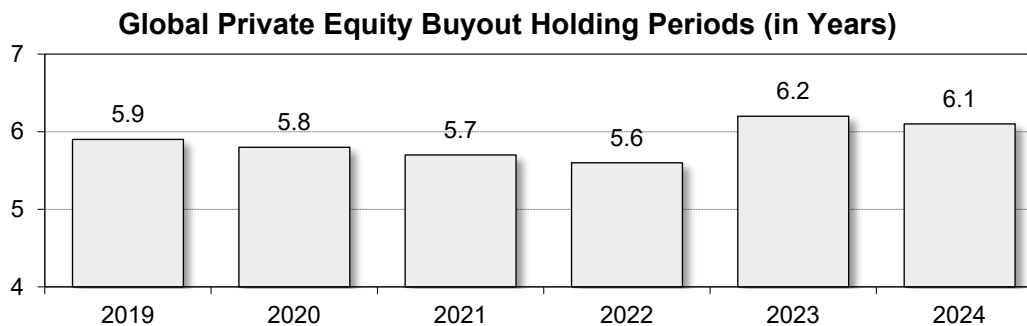
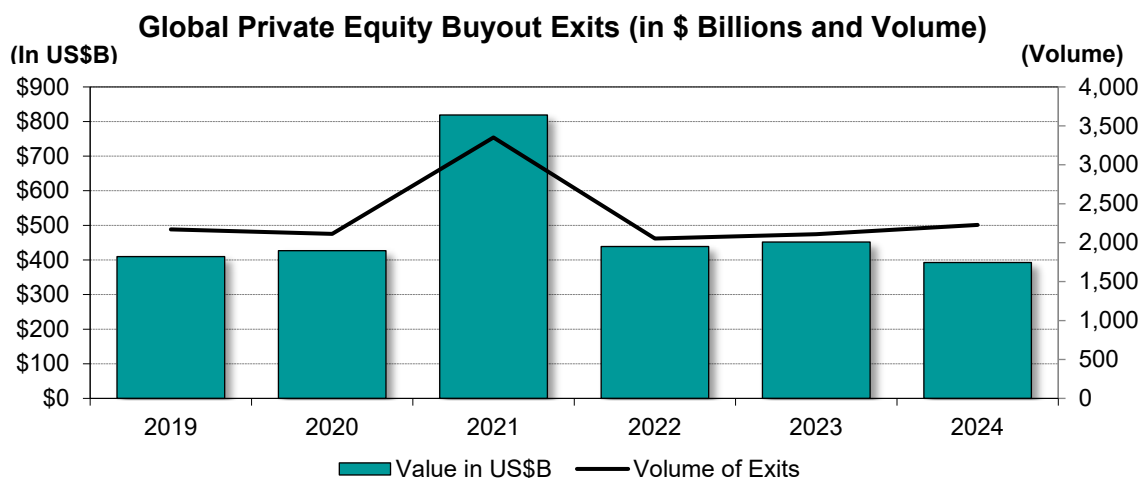


U.S. Chartbook

Economic and Capital Markets Analysis

2024 Year in Review

Private Equity in Focus



Source: S&P Global

Table of Contents

Equity Market Trends

Broad Market Trends

S&P 500 and Long-Term Momentum	2
S&P 500 and Moving Average (200D + 50D)	2
S&P 500 Monthly Performance (2011-2024)	2
S&P 500 Average Monthly Performance (1946-2024)	3
S&P 500 Quarterly Performance (1990-2024)	3
S&P 500 Volatility (Daily Absolute % Change)	4
S&P 500 Volatility (Annualized Standard Deviation)	4
S&P 500 Long Term Volatility	5
A History of Bear Markets (1929-2024)	5
S&P 500 Historical Volatility Table (1970-2024)	6
CBOE Volatility Index, Long-Term (1990-2024)	7
CBOE Volatility Index (2008-2024)	7

Style Trends

S&P 500 Growth vs. Value Cycles	8
S&P 500 Growth vs. Value Annual Performance	8
Small vs. Large-Cap Cycles	9
Small vs. Large-Cap Annual Performance	9

Sector Trends

S&P 500 Sectors and Moving Average (200D + 50D)	10
---	----

Nasdaq Market Trends

Nasdaq Composite and Long-Term Momentum	12
Nasdaq Index and Moving Average (200D + 50D)	12
Nasdaq Monthly Performance (2009-2024)	12
Nasdaq Volatility (Daily Absolute % Change)	13
Nasdaq Volatility (Annualized Standard Deviation)	13

Small-Cap Market Trends

Russell 2000 Index and Long-Term Momentum	14
Russell 2000 and Moving Average (200D + 50D)	14
Russell 2000 Monthly Performance (2009-2024)	14

Valuation

S&P 500 Price/Earnings (PE) Ratio	15
S&P 500 Rule of 20 (PEs + CPI)	15
S&P 500 PE and Inflation (1960-2024)	16
S&P 500 PEs and Inflation	16
S&P 500 Earnings Yield	17
S&P 500 Earnings Yield and 10Y Bond Yield	17
S&P 500 Rule of 20	18
S&P 500 Price/Sales Ratio	18
S&P 500 Price/Cash Flow Ratio	19
S&P 500 Price/Book Value Ratio	19
S&P 500 Sector Valuations	20

Credit Market Trends

Interest Rates – Short Term (3M T-Bill Yield)	22
Interest Rates – Long Term (10Y Bond Yield)	22
Yield Curve	23
PEs and Bond Yields	23
SOFR and Federal Fund Target Rates	24
SOFR and Fed Funds Rate	24
Target Fed Funds Rate	25
Changes in the Federal Funds Rate	25
Municipal Bonds Yield Spread	26
Municipal Bond Issuance	26
Corporate Bond Yield Spread	27
Corporate Bond Issuance	27

High Yield Bond Yield Spread	28
------------------------------------	----

High Yield Bond Issuance	28
Mortgage-Backed Securities (MBS) Yield Spread	29
Mortgage-Related Bond Issuance	29
Fixed Income Securities Total Return (2000-2024)	30

Cryptocurrency Trends

Cryptocurrencies: Bitcoin, Ethereum and Litecoin	31
Cryptocurrency Prices with Logarithmic Scale	31

Private Equity Trends

S&P Listed Private Equity Index	32
Private Equity and VC Deal Volume	32

Mutual Fund Flows

Net Inflows into Equity Mutual Funds	33
Net Inflows into Bond Mutual Funds	33
Active vs. Index Mutual Funds by Net Assets	34
Mutual Fund Total Net Assets	34

The Economy

GDP Real Growth (1960-2024)	35
Annual GDP Growth (1925-2024)	35
Consumer Spending as a % of GDP (1948-2024)	36
Private Fixed Investment as % of GDP (1948-2024)	36
Government Spending	37
Government Spending as % of GDP	37
Export & Import Growth by Quarter	38

Inflation

Consumer Price Index	39
Producer Price Index	39

Employment

Unemployment Rate (1948-2024)	40
Nonfarm Payroll Employment, Net Change	40
Average Duration of Unemployment (1967-2024)	41
Civilian Labor Force Participation Rate	41

Housing

Home Prices (1971-2024)	42
Delinquency Rates Single Family Homes	42
Housing Starts	43

The Consumer

Retail Sales Change	44
Relationship between Home Prices and Retail Sales	44
Consumer Confidence and Expectations	45
Consumer Confidence and Retail Sales	45
Consumer Financial Obligation Ratio	46
Consumer Credit as Percent of Disposable Income	46

Industry

Leading Indicators	47
Supply Management Index (ISM)	47
Industrial Production	48
Capacity Utilization	48
Corporate Profit Growth	49
Corporate Profit as a % of GDP	49
Banking Industry: CET 1 and Problem Banks	50
Liquid Assets to Total Assets	50
M2 Money Supply	51
Money Supply and Inflation	51

'T WAS ANOTHER GOOD YEAR FOR THE ECONOMY

Solid Economic Growth

2024 was another solid year for the U.S. economy with GDP growth up 2.8% over the prior year. Much of the growth was driven by strength in consumer spending, although continued inflation concerns did somewhat limit where consumers were spending their dollars.

Trading down seemed to be the trend of the year for consumers. “In” was spending at discount stores and on value or budget discretionary items, “out” was spending on jewelry, brand-name apparel and other premium items.

Similar to 2023, shrinkflation remained an issue in 2024. With supply chain and food prices remaining high, food companies and grocery stores have been reluctant to pass those higher costs onto consumers. Instead, many companies have resorted to holding prices steady for packaged food and other items, opting instead to reduce the quantity in the packaging. From cereal boxes, paper towels and other groceries to cosmetics, shrinkflation has been the (not so) hidden way companies have continued to raise prices.

According to a Purdue University consumer survey,¹ over three-quarters of consumers noticed shrinkflation at the grocery store, leading to some consumer resentment and a shift to value products – leading back to the consumer trend of trading down in 2024.

A Good Employment Situation

On the employment front, job gains remained solid. During 2024, 2.2 million jobs were added to payrolls. Although this is less than the 2.7 million and 4.5 million jobs added in 2023 and 2022, respectively, it was still a solid performance. The unemployment rate rose slightly in 2024, finishing the year at 4.1%, with the ‘true’ unemployment rate (U-6), up to 7.5%. Wage growth,

even adjusting for inflation, remained positive during the year.

Another Great Year for Equities

It was another great year for stocks in 2024 with the broader market up more than 23%, making it a two year streak of back-to-back 20%+ gains, the strongest two year run since 1998. Much of the gains were attributable to strong performance of the largest capitalization stocks, known as the Magnificent 7. These seven tech stocks (Apple, Microsoft, Nvidia, Alphabet, Amazon, Meta, and Tesla) dominated the S&P 500 performance, accounting for roughly half of the market capitalization-weighted S&P 500 Index performance.

Smaller cap stocks couldn’t keep up with the strong bull run of the leaders but still managed to deliver a solid performance for the year. The Russell 2000 Index gained 10% in 2024.

A Rebound in Private Equity

In 2024, after two years of decline, private equity experienced a comeback – albeit mixed. Deal volume was up 25% in 2024, however exit values were down 15% according to S&P Global Market Intelligence.² Much of the decline in exit values was driven by a decline in trade sales, although increases in secondary buyouts and IPOs helped to soften the overall decline.

The S&P Private Equity Index, which tracks the stock performance of the leading private equity companies, was up over 20% in 2024, reversing the anemic performance of the prior two years.

With the exit market remaining mostly weak, average buyout holding periods remained above six years, similar to 2023.

¹ Purdue University, *Consumer Food Insights*, Volume 3, Issue 10: October 2024.

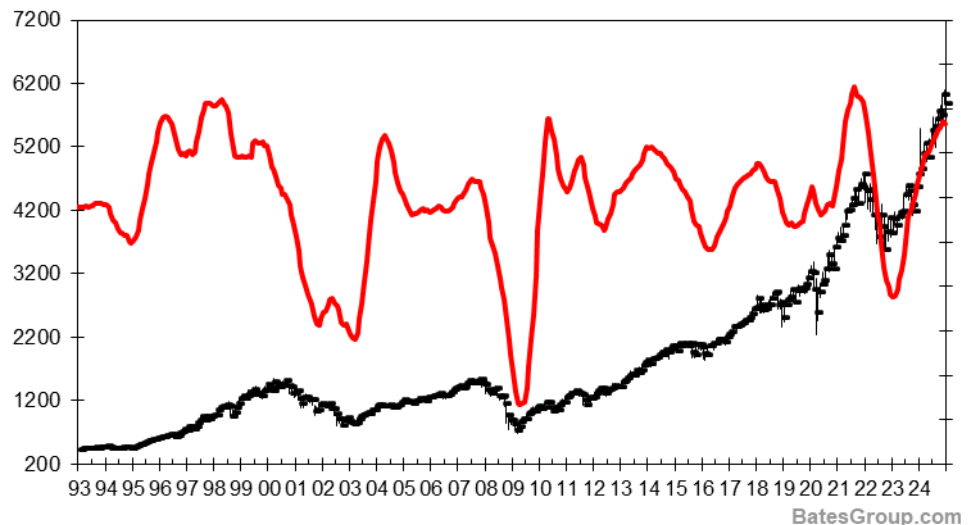
² S&P Global, *Private equity exit value falls to 5-year low*, January 15, 2025

Equity Markets – S&P 500 Market Trends

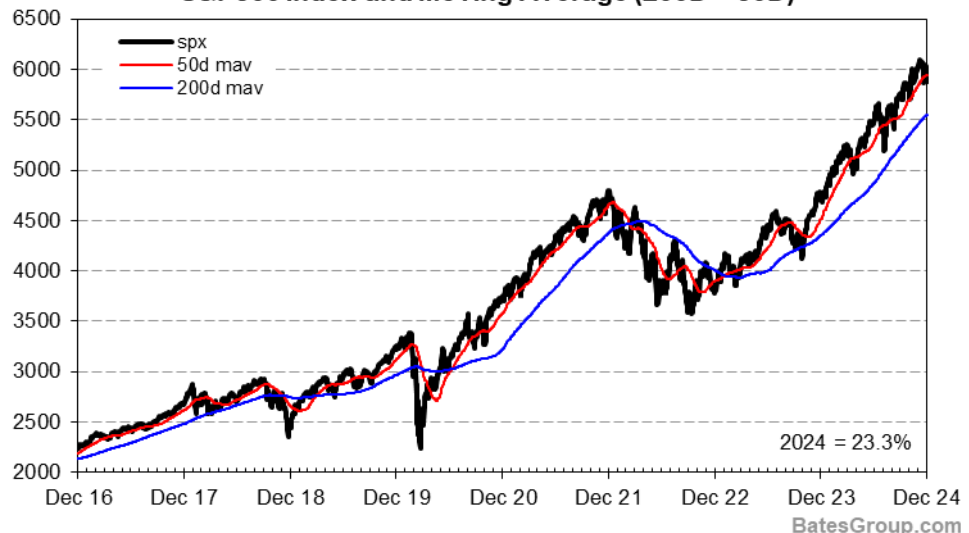
2024 continued the gains from the prior year with the S&P 500 Index up 23.3% for the year. This marks two back-to-back years of 20%+ gains, the strongest two-year run since 1998.

Overall, the S&P 500 Index was up nine of the twelve months in 2024. Q1 was the strongest quarter of 2024, with the index up 10.2%.

S&P500 Index and Long-Term Momentum



S&P500 Index and Moving Average (200D + 50D)

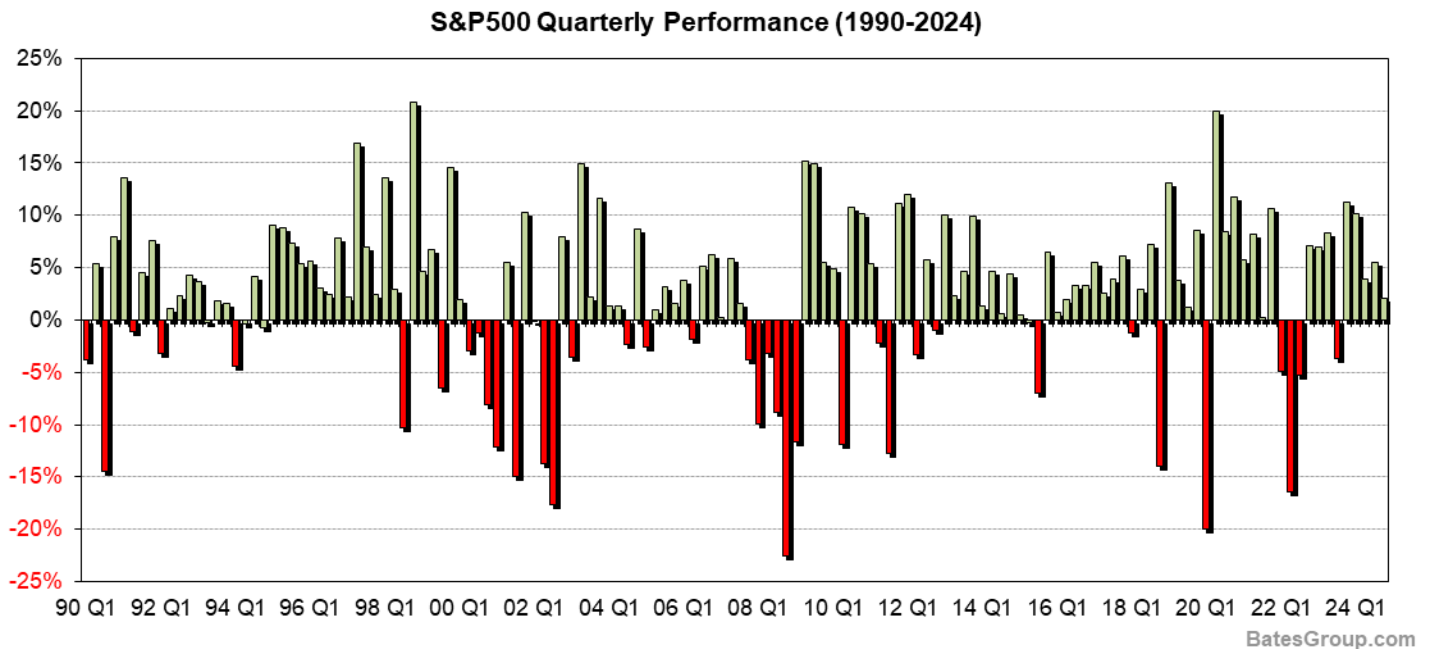
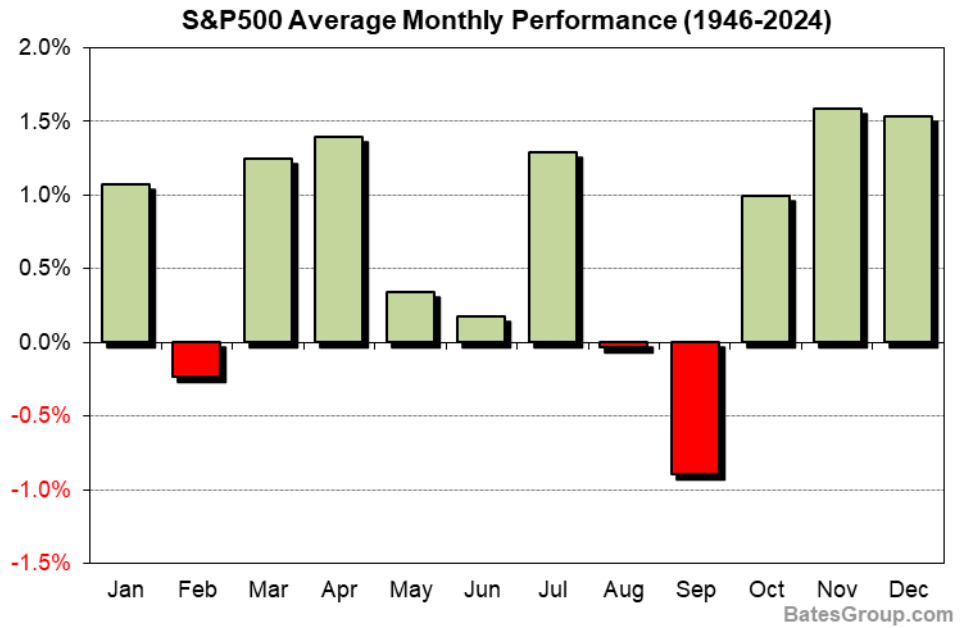


S&P 500 Monthly Performance (% change over previous month)

Month	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	--- 1946-2024 ---		
															Avg	Min	Max
Jan	2.3%	4.4%	5.0%	-3.6%	-3.1%	-5.1%	1.8%	5.6%	7.9%	-0.2%	-1.1%	-5.3%	6.2%	1.6%	1.1%	-8.6%	13.2%
Feb	3.2%	4.1%	1.1%	4.3%	5.5%	-0.4%	3.7%	-3.9%	3.0%	-8.4%	2.6%	-3.1%	-2.6%	5.2%	-0.2%	-11.0%	7.1%
Mar	-0.1%	3.1%	3.6%	0.7%	-1.7%	6.6%	-0.0%	-2.7%	1.8%	-12.5%	4.2%	3.6%	3.5%	3.1%	1.2%	-12.5%	9.7%
Apr	2.8%	-0.7%	1.8%	0.6%	0.9%	0.3%	0.9%	0.3%	3.9%	12.7%	5.2%	-8.8%	1.5%	-4.2%	1.4%	-9.0%	12.7%
May	-1.4%	-6.3%	2.1%	2.1%	1.0%	1.5%	1.2%	2.2%	-6.6%	4.5%	0.5%	0.0%	0.2%	4.8%	0.3%	-8.6%	9.2%
Jun	-1.8%	4.0%	-1.5%	1.9%	-2.1%	0.1%	0.5%	0.5%	6.9%	1.8%	2.2%	-8.4%	6.5%	3.5%	0.2%	-8.6%	8.2%
Jul	-2.1%	1.3%	4.9%	-1.5%	2.0%	3.6%	1.9%	3.6%	1.3%	5.5%	2.3%	9.1%	3.1%	1.1%	1.3%	-7.9%	9.1%
Aug	-5.7%	2.0%	-3.1%	3.8%	-6.3%	-0.1%	0.1%	3.0%	-1.8%	7.0%	2.9%	-4.2%	-1.8%	2.3%	-0.0%	-14.6%	11.6%
Sep	-7.2%	2.4%	3.0%	-1.6%	-2.6%	-0.1%	1.9%	0.4%	1.7%	-3.9%	-4.8%	-9.3%	-4.9%	2.0%	-0.9%	-14.4%	8.8%
Oct	10.8%	-2.0%	4.5%	2.3%	8.3%	-1.9%	2.2%	-6.9%	2.0%	-2.8%	6.9%	8.0%	-2.2%	-1.0%	1.0%	-21.8%	16.3%
Nov	-0.5%	0.3%	2.8%	2.5%	0.1%	3.4%	2.8%	1.8%	3.4%	10.8%	-0.8%	5.4%	8.9%	5.7%	1.6%	-11.4%	10.8%
Dec	0.9%	0.7%	2.4%	-0.4%	-1.8%	1.8%	1.0%	-9.2%	2.9%	3.7%	4.4%	-5.9%	4.4%	-2.5%	1.5%	-9.2%	11.2%

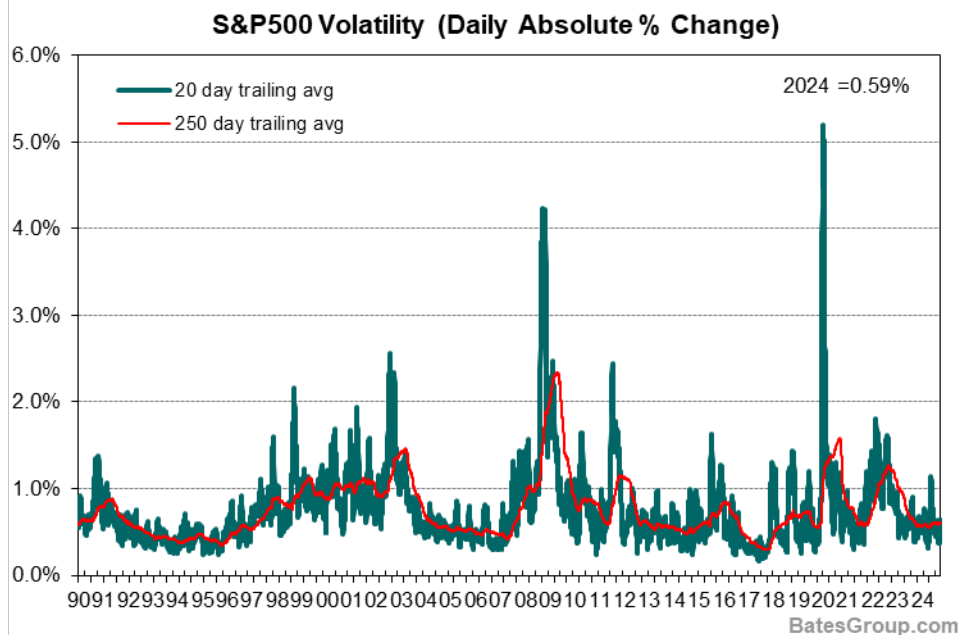
On a month-to-month basis, December has historically been the strongest performing month, although over the past few years, strong gains in November have pushed that month to be the strongest performing month on average. September continues to remain the weakest performing month on average.

The summer months, with the exception of July, have also been historically weak. This has led to the old Wall Street adage, “Sell in May, go away.”



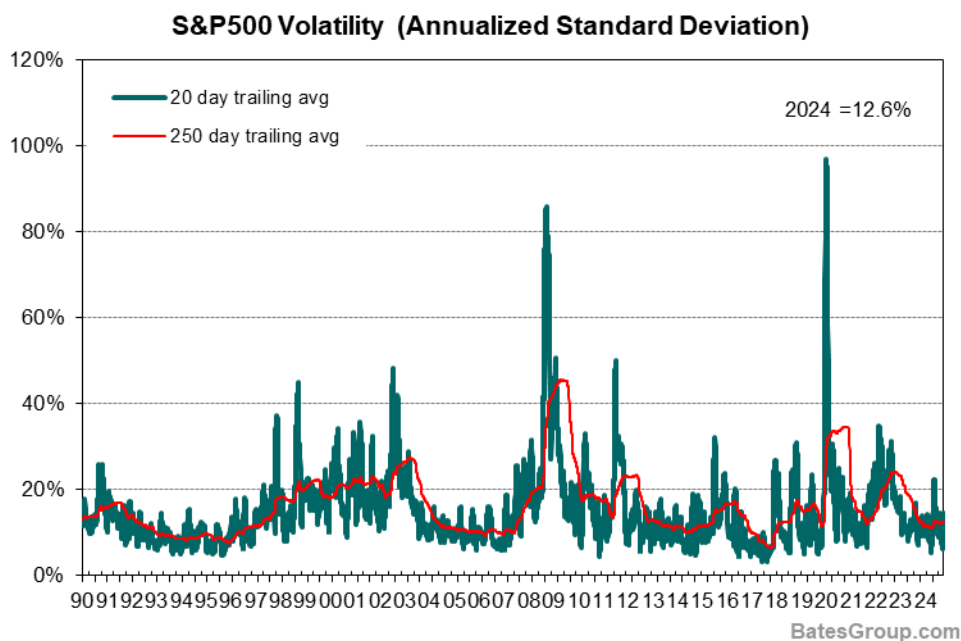
In 2024, volatility for the broader market continued to trend lower. During the year, the S&P 500 Index moved up or down 0.59% each day on average. This compares with average absolute daily price swings of 0.65% in 2023.

In comparison, over the past 30 years the average daily absolute price swing has been 0.78%.



In terms of annualized standard deviation, the S&P500's volatility was 12.6% in 2024, down from 13.0% in 2023.

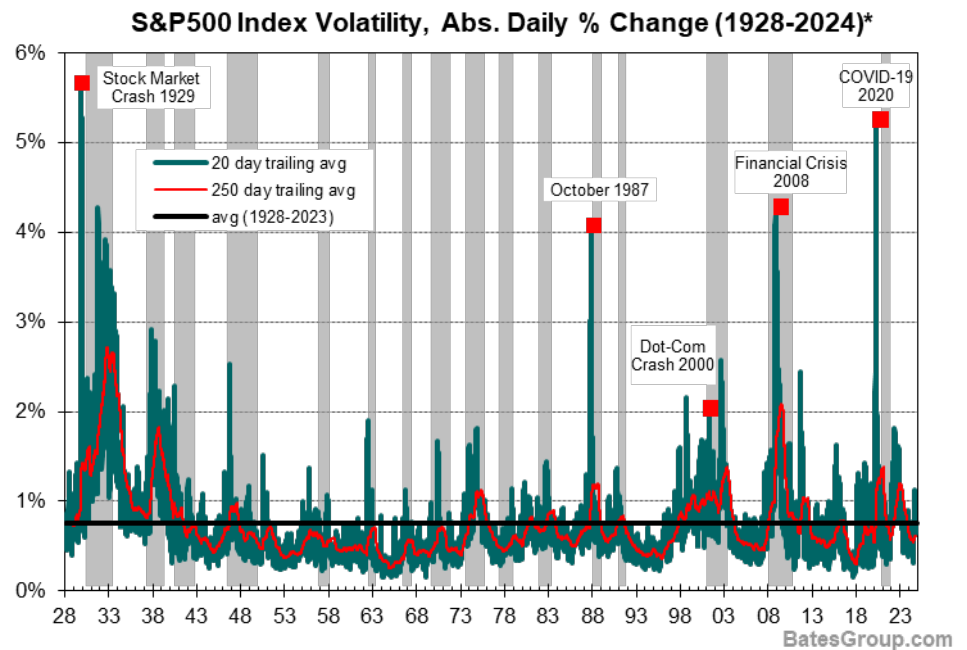
In comparison, the average volatility over the past thirty years has been 18.6%.



The chart to the right shows volatility for the broader market over the past nearly 100 years.

Not surprisingly, the pandemic had a significant impact on the equity markets, with the markets experiencing some of the highest volatility levels in history, even surpassing the crash of October 1987.

In 2024, the S&P 500 experienced 50 days of $\pm 1\%$ or greater daily price moves. This compares to 64 days in 2023.



A History of Bear Markets (1929-2024)

----- Date -----		----- Index Value -----		Percent	Duration	Recession	Years to	
Start	End	Start	End	Loss	(Months)		Recover	Comments
16-Sep-1929	1-Jun-1932	31.86	4.40	-86%	33	Yes	25.0	Crash of 1929
10-Mar-1937	28-Apr-1942	18.67	7.47	-60%	61	Yes	8.9	Austerity measures, WWII
29-May-1946	13-Jun-1949	19.25	13.55	-30%	36	Yes	4.0	Post WWII inventory recession
2-Aug-1956	22-Oct-1957	49.74	38.98	-22%	15	Yes	2.1	Cold War concerns
12-Dec-1961	26-Jun-1962	72.64	52.32	-28%	6	No	1.7	Bay of Pigs, Cold War escalation
9-Feb-1966	7-Oct-1966	94.06	73.20	-22%	8	No	1.2	Vietnam War concerns
29-Nov-1968	26-May-1970	108.37	69.29	-36%	18	Yes	3.3	Vietnam tensions in U.S.
11-Jan-1973	3-Oct-1974	120.24	62.28	-48%	21	Yes	7.5	OPEC oil embargo
28-Nov-1980	12-Aug-1982	140.52	102.42	-27%	21	Yes	1.9	Volker high interest rates (20%)
25-Aug-1987	4-Dec-1987	336.77	223.92	-34%	3	No	1.9	Black Monday crash
16-Jul-1990	11-Oct-1990	368.95	295.46	-20%	3	Yes	0.6	Iraq invades Kuwait (Iraq War)
24-Mar-2000	9-Oct-2002	1527.46	776.76	-49%	31	Yes	7.2	Dot-com crash
9-Oct-2007	9-Mar-2009	1565.15	676.53	-57%	17	Yes	5.5	Financial crisis
20-Sep-2018	24-Dec-2018	2930.75	2351.10	-20%	3	No	0.6	US-China trade war
19-Feb-2020	23-Mar-2020	3386.15	2237.40	-34%	1	Yes	0.5	COVID-19
3-Jan-2022	12-Oct-2022	4796.56	3577.03	-25%	9	No	2.0	Inflation concerns
Average		--	--	-37%	18	Yes	4.6	--

* Shaded areas represent bear markets

S&P 500 Historical Volatility Table*

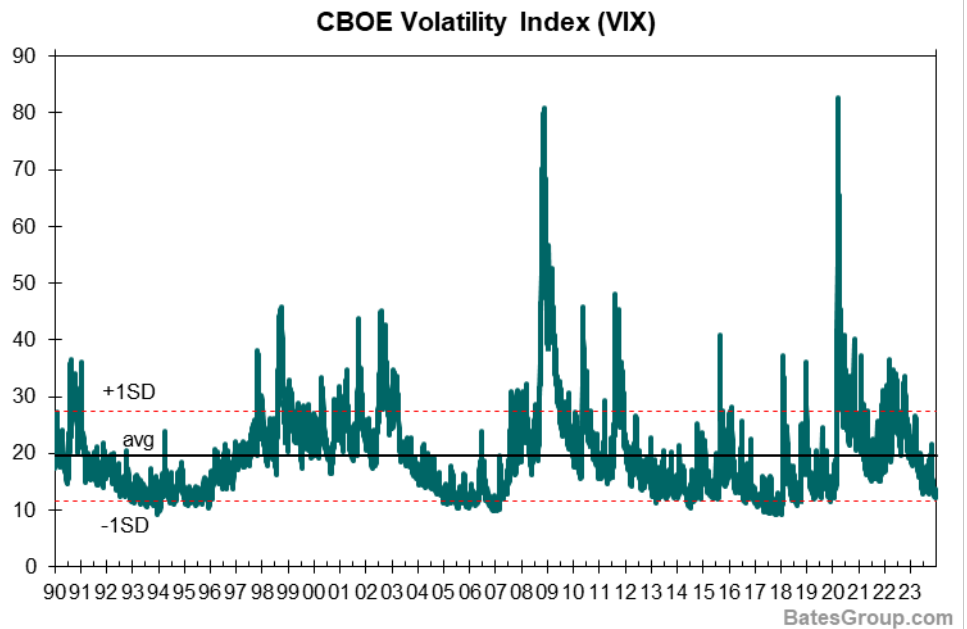
Number of Days with Percentage Moves Greater Than ...

	<1.0%	>1.0%	Total	<2.0%	>2.0%	Total	<4.0%	>4.0%	Total	<5.0%	>5.0%	Total	abs % ch	Annual. StDev
1970	34	31	65	4	7	11	0	1	1	0	1	1	0.69%	15.10%
1971	14	18	32	0	1	1	0	0	0	0	0	0	0.48%	10.17%
1972	6	4	10	0	0	0	0	0	0	0	0	0	0.40%	7.93%
1973	43	35	78	6	9	15	0	0	0	0	0	0	0.78%	15.76%
1974	67	47	114	15	17	32	0	3	3	0	0	0	1.06%	21.73%
1975	35	45	80	3	8	11	0	0	0	0	0	0	0.79%	15.37%
1976	14	25	39	0	0	0	0	0	0	0	0	0	0.57%	11.06%
1977	12	5	17	0	0	0	0	0	0	0	0	0	0.45%	9.04%
1978	24	19	43	1	3	4	0	0	0	0	0	0	0.61%	12.55%
1979	13	17	30	1	2	3	0	0	0	0	0	0	0.51%	10.80%
1980	37	43	80	7	4	11	0	0	0	0	0	0	0.82%	16.40%
1981	30	24	54	4	3	7	0	0	0	0	0	0	0.66%	13.40%
1982	38	44	82	6	11	17	0	1	1	0	0	0	0.85%	18.18%
1983	26	29	55	1	3	4	0	0	0	0	0	0	0.66%	13.27%
1984	16	25	41	0	7	7	0	0	0	0	0	0	0.61%	12.70%
1985	7	21	28	0	1	1	0	0	0	0	0	0	0.50%	10.12%
1986	25	35	60	6	3	9	1	0	1	0	0	0	0.67%	14.64%
1987	42	53	95	20	20	40	4	3	7	3	2	5	1.13%	32.01%
1988	31	37	68	5	11	16	2	0	2	1	0	1	0.74%	17.02%
1989	14	26	40	2	2	4	1	0	1	1	0	1	0.58%	13.01%
1990	42	33	75	8	5	13	0	0	0	0	0	0	0.77%	15.89%
1991	25	34	59	2	7	9	0	0	0	0	0	0	0.67%	14.24%
1992	11	17	28	0	0	0	0	0	0	0	0	0	0.46%	9.64%
1993	7	10	17	1	0	1	0	0	0	0	0	0	0.40%	8.57%
1994	15	12	27	1	1	2	0	0	0	0	0	0	0.46%	9.80%
1995	4	9	13	0	0	0	0	0	0	0	0	0	0.37%	7.78%
1996	17	21	38	3	0	3	0	0	0	0	0	0	0.56%	11.73%
1997	31	50	81	6	9	15	1	1	2	1	1	2	0.85%	18.06%
1998	32	47	79	12	11	23	1	2	3	1	1	2	0.92%	20.21%
1999	40	52	92	9	14	23	0	0	0	0	0	0	0.91%	18.00%
2000	54	48	102	19	18	37	1	1	2	1	0	1	1.06%	22.13%
2001	54	51	105	13	12	25	2	2	4	0	1	1	1.03%	21.47%
2002	72	53	125	29	23	52	1	5	6	0	2	2	1.27%	25.94%
2003	37	45	82	5	10	15	0	0	0	0	0	0	0.83%	17.00%
2004	20	21	41	0	0	0	0	0	0	0	0	0	0.54%	11.05%
2005	17	13	30	0	0	0	0	0	0	0	0	0	0.52%	10.24%
2006	13	16	29	0	2	2	0	0	0	0	0	0	0.47%	10.00%
2007	34	31	65	11	6	17	0	0	0	0	0	0	0.72%	15.92%
2008	75	59	134	41	31	72	15	13	28	11	7	18	1.74%	40.79%
2009	55	62	117	28	27	55	6	5	11	1	2	3	1.24%	27.18%
2010	37	39	76	10	12	22	0	1	1	0	0	0	0.80%	17.98%
2011	48	48	96	21	14	35	4	3	7	1	0	1	1.04%	23.18%
2012	21	29	50	3	3	6	0	0	0	0	0	0	0.59%	12.72%
2013	17	21	38	2	2	4	0	0	0	0	0	0	0.54%	11.02%
2014	19	19	38	4	2	6	0	0	0	0	0	0	0.53%	11.33%
2015	31	41	72	6	4	10	0	0	0	0	0	0	0.72%	15.43%
2016	22	26	48	5	4	9	0	0	0	0	0	0	0.58%	13.04%
2017	4	4	8	0	0	0	0	0	0	0	0	0	0.30%	6.66%
2018	32	32	64	15	5	20	1	1	2	0	0	0	0.74%	16.98%
2019	15	22	37	5	2	7	0	0	0	0	0	0	0.57%	12.42%
2020	45	64	109	25	19	44	9	8	17	5	5	10	1.35%	34.29%
2021	21	34	55	5	2	7	0	0	0	0	0	0	0.63%	13.05%
2022	63	59	122	23	23	46	2	1	3	0	1	1	1.19%	24.08%
2023	28	36	64	1	1	2	0	0	0	0	0	0	0.65%	13.04%
2024	19	31	50	4	3	7	0	0	0	0	0	0	0.59%	12.60%
Av28-24	29	32	61	9	8	17	2	1	3	1	1	2	0.76%	18.69%

* Based on daily closing prices

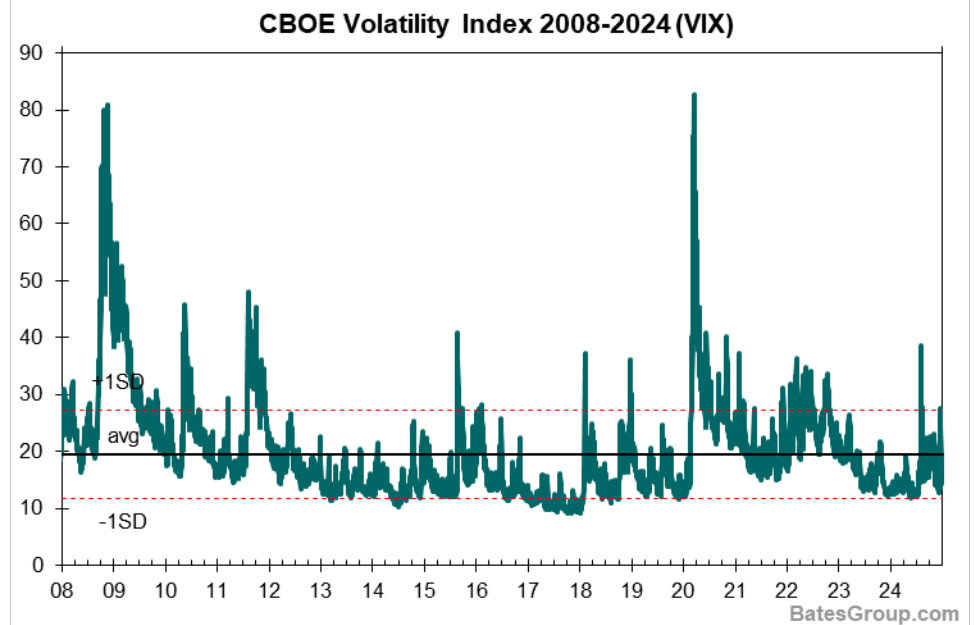
The VIX Index is a measure of *investors' expectation* of future short-term volatility and is composed of S&P 500 call and put options over a wide range of strike prices, with expirations between 23 and 37 days.

After a historic Covid-induced high in 2020, equity market volatility, as measured by the CBOE Volatility (VIX) Index, continued to decline in 2024.



The two days with the greatest single-day increase in the history of the VIX occurred in March 2020.

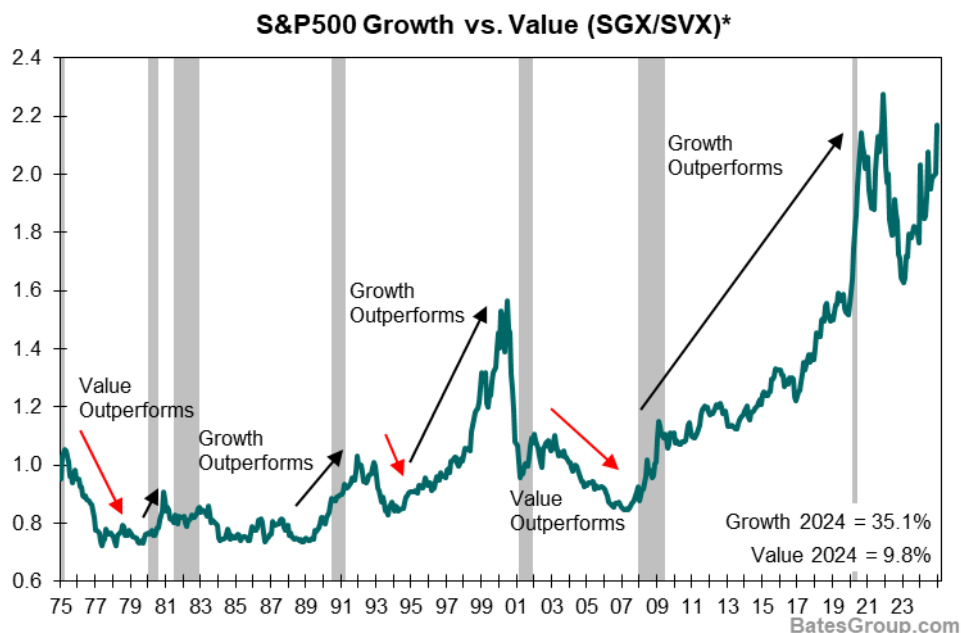
On March 12, as the S&P Index, driven by COVID pandemic fears, fell 9.5% the VIX Index jumped 21.57 points. Two trading days later, on March 16, the VIX surged another 24.86 points as the S&P Composite Index plunged 12%.



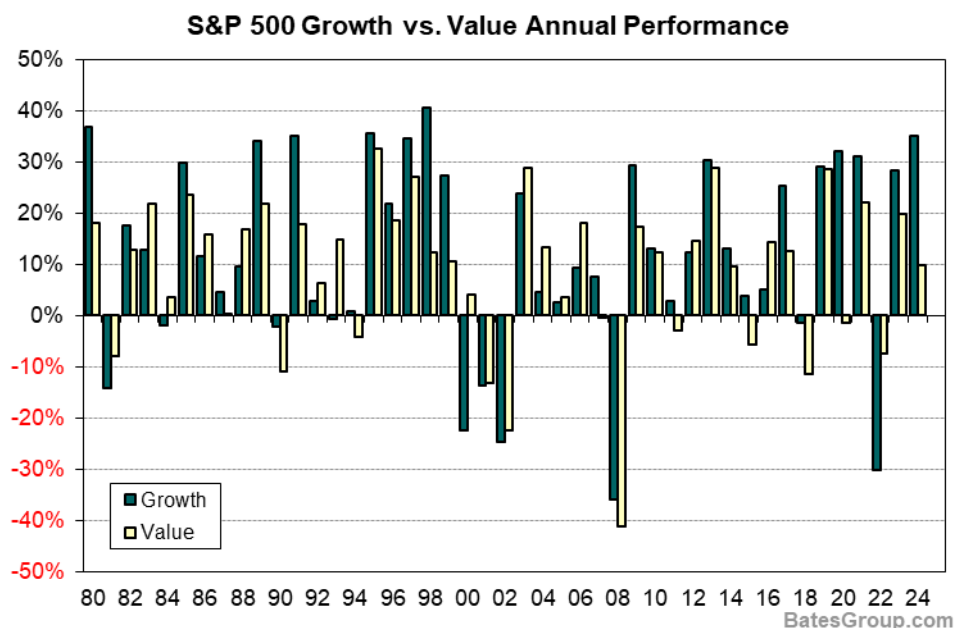
Source: Bloomberg, Chicago Board Options Exchange

Growth vs. Value

In the trade-off between growth and value, growth stocks outperformed value stocks in 2024 with the S&P Growth Index up 35.1% for the year. In comparison, the S&P Value Index was up 9.8%.



The chart to the right provides a more detailed performance comparison between growth and value styles over the past 40 years.

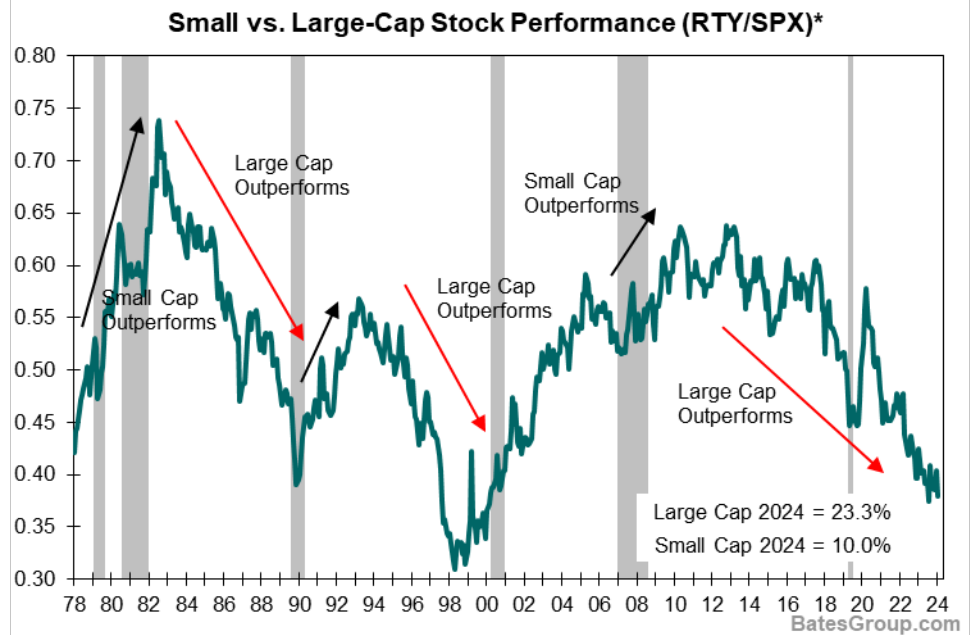


* Shaded areas represent recessions
Source: Bloomberg, Standard & Poor's

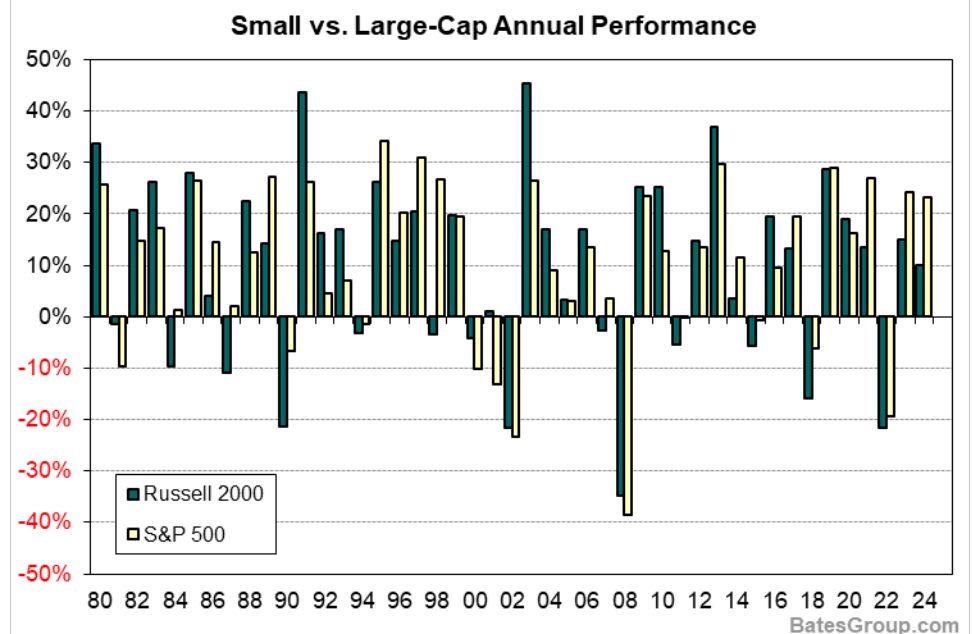
Large vs. Small

Continuing a trend of the last few years, large cap stocks outperformed small cap stocks in 2024.

Large capitalization stocks, as represented by the S&P 500, were up 23.3% in 2024. In comparison, small capitalization stocks, as represented by the Russell 2000 Index, were up 10.0% during the year.



Historically during recessions, neither investment styles tend to provide shelter. This can be seen in the chart to the right in which both indices declined during the 1990, 2000, 2008 and most recent recessions.



* Shaded areas represent recessions
Source: Bloomberg, Standard & Poor's

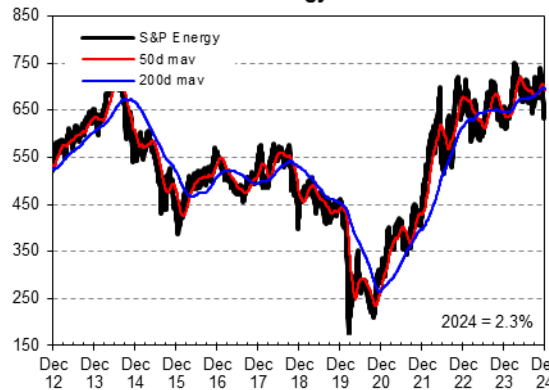
S&P 500 Sector Trends

The breadth of the stock market in 2024 was overall strong with all but one of the S&P 500 sectors closing the year in the black.

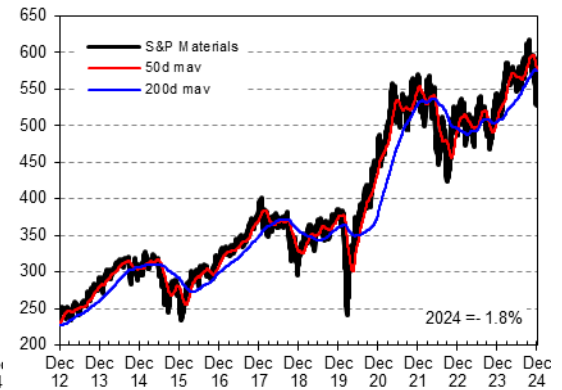
The Communication Services sector led the gains, with a strong 38.9% finish.

The weakest sector was Materials which was down 1.8% in 2024. Health Care was the next weakest sector, closing the year up just 0.9%.

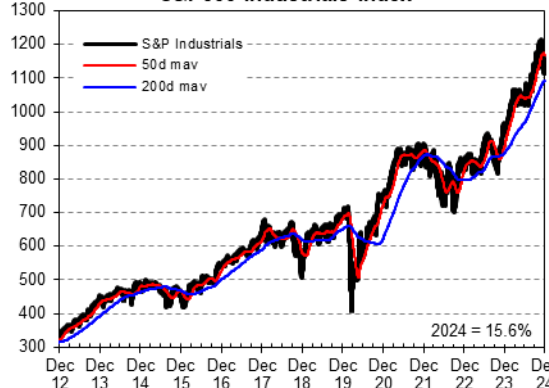
S&P500 Energy Index



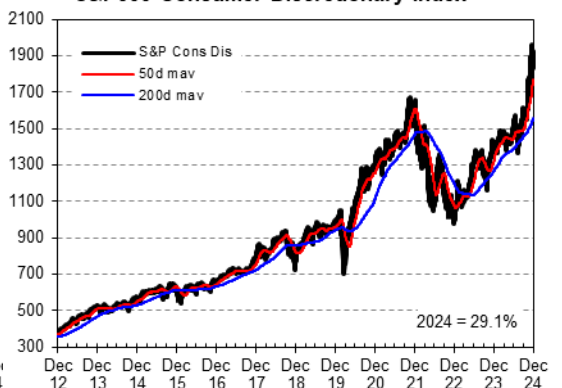
S&P500 Materials Index



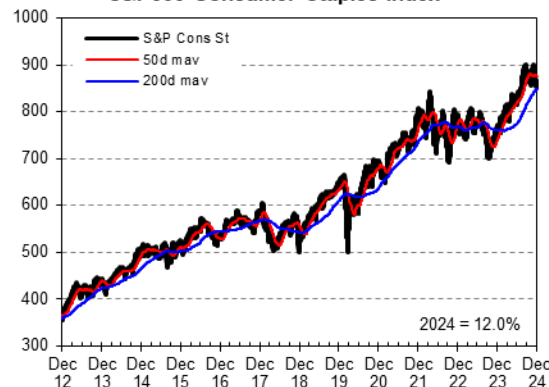
S&P500 Industrials Index



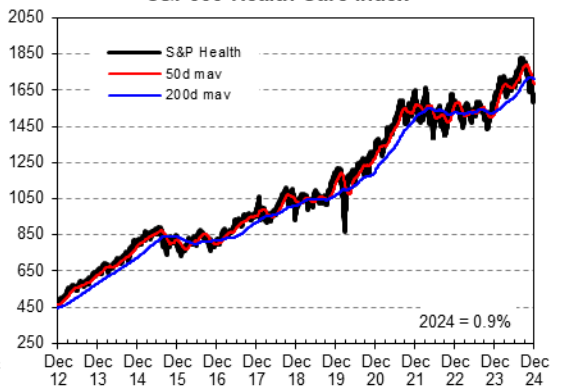
S&P500 Consumer Discretionary Index

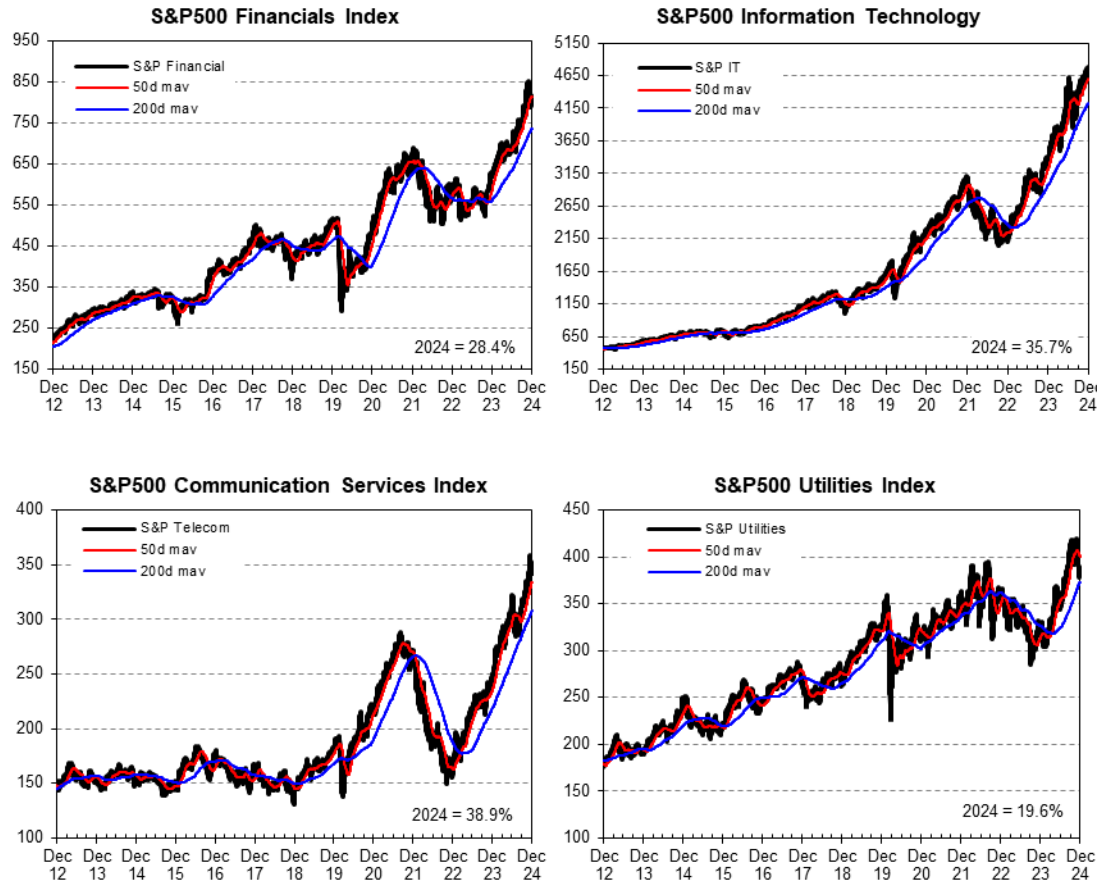


S&P500 Consumer Staples Index



S&P500 Health Care Index



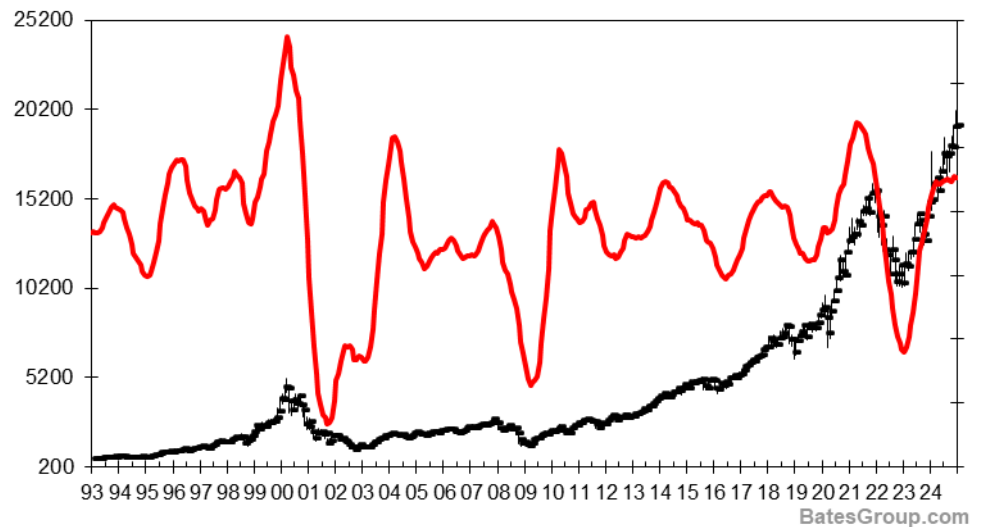


Source: Bloomberg, Standard & Poor's

Nasdaq Market Trends

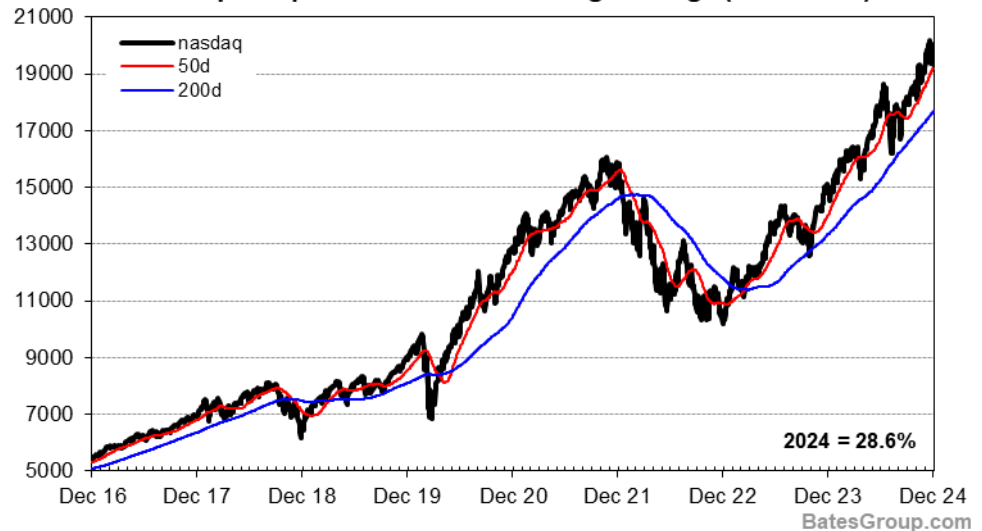
The tech-focused Nasdaq Composite Index finished 2024 up 28.6%. In comparison the Index was up over 43% in 2023.

Nasdaq Composite Index and Long-Term Momentum



In 2024 the Nasdaq Composite Index posted gains in nine of the twelve months of the year.

Nasdaq Composite Index and Moving Average (200D+50D)

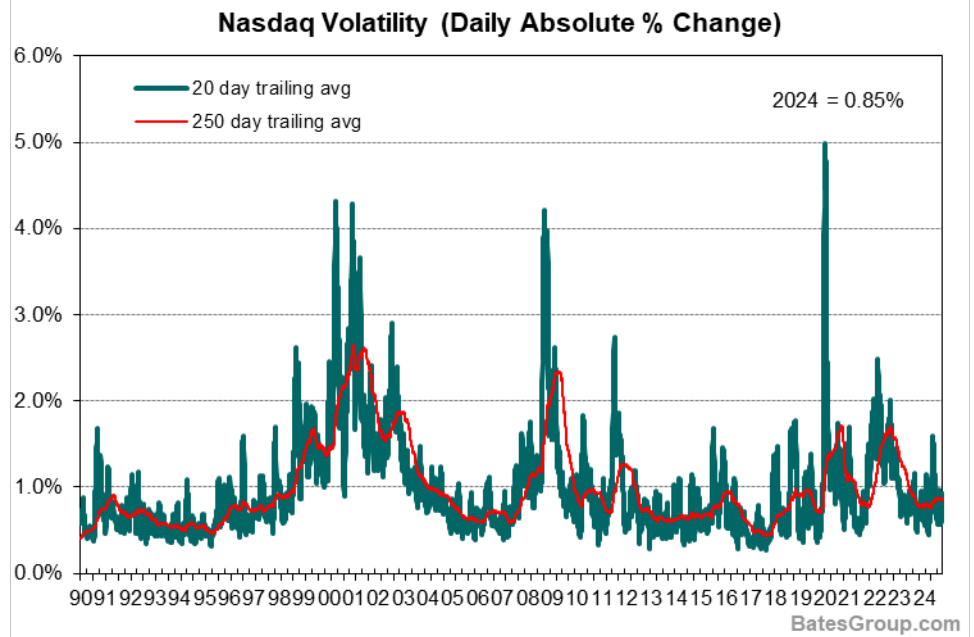


Nasdaq Monthly Performance (% change over previous month)

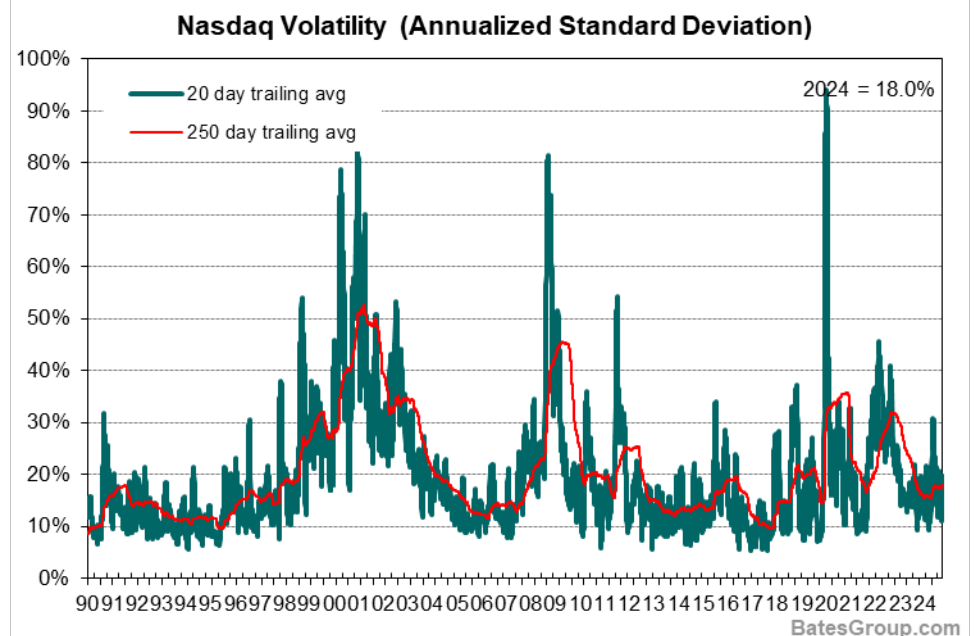
Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	85-24 Avg
Jan	-6.4%	-5.4%	1.8%	8.0%	4.1%	-1.7%	-2.1%	-7.9%	4.3%	7.4%	9.7%	2.0%	1.4%	-9.0%	10.7%	1.0%	2.4%
Feb	-6.7%	4.2%	3.0%	5.4%	0.6%	5.0%	7.1%	-1.2%	3.8%	-1.9%	3.4%	-6.4%	0.9%	-3.4%	-1.1%	6.1%	0.8%
Mar	10.9%	7.1%	-0.0%	4.2%	3.4%	-2.5%	-1.3%	6.8%	1.5%	-2.9%	2.6%	-10.1%	0.4%	3.4%	6.7%	1.8%	0.9%
Apr	12.3%	2.6%	3.3%	-1.5%	1.9%	-2.0%	0.8%	-1.9%	2.3%	0.0%	4.7%	15.4%	5.4%	-13.3%	0.0%	-4.4%	1.0%
May	3.3%	-8.3%	-1.3%	-7.2%	3.8%	3.1%	2.6%	3.6%	2.5%	5.3%	-7.9%	6.8%	-1.5%	-2.1%	5.8%	6.9%	1.5%
Jun	3.4%	-6.5%	-2.2%	3.8%	-1.5%	3.9%	-1.6%	-2.1%	-0.9%	0.9%	7.4%	6.0%	5.5%	-8.7%	6.6%	6.0%	1.1%
Jul	7.8%	6.9%	-0.6%	0.2%	6.6%	-0.9%	2.8%	6.6%	3.4%	2.2%	2.1%	6.8%	1.2%	12.3%	4.0%	-0.8%	1.3%
Aug	1.5%	-6.2%	-6.4%	4.3%	-1.0%	4.8%	-6.9%	1.0%	1.3%	5.7%	-2.6%	9.6%	4.0%	-4.6%	-2.2%	0.6%	0.2%
Sep	5.6%	12.0%	-6.4%	1.6%	5.1%	-1.9%	-3.3%	1.9%	1.0%	-0.8%	0.5%	-5.2%	-5.3%	-10.5%	-5.8%	2.7%	-1.0%
Oct	-3.6%	5.9%	11.1%	-4.5%	3.9%	3.1%	9.4%	-2.3%	3.6%	-9.2%	3.7%	-2.3%	7.3%	3.9%	-2.8%	-0.5%	0.9%
Nov	4.9%	-0.4%	-2.4%	1.1%	3.6%	3.5%	1.1%	2.6%	2.2%	0.3%	4.5%	11.8%	0.3%	4.4%	10.7%	6.2%	2.3%
Dec	5.8%	6.2%	-0.6%	0.3%	2.9%	-1.2%	-2.0%	1.1%	0.4%	-9.5%	3.5%	5.7%	0.7%	-8.7%	5.5%	0.5%	1.7%

Volatility, as measured by daily price swings, remained relatively steady in 2024 compared to the prior year. In 2024 the Nasdaq Composite Index moving up or down 0.85% each day on average.

The long-term average volatility, as measured by absolute daily price swings is $\pm 1.04\%$.



Volatility as measured by the traditional metric of annualized standard deviation was 18.0% in 2024. This was below the long-term average annual volatility (1985-2024) for the Nasdaq Composite Index of 23.9%.

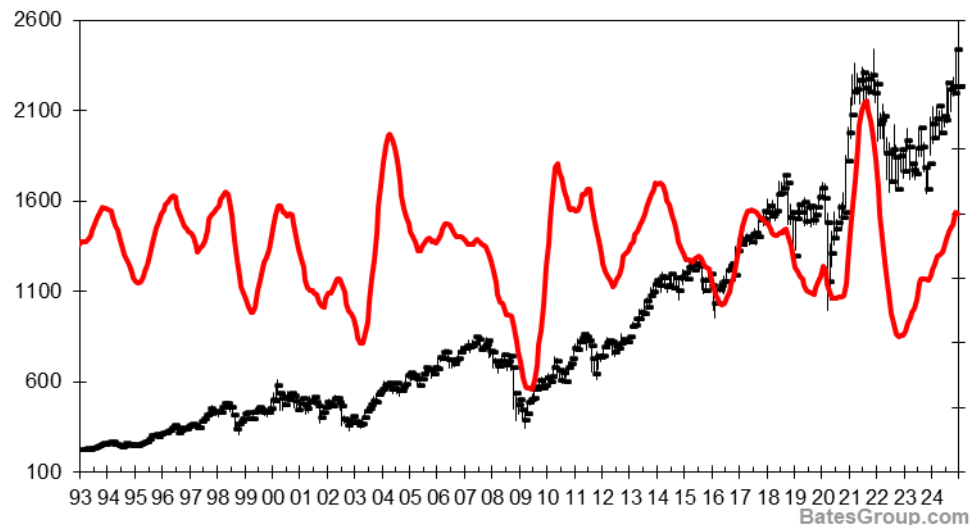


Russell 2000 Market Trends

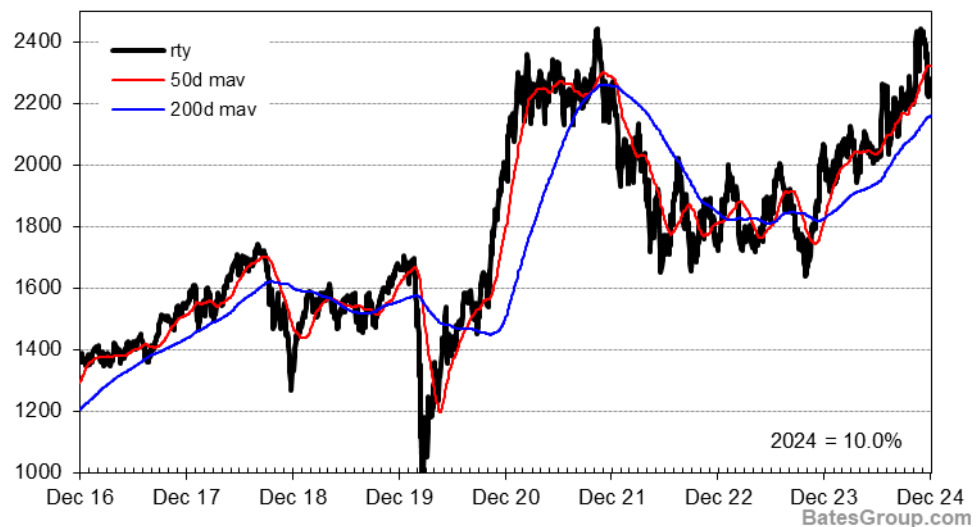
Small cap stocks as measured by the Russell 2000 Index closed the year up 10.0%.

Most of the gains in the small cap index were in the third quarter with the Russell 2000 Index up 8.9%.

Russell 2000 Index and Long-Term Momentum



Russell 2000 Index and Moving Average (200D + 50D)



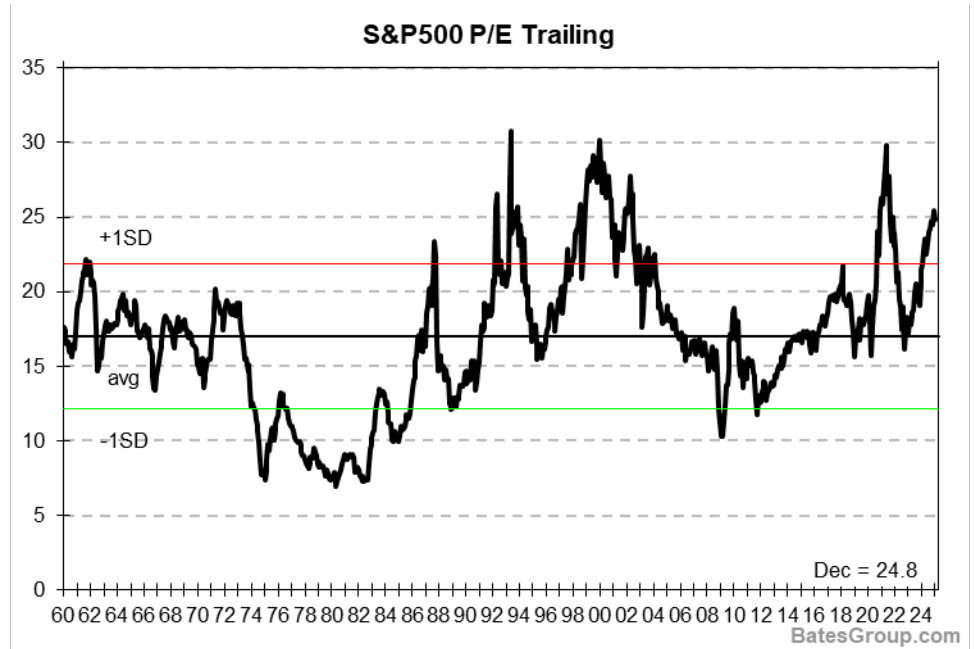
Russell 2000 Monthly Performance (% change over previous month)

Month	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	86-24 Avg
Jan	-11.2%	-3.7%	-0.3%	7.0%	6.2%	-2.8%	-3.3%	-8.8%	0.3%	2.6%	16.0%	-3.2%	5.0%	-9.7%	9.7%	-3.9%	1.0%
Feb	-12.3%	4.4%	5.4%	2.3%	1.0%	4.6%	5.8%	-0.1%	1.8%	-4.0%	5.1%	-8.5%	6.1%	1.0%	-1.8%	5.5%	1.5%
Mar	8.7%	8.0%	2.4%	2.4%	4.4%	-0.8%	1.6%	7.8%	-0.1%	1.1%	-2.3%	-21.9%	0.9%	1.1%	-5.0%	3.4%	0.9%
Apr	15.3%	5.6%	2.6%	-1.6%	-0.4%	-3.9%	-2.6%	1.5%	1.0%	0.8%	3.3%	13.7%	2.1%	-10.0%	-1.9%	-7.1%	0.9%
May	2.9%	-7.7%	-2.0%	-6.7%	3.9%	0.7%	2.2%	2.1%	-2.2%	5.9%	-6.6%	6.4%	0.1%	-0.0%	-1.1%	4.9%	1.2%
Jun	1.3%	-7.9%	-2.5%	4.8%	-0.7%	5.2%	0.6%	-0.2%	3.3%	0.6%	5.5%	3.4%	1.8%	-8.4%	7.9%	-1.1%	0.6%
Jul	9.5%	6.8%	-3.7%	-1.4%	6.9%	-6.1%	-1.2%	5.9%	0.7%	1.7%	0.5%	2.7%	-3.6%	10.4%	6.1%	10.1%	0.3%
Aug	2.8%	-7.5%	-8.8%	3.2%	-3.3%	4.8%	-6.4%	1.6%	-1.4%	4.2%	-5.1%	5.5%	2.1%	-2.2%	-5.2%	-1.6%	-0.4%
Sep	5.6%	12.3%	-11.4%	3.1%	6.2%	-6.2%	-5.1%	0.9%	6.1%	-2.5%	1.9%	-3.5%	-3.1%	-9.7%	-6.0%	0.6%	-0.7%
Oct	-6.9%	4.0%	15.0%	-2.2%	2.5%	6.5%	5.6%	-4.8%	0.8%	-10.9%	2.6%	2.0%	4.2%	10.9%	-6.9%	-1.5%	-0.5%
Nov	3.0%	3.4%	-0.5%	0.4%	3.9%	-0.0%	3.1%	11.0%	2.8%	1.4%	4.0%	18.3%	-4.3%	2.2%	8.8%	10.8%	2.2%
Dec	7.9%	7.8%	0.5%	3.3%	1.8%	2.7%	-5.2%	2.6%	-0.6%	-15.7%	2.7%	8.5%	2.1%	-6.6%	12.1%	-8.4%	2.2%

Equity Valuation

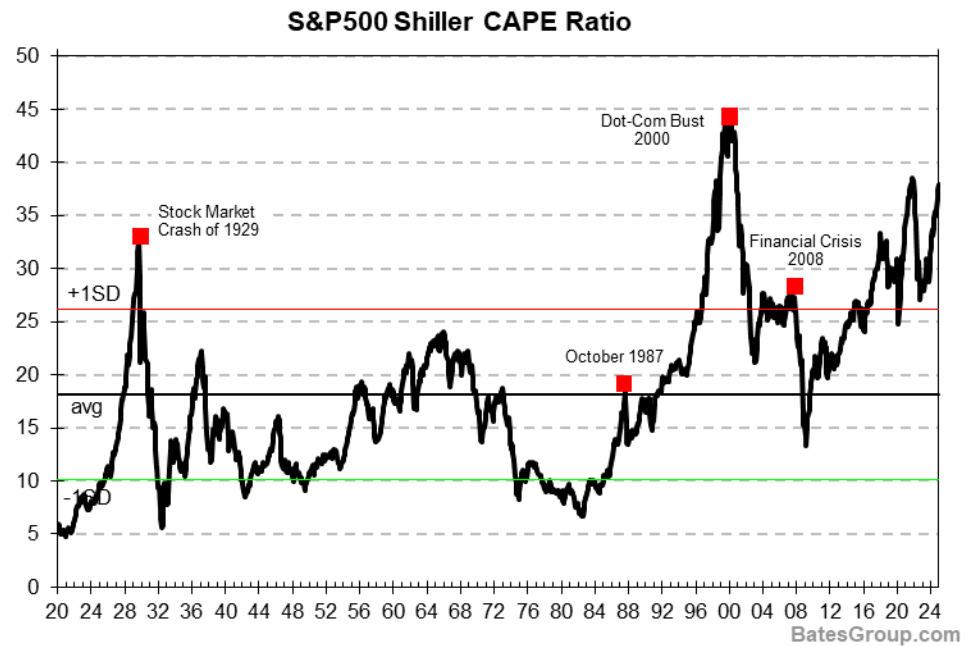
Based on S&P estimates for trailing four quarter operating earnings, the S&P 500 Index was above the upper range of fair value.

As of the end of December 2024 the S&P 500 Index traded at 24.8 times trailing 4Q earnings. This is not as high as the near-record 30.7 times in early 2021, but still above the long-term average of 16.9.



The CAPE ratio continued to rise in 2024, pushing this valuation metric further into overvalued territory.

The CAPE ratio, developed by Nobel Laureate Robert Shiller, is a cyclically adjusted price/earnings ratio. This valuation measure smooths out economic cycles by using 10-year average earnings.

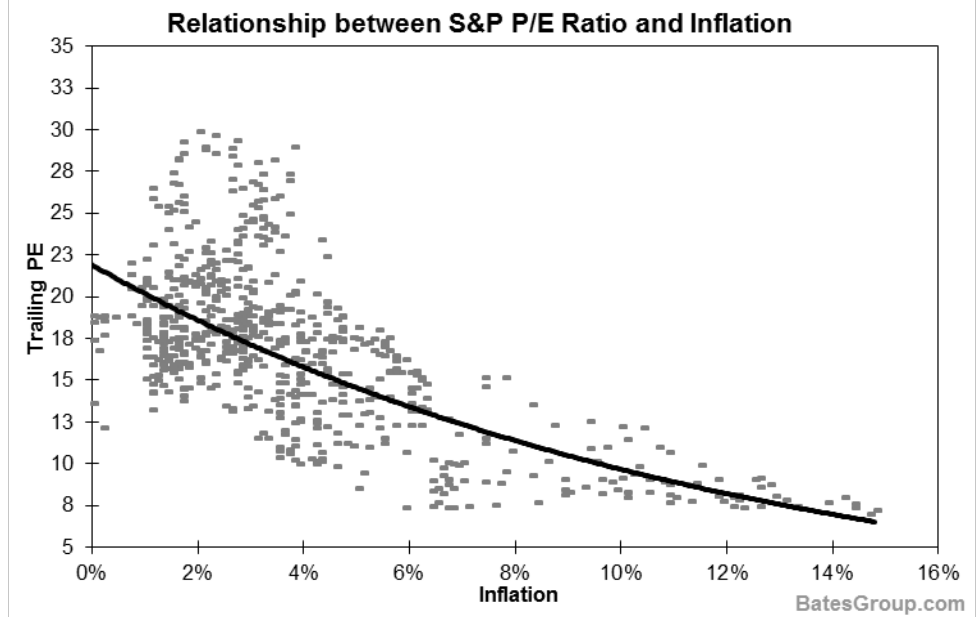


Source: Bloomberg, Robert Shiller

Lower inflation rates tend to lead to higher equity market valuations and vice versa.

The chart to the right shows the relationship between P/E ratios (S&P 500) and inflation over the past 70 years.

In similar periods when inflation has been above 5%, the S&P 500 has traded in a range of 8 to 18 times trailing earnings.

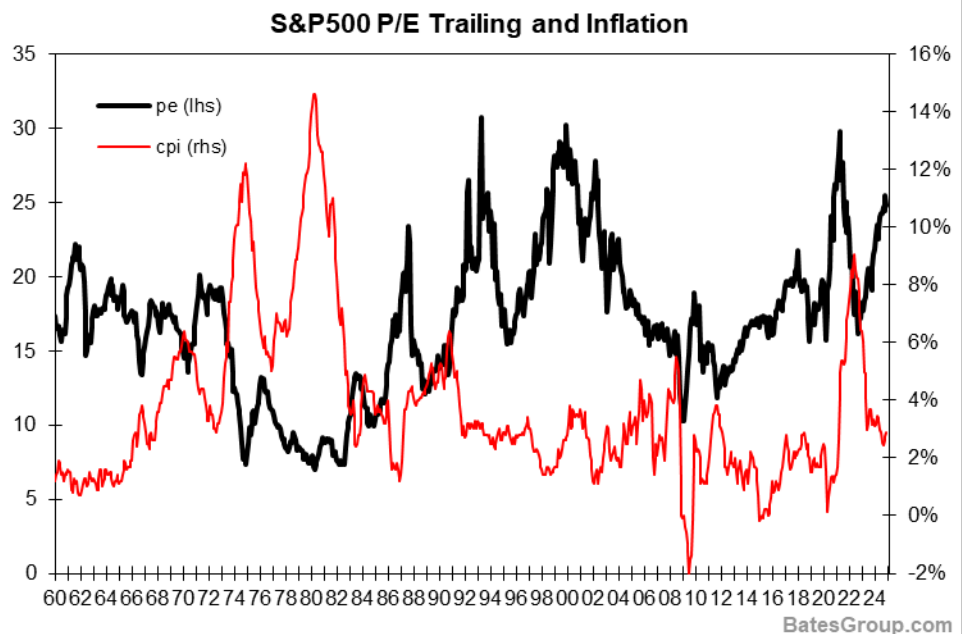


Here is another view showing the relationship between P/E ratios and inflation.

P/Es have tended to be higher in low inflation periods and vice versa.

Trailing P/E if inflation is:

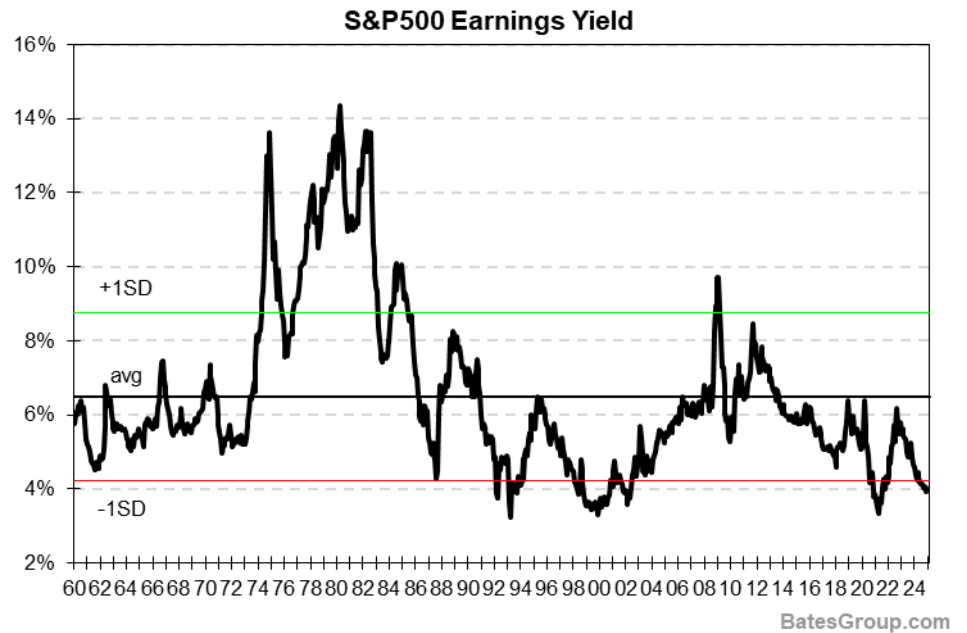
	<3.5%	3.5-5%	>5%
Low	9.8	9.8	7.0
Avg.	18.9	15.8	12.6
High	30.7	29.7	29.6
-1SD	14.8	11.9	7.7
+1SD	23.0	19.8	17.5



Source: Bloomberg, Standard & Poor's

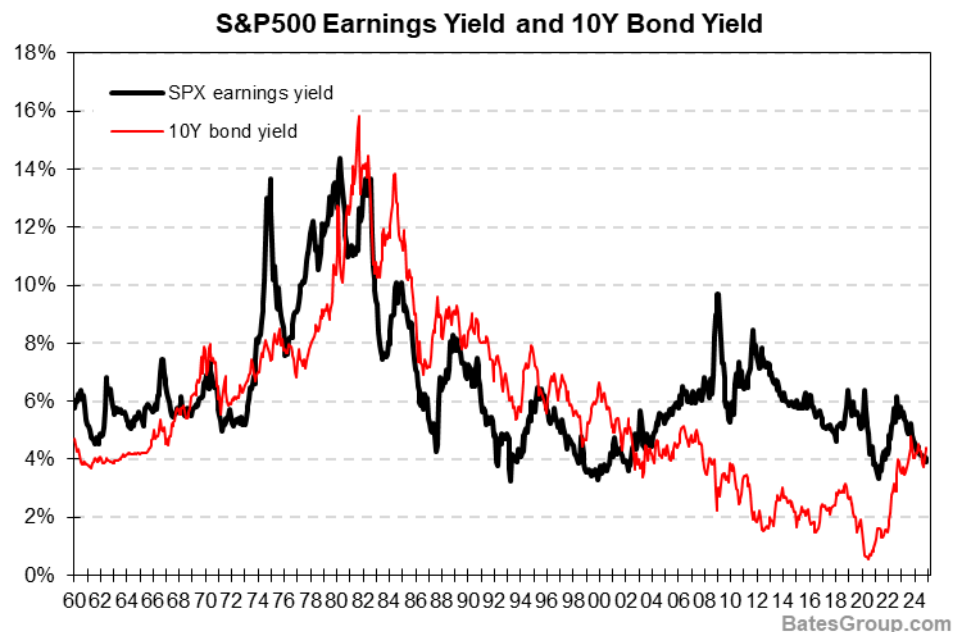
Another valuation metric, the earnings yield (inverse of the P/E ratio) closed 2024 moderately overvalued.

It's worth noting, that the high earnings yield (and low P/Es) of the 1970's and early 1980's was a function of high inflation and double-digit interest rates.



Historically, there has been a high correlation between the level of interest rates and equity market valuations.

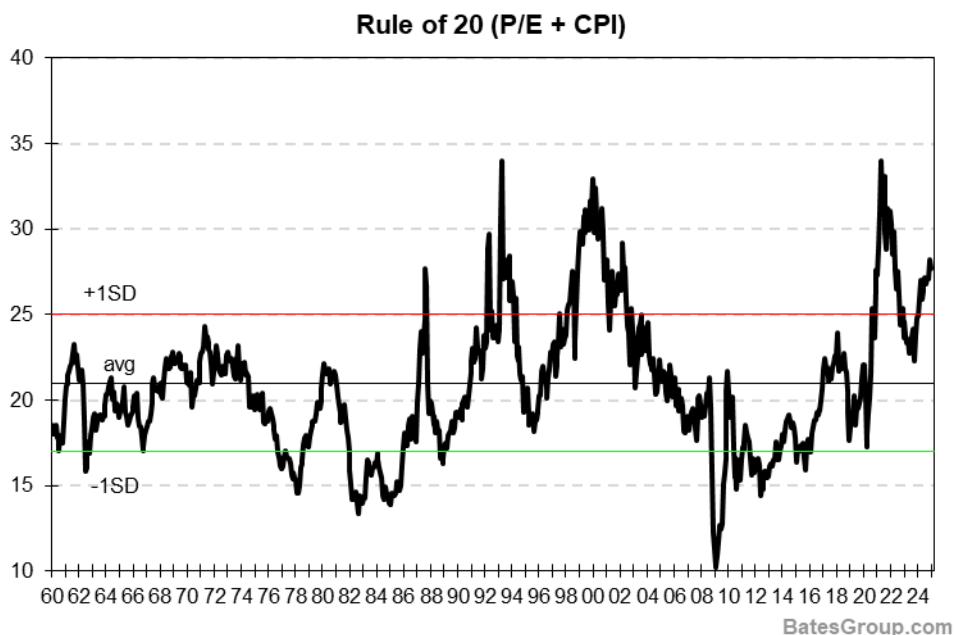
As can be seen by the chart on the right, there tends to be a positive relationship between the earnings yield for the S&P500 Index and interest rates. When interest rates increase, the earnings yield has also tended to increase (indicating a decline in P/E ratios).



Source: Bloomberg, Standard & Poor's

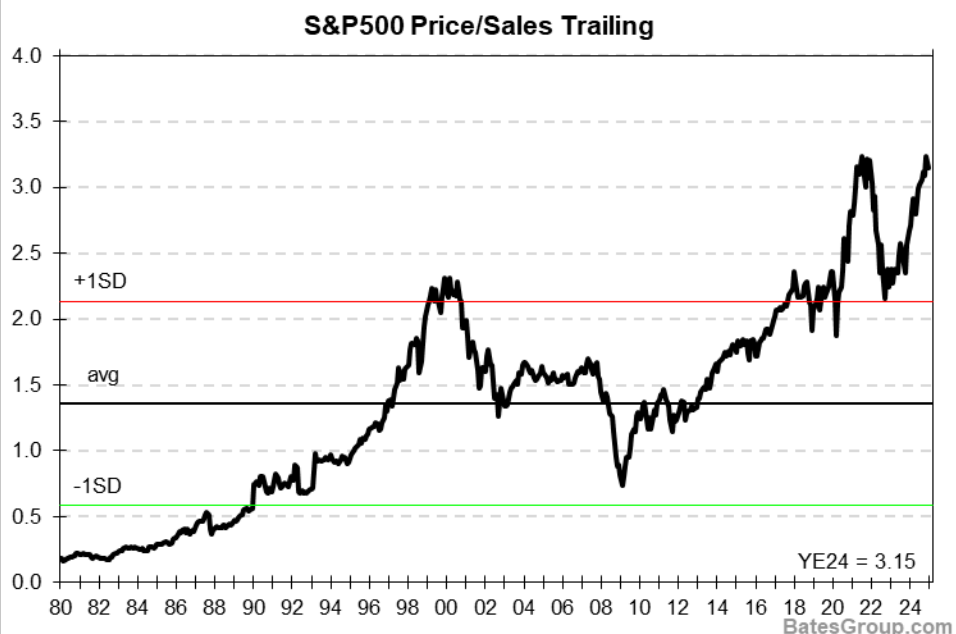
The Rule of 20 is a popular measure used to assess P/E ratios for the broader market, adjusting for inflation.

Taking inflation into account, but ignoring the impact of interest rates, the S&P 500 appeared to be overvalued.



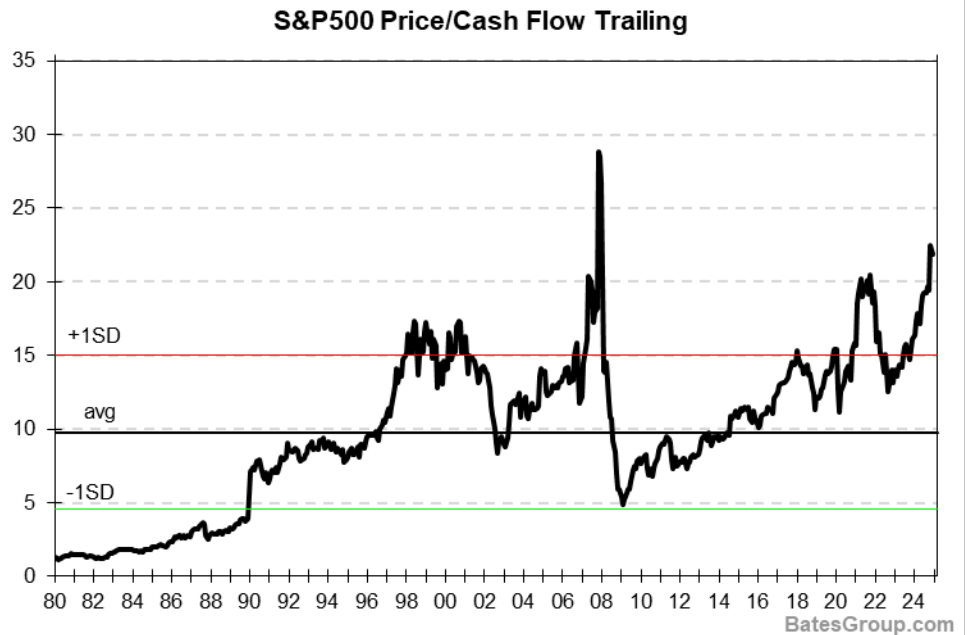
Using another measure of equity market valuation, the S&P 500 was trading significantly above long-term average price/sales levels.

As of December 2024, investors were paying 3.15 times trailing 12-month sales for the broader market. The historic average has been 1.36x sales.

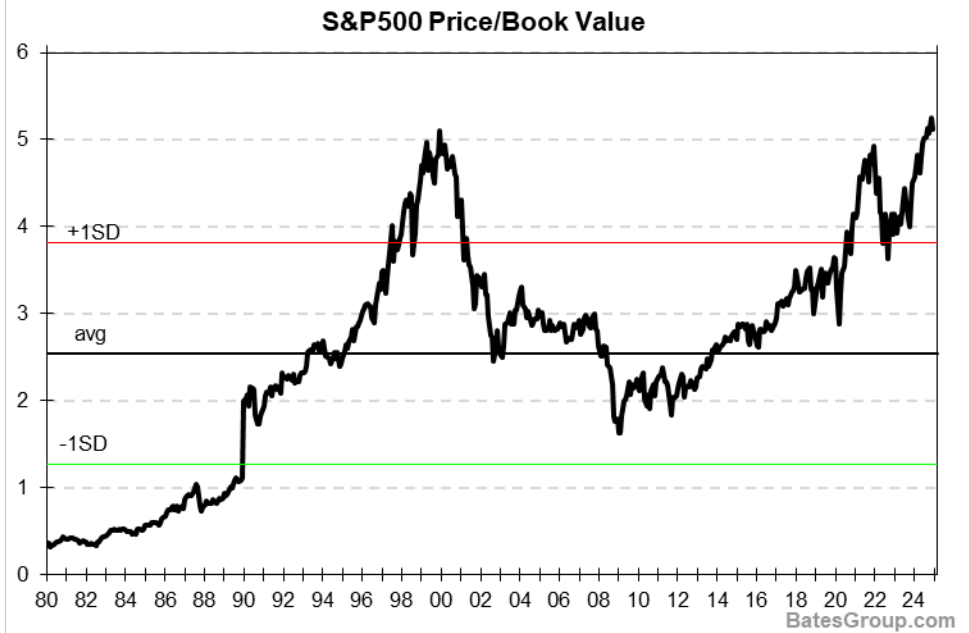


Source: Bloomberg, Standard & Poor's

Valuation for the broader market, if measured by price to cash flow, was also at the high end of the range. At the end of 2024, this metric reached the second highest level, with only the valuation levels prior to the financial crisis of 2008 surpassing it.



Price-to-book value is another common valuation metric. By this measure, the S&P 500 Index also appeared to be significantly overvalued.



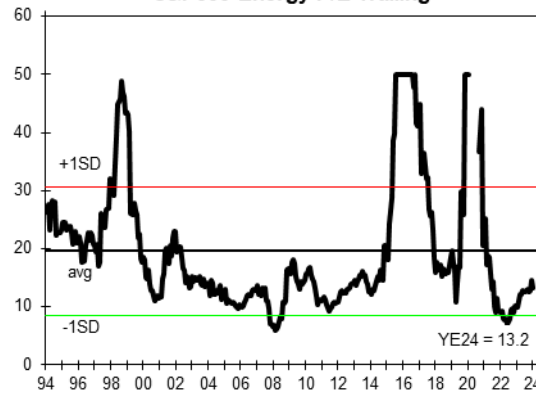
Source: Bloomberg, Standard & Poor's

S&P 500 Sector Valuations*

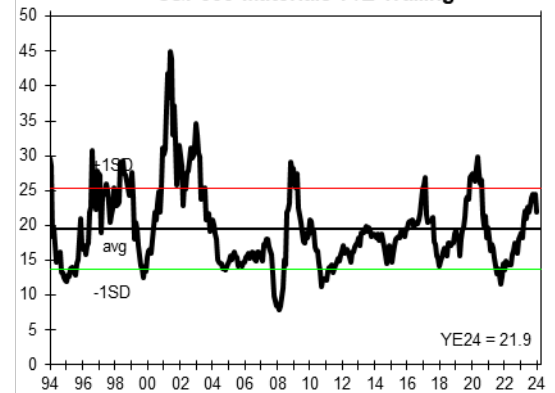
In 2024, valuation expansion across the various S&P 500 sectors was widespread, with all but one sector, Utilities, experiencing higher P/Es compared to the end of 2023.

Excluding the extreme valuations during the dot-com bubble, the average P/E ratio for the Technology sector from 2004-2024 has been 21.5x trailing earnings. As of December 2024, it was above 37x.

S&P500 Energy P/E Trailing



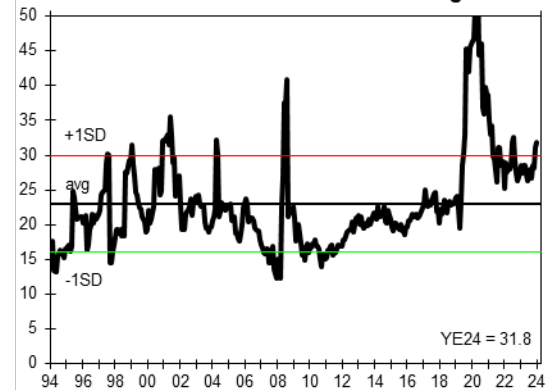
S&P500 Materials P/E Trailing



S&P500 Industrials P/E Trailing



S&P500 ConsDisc P/E Trailing



S&P500 ConsStaples P/E Trailing

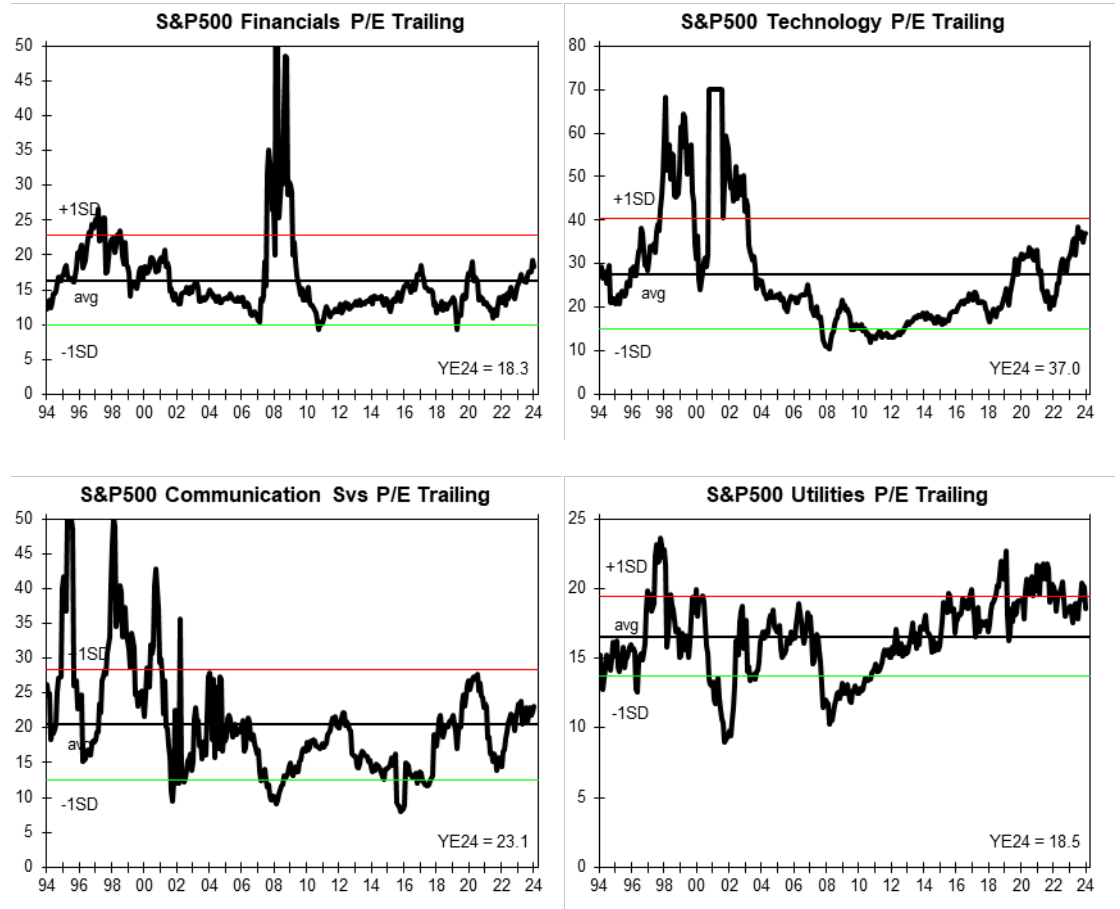


S&P500 Health Care P/E Trailing



* Some P/E ratios are capped at 50 (or 70 for the Technology sector) due to extreme values

Source: Bloomberg, Standard & Poor's

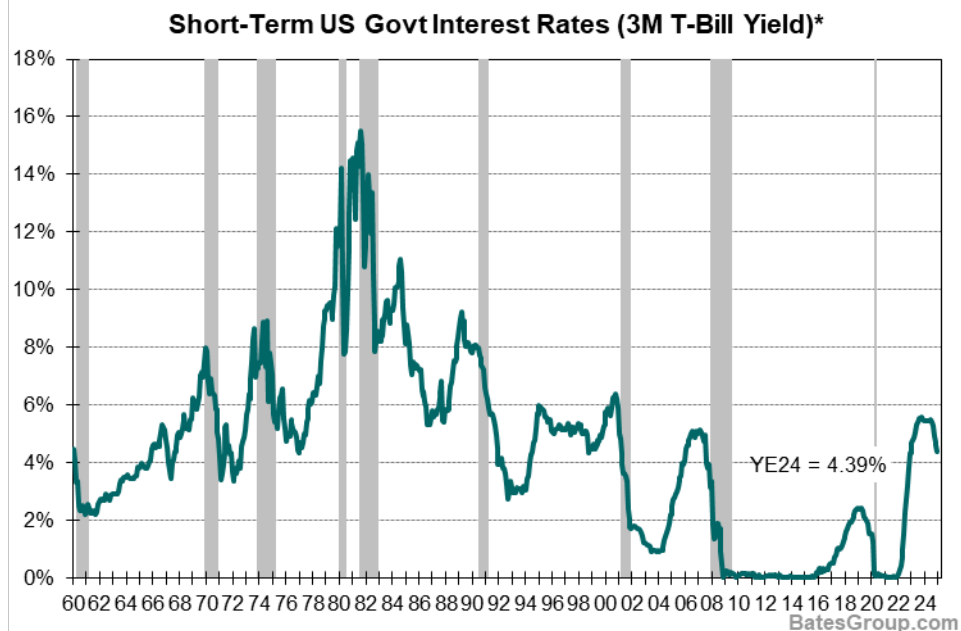


* Some extreme values in P/E ratios are capped at 50 (or 70 for the Technology sector)
Source: Bloomberg, Standard & Poor's

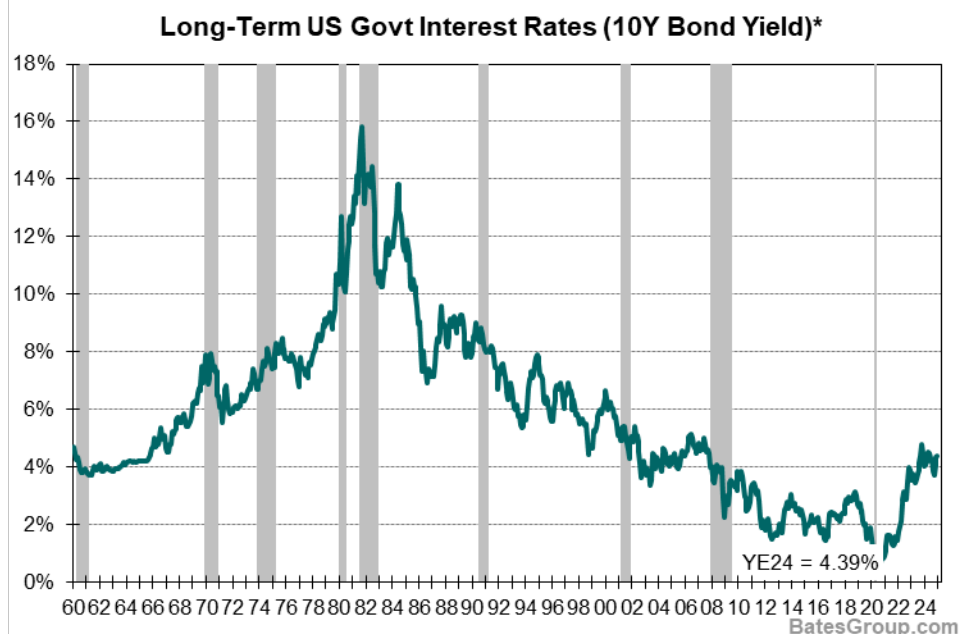
Credit Market Trends – Interest Rates

During 2024 the yield on three-month (3M) Treasury bills declined to 4.39% in December from 5.44% at the end of 2023.

The decline in yields has been a result of the Federal Reserve's steps to bring down interest rates.



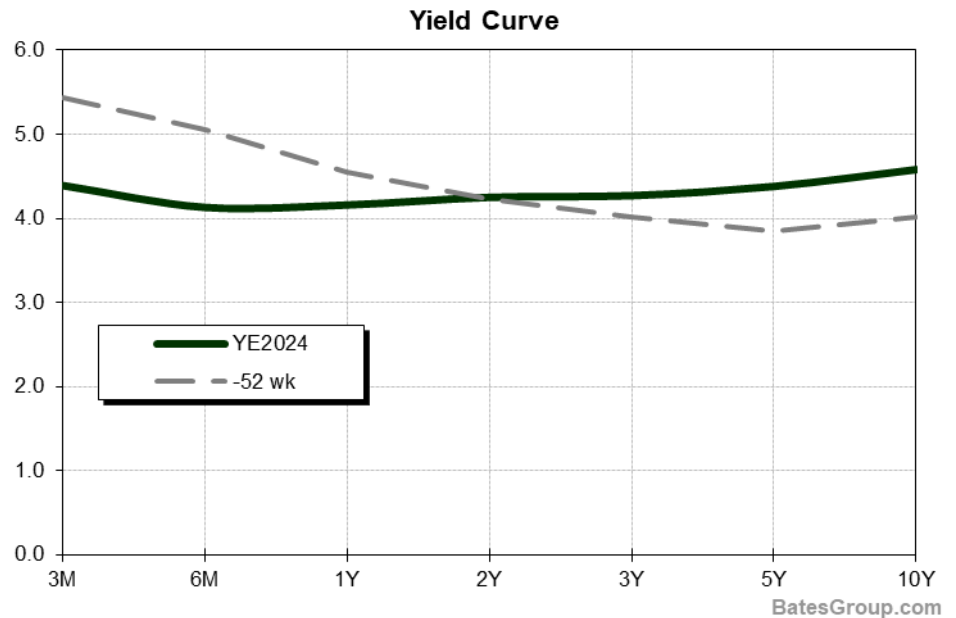
In contrast, long-term Treasury yields (10Y) climbed in 2024 to finish the fourth quarter at 4.39% compared to 4.02% at the end of 2023.



* Shaded areas represent recessions
Source: Federal Reserve, Bates Research

At the end of 2024, the yield curve reversed itself and is no longer showing an inverted yield curve as it did in 2023.

Historically, an inverted yield curve has been a “powerful predictor of future recessions” according to the Federal Reserve. However, this forecasting tool (inverted yield curve) has, to-date, not preceded a recession.

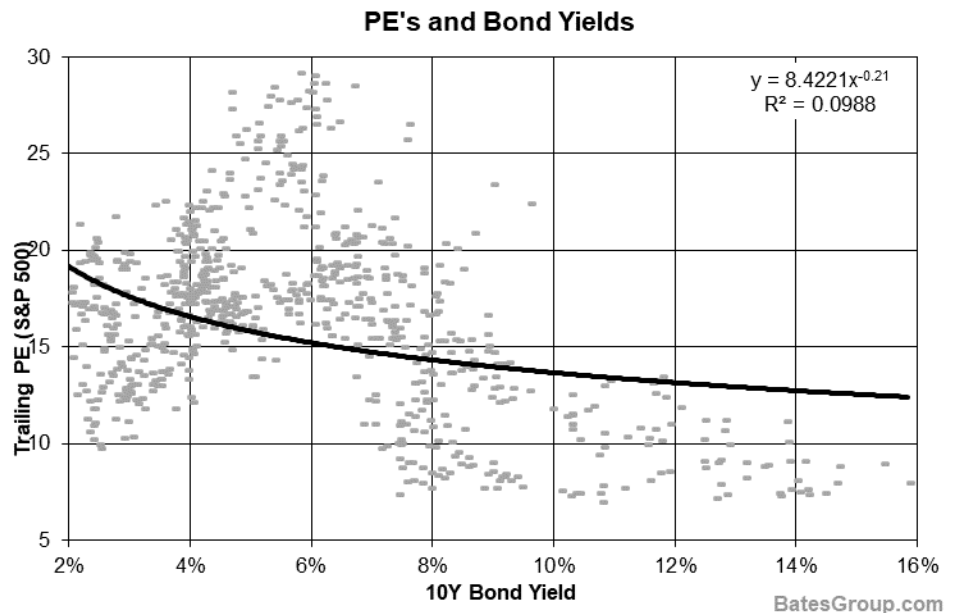


To the right is a view of the relationship between interest rates and equity valuations.

PEs tend to be higher when long-term rates are low and vice versa.

PE if interest rates:

	<4%	4-8%	>8%
Low	9.8	7.3	7.0
Avg.	17.8	18.6	11.5
High	30.7	30.0	23.4
-1SD	13.8	14	8.0
+1SD	21.7	23.3	15.0

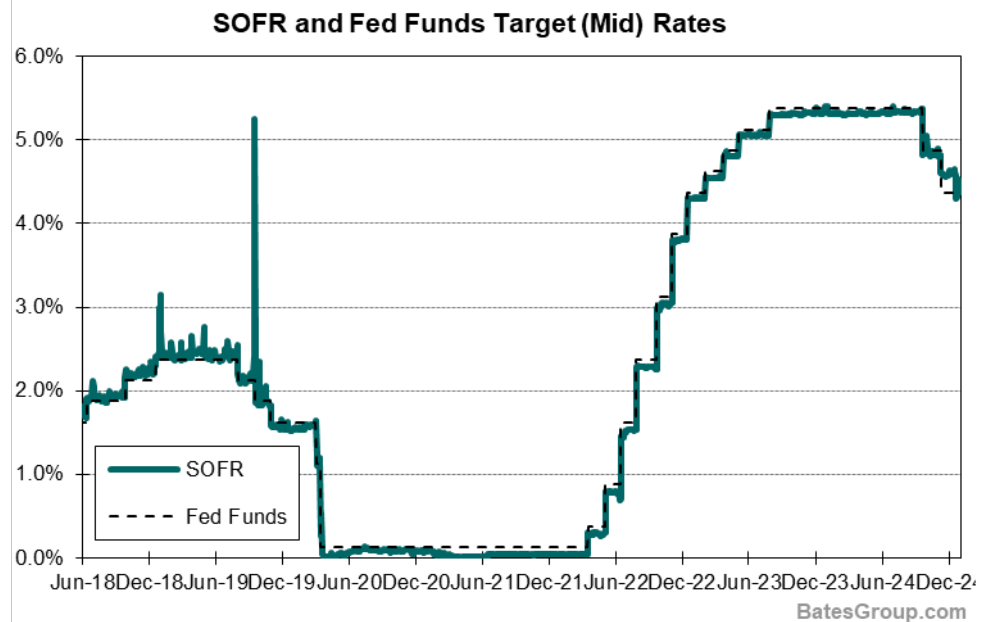


* Shaded areas represent recessions
Source: Federal Reserve, Bates Research

SOFR (Secure Overnight Funding Rates)

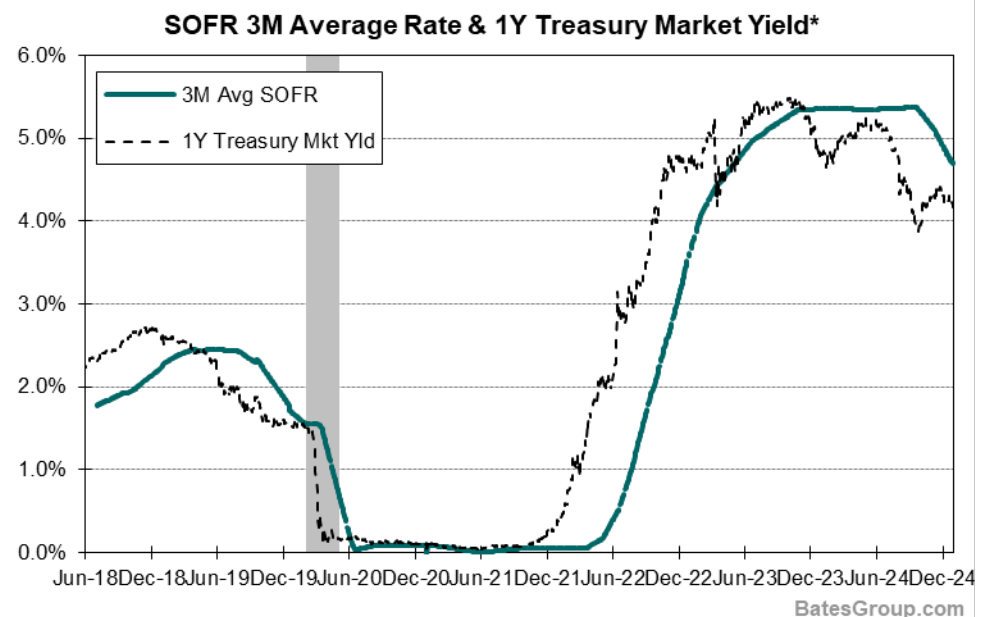
Since launching in early April 2018, SOFR has closely tracked Federal Funds target rates, with the exception of a spike in September 2019.**

SOFR, or the Secured Overnight Funding Rate, is based on observable, or actual transactions of overnight lending rates and replaced LIBOR as a benchmark overnight lending rate for US Dollar transactions.



Towards the end of 2024, the market yield on one-year Treasuries trended lower than average overnight SOFR rates (three month rolling average).

This relationship is similar to the inverse rate in mid- to late-2019 that preceded the recession in 2020. Typically, the longer the duration or maturity of borrowings, the higher the interest rate.



* Shaded areas represent recessions

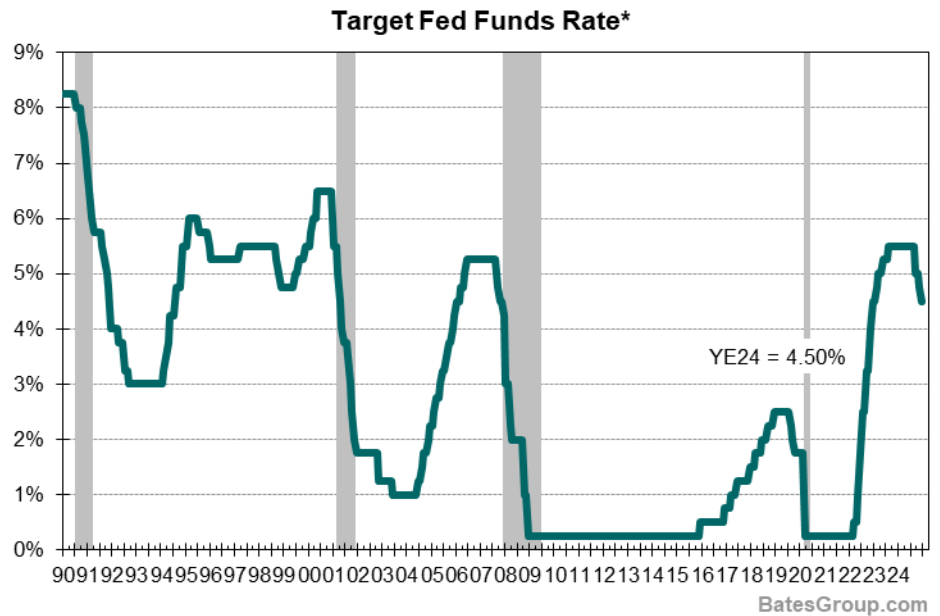
** This spike was, according to the Federal Reserve, due to a "momentaneous shortage in liquidity resulted in a momentous increase in secured borrowing costs".

Source: Federal Reserve, Bates Research

Federal Funds Rate

In response to a rapid rise in inflation, the Federal Reserve began to lower interest rates in September 2024.

By December 2024, the Federal Funds Rate had fallen to a range of 4.25% to 4.50%, down from the 5.25% to 5.50% range at the end of 2023.



Changes in the Federal Funds Rate (2005-2024)

Change (basis points)				Change (basis points)				Change (basis points)			
Date	(+)	(-)	Level (%)	Date	(+)	(-)	Level (%)	Date	(+)	(-)	Level (%)
2024				2019				30-Apr	...	25	2.00
19-Dec	25	...	4.25-4.50	31-Oct	...	25	1.50-1.75	18-Mar	...	75	2.25
8-Nov	25	...	4.50-4.75	19-Sep	...	25	1.75-2.00	30-Jan	...	50	3.00
19-Sep	50	...	4.75-5.00	1-Aug	...	25	2.00-2.25	22-Jan	...	75	3.50
2023				2018				2007			
27-Jul	25	...	5.25-5.50	20-Dec	25	...	2.25-2.50	11-Dec	...	25	4.250
4-May	25	...	5.00-5.25	27-Sep	25	...	2.00-2.25	31-Oct	...	25	4.500
23-Mar	25	...	4.75-5.00	14-Jun	25	...	1.75-2.00	18-Sep	...	50	4.750
2-Feb	25	...	4.50-4.75	22-Mar	25	...	1.50-1.75	2006			
2022				2017				29-Jun	25	...	5.250
15-Dec	50	...	4.25-4.50	14-Dec	25	...	1.25-1.50	10-May	25	...	5.000
3-Nov	75	...	3.75-4.00	15-Jun	25	...	1.00-1.25	31-Jan	25	...	4.750
22-Sep	75	...	3.00-3.25	16-Mar	25	...	0.75-1.00	2005			
28-Jul	75	...	2.25-2.50	2016				13-Dec	...	25	4.250
16-Jun	75	...	1.50-1.75	15-Dec	25	...	0.50-0.75	1-Nov	...	25	4.000
5-May	50	...	0.75-1.00	2015				20-Sep	...	25	3.750
17-Mar	25	...	0.25-0.50	17-Dec	25	...	0.25-0.50	9-Aug	25	...	3.500
2020				2008				30-Jun	25	...	3.250
16-Mar	...	100	0.00-0.25	16-Dec	...	75-100	0.00-0.25	3-May	25	...	3.000
4-Mar	...	50	1.00-1.25	29-Oct	...	50	1.00	22-Mar	25	...	2.750
				8-Oct	...	50	1.50	2-Feb	25	...	2.500

* Shaded areas represent recessions

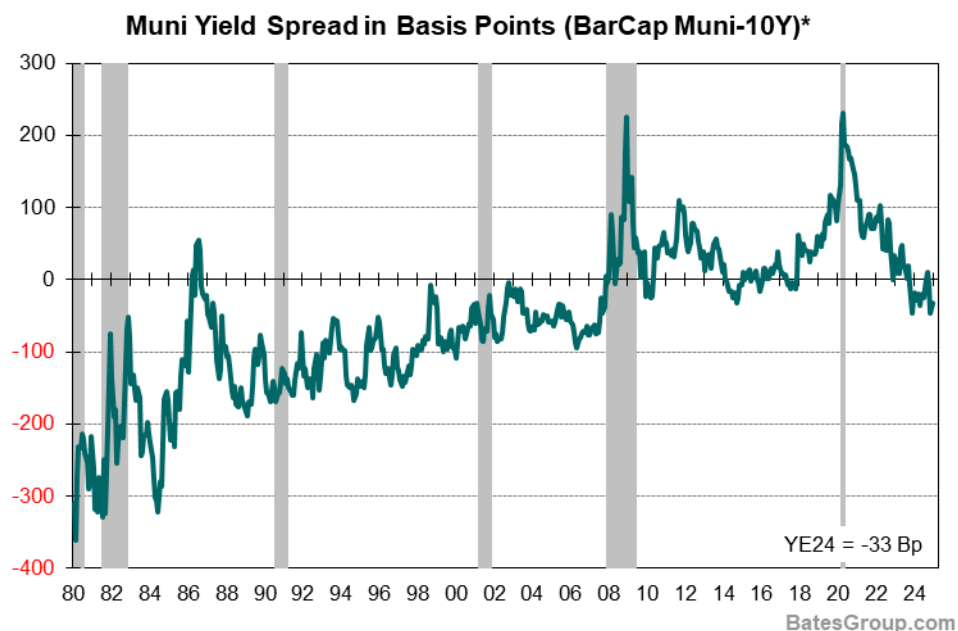
Source: Federal Reserve, Pegasus Research

Municipal Bonds

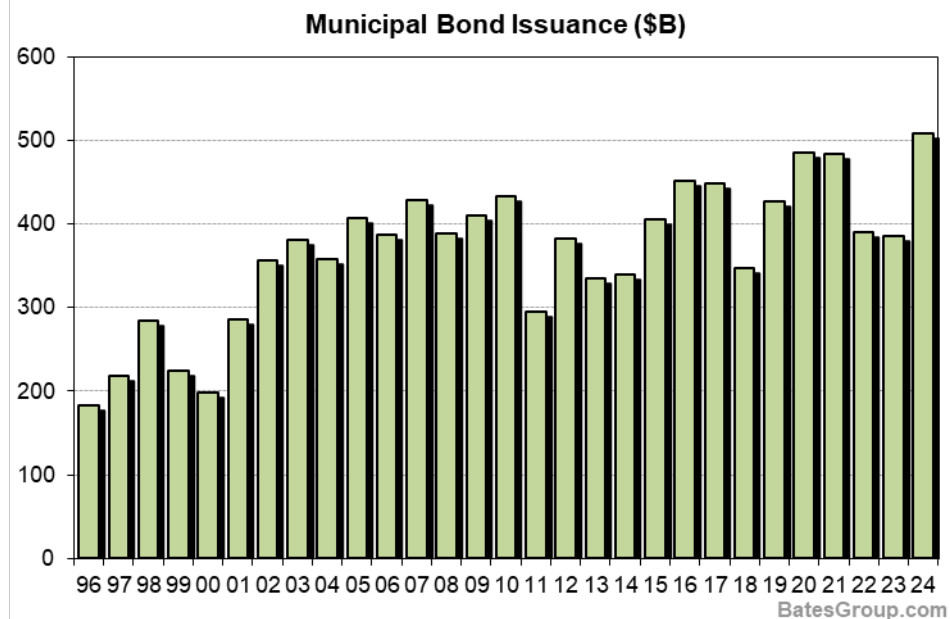
With rising yields in 2024, it was a challenging year for municipal bonds, yet the Bloomberg Municipal Bond Index close the year with a 1.1% return.

High yield municipal bonds outperformed in 2024, with a 6.3% return for the year.

For the year ended in December, the yield on the S&P Municipal Bond Index was 4.1%.



2024 was a solid year for municipal bond issuance, with total issuance up 32% from the prior year to an estimated \$508 billion.

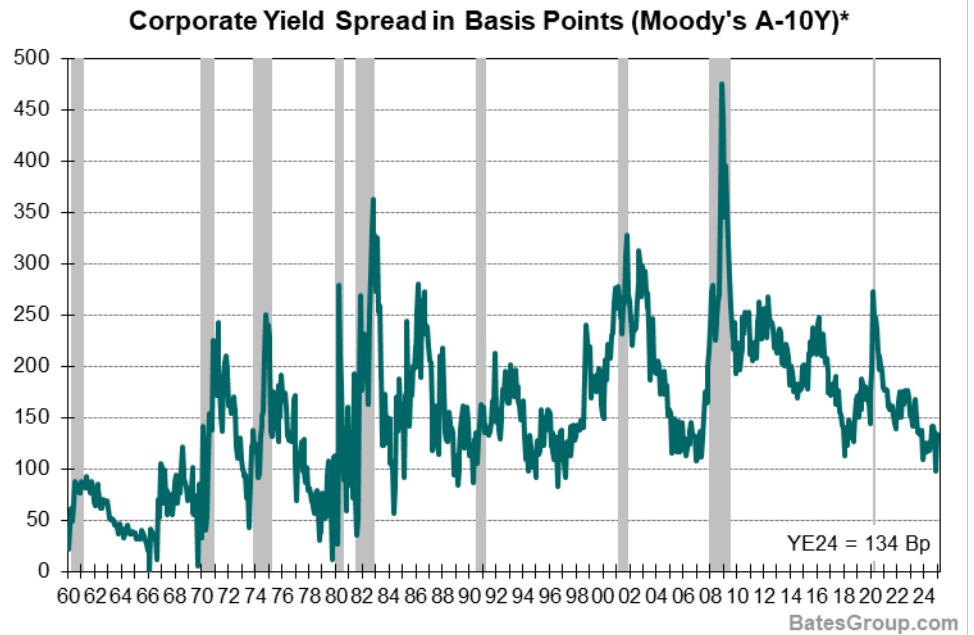


* Shaded areas represent recessions

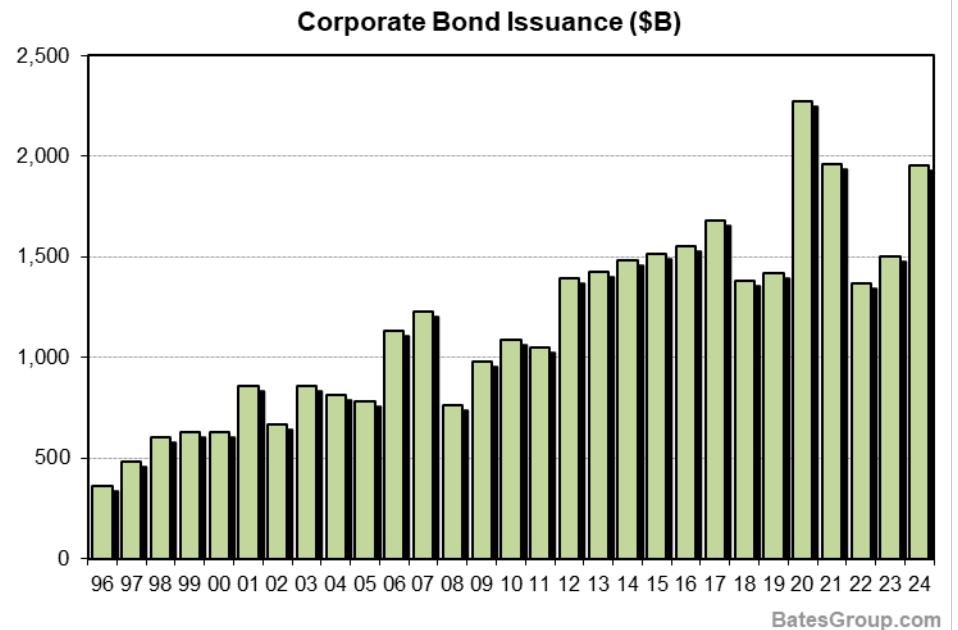
Source: Bloomberg, SIFMA, Standard & Poor's, Thomson Reuters, MSRB

Corporate Bonds

Following on a solid 2023 performance, U.S. investment-grade corporate bonds gained 2.1% in 2024. Despite rising US Treasury yields, tighter spreads contributed to the positive performance for the year.



U.S. corporate bond issuance totaled an estimated \$1,957 billion in 2024, up 30% from the prior year.

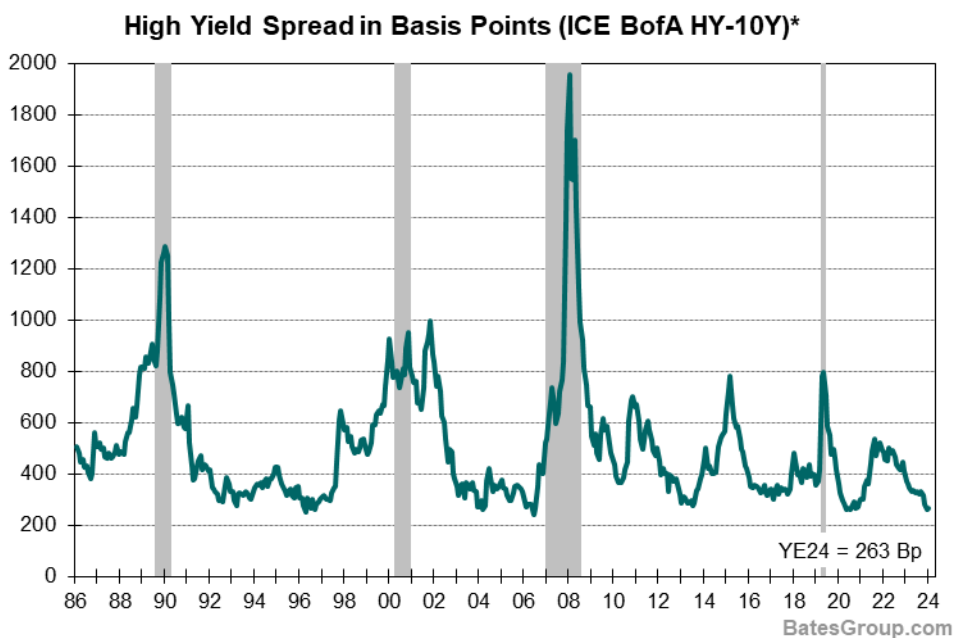


* Shaded areas represent recessions
Source: Bloomberg, Thomson Reuters, SIFMA

High Yield Securities

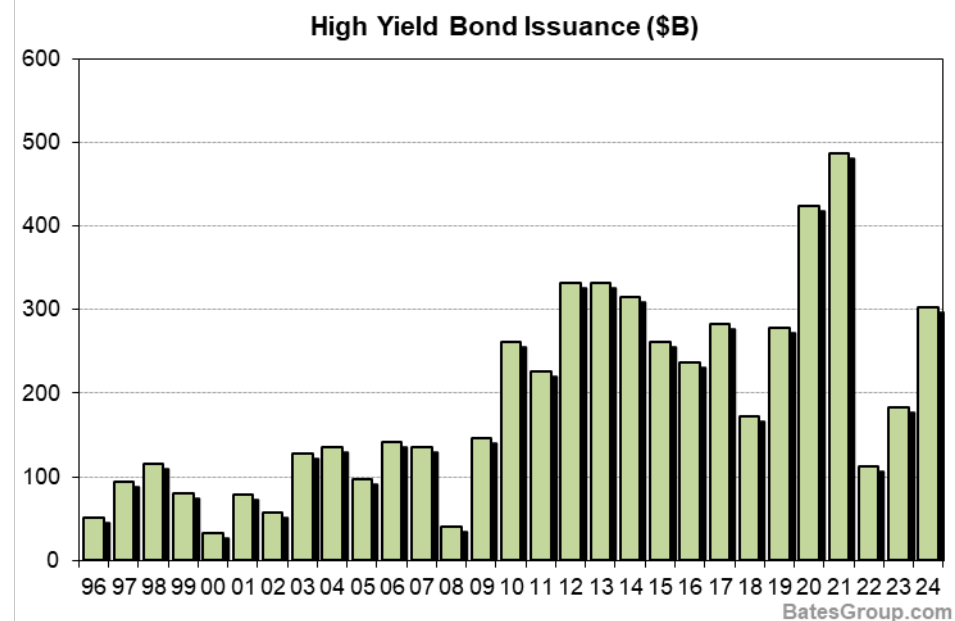
High yield risk or yield spreads declined 107 basis points in 2024 to 263 bps, with yields declining to 7.02% in December from 7.72% at the end of 2023.

The 12-month trailing U.S. corporate speculative-grade default rate rose to 5.1% in December 2024 from 4.5% a year earlier.



High yield bond issuance continued to remain strong in 2024, with total issuance up 64% to an estimated \$302 billion. In comparison, high yield bond issuance in 2023 was \$184 billion.

In 2024, more than 70% of high-yield bond issuance was used for debt refinancing.



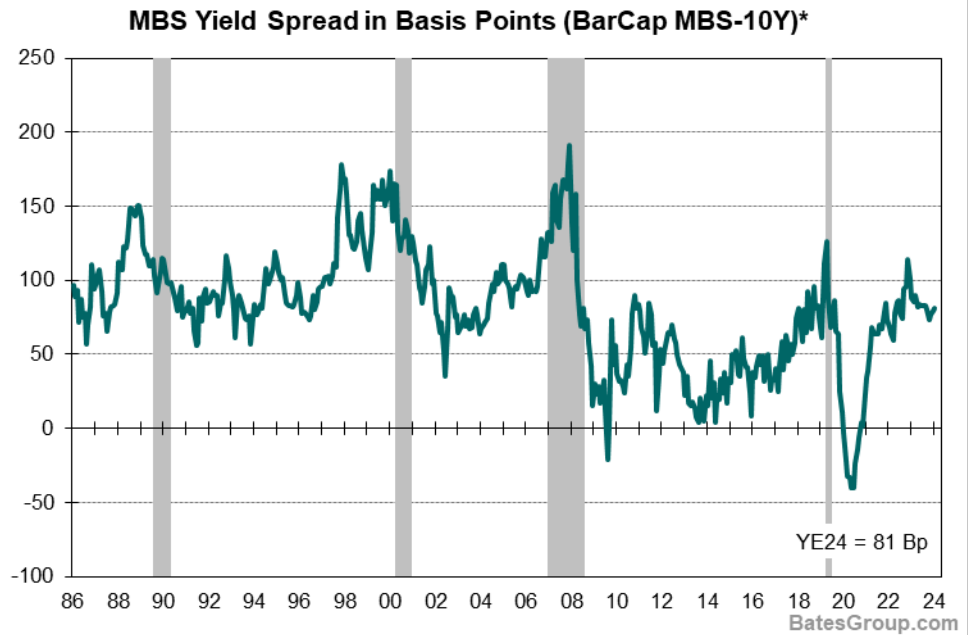
* Shaded areas represent recessions

Source: Bloomberg, Moody's, SIFMA, Standard & Poor's

Mortgage-Backed Securities

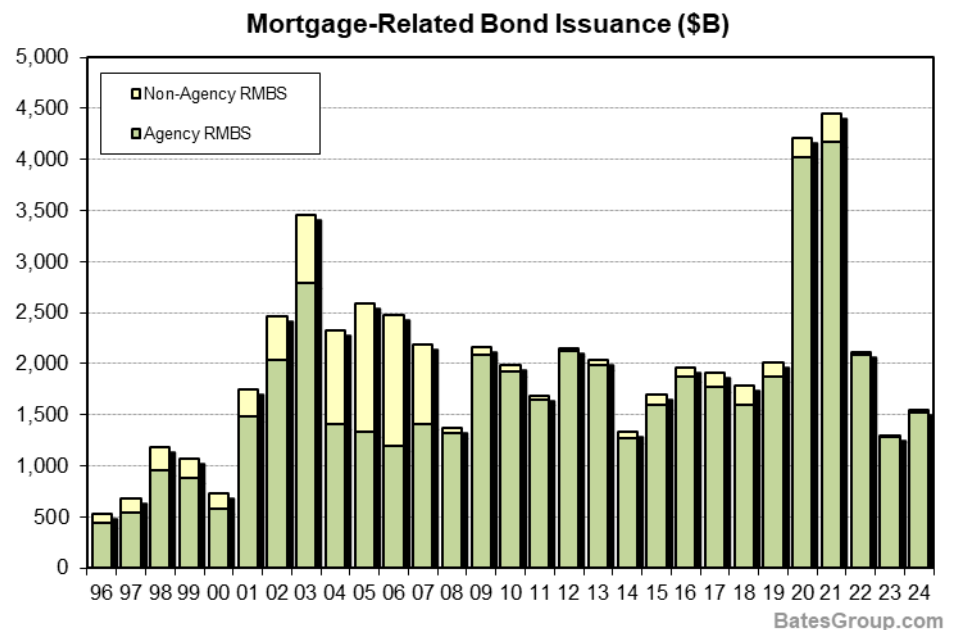
MBS yield spreads declined at year-end 2024 to 81 basis points from 88 basis points in December 2023.

MBS performance was more muted in 2024, with a 1.2% return compared to a 5.1% return in 2023.



Mortgage-related bond issuance increased in 2024, totaling an estimated \$1,592 billion.

Agency RMBS issuance was \$1,519 billion in 2024 while non-agency or private RMBS issuance was \$23 billion.



* Shaded areas represent recessions
Source: Bloomberg, Thomson Reuters

Fixed Income Securities Total Returns (2001-2024)

2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012
Corp Bonds 10.31%	Intl Govt 19.59%	High Yield 28.97%	High Yield 11.13%	Long Govt 6.50%	High Yield 11.85%	Intl Govt 10.57%	Long Govt 24.03%	High Yield 58.21%	High Yield 15.12%	Long Govt 29.93%	High Yield 15.81%
Short Govt 8.39%	Long Govt 16.79%	Intl Govt 14.78%	Intl Govt 10.33%	Munis 3.51%	Intl Govt 6.44%	Long Govt 9.81%	Intl Govt 10.23%	Corp Bonds 18.68%	Long Govt 9.38%	Munis 10.70%	Corp Bonds 9.82%
MBS 8.22%	Corp Bonds 10.12%	Corp Bonds 8.24%	Long Govt 7.70%	High Yield 2.74%	MBS 5.22%	Short Govt 7.31%	MBS 8.34%	Munis 12.91%	Corp Bonds 9.00%	Corp Bonds 8.15%	Munis 6.78%
High Yield 5.28%	Munis 9.60%	Munis 5.31%	Corp Bonds 5.39%	MBS 2.61%	Munis 4.84%	MBS 6.90%	Short Govt 6.67%	MBS 5.89%	Intl Govt 5.90%	Intl Govt 6.33%	Long Govt 3.56%
Munis 5.13%	MBS 8.75%	MBS 3.07%	MBS 4.70%	Corp Bonds 1.68%	Corp Bonds 4.30%	Corp Bonds 4.56%	Munis -2.47%	Intl Govt 2.63%	MBS 5.37%	MBS 6.23%	MBS 2.59%
Long Govt 4.21%	Short Govt 5.87%	Long Govt 2.48%	Munis 4.48%	Short Govt 1.62%	Short Govt 3.93%	Munis 3.36%	Corp Bonds -4.94%	Short Govt 0.80%	Short Govt 2.40%	High Yield 4.98%	Intl Govt 1.83%
Intl Govt -1.37%	High Yield -1.41%	Short Govt 1.92%	Short Govt 0.91%	Intl Govt -6.66%	Long Govt 1.85%	High Yield 1.87%	High Yield -26.16%	Long Govt -12.92%	Munis 2.38%	Short Govt 1.55%	Short Govt 0.43%

2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024
High Yield 7.44%	Long Govt 25.07%	Munis 3.30%	High Yield 17.13%	Long Govt 8.53%	Short Govt 1.56%	Long Govt 14.83%	Long Govt 17.70%	High Yield 5.28%	Short Govt -3.82%	High Yield 13.45%	High Yield 8.19%
Short Govt 0.36%	Munis 9.05%	MBS 1.51%	Corp Bonds 6.11%	High Yield 7.50%	Munis 1.28%	Corp Bonds 14.54%	Corp Bonds 9.89%	Munis 1.52%	Munis -8.53%	Corp Bonds 8.52%	Short Govt 4.03%
MBS -1.41%	Corp Bonds 7.46%	Short Govt 0.56%	MBS 1.67%	Intl Govt 7.29%	MBS 0.99%	High Yield 14.32%	Intl Govt 9.50%	Short Govt -0.60%	High Yield -11.19%	Munis 6.40%	Corp Bonds 2.13%
Corp Bonds -1.53%	MBS 6.08%	Corp Bonds -0.68%	Intl Govt 1.65%	Corp Bonds 6.42%	Intl Govt -0.38%	Munis 7.54%	High Yield 7.11%	Corp Bonds -1.04%	MBS -11.81%	MBS 5.05%	MBS 1.20%
Munis -2.55%	High Yield 2.45%	Long Govt -1.21%	Long Govt 1.33%	Munis 5.45%	Long Govt -1.84%	MBS 6.35%	Munis 5.21%	MBS -1.04%	Corp Bonds -15.76%	Short Govt 4.29%	Munis 1.05%
Intl Govt -4.30%	Short Govt 0.63%	Intl Govt -3.29%	Short Govt 0.86%	MBS 2.47%	High Yield -2.08%	Intl Govt 5.59%	MBS 3.87%	Long Govt -4.65%	Intl Govt -17.47%	Intl Govt 4.18%	Intl Govt -3.58%
Long Govt -12.7%	Intl Govt -0.8%	High Yield -4.5%	Munis 0.2%	Short Govt 0.4%	Corp Bonds -2.5%	Short Govt 3.6%	Short Govt 3.2%	Intl Govt -6.6%	Long Govt -29.3%	Long Govt 3.1%	Long Govt -6.4%

Source: Bloomberg, Bates Research

Cryptocurrency Trends

Cryptocurrencies hit new highs in 2024, with Bitcoin more than doubling in price to close 2024 at \$93,429. In comparison, Ethereum gained 47% to finish 2024 at \$3,332.

Although crypto currencies are continuing to gain traction as a financial asset/currency, the crypto market is still just a fraction of the size of the fixed income and equity markets.

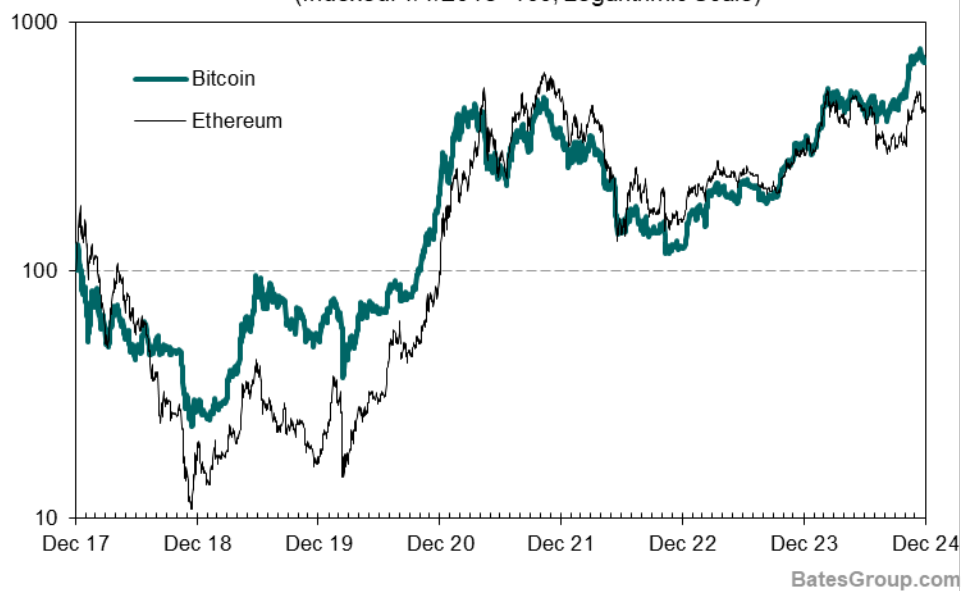
The crypto market value was an estimated \$3.3 trillion at the end of 2024. In comparison, the global bond market was approximately \$150 trillion, while the global equity markets had an estimated value of \$126 trillion.

The chart to the right shows changes in Bitcoin and Ethereum on a logarithmic scale. A logarithmic scale better shows percentage changes in large price movements than a linear scale.

Cryptocurrencies: Bitcoin & Ethereum
(Indexed: 1/1/2018=100)



Cryptocurrencies: Bitcoin & Ethereum
(Indexed: 1/1/2018=100, Logarithmic Scale)



* Shaded areas represent recessions

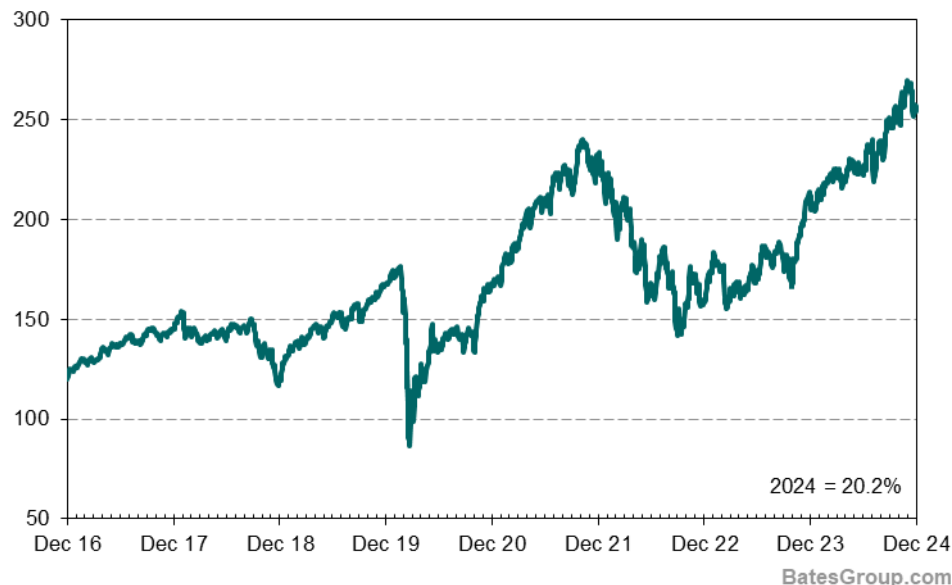
Source: Federal Reserve FRED, Coinbase, SIFMA, CoinMarketCap

Private Equity Trends

In 2024 publicly listed private equity companies experienced strong gains with the S&P PE Index up 20.2% for the year.

In terms of industry-wide IRR (a key performance metric) private equity performance was an estimated 16%, using Blackstone's 2024 realized IRR as a proxy for the sector.

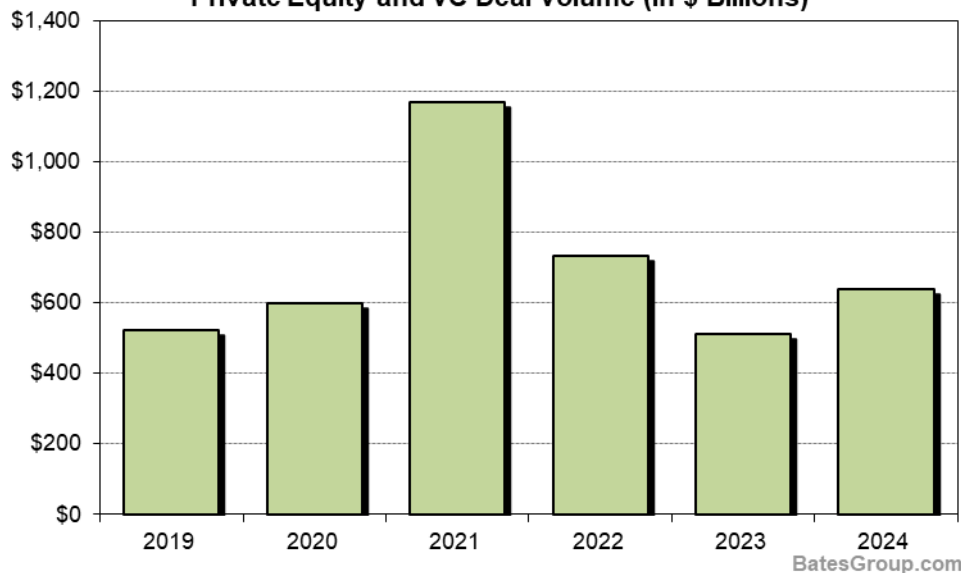
S&P Listed Private Equity Index Performance



After two years of decline, deal volume was up in 2024. According to S&P Global Market Intelligence, total deal volume rose nearly 25% to \$639 billion. This compares to \$512 billion in 2023.

Exit volumes were down in dollar terms compared to 2023 but were up 5% in terms of number of deals. This weakness in values led to average holding periods for private firms remaining over 6 years.

Private Equity and VC Deal Volume (in \$ Billions)

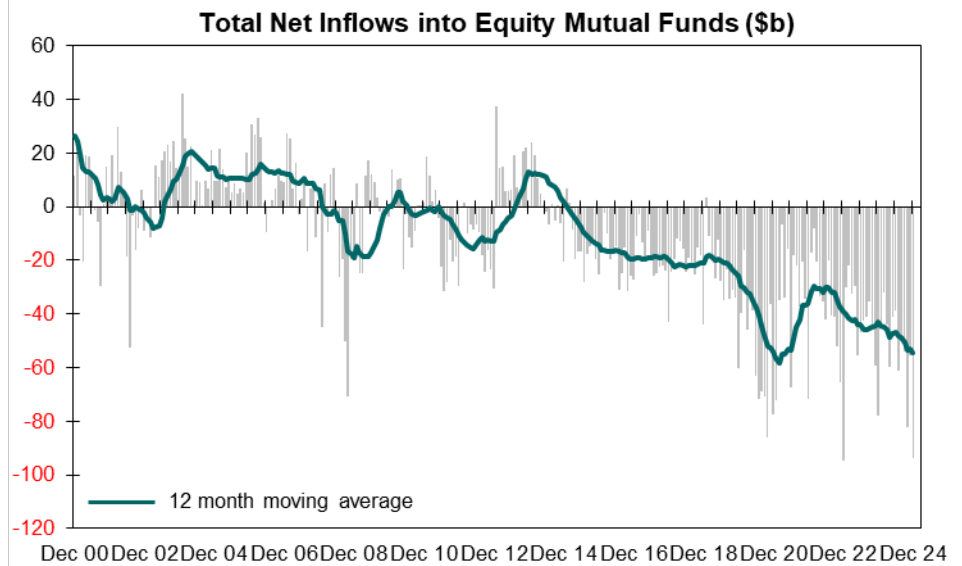


Source: Blackstone, Standard and Poor's, S&P Global Market Intelligence

Mutual Fund Flows

Total net inflows into equity mutual funds continued to decline in 2024, accelerating in the last quarter of the year. In December 2024 alone, nearly \$94 billion flowed out of equity funds.

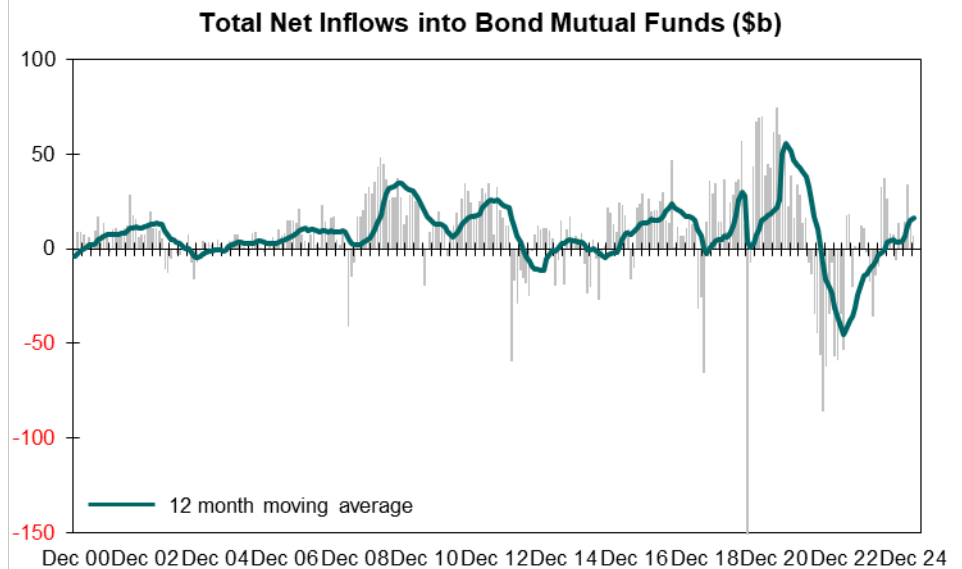
Total assets for equity funds declined 15% in 2024 to an estimated \$21,685 billion.



BatesGroup.com

With the interest rate environment appearing to ease in 2024, bond funds experienced net inflows through most of the year.

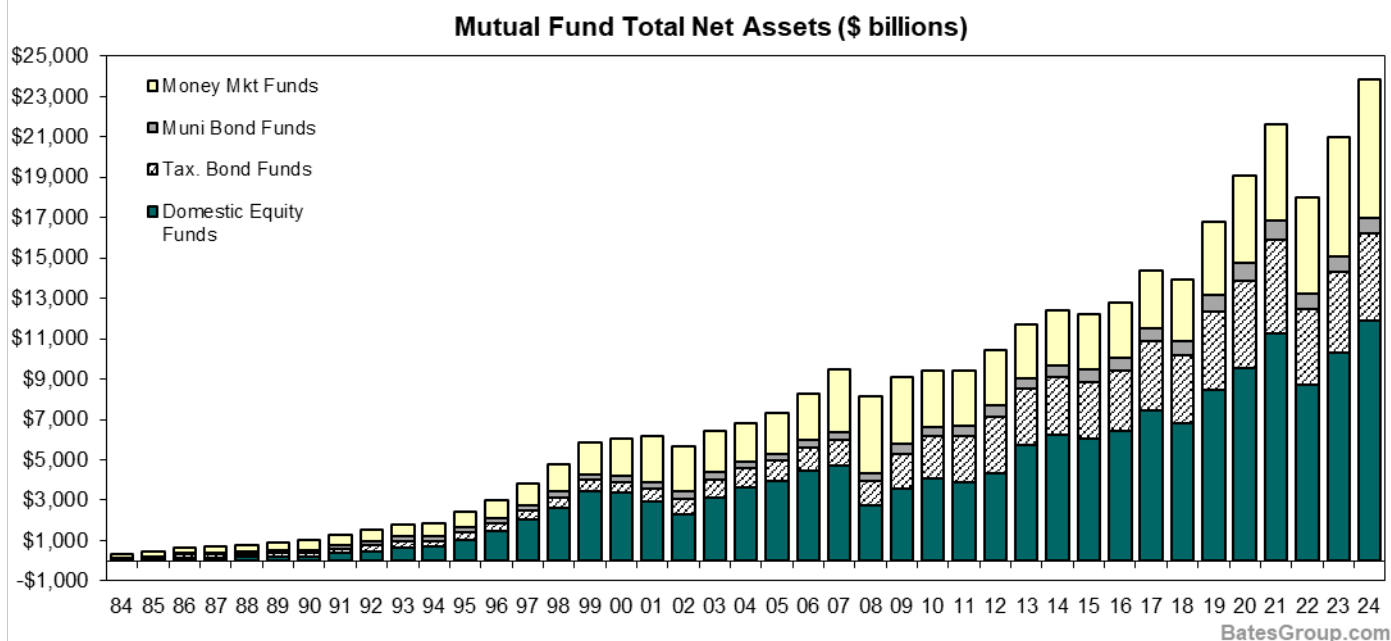
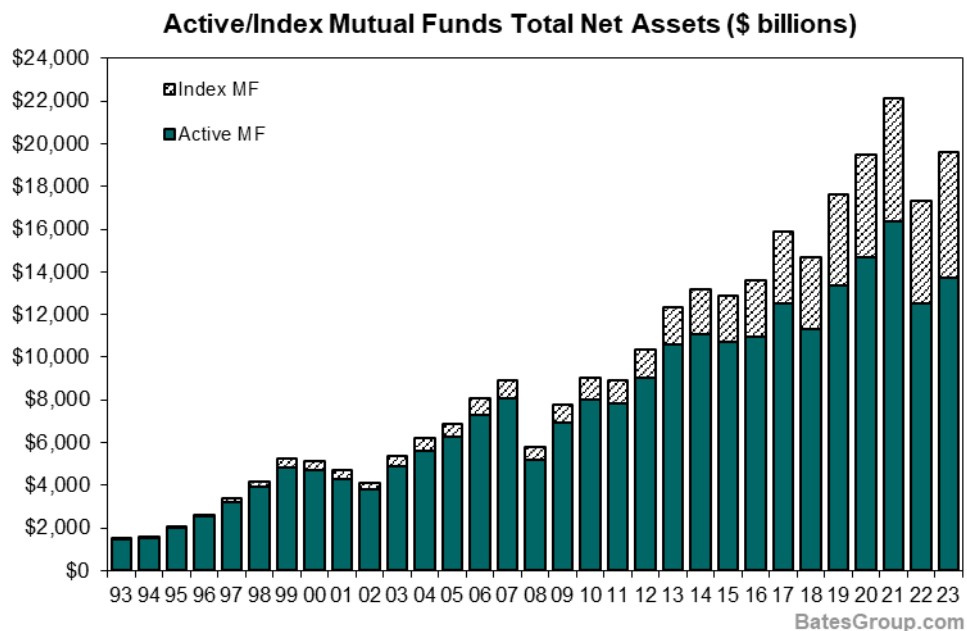
The estimated total assets in bond mutual funds was \$4,270 billion at the end of 2024 compared to \$3,990 billion in 2023.



BatesGroup.com

Source: Investment Company Institute

In terms of total net assets, actively managed mutual funds accounted for 70% of all mutual funds, compared to 30% for indexed or passive funds.

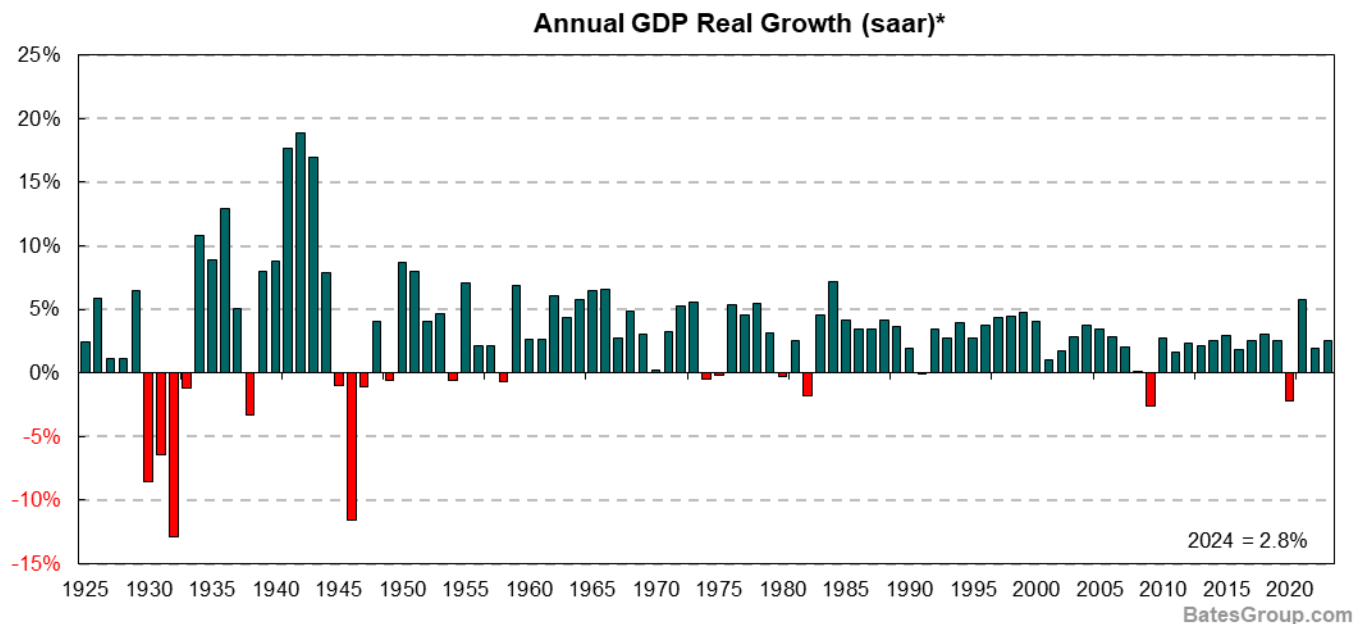
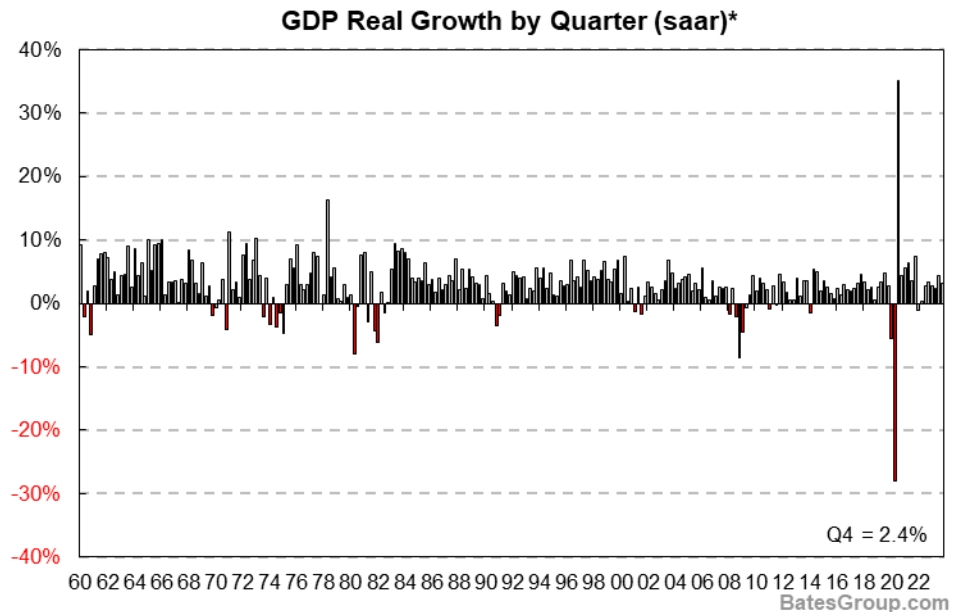


Source: Investment Company Institute

The Economy ($GDP = C + I + G + (X - M)$)

Economic growth was solid across the board in 2024, with the U.S. economy growing at a 2.4% annual rate in the last quarter of 2024. For the year, GDP was up 2.8% compared to 2023.

Consumer spending accounted for a large portion of the growth while private investments, and to a lesser extent, government spending also contributed. In Q4 PCE (personal consumption expenditures) contributed 2.7% to the growth rate while government spending contributed 0.5% to economic growth.

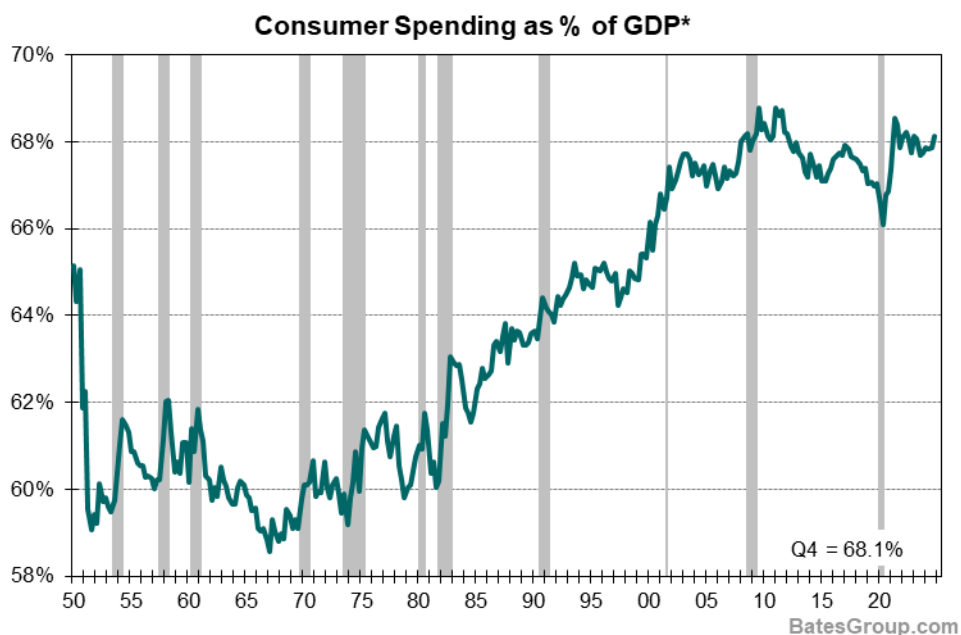


* saar – seasonally adjusted annual rate

Source: Bureau of Economic Analysis, National Bureau of Economic Research

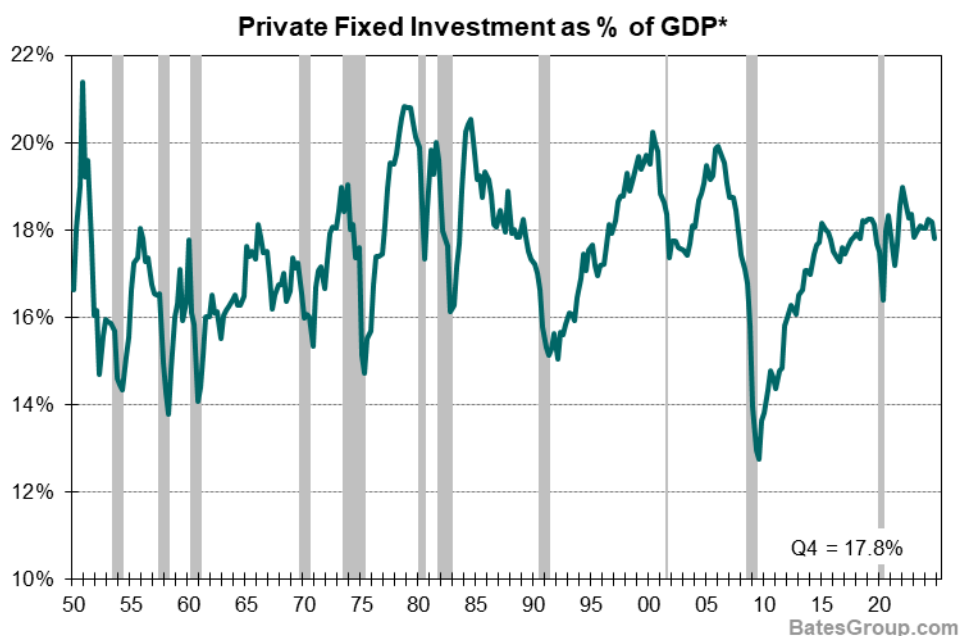
Consumer spending increased at a 4.0% annual rate in the fourth quarter, driven by solid consumption in goods and services. Wage growth also helped drive the spending increase with real disposable personal income up 2.5% in Q4 2024.

Consumer spending is still the largest component of economic growth. As a percentage of GDP, personal consumption expenditures (PCE) increased slightly to 68.1% of GDP.



Private fixed investments declined in the fourth quarter of 2024, down 5.6% from the previous quarter at a seasonally adjusted annual rate.

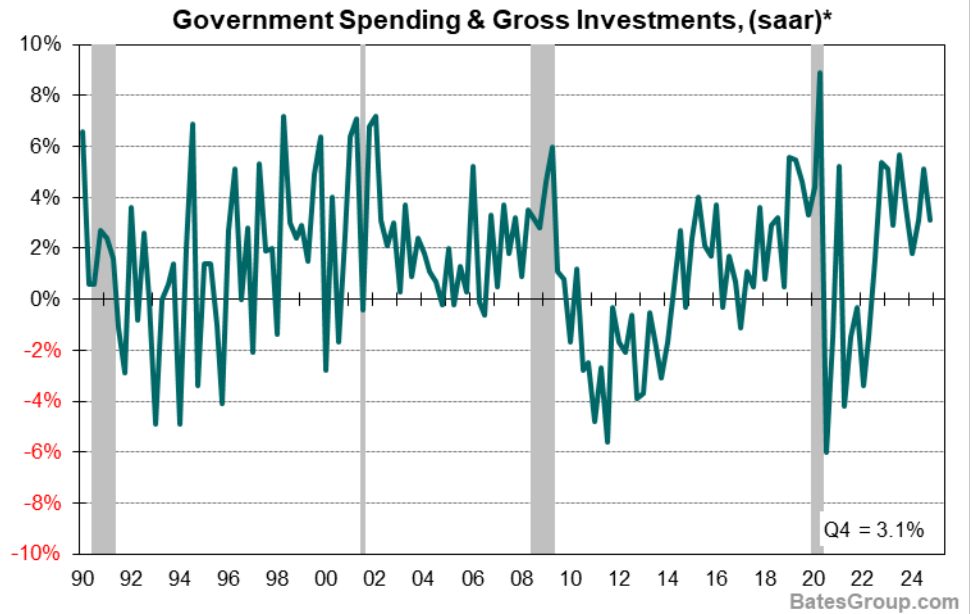
Buoyed by solid gains in the first half of the year, gross spending on private fixed investment was up 4.0% for the full year.



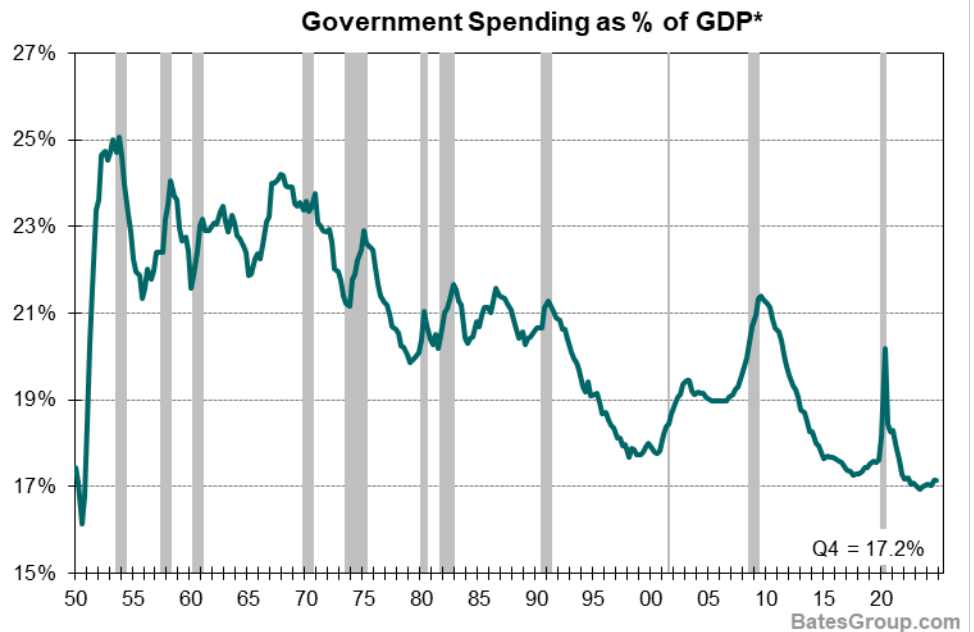
* Shaded areas represent recessions
Source: Bureau of Economic Analysis

Government spending was up at a 3.1% annual rate in Q4 and increased 3.4% overall in 2024. Federal government spending increased at a 4.0% annual rate in Q4 with nondefense spending up 2.9%. State and local spending increased at a 2.5% annual rate in the last quarter of 2024.

Overall, government spending contributed 0.6% to the 2.8% growth in last year's GDP.

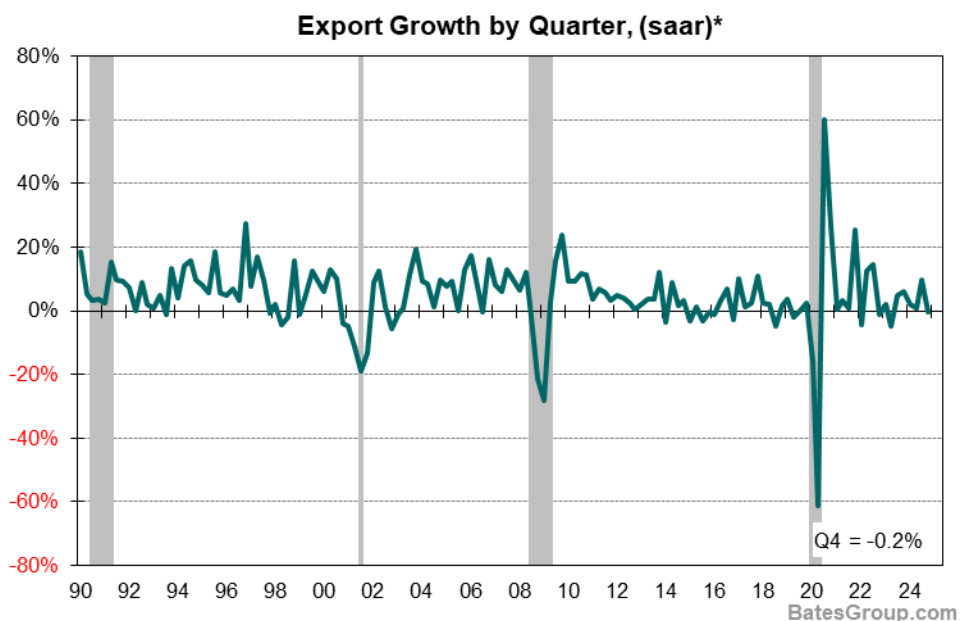


Relative to GDP, government spending remained stable and finished the year at 17.2% of GDP, with defense spending accounting for 3.7% of GDP in 2024.



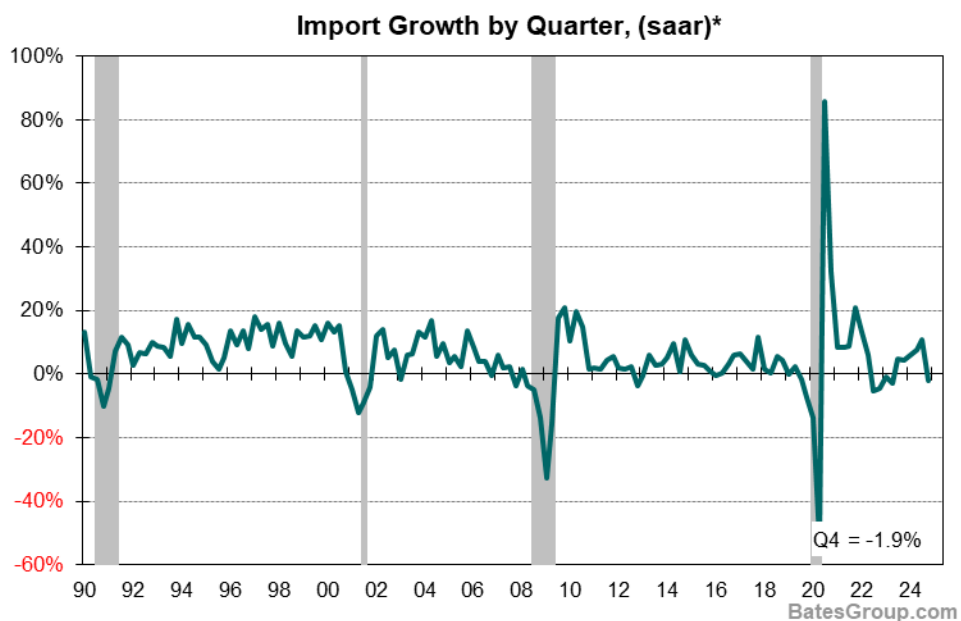
* Shaded areas represent recessions, saar – seasonally adjusted annual rate
Source: Bureau of Economic Analysis

In the last quarter of 2024 exports declined at a 0.2% annual rate compared to a 9.6% rate in the third quarter. For the year, exports of goods and services advanced 3.3%.



Imports were down at a 1.9% annual rate in the fourth quarter. Imported services were up at a 10.9% rate while imported goods declined at a 4.9% annual rate.

For the year, imports were up 5.3%.

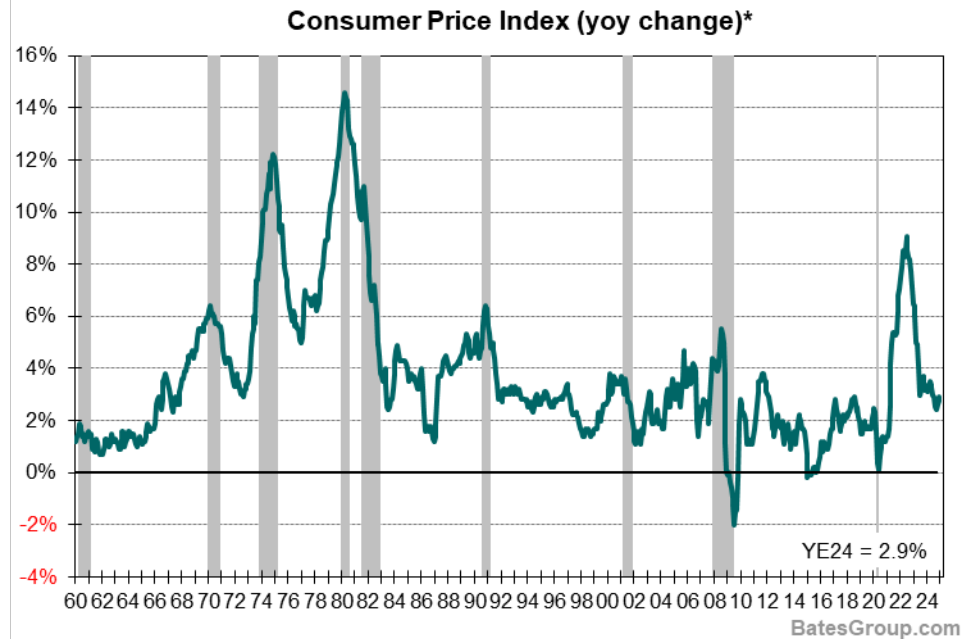


* Shaded areas represent recessions, saar – seasonally adjusted annual rate
Source: Bureau of Economic Analysis

Inflation

After hitting a 40 year high in 2022, inflation continued to fall in 2024. In December, the inflation rate was 2.9% compared to a peak of 9.0% in June 2022.

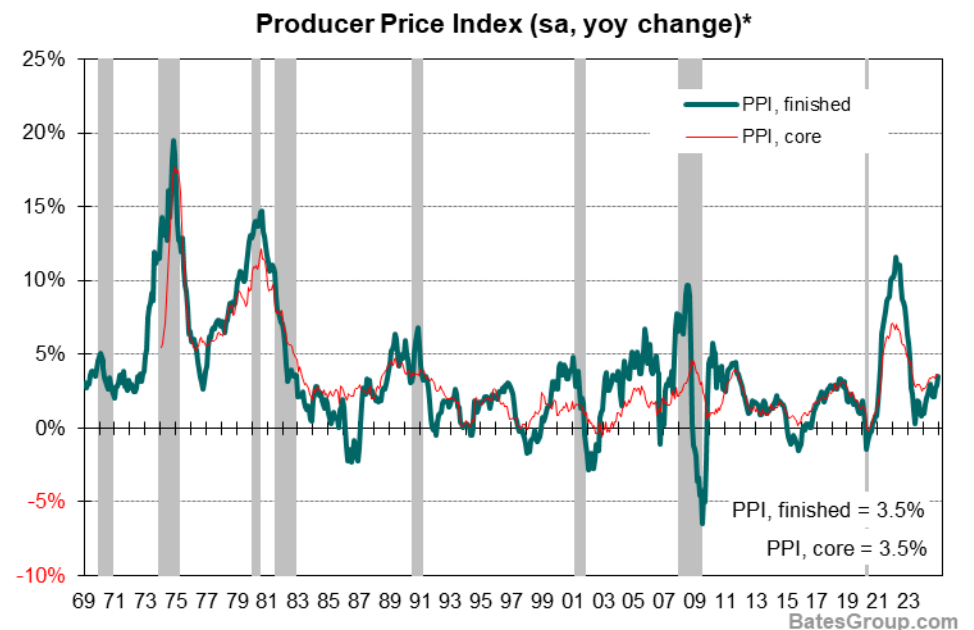
Transportation and shelter prices were up 7.3% and 4.6% respectively on a 12-month basis while food prices increased 2.9% in 2024.



Producer prices for final demand increased in the second half of 2024, increasing 0.2% in December. Leading the gain was a 3.5% increase in the final demand for energy.

For the 12 months ended December 2024, producer prices for final demand were up 3.3%.

The 12-month core PPI rate (final demand finished goods less foods and energy) was also up 3.3% in December.

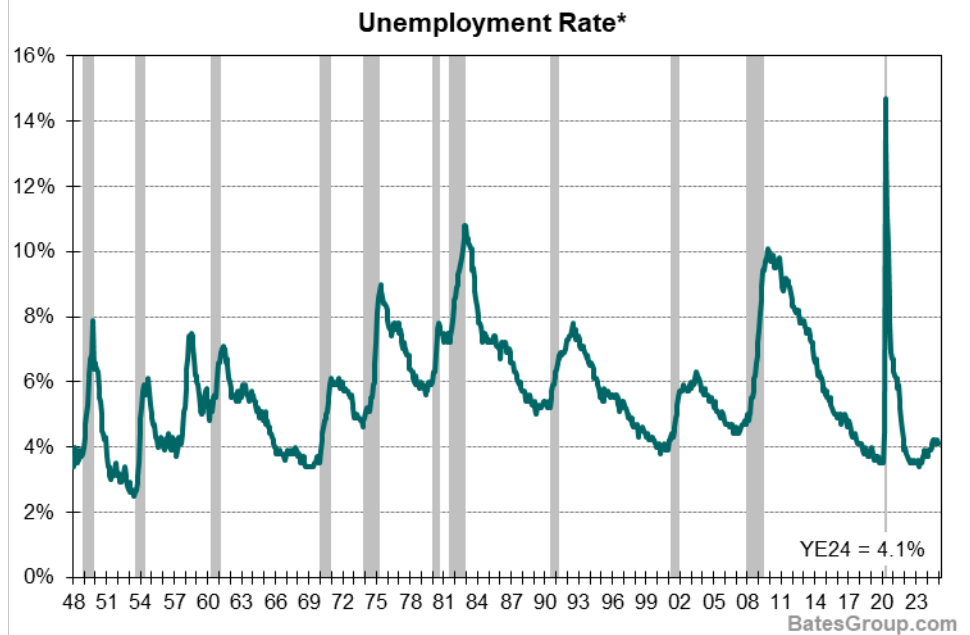


* Shaded areas represent recessions
Source: Bureau of Labor Statistics

Employment

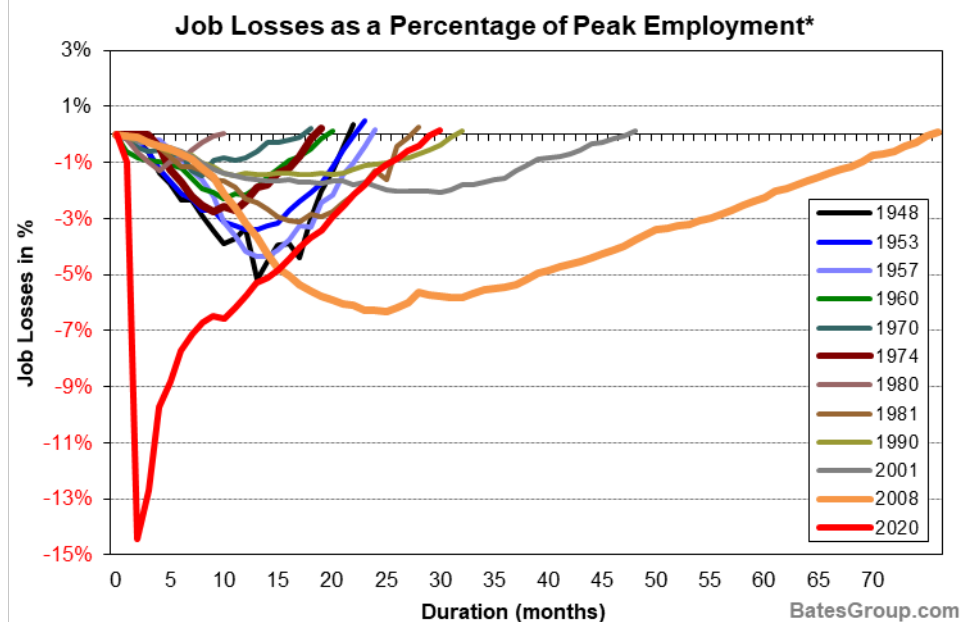
After spiking to 14.7% in April 2020, the top-line unemployment rate declined substantially to finish 2024 at 4.1%.

A fuller, or better measure of unemployment is the U-6 number, which was 7.5% in December. The U-6 number measures people who are either unemployed, given up on finding work, or are only marginally employed. In April at the height of the coronavirus pandemic, the 'real' unemployment number was over 22%. This was the highest unemployment rate that the U.S. had experienced since the Great Depression.



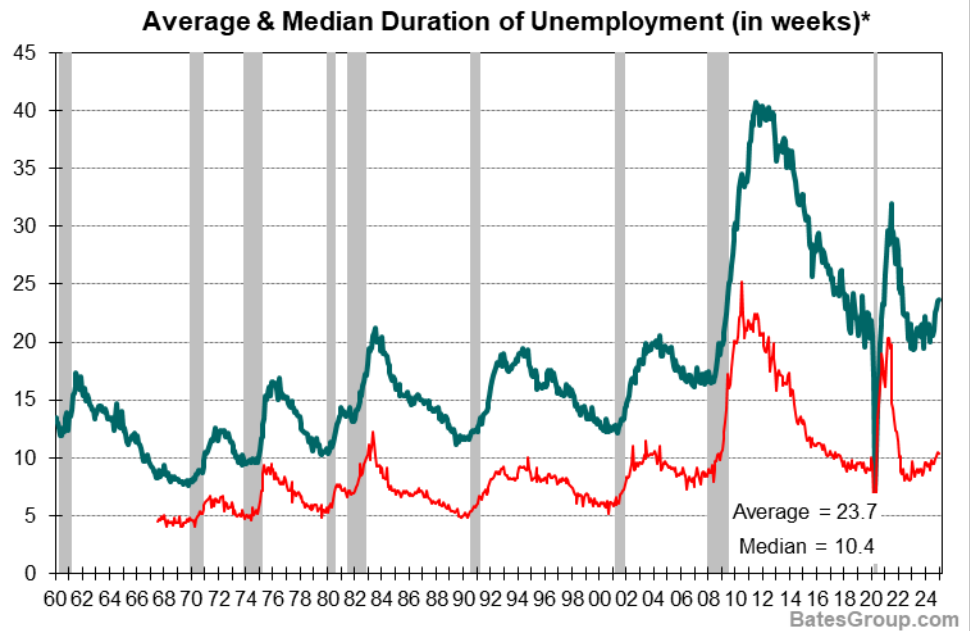
2020 was also notable for the steepest decline in employment since the Great Depression. In just two months in early 2020, nearly 15% of the workforce lost their jobs.

It also marked the worst jobs recession in post-WW II history. Since then, the job situation has bounced back above pre-pandemic levels.

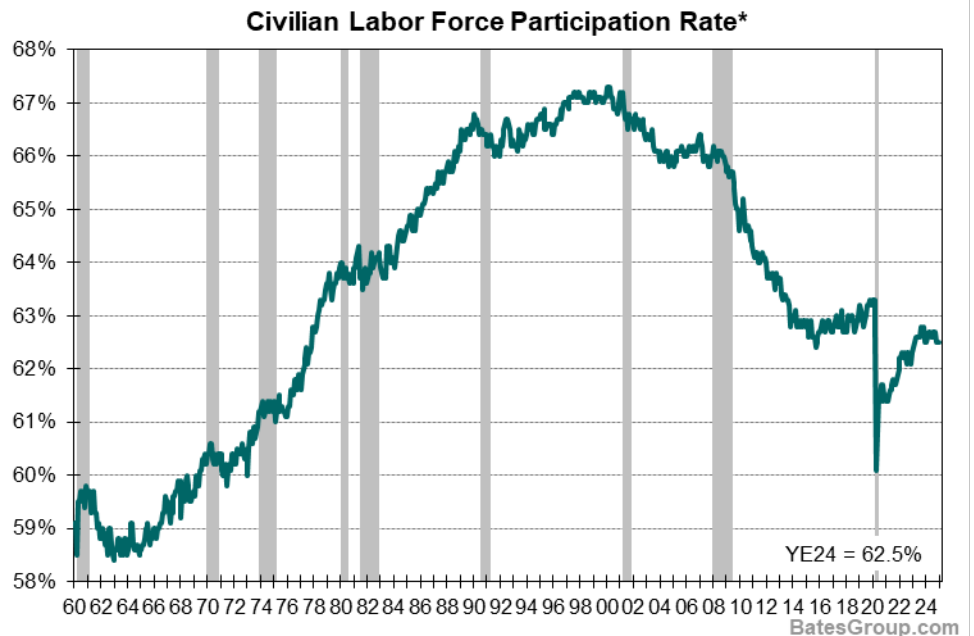


* Shaded areas represent recessions
Source: Bureau of Labor Statistics

After declining from the peak set in 2010, the average duration of unemployment spiked in 2020. Since that time, the average duration of unemployment has continued to trend lower. In December 2024 it was at 23.7 weeks.



The civilian labor force participation rate declined from the 1980-2000 period in large part due to secular changes. Beginning in the 2000s, baby boomers began reaching retirement age and started dropping out of the labor force. However, other changes also accounted for the decline. Life cycle or generational changes have recently led to less men participating in the labor force compared to earlier generations.

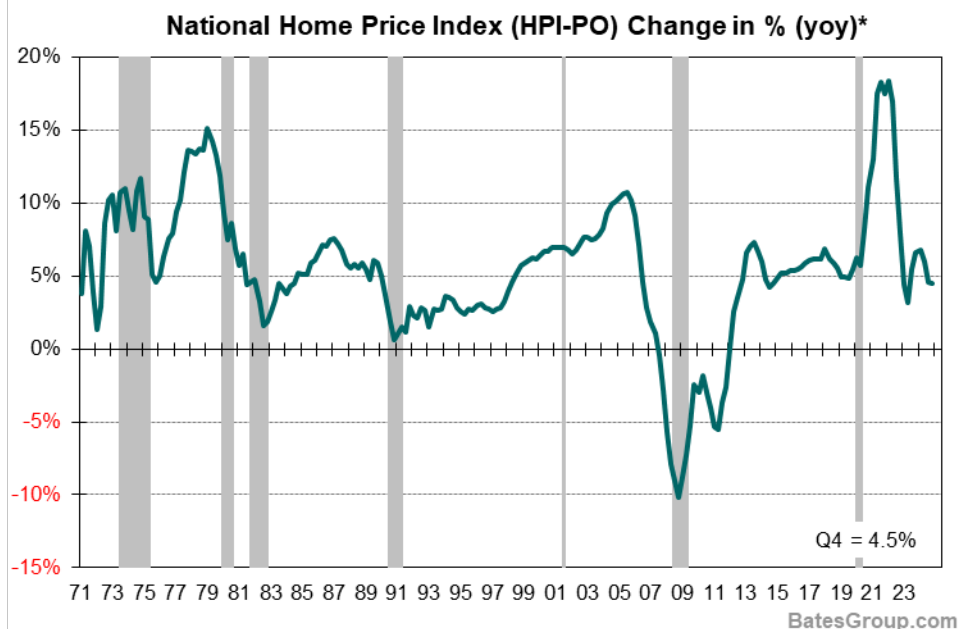


* Shaded areas represent recessions
Source: Bureau of Labor Statistics

Housing

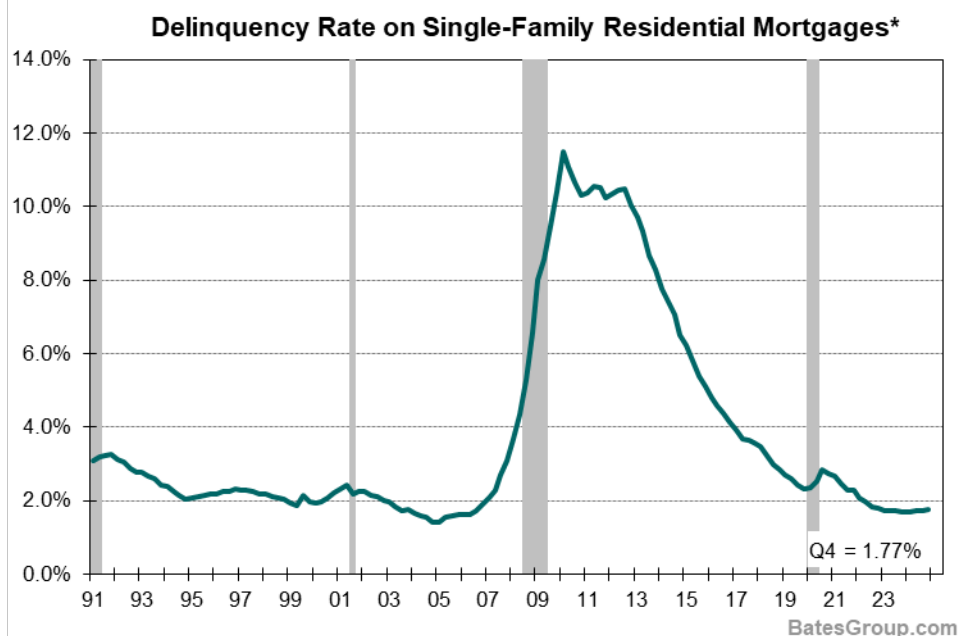
Housing price appreciation (purchases only) remained solid in 2024, rising 4.5% year-over-year (yoy) in the last quarter of 2024.

Of the nine census divisions, the Middle Atlantic region experienced the strongest gain, up 7.1% yoy. The weakest division was the West South Central region where prices rose just 2.3% yoy.



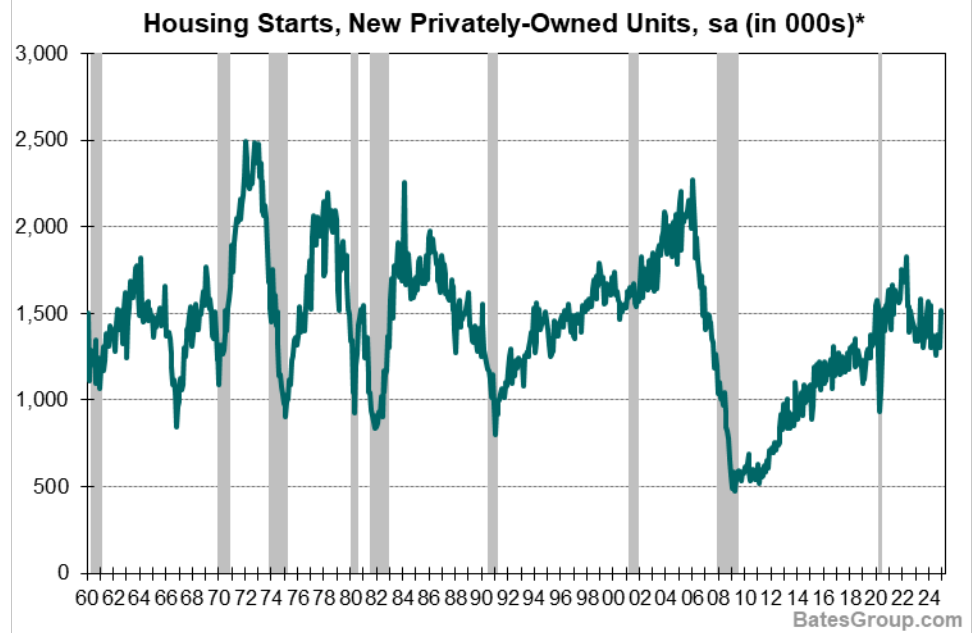
According to the Federal Reserve, delinquency rates on single-family residential mortgages trended up during the year, ending Q4 at 1.77% compared to 1.69% at the end of 2023.

In contrast, Fannie Mae's serious delinquency rate for single-family homes was 0.56%, virtually unchanged from the prior year.



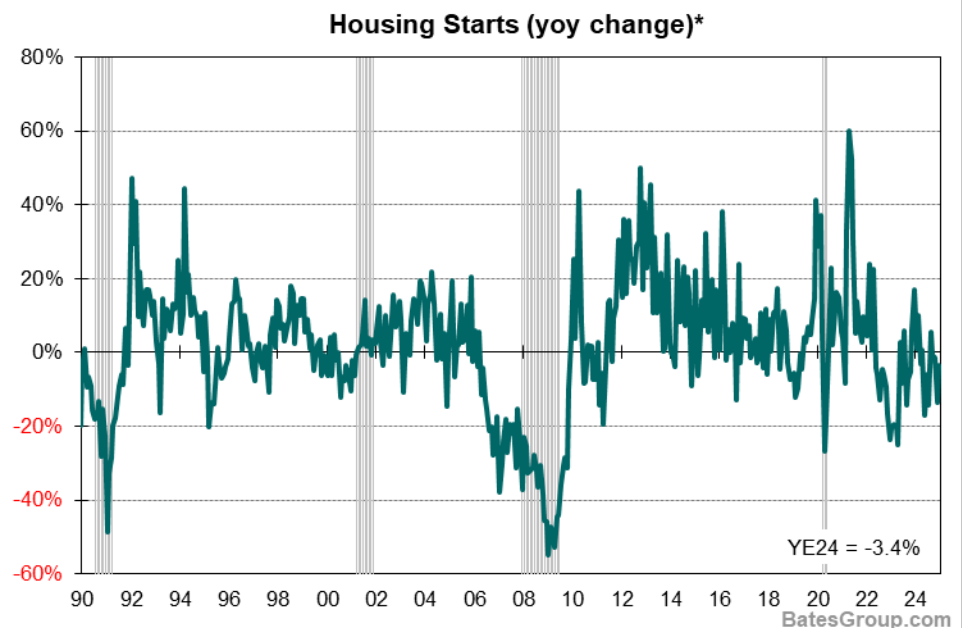
* Shaded areas represent recessions
Source: FHFA, Federal Reserve, Bloomberg

The number of new home constructions fell slightly in 2024 compared to the previous year. In December 1.51 million units were started compared to 1.57 million units a year earlier.



On an annual basis, housing starts fell 3.4% in December from a year earlier.

However, the gains were not felt everywhere. Housing starts in the Northeast and Midwest were up 14.0% and 5.9% respectively. In contrast, housing starts in the West were down 6.3%, and down 6.5% in the South.



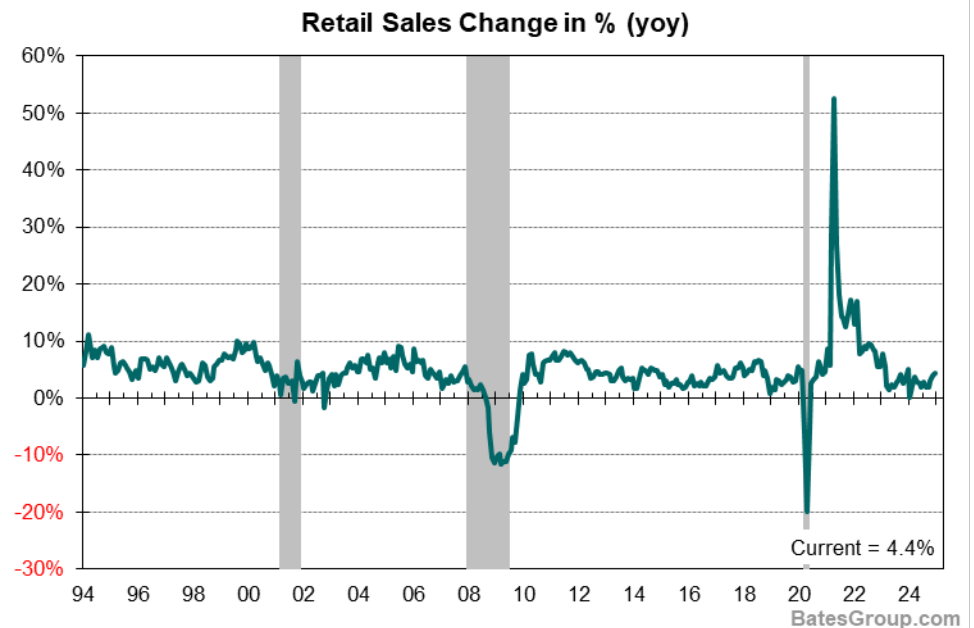
* Shaded areas represent recessions
Source: Census Bureau, HUD

The Consumer

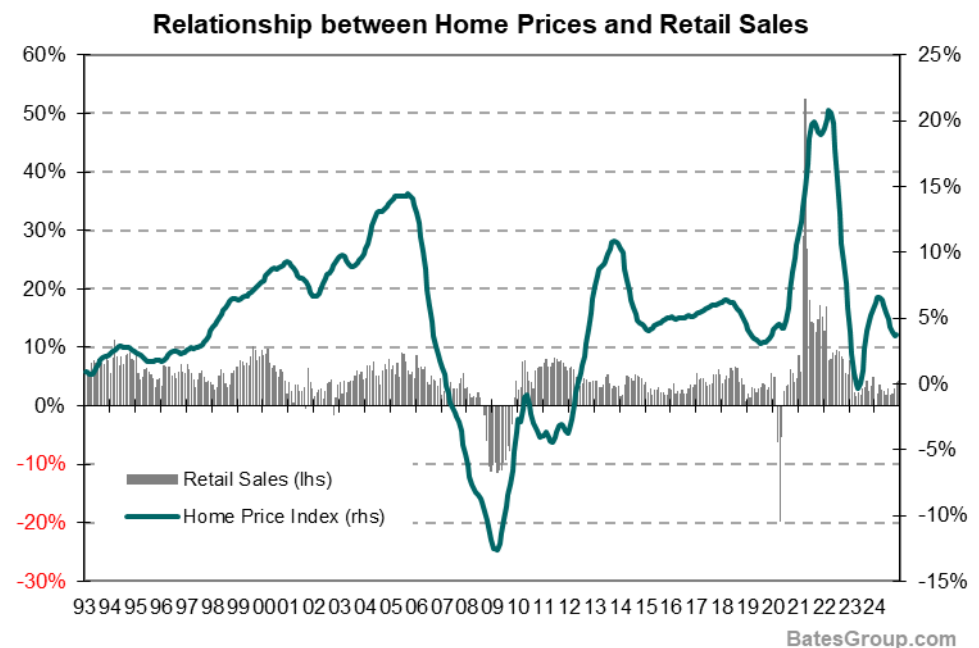
In the last month of 2024, the advance estimate of retail sales increased 0.7% over the previous month, while year-over-year (yoy) retail sales increased an estimated 4.4%.

On a 12-month basis, non-store retailers showed the largest gain, up 8.2%, while food services and bars were up 4.6%.

Gas station sales were the weakest, down 2.8%, followed by sporting goods, hobby, and book store sales with a 2.7% yoy decline.



The chart to the right shows the relationship between home prices and retail sales.

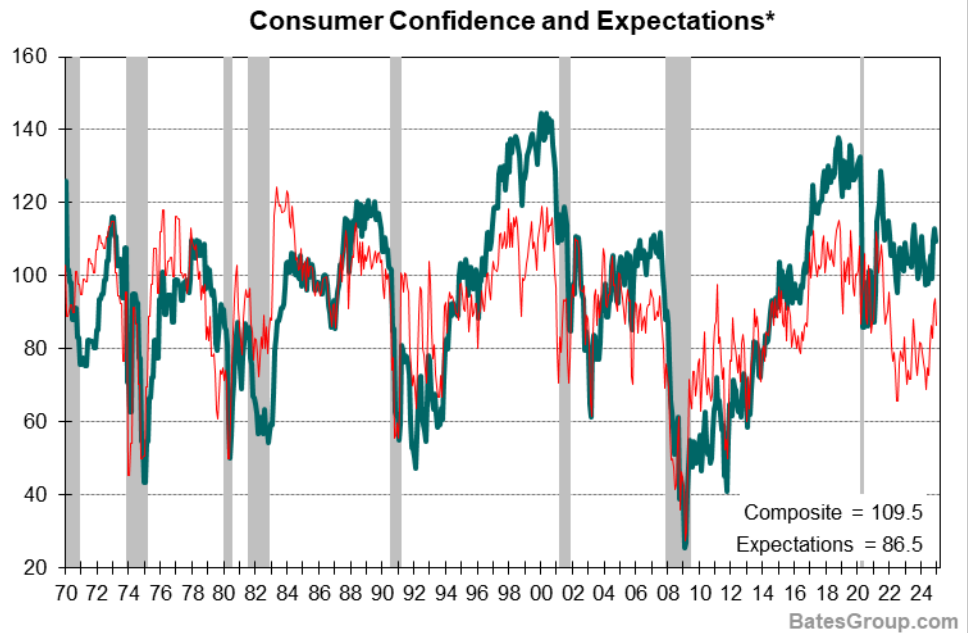


* Shaded areas represent recessions
Source: U.S. Census Bureau, FHFA

Consumer confidence increased in December to 109, down from 112 in the prior month.

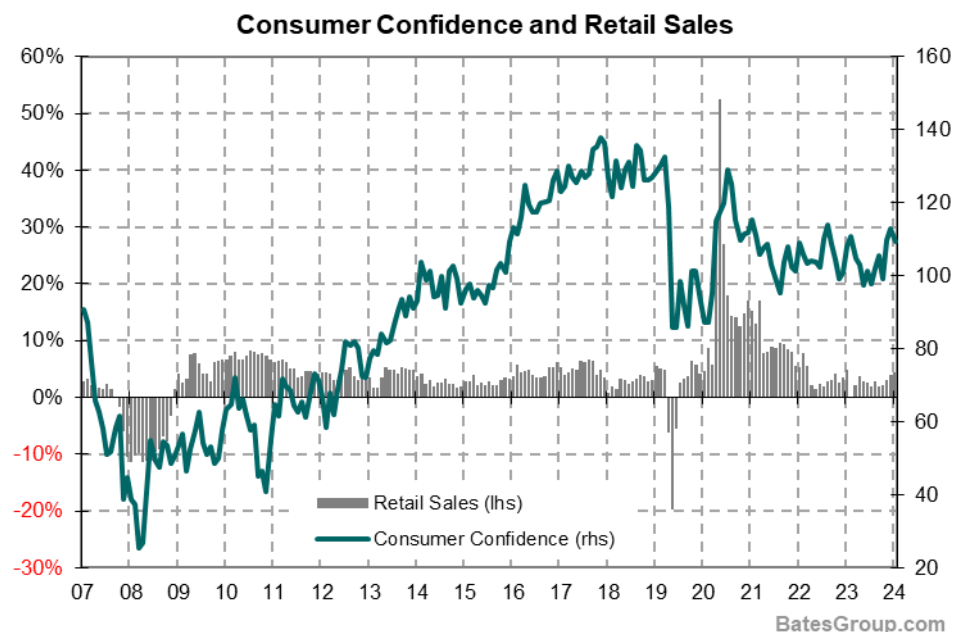
The consumer expectations index declined to 86 in December. According to the Conference Board, the index is “just above the threshold of 80 that usually signals a recession ahead.”

With consumer spending accounting for roughly 70% of economic activity, consumer confidence is a key metric for gauging spending trends.



As the chart to the right highlights, consumer confidence tends to be a good barometer of retail spending levels.

Consumer spending accounts for roughly 70% of economic activity, and the consumer confidence measure is a key metric for gauging spending and economic trends.

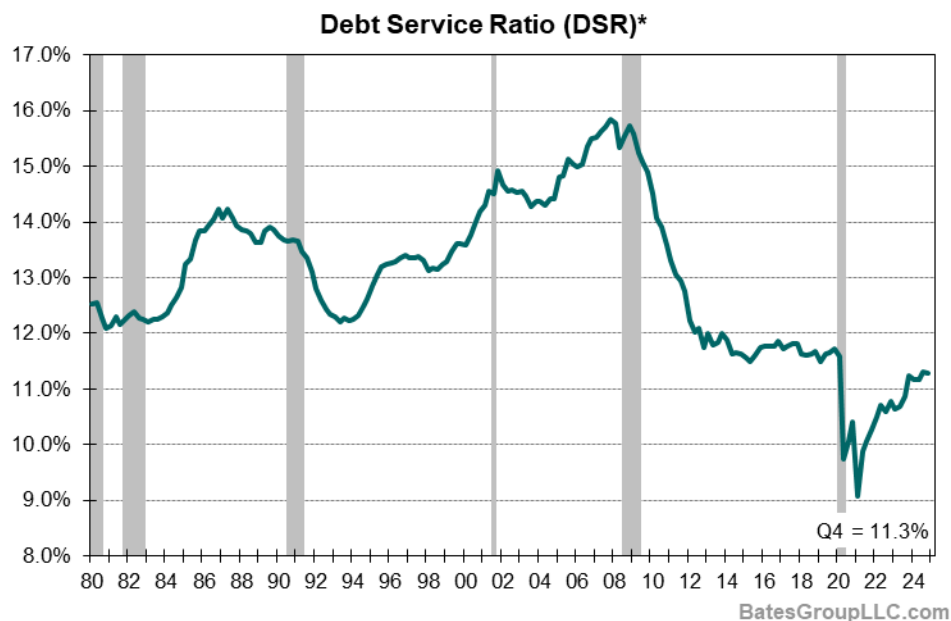


* Shaded areas represent recessions

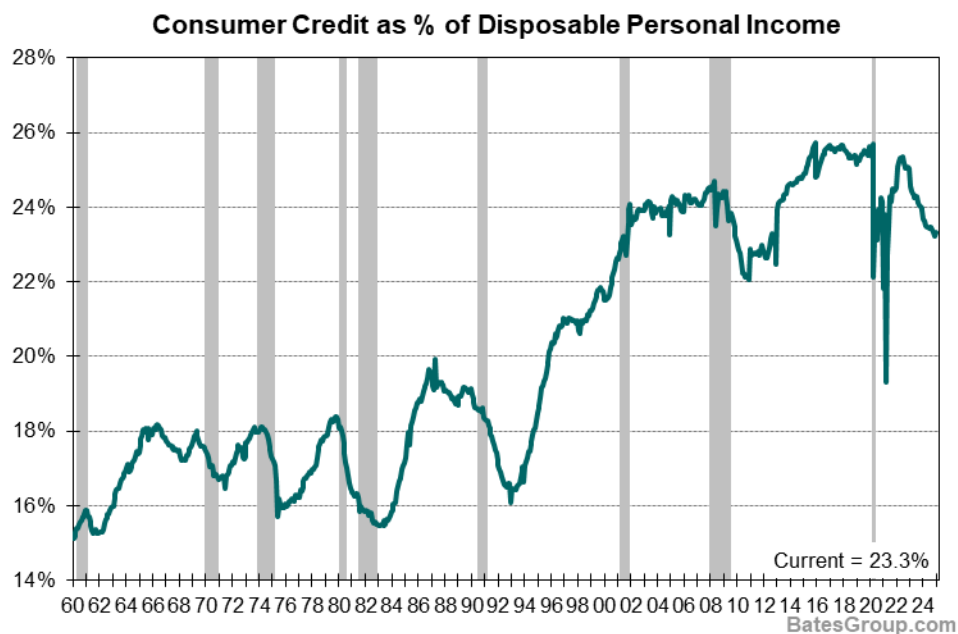
Source: The Conference Board, U.S. Census Bureau

The Federal Reserve's Debt Service Ratio (DSR) is an estimate of total required household debt payments as a percentage of total disposable income.

During the pandemic the debt level fell to the lowest level since the Federal Reserve began tabulating the data but has been rising again since 2022.



After significant household deleveraging during the credit crisis in 2008-2010, consumer credit expanded in the 2013-2019 period. That all changed in early 2020 as pandemic-fueled financial fears drove consumer credit levels sharply lower.

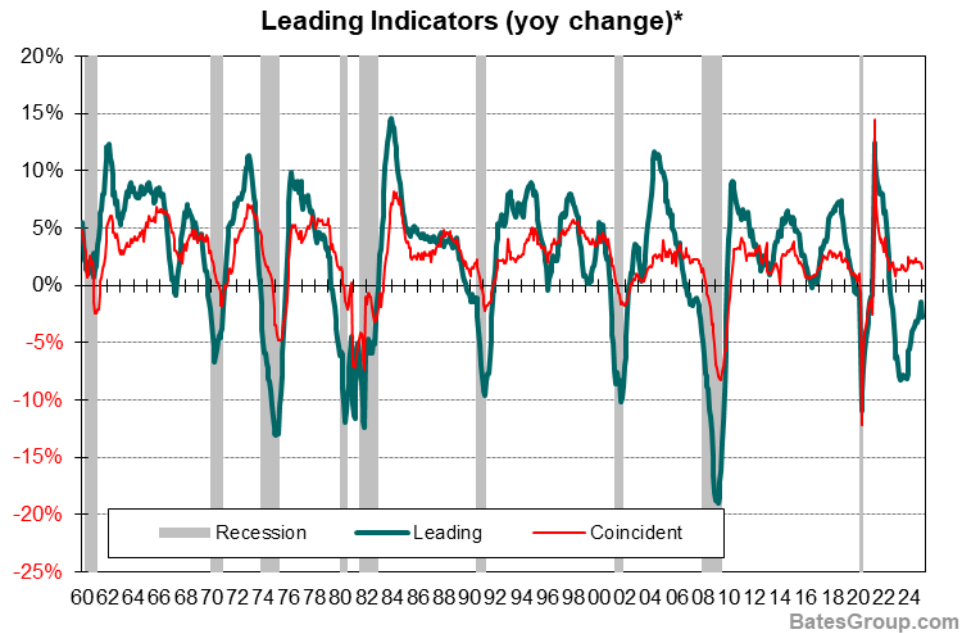


* Shaded areas represent recessions
Source: Federal Reserve

Industry Indicators

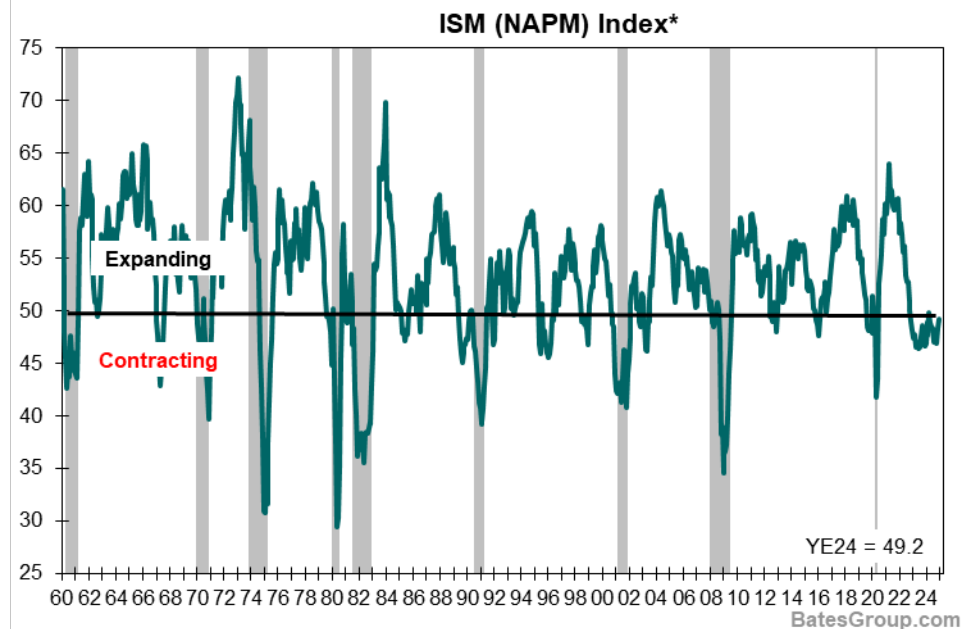
In a sign that the U.S. economy may be slowing, the index of leading indicators declined to 101.8 in December, from 104.7 at the end of 2023.

According to the Conference Board, a number of factors contributed to the decline including low consumer confidence about future business conditions. Still, half of the leading indicators made positive contributions to the Index in December.



The Institute for Supply Management Index, a gauge of the health of the manufacturing sector, continued to remain in contraction territory at 49.2 in December.

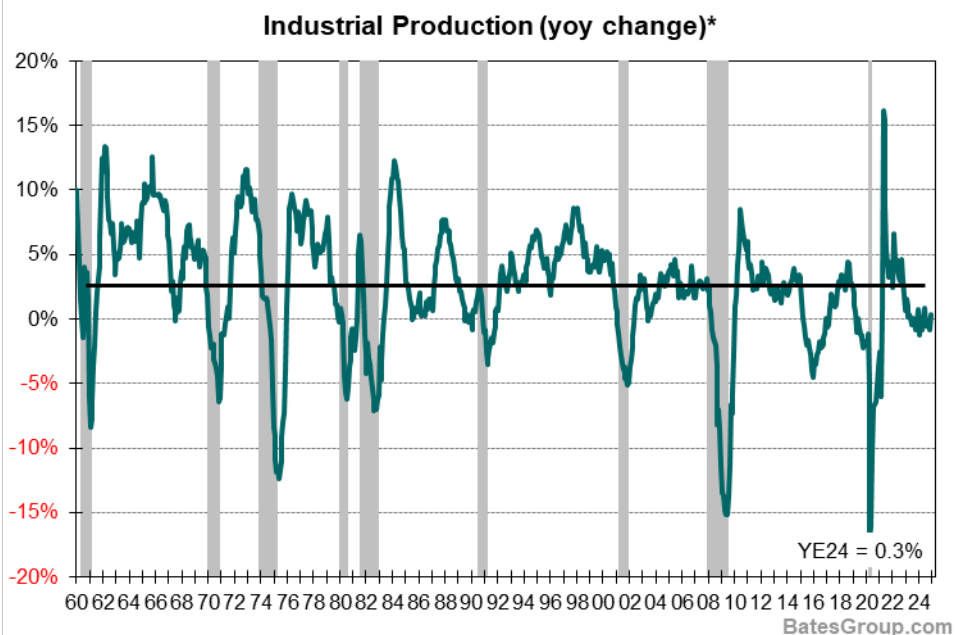
According to ISM, a reading below 50 represents a contraction in manufacturing activity.



* Shaded areas represent recessions

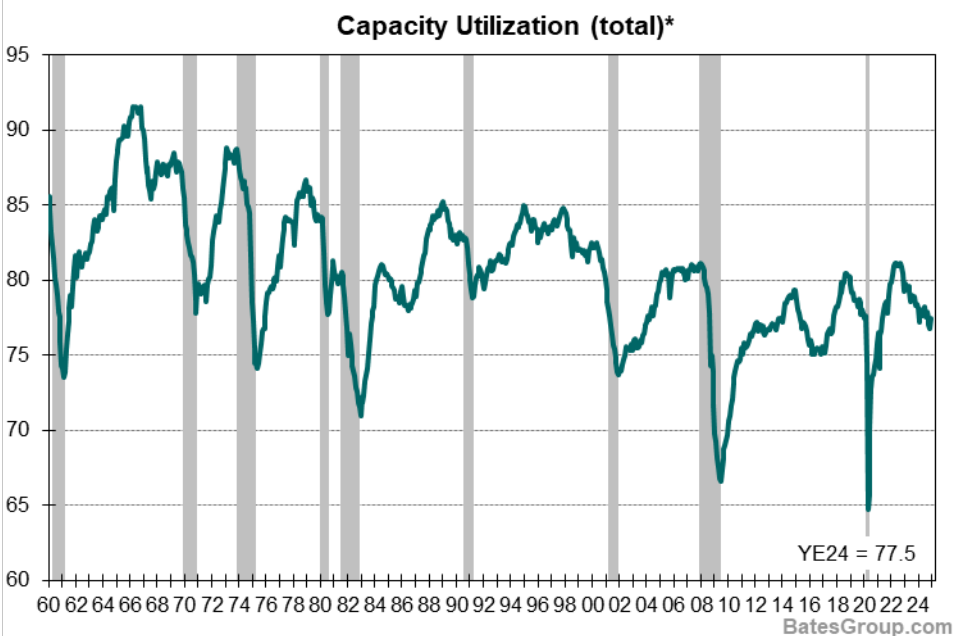
Source: The Conference Board, Institute for Supply Management

Industrial production continued to remain virtually unchanged through 2024, with the index at 103.2 in December. Year-over-year the index was up just 0.3% from December 2023.



In December, the utilization rate was 77.5% which was below the long-term average of 79.7%.

The mining utilization rate was 90.6% while utilities was 70.8%. Manufacturing utilization was 76.4%.

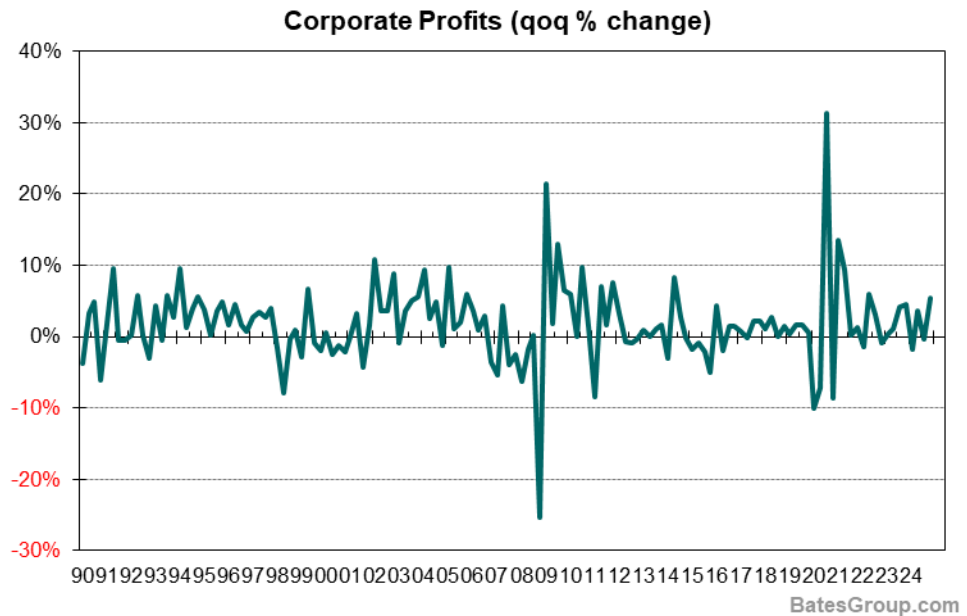


* Shaded areas represent recessions
Source: Federal Reserve

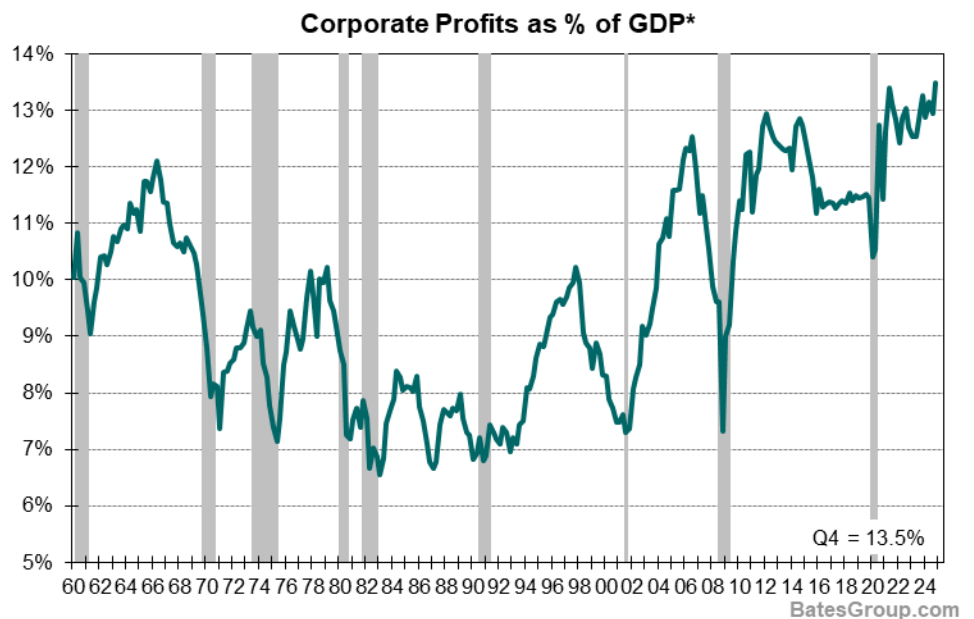
Corporate Profits

In the last quarter of the year overall corporate profits increased 5.4% to approximately \$4,007 billion. Domestically, corporate profits were up 3.6%

Profits for domestic financial corporations increased \$69.4 billion, and profits for domestic nonfinancial companies were up \$53.1 billion in the fourth quarter of 2024.



Corporate profit margins as measured by the ratio of corporate profits to GDP increased to 13.5% in the fourth quarter of 2024.



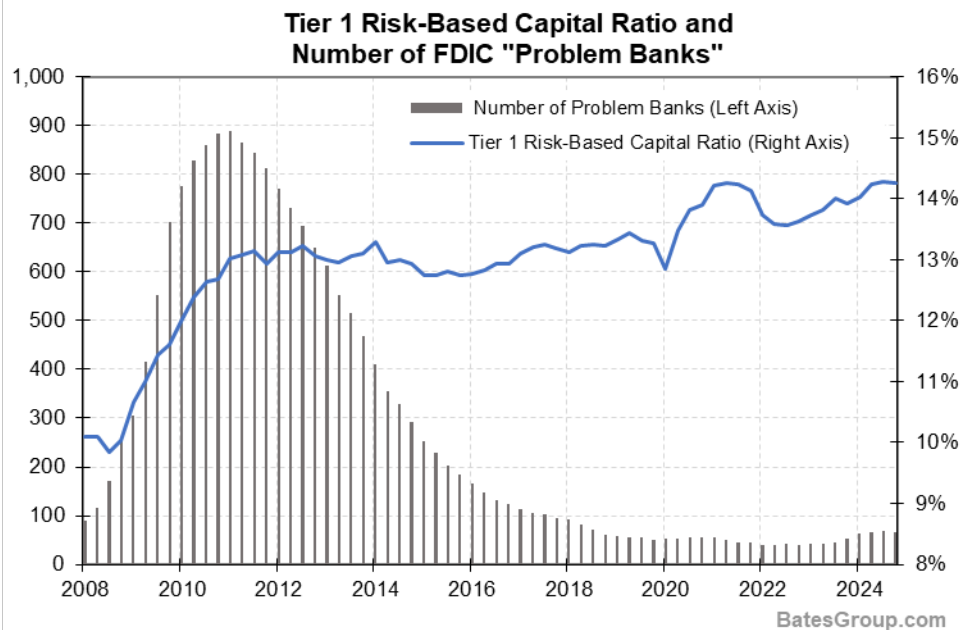
* Shaded areas represent recessions
Source: Bureau of Economic Analysis

Banking Industry

Capital ratios remained constant in 2024, and the banking industry's financial strength remained solid with risk-based Tier 1 capital ratios above 14%.

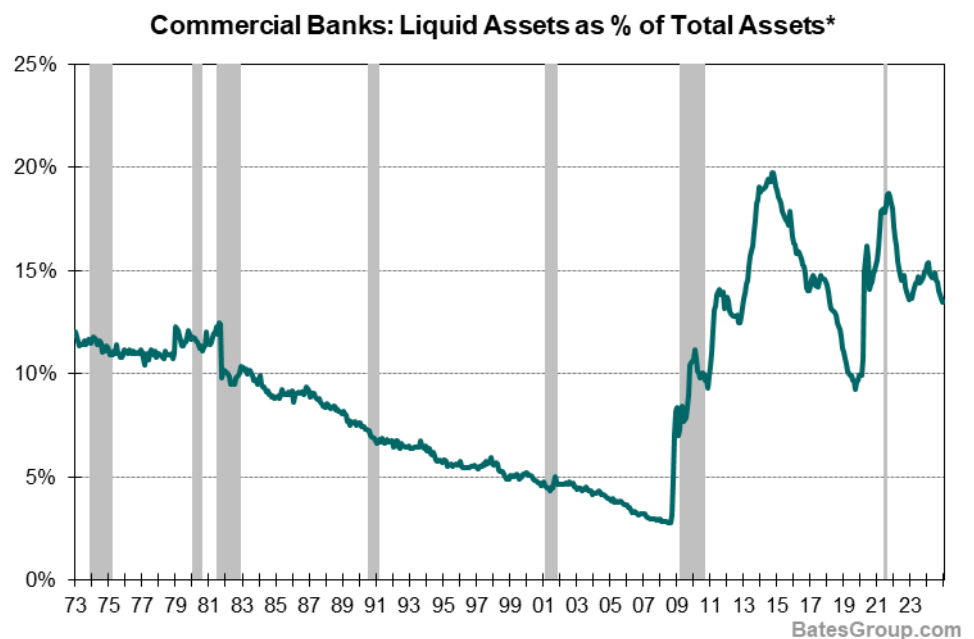
However, the number of problem FDIC institutions ticked up in the fourth quarter of 2024 to 66 from 52 at the end of 2023.

A problem bank is one that has a CAMELS composite rating of 3, 4 or 5 signifying financial, managerial or operational weakness.



Aggregate liquidity ratios for commercial banks, defined as cash and CE as a percentage of total assets, declined in December 2024 to 13.4% from 15.0% a year earlier.

Cash as a percent of total deposits also declined in 2024, ending 2024 at 17.7% compared to 20.0% a year earlier.



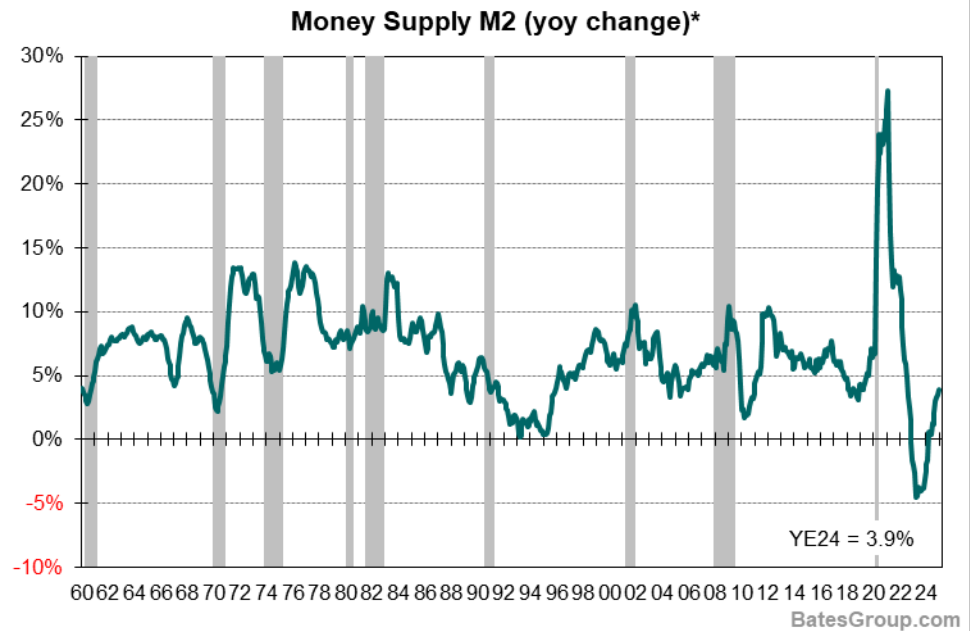
* Shaded areas represent recessions

Source: Federal Reserve, FDIC, OCC Comptroller's Handbook, Problem Bank Supervision, September 2021.

Money Supply

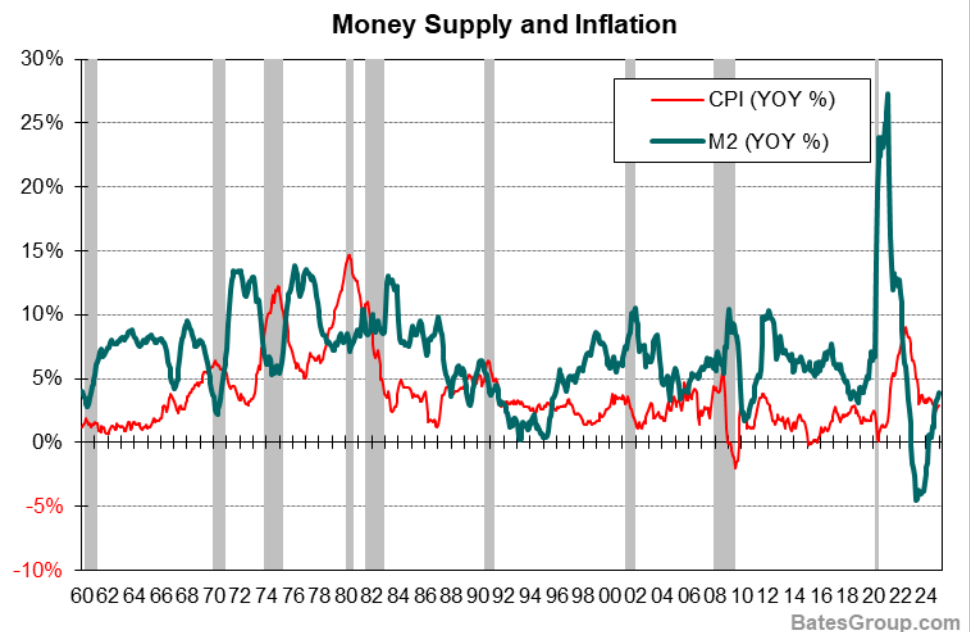
In 2022, M2 money supply experienced one of its steepest drops in history following one of the most rapid increases in history.

The growth in money supply turned positive in 2024 as the Federal Reserve began to relax its restrictive policies aimed at reducing inflation.



Contrary to popular belief money supply, although one of the factors, is not the determining factor in inflationary growth.

As the chart to the right shows, there is a low correlation between growth in M2 money supply and growth in inflation. Even adjusting for a time lag (i.e. money supply growth precedes inflation changes by 6 months or a year) the correlation, or relationship, is still weak.



Source: Federal Reserve, U.S. Bureau of Labor Statistics, Bates Research

Additional information is available upon request. Copyright © 2025, Bates Group LLC. All rights reserved.






No part of this report may be reproduced in any manner without written permission of Bates Group LLC. The information contained in this report is the opinion of the individual author only; Bates Group LLC does not endorse such views and is not liable for them. You should always seek the assistance of your own financial, legal, tax, and other professional advisors who know your particular situation for advice on investments, your taxes, the law, and any other business and professional matters that affect you. This report provides general information that may not be applicable to your situation. At any time or from time to time Bates Group LLC or its principals or affiliates may have been employed by or provided management, consulting, or other services to one or more companies mentioned in this report. Nothing in this report shall be construed as an offer to purchase or sell any securities. THIS REPORT IS PROVIDED ON AN "AS IS" BASIS AND AS OF THE DATE OF PUBLICATION ONLY, WITHOUT ANY OBLIGATION TO UPDATE. BATES GROUP LLC DISCLAIMS ANY AND ALL REPRESENTATIONS AND WARRANTIES, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION, THOSE RELATING TO COMPLETENESS, ACCURACY, TIMELINESS, NON-INFRINGEMENT, OR FITNESS FOR A PARTICULAR PURPOSE.

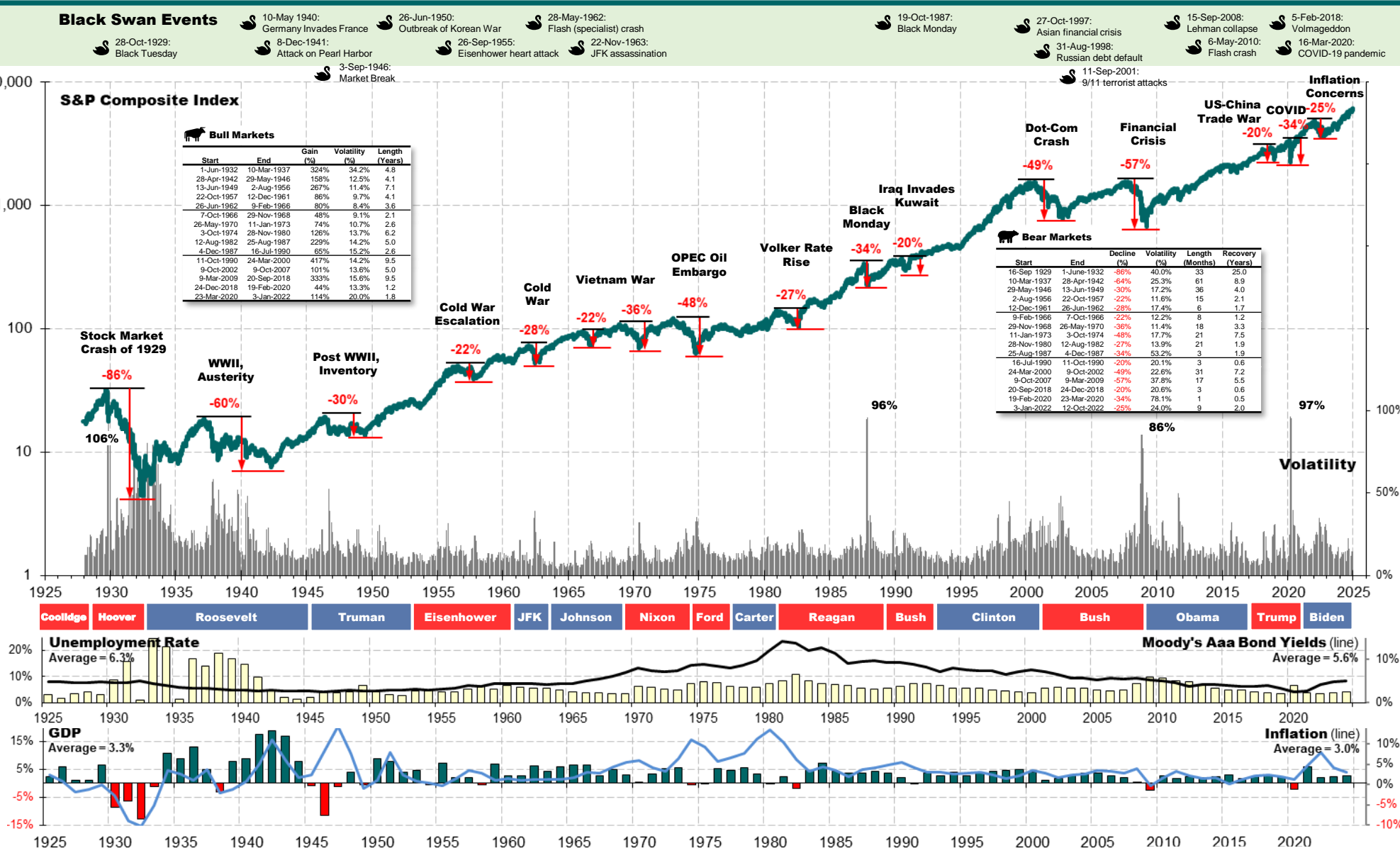
Bates Group LLC | 2 Lincoln Center 10220 SW Greenburg Road, Suite 200 | Portland OR 97223 | Tel: 503.670.7772

<http://BatesGroup.com> | GKyle@BatesGroup.com



A BRIEF HISTORY OF THE U.S. STOCK MARKET & THE ECONOMY

 Bull Markets	Avg. Length:	4.6 years	 GDP (avg.)	3.3%
	Avg. Gain:	164%	 Inflation (avg.)	3.0%
 Bear Markets	Avg. Length:	18 months	 Unemployment (avg.)	6.3%
	Avg. Decline:	-37%		
	Avg. Volatility:	26%		



Sources: S&P 500 Composite Index: Bloomberg, LP. The S&P 90 Index was replaced by the S&P 500 Index on March 4, 1957. Volatility: Bear and bull market tables based on annualized standard deviation for the period. Chart based on 20-day moving average annualized standard deviation. Unemployment Rate: Bureau of Labor Statistics. Moody's Corporate Aaa Bond Yield: The Federal Reserve Bank of St. Louis (FRED). GDP: Bureau of Economic Analysis. Inflation: Bureau of Labor Statistics. Bear Markets: Decline and length based on market peak to trough. Recovery based on time to reach pre-bear market level. Bull Markets: Gain and length based on market trough to peak. © 2025 Bates Group LLC. All rights reserved. No part of this graphic may be reproduced in any manner without written permission. Prepared by Greg Kyle

