Signature Financial Group, LLC

Point of View
Economy – Markets – Investment Strategy
March 2022

FRITZMEYER POV

ECONOMY MARKETS INVESTMENT STRATEGY

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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.

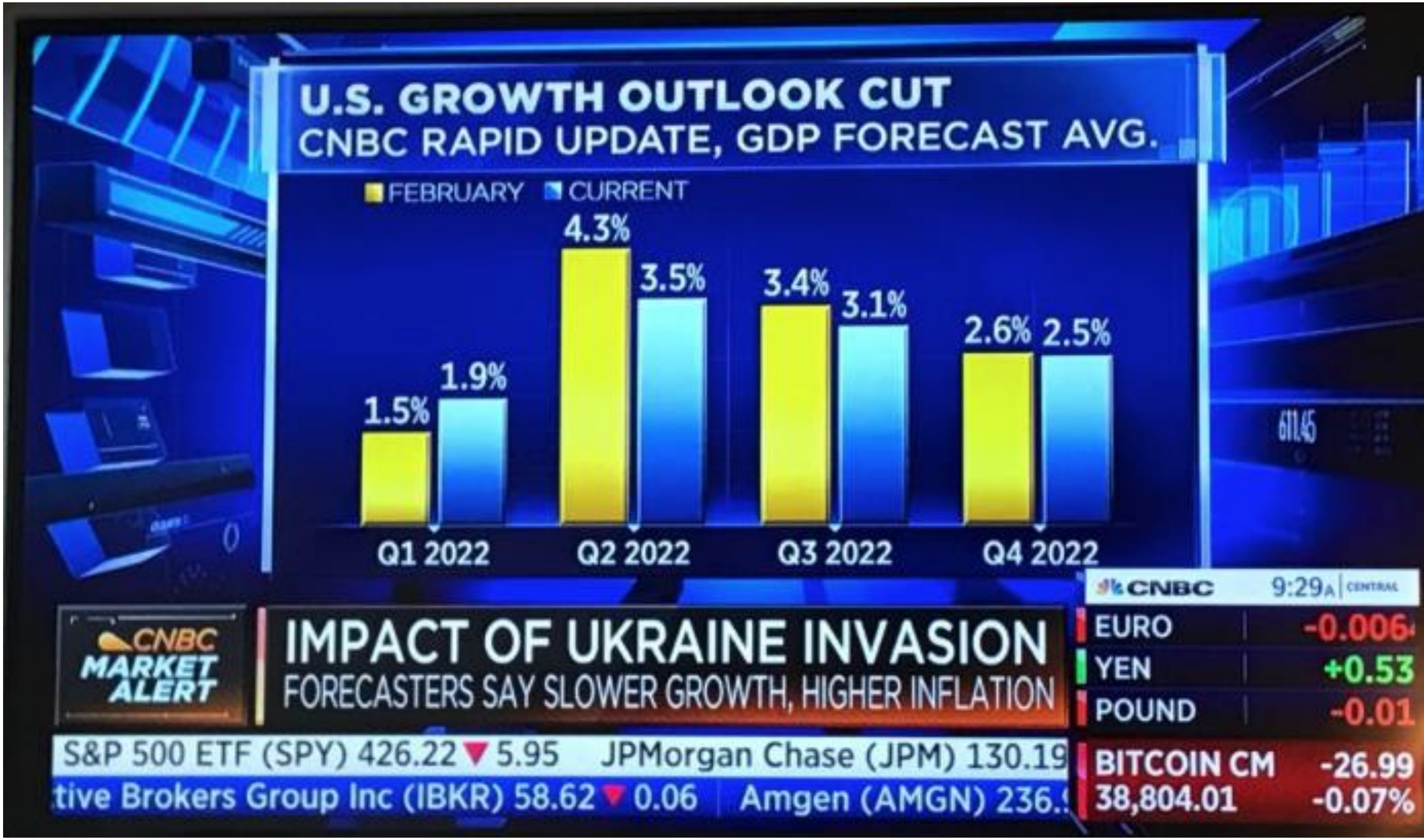
What's new?

- Russia attacks Ukraine
- Oil price new highs
- Inflation new highs
- Strong economic data
- Forecast revisions, for example

<u>JP Morgan</u>
2022 U.S. GDP: from +2.8% to +2.7%
2022 inflation: from +3.9% to +4.9%

<u>Ed Yardeni</u>
2022 U.S. GDP: from +2.8% to +2.0%
2022 inflation: +5.6%
2022 YE S&P 500 price target: from 5200 to 4800 to 4000

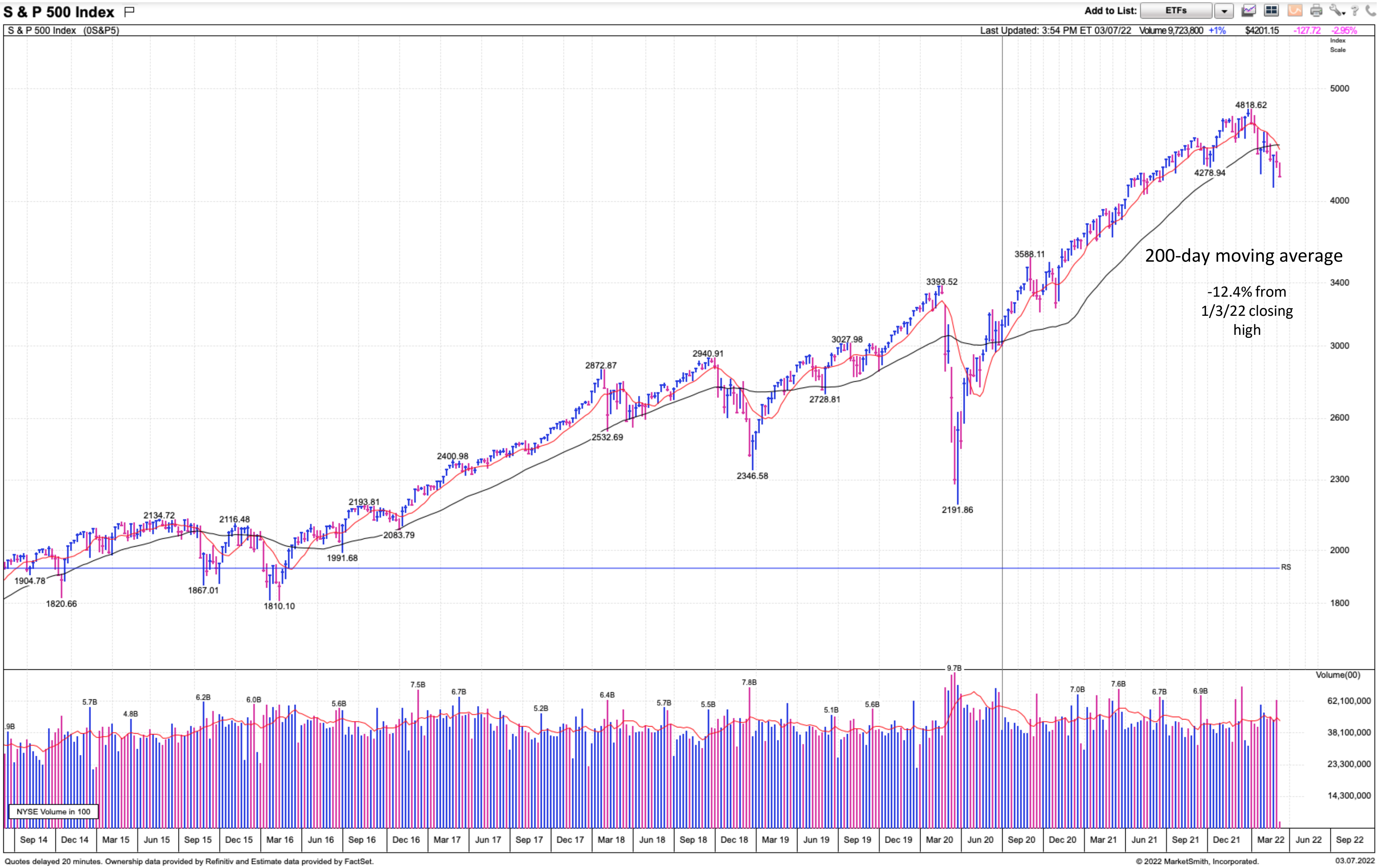
CNBC Survey



Source: *CNBC* screenshot, March 7, 2022.

Stock market

S&P 500 – correction



Source: Standard & Poor's and MarketSmith, Inc. Data through March 7, 2022.

Ukraine

Bloomberg Businessweek

By Barry Ritholtz
March 2, 2022, 3:00 AM MST

After Russia rolled tanks and troops into Ukraine, markets sold off–for half a day. S&P 500 futures tumbled overnight, but by 2:30 p.m. in New York on Feb. 24, the S&P 500 was higher than before military action began. While there's been volatility, U.S. equities as of March 1 were still up since before the invasion.

A lot of clients at my wealth management firm called and wrote to ask how that could be. The short answer is, this isn't unusual. Historically, events such as wars, assassinations, and terror attacks are just not that meaningful to the factors that drive markets. These horrific events exact a terrible human toll, as measured in casualties and injuries, human suffering, and refugees. But the immediate reaction to dangerous mass conflicts like the war in Ukraine tends not to affect equity valuations over the long term. What drives equity prices are increased corporate revenue and profit, and the typical geopolitical event isn't big enough to change those very much. The impact on global gross domestic product is modest in all but a few outlier cases.

Source: *Bloomberg Businessweek online*, March 2, 2022.

Ukraine

BARRON'S

Geopolitical tension isn't good, but it doesn't have to do permanent damage to the stock market. The peak-to-trough move in the S&P 500 when Russia annexed Crimea back in 2014 was about 2%, yet the S&P 500 rose 11% for all of 2014. Still, the news injected a rush of uncertainty into the market. And investors really hate uncertainty.

THE WALL STREET JOURNAL.

The bottom line is that the impact of war specifically on investment portfolios may be hard to discern. A historical analysis of military and terrorist conflicts shows that market impacts tend to be short-lived unless they create a recession.

Source: *Barron's*, February 14, 2022; *The Wall Street Journal*, February 15, 2022.

BARRON'S

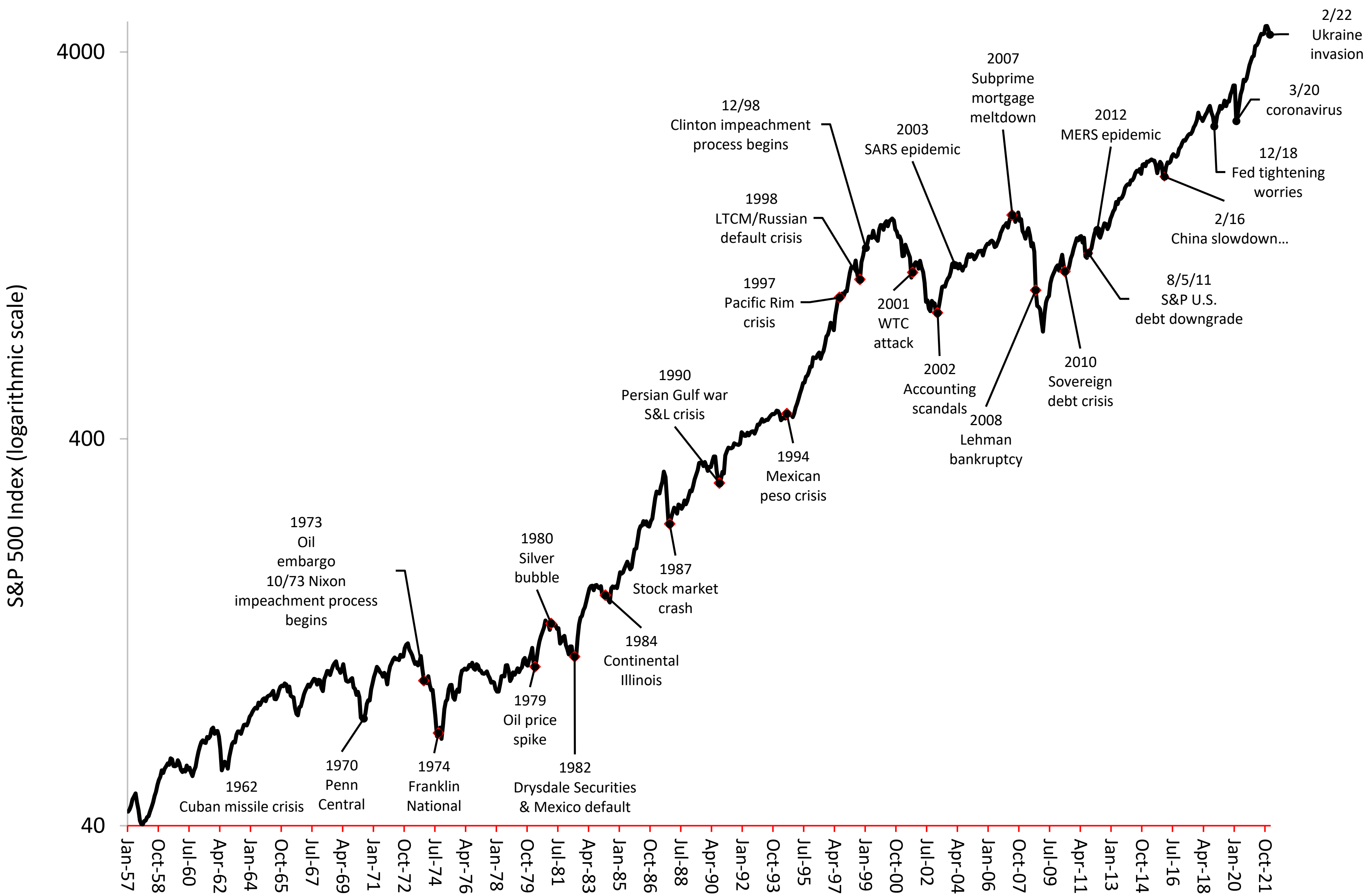
Stocks Can Sail Through a Crisis – Usually

NDR examined the effect on stocks of more than 50 crisis events since the turn of the 20th century – from the Panic of 1907 to the Covid-19 crash of 2020 – and found a pattern. After falling an average of 7% in the immediate aftermath of a crisis, the Dow rose 4.2% over the next three weeks. Nine weeks later, it had gained 6%, and after 18 weeks it was up an average of 9.6%, according to NDR.

Not every event followed the pattern precisely, and all were subject to larger economic forces. Yet the study shows a remarkable symmetry in market reaction.

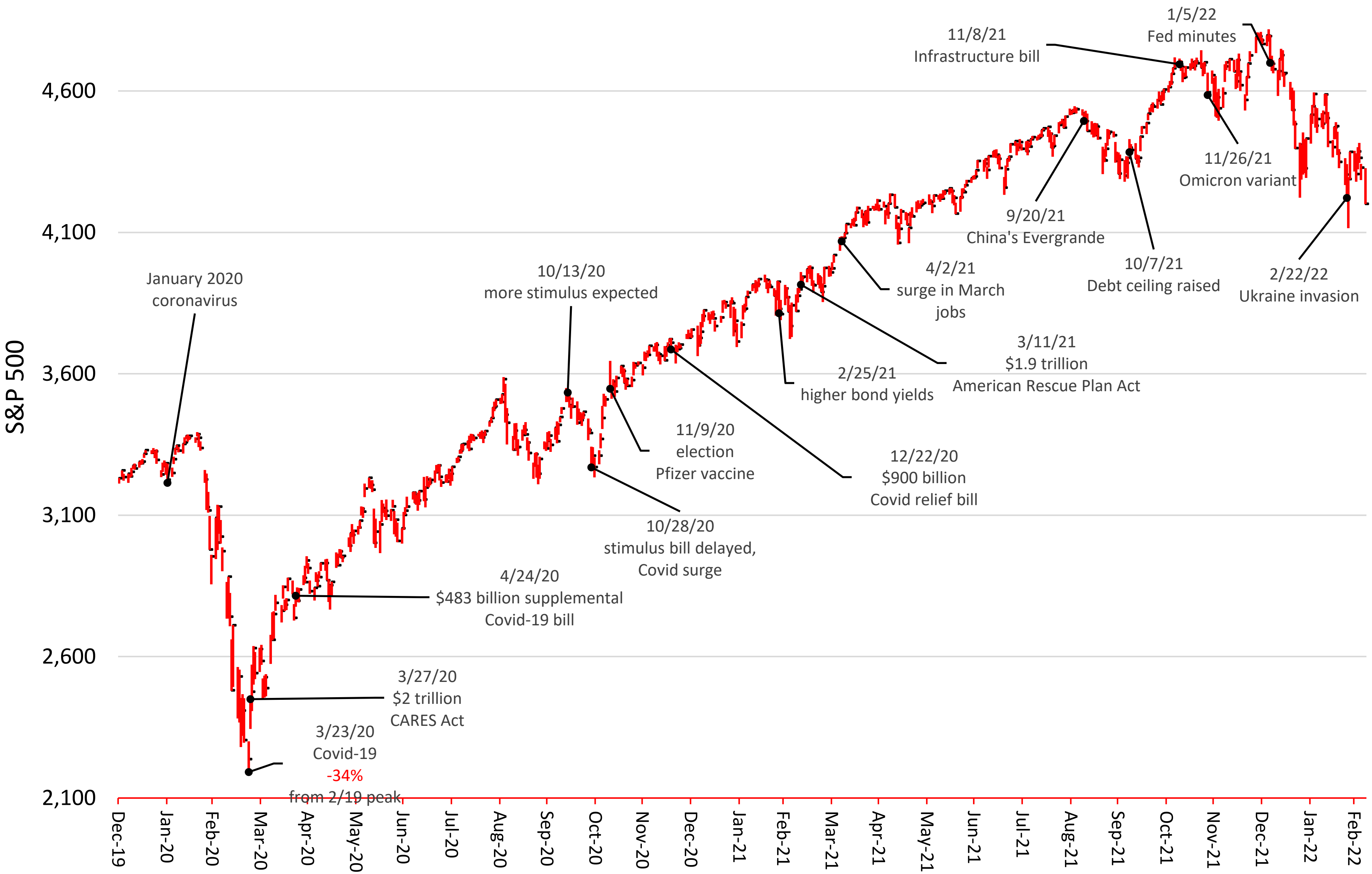
Source: *Barron's*, March 7, 2022.

S&P 500 and crises



Source: Standard and Poor's. Data through February 2022. [1] Compound annual growth rate.

S&P 500 – correction



Source: Standard & Poor's. Data through March 7, 2022.

THE WALL STREET JOURNAL.

U.S. Economy Positioned To Absorb Current Shocks

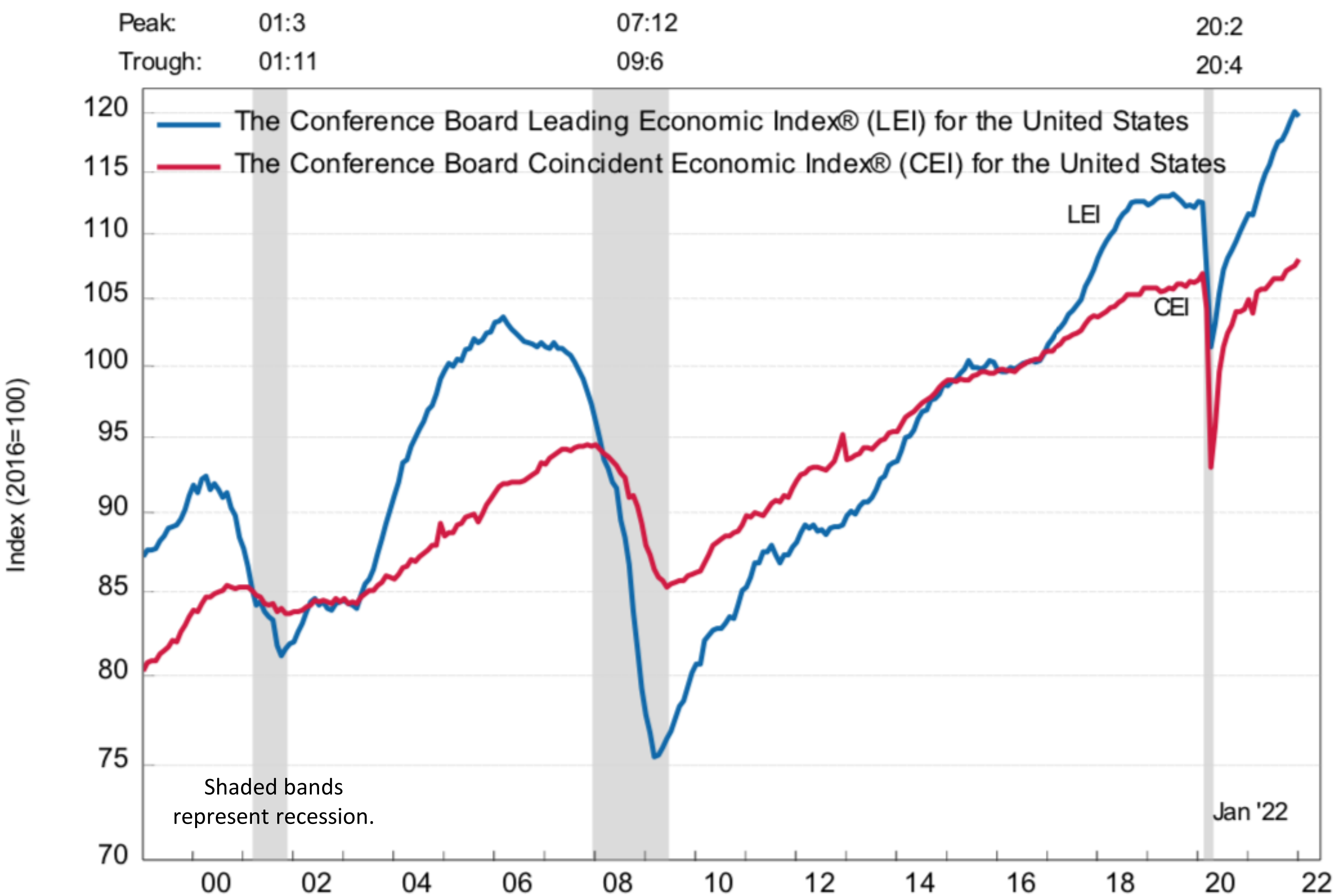
A range of U.S. data suggests U.S. economic activity picked up in recent weeks.

… the economic expansion appears to be on solid ground.

“The impact of the Russian invasion on the U.S. economy will be on the margins.”

Source: *The Wall Street Journal*, March 1, 2022.

U.S. index of leading economic indicators – strong recovery



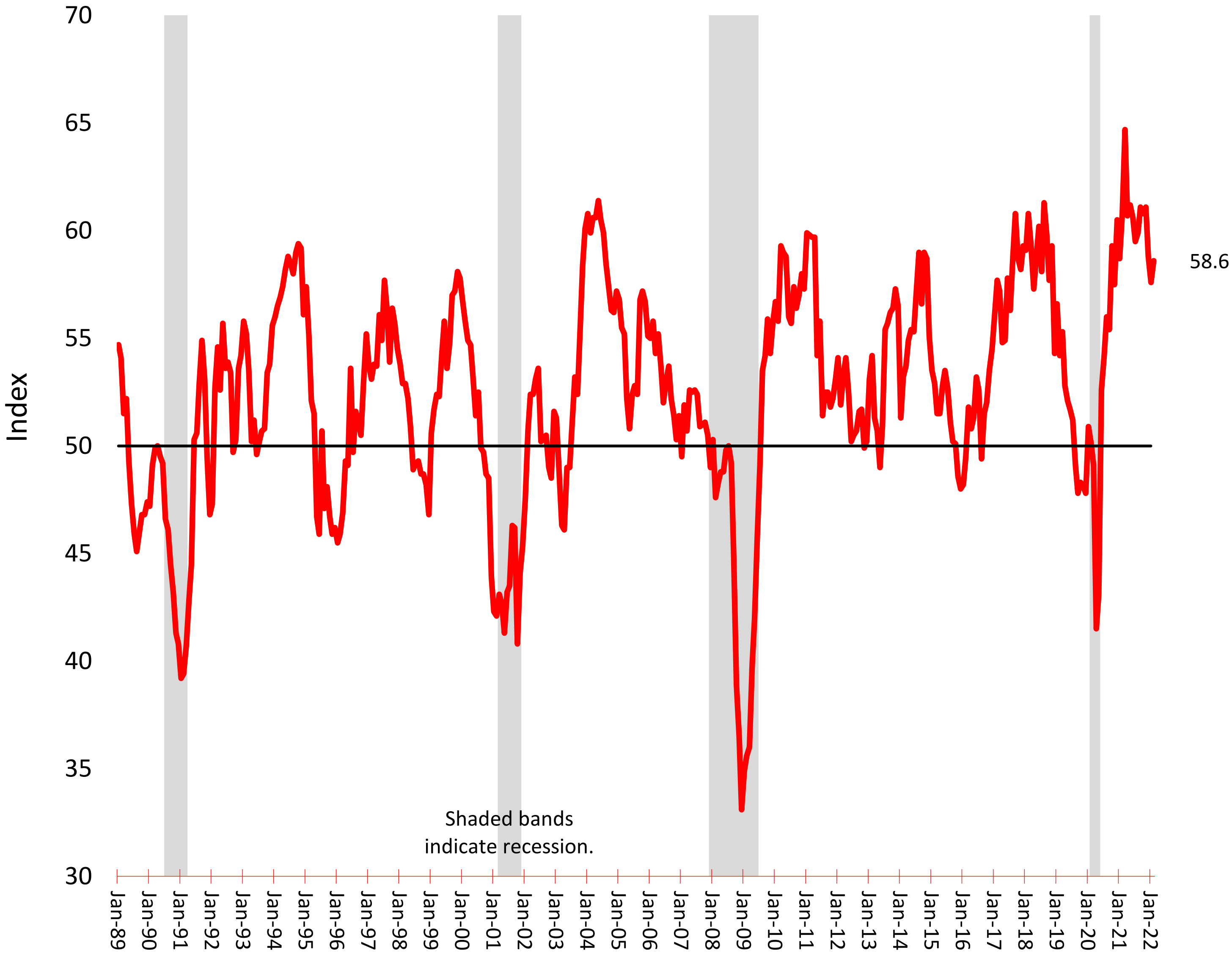
Down -0.3% in January, following +0.8% in December and +0.7% in November.

"The U.S. LEI posted a small decline in January, as the Omicron wave, rising prices, and supply chain disruptions took their toll. Despite this month's decline and a deceleration in the LEI's six-month growth rate, widespread strengths among the leading indicators still point to continued, albeit slower, economic growth into the spring. … The Conference Board forecasts GDP growth for Q1 to slow somewhat from the very rapid pace of Q4 2021. Still, the US economy is projected to expand by a robust 3.5 percent year-over-year in 2022—well above the pre-pandemic growth rate, which averaged around 2 percent."

This chart shows how the LEI has definitively rolled over well in advance of the last two 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 January released February 18, 2022.

ISM manufacturing PMI – strong



February at 58.6.

February new orders 61.7.

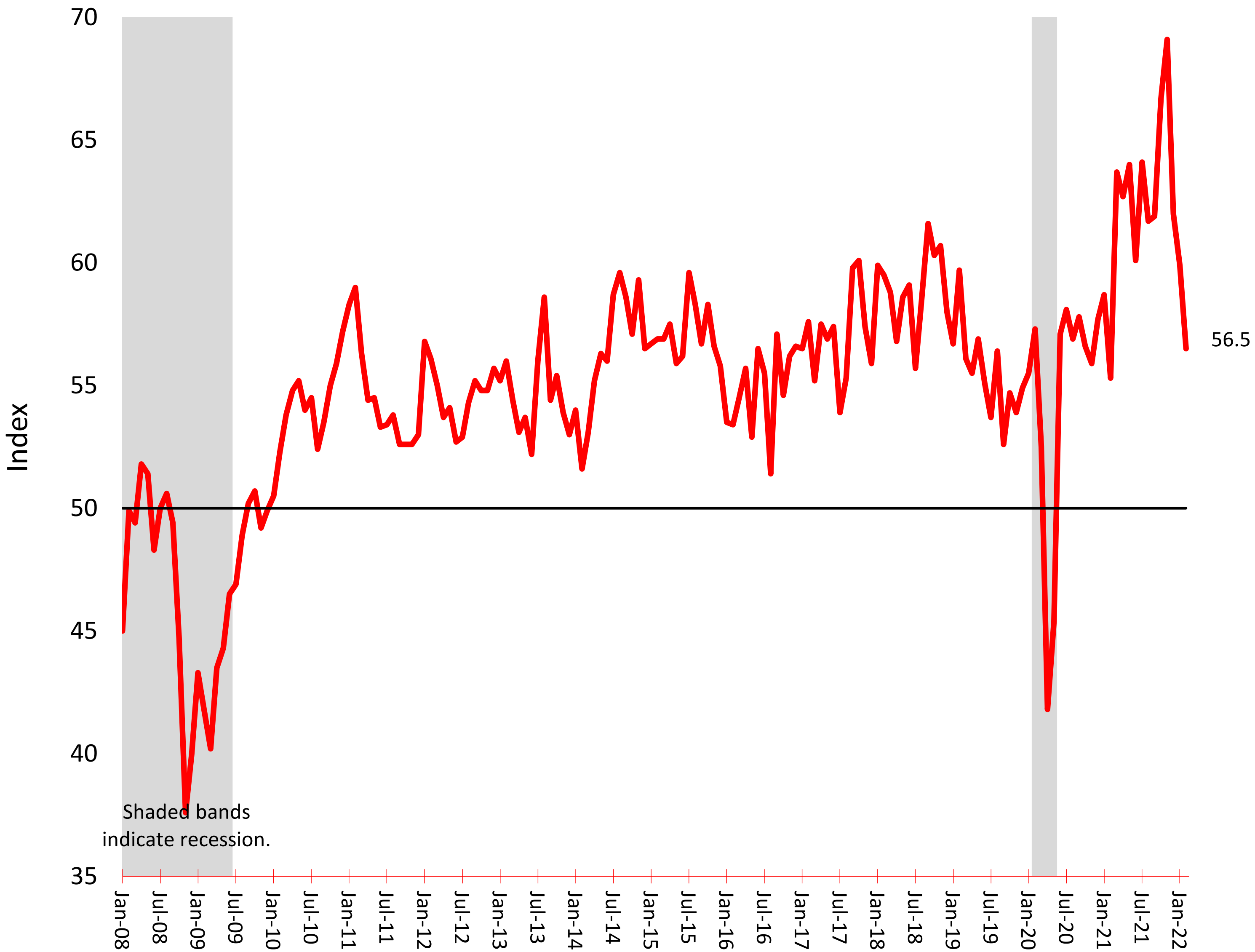
Note the historic volatility in the manufacturing PMI.

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

Source: Copyright 2022, Institute for Supply Management. Data through February 2022.

ISM: "A reading above 50 percent indicates that the manufacturing economy is generally expanding; below 50 percent indicates that it is generally contracting. A PMI in excess of 42.9 percent, over a period of time, generally indicates an expansion of the overall economy."

ISM services PMI



February at 56.5.

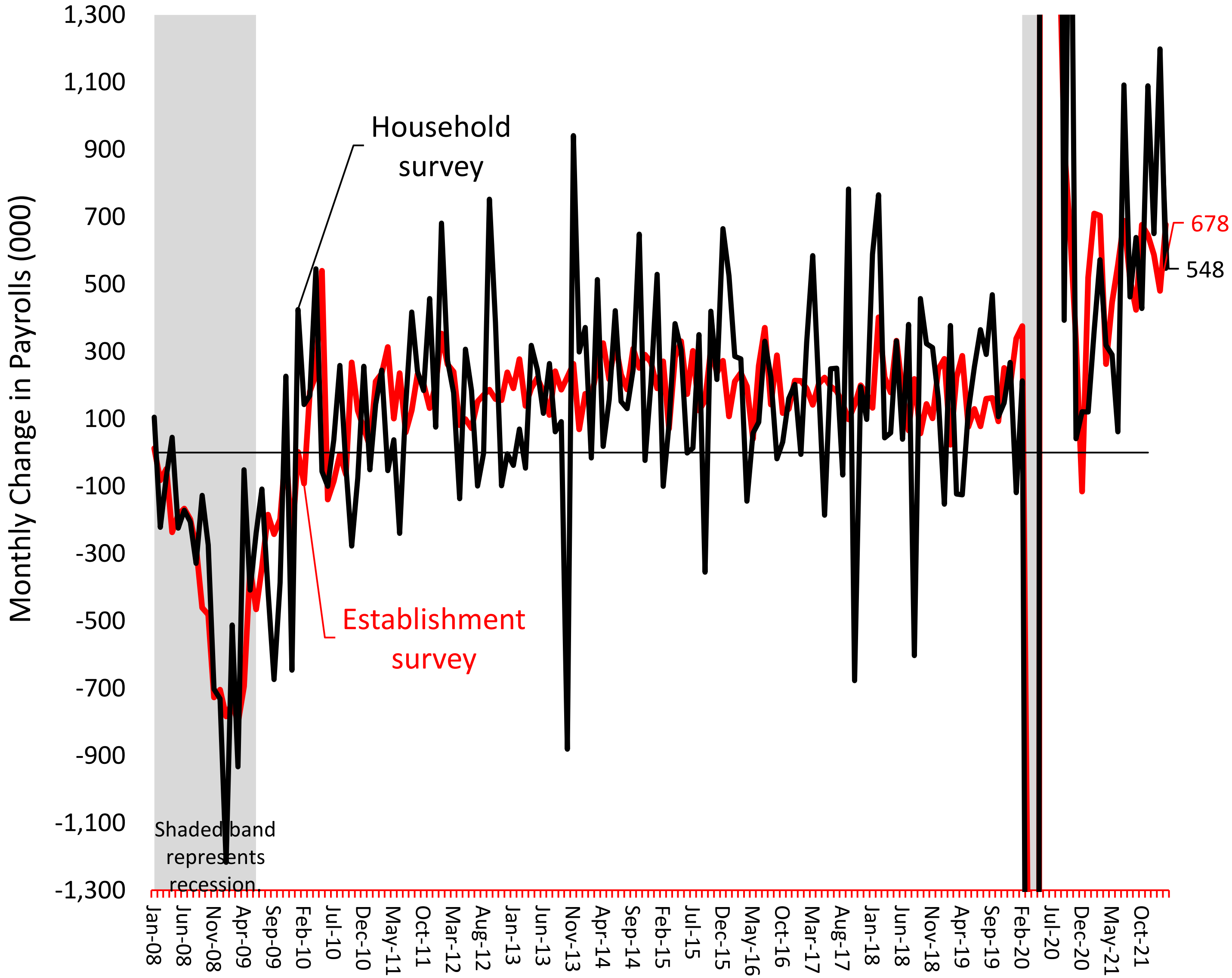
February new orders 56.1.

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

Source: Copyright 2022, Institute for Supply Management; data through February 2022. This data series was created in 2008. ISM: “A reading above 50 percent indicates that the non-manufacturing economy is generally expanding; below 50 percent indicates that it is generally contracting.” “An NMI® above 48.6 percent, over time, generally indicates an expansion of the overall economy.” [1]Value added as a percent of GDP.

Economic data

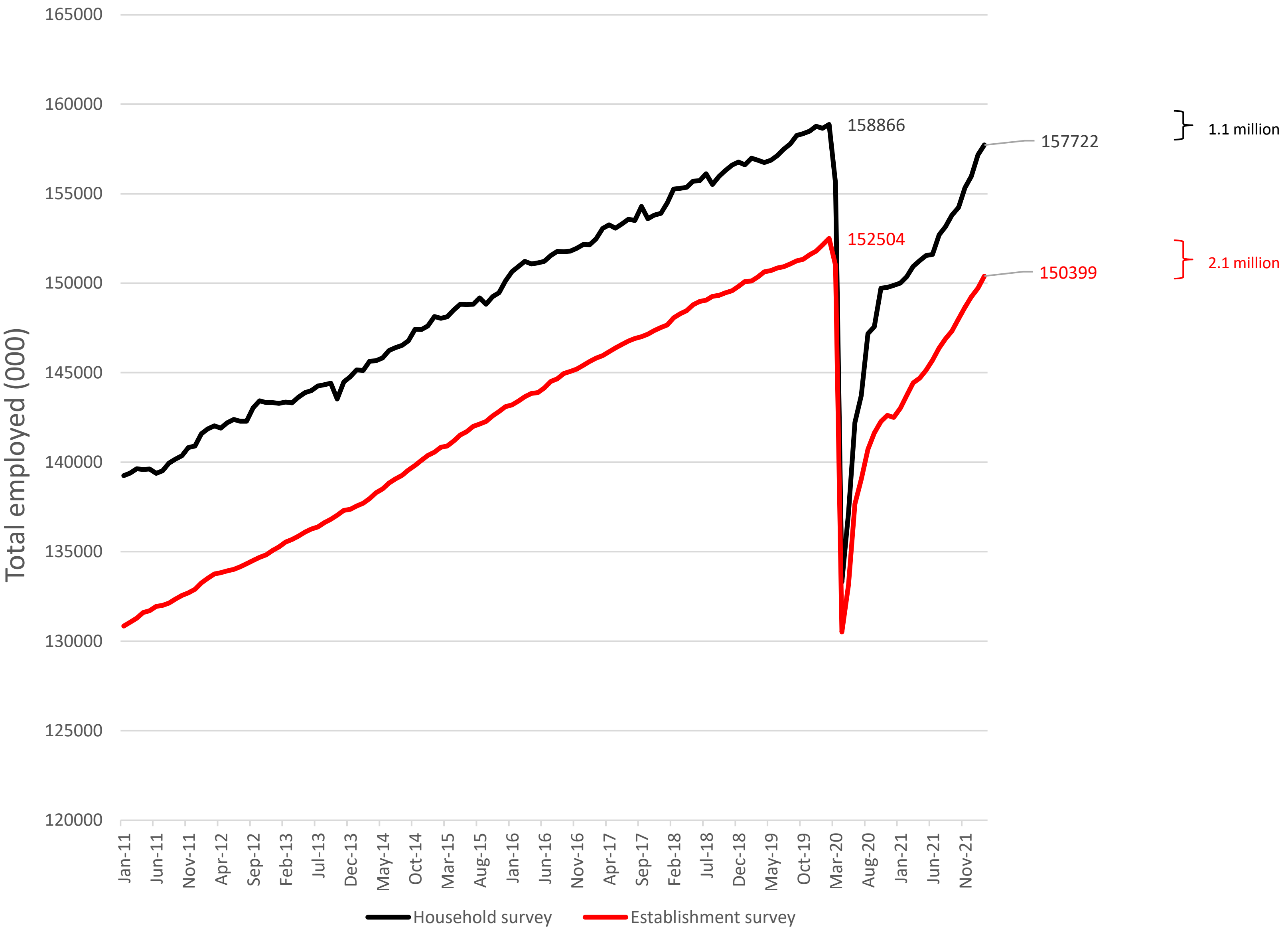
Net new job formation



678,000 jobs gained in February on the establishment survey and 548,000 on the household survey.

Source: Bureau of Labor Statistics. Data through February 2022.

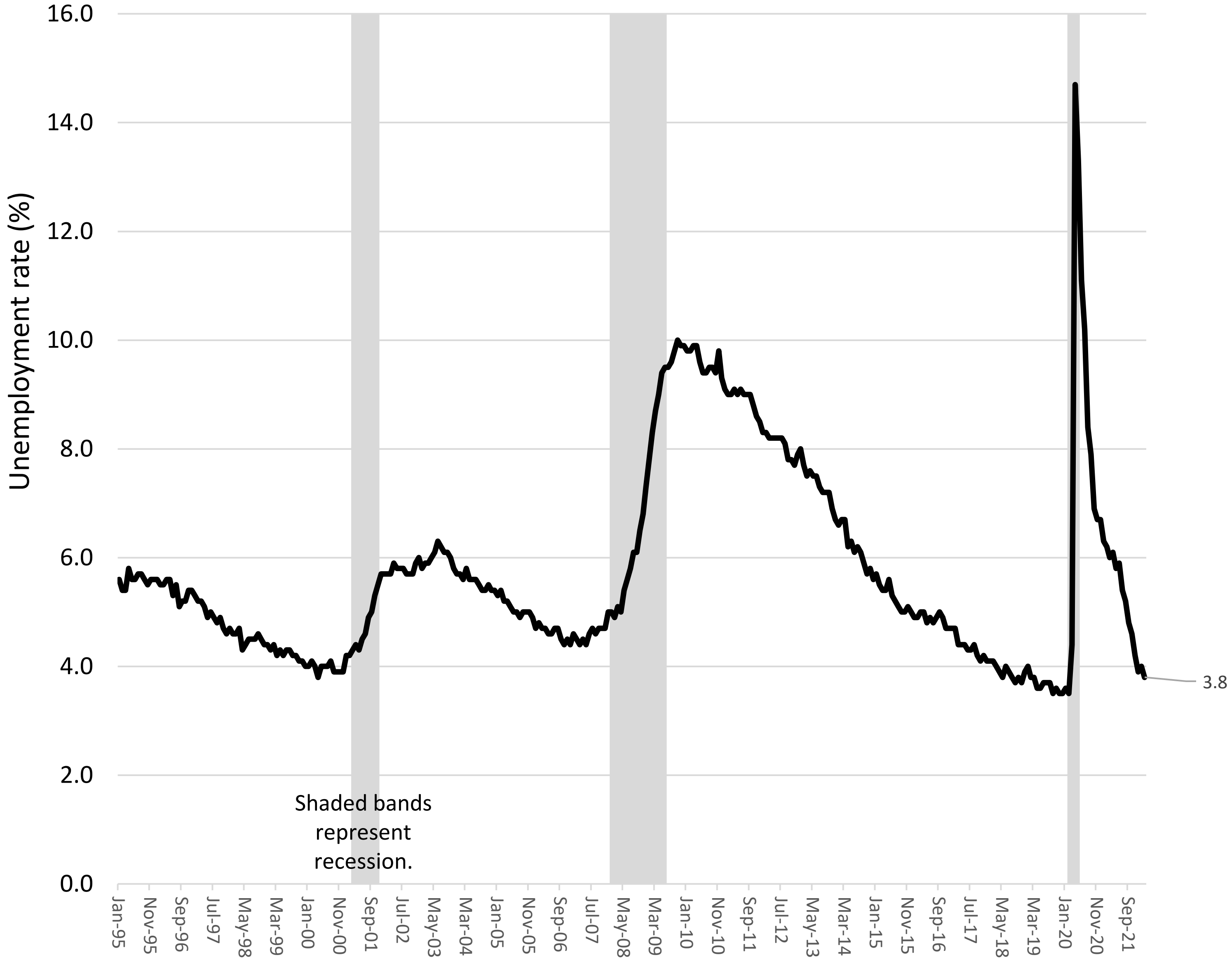
Jobs – household vs. establishment surveys



Source: Bureau of Labor Statistics. Data through February 2022.

Economic data

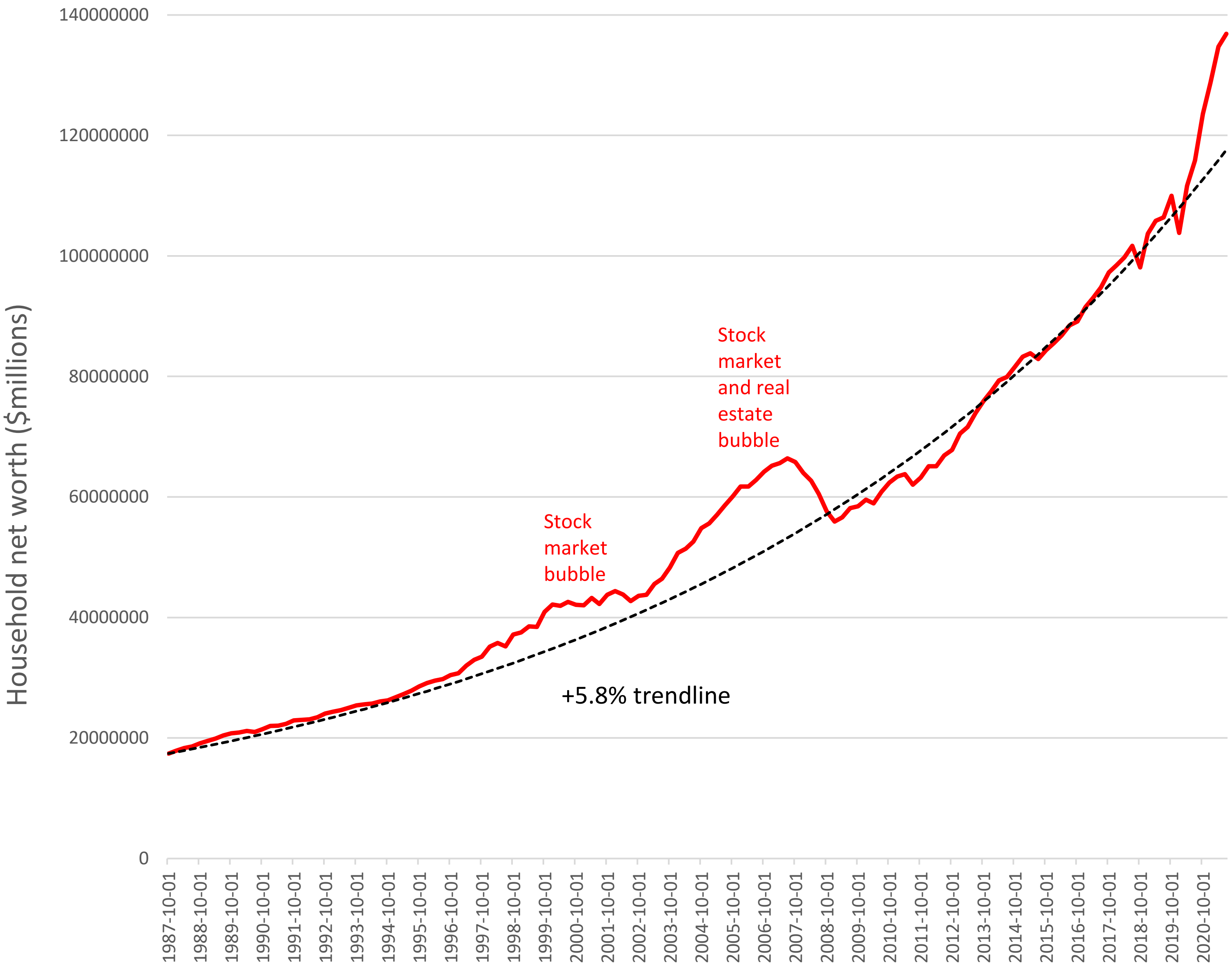
Unemployment rate



3.8% in February.

Source: Bureau of Labor Statistics. Data through February 2022.

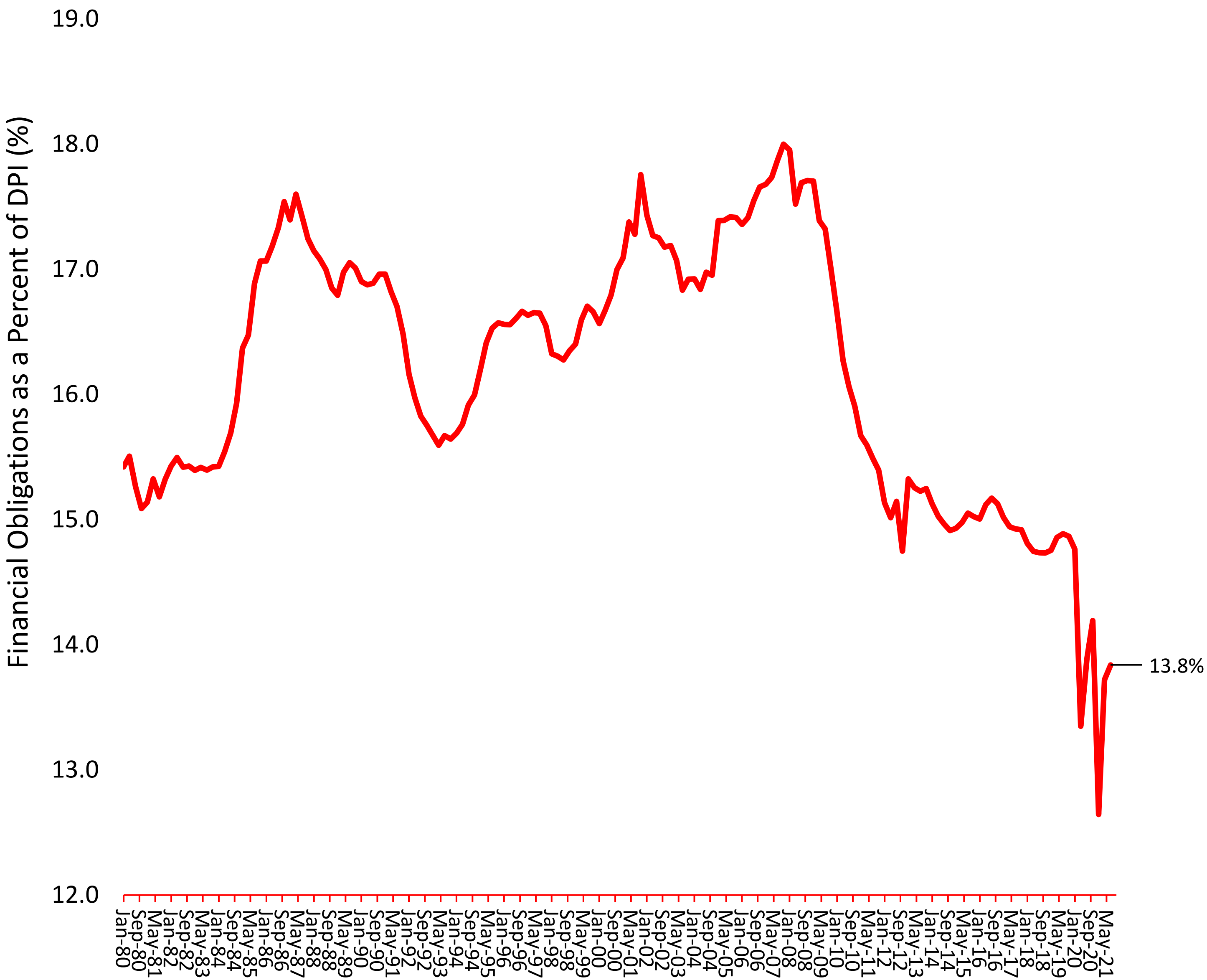
Household net worth – the wealth effect



Household net worth has surged on stock market and real estate gains.

Source: Federal Reserve, FRBSL. Quarterly data through September 2021, released December 9, 2021.

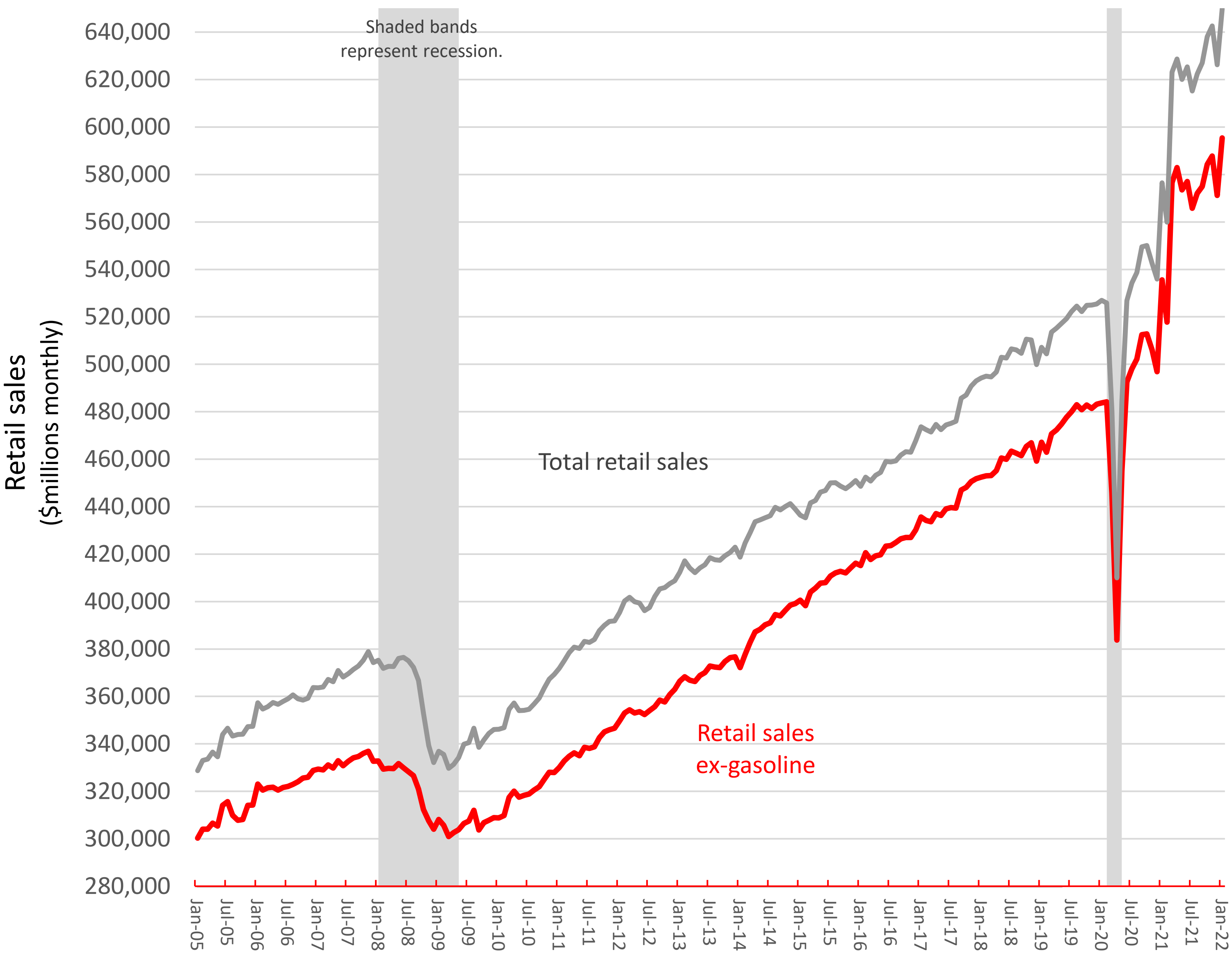
Financial obligations ratio – near record low



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.

Source: Federal Reserve. Quarterly data through September 2021.

Retail sales – coronavirus collapse, resurgence



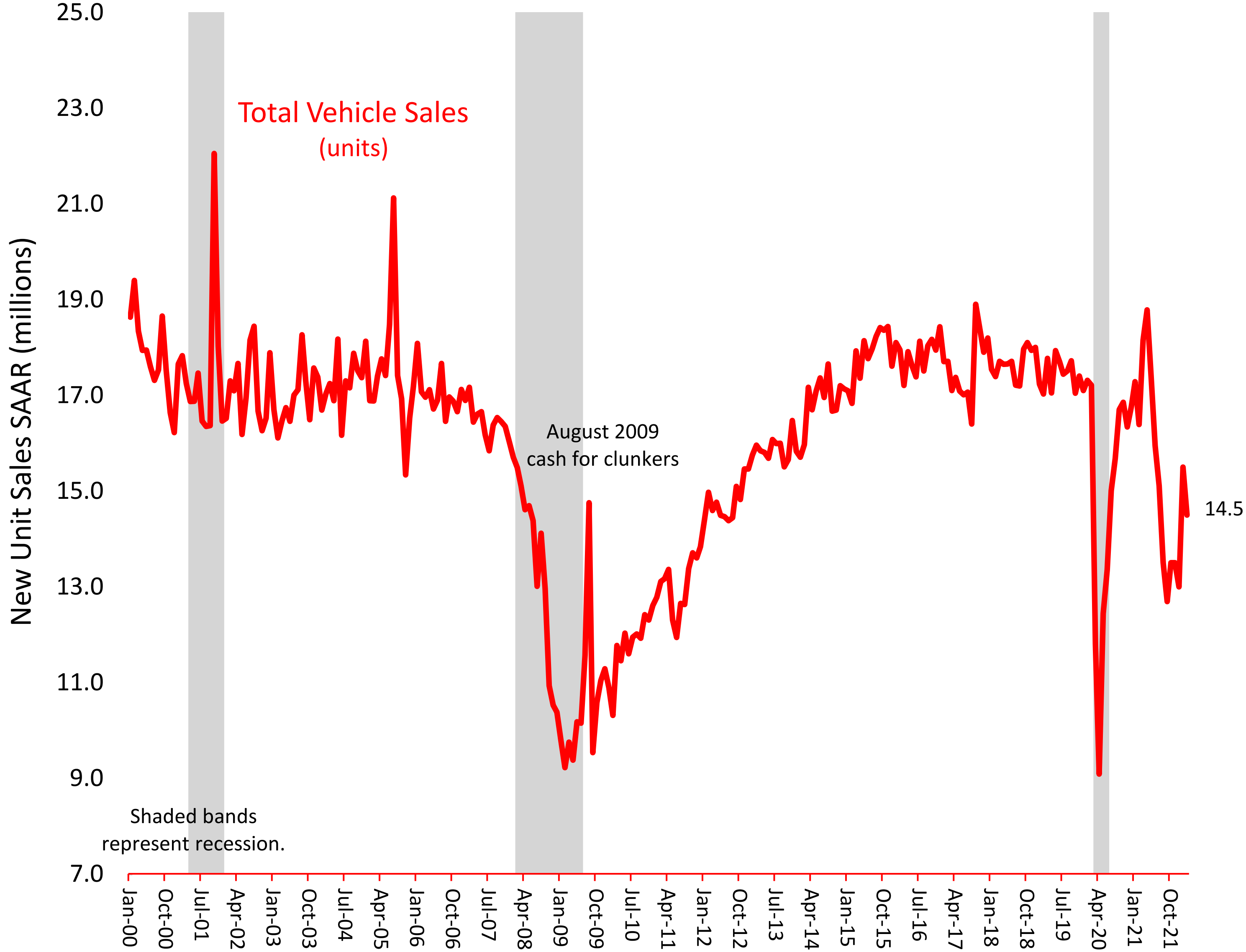
January retail sales up +12.7% y/y; and up +3.8% m/m.

January retail sales ex-gasoline up +11.2% y/y; and up +4.2% m/m.

Retail sales are mostly goods (12% services) and comprise 30% of GDP.

Source: U.S. Census Bureau. Data through January 2022.

Vehicle sales



Car sales collapsed with coronavirus. Impressive rebound followed by parts-shortage contraction and partial recovery.

Sources: BEA. Data through February 2022.

Flush with cash

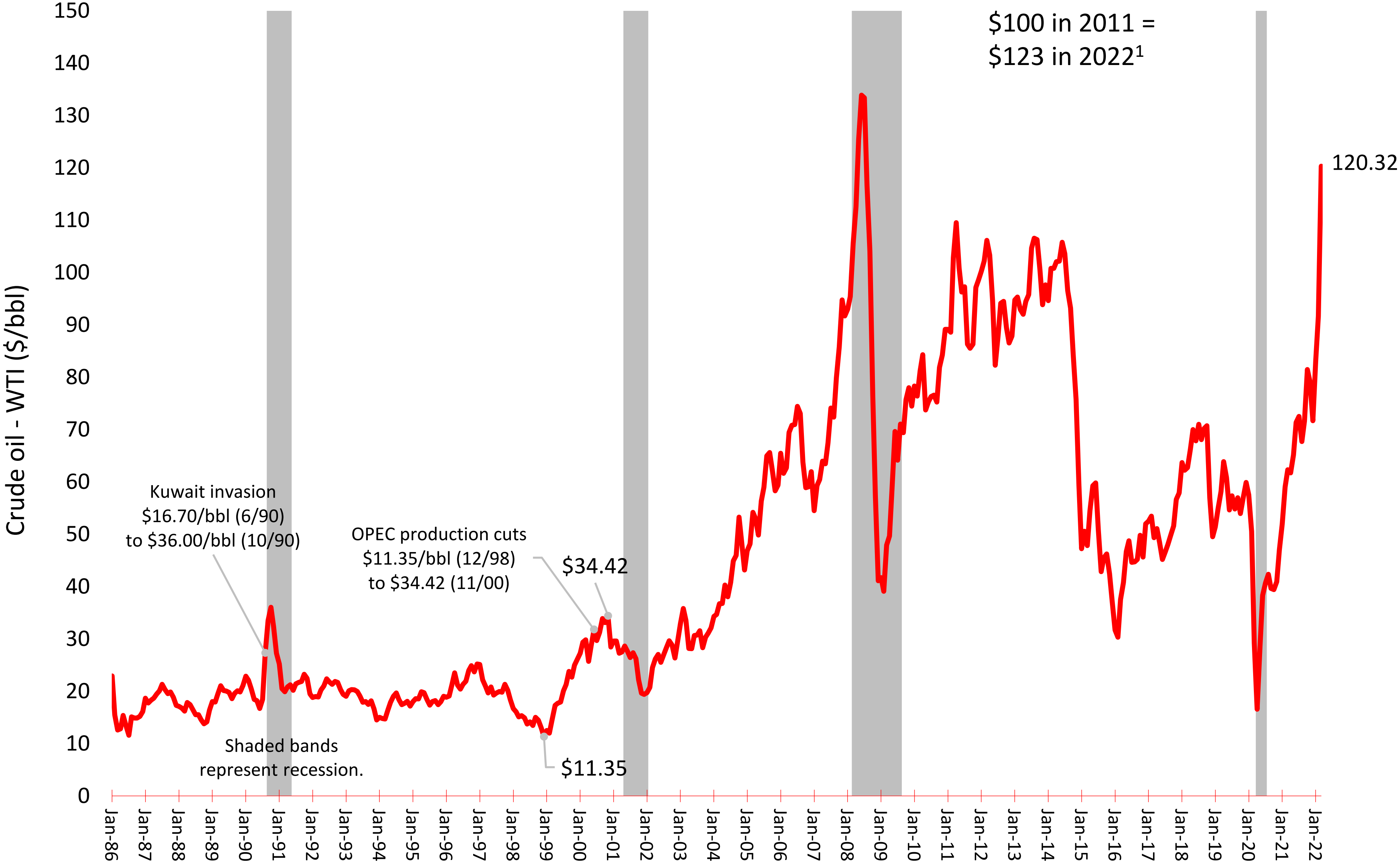
BARRON'S

States Are Flush, And Itching to Spend

While the U.S. economy is expected to cool in 2022 after a pandemic resurgence, there's a largely untapped source of hundreds of billions of dollars in potential stimulus that could keep inflation elevated for longer – and it's sitting with state and local governments.

Source: *Barron's*, January 10, 2022.

WTI spot crude oil prices



Source: U.S. Energy Information Agency. Data through March 7, 2022. [1]Using the PCED from January 2011 to January 2022.

Oil

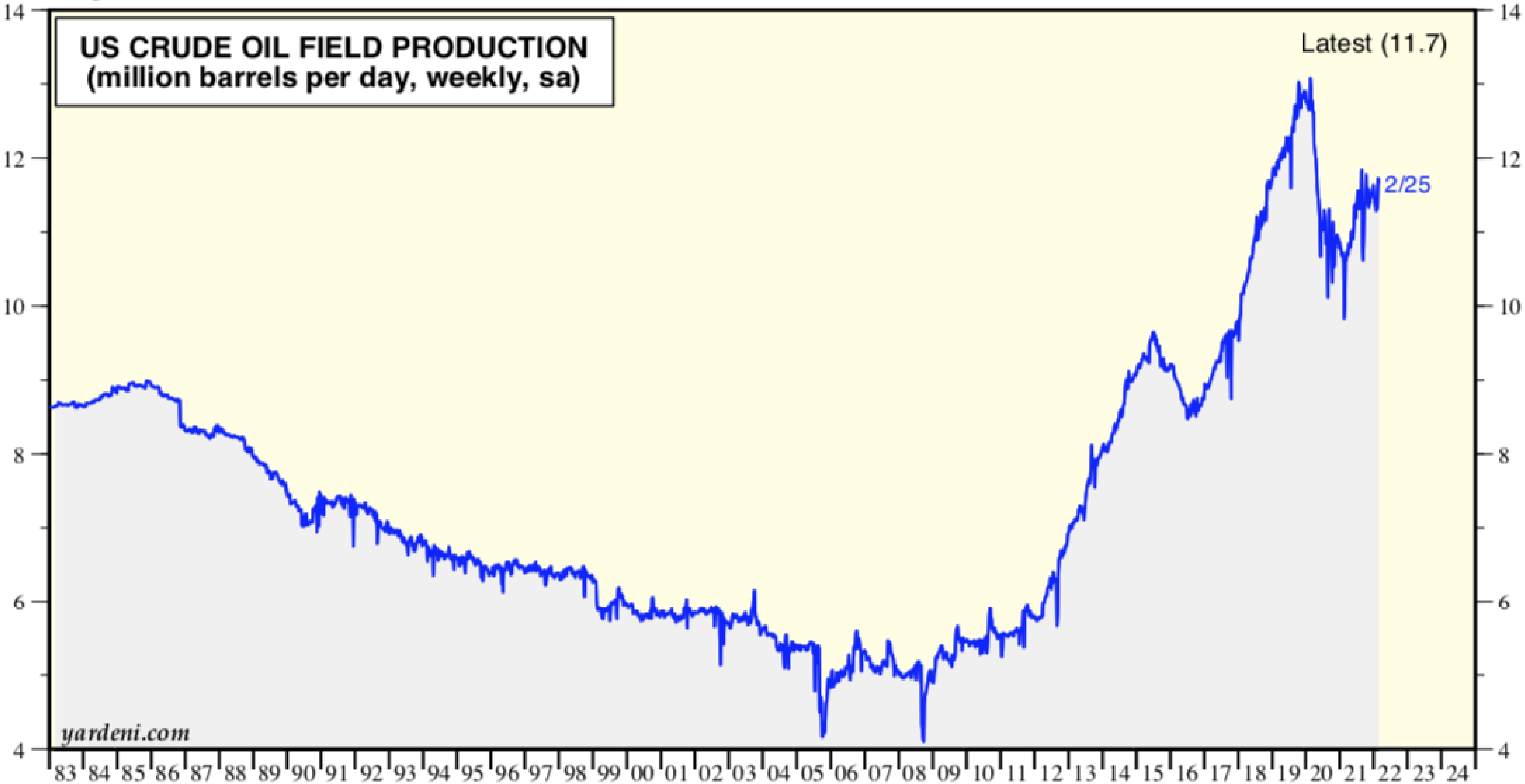
BARRON'S

Some economists say we are a ways off from demand destruction. Wells Fargo Investment Institute, for example, pegs the demand-impairing prices for oil and gasoline at $132.72 a barrel and $4.67 a gallon, respectively.

Source: *Barron's*, March 7, 2022.

Oil production

Figure 1.

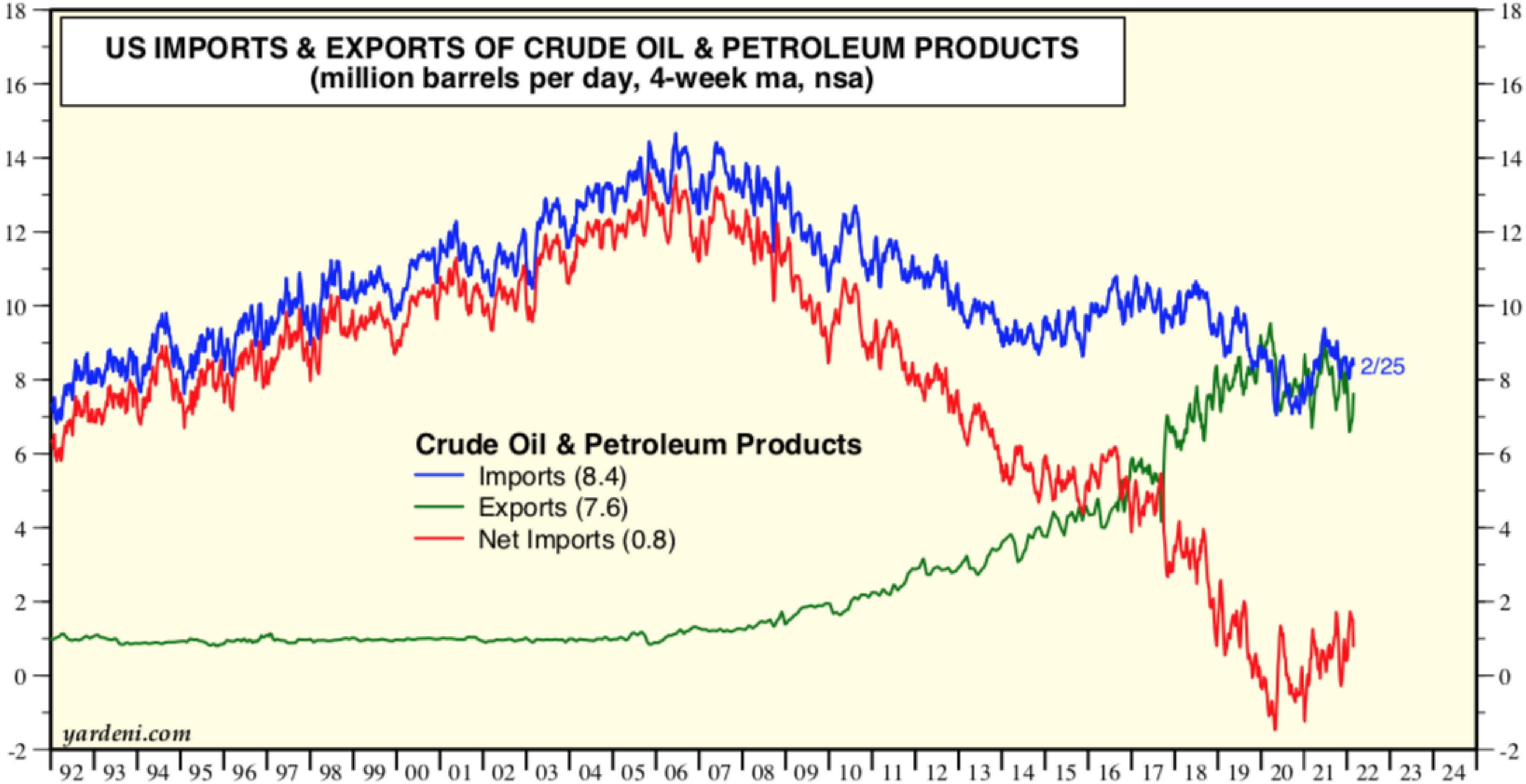


Source: US Department of Energy and Haver Analytics.

Source: Yardeni Research, Inc., with permission. March 2, 2022.

Oil net imports

Figure 2.

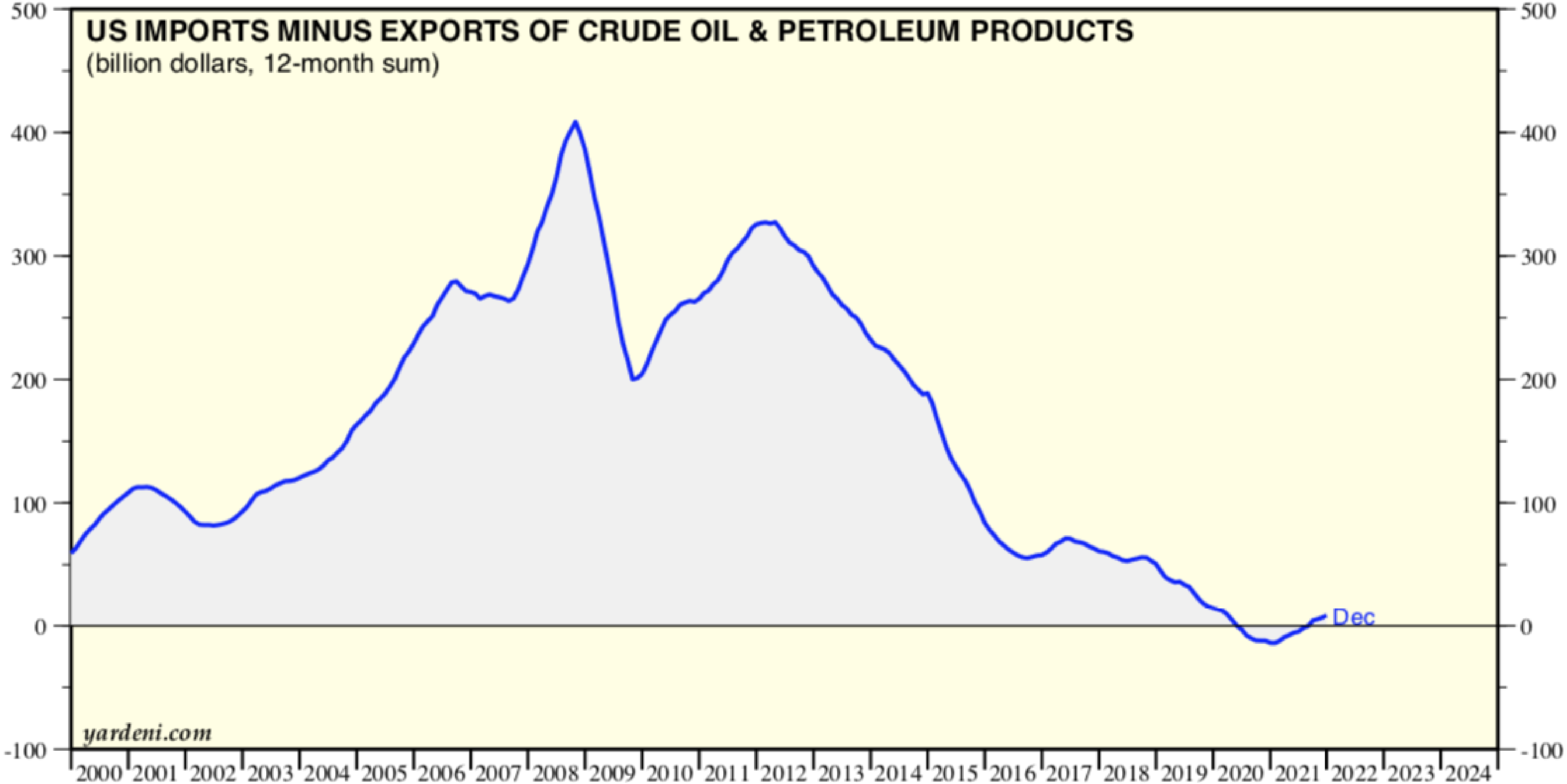


Source: US Department of Energy and Haver Analytics.

Source: Yardeni Research, Inc., with permission. March 2, 2022.

Oil balance of payments

Figure 5.



Source: Bureau of the Census.

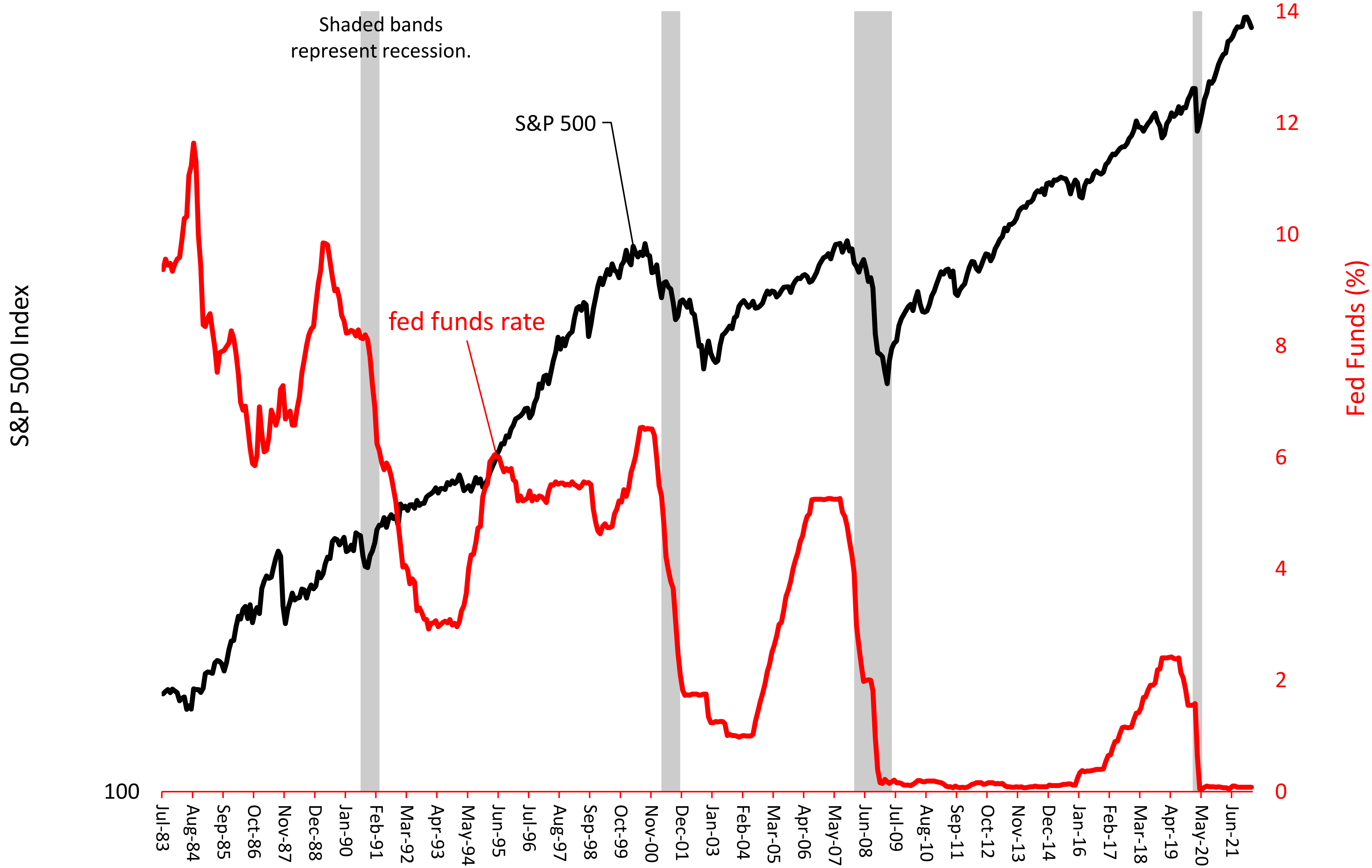
Source: Yardeni Research, Inc., with permission. March 2, 2022.

Stock Market

- correction and partial recovery
- stocks vs. bond yields
- 2000 bubble vs. now
- “parabolic” is normal
- discounting strong 2021/2022 earnings growth
- low bond yields → high P/E ratios

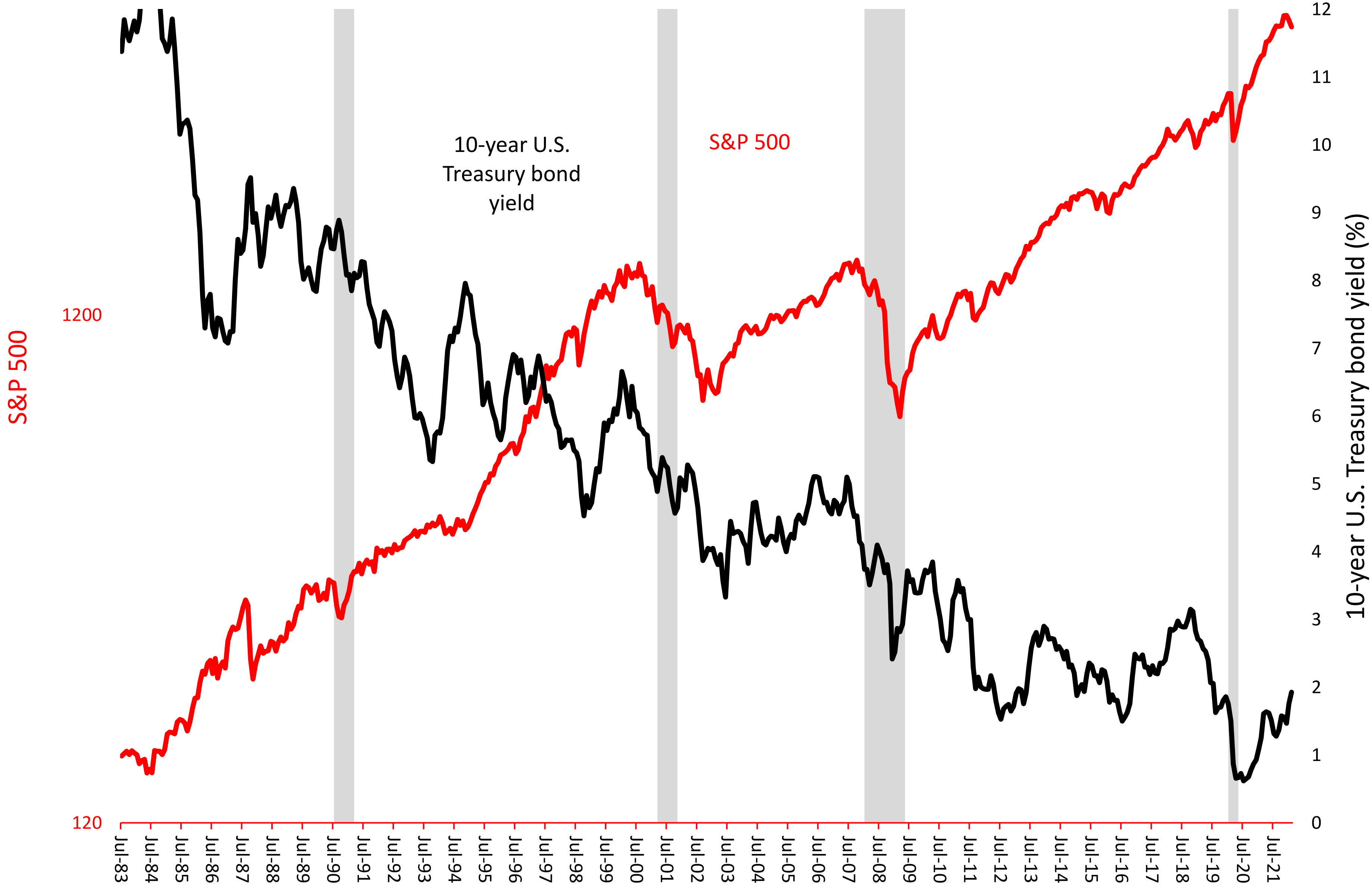
Stock market

S&P 500 vs. fed funds rate



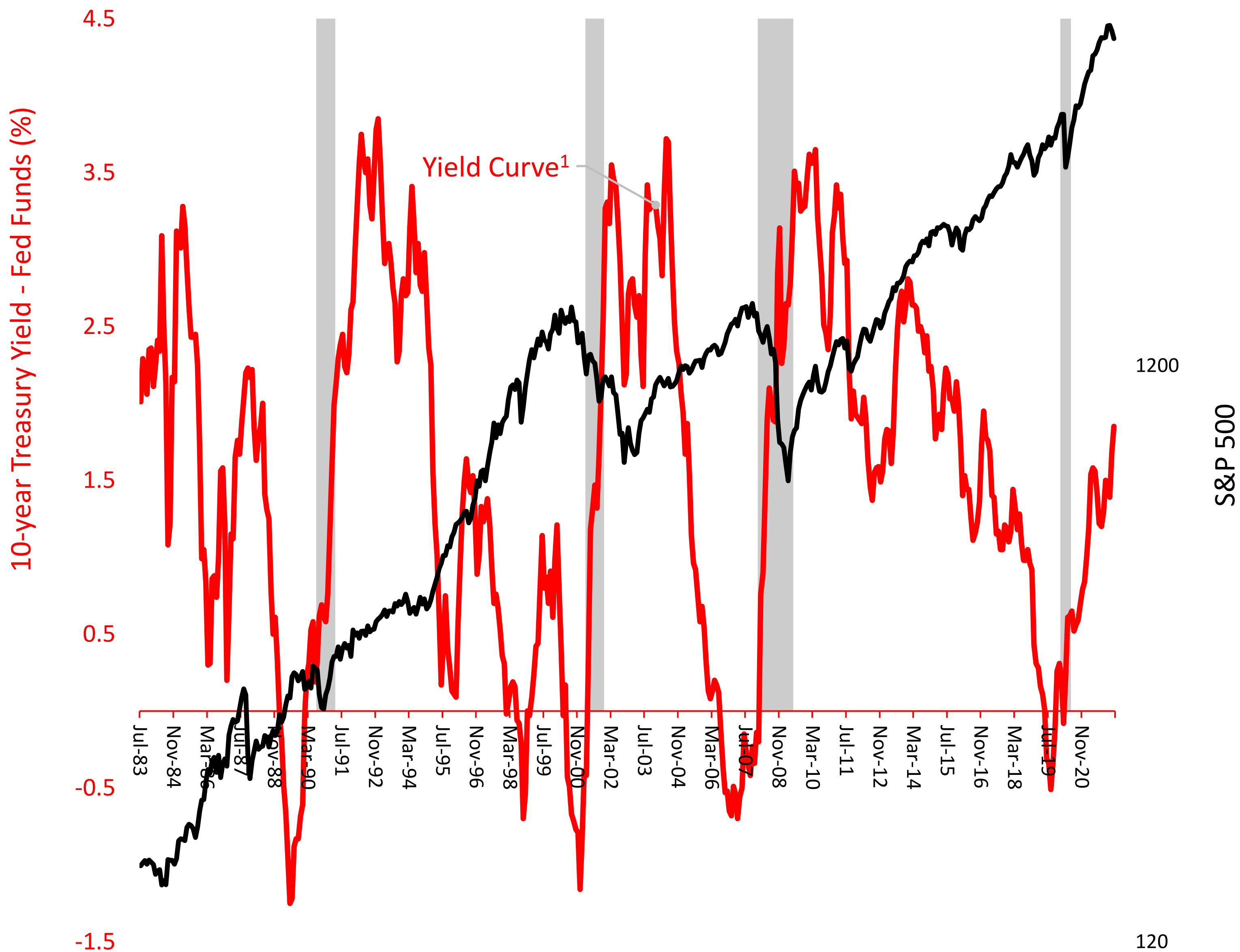
Sources: Federal Reserve, Standard & Poor’s. Data through February 2022.

S&P 500 vs. 10-year U.S. Treasury bond yield



Sources: Federal Reserve, Standard & Poor's. Data through February 2022.

Yield curve vs. the S&P 500

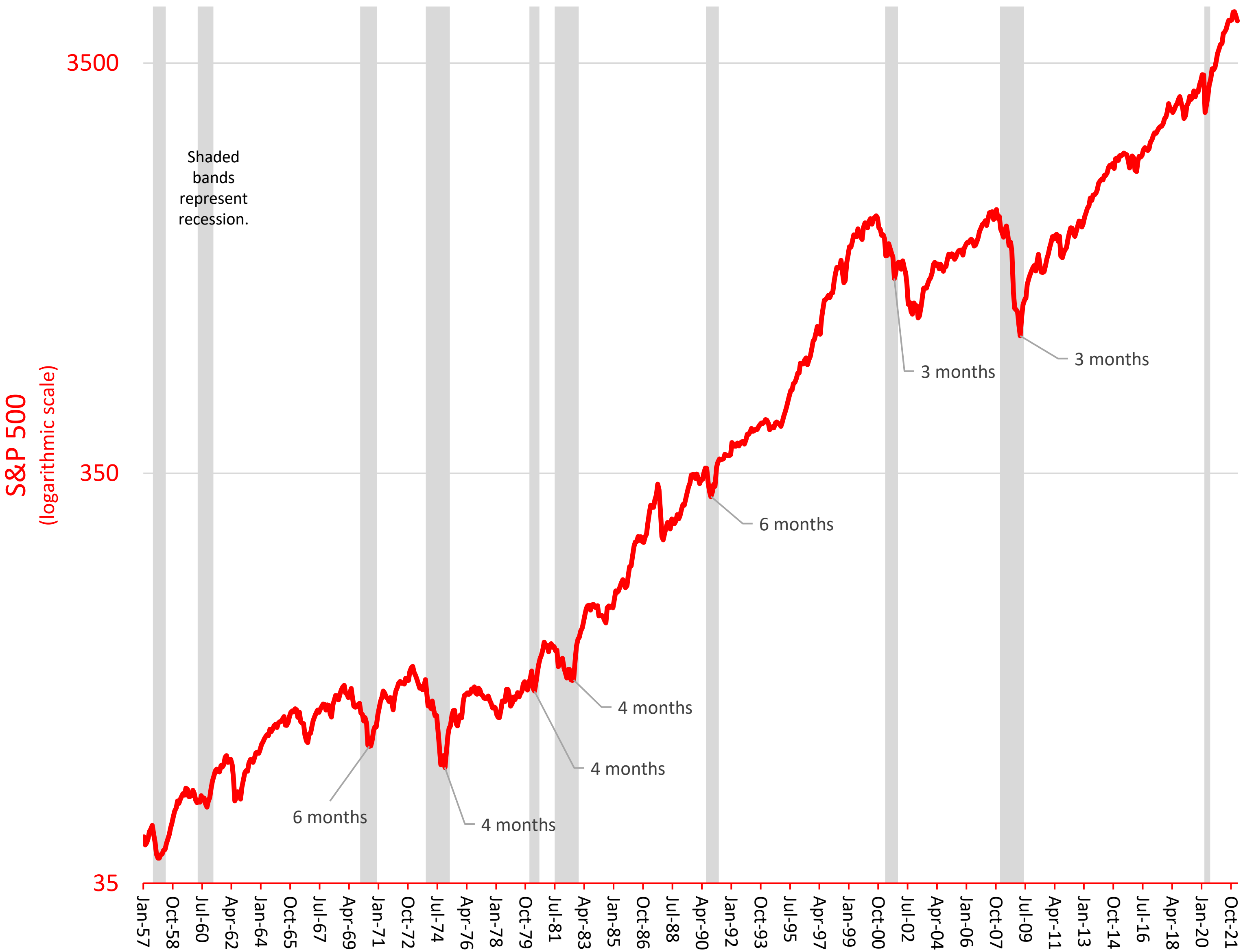


When the yield curve has inverted the economy has usually turned down into recession with a lag of a year or more.

Today, Fed policy is accommodative.

Sources: NBER, Federal Reserve and Standard & Poor's. Data through February 2022.
[1]The interest rate on the 10-year Treasury bond (long term) minus the fed funds rate (short term).

S&P 500 vs. recessions

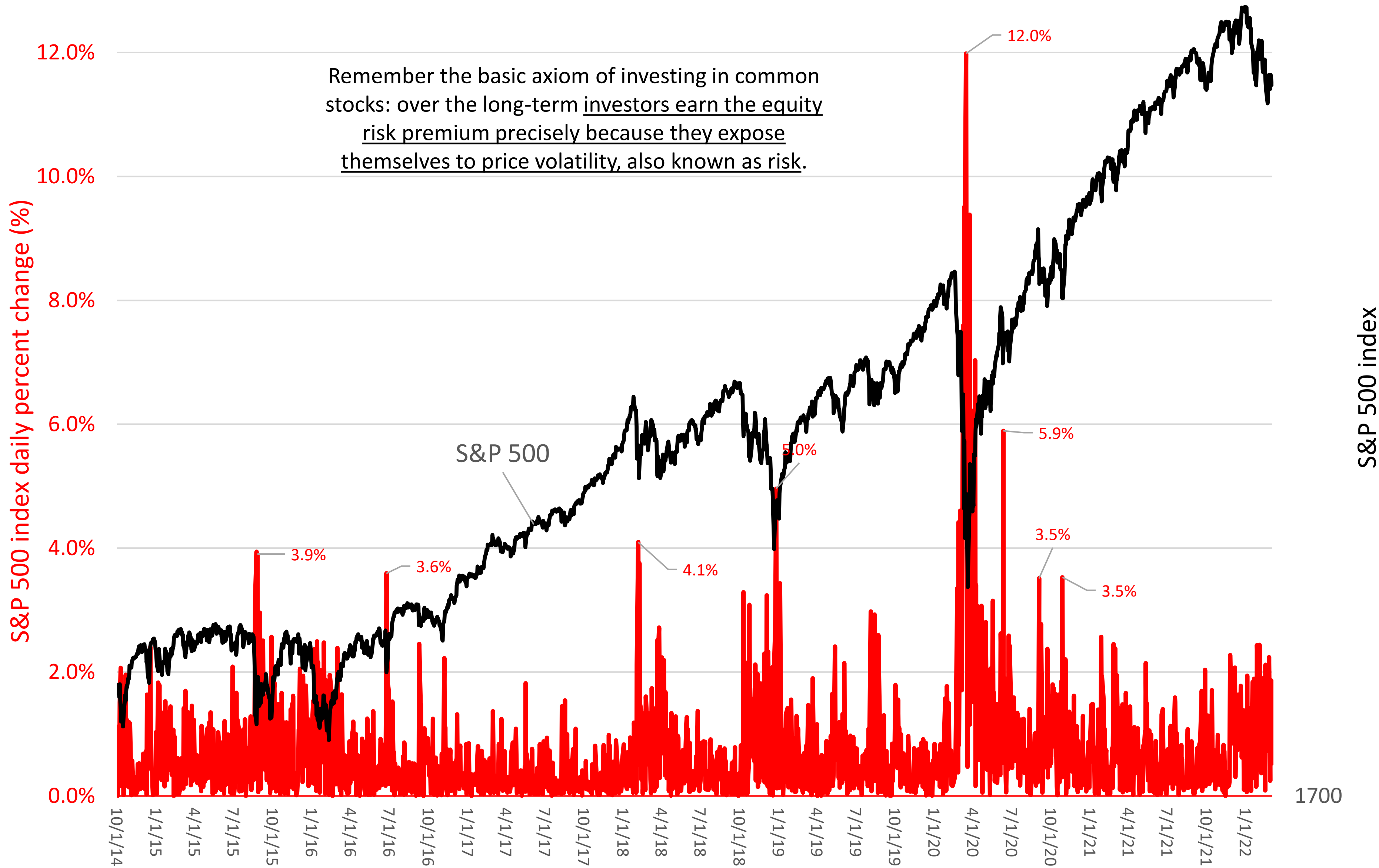


Big declines are associated with recessions.

Stocks bottom months before recession-end.

Source: Standard and Poor's Corporation, National Bureau of Economic Research. Data through February 2022.

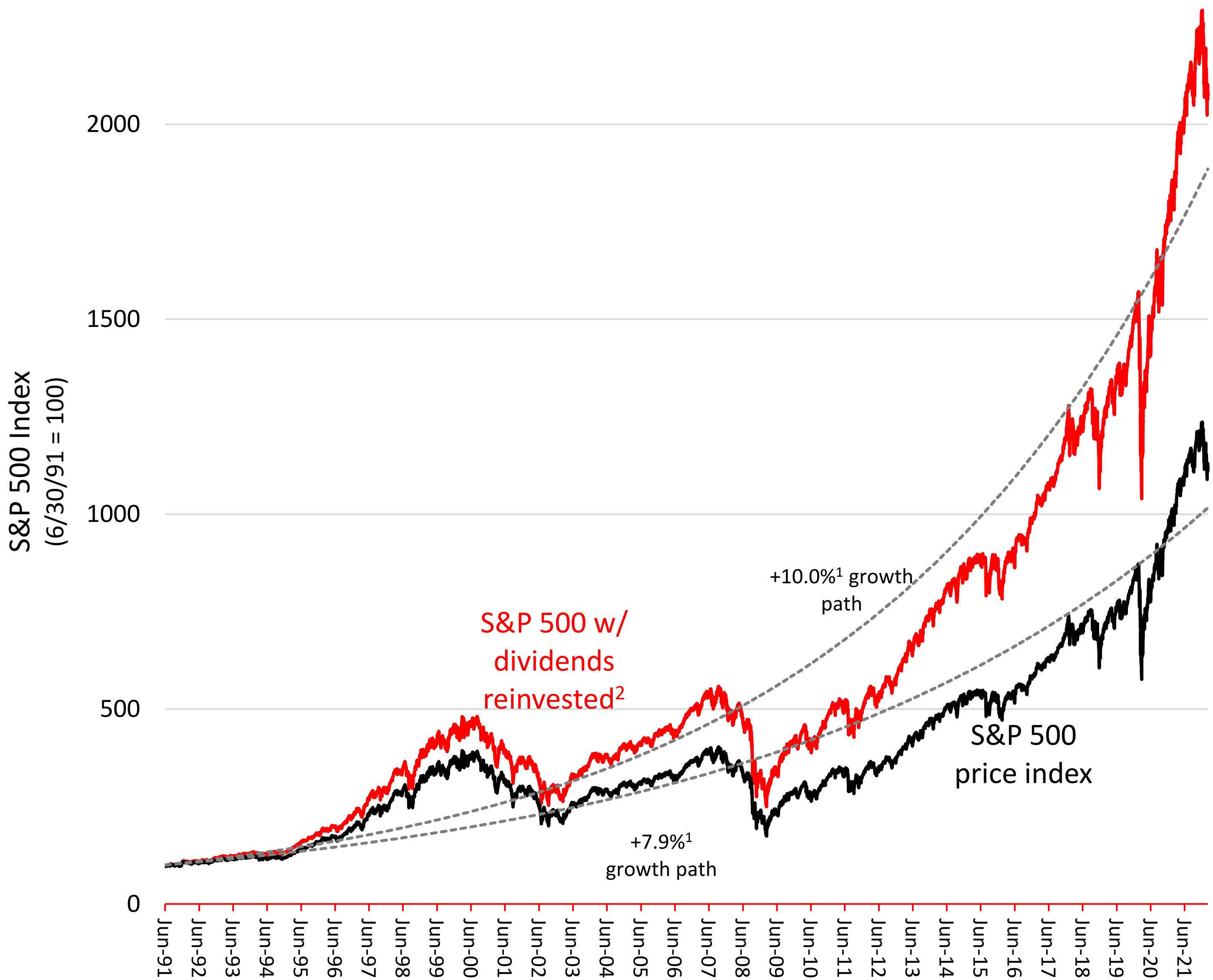
S&P 500 volatility



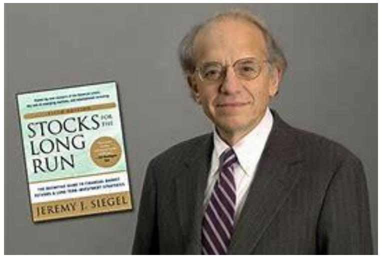
Source: Standard & Poor's. data through March 4, 2022.

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 March 4, 2022.[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.

Stock market arithmetic

J.P. Morgan’s Guide to the Markets

Equities

S&P 500 Index at inflection points

GTM | U.S. | 4

S&P 500 Price Index

Characteristic	3/24/2000	10/9/2007	2/19/2020	2/28/2022
Index Level	1,527	1,565	3,386	4,374
P/E Ratio (fwd.)	25.2x	15.1x	19.2x	19.2x
Dividend Yield	1.4%	1.9%	1.9%	1.5%
10-yr. Treasury	6.2%	4.7%	1.6%	1.8%

Source: Compustat, FactSet, Federal Reserve, Refinitiv Datastream, Standard & Poor’s, J.P. Morgan Asset Management.
Dividend yield is calculated as consensus estimates of dividends for the next 12 months, divided by most recent price, as provided by Compustat. Forward price-to-earnings ratio is a bottom-up calculation based on IBES estimates and FactSet estimates since January 2022. Returns are cumulative and based on S&P 500 Index price movement only, and do not include the reinvestment of dividends. Past performance is not indicative of future returns.
Guide to the Markets – U.S. Data are as of February 28, 2022.

J.P.Morgan
ASSET MANAGEMENT

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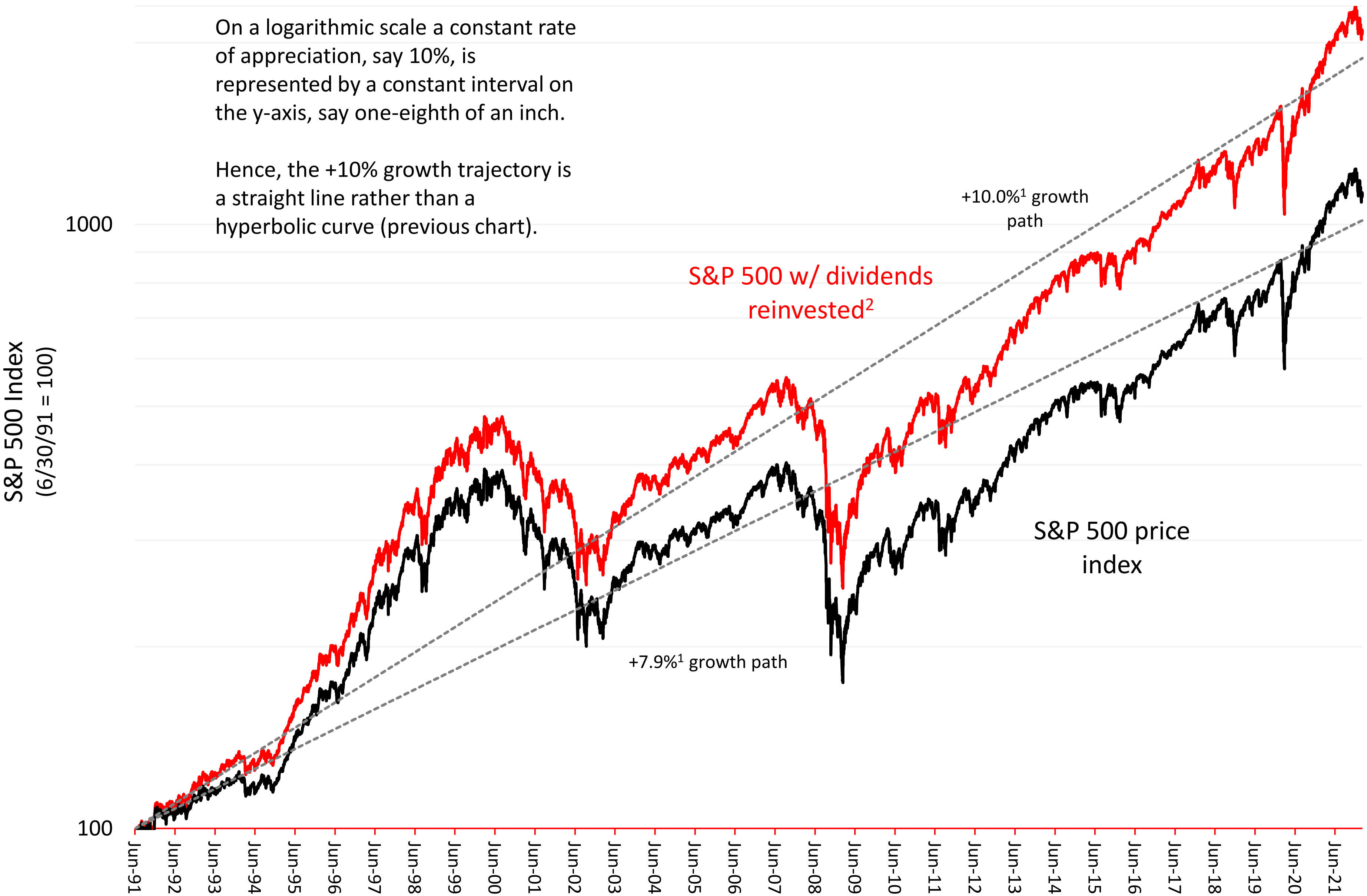
Source: J.P. Morgan’s website, March 4, 2022.

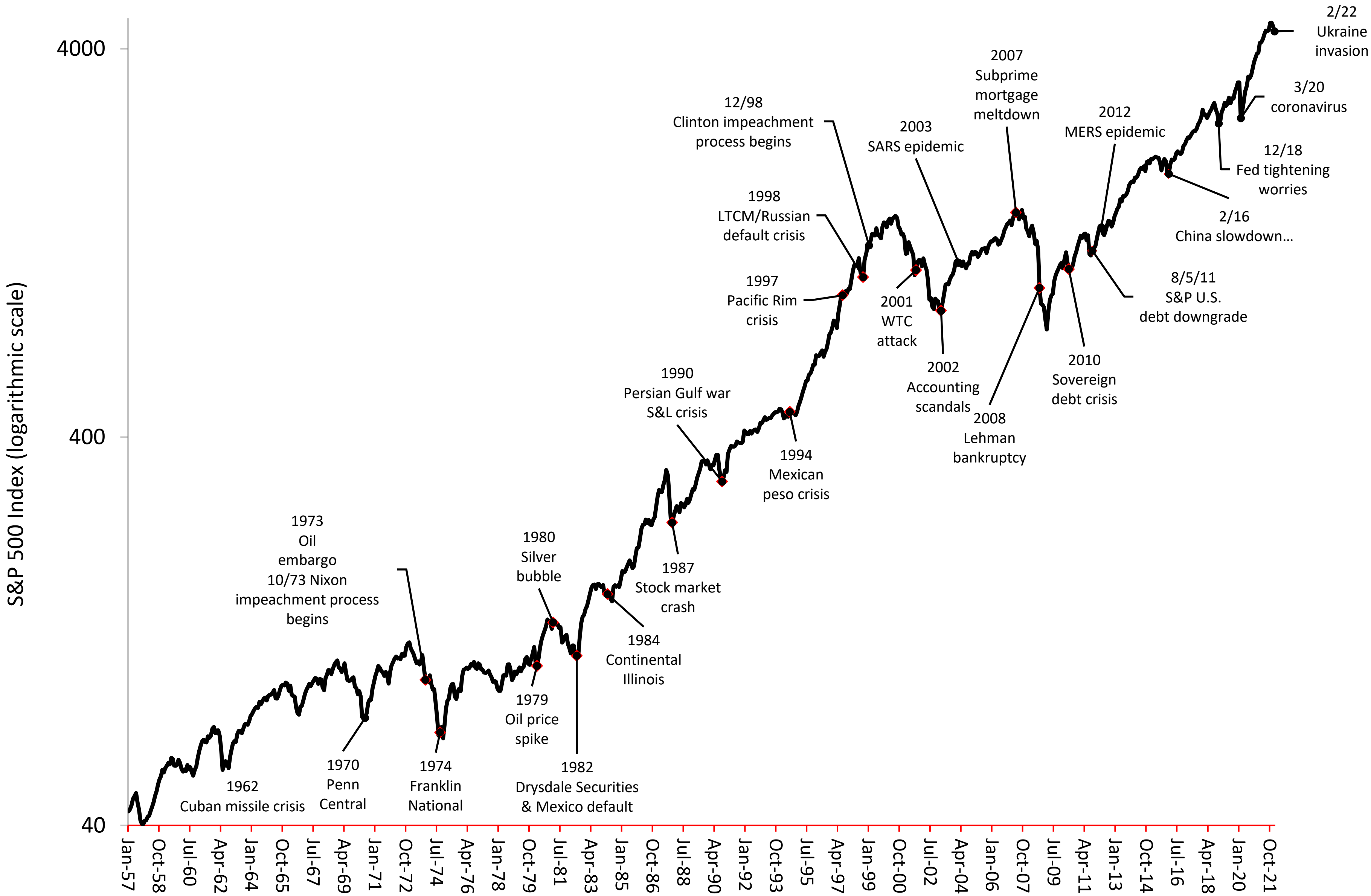
Stock market arithmetic

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



Source: Standard and Poor's. Data through March 4, 2022. [1] Compound annual growth rate. [2] S&P 500 total return index.

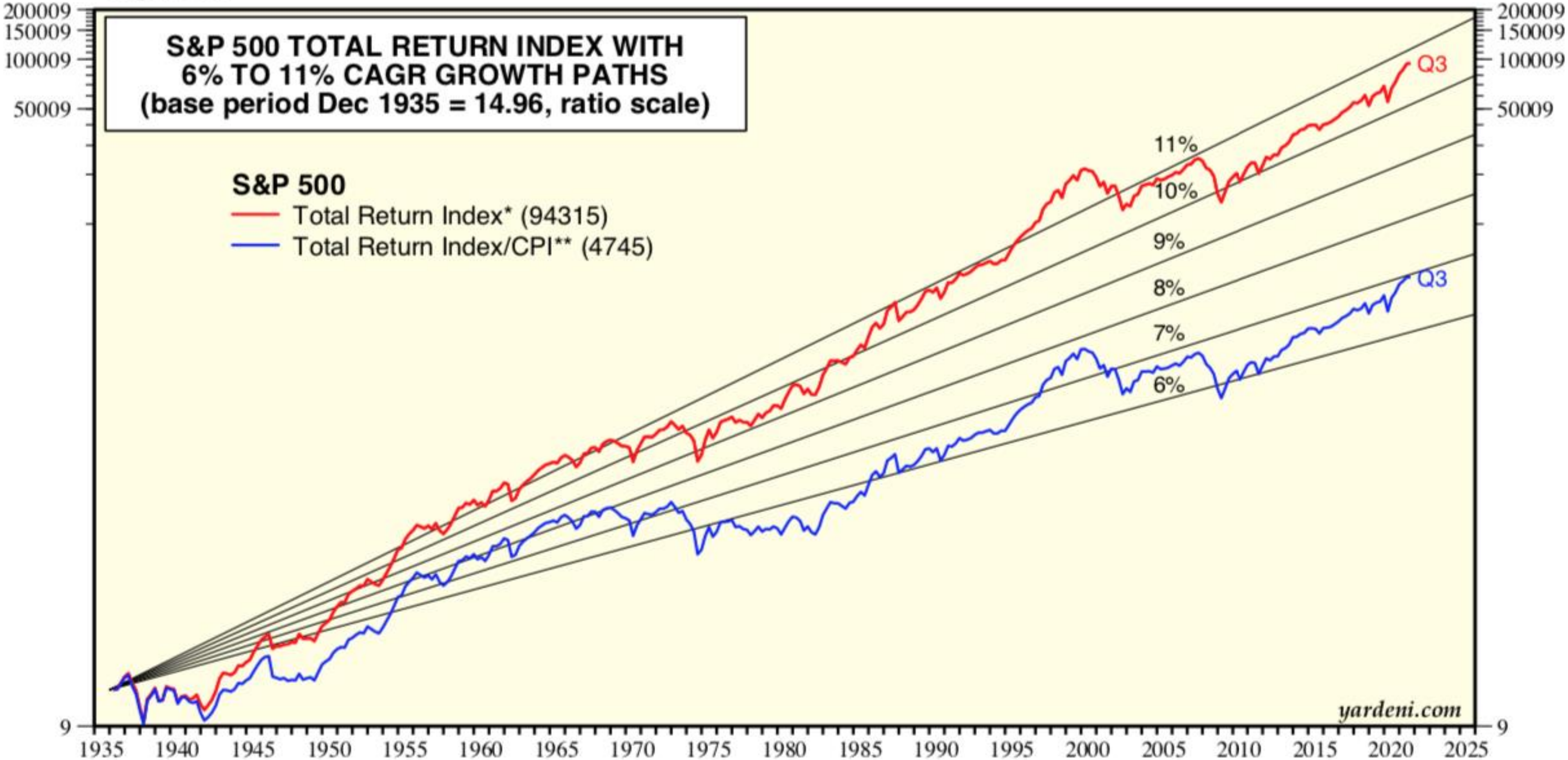
S&P 500 and crises



Source: Standard and Poor's. Data through February 2022. [1] Compound annual growth rate.

Total return and real total return

Figure 2.

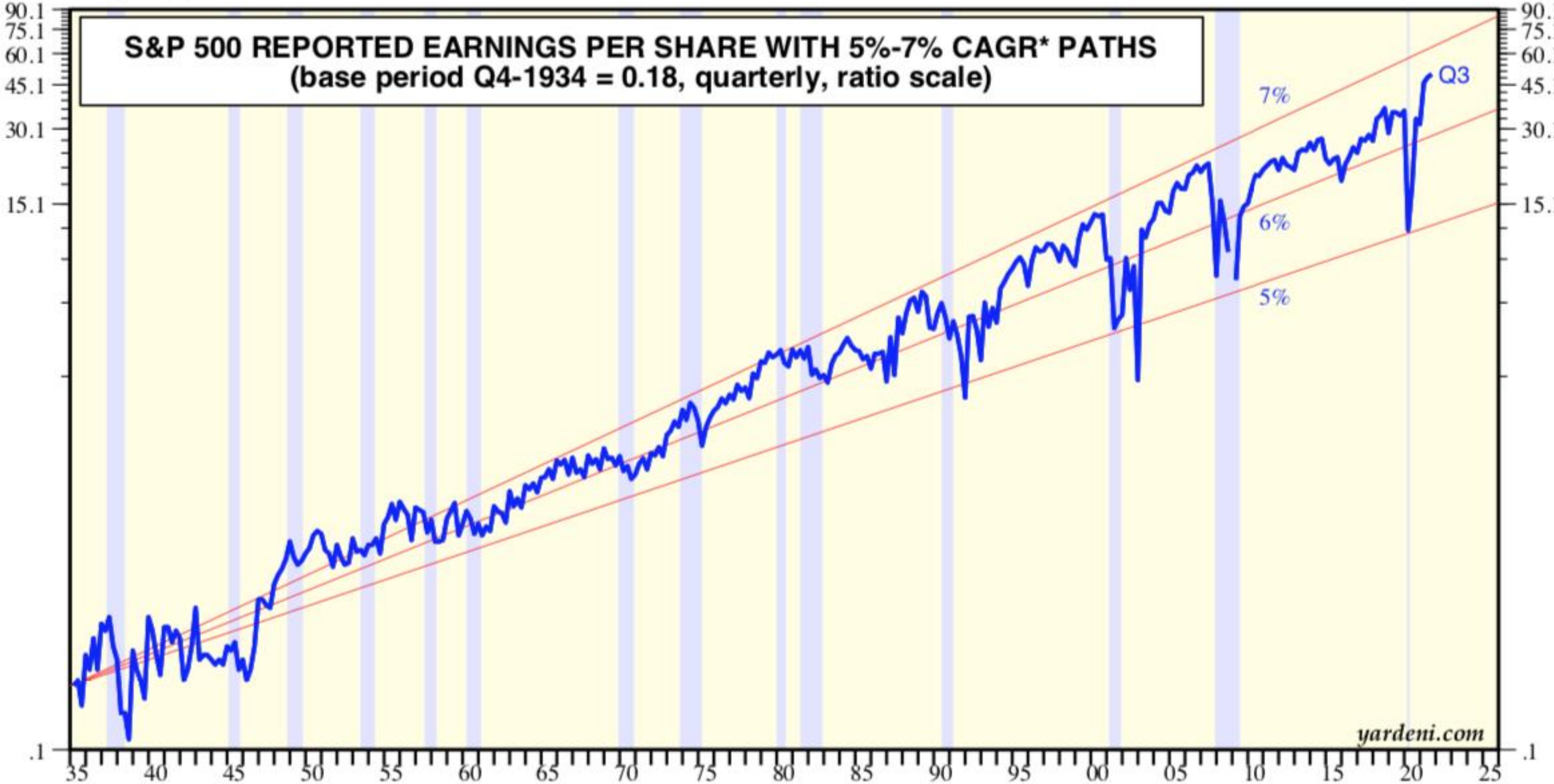


* Includes reinvested dividends.
** Using last month of quarter CPI. Compounded monthly using base value.
Source: Standard & Poor's.

Source: Yardeni Research, Inc., with permission.

85 years of S&P 500 earnings growth

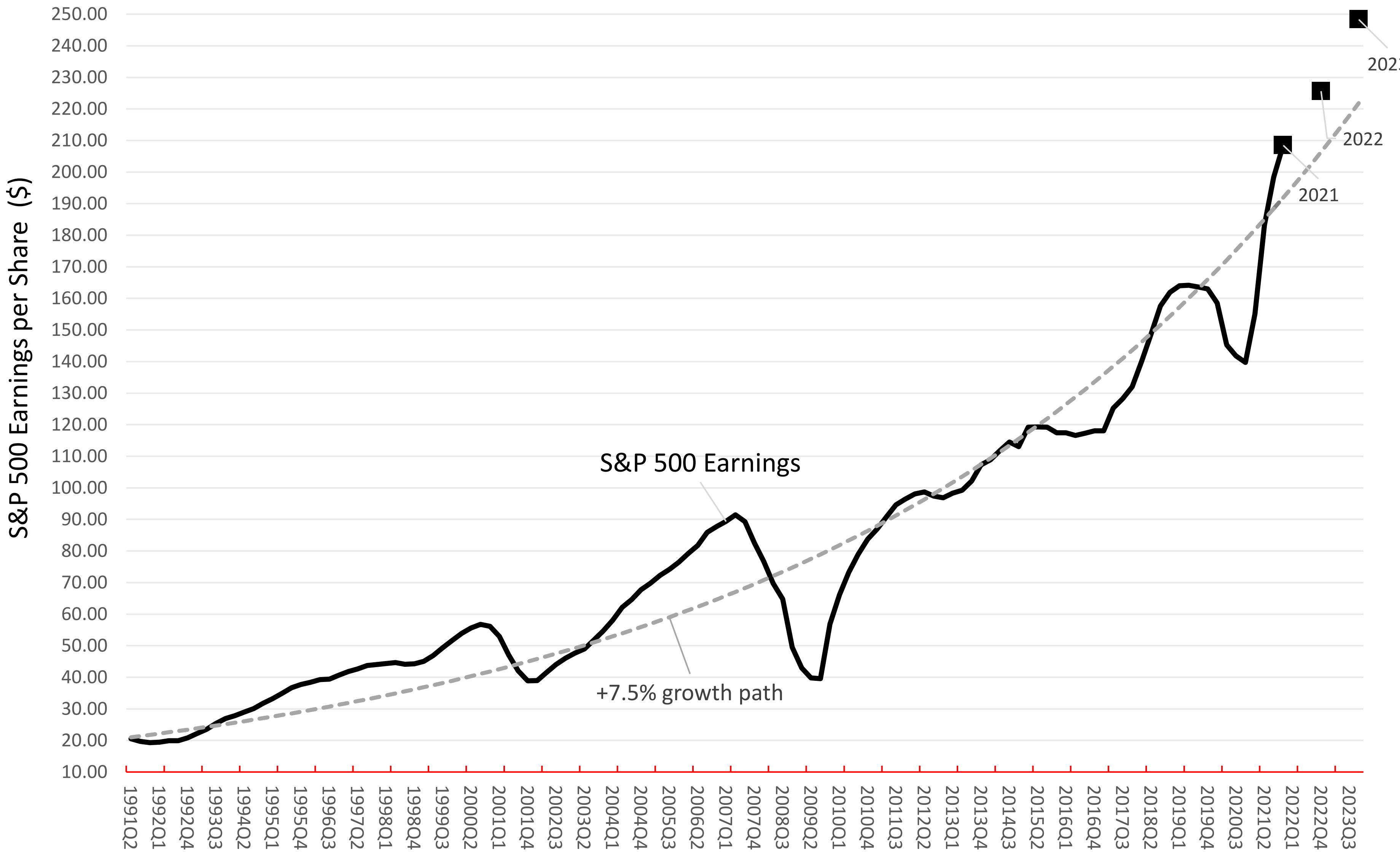
Figure 9.



* 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.

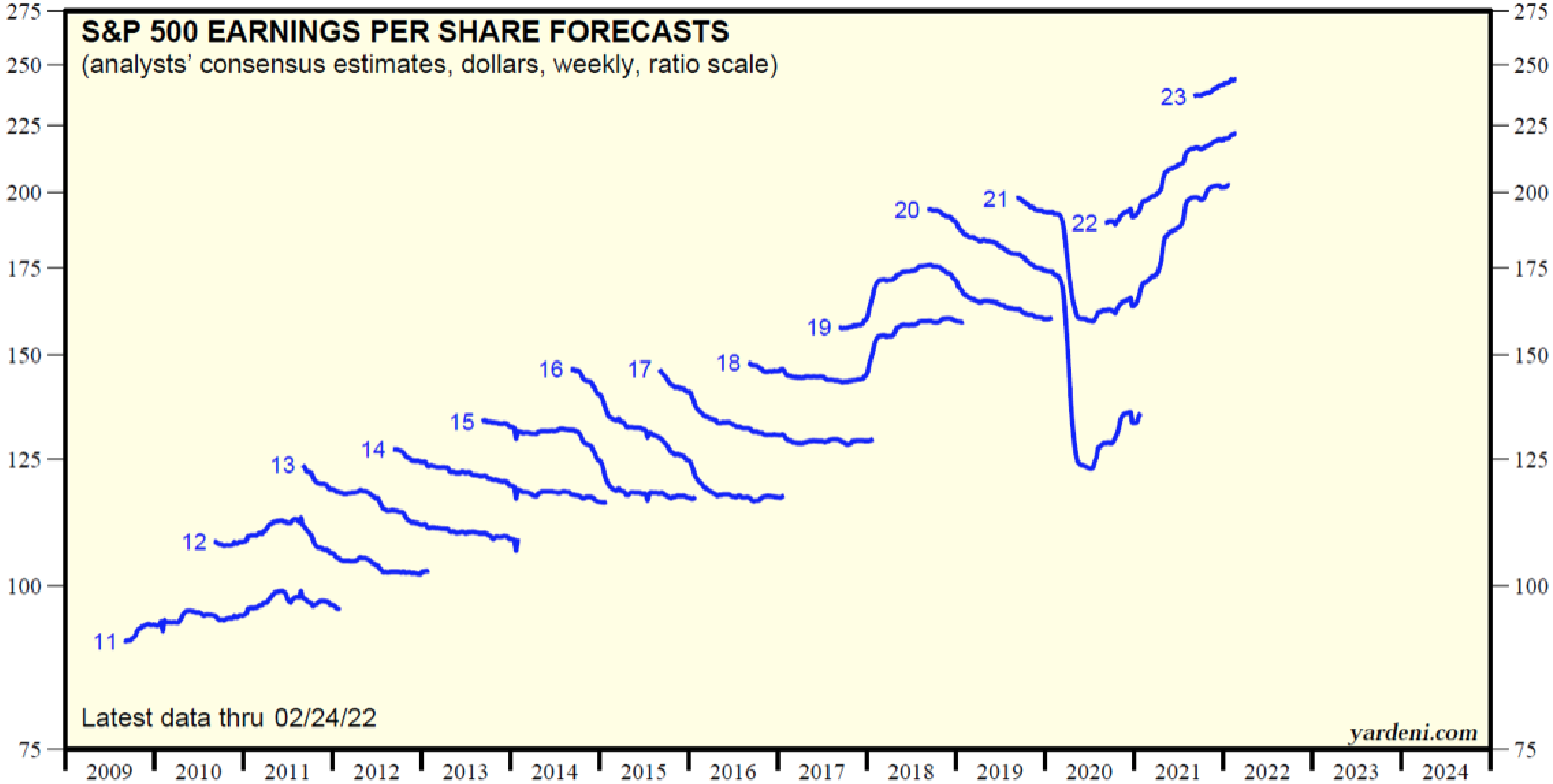
S&P 500 earnings – actual and I/B/E/S estimates



2021 (actual), 2022 (estimated) and 2023 (estimated) bottom-up S&P 500 operating earnings per share as of March 7, 2022: for 2020(a), $139.76; for 2021(a), $208.49; for 2022(e), $225.68; for 2023(e), $248.35. 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 upward earnings revisions

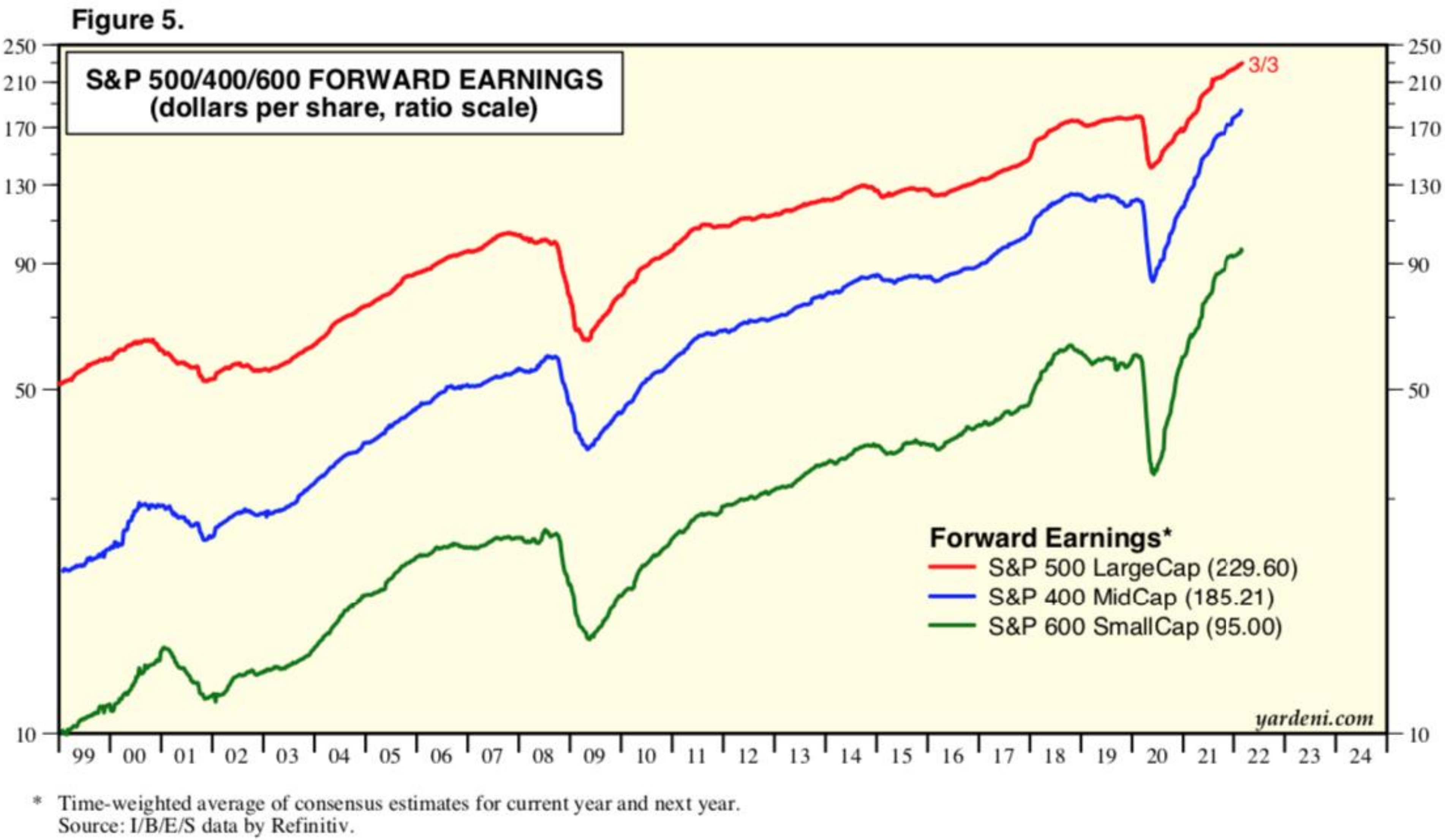
Figure 7.



Source: I/B/E/S data by Refinitiv.

Source: Yardeni Research, Inc., with permission. March 7, 2022.

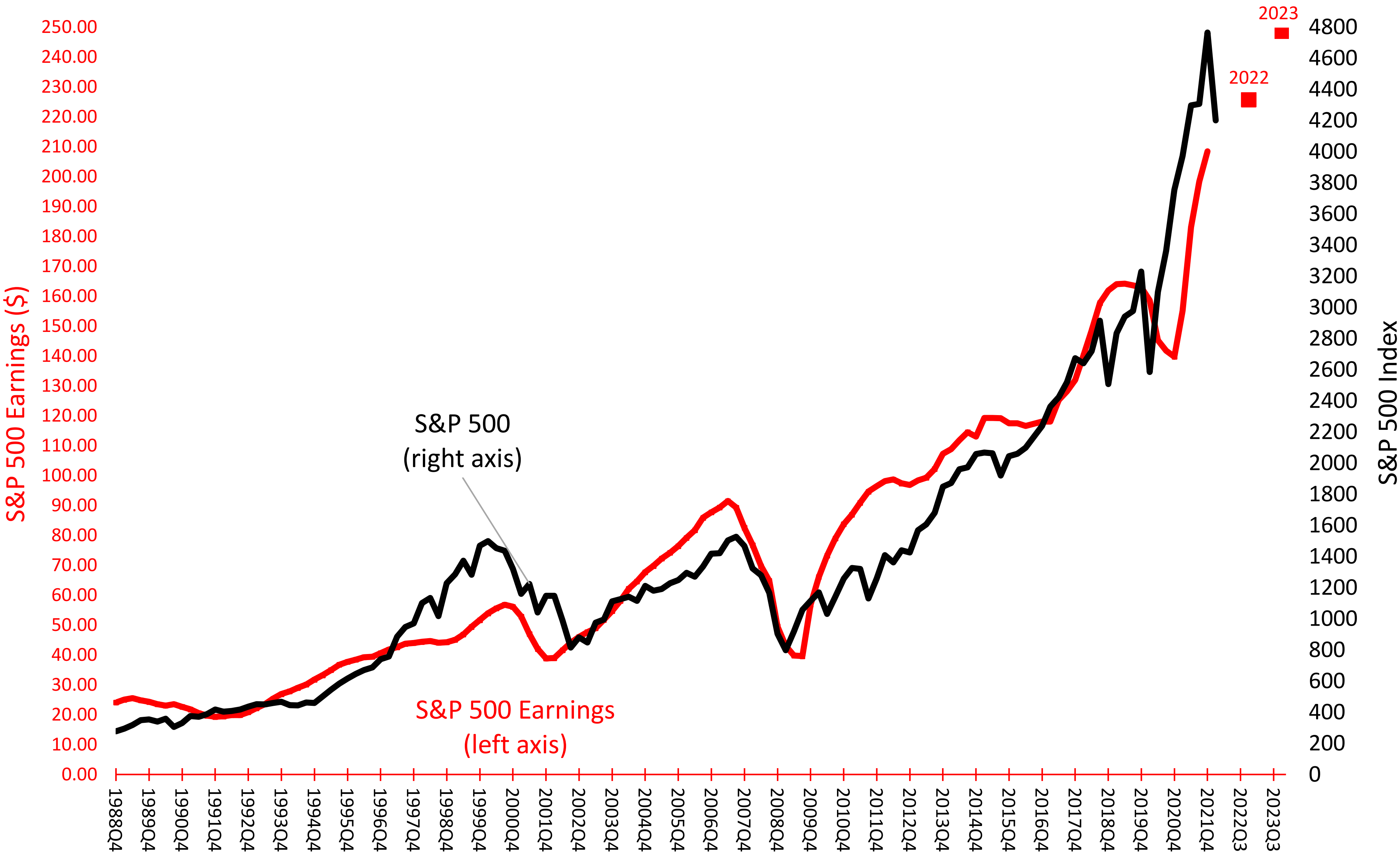
S&P index forward earnings



Source: Yardeni Research, Inc., with permission. March 7, 2022.

Valuation

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



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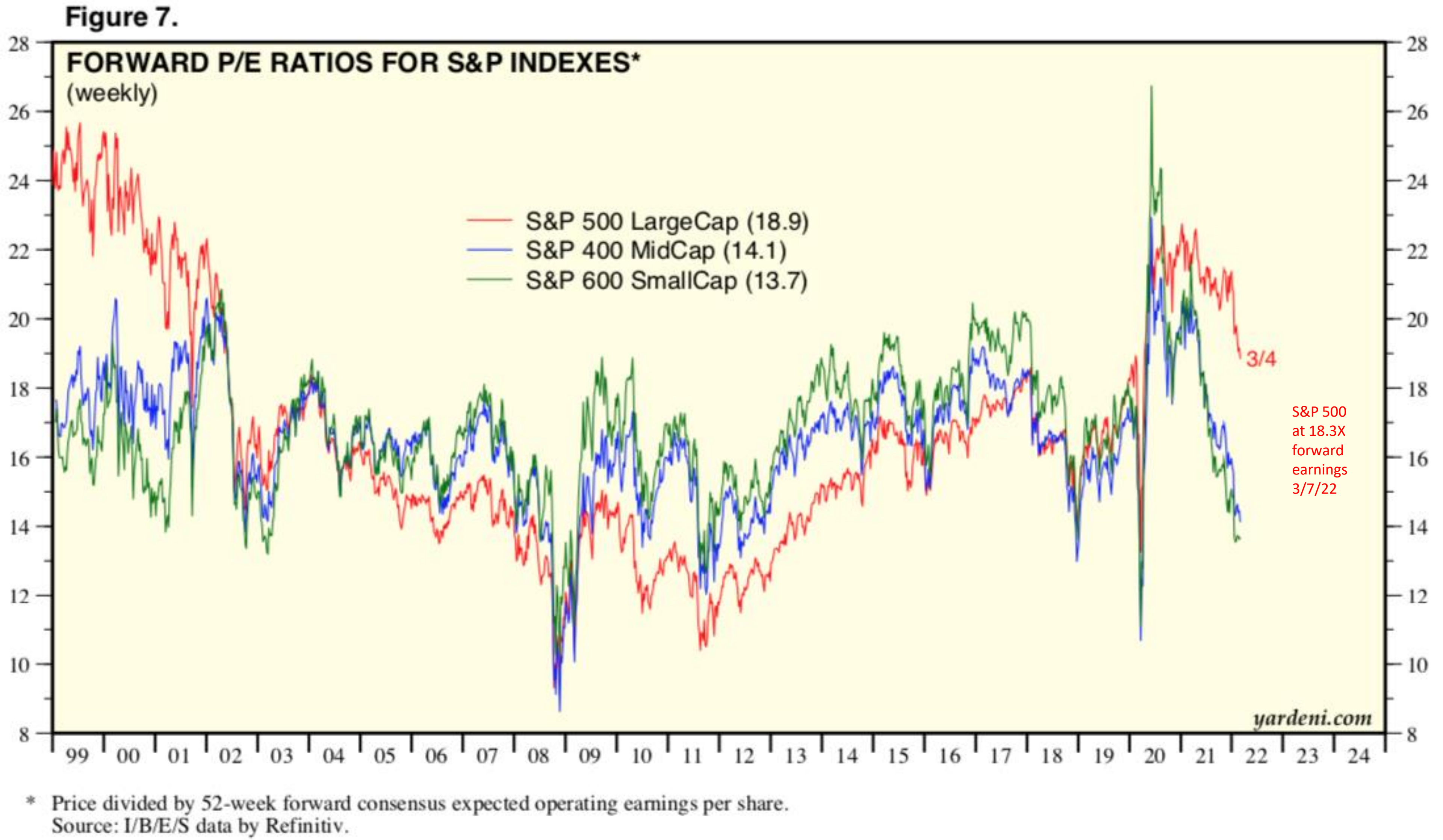
S&P index forward P/E ratios



S&P 500 at 18.3X forward earnings 3/7/22

Source: Yardeni Research, Inc., with permission. March 7, 2022.

S&P 500 vs. forward earnings X P/E ratios

Looking ahead to year-end 2022:

	2023
EPS(E)	$ 248.35
X P/E	17
= S&P 500 (E)	4222
X P/E	18
= S&P 500 (E)	4470
X P/E	19
= S&P 500 (E)	4719
X P/E	20
= S&P 500 (E)	4967

S&P 500 at 4201 3/7/22

I/B/E/S consensus earnings forecast as of March 7, 2022.

Chairman Powell on valuation

December 16, 2020 Chair Powell's Press Conference FINAL

Transcript of Chair Powell's Press Conference December 16, 2020

"If you look at P/Es, they're historically high, but, you know, in a world where the— where the risk-free rate is sustain—is going to be low for a sustained period, the equity premium, which is really the reward you get for taking equity risk, would be what you'd look at. And that's not at, at incredibly low levels, which would mean that they're not overpriced in that sense. Admittedly, P/Es are high, but that's—you know, that's, that's maybe not as relevant in a world where we think the 10-year Treasury is going to be lower than it's been historically, from a—from a return perspective."

Paraphrase:
Stocks are not overpriced compared to bond yields, which are going to be low for "a sustained period."

The Fed … not concerned about a bubble

THE WALL STREET JOURNAL.

Fed Won't Burst This Bubble (Yet)

Risk of collateral damage will have to be higher

The Federal Reserve's job might be easier if stocks stopped going up, but there is little risk that the central bank is about to get in the market's way.

Fed Chairman Jerome Powell said on Wednesday that across the asset market, banking and other financial areas the central bank looks at "vulnerabilities overall are moderate."

… the Fed has been highlighting the spread between the S&P 500's earnings yield (the inverse of the index's forward price-earnings ratio) and 10-year Treasury yields adjusted for economists' inflation expectations. Current data show that spread is around 5.6 percentage points, which if anything suggests stocks are relatively cheap. At the height of the dot-com bubble, that spread was around zero.

Source: *The Wall Street Journal*, February 1, 2021.

The Fed’s view on valuation

Financial Stability Report

November 2021

Source: Federal Reserve, *Financial Stability Report*, November 2021.

The Fed's view: stocks are reasonably priced

My calculation 3/7/22:
[1/18.3] – [TIPS yield] =
5.46% - [-. 93%] =
6.4%

Source: Federal Reserve, *Financial Stability Report*, November 2021.

Fed policy

Transcript of Chair Powell's Press Conference January 26, 2022

In light of the remarkable progress we have seen in the labor market and inflation that is well above our 2 percent longer-run goal, the economy no longer needs sustained high levels of monetary policy support. That is why we are phasing out our asset purchases and why we expect it will soon be appropriate to raise the target range for the federal funds rate.

Source: Federal Reserve, January 26, 2022.

Chairman Powell's speech

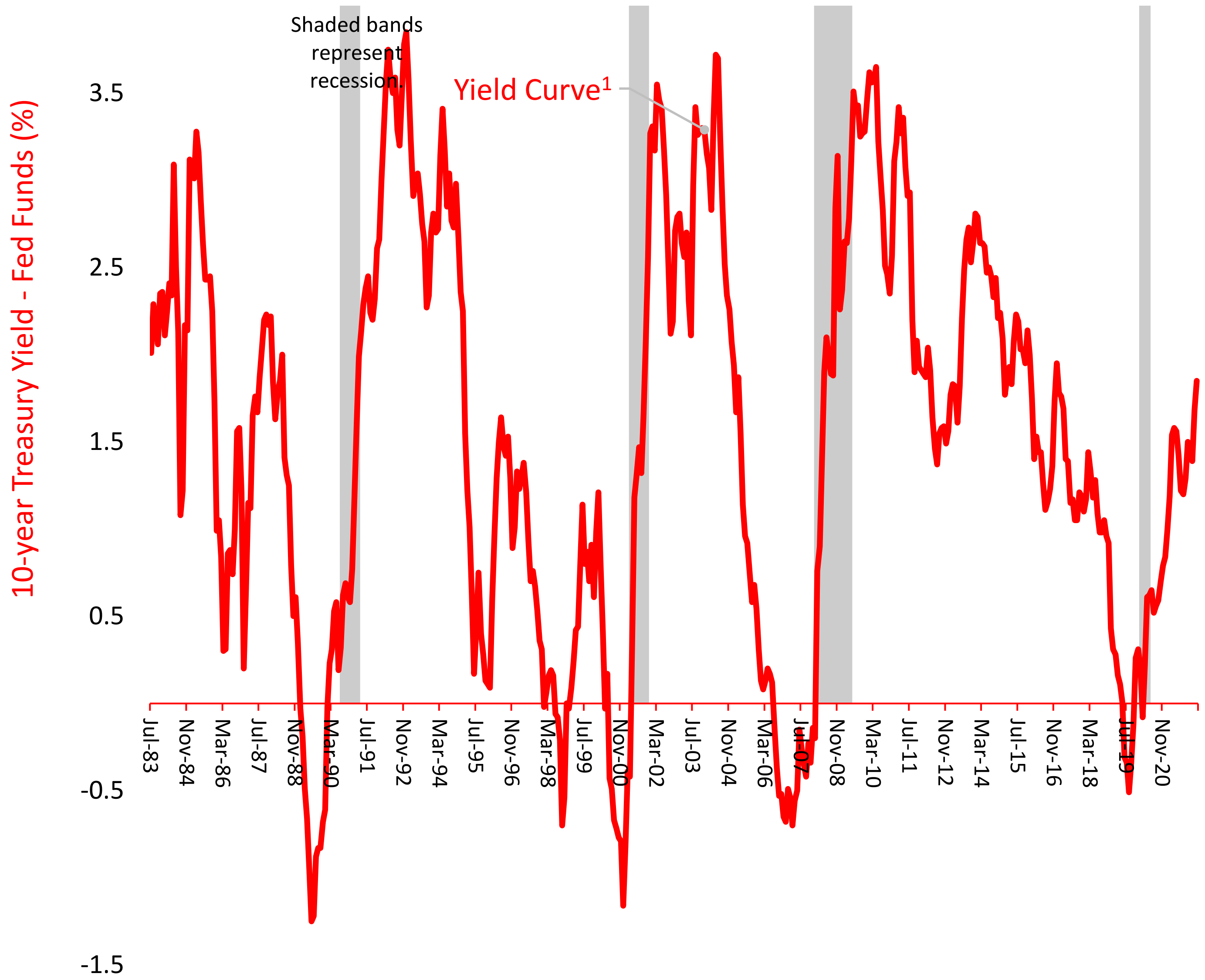
THE WALL STREET JOURNAL.

"The economy is very strong and inflationary pressures are high, and it is therefor appropriate, in my view, to consider wrapping up the taper of our asset purchases … perhaps a few months sooner."

"What we missed about inflation was we didn't predict the supply-side problems, and those are highly unusual and very difficult, very nonlinear."

Source: *The Wall Street Journal*, December 1, 2021.

Yield curve

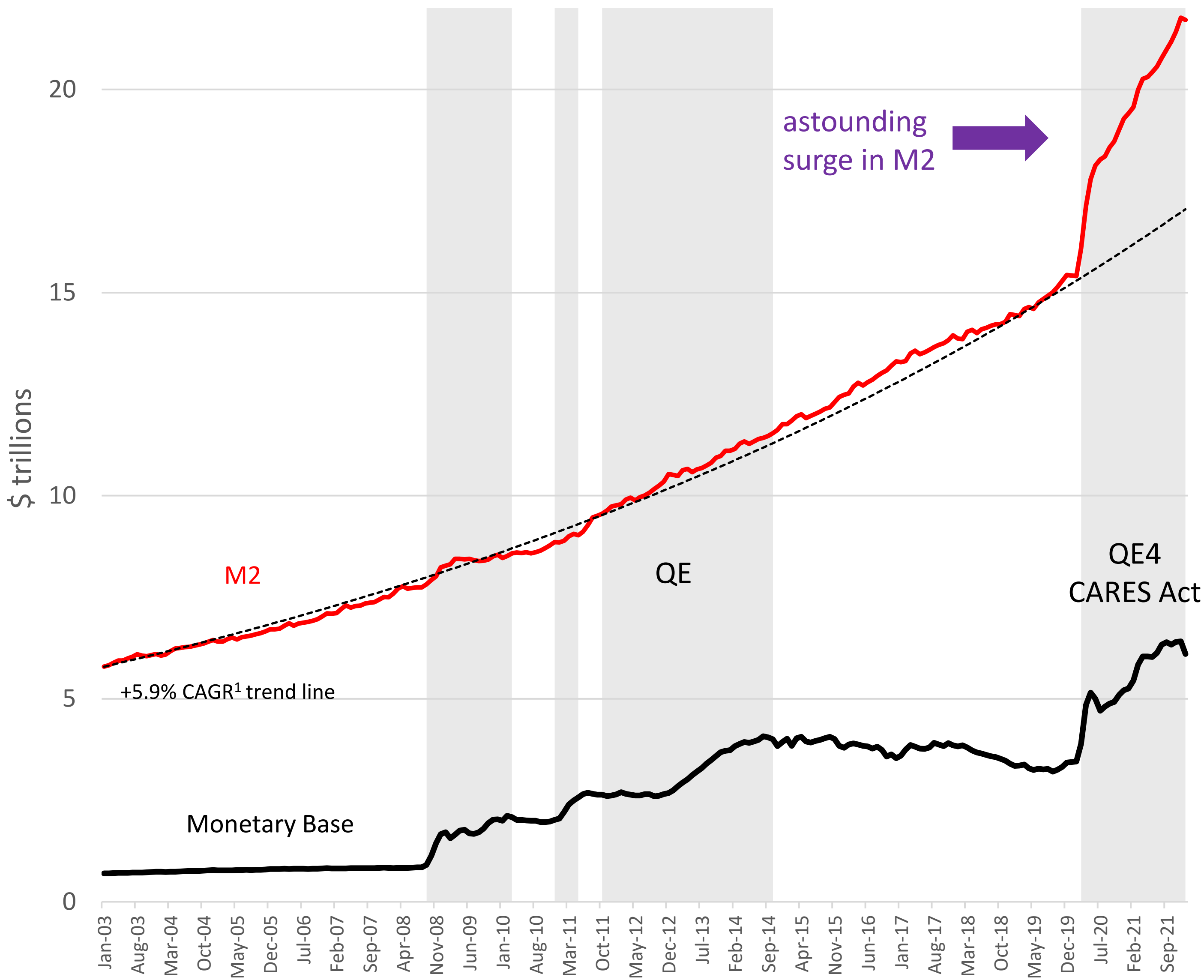


When the yield curve has inverted the economy has usually turned down into recession with a lag of a year or more.

Today, Fed policy is accommodative.

Sources: NBER, Federal Reserve and Standard & Poor's. Data through February 2022.
[1]The interest rate on the 10-year Treasury bond (long term) minus the fed funds rate (short term).

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. The CARES Act and subsequent stimulus did … 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).

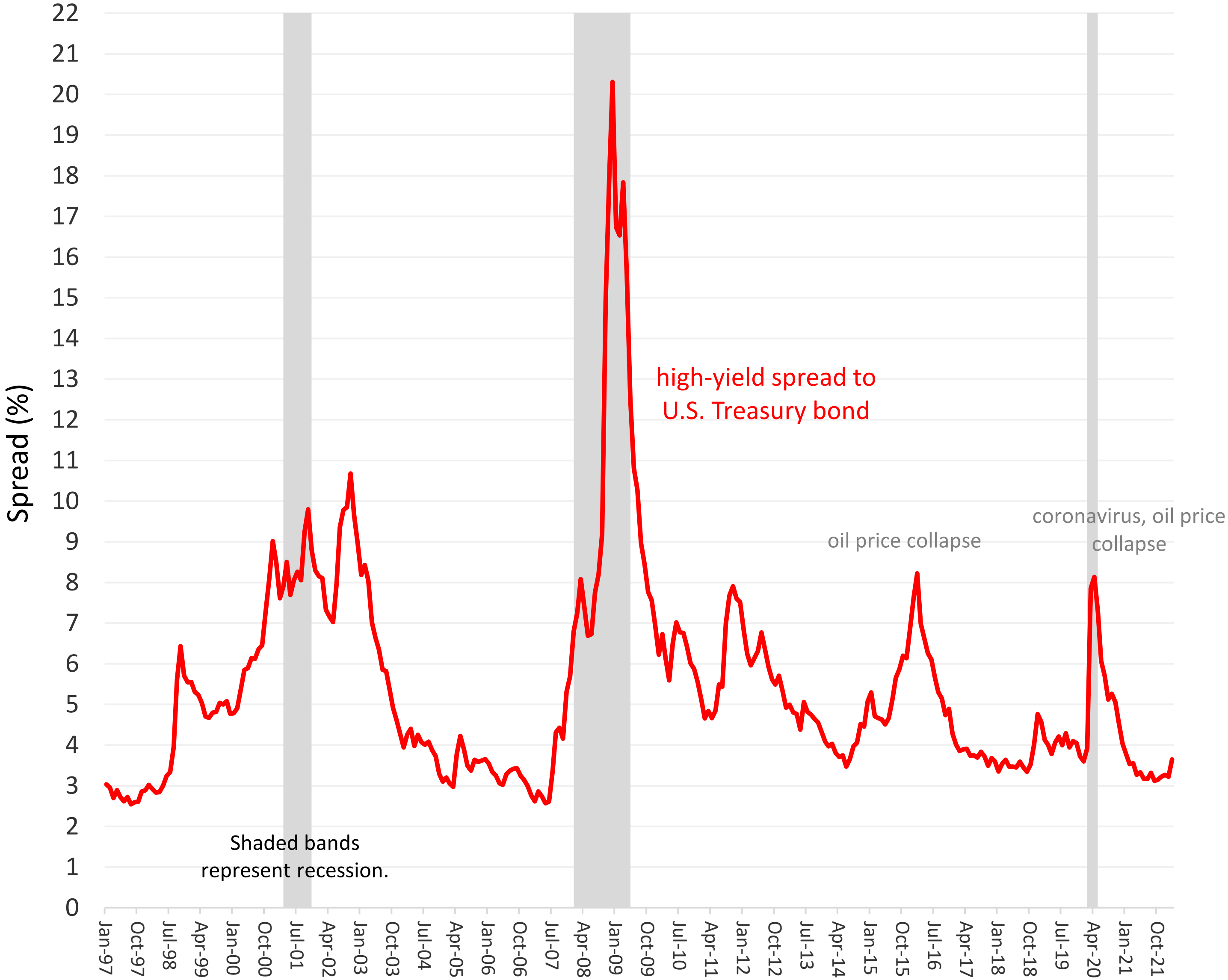
Source: Federal Reserve, statistical release H.6. Data through January 2022.
[1]CAGR = compound annual growth rate.

Bond Yields

- lowest yields in history
- negative real yields don’t make sense
- Fed’s QE took yields to those levels
- the Fed and ECB continue to pin rates down

Bond yields

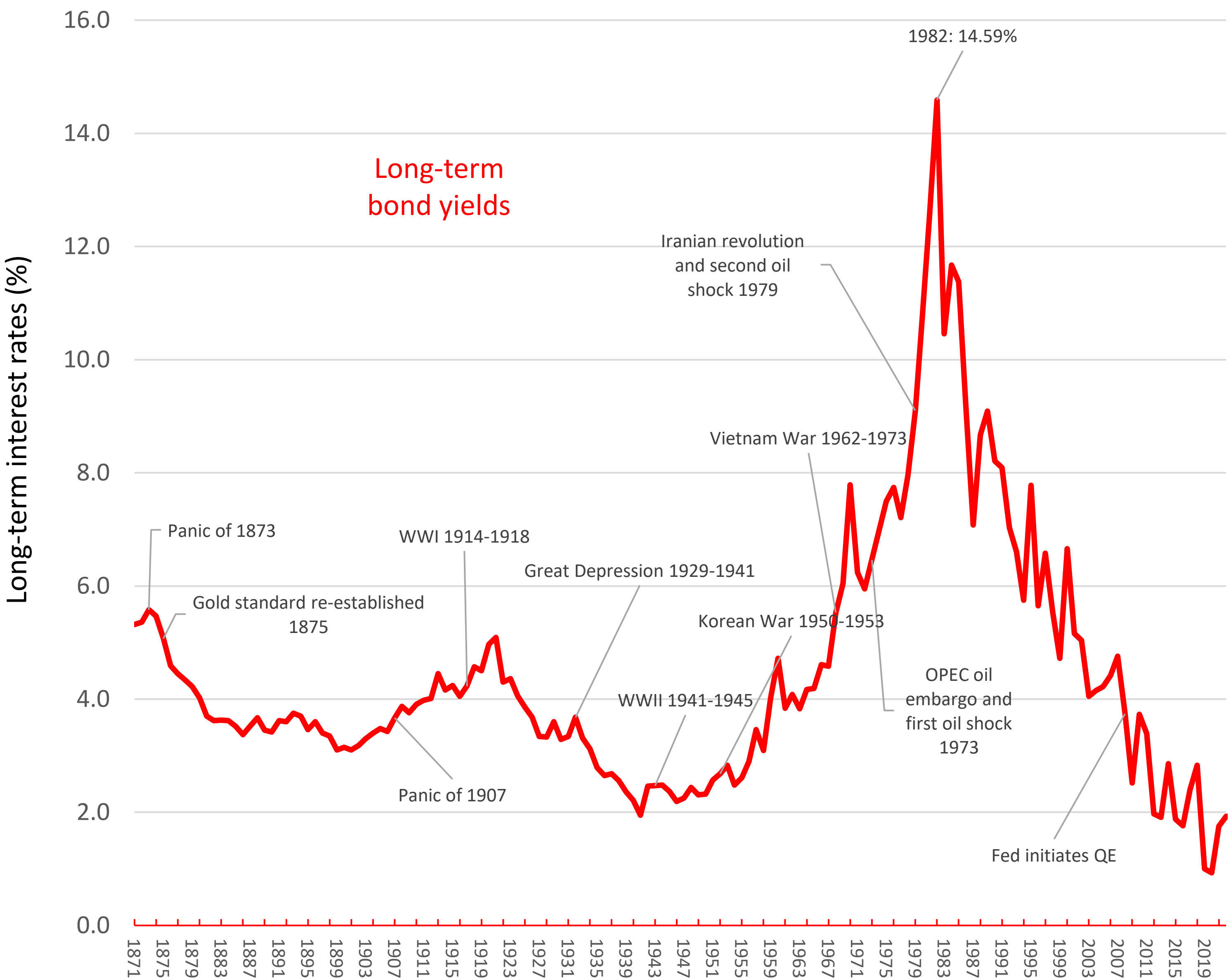
Fear, recovery reflected in the high yield-bond market



Recession fears were reflected here, but no longer.

Source: ICE Benchmark Administration Limited (IBA), ICE BofAML US High Yield Master II Option-Adjusted Spread [BAMLH0A0HYM2], retrieved from FRED, Federal Reserve Bank of St. Louis. Data through February 2022.

Record low U.S. Treasury bond yields

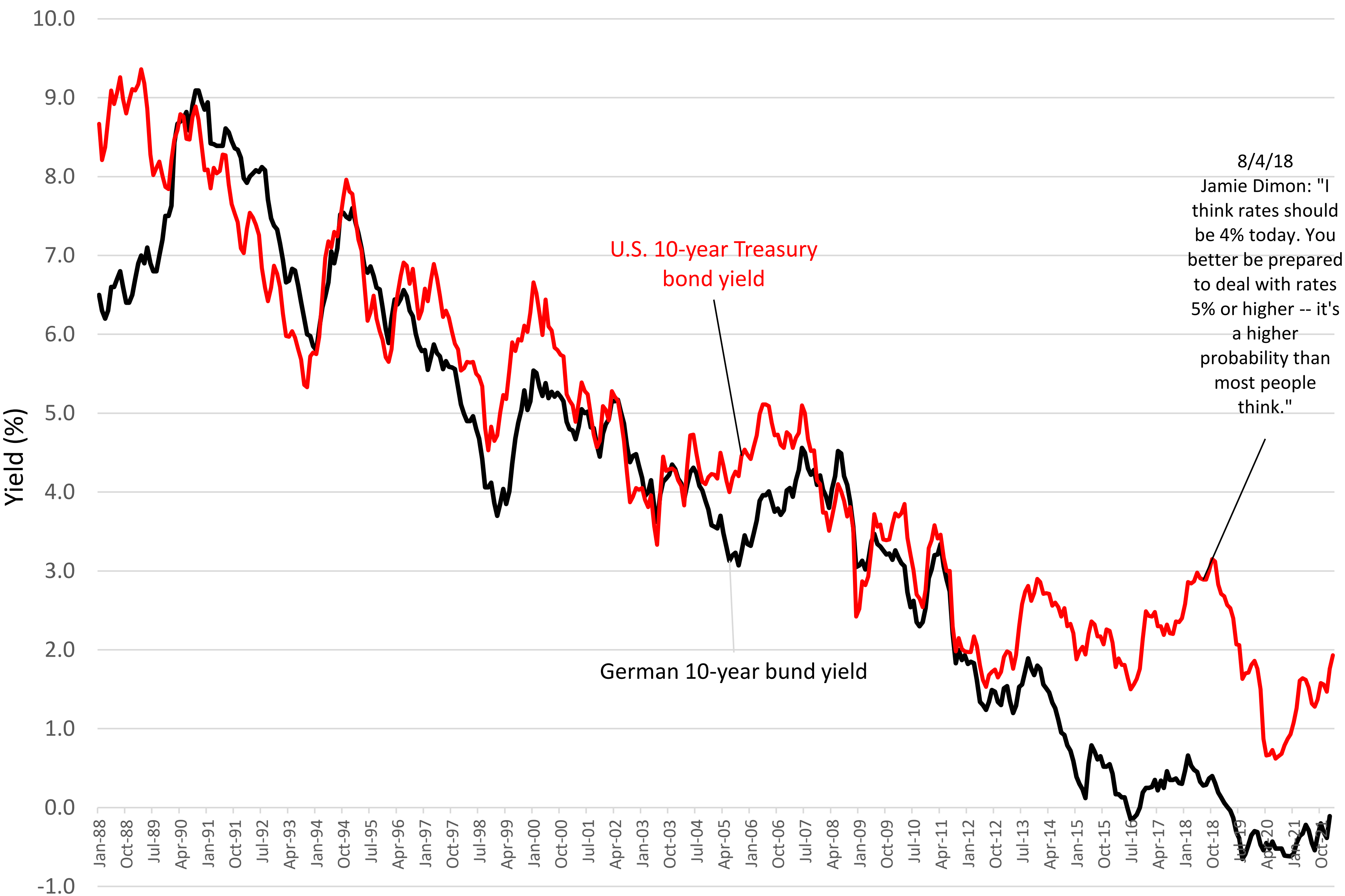


The lowest long-term interest rates in U.S. history.

Source: Online Data Robert Shiller, data through 2016; 10-year U.S. Treasury bond yield data from 2017; data through February 2022.

Bond yields

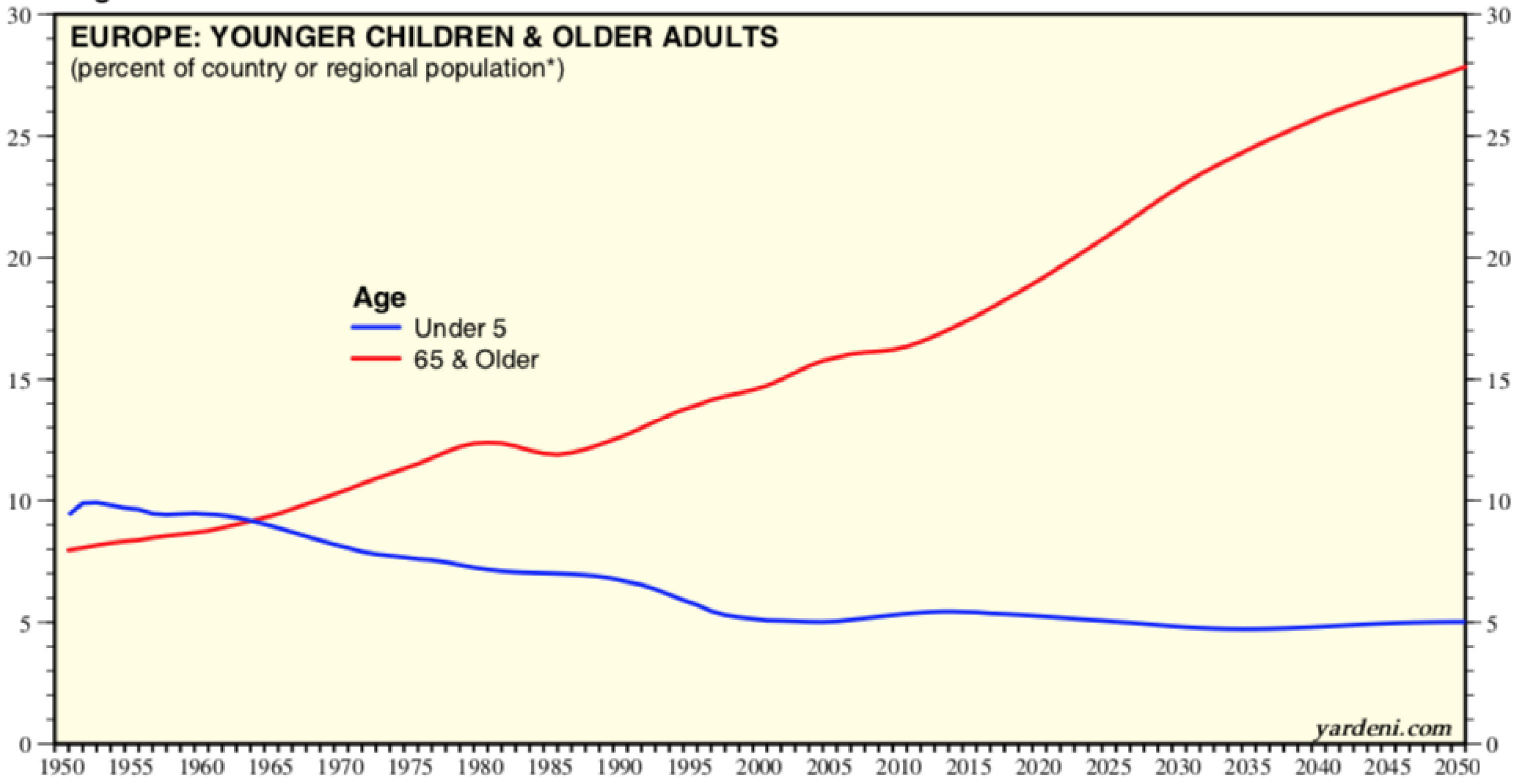
German bund yields are weighing on U.S. Treasury bond yields



Source: Federal Reserve, data through February 2022.

Europe's ageing population

Figure 9.



* Estimates through 2015, then projections through 2050.
Source: United Nations.

Demographics driving a global savings glut, driving bond yields down.

Source: World Bank, 2019. Data through 2017. Euro area includes the 19 countries that use the Euro currency, including Germany, France, Italy and Spain.

Inflation

- headline PCED +6.1%, +5.2% core
- inflation breaking 10-year trend
- inflation expectations (TIPS spread) rising
- productivity offsets rising employment costs

Global disinflation forces

- labor unions lost power
- globalization
- technology revolution
- Amazon
- aging demographics

Supply chain disruption

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Traffic Jam at Southern California Ports Eases

The lengthy backup of container ships waiting to unload in Southern California is shrinking, the first sign in three months of an easing in U.S. supply-chain congestion at the nation's busiest container port complex.

Containers are also moving more quickly out of terminals by road and rails.

Source: *The Wall Street Journal*, February 11, 2022.

McDonald's price hikes

THE WALL STREET JOURNAL.

McDonald's Raises Menu Prices

Those higher costs are making their way to consumers, as McDonald's executives said they expect U.S. prices to be up about 6% this year compared with last year.

Source: *The Wall Street Journal*, October 26, 2021.

Housing inflation

THE WALL STREET JOURNAL.

Housing Is Key To Inflation Direction

The biggest wild card for U.S. inflation over the next year doesn't come from used cars or airline fares. Instead, it is housing.

In recent months, housing-cost trends point to more persistent, rather than transitory, upward price pressures in the coming months.

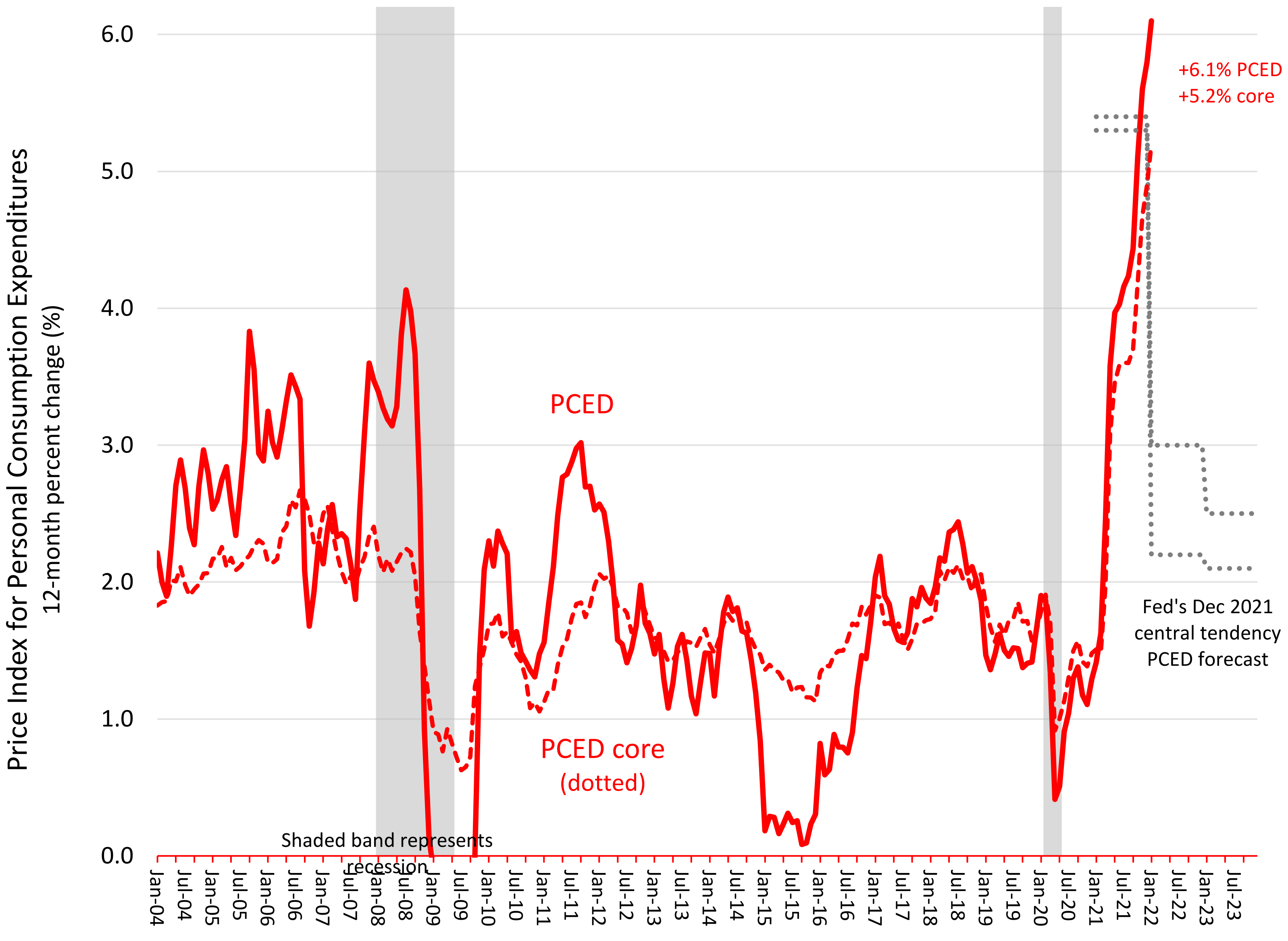
In a June report, economists at Fannie Mae said they expected the rate of shelter inflation to pick up from around 2% in May to 4.5% over the coming years – and higher still, if house-price growth doesn't cool off soon.

They forecast that by the end of 2022, housing could contribute 1 percentage point to core PCE inflation, the strongest contribution since 1990, and they forecast core inflation slowing to just 3% by then.

Housing inflation is important because it accounts for a hefty share of overall inflation – around 18% of core PCE inflation, and around one-third of … the consumer-price index.

Source: *The Wall Street Journal*, August 9, 2021.

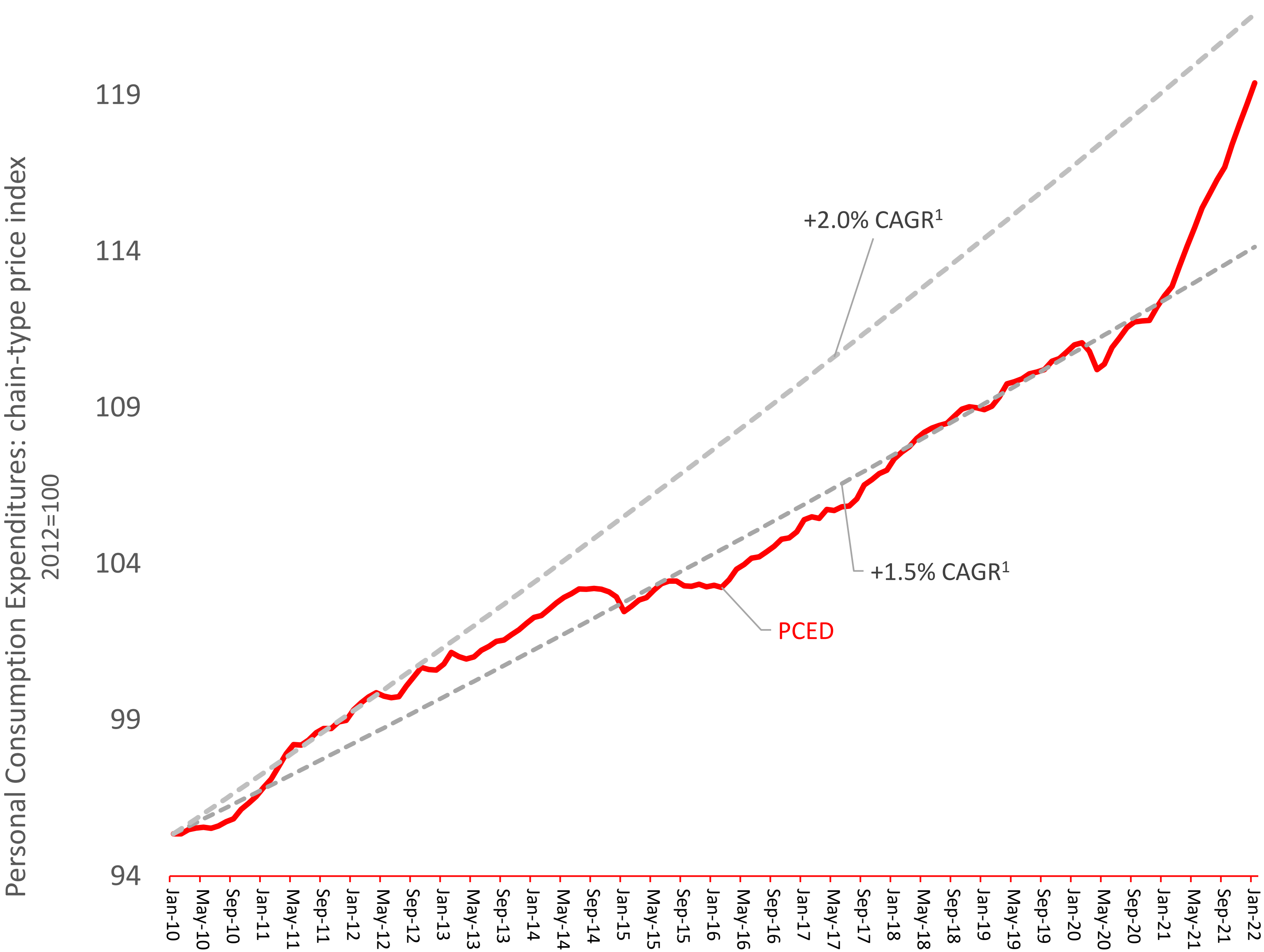
PCED – headline and core



Inflation is surging, following the Covid-19 plunge.

Source: NBER, Federal Reserve Bank of St. Louis. Data through January 2022.

Inflation – breaking away from 10-year trend



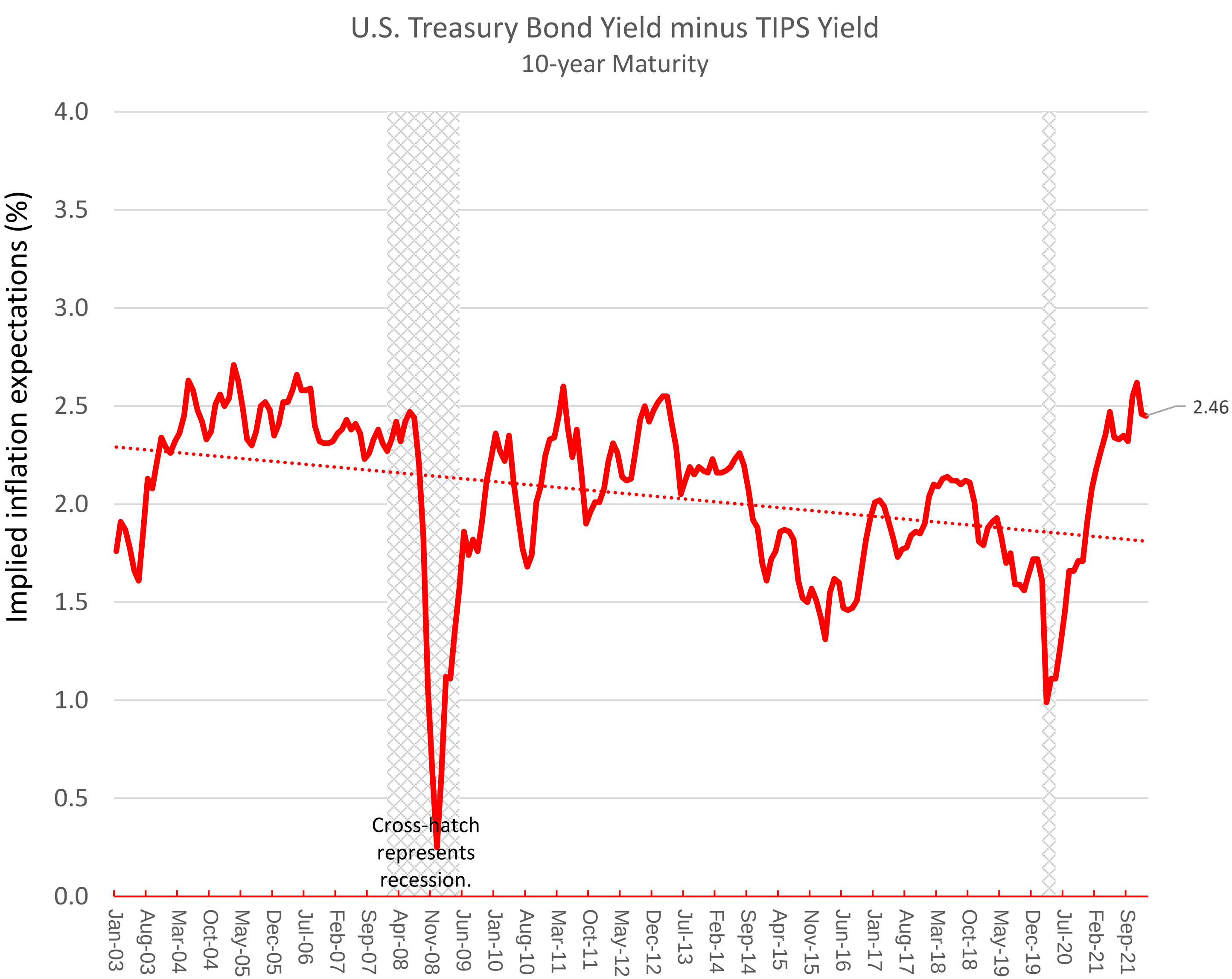
Inflation had been running way below the Fed's 2% target.

How persistent will the current upturn be?

Source: U.S. Commerce Department reported by Federal Reserve Bank of St. Louis. Data through January 2022.

[1] CAGR = compound annual growth rate.

Inflation expectations

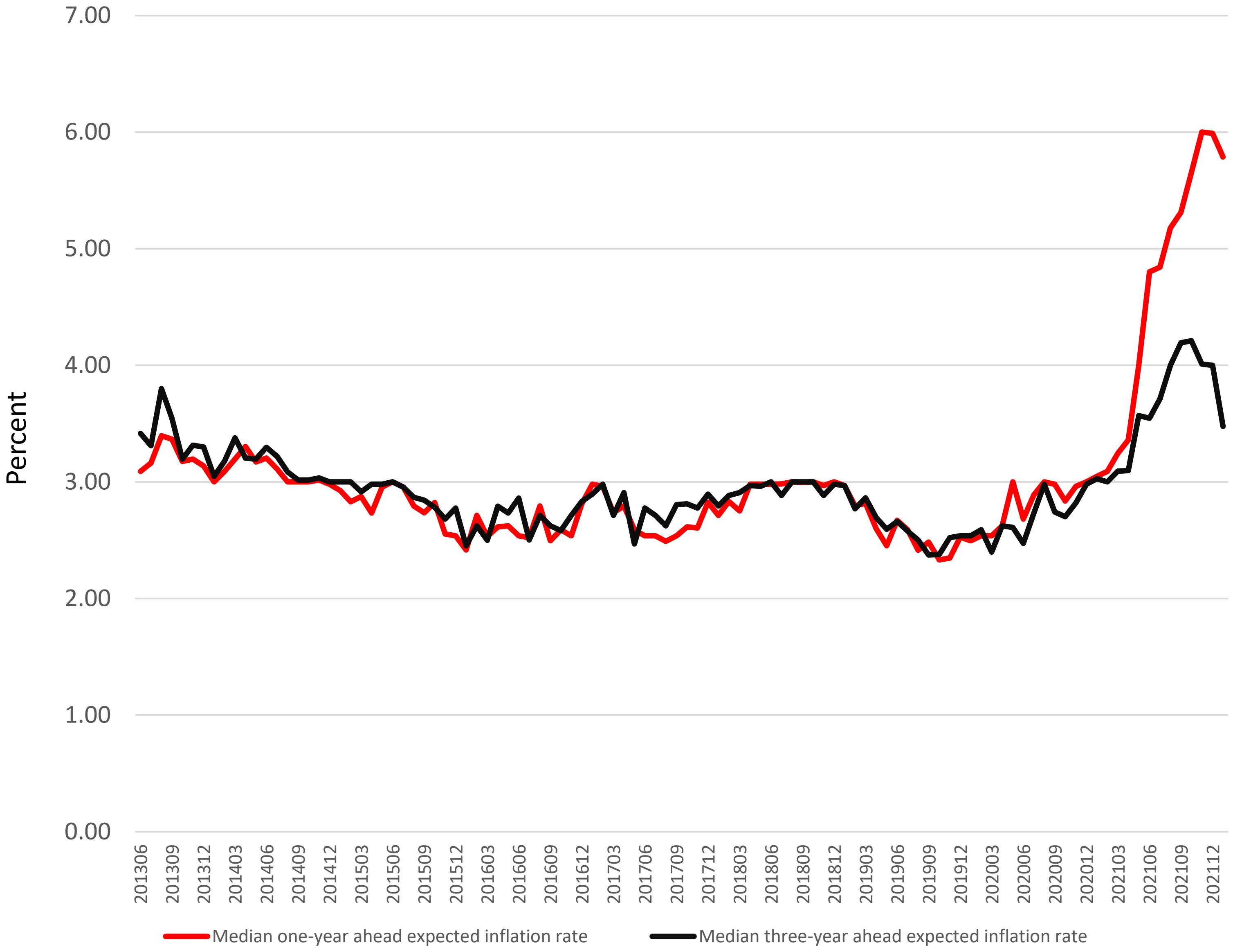


The difference between the nominal 10-year Treasury bond yield and the TIPS yield gives the market's opinion for a 10-year inflation forecast.

It had been trending lower for 15 years but has moved higher in the past year.

Source: Federal Reserve. Data through February 2022.

Inflation expectations

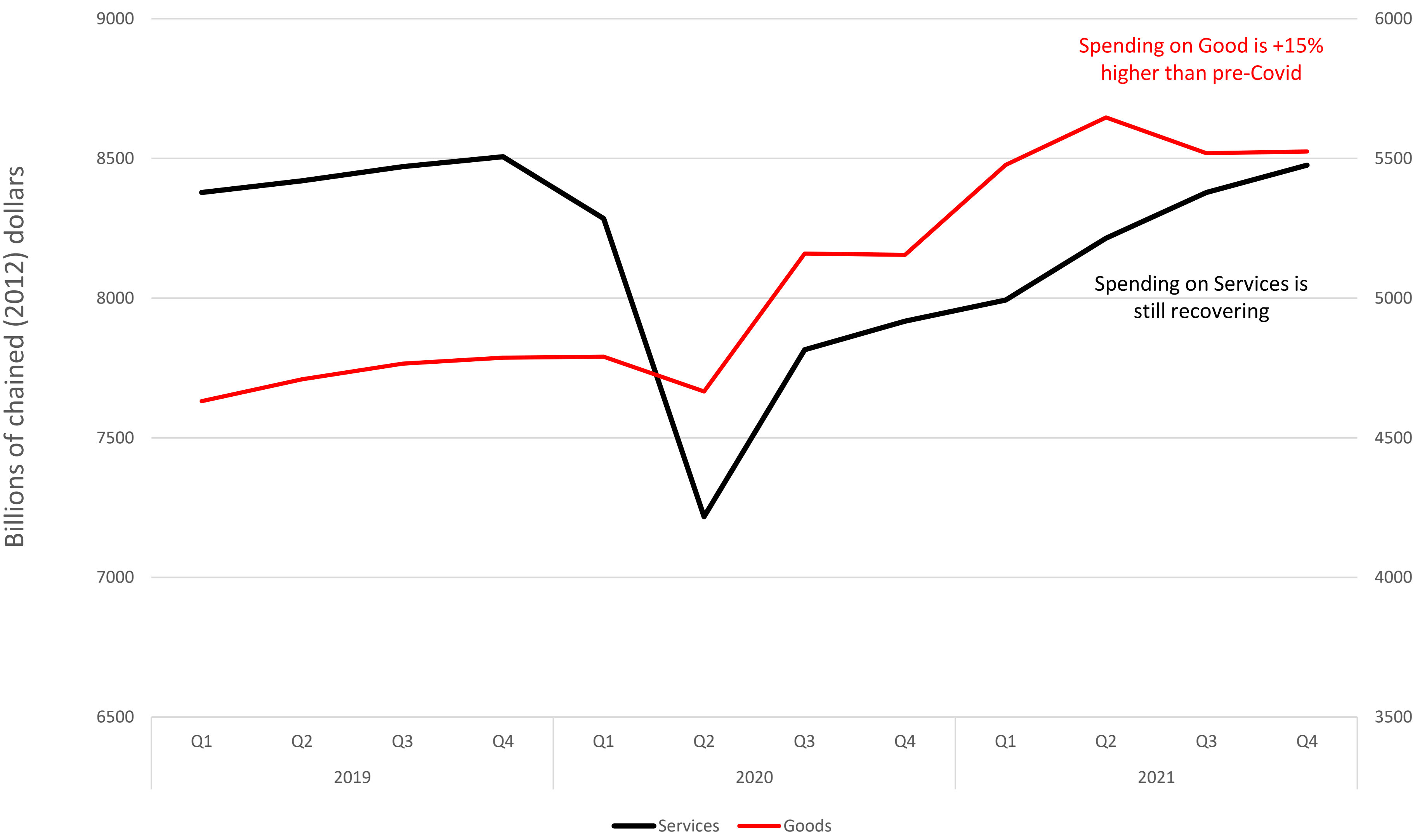


Consumers expect moderating inflation past one year.

Source: Federal Reserve Bank of New York, *Survey of Consumer Expectations*. Data through January 2022.

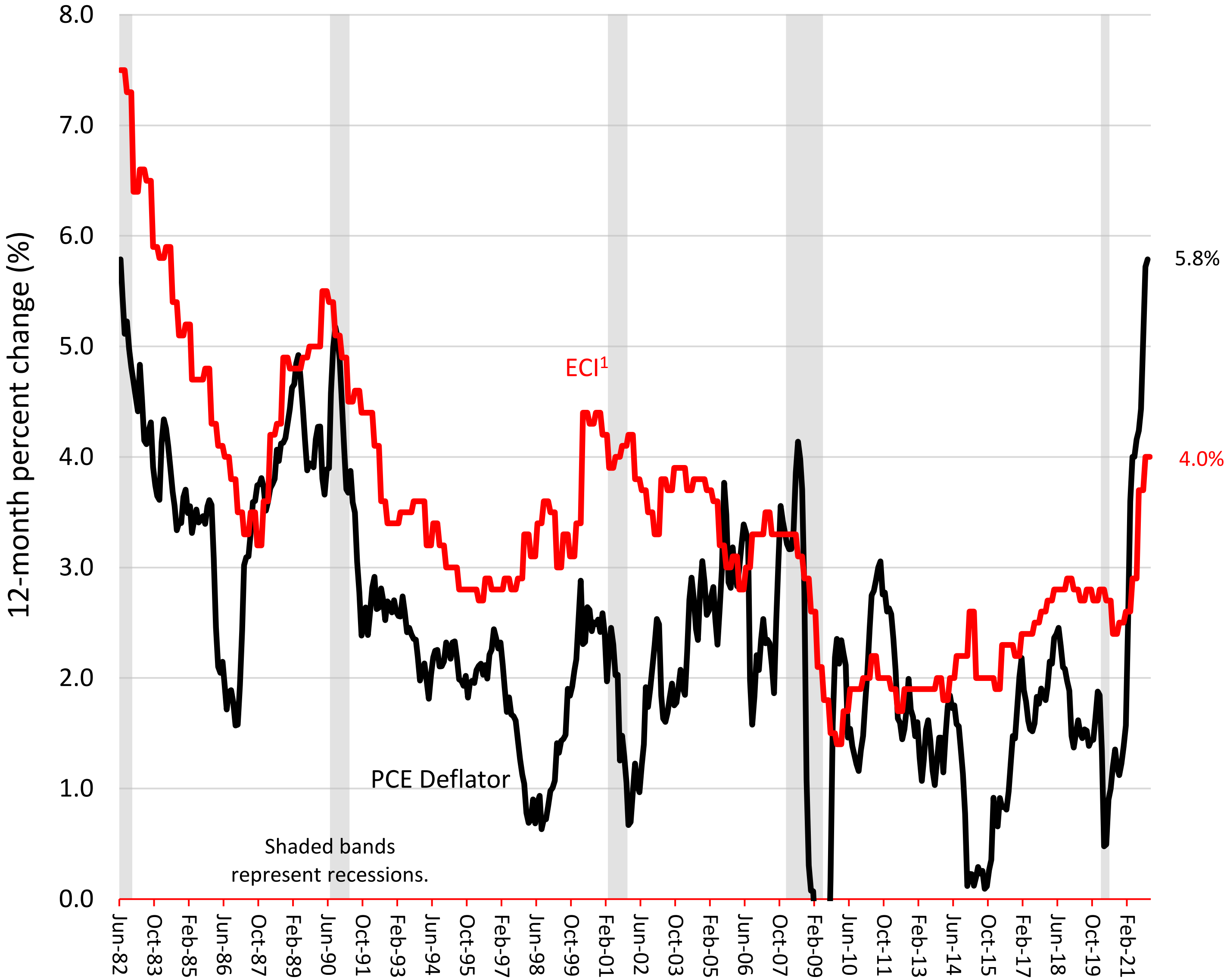
Economy

Surge in spending on Goods = jammed supply chain



Sources: Bureau of Economic Analysis, quarterly data through December 2021.

Employment cost index and inflation

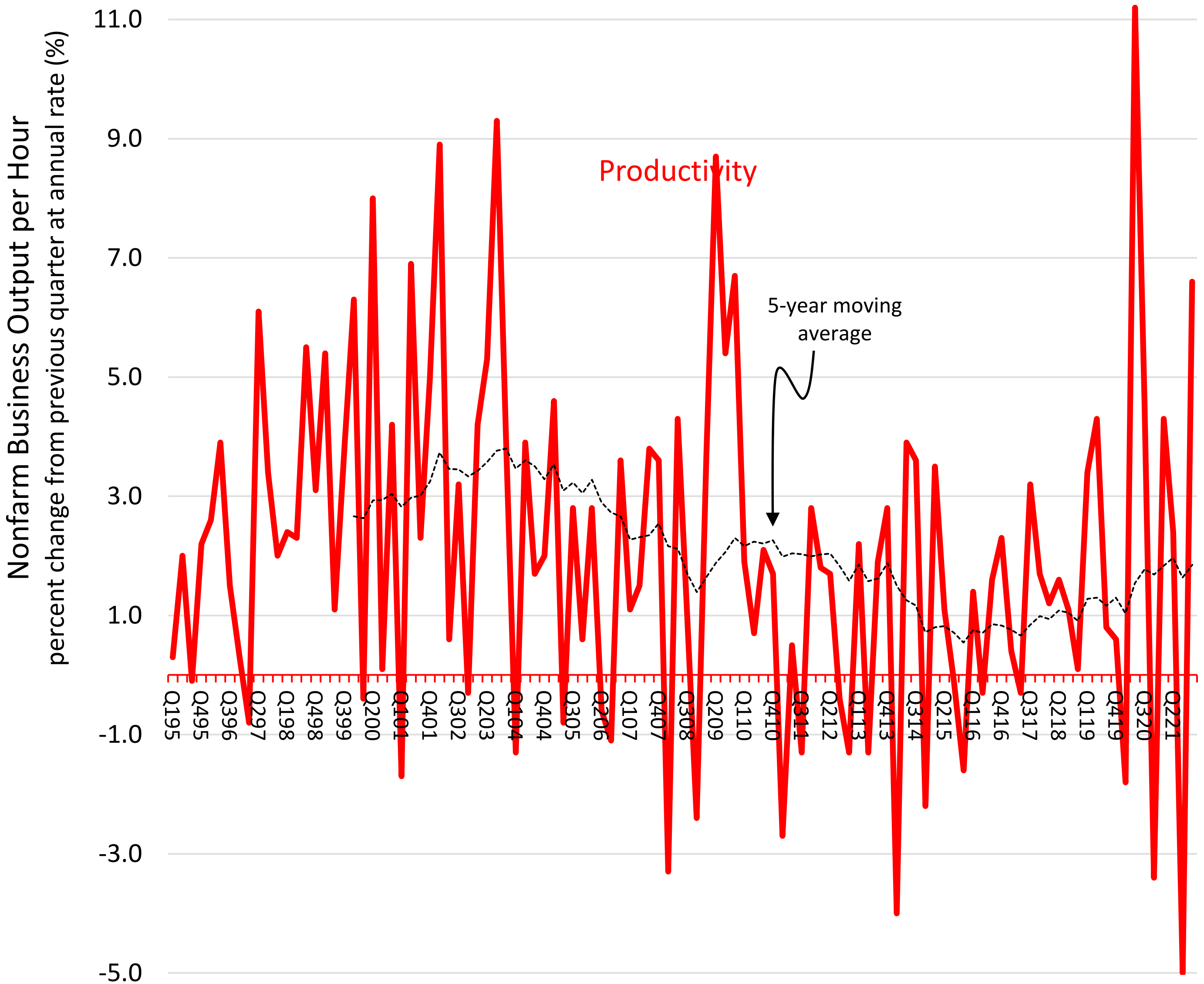


Overall inflation has generally remained below wage and benefit inflation.

Inflation (PCE deflator) generally runs lower than measured ECI inflation because higher employment costs can be offset by productivity gains.

Source: Bureau of Labor Statistics and BEA. ECI quarterly data through December 2021. PCED monthly data through December 2021.
[1] Employment Cost Index. The BLS 's ECI is built with fixed weights for individual industries and occupations.

Productivity – trending up



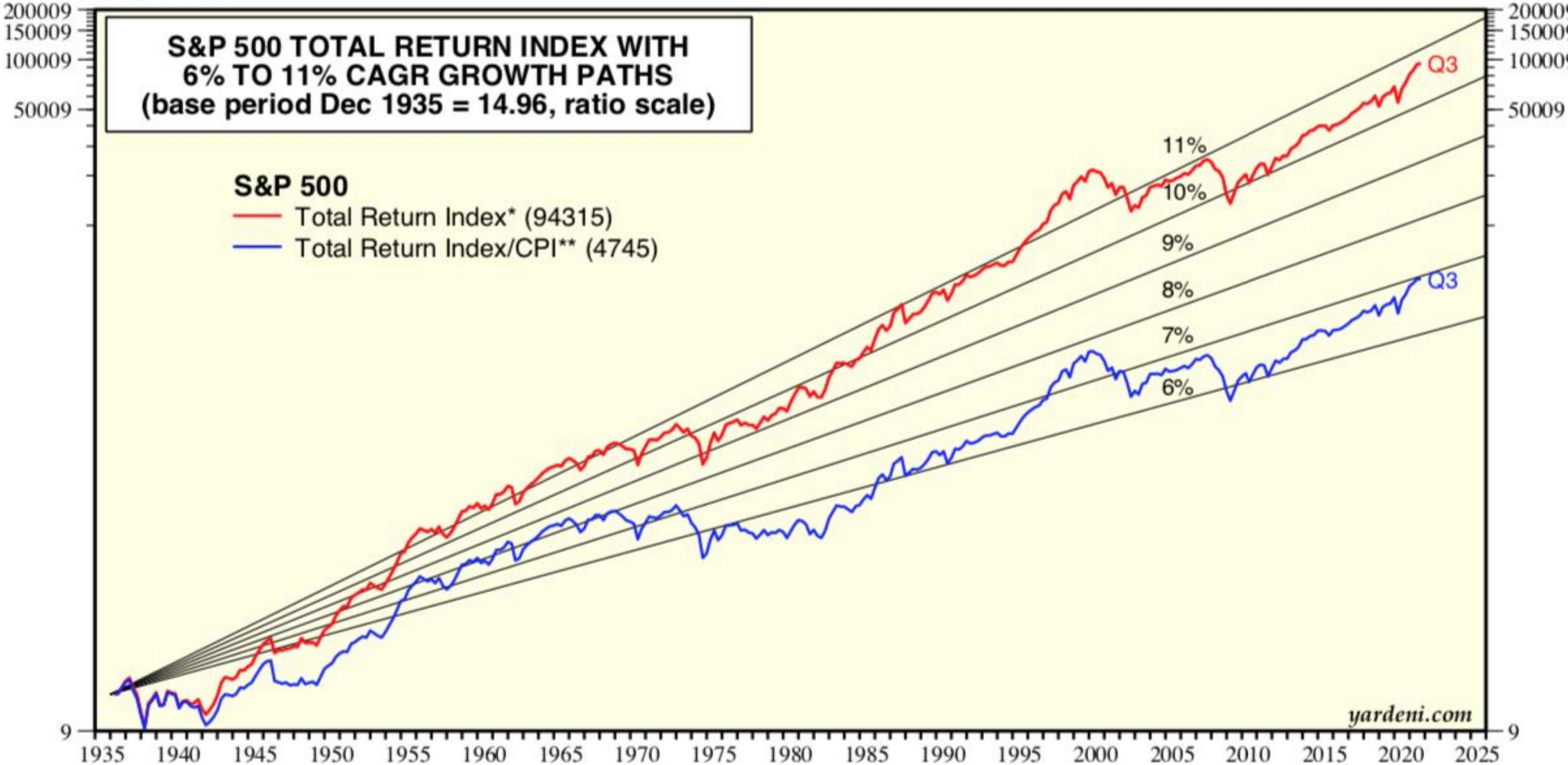
Productivity gains have averaged +1.9% per year for the last five years, and the trend is improving.

Productivity gains partially offset wage gains.

Source: Bureau of Labor Statistics, quarterly data through December 2021.

Total return and real total return

Figure 2.



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

Source: Yardeni Research, Inc., with permission.

Stocks and inflation

THE WALL STREET JOURNAL.

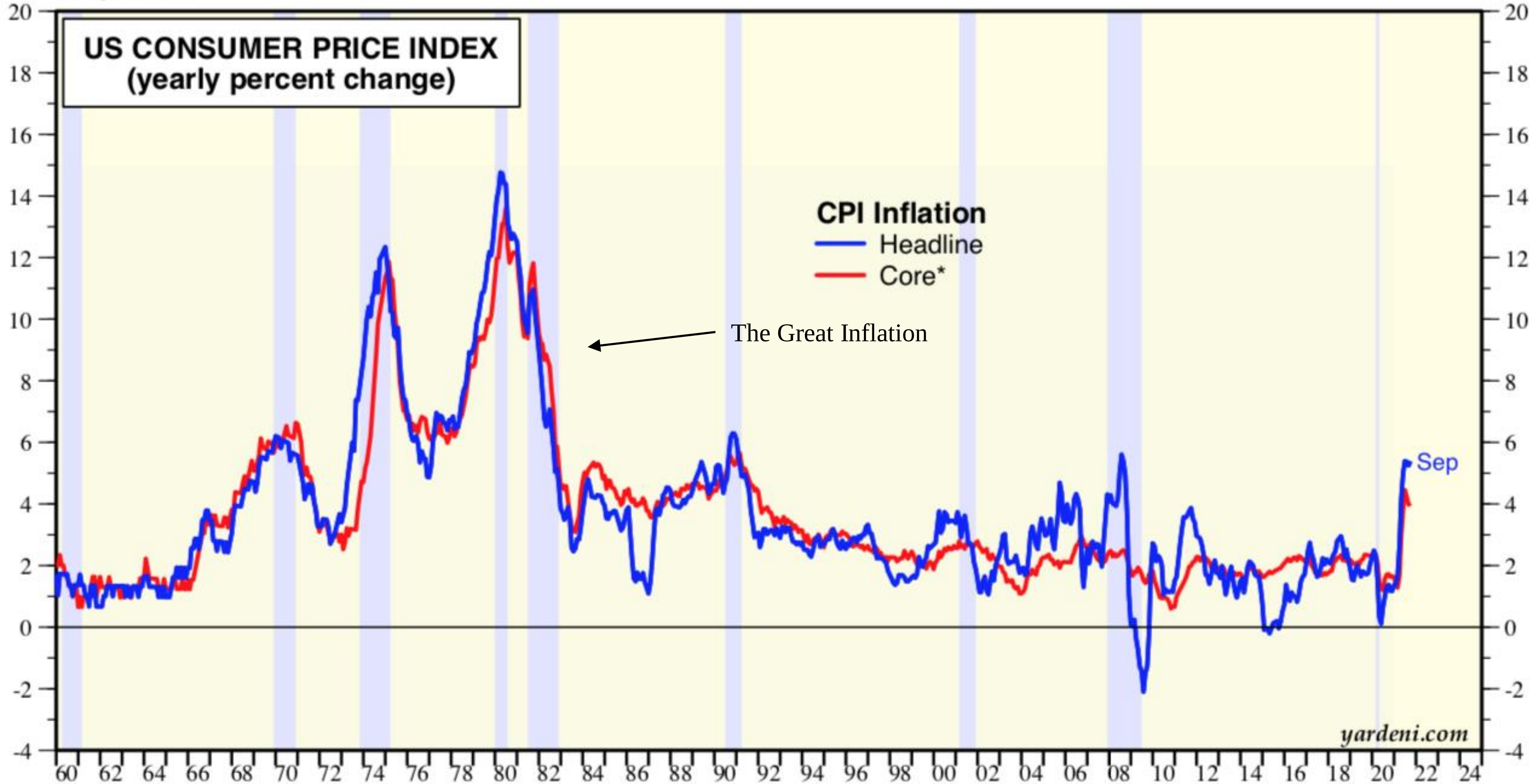
An Investor's Guide to Deflating Inflation Fears

Fortunately, the stock market overall has outpaced moderate rises in the cost of living. From 1927 through 2020, according to Dimensional, U.S. stocks as a whole outperformed inflation by an average of 4.9 percentage points annually in years when rises in the cost of living were above the median. If your stock portfolio is already well diversified, it should be able to keep pace with modestly rising prices.

Source: *The Wall Street Journal*, October 30-31, 2021.

The Great Inflation: 1965-82

Figure 2.



* Excluding food and energy.
Note: Shaded areas are recessions according to the National Bureau of Economic Research.
Source: Bureau of Labor Statistics.

Source: Yardeni Research, Inc., with permission. November 1, 2021.

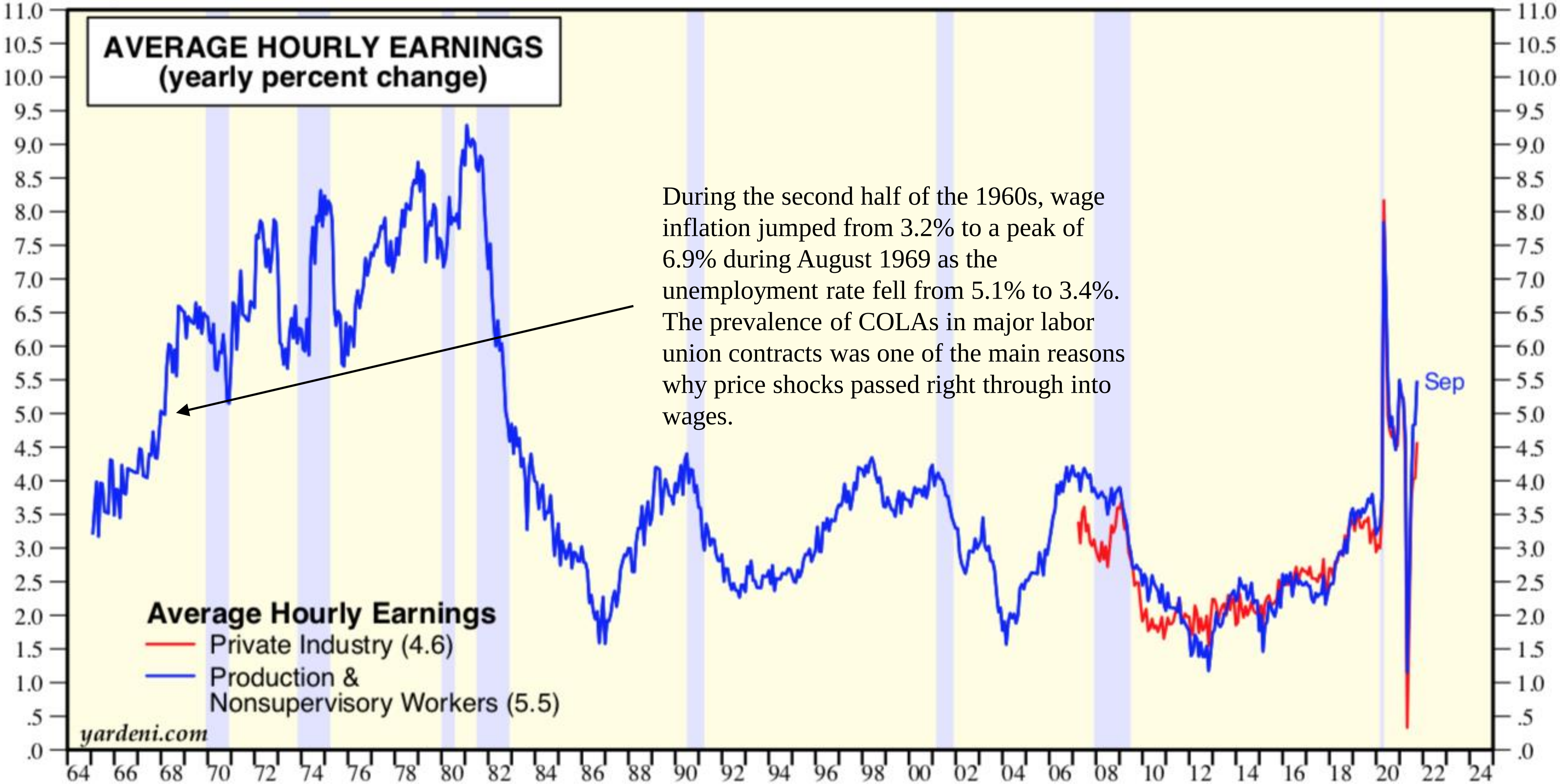
The Great Inflation: 1965-82

1. During the second half of the 1960s, wage inflation jumped from 3.2% to a peak of 6.9% during August 1969 as the unemployment rate fell from 5.1% to 3.4%. The prevalence of COLAs in major labor union contracts was one of the main reasons why price shocks passed right through into wages.
2. On August 15, 1971, President Nixon suspended the convertibility of the dollar into gold. The dollar plunged and commodity prices surged.
3. Monetary policy during this period helped spur a surge in inflation and inflation expectations. The Fed did raise interest rates, but the rate hikes were too little, too late. The Fed was increasingly criticized for being "behind the curve."[1]
4. 1973 oil shock
5. 1979 oil shock

[1] *Predicting the Markets,* Edward Yardeni, © 2018.

The Great Inflation: wage price spiral

Figure 31.

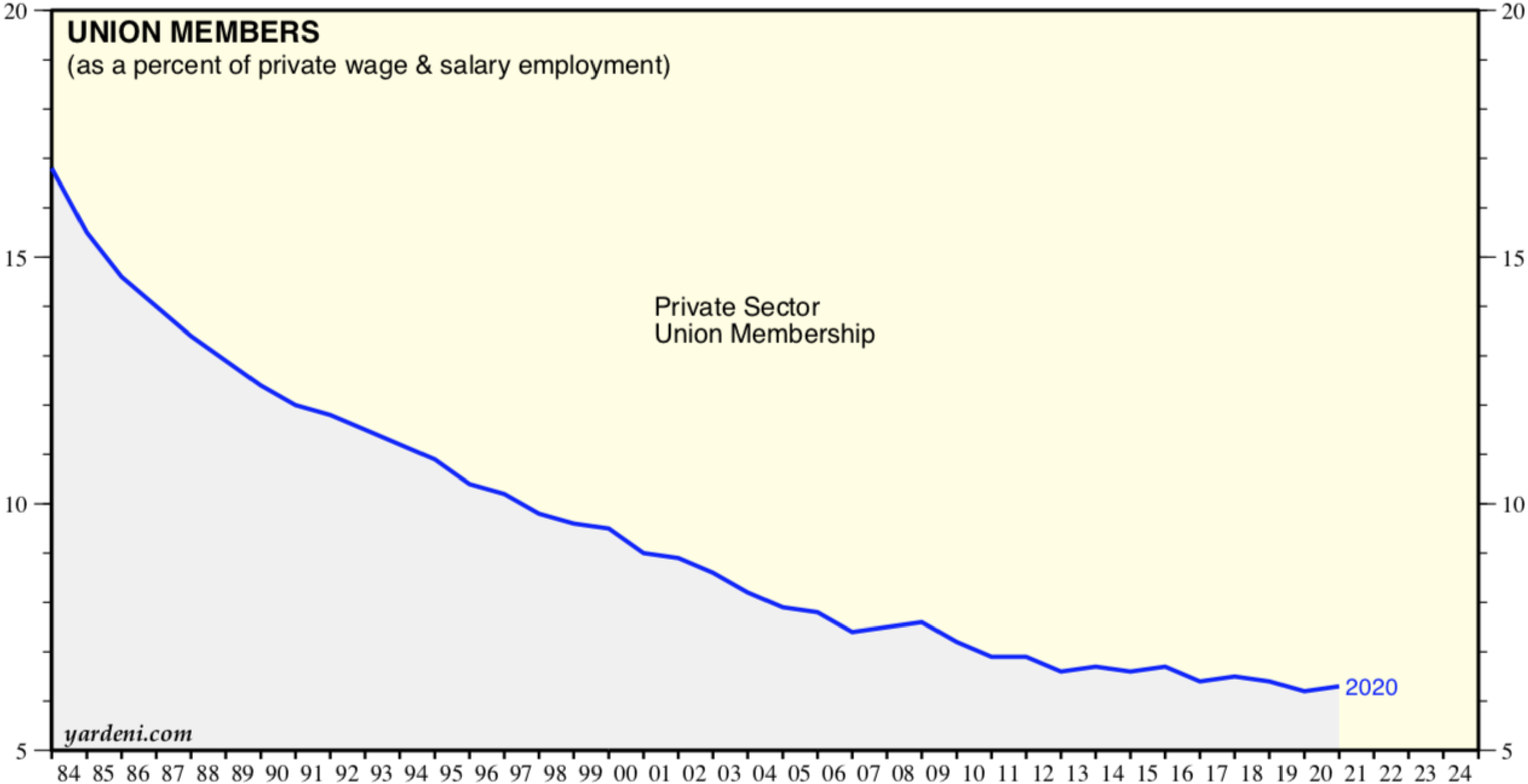


Note: Shaded areas are recessions according to the National Bureau of Economic Research.
Source: Bureau of Labor Statistics.

Source: Yardeni Research, Inc., with permission. November 1, 2021.

The Great Inflation: union membership and COLAs

Figure 6.

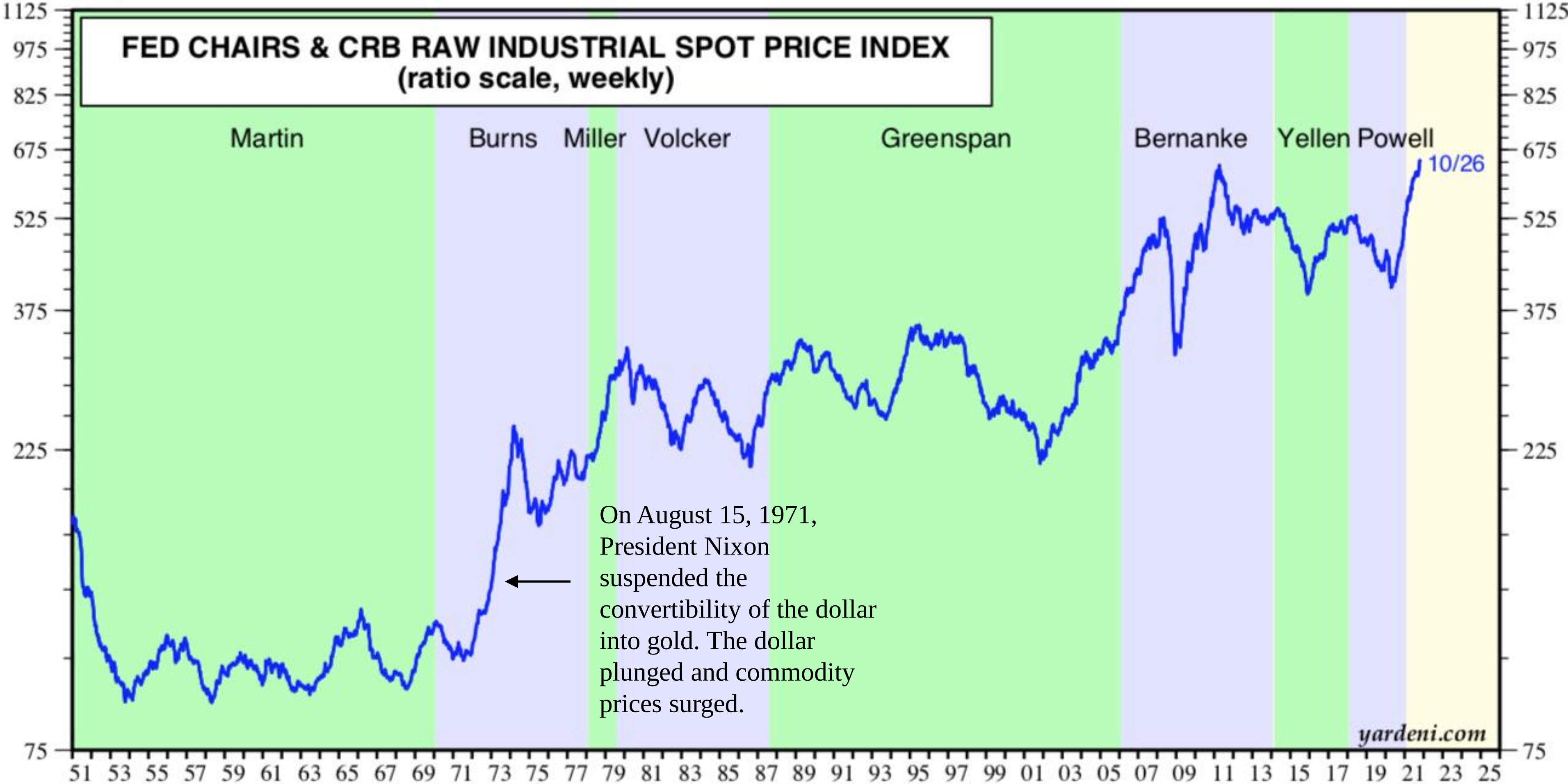


Source: Bureau of Labor Statistics.

Source: Yardeni Research, Inc., with permission. November 1, 2021.

The Great Inflation: end of Bretton Woods, August 1971

Figure 6.

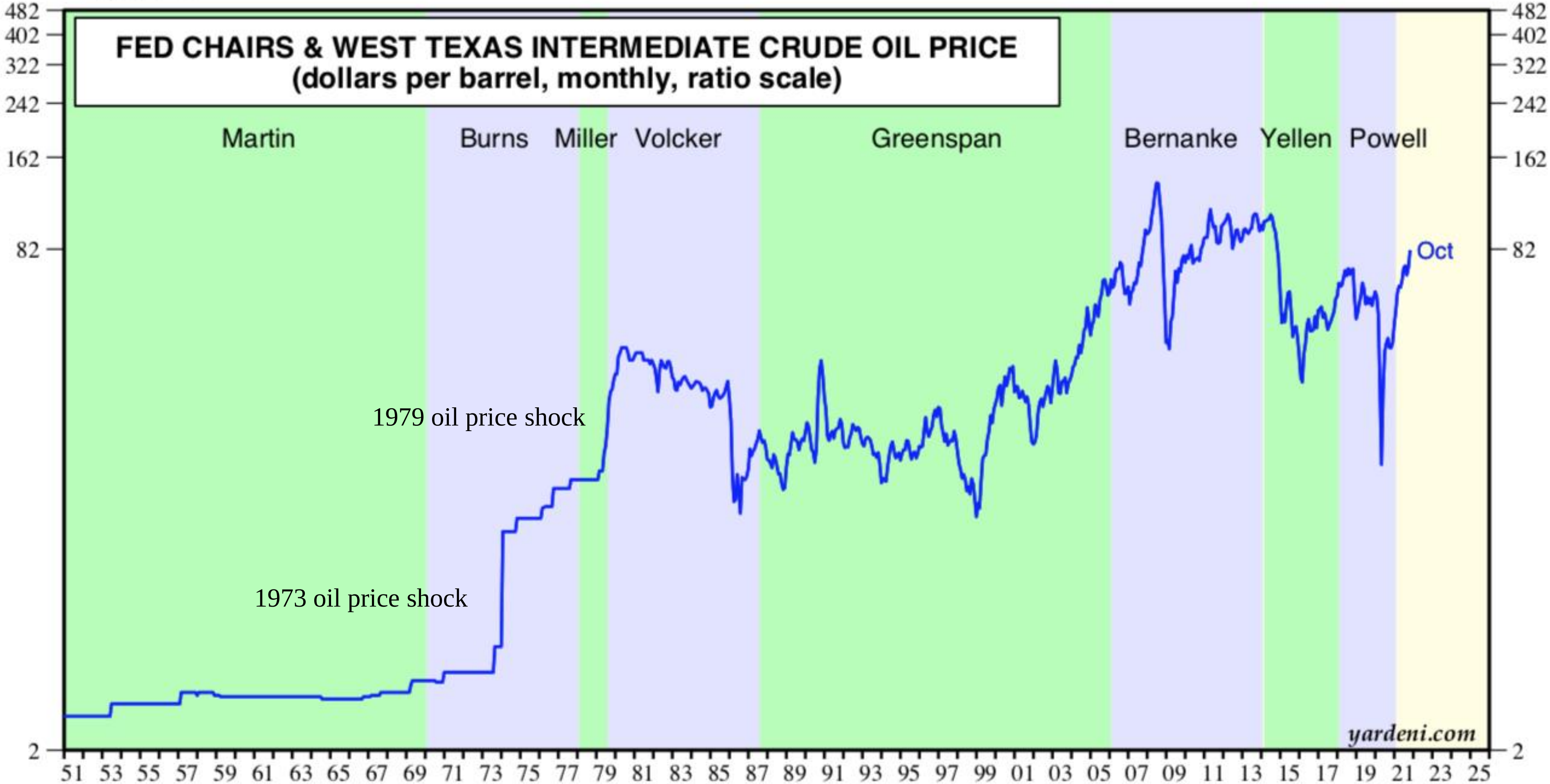


Note: Shades denote terms of Fed chairs.
Source: Commodity Research Bureau.

Source: Yardeni Research, Inc., with permission. November 1, 2021.

The Great Inflation: 1973 and 1979 oil shocks

Figure 4.



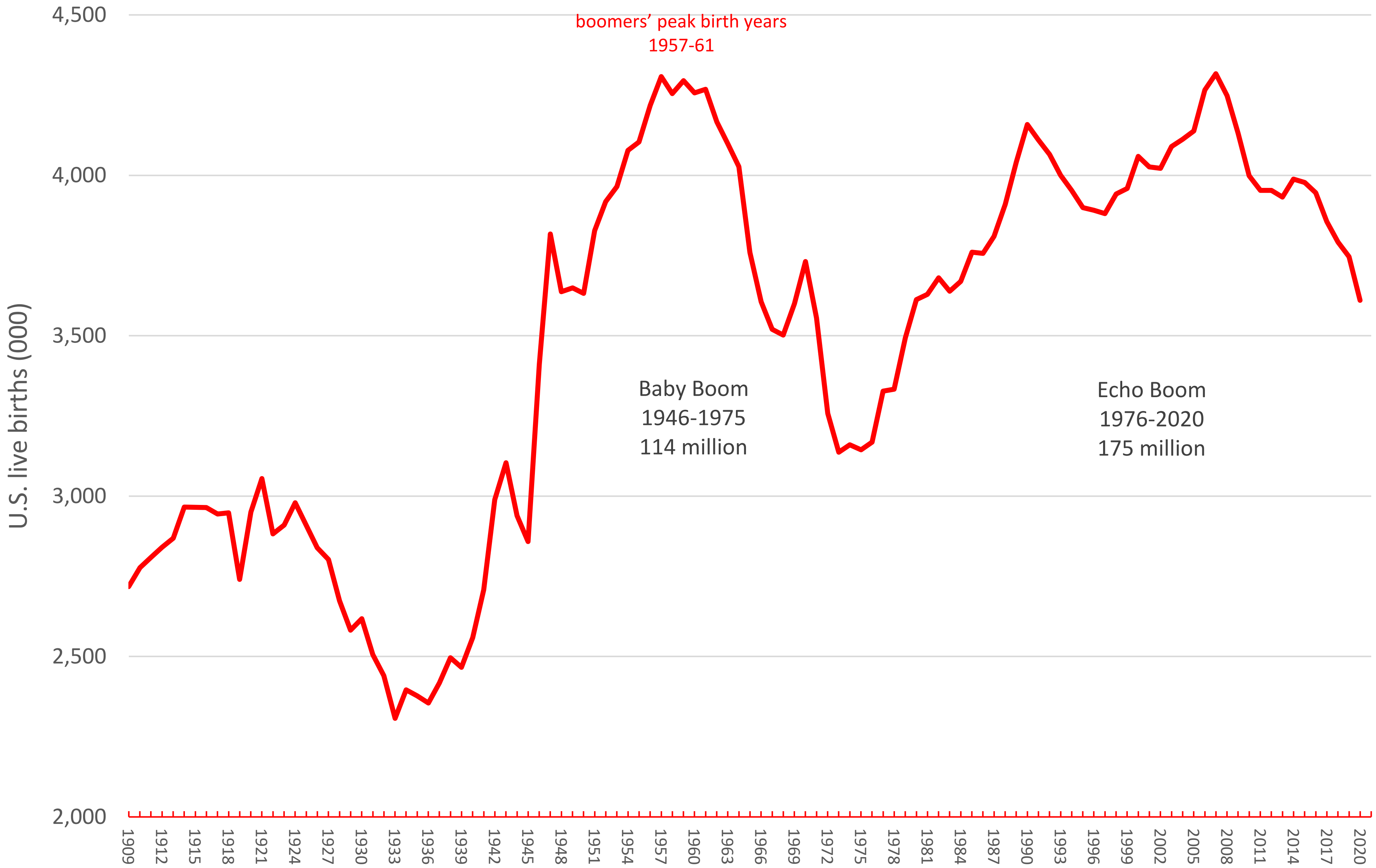
Note: Shades denote terms of Fed chairs.
Source: Haver Analytics.

Source: Yardeni Research, Inc., with permission. November 1, 2021.

Global demographics

- U.S. “echo boom” to drive a recovery in working age population growth
- immigration accounts for 48% of U.S. population growth
- global population bust
- *working-age population in Europe, Japan and China is already in decline*

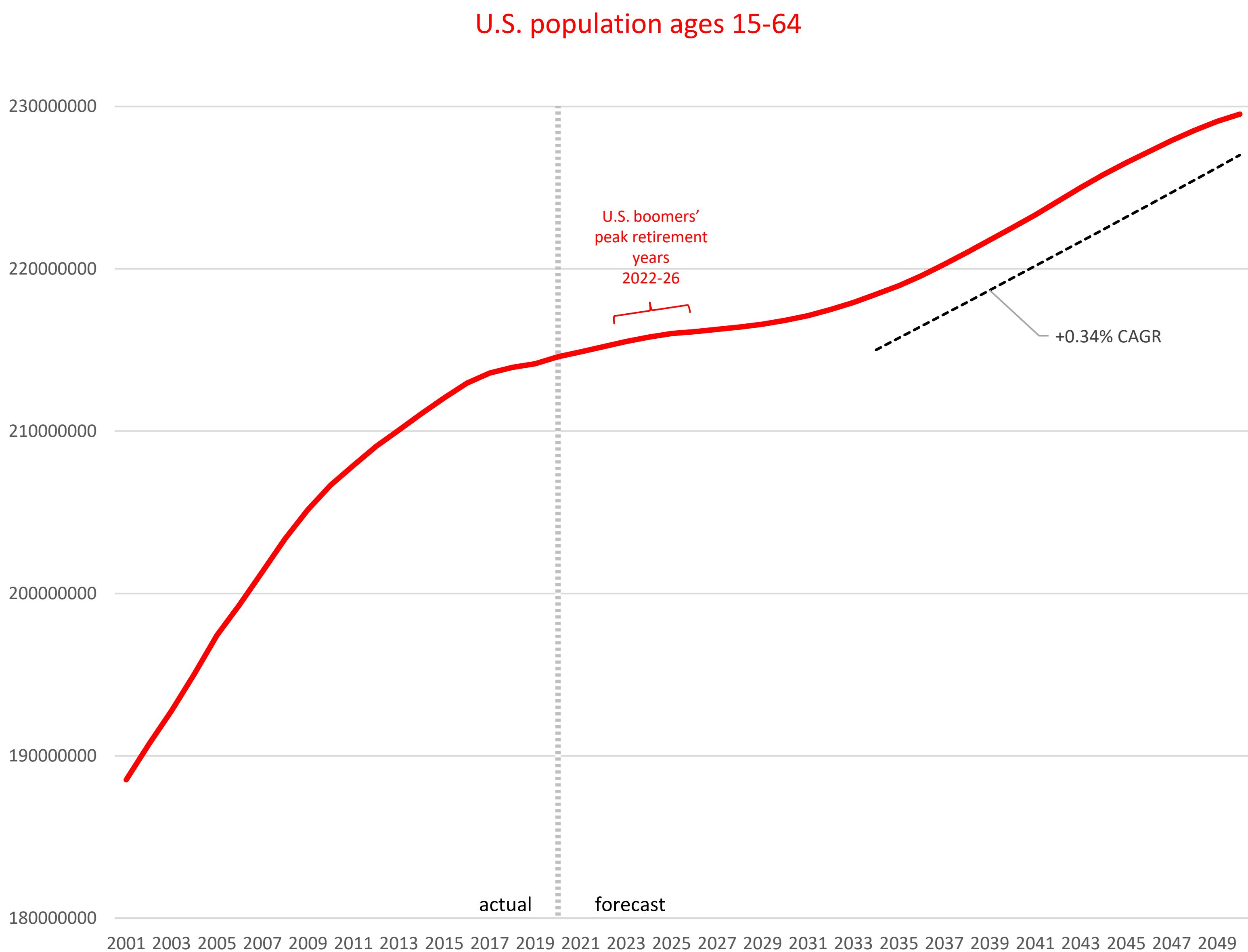
U.S. live birth profile



Source: U.S. Center for Health Statistics, annual data through 2020.

GDP growth potential = Δ productivity + Δ labor force

U.S. working age population forecast

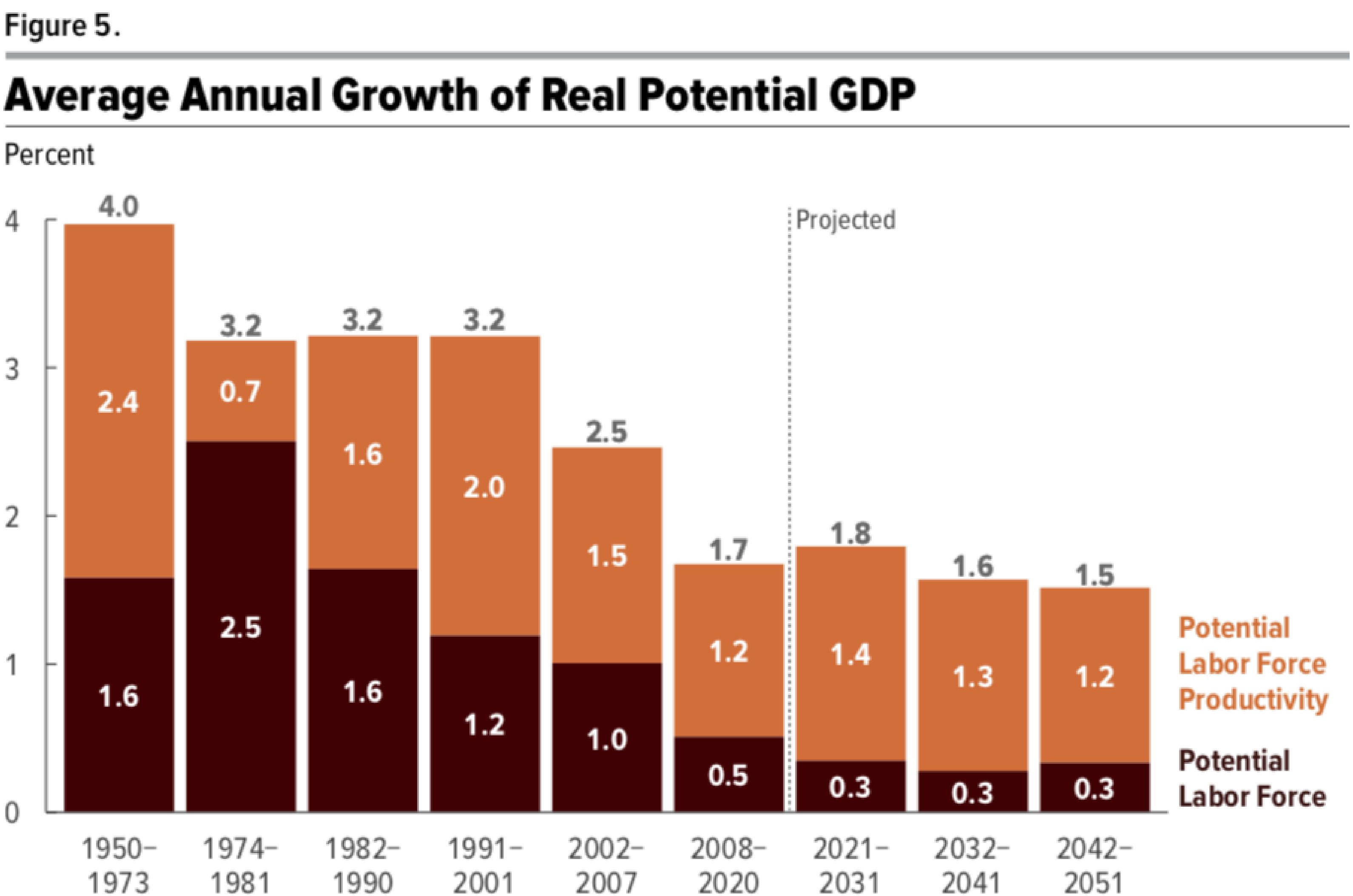


Source: World Bank, 2021. Data through 2020.

The U.S.'s prime working age population growth is set to slow to a crawl through 2030.

Thereafter, growth picks up to a trend rate of +0.34% CAGR.

GDP growth potential = Δ productivity + Δ labor force
CBO's potential growth calculations

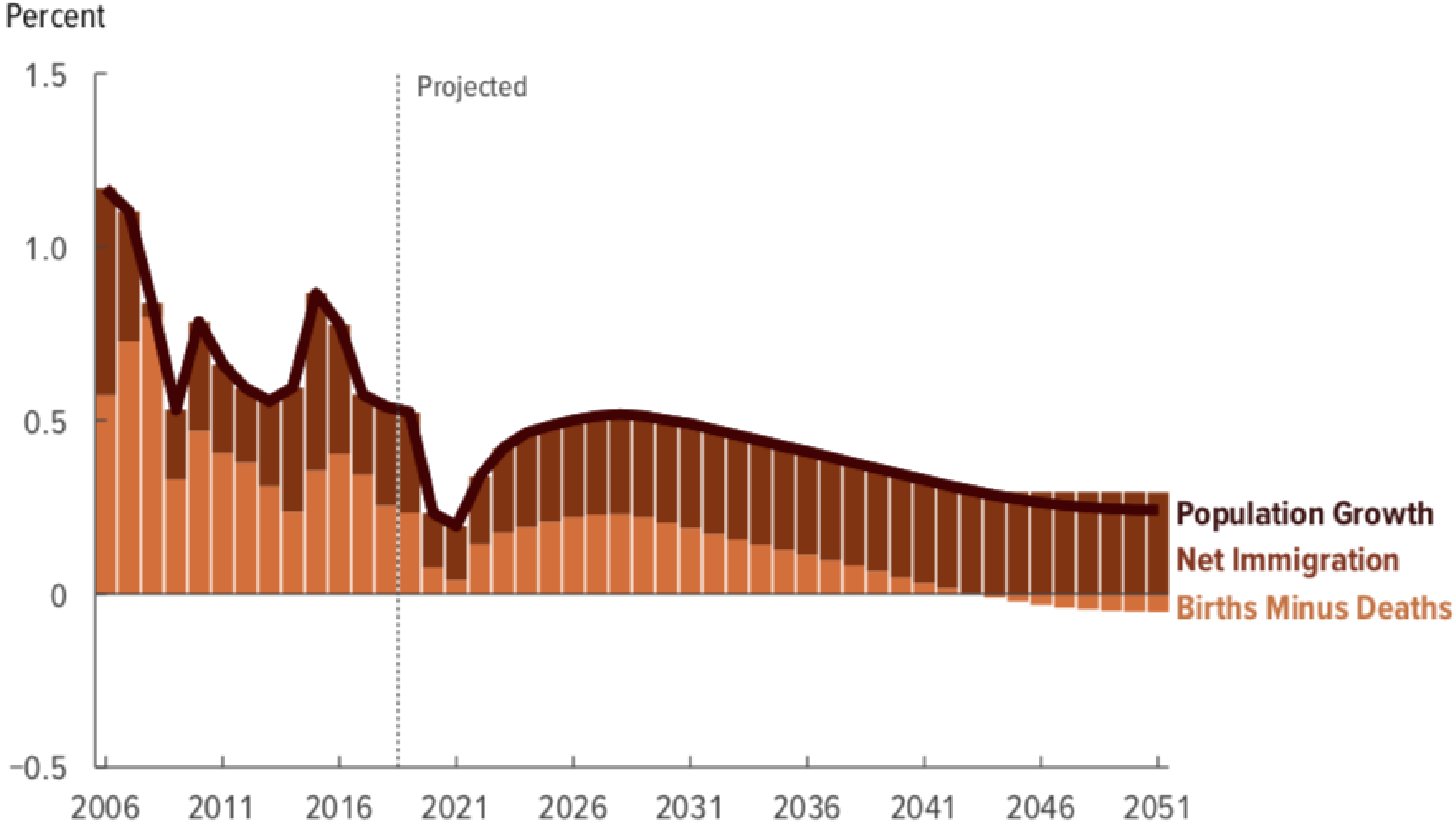


Source: Congressional Budget Office, *The Long-Term Budget Outlook,* released March 2021.

GDP growth potential = Δ productivity + Δ labor force
Immigration's impact on population growth

Figure A-1.

Demographic Factors That Contribute to Population Growth



Source: Congressional Budget Office, *The Long-Term Budget Outlook,* released March 2021.

GDP growth potential = Δ productivity + Δ labor force

Immigration

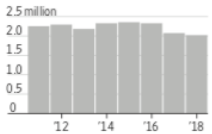
Immigration's Impact on Nation Grows

U.S. is relying more on newcomers, who now propel population gains in 10% of counties

By Janet Adamy And Paul Overberg

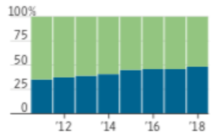
As growth slows...

Annual increase in U.S. population



... migrants' share is up...

Increase from: Natural growth / Immigration

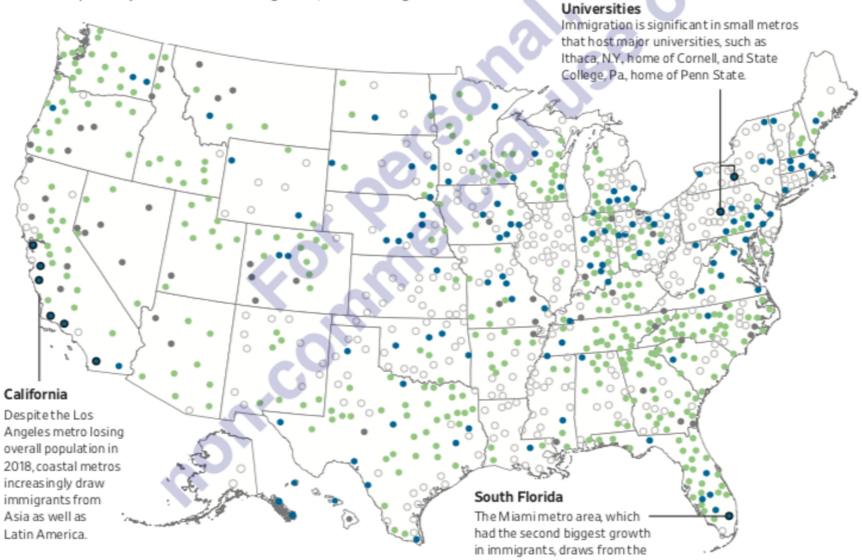


... fueled largely by arrivals in the East and South.

Number of migrants from abroad per 100,000 population from 2017-18, top destinations

Florida	825	Washington	406
Massachusetts	768	Maryland	374
New Jersey	524	Virginia	372
D.C.	511	Texas	366
Connecticut	462	New York	360
South Dakota	415	North Dakota	342

2017-2018 population change in U.S. metro areas



*International migration was greater than combined gain/loss from natural growth and domestic migration
Source: U.S. Census Bureau

Max Rust/THE WALL STREET JOURNAL

WASHINGTON—About one in 10 U.S. counties grew in the fiscal year that ended last June primarily because of immigration—a significant increase from 2011—showing how new arrivals are shaping the nation as the population ages and the birthrate slows, new census figures show.

The share of U.S. population growth that comes from immigration has risen steadily since the start of the decade, when the fallout from the financial crisis prompted many people to delay having children.

That fertility lull has lasted longer than expected, and it overlaps with a large cohort of baby boomers facing retirement and rising death rates.

The share of U.S. population growth attributable to immigrants hit 48% for the fiscal year ended June 30, 2018, up from 35% in fiscal 2011.

The result is a country that is becoming increasingly dependent on immigrants to fill jobs and fund programs like Social Security and Medicare, economists said.

"We have a situation where U.S. fertility rates are really low and we're not actively adding to the workforce through natural increase," said Aparna Mathur, a resident scholar of economic policy at the American Enterprise Institute, a conservative think tank in Washington. "We cannot afford to talk about immigrants as bad for the U.S. economy."

Separate federal statistics released last year suggest that a number of women who put off having babies after the 2007-09 recession are forgoing them altogether. The general fertility rate in 2017 for women age 15 to 44 was 60.2 births per 1,000 women—the lowest since the government began tracking it more than a century ago, according to the National Center for Health Statistics.

Kenneth M. Johnson, a senior demographer at the University of New Hampshire, estimated that lower teen fertility accounts for about one-third of the overall decline in births among U.S. women.

The increase in women attending college is another force behind the birth decline, researchers say, because women with more skills face a greater financial trade-off if they pause their careers for children.

Still, the continued decline has flummoxed demographers, who expected a greater recovery in birthrates as effects of the recession faded.

For the last fiscal year, 298 of the nation's 3,142 counties grew primarily because of immigration instead of a surplus of births over deaths and from people moving around the country, according to the new Census Bureau figures. That is up from 247 counties in 2011, the earliest data in the figures released Thursday.

These counties include parts of large metro areas, such as most of the San Francisco Bay and the counties that contain San Diego, Houston, Dallas, Miami and Boston, as well as some of their suburban counties.

Fourteen states and the District of Columbia drew on immigration for more than half of their growth last fiscal year, including Florida, Kansas, Michigan, Ohio, Pennsylvania and Virginia.

Since 2010, the biggest share of immigrants—41%—has come from Asia, according to separate census figures. A fifth, or 21%, has come from Mexico and Central America, a flow of migrants that President Trump has sought to stem.

President Trump has made securing the southern U.S. border a top priority, saying earlier this month that the country couldn't take more immigrants because it's full.

Demographers said that maintaining a flow of immigrants, who are typically younger, is key to preventing the U.S. from becoming an older society where spending on the elderly absorbs an outsize share of the federal budget. The census numbers don't distinguish between legal and illegal immigrants.

The White House didn't respond to a request for comment Wednesday.

Advocates of immigration restrictions said that immigrants alone can't make up for an aging workforce or sufficiently fund entitlement shortfalls. "The bottom line is that it would take a ridiculous level of immigration to come close to maintaining even the current ratio of workers to nonworkers," said Steven Camarota, demographer and director of research at the Center for Immigration Studies. "Immigration isn't going to fix Social Security."

Almost one million people came to the U.S. last year, according to the census estimates. Though that is up 3% from 2017 and 5% from the average since the 2010 census, it is in line with longer-term averages.

Growth from immigration is spreading beyond traditional immigrant gateways. More than half of U.S. metropolitan areas gained more residents from abroad than they did from the rest of the country last fiscal year, the new census figures show.

—Louise Radnofsky contributed to this article.

The U.S. "is becoming increasingly dependent on immigrants to fill jobs and fund programs like Social Security and Medicare."

Netflix is the new birth control!

Words for Killing a Romantic Mood: Let's Watch Netflix

* * *

Is streaming video contributing to the nation's declining fertility rate?

By Shalini Ramachandran

Once upon a time, Netflix dates were synonymous with romance, best captured by the viral hashtag #NetflixandChill, a euphemistic suggestion disguised as an invitation to watch TV.

These days, the literal chill of the on-demand streaming video service is so great that some young couples call it the new birth control.

Consider this recent episode: Tony Lozzi, 35, tucked his children into bed and went downstairs to find his wife, Amber, streaming Netflix. She had been trying to get pregnant again, and he was in a romantic mood.

Death of kiss

She made a counterproposal. "Or we could watch 'The Prophet,'" she said, referring to an animated movie based on a book by Lebanese-American author Kahlil Gibran.

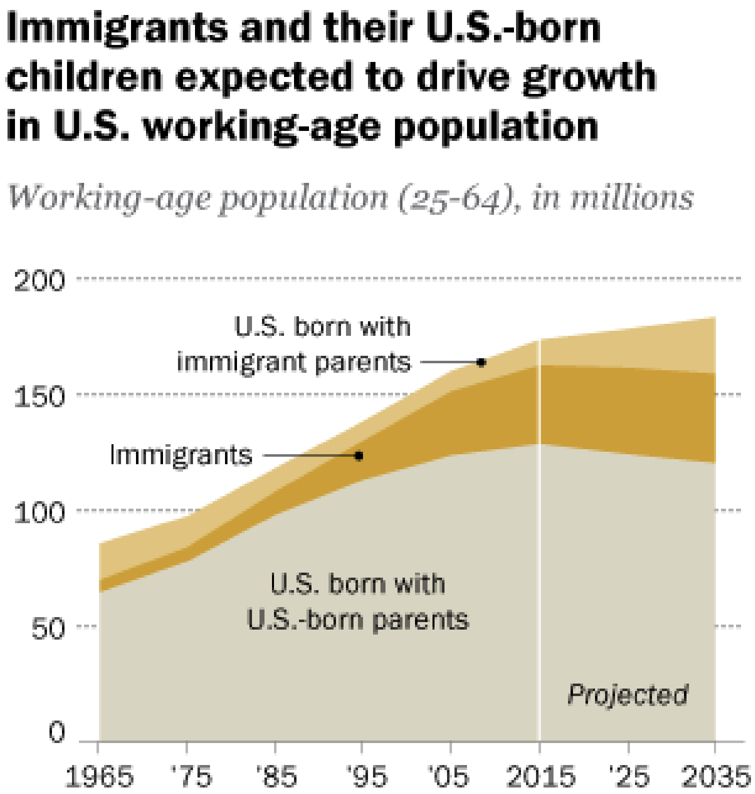
"I'm a mom," the 31-year-old digital-marketing strategist explains. "I literally just want to Netflix and chill. We stop there."

Please turn to page A8

Source: *The Wall Street Journal*, April 18, 2019.

GDP growth potential = Δ productivity + Δ labor force

Immigration



Without future immigration the U.S. working-age population would decrease.

Source: Pew Research Center, *Immigration projected to drive growth in U.S. working-age population through at least 2035,* published March 8, 2017.

GDP growth potential = Δ productivity + Δ labor force

Working-age population forecasts

Figure 15.

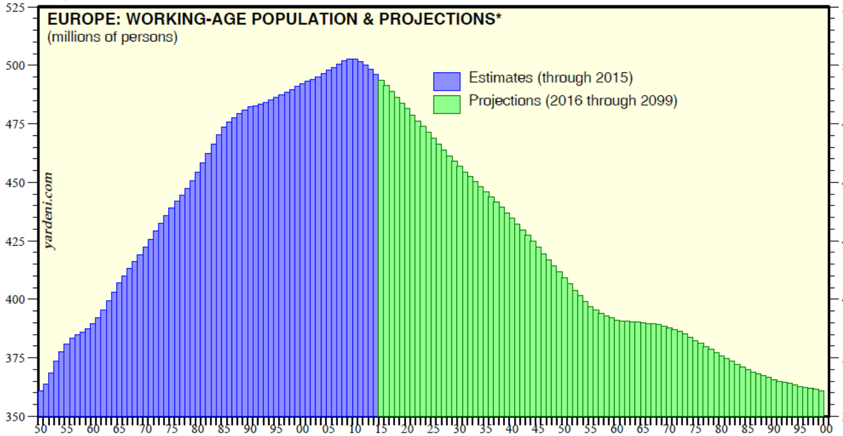


Figure 4.

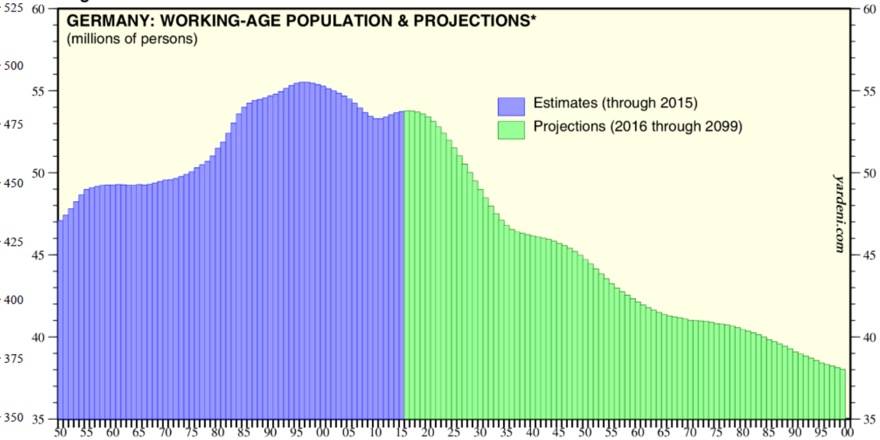


Figure 3.

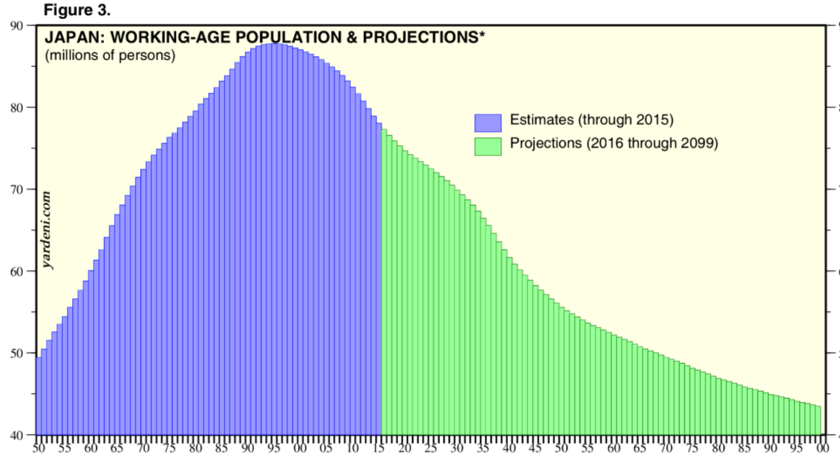


Figure 14.

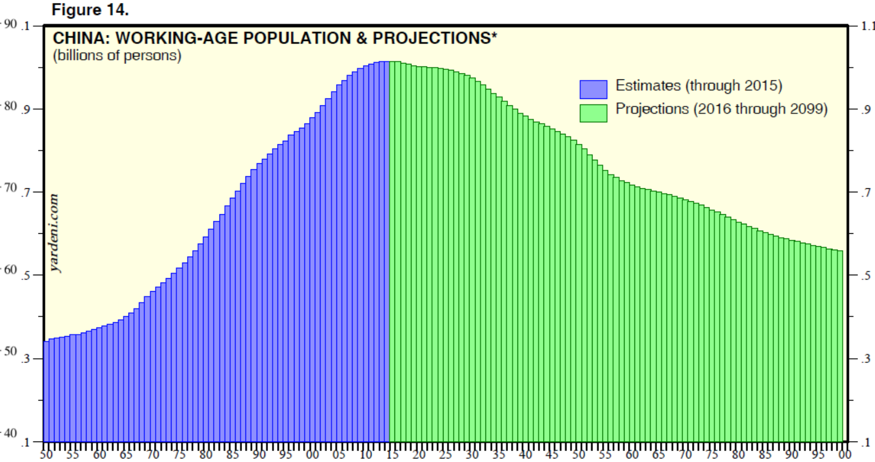
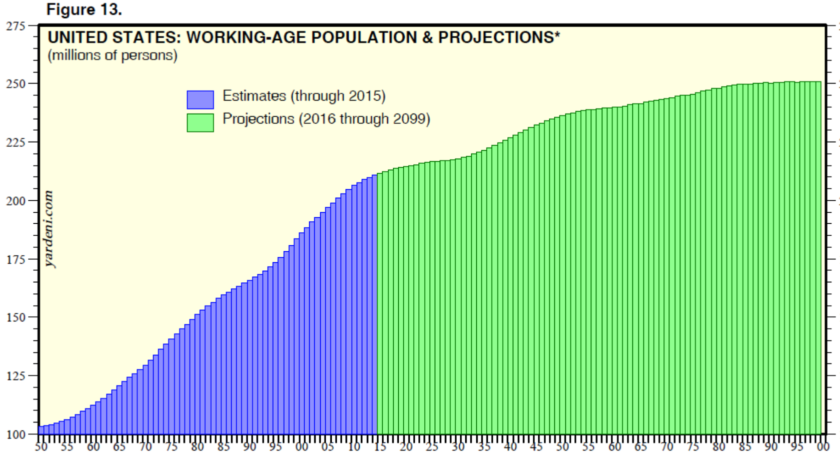


Figure 13.



<u>U.S. demographics are favorable for long-term economic growth</u> in contrast to the world's other major economies.

* Persons 15-64 years old.
Source: United Nations.

Source: United Nations, illustrated by Yardeni Research, Inc., with permission.

Global population bust

FOREIGN AFFAIRS

REVIEW ESSAY

The Population Bust

Demographic Decline and the End of Capitalism as We Know It

By Zachary Karabell September/October 2019

"We do not face the challenge of a population bomb but a population bust—a relentless, generation-after-generation culling of the human herd."

Almost every country in Europe now has a fertility rate below the 2.1 births per woman that is needed to maintain a static population. … That trend is well under way in Japan, whose population has already crested, and in Russia, where the same trends, plus high mortality rates for men, have led to a decline in the population.

What is striking is that the population bust is going global almost as quickly as the population boom did in the twentieth century.

Fertility rates in China and India, which together account for nearly 40 percent of the world's people, are now at or below replacement levels. So, too, are fertility rates in other populous countries, such as Brazil, Malaysia, Mexico, and Thailand. Sub-Saharan Africa remains an outlier in terms of demographics, as do some countries in the Middle East and South Asia, such as Pakistan, but in those places, as well, it is only a matter of time before they catch up, given that more women are becoming educated, more children are surviving their early years, and more people are moving to cities.

Source: Foreign Affairs, September/October 2019.

Global population bust

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The Lancet: World population likely to shrink after mid-century, forecasting major shifts in global population and economic power

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Publication date:
July 14, 2020

Reposting of press release published by The Lancet

- ***By 2100, projected fertility rates in 183 of 195 countries will not be high enough to maintain current populations without liberal immigration policies.***
- ***World population forecasted to peak in 2064 at around 9.7 billion people and fall to 8.8 billion by century's end, with 23 countries seeing populations shrink by more than 50%, including Japan, Thailand, Italy, and Spain.***
- ***Dramatic declines in working age-populations are predicted in countries such as India and China, which will hamper economic growth and lead to shifts in global powers.***
- ***Liberal immigration policies could help maintain population size and economic growth even as fertility falls.***
- ***Authors warn response to population decline must not compromise progress on women's freedom and reproductive rights.***

Source: IHME, July 14, 2020.

Global population bust

Landmark UW study projects dramatic plunge in global population

by KOMO News Staff | Wednesday, July 15th 2020

SEATTLE - A dramatic decline in the human fertility rate will trigger a drop in the global human population by 2100, ushering in convulsive changes to world civilization, says a new study by the University of Washington.

The study, carried out by UW's Institute for Health Metrics and Evaluation, projects that the average number of children a woman delivers over her lifetime will drop from 2.4 today to 1.7 by the end of the century - far below the replacement level of 2.1 births per woman. In 1950, an average of 4.7 children were being born for every woman worldwide.

As a result, nearly every country on the planet will have a declining population by the end of the century. The study projects that world population will likely peak in 2064 at around 9.7 billion, and then decline to about 8.8 billion by 2100 - about 2 billion lower than some previous estimates.

Some countries could see their populations drop by more than half, including Japan (from around 128 million people in 2017 to 60 million in 2100), Thailand (71 million to 35 million), Spain (46 million to 23 million), Italy (61 million to 31 million), Portugal (11 million to 5 million), and South Korea (53 million to 27 million).

An additional 34 countries are expected to have population declines of 25 to 50%, including China (1.4 billion in 2017 to 732 million in 2100).

Fewer births and longer life expectancy will also mean a drastically older population in most of the world and a much smaller working-age population. That fact alone will have massive implications, as nations squeeze more taxes from an ever-smaller working class to support an expanding elderly class with growing medical needs.

Source: KOMO News online, July 15, 2020.

If the U.N.’s Sustainable Development Goals for education and contraceptive use are met in full, the researchers estimate that population could be as low as 6.29 billion in 2100. That would be 33% lower than the lowest current U.N. projection, and around 1.5 billion fewer than Earth’s population today.

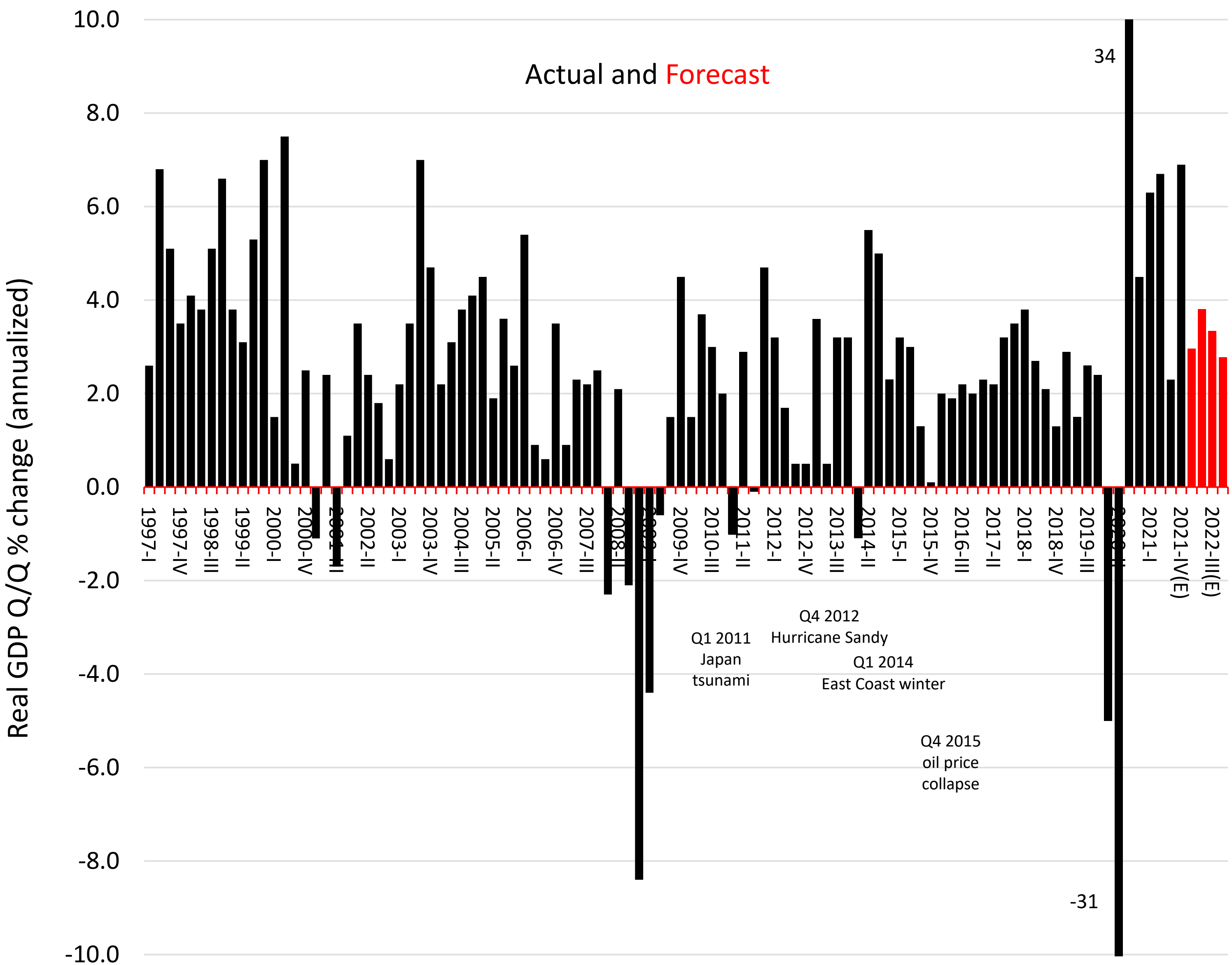
Source: *The Wall Street Journal*, July 28, 2020.

Economy after Covid-19

- collapse in the data
- consensus V-shaped recovery
- stronger-than-expected recovery

Consensus GDP forecast

Huge contraction with V-shaped recovery

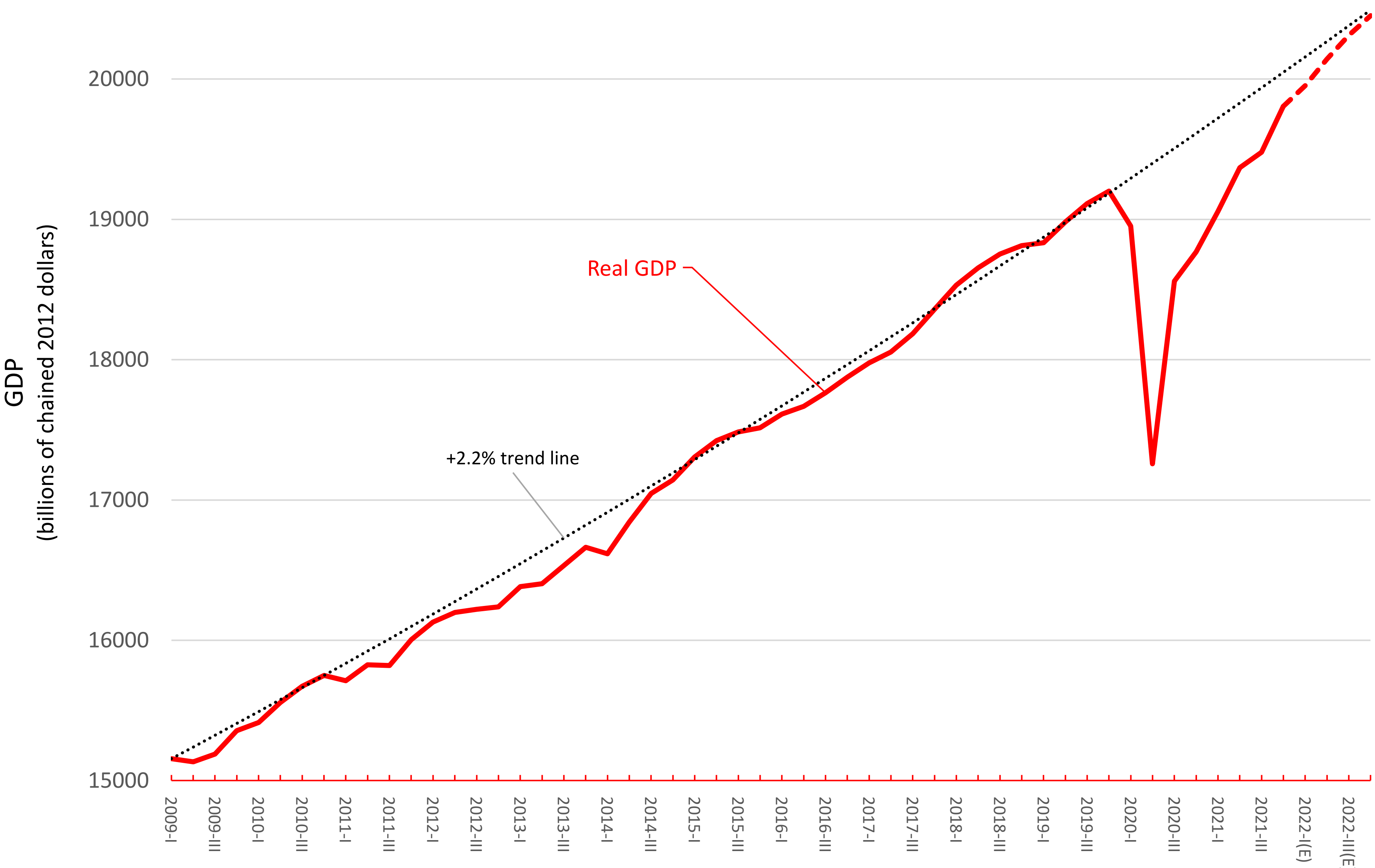


The 60 economists surveyed in early-January see continued expansion over the five quarters ahead.

Sources: Bureau of Economic Analysis, actual quarterly data through December 2021. *The Wall Street Journal* survey released January 2022.

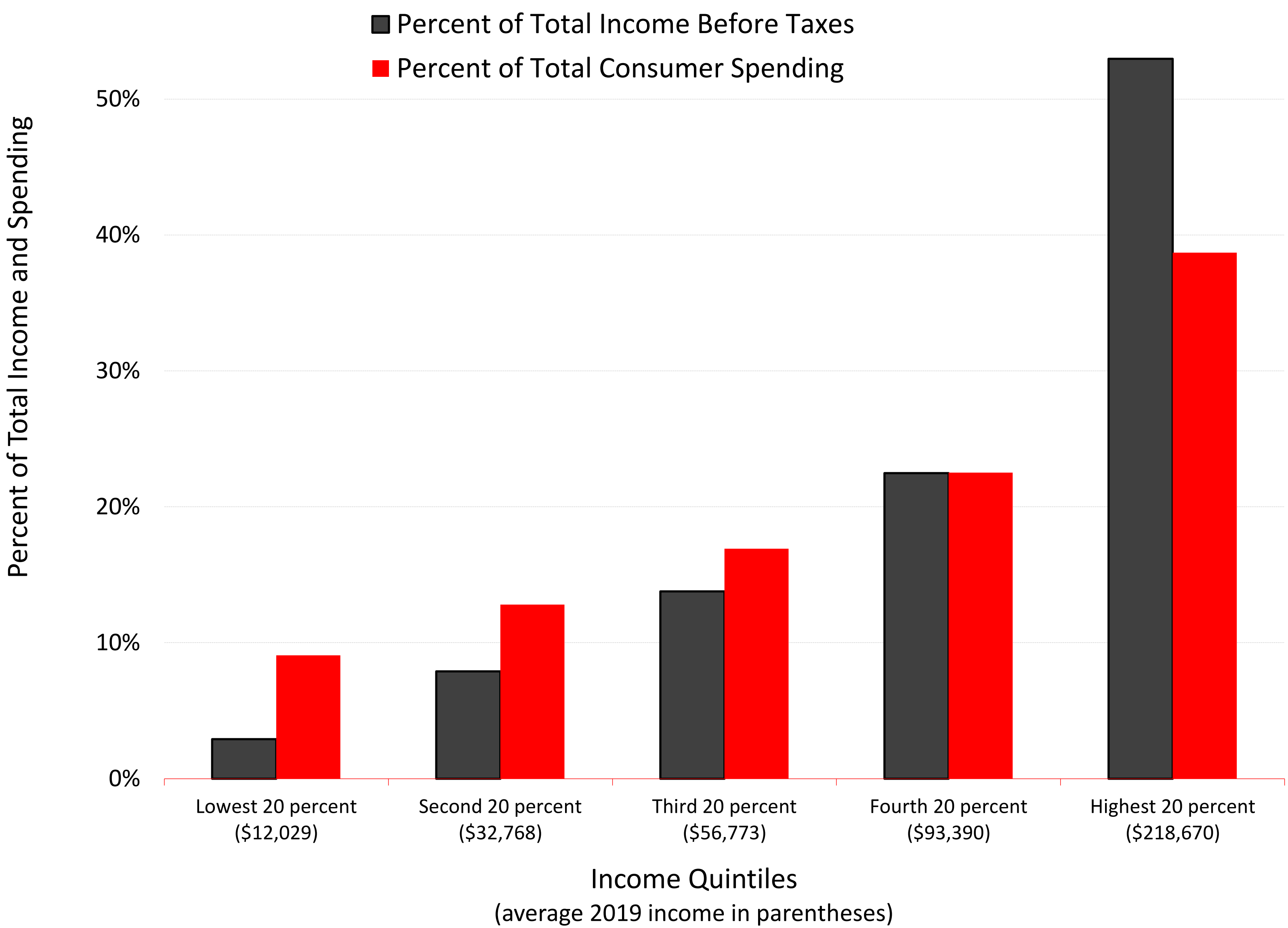
Consensus GDP forecast

V-shaped consensus forecast (WSJ survey)



Sources: Bureau of Economic Analysis, actual quarterly data through December 2021. *The Wall Street Journal* survey released January 2022.

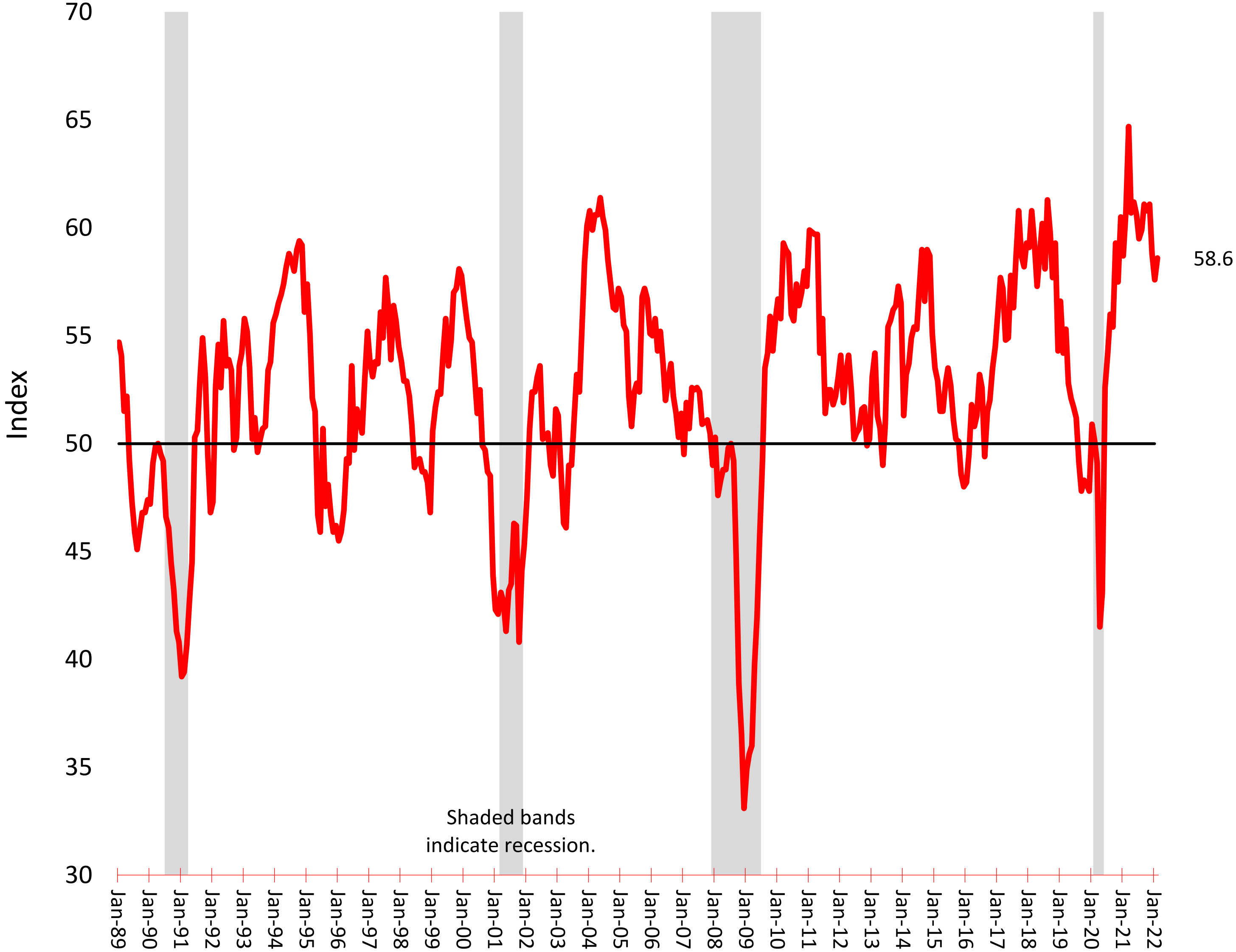
Distribution of consumer income and spending



Consumer spending is heavily skewed toward higher income consumers.

Source: BLS, Consumer Expenditure Survey 2019, released September 2020.

ISM manufacturing PMI – strong



February at 58.6.

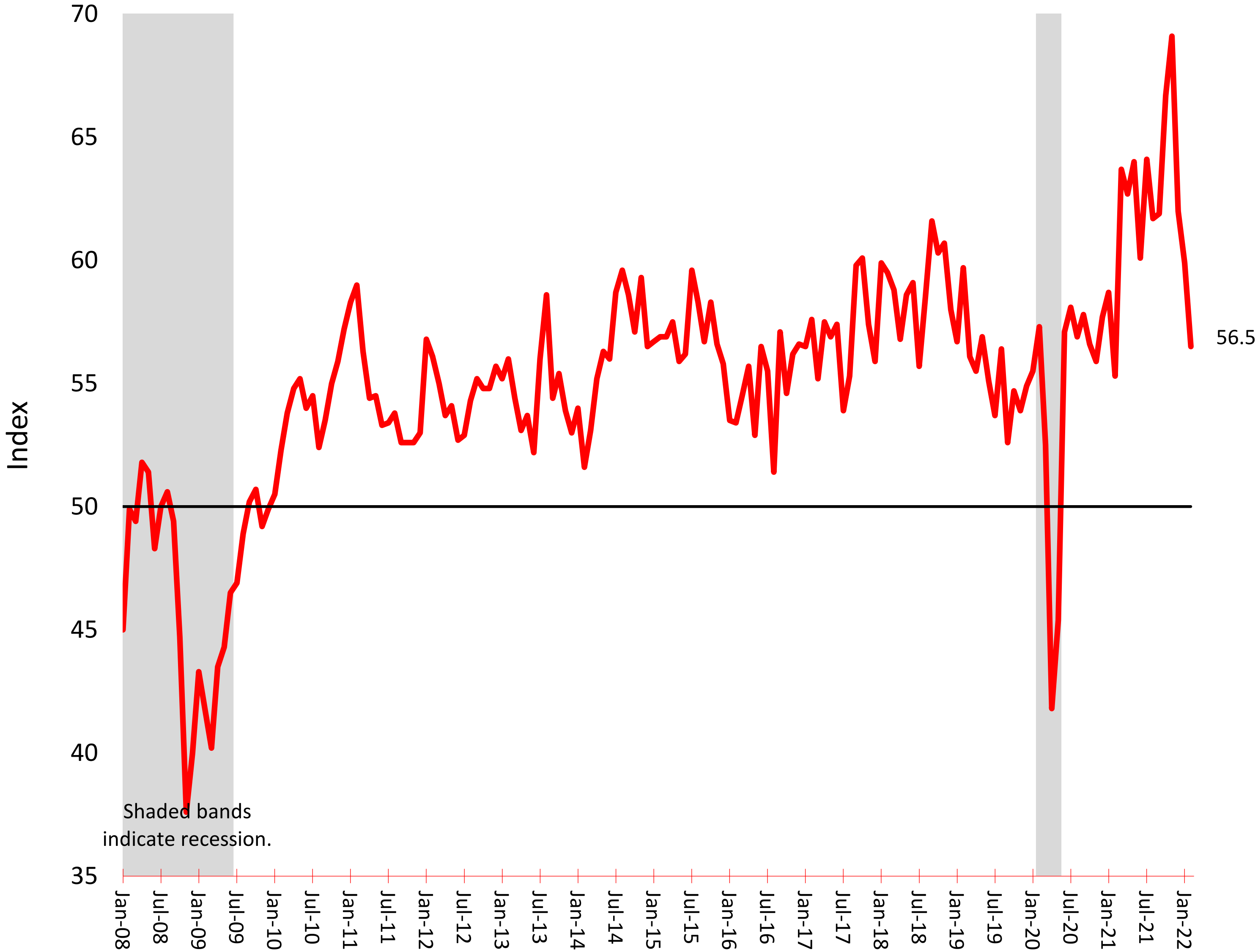
February new orders 61.7.

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 2022, Institute for Supply Management. Data through February 2022.
ISM: “A reading above 50 percent indicates that the manufacturing economy is generally expanding; below 50 percent indicates that it is generally contracting. A PMI in excess of 42.9 percent, over a period of time, generally indicates an expansion of the overall economy.”

ISM services PMI



February at 56.5.

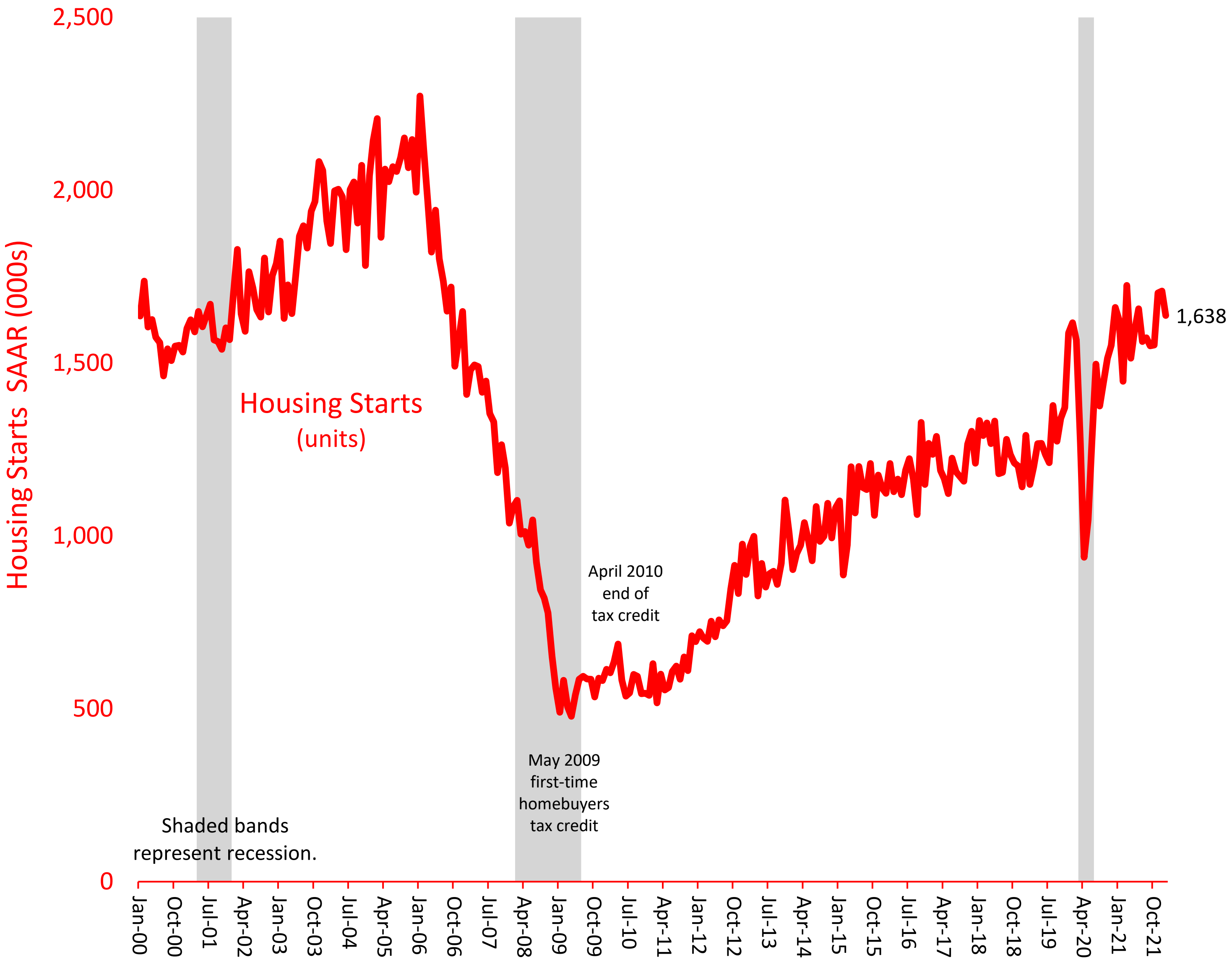
February new orders 56.1.

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

Source: Copyright 2022, Institute for Supply Management; data through February 2022. This data series was created in 2008. ISM: “A reading above 50 percent indicates that the non-manufacturing economy is generally expanding; below 50 percent indicates that it is generally contracting.” “An NMI® above 48.6 percent, over time, generally indicates an expansion of the overall economy.” [1]Value added as a percent of GDP.

Economic data

Housing starts – boom



1.638 million in January.

January permits at 1.899 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 January 2022.
[1] *Economic Report of the President*, Council of Economic Advisors, February 2018

Housing shortage

THE WALL STREET JOURNAL.

U.S. Home Shortage Nears 4 Million Units

Freddie Mac report.

The U.S. housing market is 3.8 million single-family homes short of what is needed to meet the country's demand.

Single-family housing starts rose last year to 991,000 units. … Home builders would need to construct between 1.1 million and 1.2 million single-family homes a year to meet long-term demand, but the start rate would need to be even higher to shrink the existing deficit.

Source: *The Wall Street Journal*, April 16, 2021.

Housing shortage

THE WALL STREET JOURNAL.

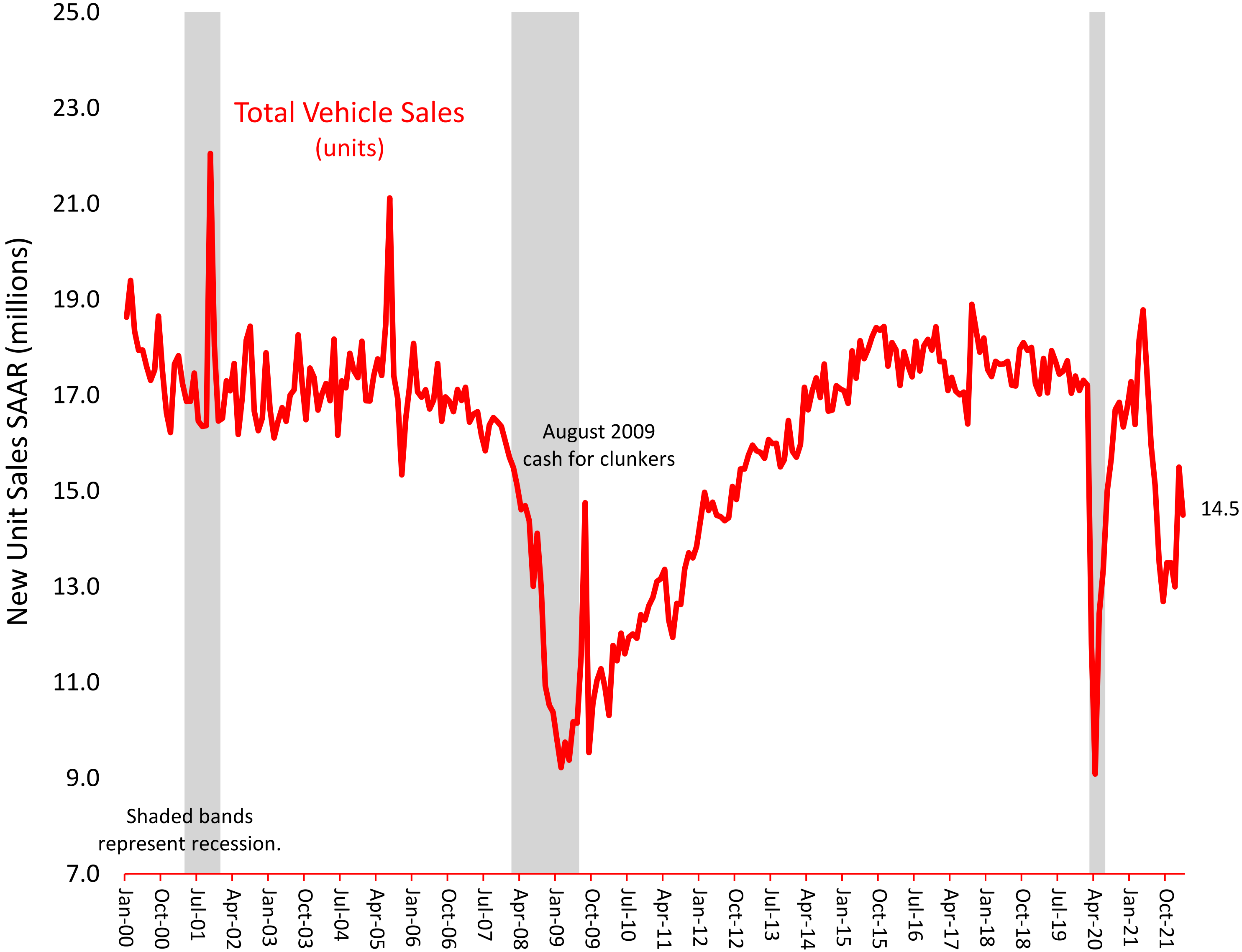
Housing Deficit Is Put at 5.5 million

National Association of Realtors report.

The report also says that from 2010 to 2020, new home construction fell 6.8 million units short of what was needed to meet household-formation growth and replace units that were aging or destroyed by natural disasters.

Source: *The Wall Street Journal*, June 17, 2021.

Vehicle sales

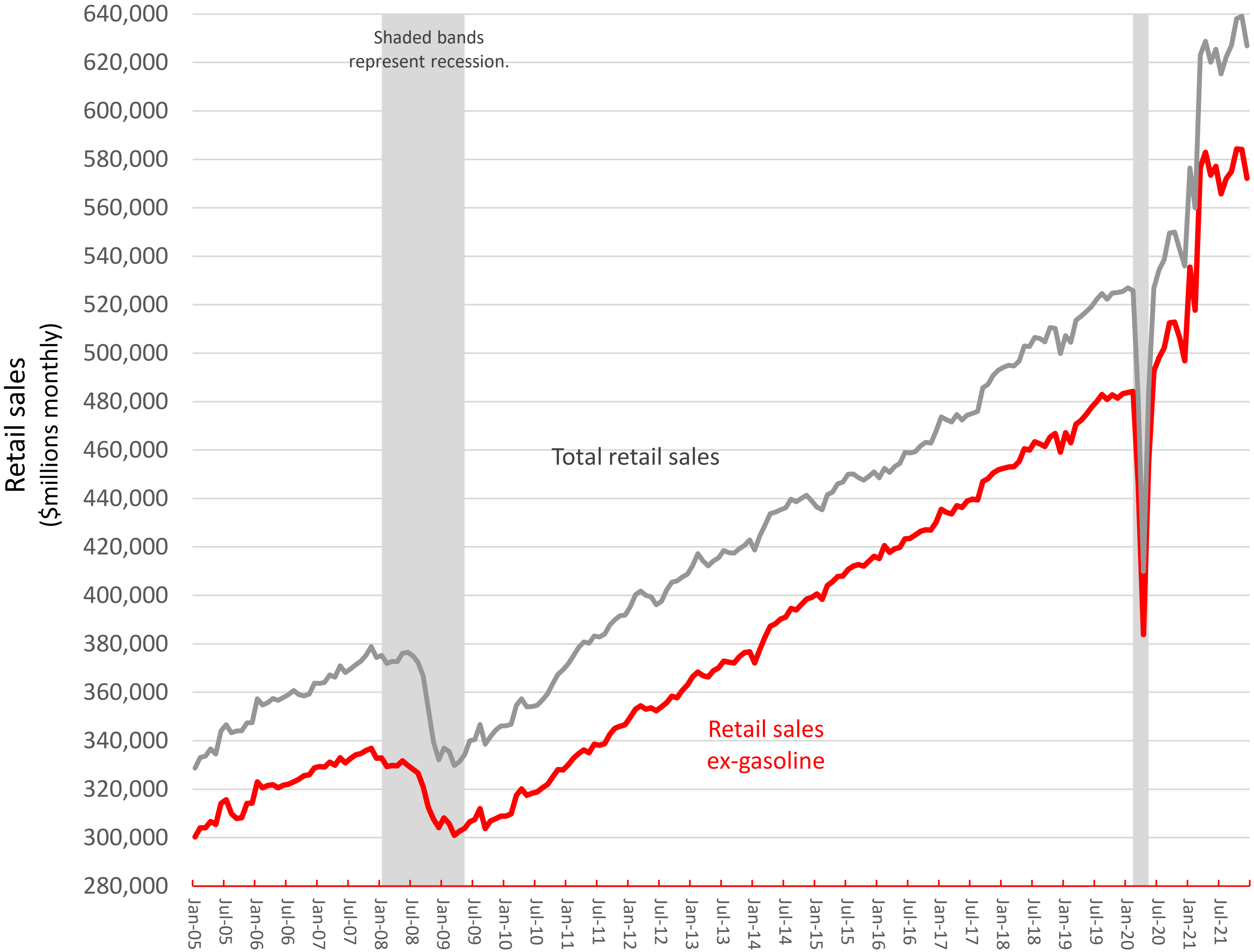


Car sales collapsed with coronavirus. Impressive rebound followed by parts-shortage contraction and partial recovery.

Sources: BEA. Data through February 2022.

Economic data

Retail sales – coronavirus collapse, resurgence



December retail sales up +17.0% y/y; and up -1.9% m/m.

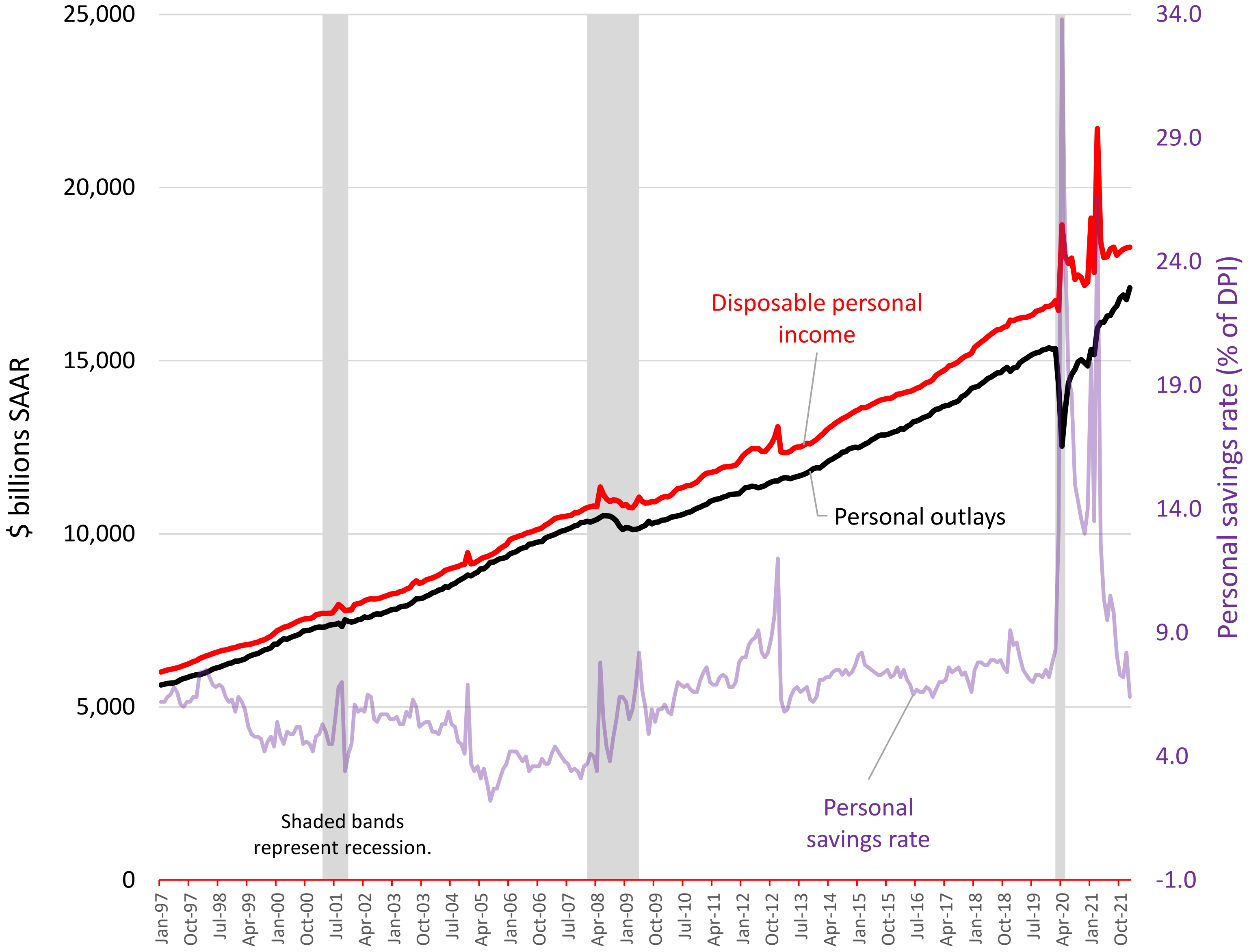
December retail sales ex-gasoline up +15.2% y/y; and up -2.0% m/m.

Retail sales are mostly goods (12% services) and comprise 30% of GDP.

Source: U.S. Census Bureau. Data through December 2021.

Consumer income

Disposable personal income, spending and saving



DPI is still strong despite having come off its March surge from the third round of Covid relief checks to consumers.

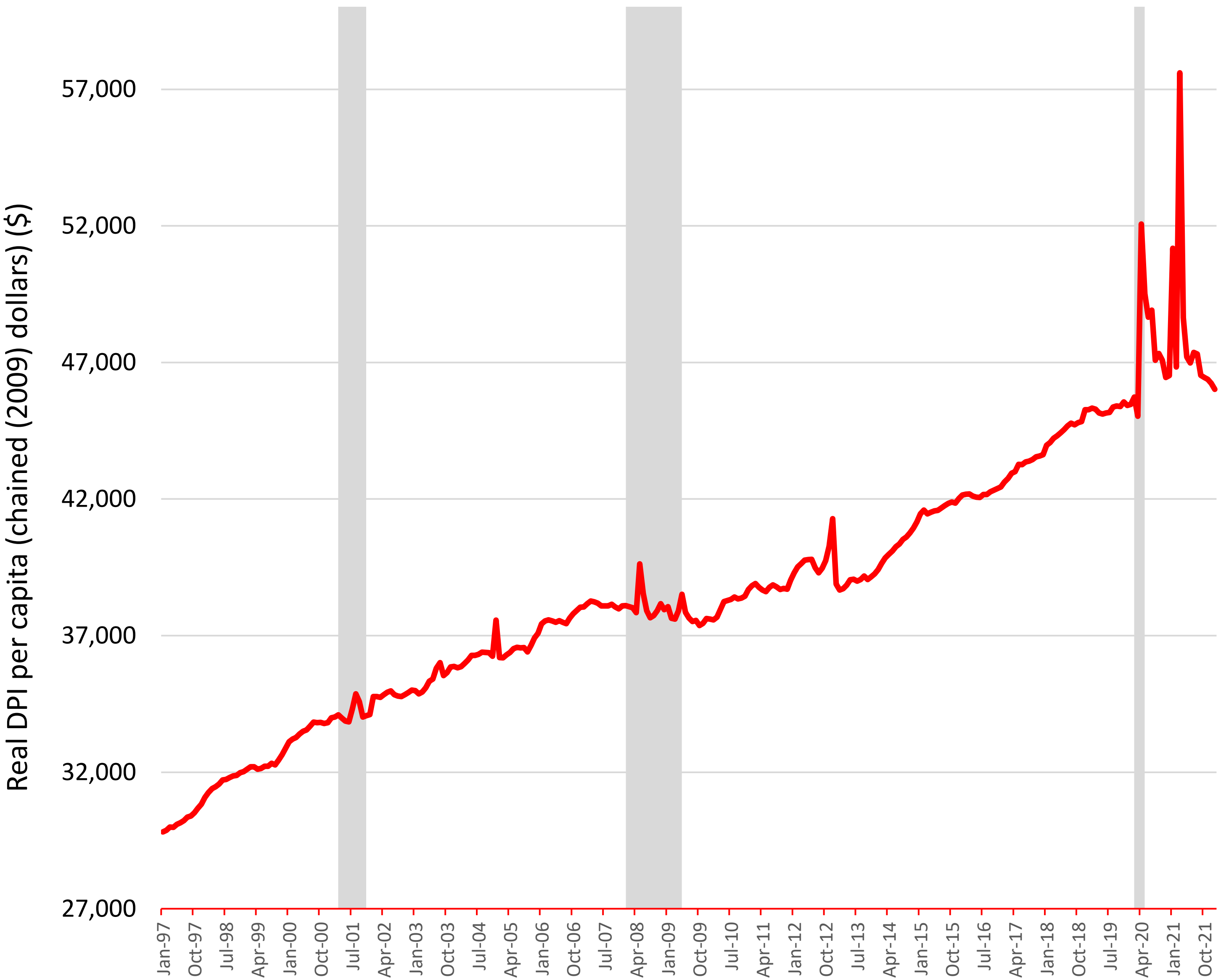
Personal outlays up +11.6% y/y, much stronger than pre-Covid trend.

The savings rate, at 6.4%, is back to pre-Covid levels.

Source: Bureau of Economic Analysis, monthly data through January 2022.

Consumer income

Real disposable personal income per capita



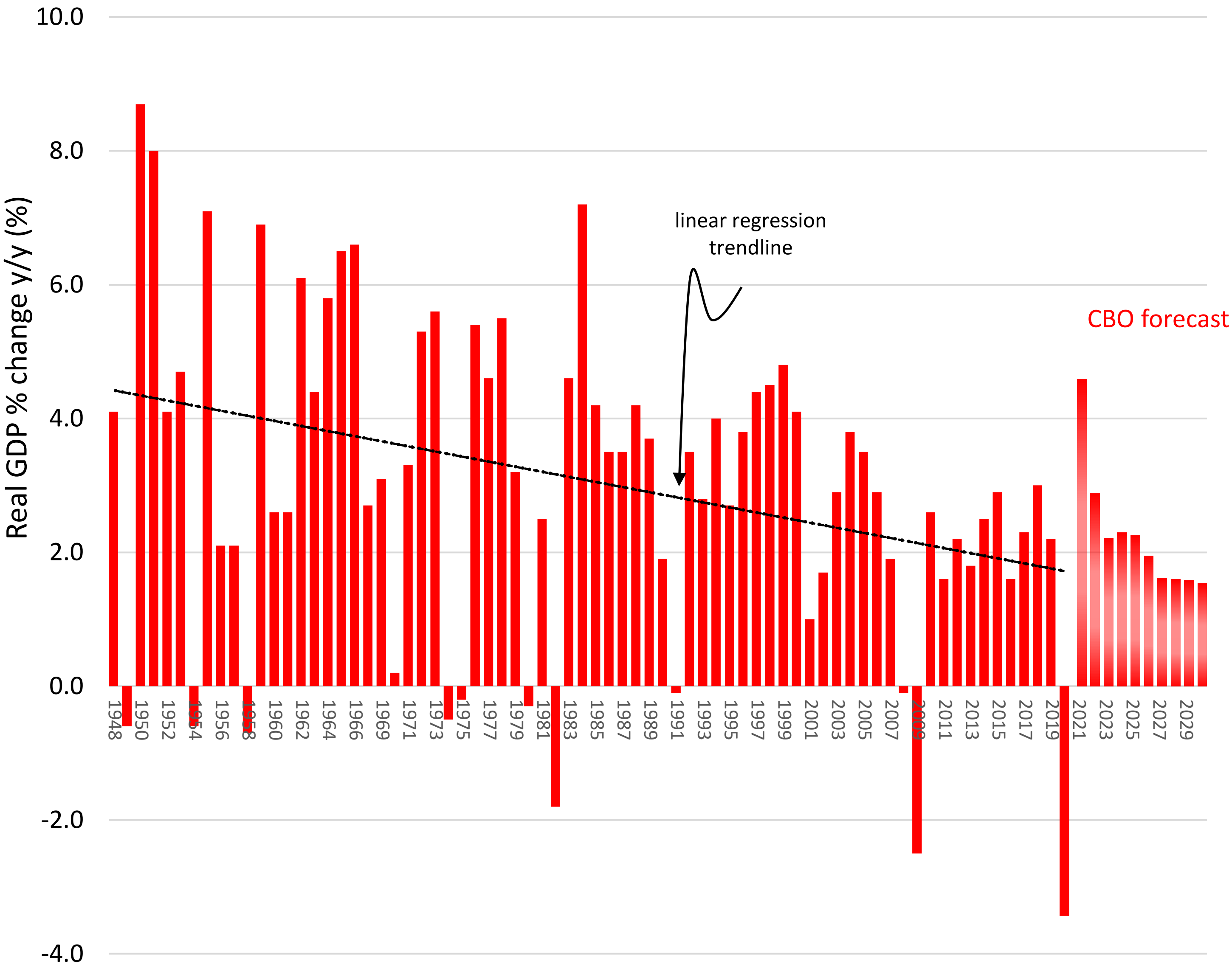
Inflation is cutting into real income.

Real DPI per capita is down -10.1% y/y.

Sources: Bureau of Economic Analysis, monthly data through January 2022.

GDP growth

CBO's February 2021 forecast



Since the 1950s, U.S. GDP growth has been gradually slowing, principally due to slower population growth and declining labor force participation.

Sources: BEA, CBO. Actual annual data through 2020; and CBO forecast through 2031 dated February 2021 from the CBO's report *An Overview of the Budget and Economic Outlook: 2021 to 2031.*

GDP growth potential = Δ productivity + Δ labor force

Productivity

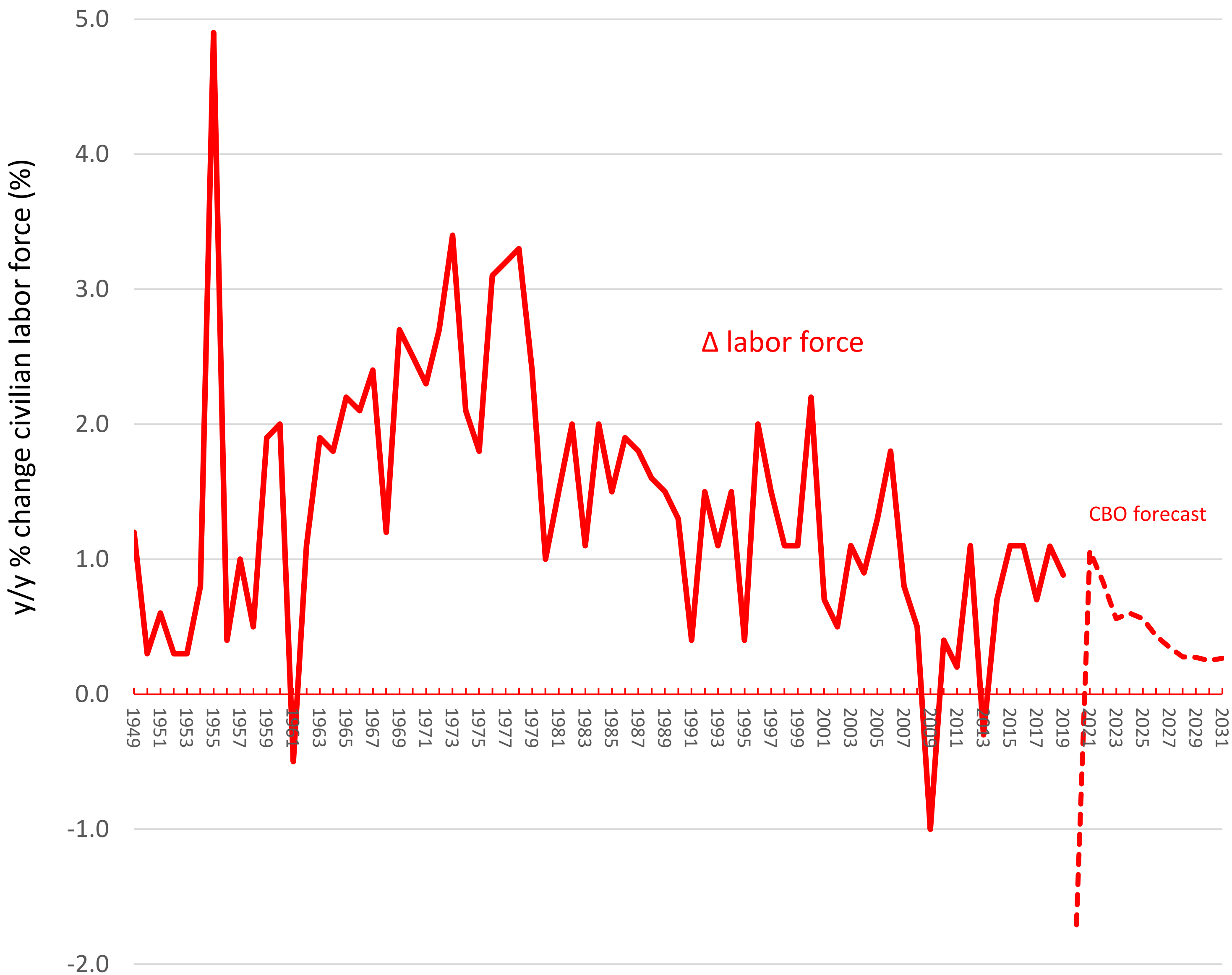
Labor force productivity gains are driven by the application of automation, technology and improved work methods.

The Congressional Budget Office forecasts a recovery in annual productivity gains through 2031.

Sources: BEA, CBO. Actual annual data through 2019; and CBO forecast through 2031 dated February 2021 from the CBO's report *An Overview of the Budget and Economic Outlook: 2021 to 2031.*

GDP growth potential = Δ productivity + Δ labor force

Labor force



The labor force surged post-WWII, peaking in the late 1970s. Since then, the U.S. has seen gradually slowing growth in the labor force partly due to the aging population and partly due to a declining participation rate.

The Congressional Budget Office forecasts annual labor force growth slowing to a low of just +0.3% in the period 2027-2031.

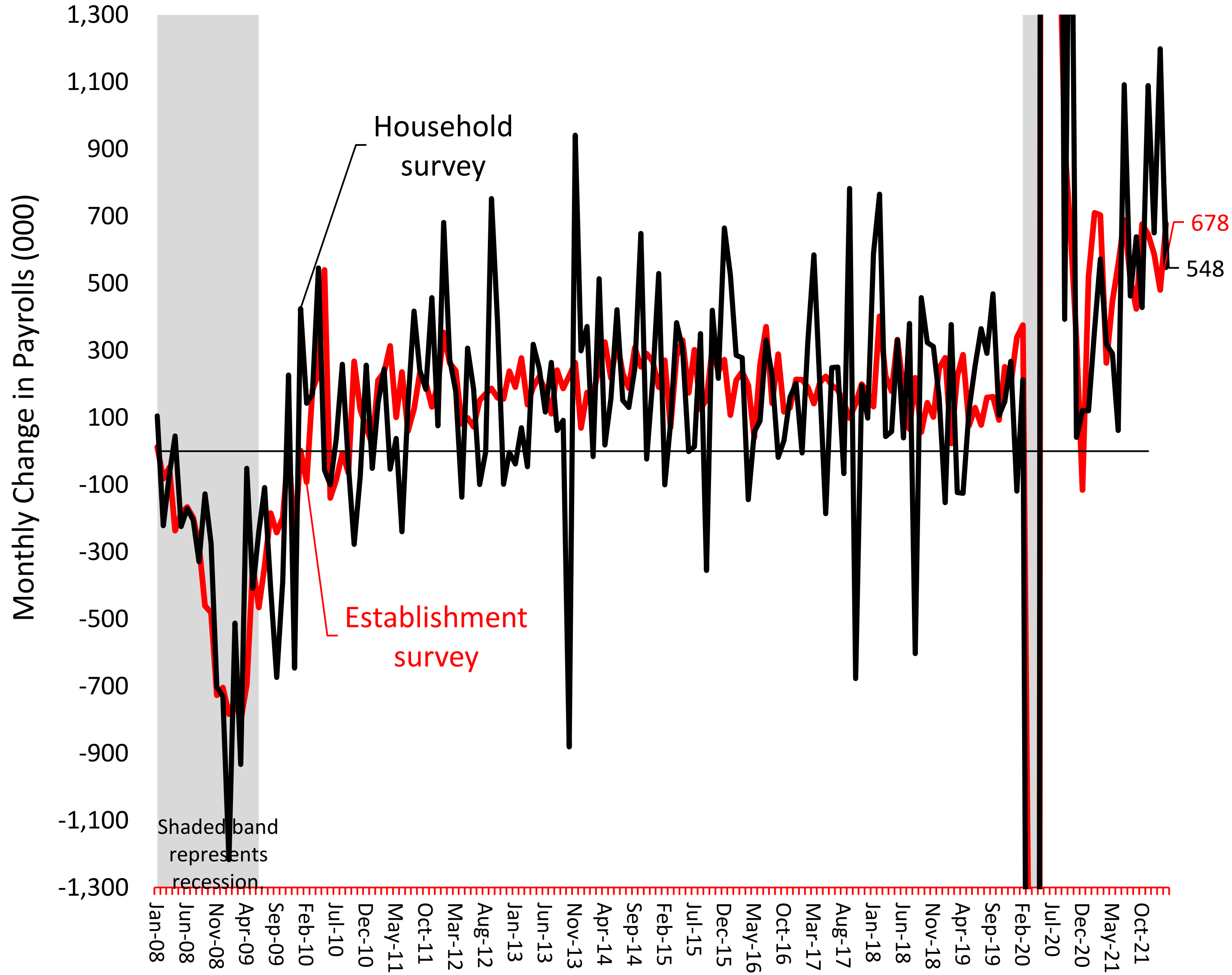
Sources: BEA, CBO. Actual annual data through 2019; and CBO forecast through 2031 dated February 2021 from the CBO's report *An Overview of the Budget and Economic Outlook: 2021 to 2031.*

Jobs

- coronavirus collapse and recovery

Economic data – jobs

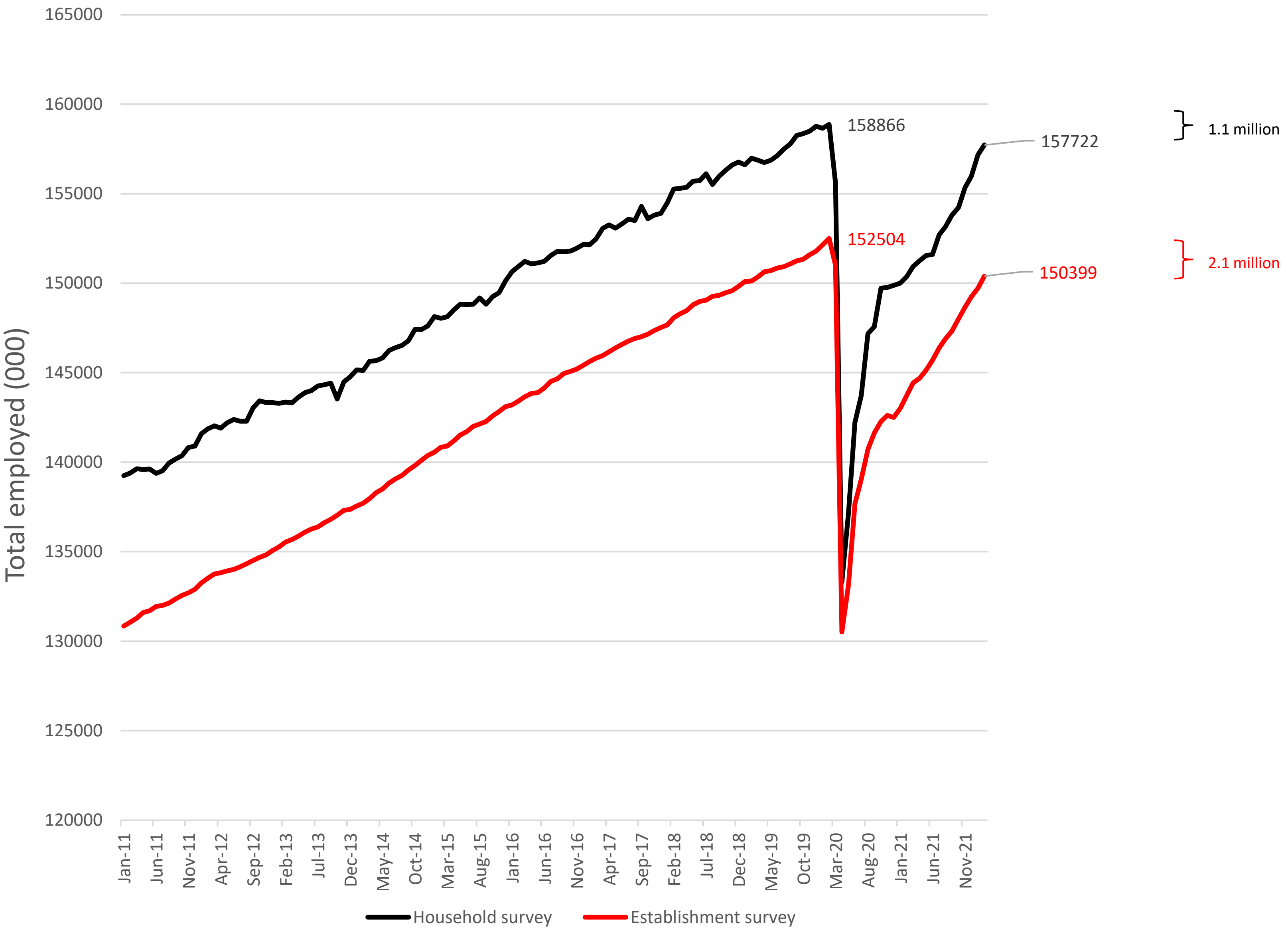
Net new job formation



678,000 jobs gained in February on the establishment survey and 548,000 on the household survey.

Source: Bureau of Labor Statistics. Data through February 2022.

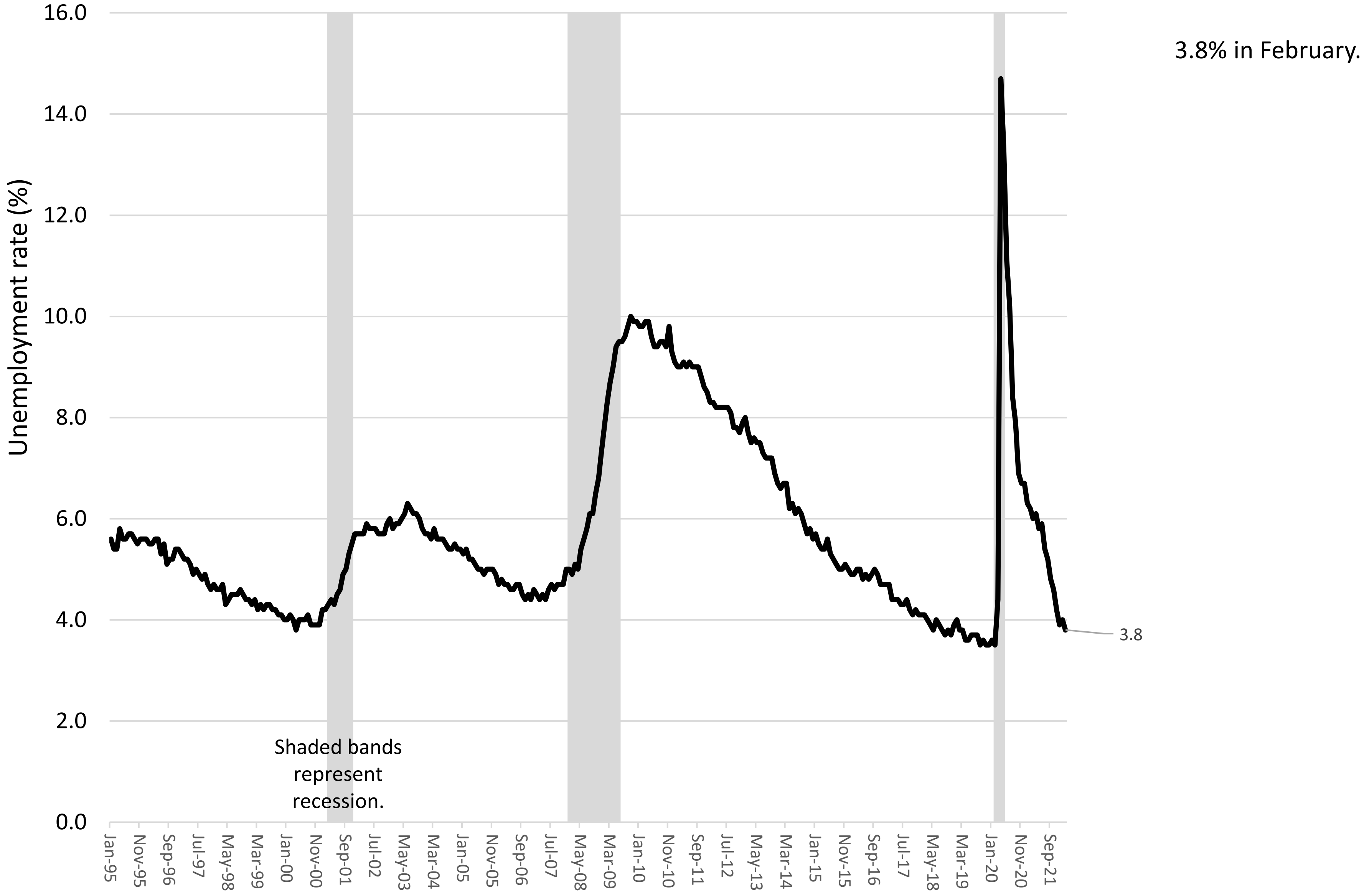
Jobs – household vs. establishment surveys



Source: Bureau of Labor Statistics. Data through February 2022.

Economic data – jobs

Unemployment rate



Source: Bureau of Labor Statistics. Data through February 2022.

Labor force statistics

The Bureau of Labor Statistics publishes two employment surveys each month, the Current Population Survey (CPS; household survey) and the Current Employment Statistics survey (CES; establishment survey). The household survey is a sample survey of about 60,000 eligible households conducted by the U.S. Census Bureau for the U.S. Bureau of Labor Statistics (BLS). The establishment survey collects data each month from the payroll records of a sample of about 144,000 businesses and government agencies, representing approximately 554,000 individual worksites, in order to provide detailed industry data on employment, hours, and earnings of workers on nonfarm payrolls. The active sample includes approximately one-third of all nonfarm payroll employees.

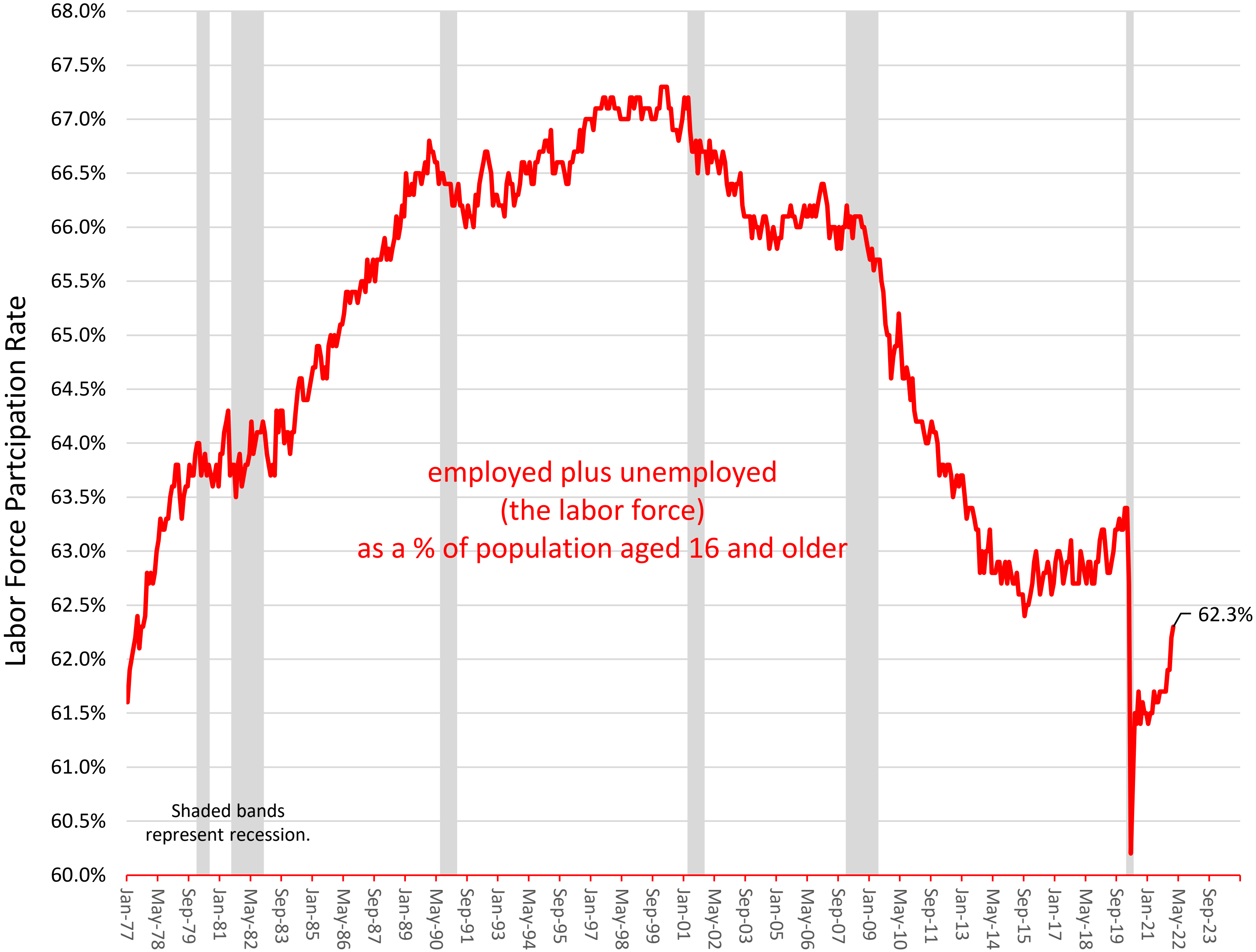
Household survey. The sample is selected to reflect the entire civilian noninstitutional population. Based on responses to a series of questions on work and job search activities, each person 16 years and over in a sample household is classified as employed, unemployed, or not in the labor force.

Establishment survey. The sample establishments are drawn from private nonfarm businesses such as factories, offices, and stores, as well as from federal, state, and local government entities. Employees on nonfarm payrolls are those who received pay for any part of the reference pay period, including persons on paid leave. Persons are counted in each job they hold.

The household survey includes agricultural workers, self-employed workers whose businesses are unincorporated, unpaid family workers, and private household workers among the employed. These groups are excluded from the establishment survey. The household survey includes people on unpaid leave among the employed. The establishment survey does not. The household survey is limited to workers 16 years of age and older. The establishment survey is not limited by age. The household survey has no duplication of individuals, because individuals are counted only once, even if they hold more than one job. In the establishment survey, employees working at more than one job and thus appearing on more than one payroll are counted separately for each appearance.

Source: Bureau of Labor Statistics.

Labor force participation rate[1] – hit by Covid



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

Source: BLS. Data through February 2022.

[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.

Participation rate

THE WALL STREET JOURNAL.

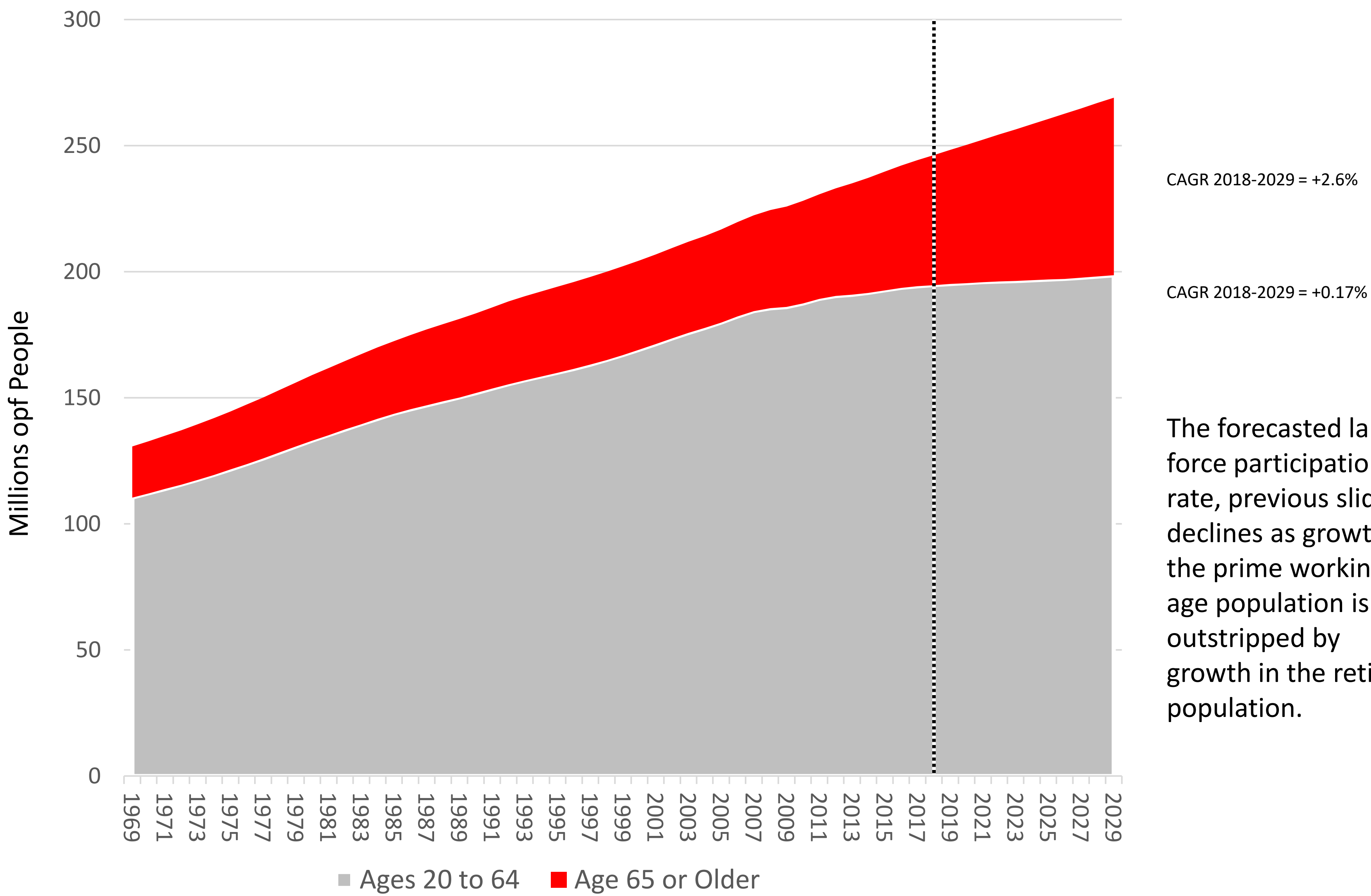
Retirements Muddle Jobs Policy

According to the Dallas Fed, roughly 1.5 million more people retired during the pandemic than would have been expected before the onset of Covid-19 – meaning fewer available workers to take open jobs as the economy reopens.

“It is a different economy,” Mr. Powell said. “We don’t know exactly what labor-force participation will be as we go forward.”

Source: *The Wall Street Journal*, June 17, 2021.

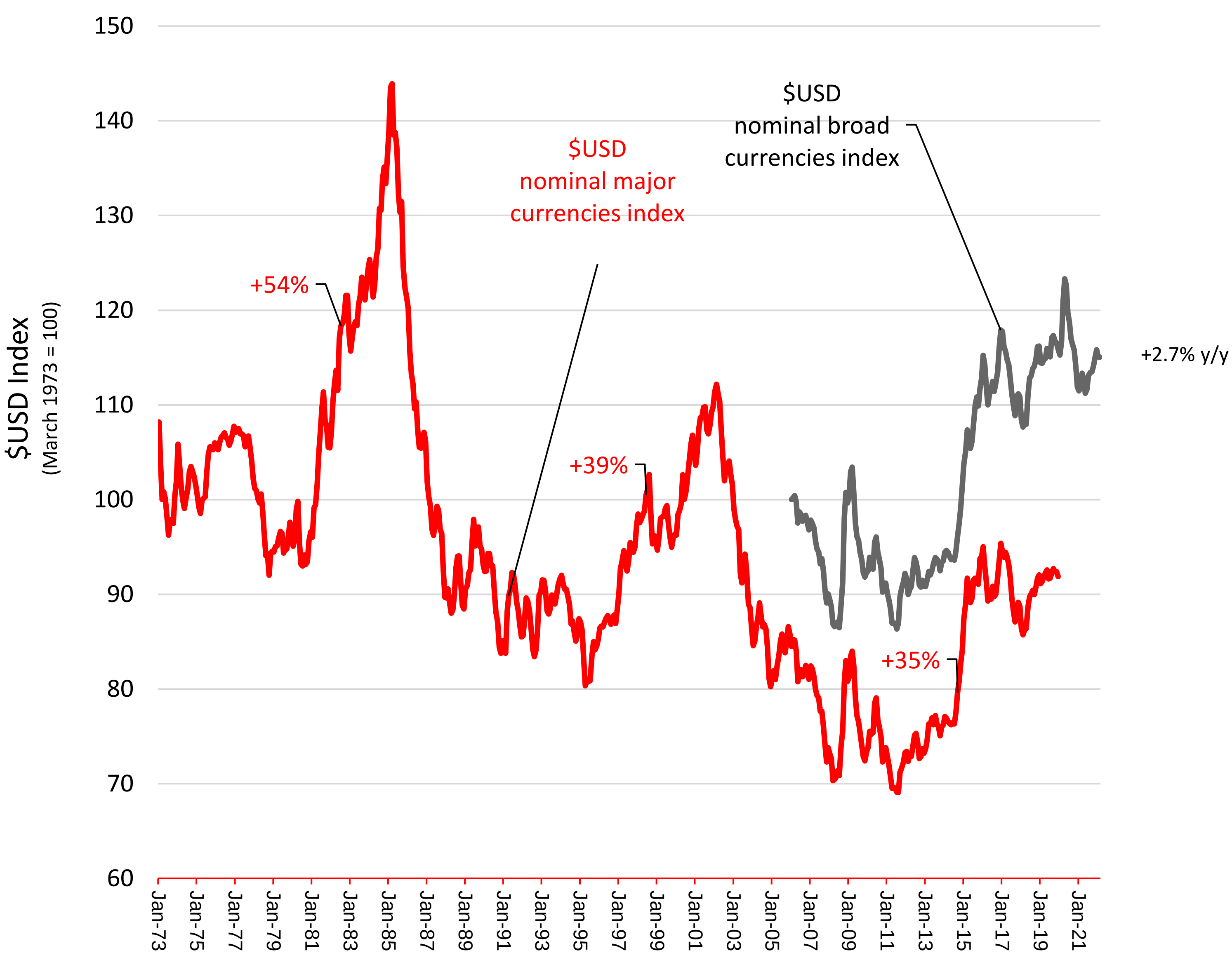
Population by age group



The forecasted labor force participation rate, previous slide, declines as growth in the prime working-age population is outstripped by growth in the retired population.

Source: Congressional Budget Office, January 2019 report *The Budget and Economic Outlook: 2019 to 2029*. Actual data through 2017.
CAGR = compound annual growth rate.

U.S. Dollar index – trending sideways



The dollar's surge created a headwind for S&P 500 earnings in 2014-15.

Trending higher since then.

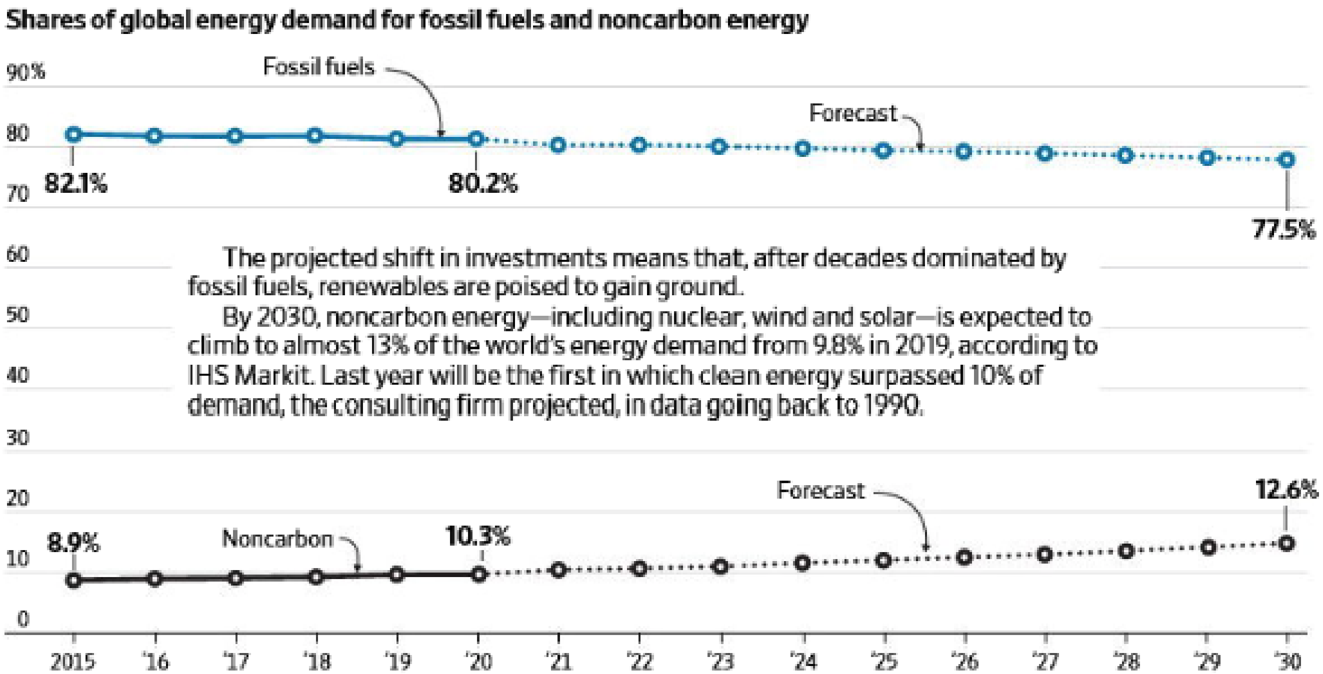
"… no model projecting directional movements in exchange rates is significantly superior to tossing a coin."

-- Alan Greenspan[1]

Source: Federal Reserve. Data through February 2022.

[1]Federal Reserve, Remarks by Chairman Alan Greenspan before the Economic Club of New York, March 2, 2004.

World hydrocarbon demand



Very gradual decline in world demand for hydrocarbons, despite accelerating investment in renewables.

Source: *The Wall Street Journal*, January 19, 2021, citing IHS Markit data.

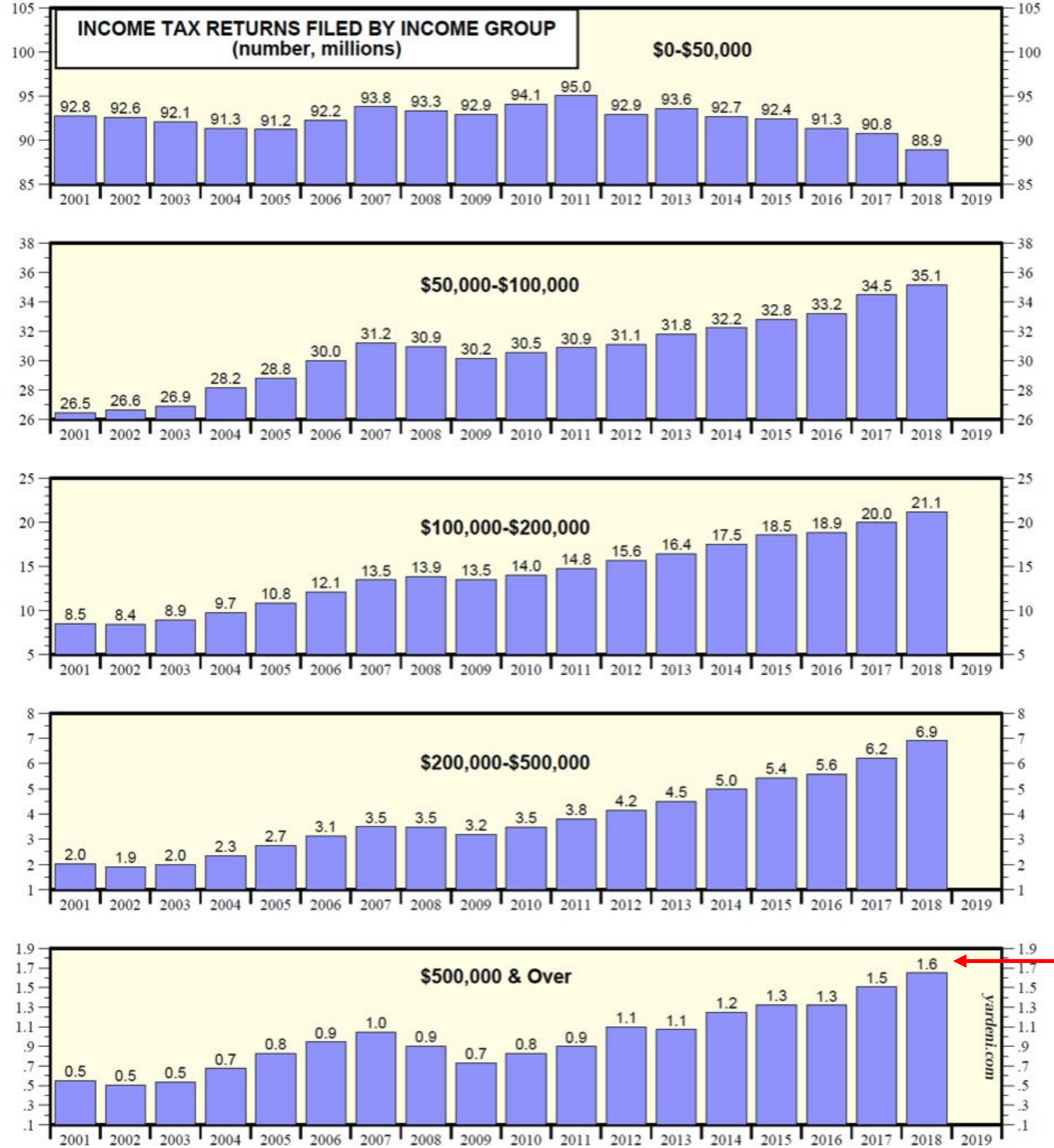
Federal budget

- CBO’s February 2021 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

Debt and taxes

Federal tax returns (millions)

Figure 7.



Source: Internal Revenue Service.

<u>1%ers</u>

Americans filed 153.6 million tax returns in 2018.

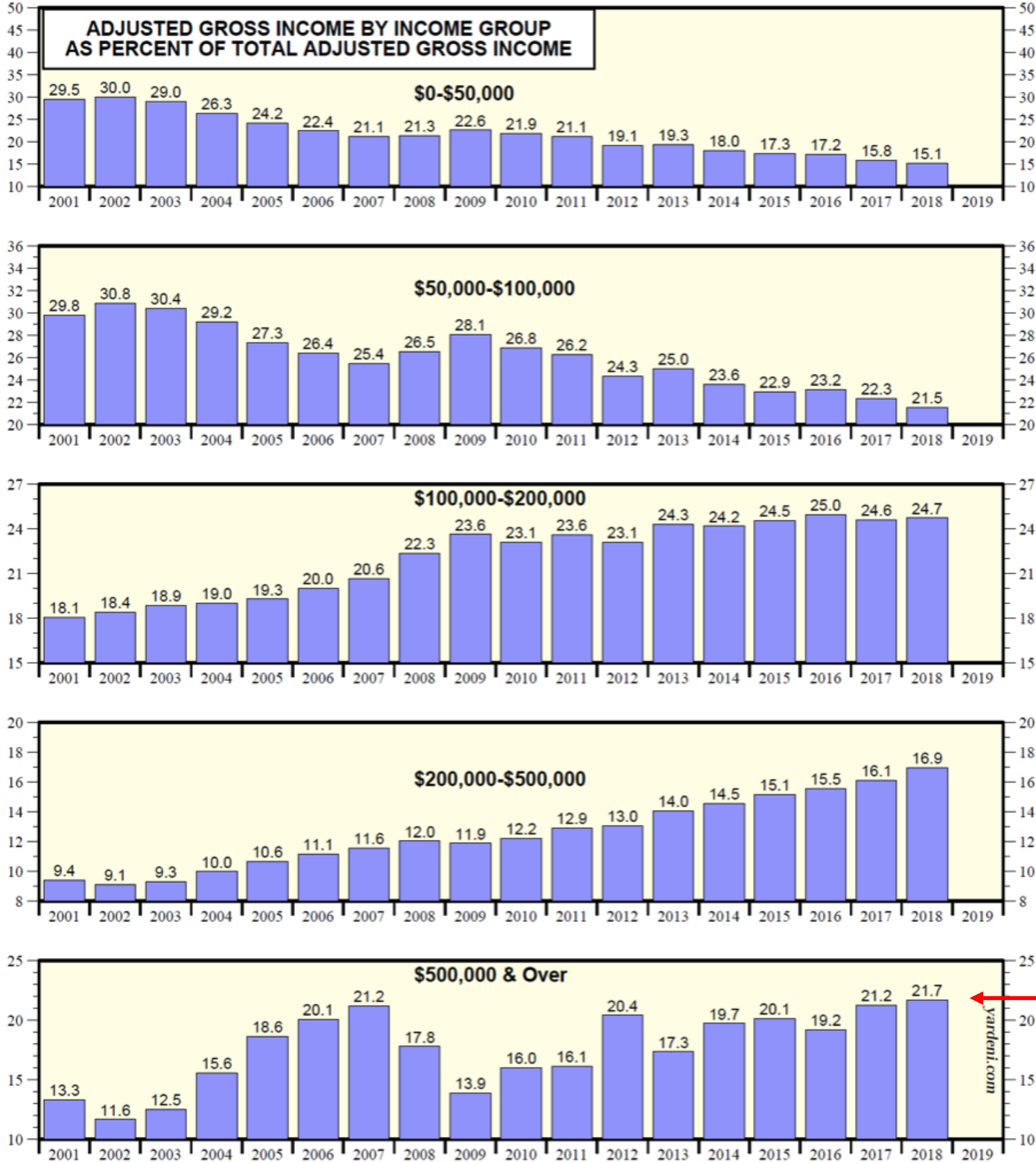
Of that, 1.6 million (exactly 1%) were filed by Americans earning $500,000 & over.

Source: Yardeni Research, Inc. with permission.

Debt and taxes

AGI by income group % of total

Figure 9.



Source: Internal Revenue Service.

<u>1%ers</u>

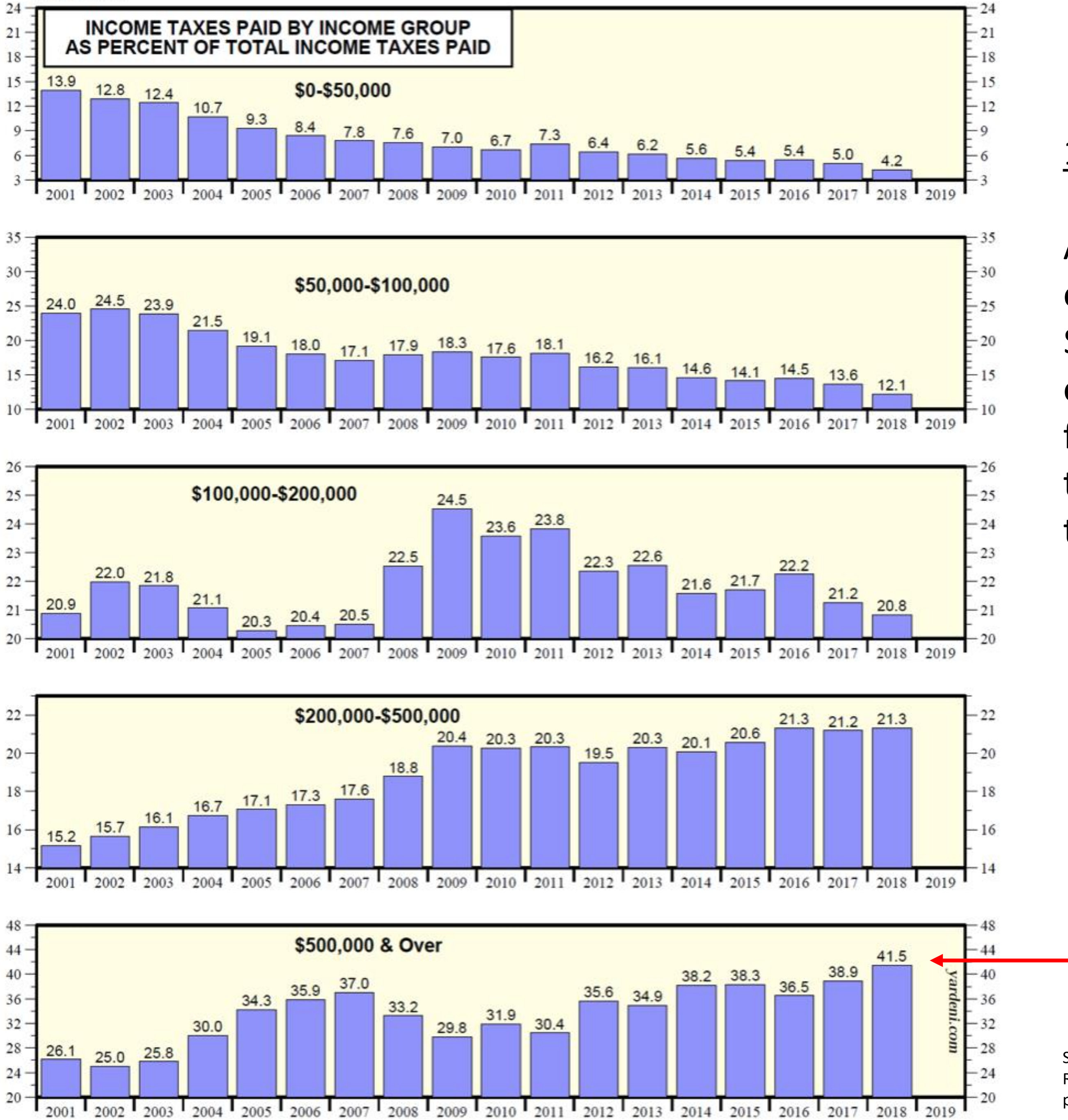
Americans earning $500,000 & over accounted for 21.7% of total AGI.

Source: Yardeni Research, Inc. with permission.

Debt and taxes

Income taxes paid by income group % of total

Figure 12.



Source: Internal Revenue Service.

1%ers

Americans earning $500,000 & over accounted for 41.5% of total income taxes paid.

Source: Yardeni Research, Inc. with permission.

Debt and taxes

Income taxes paid % of AGI

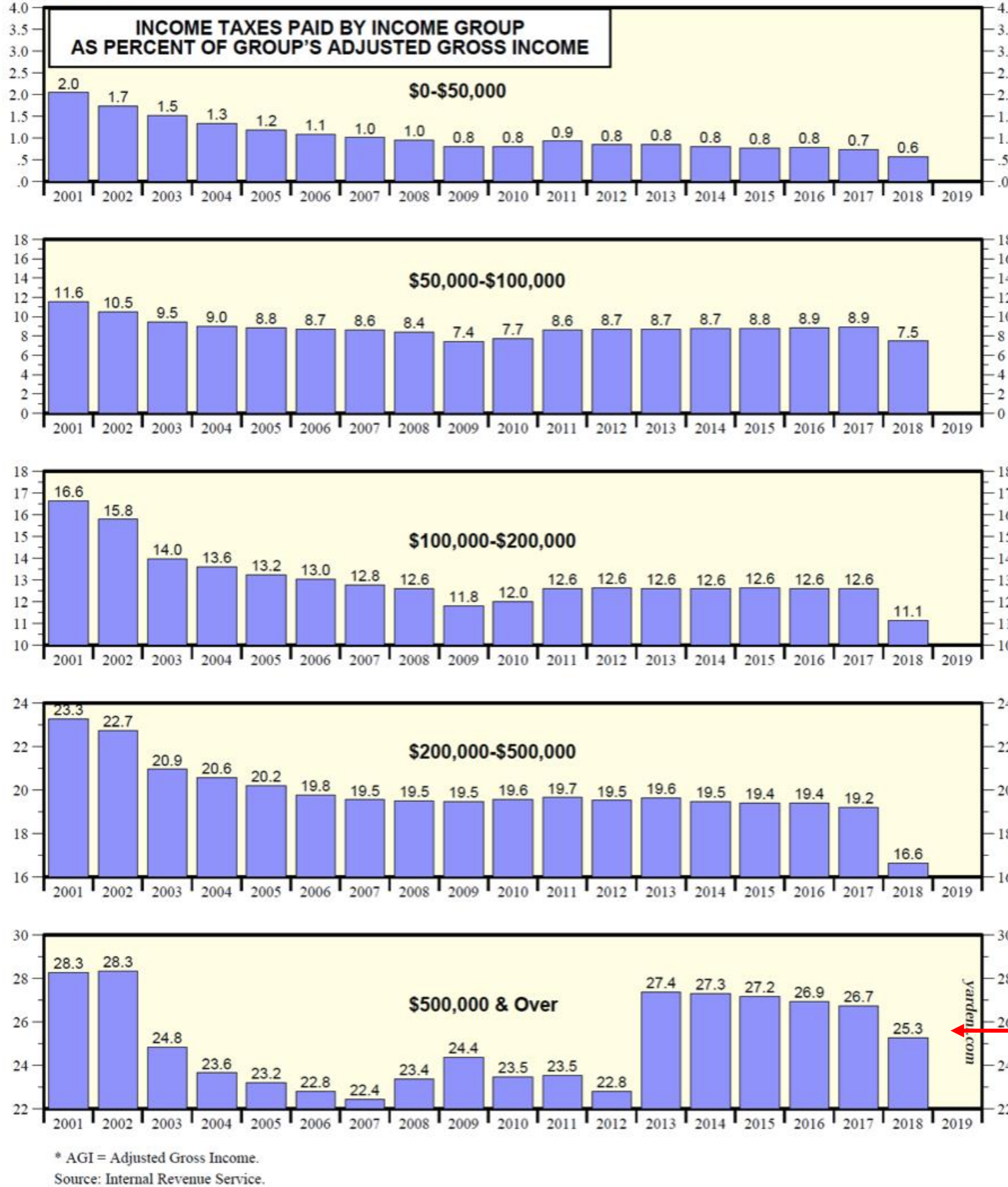


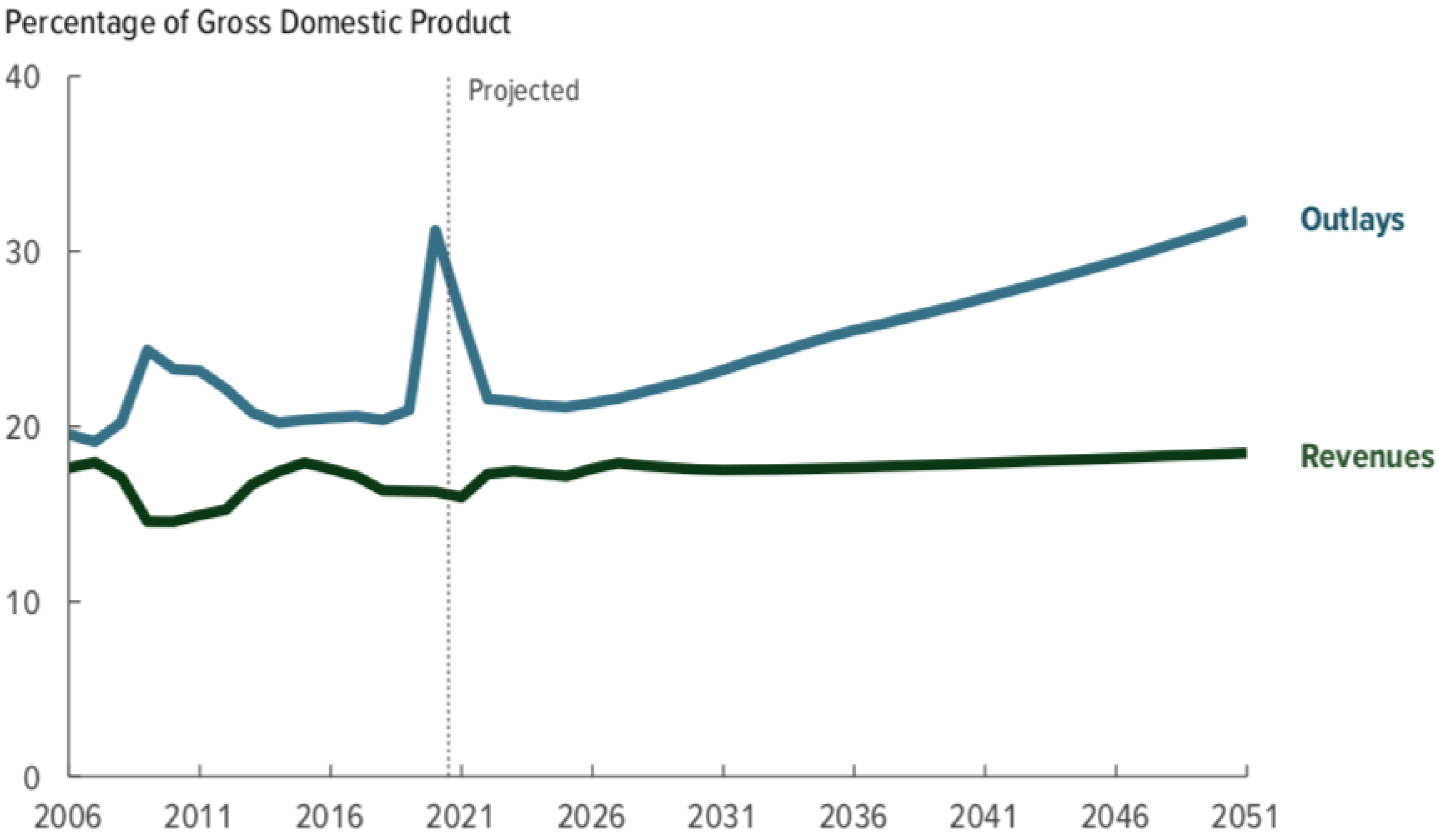
Figure 11.

<u>1%ers</u>

Americans earning $500,000 & over paid 25.3% of their AGI in taxes.

Source: Yardeni Research, Inc. with permission.

Federal revenues and outlays through 2051

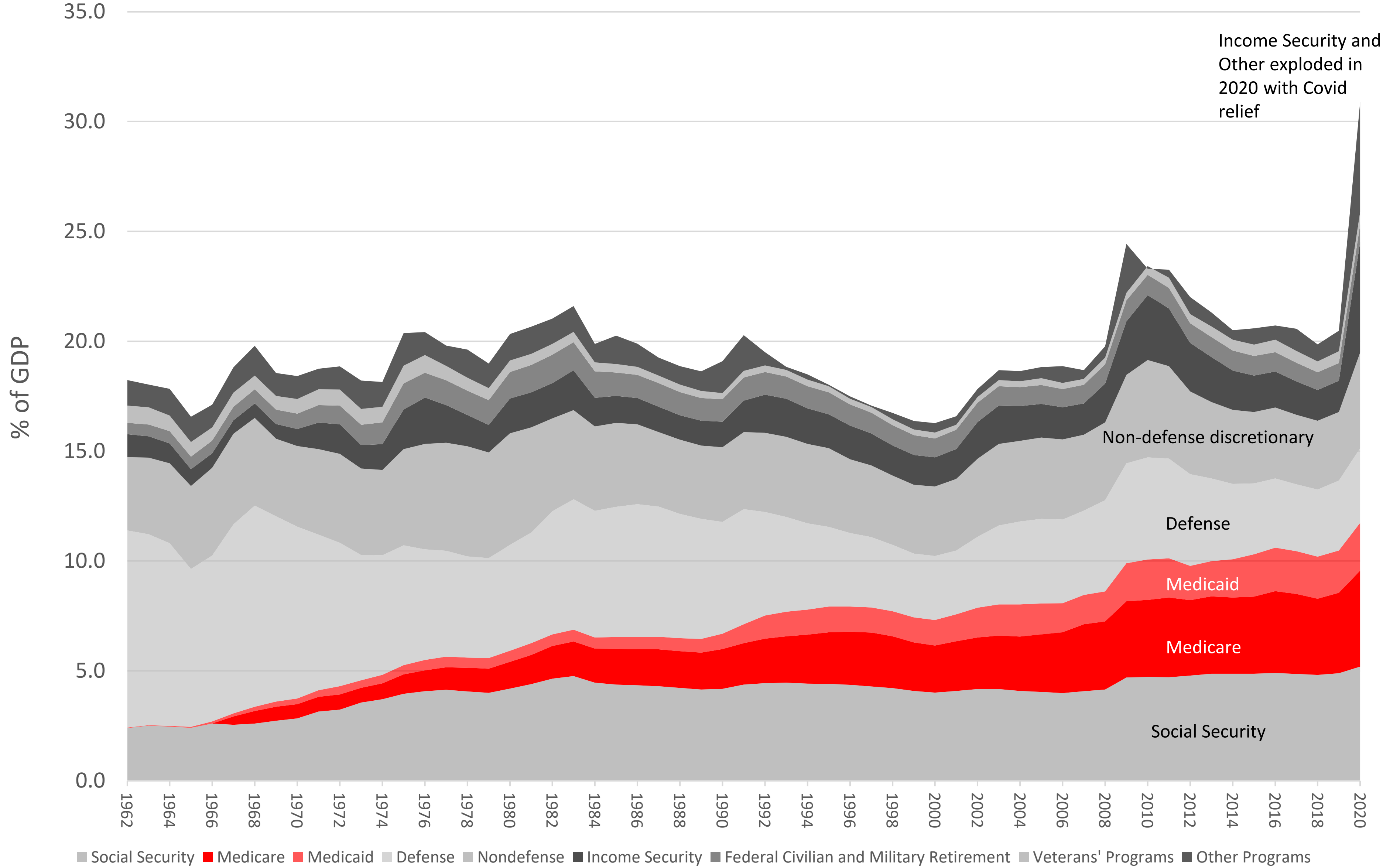


The gap widens significantly over 30 years.

Source: Congressional Budget Office, *The Long-Term Budget Outlook,* released March 2021.

Federal deficit and debt

Federal outlays % of GDP



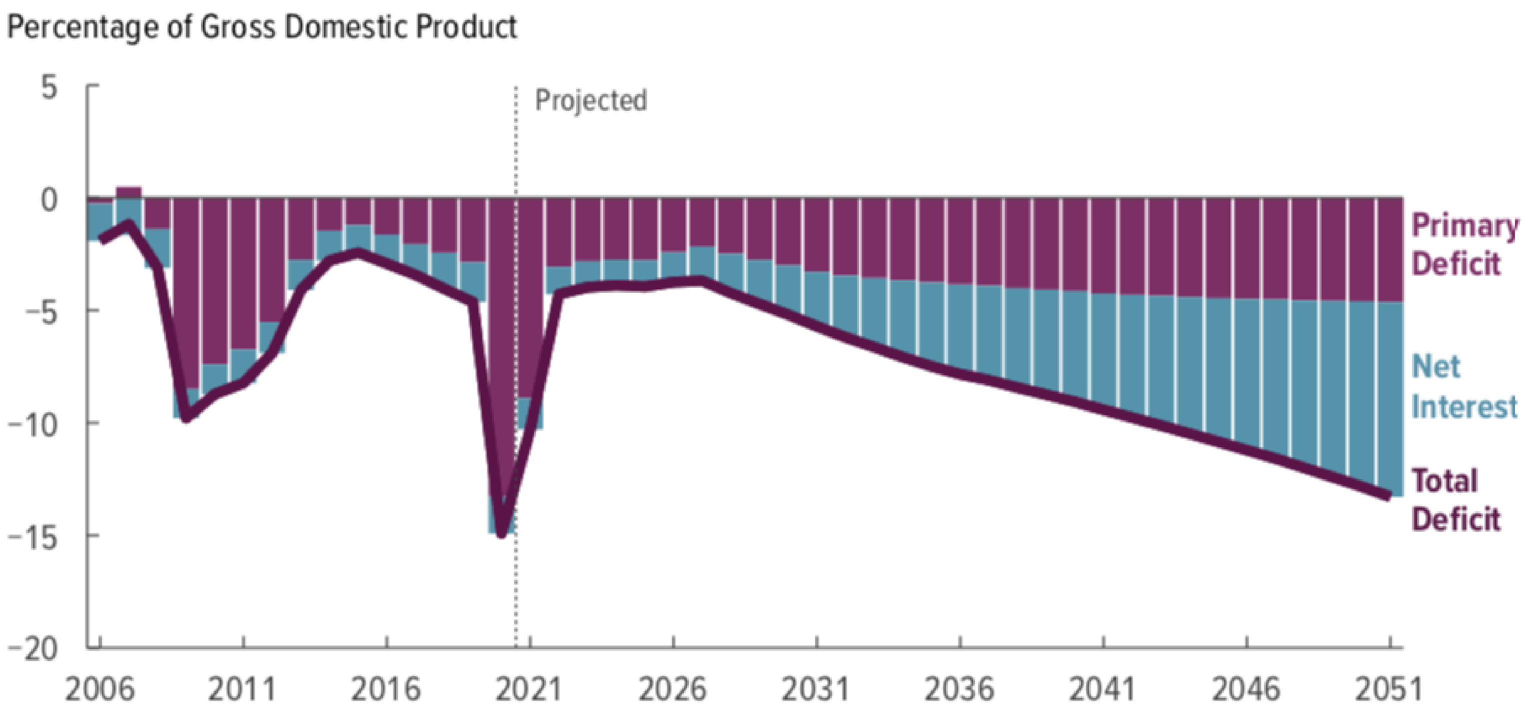
Source: Congressional Budget Office, *The Budget and Economic Outlook: 2021 to 2031*, released February 2021.

Federal debt % of GDP though 2051

Debt/GDP grows significantly over 30 years.

Source: Congressional Budget Office, *The Long-Term Budget Outlook,* released March 2021.

Federal deficits % of GDP though 2051

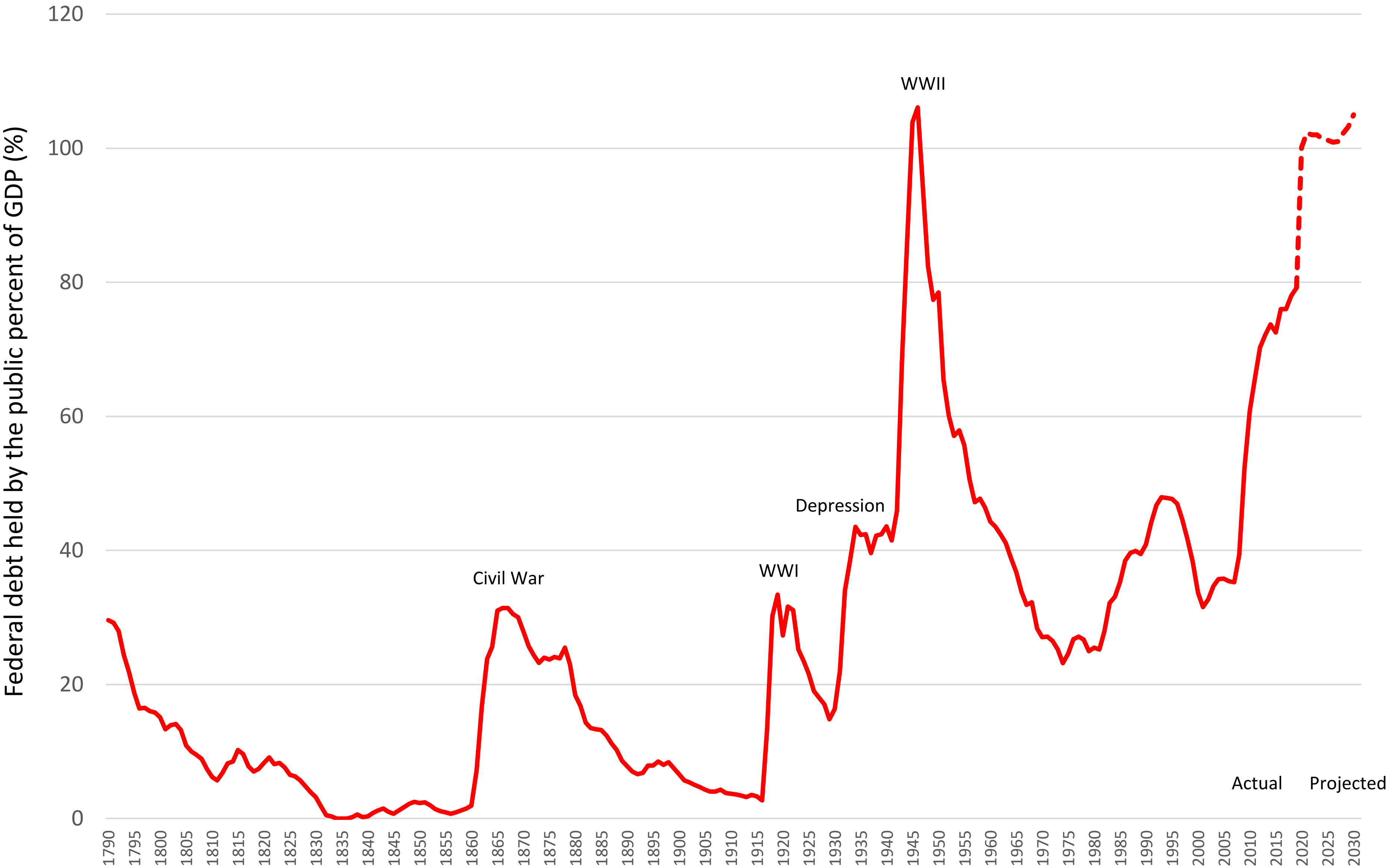


Net interest becomes the major part of deficits.

Source: Congressional Budget Office, *The Long-Term Budget Outlook,* released March 2021.

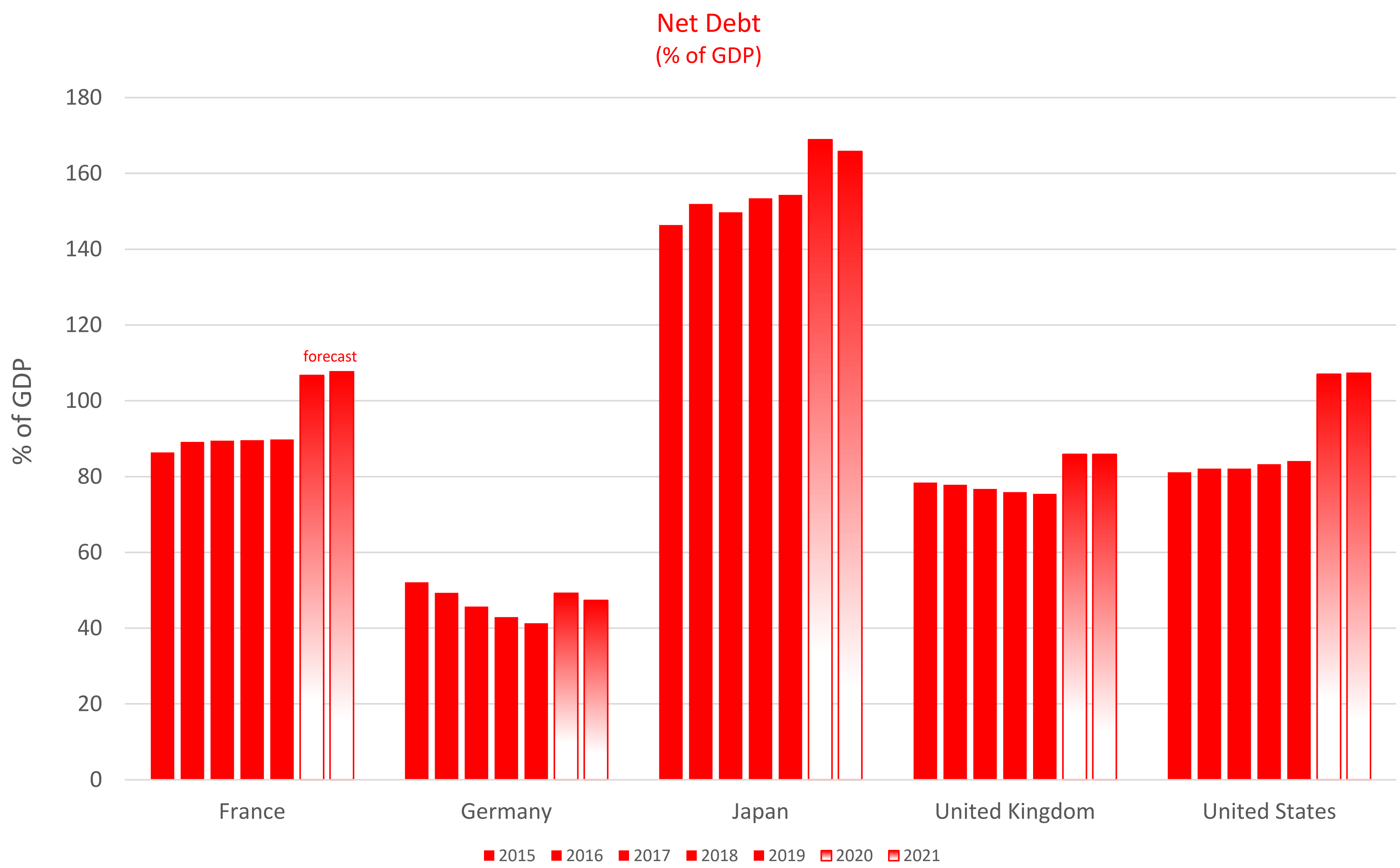
Federal deficit and debt through 2031

Federal debt % of GDP through 2031



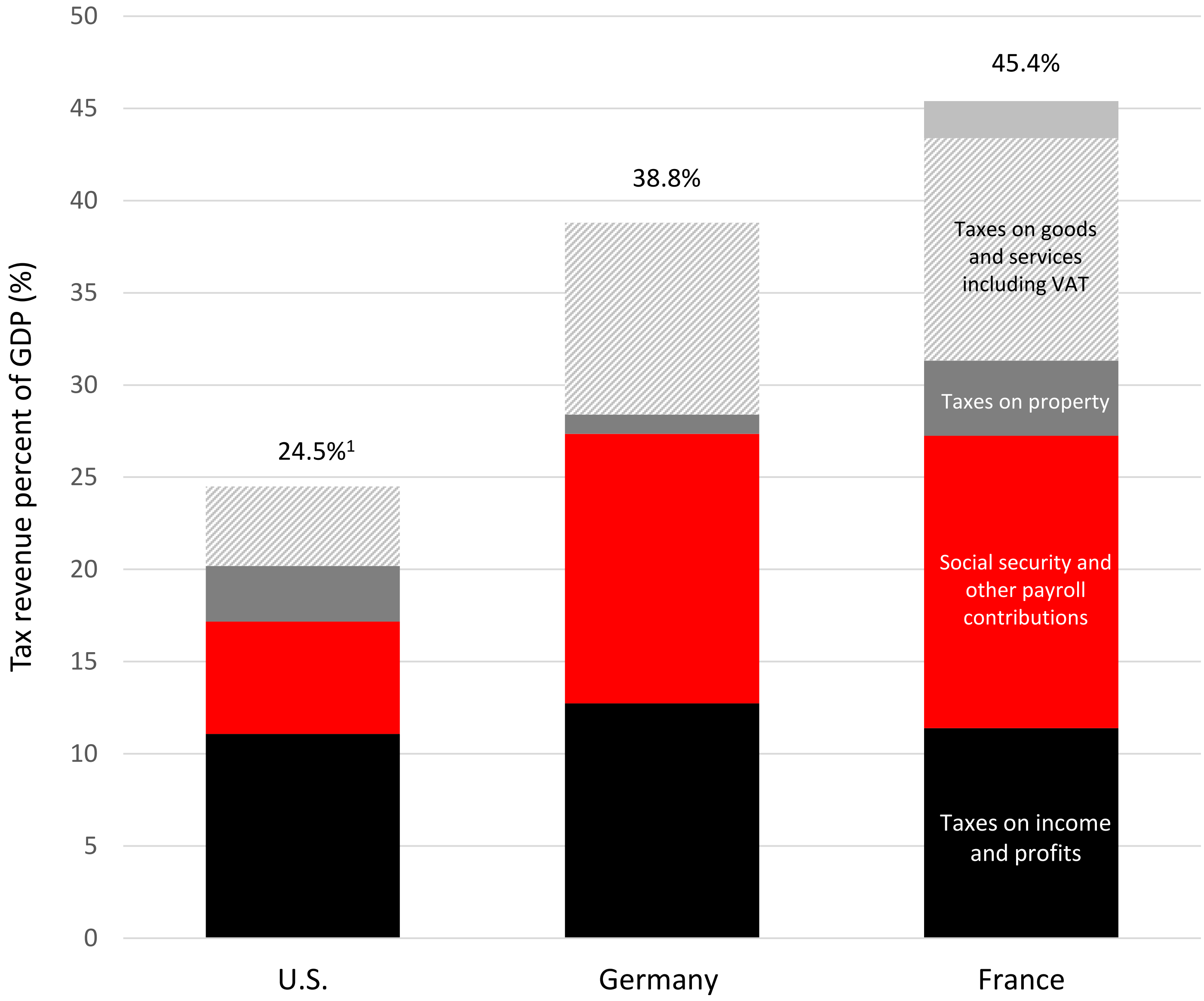
Source: Congressional Budget Office, *The Budget and Economic Outlook: 2021-2031*, released February 2021.

Debt-to-GDP comparisons



Source: IMF. Actual data through 2019.

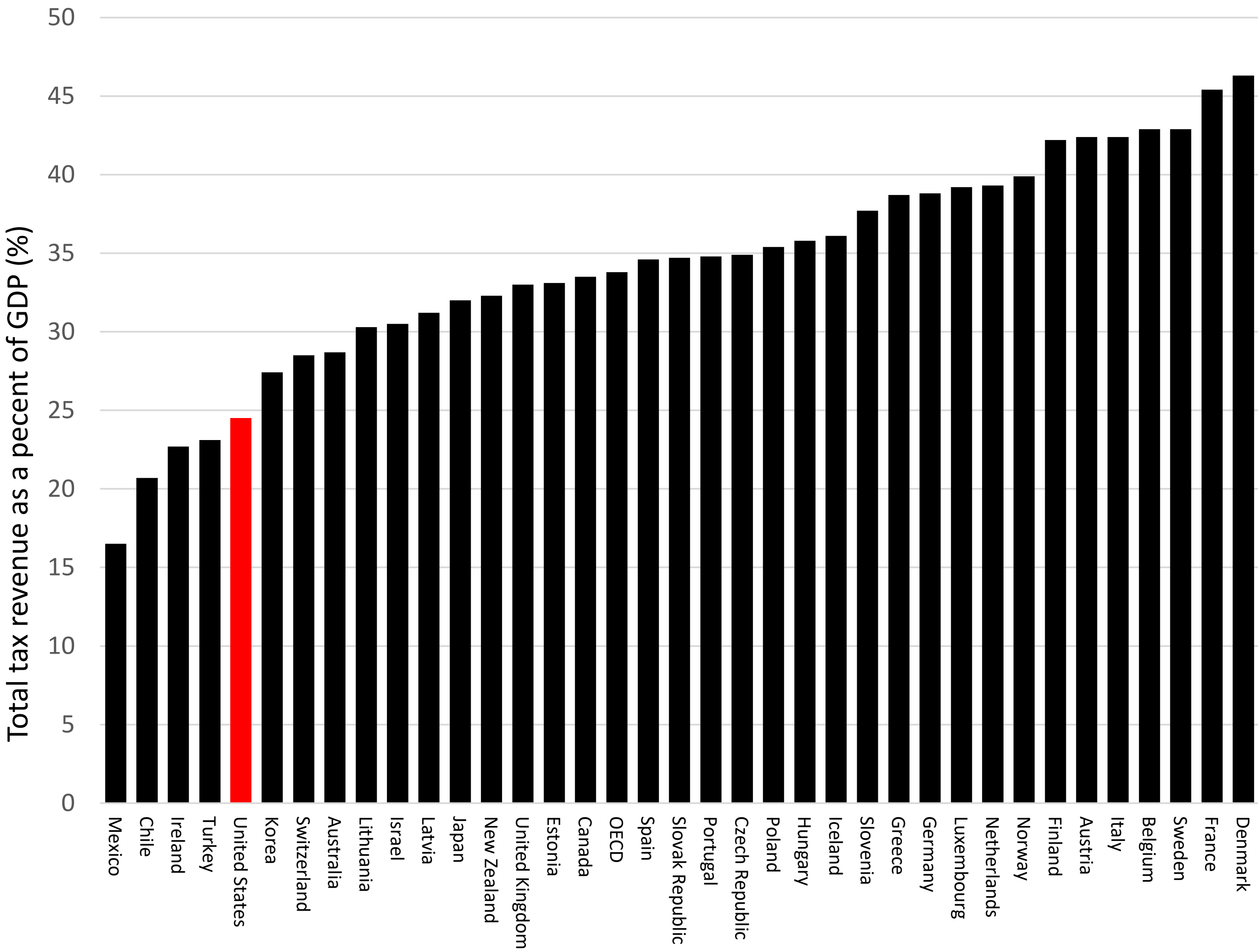
Tax structure U.S. vs. France and Germany



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 2020, published December 3, 2020. Data for 2019. [1]27.1% in 2017, before TCJA of 2017.

Taxes % of GDP – U.S. is the lowest of major developed

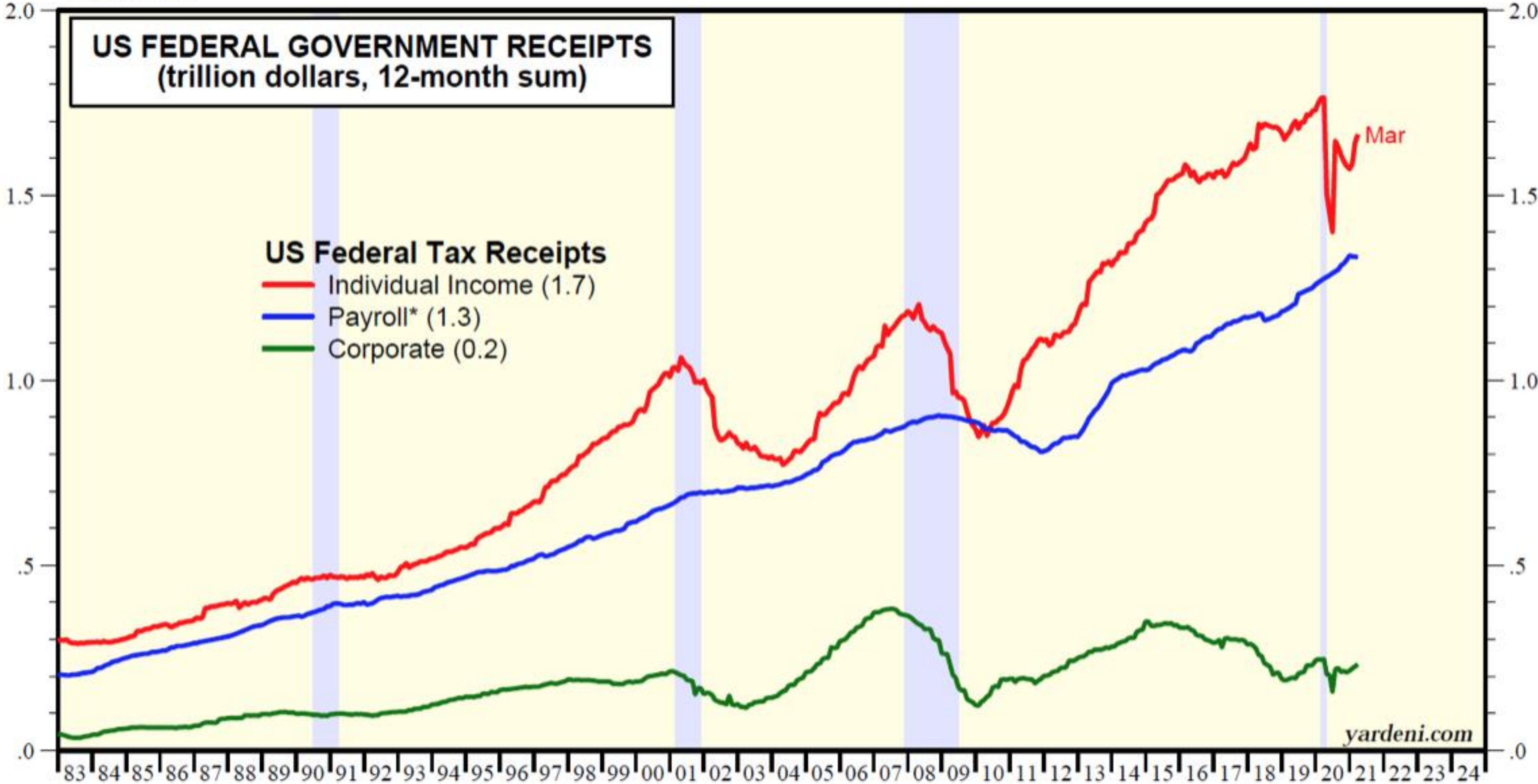


The U.S.'s comparatively low tax burden allows flexibility in solving its long-term entitlement spending problem.

Source: OECD, Revenue Statistics 2020. 2019 data for all countries except 2018 data for Australia and Japan. Includes data for 37 OECD countries and does not include non-OECD countries such as China, Brazil, India and Russia. Includes all forms of taxes: federal, state and local; income taxes, sales taxes, VAT taxes, estate taxes, property taxes, etc.

Federal government tax receipts

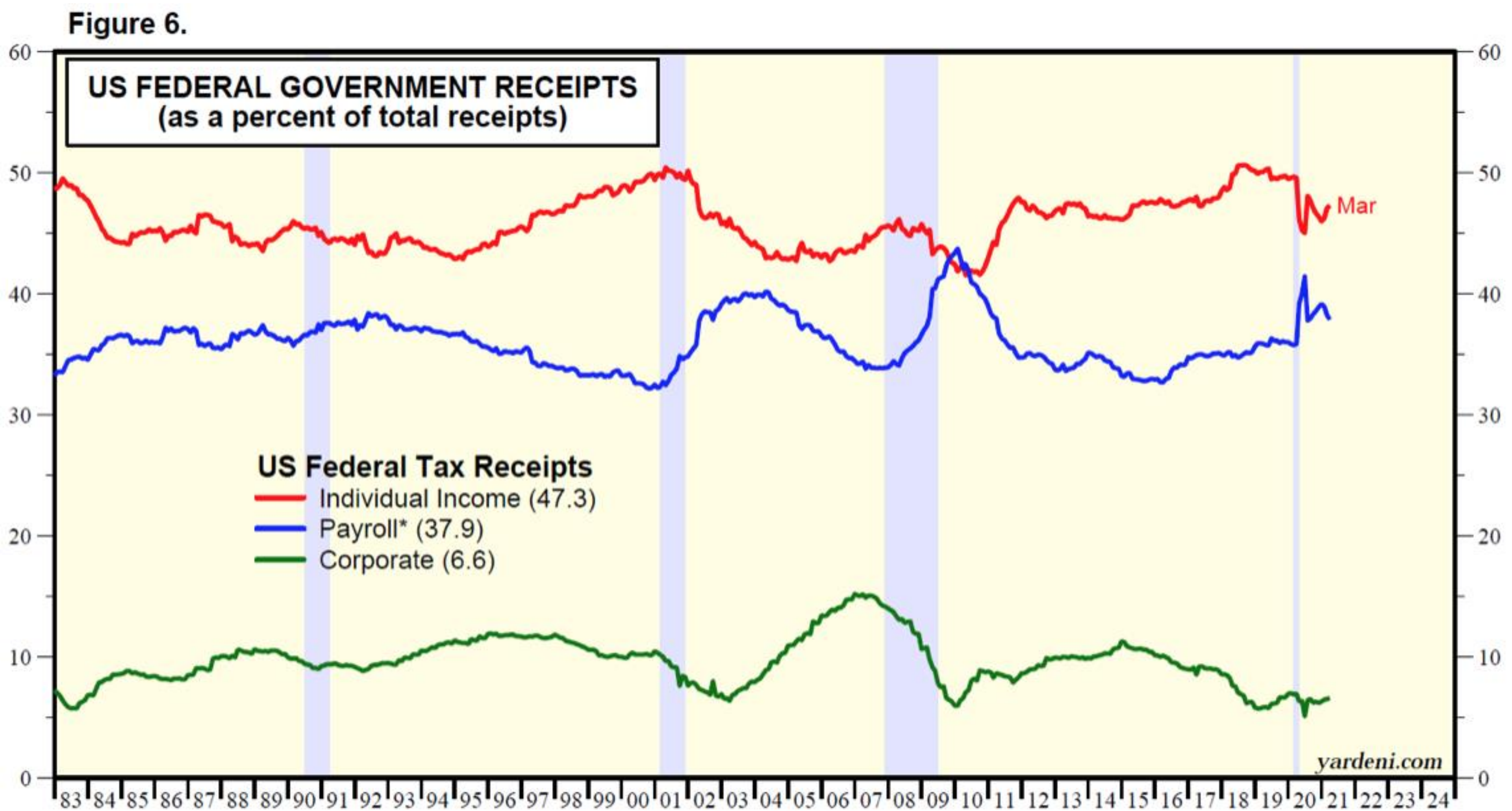
Figure 5.



* Employment and general retirement, unemployment insurance, and other retirement.
Note: Shaded areas are recessions according to the National Bureau of Economic Research.
Source: US Treasury.

Source: Yardeni Research, Inc. with permission.

Federal government tax receipts % of total



* Employment and general retirement, unemployment insurance, and other retirement.
Note: Shaded areas are recessions according to the National Bureau of Economic Research.
Source: US Treasury Department.

Source: Yardeni Research, Inc. with permission.

Modern Monetary Theory

- The federal government can and should run large budget deficits in order to achieve full employment.
- The federal government deficit is clearly too small if there is any unemployment, a sign of underutilized resources.
- There is no well-defined limit on deficit financed government spending unless and until inflation heats up.
- Inflation can be taxed away. Targeted taxes can reduce excess demand.

Yardeni Research

Morning Briefing - July 8, 2020

Modern Monetary Theory: In Theory & In Practice

Check out the accompanying pdf and chart collection.

(1) Meet Stephanie Kelton. (2) A manifesto for the people's economy. (3) A champion of big government. (4) Resource allocation debate: government vs markets. (5) The magic of printing money. (6) Fiscal policy should take the lead in creating full employment. (7) Economic deficits matter more than budget deficits. (8) MMT is the New Deal on steroids. (9) Fighting inflation by raising taxes. (10) Public service jobs for all. (11) The Wiz is a Utopian. (12) Big-government politicians on both sides of the aisle embrace MMT. (13) Trump administration unites fiscal and monetary policy in MMT alliance to fight the GVC.

(I) MMT Description: Meet Professor Kelton. Stephanie Kelton is the most vocal proponent of Modern Monetary Theory (MMT) today. She is a former chief economist on the US Senate Budget Committee and professor of economics and public policy at Stony Brook University. Her June 2020 book, *The Deficit Myth: Modern Monetary Theory and the Birth of the People's Economy*, reads like the MMT movement's manifesto. Melissa and I have written about MMT before (see here and here). Kelton's new book provides us with more to write about both her theory and her policy prescriptions.

Kelton argues that the federal government can and should run large budget deficits as long as inflation remains subdued. MMT opponents' main objection is that the theory provides a blank check for the government to get much bigger. It provides the government with too much power to allocate resources. Free-market capitalists believe that markets do a much better job of doing so than politicians and bureaucrats. Kelton clearly disagrees; but before we go there, let's dive into her theoretical description of MMT:

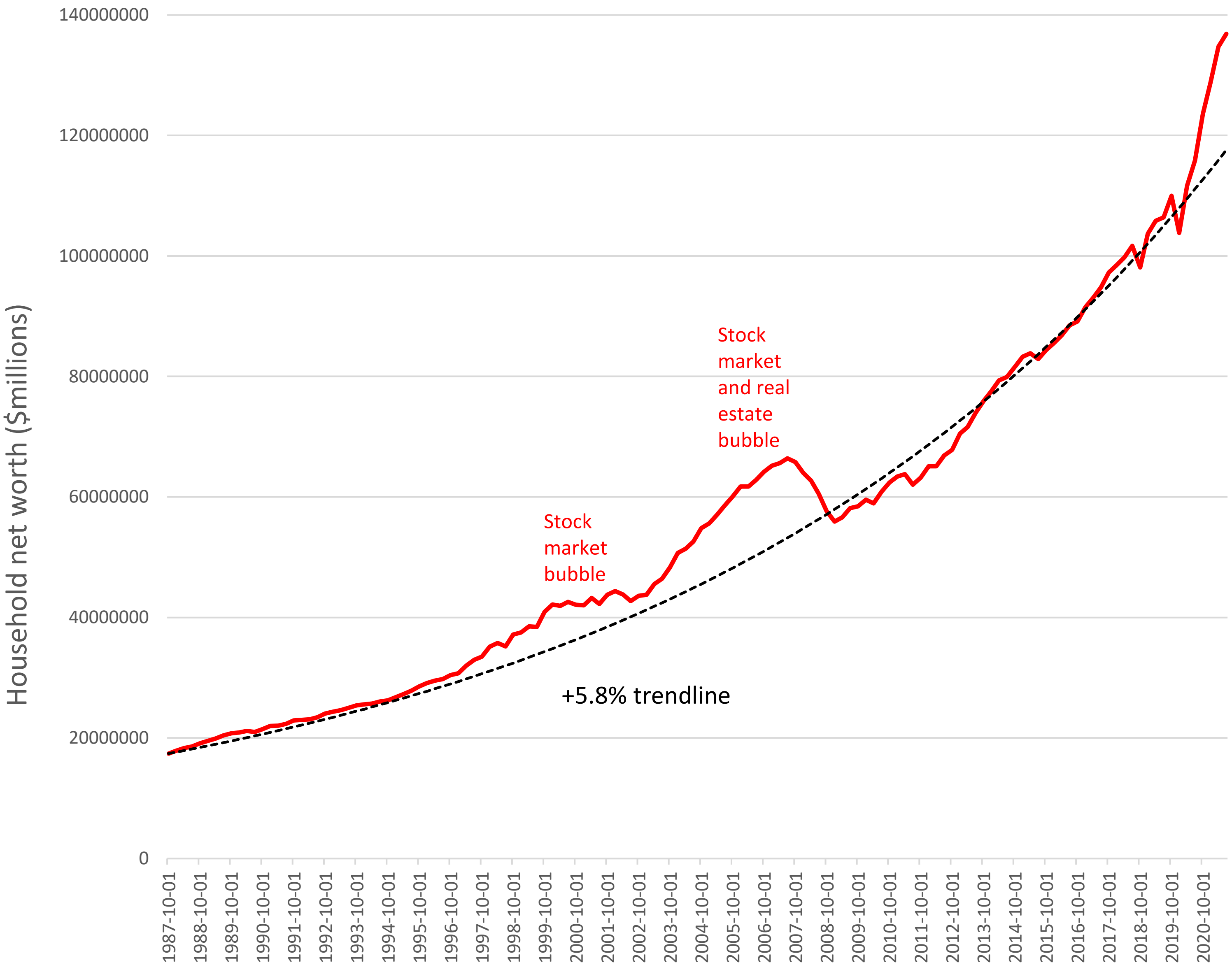
(1) *Printing press.* The central premise of MMT is that the US federal government, as the exclusive issuer of its sovereign currency (i.e., the US dollar), can "print" money without limit. It can do so as necessary to service or to pay down the public debt. It follows, therefore, that there is no well-defined limit on deficit-financed government spending unless and until inflation heats up.

Household balance sheets

- new highs in household net worth
- financial obligations ratio at record low means that consumers are in record good shape to spend money

Household balance sheets

Household net worth – the wealth effect

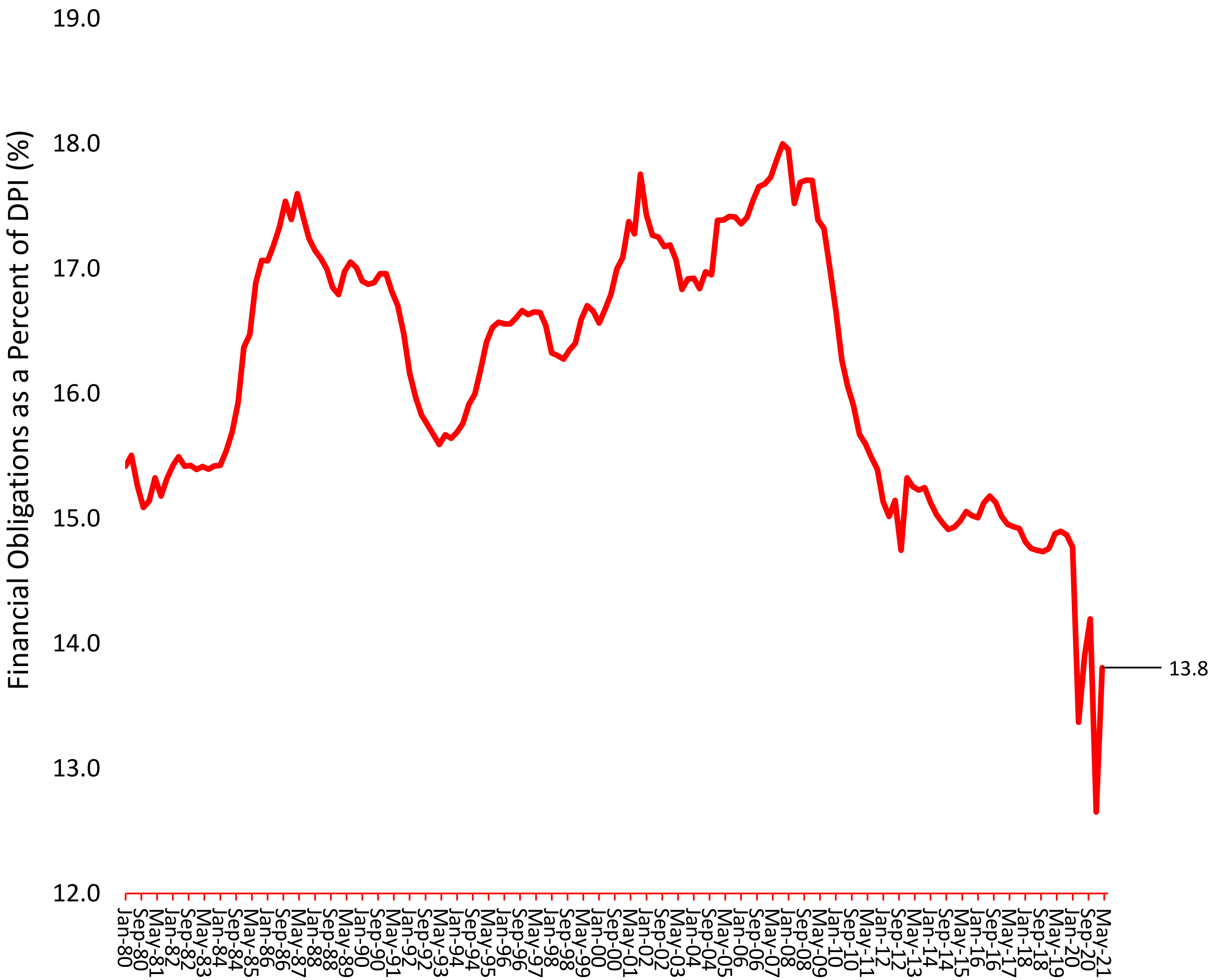


Household net worth has surged on stock market and real estate gains.

Source: Federal Reserve, FRBSL. Quarterly data through September 2021, released December 9, 2021.

Household balance sheets

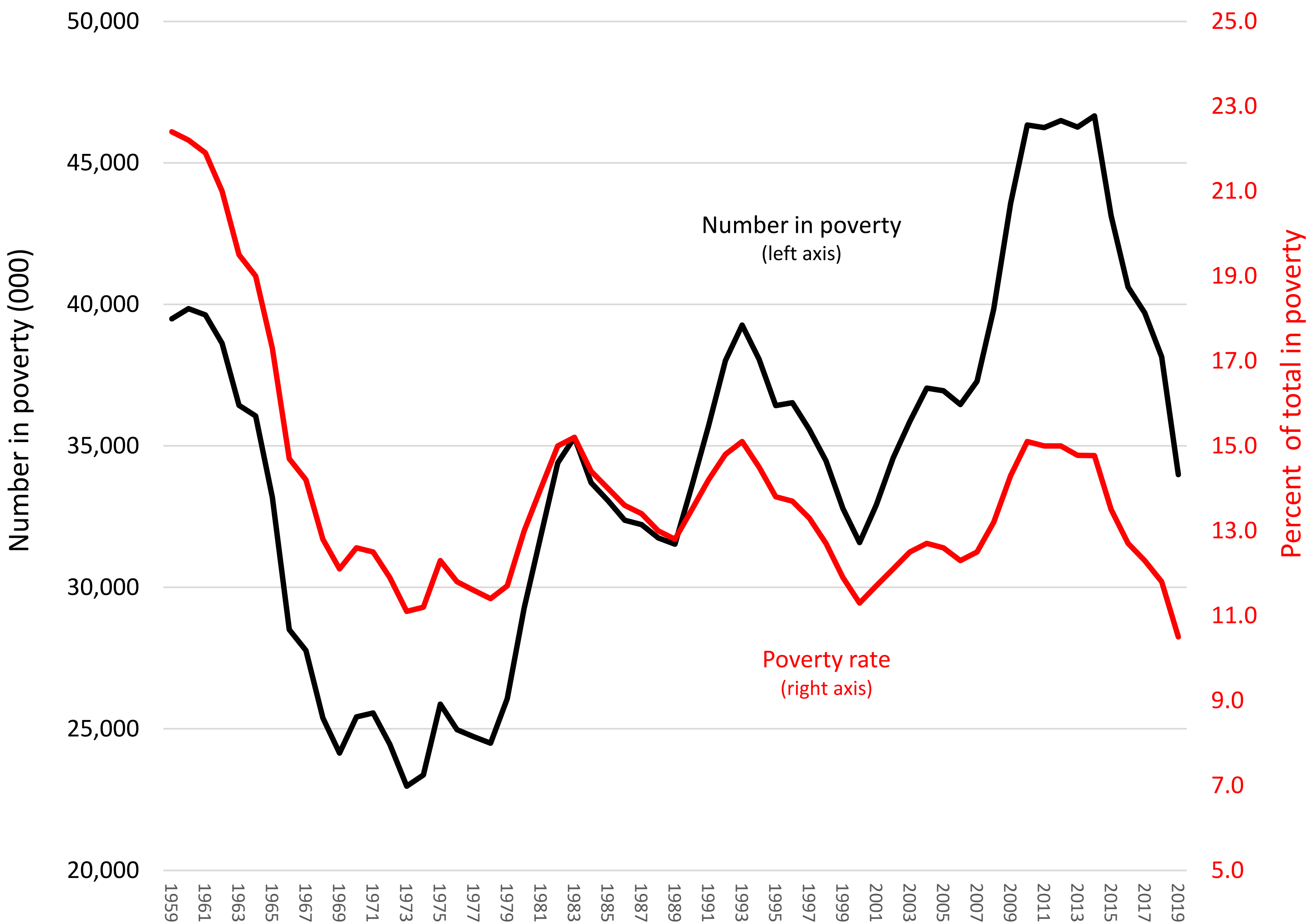
Financial obligations ratio – near record low



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.

Source: Federal Reserve. Quarterly data through March 2021.

Poverty rate – record low

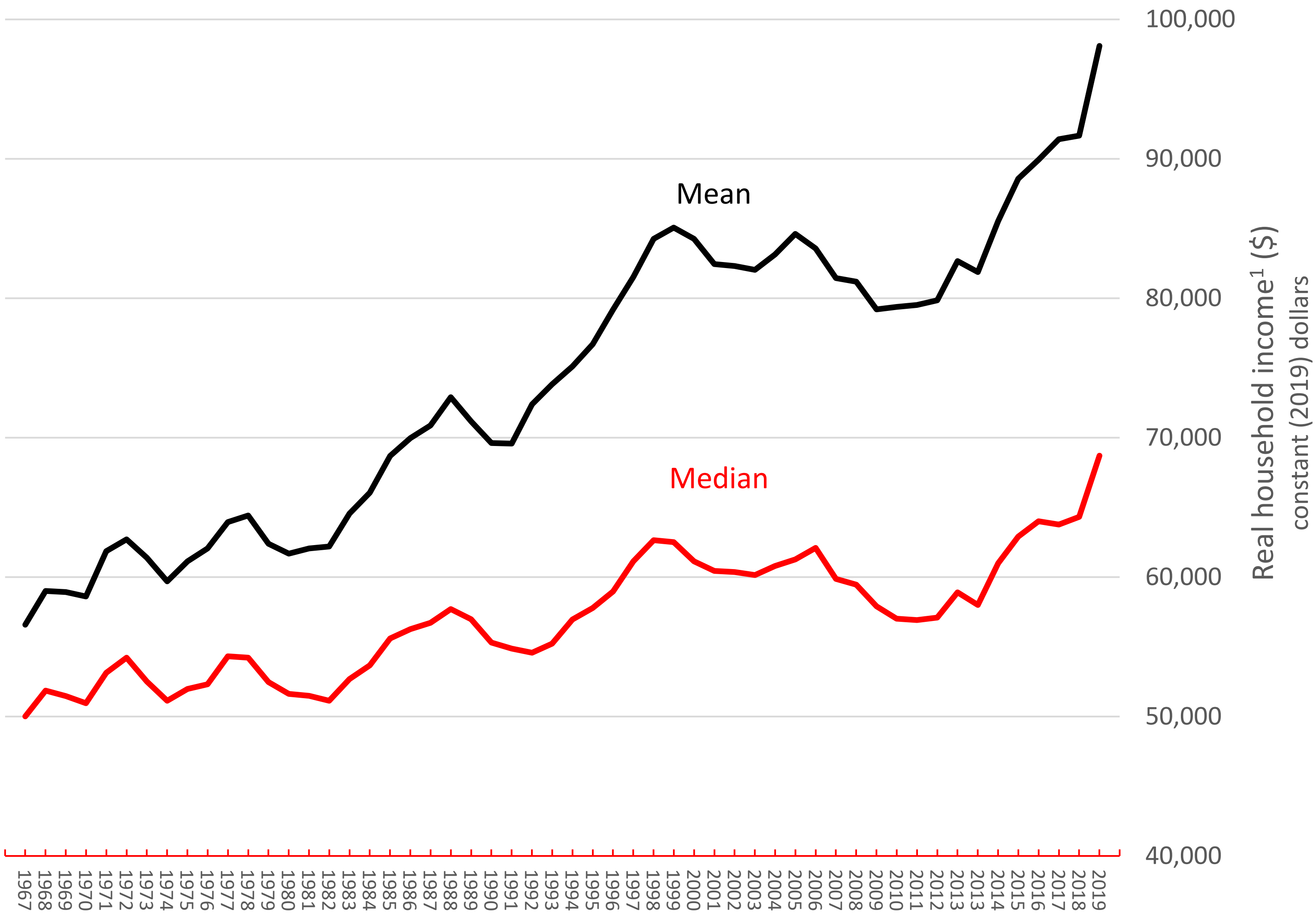


The poverty rate is a record low.

Source: U.S. Census Bureau. *Income and Poverty in the United States: 2019.* Issued September 2020. Data through 2019.

[1] The Census Bureau's income estimates are based solely on money income before taxes and do not include the value of non-cash benefits such as food stamps, Medicare, Medicaid, public housing and employer-provided fringe benefits.

Median and mean household income



New highs in household mean and median money income.

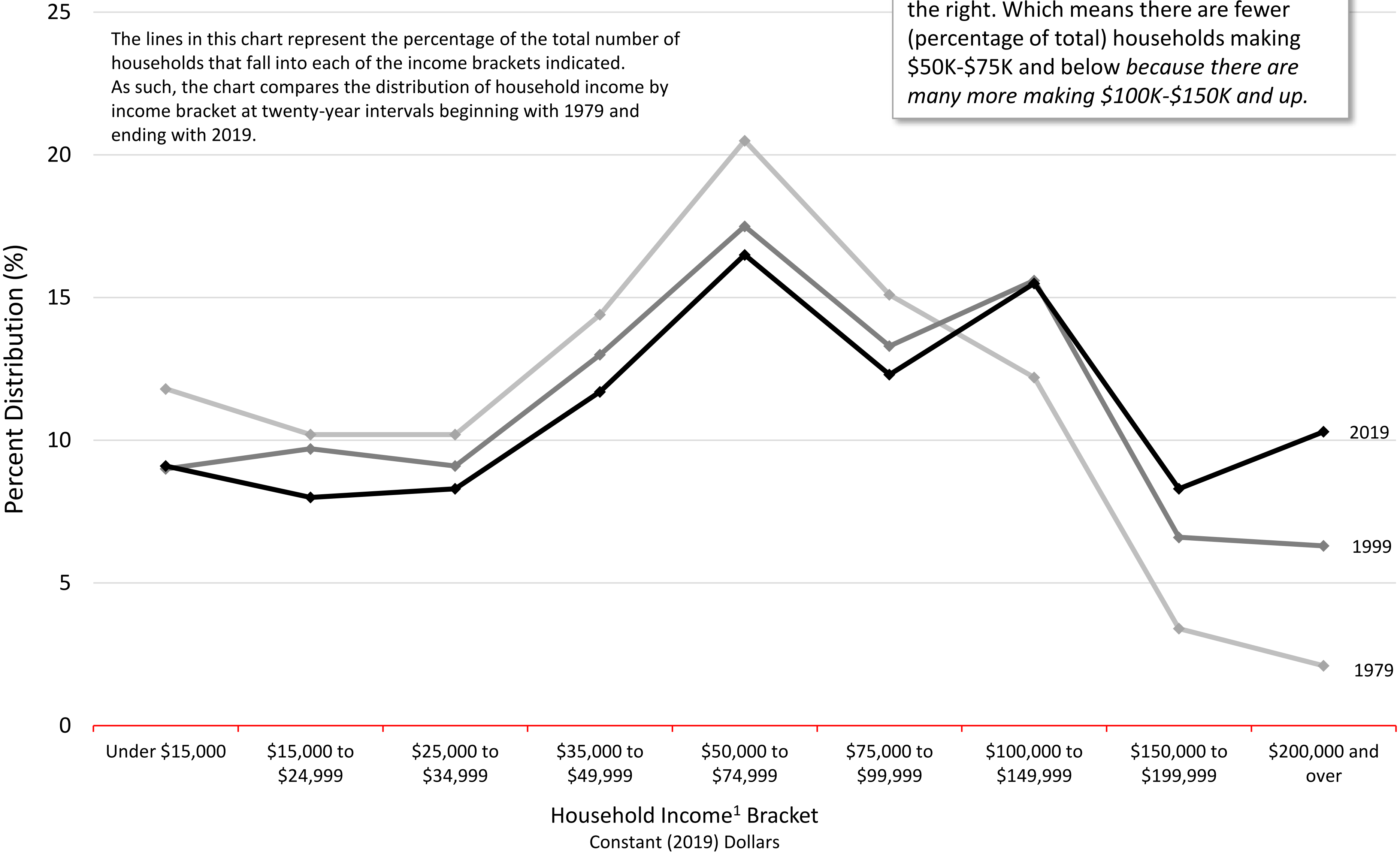
NOTE: These measures based on money income don't account for income re-distribution inherent in the tax code, food stamps, Medicare, Medicaid, public housing, etc.

Source: U.S. Census Bureau. *Income and Poverty in the United States: 2019*. Issued September 2020. Data through 2019.

[1] The Census Bureau's income estimates are based solely on money income before taxes and do not include the value of non-cash benefits such as food stamps, Medicare, Medicaid, public housing and employer-provided fringe benefits.

Income distribution

Over the last 40 years, the distribution of income has both flattened and shifted to the right. Which means there are fewer (percentage of total) households making $50K-$75K and below *because there are many more making $100K-$150K and up.*



Source: U.S. Census Bureau. *Income and Poverty in the United States: 2019*. Issued September 2020. Data through 2019.

[1] The Census Bureau's income estimates are based solely on money income before taxes and do not include the value of non-cash benefits such as food stamps, Medicare, Medicaid, public housing and employer-provided fringe benefits.

2018 Auten-Splitter study

VI. Summary and Conclusions

Using tax return data, Piketty and Saez (2003) argued that the top one percent income share more than doubled compared to 1960. This analysis, however, did not account for the effects of major tax reforms, income sources not reported on individual income tax returns, or changes in marriage rates, which resulted in a distorted view of income inequality levels and trends. Piketty, Saez, and Zucman (2018) reached similar conclusions after addressing some of these issues by allocating total national income and measuring income groups by the numbers of adults. But other issues were left unaddressed and our analysis shows that their conclusions are highly sensitive to certain allocation assumptions. Alternative assumptions that we believe are more appropriate lead to quite different results, especially in recent decades.

Using administrative U.S. tax data, this paper develops measures of pre-tax and after-tax income that target total national income to examine levels and trends in top income shares from 1960 to 2015. Our measure of pre-tax top one percent income shares increased by less than 3 percentage points. While pre-tax income measures how individuals are compensated for their labor and investments, it provides an incomplete picture of the overall resources available across the income distribution. Our measure of after-tax top one percent income shares, which includes government transfers, increased less than half a percentage point since 1960. Even during the more recent period since 1979, we estimate that it increased less than one percentage point.

Our results highlight the importance of accounting for tax reforms and including income not reported on tax returns. The most important factors in our differences from Piketty and Saez (2003) are accounting for C corporation retained earnings, corporate and business property taxes, employer payroll taxes and insurance, and changing family structures. Our results also highlight the sensitivity of top income share estimates to the assumptions used to allocate income not reported on tax returns. For example, the most important difference with Piketty, Saez, and Zucman (2018) arises from the allocation of underreported income. In addition, we account for numerous changes in how income is reported on tax returns over time due to reforms.

Our results suggest an alternative narrative about top income shares: changes in the top one percent income shares over the last half century are likely to have been relatively modest.

Source: *Income Inequality in the United States: Using Tax Data to Measure Long-term Trends*, August 23, 2018. Authors: Gerald Auten, Office of Tax Analysis, U.S. Treasury Department; David Splinter, Joint Committee on Taxation, U.S. Congress. Paper written for the Joint Committee on Taxation a bi-partisan committee of both houses of Congress.

2018 Auten-Splitter study

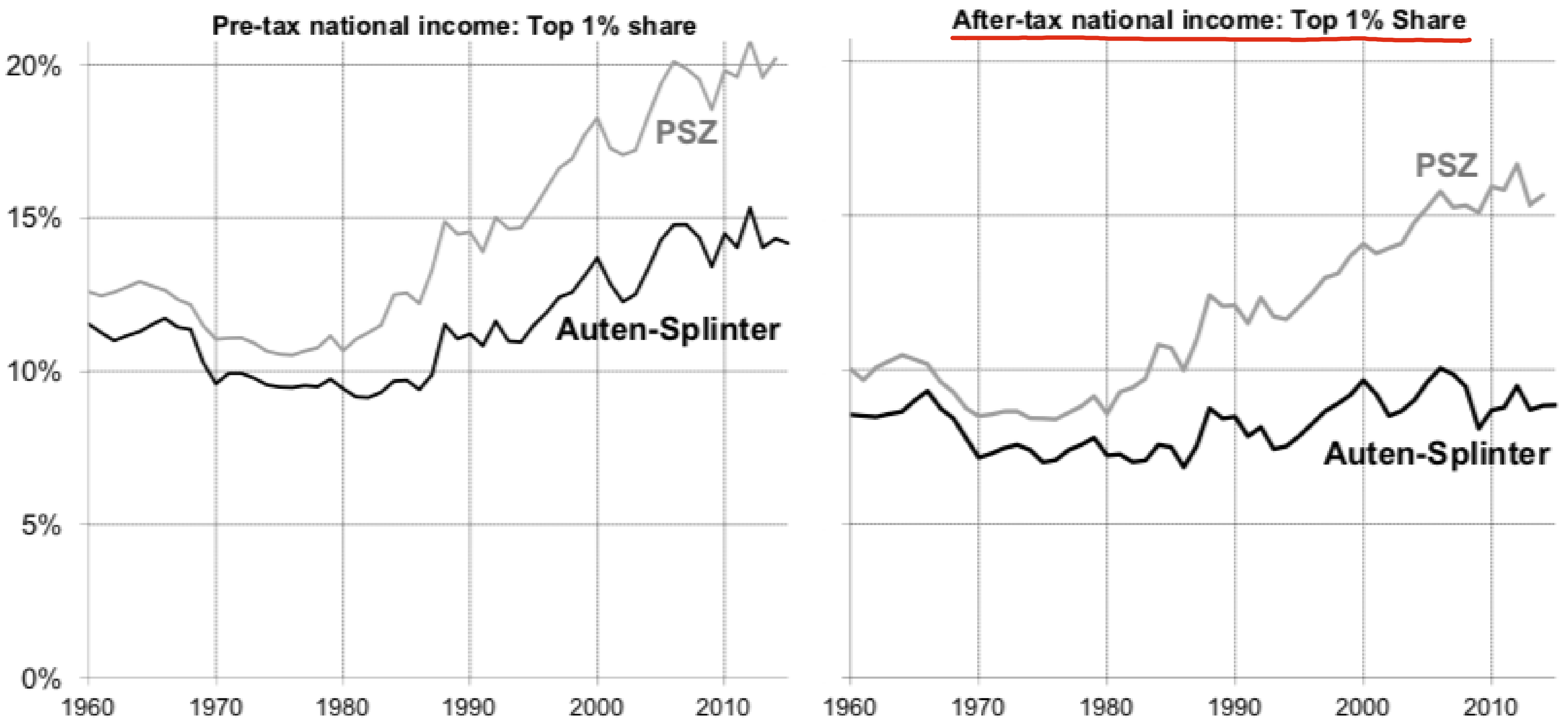


Figure 1: Total income as a share of NIPA income

Notes: Adjustments used to estimate Auten-Splinter pre-tax and after-tax income are listed in Tables 1, 2, and A1 and described in detail in the online appendix.

Sources: Authors' calculations, and Piketty, Saez, and Zucman (2018, PSZ in figure).

Source: *Income Inequality in the United States: Using Tax Data to Measure Long-term Trends*, August 23, 2018, page 32. Authors: Gerald Auten, Office of Tax Analysis, U.S. Treasury Department; David Splinter, Joint Committee on Taxation, U.S. Congress. Paper written for the Joint Committee on Taxation a bi-partisan committee of both houses of Congress.

2021 forecasts

Wall Street spends a great deal of time and money trying to forecast relative performance among sectors, styles, markets and even asset classes.

In December of every year *Barron's* publishes its survey of the 10 top Wall Street strategists' picks vs. pans among the S&P 500's 11 sectors.

Source: *Barron's,* December 21, 2020.

Investment Strategy
2021 forecasts

Sizing Up 2021

Here are Wall Street strategists' predictions for U.S. stocks, interest rates, the economy, gold, and more. The group is bullish on economically sensitive sectors such as industrials and materials, and bearish on utilities.

Dubravko Lakos-Bujas
J.P. Morgan
S&P 500 YE2021 Target
4400
S&P 500 2021 EPS
$178
10-Year U.S. Treasury Yield YE2021:
1.30%
Fed Funds Rate Target Range YE2021:
0.00-0.25%
Gold Price YE2021:
$1650
2021 U.S. GDP Growth/Decline:
3.3%
Overweight Sectors
Consumer Discretionary, Energy, Financials, Health Care
Underweight Sectors
Consumer Staples, Utilities, Real Estate

David Kostin
Goldman Sachs
S&P 500 YE2021 Target
4300
S&P 500 2021 EPS
$175
10-Year U.S. Treasury Yield YE2021:
1.30%
Fed Funds Rate Target Range YE2021:
0.00-0.25%
Gold Price YE2021:
$2300
2021 U.S. GDP Growth/Decline:
5.0%
Overweight Sectors
Technology, Heath Care, Industrials, Materials
Underweight Sectors
Communication Services, Consumer Staples, Utilities, Real Estate

Edward Yardeni
Yardeni Research
S&P 500 YE2021 Target
4290
S&P 500 2021 EPS
$170
10-Year U.S. Treasury Yield YE2021:
1.00%
Fed Funds Rate Target Range YE2021:
0.00-0.25%
Gold Price YE2021:
$2000
2021 U.S. GDP Growth/Decline:
5.0%
Overweight Sectors
Technology, Industrials, Financials
Underweight Sectors
Consumer Staples, Utilities

Saira Malik
Nuveen
S&P 500 YE2021 Target
4050
S&P 500 2021 EPS
$177
10-Year U.S. Treasury Yield YE2021:
1.40%
Fed Funds Rate Target Range YE2021:
0.00-0.25%
Gold Price YE2021:
$1700
2021 U.S. GDP Growth/Decline:
5.0%
Overweight Sectors
Consumer Discretionary, Financials, Health Care
Underweight Sectors
Energy, Utilities

Michael Fredericks
BlackRock
S&P 500 YE2021 Target
4025
S&P 500 2021 EPS
$175
10-Year U.S. Treasury Yield YE2021:
1.30%
Fed Funds Rate Target Range YE2021:
0.00-0.25%
Gold Price YE2021:
N/A
2021 U.S. GDP Growth/Decline:
4.5%
Overweight Sectors
Financials, Health Care, Industrials
Underweight Sectors
Utilities

Rob Sharps
T. Rowe Price
S&P 500 YE2021 Target
3950
S&P 500 2021 EPS
$175
10-Year U.S. Treasury Yield YE2021:
1.35%
Fed Funds Rate Target Range YE2021:
0.00-0.25%
Gold Price YE2021:
$1400
2021 U.S. GDP Growth/Decline:
4.1%
Overweight Sectors
Financials, Industrials
Underweight Sectors
Consumer Staples, Technology (software), Utilities

Mike Wilson
Morgan Stanley
S&P 500 YE2021 Target
3900
S&P 500 2021 EPS
$175
10-Year U.S. Treasury Yield YE2021:
1.45%
Fed Funds Rate Target Range YE2021:
0.00-0.25%
Gold Price YE2021:
N/A
2021 U.S. GDP Growth/Decline:
6.0%
Overweight Sectors
Financials, Health Care, Materials, Industrials
Underweight Sectors
Consumer Staples, Utilities

Lori Heinel
State Street
S&P 500 YE2021 Target
3850
S&P 500 2021 EPS
$168
10-Year U.S. Treasury Yield YE2021:
1.48%
Fed Funds Rate Target Range YE2021:
0.00-0.25%
Gold Price YE2021:
$2000
2021 U.S. GDP Growth/Decline:
4.1%
Overweight Sectors
Consumer Discretionary, Communication Services, Health Care, Materials
Underweight Sectors
Financials, Real Estate, Utilities

Tobias Levkovich
Citi
S&P 500 YE2021 Target
3800
S&P 500 2021 EPS
$167
10-Year U.S. Treasury Yield YE2021:
1.25%
Fed Funds Rate Target Range YE2021:
0.00-0.25%
Gold Price YE2021:
$1900
2021 U.S. GDP Growth/Decline:
4.9%
Overweight Sectors
Con. Discretionary (services), Financials (insurance), Health Care (services), Industrials (capital goods), Technology (hardware)
Underweight Sectors
Comm. Services, Con. Staples (food, beverage, and tobacco), Materials, Technology (software), Utilities

Savita Subramanian
BofA Securities
S&P 500 YE2021 Target
3800
S&P 500 2021 EPS
$165
10-Year U.S. Treasury Yield YE2021:
1.50%
Fed Funds Rate Target Range YE2021:
0.00-0.25%
Gold Price YE2021:
$2100
2021 U.S. GDP Growth/Decline:
4.5%
Overweight Sectors
Financials, Energy, Technology, Health Care
Underweight Sectors
Consumer Staples, Communication Services, Real Estate

Source: *Barron's,* December 21, 2020.

Wall Street's sector calls for 2021 – should you take their advice?

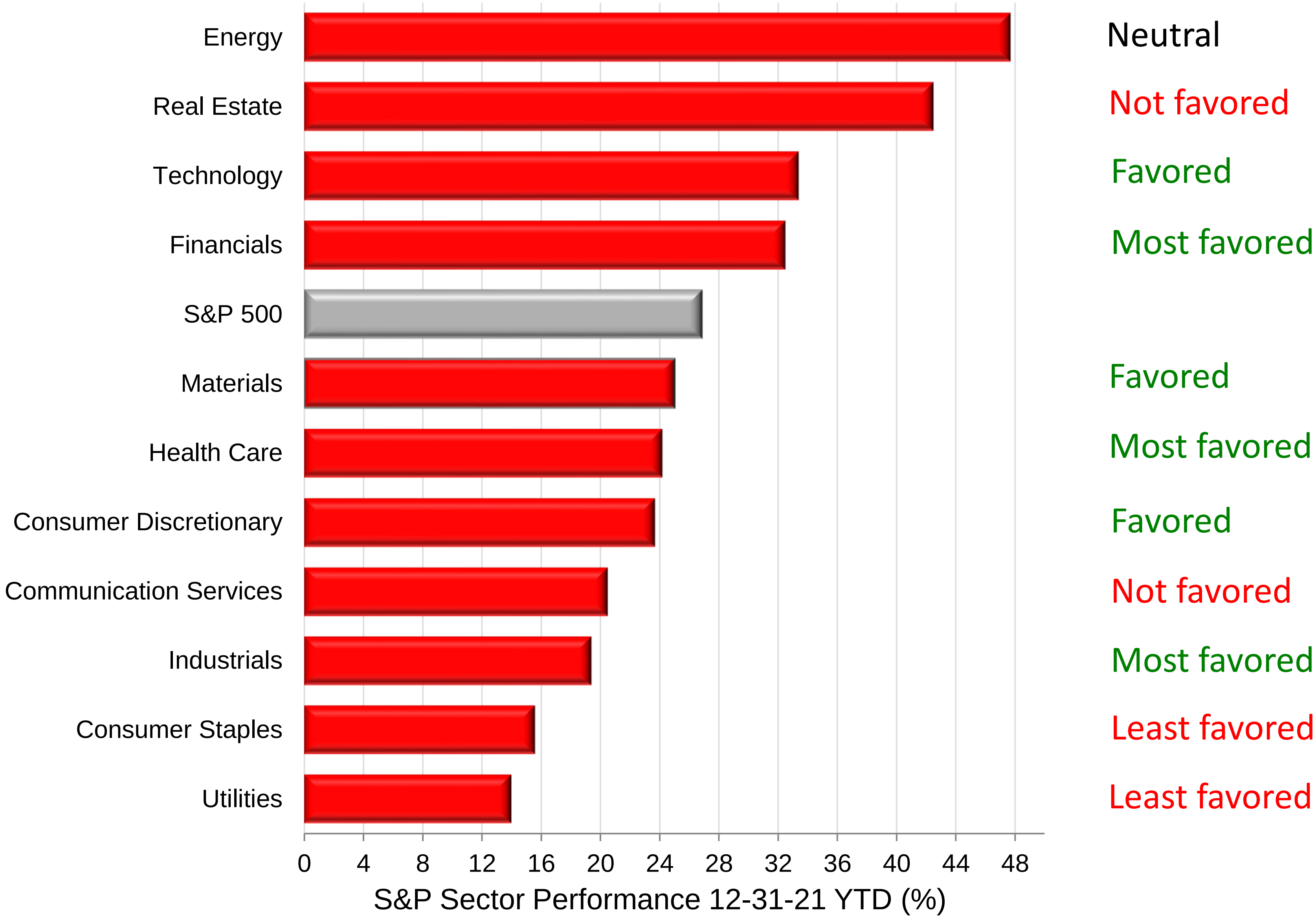
Barron's 2021 Forecast[1]

Survey of 10 stock market strategists' sector picks and pans for 2021

	Consumer Discretionary	Consumer Staples	Energy	Financials	Health Care	Industrials	Information Technology	Materials	Communications Services	Utilities	REITs
J.P. Morgan	+	-	+	+	+					-	-
Goldman Sachs		-			+	+	+	+	-	-	-
Yardeni Research		-		+		+	+			-	
Nuveen	+		-	+	+					-	
BlackRock				+	+	+				-	
T. Rowe Price		-		+		+	-			-	
Morgan Stanley		-		+	+	+		+		-	
State Street	+			-	+			+	+	-	-
Citi	+	-		+	+	+		-	-	-	
BofA Securities		-	+	+	+		+		-		-
Net (+/-)	**+4**	**-7**	**+1**	**+7**	**+8**	**+6**	**+2**	**+2**	**-2**	**-9**	**-4**

[1] Published December 21, 2020.

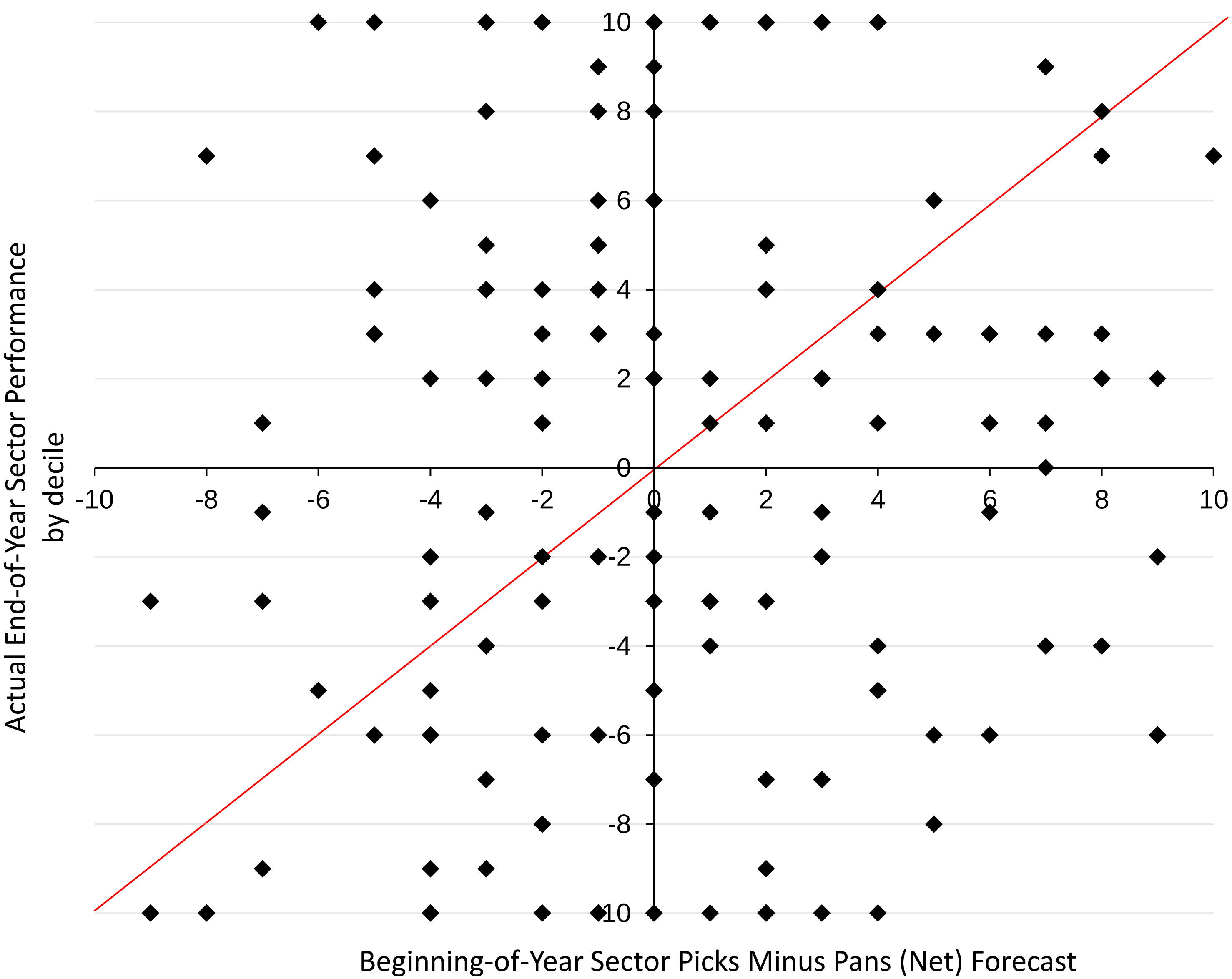
S&P 2021 sector returns vs. the strategists[1] beginning-of-year calls



Source: Standard and Poor's

[1] From *Barron's* survey of 10 Wall Street strategists, published December 21, 2020.

Summary of Wall Street's sector calls 2007-2021



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

<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.

THE WALL STREET JOURNAL.

Stock-Picking Funds Trailed Market Again

Over the long run, S&P Dow Jones Indices found that most U.S. equity funds, regardless of category, fail to beat the relevant stock index. Of the U.S. large-cap funds that were in business 20 years ago, 6% are both still operating and have beaten the S&P 500 over that time, according to the report.

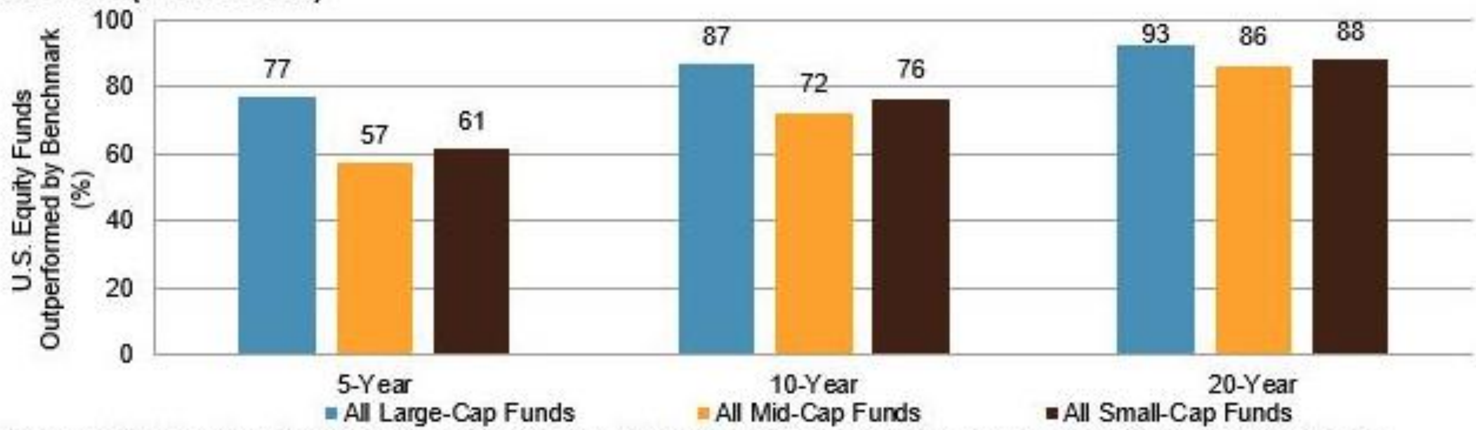
Source: *The Wall Street Journal*, March 12, 2021.

Active vs. passive

S&P DOW JONES INDICES — 26 Mar, 2021

Risk-Adjusted SPIVA Year-End 2020 Scorecard No Evidence to Support Superior Risk Management Skills of Active Managers

Exhibit 1a: Percentage of U.S. Equity Funds Outperformed by Benchmarks – Risk-Adjusted Returns (Net-of-Fees)



Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2020. Past performance is no guarantee of future results. Chart is provided for illustrative purposes.

Conclusion

Although active managers claim that their risk management skills are superior to passive investment strategies, their claim does not stand the test of historical statistics. The Risk-Adjusted SPIVA Year-End 2020 Scorecard shows that our SPIVA Scorecard results also hold on risk-adjusted basis. Most active funds lagged their benchmarks in the long term, and we found little evidence to support the assumption that higher risks were rewarded by higher returns.

Source: *S&P Global*, March 26, 2021.

Active vs. passive

SPIVA U.S. Scorecard — Year-End 2020

REPORTS

Report 1: Percentage of U.S. Equity Funds Underperforming Their Benchmarks

FUND CATEGORY	COMPARISON INDEX	1-YEAR (%)	3-YEAR (%)	5-YEAR (%)	10-YEAR (%)	20-YEAR (%)
All Domestic Funds	S&P Composite 1500	57.09	67.01	72.80	83.22	86.01
All Large-Cap Funds	S&P 500	60.33	69.71	75.27	82.32	94.00
All Mid-Cap Funds	S&P MidCap 400	50.68	53.49	59.68	72.80	88.03
All Small-Cap Funds	S&P SmallCap 600	45.52	57.04	65.12	76.31	88.06
All Multi-Cap Funds	S&P Composite 1500	55.58	62.87	71.94	86.57	90.07
Large-Cap Growth Funds	S&P 500 Growth	38.18	39.74	57.03	81.31	96.46
Large-Cap Core Funds	S&P 500	65.89	78.99	87.70	94.47	96.36
Large-Cap Value Funds	S&P 500 Value	33.44	72.48	80.42	85.96	76.56
Mid-Cap Growth Funds	S&P MidCap 400 Growth	17.16	18.55	31.25	56.74	89.92
Mid-Cap Core Funds	S&P MidCap 400	80.37	71.90	83.05	84.31	86.36
Mid-Cap Value Funds	S&P MidCap 400 Value	52.73	73.21	92.45	87.88	85.11
Small-Cap Growth Funds	S&P SmallCap 600 Growth	13.71	19.57	32.82	56.78	93.94
Small-Cap Core Funds	S&P SmallCap 600	62.35	71.83	80.72	90.35	88.30
Small-Cap Value Funds	S&P SmallCap 600 Value	43.84	78.49	85.22	96.88	75.91
Multi-Cap Growth Funds	S&P Composite 1500 Growth	46.67	55.25	69.57	87.76	92.49
Multi-Cap Core Funds	S&P Composite 1500	62.15	79.76	89.11	92.88	88.89
Multi-Cap Value Funds	S&P Composite 1500 Value	50.00	83.62	84.62	86.29	82.83
Real Estate Funds	S&P United States REIT	24.68	43.37	50.59	75.56	87.93

Source: S&P Dow Jones Indices LLC. Data as of Dec. 31, 2020. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Source: *S&P Global*, March 11, 2021.

Active vs. passive

SPIVA U.S. Scorecard Year-End 2020

Report 11: Percentage of Fixed Income Funds Underperforming Their Benchmarks

FUND CATEGORY	COMPARISON INDEX	1-YEAR (%)	3-YEAR (%)	5-YEAR (%)	10-YEAR (%)	15-YEAR (%)
Government Long Funds	Barclays US Government Long	94.29	98.04	98.11	98.73	97.96
Government Intermediate Funds	Barclays US Government Intermediate	53.57	88.24	81.82	81.82	85.71
Government Short Funds	Barclays US Government (1-3 Year)	47.83	66.67	71.43	75.00	82.35
Investment-Grade Long Funds	Barclays US Government/Credit Long	94.38	97.73	97.80	98.37	97.06
Investment-Grade Intermediate Funds	Barclays US Government/Credit Intermediate	33.51	44.55	41.12	50.20	65.78
Investment-Grade Short Funds	Barclays US Government/Credit (1-3 Year)	43.96	63.16	42.70	43.33	71.01
High Yield Funds	Barclays US Corporate High Yield	77.71	91.43	95.26	97.22	98.47
Mortgage-Backed Securities Funds	Barclays US Aggregate Securitized - MBS	52.08	72.00	66.04	72.73	91.11
Global Income Funds	Barclays Global Aggregate	69.07	66.04	64.60	63.33	62.50
Emerging Markets Debt Funds	Barclays Emerging Markets	64.41	93.22	77.59	100.00	86.67
General Municipal Debt Funds	S&P National AMT-Free Municipal Bond	59.74	65.33	62.96	48.05	79.57
California Municipal Debt Funds	S&P California AMT-Free Municipal Bond	68.57	66.67	54.29	44.44	83.33
New York Municipal Debt Funds	S&P New York AMT-Free Municipal Bond	57.14	52.00	53.85	62.50	86.49
Loan Participation Funds	S&P/LSTA U.S. Leveraged Loan 100	90.57	100.00	91.67	96.00	100.00

Source: S&P Dow Jones Indices LLC, Factset. Data as of Dec. 31, 2020. Returns shown are annualized. Past performance is no guarantee of future results. Table is provided for illustrative purposes.

Source: *S&P Global*, March 11, 2021.

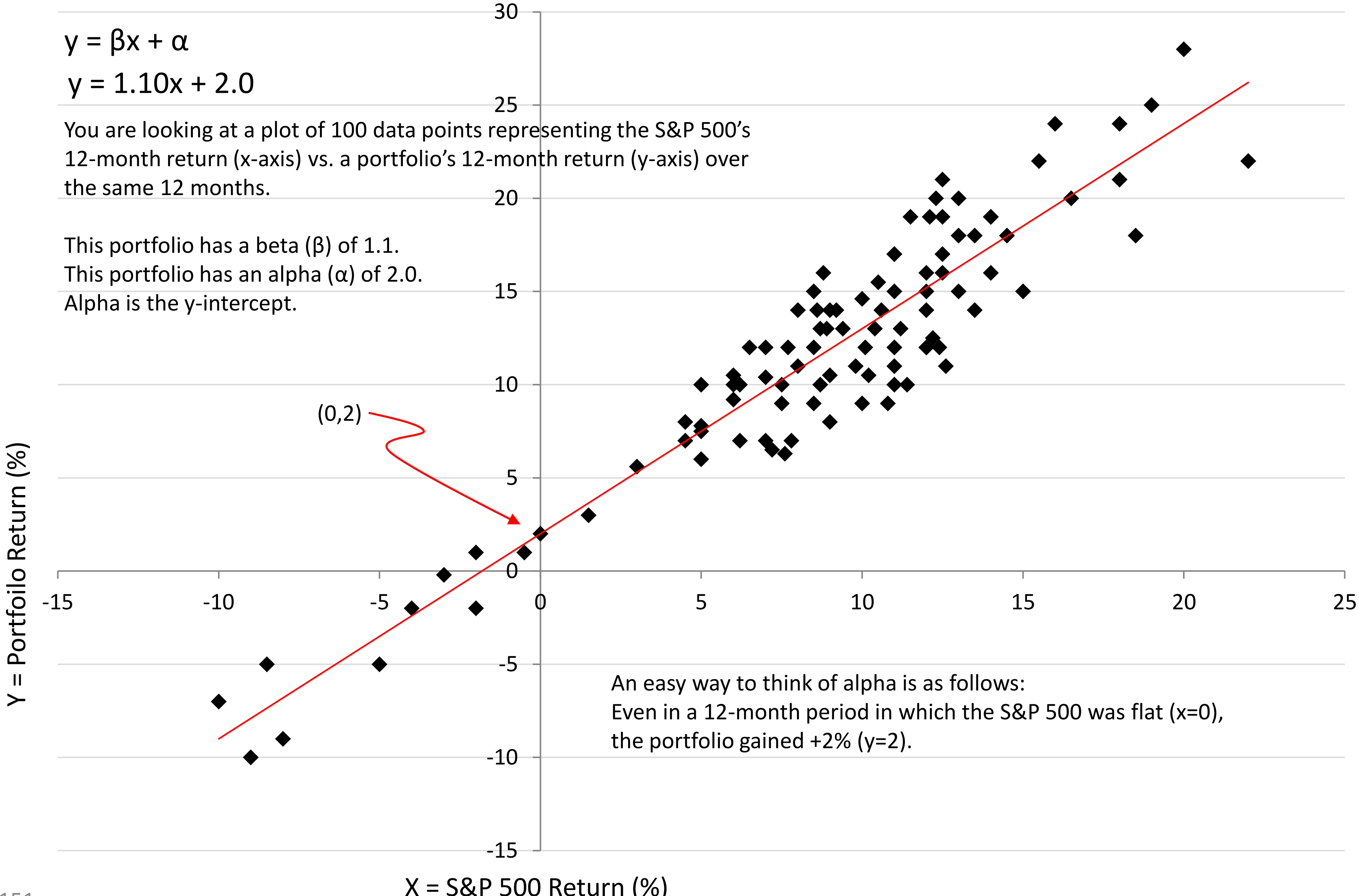
What is Alpha(α)?

$y = \beta x + \alpha$

$y = 1.10x + 2.0$

You are looking at a plot of 100 data points representing the S&P 500's 12-month return (x-axis) vs. a portfolio's 12-month return (y-axis) over the same 12 months.

This portfolio has a beta (β) of 1.1.
This portfolio has an alpha (α) of 2.0.
Alpha is the y-intercept.



An easy way to think of alpha is as follows:
Even in a 12-month period in which the S&P 500 was flat (x=0), the portfolio gained +2% (y=2).

Behavioral economics

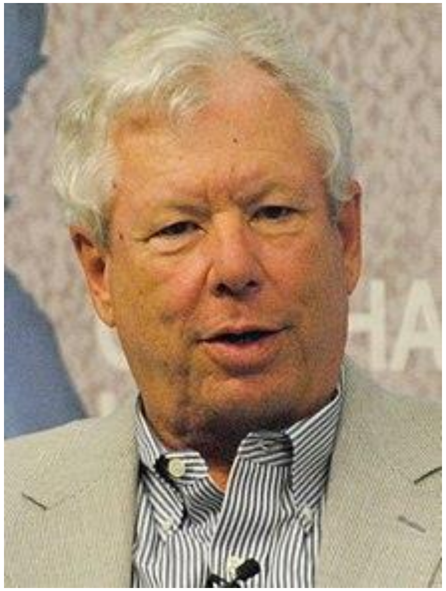
BARRON'S

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

Wall Street strategists' dismal track record with their S&P 500 sector recommendations illustrates how extremely difficult it is to systematically add α with tactical asset allocation – ie. trying to guess which sectors, styles, markets (foreign vs. domestic) or asset classes (eg. stocks, bonds, commodities, gold, etc.) are going to outperform and which are going to lag. In my opinion, MPT is still the best investing mousetrap yet devised.

"Your mother called to remind you to diversify."

Modern Portfolio Theory

Figure 1. Efficient frontier

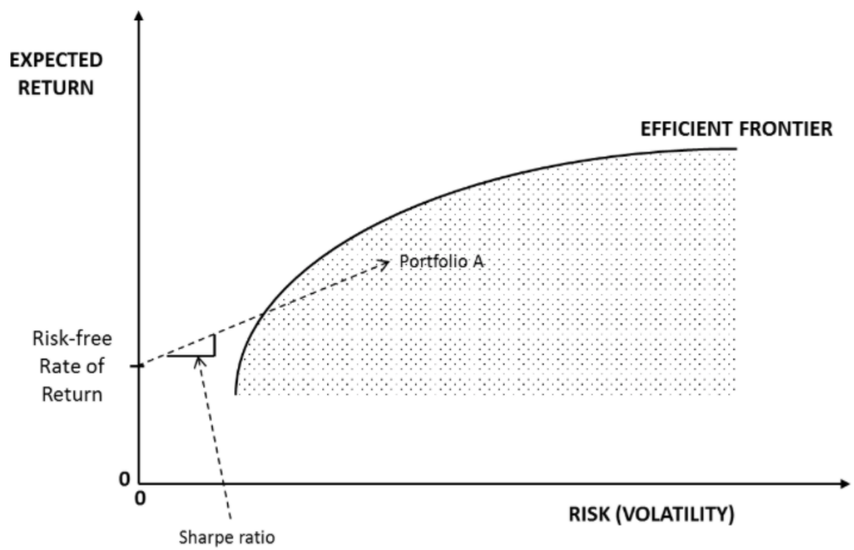
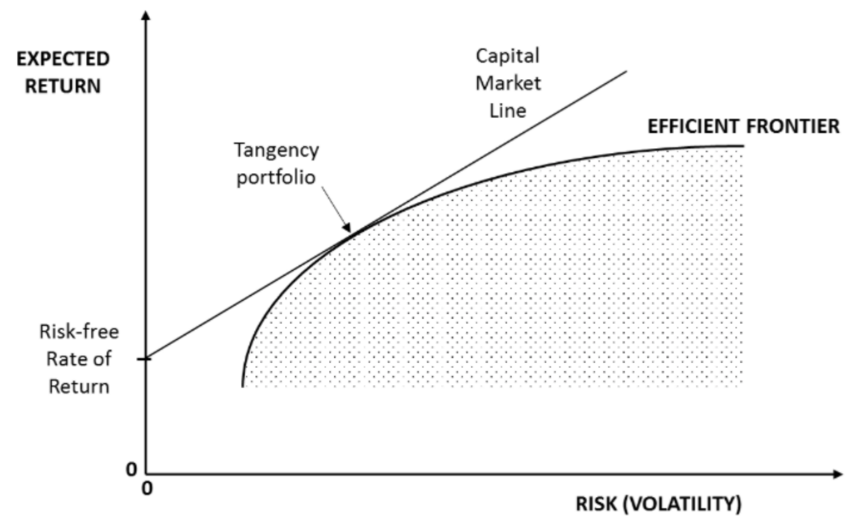


Figure 2. The capital market line



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.

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*.

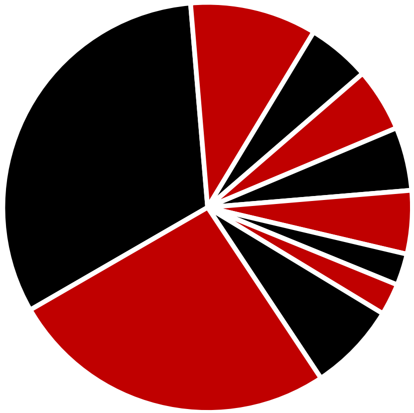
Thirty-eight years later, he shared a Nobel Prize with Merton Miller and William Sharpe for what has become a broad theory for portfolio selection.

<u>Modern Portfolio Theory</u>

Diversify

Optimize

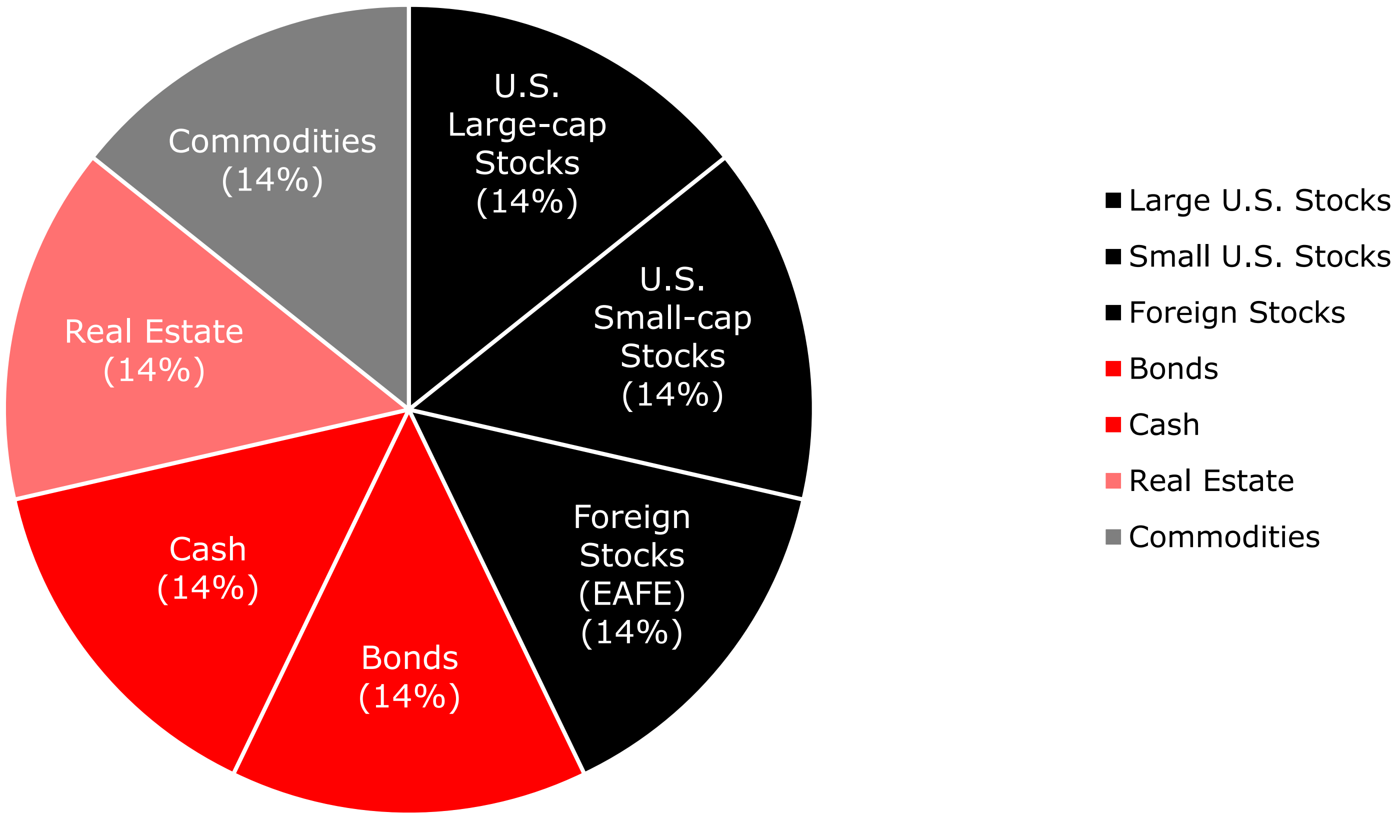
Rebalance



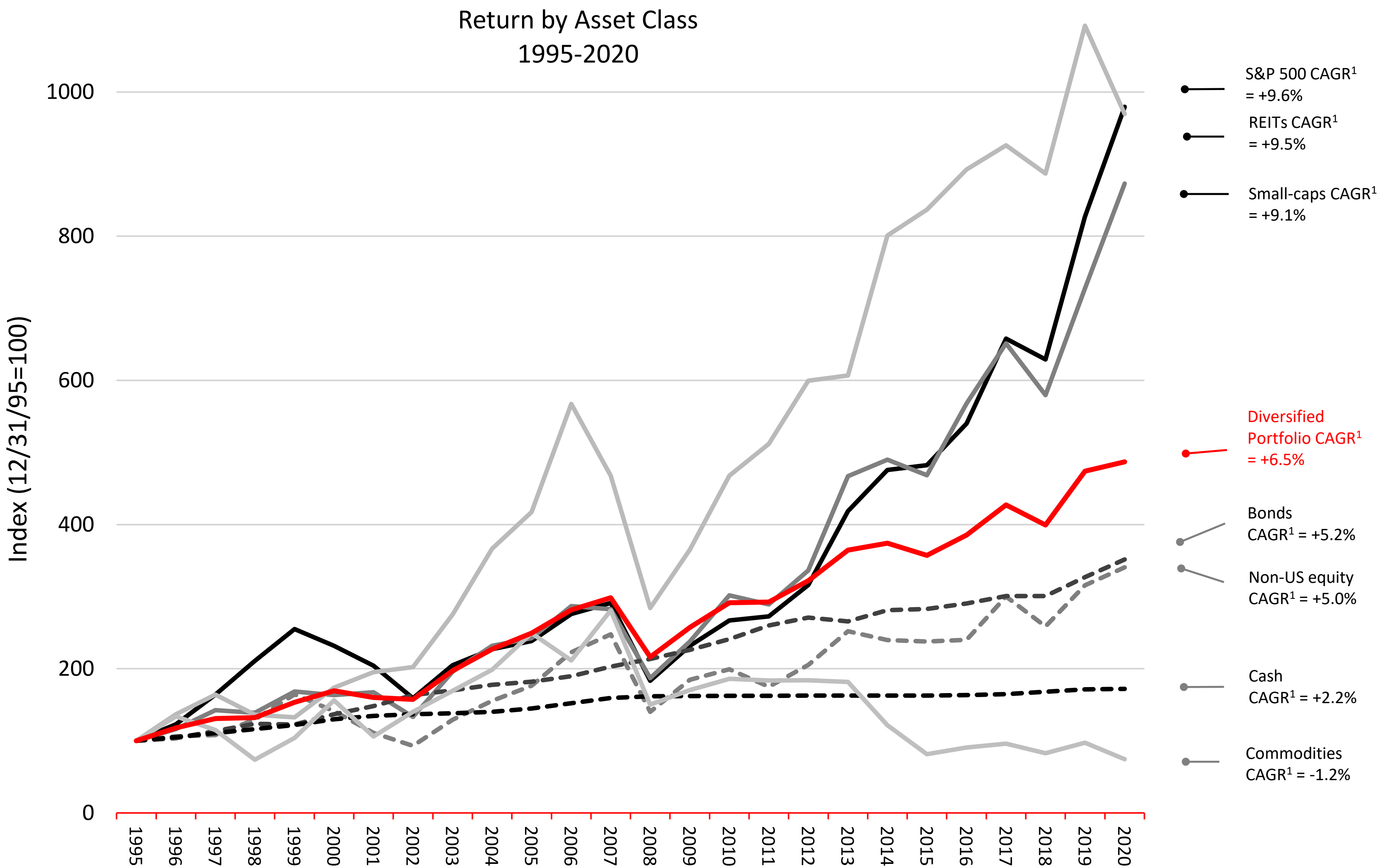
Asset allocation and diversification do not guarantee a profit or eliminate the risk of loss.
Source: Riskglossary.com

Asset Allocation — An Example

Let's construct a global balanced portfolio using 7 asset classes …

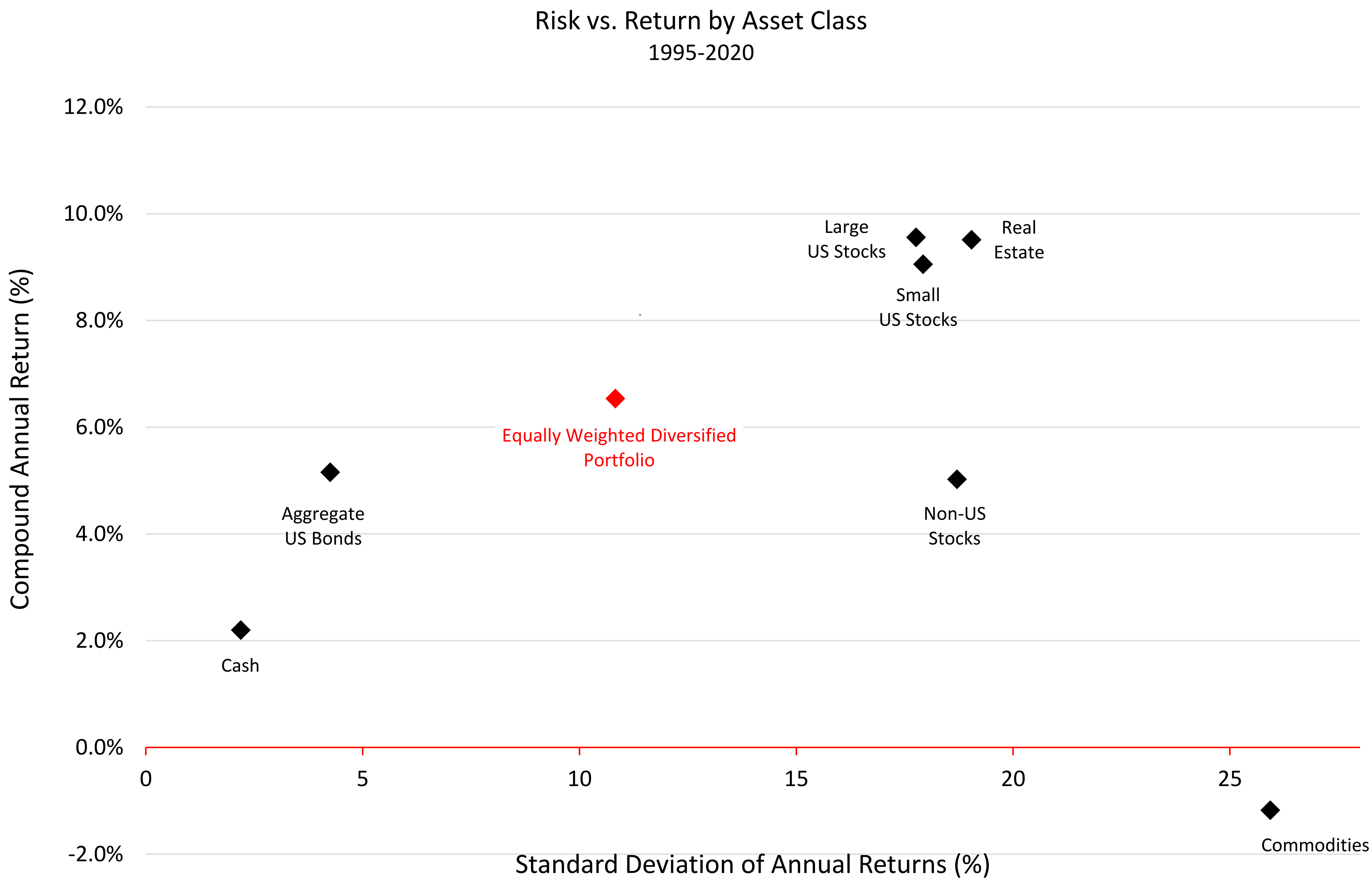


Asset Allocation over 25 years — An Example



Data through 2020. Past performance is not a guarantee of future results. An investment cannot be made directly in the indexes used in this illustration.
Source: ©2021 The 7Twelve ™ Portfolio powerpoint presentation, by Craig Israelsen. Used with permission. [1]Compound annual growth rate.

Asset Allocation over 25 years — the efficient frontier



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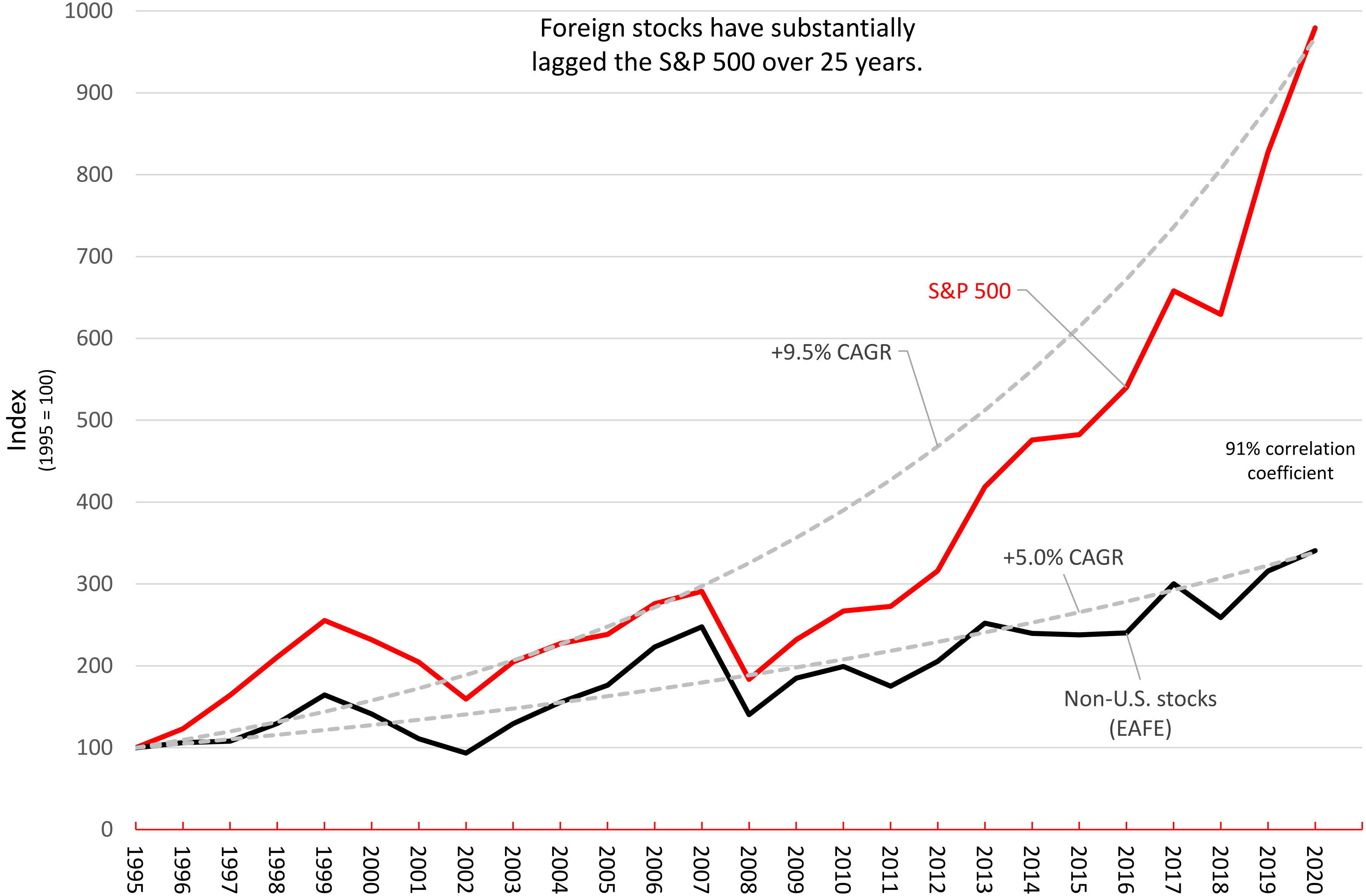
U.S. vs. foreign stocks – 25 years



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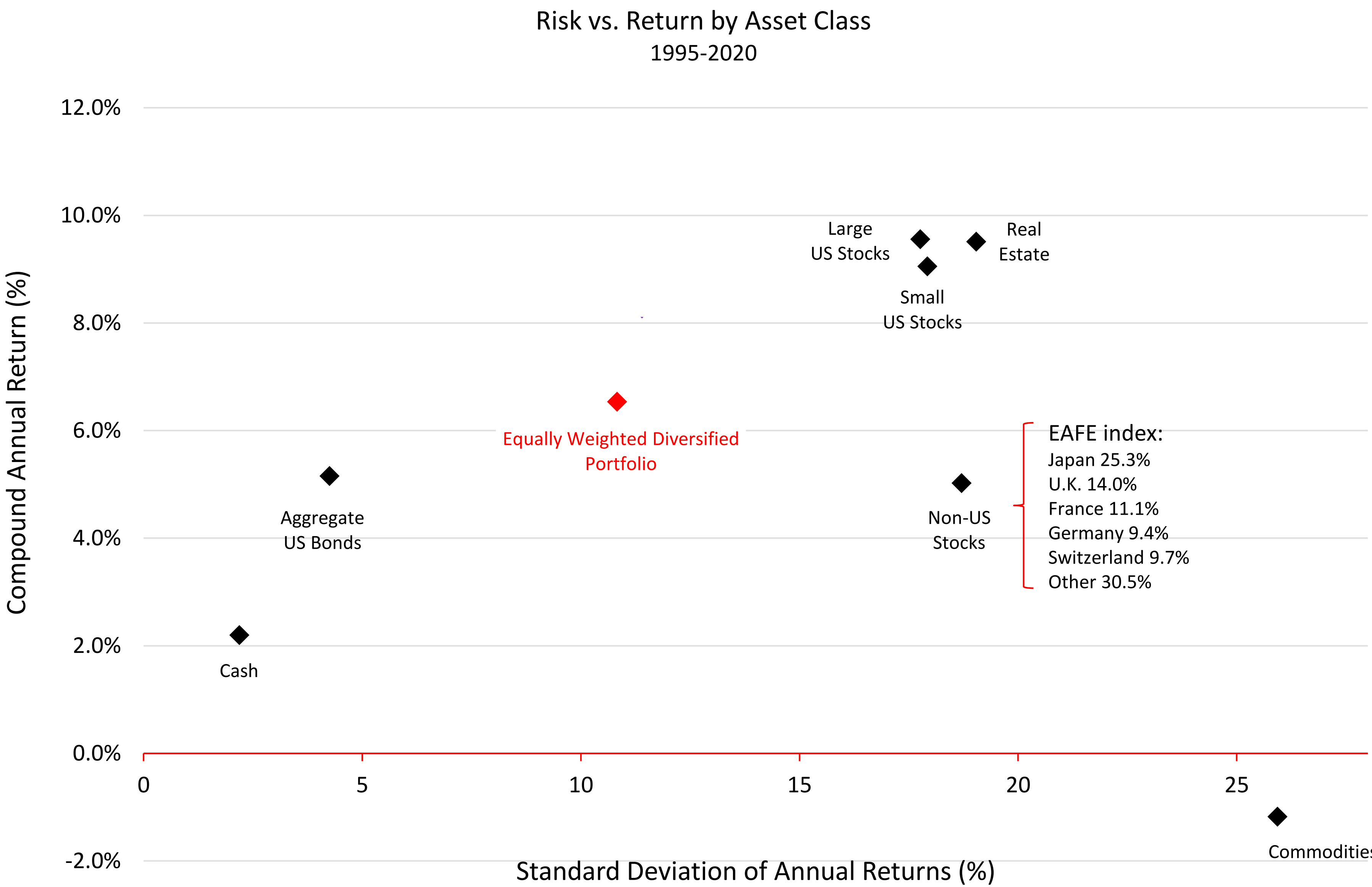
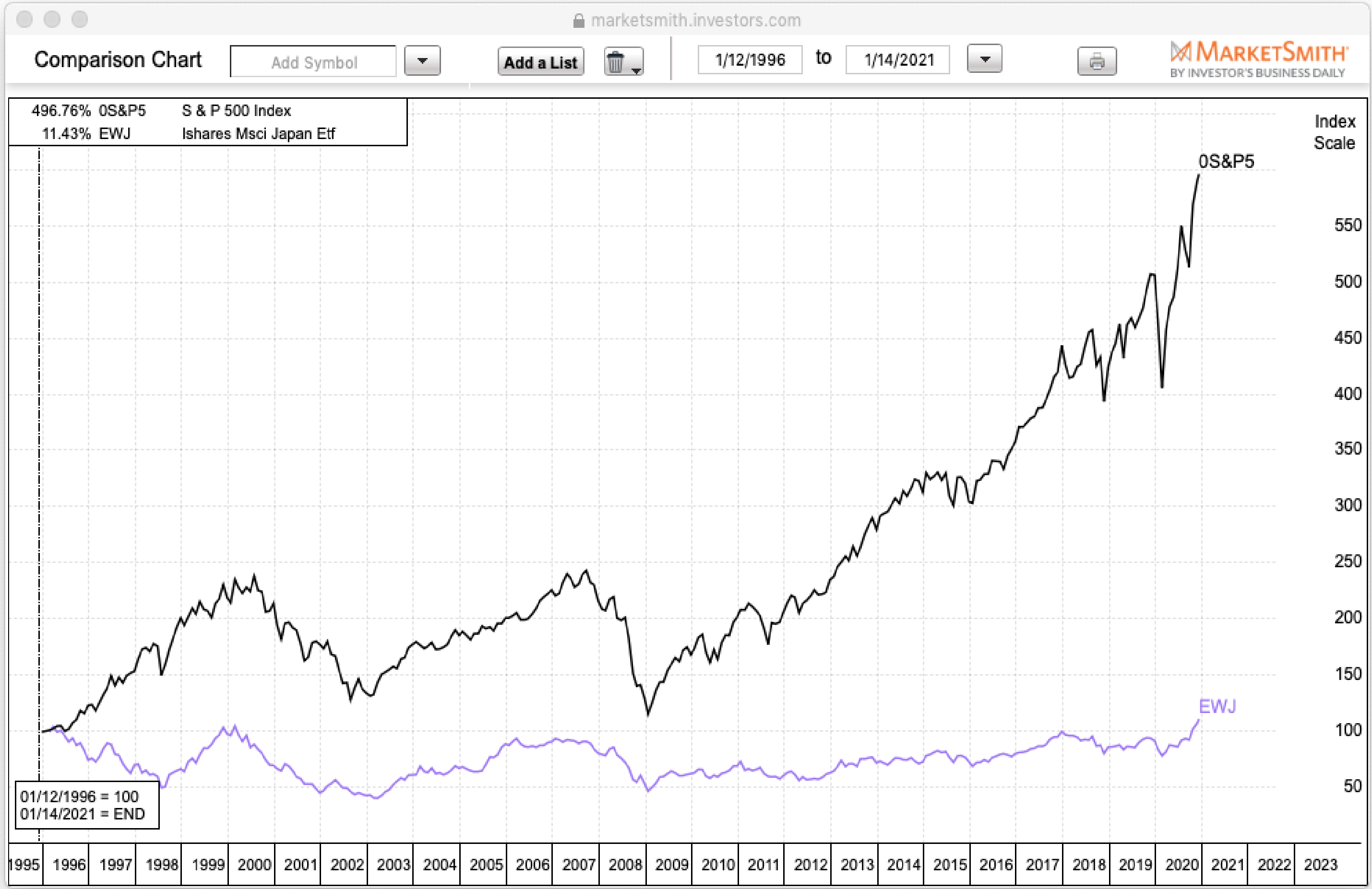
Asset Allocation over 25 years — the efficient frontier



Data through 2020. Past performance is not a guarantee of future results. An investment cannot be made directly in the indexes used in this illustration.
Sources: ©2021 The 7Twelve ™ Portfolio powerpoint presentation, by Craig Israelsen. Used with permission. MSCI for EAFE index weights.

EAFE index construction – know what you own

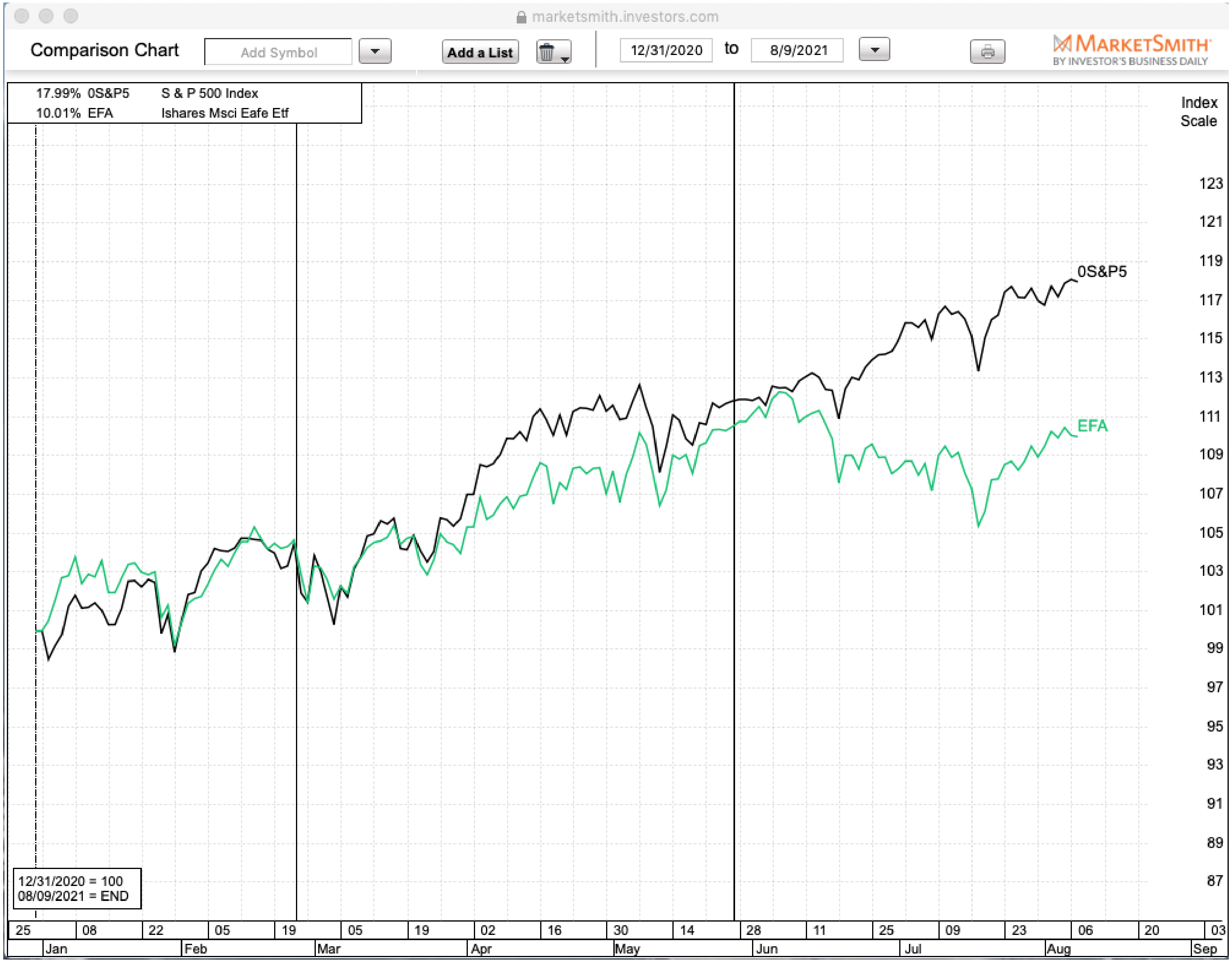


Japanese stocks compared to the S&P 500.

Japanese stocks have gone nowhere over 25 years.

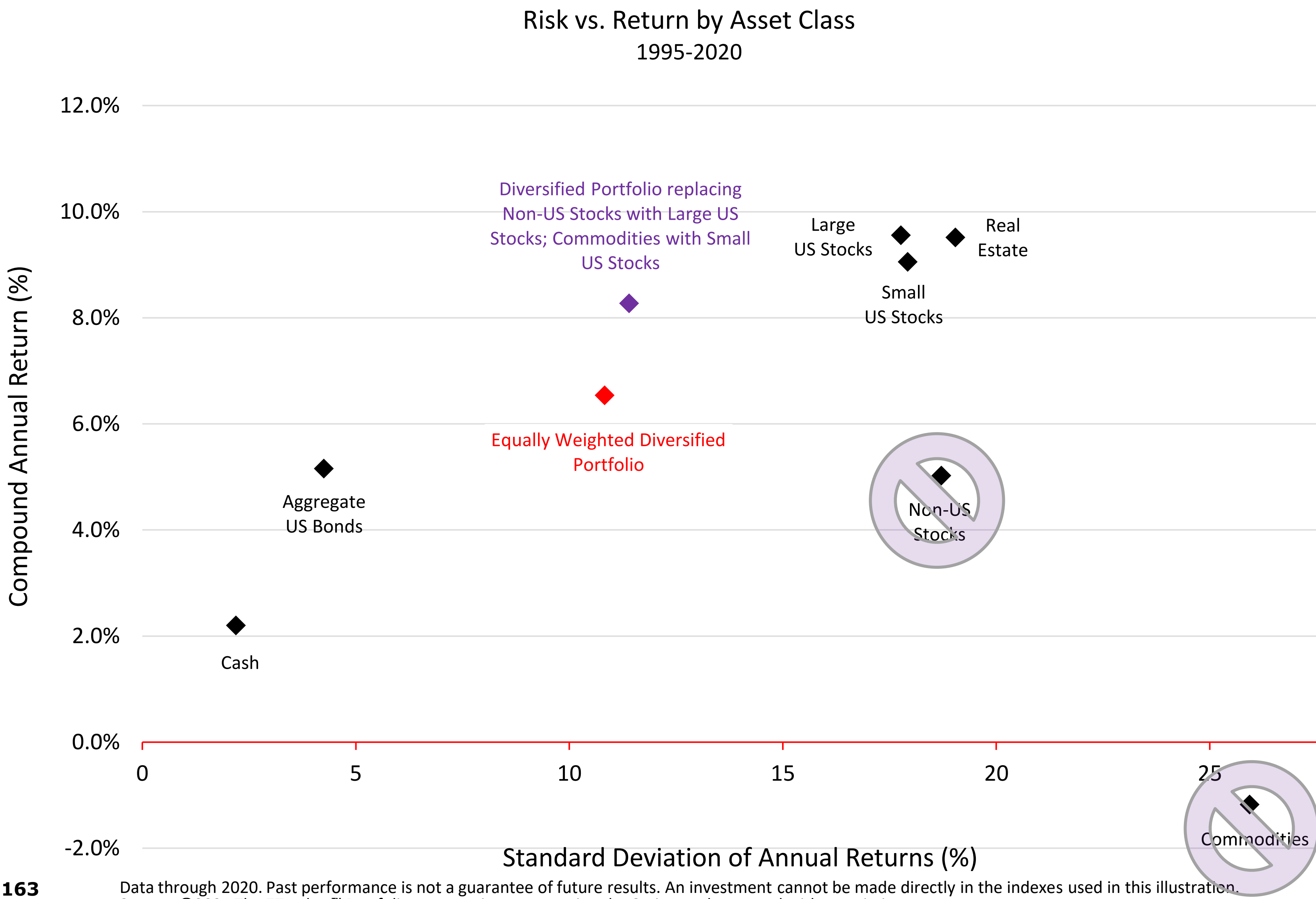
Source: MarketSmith, Incorporated. January 14, 2021.

S&P 500 vs. EAFE 2021-ytd



Source: MarketSmith, Incorporated. August 9, 2021.

Asset Allocation over 25 years — the efficient frontier



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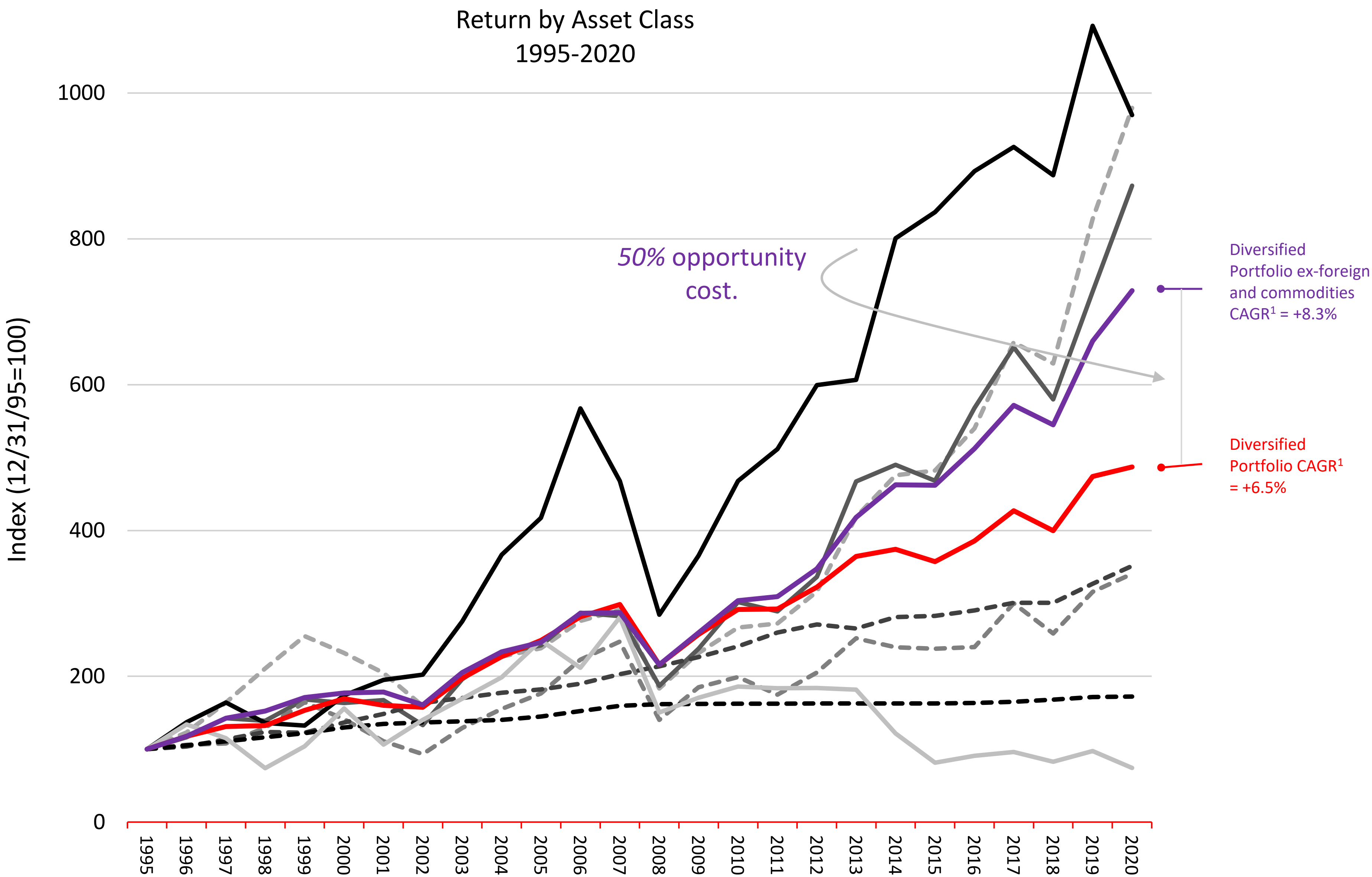
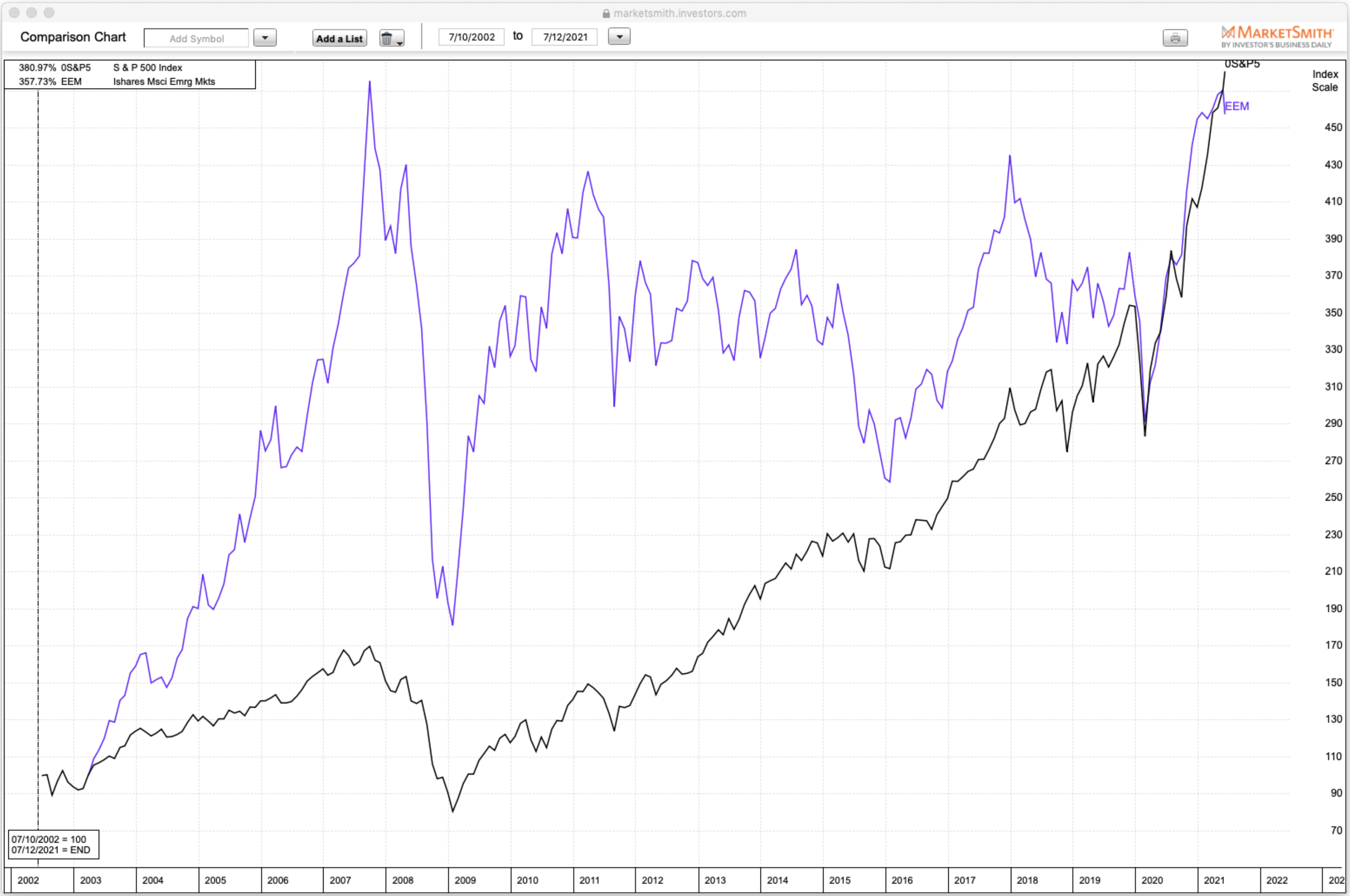
Asset Allocation over 25 years — An Example



Data through 2020. Past performance is not a guarantee of future results. An investment cannot be made directly in the indexes used in this illustration.
Source: ©2021 The 7Twelve ™ Portfolio powerpoint presentation, by Craig Israelsen. Used with permission. [1]Compound annual growth rate.

S&P 500 vs. Emerging markets

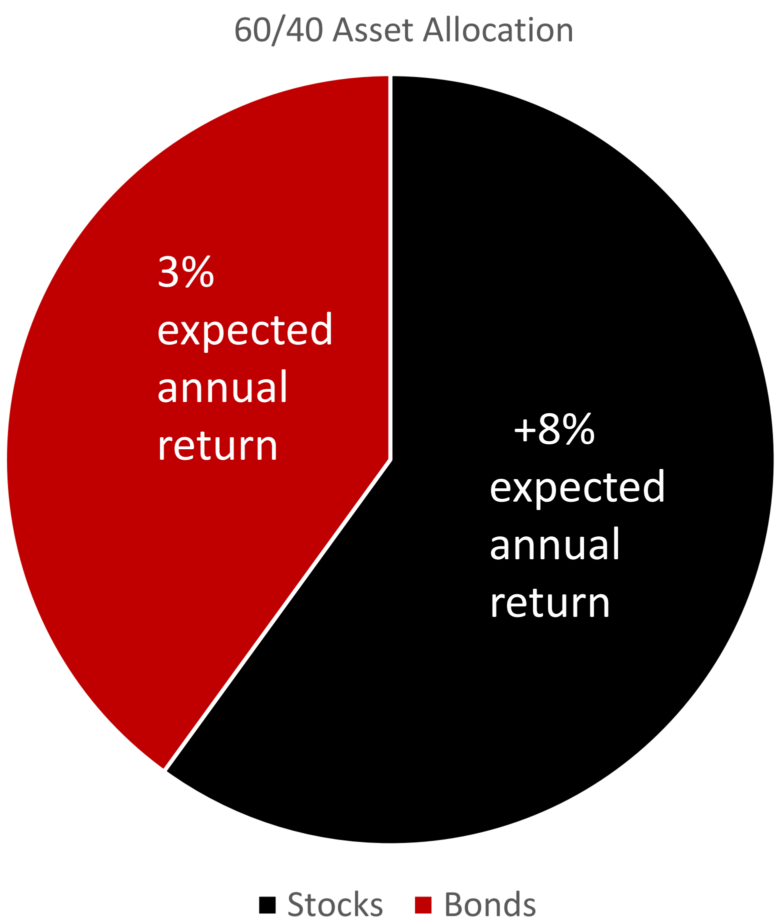


Source: MarketSmith, Incorporated. July 12, 2021.

S&P 500 vs. Emerging markets

Source: MarketSmith, Incorporated. July 12, 2021.

Setting expectations



Fixed income returns can no longer boost portfolio total returns as they have over the last 40 years.

Expect very modest fixed income returns going forward.

60% X 8% = 4.8%
40% X 3% = 1.2%
6.0% weighted expected return

Annuities – William Sharpe sees value

RETIREMENT INCOME

Solving the 'Hardest Problem in Retirement'

AN INTERVIEW WITH WILLIAM SHARPE, NOBEL LAUREATE IN ECONOMICS

BY SARAH MAX

NOBEL PRIZE-WINNING ECONOMIST WILLIAM Sharpe has spent most of his career thinking about risk. He's behind the Capital Asset Pricing Model for gauging systemic risk and the eponymous Sharpe ratio, which captures risk-adjusted return.

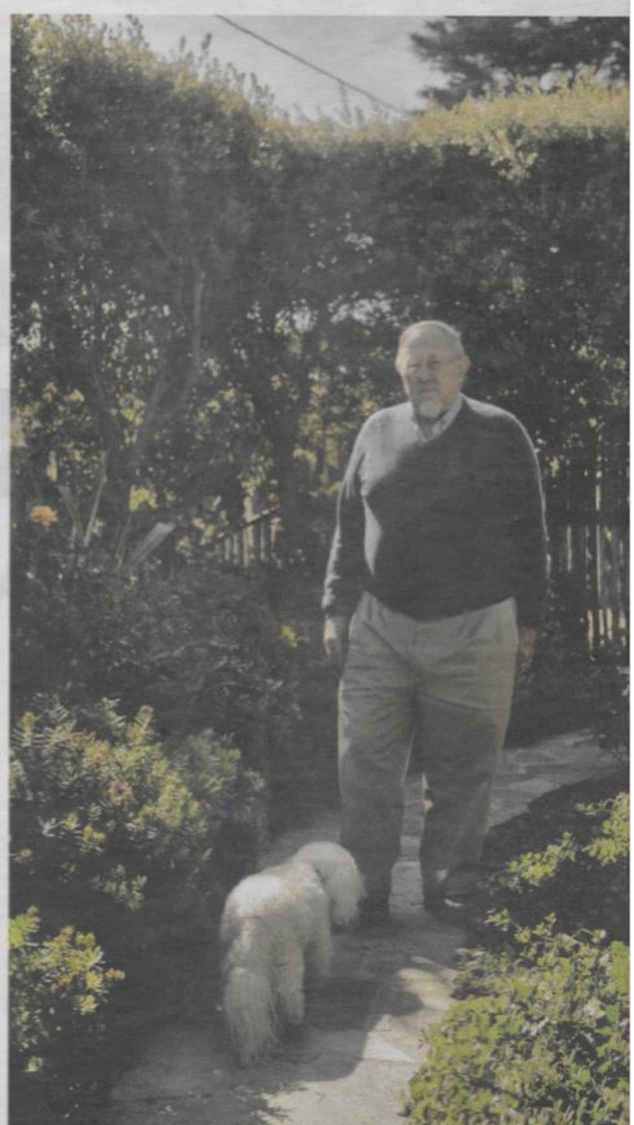
A few decades ago, Sharpe turned his attention to what may be the biggest risk of all for most Americans – running out of money in retirement. The professor of finance, emeritus, at Stanford University's Graduate School of Business created a computer program that eventually covered 100,000 retirement-income scenarios based on different combinations of life spans and investment returns for a retired couple. Sharpe has made this program available in a free ebook, *Retirement Income Scenario Matrices* (stanford.edu/~wfsharpe).

Of course, it's one thing to understand all of the possibilities and another to plan for them. The most difficult problem in finance, says Sharpe, is knowing how to strike a balance between having enough income to meet your current needs (and wants, assuming you've saved enough) and having enough to get you through your lifetime.

Sharpe acknowledges that there's no easy answer, though he has a few ideas for how retirees can better manage this risk. *Barron's* recently spoke with Sharpe about what he has called the "nastiest, hardest problem in finance."

Barron's: How do you describe yourself?

Bill Sharpe: Well, I'm 85, so that gives you some information. I would call myself semi-



Photograph by Tracy Nguyen

Why is creating sustainable retirement income such a hard problem?

If you invest your money in almost anything except an annuity with cost-of living adjustments, you're going to be subject to two kinds of uncertainty – investment uncertainty and mortality uncertainty.

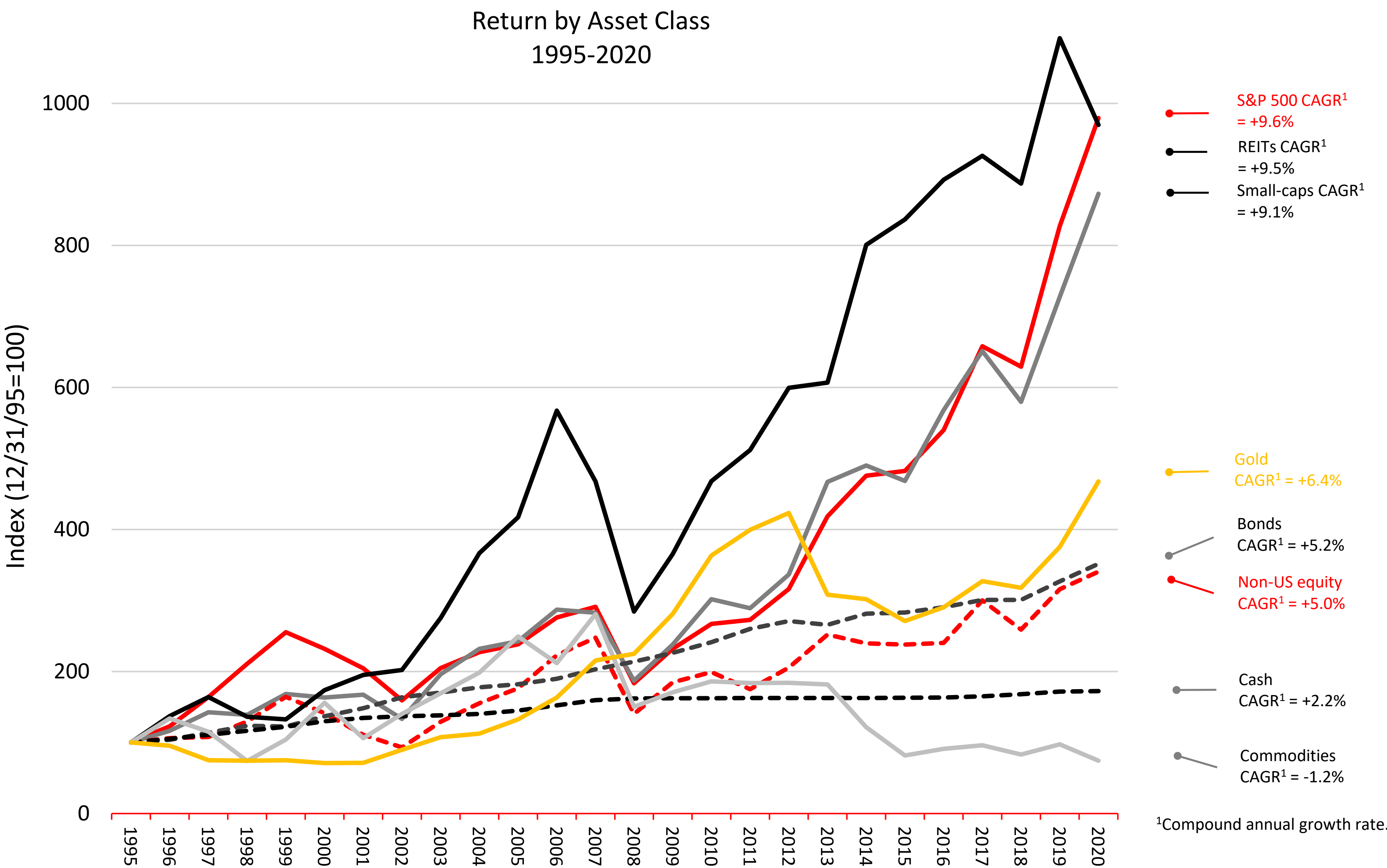
Let's talk about annuities. They're criticized for their cost and complexity. Is it deserved?

It it's most basic form, an annuity is a way to spread the risk of longevity. … Annuities are a vehicle for pooling that risk. … when we retire, longevity risk is at least as big a risk as investment risk , and you really should consider pooling some of that, particularly as you get into the later stages of retirement.

The insurance and investment industries are beginning to come together and provide products where you can take some investment risk and also pool longevity risk. … I think it's interesting, and I think you're going to see more products that cross over."

Source: *Barron's*, November 18, 2019.

Asset returns over 25 years



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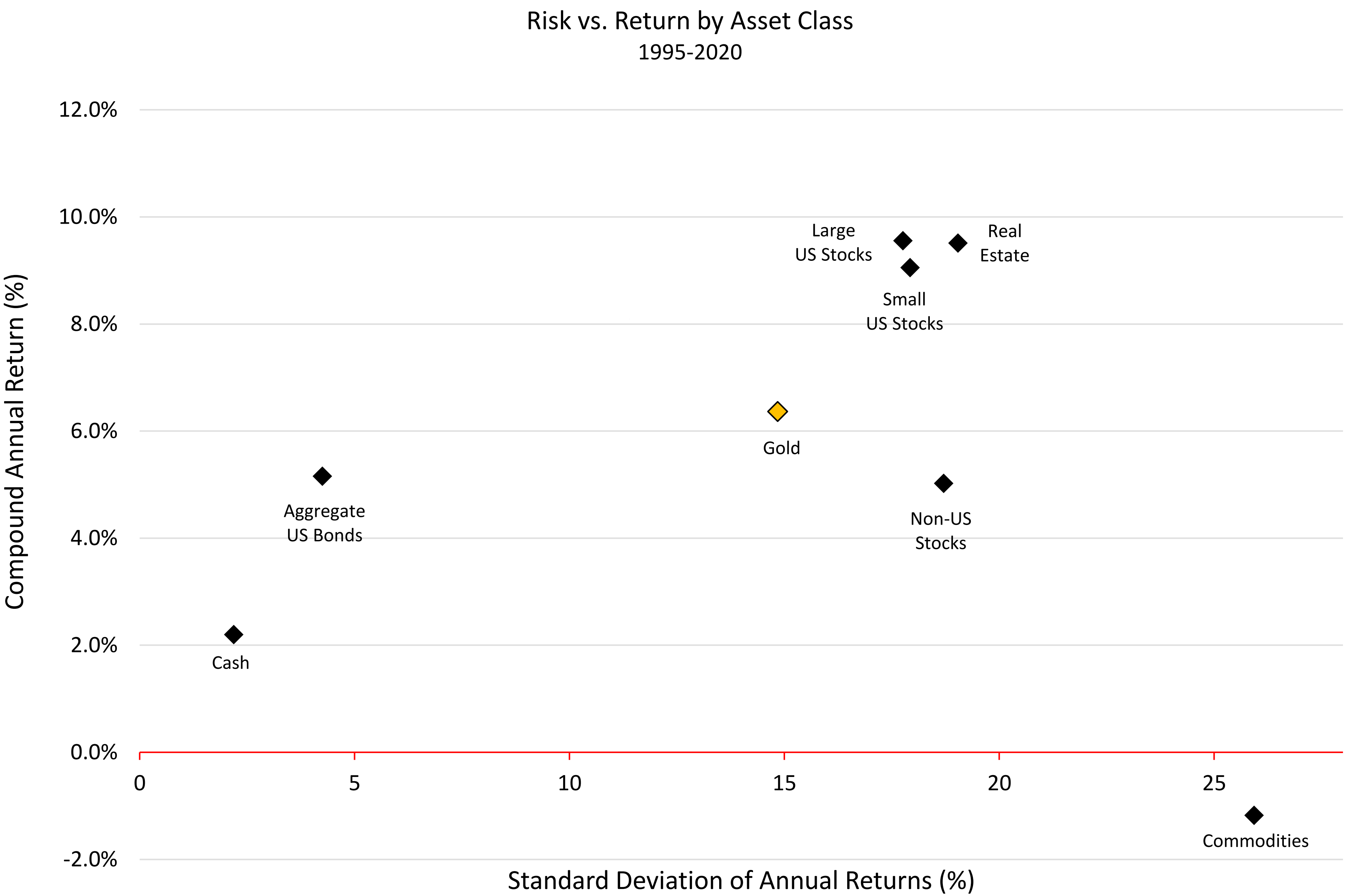
Source: ©2021 The 7Twelve ™ Portfolio powerpoint presentation, by Craig Israelsen. Used with permission. [1]Compound annual growth rate.

Asset returns vs. risk over 25 years



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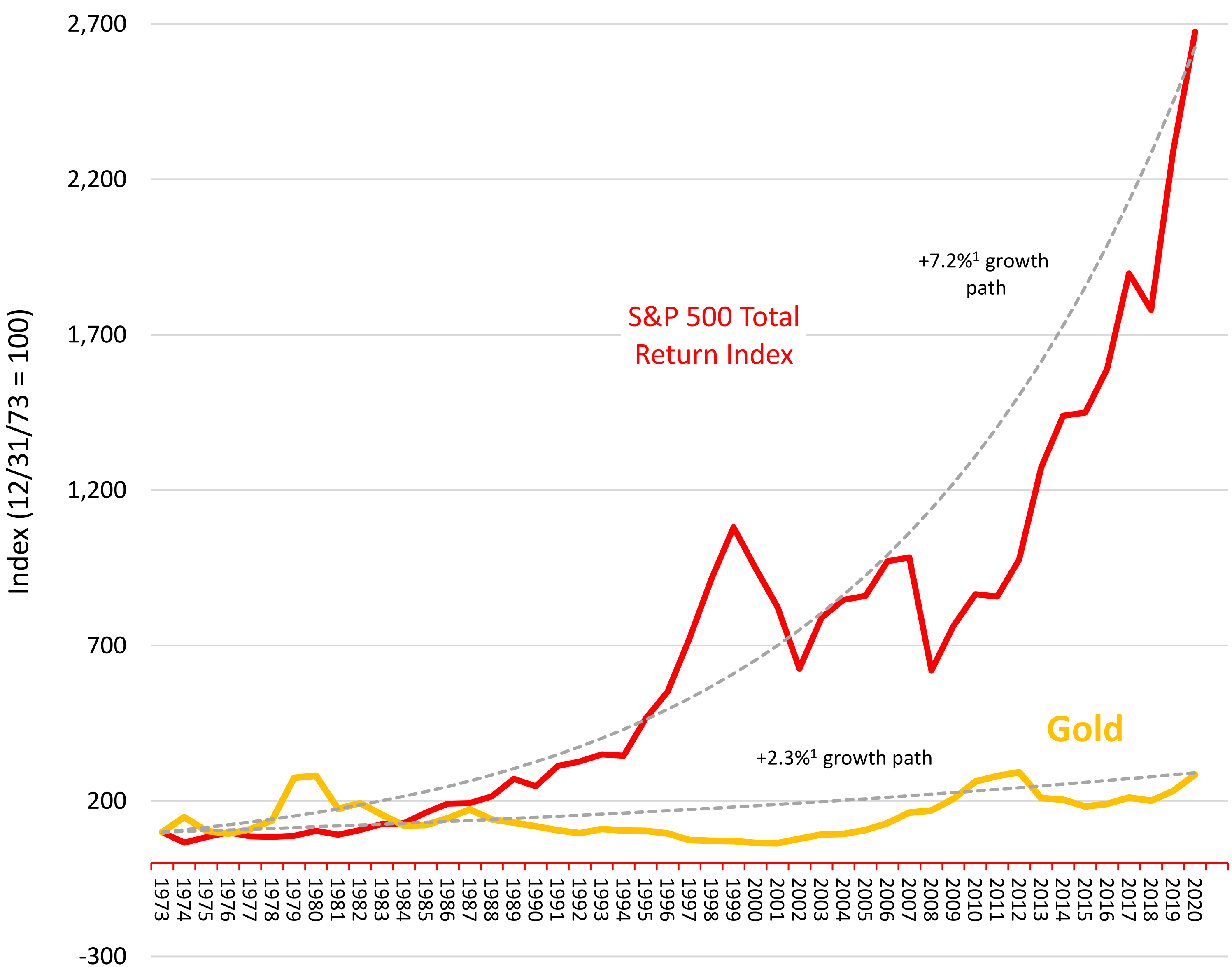
Source: ©2021 The 7Twelve ™ Portfolio powerpoint presentation, by Craig Israelsen. Used with permission. [1]Compound annual growth rate.

Gold vs. stocks since gold's 1973 unpegging – adjusted for inflation



This chart illustrates the stark contrast between the long-term, after-inflation returns for stocks and gold.

<u>Stocks are the only asset class in which you get to invest in human ingenuity, creativity and drive to create wealth.</u>

Sources: Standard & Poor's, FRB St. Louis, BLS. Annual data through 2020. [1]Compound annual growth rate.

Gold – compared to U.S. markets

Table 1. Size of Selected Asset Markets

Item	Outstanding (billions of dollars)	Growth, 2018:Q4–2019:Q4 (percent)	Average annual growth, 1997–2019:Q4 (percent)
Equities	38,491	26.4	8.6
Residential real estate	37,768	3.8	5.5
Commercial real estate	20,007	8.0	7.1
Treasury securities	16,629	6.8	7.5
Investment-grade corporate bonds	5,949	4.1	8.4
Farmland	2,555	1.8	5.5
High-yield and unrated corporate bonds	1,341	4.9	6.6
Leveraged loans*	1,193	5.0	15.1
Total	123,933		
Price growth (real)			
Commercial real estate**		4.6	2.6
Residential real estate***		1.4	2.0

Note: The data extend through 2019:Q4. Growth rates are measured from Q4 of the year immediately preceding the period through Q4 of the final year of the period. Equities, real estate, and farmland are at market value; bonds and loans are at book value.

* The amount outstanding shows institutional leveraged loans and generally excludes loan commitments held by banks. For example, lines of credit are generally excluded from this measure. Average annual growth of leveraged loans is from 2000 to 2019:Q4, as this market was fairly small before then.

** One-year growth of commercial real estate prices is from September 2018 to December 2019, and average annual growth is from 1998:Q4 to 2019:Q4. Both growth rates are calculated from value-weighted nominal prices deflated using the consumer price index.

*** One-year growth of residential real estate is from September 2018 to December 2019, and average annual growth is from 1997:Q4 to 2019:Q4. Nominal prices are deflated using the consumer price index.

Source: For leveraged loans, S&P Global Market Intelligence, Leveraged Commentary & Data; for corporate bonds, Mergent, Inc., Corporate Fixed Income Securities Database; for farmland, Department of Agriculture; for residential real estate price growth, CoreLogic; for commercial real estate price growth, CoStar Group, Inc., CoStar Commercial Repeat Sale Indices; for all other items, Federal Reserve Board, Statistical Release Z.1, "Financial Accounts of the United States."

Gold is a comparatively small asset class.

Above-ground stock of gold ex-jewelry at $2000/oz = $6 trillion.[1]

Source: Federal Reserve, Financial Stability Report, May 2020. [1] Sunshine Profits online, August 6, 2020.

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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