

Central Banks: Modern Monetary Theory

Yardeni Research, Inc.

December 28, 2023

Dr. Edward Yardeni

516-972-7683
eyardeni@yardeni.com

Debbie Johnson

480-664-1333
djohnson@yardeni.com

Mali Quintana

480-664-1333
aquintana@yardeni.com

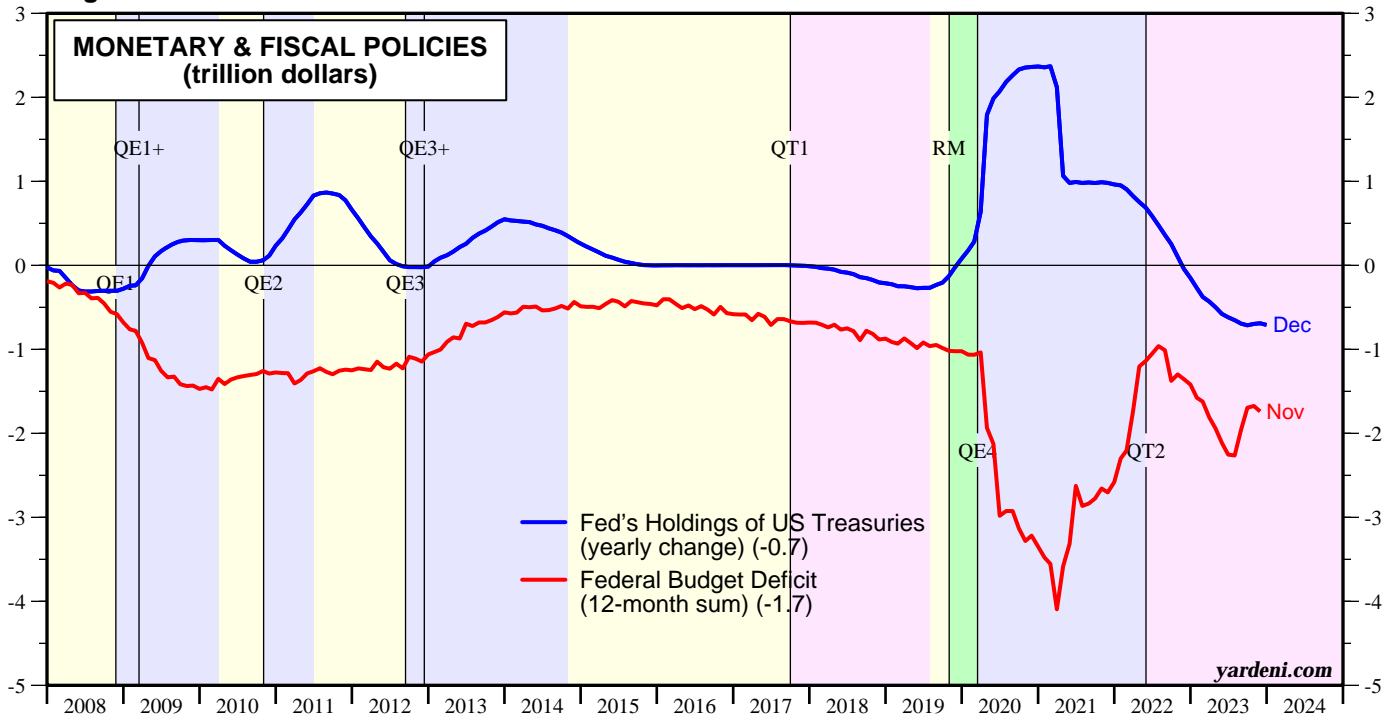
Please visit our sites at
www.yardeni.com
blog.yardeni.com



thinking outside the box

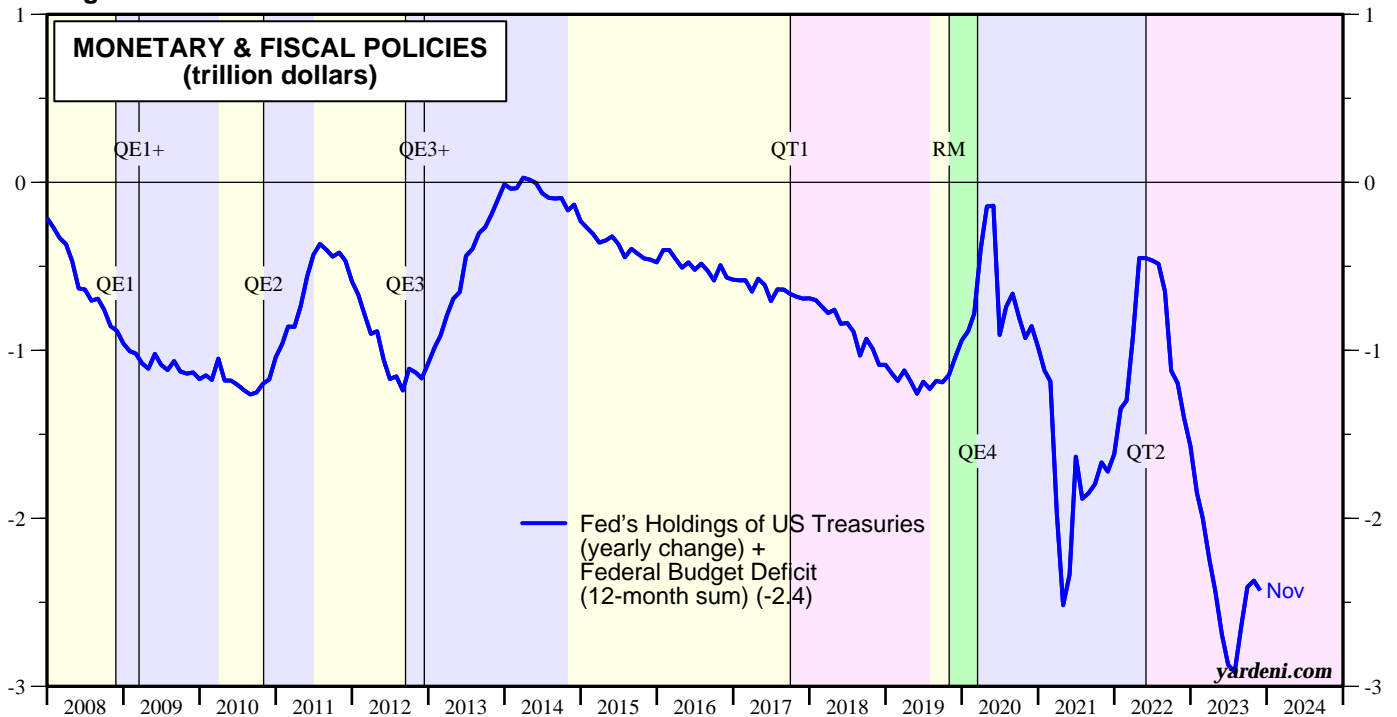
Table Of Contents

Figure 1.



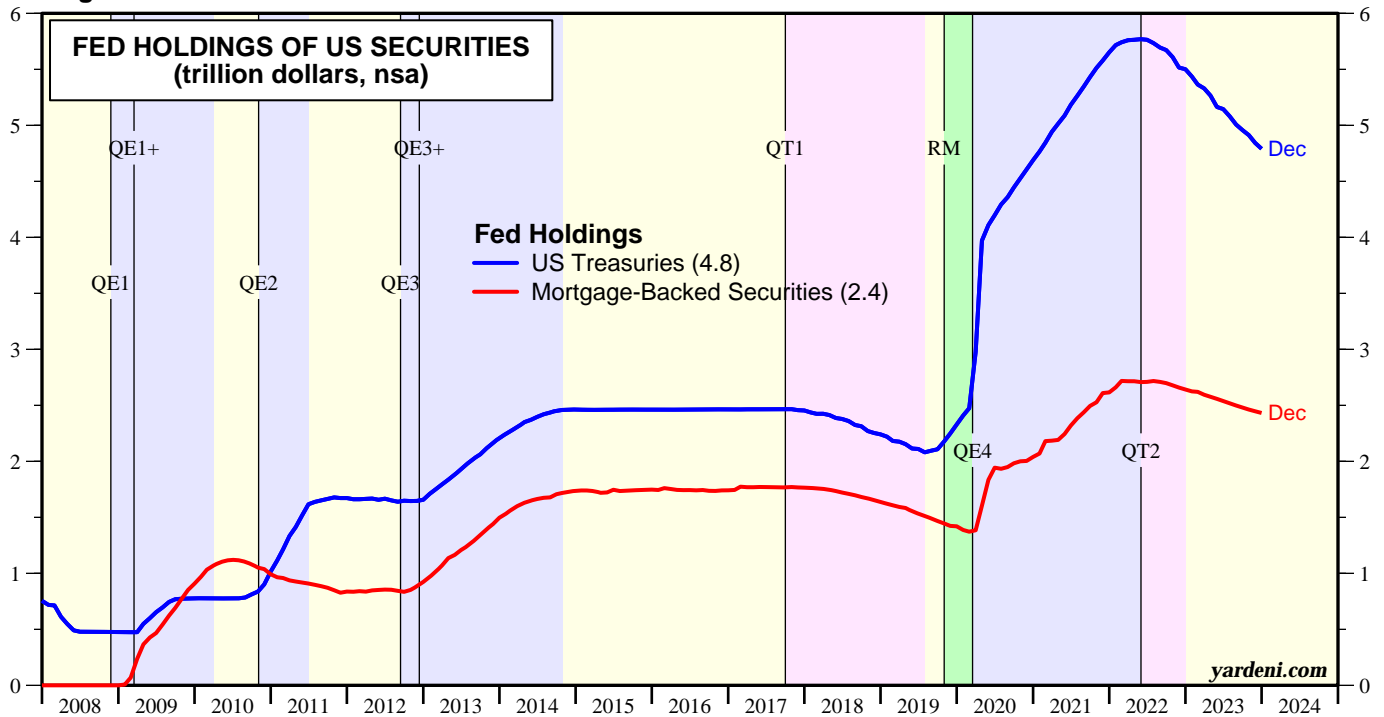
Note: QE1 (11/25/08-3/31/10) = \$1.24tn in mortgage securities; expanded (3/16/09-3/31/10) = \$300bn in Treasuries. QE2 (11/3/10-6/30/11) = \$600bn in Treasuries. QE3 (9/13/12-10/29/14) = \$40bn/month in mortgage securities (open ended); expanded (12/12/12-10/1/14) = \$45bn/month in Treasuries. QT1 (10/1/17-7/31/19) = 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 and US Treasury Department.

Figure 2.



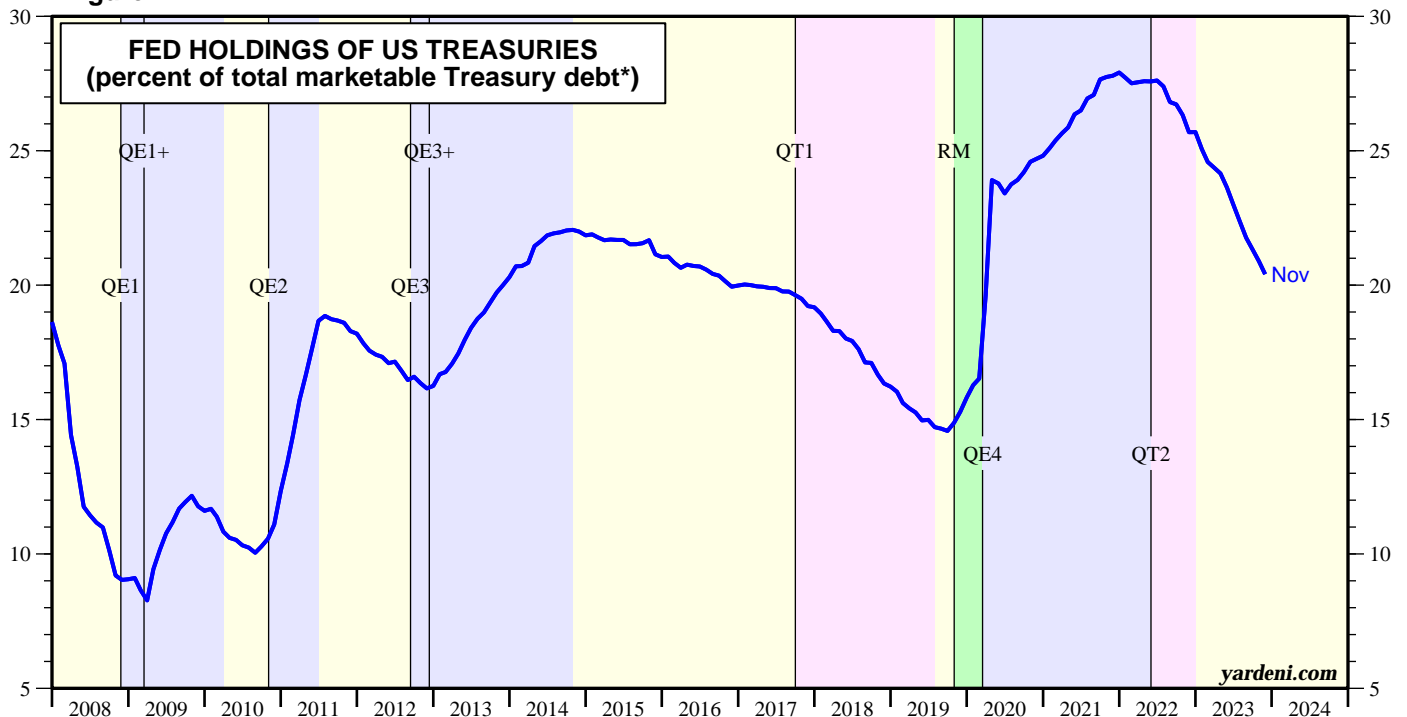
Note: QE1 (11/25/08-3/31/10) = \$1.24tn in mortgage securities; expanded (3/16/09-3/31/10) = \$300bn in Treasuries. QE2 (11/3/10-6/30/11) = \$600bn in Treasuries. QE3 (9/13/12-10/29/14) = \$40bn/month in mortgage securities (open ended); expanded (12/12/12-10/1/14) = \$45bn/month in Treasuries. QT1 (10/1/17-7/31/19) = 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 and US Treasury Department.

Figure 3.



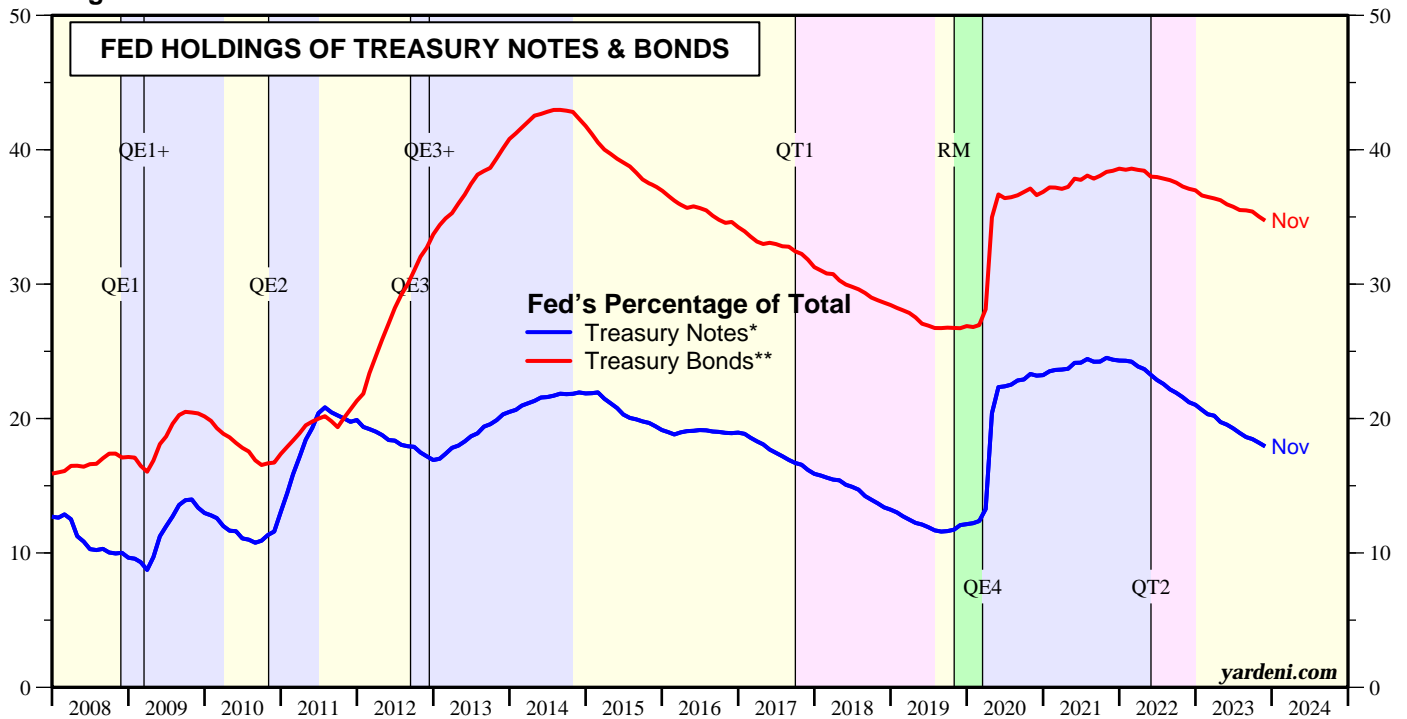
Note: QE1 (11/25/08-3/31/10) = \$1.24tn in mortgage securities; expanded (3/16/09-3/31/10) = \$300bn in Treasuries. QE2 (11/3/10-6/30/11) = \$600bn in Treasuries. QE3 (9/13/12-10/29/14) = \$40bn/month in mortgage securities (open ended); expanded (12/12/12-10/1/14) = \$45bn/month in Treasuries. QT (10/1/17-7/31/19) = balance sheet pared by \$675bn. RM (11/1/19-3/15/20) = reserve management, \$60bn/month in Treasury bills. QE4 (3/16/20-infinity). Source: Federal Reserve Board (Consolidated Statement of Condition of all Federal Reserve Banks (H.4.1 TABLE 5)).

Figure 4.



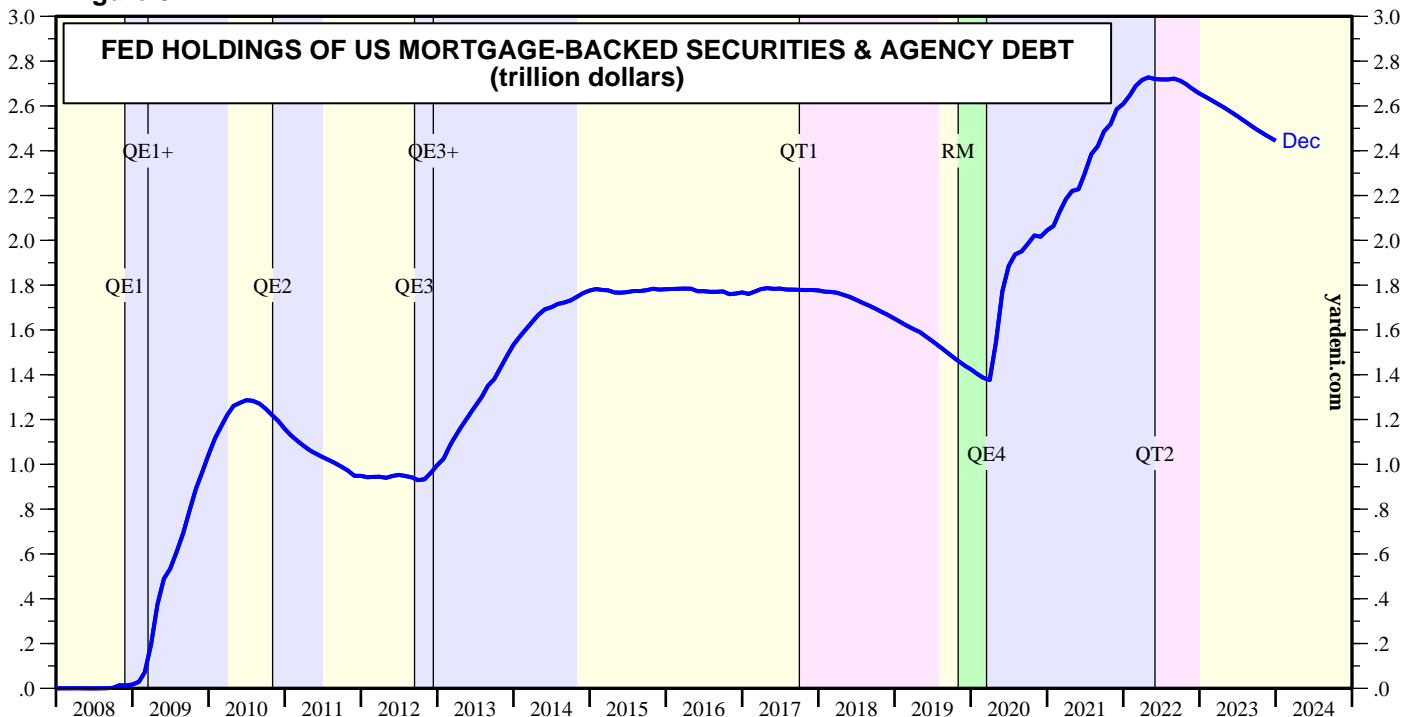
Note: QE1 (11/25/08-3/31/10) = \$1.24tn in mortgage securities; expanded (3/16/09-3/31/10) = \$300bn in Treasuries. QE2 (11/3/10-6/30/11) = \$600bn in Treasuries. QE3 (9/13/12-10/29/14) = \$40bn/month in mortgage securities (open ended); expanded (12/12/12-10/1/14) = \$45bn/month in Treasuries. QT (10/1/17-7/31/19) = balance sheet pared by \$675bn. RM (11/1/19-3/15/20) = reserve management, \$60bn/month in Treasury bills. QE4 (3/16/20-infinity). Source: Federal Reserve Board and US Treasury Department.

Figure 5.



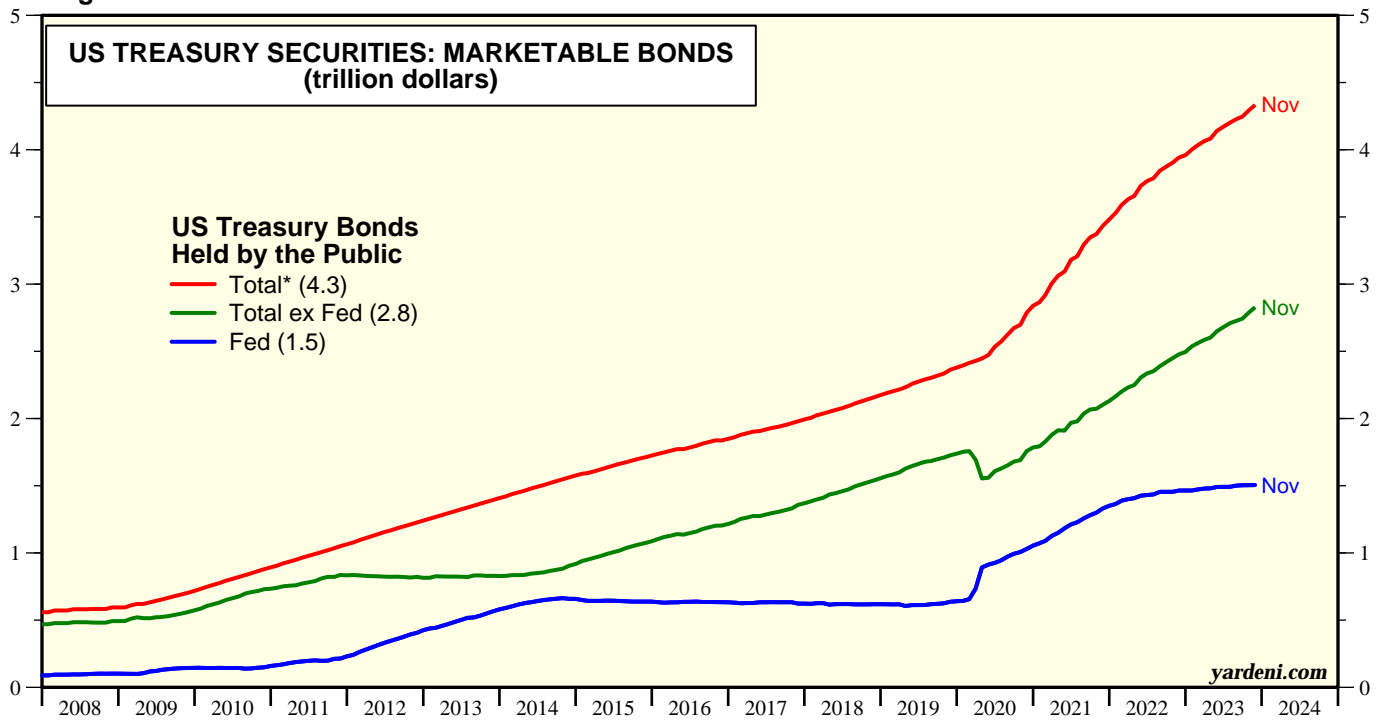
* 1-10 years. ** Over 10 years.
 Note: QE1 (11/25/08-3/31/10) = \$1.24tn in mortgage securities; expanded (3/16/09-3/31/10) = \$300bn in Treasuries. QE2 (11/3/10-6/30/11) = \$600bn in Treasuries. QE3 (9/13/12-10/29/14) = \$40bn/month in mortgage securities (open ended); expanded (12/12/12-10/1/14) = \$45bn/month in Treasuries. QT (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).
 Source: Federal Reserve Board.

Figure 6.



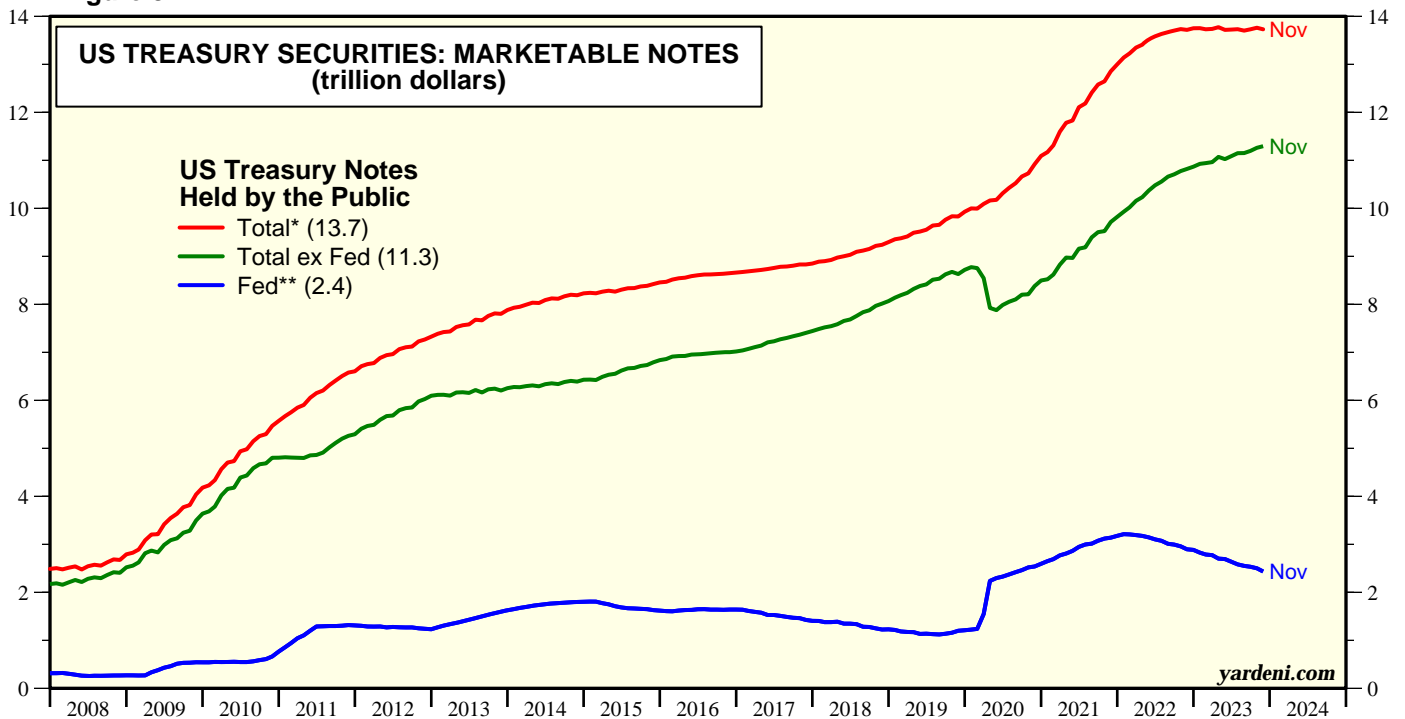
Note: QE1 (11/25/08-3/31/10) = \$1.24tn in mortgage securities; expanded (3/16/09-3/31/10) = \$300bn in Treasuries. QE2 (11/3/10-6/30/11) = \$600bn in Treasuries. QE3 (9/13/12-10/29/14) = \$40bn/month in mortgage securities (open ended); expanded (12/12/12-10/1/14) = \$45bn/month in Treasuries. QT (10/1/17-7/31/19) = balance sheet pared by \$675bn. RM (11/1/19-3/15/20) = reserve management, \$60bn/month in Treasury bills. QE4 (3/16/20-infinity).
 * Fed data are averages of daily figures for weeks ending Wednesday. Source: Federal Reserve Board.

Figure 7.



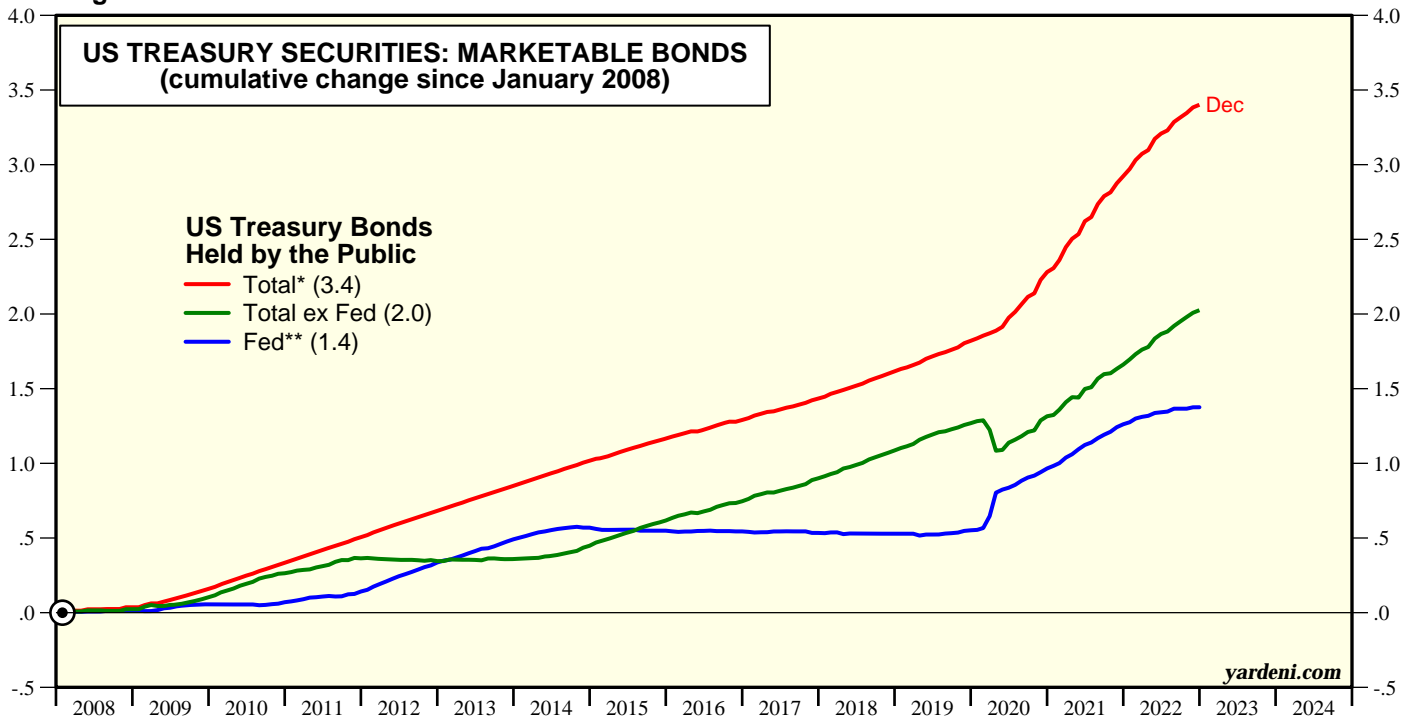
* Including held by the Fed.
 Source: Federal Reserve Board and US Treasury Department, Monthly Statement of the Public Debt of the United States.

Figure 8.



* Including held by the Fed.
 ** 1-10 years maturities.
 Source: Federal Reserve Board and US Treasury Department, Monthly Statement of the Public Debt of the United States.

Figure 9.

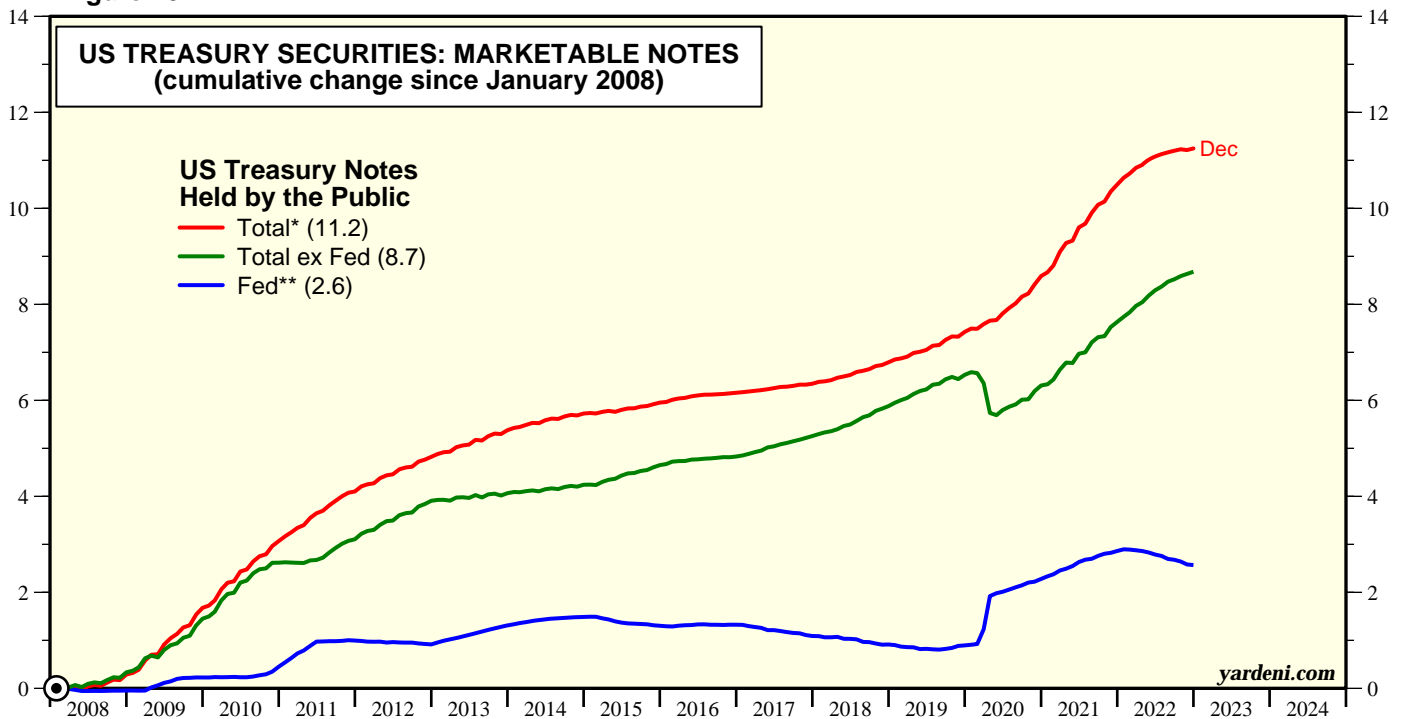


* Including held by the Fed.

** 10+ years maturities.

Source: Federal Reserve Board and US Treasury Department, Monthly Statement of the Public Debt of the United States.

Figure 10.



* Including held by the Fed.

** 1-10 years maturities.

Source: Federal Reserve Board and US Treasury Department, Monthly Statement of the Public Debt of the United States.

Figure 11.

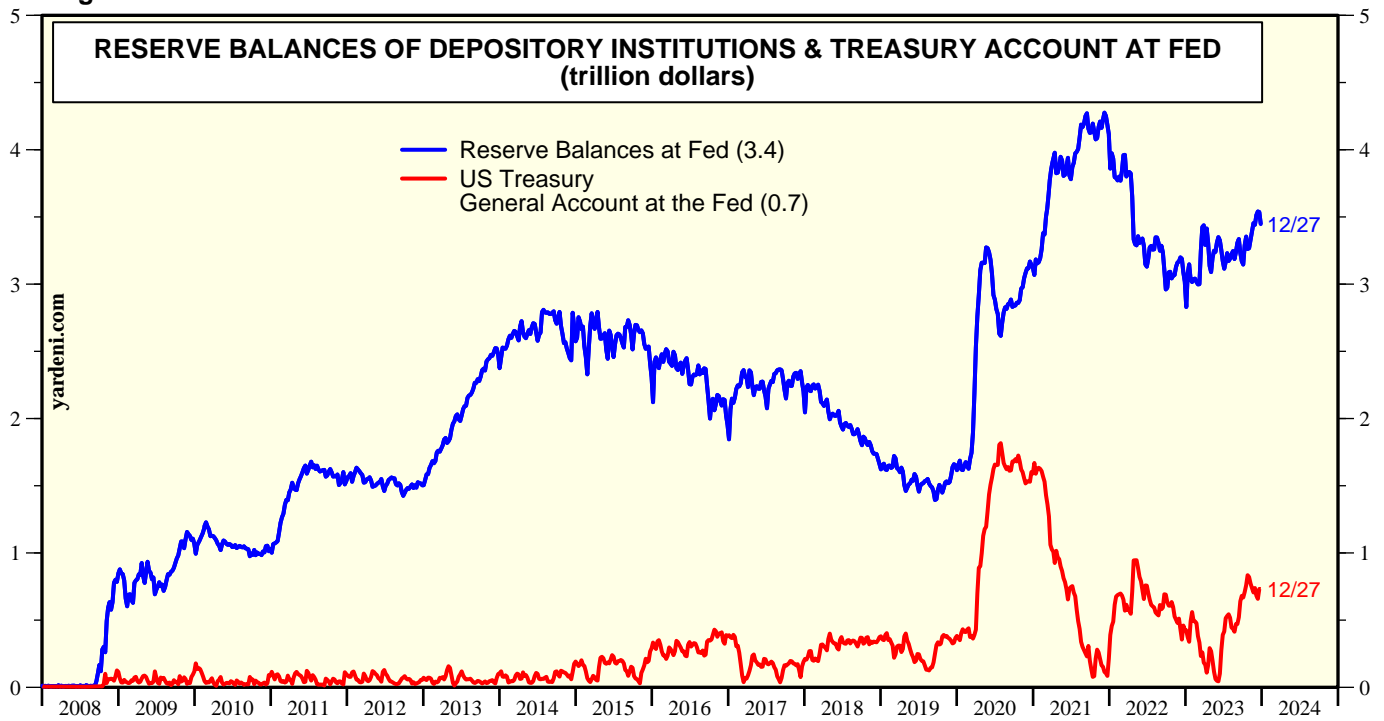


Figure 12.

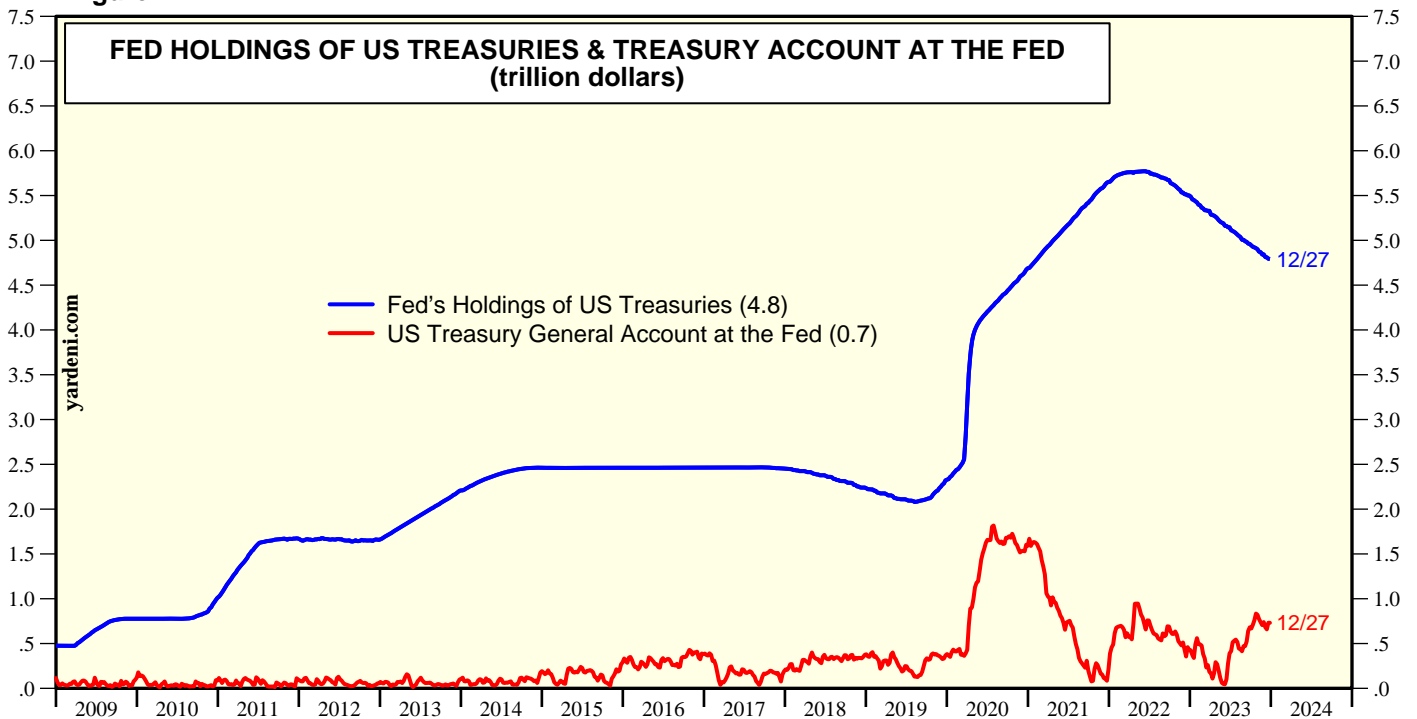
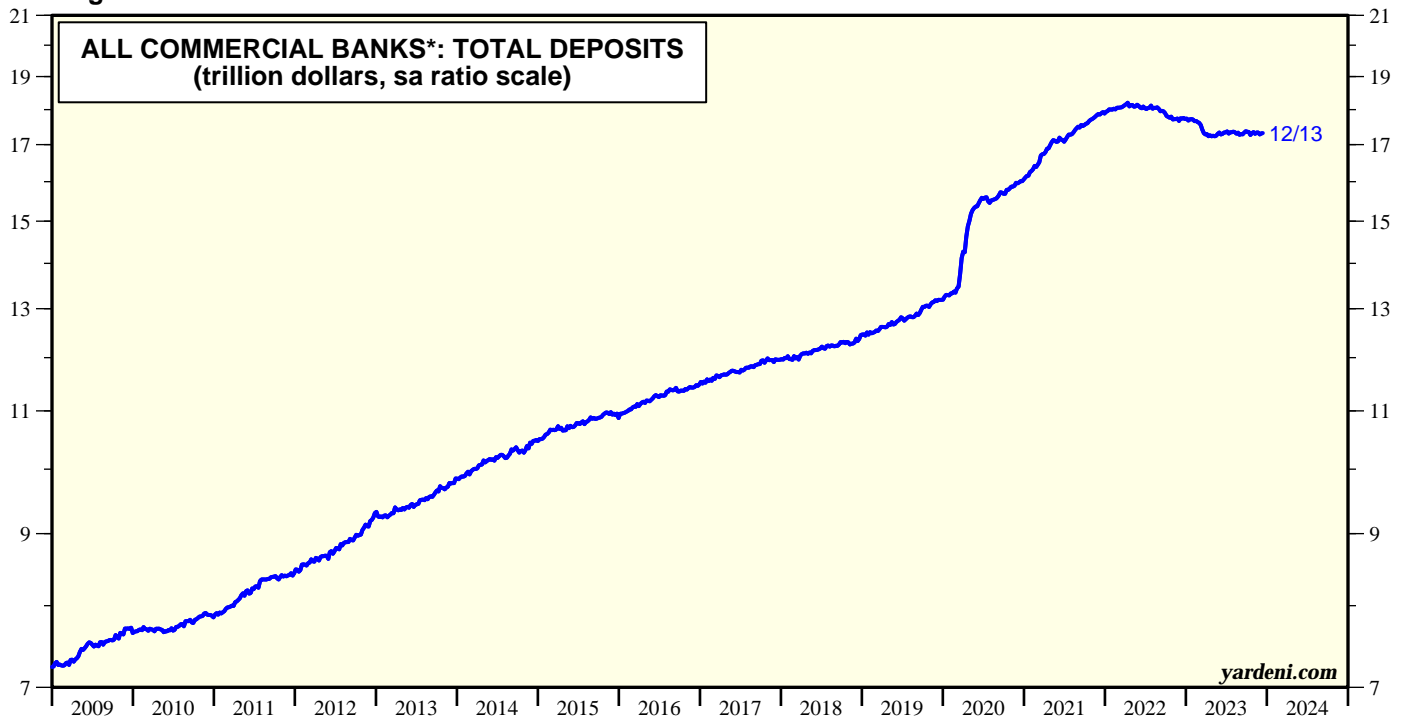
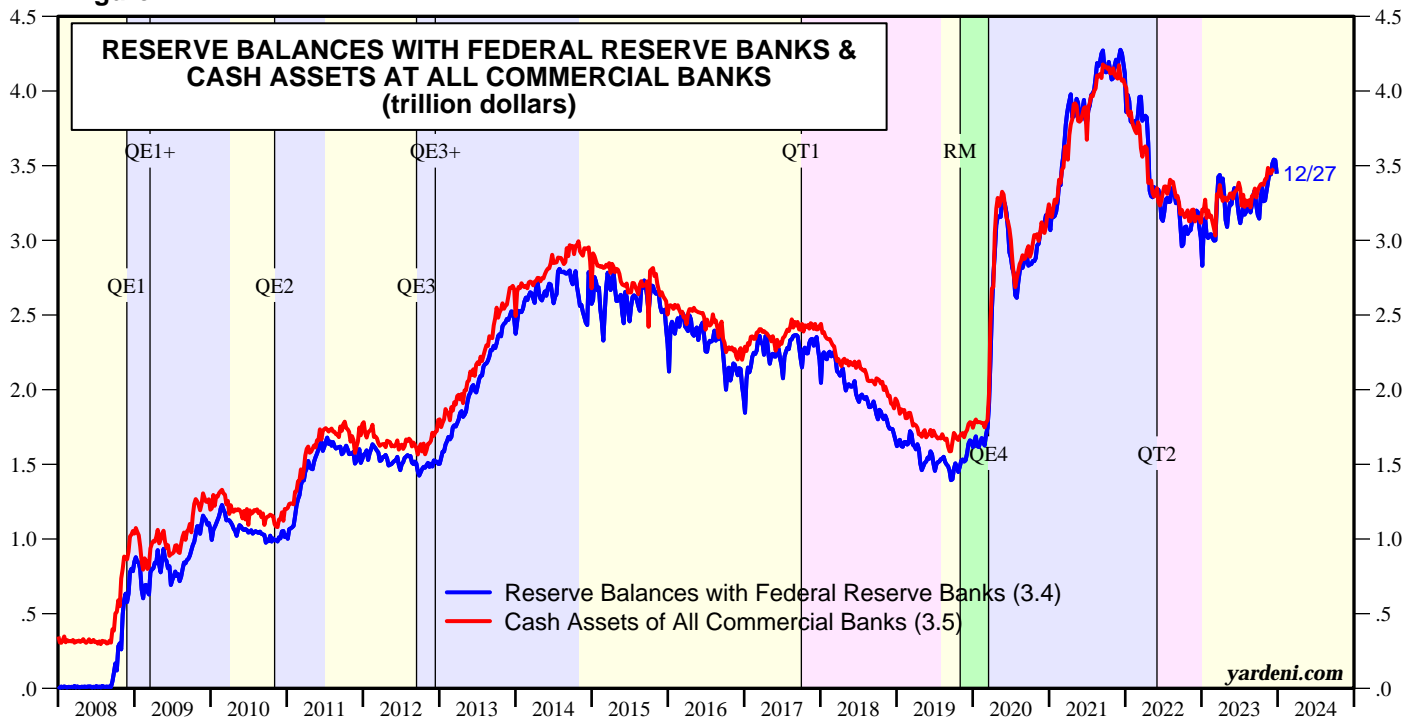


Figure 13.



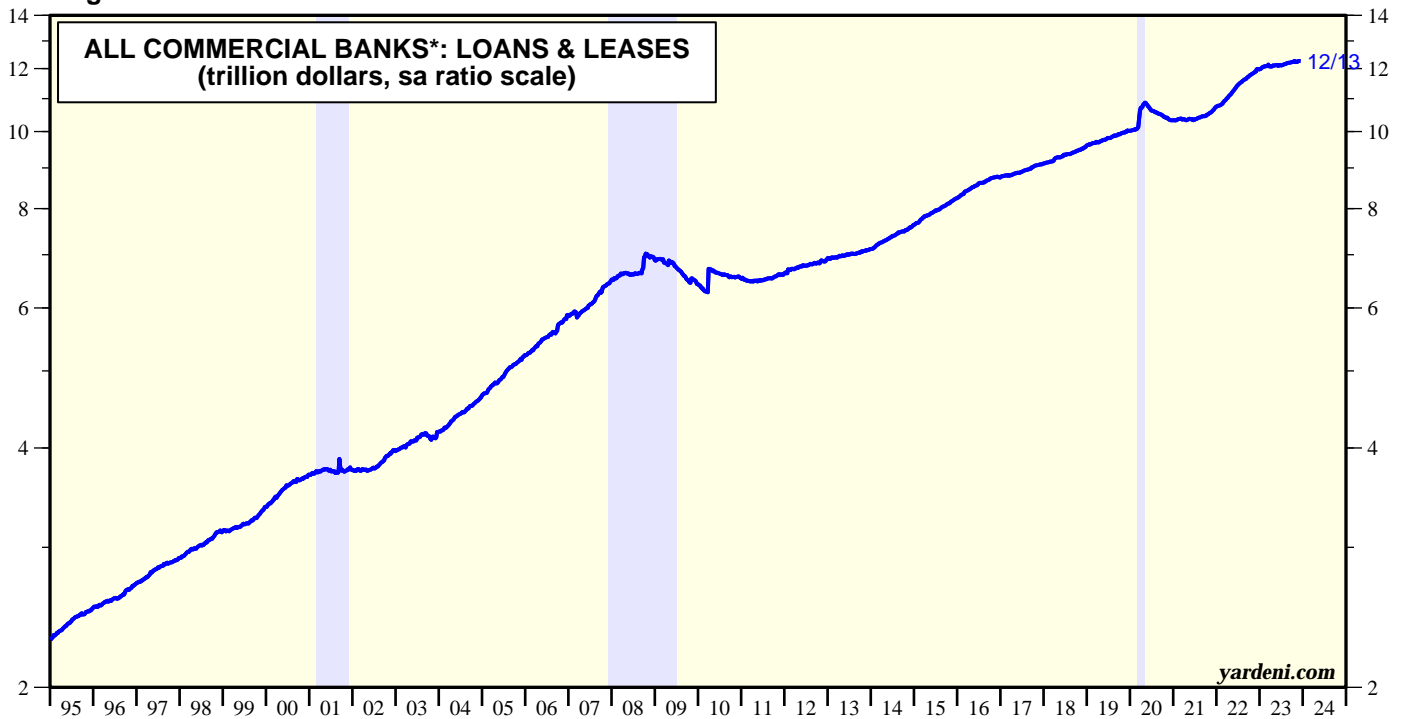
* Includes domestically chartered commercial banks and foreign-related ones.
Source: Federal Reserve Board.

Figure 14.



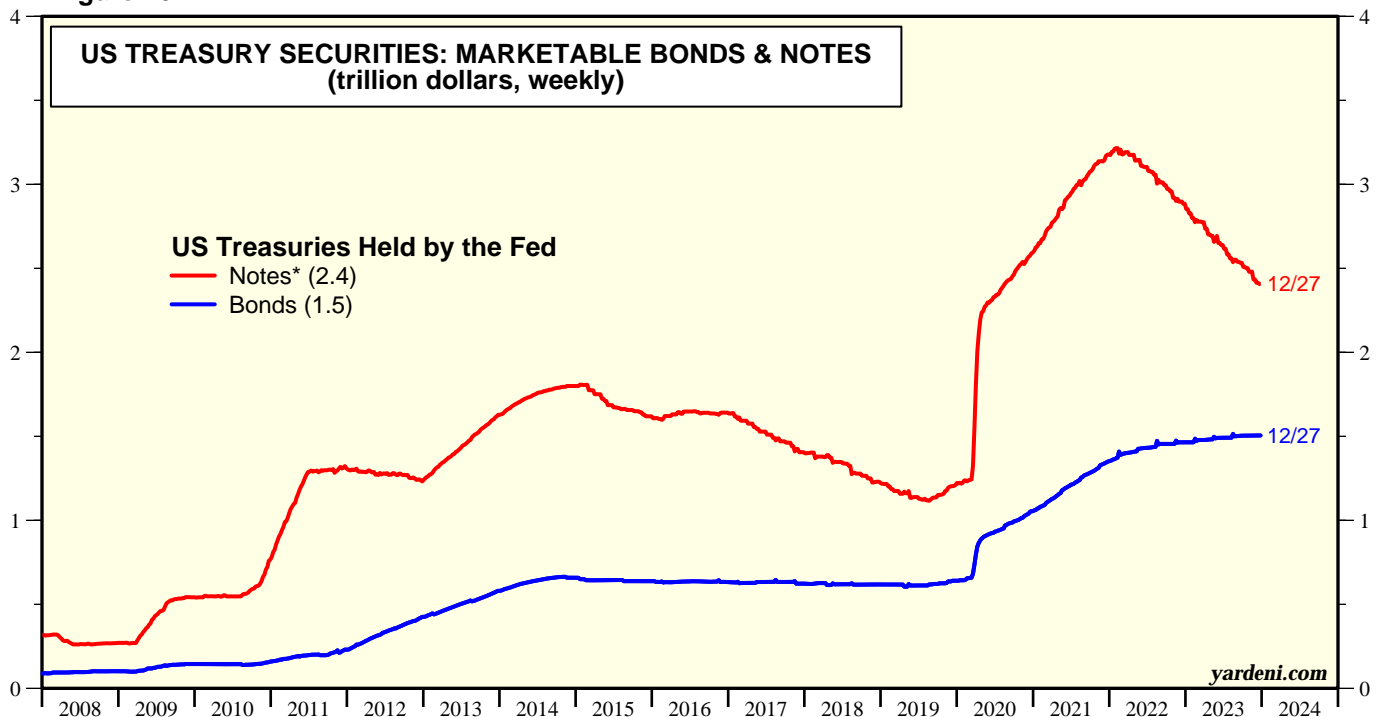
Note: QE1 (11/25/08-3/31/10) = \$1.24tn in mortgage securities; expanded (3/16/09-3/31/10) = \$300bn in Treasuries. QE2 (11/3/10-6/30/11) = \$600bn in Treasuries. QE3 (9/13/12-10/29/14) = \$40bn/month in mortgage securities (open ended); expanded (12/12/12-10/1/14) = \$45bn/month in Treasuries. QT (10/1/17-7/31/19) = balance sheet pared by \$675bn. RM (11/1/19-3/15/20) = reserve management, \$60bn/month in Treasury bills. QE4 (3/16/20-infinity).
Source: Federal Reserve Board Release H.4.1 and H.8.

Figure 15.



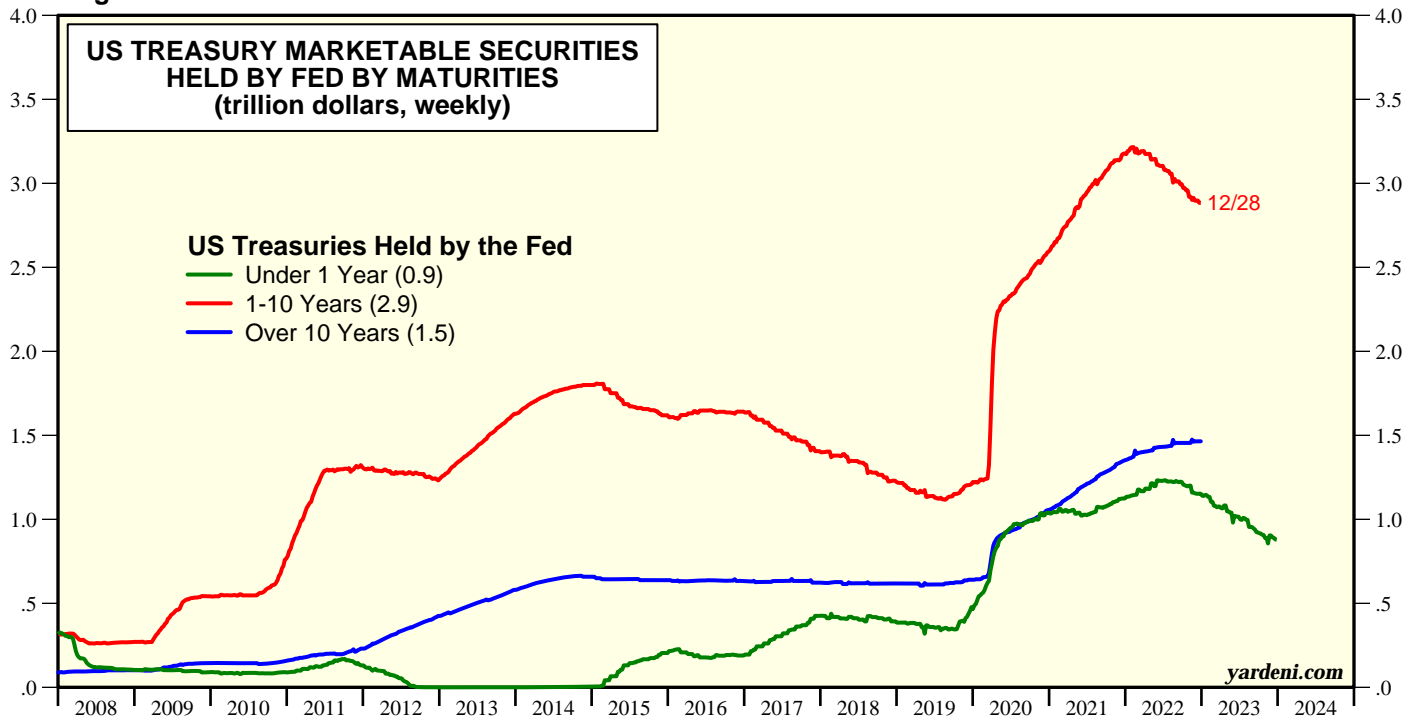
* Includes domestically chartered commercial banks and foreign-related ones.
Note: Shaded areas are recessions according to the National Bureau of Economic Research.
Source: Federal Reserve Board.

Figure 16.



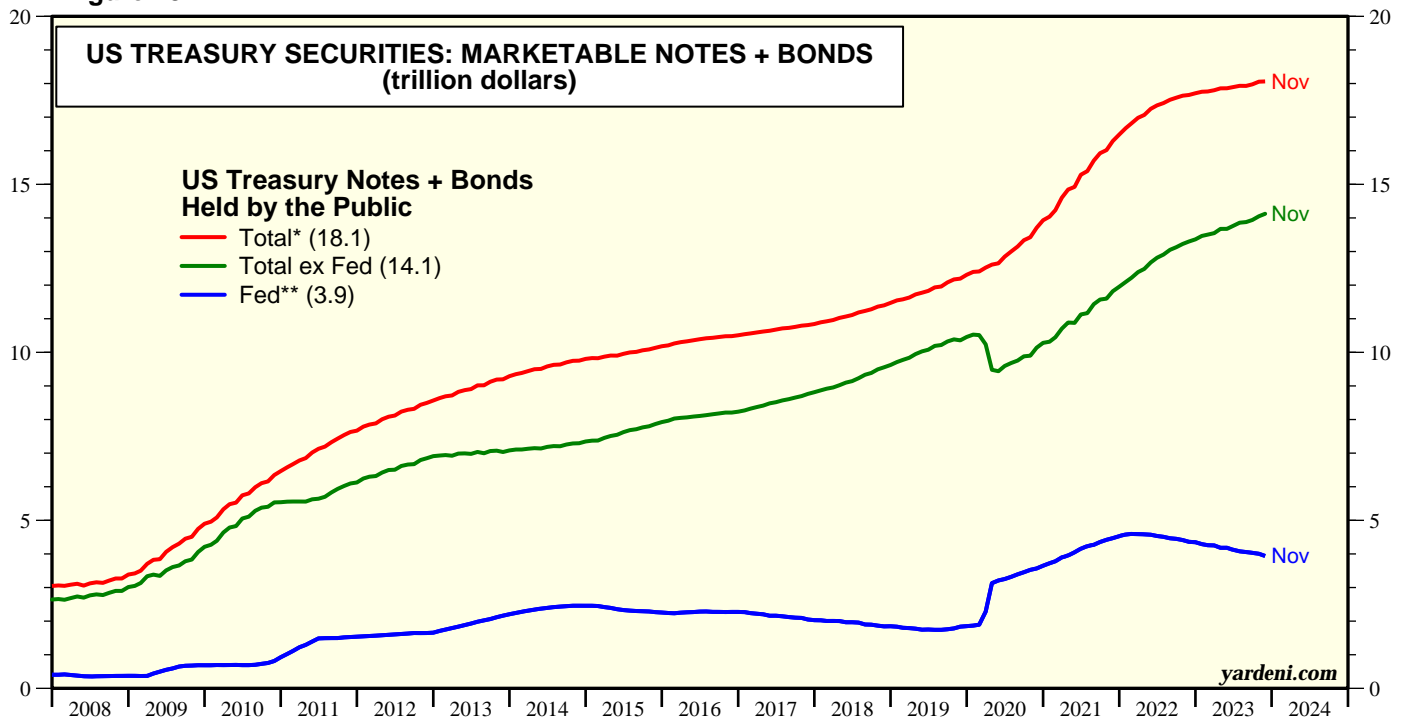
* 1-10 years maturities.
Source: Federal Reserve Board and US Treasury Department, Monthly Statement of the Public Debt of the United States.

Figure 17.



Source: Federal Reserve Board, H.4.1 Table 2.

Figure 18.

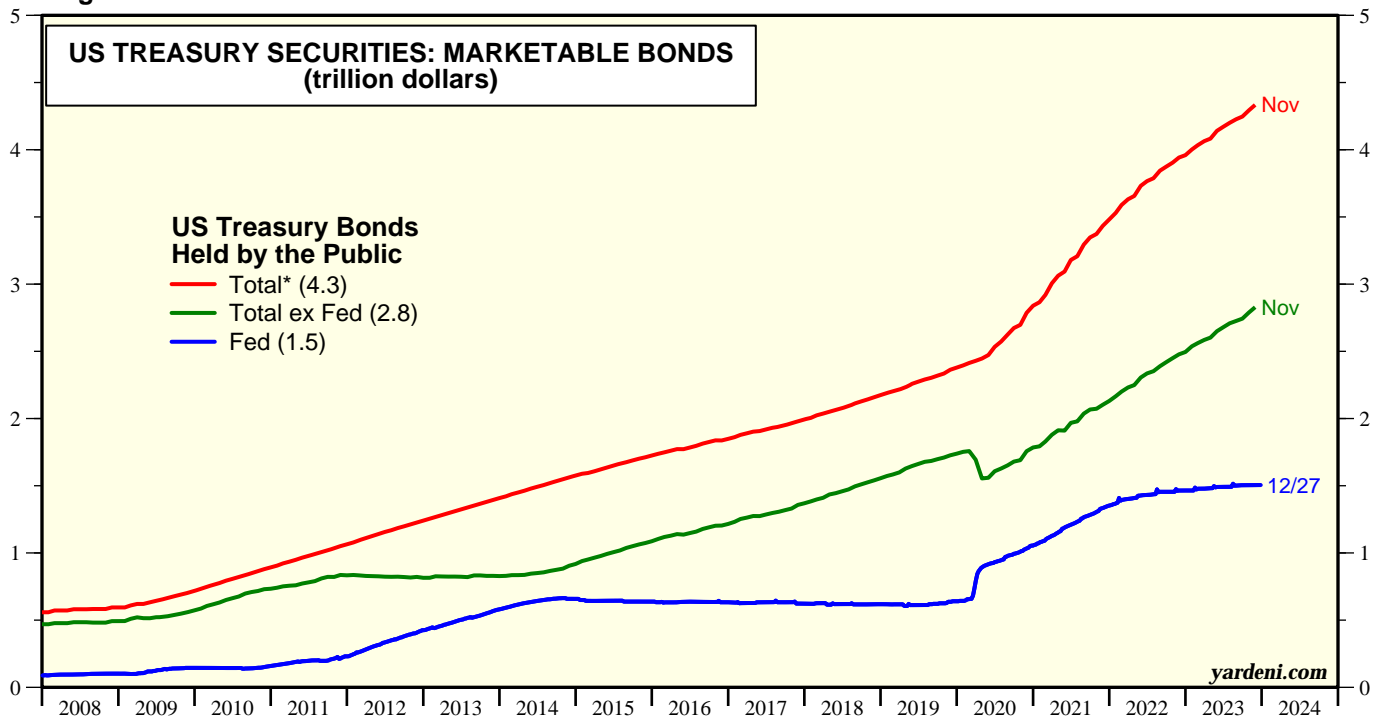


* Including held by the Fed.

** Treasury securities with maturities of 1-10 years plus over 10 years.

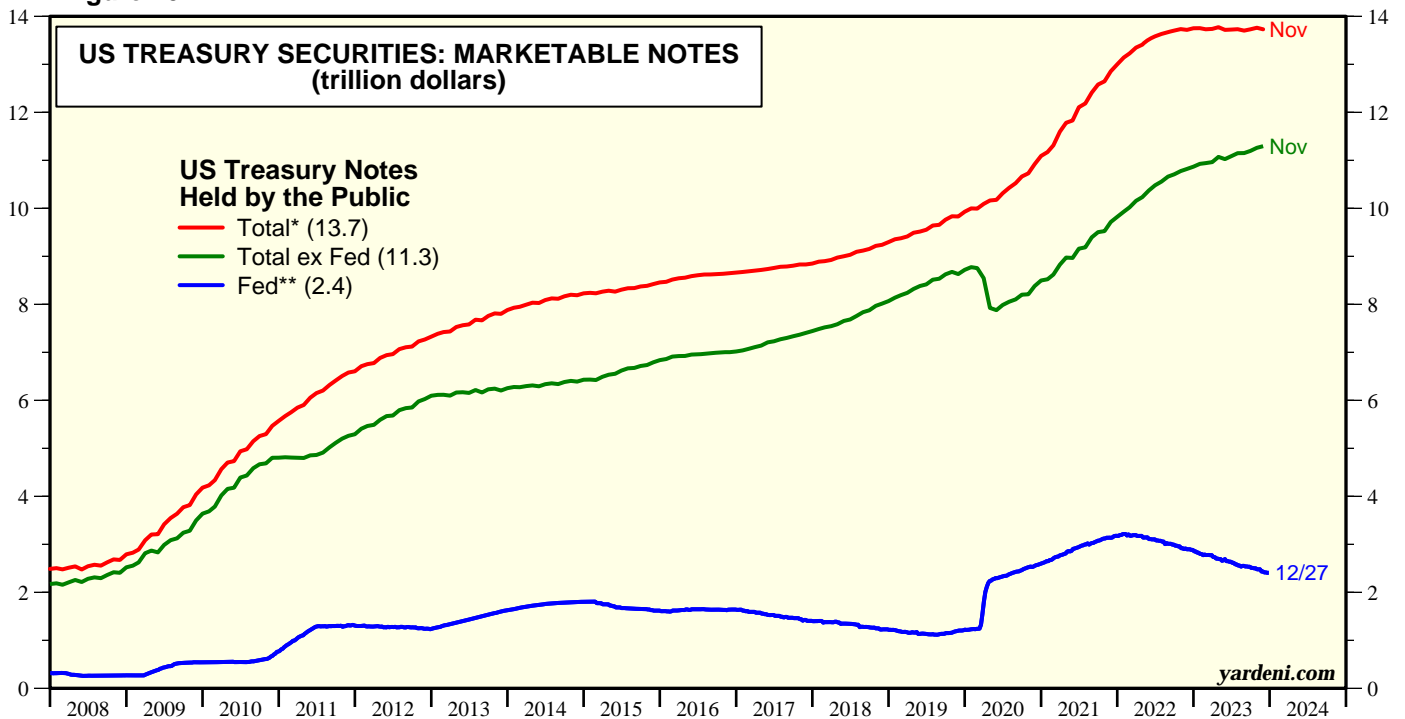
Source: FN3 Source: Federal Reserve Board, H.4.1 Table 2.

Figure 19.



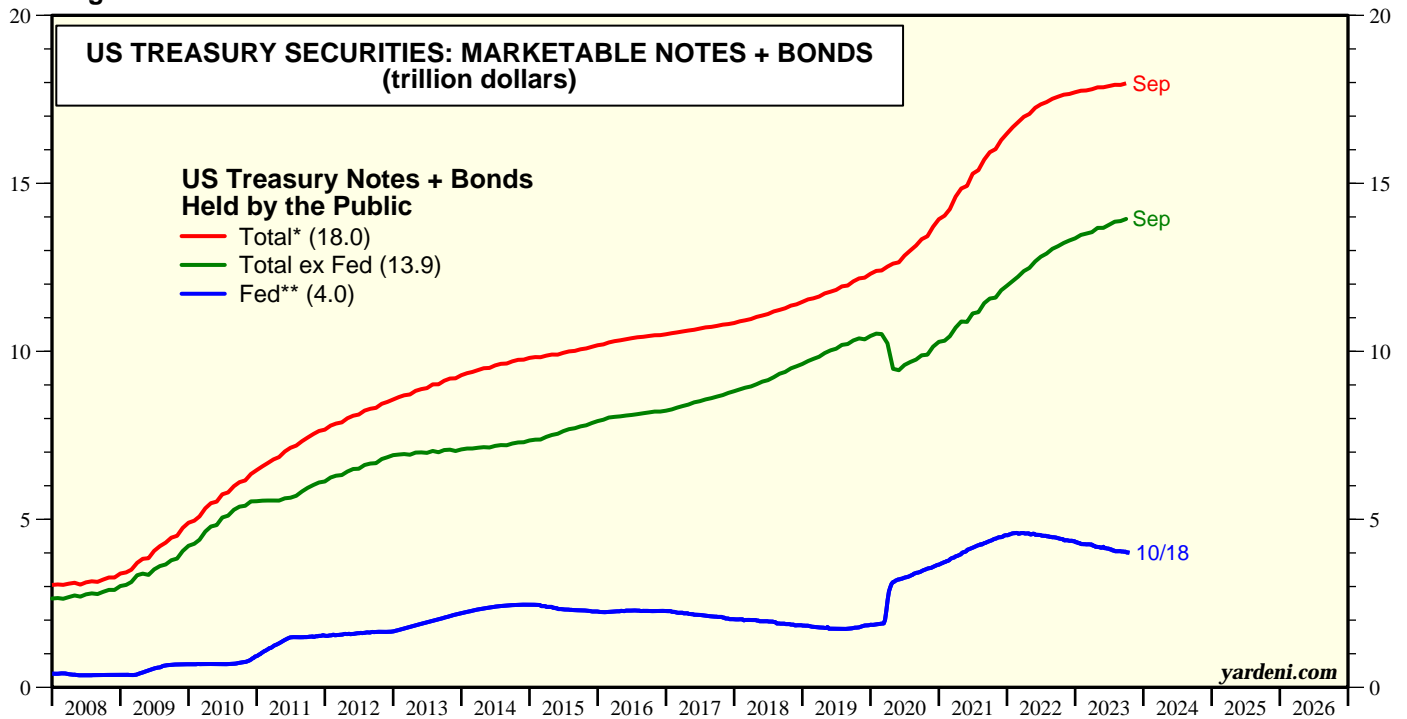
* Including held by the Fed.
Source: Federal Reserve Board and US Treasury.

Figure 20.



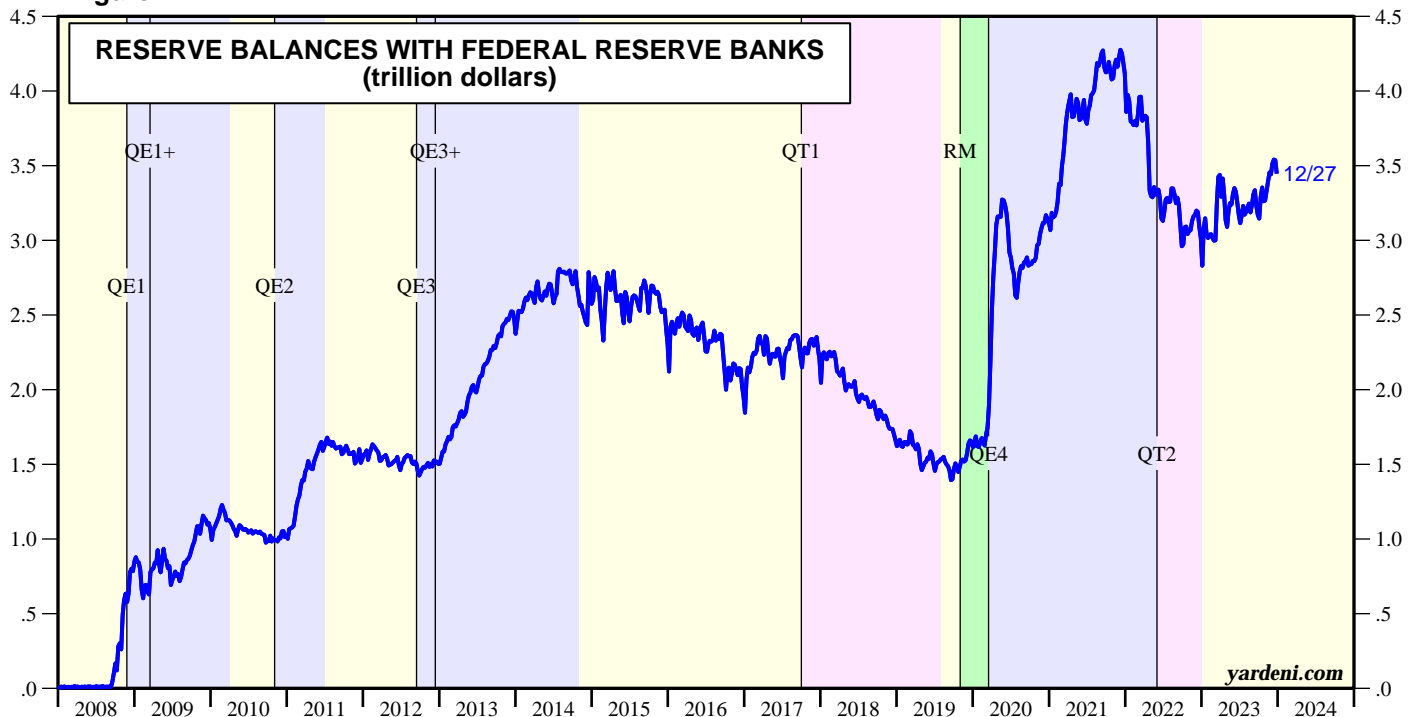
* Including held by the Fed.
** 1-10 years maturities.
Source: Federal Reserve Board and US Treasury.

Figure 21.



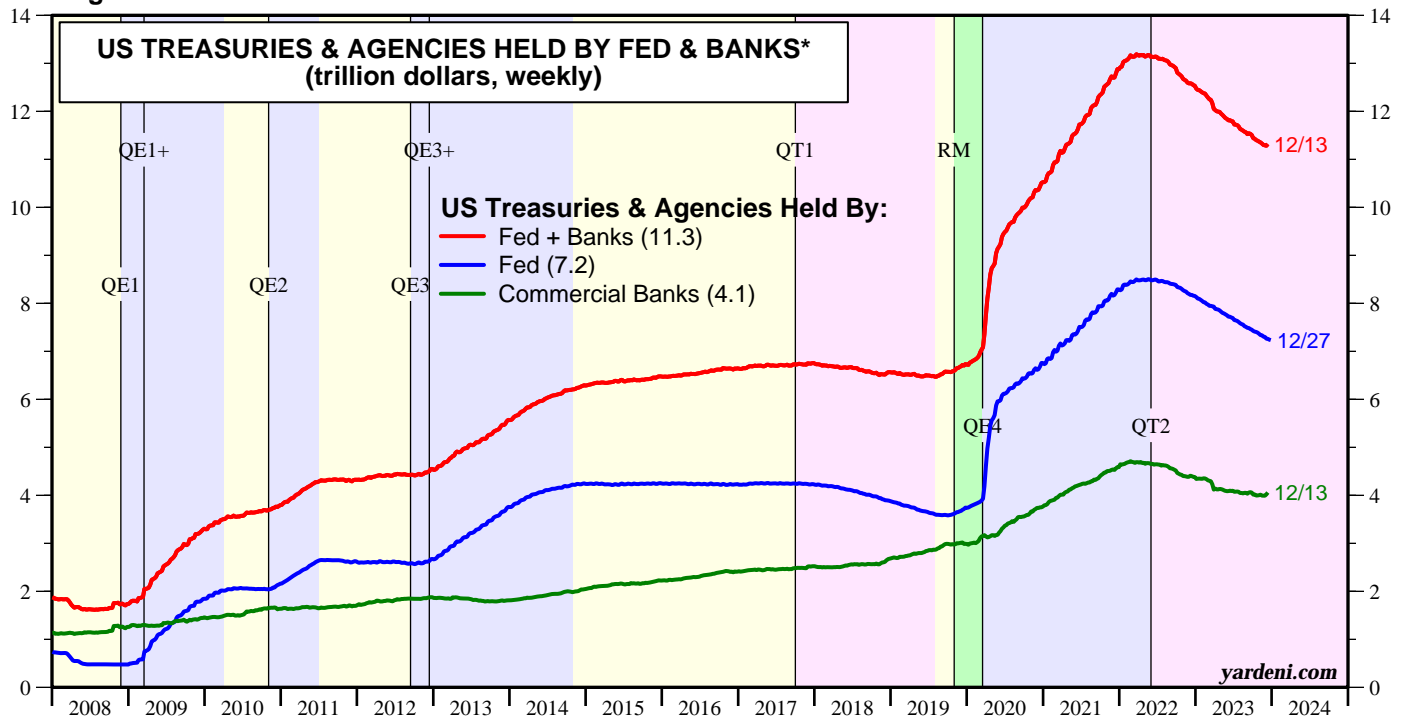
* Including held by the Fed.
 ** Treasury securities with maturities of 1-10 years plus over 10 years.
 Source: Federal Reserve Board, H.4.1 Table 2.

Figure 22.



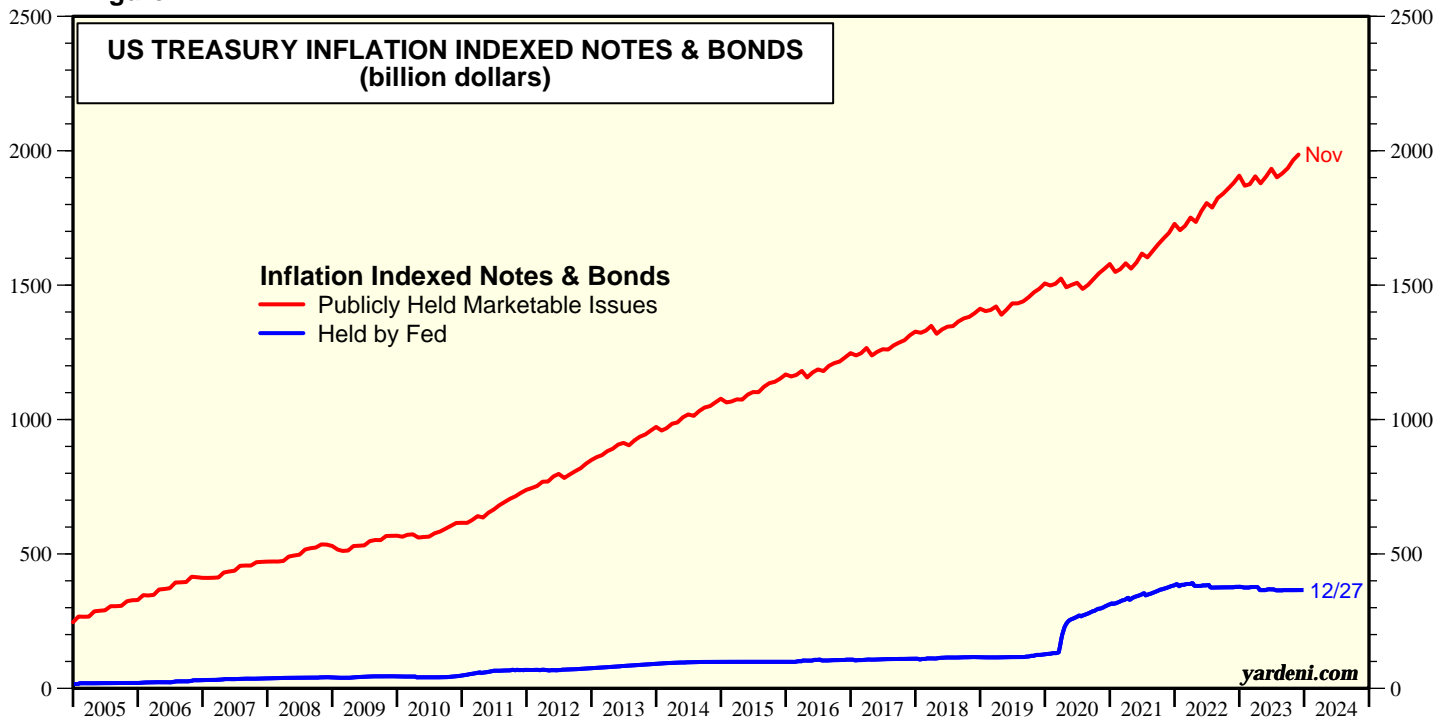
Note: QE1 (11/25/08-3/31/10) = \$1.24tn in mortgage securities; expanded (3/16/09-3/31/10) = \$300bn in Treasuries. QE2 (11/3/10-6/30/11) = \$600bn in Treasuries. QE3 (9/13/12-10/29/14) = \$40bn/month in mortgage securities (open ended); expanded (12/12/12-10/1/14) = \$45bn/month in Treasuries. QT (10/1/17-7/31/19) = balance sheet pared by \$675bn. RM (11/1/19-3/15/20) = reserve management, \$60bn/month in Treasury bills. QE4 (3/16/20-infinity).
 Source: Federal Reserve Board Release H.4.1 and H.8.

Figure 23.



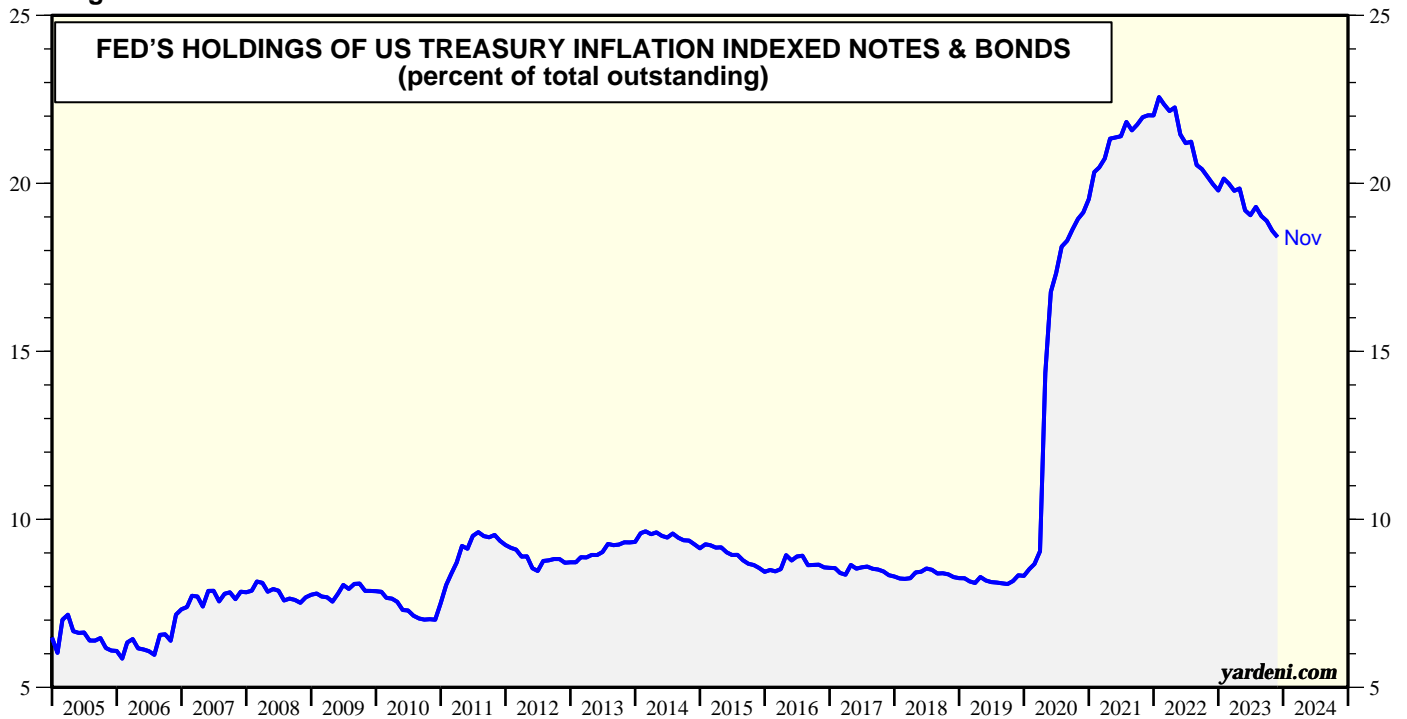
* Averages of daily figures for weeks ending Wednesday. Securities held by Fed include US Treasuries, Agency debt, and mortgage-backed securities. Note: QE1 (11/25/08-3/31/10) = \$1.24tn in mortgage securities; expanded (3/16/09-3/31/10) = \$300bn in Treasuries. QE2 (11/3/10-6/30/11) = \$600bn in Treasuries. 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 24.



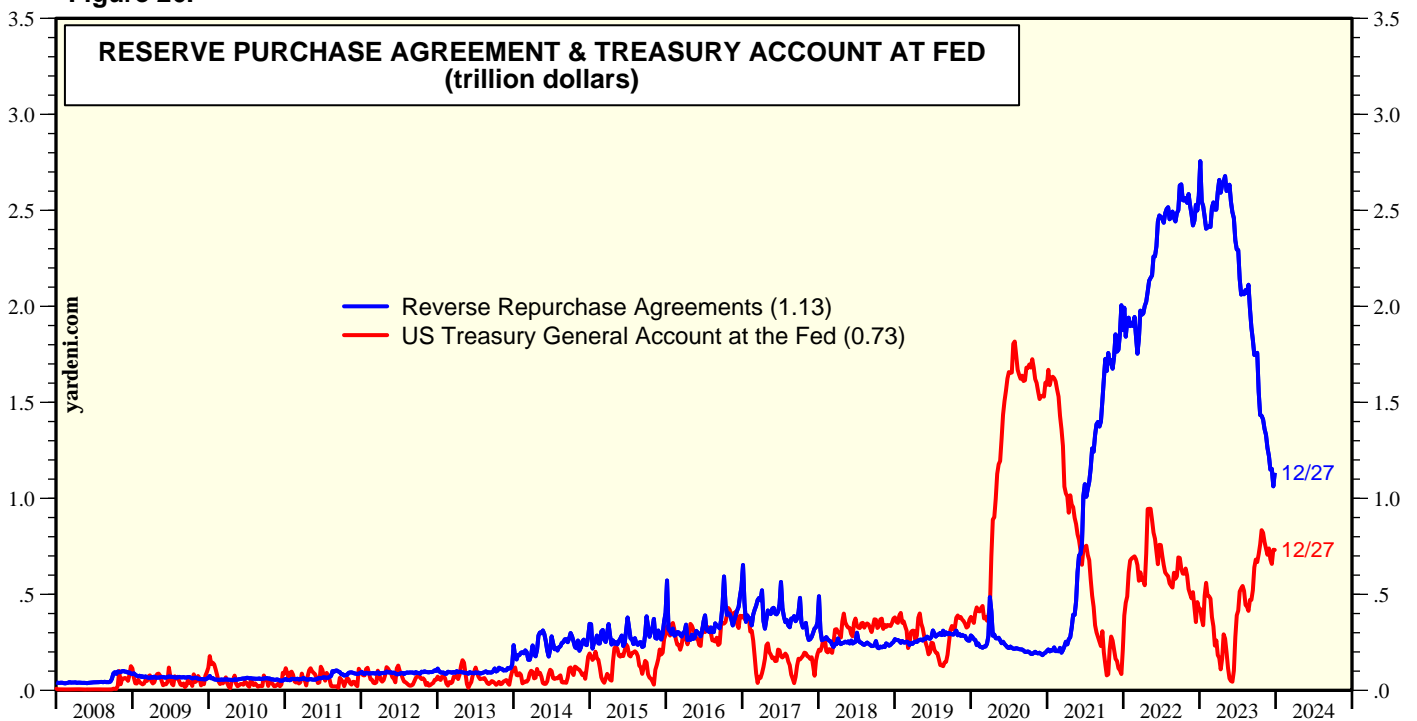
Source: Federal Reserve Board, Table H.4.1.

Figure 25.



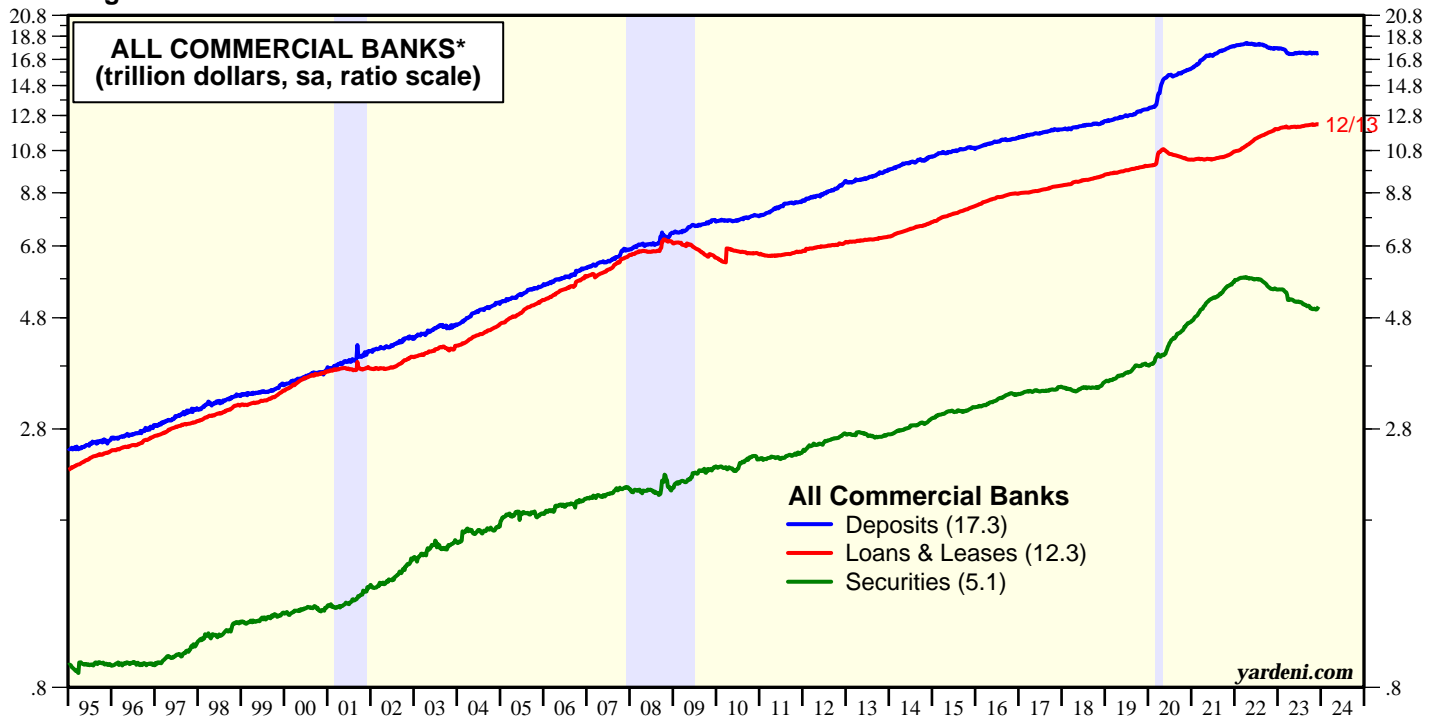
Source: Federal Reserve Board, Table H.4.1 and US Treasury.

Figure 26.



Source: Federal Reserve Board.

Figure 27.



* Includes domestically chartered commercial banks and foreign-related ones.
 Note: Shaded areas are recessions according to the National Bureau of Economic Research.
 Source: Federal Reserve Board.

Copyright (c) Yardeni Research, Inc. 2023. All rights reserved. The information contained herein has been obtained from sources believed to be reliable, but is not necessarily complete and its accuracy cannot be guaranteed. No representation or warranty, express or implied, is made as to the fairness, accuracy, completeness, or correctness of the information and opinions contained herein. The views and the other information provided are subject to change without notice. All reports and podcasts posted on www.yardeni.com, blog.yardeni.com, and YRI's Apps are issued without regard to the specific investment objectives, financial situation, or particular needs of any specific recipient and are not to be construed as a solicitation or an offer to buy or sell any securities or related financial instruments. Past performance is not necessarily a guide to future results. Company fundamentals and earnings may be mentioned occasionally, but should not be construed as a recommendation to buy, sell, or hold the company's stock. Predictions, forecasts, and estimates for any and all markets should not be construed as recommendations to buy, sell, or hold any security--including mutual funds, futures contracts, and exchange traded funds, or any similar instruments.

The text, images, and other materials contained or displayed on any Yardeni Research, Inc. product, service, report, email or website are proprietary to Yardeni Research, Inc. and constitute valuable intellectual property. No material from any part of www.yardeni.com, blog.yardeni.com, and YRI's Apps may be downloaded, transmitted, broadcast, transferred, assigned, reproduced or in any other way used or otherwise disseminated in any form to any person or entity, without the explicit written consent of Yardeni Research, Inc. All unauthorized reproduction or other use of material from Yardeni Research, Inc. shall be deemed willful infringement(s) of this copyright and other proprietary and intellectual property rights, including but not limited to, rights of privacy. Yardeni Research, Inc. expressly reserves all rights in connection with its intellectual property, including without limitation the right to block the transfer of its products and services and/or to track usage thereof, through electronic tracking technology, and all other lawful means, now known or hereafter devised. Yardeni Research, Inc. reserves the right, without further notice, to pursue to the fullest extent allowed by the law any and all criminal and civil remedies for the violation of its rights.

The recipient should check any email and any attachments for the presence of viruses. Yardeni Research, Inc. accepts no liability for any damage caused by any virus transmitted by this company's emails, website, blog and Apps. Additional information available on [request](#).