S&P 500 Shiller Composite and Bonds represent Strategas/Ibbotson for periods from 1950 to 2010 and Bloomberg Aggregate thereafter. Growth of $100,000 is based on annual average total returns from 1950 to 2022.
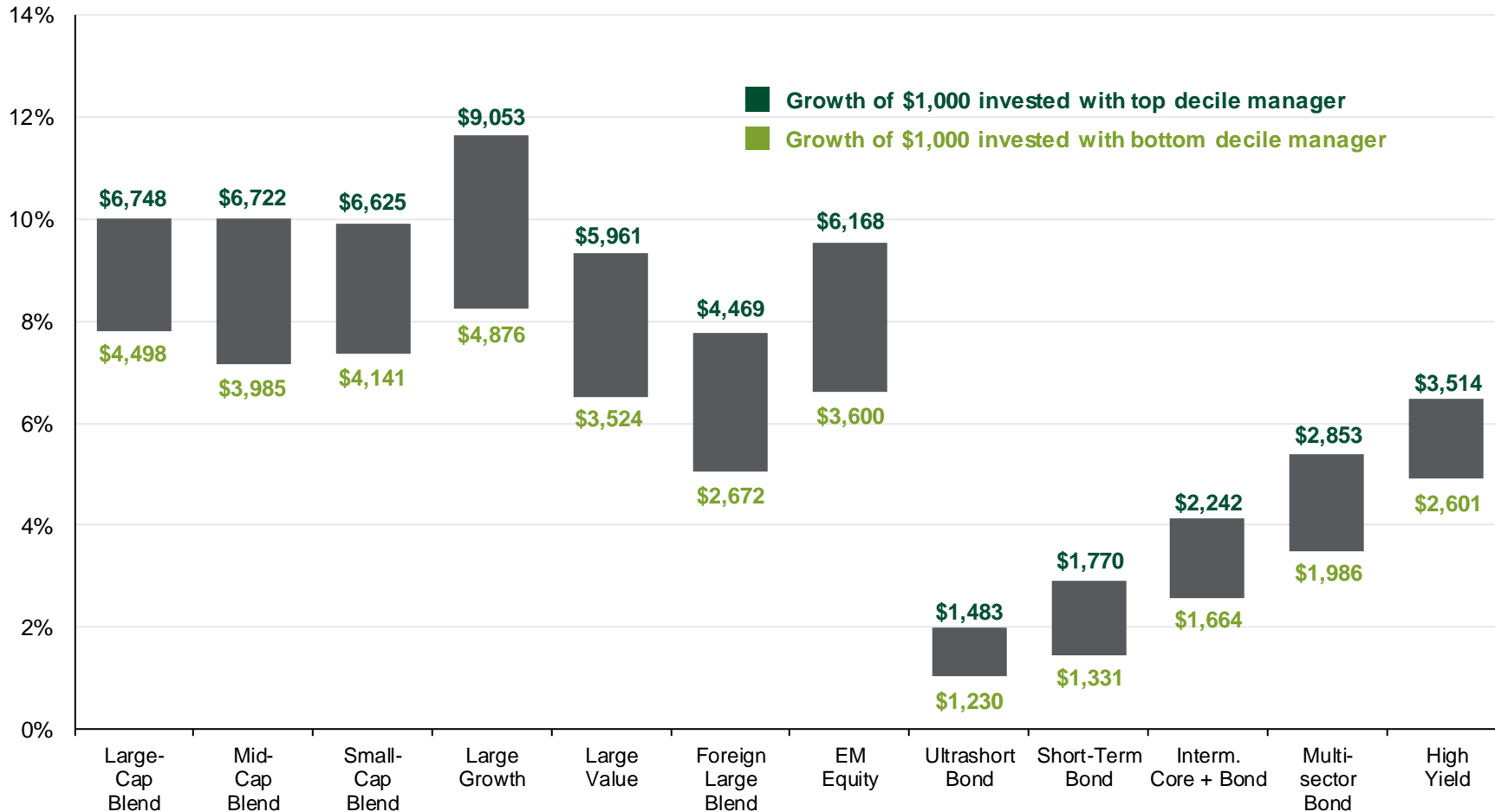*Guide to the Markets – U.S.* Data are as of June 30, 2023.

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Manager dispersion

Investing Principles (sidebar)

20-year manager return dispersion and growth of capital
By asset type, annualized total returns, growth of $1,000 invested 20 years ago*

Legend:
- ■ (dark green) Growth of $1,000 invested with top decile manager
- ■ (light green) Growth of $1,000 invested with bottom decile manager

Data labels by asset type (top decile / bottom decile):
- Large-Cap Blend: $6,748 / $4,498
- Mid-Cap Blend: $6,722 / $3,985
- Small-Cap Blend: $6,625 / $4,141
- Large Growth: $9,053 / $4,876
- Large Value: $5,961 / $3,524
- Foreign Large Blend: $4,469 / $2,672
- EM Equity: $6,168 / $3,600
- Ultrashort Bond: $1,483 / $1,230
- Short-Term Bond: $1,770 / $1,331
- Interm. Core + Bond: $2,242 / $1,664
- Multi-sector Bond: $2,853 / $1,986
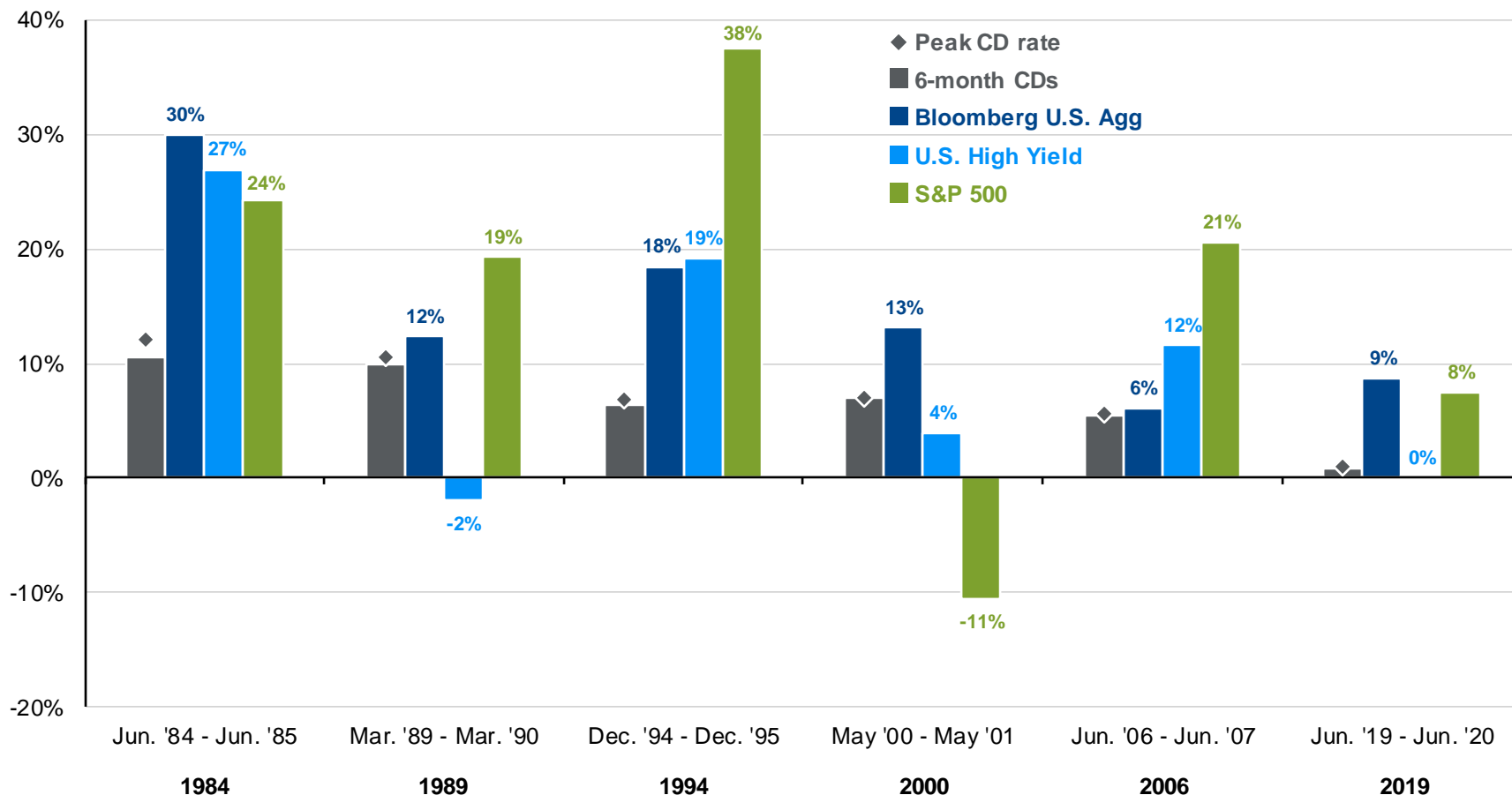- High Yield: $3,514 / $2,601

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CD rates and other investment opportunities

Fixed income opportunities outside of CDs

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

Investing Principles

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Institutional investor behavior

Asset allocation: Corporate DB plans vs. endowments
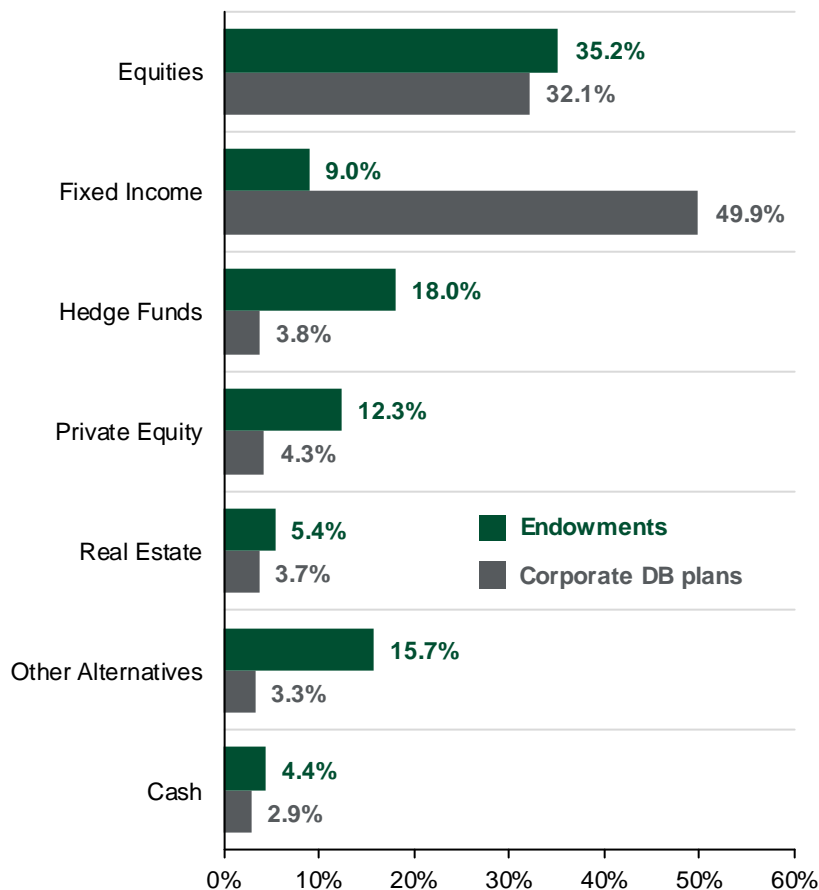
Corporate pension liabilities and 10-year UST yield
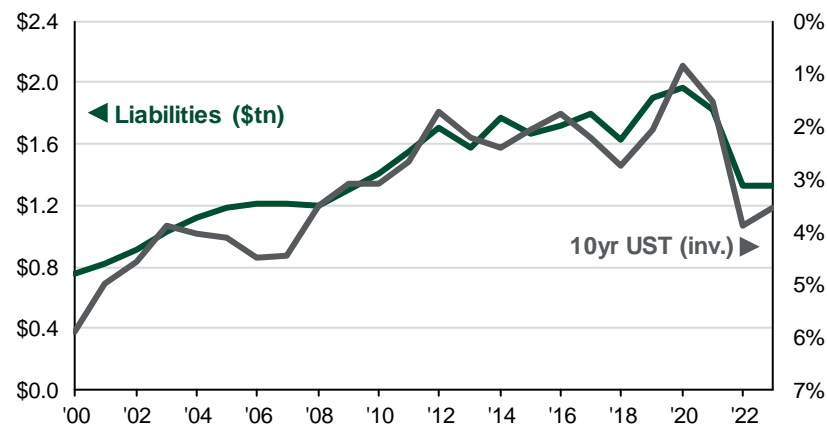
Pension return assumptions
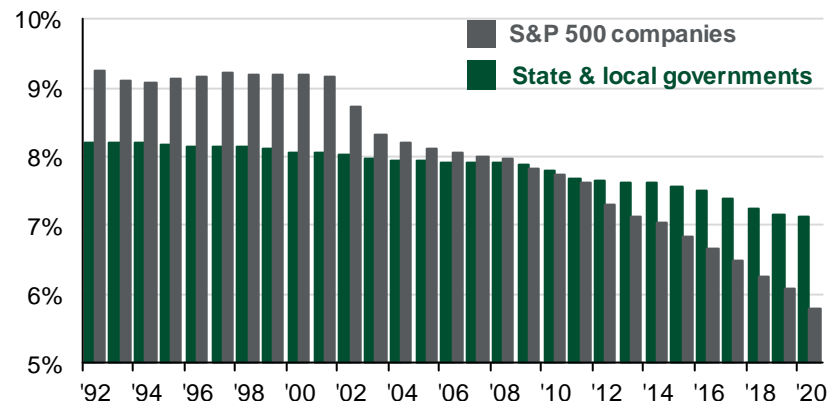
Source: J.P. Morgan Asset Management; (Left) NACUBO (National Association of College and University Business Officers), Towers Watson; (Top right) Milliman Pension Funding Index; (Bottom right) Census for Governments, Compustat, FactSet, S&P 500 corporate 10-Ks. Endowment asset allocation is as of 2019. Corporate DB plan asset allocation as of 2018. Endowments represents dollar-weighted average data of 749 colleges and universities. Corporate DB plans represents aggregate asset as of 12/31/2020 for Fortune 1000 pension plans. Pension return assumptions based on all available and reported data from S&P 500 Index companies and are as of 12/31/2019. State and local pension return assumptions are weighted by plan size. Pension assets, liabilities and funded status based on Milliman 100 companies reporting pension data as of March 2023. All information is shown for illustrative purposes only.
Guide to the Markets – U.S. Data are as of June 30, 2023.

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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.

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J.P. Morgan Asset Management – Definitions

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.

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Unless otherwise stated, all data are as of June 30, 2023 or most recently available.

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