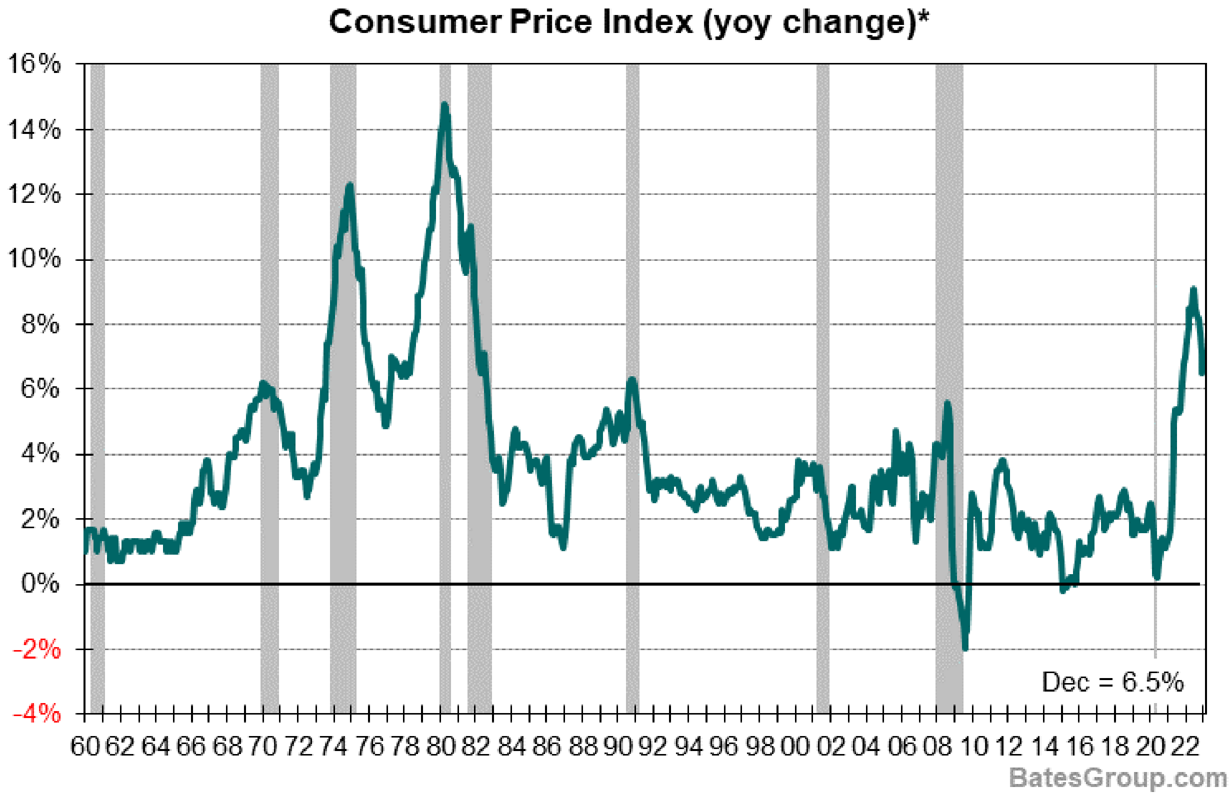
U.S. Chartbook

Economic and Capital Markets Analysis

2022 Year in Review

Inflation, Inflation, Inflation!



** Shaded areas represent recessions*
Source: U.S. Bureau of Labor Statistics

Greg Kyle

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ANOTHER YEAR FOR THE HISTORY BOOKS

Inflation was the Buzzword of the Year

If there's one phrase that can describe 2022 it is "Inflation, Inflation, Inflation!" The global pandemic led to a number of ports around the world, particularly in China, being either shut down, or significantly slowed to a virtual crawl. This led to unprecedented supply constraints not just for imported consumer goods and commodities but also for parts used in anything ranging from cars and industrial equipment to chips and even for items needed for housing and new construction. As a result, inflation in the U.S. rose to one of the highest levels in nearly 40 years, finishing the year at 6.5%. The last time annual inflation was above 6% was in the early 80s.

The good news for 2023 is that spot rates for ocean shipping have fallen nearly 80% from their pandemic high, however a large majority of U.S. companies locked in rates with long-term contracts during the COVID pandemic. This will limit how far lower shipping costs will impact inflation in the near term.

It wasn't just consumer goods which saw a dramatic rise in inflation, food across the board was also heavily impacted by a combination of domestic supply constraints and in the case of egg and chicken prices, one of the worst domestic bird flu outbreaks in U.S. history. In 2022 over 57 million chickens died, most of which were egg layers (vs. broilers). This was significant considering that the U.S. Department of Agriculture estimated that the flock of table-egg layers was roughly 320 million in early 2022. Not surprisingly, this drove egg prices up over 70% in some areas of the country. Flour and other bakery products also experienced strong price increases, rising from 14% to 23% during the year.

A Strong Employment Situation

During the COVID pandemic, U.S. workers experienced one of the worst periods for job losses in almost 100 years, but the situation quickly reversed and the jobs situation bounced back quicker than any other downturn in history. In 2022, despite two quarters of negative economic growth, the employment situation continued to improve, which raised the question of whether the U.S. experienced a recession or not.

A Recession or Not a Recession?

One of the questions that has been tossed back and forth during the year, was with two consecutive quarters of negative GDP growth, had the U.S. entered a recession? The general answer would be no, as a recession typically includes a combination of weak economic factors (i.e. negative economic growth, weak industrial production, job losses) that show depth, duration and diffusion. Specifically though, it is defined by NBER which is widely recognized as the arbiter of turning points in business cycles since at least the 1960s. In their view, the U.S. did not enter a recession in early 2022.

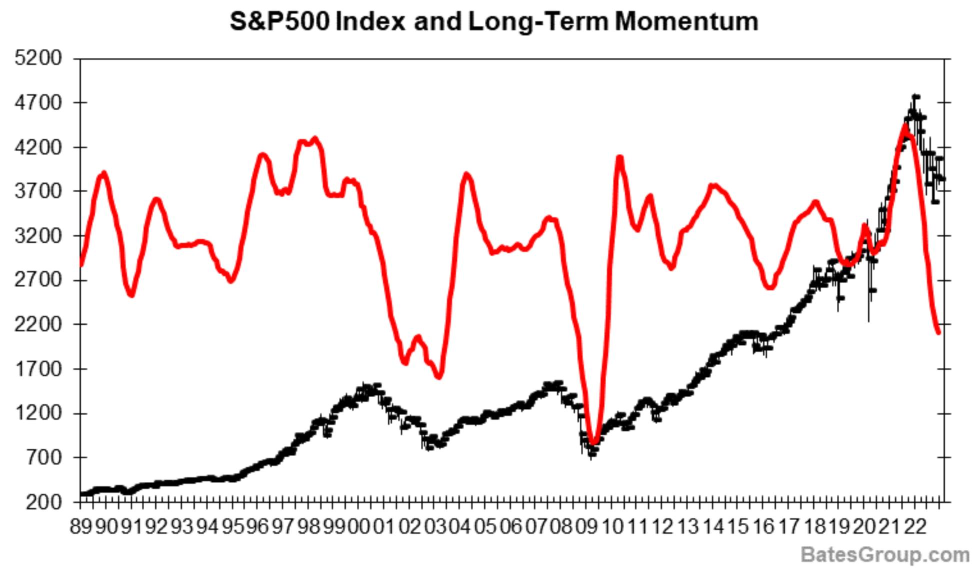
Worst Returns for Fixed Income in Nearly 100 Years

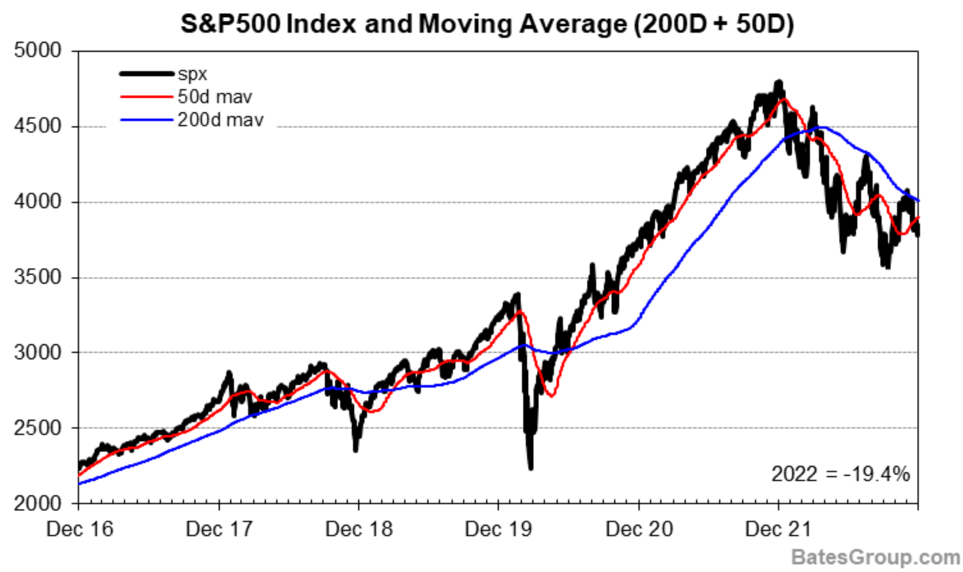
Adding to another "one for the history books," the rapid rise in interest rates, which began in March 2022, led bond returns to experience one of the worst years in nearly 100 years. Between March and December, the Federal Reserve rose the federal funds rate 400 basis points, leading long term-bonds prices to fall significantly. The reason for this is because of the inverse relationship between interest rates and bond prices. When interest rates rise, bond prices fall, particularly for long-term bonds.

Equity Markets – S&P 500 Market Trends

Equites experienced declining prices in 2022 with the broader market closing the year down 19.4%.

Overall, the S&P 500 Index was down seven of the twelve months in 2022. The fourth quarter of year was the only positive quarter of 2022 with the index rebounding 7.1% in Q4.





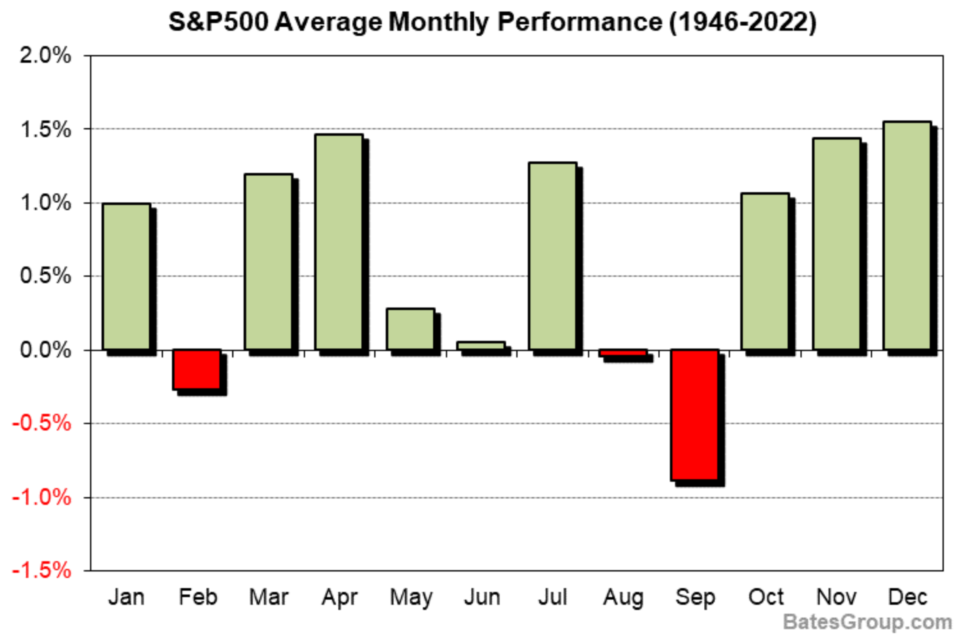
S&P 500 Monthly Performance (% change over previous month)

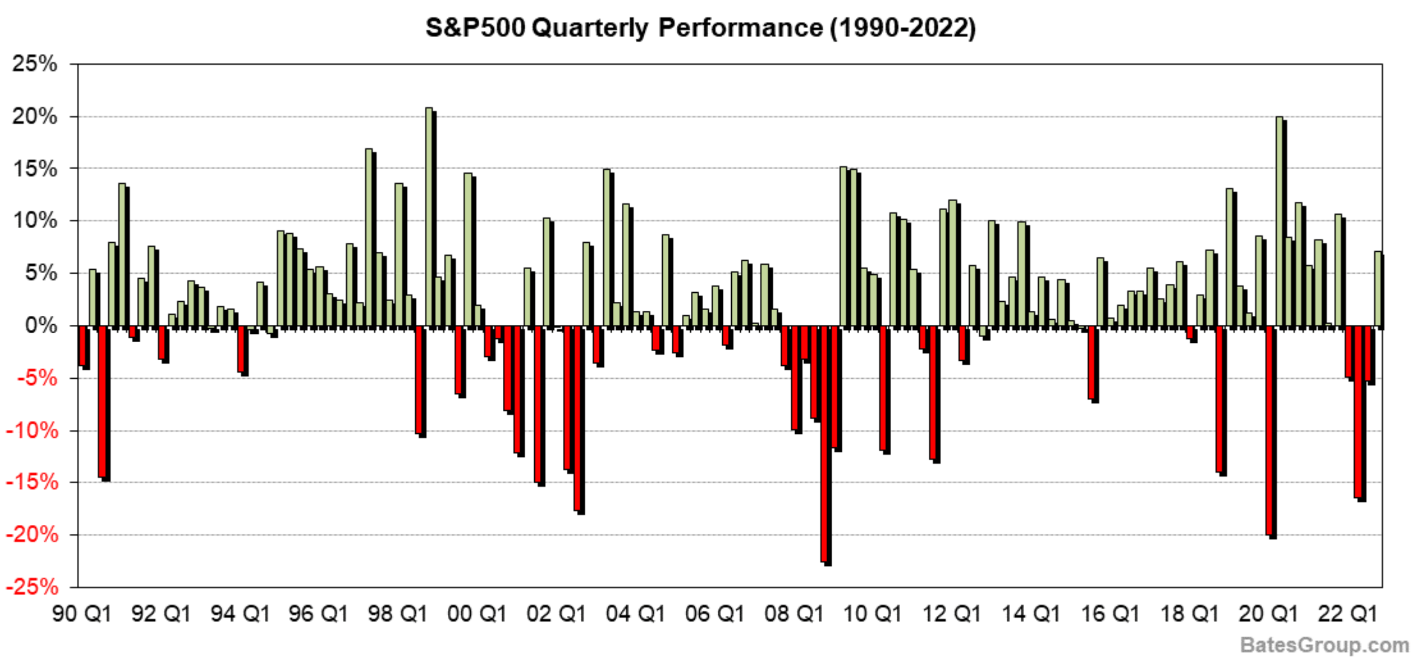
															--- 1946-2022 ---		
Month	**2009**	**2010**	**2011**	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**	**2021**	**2022**	**Avg**	**Min**	**Max**
Jan	-8.6%	-3.7%	2.3%	4.4%	5.0%	-3.6%	-3.1%	-5.1%	1.8%	5.6%	7.9%	-0.2%	-1.1%	-5.3%	1.0%	-8.6%	13.2%
Feb	-11.0%	2.9%	3.2%	4.1%	1.1%	4.3%	5.5%	-0.4%	3.7%	-3.9%	3.0%	-8.4%	2.6%	-3.1%	-0.3%	-11.0%	7.1%
Mar	8.5%	5.9%	-0.1%	3.1%	3.6%	0.7%	-1.7%	6.6%	-0.0%	-2.7%	1.8%	-12.5%	4.2%	3.6%	1.2%	-12.5%	9.7%
Apr	9.4%	1.5%	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%	-9.0%	12.7%
May	5.3%	-8.2%	-1.4%	-6.3%	2.1%	2.1%	1.0%	1.5%	1.2%	2.2%	-6.6%	4.5%	0.5%	0.0%	0.3%	-8.6%	9.2%
Jun	0.0%	-5.4%	-1.8%	4.0%	-1.5%	1.9%	-2.1%	0.1%	0.5%	0.5%	6.9%	1.8%	2.2%	-8.4%	0.1%	-8.6%	8.2%
Jul	7.4%	6.9%	-2.1%	1.3%	4.9%	-1.5%	2.0%	3.6%	1.9%	3.6%	1.3%	5.5%	2.3%	9.1%	1.3%	-7.9%	9.1%
Aug	3.4%	-4.7%	-5.7%	2.0%	-3.1%	3.8%	-6.3%	-0.1%	0.1%	3.0%	-1.8%	7.0%	2.9%	-4.2%	-0.0%	-14.6%	11.6%
Sep	3.6%	8.8%	-7.2%	2.4%	3.0%	-1.6%	-2.6%	-0.1%	1.9%	0.4%	1.7%	-3.9%	-4.8%	-9.3%	-0.9%	-14.4%	8.8%
Oct	-2.0%	3.7%	10.8%	-2.0%	4.5%	2.3%	8.3%	-1.9%	2.2%	-6.9%	2.0%	-2.8%	6.9%	8.0%	1.1%	-21.8%	16.3%
Nov	5.7%	-0.2%	-0.5%	0.3%	2.8%	2.5%	0.1%	3.4%	2.8%	1.8%	3.4%	10.8%	-0.8%	5.4%	1.4%	-11.4%	10.8%
Dec	1.8%	6.5%	0.9%	0.7%	2.4%	-0.4%	-1.8%	1.8%	1.0%	-9.2%	2.9%	3.7%	4.4%	-5.9%	1.6%	-9.2%	11.2%

On a month-to-month basis, December has historically been the strongest performing month, while September has been the weakest.

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 terms of quarterly returns, the fourth quarter has historically been the strongest quarter for the S&P 500 Index, with an average gain of 3.6% (1946-2022 average).

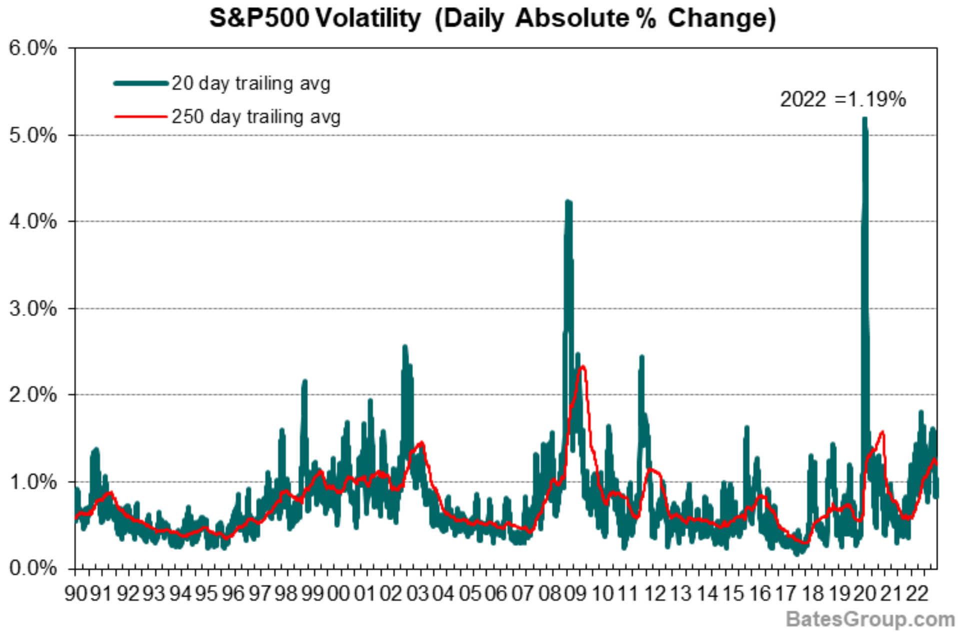




Volatility for the broader market continued to trend up in 2022 as inflation-driven recession concerns led to uncertainty in the direction of equity prices.

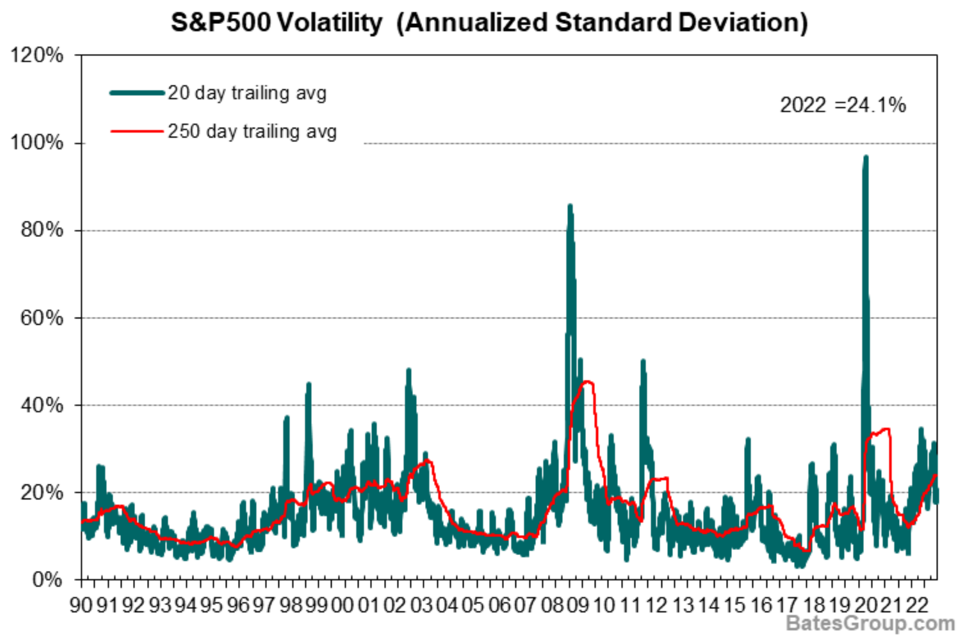
During the year, the S&P 500 index moved up or down 1.19% each day on average. This compares with average absolute daily price swings of 0.63% in 2021.

In comparison, over the past 20 years the average daily absolute price swing has been 0.62%.



In terms of annualized standard deviation, the S&P500's volatility in 2022 was 24.1%, up significantly from 2021. During 2021 the annualized standard deviation for the S&P 500 index was 13.0%.

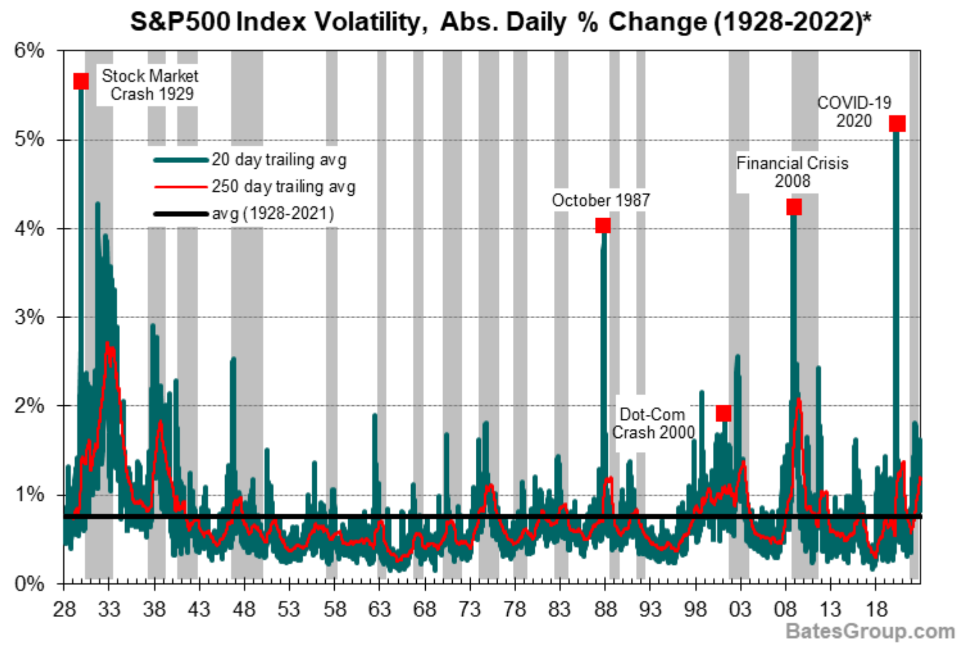
In comparison, the average volatility since 1928 has been 18.7%.



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 2022, the S&P 500 experienced 122 days of 1% or greater daily price moves. This compares to only 55 days in 2021.



A History of Bear Markets (1929-2022)

-------- Date --------		----- Index Value -----		Percent	Duration		Years to	
Start	End	Start	End	Loss	(Months)	Recession	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	--	Inflation concerns
Average		**--**	**--**	**-37%**	**18**	**Yes**	**4.8**	**--**

** Shaded areas represent bear markets*
It's unclear as of the time of publication whether the 2022 bear market has bottomed.

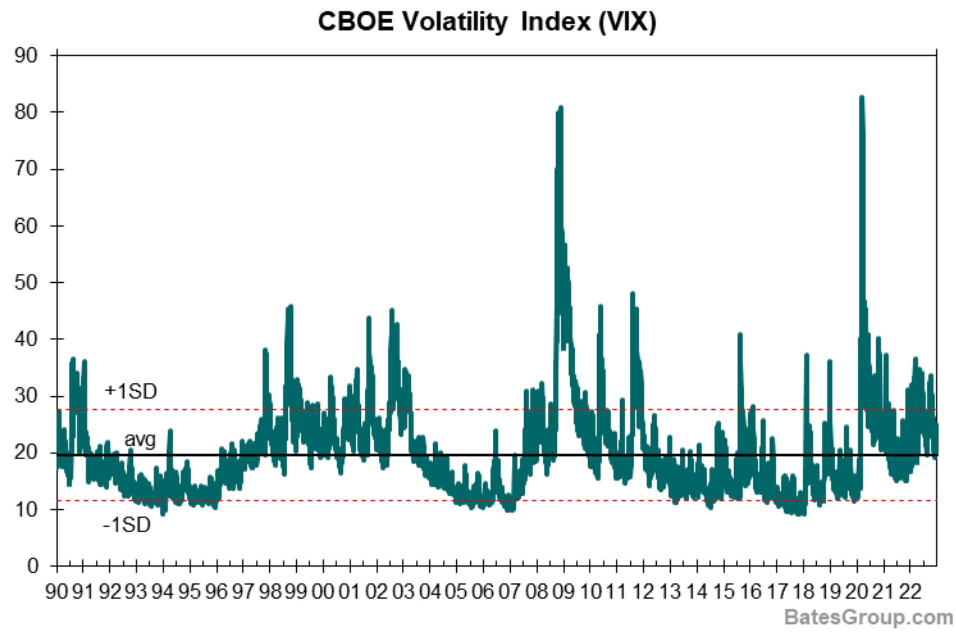
S&P 500 Historical Volatility Table*

Number of Days with Percentage Moves Greater Than …													daily avg	annualized
	<-1.0%	>1.0%	Total	<-2.0%	>2.0%	Total	<-4.0%	>4.0%	Total	<-5.0%	>5.0%	Total	abs % ch	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%
Av28-22	**30**	**32**	**62**	**9**	**8**	**17**	**2**	**2**	**3**	**1**	**1**	**2**	**0.76%**	**18.74%**

** Based on daily closing prices*

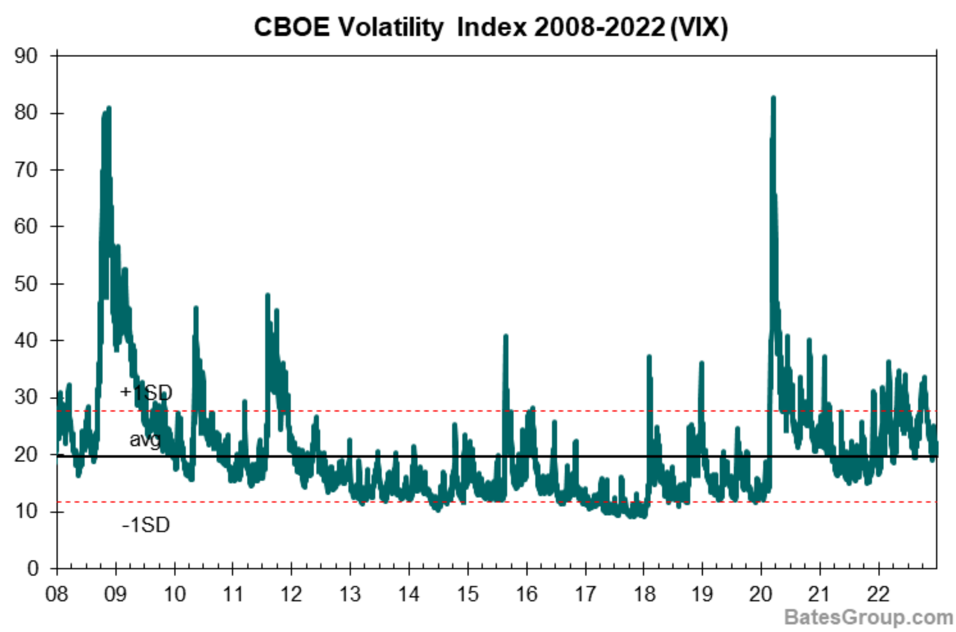
The VIX Index is a measure of *investors' expectation* of future short-term volatility and is composed of S&P 500 call and put options over a wide range of strike prices, with expirations between 23 and 37 days.

After a historic Covid-induced high in 2020, equity market volatility, as measured by the CBOE Volatility (VIX) Index, declined in 2021 but increased again in 2022 to levels above the long-term average.



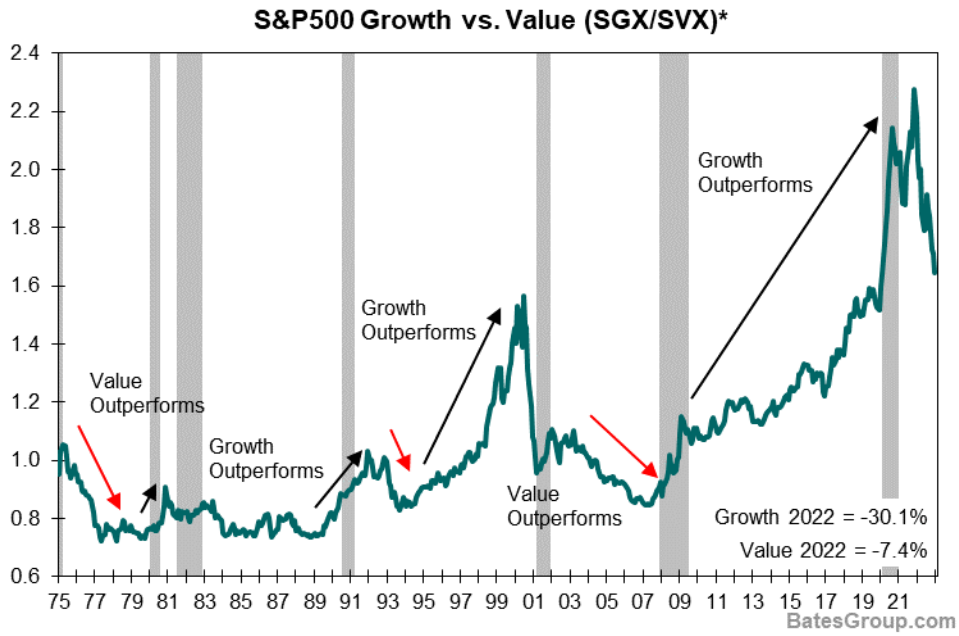
The two days with the greatest single-day increase in the history of the VIX occurred in March 2020.

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%.

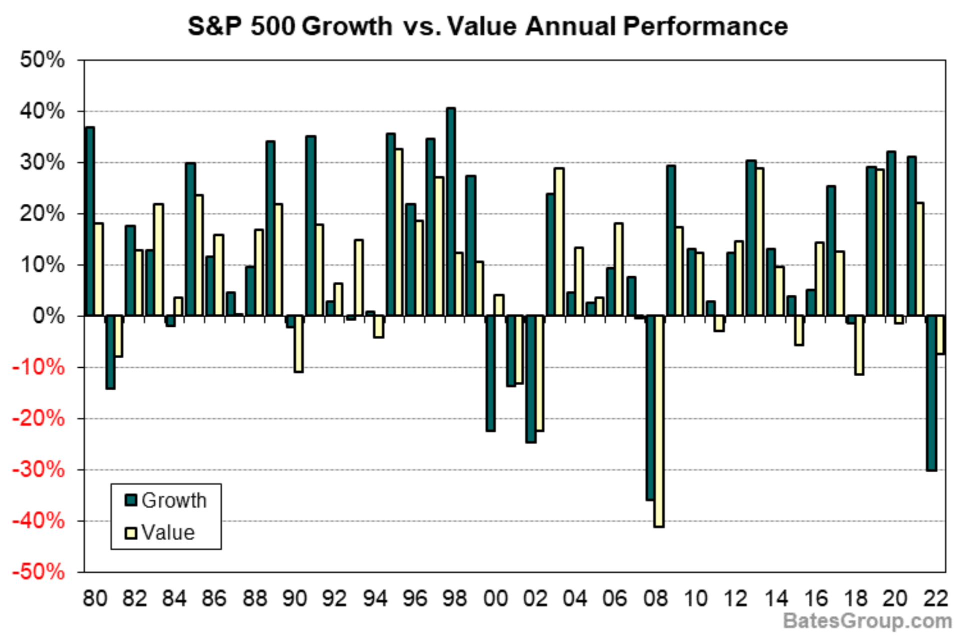


Growth vs. Value

In the trade-off between growth and value, growth stocks significantly underperformed value stocks in 2022 with the S&P Growth Index down 30% for the year. In comparison, the S&P Value Index declined 7.4%.



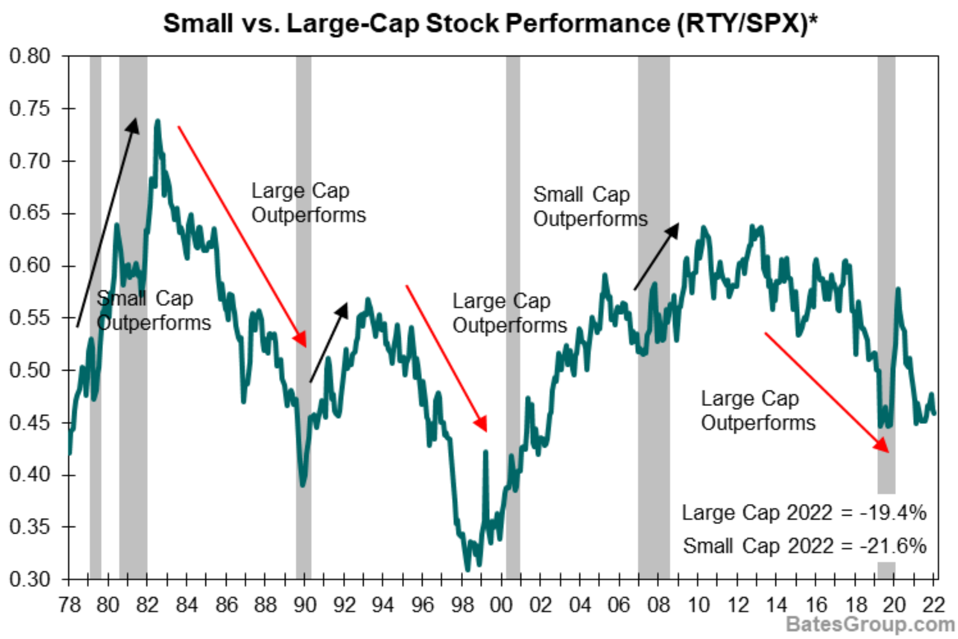
The chart to the right provides a more detailed performance comparison between growth and value styles over the past 40 years.



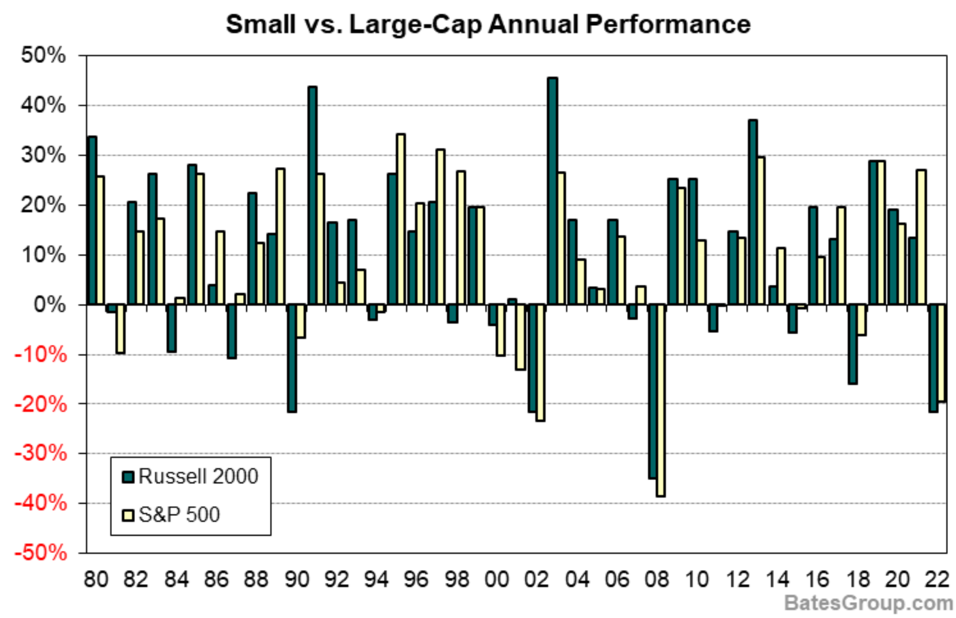
** Shaded areas represent recessions*

Large vs. Small

Large capitalization stocks, as represented by the S&P 500, fell 19.4% in 2022. In comparison, small capitalization stocks, as represented by the Russell 2000 Index, were down 21.6% 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*

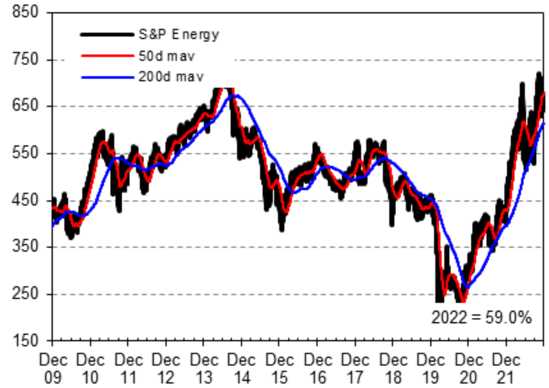
S&P 500 Sector Trends

The breadth of the stock market in 2022 was overall weak with most of the S&P 500 sectors closing in the red.

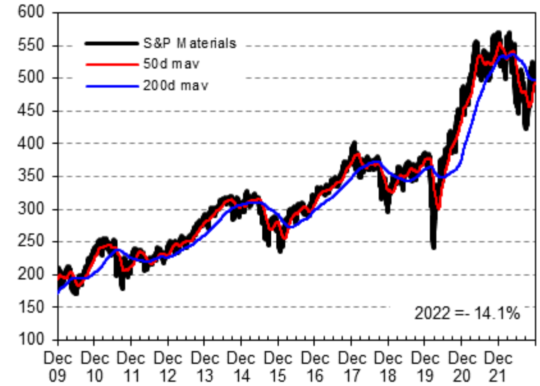
Only the Energy sector ended the year on a positive note, up a strong 59%. The Utilities sector was the second 'strongest' sector, down only 1.4% during the year.

The weakest sector was Communications which fell 40.4% in 2022. Follow-up for the worst performer of the year was Consumer Discretionary which declined 37.6% in the year.

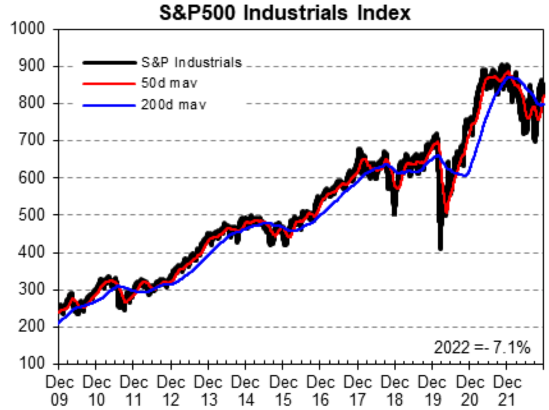
S&P500 Energy Index



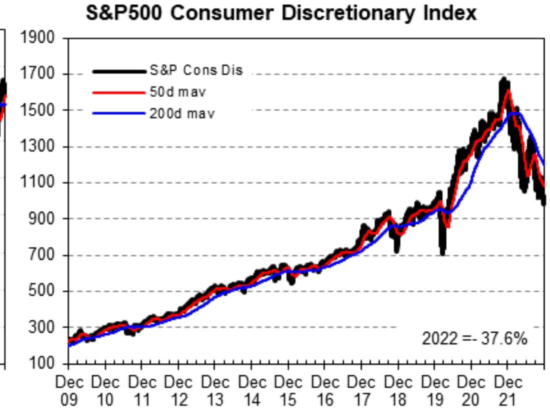
S&P500 Materials Index



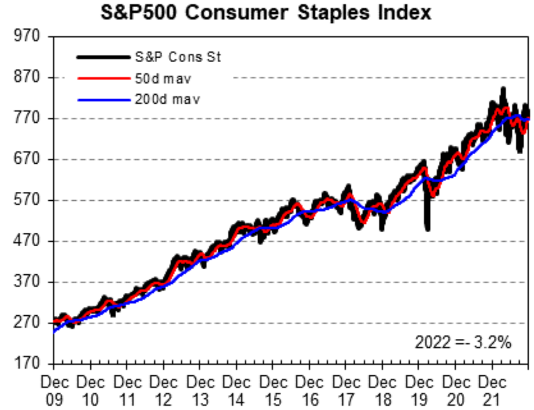
S&P500 Industrials Index



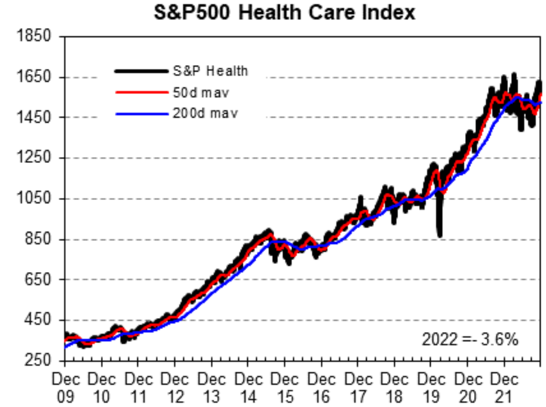
S&P500 Consumer Discretionary Index

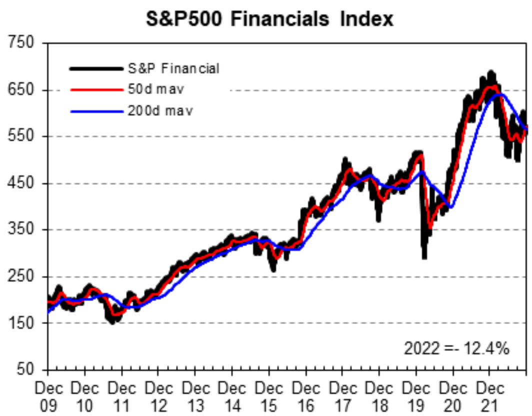


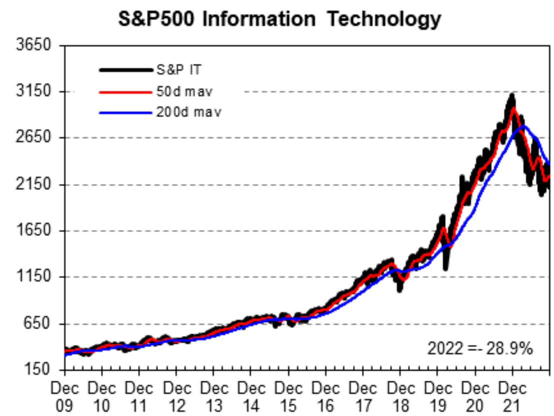
S&P500 Consumer Staples Index

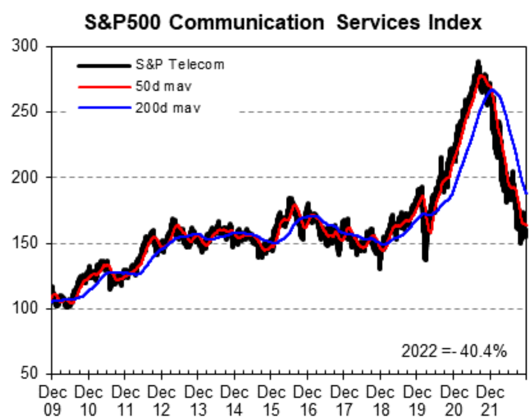


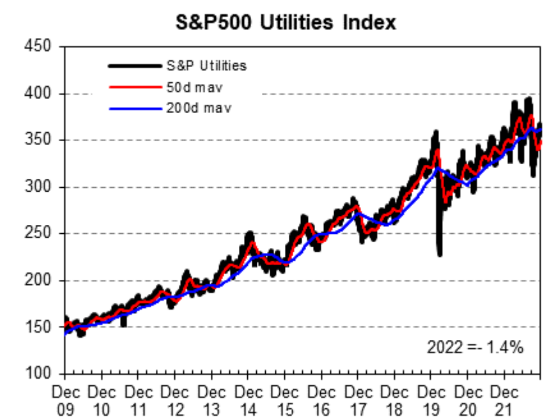
S&P500 Health Care Index




S&P500 Financials Index
S&P Financial
50d mav
200d mav
2022 =- 12.4%

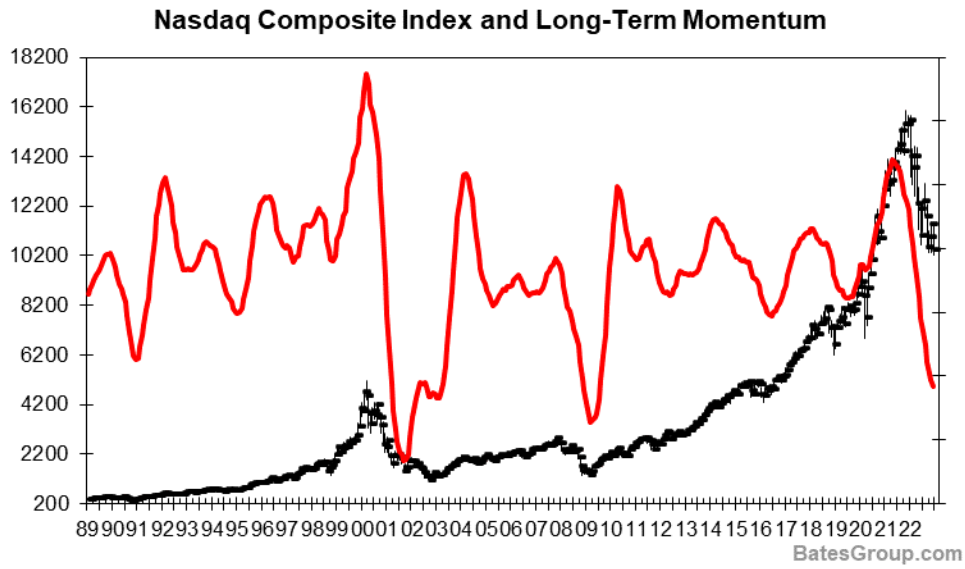

S&P500 Information Technology
S&P IT
50d mav
200d mav
2022 =- 28.9%


S&P500 Communication Services Index
S&P Telecom
50d mav
200d mav
2022 =- 40.4%

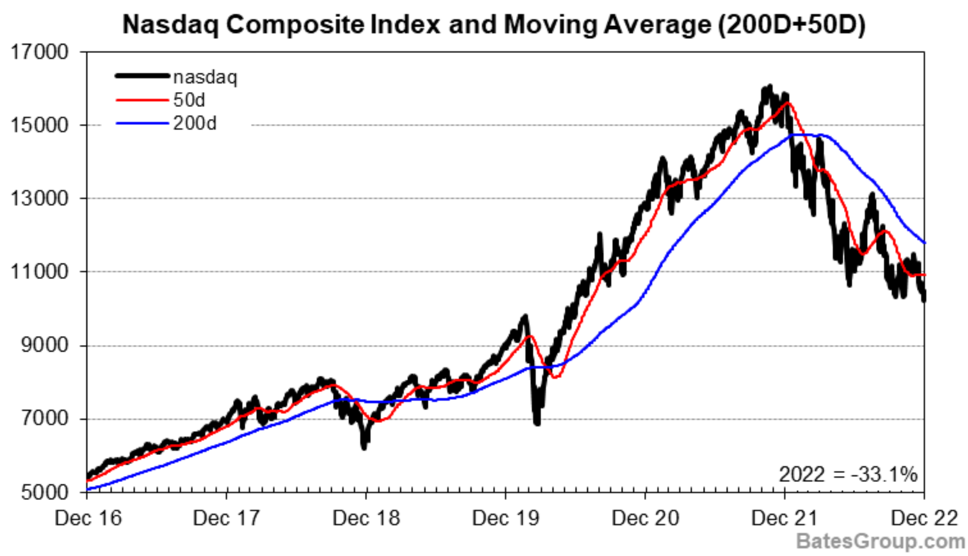

S&P500 Utilities Index
S&P Utilities
50d mav
200d mav
2022 =- 1.4%

Nasdaq Market Trends

The tech-focused Nasdaq Composite Index finished 2022 down over 33% as a slowing economy and recession concerns weighed on the tech heavy index.



In 2022 the Nasdaq Composite Index posted gains in just four of the twelve months of the year.

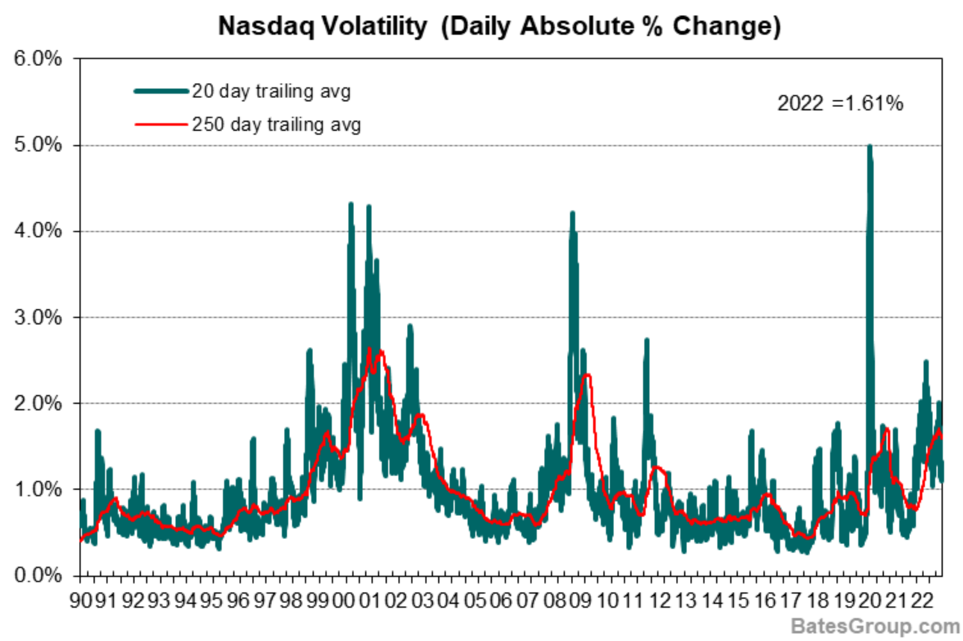


Nasdaq Monthly Performance (% change over previous month)

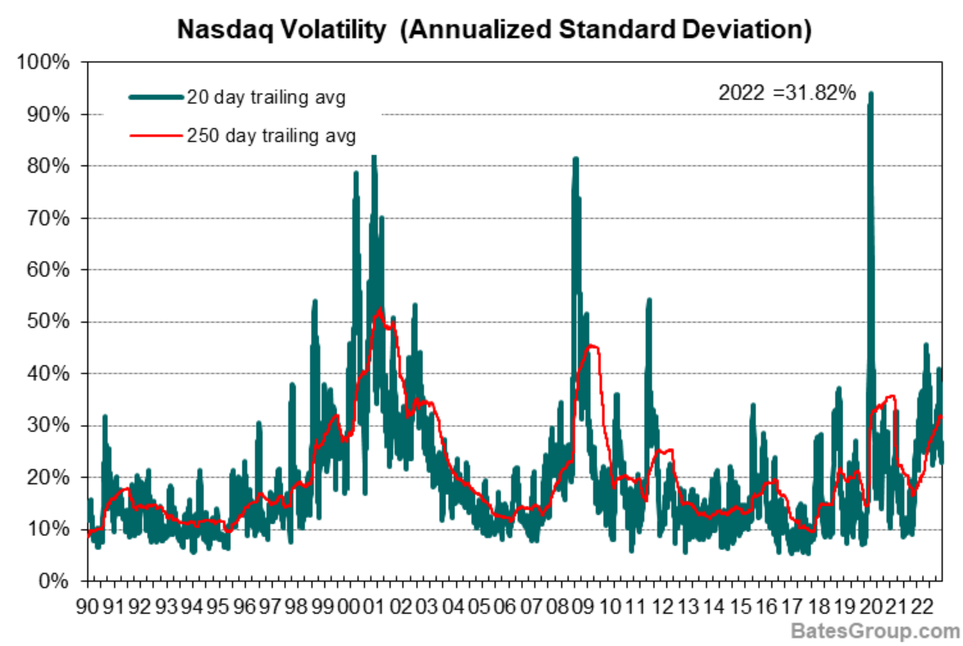
Month	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	85-22 Avg
Jan	2.0%	-9.9%	-6.4%	-5.4%	1.8%	8.0%	4.1%	-1.7%	-2.1%	-7.9%	4.3%	7.4%	9.7%	2.0%	1.4%	-9.0%	2.2%
Feb	-1.9%	-5.0%	-6.7%	4.2%	3.0%	5.4%	0.6%	5.0%	7.1%	-1.2%	3.8%	-1.9%	3.4%	-6.4%	0.9%	-3.4%	0.7%
Mar	0.2%	0.3%	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%	0.7%
Apr	4.3%	5.9%	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%	1.2%
May	3.1%	4.6%	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%	1.3%
Jun	-0.0%	-9.1%	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%	0.8%
Jul	-2.2%	1.4%	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%	1.3%
Aug	2.0%	1.8%	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%	0.3%
Sep	4.0%	-11.6%	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%	-0.9%
Oct	5.8%	-17.7%	-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%	1.0%
Nov	-6.9%	-10.8%	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%	1.9%
Dec	-0.3%	2.7%	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%	1.7%

Volatility, as measured by daily price swings, increased in 2022 with the Nasdaq Composite Index moving up or down 1.61% each day on average. In comparison, the absolute average daily price change in 2021 was 0.85%.

The long-term average volatility, as measured by absolute daily price swings is ±0.90%.



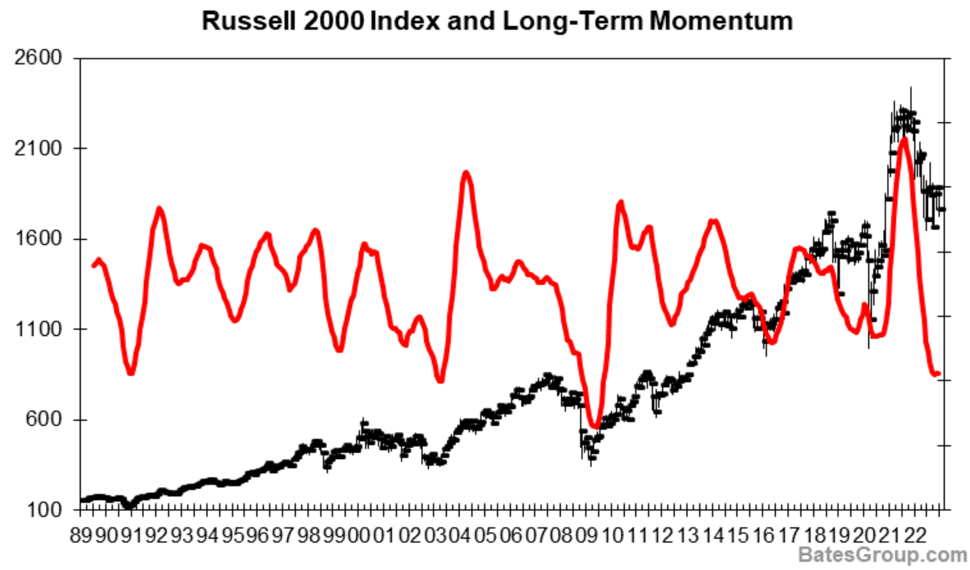
Volatility as measured by the traditional metric of annualized standard deviation was 31.8% in 2022. This was well above the long-term average annual volatility (1985-2022) for the Nasdaq Composite Index of 22.2%.

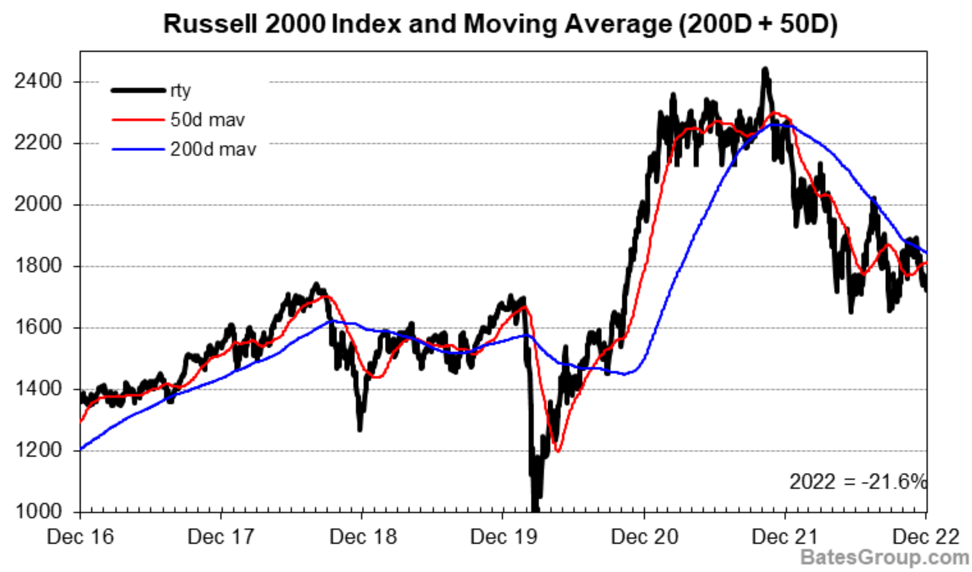


Russell 2000 Market Trends

Small cap stocks as measured by the Russell 2000 Index closed the year down 21.6%.

In the last quarter of 2022, the return for small cap index was positive, up 5.8%.





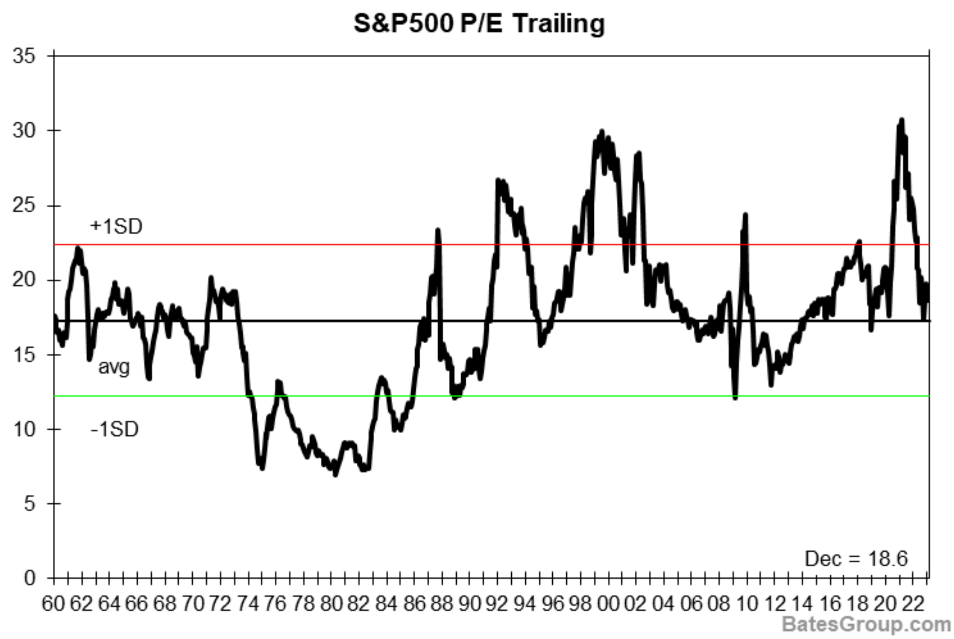
Russell 2000 Monthly Performance (% change over previous month)

Month	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	86-22 Avg
Jan	1.6%	-6.9%	-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%	0.9%
Feb	-0.9%	-3.8%	-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%	1.5%
Mar	0.9%	0.3%	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%	1.0%
Apr	1.7%	4.1%	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%	1.2%
May	4.0%	4.5%	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%	1.2%
Jun	-1.6%	-7.8%	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%	0.4%
Jul	-6.9%	3.6%	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%	-0.1%
Aug	2.2%	3.5%	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%	-0.2%
Sep	1.6%	-8.1%	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%	-0.6%
Oct	2.8%	-20.9%	-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%	-0.3%
Nov	-7.3%	-12.0%	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%	1.8%
Dec	-0.2%	5.6%	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%	2.2%

Equity Valuation

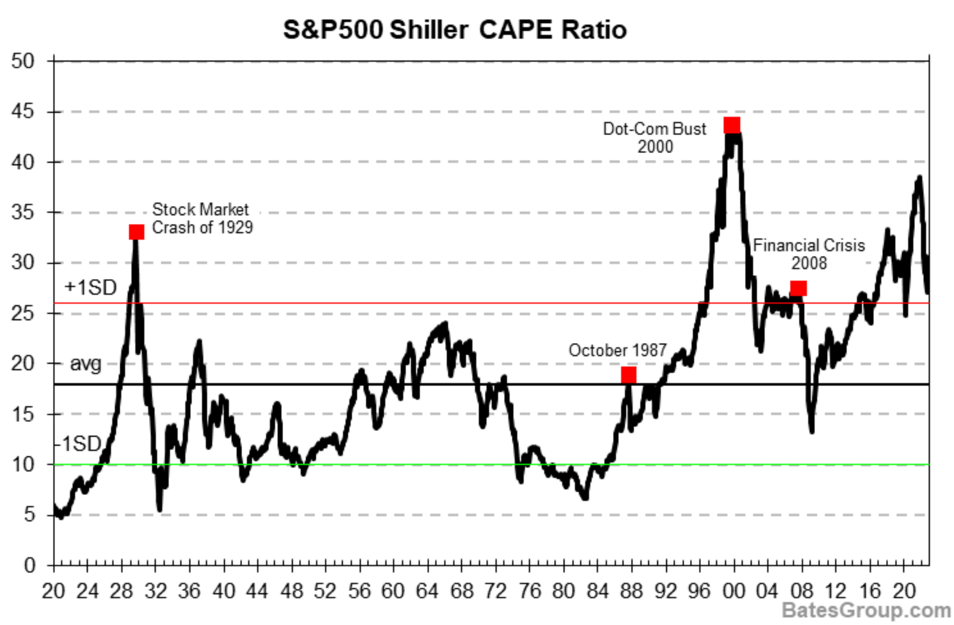
Based on S&P estimates for trailing four quarter operating earnings, the S&P 500 Index is fairly valued in terms of P/E ratios.

As of the end of December 2022 the S&P 500 Index traded at 18.6 times trailing 4Q earnings, down significantly from a record 30.7 times in early 2021, and moderately above the long-term average.



The CAPE ratio has declined from historical levels but is still much higher than the long-term average, suggesting an overvalued market.

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.

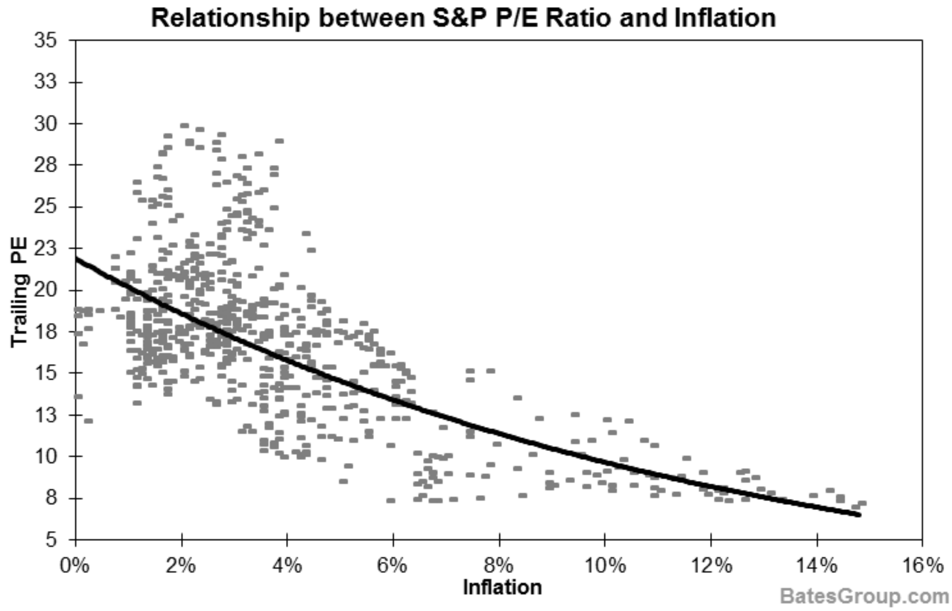


** Standard and Poor's estimate*
Source: Bloomberg, Robert Shiller

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.

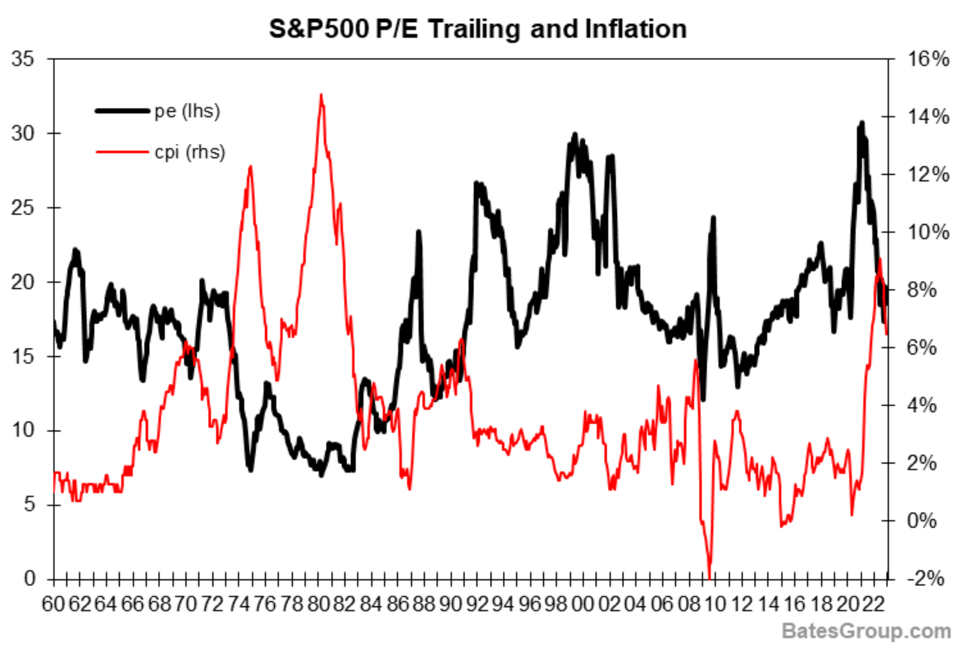
In similar periods when inflation has been above 5%, the S&P 500 has traded in a range of 8 to 18 times trailing earnings.



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

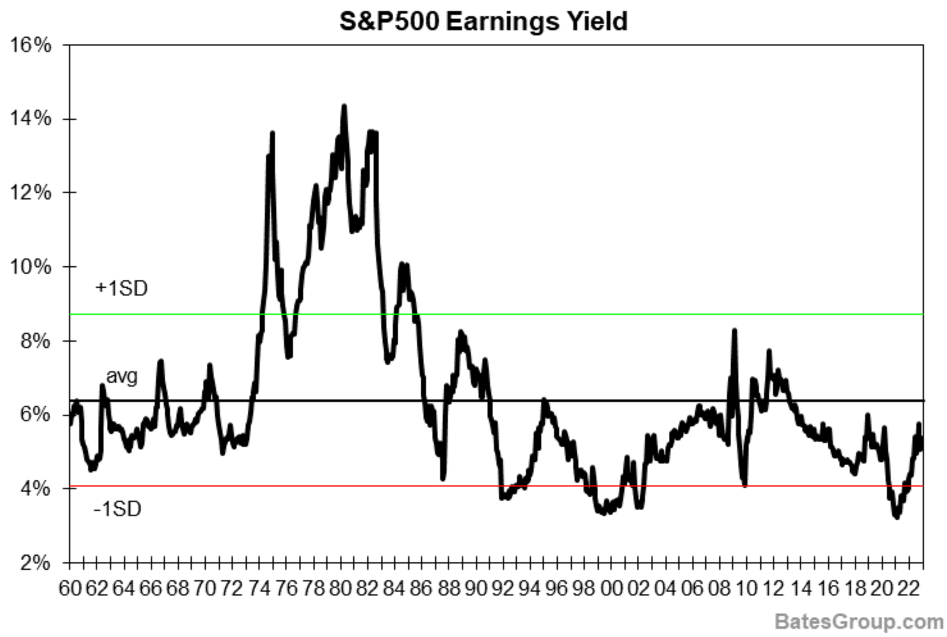
P/Es have tended to be higher in low inflation periods and vice versa.

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



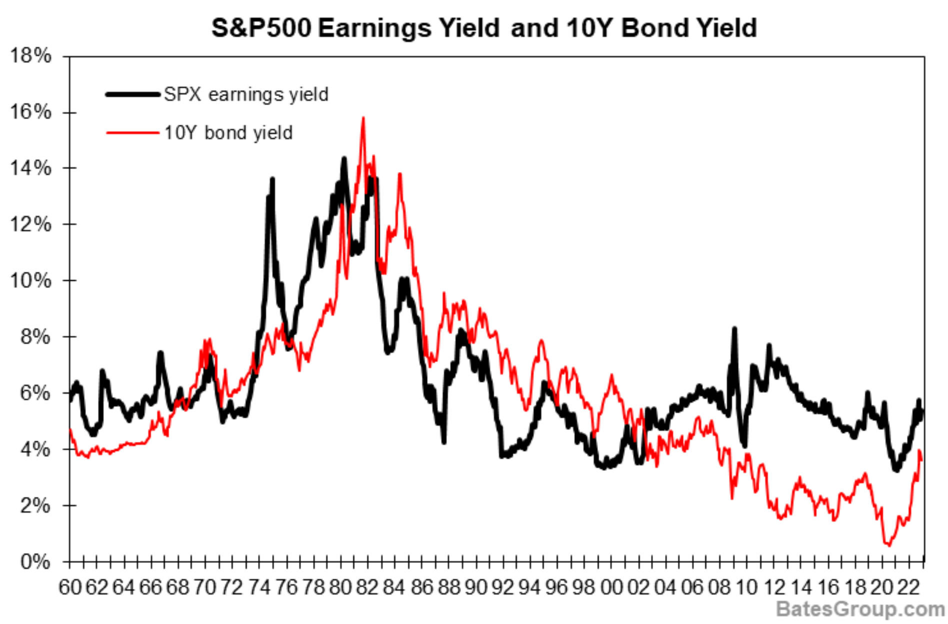
The earnings yield (inverse of the P/E ratio) has remained below the long-term average in 2022 suggesting a slightly overvalued market.

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 stock market valuations.

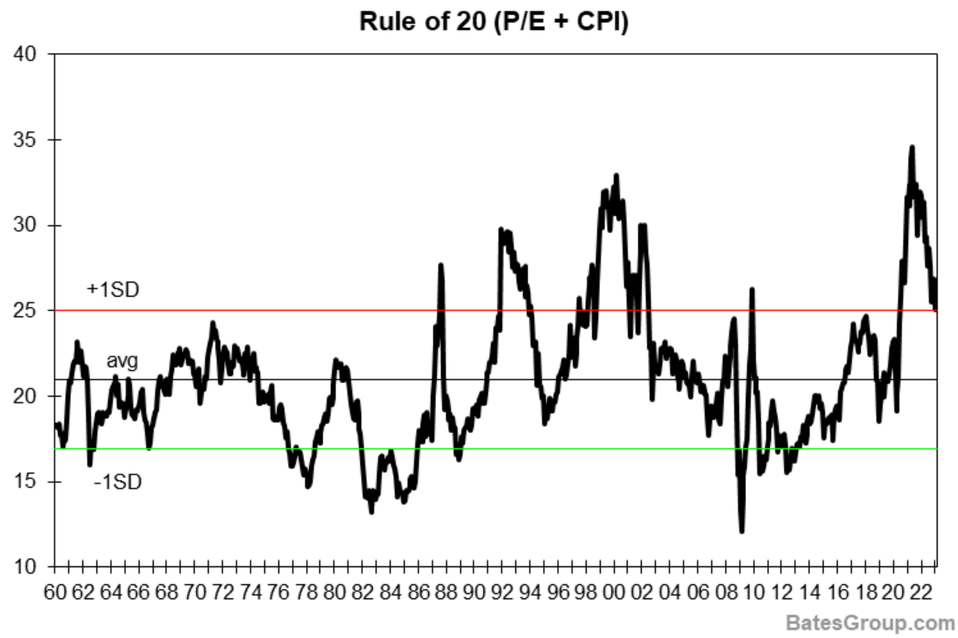
As can be seen by the chart on the right, there is a positive relationship between the earnings yield for the S&P500 Index and interest rates. When interest rates decline, the earnings yield has also tended to decline.



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

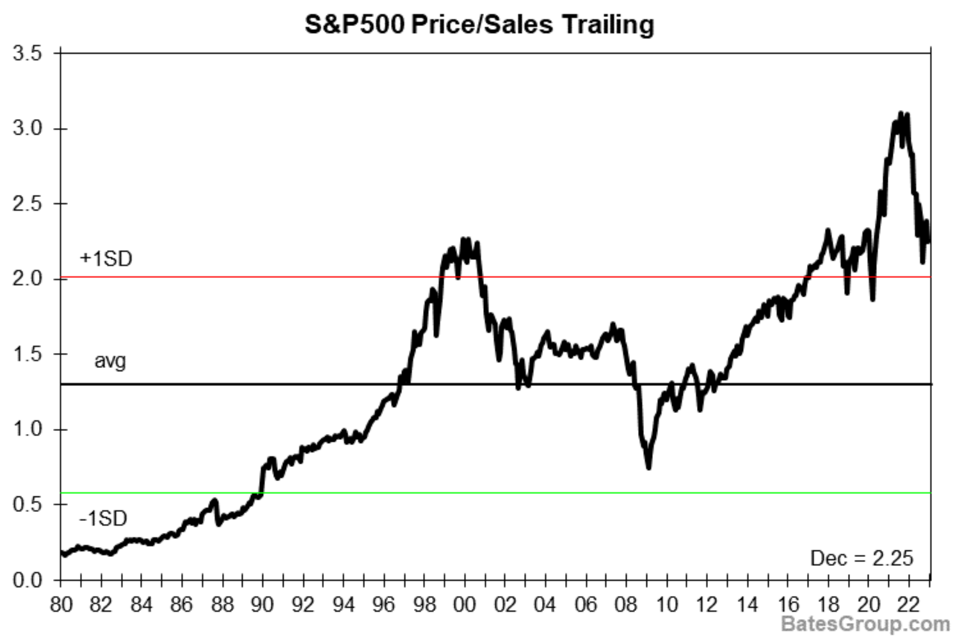
Taking inflation into account, but ignoring the impact of interest rates, the S&P 500 appears to be overvalued.

As of the end of 2022, this valuation measure is one standard deviation above the average for the past 60 years.

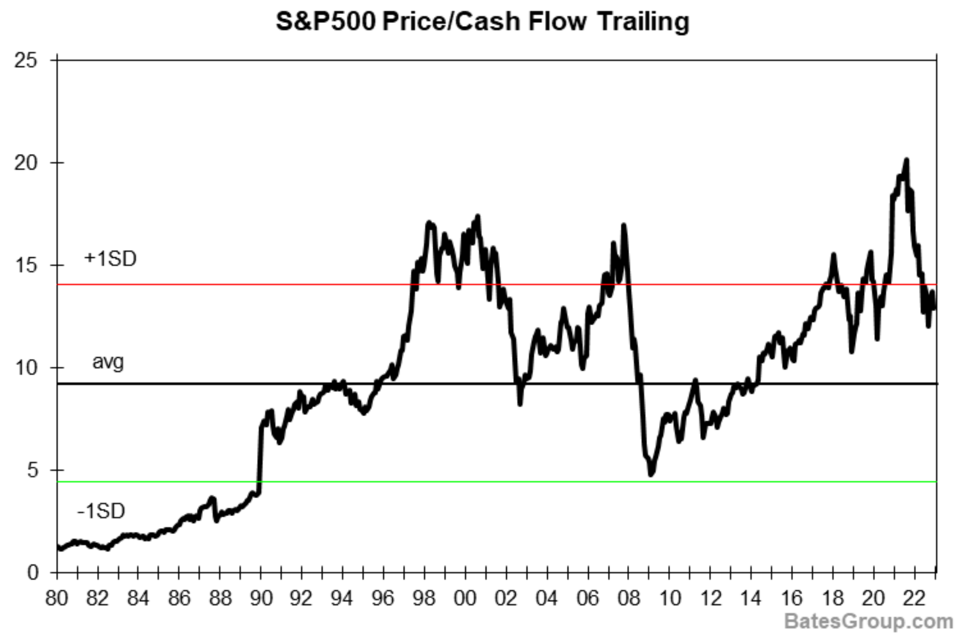


Using another measure of equity market valuation, the S&P 500 is trading significantly above long-term average levels.

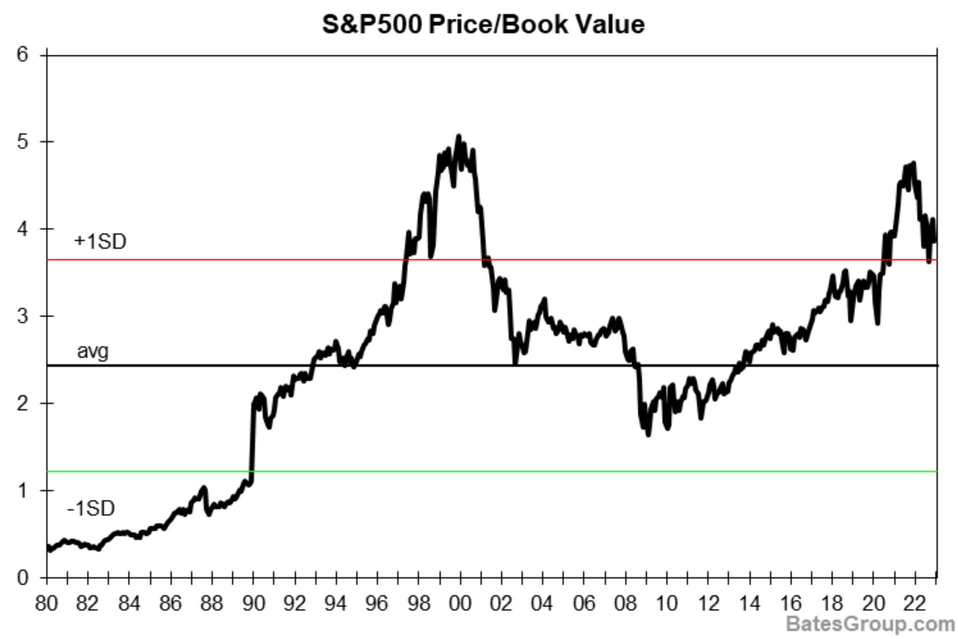
Currently, investors are paying 2.25 times trailing 12-month sales for the broader market. The historic average has been 1.22x sales.



Valuation for the broader market, if measured by price to cash flow, is also at historically high levels although not as high as during the periods just prior to the Dot-com crash in 2000 and the financial crisis in 2008.



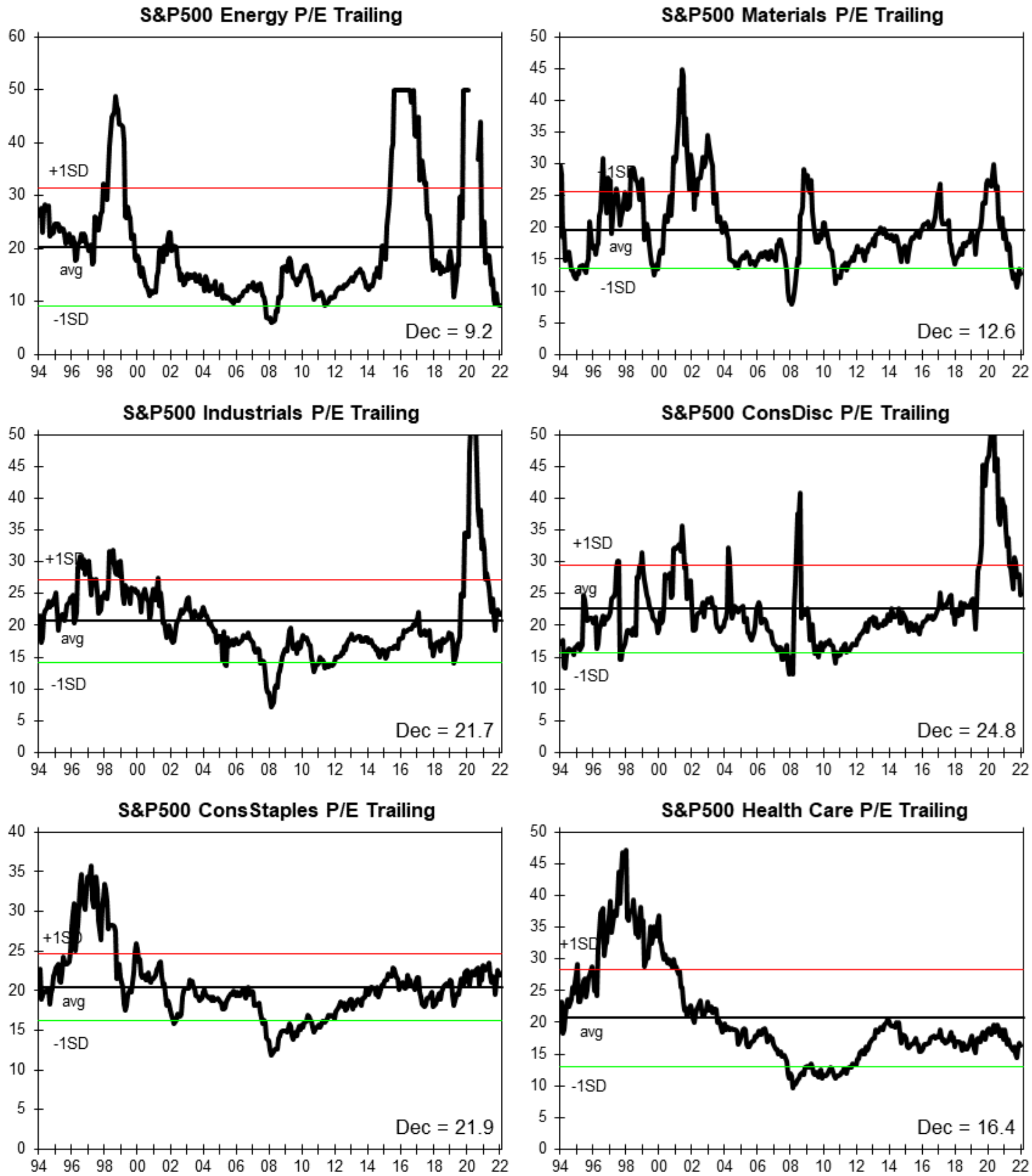
Price-to-book value is another common valuation metric. By this measure, the S&P 500 Index also appears significantly overvalued.



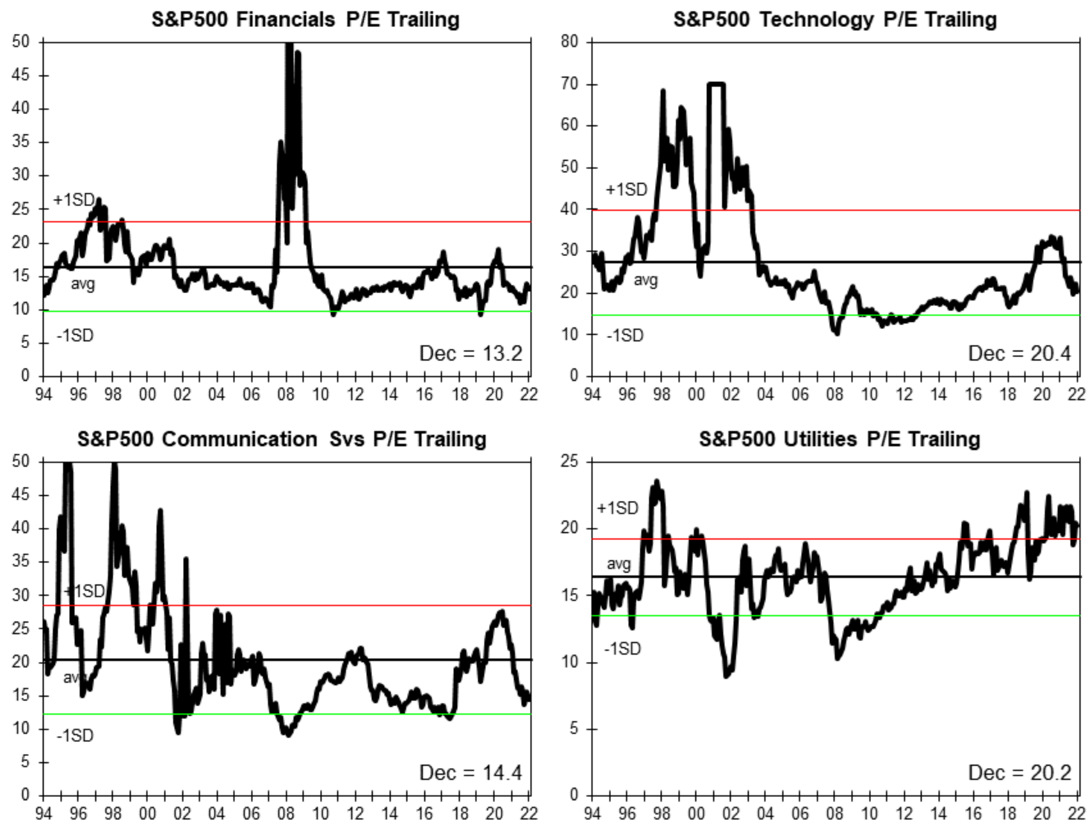
S&P 500 Sector Valuations

Valuation compression across the various S&P 500 sectors was widespread, with all but one sector experiencing PE contraction in 2022.

The S&P 500 Utilities Sector valuation remained relatively flat, between 19x-21x trailing TTM earnings.



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

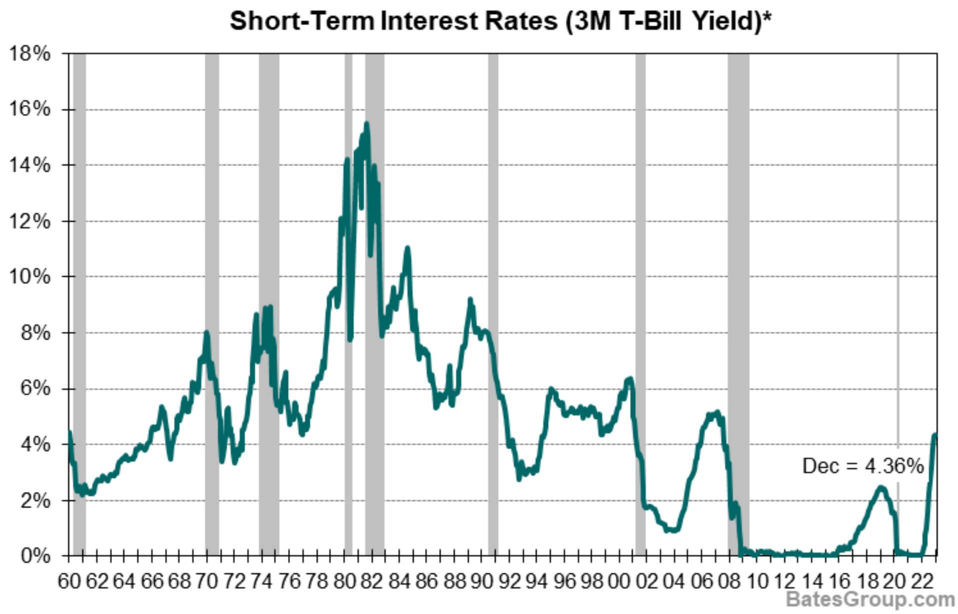


Some Extreme values in P/E ratios are capped at 50 (or 70 for the Technology sector)
Source: Bloomberg, Standard & Poor's

Credit Market Trends – Interest Rates

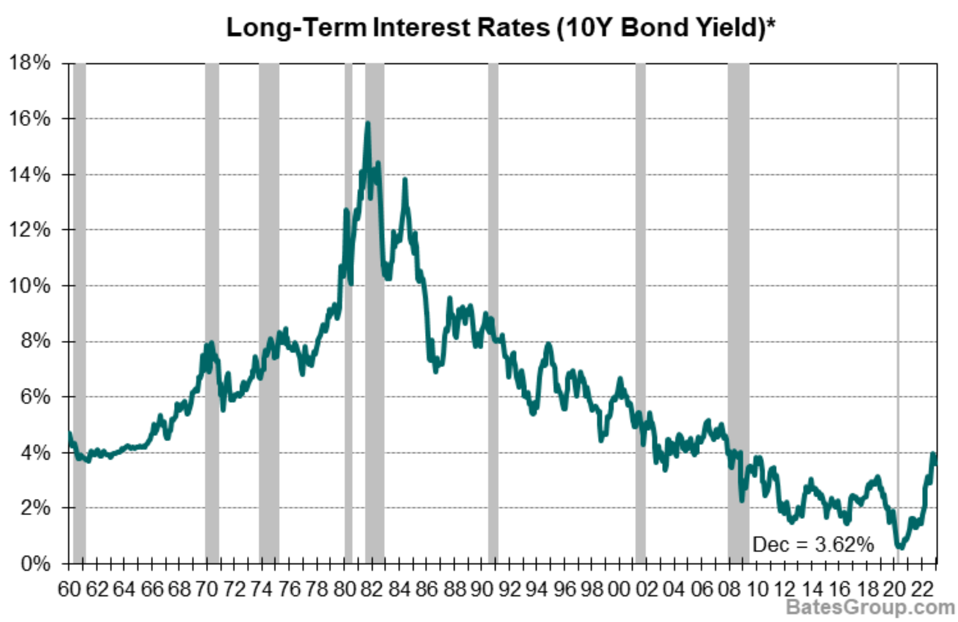
During 2022 the yield on three-month Treasury bills climbed from 0.06% at the end of 2021 to 4.36% at the end of December.

The sharp rise in yields during the year has been in response to the Federal Reserve's efforts to rein in inflation through a series of interest rate hikes.



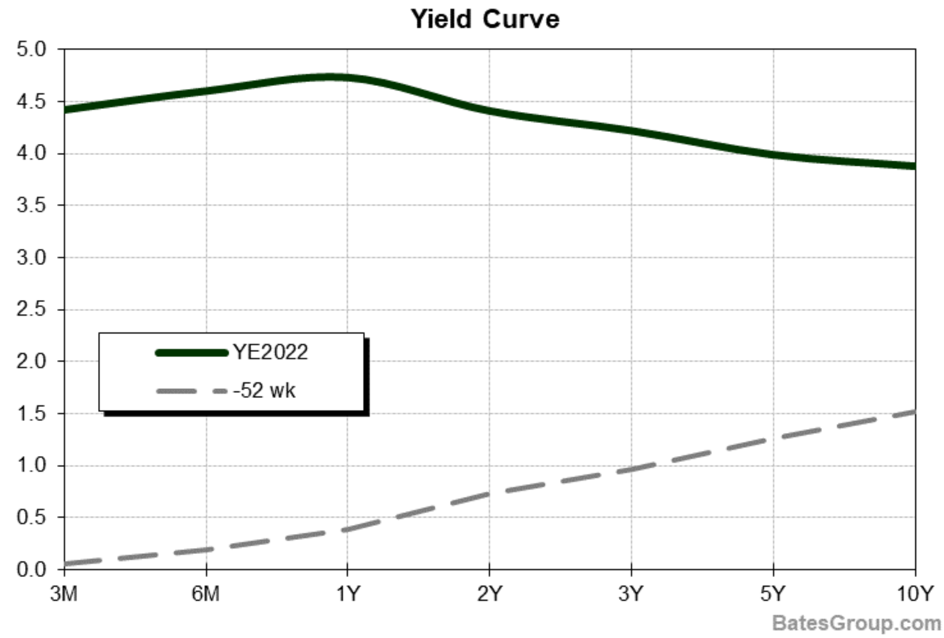
Long-term Treasury yields (10Y) climbed in 2022 to finish the fourth quarter at 3.62%. This is up from 1.47% at the end of 2021.

In 2022, the Federal Reserve ended its quantitative easing policy of purchasing large amounts of long-term treasuries and mortgage backed securities.



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

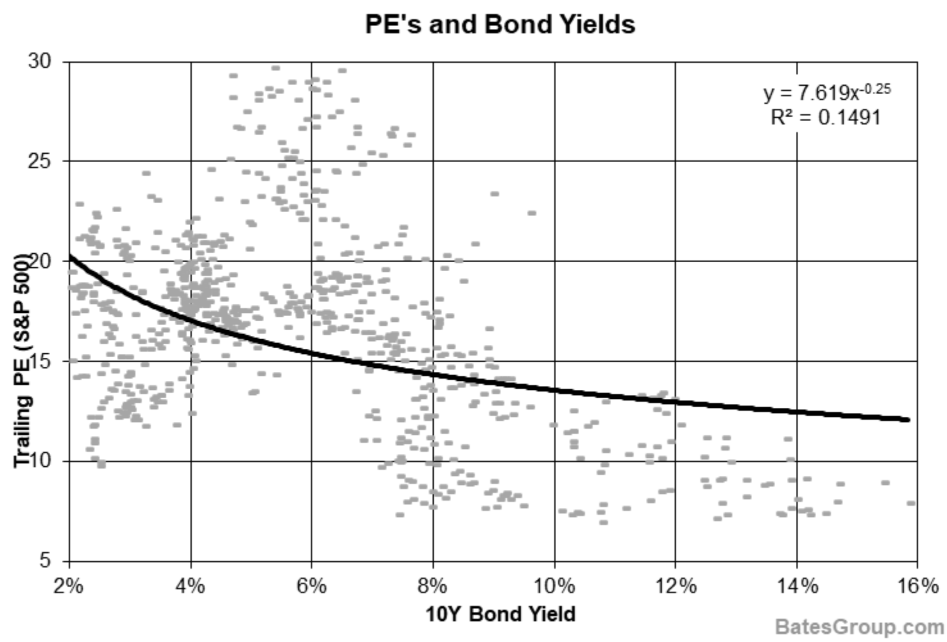
At the end of 2022, the yield curve was lower at the long end of the curve. This is known as an inverted yield curve and has historically been a "powerful predictor of future recessions" according to the Federal Reserve.



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

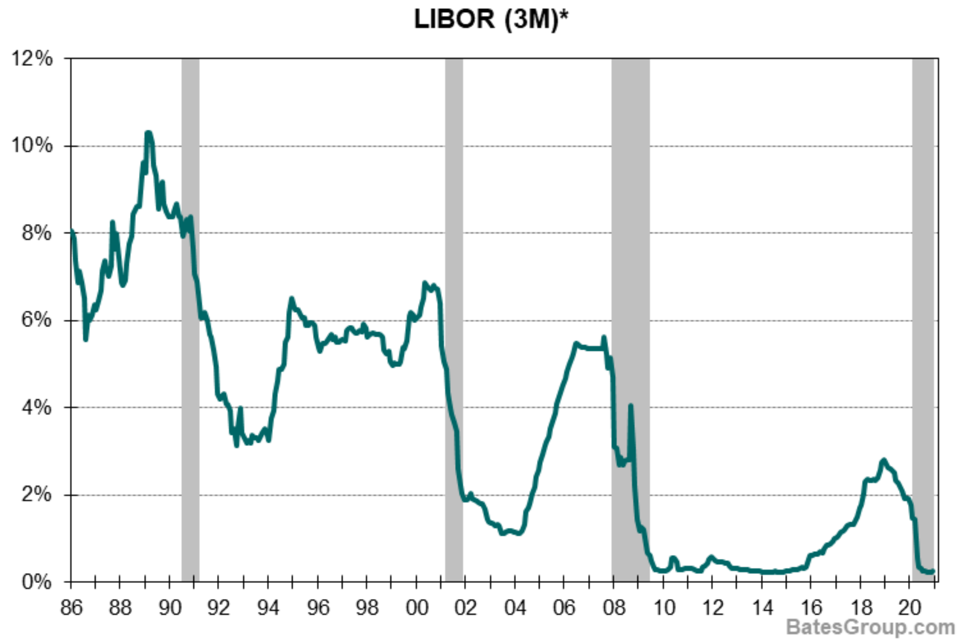


** Shaded areas represent recessions*
Source: Federal Reserve, Bates Research

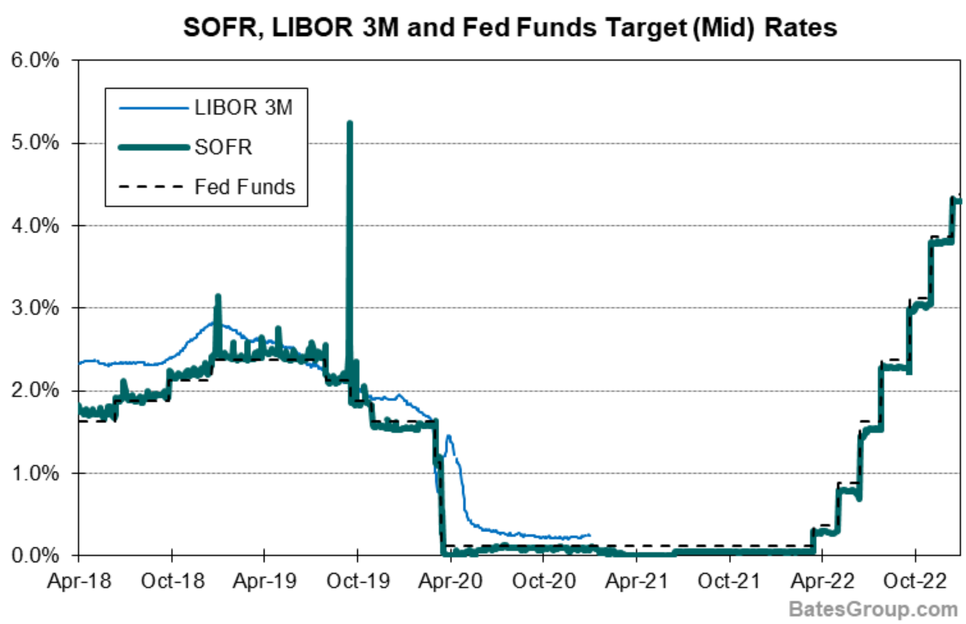
LIBOR & SOFR Rates

This will be our last review of LIBOR rates in this publication as the FCA has been phasing out LIBOR as a benchmark rate, and the index will officially end on June 30, 2023.

In April 2018, SOFR (Secured Overnight Financing Rate) was introduced in the U.S. as an alternative to dollar-denominated LIBOR rates. It is based on actual overnight rates (secured by US Treasuries), while LIBOR is based on a survey of what banks would likely charge (unsecured) other banks for overnight lending.



Since launching in early April 2018, SOFR has closely tracked Federal Funds target rates, with the exception of a spike in September 2019. This spike was due to a “momentaneous shortage in liquidity resulted in a momentous increase in secured borrowing costs” according to the Federal Reserve.

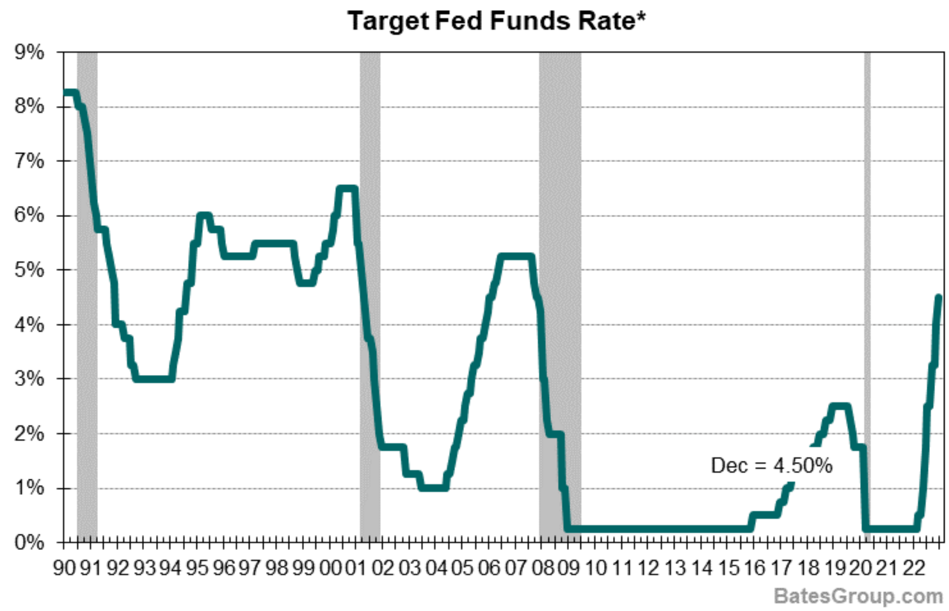


** Shaded areas represent recessions*
Source: Federal Reserve, Bates Research

Federal Funds Rate

In response to a rapid rise in inflation, the Federal Reserve began to raise interest rates in March 2022 and continued through the year.

By December 2022, the Federal Funds Rate had risen to a range of 4.25% to 4.50%, up from 0% to 0.25% a year earlier.



Changes in the Federal Funds Rate (2003-2020)

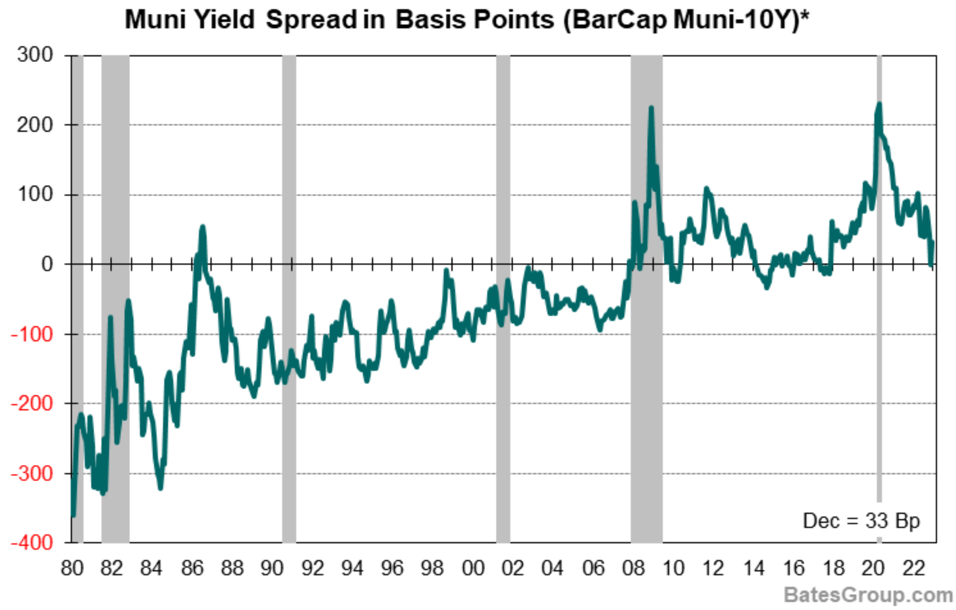
	Change (basis points)				Change (basis points)				Change (basis points)		
Date	**(+)**	**(-)**	**Level (%)**	**Date**	**(+)**	**(-)**	**Level (%)**	**Date**	**(+)**	**(-)**	**Level (%)**
2022				**2017**				**2006**			
14-Dec	50	...	4.25-4.50	14-Dec	25	...	1.25-1.50	29-Jun	25	...	5.250
2-Nov	75	...	3.75-4.00	15-Jun	25	...	1.00-1.25	10-May	25	...	5.000
21-Sep	75	...	3.00-3.25	16-Mar	25	...	0.75-1.00	31-Jan	25	...	4.750
27-Jul	75	...	2.25-2.50	**2016**				**2005**			
16-Jun	75	...	1.50-1.75	15-Dec	25	...	0.50-0.75	13-Dec	...	25	4.250
5-May	50	...	0.75-1.00	**2015**				1-Nov	...	25	4.000
17-Mar	25	...	0.25-0.50	17-Dec	25	...	0.25-0.50	20-Sep	...	25	3.750
2020				**2008**				9-Aug	25	...	3.500
15-Mar	...	100	0.00-0.25	16-Dec	...	75-100	0.00-0.25	30-Jun	25	...	3.250
4-Mar	...	50	1.00-1.25	29-Oct	...	50	1.00	3-May	25	...	3.000
2019				8-Oct	...	50	1.50	22-Mar	25	...	2.750
31-Oct	...	25	1.50-1.75	30-Apr	...	25	2.00	2-Feb	25	...	2.500
19-Sep	...	25	1.75-2.00	18-Mar	...	75	2.25	**2004**			
1-Aug	...	25	2.00-2.25	30-Jan	...	50	3.00	14-Dec	25	...	2.250
2018				22-Jan	...	75	3.50	10-Nov	25	...	2.000
20-Dec	25	...	2.25-2.50	**2007**	...			21-Sep	25	...	1.750
27-Sep	25	...	2.00-2.25	11-Dec	...	25	4.250	10-Oct	25	...	1.500
14-Jun	25	...	1.75-2.00	31-Oct	...	25	4.500	30-Jun	25	...	1.250
22-Mar	25	...	1.50-1.75	18-Sep	...	50	4.750				

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

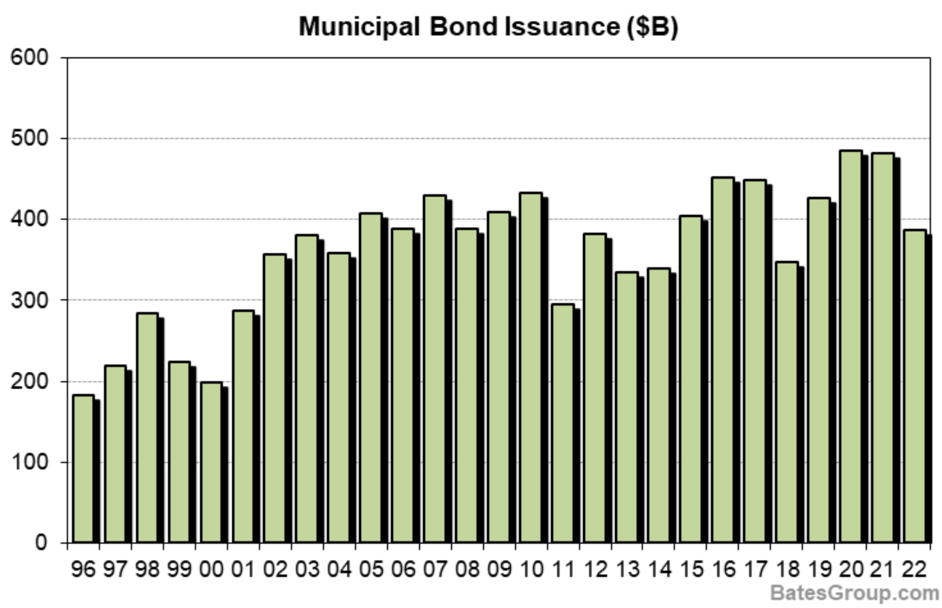
Municipal Bonds

With rising interest rates, 2022 was a tough year for municipal bonds, with high yield municipal bonds returning -13.1% for the year. Investment grade municipal bonds returns were -8.5% for the year.

For the year ended in December, the yield on the S&P Municipal Bond Index was 3.95%.



Municipal bond issuance declined an estimated 20% in 2022 to $386.6 billion.

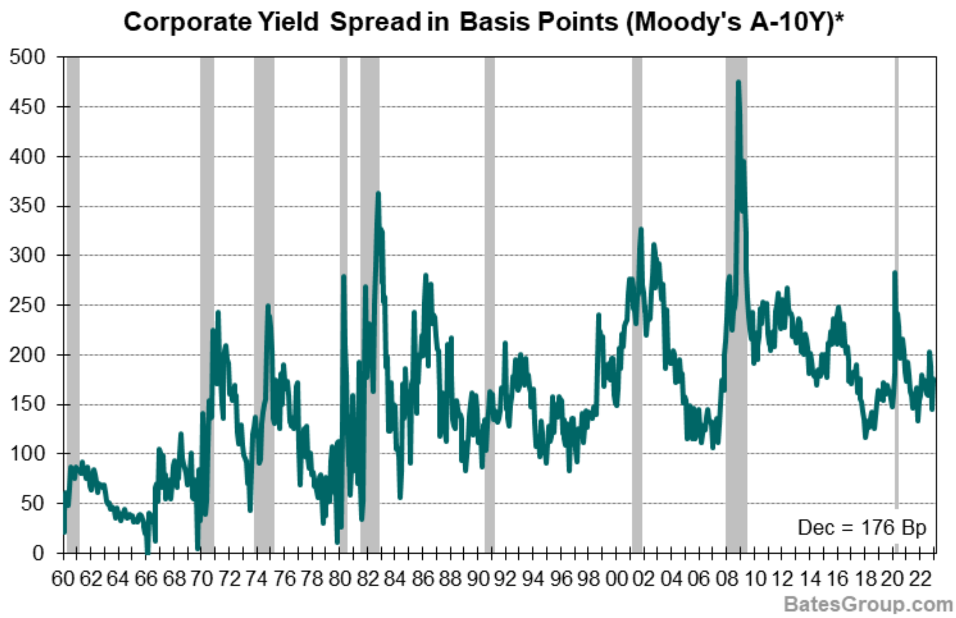


** Shaded areas represent recessions*
Source: Bloomberg, SIFMA, Standard & Poor's, Thomson Reuters, MSRB

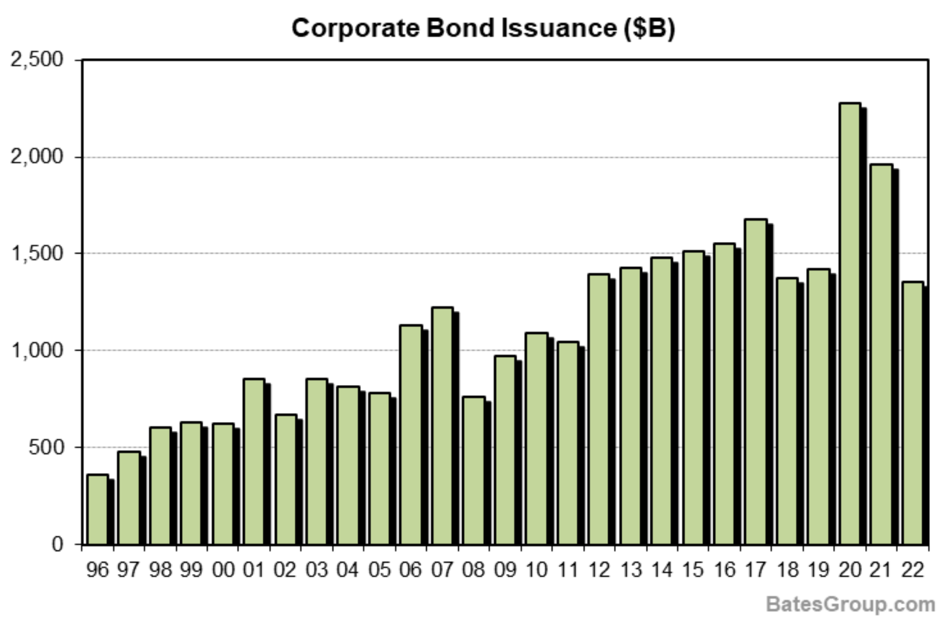
Corporate Bonds

U.S. corporate bonds posted one of the worst returns in decades as rapidly rising interest rates drove longer duration bond prices down (and yields up). The return for corporate bond in 2022 was -15.8% while U.S. aggregate bond performance was -13.0%.

U.S. corporate bond spreads widened during the year, with the spread on Moody's A-rated Bond Index closing the year at 176 basis points. This compares to a risk spread of 155 basis points in December 2021.



U.S. corporate bond issuance totaled $1,353.8 billion in 2022, down 31% from the prior year.

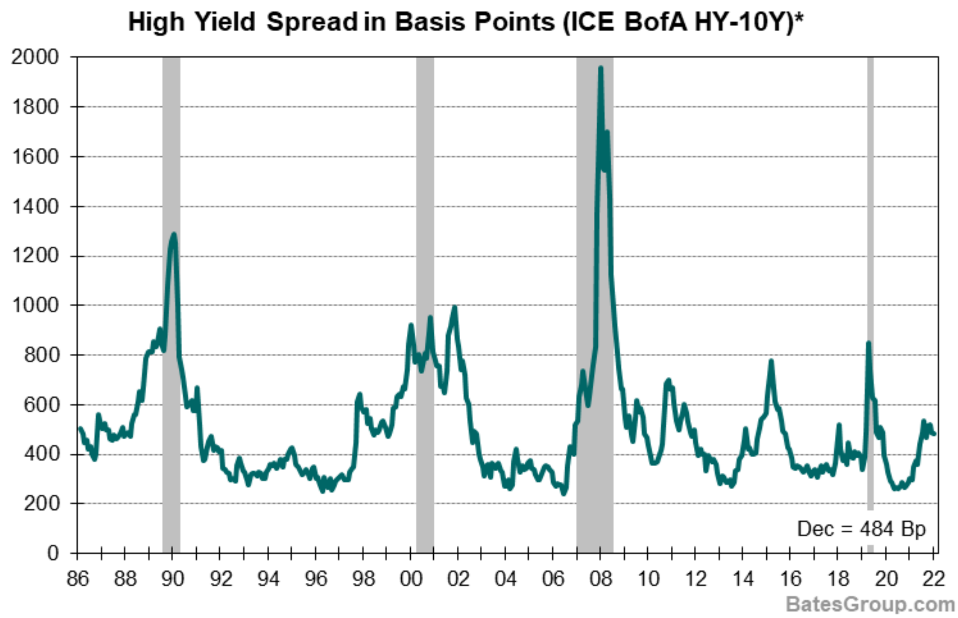


** Shaded areas represent recessions*
Source: Bloomberg, Thomson Reuters, SIFMA

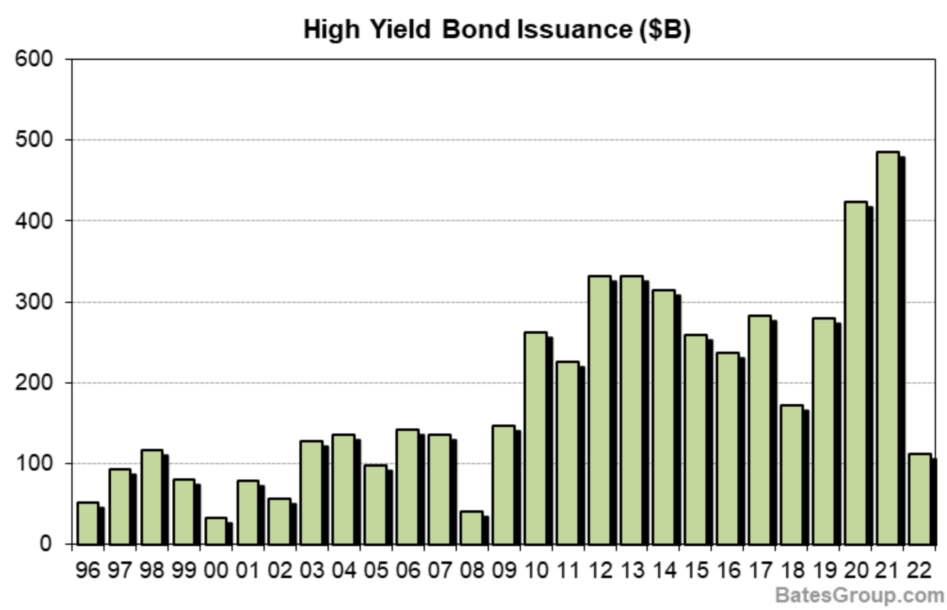
High Yield Securities

High yield risk spreads increased 182 basis points in 2022 to 484 Bp, with yields rising to 8.46% in December from 4.49% at the end of 2021.

The 12-month trailing U.S. corporate speculative-grade default rate remained modest at 2.8% in December 2022.



High yield issuance fell dramatically in 2022 compared to the previous year, with only $112 billion being issued last year compared to $486.1 billion in 2021.

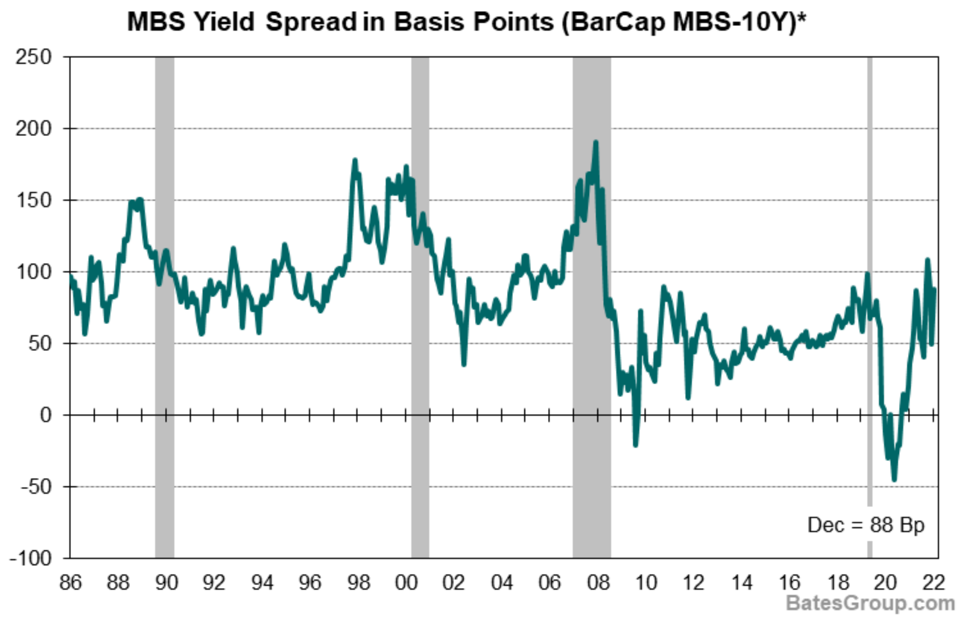


** Shaded areas represent recessions*
Source: Bloomberg, Moody's, SIFMA, Standard & Poors

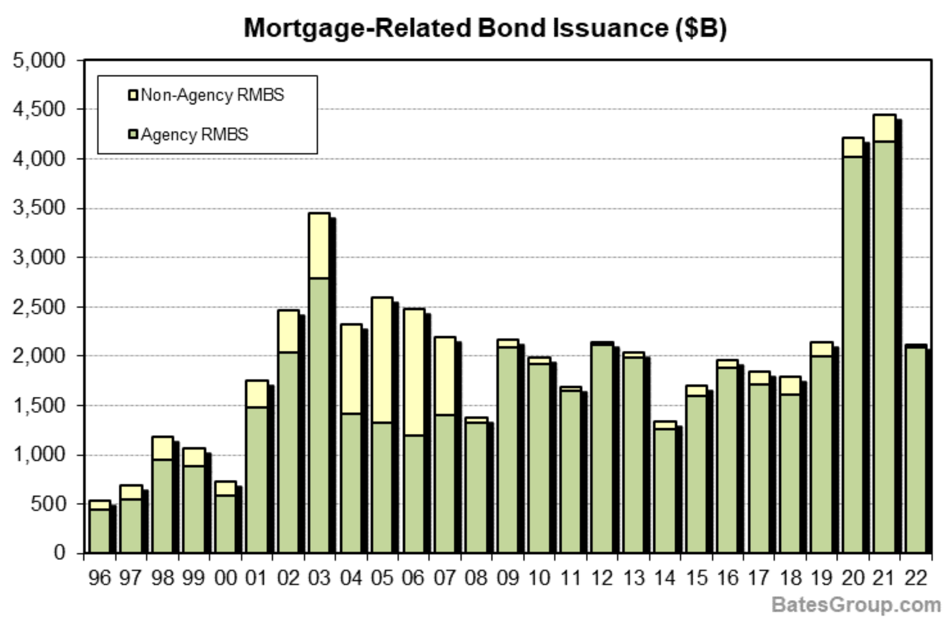
Mortgage-Backed Securities

MBS yield spreads increased in 2022 to 88 basis points from 37 basis points in December 2021.

MBS performance was also very poor in 2022, with a -11.8% return for the Bloomberg MBS Index.



Mortgage-related bond issuance totaled $2,145 billion in 2022, down over half from the prior year.



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

Fixed Income Securities Total Returns (1999-2022)

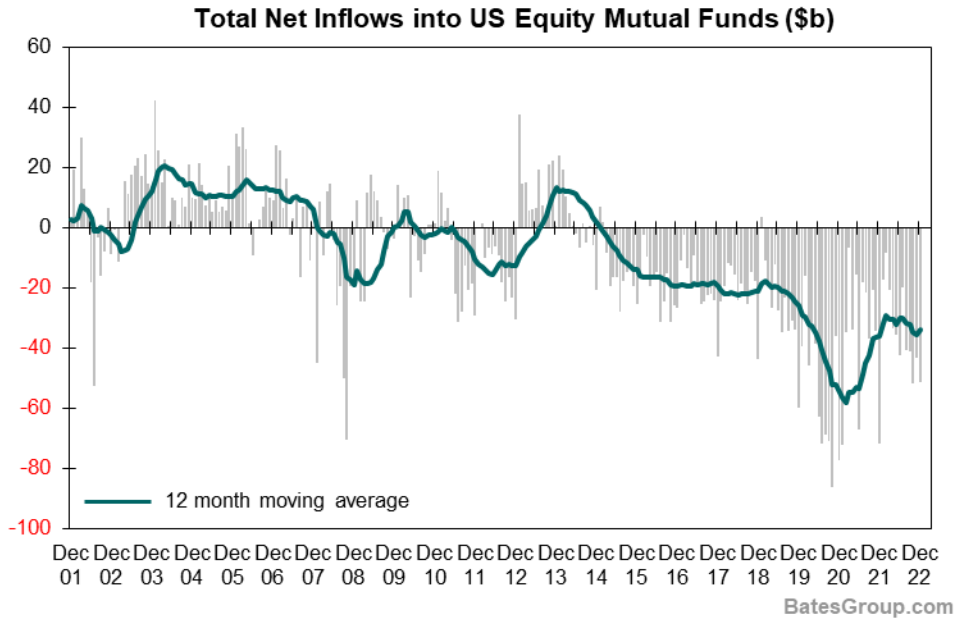
1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010
Short Govt 2.90%	Long Govt 20.27%	Corp Bonds 10.31%	Intl Govt 19.59%	High Yield 28.97%	High Yield 11.13%	Long Govt 6.50%	High Yield 11.85%	Intl Govt 10.57%	Long Govt 24.03%	High Yield 58.21%	High Yield 15.12%
High Yield 2.39%	Munis 11.68%	Short 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%
MBS 1.86%	MBS 11.16%	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 -1.96%	Corp Bonds 9.08%	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%
Munis -2.06%	Short Govt 8.05%	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%
Intl Govt -5.24%	Intl Govt 1.43%	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%
Long Govt -8.74%	High Yield -5.86%	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%

2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
Long Govt 29.93%	High Yield 15.81%	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%
Munis 10.70%	Corp Bonds 9.82%	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 8.15%	Munis 6.78%	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%
Intl Govt 6.33%	Long Govt 3.56%	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 6.23%	MBS 2.59%	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%
High Yield 4.98%	Intl Govt 1.83%	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%
Short Govt 1.55%	Short Govt 0.43%	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%

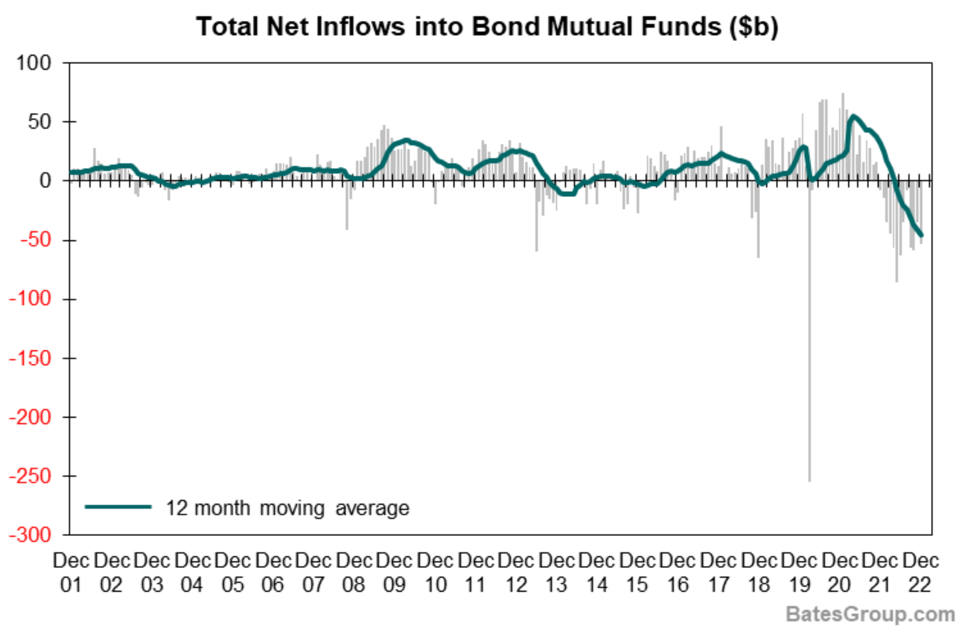
Source: Bloomberg, Pegasus Research

Mutual Fund Flows

With a combination of lower market values and money outflows, total net assets for equity mutual funds was $22,108 billion ending the year. This was down 18% from the end of 2021.

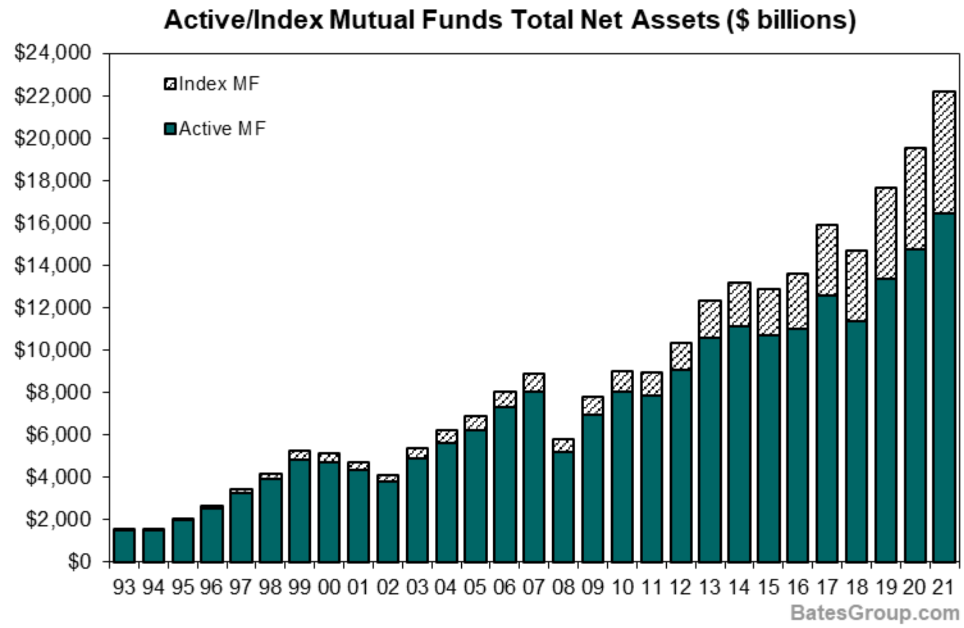


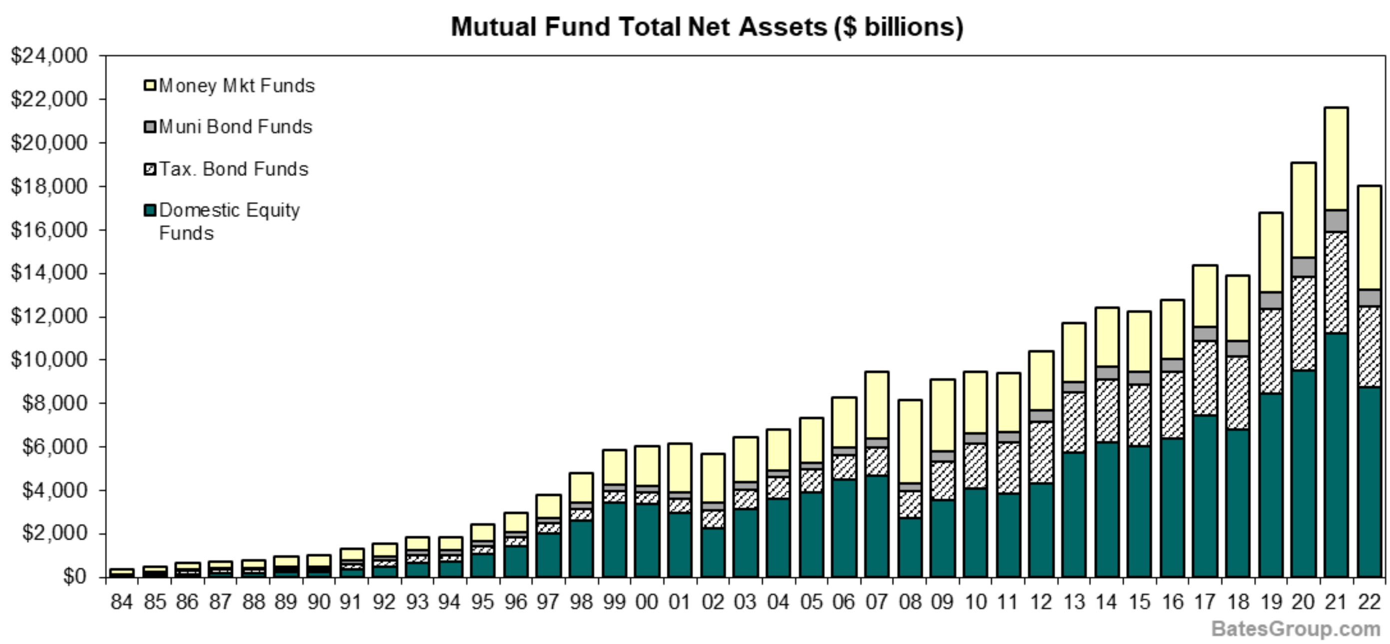
Bond funds also experienced a substantial decline in net assets with the rising interest rate environment. For the year ended 2022, total net assets were an estimated $3,775 billion.



Source: Investment Company Institute

In terms of total net assets, actively managed mutual funds accounted for 74% of all mutual funds in 2022, compared to just 16% for indexed funds.



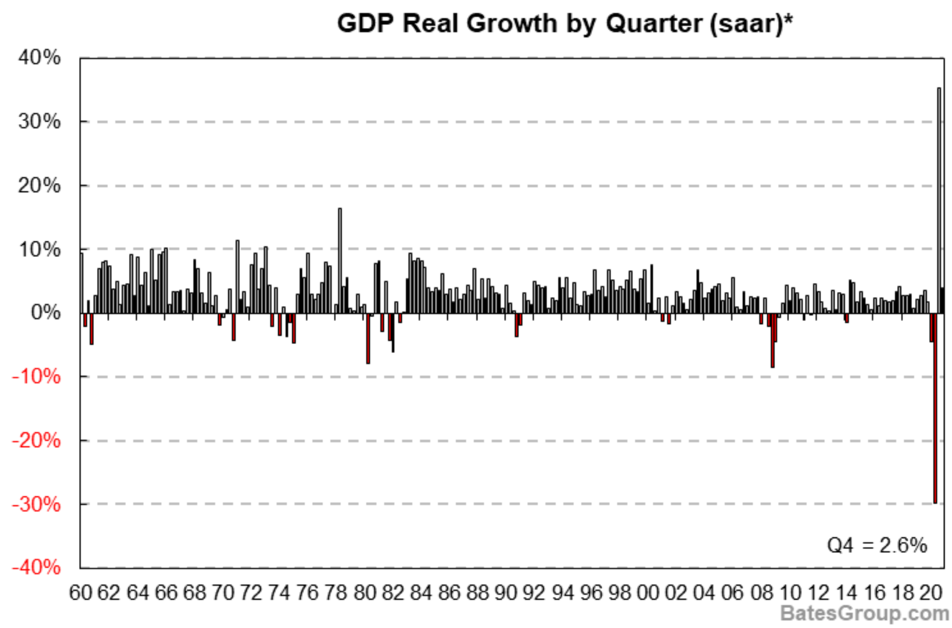


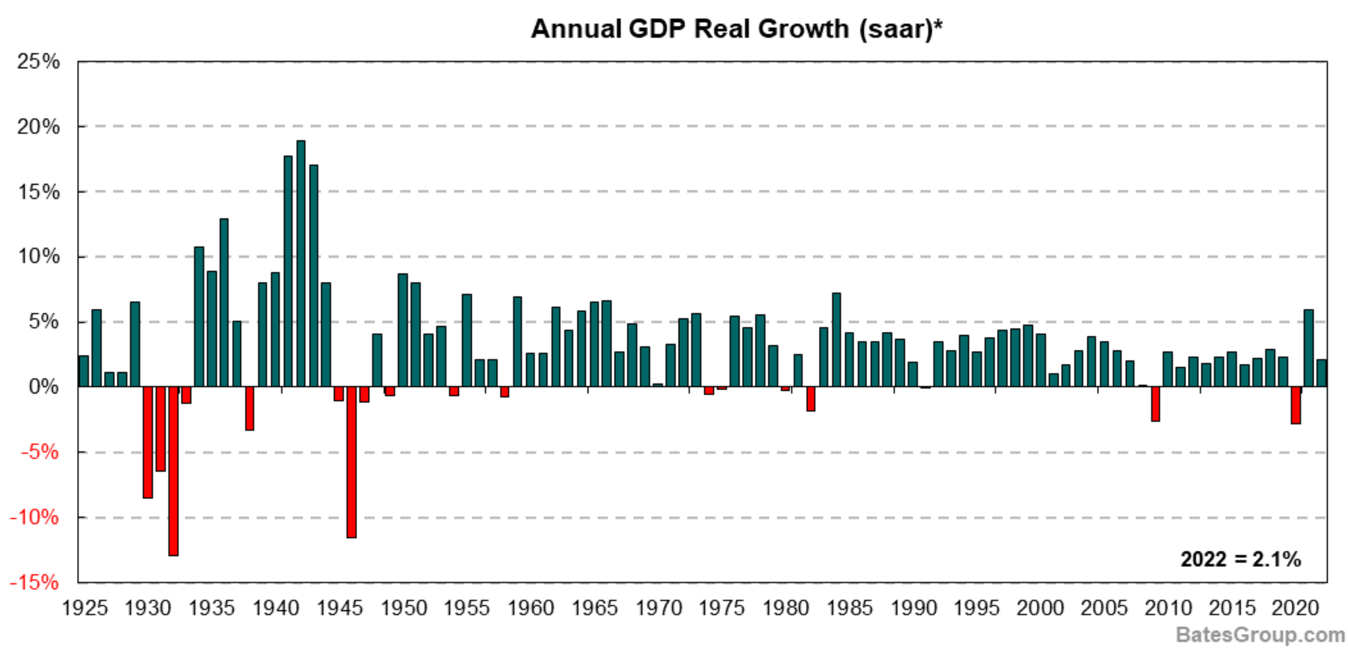
Source: Investment Company Institute

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

After two quarters of negative growth in early 2022, the U.S. economy rebounded in the latter half of the year to finish the fourth quarter with a 2.6% annual growth rate.

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 contributed 0.70% to the growth rate while gross private fixed investment added 0.79%. Government spending added 0.65% to economic growth.

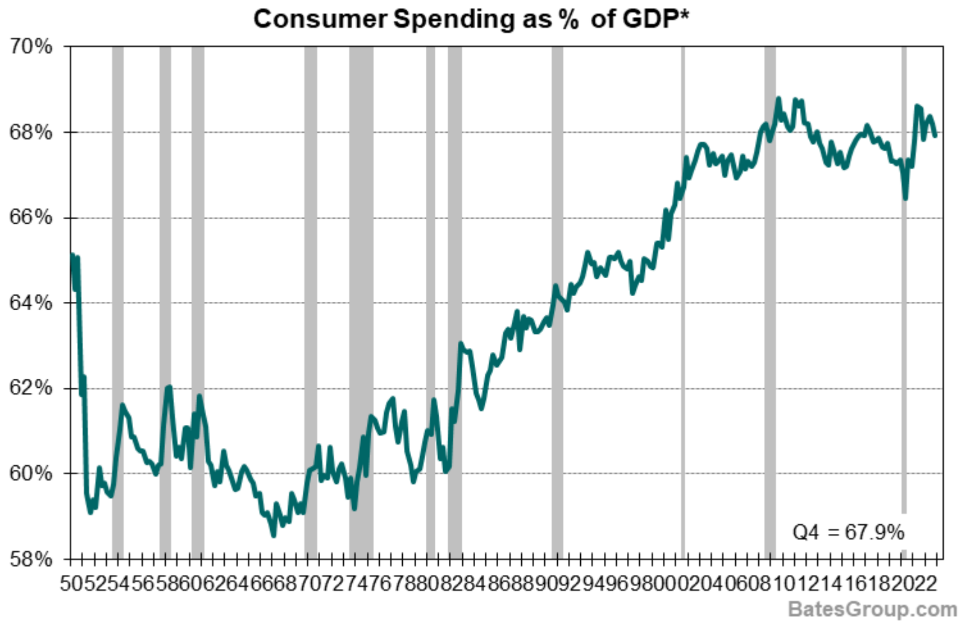




** saar – seasonally adjusted annual rate*
Source: Bureau of Economic Analysis, National Bureau of Economic Research

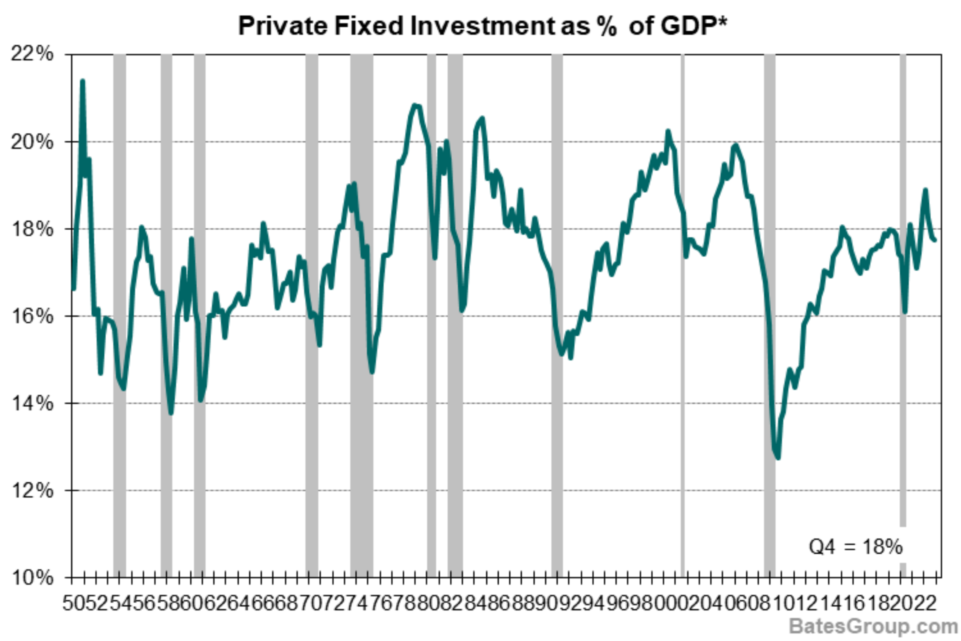
Consumer spending increased at a 1.0% annual rate in the fourth quarter, much weaker than what many economists had expected. According to Bloomberg, the preliminary consensus forecast for Q4 2022 was 2.6%.

Consumer spending is still the largest component of economic growth. As a percentage of GDP, personal consumption expenditures (PCE) declined slightly to 68% of GDP.



With the pandemic changing the world virtually overnight, many factories in the U.S. halted or dramatically slashed production before bouncing back on and off over the past two years. In the last quarter of 2022, spending on private fixed investments was up at a 4.5% annual rate after two down quarters.

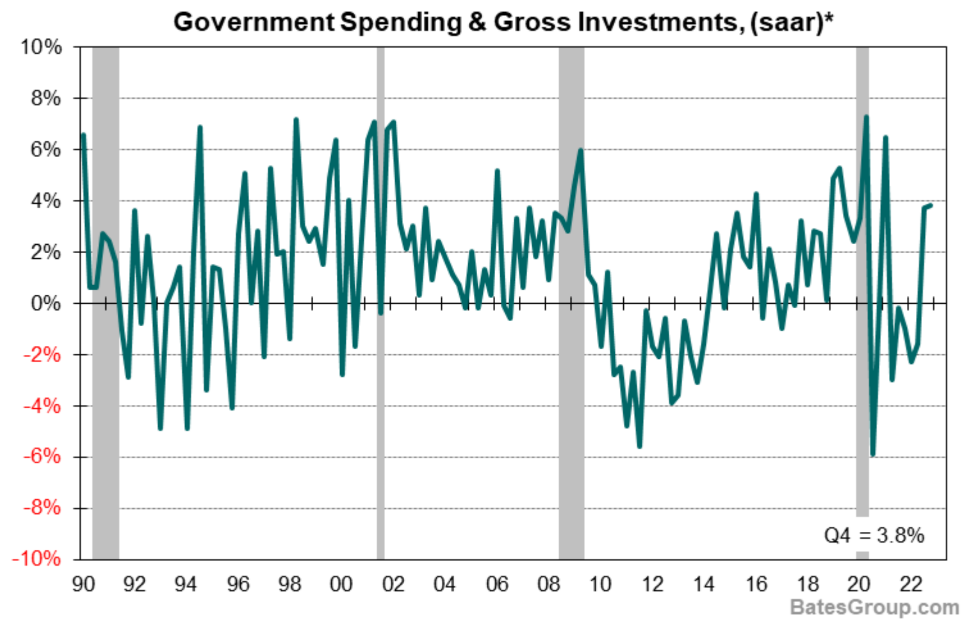
For the full year, spending on private fixed investment was up 3.9% over 2021.



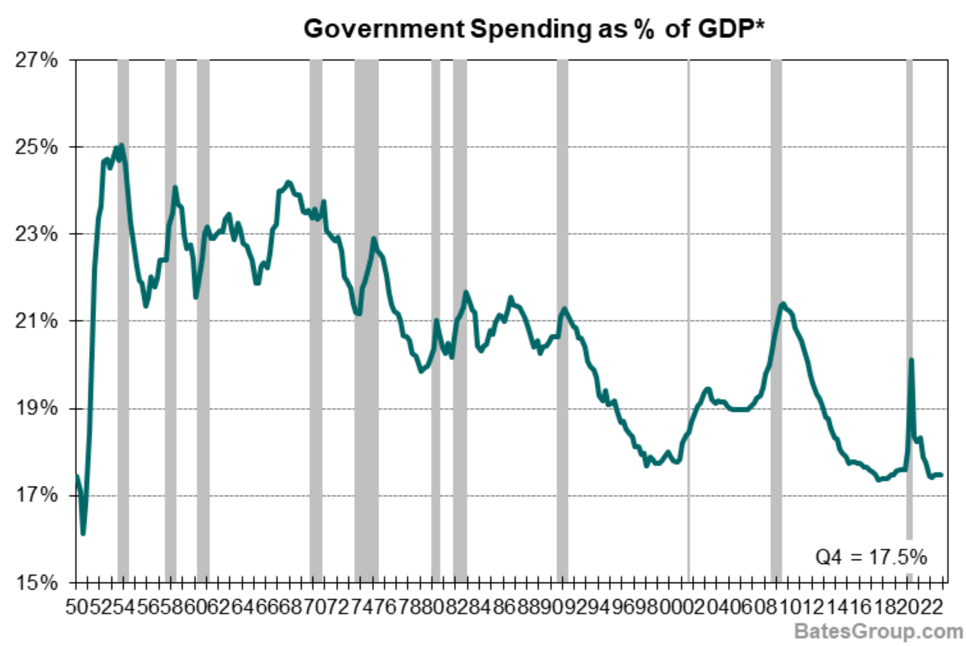
** Shaded areas represent recessions*
Source: Bureau of Economic Analysis

Government spending and gross investments increased 3.8% in the last quarter of the year. Federal government spending increased at a 5.8% annual rate, led by a 10.6% gain in nondefense spending.

Overall, government spending contributed 0.6% to the 2.6% growth in GDP.

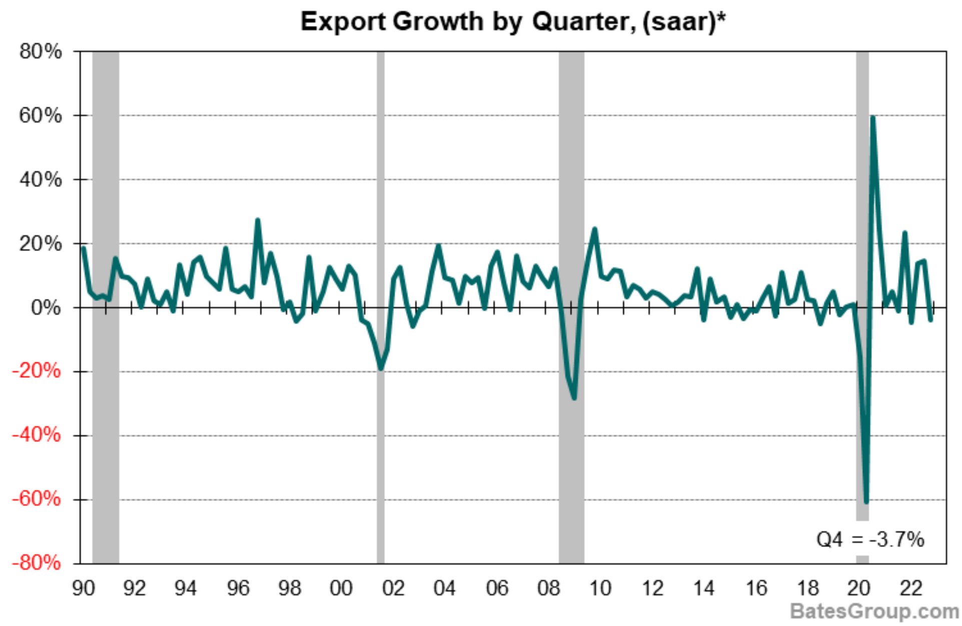


Relative to GDP, government spending continued to trend lower and finished the year at 17.5% of GDP. Defense spending was 3.6% of GDP in the last quarter of 2022.

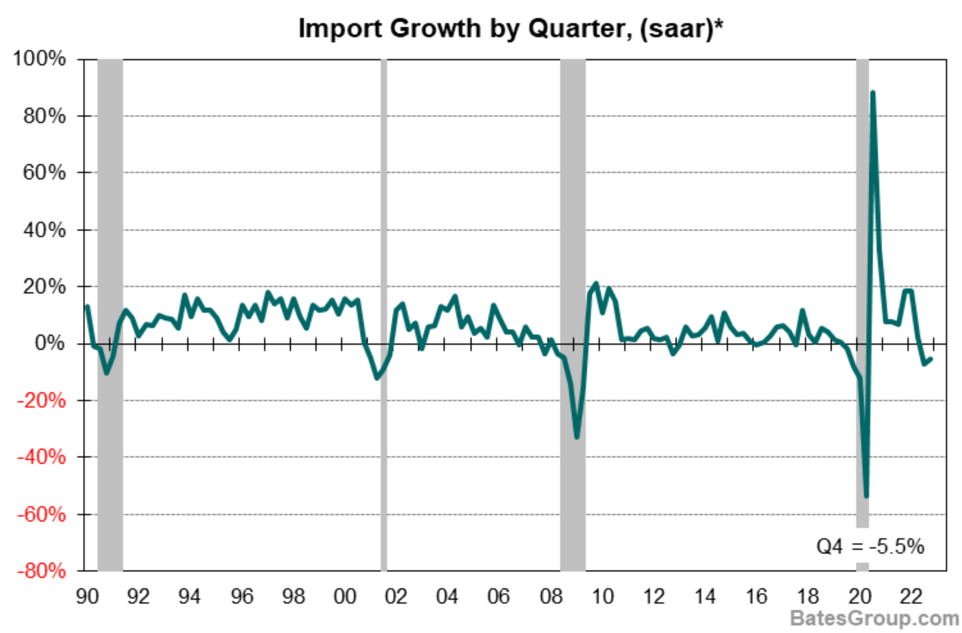


** Shaded areas represent recessions, saar – seasonally adjusted annual rate*
Source: Bureau of Economic Analysis

A downturn in exports contributed to the deceleration in real GDP. In the last quarter of the year, exports declined 3.7% compared to an increase of 14.6% (annual rate) in the third quarter.



Imports were soft in the last quarter with a decrease in goods (primarily durable goods) partly offset by an increase in services. The increase in services was led by travel and transport.



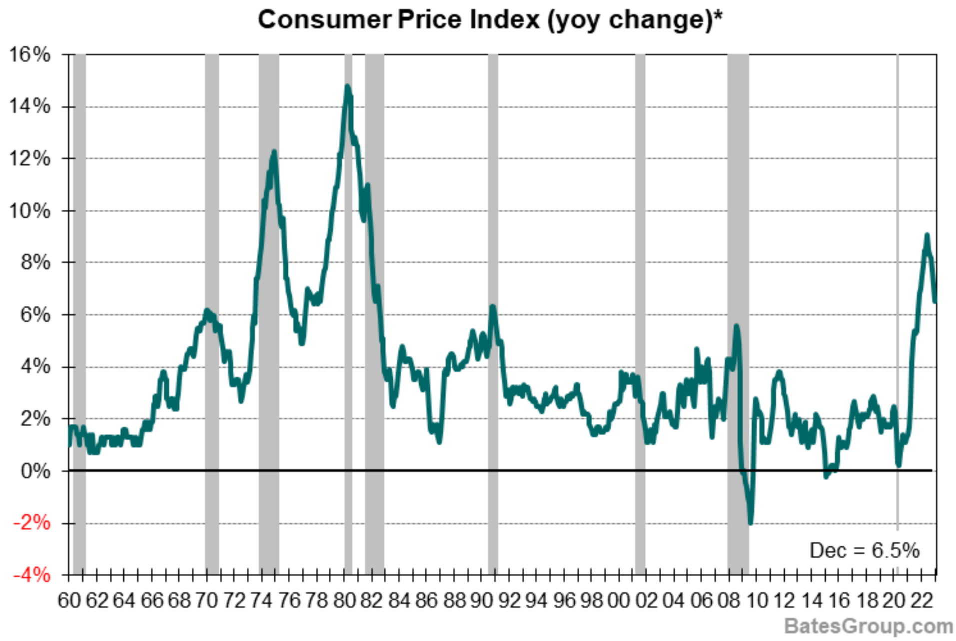
** Shaded areas represent recessions, saar – seasonally adjusted annual rate*
Source: Bureau of Economic Analysis

Inflation

If one theme were to define 2022, that would be inflation. During the year, the dramatic rise in inflation to rates not experienced in nearly 40 years.

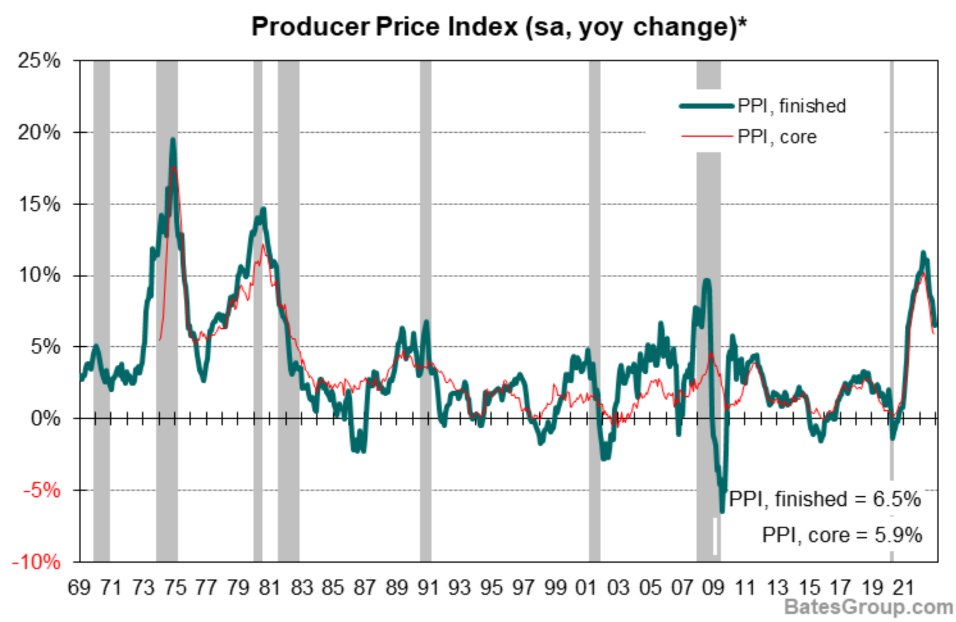
After peaking in June to a rate of 9.1% yoy, inflation declined during the second half of the year and by December was at 6.5%.

Food prices increased 10.4% from December 2021 to December 2022 and energy prices climbed 7.3% during the year.



Producer prices for final demand softened further in the second half of 2022, declining 0.5% in December. Leading the December decline was a 7.9% drop in final demand for energy. For the 12 months ended December 2022, producer prices for final demand were up 6.5%

The 12-month core PPI rate (final demand finished goods less foods and energy) was 5.9% in December.

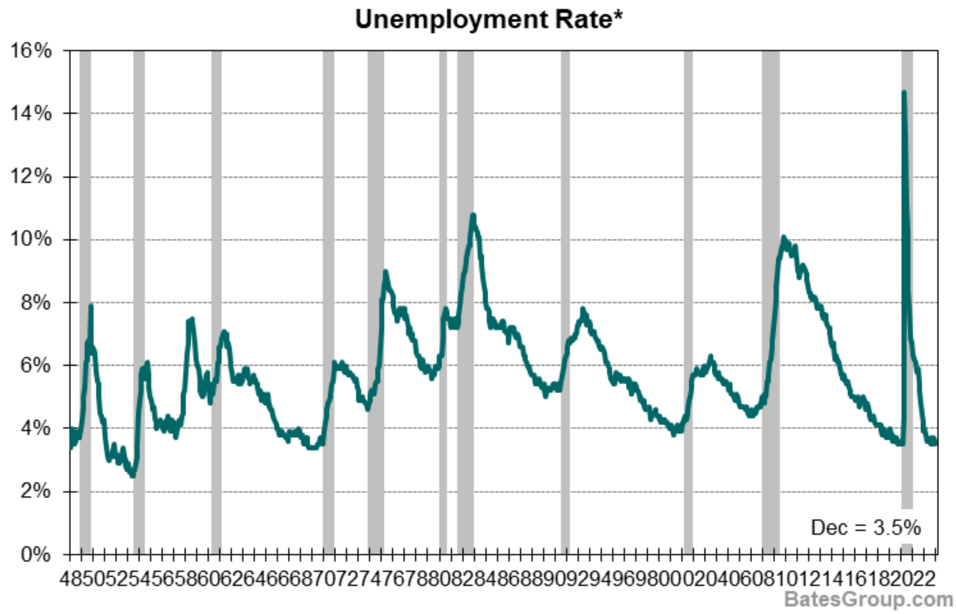


Shaded areas represent recessions
Source: Bureau of Labor Statistics

Employment

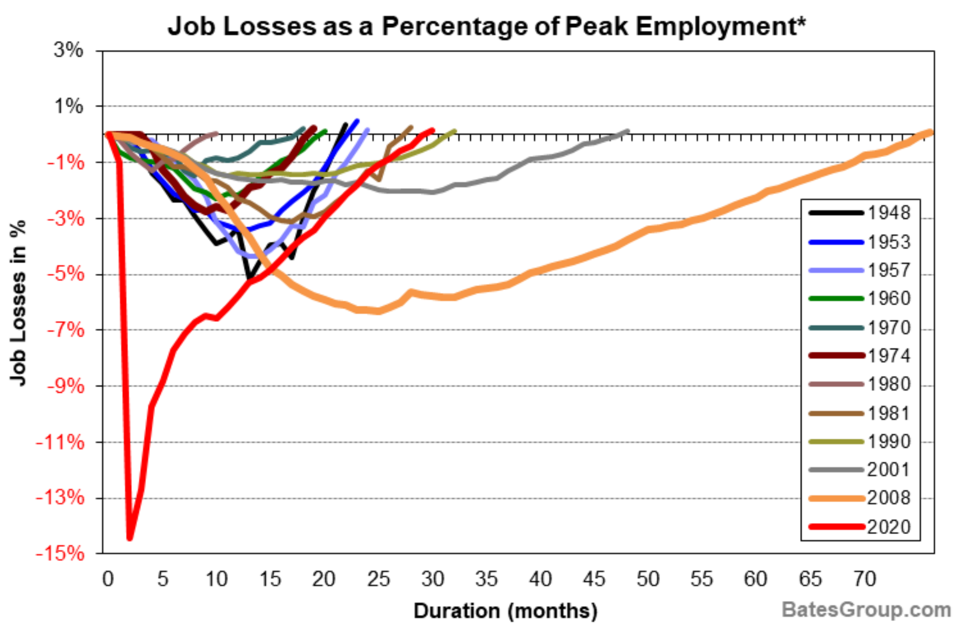
After spiking to 14.7% in April 2020, the top-line unemployment rate declined substantially during the next two years to finish 2022 at 3.5%.

A fuller, or better measure of unemployment is the U-6 number, which was 6.5% 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 22.8%. This was the highest unemployment rate that the U.S. had experienced since the Great Depression.



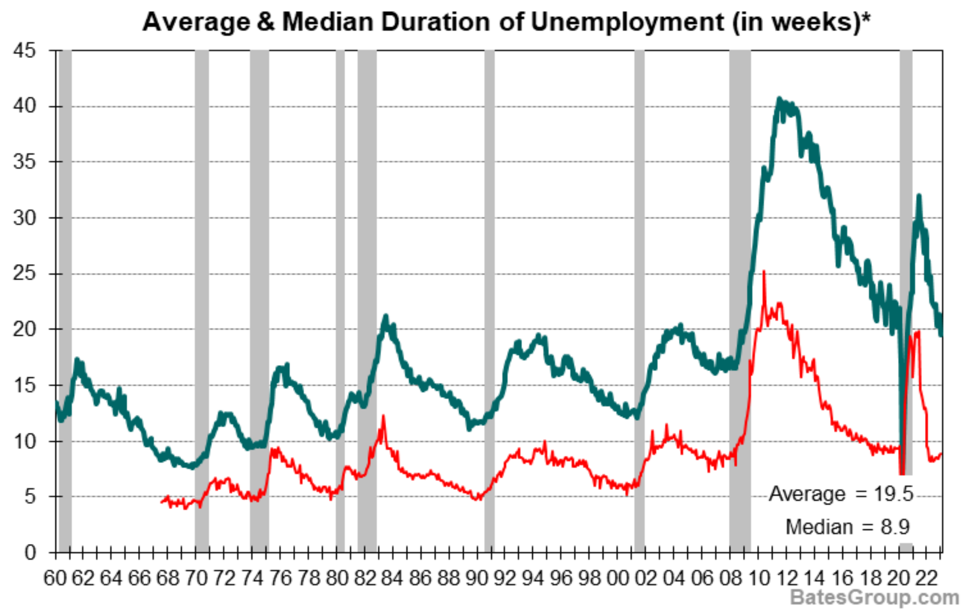
2020 was also notable for the steepest decline in employment since the Great Depression. In just two months in early 2020, nearly 15% of the workforce lost their jobs.

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



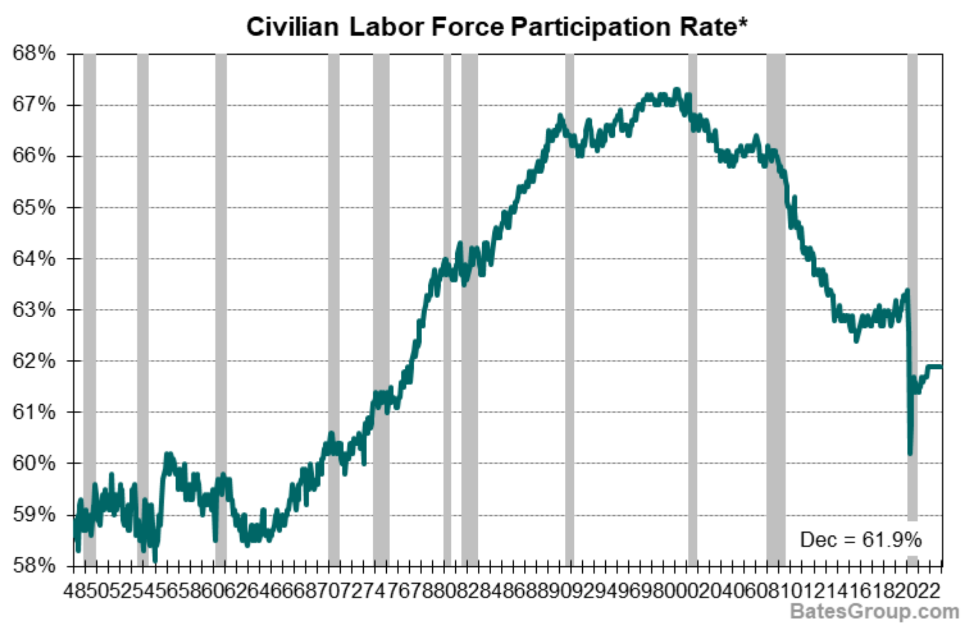
** Shaded areas represent recessions*
Source: Bureau of Labor Statistics

After declining from the peak set in 2010, the average duration of unemployment spiked in 2020. Since that time, the average duration of unemployment is back to pre-pandemic levels. In December 2022 it was at 19.5 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 account for the decline. Life cycle or generational changes have recently led to less men participating in the labor force compared to earlier generations.

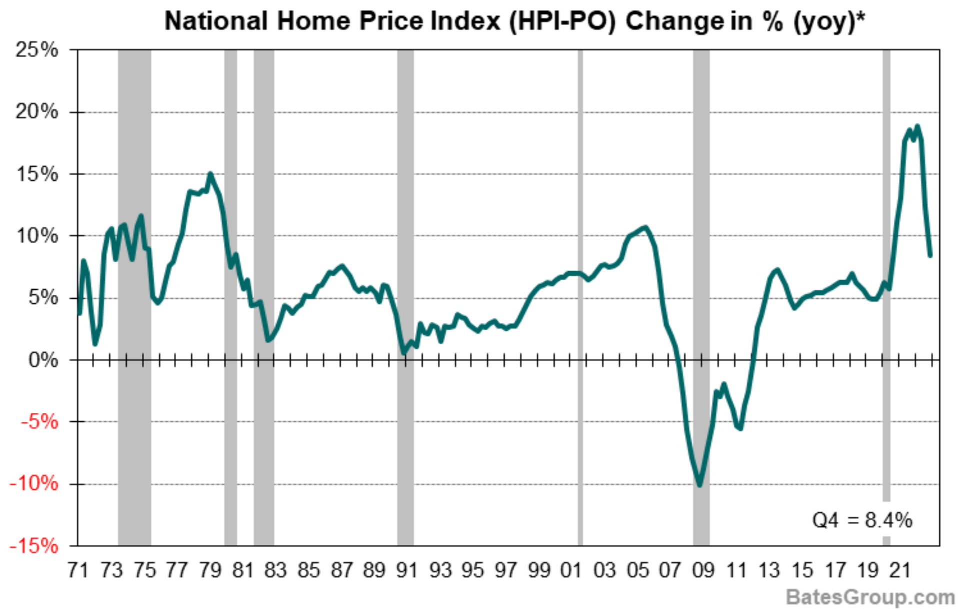


** Shaded areas represent recessions*
Source: Bureau of Labor Statistics

Housing

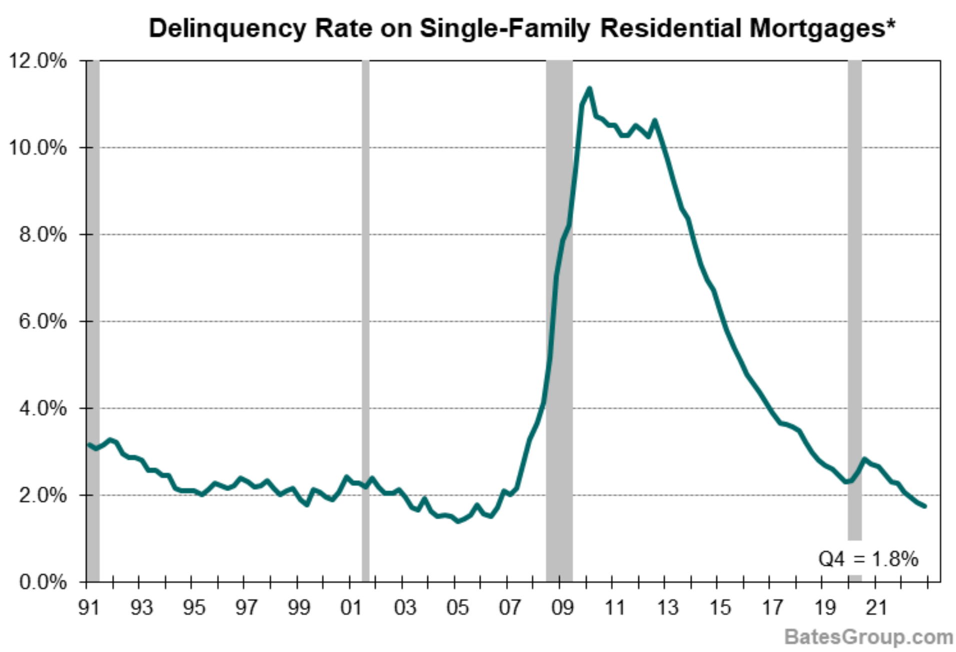
Housing price appreciation (purchases only) was strong in 2022, rising 8.4% year-over-year (yoy) in the fourth quarter of 2020.

Of the nine census divisions, the South Atlantic region experienced the strongest gain, with a 12.4% yoy gain. The weakest division was the Pacific region where prices rose 2.9% yoy.



According to the Federal Reserve, delinquency rates on single-family residential mortgages trended down during the year, ending Q4 at 1.77% compared to 2.28% at the end of 2021.

In contrast, Fannie Mae's serious delinquency rate for single-family homes was 0.65% in December 2022 compared to 1.25% a year previously.

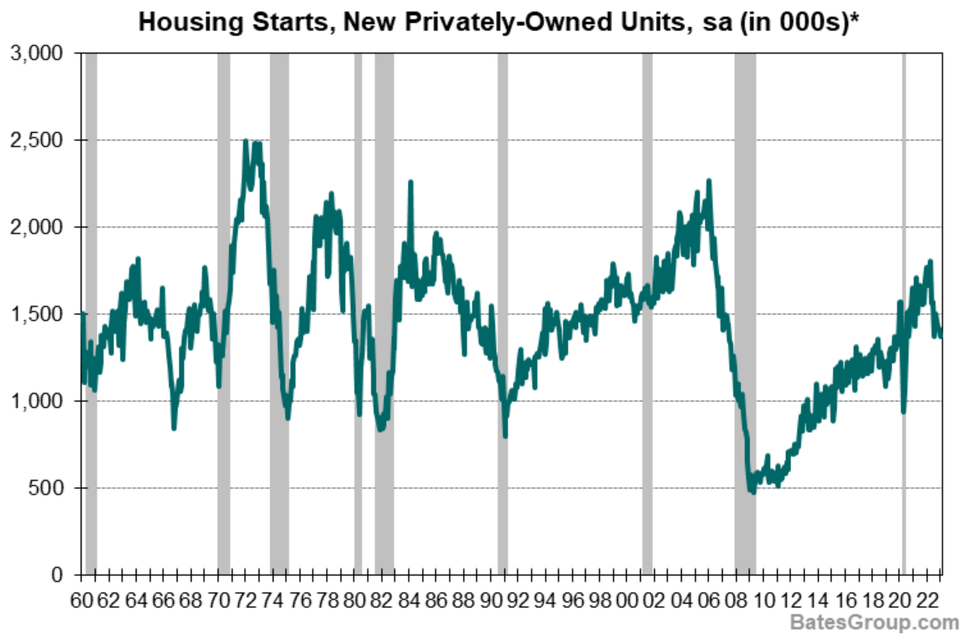


** Shaded areas represent recessions*
Source: FHFA, Federal Reserve, Bloomberg

With interest rates beginning to rise in the first part of 2022, the number of new home construction began to slow down with only 1.38 million units started in December 2022.

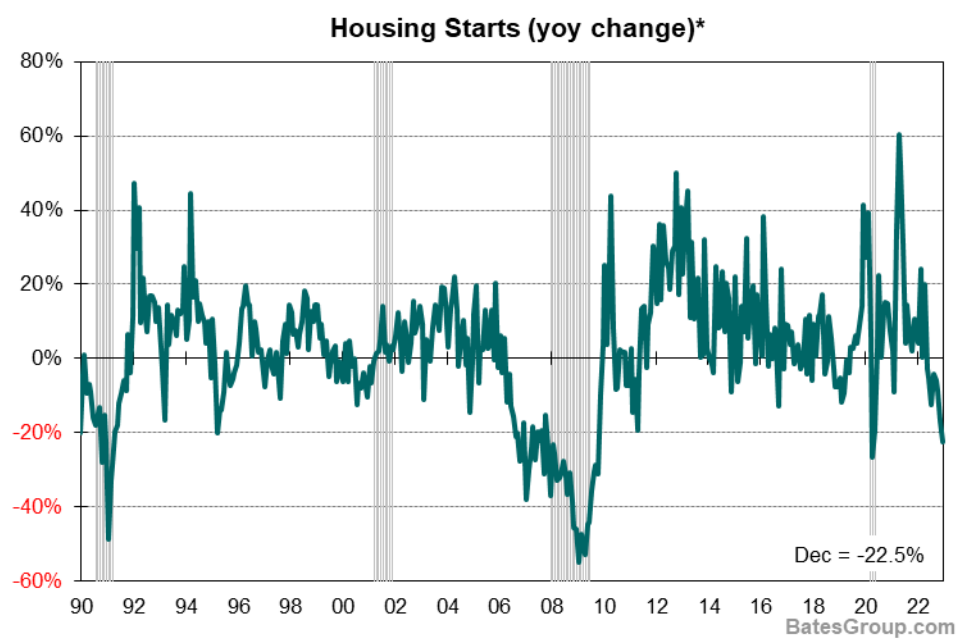
A number of factors also contributed to the slowdown including the high cost of construction as well as supply chain constraints.

The weakness was felt in three of the four U.S. regions, Midwest, South and West.



On an annual basis, housing starts fell 22.5% in December from a year earlier.

The strongest pullback was in the Midwest region where housing starts fell 61.5% yoy.

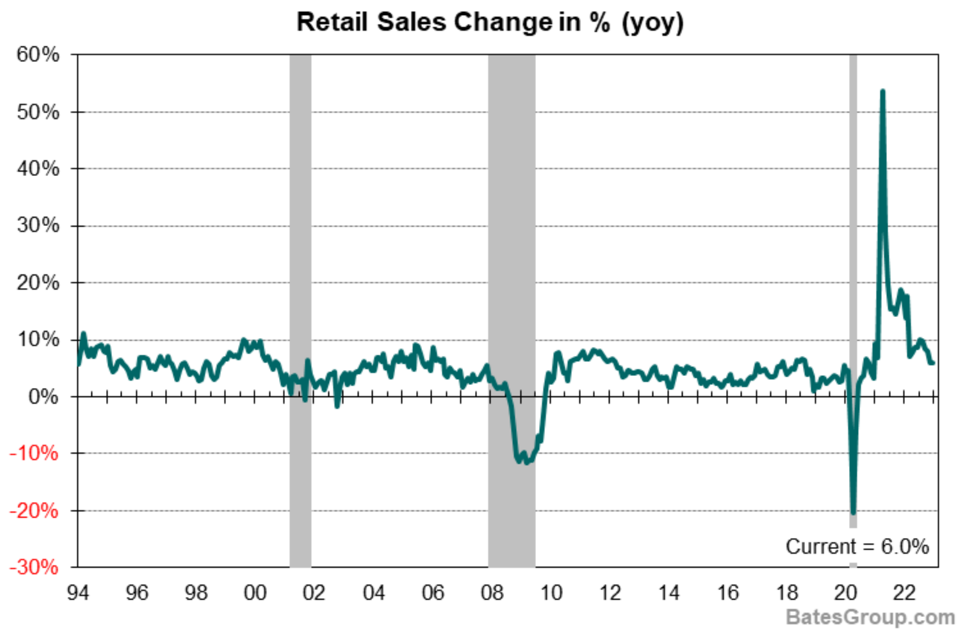


** Shaded areas represent recessions*
Source: Census Bureau, HUD

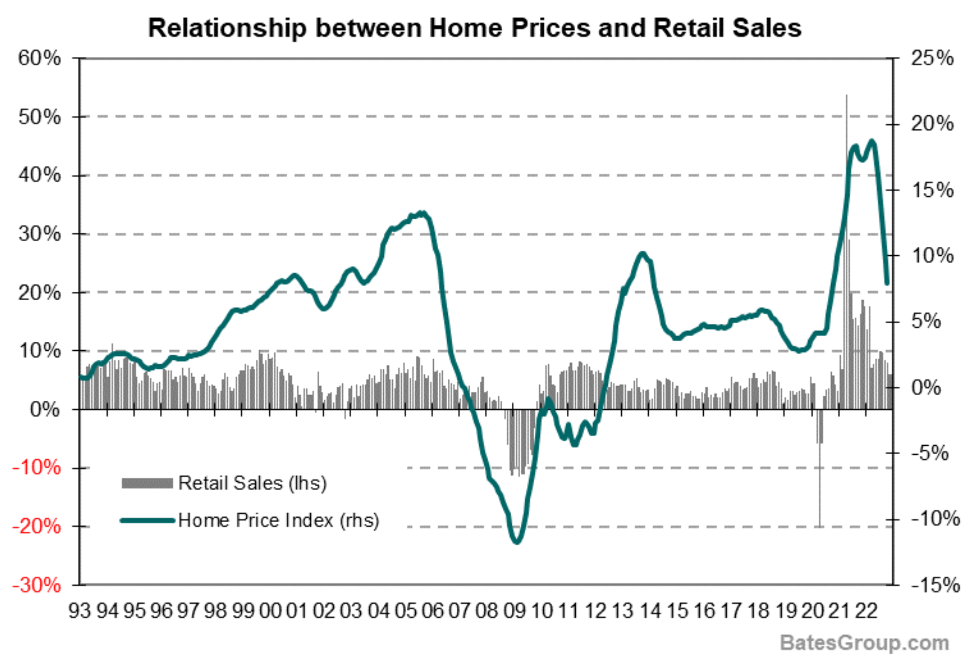
The Consumer

In the last month of 2022, the advance estimate of retail sales fell 1.1% over the previous month, while year-over-year (yoy) retail sales increased an estimated 6%.

On a 12-month basis, nonstore retailers showed the biggest gain, up 13.7% while bars & restaurants gained 12.1%. Electronic and appliance store sales were down 5.6% for the 12 months ended December 2022.



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

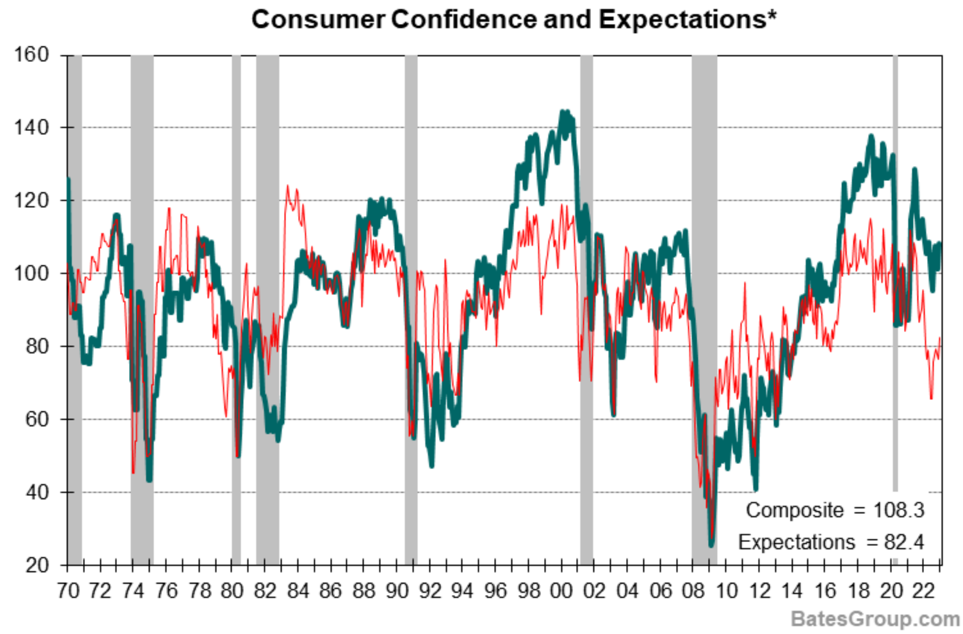


** Shaded areas represent recessions*
Source: U.S. Census Bureau, FHFA

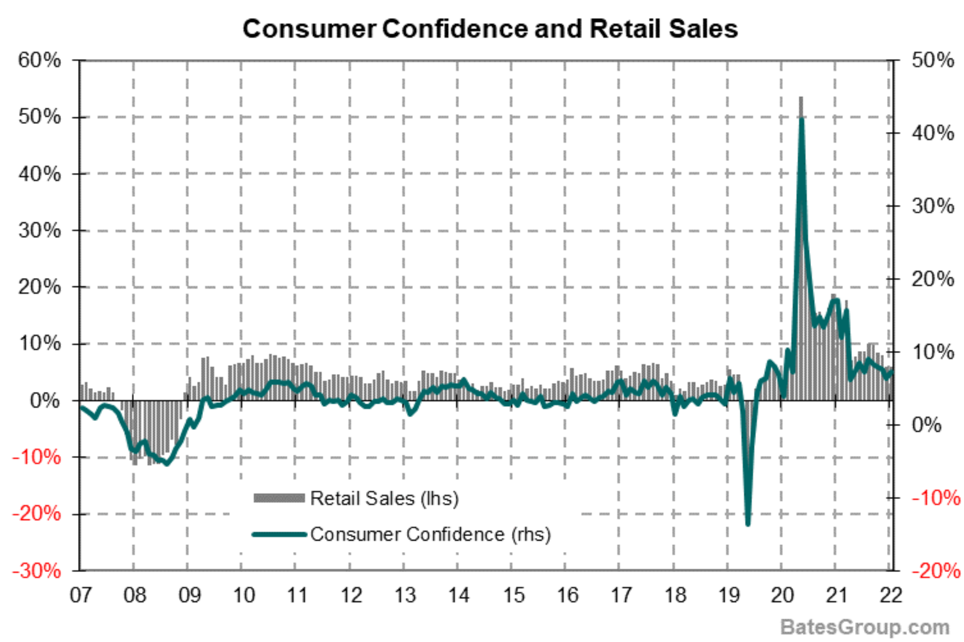
Consumer confidence increased in December to 108.3, up sharply from 101.4 in the prior month. According to the Conference Board, this reflected consumer's positive view on the economy and jobs.

The consumer expectations index rose to 82.4 in December.

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



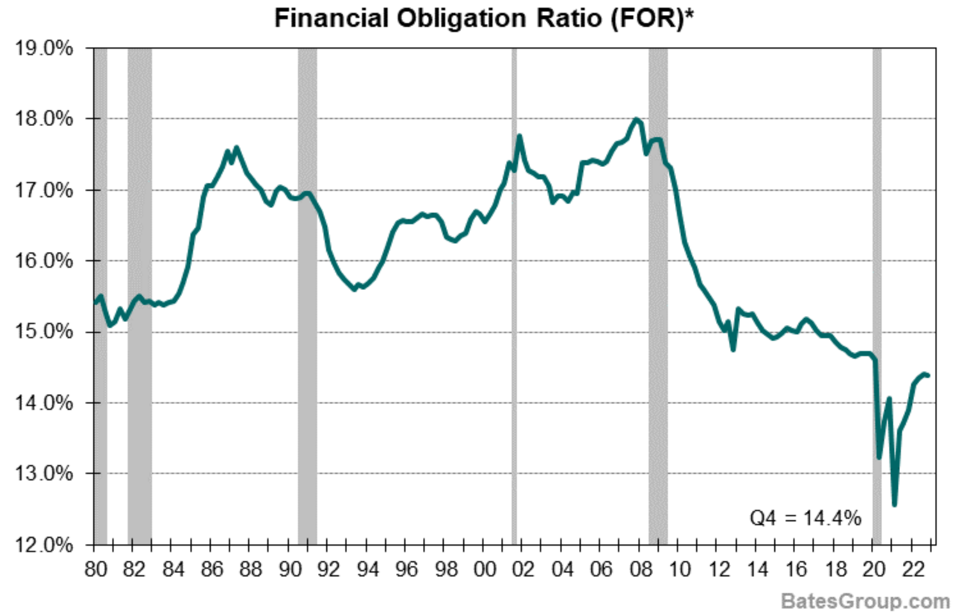
As the chart to the right highlights, consumer confidence tends to be a good barometer of retail spending levels.



** Shaded areas represent recessions*
Source: The Conference Board, U.S. Census Bureau

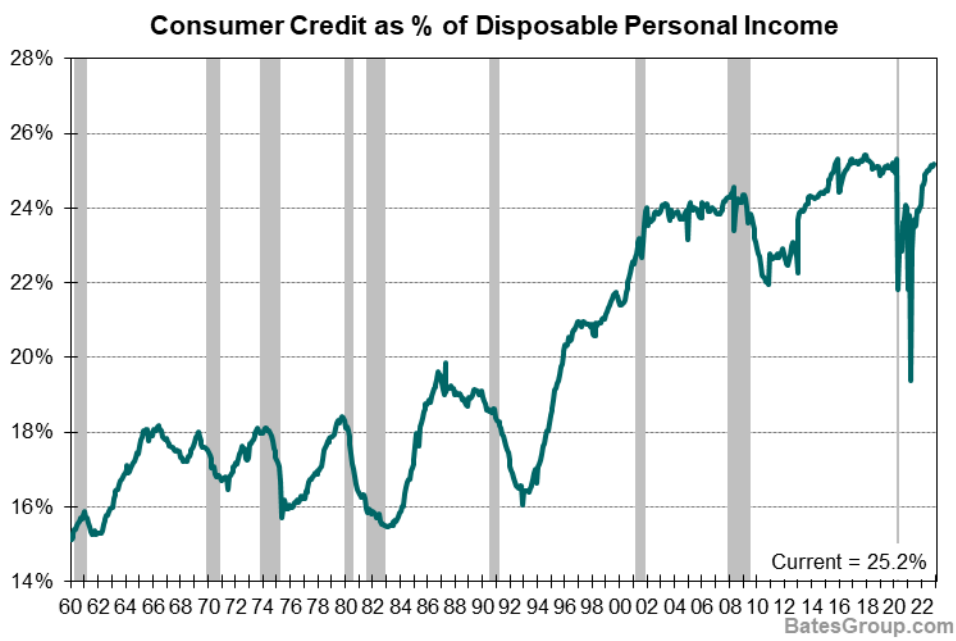
The Federal Reserve's Financial Obligation Ratio (FOR) is an estimate of all debt payments plus car lease payments, rent, homeowner's insurance and property tax payments as a percentage of disposable personal income.

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

Recently, over the past two years consumer credit has been rising again to near pre-pandemic levels.

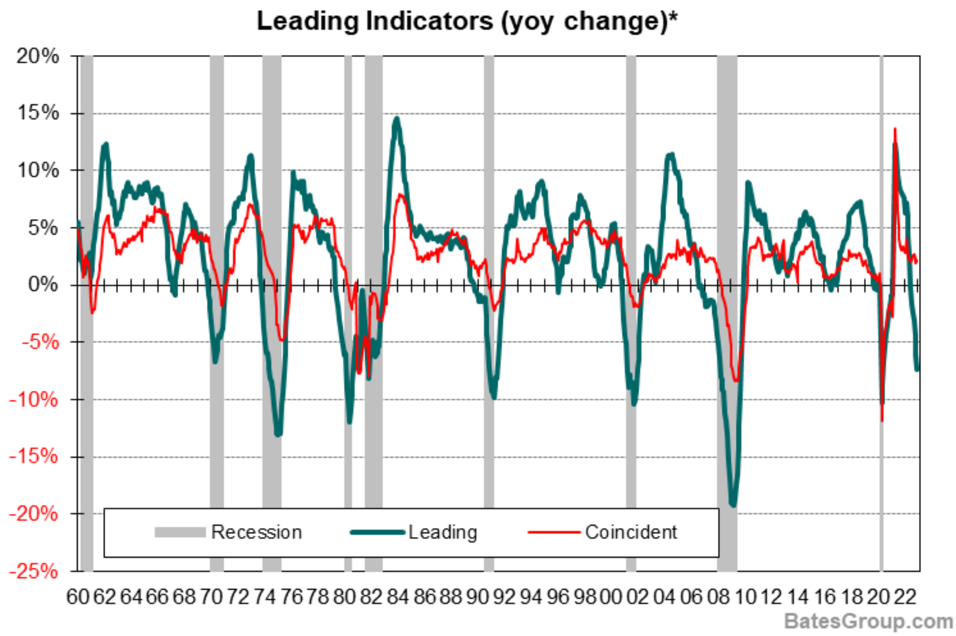


** Shaded areas represent recessions*
Source: Federal Reserve

Industry Indicators

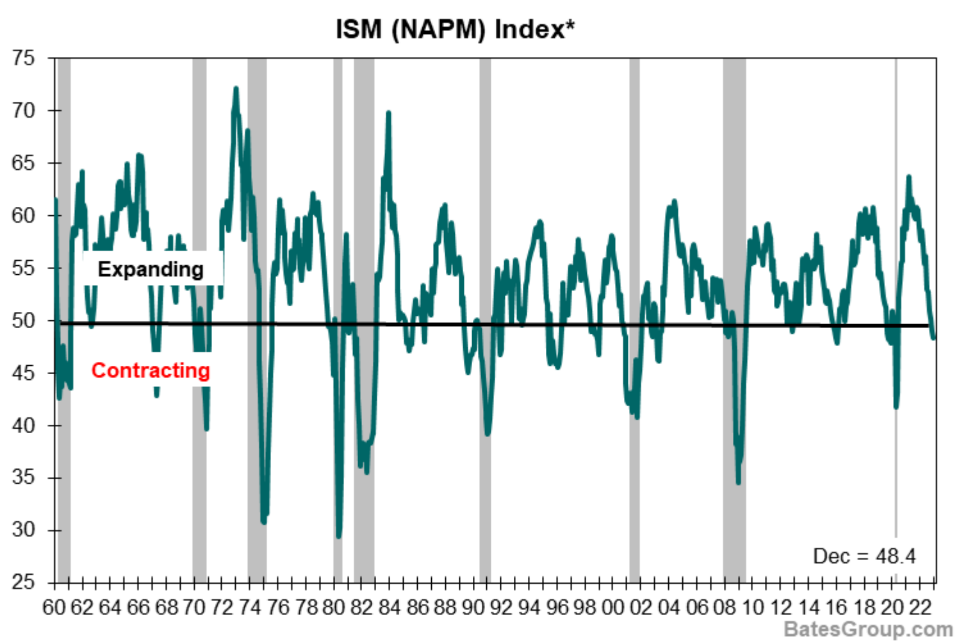
In a sign that the U.S. economy is slowing, the index of leading indicators declined to 110.5 in December. This reflected a 4.2 percent decline over the prior six months.

According to the Conference Board, the index is “continuing to signal recession for the US economy in the near term” citing “widespread weakness.”



The Institute for Supply Management Index, a gauge on the health of the manufacturing sector, continued to decline through 2022 and fell to 48.4 in December.

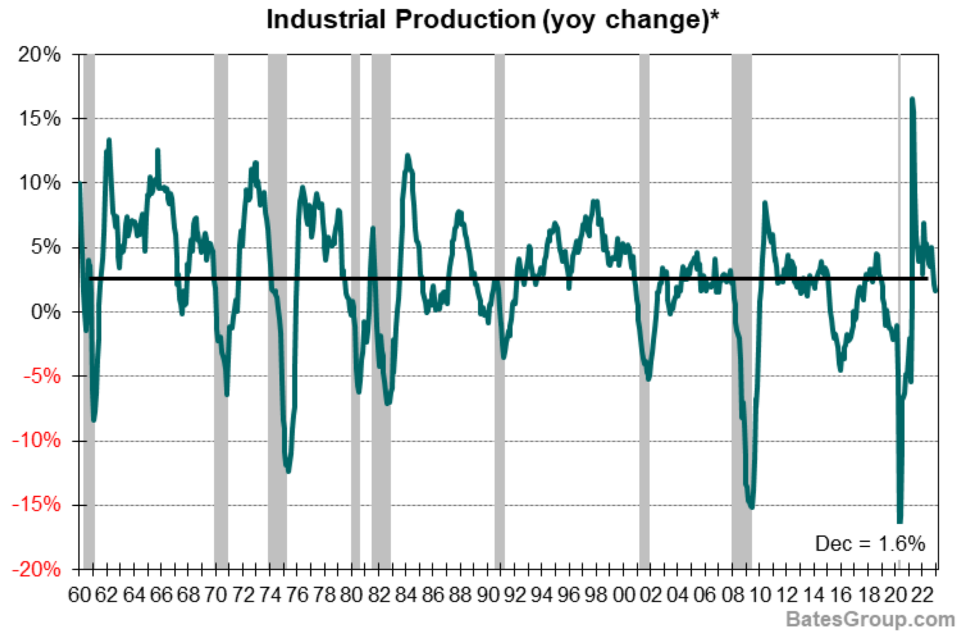
A reading below 50 represents a contraction in manufacturing activity.



** Shaded areas represent recessions*
Source: The Conference Board, Institute for Supply Management

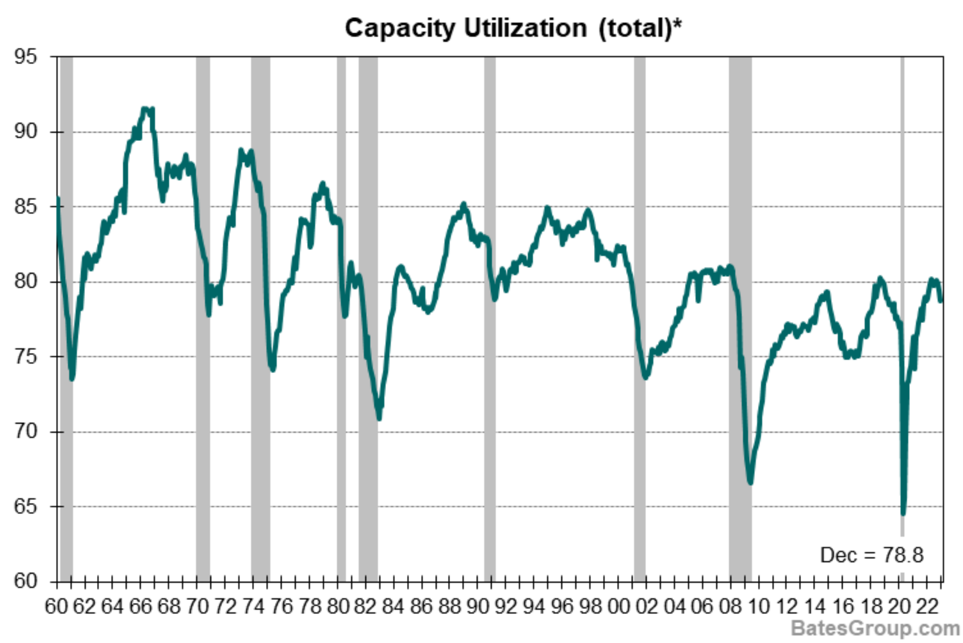
Industrial production continued to remain virtually unchanged in December relative to the rest of 2022. Year-over-year the index was up just 1.6% from December 2021.

Utilities was up 5.8% yoy while manufacturing output was down 0.5%,



In December, the utilization rate was 78.8% which was below the long-term average of 79.6%.

The mining utilization rate was 85.8% while utilities was 71.8%. Both were below their long-term averages.

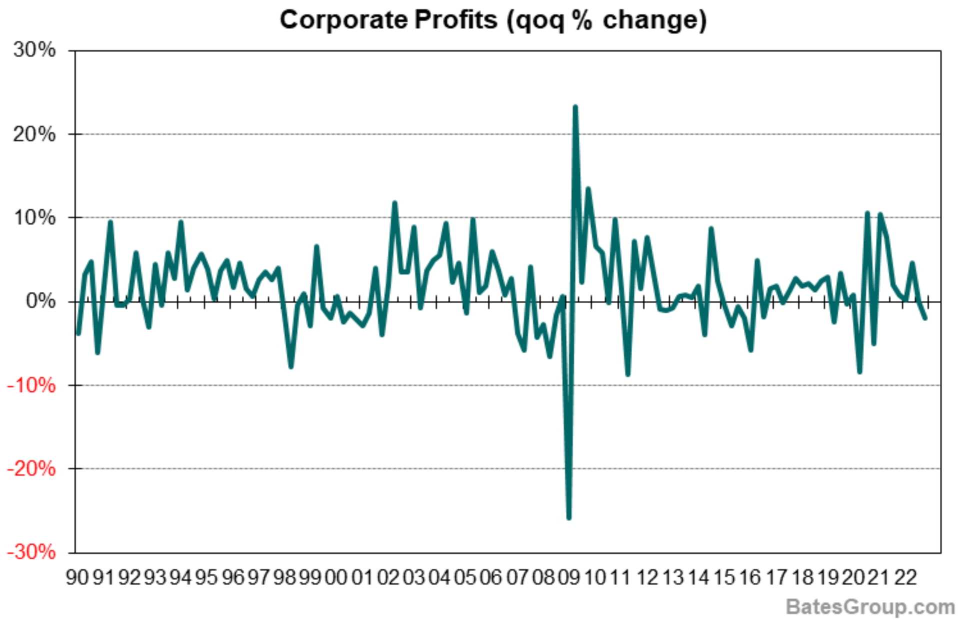


** Shaded areas represent recessions*
Source: Federal Reserve

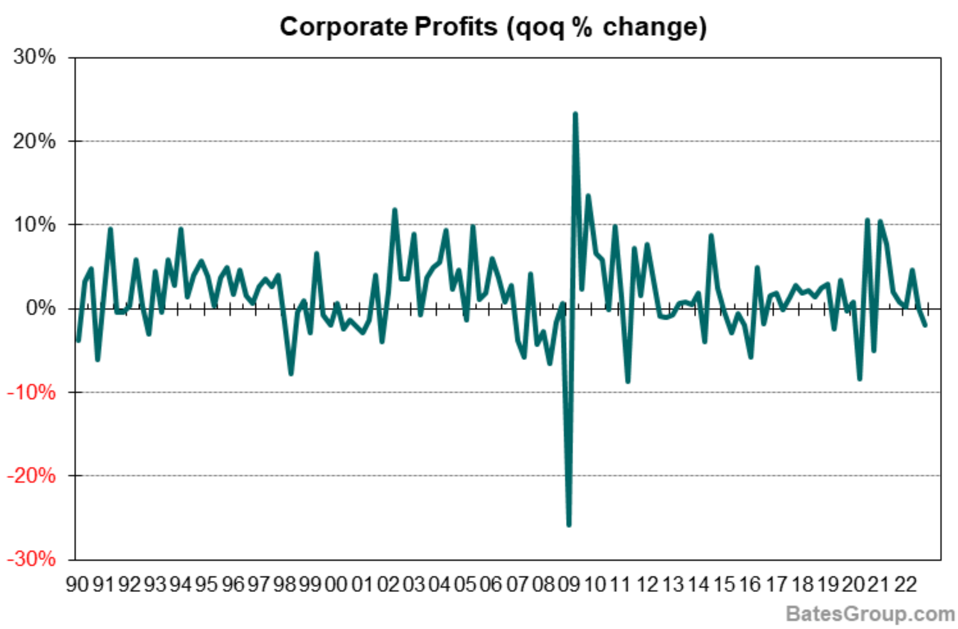
Corporate Profits

In the third quarter of 2022, corporate profits declined 2 percent to approximately $2,939 billion.

Profits for domestic financial corporations fell $58.9 billion in Q4, and profits for domestic nonfinancial companies declined $22.9 billion in the last quarter of the year.



Corporate profit margins as measured by the ratio of corporate profits to GDP increased to 11.2% in the third quarter of 2022.

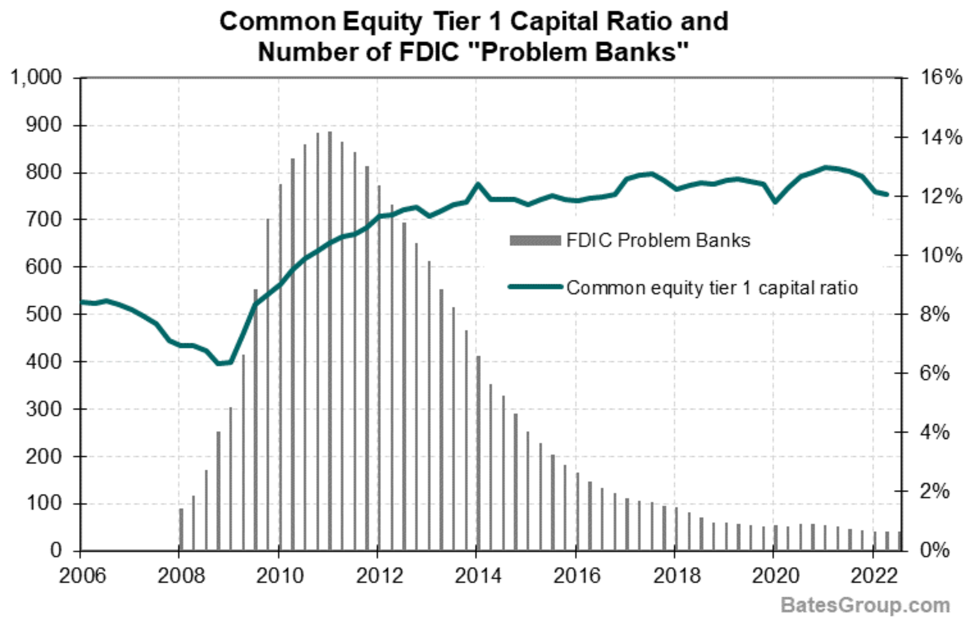


** Shaded areas represent recessions*
Source: Bureau of Economic Analysis

Banking Industry

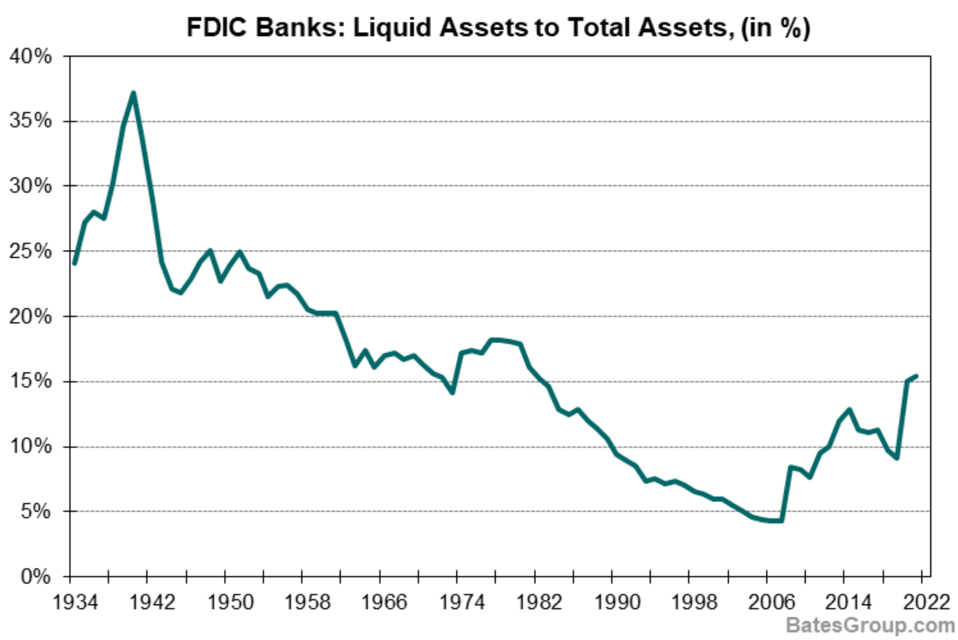
Although capital ratios have dipped slightly in late 2022, the banking industry's financial strength remains solid with common equity Tier 1 capital ratios above 12%.

The number of problem FDIC institutions ticked up in the third quarter to 42 from 40 in the prior quarter, but still remain at very low levels compared to the financial crisis beginning 2008.



Aggregate liquidity ratios for banks, defined as cash and CE as a percent of total assets, continued to improve in 2022 compared to the low levels just prior to the 2008 financial crisis.

Today liquidity ratios are above 15% compared to below 4.3% in 2007.

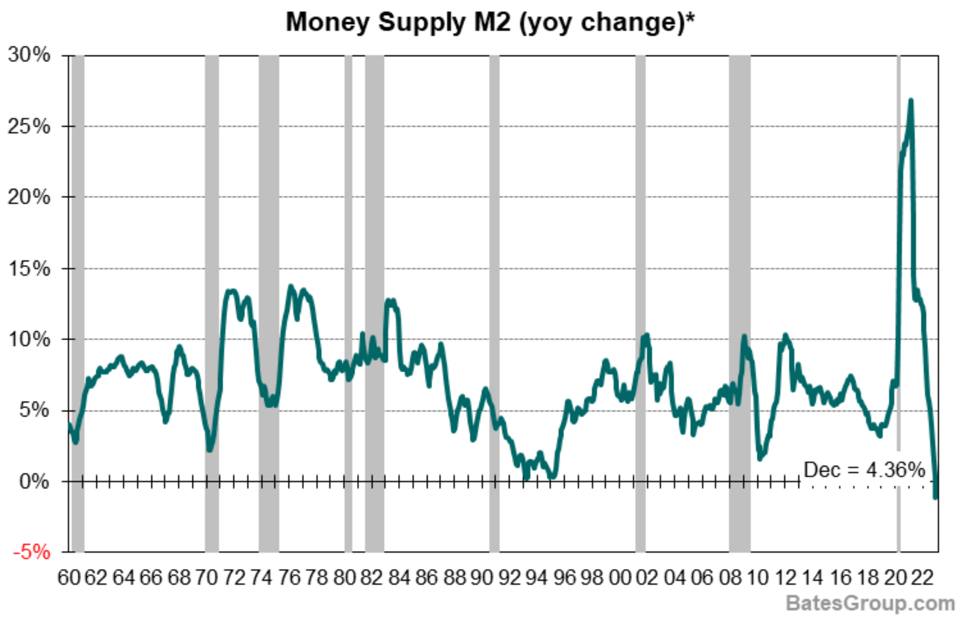


Source: Federal Reserve, FDIC

Money Supply

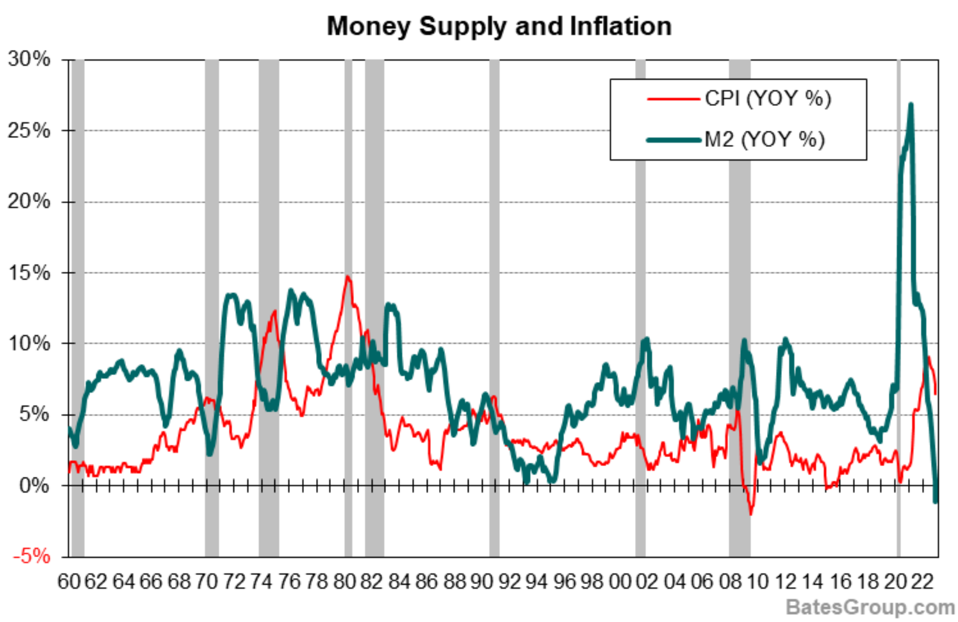
Continuing the theme, "one for the history books," M2 money supply experienced one of its steepest drops in history following one of the most rapid increases in history.

In the last month of the year, the growth in money supply turned negative as the Federal Reserve tightened supply in a move to slow growth and reduce 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, Bates Research

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