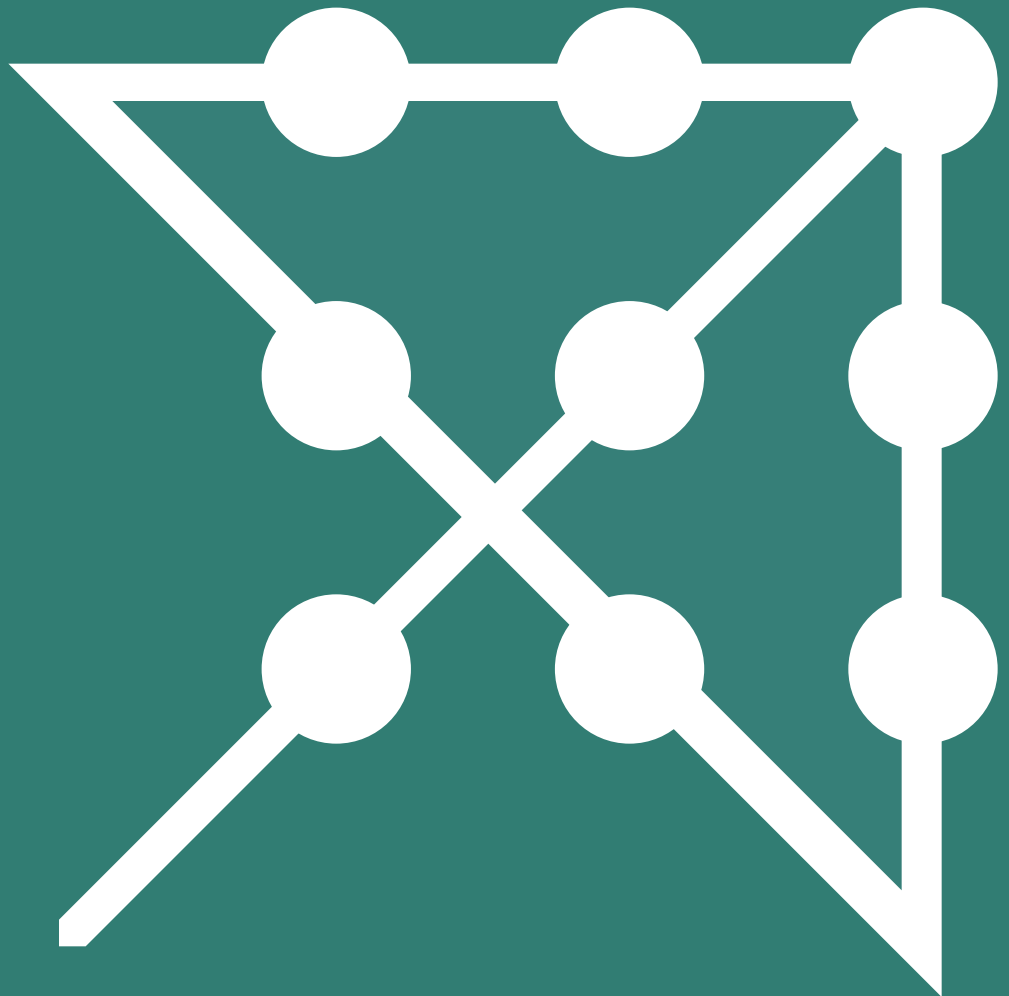# Zoom Charts
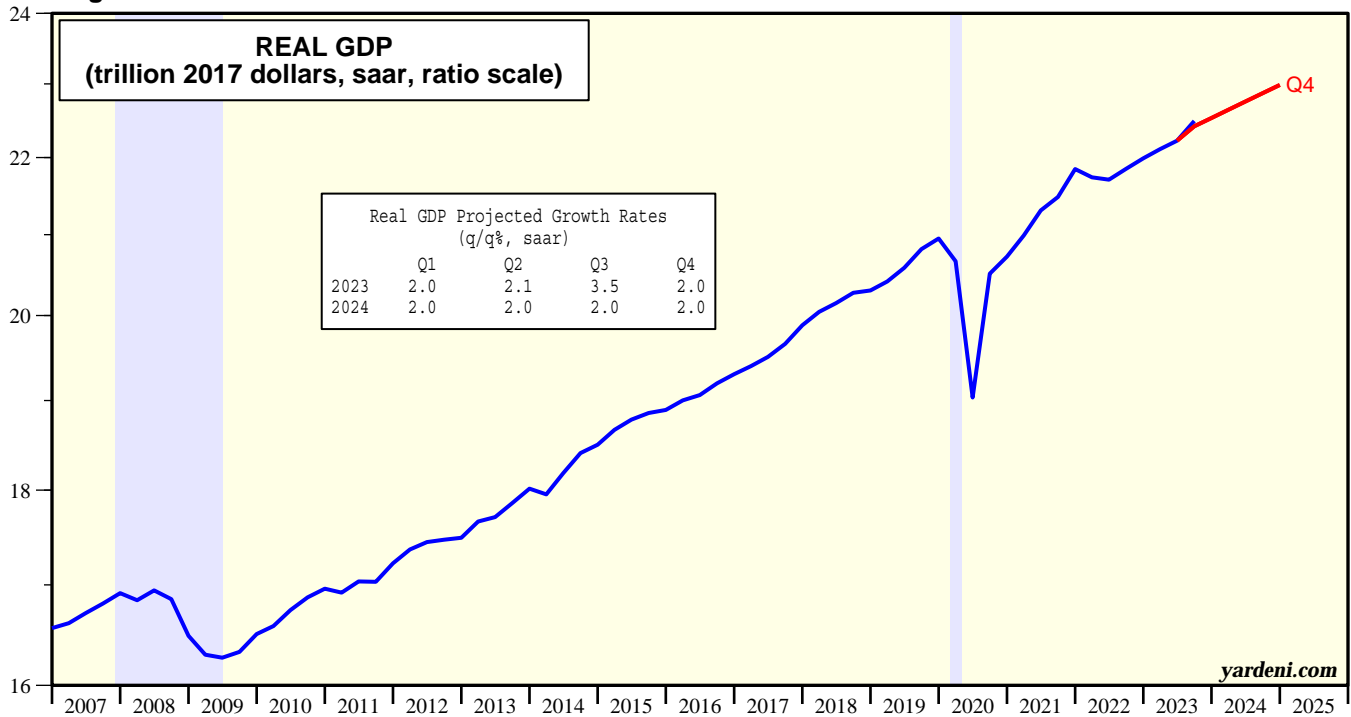
December 30, 2023

Dr. Edward Yardeni
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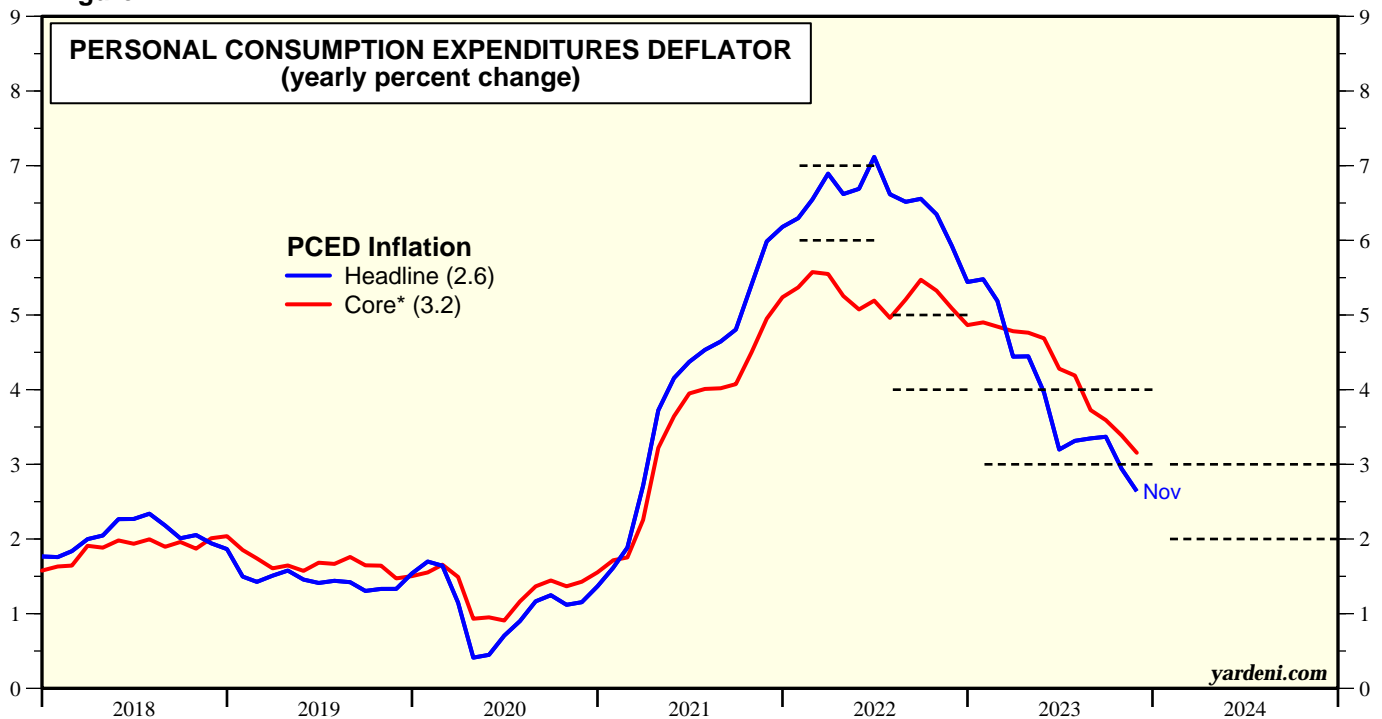*thinking outside the box*

Figure 1.

REAL GDP
(trillion 2017 dollars, saar, ratio scale)

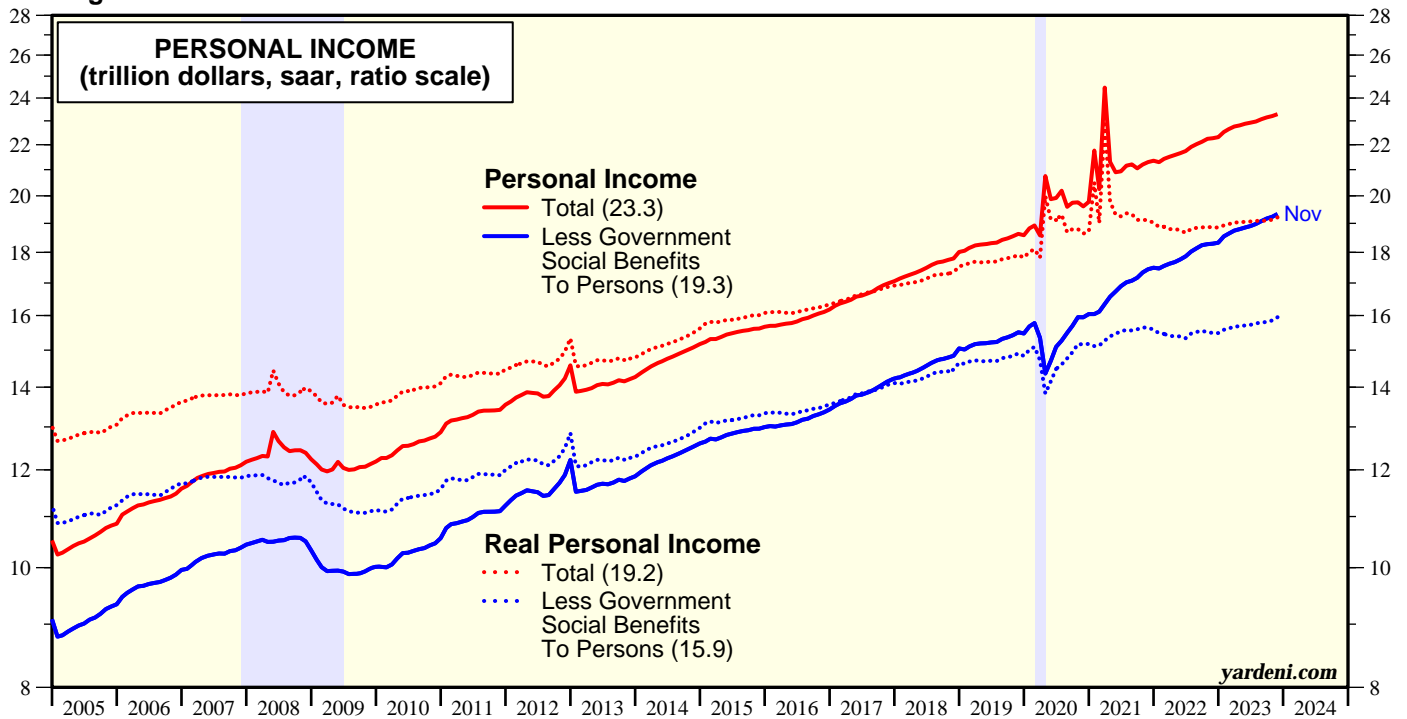| Real GDP Projected Growth Rates (q/q%, saar)				
	Q1	Q2	Q3	Q4
2023	2.0	2.1	3.5	2.0
2024	2.0	2.0	2.0	2.0

Q4

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* Red line is YRI forecast for Q2-2022 through Q4-2023.
Note: Shaded areas are recessions according to the National Bureau of Economic Research.
Source: Bureau of Economic Analysis.

Figure 2.

PERSONAL CONSUMPTION EXPENDITURES DEFLATOR
(yearly percent change)

PCED Inflation
— Headline (2.6)
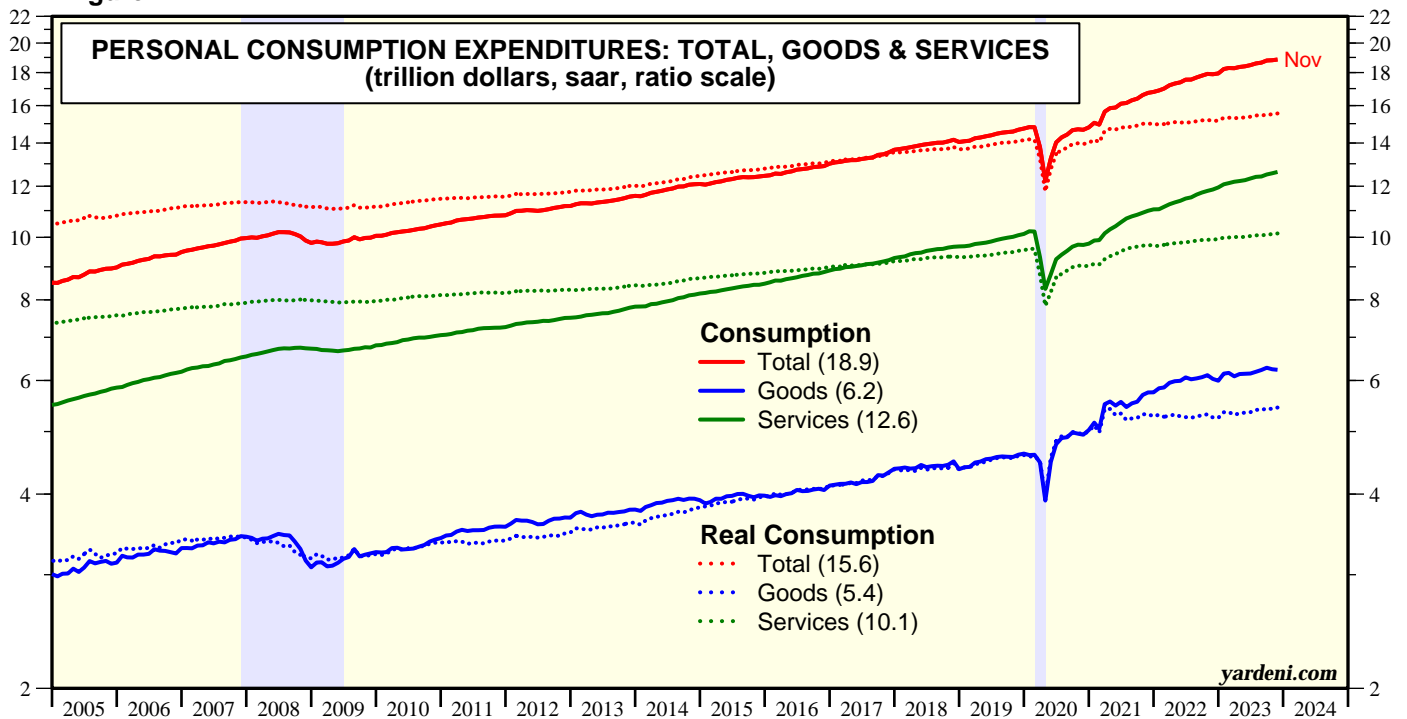— Core* (3.2)

Nov

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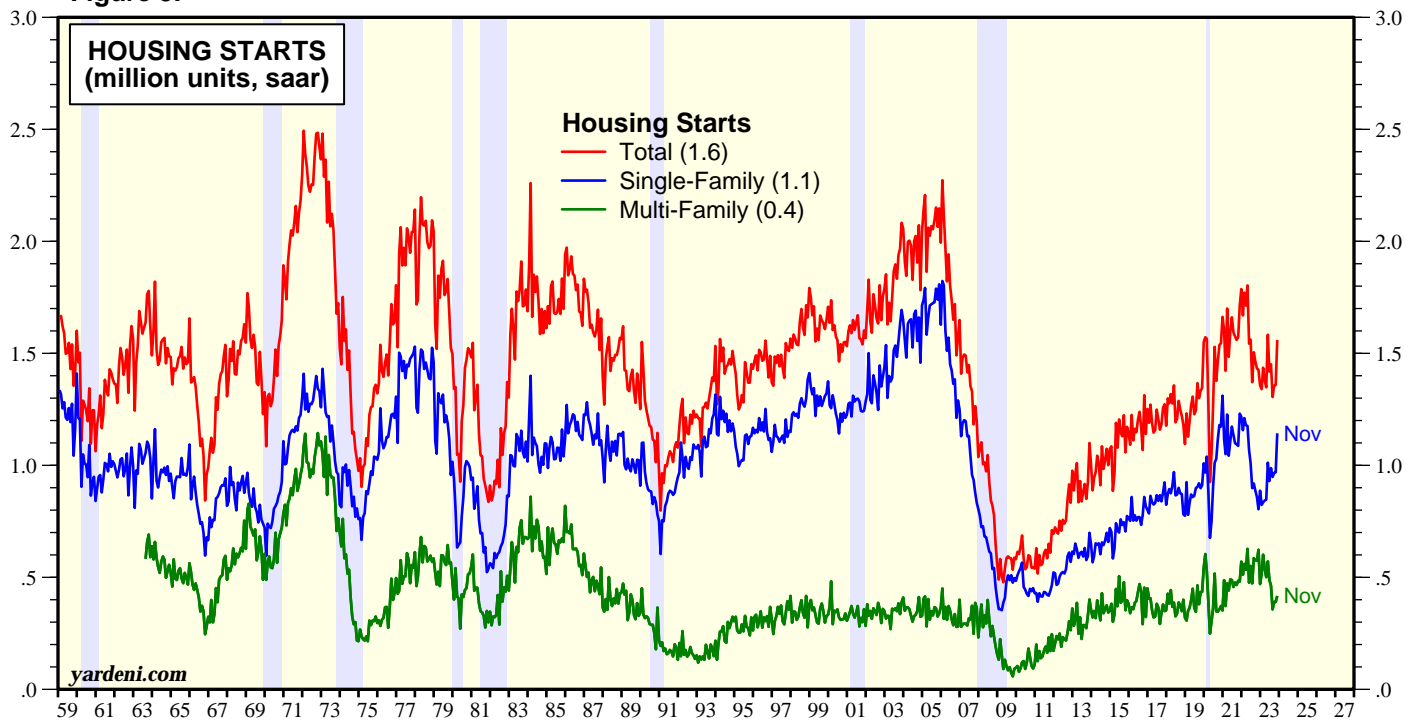Source: Bureau of Economic Analysis.

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Figure 3.

PERSONAL INCOME
(trillion dollars, saar, ratio scale)

Personal Income
— Total (23.3)
— Less Government
Social Benefits
To Persons (19.3)

Real Personal Income
····· Total (19.2)
····· Less Government
Social Benefits
To Persons (15.9)

Nov

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

Figure 4.

PERSONAL CONSUMPTION EXPENDITURES: TOTAL, GOODS & SERVICES
(trillion dollars, saar, ratio scale)

Nov

Consumption
— Total (18.9)
— Goods (6.2)
— Services (12.6)

Real Consumption
····· Total (15.6)
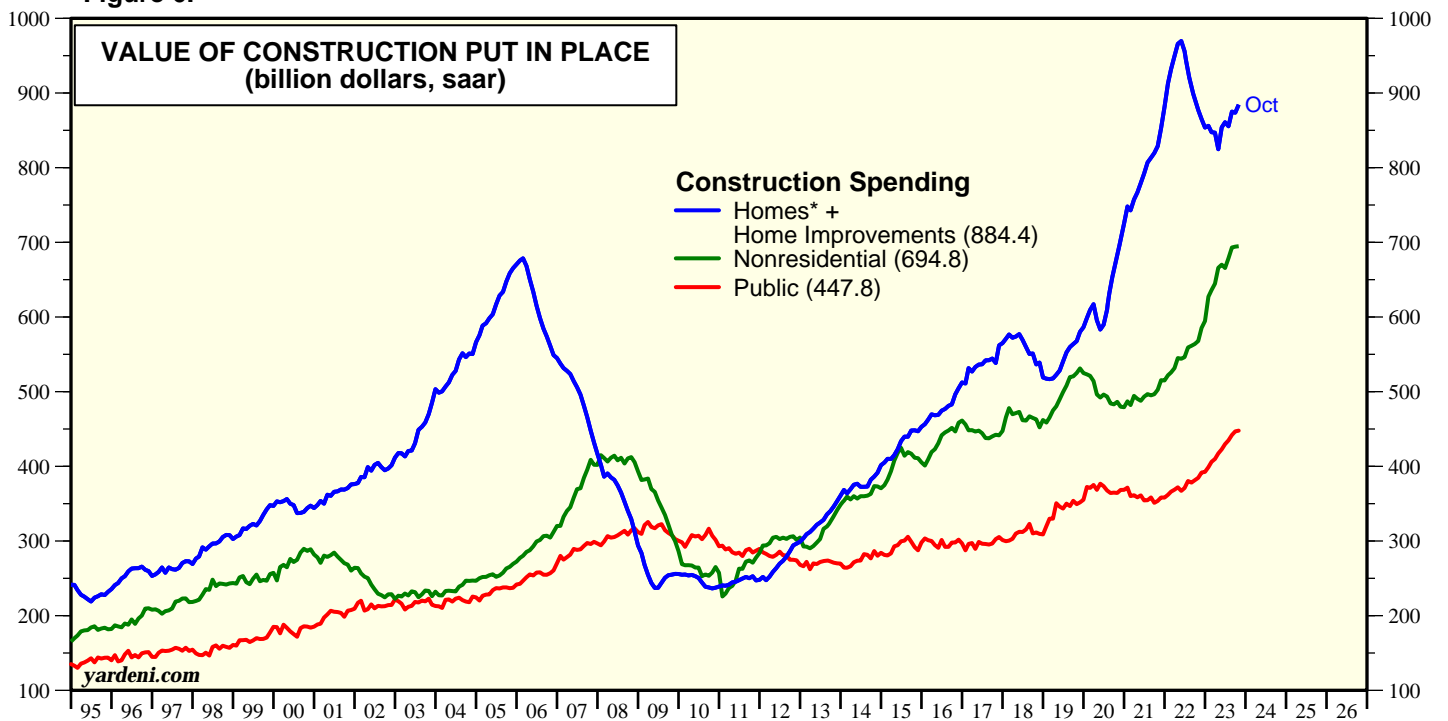····· Goods (5.4)
····· Services (10.1)

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

Figure 5.

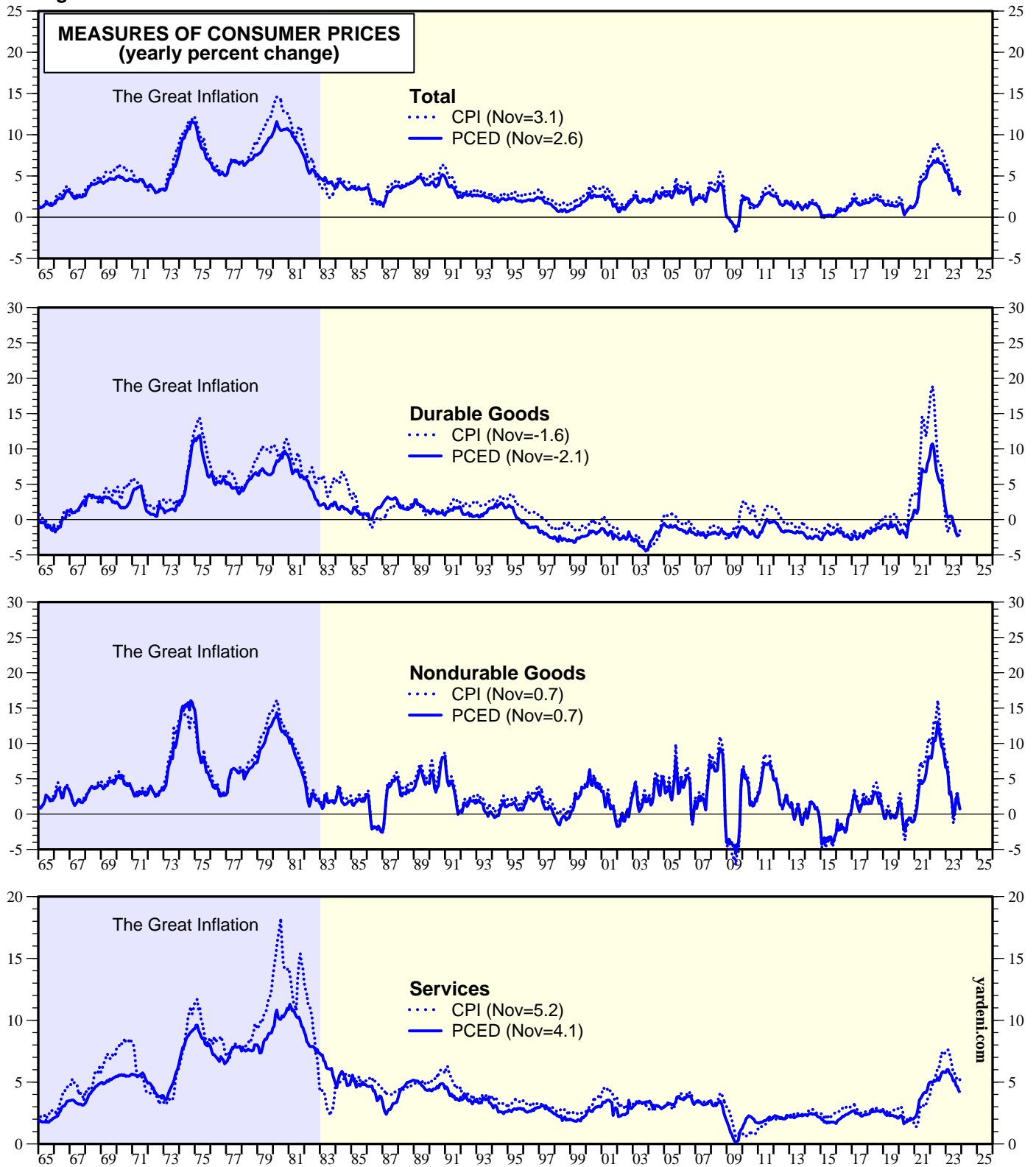HOUSING STARTS
(million units, saar)

Housing Starts
- Total (1.6)
- Single-Family (1.1)
- Multi-Family (0.4)

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

Figure 6.

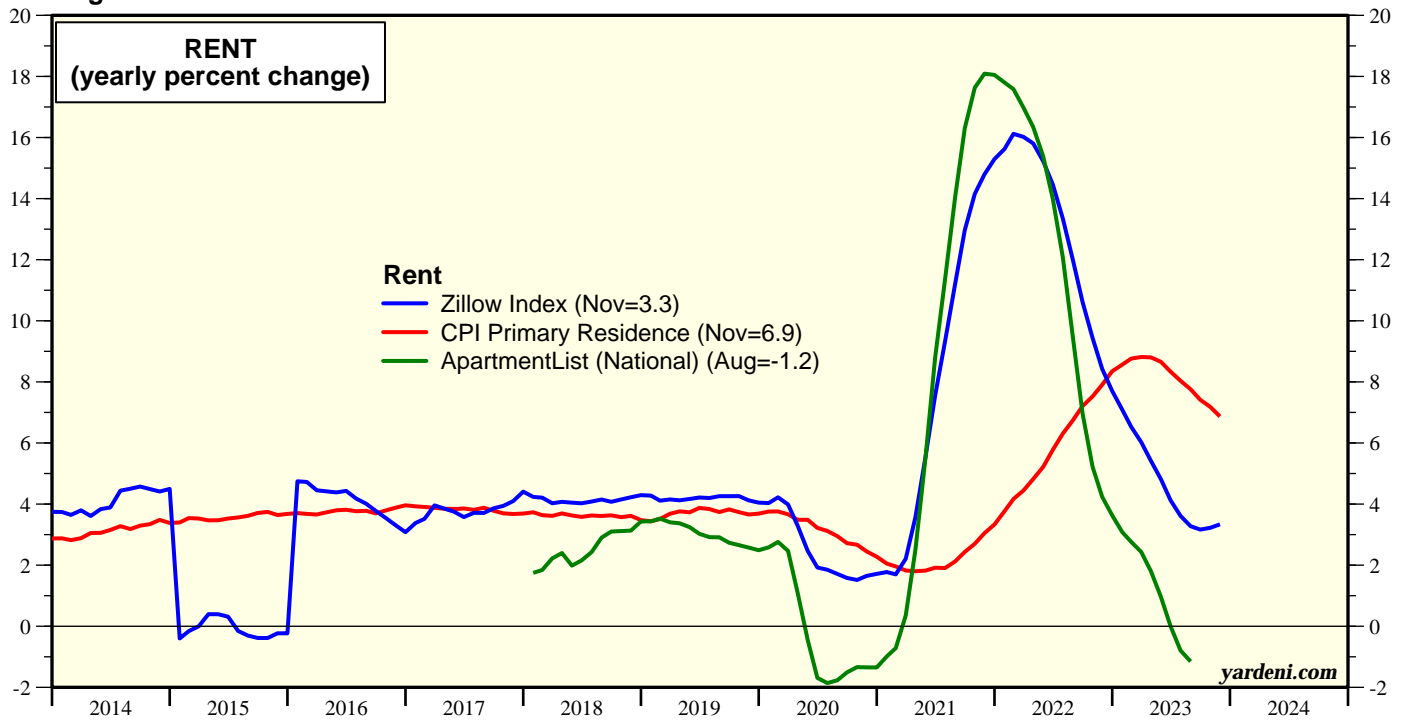VALUE OF CONSTRUCTION PUT IN PLACE
(billion dollars, saar)

Construction Spending
- Homes* +
  Home Improvements (884.4)
- Nonresidential (694.8)
- Public (447.8)

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*   Includes single-family and multi-family homes.
    Source: Census Bureau.

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Figure 7.

MEASURES OF CONSUMER PRICES
(yearly percent change)

The Great Inflation

Total
····· CPI (Nov=3.1)
—— PCED (Nov=2.6)

The Great Inflation

Durable Goods
····· CPI (Nov=-1.6)
—— PCED (Nov=-2.1)

The Great Inflation

Nondurable Goods
····· CPI (Nov=0.7)
—— PCED (Nov=0.7)

The Great Inflation

Services
····· CPI (Nov=5.2)
—— PCED (Nov=4.1)

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Source: Bureau of Labor Statistics and Bureau of Economic Analysis.

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Figure 8.

RENT
(yearly percent change)

Rent
— Zillow Index (Nov=3.3)
— CPI Primary Residence (Nov=6.9)
— ApartmentList (National) (Aug=-1.2)

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Source: Zillow, ApartmentList, and Bureau of Labor Statistics.

Figure 9.
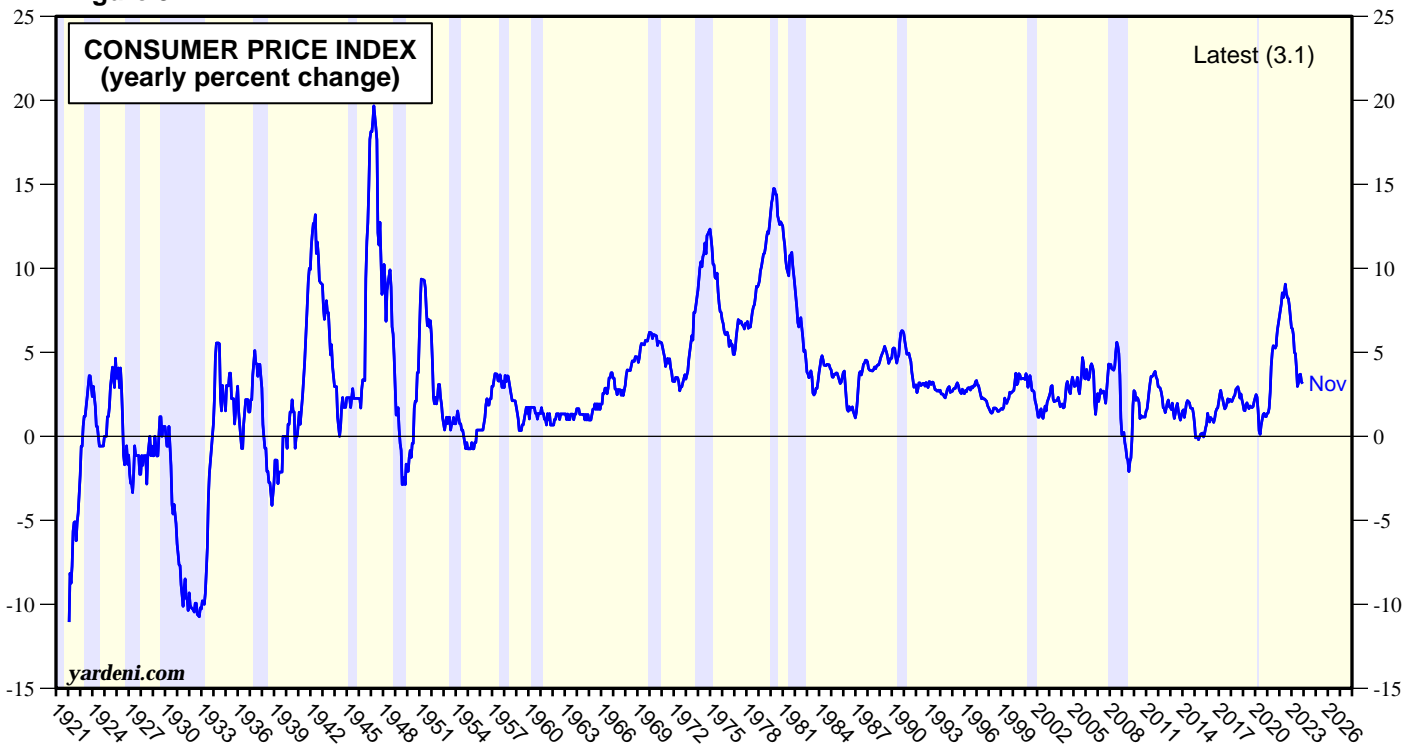
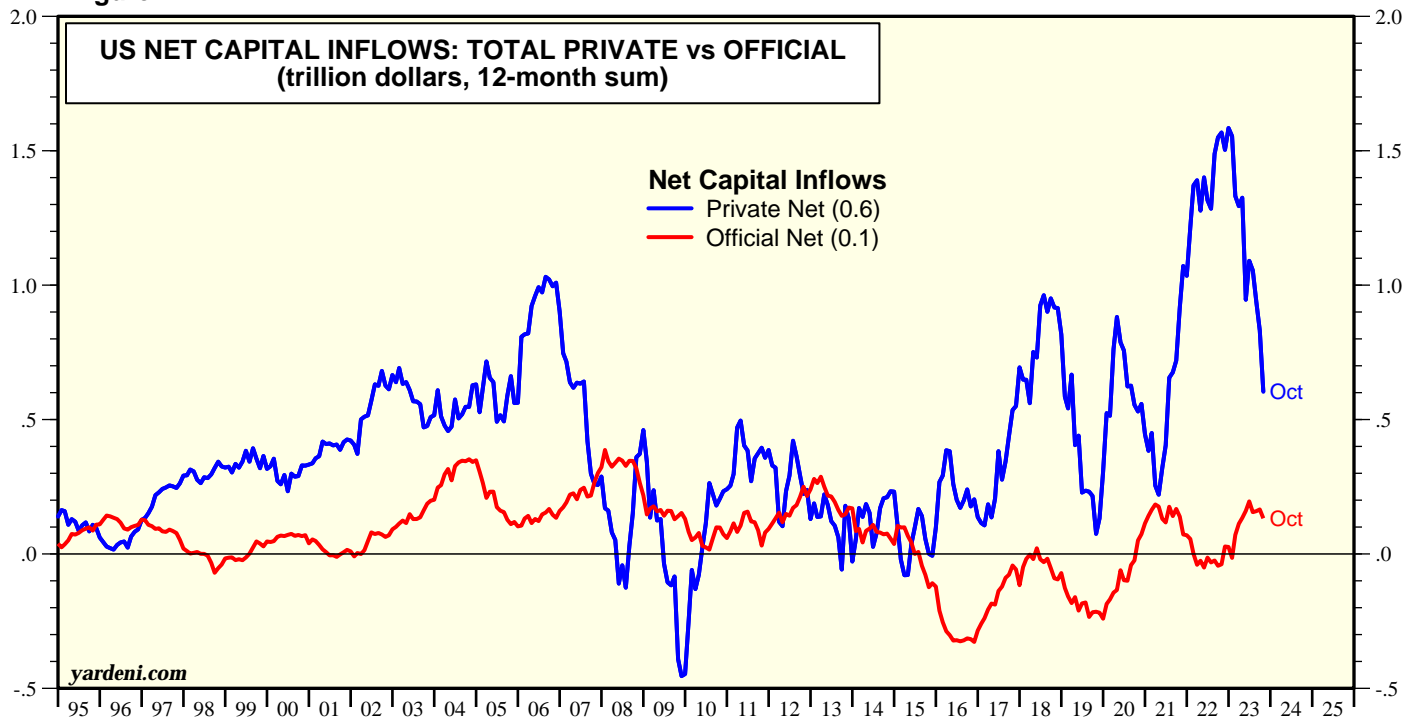CONSUMER PRICE INDEX
(yearly percent change)

Latest (3.1)

Nov

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

Figure 10.

**FED'S ASSETS
(trillion dollars, weekly)**

QE1+   QE3+   RM

QT1   QT2

QE1   QE2   QE3   QE4

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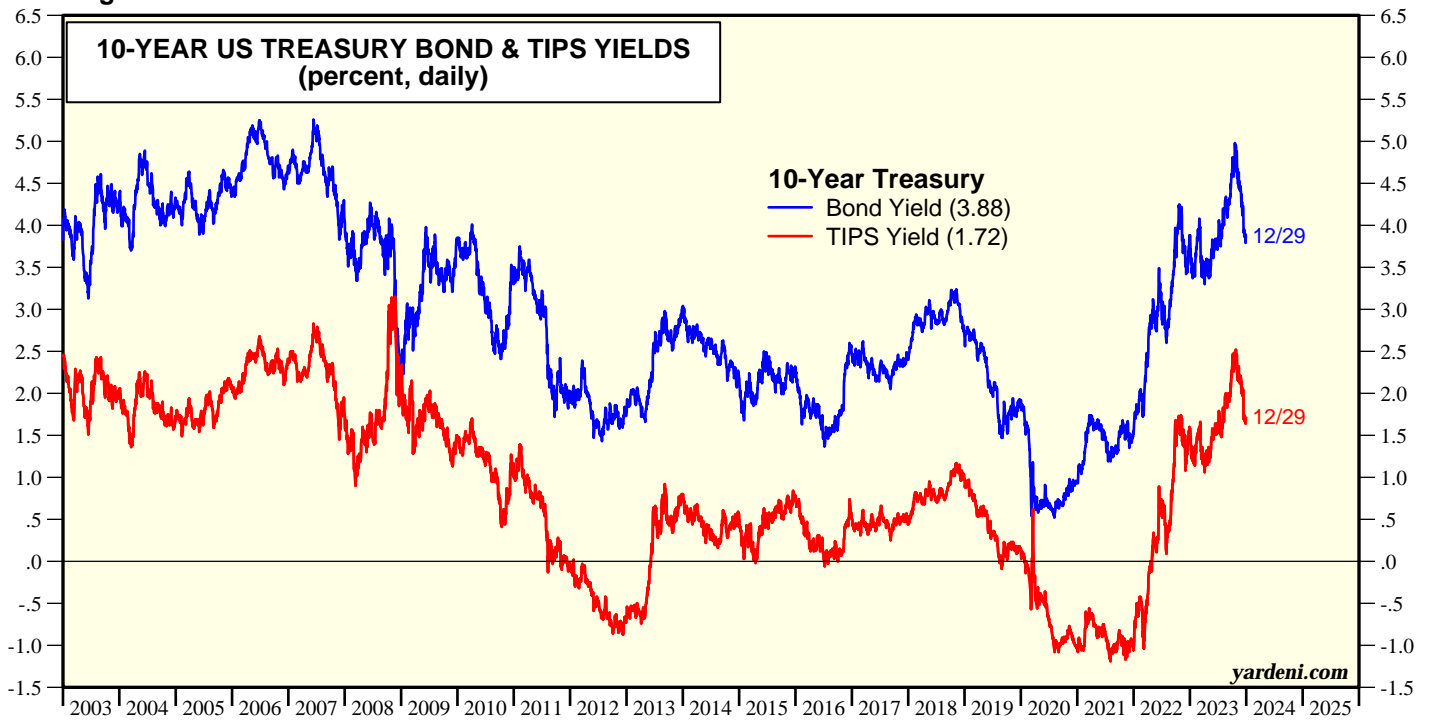
Held By Fed
— Securities
⋯ Announced
     Tapering
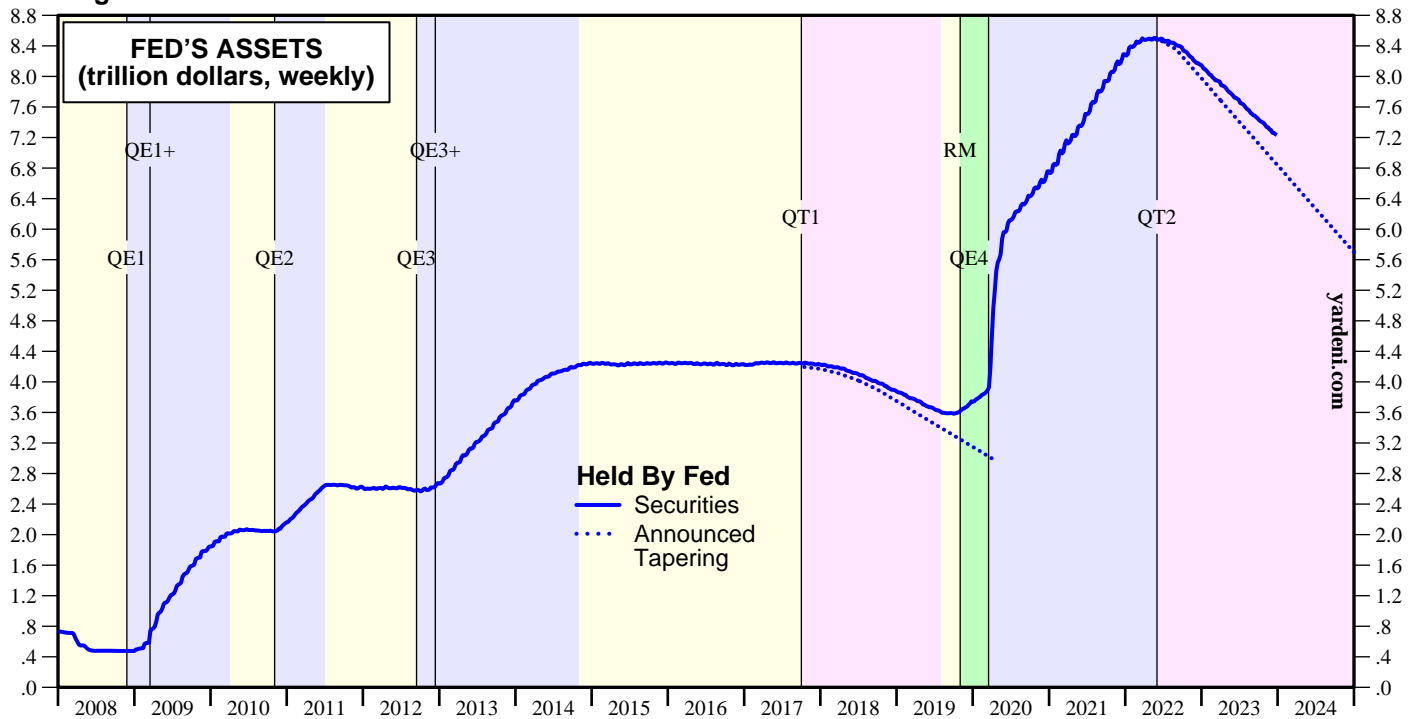
Note: QE1 (11/25/08-3/31/10) = $1.24tn in mortgage securities; expanded (3/16/09-3/31/10) = $300bn in Treasuries. QE2 (11/3/10-6/30/11) = $600bn in Treasuries. QE3 (9/13/12-10/29/14) = $40bn/month in mortgage securities (open ended); expanded (12/12/12-10/1/14) = $45bn/month in Treasuries. QT1 (10/1/17-7/31/19) = balance sheet pared by $675bn. RM (11/1/19-3/15/20) = reserve management, $60bn/month in Treasury bills. QE4 (3/16/20-infinity). QT2 = balance sheet pared by $95 billion per month. Source: Federal Reserve Board.
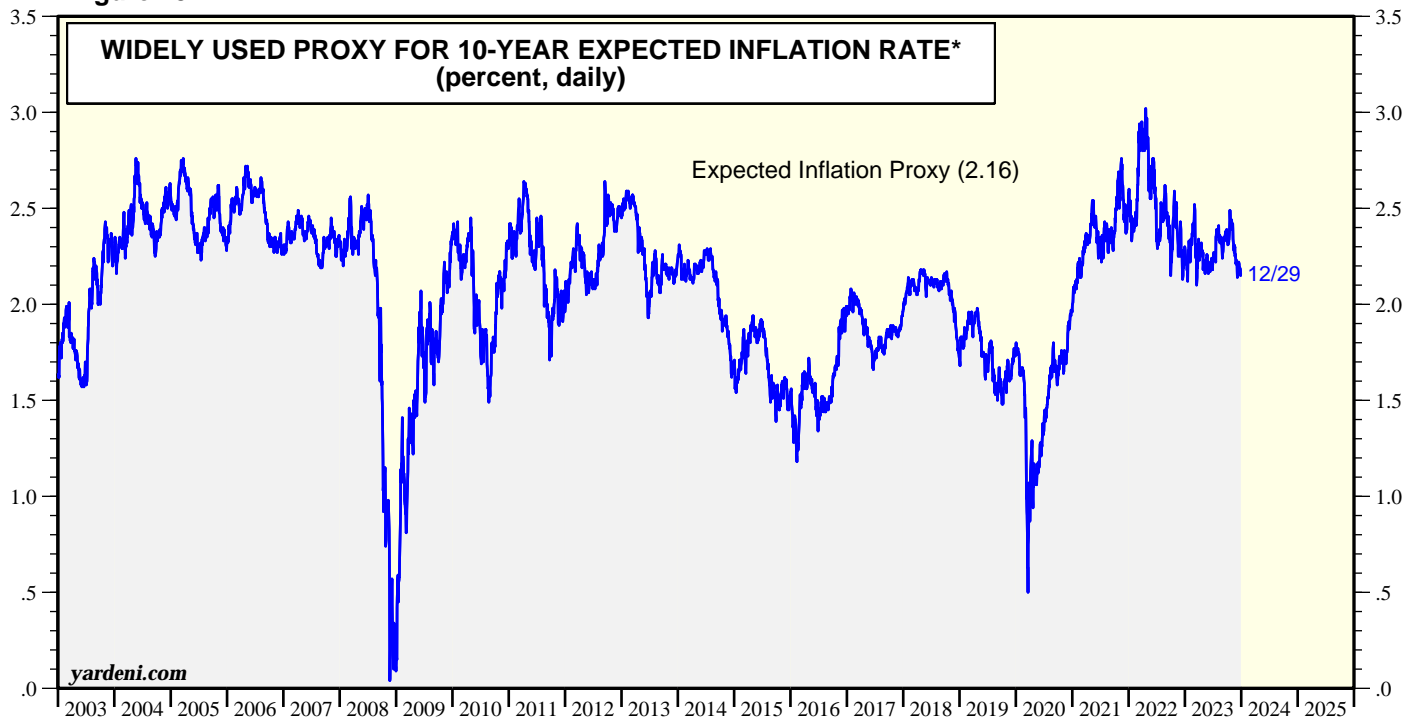
Figure 11.

**US NET CAPITAL INFLOWS: TOTAL PRIVATE vs OFFICIAL
(trillion dollars, 12-month sum)**

Net Capital Inflows
— Private Net (0.6)
— Official Net (0.1)

Oct

Oct

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Source: US Treasury International Capital System.

Figure 12.

10-YEAR US TREASURY BOND & TIPS YIELDS
(percent, daily)

10-Year Treasury
— Bond Yield (3.88)
— TIPS Yield (1.72)

12/29

12/29

Source: Federal Reserve Board.

Figure 13.

WIDELY USED PROXY FOR 10-YEAR EXPECTED INFLATION RATE*
(percent, daily)

Expected Inflation Proxy (2.16)

12/29

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* Nominal 10-year US Treasury bond yield minus 10-year TIPS yield.
Source: Federal Reserve Board.

Figure 14.
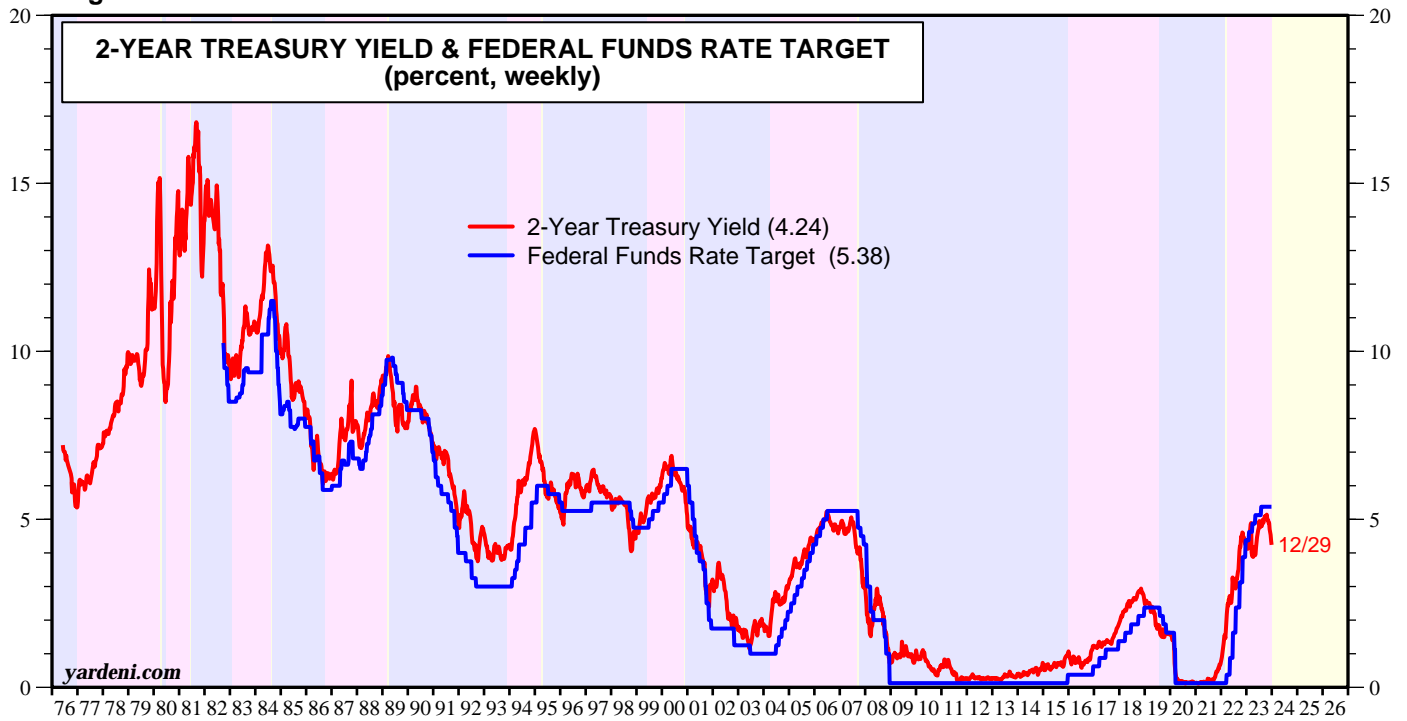
2-YEAR TREASURY YIELD & FEDERAL FUNDS RATE TARGET
(percent, weekly)

— 2-Year Treasury Yield (4.24)
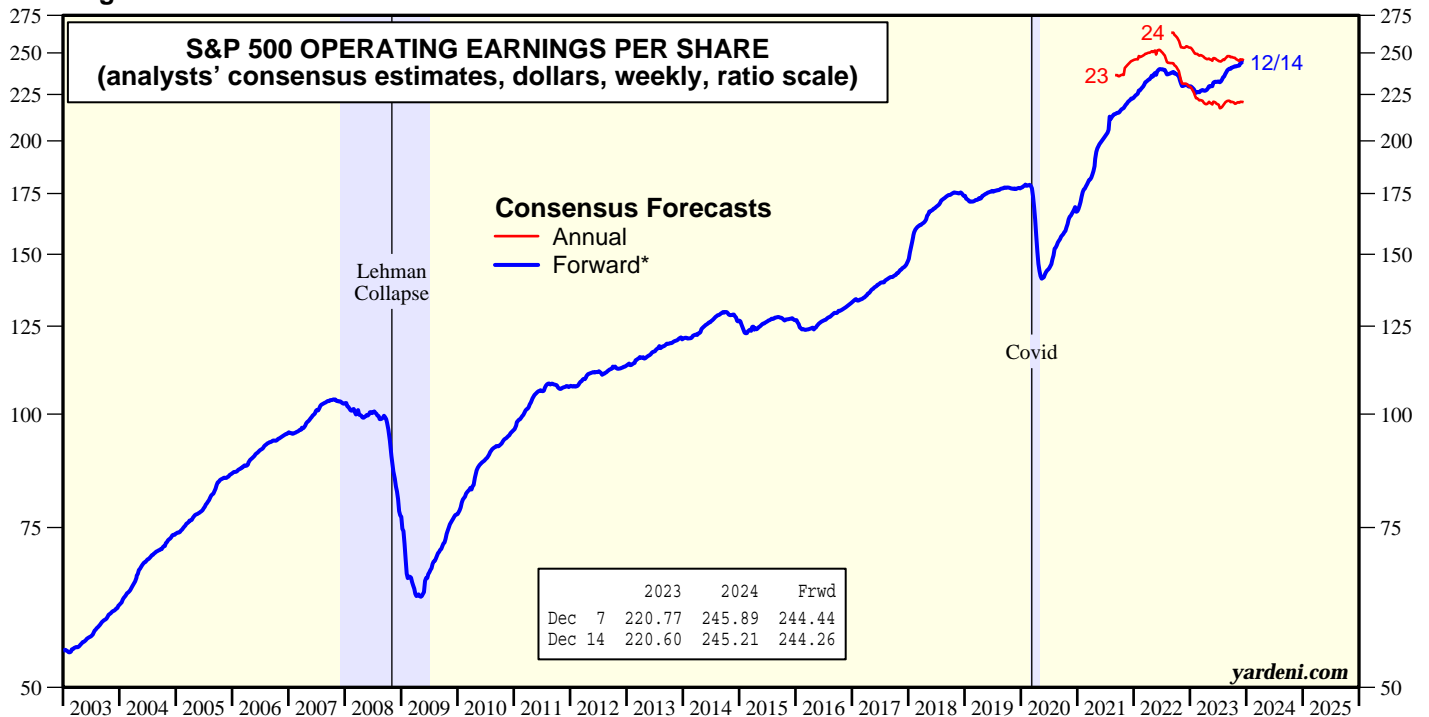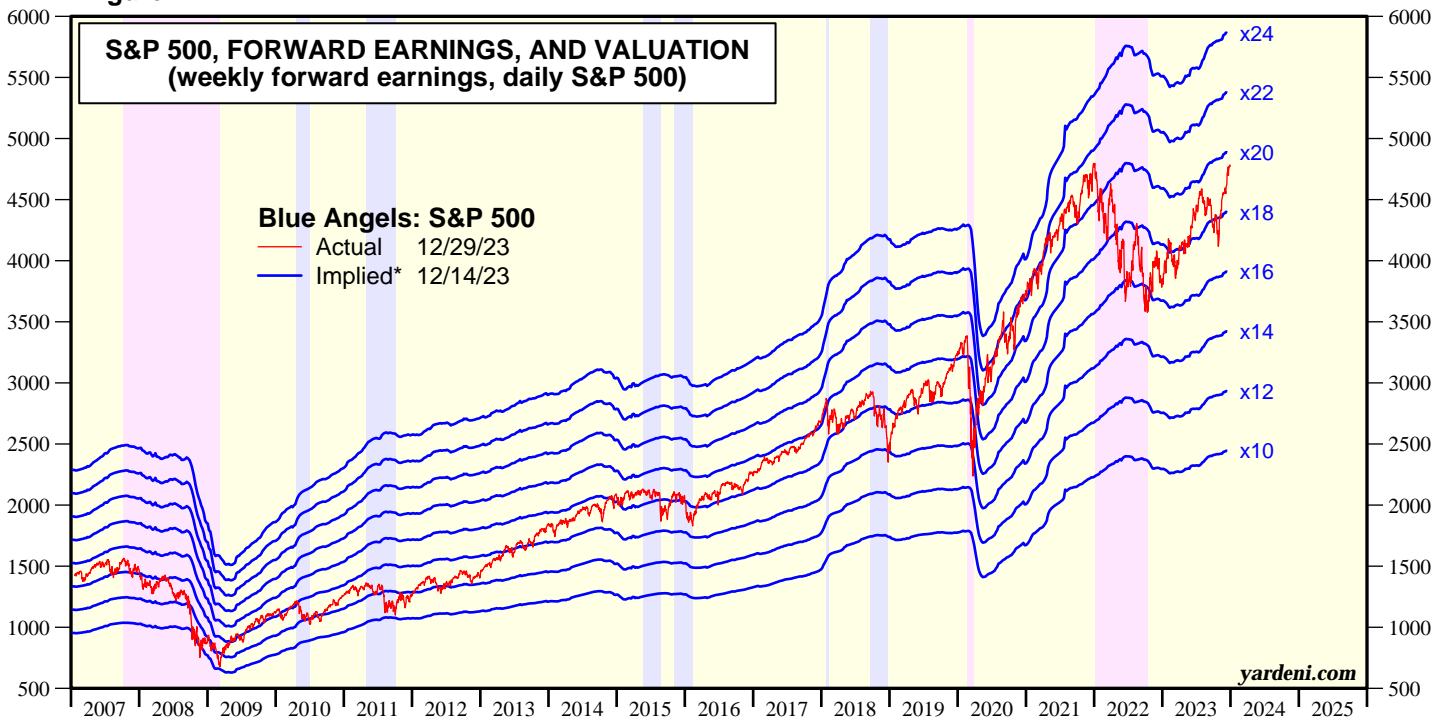— Federal Funds Rate Target (5.38)

12/29

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Note: Blue shaded areas are periods of monetary easing between cyclical peaks and troughs in the federal funds rate. Red shaded areas are monetary tightening periods.
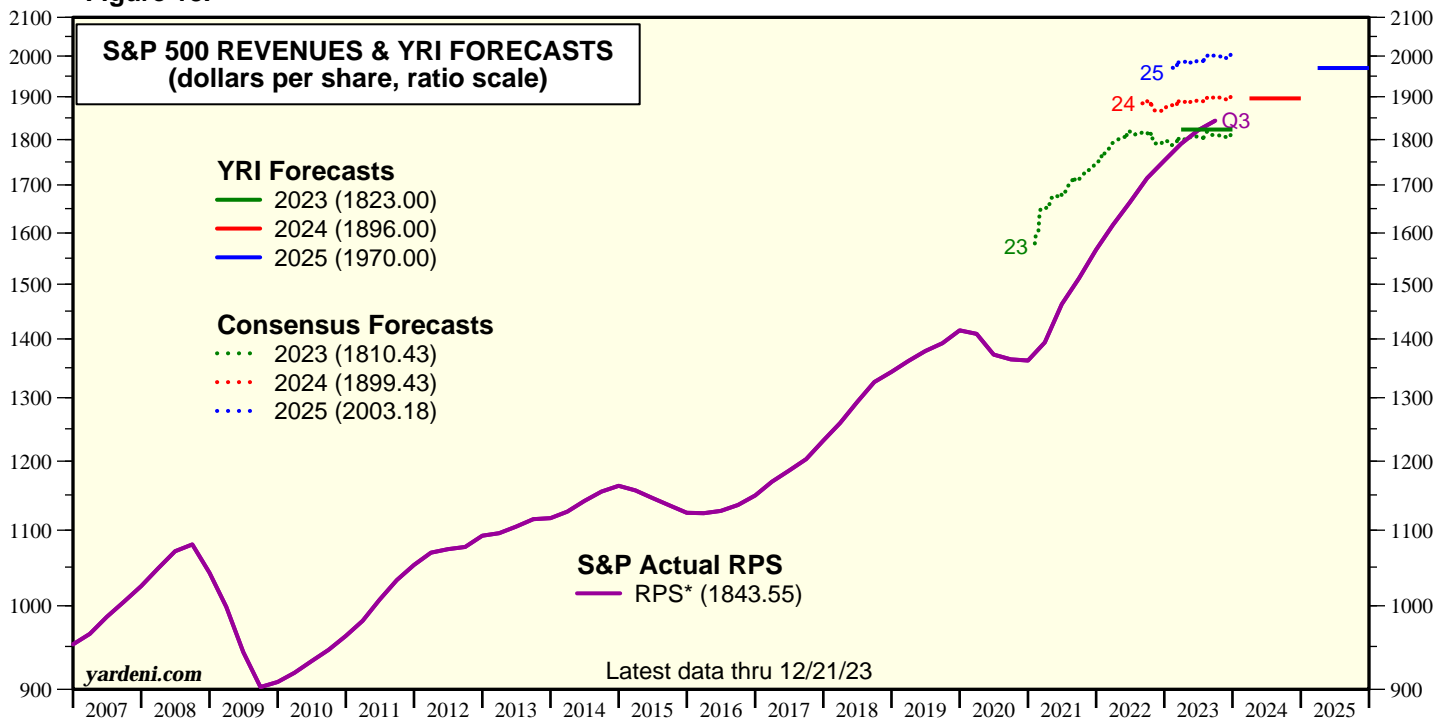Source: Federal Reserve Board.

Figure 15.

US TREASURY YIELDS: 2-YEAR & 10-YEAR
(percent, weekly)

Treasury Yields
— 2-Year (4.24)
— 10-Year (3.85)

12/29

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Note: Blue shaded areas are periods of monetary easing between cyclical peaks and troughs in the federal funds rate. Red shaded areas are monetary tightening periods.
Source: Federal Reserve Board.

Figure 16.

S&P 500 OPERATING EARNINGS PER SHARE
(analysts' consensus estimates, dollars, weekly, ratio scale)

Consensus Forecasts
— Annual
— Forward*

Lehman Collapse

Covid

	2023	2024	Frwd
Dec 7	220.77	245.89	244.44
Dec 14	220.60	245.21	244.26

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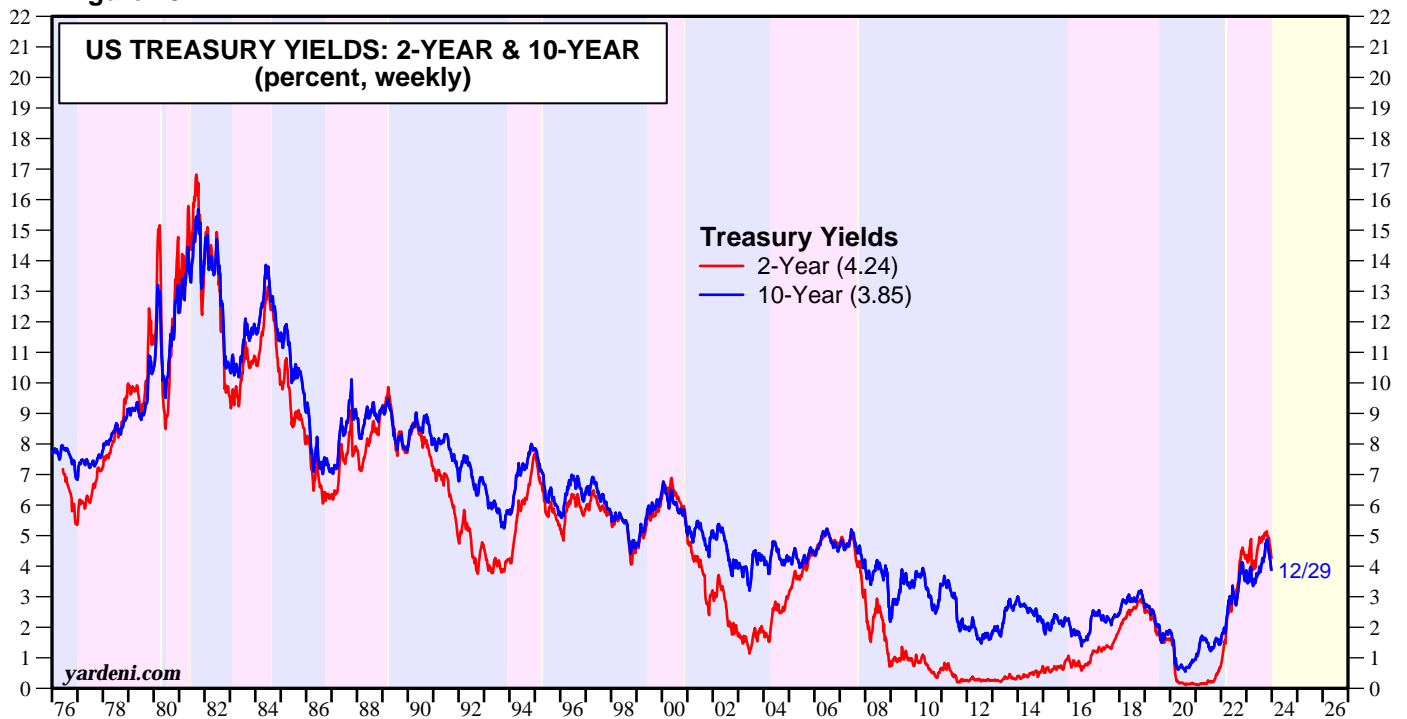
* Time-weighted average of analysts' consensus estimates for S&P 500 operating earnings for current year and next year.
Note: Shaded areas are recessions according to the National Bureau of Economic Research.
Note: Lehman collapsed 9/15/2008. COVID-19 = WHO declares global pandemic on 3/11/2020.
Source: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

Figure 17.

S&P 500, FORWARD EARNINGS, AND VALUATION
(weekly forward earnings, daily S&P 500)

Blue Angels: S&P 500
— Actual   12/29/23
— Implied* 12/14/23

x24
x22
x20
x18
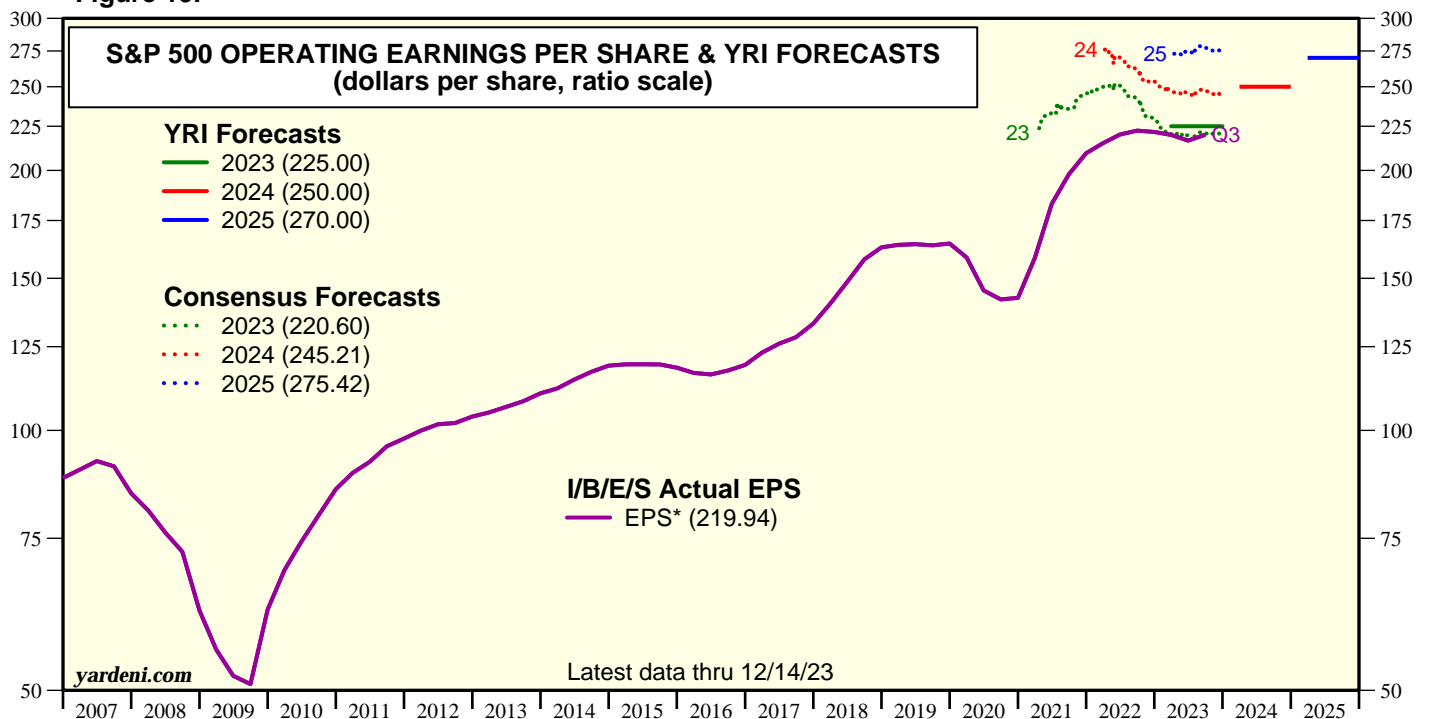x16
x14
x12
x10

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* Implied price index calculated using forward earnings times forward P/Es. Weekly data start January 2007.
Note: Shaded red areas are S&P 500 bear market declines of 20% or more. Blue shaded areas are correction declines of 10% to less than 20%.
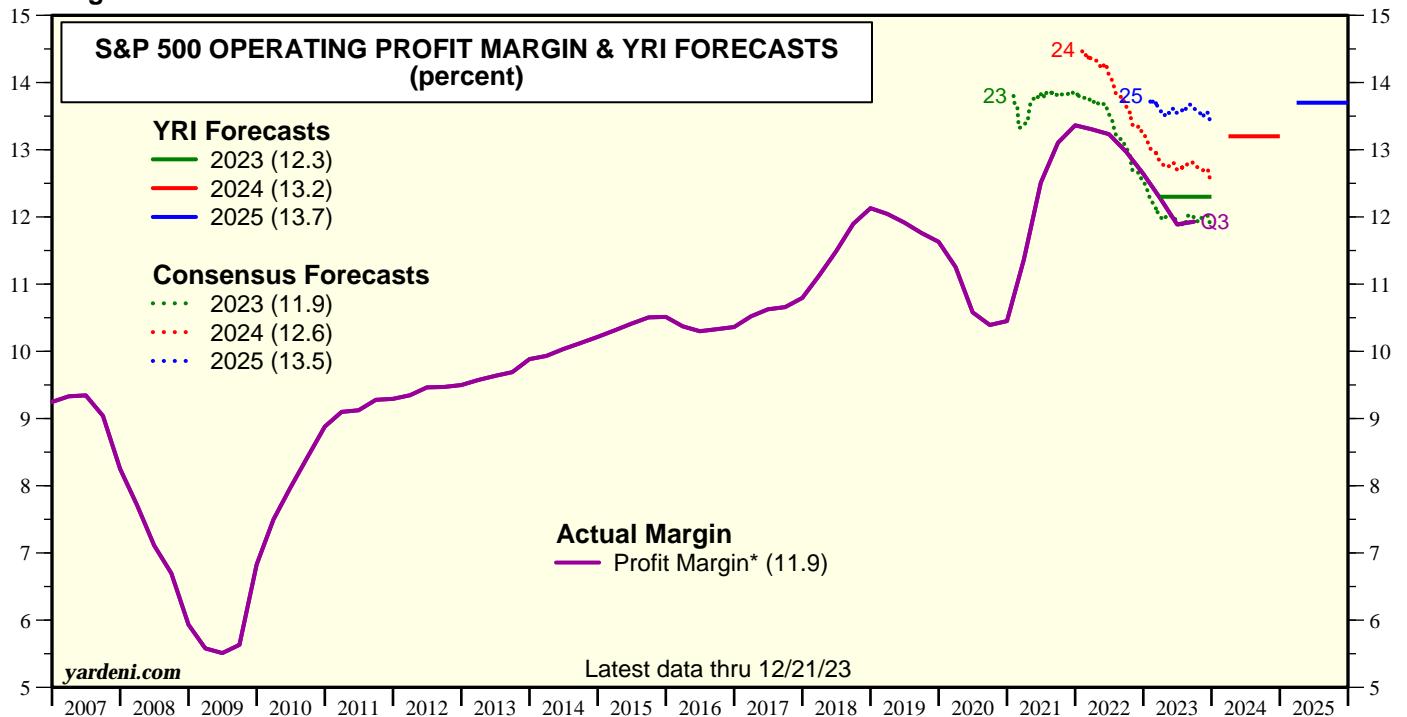Source: Standard & Poor's and I/B/E/S data by Refinitiv.

Figure 18.

S&P 500 REVENUES & YRI FORECASTS
(dollars per share, ratio scale)

YRI Forecasts
— 2023 (1823.00)
— 2024 (1896.00)
— 2025 (1970.00)

Consensus Forecasts
···· 2023 (1810.43)
···· 2024 (1899.43)
···· 2025 (2003.18)

S&P Actual RPS
— RPS* (1843.55)

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Latest data thru 12/21/23

* Four-quarter trailing sum of revenues per share.
Source: I/B/E/S data by Refinitiv.

Figure 19.

S&P 500 OPERATING EARNINGS PER SHARE & YRI FORECASTS
(dollars per share, ratio scale)

YRI Forecasts
— 2023 (225.00)
— 2024 (250.00)
— 2025 (270.00)

Consensus Forecasts
···· 2023 (220.60)
···· 2024 (245.21)
···· 2025 (275.42)

I/B/E/S Actual EPS
— EPS* (219.94)

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Latest data thru 12/14/23

* Four-quarter trailing sum of operating earnings per share.
Source: I/B/E/S data by Refinitiv.

Figure 20.

S&P 500 OPERATING PROFIT MARGIN & YRI FORECASTS
(percent)

YRI Forecasts
— 2023 (12.3)
— 2024 (13.2)
— 2025 (13.7)

Consensus Forecasts
···· 2023 (11.9)
···· 2024 (12.6)
···· 2025 (13.5)

Actual Margin
— Profit Margin* (11.9)

Latest data thru 12/21/23

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* Four-quarter trailing operating profit margin.
Source: I/B/E/S data by Refinitiv and Standard & Poor's.

Figure 21.

S&P 500 OPERATING EARNINGS PER SHARE: FORWARD & ACTUAL
(I/B/E/S data by Refinitiv)
(dollars per share, ratio scale)

YRI Forward
Earnings Forecast
— 2023 (250.00)
— 2024 (270.00)
— 2025 (290.00)

Earnings Per Share
···· Forward* (244.26)
— Operating** (4Q sum) (219.94)

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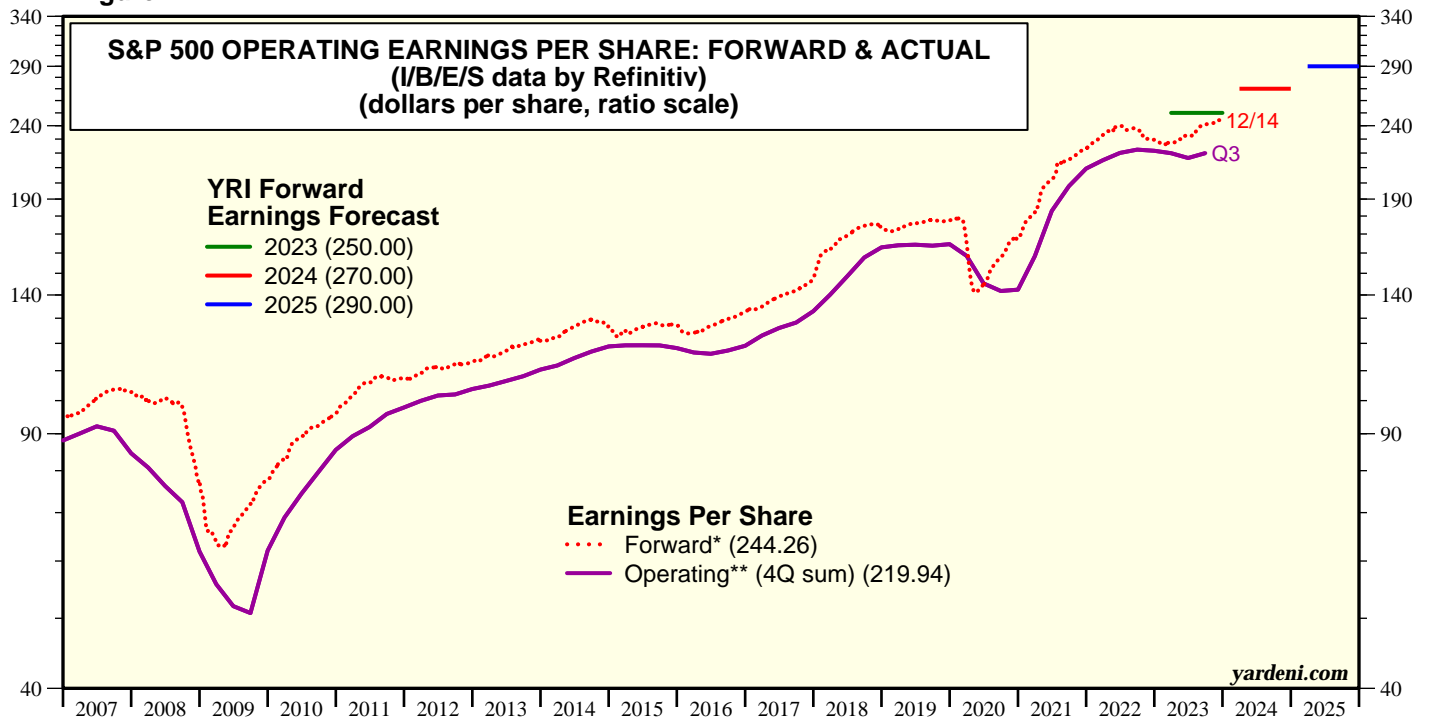
* Time-weighted average of consensus operating earnings estimates for current and next year. Monthly through March 1994, then weekly.
** From S&P until Q4-1993, then from I/B/E/S data by Refinitiv.
Source: I/B/E/S data by Refinitiv.

Figure 22.

S&P 500 FORWARD P/E*
& YRI FORECAST RANGE

Latest (19.3)

YRI Forward
P/E Forecast
— 2023 (16.0 to 20.0)
— 2024 (16.0 to 20.0)
— 2025 (16.0 to 20.0)

12/15

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

Figure 23.

S&P 500 INDEX & YRI FORECAST RANGE
(ratio scale)

5800
5400
5000
4640
4320
4000

YRI Forecasts
(red line)

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Source: Standard & Poor's.

Figure 24.

S&P 500 REVENUES PER SHARE: FORWARD & ACTUAL
(dollars)

Revenues Per Share
52-week Forward* (1905.7)
Actual (x4) (1874.2)

12/21
Q3

S&P 500 OPERATING EARNINGS PER SHARE: FORWARD & ACTUAL
(dollars)

Operating Earnings Per Share
52-week Forward* (244.3)
I/B/E/S data (x4) (234.5)

12/14
Q3

S&P 500 PROFIT MARGIN MEASURES
(percent)

Operating Profit Margins
52-week Forward* (12.6)
I/B/E/S Data (12.5)

Q3 12/21

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* Time-weighted average of consensus estimates for current and next years.
  Note: Shaded areas are recessions according to the National Bureau of Economic Research.
  Source: Standard & Poor's and I/B/E/S data by Refinitiv.

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Figure 25.

STYLE RATIOS: STAY HOME vs GO GLOBAL
(daily, ratio scale)

US MSCI / ACW ex-US
Stock Price Indexes
— In dollars
— In local currencies

12/28
12/28

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Source: MSCI.

Figure 26.

S&P GOLDMAN SACHS COMMODITY INDEX & TRADE-WEIGHTED DOLLAR
(daily)

JP Morgan Nominal
Broad Effective
Exchange Rate →

S&P GSCI
(nearby futures price) ←

12/29
12/28

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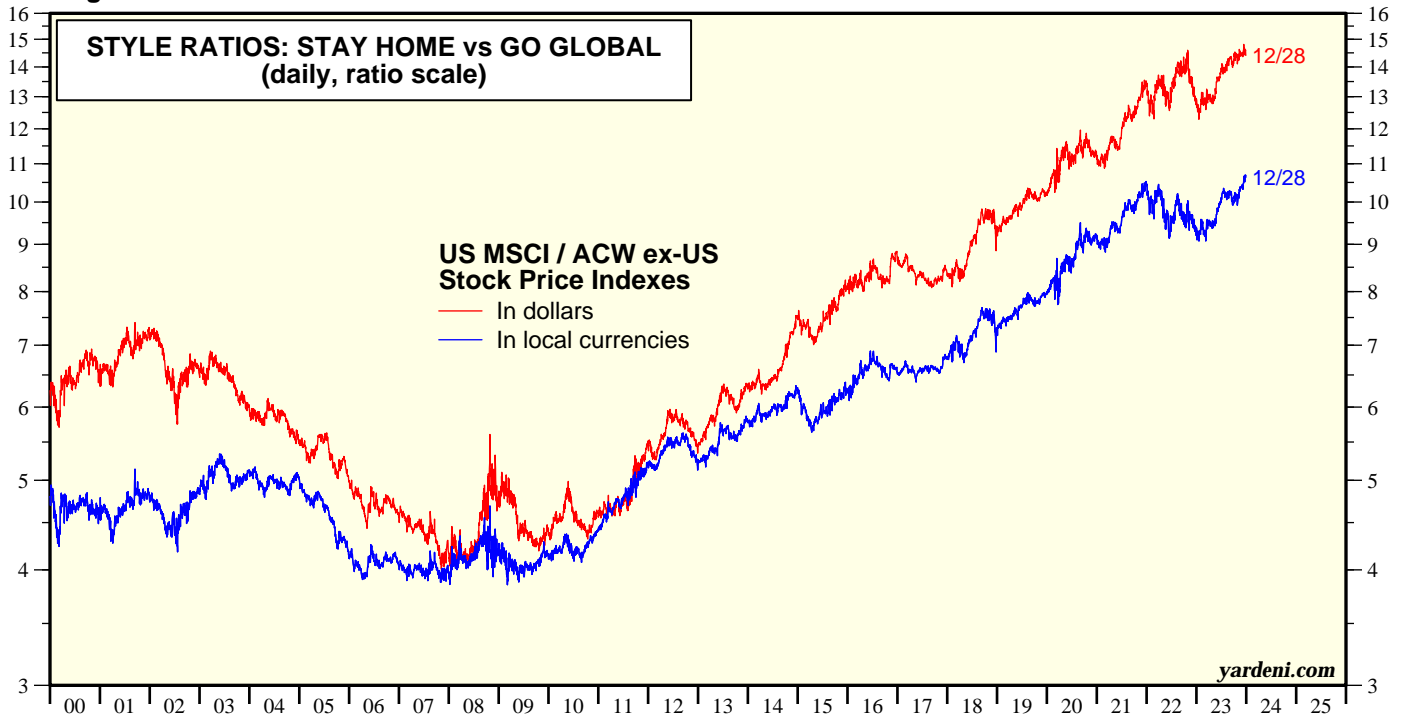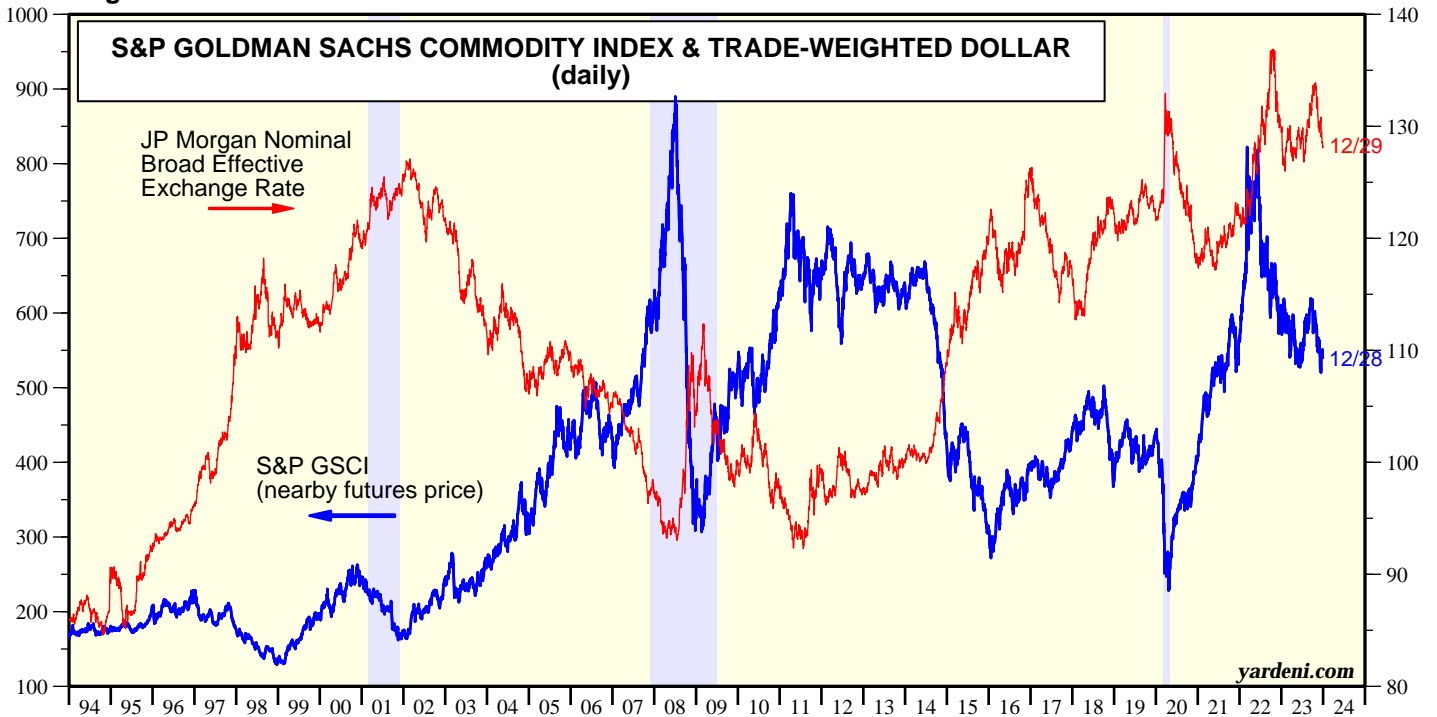
Note: Shaded areas are recessions according to the National Bureau of Economic Research.
Source: Standard & Poor's, JP Morgan, and Haver Analytics.

Figure 27.
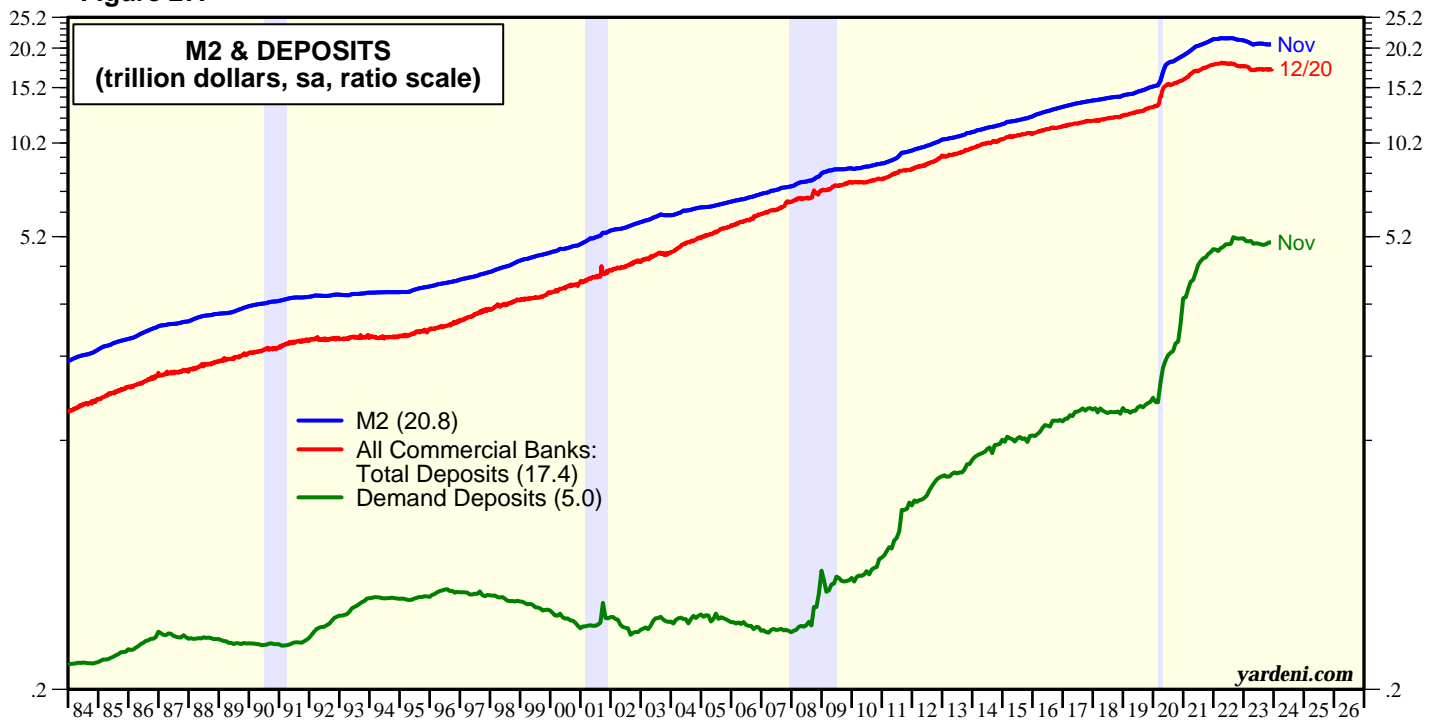
M2 & DEPOSITS
(trillion dollars, sa, ratio scale)

M2 (20.8)
All Commercial Banks:
Total Deposits (17.4)
Demand Deposits (5.0)

Nov
12/20
Nov

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Note: Shaded areas are recessions according to the National Bureau of Economic Research.
Source: Board of Governors of the Federal Reserve System.

Figure 28.
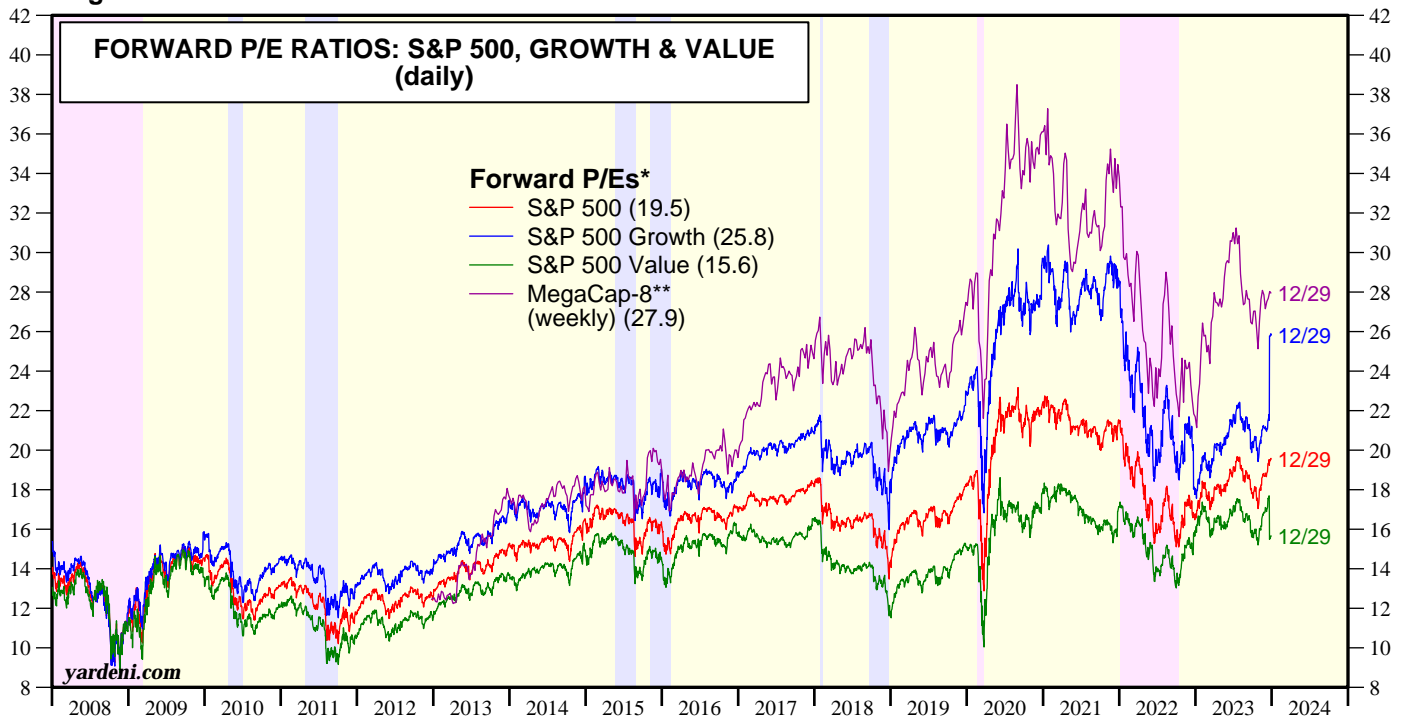
M2 AS A RATIO OF NOMINAL GDP

Latest (0.8)

Q3

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Source: Federal Reserve Board.

Figure 29.

FORWARD P/E RATIOS: S&P 500, GROWTH & VALUE
(daily)

Forward P/Es*
S&P 500 (19.5)
S&P 500 Growth (25.8)
S&P 500 Value (15.6)
MegaCap-8**
(weekly) (27.9)

* Price divided by 12-month forward consensus expected operating earnings per share. Monthly through December 2005, weekly and daily thereafter.
** MegaCap-8 stocks include Alphabet (Google), Amazon, Apple, Meta (Facebook), Microsoft, Netflix, NVIDIA, and Tesla. Both classes of Alphabet are included.
Note: Shaded red areas are S&P 500 bear market declines of 20% or more. Blue shaded areas are correction declines of 10% to less than 20%.
Source: I/B/E/S data by Refinitiv and Standard & Poors.

Figure 30.

FORWARD P/E RATIOS: MEGACAP, LARGECAP & SMIDCAP
(daily)

Forward P/Es
S&P 500 LargeCap (19.5)
S&P 400 MidCap (14.7)
S&P 600 SmallCap (14.5)
MegaCap-8**
(weekly) (27.9)
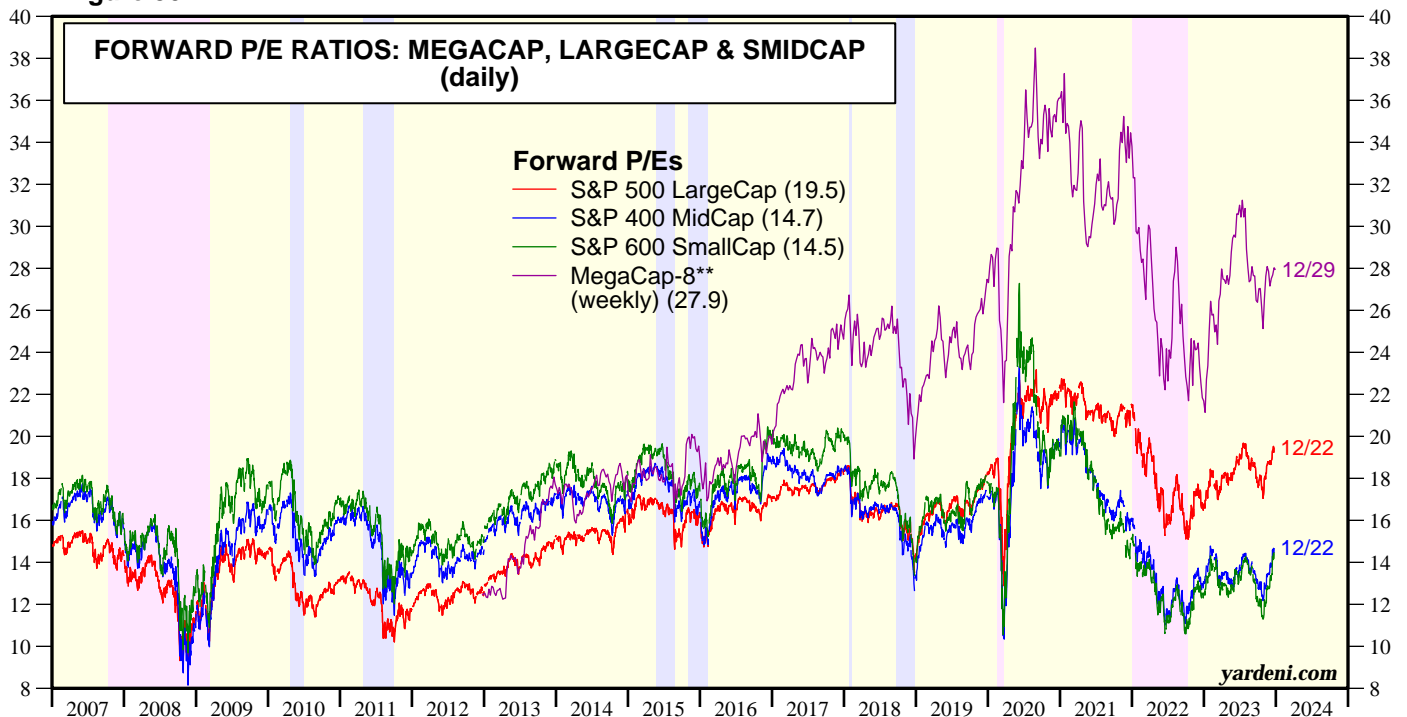
* Daily stock price index divided by 52-week forward consensus expected operating earnings per share.
** MegaCap-8 stocks include Alphabet (Google), Amazon, Apple, Meta (Facebook), Microsoft, Netflix, NVIDIA, and Tesla. Both classes of Alphabet are included.
Note: Shaded red areas are S&P 500 bear market declines of 20% or more. Blue shaded areas are correction declines of 10% to less than 20%.
Yellow areas are bull markets. Source: I/B/E/S data by Refinitiv and Standard & Poor's.

Figure 31.
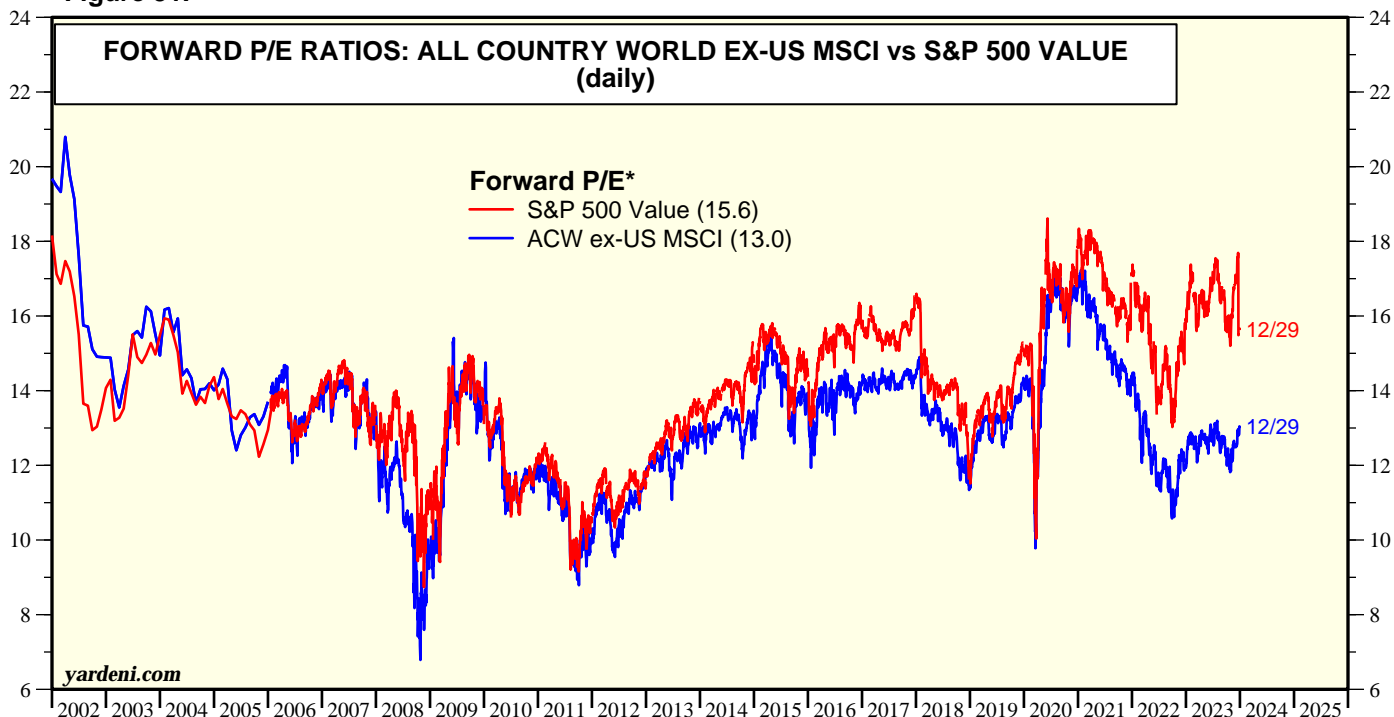
FORWARD P/E RATIOS: ALL COUNTRY WORLD EX-US MSCI vs S&P 500 VALUE
(daily)

Forward P/E*
— S&P 500 Value (15.6)
— ACW ex-US MSCI (13.0)

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* Price divided by 12-month forward consensus expected operating earnings per share. Monthly through December 2005, daily thereafter.
  Source: I/B/E/S data by Refinitiv and MSCI.

Figure 32.

FORWARD P/E RATIOS: SELECTED MSCI
(weekly)

Capped at 25

Forward P/E*
— EMU (12.4)
— Emerging Markets (11.6)
— US (19.8)
— Japan (13.9)
— UK (10.7)

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* Price divided by 12-month forward consensus expected operating earnings per share.
  Source: I/B/E/S data by Refinitiv.

Figure 33.

IT EQUPMENT, SOFTWARE, AND R&D SPENDING IN NOMINAL GDP
(as a percent of total capital spending in nominal GDP)

Technology
As Percent of Total
Capital Spending (49.2)

Source: Bureau of Economic Analysis.

Figure 34.

NONFARM BUSINESS (NFB) PRODUCTIVITY
& REAL HOURLY COMPENSATION
(20-quarter percent change, annual rate)

Productivity (1.8)
Real Hourly Compensation
(using NFB Deflator) (1.4)

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

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