Point of View
Presented for
CGAN

Point of View

Economy – Markets – Investment Strategy

May 2023

Important Information

The views and opinions expressed are those of the speaker and are subject to change based on factors such as market and economic conditions. These views and opinions are not an offer to buy a particular security and should not be relied upon as investment advice. Past performance cannot guarantee comparable future results.

Important Information

Performance quoted is past performance and cannot guarantee comparable future results; current performance may be higher or lower.

Results shown assume the reinvestment of dividends.

An investment cannot be made directly in an index.

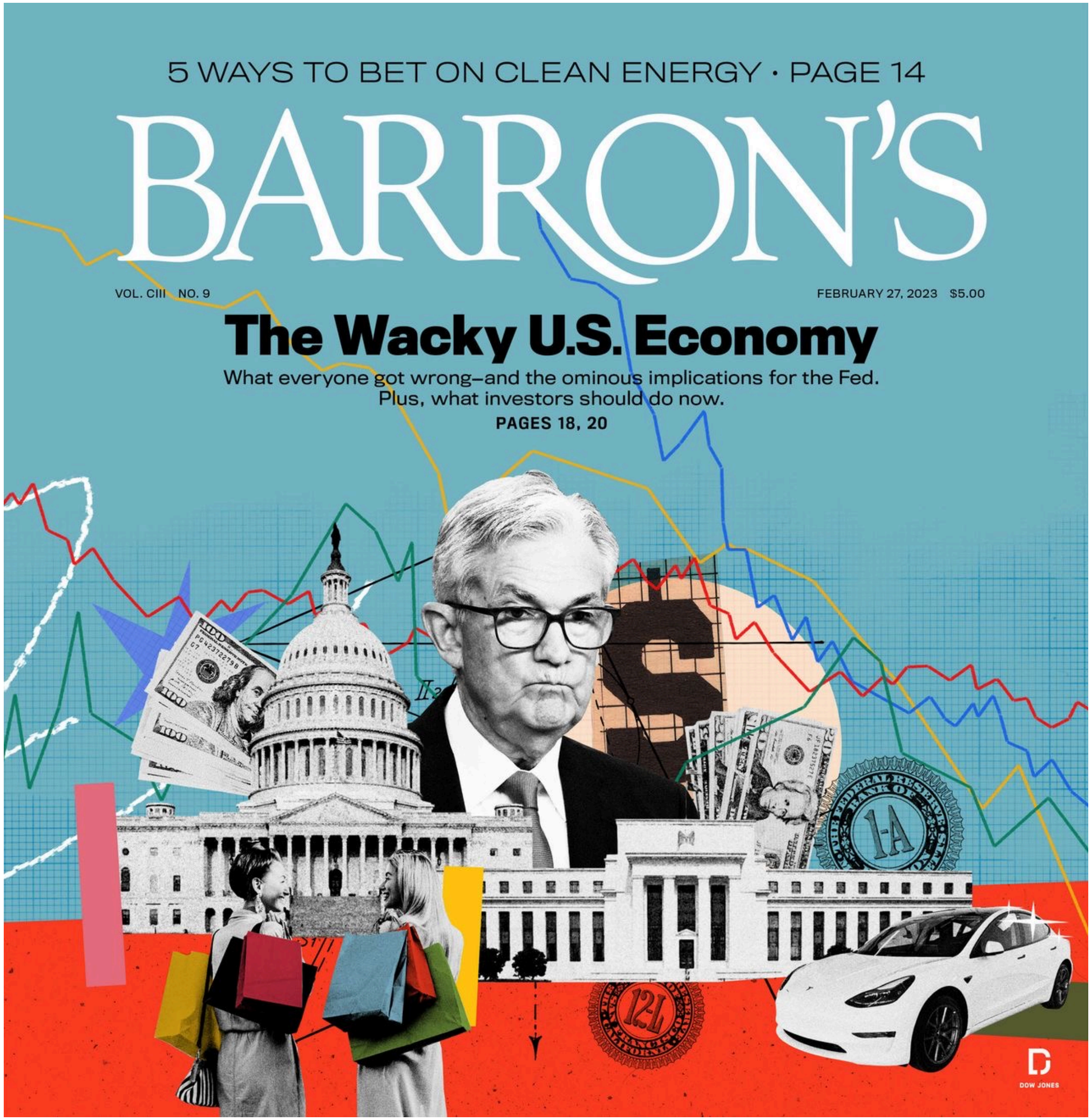
Investments with higher return potential carry greater risk for loss.

Investing in small companies involves greater risks not associated with investing in more established companies, such as business risk, significant stock price fluctuations and illiquidity.

Foreign securities have additional risks, including exchange rate changes, political and economic upheaval, the relative lack of information about these companies, relatively low market liquidity and the potential lack of strict financial and accounting controls and standards.

Investing in emerging markets involves greater risk than investing in more established markets such as risks relating to the relatively smaller size and lesser liquidity of these markets, high inflation rates, adverse political developments and lack of timely information.

Fluctuations in the price of gold and precious metals often dramatically affect the profitability of the companies in the gold and precious metals sector. Changes in political or economic climate for the two largest gold producers, South Africa and the former Soviet Union, may have a direct effect on the price of gold worldwide.



Source: *Barron's*, February 27, 2023.

The Split-Personality Economy

Bad news

- LEI
- Inverted yield curve
- Weak manufacturing PMI
- Weakening services PMI
- Cooling retail sales
- Weak housing starts

Good news

- Strong hiring data
- Strong Q1 GDP
- Strong March car sales
- Oil down
- Consumers still have cash
- Strong corporate balance sheets
- Strong bank capital
- Inflation is moderating

Bad news

- LEI
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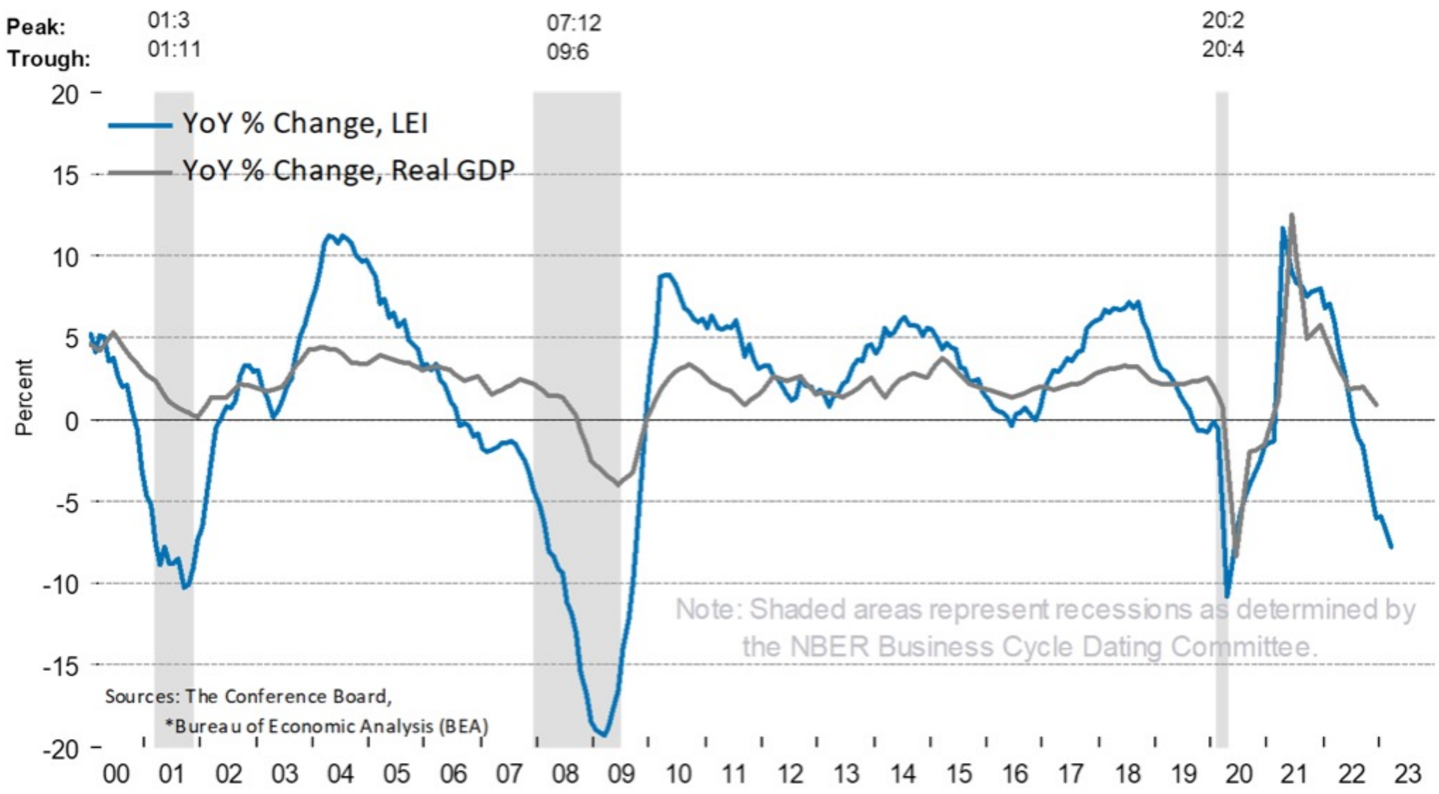
U.S. index of leading economic indicators – signaling recession



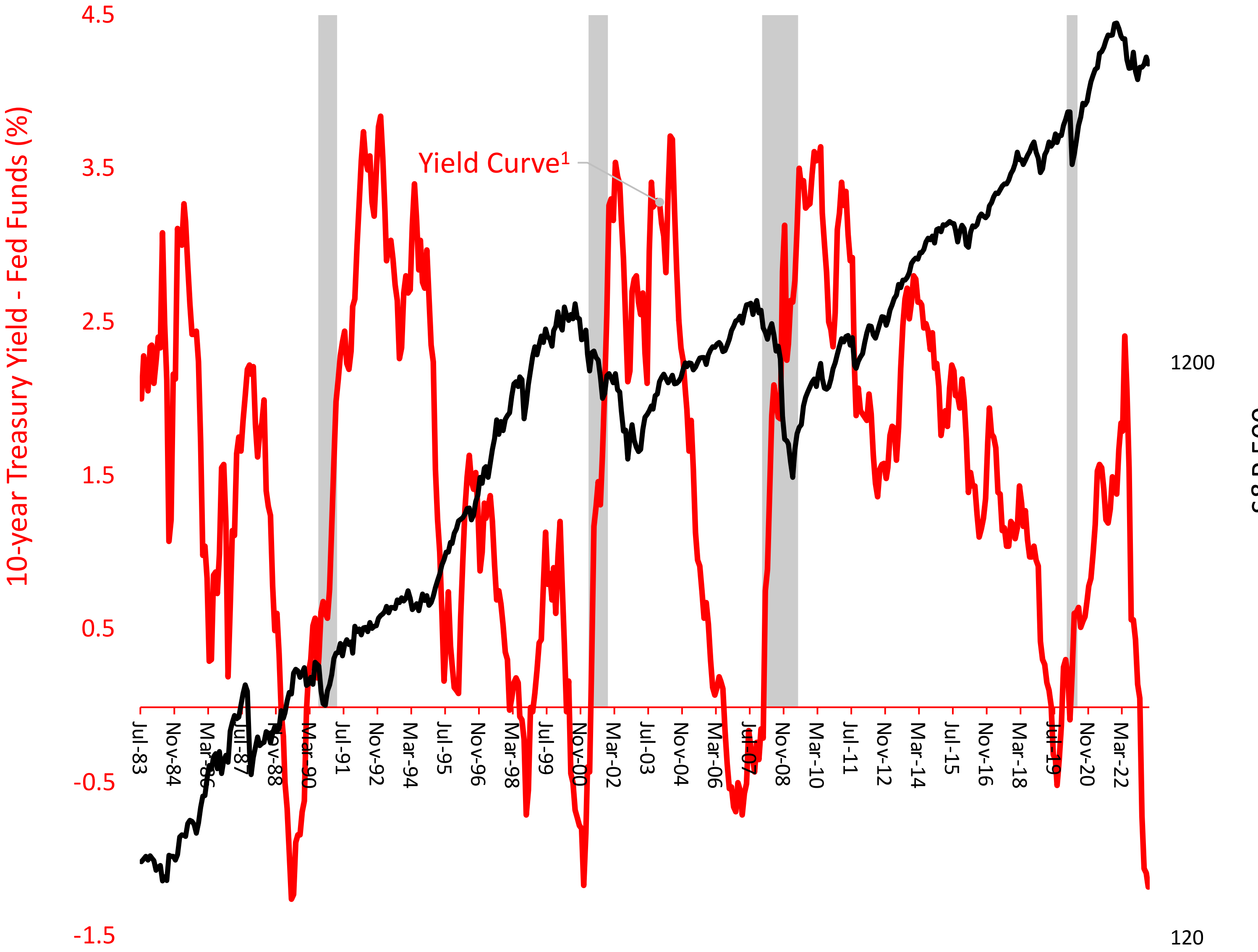
"The weaknesses among the index's components were widespread in March and have been so over the past six months, which pushed the growth rate of the LEI deeper into negative territory. … The Conference Board forecasts that economic weakness will intensify and spread more widely throughout the US economy over the coming months, leading to a recession starting in mid-2023."

This chart shows how the LEI has definitively rolled over well in advance of the last recessions.

The Conference Board Leading Economic Index® (LEI) components: 1) average weekly hours worked, manufacturing; 2) average weekly initial unemployment claims; 3) manufacturers' new orders – consumer goods and materials; 4) ISM index of new orders; 5) manufacturers' new orders, nondefense capital goods; 6) building permits – new private housing units; 7) stock prices, S&P 500; 8) Leading Credit Index™; 9) interest rate spread; 10-year Treasury minus fed funds; 10) index of consumer expectations.
Source: ©The Conference Board. Data through February released April 20, 2023.

Federal Reserve policy

Yield curve vs. the S&P 500



When the yield curve has inverted the economy has usually turned down into recession with a lag of a year or more.

Today, <u>the yield curve is inverted</u>.

Sources: NBER, Federal Reserve and Standard & Poor's. Data through March 2023.

[1]The interest rate on the 10-year Treasury bond (long term) minus the fed funds rate (short term).

Retail sales

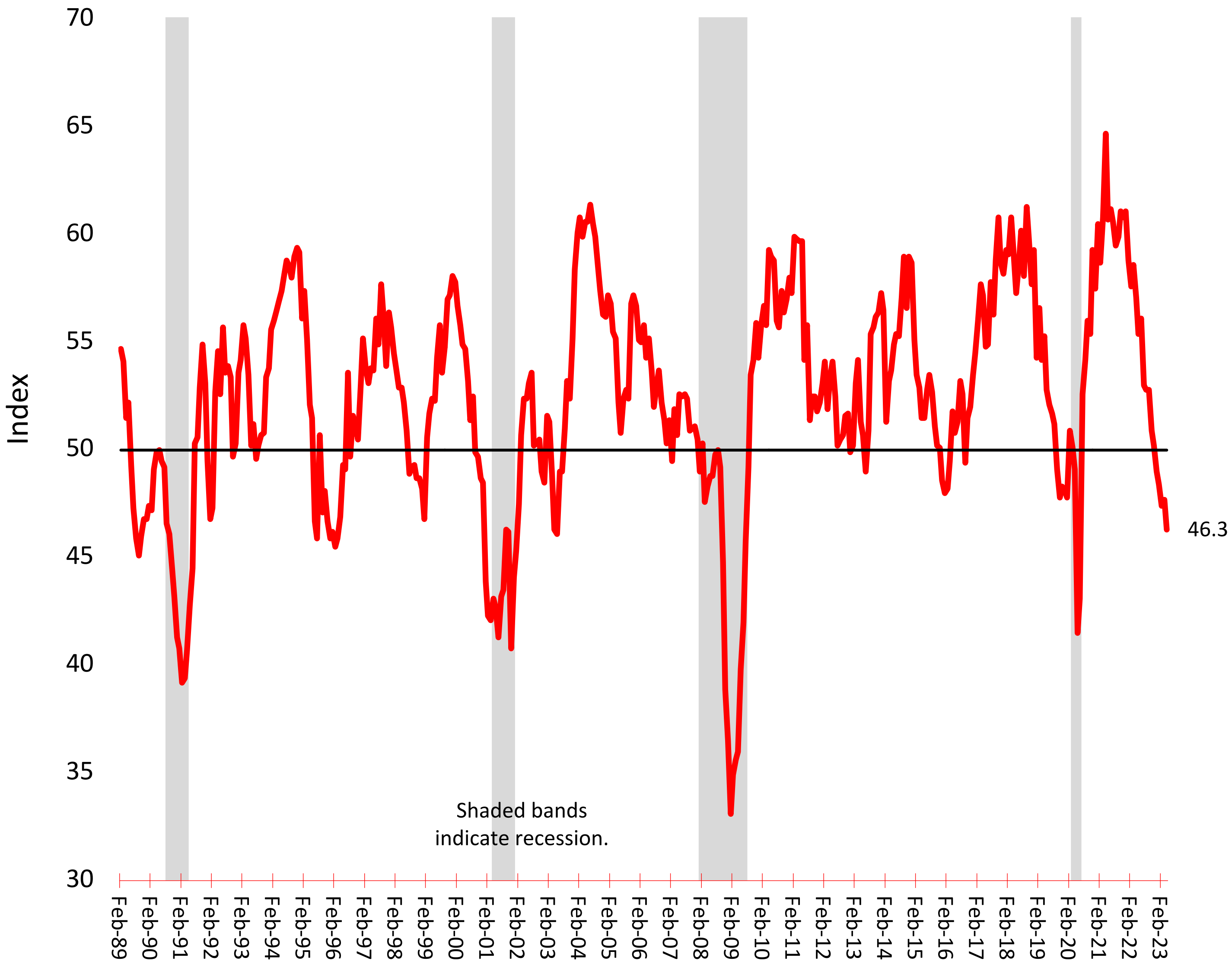
THE WALL STREET JOURNAL.

Consumers Again Scale Back Retail Spending

American consumers cut their retail spending for the second straight month in March, adding to signs of a slowing economy.

Source: *The Wall Street Journal.* “Consumers Again Scale Back Retail Spending”, by Harriet Torry. April 15-16, 2023.

ISM manufacturing PMI



March at 46.3.

March new orders 44.3.

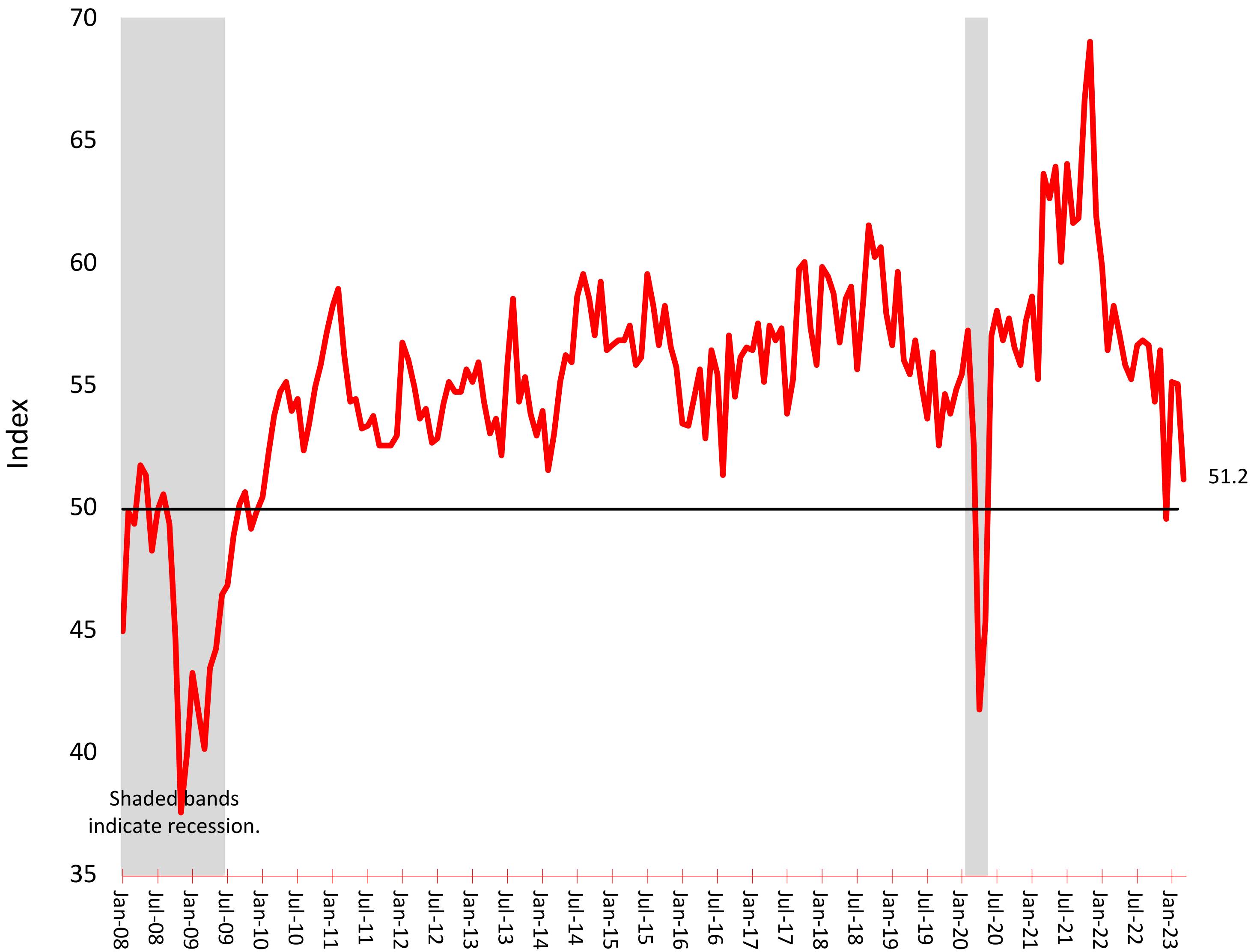
Note the historic volatility in the manufacturing PMI.

Note how this indicator has slumped well below 50 even during periods of strong economic expansion, eg. 1995, 1999, 2003, 2013, 2016.

Source: Copyright 2023, Institute for Supply Management. Data through March 2023.

ISM: “A reading above 50 percent indicates that the manufacturing economy is generally expanding; below 50 percent indicates that it is generally contracting. A Manufacturing PMI® above 48.7 percent, over a period of time, generally indicates an expansion of the overall economy.”

ISM services PMI



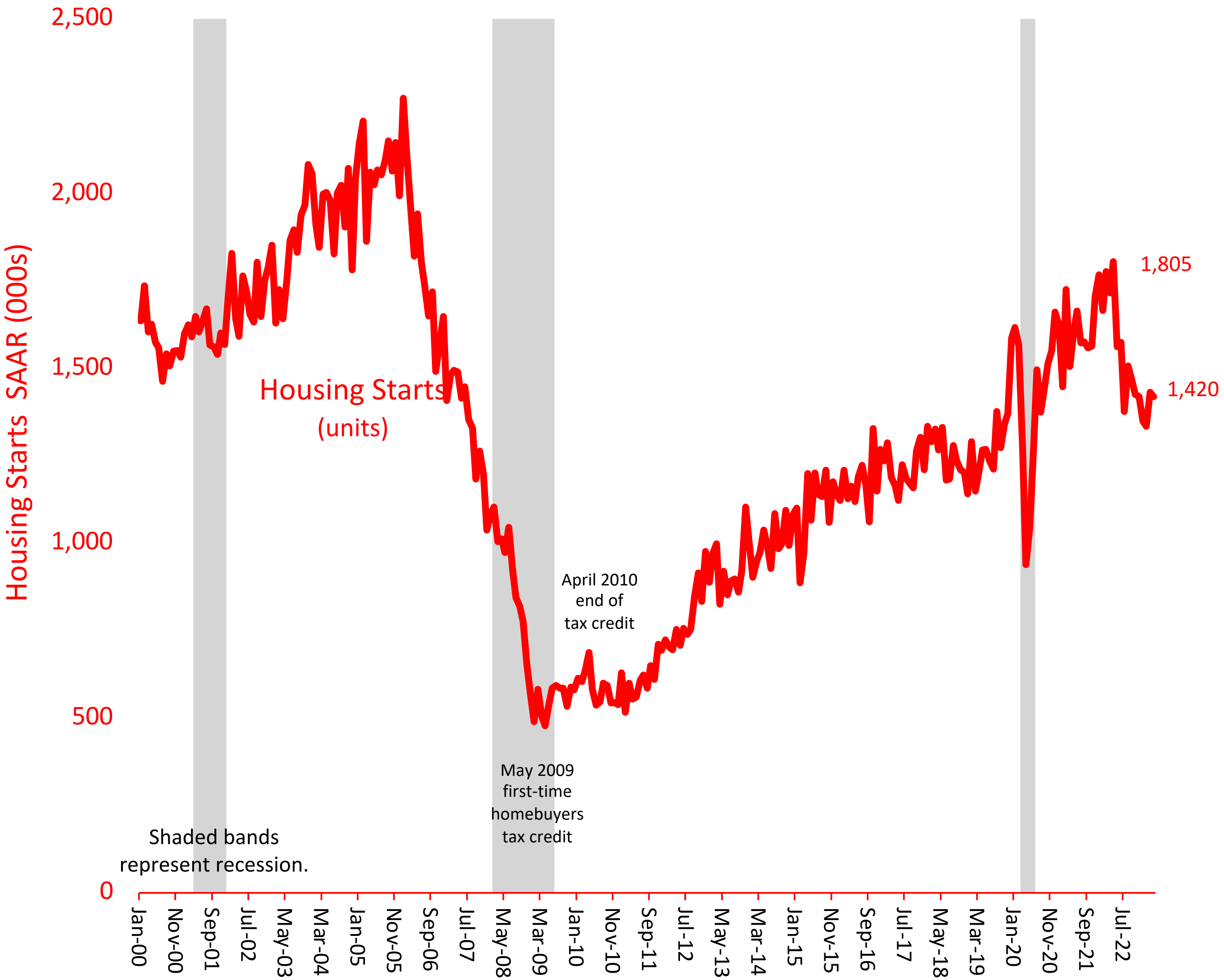
March at 51.2.

March new orders 52.2.

Services comprise 89% of the U.S. economy[1] and 91% of total nonfarm jobs.

Source: Copyright 2023, Institute for Supply Management; data through March 2023. This data series was created in 2008. ISM: “A reading above 50 percent indicates that the services sector economy is generally expanding; below 50 percent indicates that it is generally contracting.” “A Services PMI® above 50.1 percent, over time, generally indicates an expansion of the overall economy.” [1]Value added as a percent of GDP.

Housing starts



1.420 million in March.

March permits at 1.413 million.

"Housing starts also remain(ed) well below the projected rate of 1.6 to 1.8 million that is consistent with long-term demographics and the replacement of the existing housing stock (Herbert, McCue, and Spader 2016)." [1]

Sources: BEA and U.S. Census Bureau. Data through March 2023.

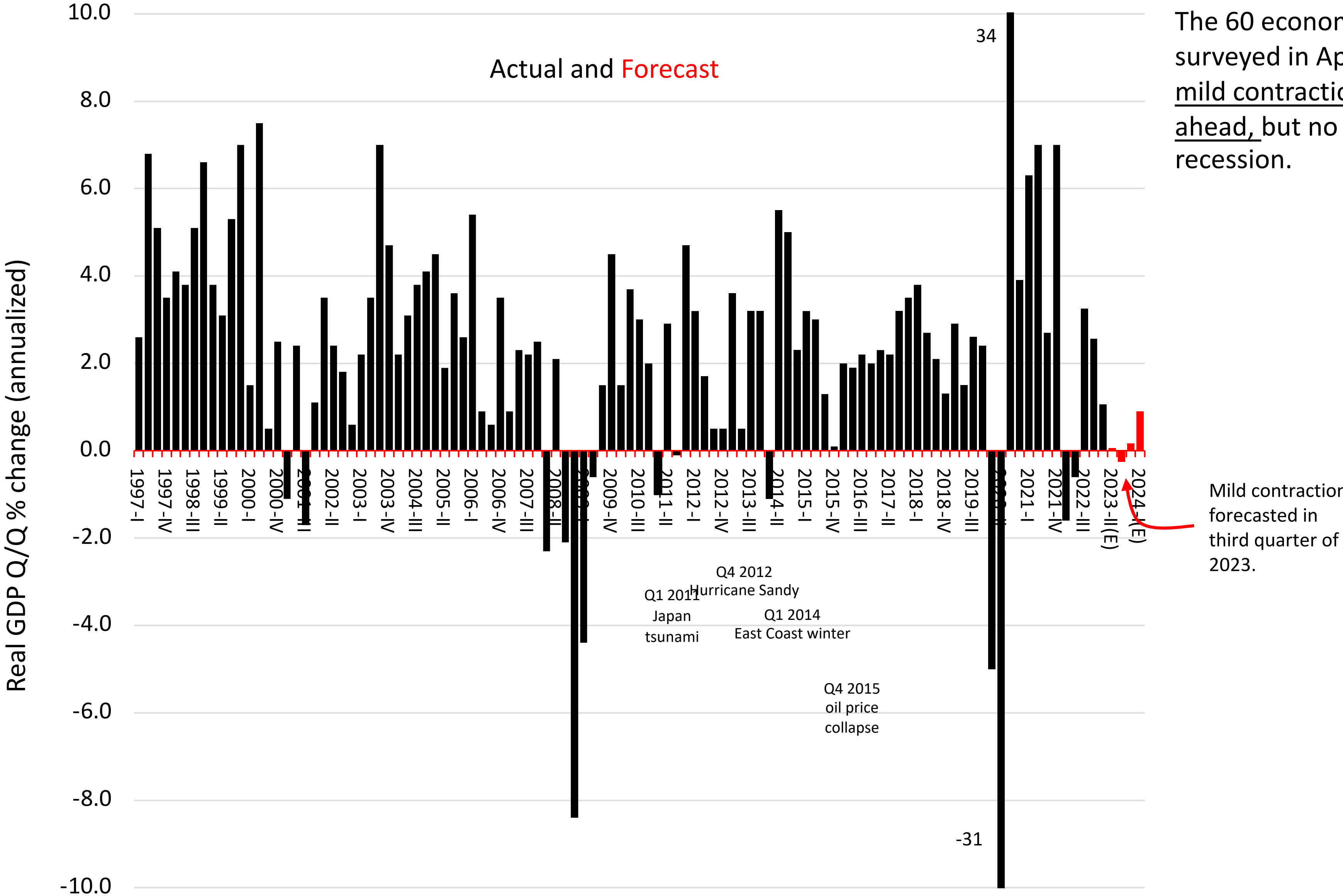
[1] *Economic Report of the President*, Council of Economic Advisors, February 2018

Good news

- Strong hiring data
- Strong Q1 GDP
- Strong March car sales
- Oil down
- Consumers still have cash
- Strong corporate balance sheets
- Strong bank capital
- Inflation is moderating

Consensus GDP forecast

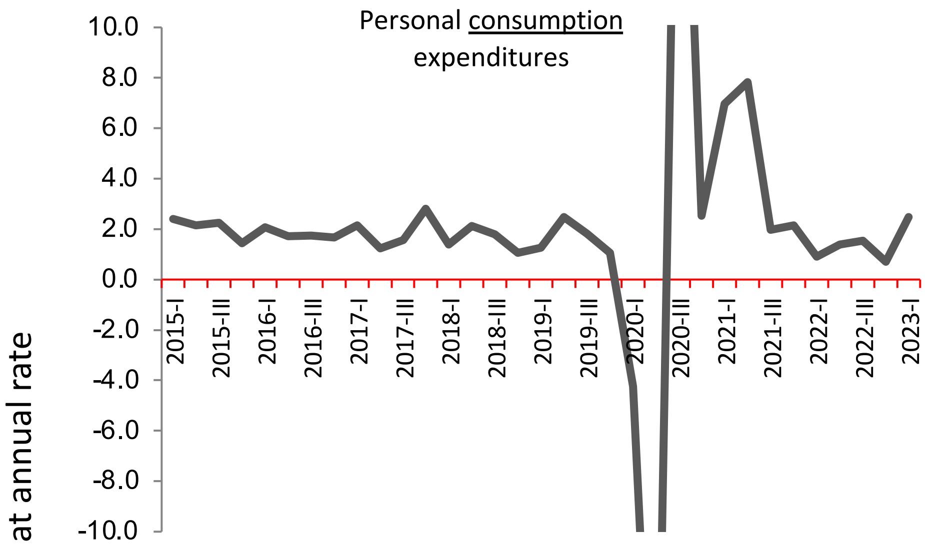
GDP

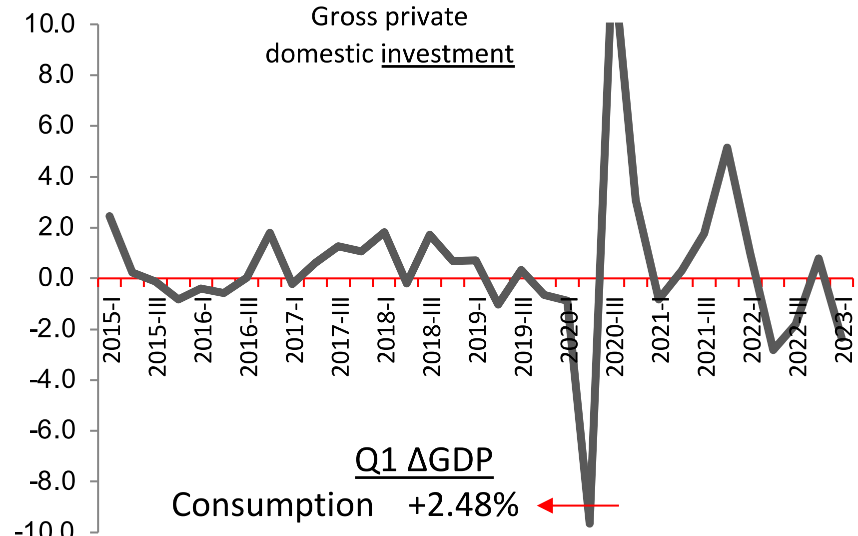


The 60 economists surveyed in April see mild contraction ahead, but no recession.

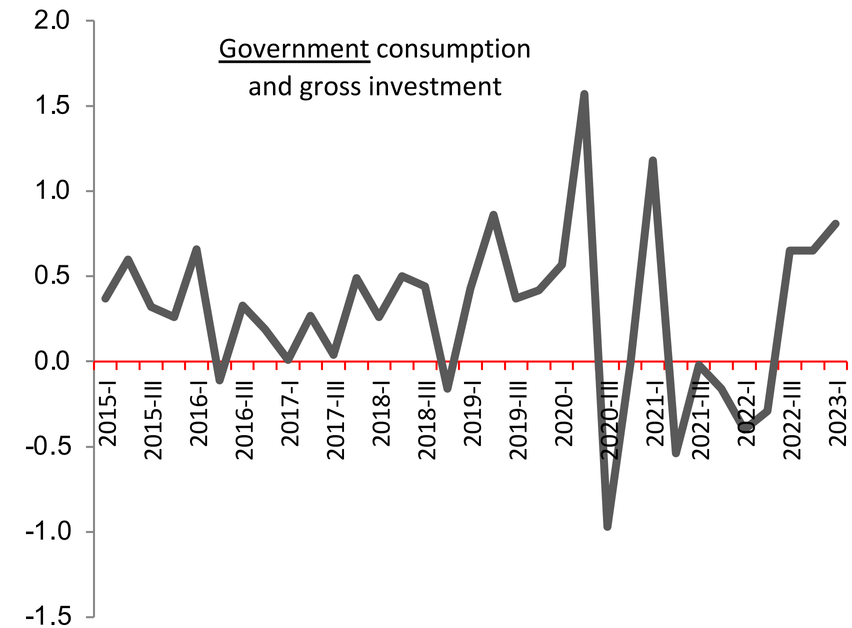
Sources: Bureau of Economic Analysis, actual quarterly data through March 2023. *The Wall Street Journal* survey released April 2023.

Contributions to GDP growth: C + I + G + Net Exports



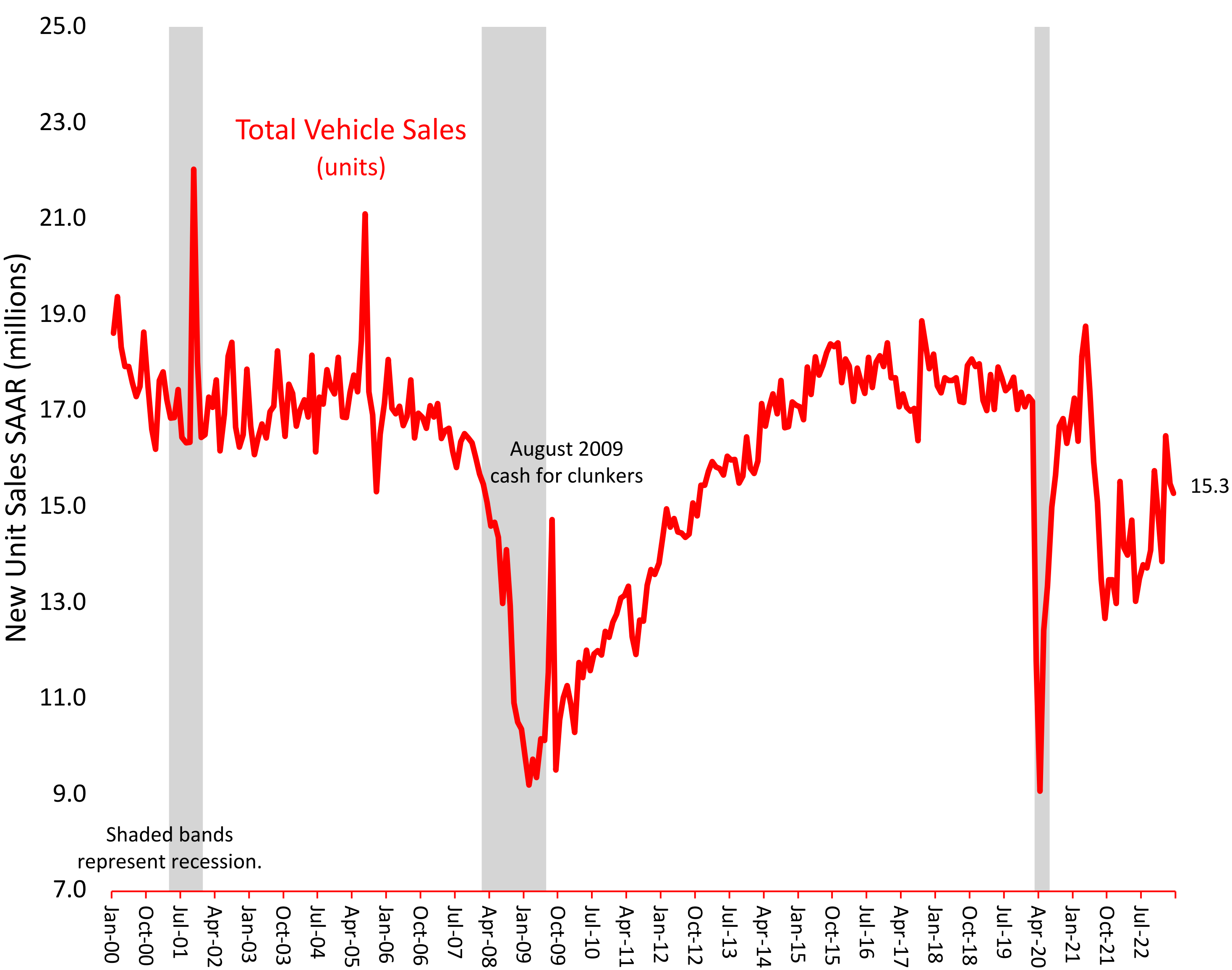


Q1 ΔGDP	
Consumption	+2.48%
Investment	-2.34%
Net exports	+0.11%
Government	+0.81%
Total	+1.06%



Source: Bureau of Economic Analysis, quarterly data through March 2023.

Vehicle sales

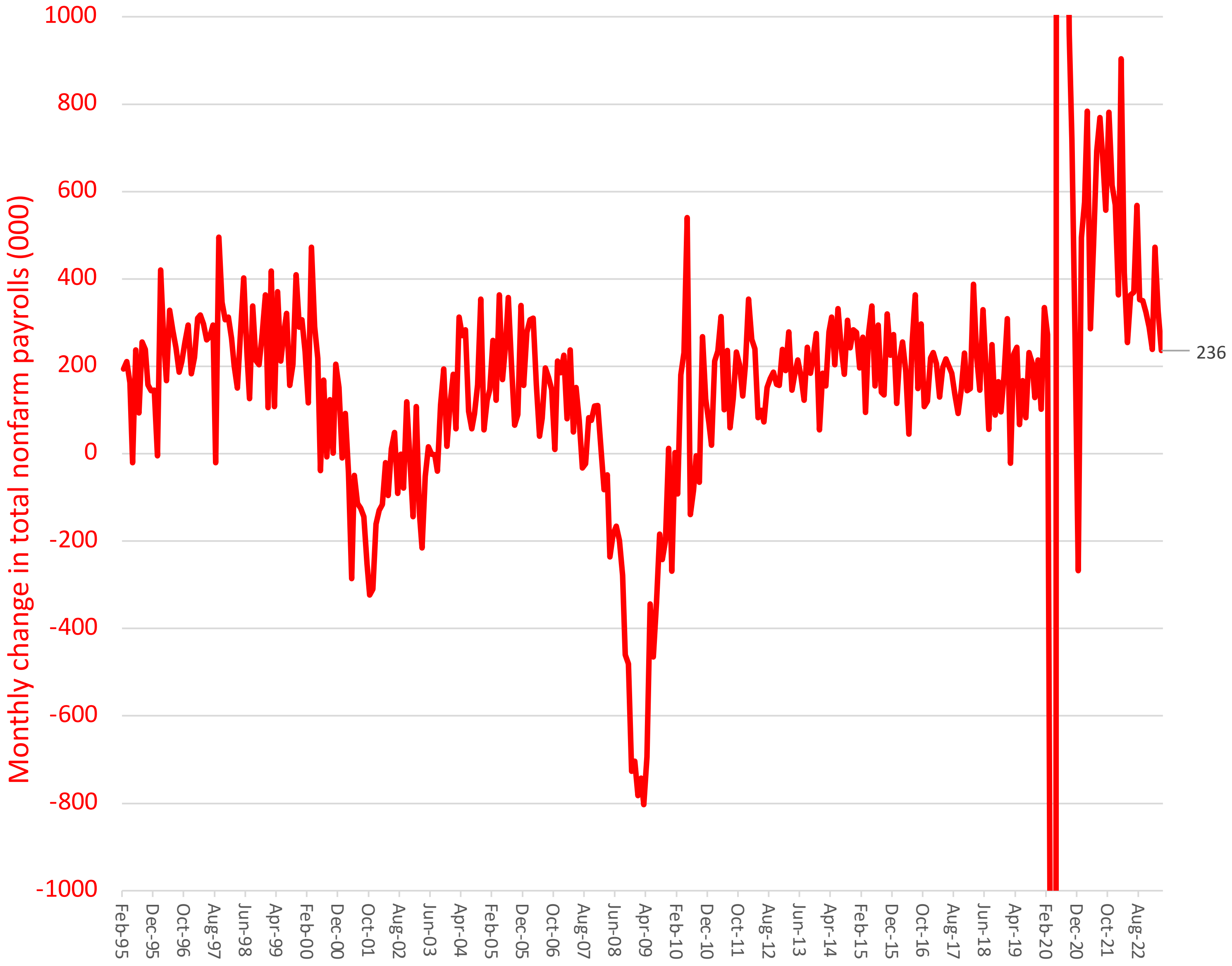


Car sales recovering.

Sources: BEA. Data through March 2023.

Economic data

Net new job formation



236,000 jobs gained in March on the establishment survey.

Source: Bureau of Labor Statistics. Data through March 2023.

Net new job formation

THE WALL STREET JOURNAL.

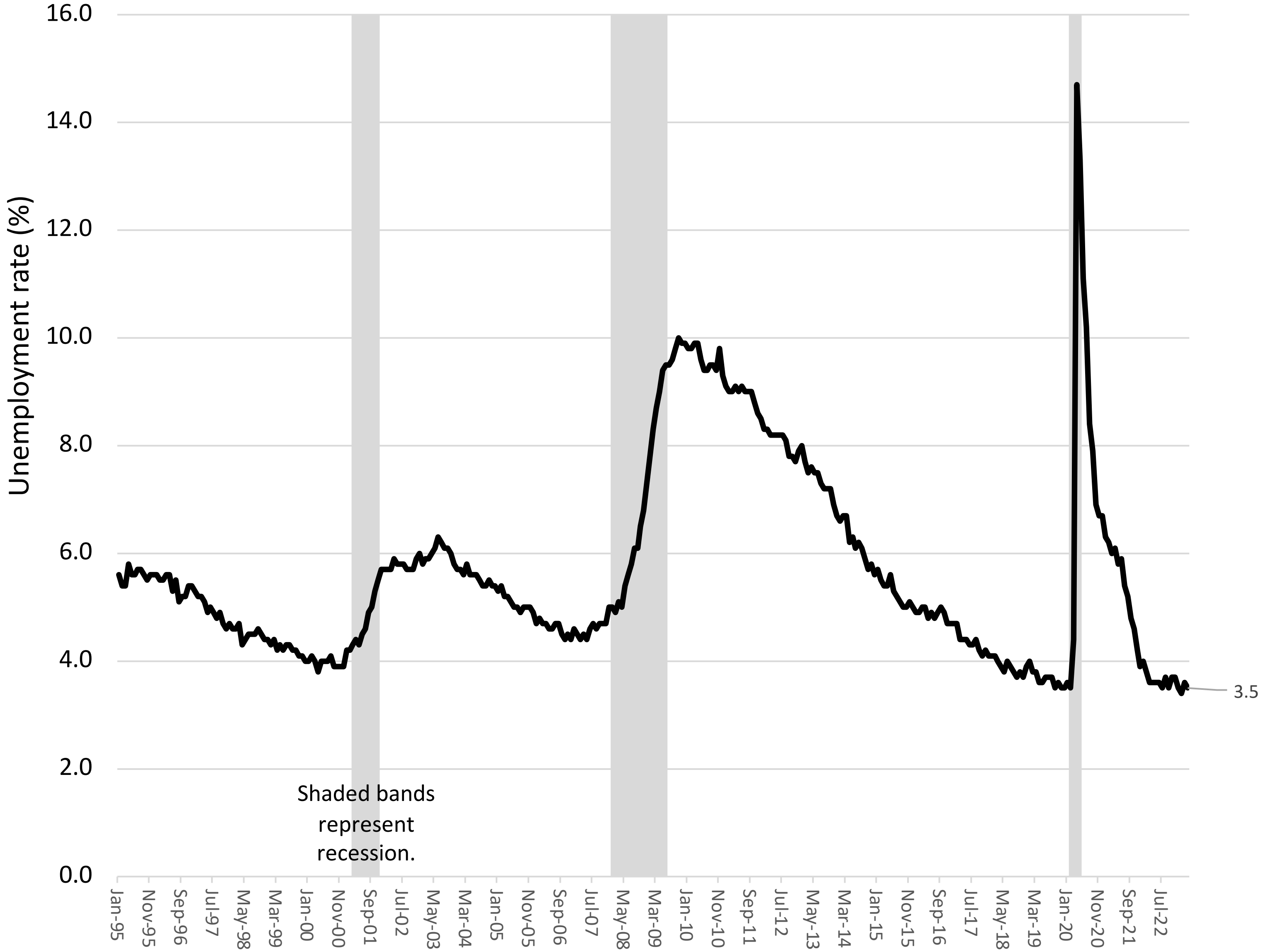
Jobs, Wages Show Signs of Easing

Still-strong report reveals unemployment dipped to 3.5%, more people sought work.

The red-hot labor market cooled some in March, with hiring gains moderating and wage growth easing as more workers sought jobs.

Source: *The Wall Street Journal.* “Jobs, Wages Show Signs of Easing”, by Sarah Chaney Cambon and Nick Timiraos. April 8-9, 2023.

Unemployment rate

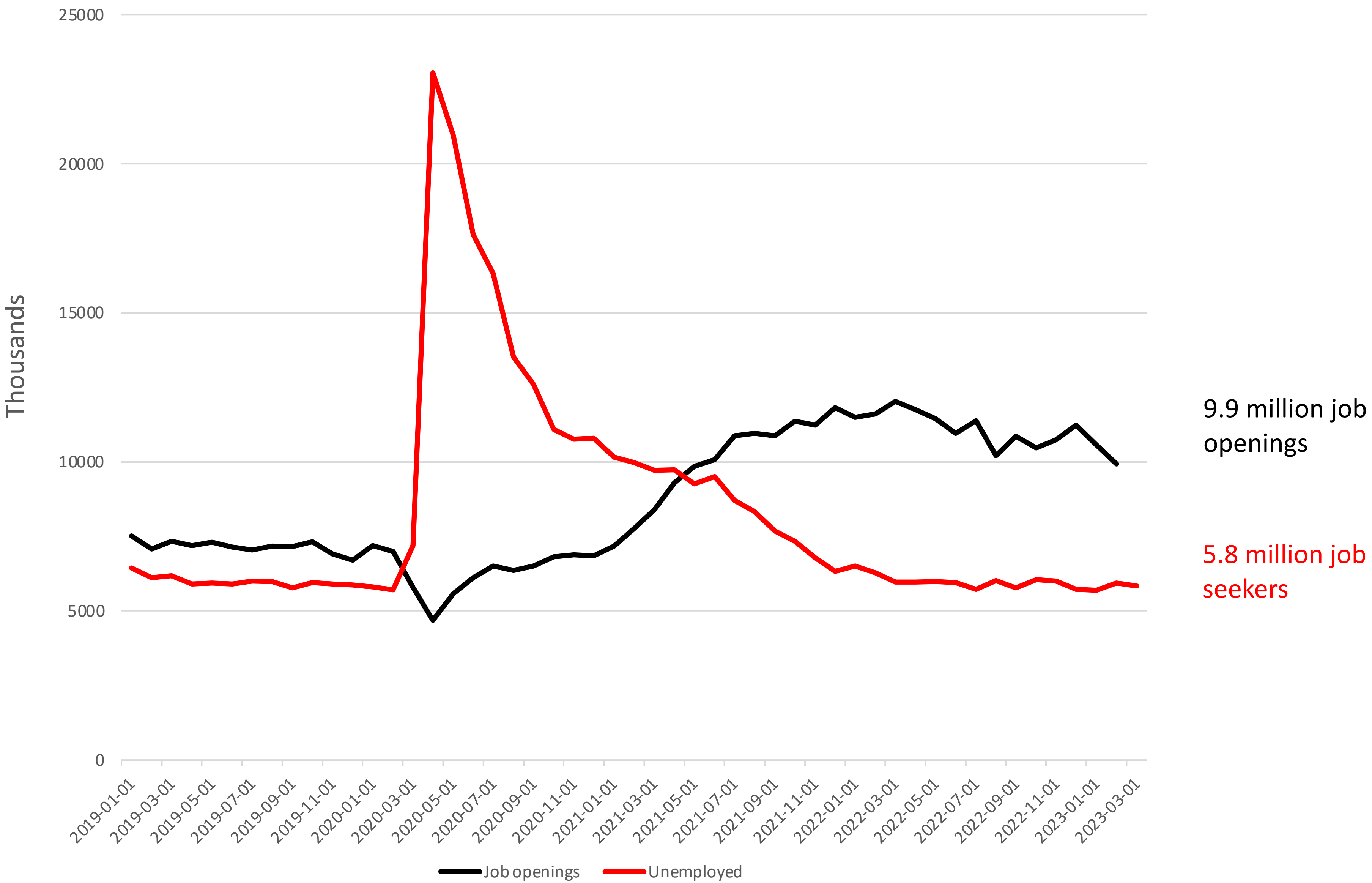


3.5% in March.

Source: Bureau of Labor Statistics. Data through March 2023.

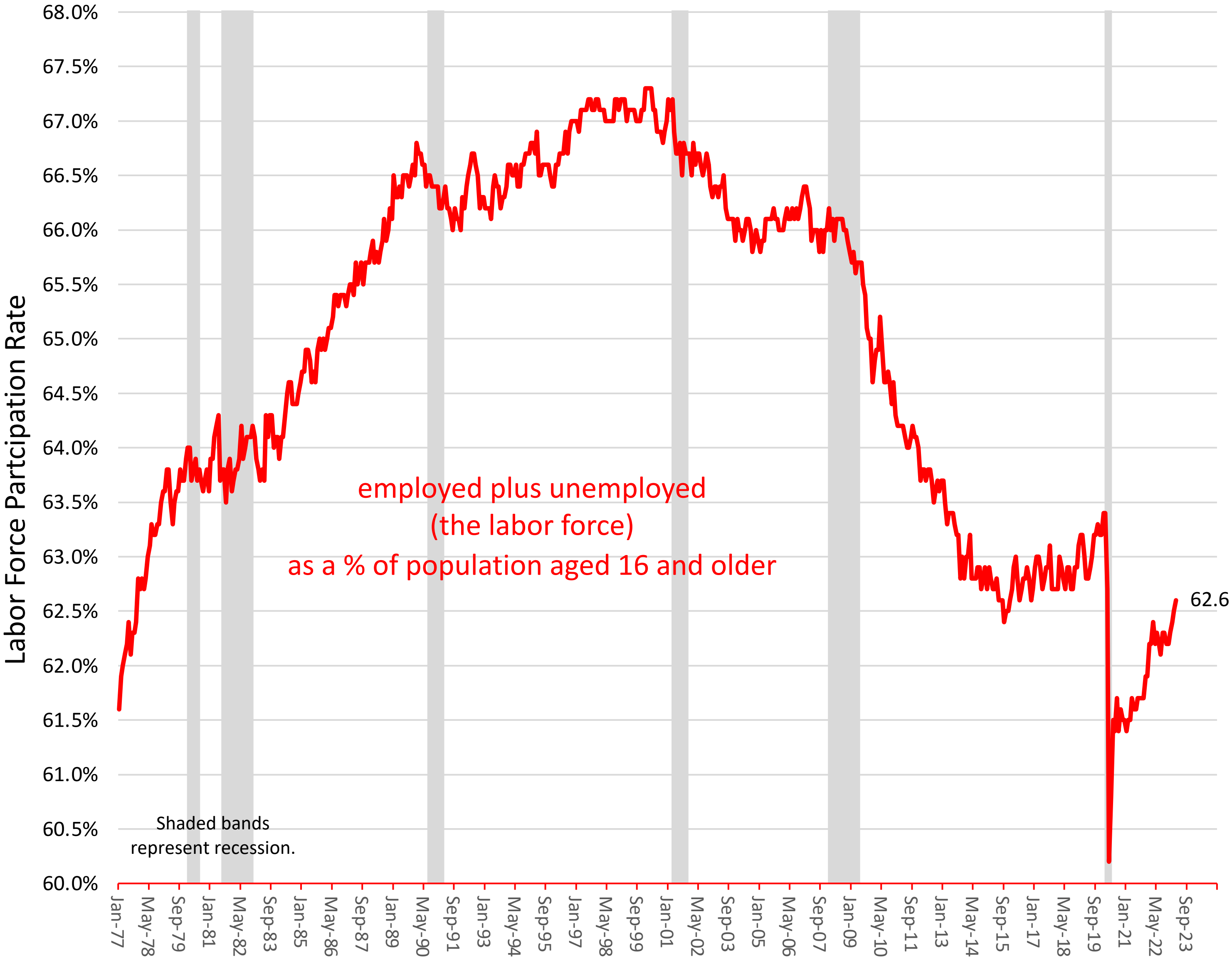
Economic data

Job openings vs. unemployed job seekers



Source: Bureau of Labor Statistics. Data through February 2023 for job openings, March 2023 for unemployed.

Labor force participation rate[1] – recovering from Covid



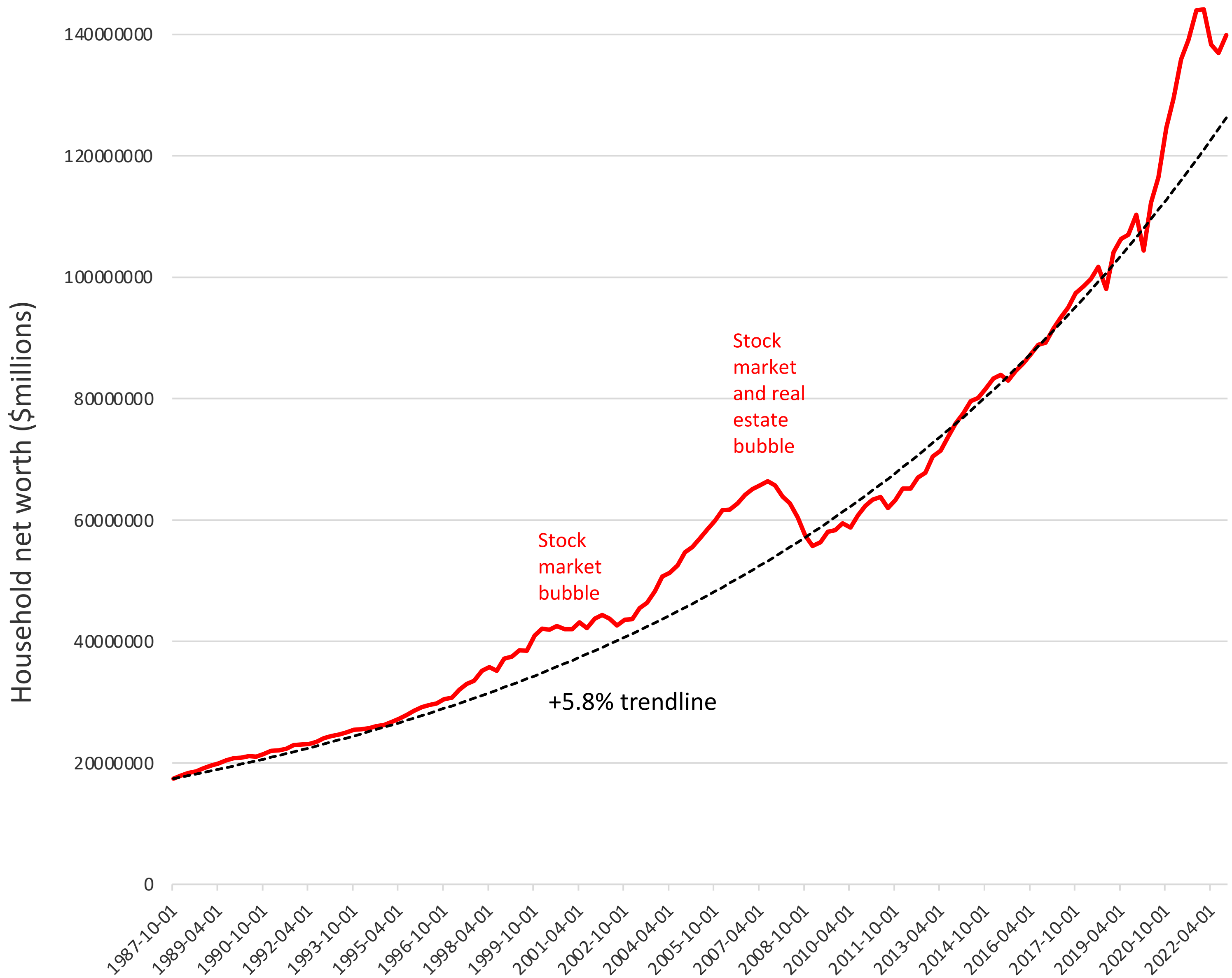
Americans were joining and staying in the labor force in increasing numbers … until Covid-19.

A reduction in immigration and a surge in retirements have subtracted from the labor force.

Source: BLS. Data through March 2023.

[1]Labor force participation rate: the proportion of the civilian noninstitutional population 16 years of age and older either at work or actively seeking work.

Household net worth – the wealth effect



Household net worth surged.

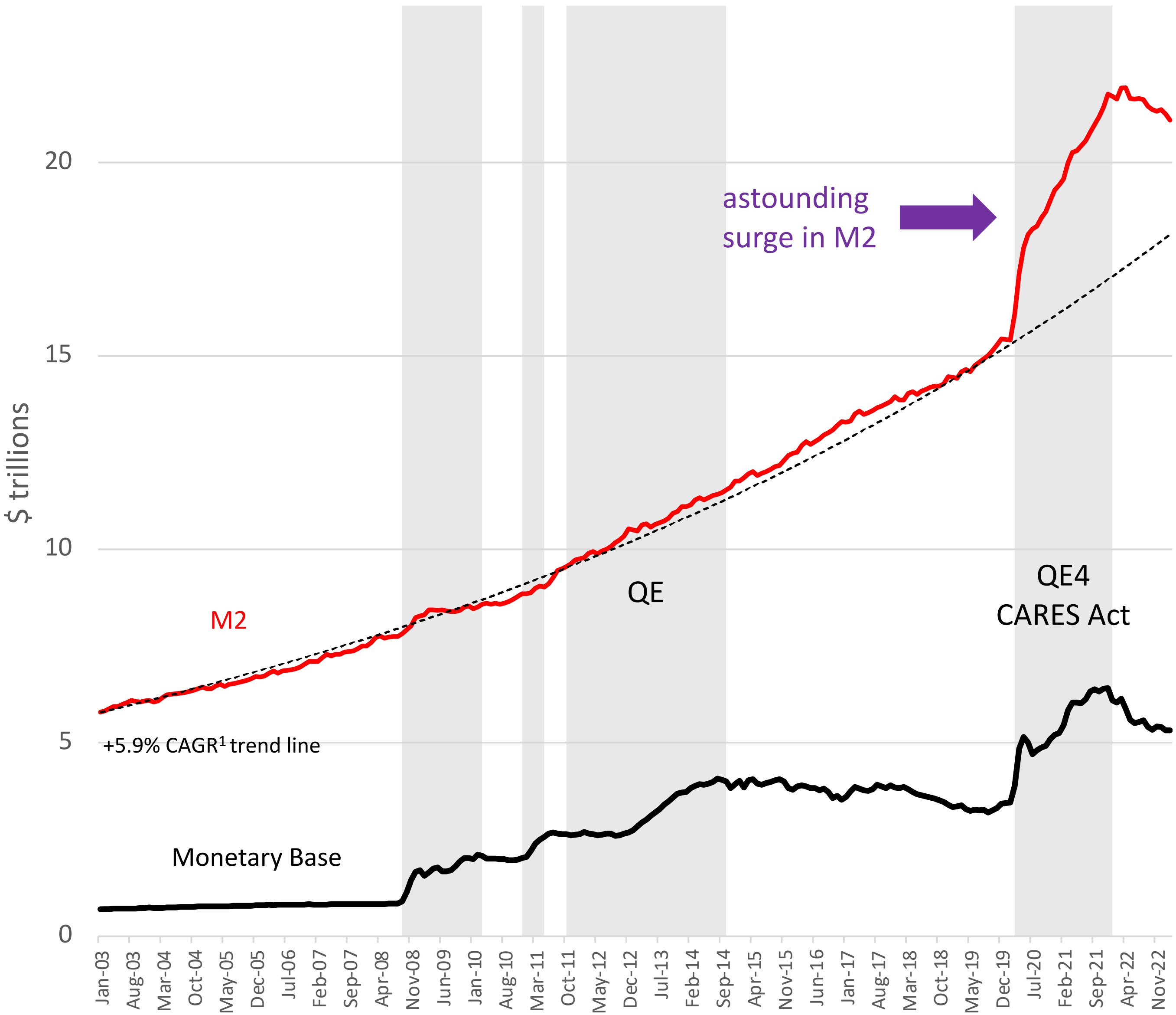
Source: Federal Reserve, FRBSL. Quarterly data through December 2022, released March 9, 2023.

Financial obligations ratio

Source: Federal Reserve. Quarterly data through December 2022.

This measure shows that percent of monthly after-tax income that the average household pays for fixed recurring monthly obligations, such as a mortgage, car payment, utilities, real estate taxes, etc.

The monetary base and the money supply



M2: currency held by the public plus checking, savings and money market accounts.

A quadrupling of the monetary base with QE did not affect M2 growth. <u>The CARES Act and subsequent stimulus did </u>… by putting money directly into consumers' and businesses' accounts.

Monetary base: currency in circulation plus reserve balances (deposits held by banks in their accounts at the Federal reserve).

Source: Federal Reserve, statistical release H.6. Data through February 2023.
[1]CAGR = compound annual growth rate.

Consumers' cash balances declining

THE WALL STREET JOURNAL.

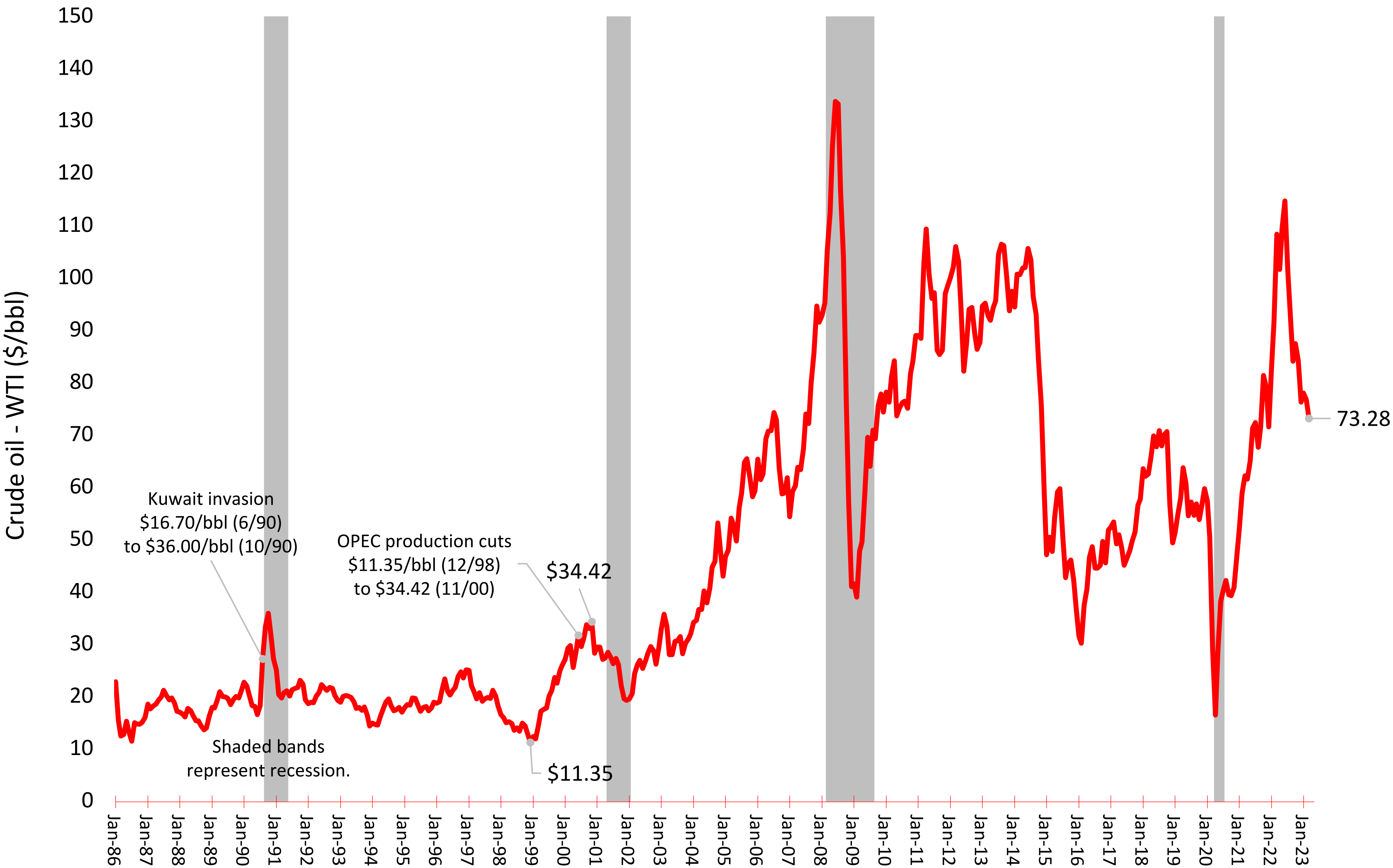
As Savings Shrink, Spending at Risk

It is the $1.7 trillion question for the U.S. economy: How long can the savings consumers built up during the pandemic keep their spending going?
The answer: about nine to 12 more months.

Economists estimate that headed into the third quarter of this year, households still had about $1.2 trillion to $1.8 trillion in "excess savings"— the amount above what they would have saved had there been no pandemic.

Source: *The Wall Street Journal*, "As Savings Shrink, Spending at Risk", Harriet Torry. November 21, 2022.

WTI spot crude oil prices



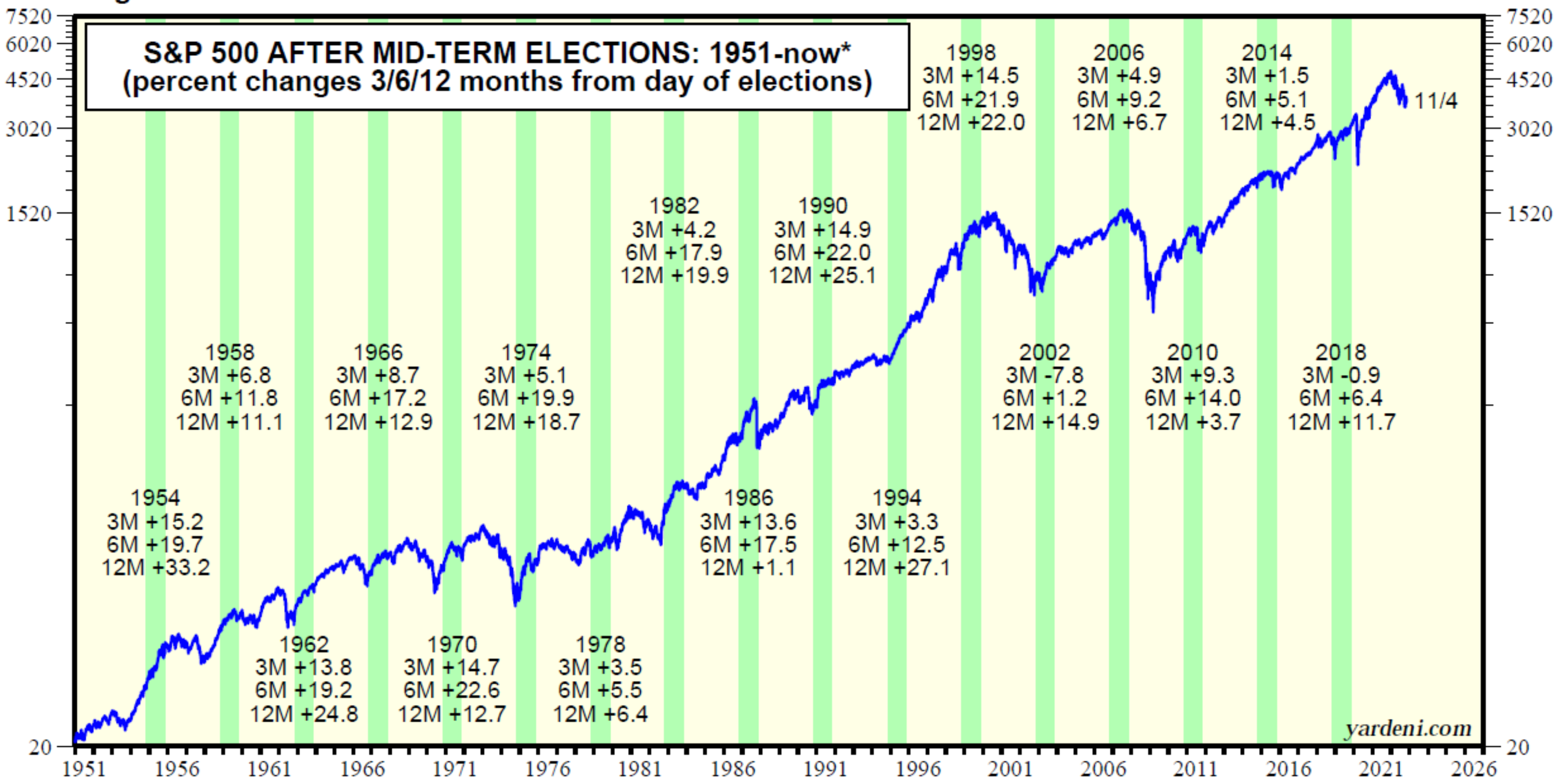
Source: U.S. Energy Information Agency. Data through March 2023.

Stock Market

- mid-term election years
- bear market
- stocks vs. recessions
- “parabolic” is normal
- 2023/2024 earnings estimates
- P/E multiple

S&P 500 and mid-term elections

Figure 3.

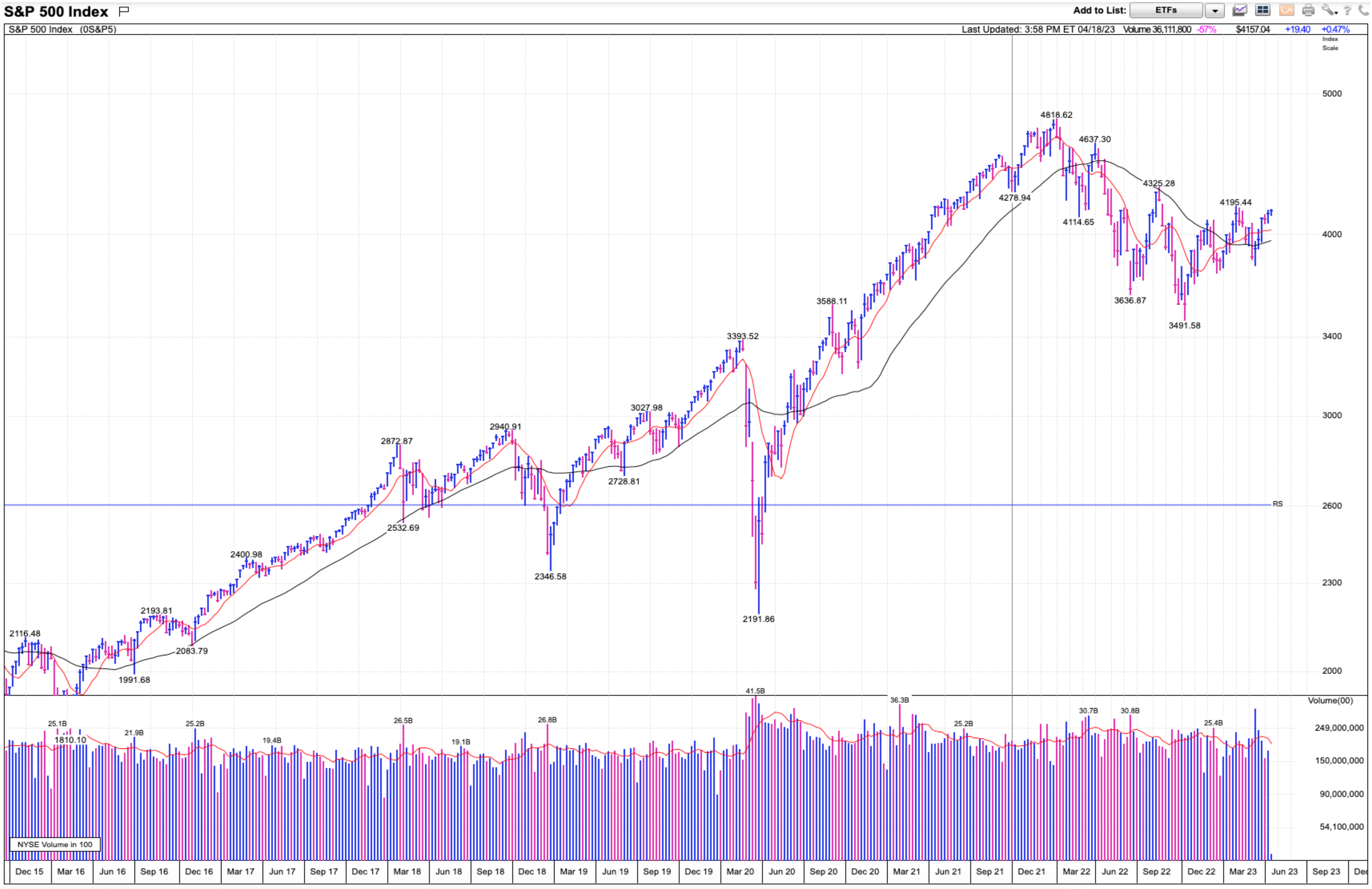


* S&P 500 up (down) during 12-month span following election day in green (red) shaded area. Prior to 1969, markets were closed on election day, therefore used "latest close" for those dates.
Source: Haver Analytics, Standard & Poor's, YRI calculations.

Source: Yardeni Research, Inc., with permission. November 6, 2022.

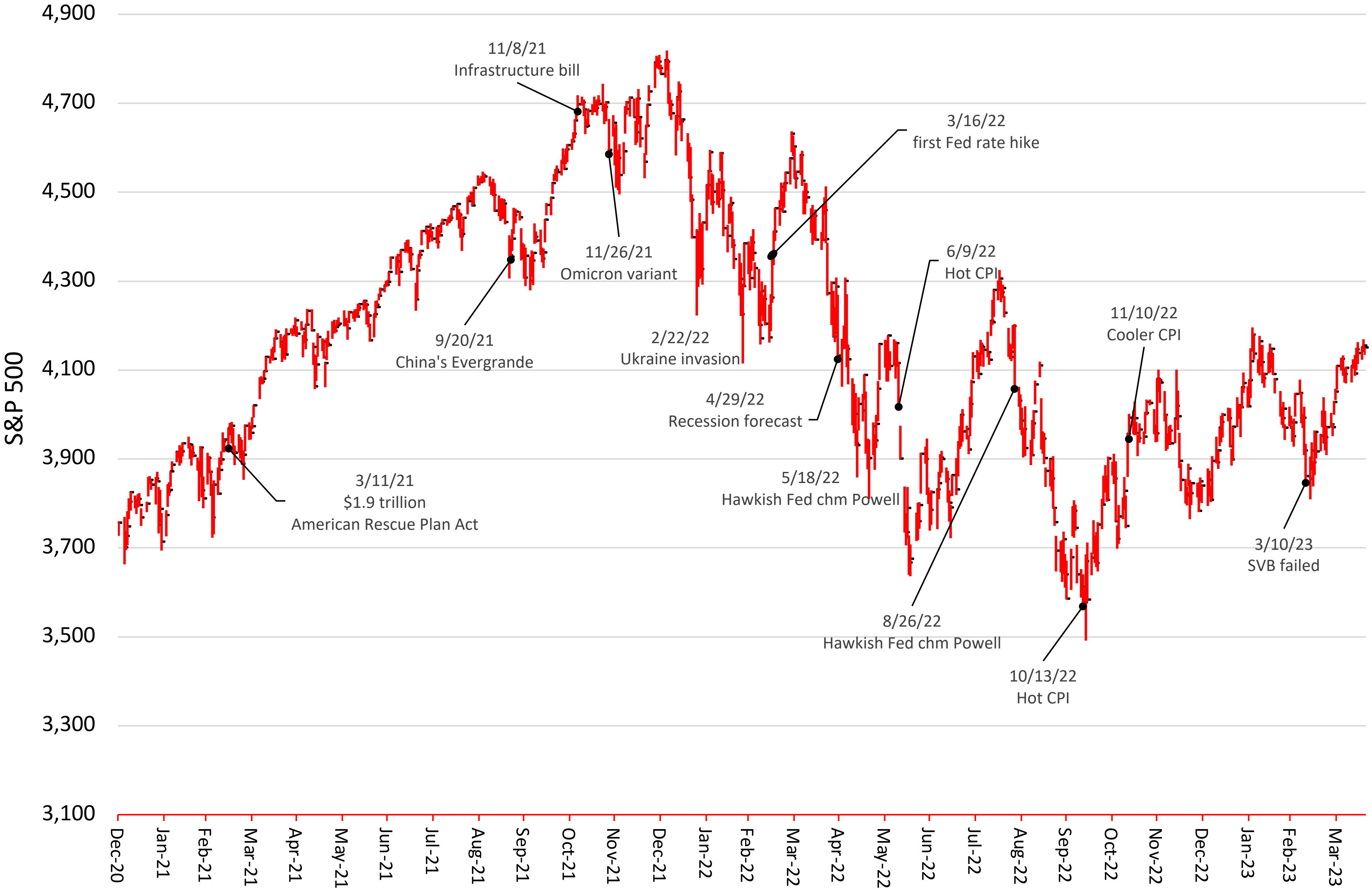
Stock market

S&P 500



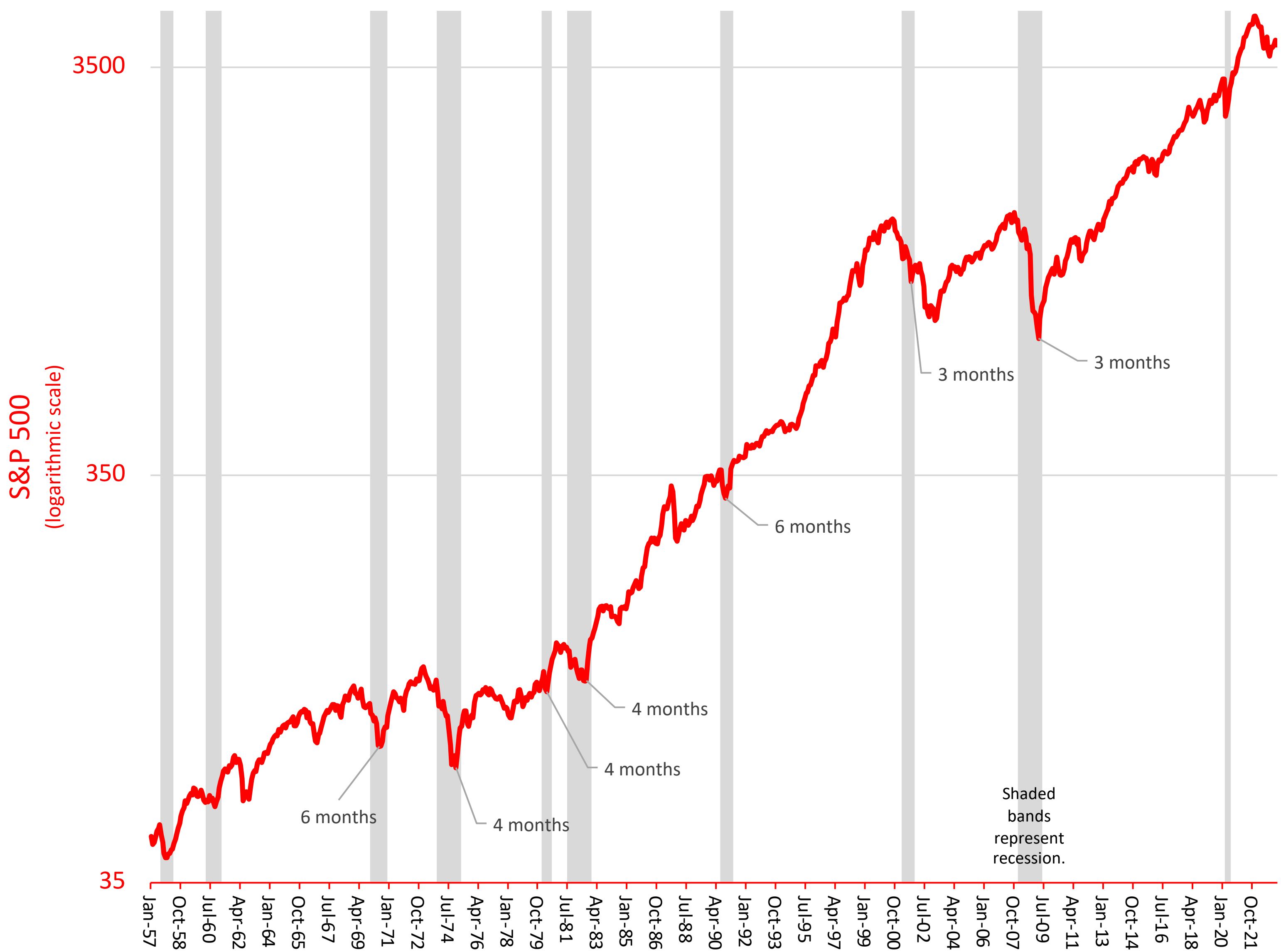
Source: Standard & Poor's and MarketSmith, Inc. Data through April 18, 2023.

S&P 500



Source: Standard & Poor’s. Data through April 19, 2023.

S&P 500 vs. recessions



Big declines are associated with recessions.

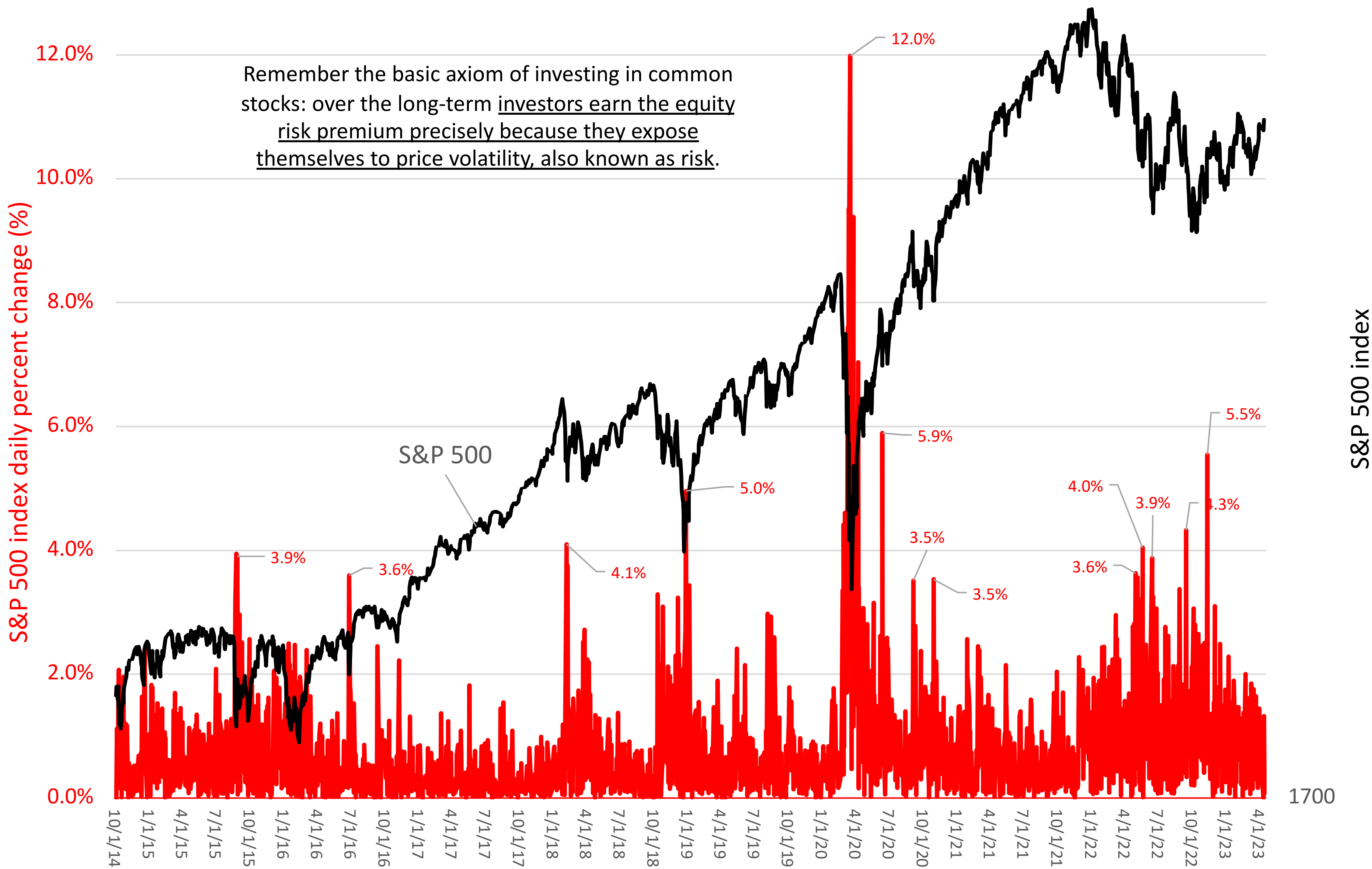
Stocks often bottom months before recession-end.

Source: Standard and Poor's Corporation, National Bureau of Economic Research. Data through March 2023.

S&P 500 and crises

Source: Standard and Poor's. Data through March 2023. [1] Compound annual growth rate.

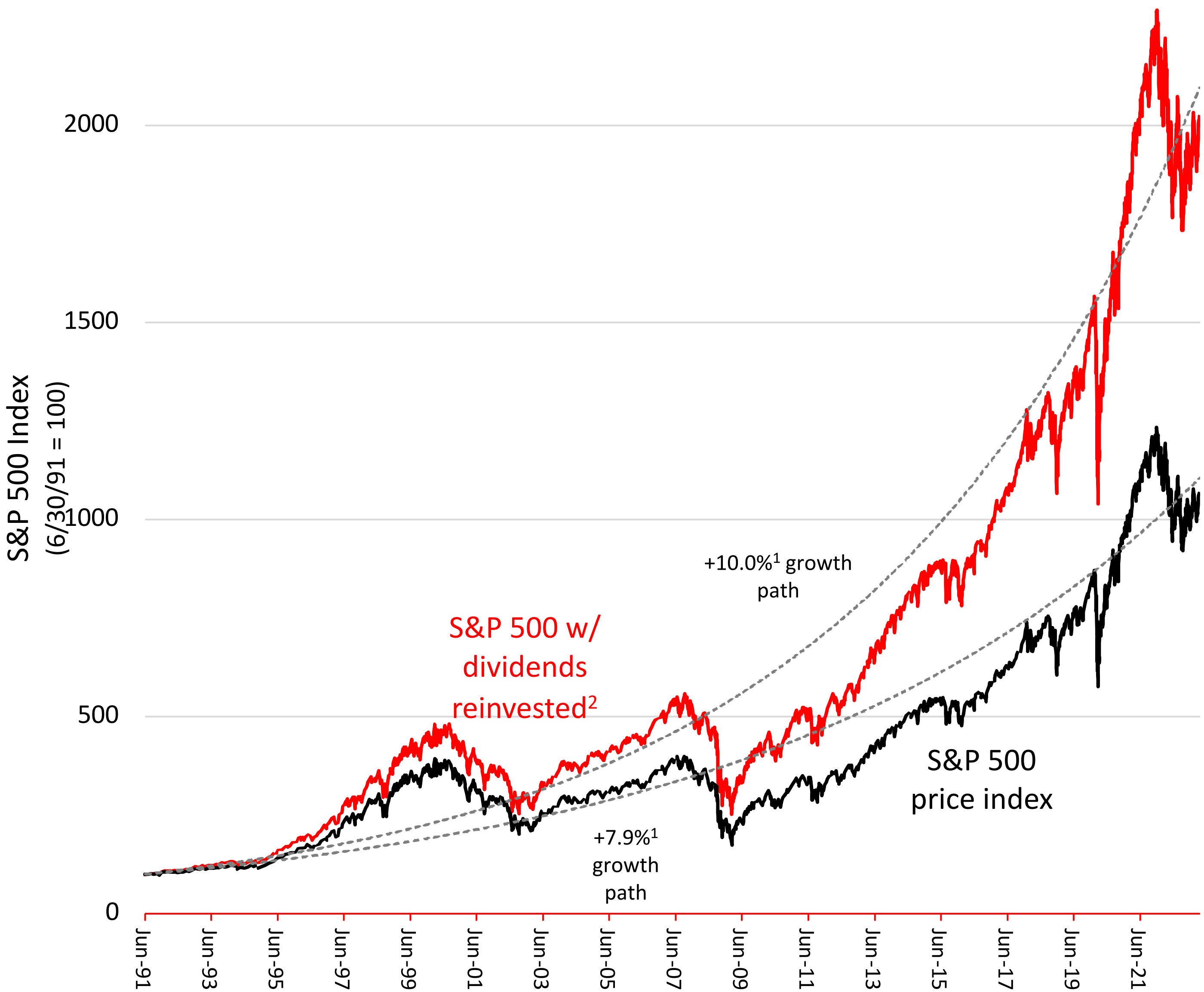
S&P 500 volatility



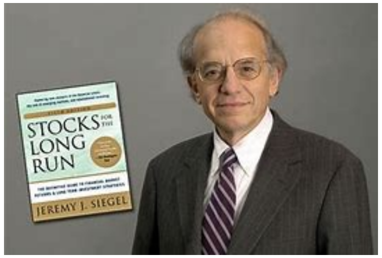
Source: Standard & Poor's, data through April 18, 2023.

Stock market arithmetic

Total return = 7.9% earnings-driven price + 2.1% dividends reinvested



+10% per year S&P 500 total return over the last 30 years is in line with the stock market's long-term returns going back to 1926, or back even further to 1871.[3]



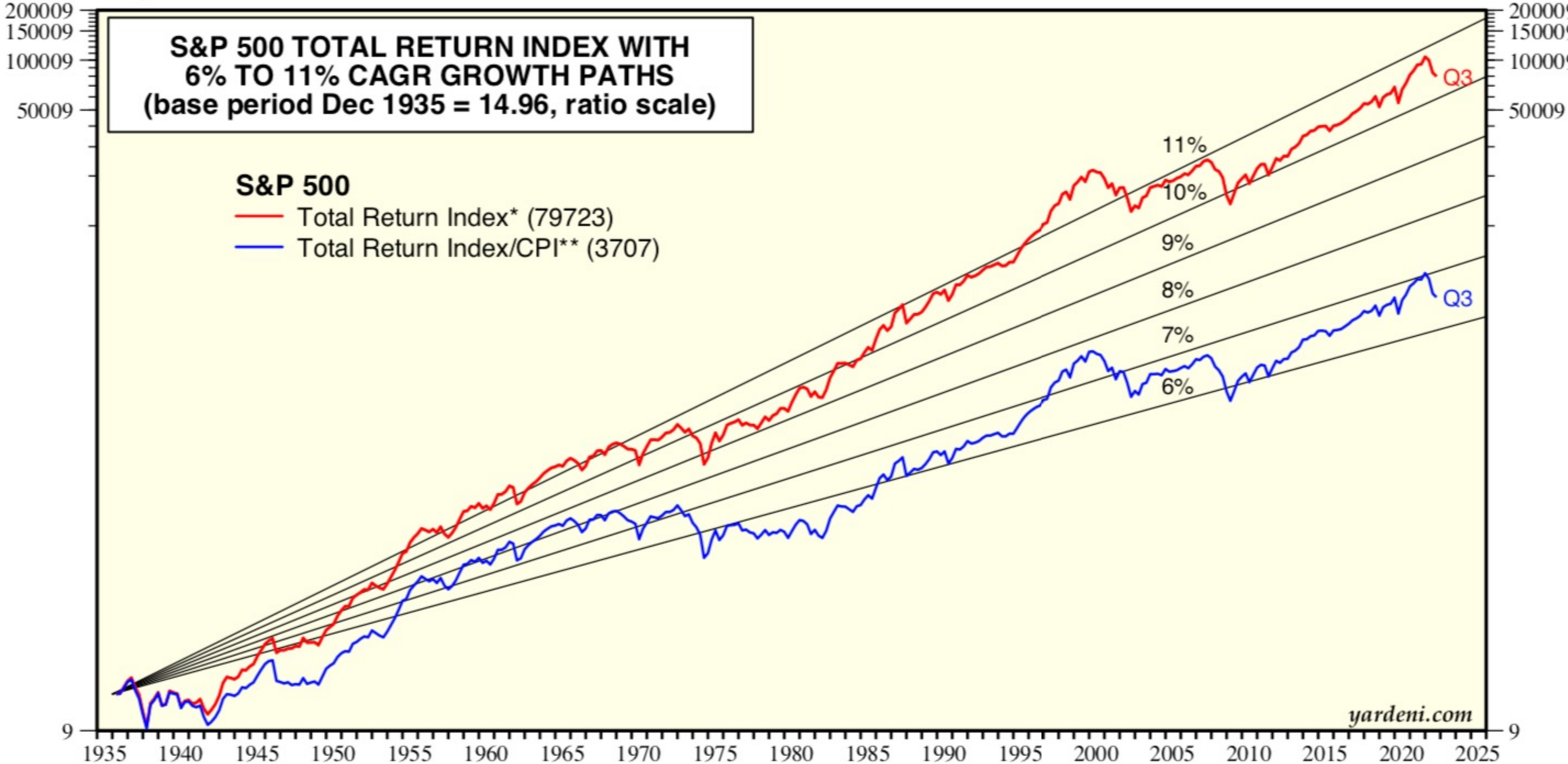
Source: Standard and Poor's. Data through April 18, 2023.[1] Compound annual growth rate. [2] S&P 500 total return index.
[3] per Professor Jeremy Siegel's seminal *Stocks for the Long Run*, first published in 1994.

Total return = 7.9% earnings-driven price + 2.1% dividends reinvested

Source: Standard and Poor's. Data through April 18, 2023. [1] Compound annual growth rate. [2] S&P 500 total return index.

Total return and real total return

Figure 6.

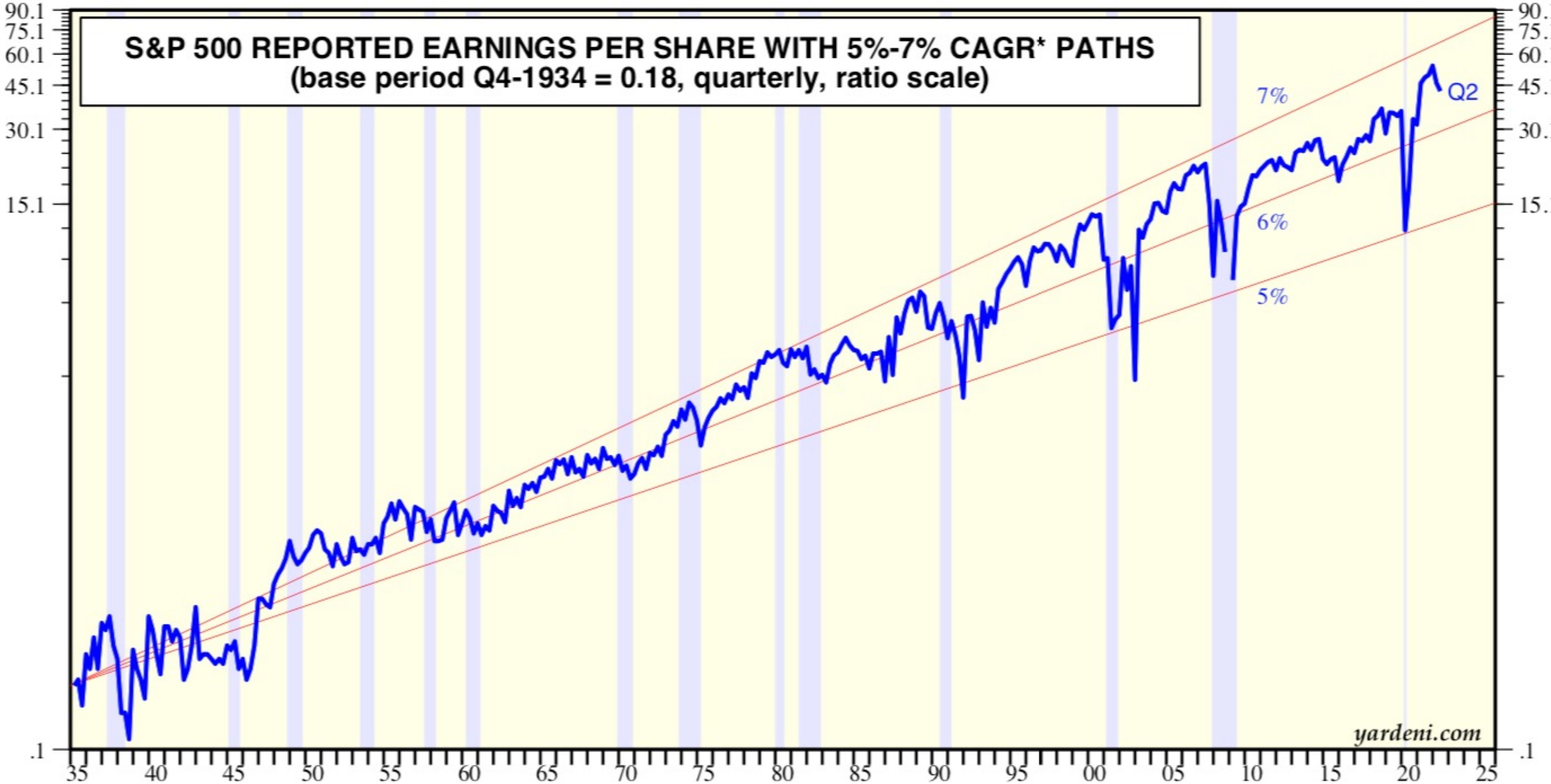


* Includes reinvested dividends.
** Using last month of quarter CPI. Compounded monthly using base value.
Source: Standard & Poor's.

Source: Yardeni Research, Inc., with permission.

85 years of S&P 500 earnings growth

Figure 9.

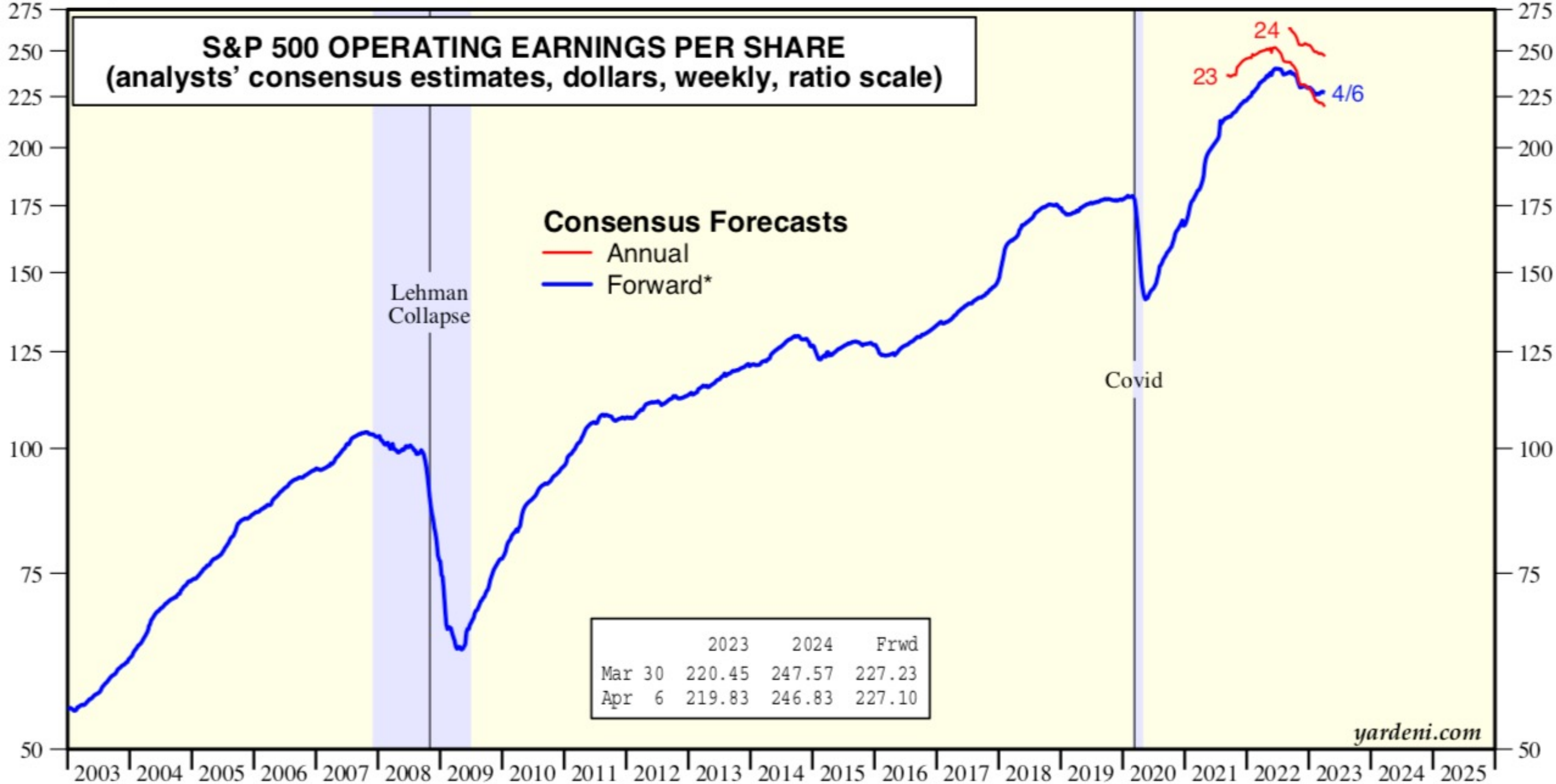


* Compounded annual growth rate from base value using monthly data. Q4-2008 not shown because of large negative value.
Note: Shaded areas denote recessions according to the National Bureau of Economic Research.
Source: Standard & Poor's.

Source: Yardeni Research, Inc. with permission.

S&P earnings estimates

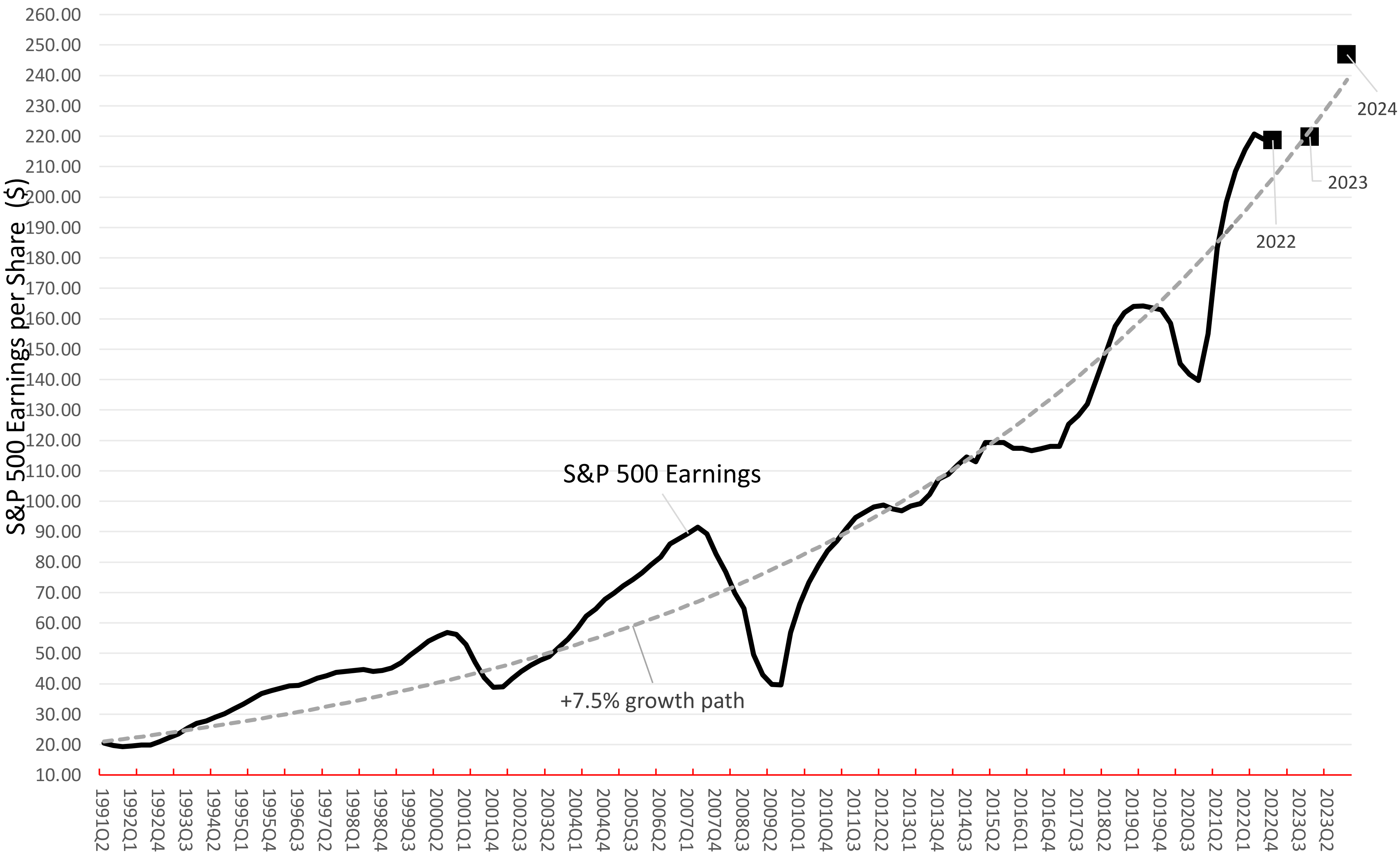
Figure 4.



* Time-weighted average of analysts' consensus estimates for S&P 500 operating earnings for current year and next year.
Note: Shaded areas are recessions according to the National Bureau of Economic Research.
Note: Lehman collapsed 9/15/2008. COVID-19 = WHO declares global pandemic on 3/11/2020.
Source: I/B/E/S data by Refinitiv.

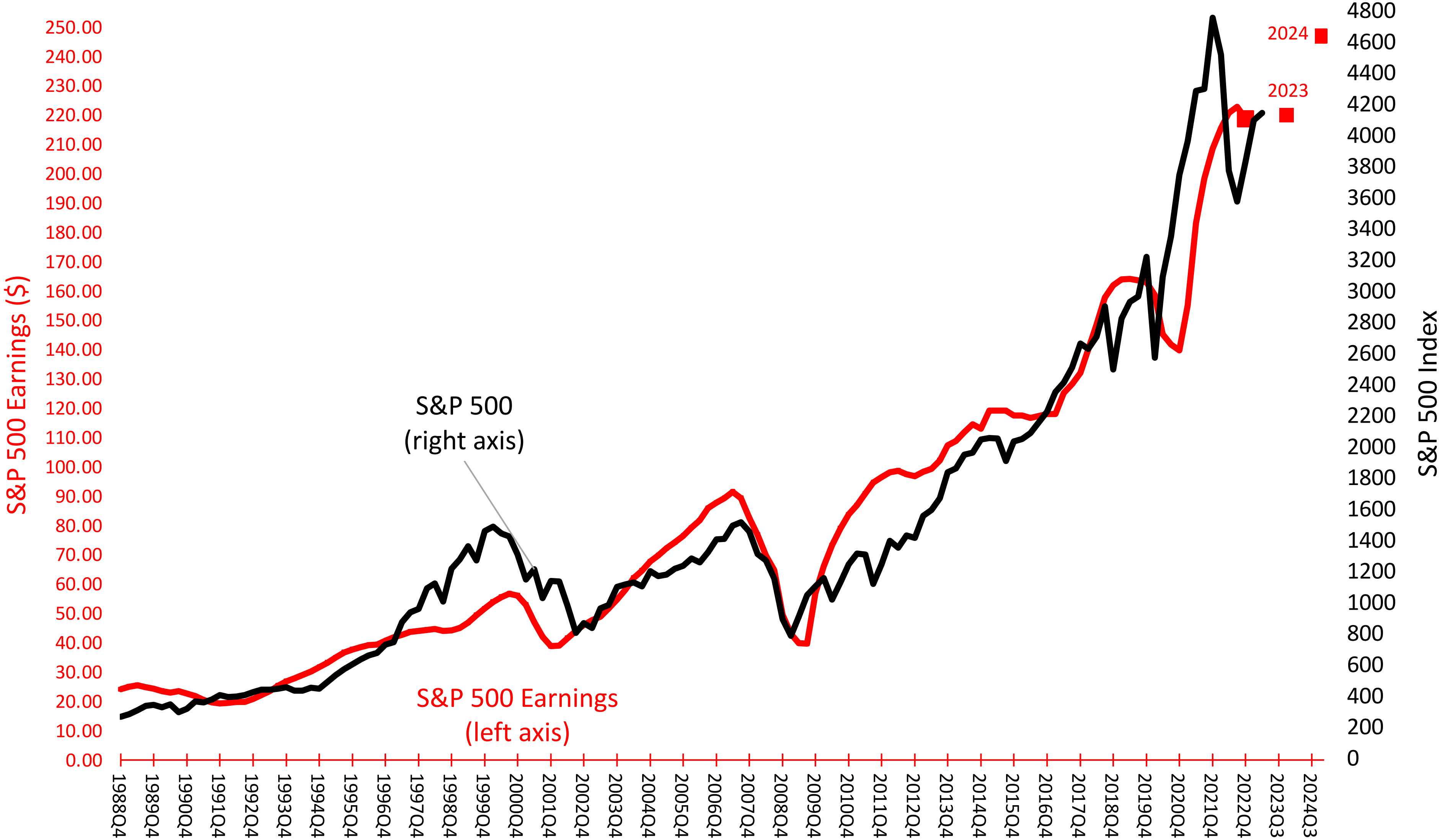
Source: Yardeni Research, Inc., with permission. April 14, 2023.

S&P 500 earnings – actual and I/B/E/S estimates



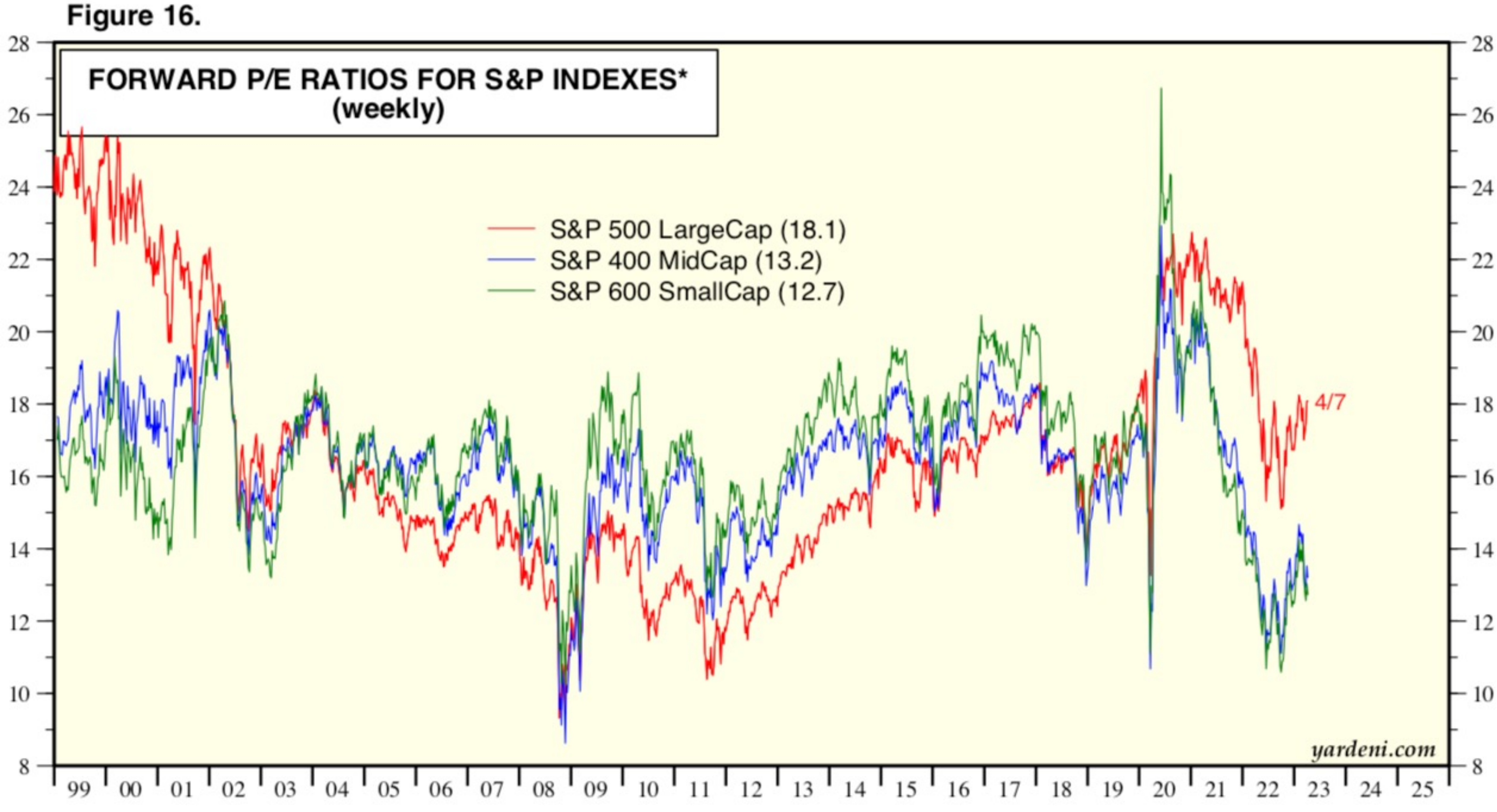
2022 (estimated), 2023 (estimated) and 2024 (estimated) bottom-up S&P 500 operating earnings per share as of April 14, 2023: for 2022(e), $218.71; for 2023(e), $219.83; for 2024(e), $246.83. Sources: Yardeni Research, Inc. and Thomson Reuters I/B/E/S for actual and estimated operating earnings from 2015. Standard and Poor's for actual operating earnings data through 2014.

S&P 500 vs. actual and I/B/E/S estimated earnings



2022 (estimated), 2023 (estimated) and 2024 (estimated) bottom-up S&P 500 operating earnings per share as of April 14, 2023: for 2022(e), $218.71; for 2023(e), $219.83; for 2024(e), $246.83. Sources: Yardeni Research, Inc. and Thomson Reuters I/B/E/S for actual and estimated operating earnings from 2015. Standard and Poor's for actual operating earnings data through 2014; index price data through April 18, 2023.

S&P 500 index forward P/E ratio



* Price divided by 52-week forward consensus expected operating earnings per share.
Source: I/B/E/S data by Refinitiv.

Source: Yardeni Research, Inc., with permission, April 14, 2023.

S&P 500 index forward P/E ratio

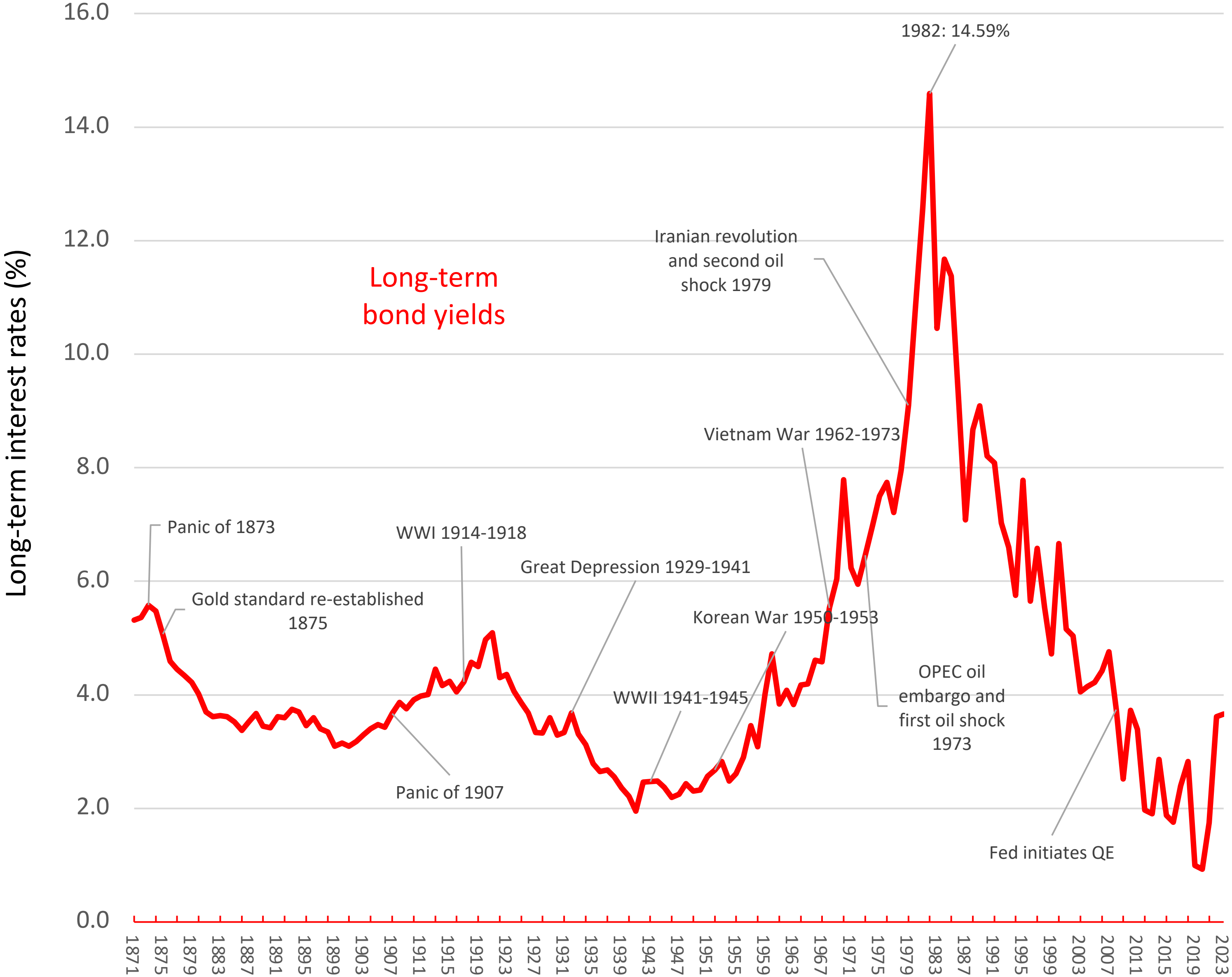
* Price divided by 52-week forward consensus expected operating earnings per share.
Source: I/B/E/S data by Refinitiv and Standard & Poor's.

Source: Yardeni Research, Inc., with permission, April 14, 2023.

Bond Yields

- Normal yields by historic comparison

U.S. Treasury bond yields



Rising from the lowest long-term interest rates in U.S. history.

Source: Online Data Robert Shiller, data through 2016; 10-year U.S. Treasury bond yield data from 2017; data through March 2023.

Federal Reserve

- Hiked rates
- Inverted the yield curve
- Special liquidity facility
- Forecasting no growth

Quarter-point hike on March 22, 2023

THE WALL STREET JOURNAL.

Fed Boosts Rates Amid Bank Turmoil

Quarter-point increase comes with signal that hikes could end sooner than recently expected.

Source: *The Wall Street Journal.* “Fed Boosts Rates Amid Bank Turmoil”, by Nick Timiraos. March 23, 2023.

Central tendency forecast

For release at 2:00 p.m., EDT, March 22, 2023

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assumptions of projected appropriate monetary policy, March 2023

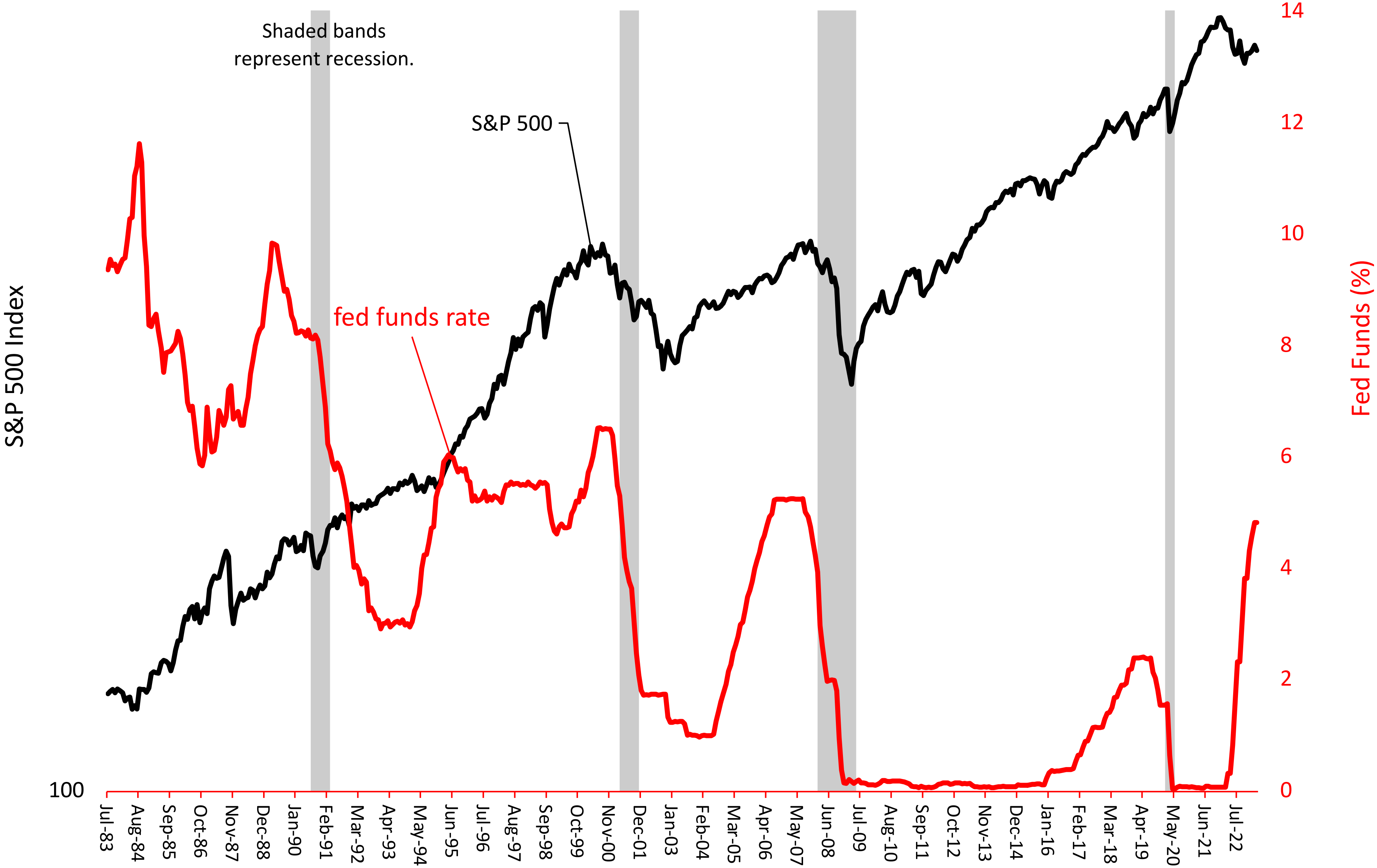
Percent

Variable	Median[1]				Central Tendency[2]				Range[3]			
	2023	2024	2025	Longer run	2023	2024	2025	Longer run	2023	2024	2025	Longer run
Change in real GDP	0.4	1.2	1.9	1.8	0.0–0.8	1.0–1.5	1.7–2.1	1.7–2.0	-0.2–1.3	0.3–2.0	1.5–2.2	1.6–2.5
December projection	0.5	1.6	1.8	1.8	0.4–1.0	1.3–2.0	1.6–2.0	1.7–2.0	-0.5–1.0	0.5–2.4	1.4–2.3	1.6–2.5
Unemployment rate	4.5	4.6	4.6	4.0	4.0–4.7	4.3–4.9	4.3–4.8	3.8–4.3	3.9–4.8	4.0–5.2	3.8–4.9	3.5–4.7
December projection	4.6	4.6	4.5	4.0	4.4–4.7	4.3–4.8	4.0–4.7	3.8–4.3	4.0–5.3	4.0–5.0	3.8–4.8	3.5–4.8
PCE inflation	3.3	2.5	2.1	2.0	3.0–3.8	2.2–2.8	2.0–2.2	2.0	2.8–4.1	2.0–3.5	2.0–3.0	2.0
December projection	3.1	2.5	2.1	2.0	2.9–3.5	2.3–2.7	2.0–2.2	2.0	2.6–4.1	2.2–3.5	2.0–3.0	2.0
Core PCE inflation[4]	3.6	2.6	2.1		3.5–3.9	2.3–2.8	2.0–2.2		3.5–4.1	2.1–3.1	2.0–3.0	
December projection	3.5	2.5	2.1		3.2–3.7	2.3–2.7	2.0–2.2		3.0–3.8	2.2–3.0	2.0–3.0	
Memo: Projected appropriate policy path												
Federal funds rate	5.1	4.3	3.1	2.5	5.1–5.6	3.9–5.1	2.9–3.9	2.4–2.6	4.9–5.9	3.4–5.6	2.4–5.6	2.3–3.6
December projection	5.1	4.1	3.1	2.5	5.1–5.4	3.9–4.9	2.6–3.9	2.3–2.5	4.9–5.6	3.1–5.6	2.4–5.6	2.3–3.3

Source: Federal Reserve, March 22, 2023.

Stock market

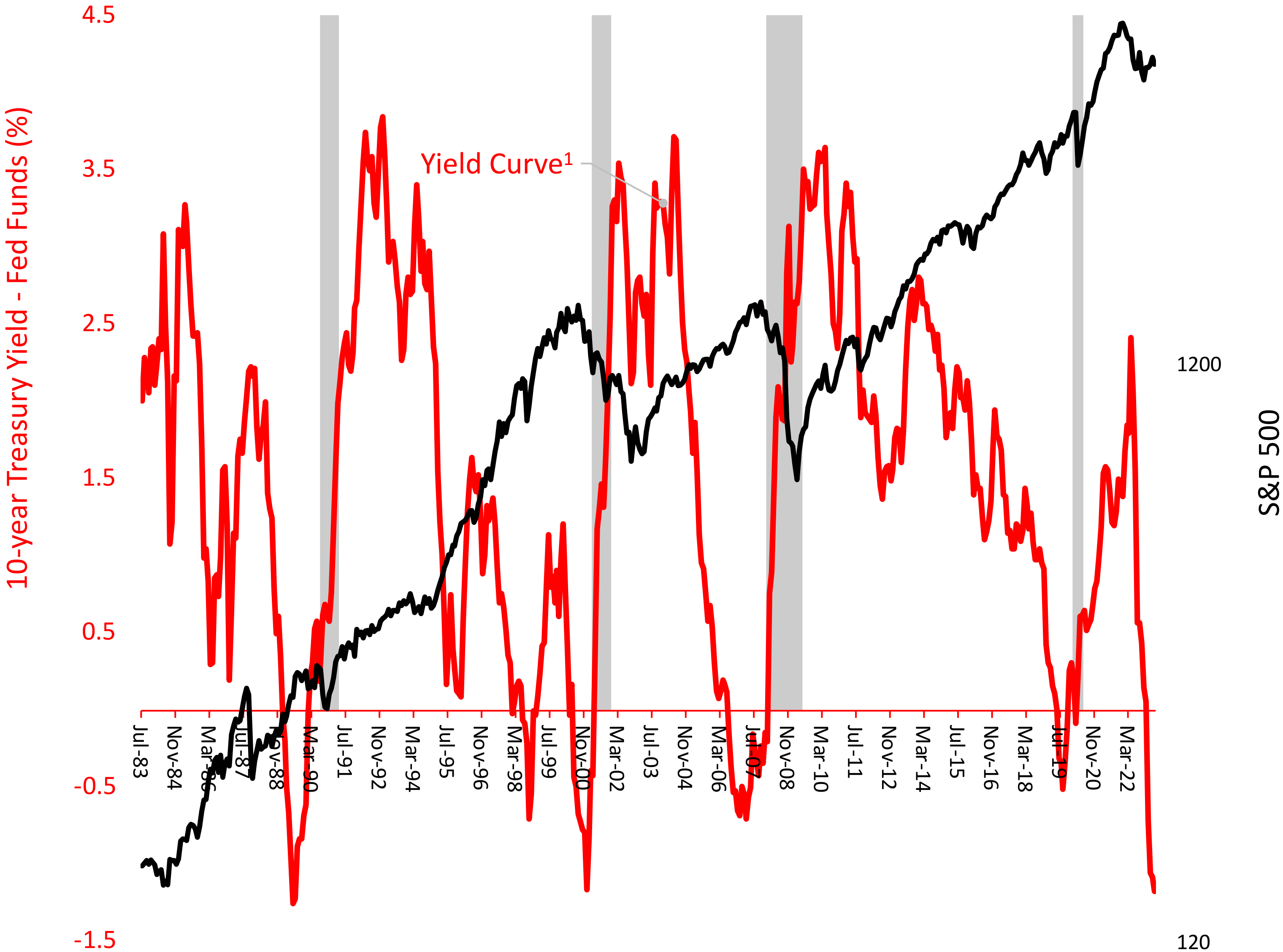
S&P 500 vs. fed funds rate



Sources: Federal Reserve, Standard & Poor’s. Data through March 2023.

Federal Reserve policy

Yield curve vs. the S&P 500



When the yield curve has inverted the economy has usually turned down into recession with a lag of a year or more.

Today, <u>the yield curve is inverted</u>.

Sources: NBER, Federal Reserve and Standard & Poor's. Data through March 2023.

[1]The interest rate on the 10-year Treasury bond (long term) minus the fed funds rate (short term).

Bank Term Funding Program

March 12, 2023

Federal Reserve Board announces it will make available additional funding to eligible depository institutions to help assure banks have the ability to meet the needs of all their depositors

For release at 6:15 p.m. EDT

Share

To support American businesses and households, the Federal Reserve Board on Sunday announced it will make available additional funding to eligible depository institutions to help assure banks have the ability to meet the needs of all their depositors. This action will bolster the capacity of the banking system to safeguard deposits and ensure the ongoing provision of money and credit to the economy.

The Federal Reserve is prepared to address any liquidity pressures that may arise.

The additional funding will be made available through the creation of a new Bank Term Funding Program (BTFP), offering loans of up to one year in length to banks, savings associations, credit unions, and other eligible depository institutions pledging U.S. Treasuries, agency debt and mortgage-backed securities, and other qualifying assets as collateral. These assets will be valued at par. The BTFP will be an additional source of liquidity against high-quality securities, eliminating an institution's need to quickly sell those securities in times of stress.

Source: Federal Reserve, March 12, 2023.

Economic fallout

Source: *CNBC* live, March 22, 2023.

Economic fallout

THE WALL STREET JOURNAL.

Fed Boosts Rates Amid Bank Turmoil

Estimates of just how much any credit contraction could reduce hiring, economic activity and inflation were "rule-of thumb guesswork, almost, at this point. But we think it's potentially quite real, and that argues for being alert as we go forward," Mr. Powell said at a news conference after the conclusion of the Fed's policy meeting. Later, he said, "it could easily have a significant macroeconomic effect."

Source: *The Wall Street Journal.* "Fed Boosts Rates Amid Bank Turmoil", by Nick Timiraos. March 23, 2023.

THE WALL STREET JOURNAL.

Banking Mess Raises Recession Risk

Main Street businesses and American families are likely to find it harder to get a loan because of turmoil in the banking industry, denting economic growth and raising the risk of a recession.

Smaller banks are likely to respond by tightening standards and slowing lending to raise capital ratios, said Torsten Slok, chief economist at Apollo Global Management Inc., a private-equity firm. "If it's suddenly much harder to get an auto loan, a consumer loan, a mortgage for commercial real estate simply because smaller regional banks have to reorganize balance sheets," Mr. Slok said, "then you run the risk that many people won't get the financing to buy that car, to buy that washer, and that corporate lending takes a hit."

Goldman Sachs economists increased the probability that the economy enters a recession in the next 12 months to 35%, from 25% before the SVB failure.

Source: *The Wall Street Journal.* "Banking Mess Raises Recession Risk", by Gwynn Guilford. March 20, 2023.

Central tendency forecast

For release at 2:00 p.m., EDT, March 22, 2023

Table 1. Economic projections of Federal Reserve Board members and Federal Reserve Bank presidents, under their individual assumptions of projected appropriate monetary policy, March 2023

Percent

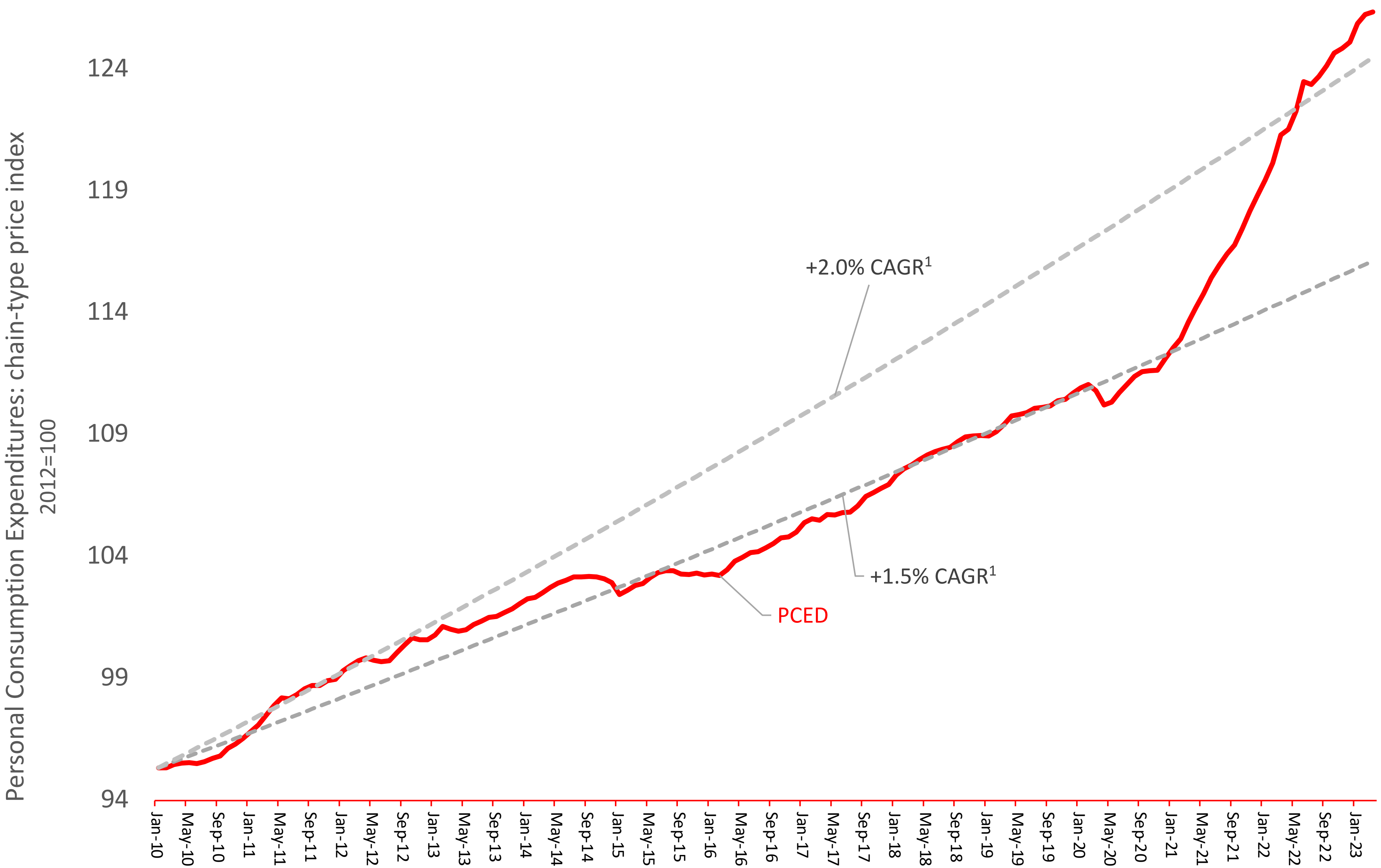
Variable	Median[1]				Central Tendency[2]				Range[3]			
	2023	2024	2025	Longer run	2023	2024	2025	Longer run	2023	2024	2025	Longer run
Change in real GDP	0.4	1.2	1.9	1.8	0.0–0.8	1.0–1.5	1.7–2.1	1.7–2.0	-0.2–1.3	0.3–2.0	1.5–2.2	1.6–2.5
December projection	0.5	1.6	1.8	1.8	0.4–1.0	1.3–2.0	1.6–2.0	1.7–2.0	-0.5–1.0	0.5–2.4	1.4–2.3	1.6–2.5
Unemployment rate	4.5	4.6	4.6	4.0	4.0–4.7	4.3–4.9	4.3–4.8	3.8–4.3	3.9–4.8	4.0–5.2	3.8–4.9	3.5–4.7
December projection	4.6	4.6	4.5	4.0	4.4–4.7	4.3–4.8	4.0–4.7	3.8–4.3	4.0–5.3	4.0–5.0	3.8–4.8	3.5–4.8
PCE inflation	3.3	2.5	2.1	2.0	3.0–3.8	2.2–2.8	2.0–2.2	2.0	2.8–4.1	2.0–3.5	2.0–3.0	2.0
December projection	3.1	2.5	2.1	2.0	2.9–3.5	2.3–2.7	2.0–2.2	2.0	2.6–4.1	2.2–3.5	2.0–3.0	2.0
Core PCE inflation[4]	3.6	2.6	2.1		3.5–3.9	2.3–2.8	2.0–2.2		3.5–4.1	2.1–3.1	2.0–3.0	
December projection	3.5	2.5	2.1		3.2–3.7	2.3–2.7	2.0–2.2		3.0–3.8	2.2–3.0	2.0–3.0	
Memo: Projected appropriate policy path												
Federal funds rate	5.1	4.3	3.1	2.5	5.1–5.6	3.9–5.1	2.9–3.9	2.4–2.6	4.9–5.9	3.4–5.6	2.4–5.6	2.3–3.6
December projection	5.1	4.1	3.1	2.5	5.1–5.4	3.9–4.9	2.6–3.9	2.3–2.5	4.9–5.6	3.1–5.6	2.4–5.6	2.3–3.3

Source: Federal Reserve, March 22, 2023.

Inflation

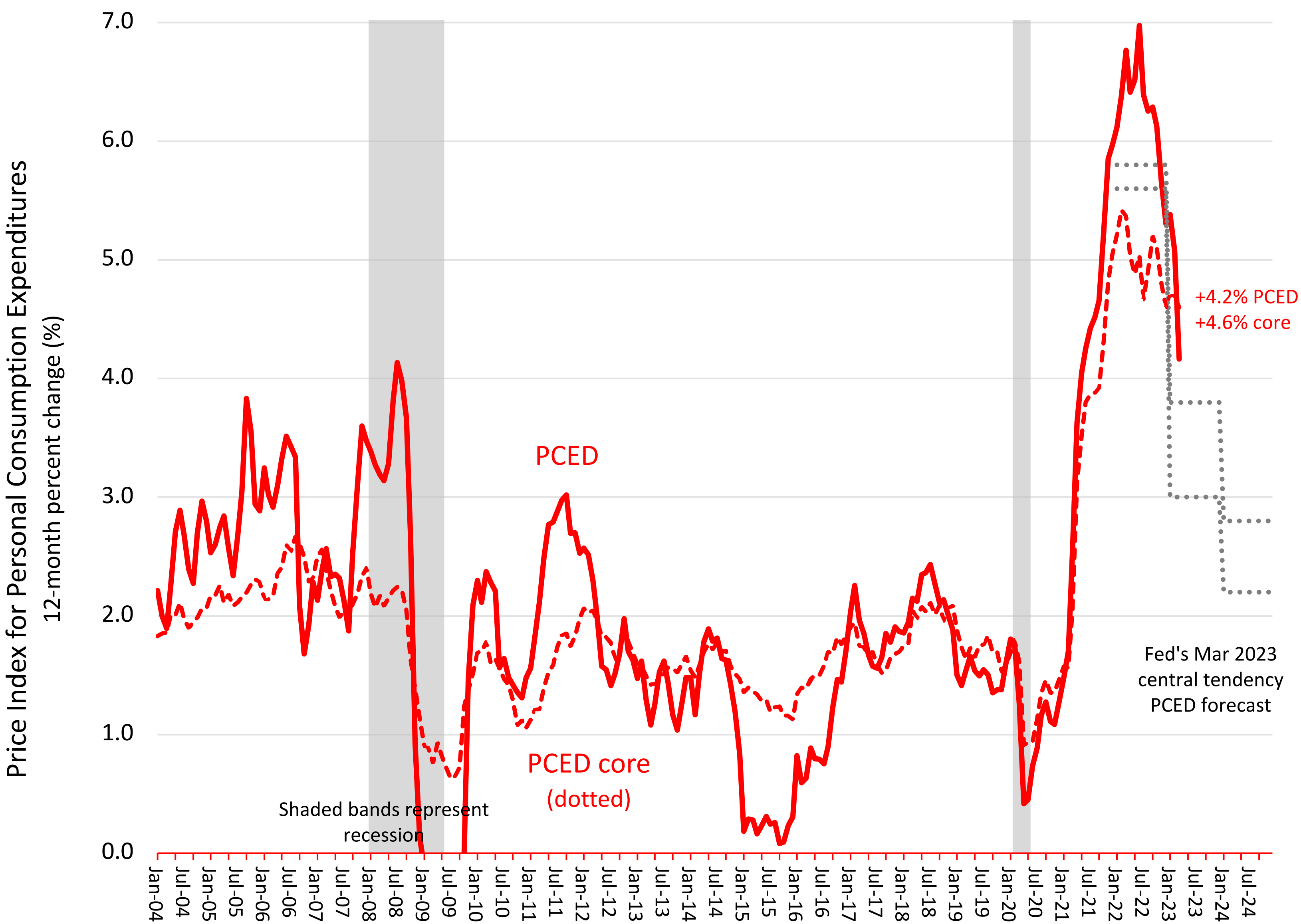
- Year-over-year headline PCED +4.2%, +4.6% core
- M2 driving inflation
- Inflation expectations (TIPS spread) falling

PCED – headline



Source: NBER, Federal Reserve Bank of St. Louis. Data through March 2023.

PCED – headline and core

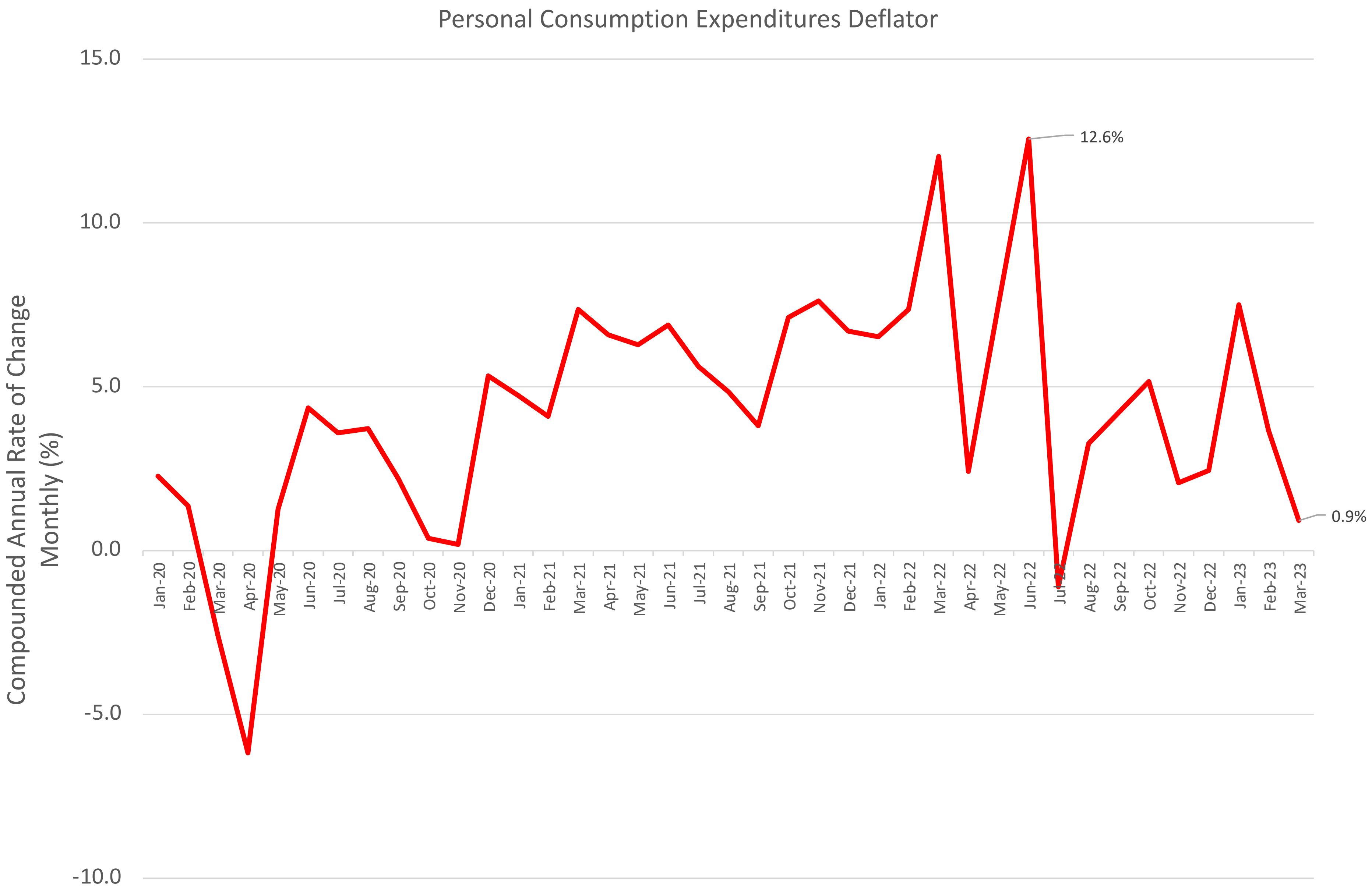


Inflation peaked, following the post-Covid surge.

Source: NBER, Federal Reserve Bank of St. Louis. Data through March 2023.

Inflation

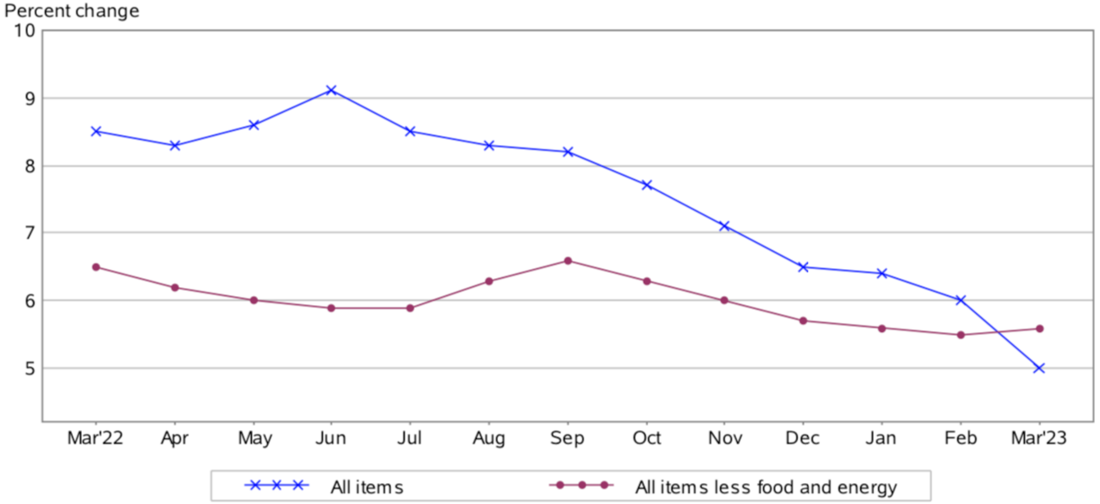
PCED – monthly rate of change annualized



Source: Federal Reserve Bank of St. Louis. Data through March 2023.

CPI – headline and core

Chart 2. 12-month percent change in CPI for All Urban Consumers (CPI-U), not seasonally adjusted, Mar. 2022 - Mar. 2023



Up +5.6% y/y in March.

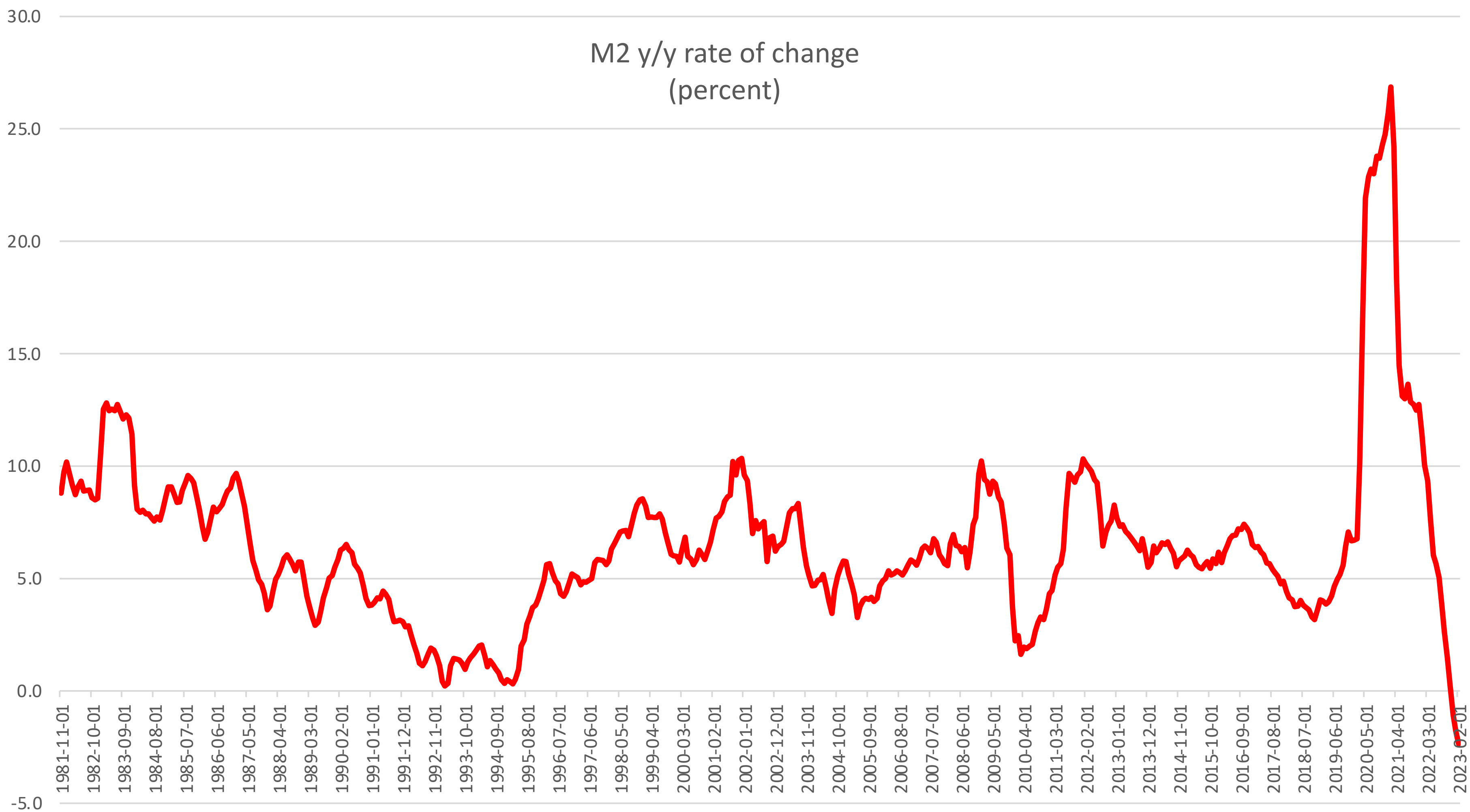
Up +5.0% y/y in March.

Table A. Percent changes in CPI for All Urban Consumers (CPI-U): U.S. city average

	Seasonally adjusted changes from preceding month							Un-adjusted 12-mos. ended Mar. 2023
	Sep. 2022	Oct. 2022	Nov. 2022	Dec. 2022	Jan. 2023	Feb. 2023	Mar. 2023	
All items	0.4	0.5	0.2	0.1	0.5	0.4	0.1	5.0
Food	0.8	0.7	0.6	0.4	0.5	0.4	0.0	8.5
Food at home	0.7	0.5	0.6	0.5	0.4	0.3	-0.3	8.4
Food away from home[1]	0.9	0.9	0.5	0.4	0.6	0.6	0.6	8.8
Energy	-1.7	1.7	-1.4	-3.1	2.0	-0.6	-3.5	-6.4
Energy commodities	-4.1	3.7	-2.1	-7.2	1.9	0.5	-4.6	-17.0
Gasoline (all types)	-4.2	3.4	-2.3	-7.0	2.4	1.0	-4.6	-17.4
Fuel oil[1]	-2.7	19.8	1.7	-16.6	-1.2	-7.9	-4.0	-14.2
Energy services	1.2	-0.7	-0.6	1.9	2.1	-1.7	-2.3	9.2
Electricity	0.8	0.5	0.5	1.3	0.5	0.5	-0.7	10.2
Utility (piped) gas service	2.2	-3.7	-3.4	3.5	6.7	-8.0	-7.1	5.5
All items less food and energy	0.6	0.3	0.3	0.4	0.4	0.5	0.4	5.6
Commodities less food and energy commodities	0.0	-0.1	-0.2	-0.1	0.1	0.0	0.2	1.5
New vehicles	0.7	0.6	0.5	0.6	0.2	0.2	0.4	6.1
Used cars and trucks	-1.1	-1.7	-2.0	-2.0	-1.9	-2.8	-0.9	-11.2
Apparel	0.0	-0.2	0.1	0.2	0.8	0.8	0.3	3.3
Medical care commodities[1]	-0.1	0.0	0.2	0.1	1.1	0.1	0.6	3.6
Services less energy services	0.8	0.5	0.5	0.6	0.5	0.6	0.4	7.1
Shelter	0.7	0.7	0.6	0.8	0.7	0.8	0.6	8.2
Transportation services	1.9	0.6	0.3	0.6	0.9	1.1	1.4	13.9
Medical care services	0.8	-0.4	-0.5	0.3	-0.7	-0.7	-0.5	1.0

Source: BLS. Data through March 2023.

The money supply – y/y rate of change



 Source: Federal Reserve Bank of St. Louis. Data through February 2023.

M2 vs. inflation

THE WALL STREET JOURNAL.

Why Inflation Is on the Way Down

Yet the relationship between money-supply growth, as measured by M2 and subsequent inflation has been statistically near-perfect in the pandemic era, with a 13-month lag. Year-over-year M2 growth began to accelerate during the pandemic recession in April 2020, and core inflation started to accelerate 13 months later, in May 2021. M2 growth peaked at a history making, off-the-charts 27% in February 2021, and core CPI peaked 13 months later, in March 2022. Both M2 growth and core CPI have been falling every month since their respective peaks.

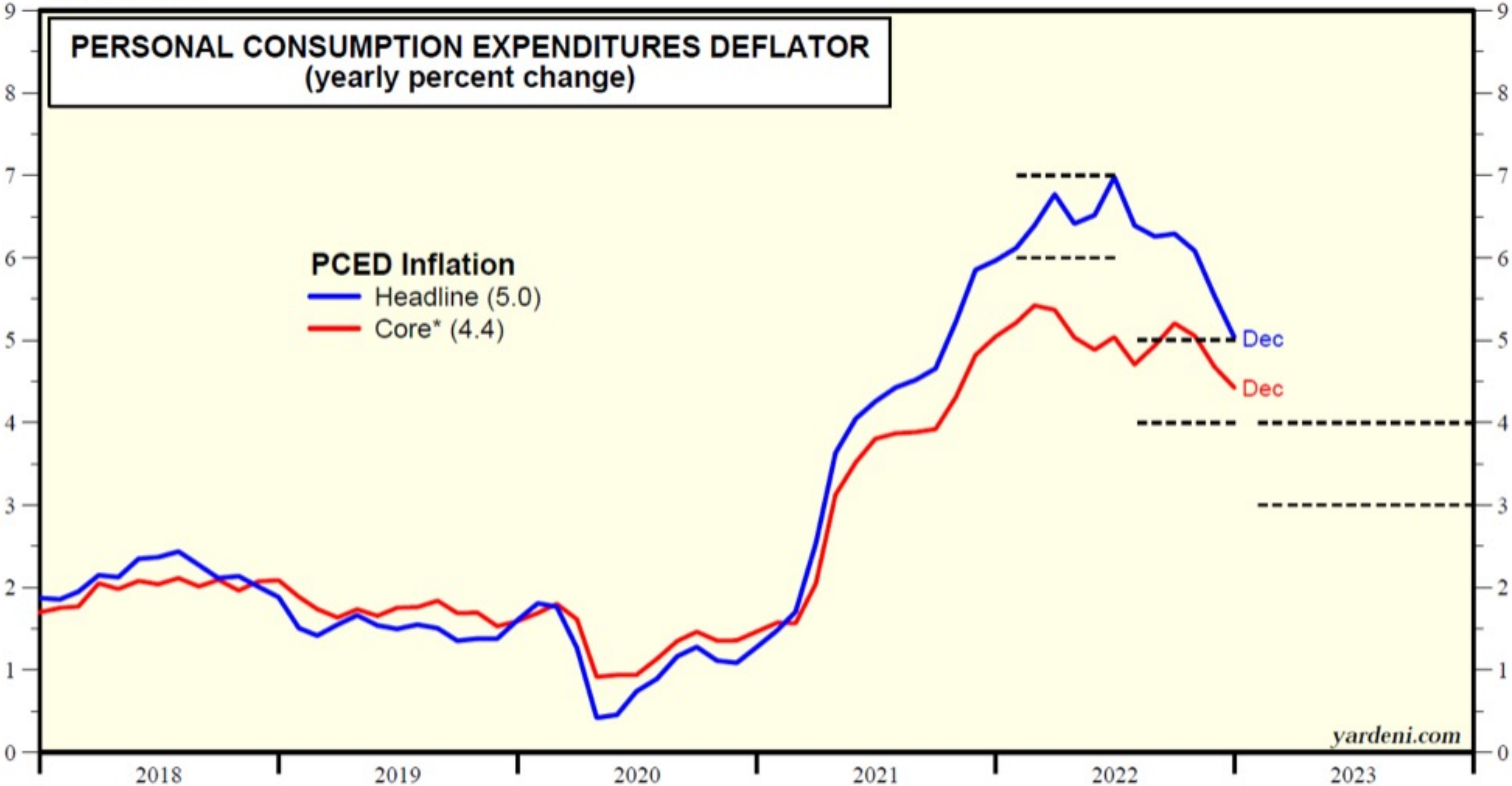
Experience is proving, 40 years after Friedman taught Volcker, that inflation is still a monetary phenomenon.

<u>If the relationship with inflation continues, core inflation will be at only 2.3% in 13 months, in June 2023</u>.

Source: *The Wall Street Journal*, July 26, 2022. Opinion section. Author: Donald L. Luskin.

Ed Yardeni's inflation forecast

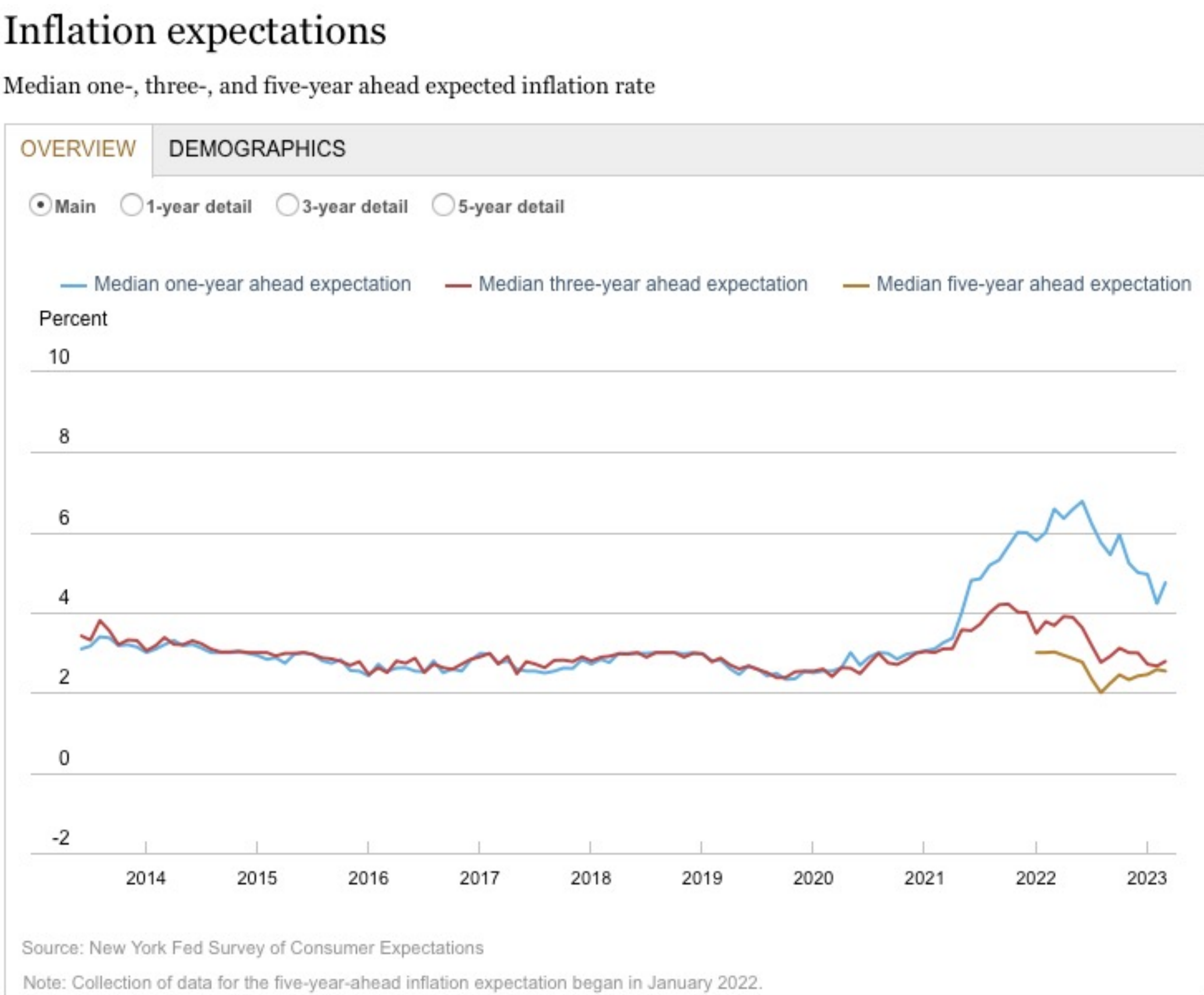
Figure 25.



* Excluding food & energy.
Note: Dashed ranges are YRI forecasts for headline PCED inflation rate.
Source: Bureau of Economic Analysis.

Source: Yardeni Research, Inc., with permission, January 30, 2022.

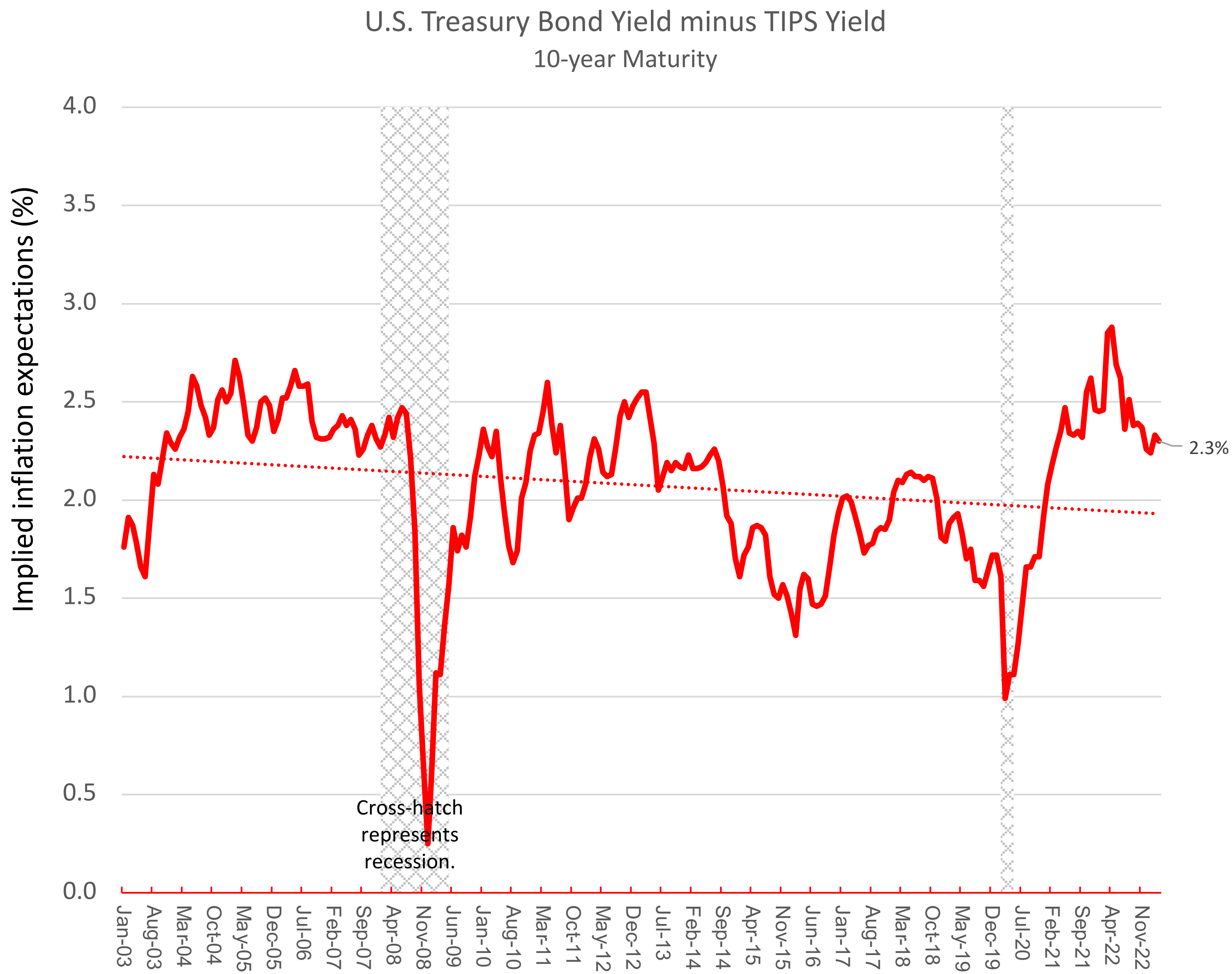
Inflation expectations



Consumers expect substantially moderating inflation.

Source: Federal Reserve Bank of New York, *Survey of Consumer Expectations*. Data through February 2023.

Inflation expectations



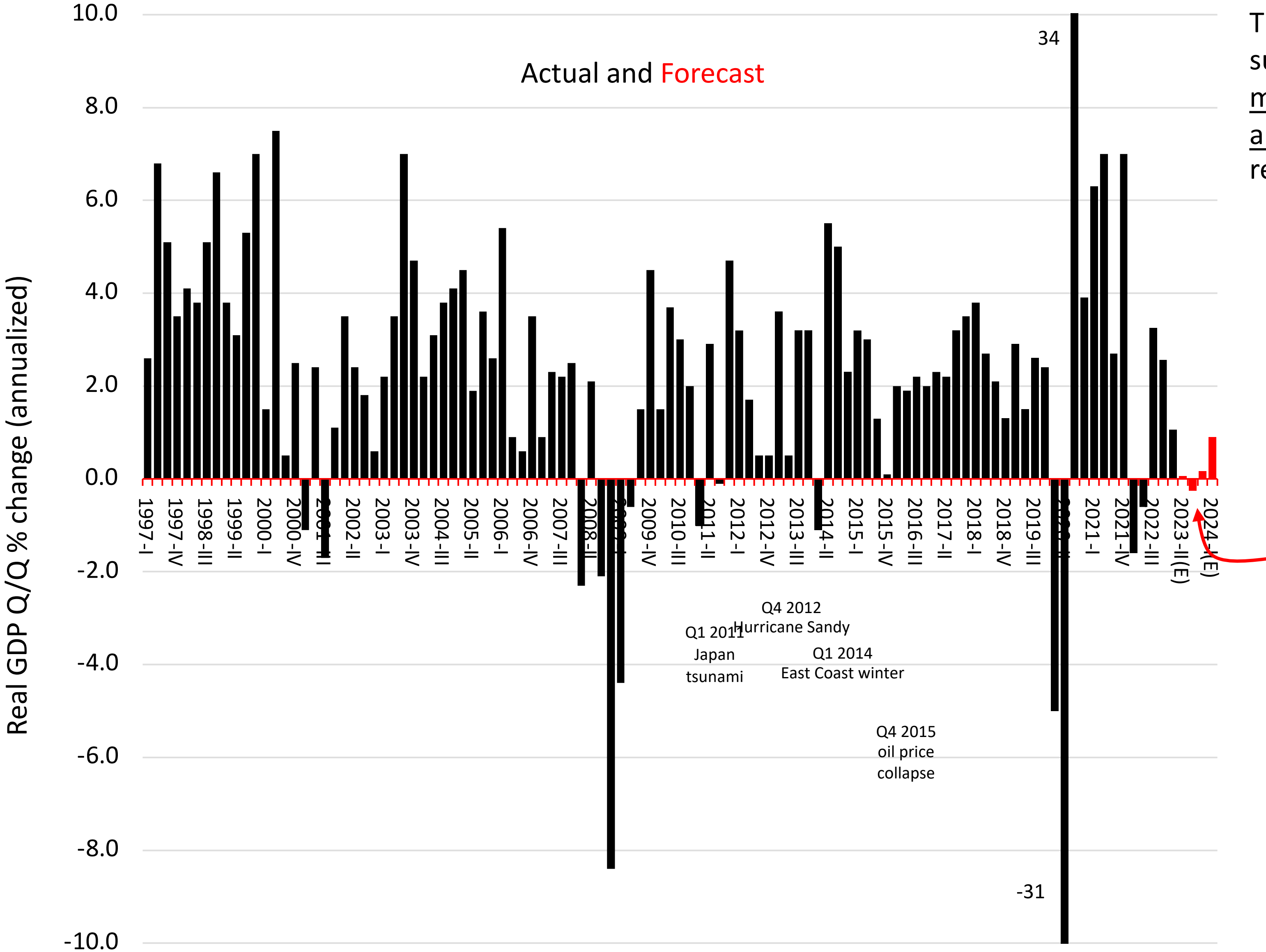
The difference between the nominal 10-year Treasury bond yield and the TIPS yield gives the market's opinion for a 10-year inflation forecast.

It had been trending lower for 15 years but has moved higher post-Covid.

Source: Federal Reserve. Data through March 2023.

Consensus GDP forecast

GDP



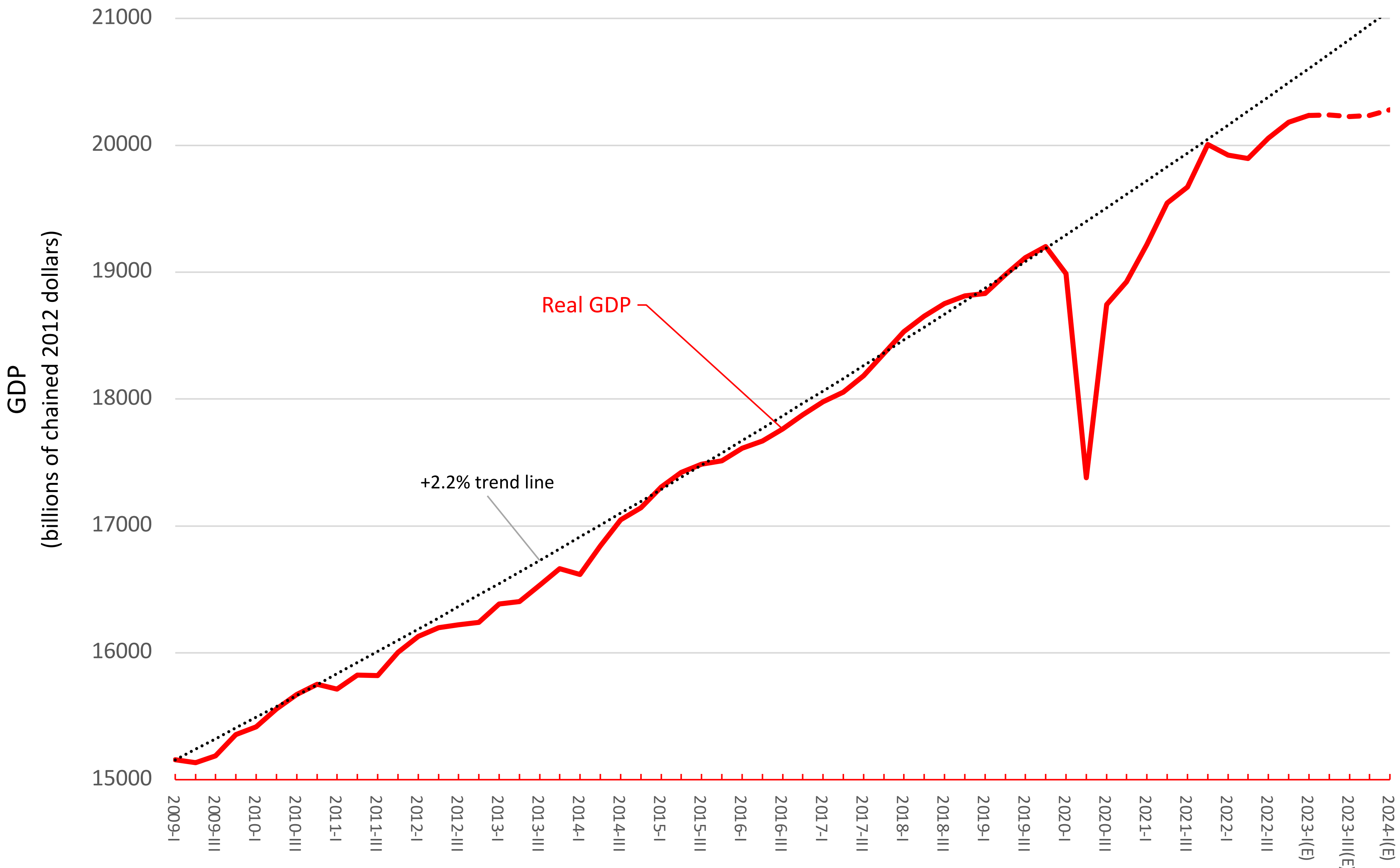
The 60 economists surveyed in April <u>see mild contraction ahead,</u> but no recession.

Mild contraction forecasted in third quarter of 2023.

Sources: Bureau of Economic Analysis, actual quarterly data through March 2023. *The Wall Street Journal* survey released April 2023.

GDP forecast

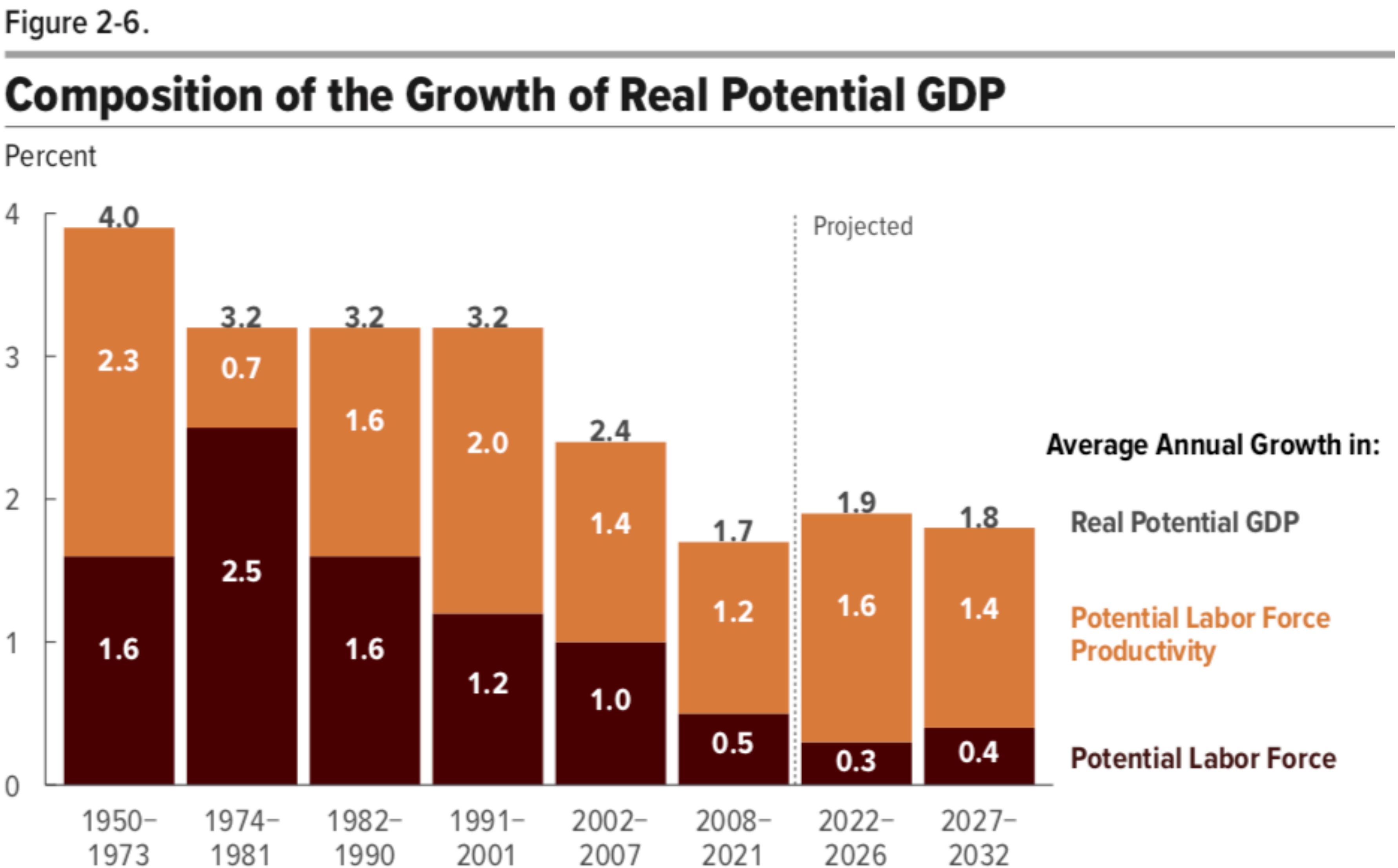
V-shaped recovery from Covid, followed by slowing growth



Sources: Bureau of Economic Analysis, actual quarterly data through March 2023. *The Wall Street Journal* survey released April 2023.

GDP growth potential = Δ productivity + Δ labor force

CBO's potential growth calculations

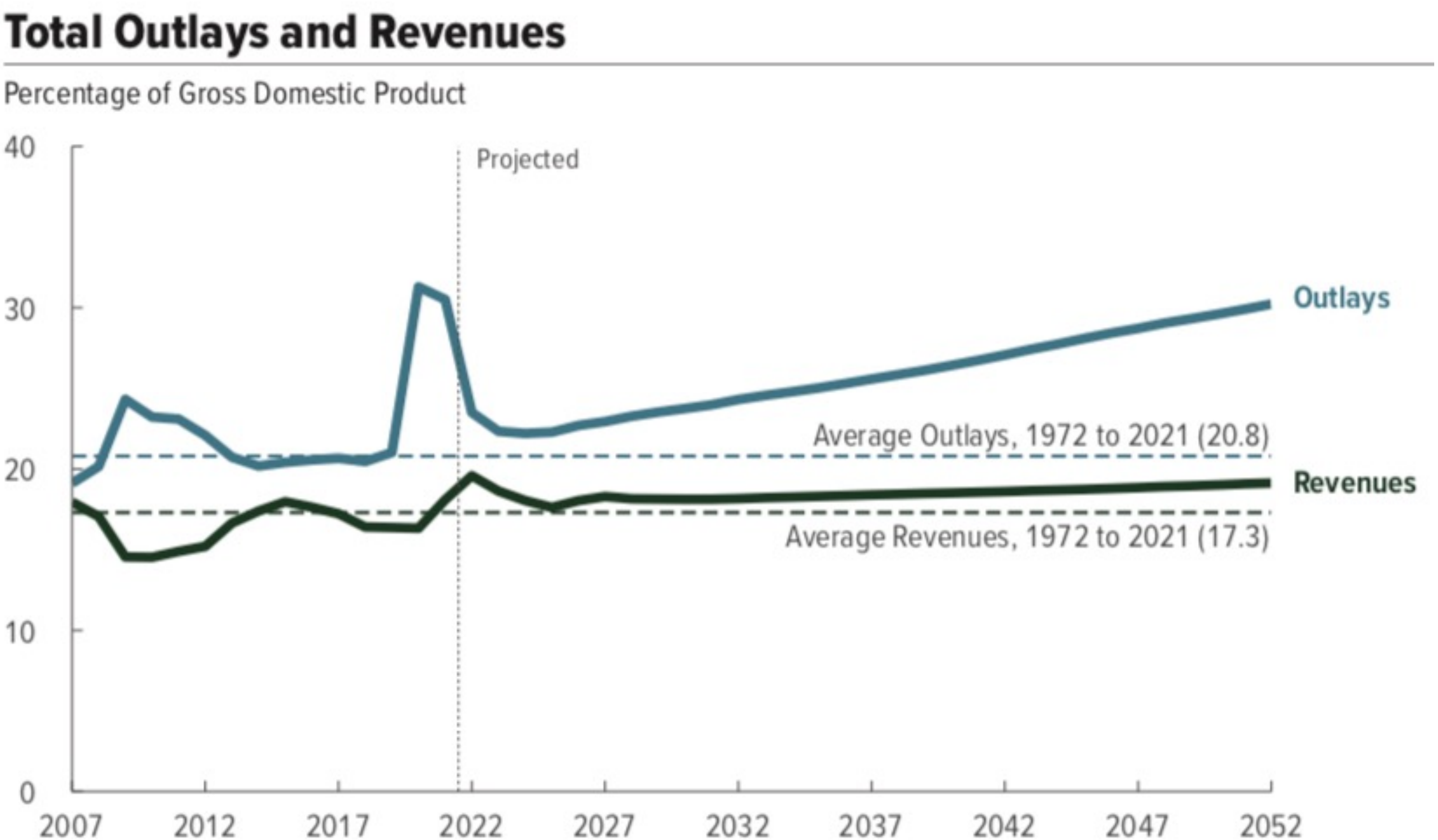


Source: Congressional Budget Office, *The Budget and Economic Outlook: 2022 to 2032,* released May 2022.

Federal budget

- CBO’s July 2022 projections
- Go Big! Huge new spending programs.
- “pay their fair share”
- increasing deficits, rising debt
- Could we fix it?
- low U.S. tax burden allows flexibility to solve long-term entitlements problem

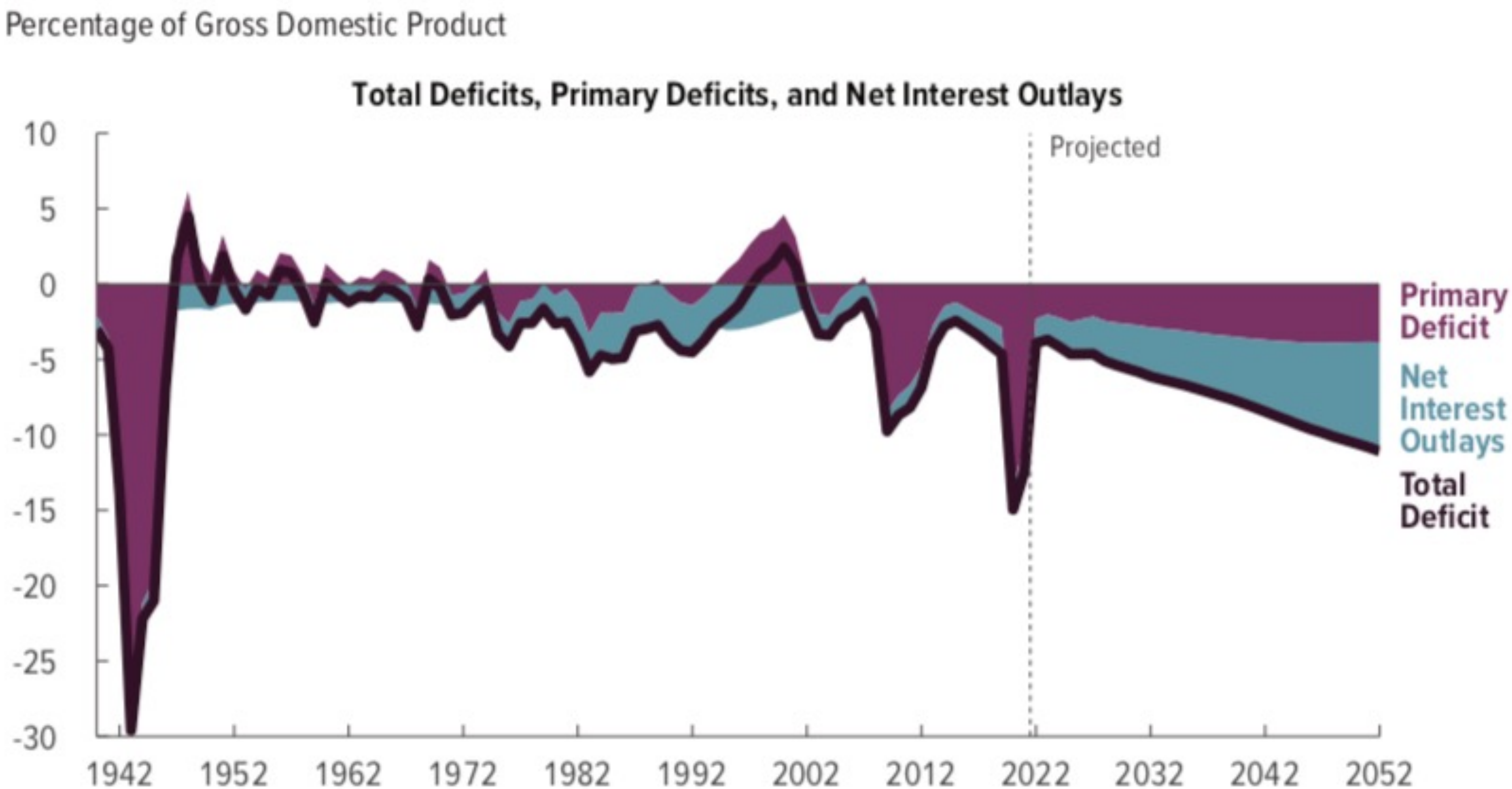
Federal revenues and outlays through 2052



The gap widens significantly over 30 years.

Source: Congressional Budget Office, *The 2022 Long-Term Budget Outlook,* released July 2022.

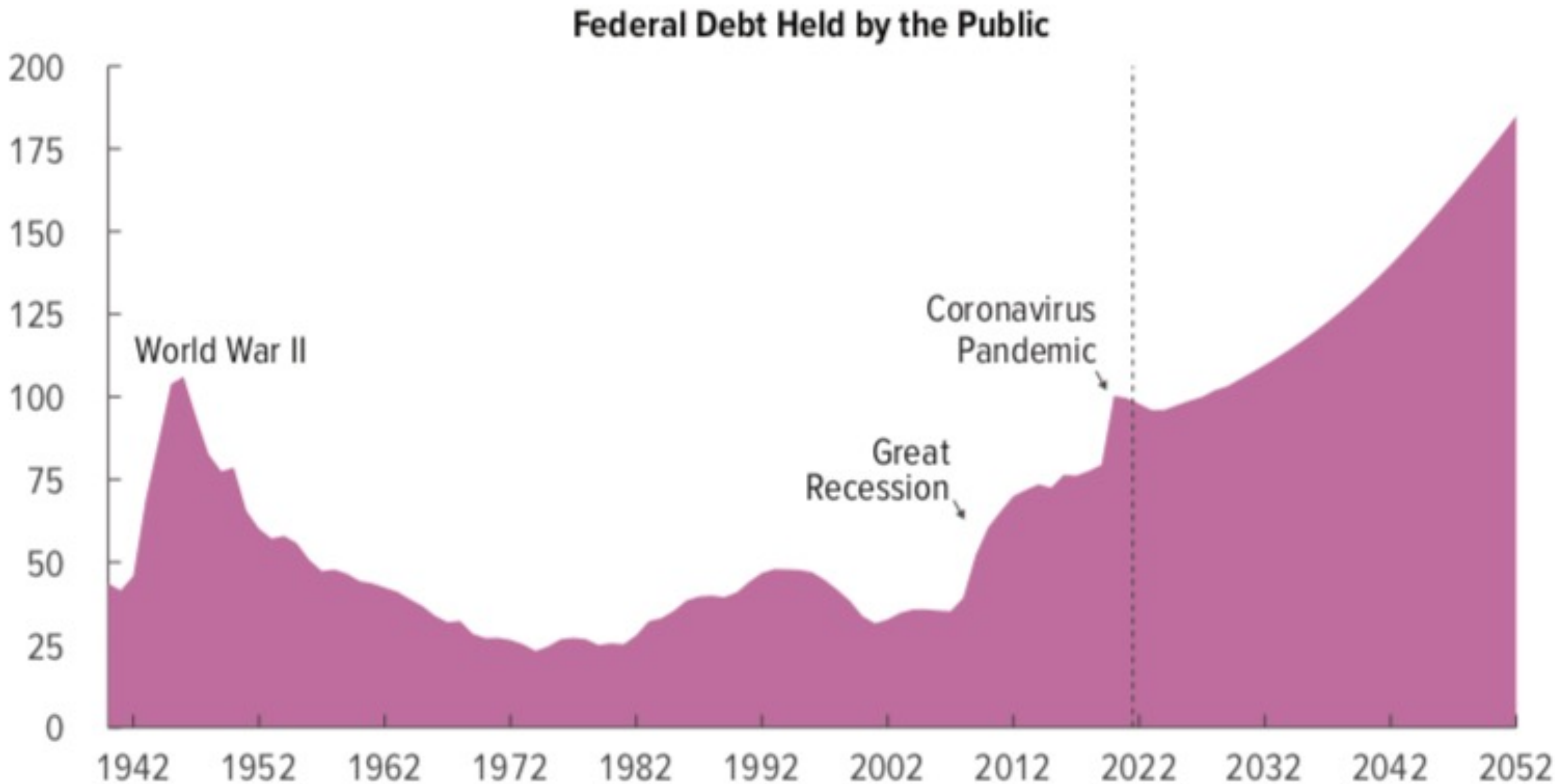
Federal deficits % of GDP though 2052



Net interest becomes the major part of deficits.

Source: Congressional Budget Office, *The 2022 Long-Term Budget Outlook,* released July 2022.

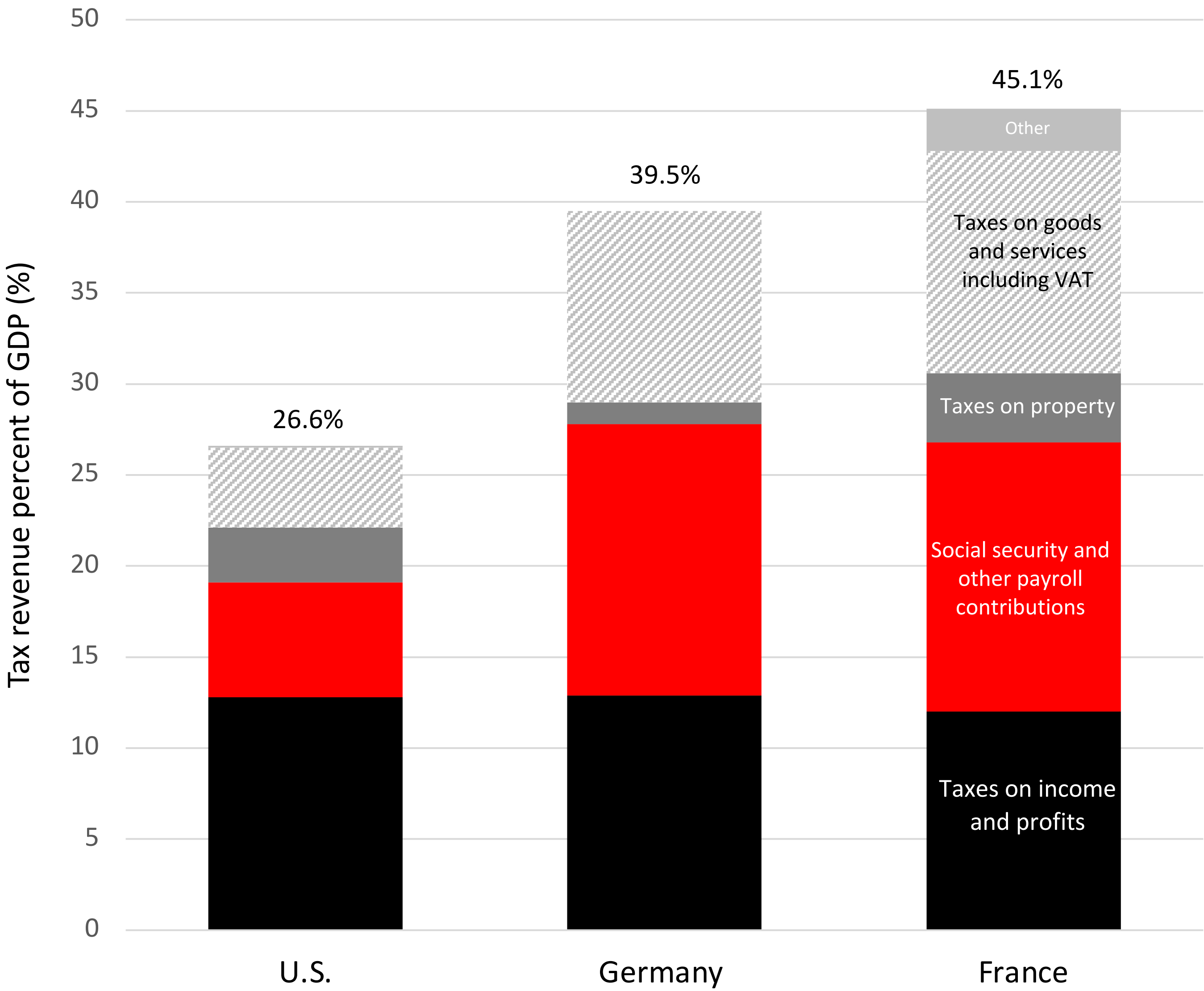
Federal debt % of GDP though 2052



Debt/GDP grows significantly over 30 years.

Source: Congressional Budget Office, *The 2022 Long-Term Budget Outlook,* released July 2022.

Tax structure U.S. vs. France and Germany



The U.S. has a much lower total tax burden and takes a very different approach to raising tax revenues compared to most other developed economies.

Source: OECD Revenue Statistics 2022, published November 30, 2022. Data for 2021.

Federal government debt

THE WALL STREET JOURNAL.

Default on U.S. Debt Is Impossible

In reality, the U.S. *can't* default on its debt.
Section 4 of the 14th Amendment is unequivocal on that point: "The validity of the public debt of the United States, authorized by law, . . . shall not be questioned." This provision was adopted to ensure that the federal debts incurred to fight the Civil War couldn't be dishonored by a Congress that included members from the former Confederate states.

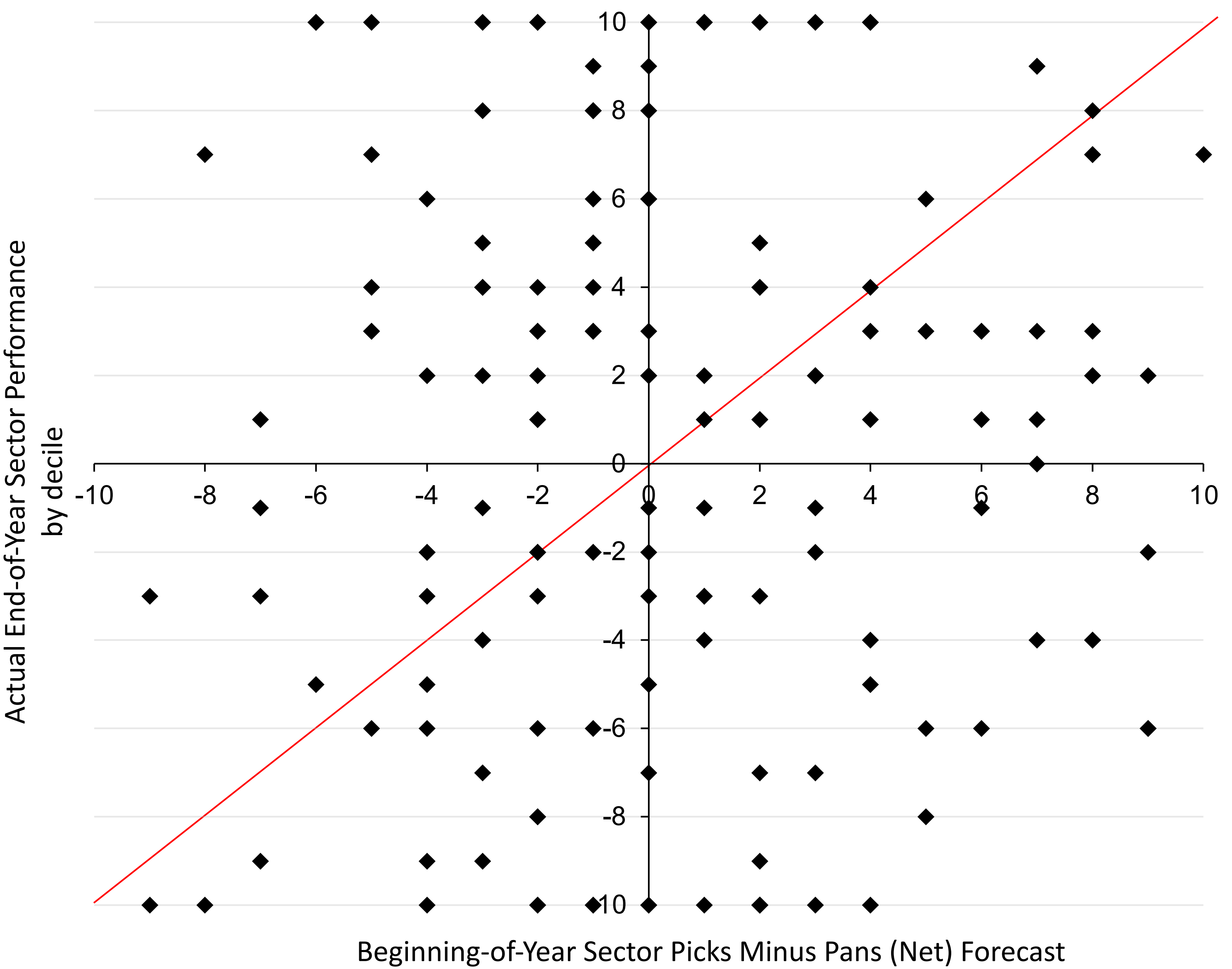
The Public Debt Clause isn't limited to Civil War debts. As the Supreme Court held in *Perry v. U.S.* (1935), it covers all sovereign federal debt, past, present and future.

Those who warn of default confuse debt payments with other spending obligations.

There's no question enough money would be available: The government collects roughly $450 billion a month in tax revenue, more than enough to cover the $55 billion or so in monthly debt service.

Source: *The Wall Street Journal*, "Default on U.S. Debt Is Impossible", by David B. Rivkin Jr. and Lee A Casey. February 21, 2023.

Summary of Wall Street's sector calls 2007-2021



<u>Strategists are no better than throwing darts</u>.

If the strategists surveyed, collectively, were able to systematically give valuable sector picking advice, then these data points would lie along the indicated approximate 45-degree angle: sectors with high net picks would correspondingly perform relatively highly and sectors with negative net picks would perform relatively negatively. These data look pretty random.

Sources: Standard and Poor's for actual annual sector performance data. *Barron's* surveys for beginning-of-year sector picks minus pans (net) figures.

Behavioral economics

BARRON'S

***Barron's:* What investment opportunities should investors look for after the pandemic?**

Richard Thaler: It's not knowable. That's exactly the sort of thing we pride ourselves in not doing – trying to forecast what the world is going to look like six months from now or a year from now. For individual investors, the best strategy is benign neglect. Create a sensible long-term portfolio, and then ignore it.

***Barron's:* What elements of behavioral economics do you find particularly relevant now?**

Richard Thaler: … Well, one of the interesting things we observed in the past six months is a big increase in retail investing at the level of individual securities.. My opinion is, for individual investors to be doing that is a fool's errand. The world has conspired to make them overconfident now because the market's been going up pretty steadily, and it has been going up fast in the segment of the market that retail investors have been most attracted to. So, it's very easy to think that you've figured this stuff out. If you think you've figured it out right now, think again.

Richard H. Thaler
Nobel prize winner for behavioral economics

Source: *Barron's*, December 7, 2020.

Modern Portfolio Theory = Asset Allocation

Modern portfolio theory was introduced by Harry Markowitz with his paper "Portfolio Selection," which appeared in the 1952 *Journal of Finance*.

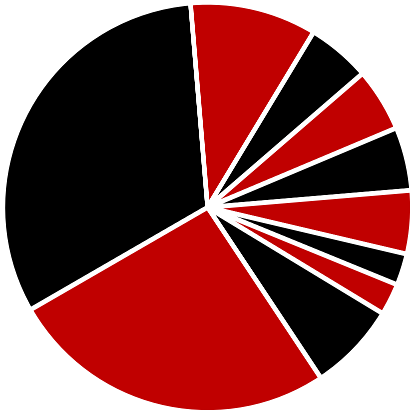
Thirty-eight years later, he shared a Nobel Prize with Merton Miller and William Sharpe for what has become a broad theory for portfolio selection.

<u>Modern Portfolio Theory</u>

Diversify

Optimize

Rebalance



Asset allocation and diversification do not guarantee a profit or eliminate the risk of loss.
Source: Riskglossary.com

Modern Portfolio Theory

Figure 1. Efficient frontier

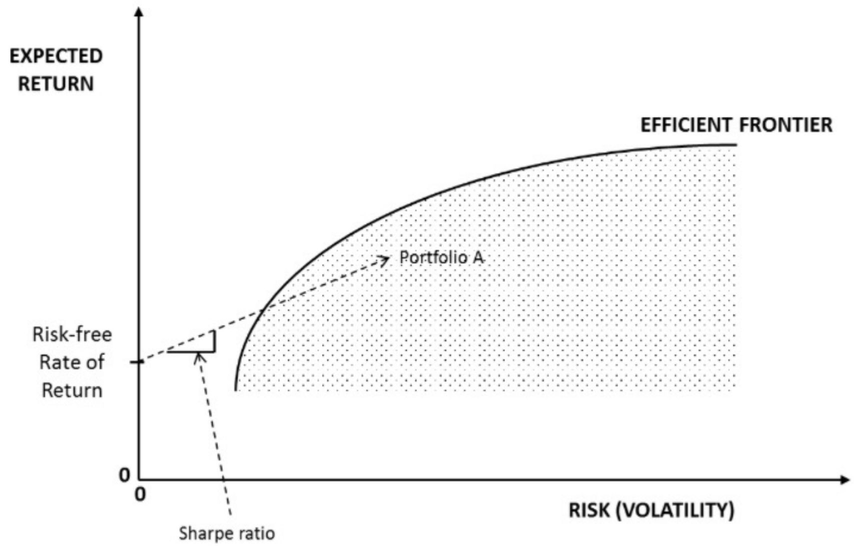
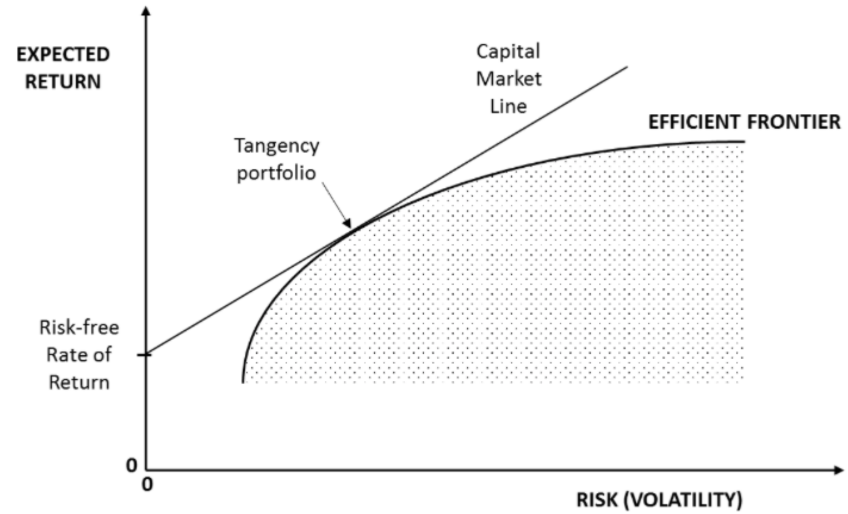


Figure 2. The capital market line



The dots under the curve in Figure 1 represent "inefficient" portfolios – some are even single stocks. Each one can be diversified further, either to reduce volatility without reducing expected return, or to increase expected return without increasing volatility. The ones that can't be so diversified any further lie on the efficient frontier.

Each portfolio has a "Sharpe ratio," named after Markowitz's successor in the development of portfolio theory, William F. Sharpe. The Sharpe ratio (see Figure 1) is the ratio of expected return (over and above the risk-free rate) to "risk," i.e. volatility (standard deviation of returns). Note that the inefficient Portfolio A's Sharpe ratio is lower than that of a portfolio on the efficient frontier above it.

The next step in the theory was to realize that the portfolio with the highest Sharpe ratio is the "tangency portfolio" – see Figure 2. The tangency portfolio is the portfolio at the intersection of a line drawn from the risk-free security that is tangent to the efficient frontier. This line is called the capital market line.

Any portfolio on the capital market line can be obtained by combining the risk-free asset with the tangency portfolio. Therefore, a portfolio on that line is *more* efficient than a portfolio on the efficient frontier. (For the upper right-hand part of that line, you have to assume that not only can you invest at the risk-free rate, you can also borrow at it.)

So it matters what the tangency portfolio is. If you make the assumption that all publicly available information is known to all investors, and that markets are in equilibrium, this leads to the conclusion that the tangency portfolio is the capitalization-weighted market portfolio. This is not in the least surprising – indeed it is trivial – since in equilibrium all investors, all with the same knowledge, will invest their risk assets in the same portfolio. And the only way they can all do that is if it is the market portfolio. It was this insight that originally brought forth the idea of creating capitalization-weighted index funds to mimic the market.

Source: The Myths and Fallacies about Diversified Portfolios, by Michael Edesses, January 9, 2017.

Important Information

All material presented is compiled from sources believed to be reliable and current, but accuracy cannot be guaranteed. This is not to be construed as an offer to buy or sell any financial instruments and should not be relied upon as the sole factor in an investment making decision. As with all investments there are associated inherent risks. Please obtain and review all financial material carefully before investing.

The opinions expressed are those of the author, are based on current market conditions and are subject to change without notice.

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