APOLLO

Outlook for public and private markets

Torsten Slok, Ph.D. | Chief Economist | tslok@apollo.com

Apollo Global Management

October 2023

Legal Disclaimer

Unless otherwise noted, information included herein is presented as of the dates indicated. Apollo Global Management, Inc. (together with its subsidiaries, "Apollo") makes no representation or warranty, expressed or implied, with respect to the accuracy, reasonableness, or completeness of any of the information contained herein, including, but not limited to, information obtained from third parties. Opinions, estimates and projections constitute the current judgment of the author as of the date indicated. They do not necessarily reflect the views and opinions of Apollo and are subject to change at any time without notice. Apollo does not have any responsibility to update the information to account for such changes. Hyperlinks to third-party websites in these materials are provided for reader convenience only. There can be no assurance that any trends discussed herein will continue.

The information contained herein is not intended to provide, and should not be relied upon for, accounting, legal or tax advice and does not constitute an investment recommendation or investment advice. Investors should make an independent investigation of the information contained herein, including consulting their tax, legal, accounting or other advisors about such information. Apollo does not act for you and is not responsible for providing you with the protections afforded to its clients.

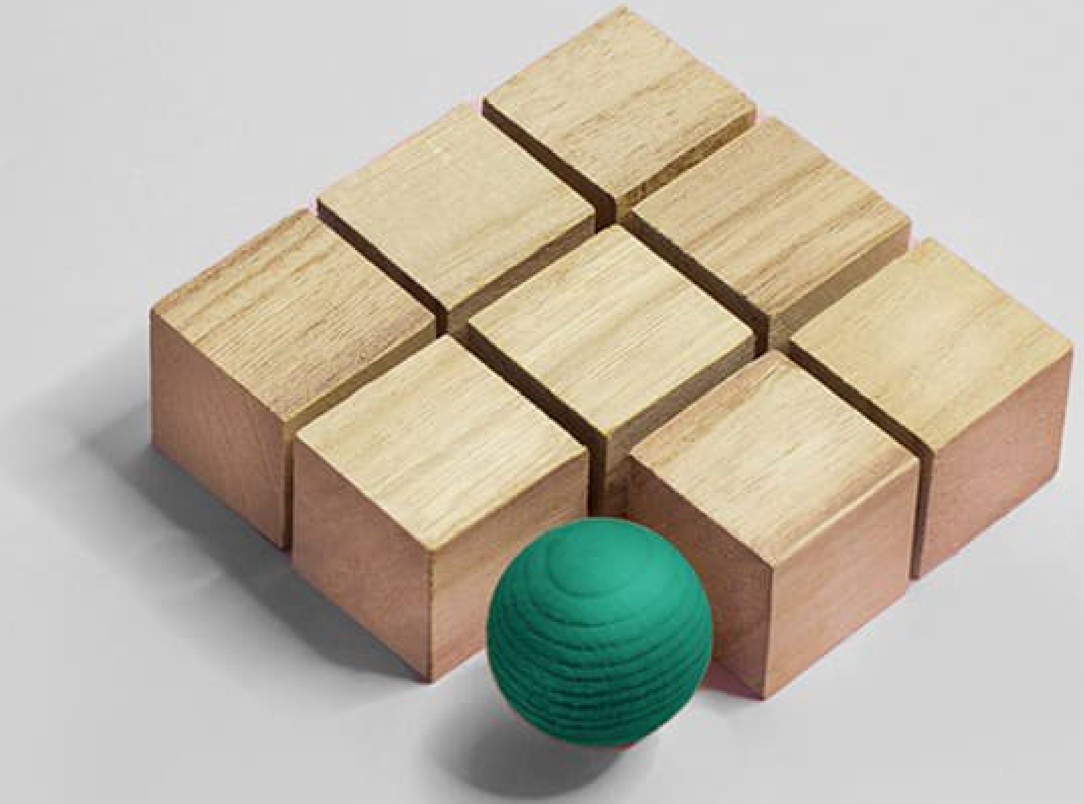
Certain information contained herein may be "forward-looking" in nature. Due to various risks and uncertainties, actual events or results may differ materially from those reflected or contemplated in such forward-looking information. As such, undue reliance should not be placed on such information. Forward-looking statements may be identified by the use of terminology including, but not limited to, "may", "will", "should", "expect", "anticipate", "target", "project", "estimate", "intend", "continue" or "believe" or the negatives thereof or other variations thereon or comparable terminology.

Ten downside risks to the US economic outlook

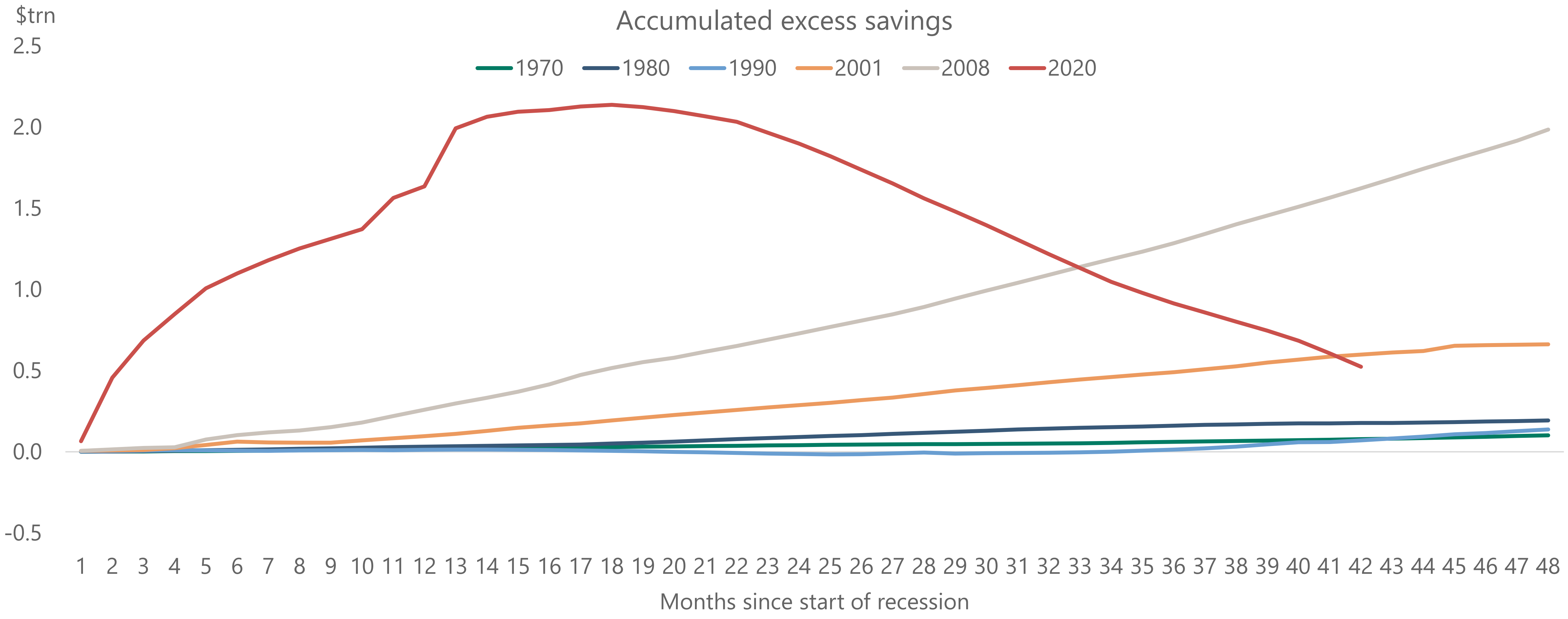
1. Households running out of excess savings
2. Student loan payments restarting
3. Sticky inflation forces the Fed to tighten too much
4. Delinquency rates rising for credit cards and auto loans
5. Default rates rising for HY and loans
6. Interest coverage ratios falling for IG and HY
7. Banking sector loan growth slowing rapidly
8. Oil prices rising
9. China, Japan, and Europe slowing
10. Long-term interest rates rising for non-economic reasons

Source: Apollo Chief Economist

1. Households running out of excess savings



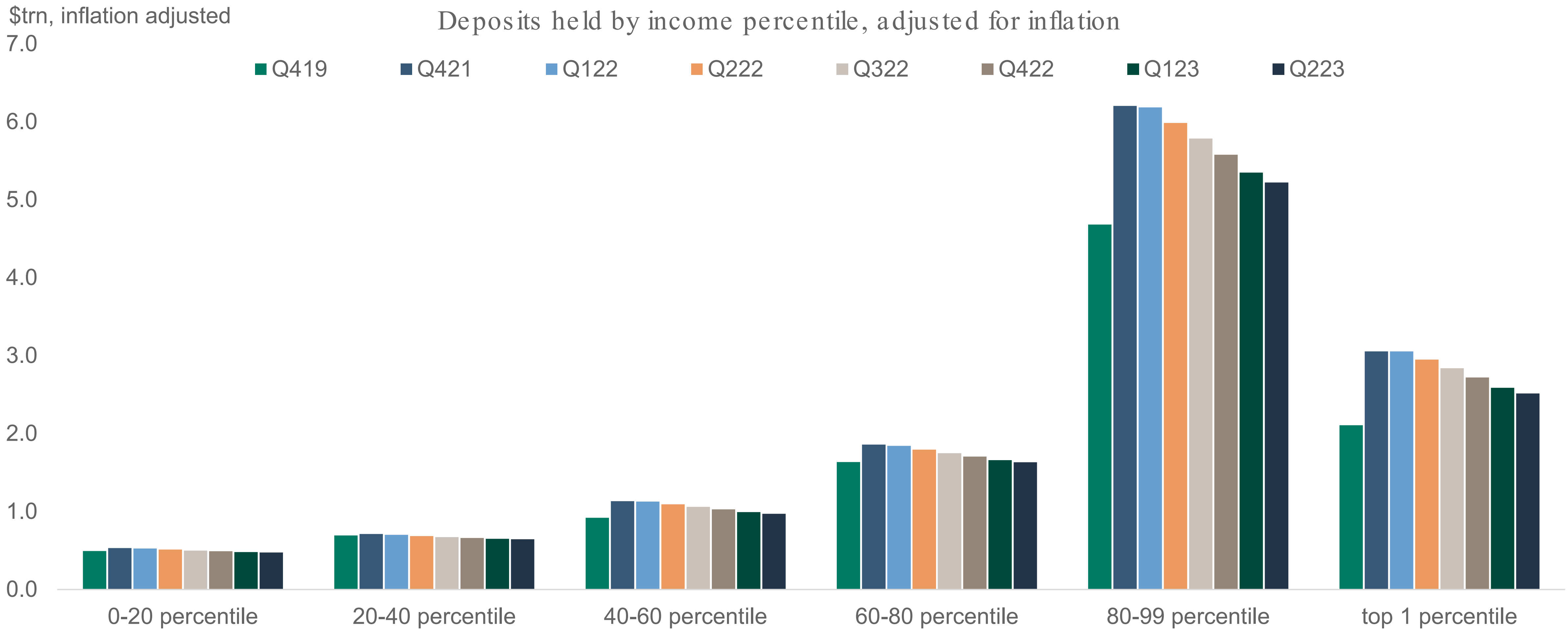
US households running out of excess savings



Source: BEA, Haver Analytics, Apollo Chief Economist.

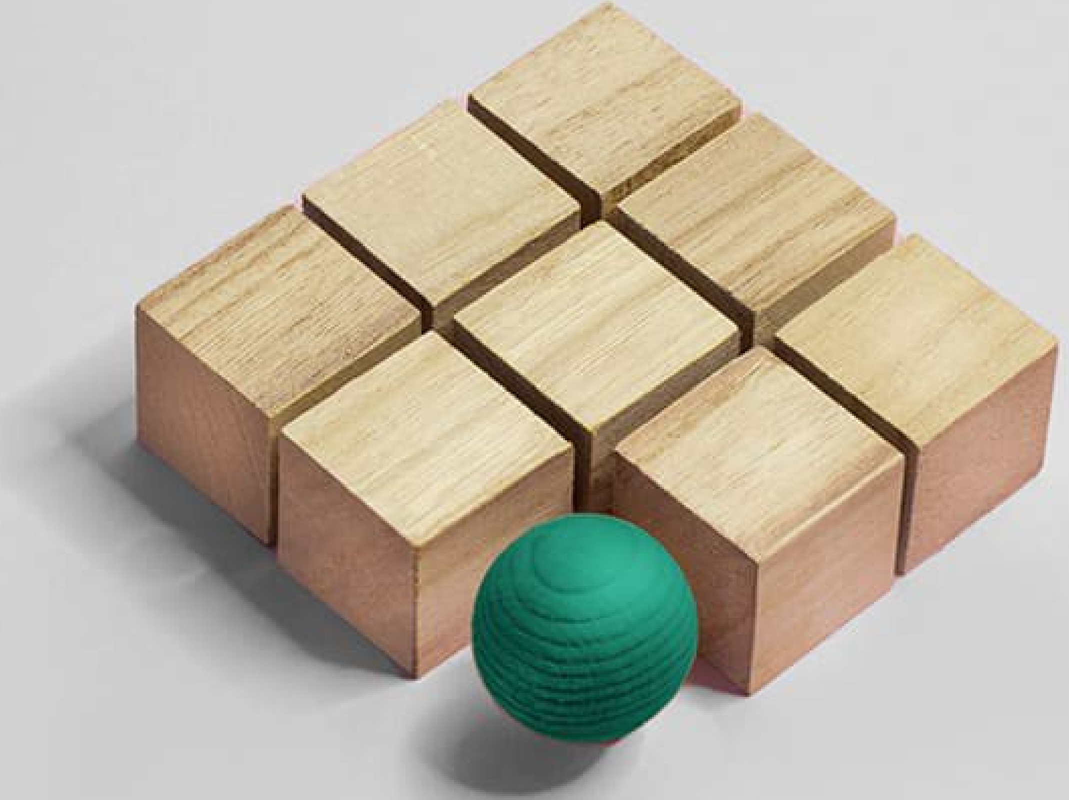
Note: Excess savings are calculated as the accumulated difference between actual personal savings and the trend implied by data for the 48 months leading up to the first month of each recession, as defined by the NBER.

Inflation-adjusted pandemic savings across the income distribution



Source: FRB, Haver Analytics, Apollo Chief Economist

2. Student loan payments restarting



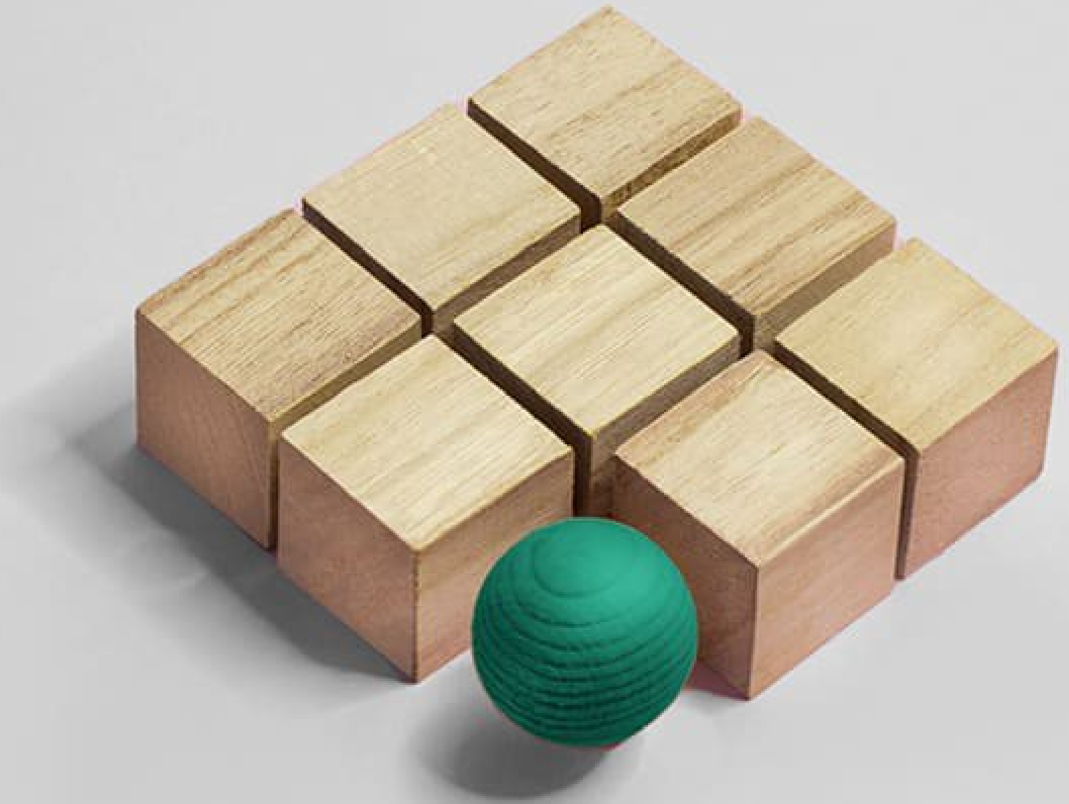
Student loan payments restarting

- About 44 million people have a student loan
- The average student loan payment is around $300 a month
- Average student loan balance: $38,000. Total $1.6trn.
- Roughly half of all student loans will restart payments

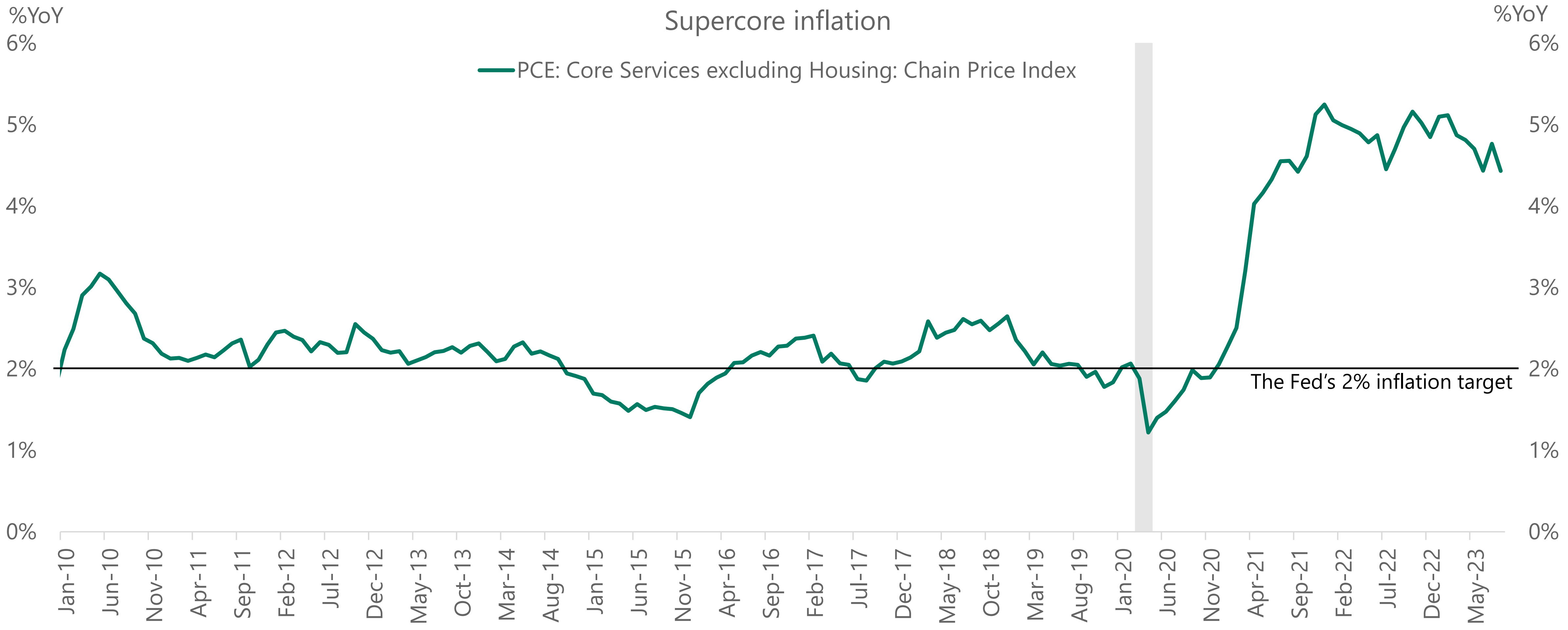
Restart date: October 1.

Source: Apollo Chief Economist

3. Sticky inflation



Inflation: Too early to declare victory

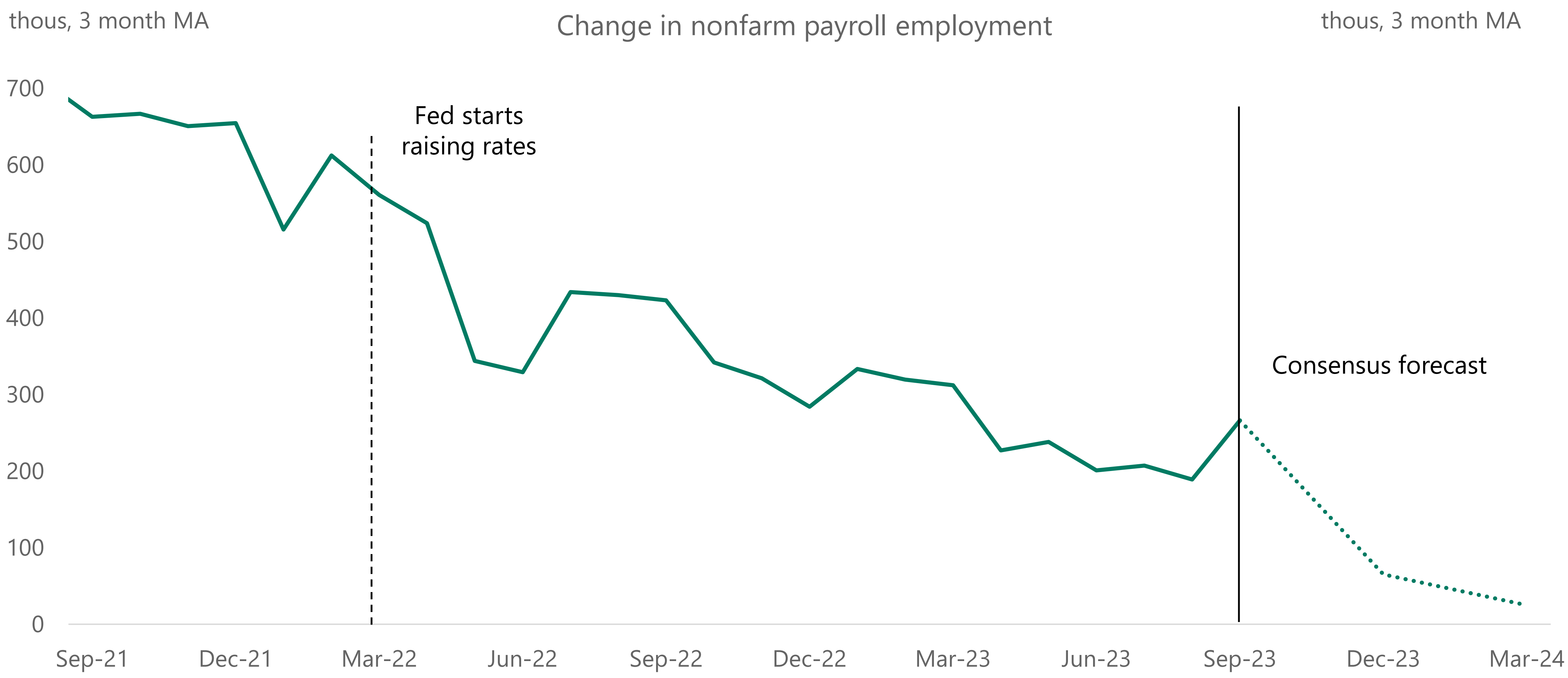


Source: BEA, Haver Analytics, Apollo Chief Economist

Inflation: Too early to declare victory

Source: BLS, Haver Analytics, Apollo Chief Economist

Since the Fed started raising rates employment growth has slowed

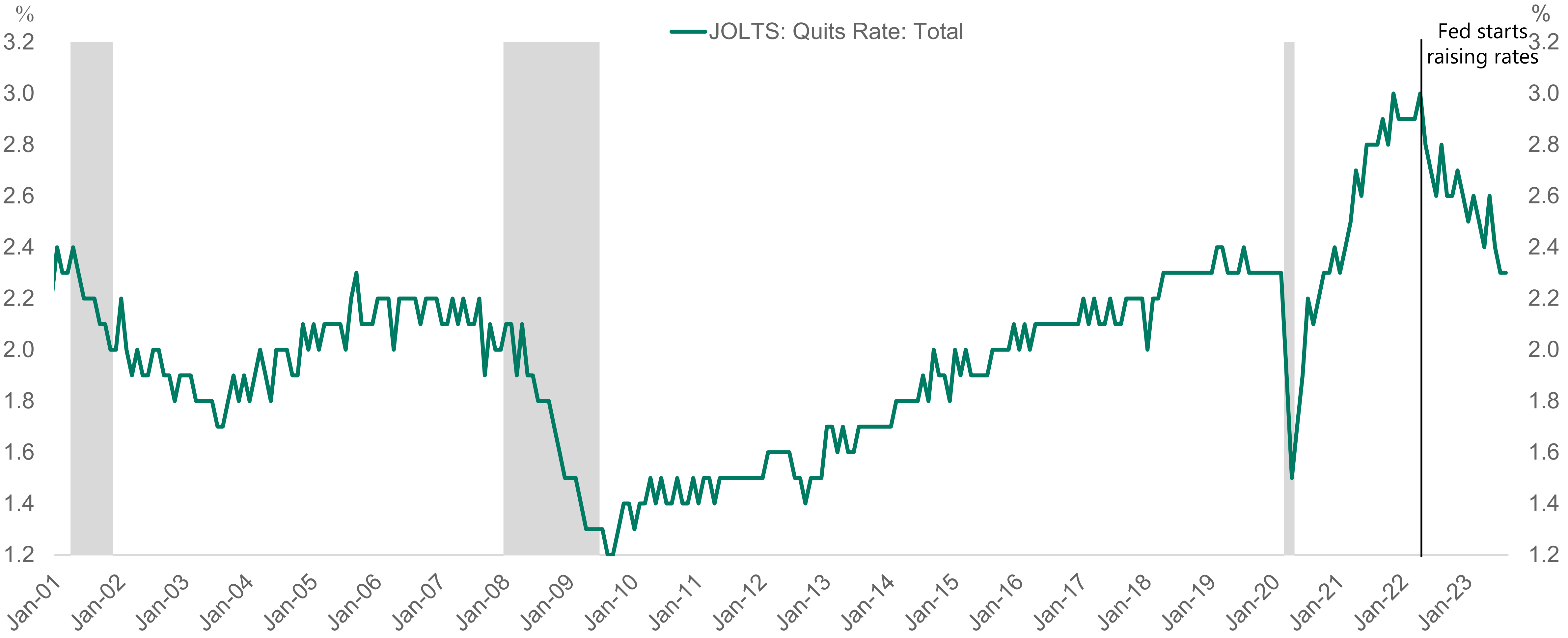


Source: BLS, Haver Analytics, Apollo Chief Economist

Since the Fed started raising rates job openings have been trending lower

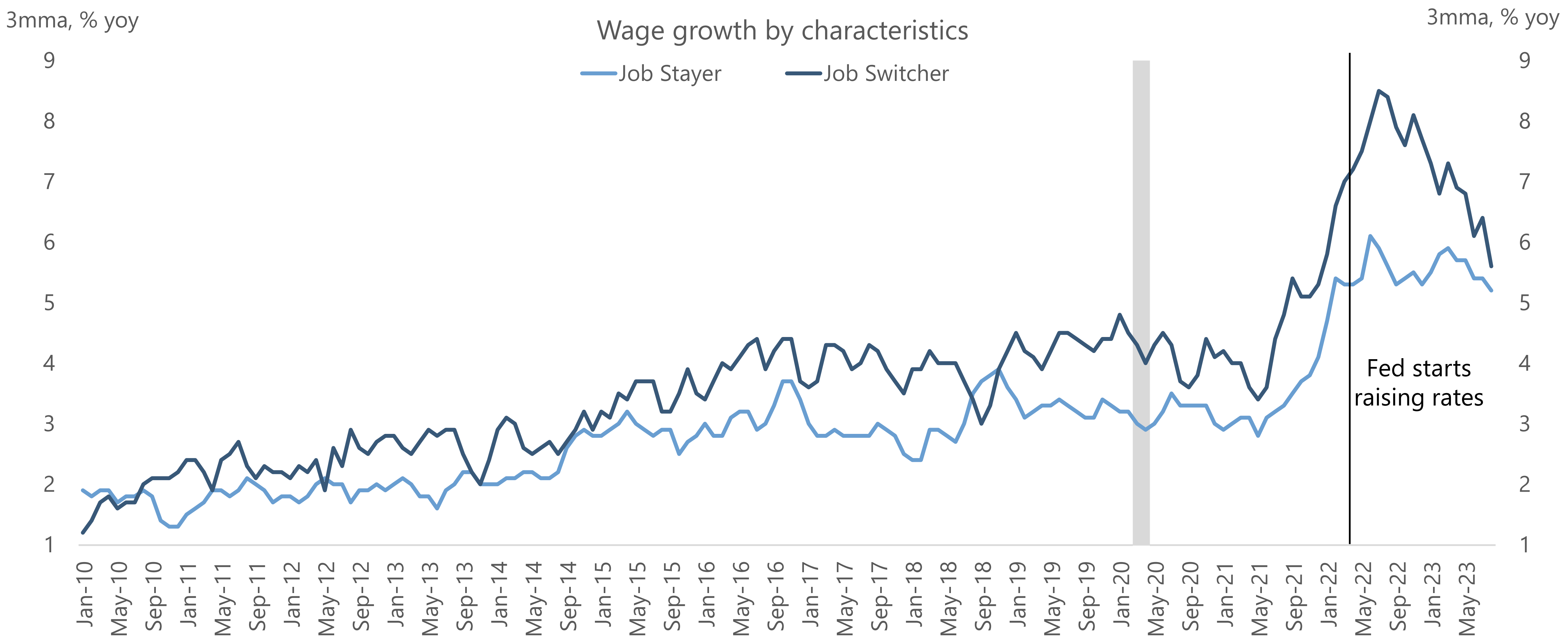
Source: BLS, Haver, Apollo Chief Economist

Since the Fed started raising rates, the share of workers voluntarily quitting their jobs has been declining



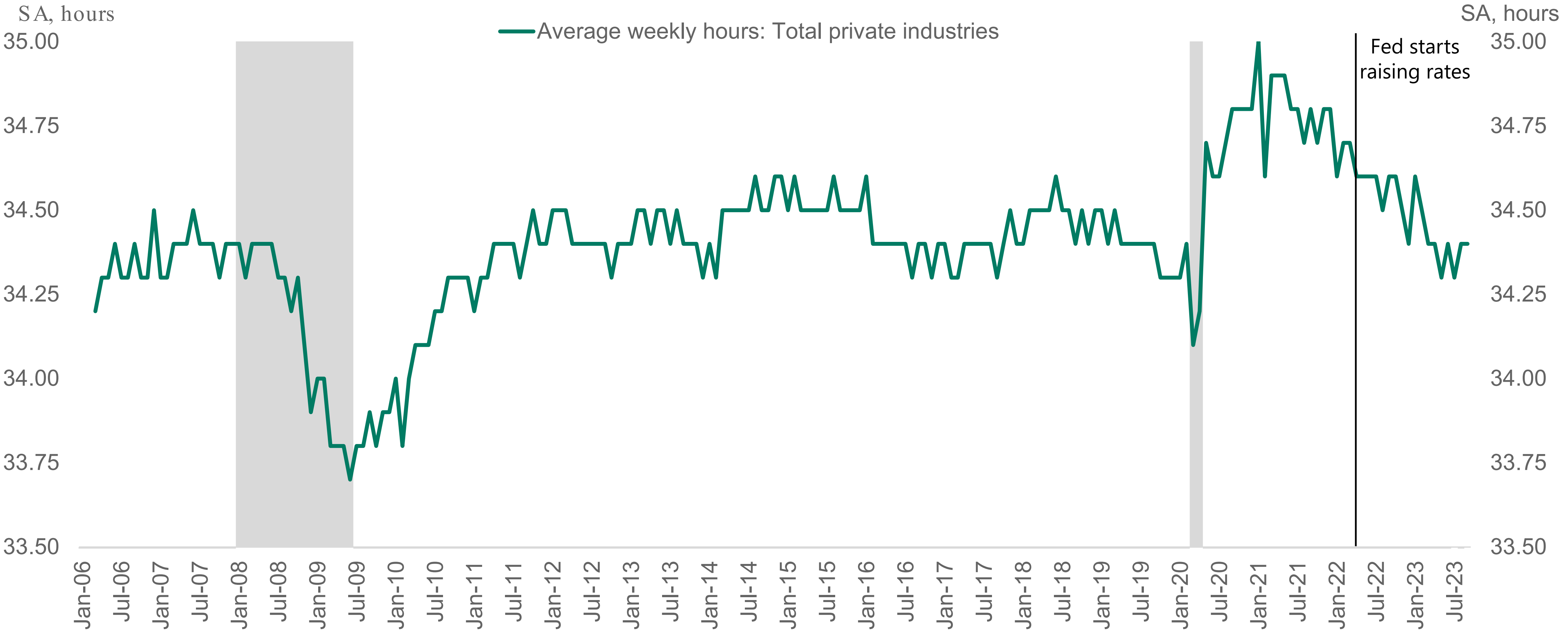
Source: BLS, Haver, Apollo Chief Economist

Wage growth for job switchers is declining



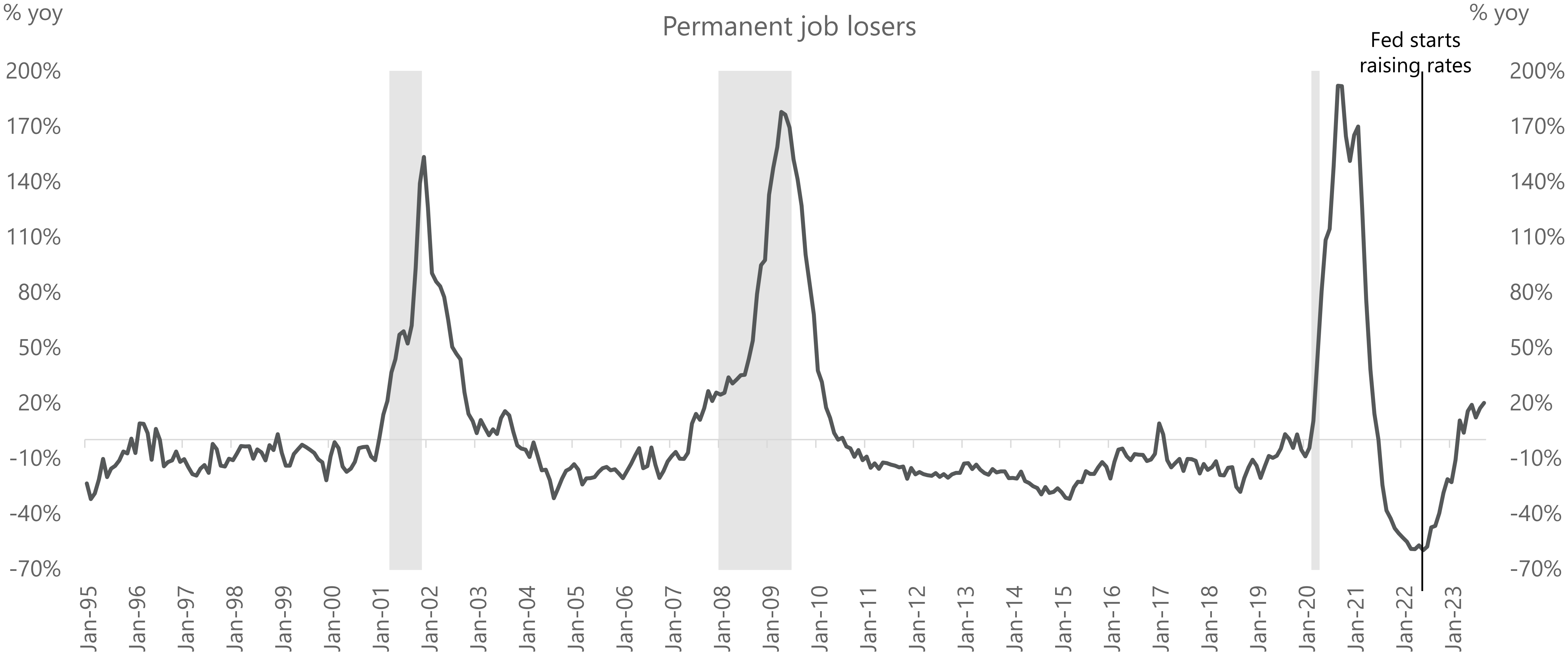
Source: FRB of Atlanta, Haver, Apollo Chief Economist

Average weekly hours worked is softening



Source: BLS, Haver, Apollo Chief Economist

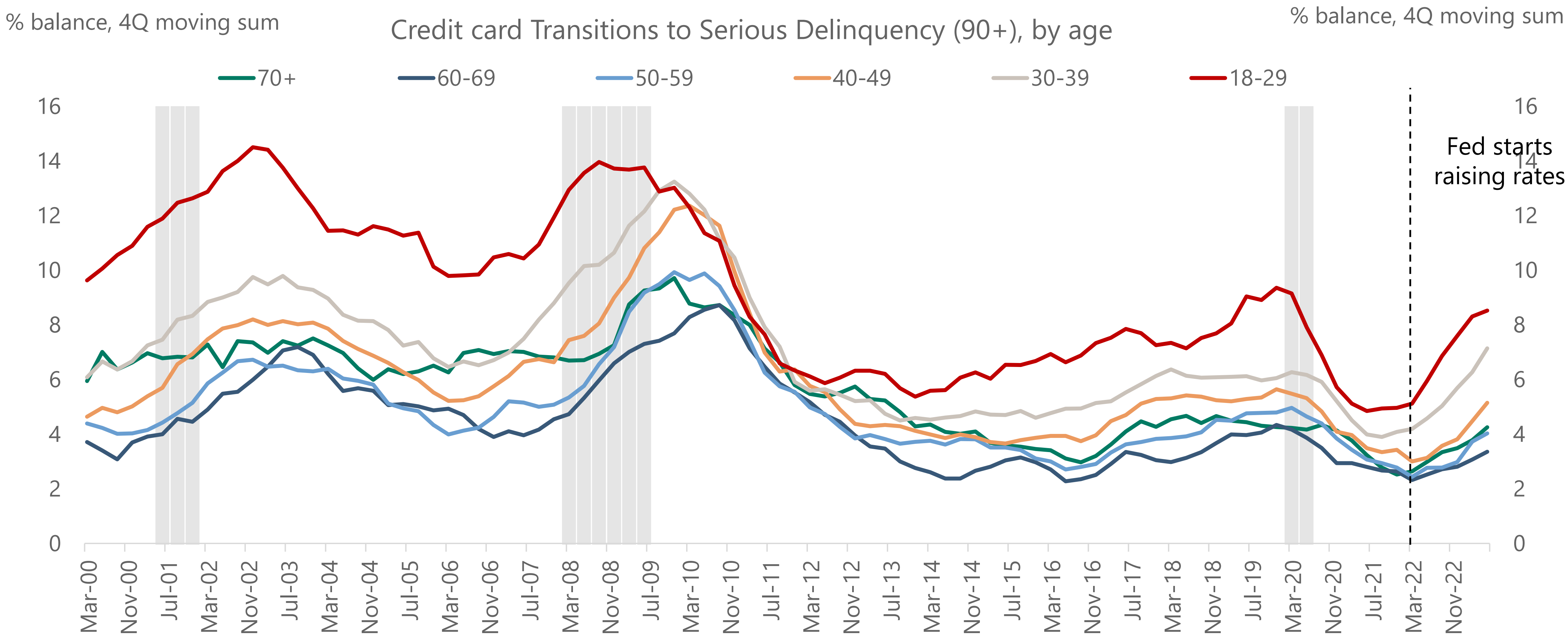
US permanent job losses rise ahead of recessions



Source: BLS, Haver, Apollo Chief Economist

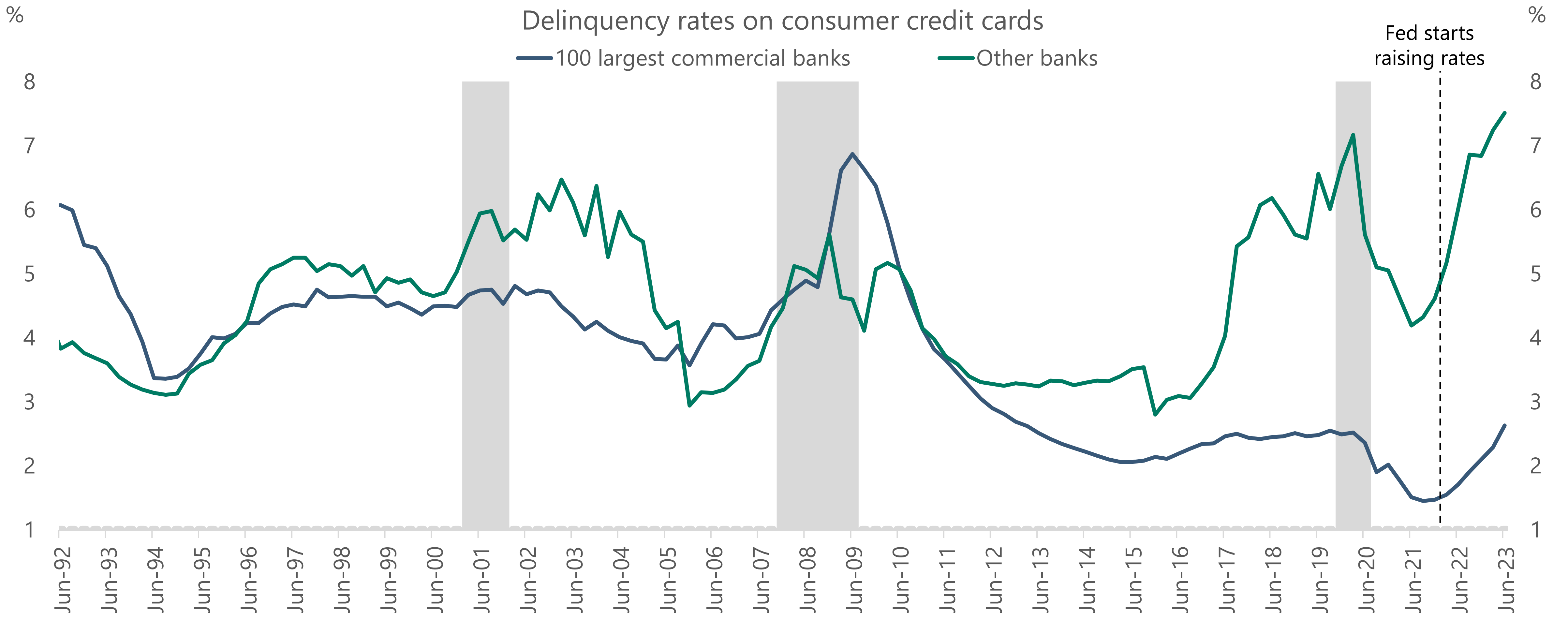
4. Delinquency rates rising for consumers

Credit card delinquency rates rising



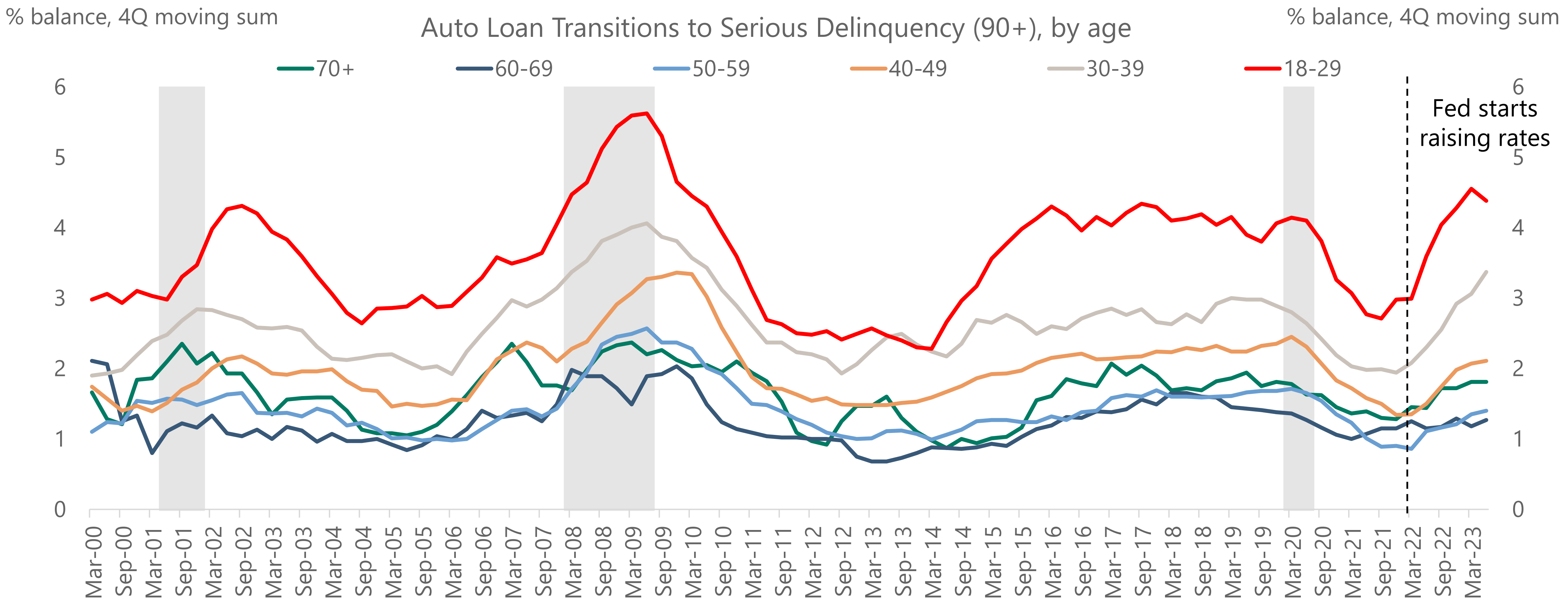
Source: New York Fed Consumer Credit Panel / Equifax, Apollo Chief Economist

Credit card delinquency rates much higher for small banks



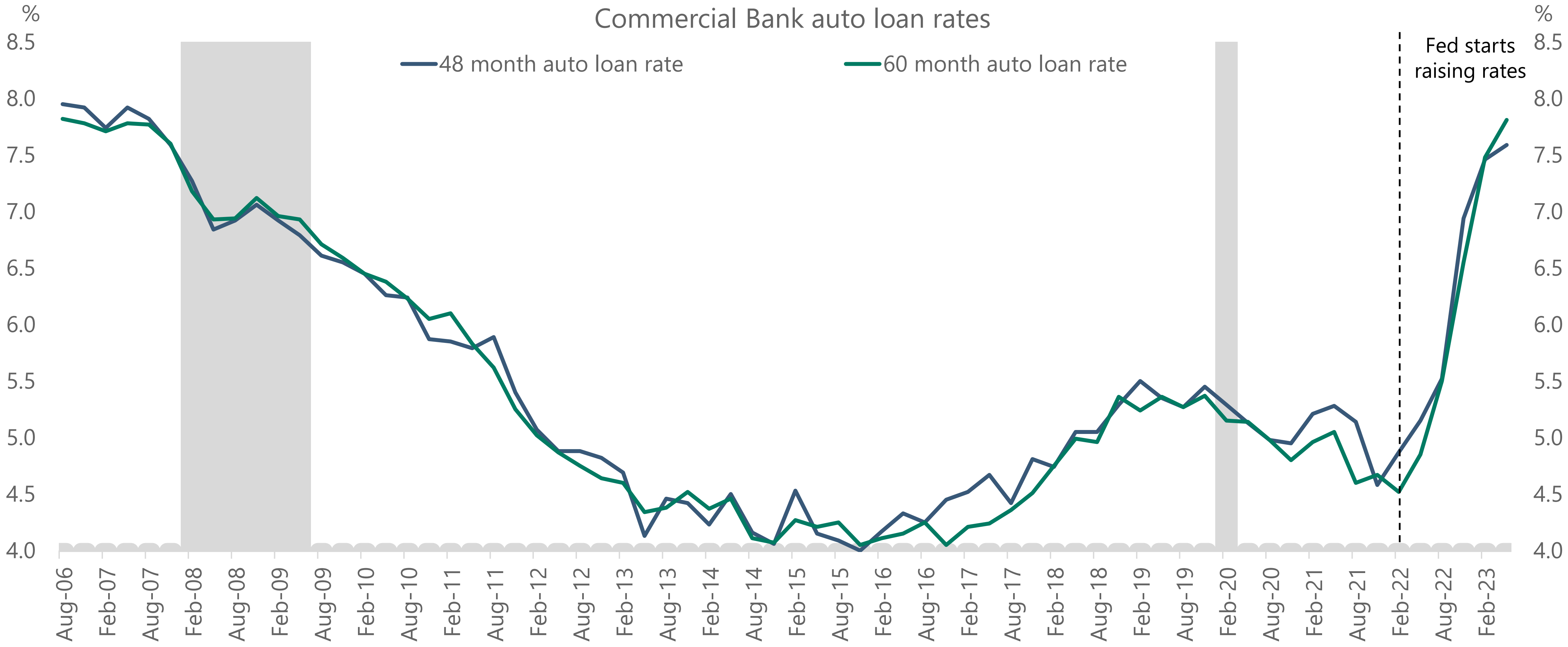
Source: FRB, Bloomberg, Apollo Chief Economist

Auto loan transitions to serious delinquency approaching 2008 levels



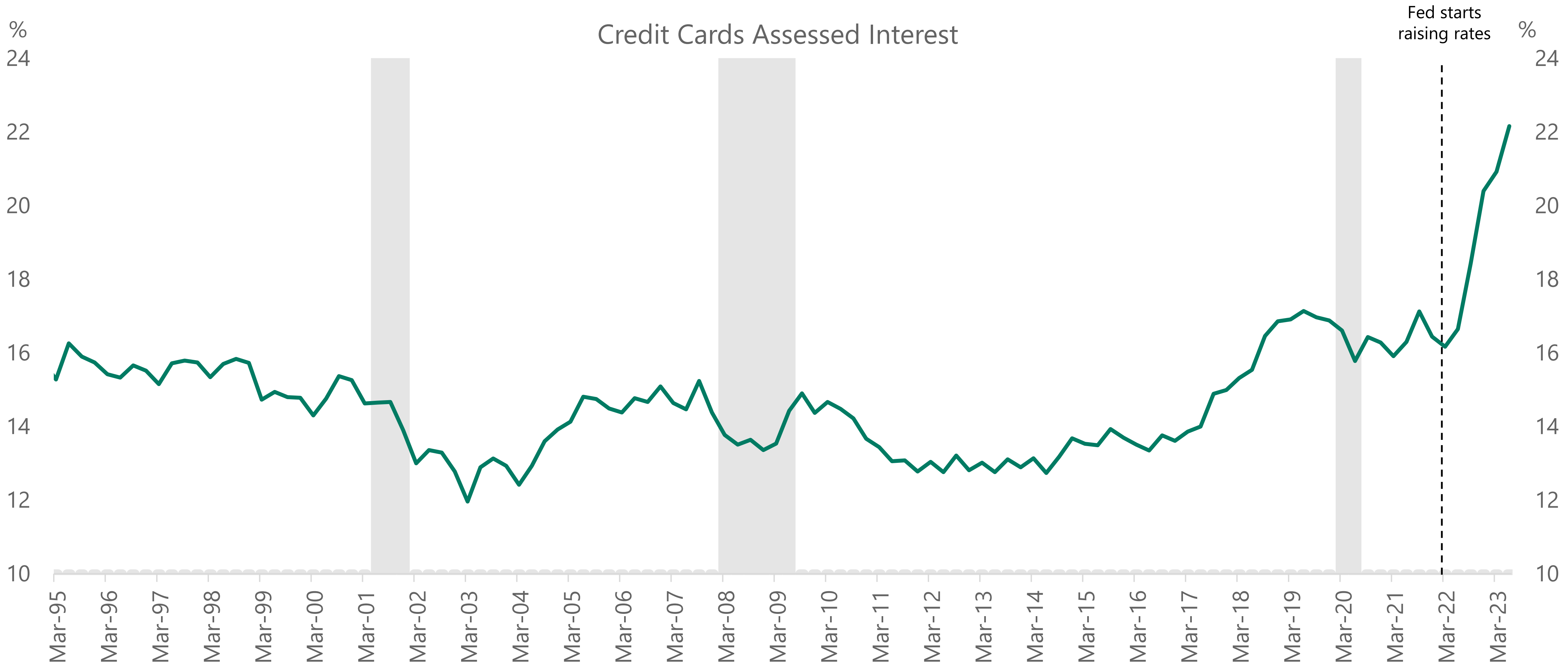
Source: FRBNY Consumer Credit Panel, Equifax, Haver Analytics, Apollo Chief Economist

Interest rate on auto loans



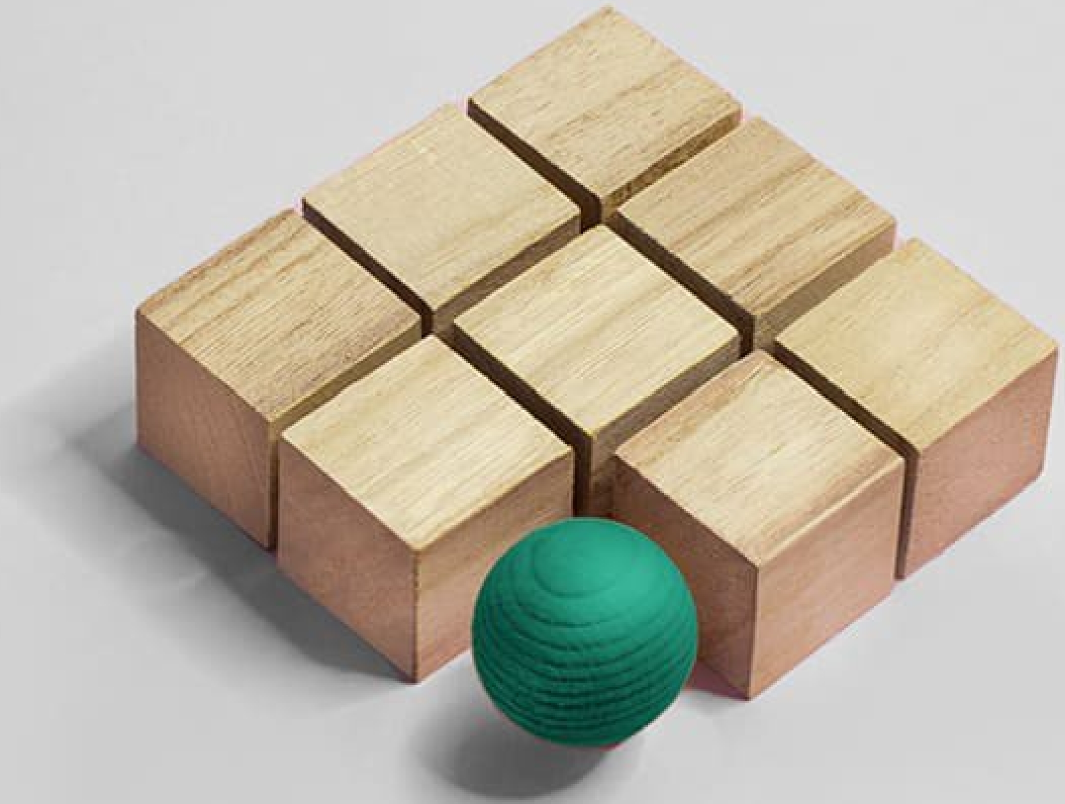
Source: FRB, Bloomberg, Apollo Chief Economist

Interest rate on credit cards

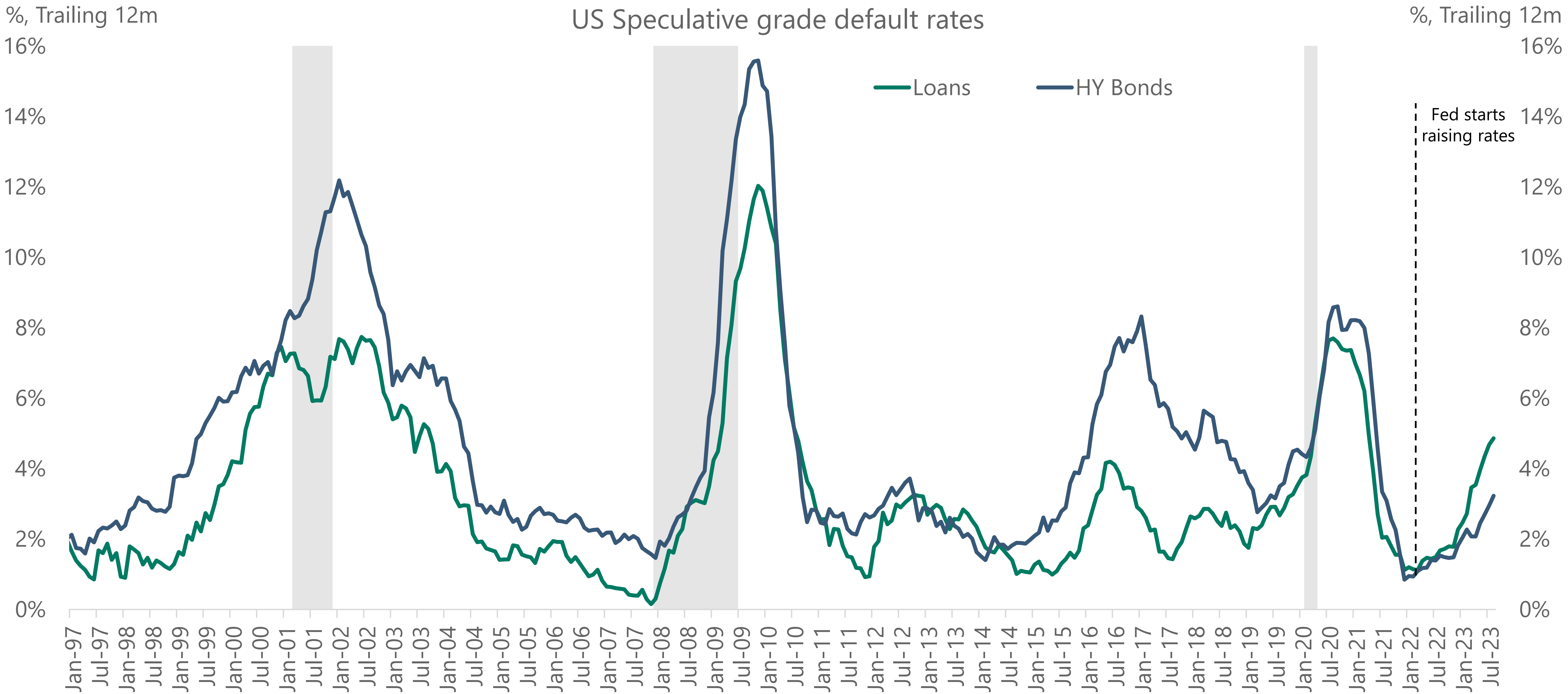


Source: FRB, Haver Analytics, Apollo Chief Economist

5. Default rates rising HY and loans



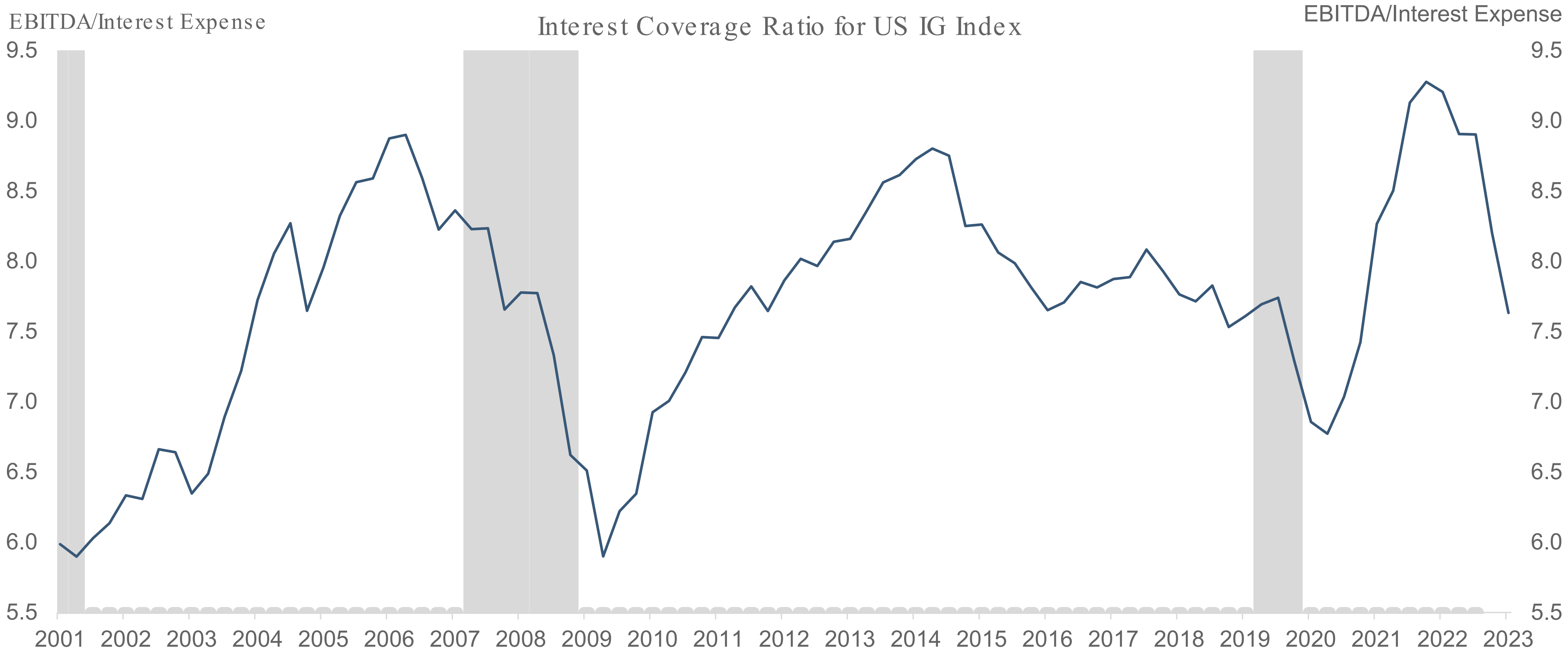
A default cycle has started



Source: Moody's Analytics, Apollo Chief Economist

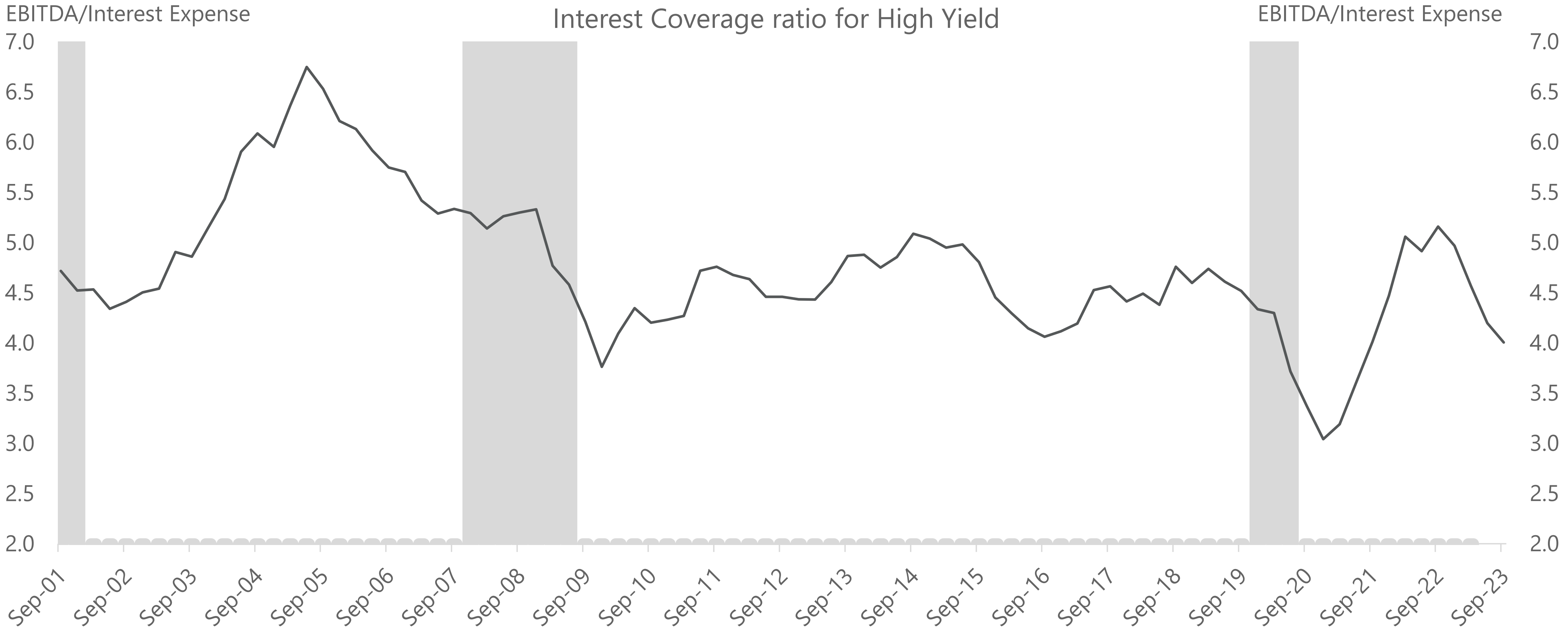
6. Interest coverage ratios falling

IG ICR declining



Source: Bloomberg, Apollo Chief Economist

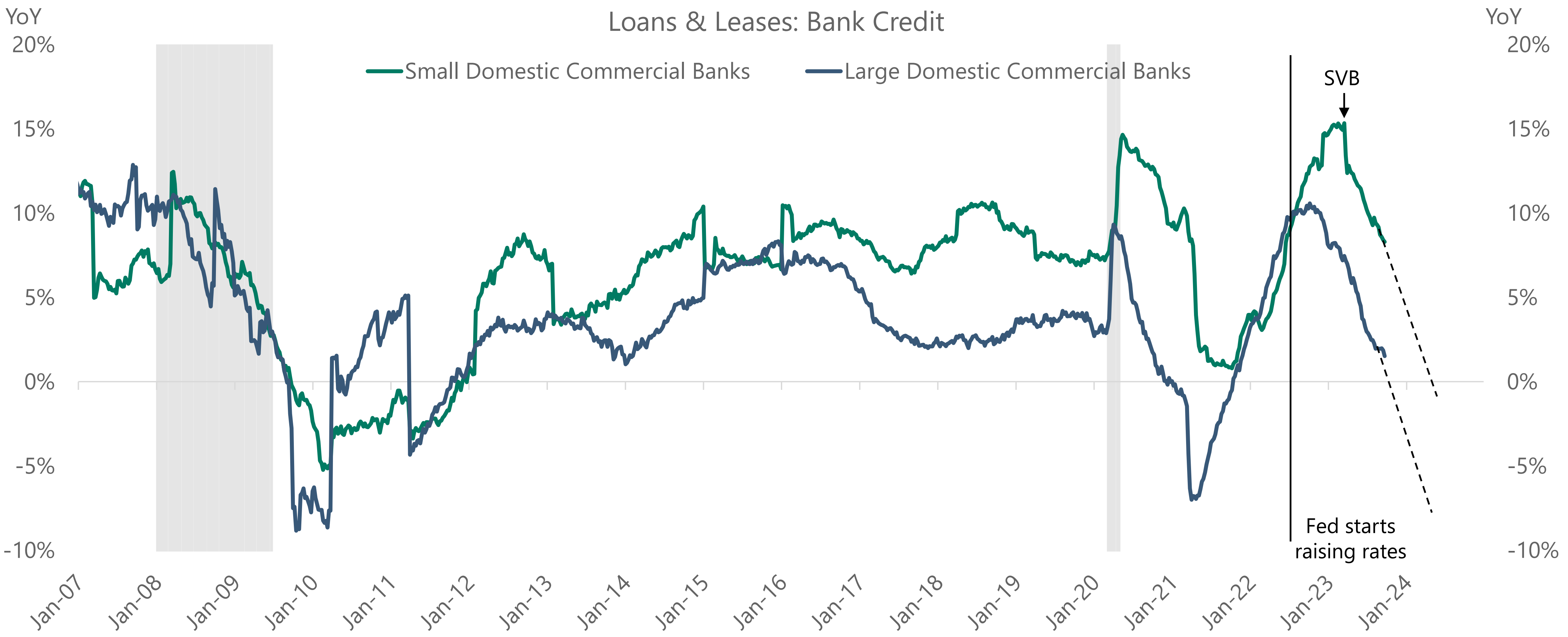
HY ICR declining



Source: Bloomberg, Apollo Chief Economist

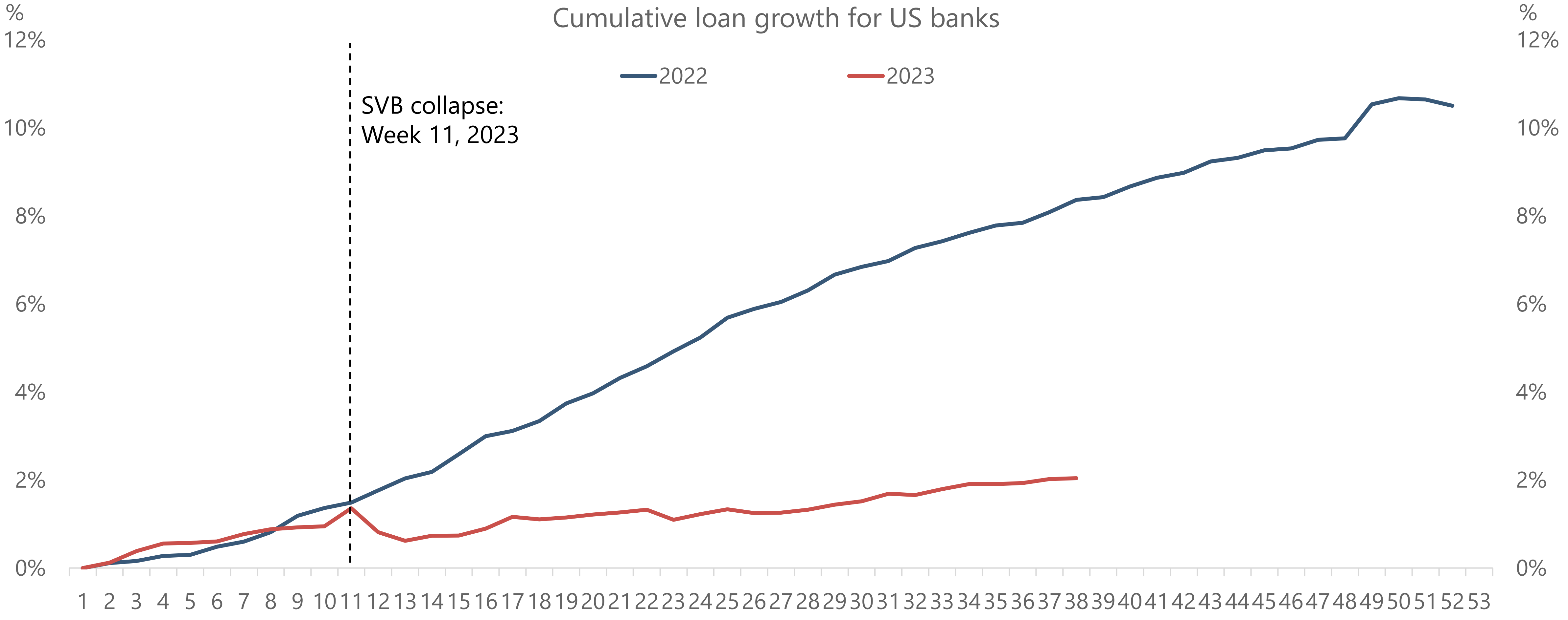
7. Banking sector loan growth falling

Weekly Fed data shows small and large bank lending growth slowing rapidly



Source: Federal Reserve Board, Haver Analytics, Apollo Chief Economist.

SVB having a permanent effect



Source: FRB, Bloomberg, Apollo Chief Economist

8. Oil prices rising
9. China, Japan, and Europe slowing
10. Interest rates rising for non-economic reasons

Why are long-term interest rates rising?

Answer: The term premium

Why is the term premium going up?

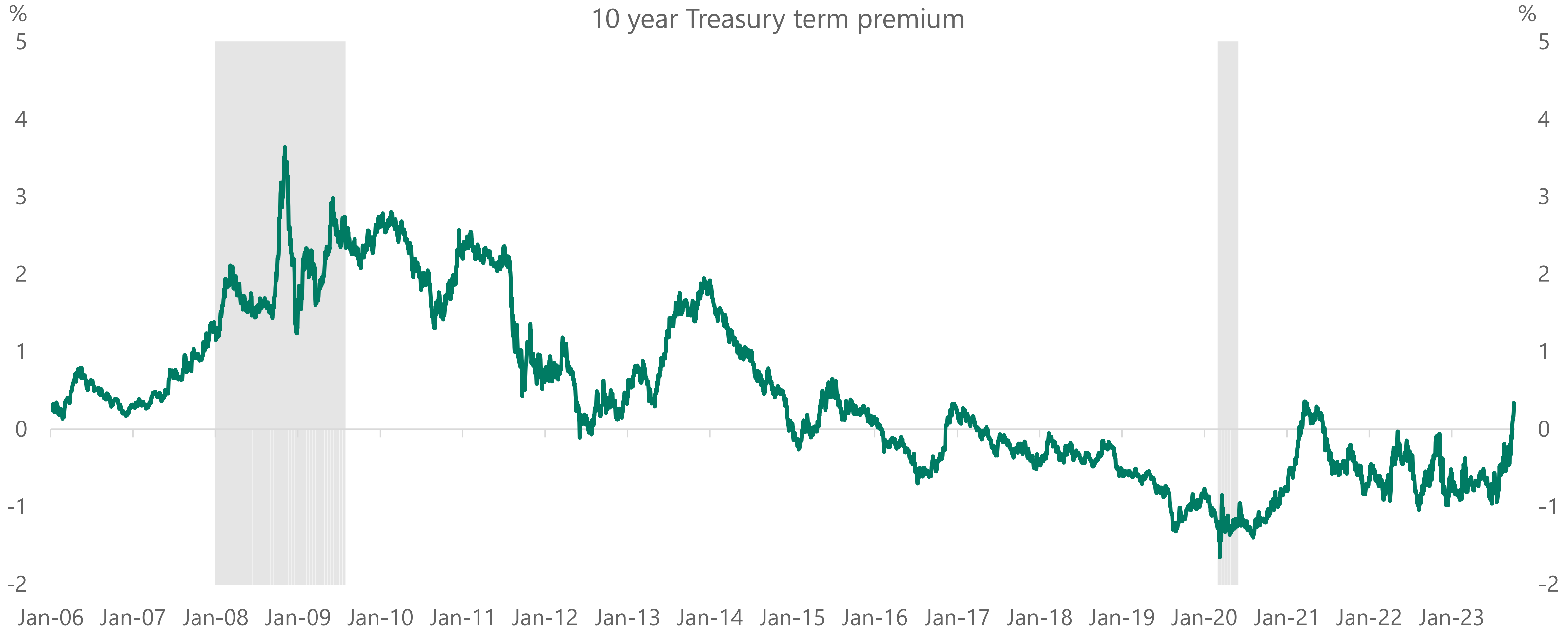
For non-economic reasons:

1. US sovereign downgrade
2. Japan exiting YCC
3. Big US budget deficit
4. Fed doing QT
5. Big “snowball” of T-Bills because of debt ceiling in June
6. Chinese exports slowing, meaning China has fewer USD to recycle

Treasury auction sizes going up 23% on average in 2024.

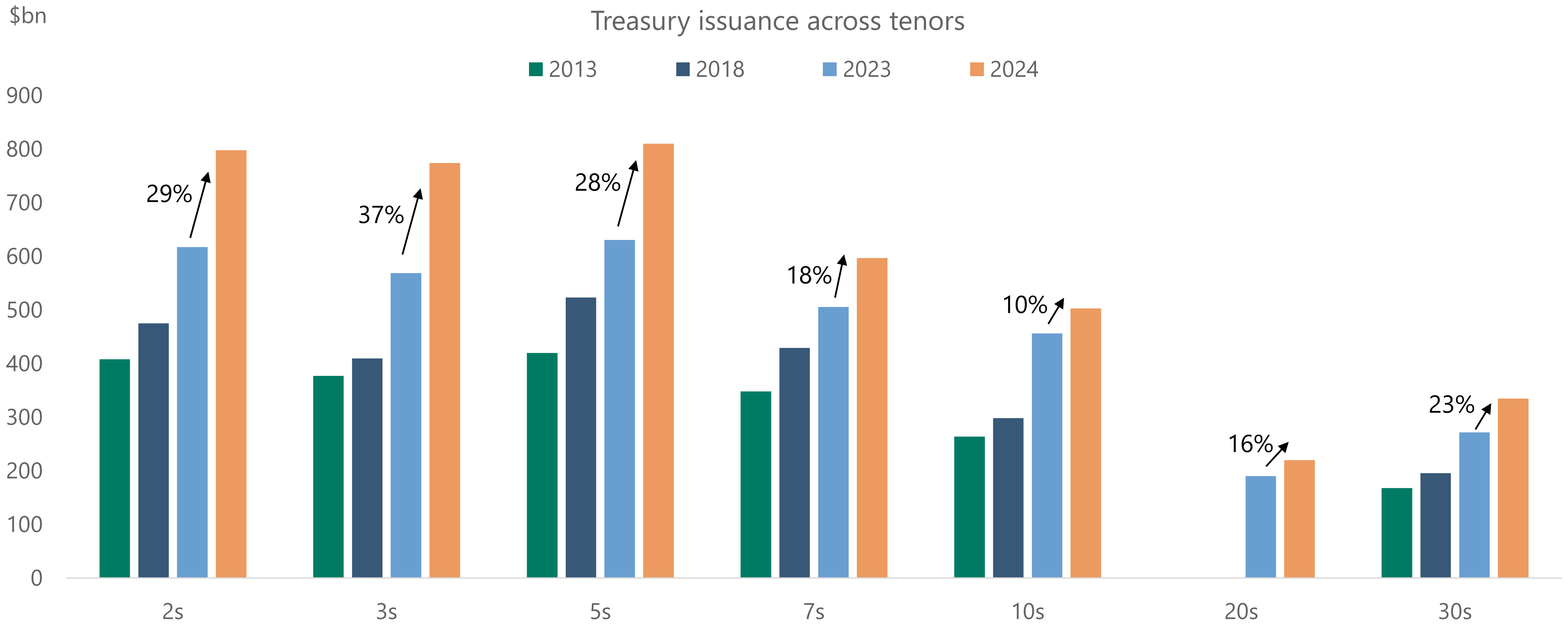
Source: Apollo Chief Economist

Term premium rising



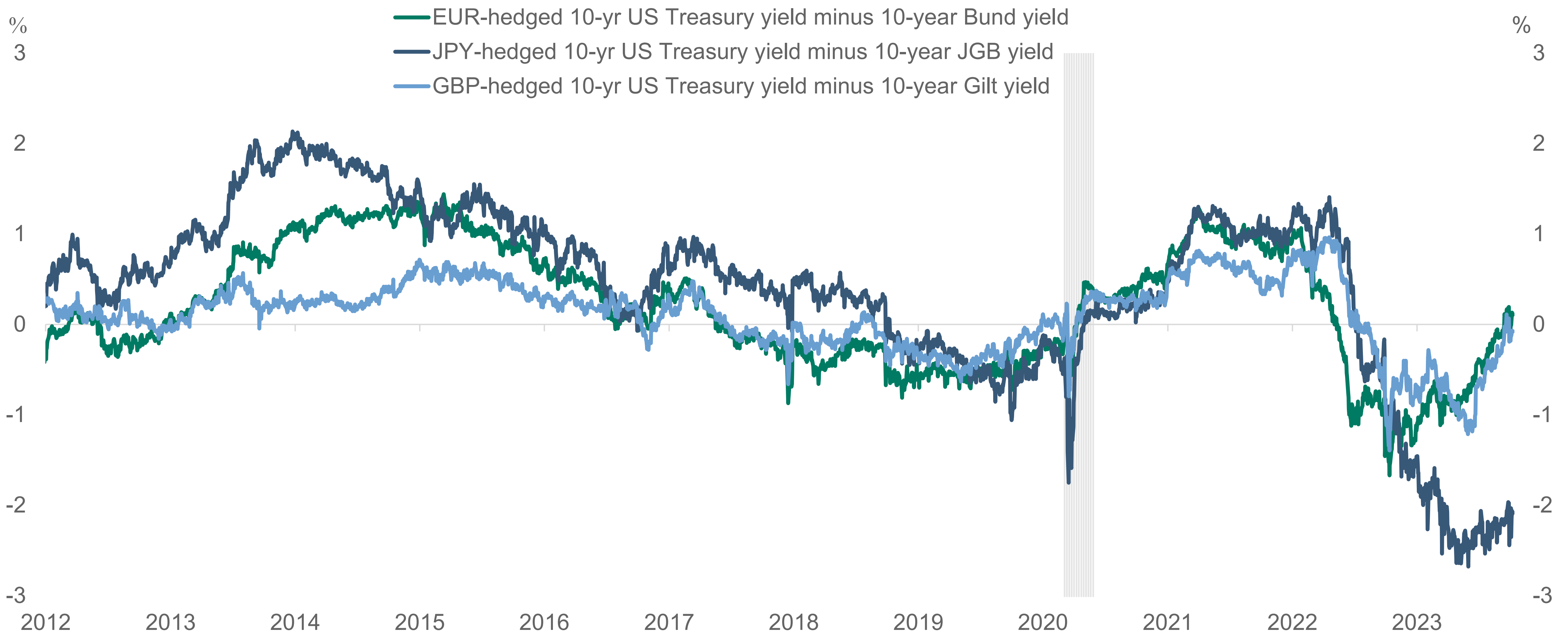
Source: Bloomberg, Apollo Chief Economist

Treasury auction sizes will in 2024 increase on average 23% across the yield curve



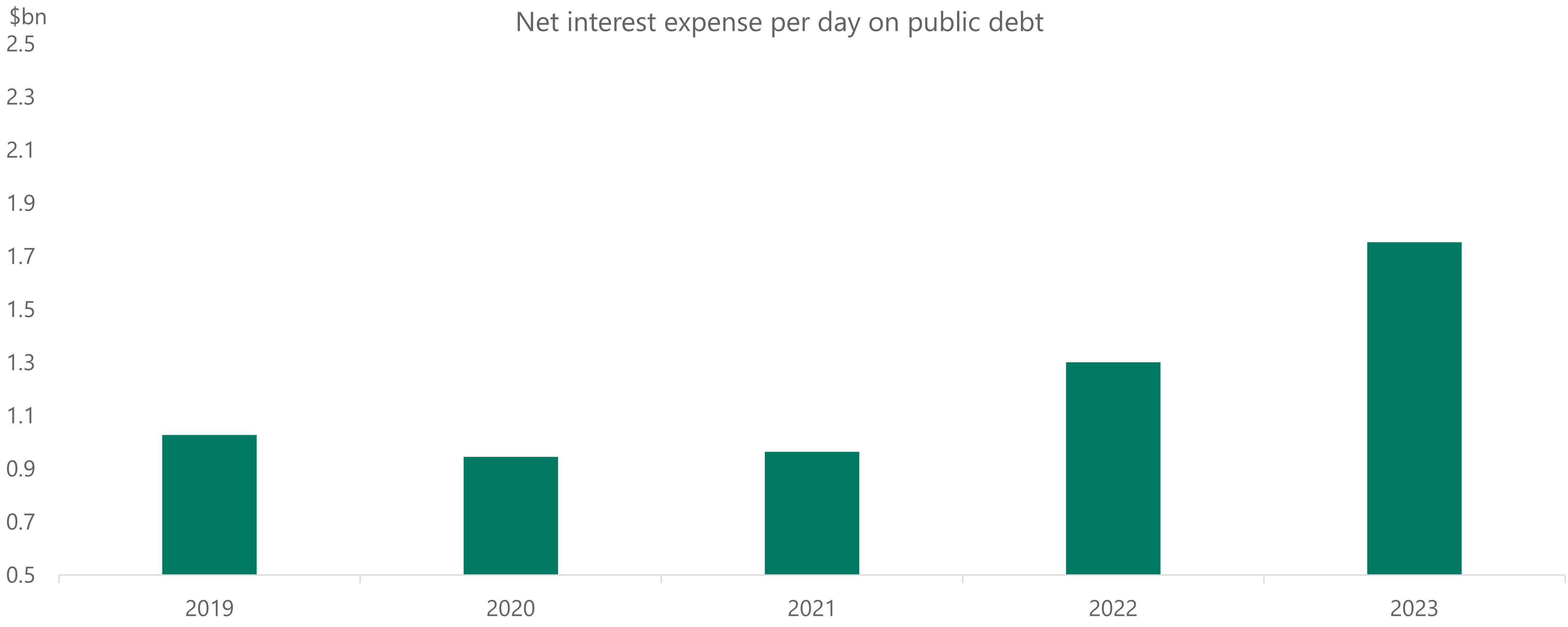
Source: SIFMA, TBAC, Haver Analytics, Apollo Chief Economist. Note: Estimates from September 2023 to Dec 2024 from the TBAC neutral issuance scenario.

Hedging costs are high for EU, UK, and Japanese investors buying US Treasuries



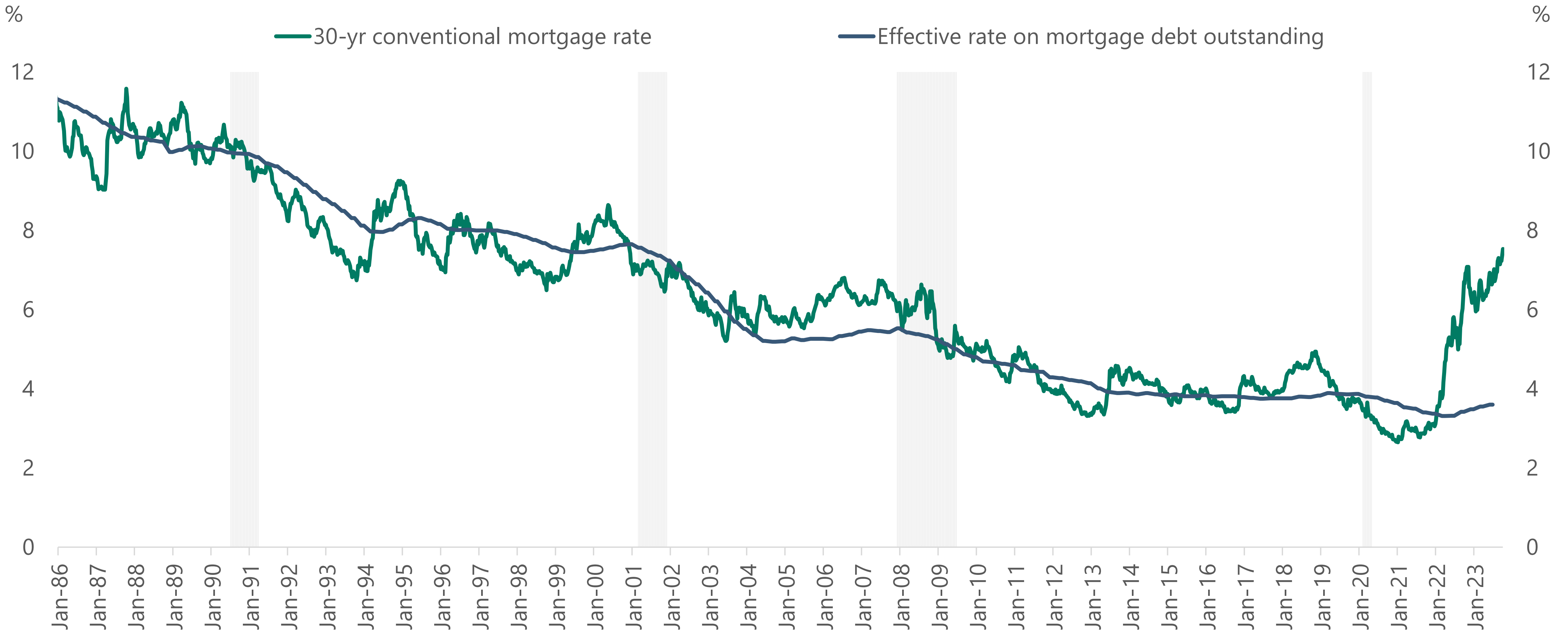
Source: Bloomberg, Apollo Chief Economist. Note: Hedged Treasury yield is calculated as ((((-3 month forward/10000)/exchange rate)+1)^4-1)*100 + 10 year US Treasury yield.

US government interest payments per day have doubled from $1bn per day before the pandemic to almost $2bn per day in 2023



Source: CBO, Haver Analytics, Apollo Chief Economist. Note: Interest rate assumption by CBO: 2.1% in 2022 and 2.7% in 2023. Annual CBO data divided by 365.

Effective outstanding mortgage rate around 3.6%

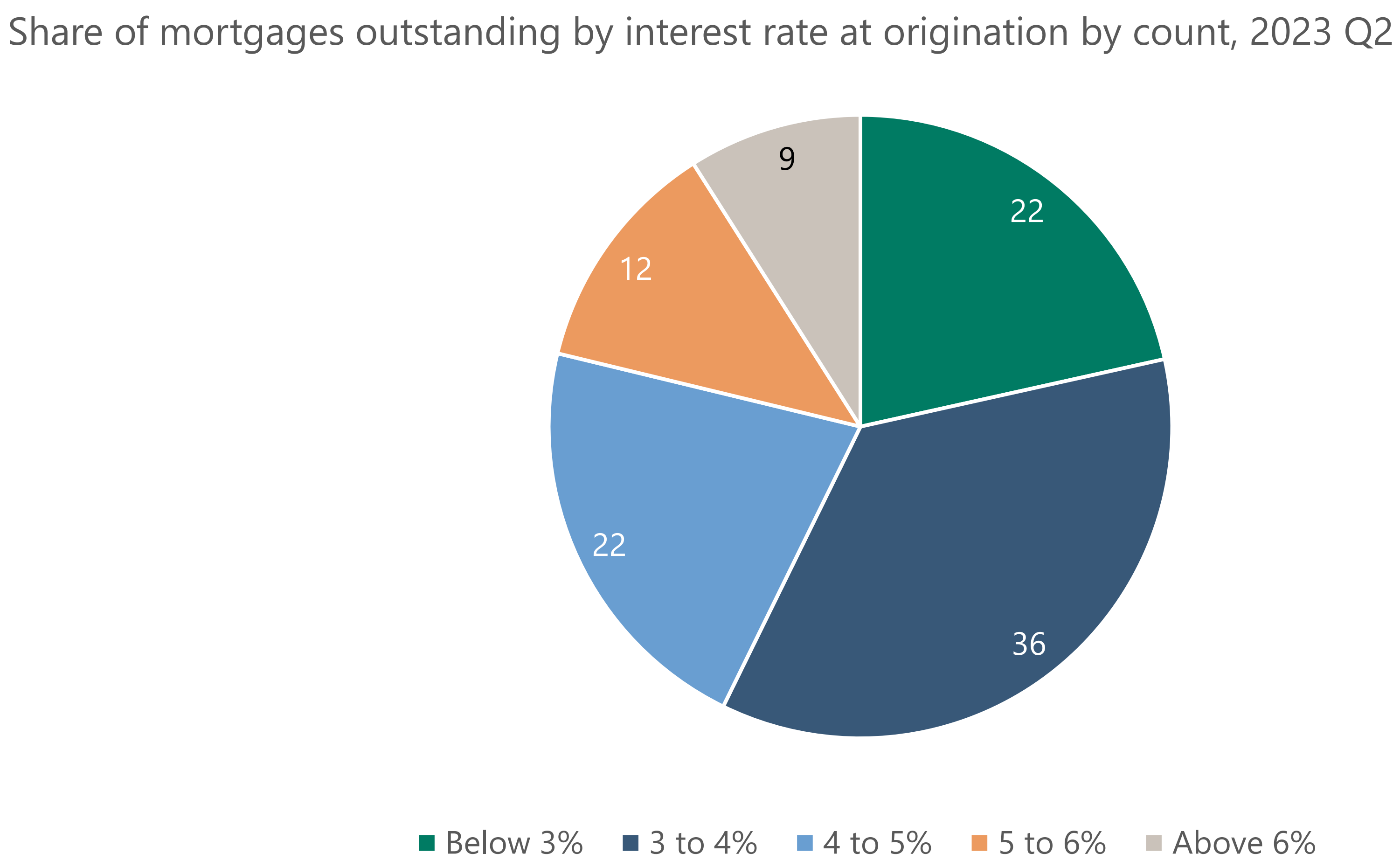


Source: Freddie Mac, BEA, Bloomberg, Apollo Chief Economist. The effective interest rate (%) reflects the amortization of initial fees and charges over a 10-year period, which is the historical assumption of the average life of a mortgage loan.

Monthly mortgage payment on a new mortgage

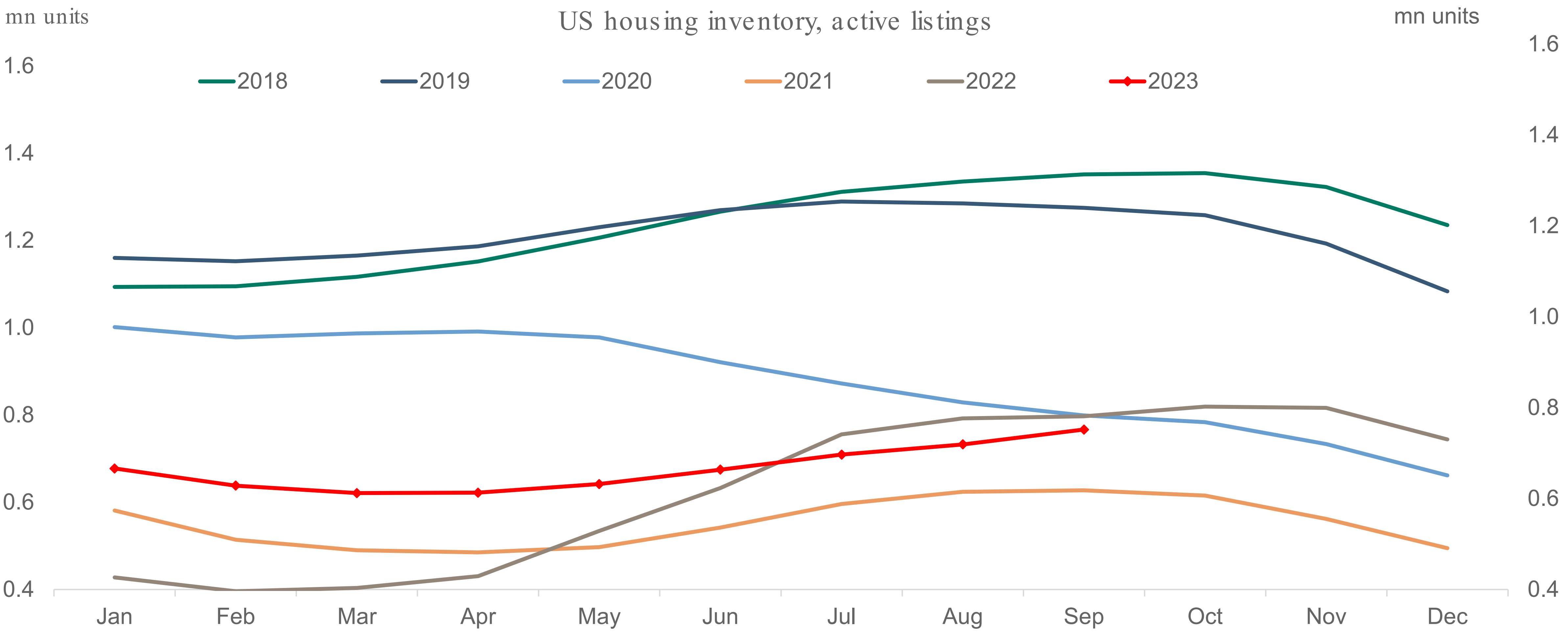
Source: Bloomberg L.P., Apollo Chief Economist (Note: Calculation of monthly payment using the 30-year purchase loan application size and the 30-yr effective rate.

Share of mortgages outstanding by interest rate



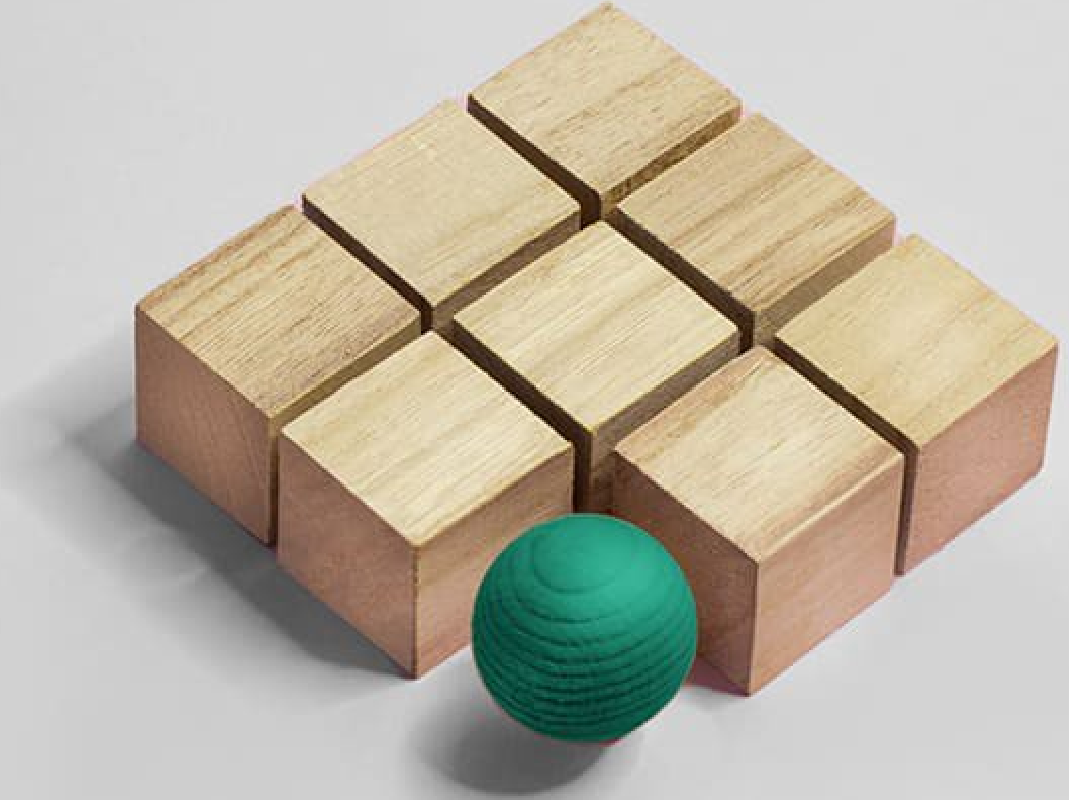
Source: FHFA, Apollo Chief Economist

Active listings at very low levels, very low inventory of homes for sale

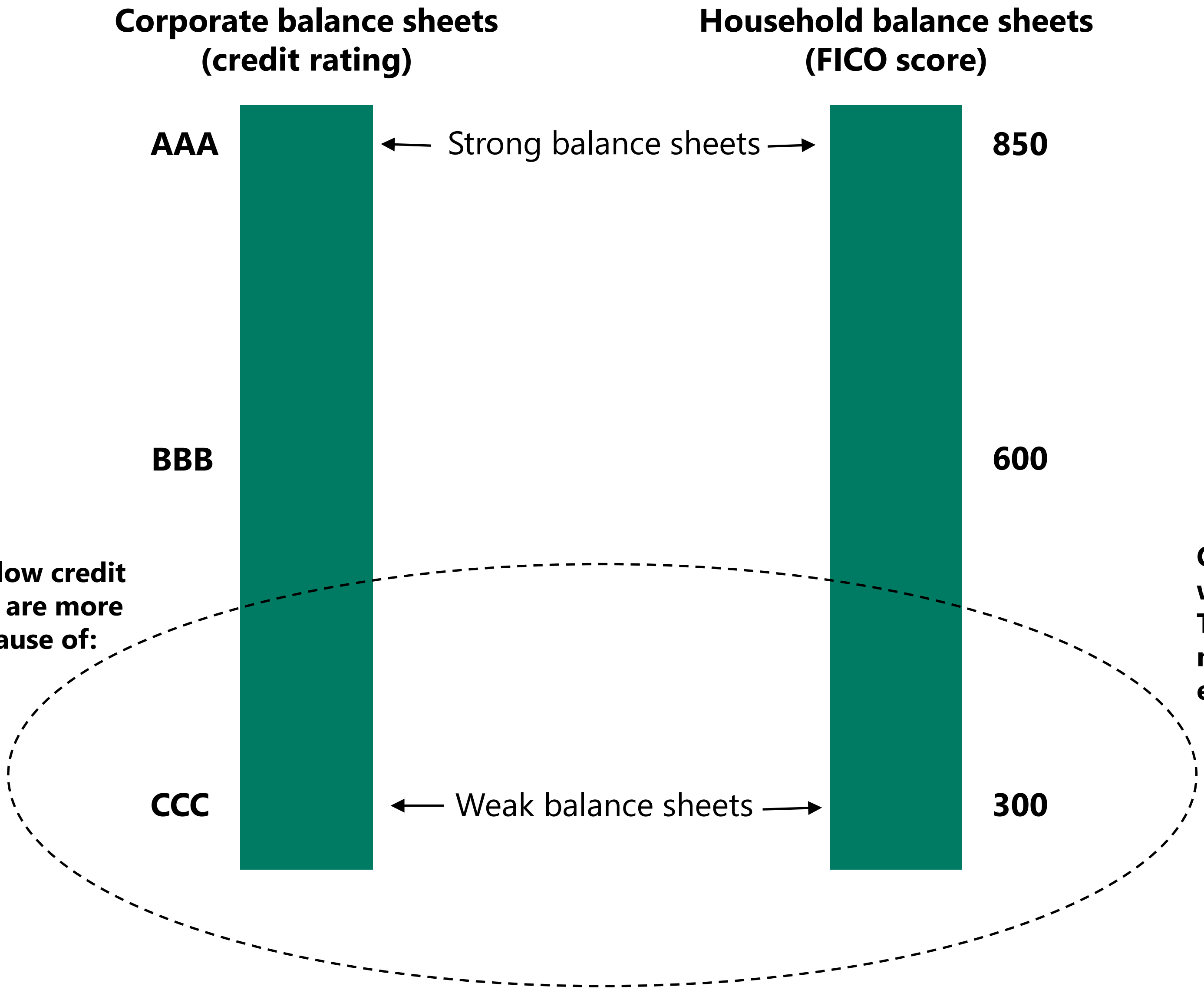


Source: Realtor.com, Apollo Chief Economist

Conclusion



Fed hikes have bigger impact on weaker balance sheets



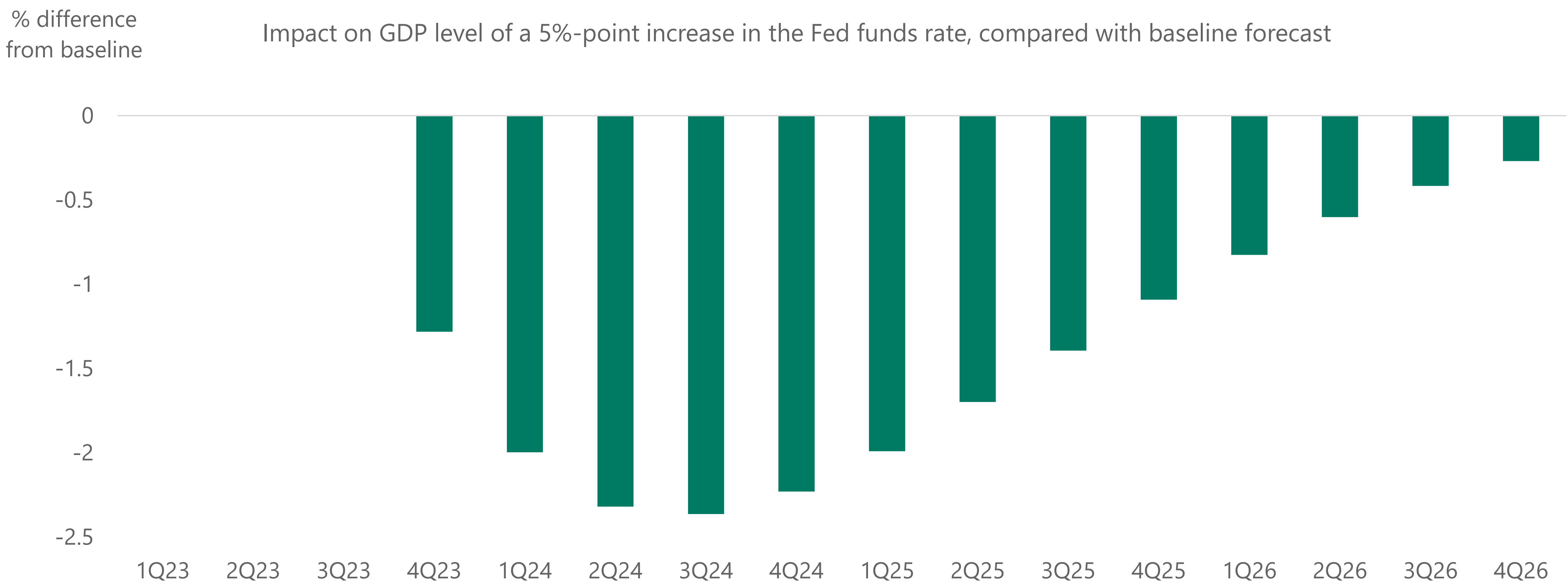
Firms and households with low credit ratings and low FICO scores are more vulnerable to Fed hikes because of:

- **More debt**
- **Lower earnings**
- **Lower savings**

Over time, more and more balance sheets will be negatively impacted by Fed hikes. The ultimate result is a weakening of the macro data such as capex spending, employment, and consumer spending.

Source: Apollo Chief Economist

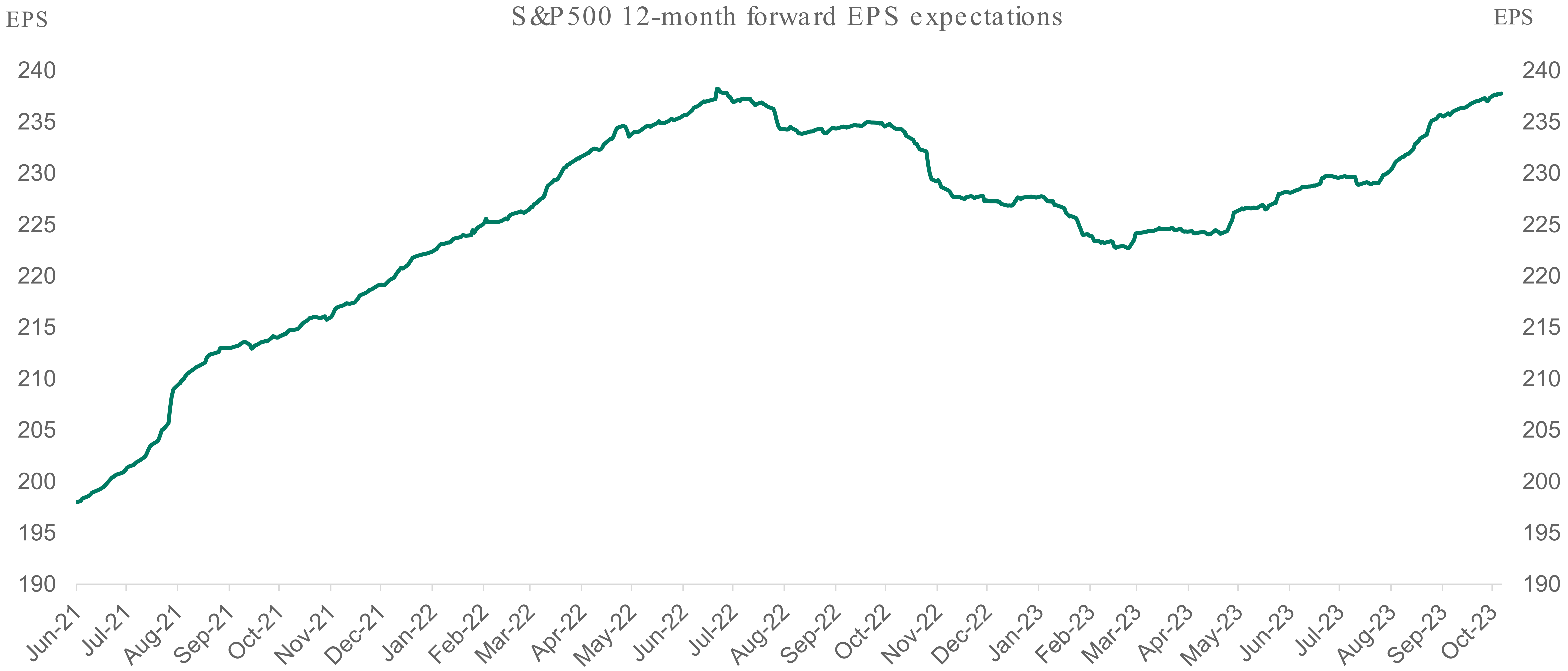
The lagged effects of Fed hikes will continue to drag down growth over the coming 12 months



Source: Bloomberg, Apollo Chief Economist. Note: 500bps monetary policy shock in 3Q23

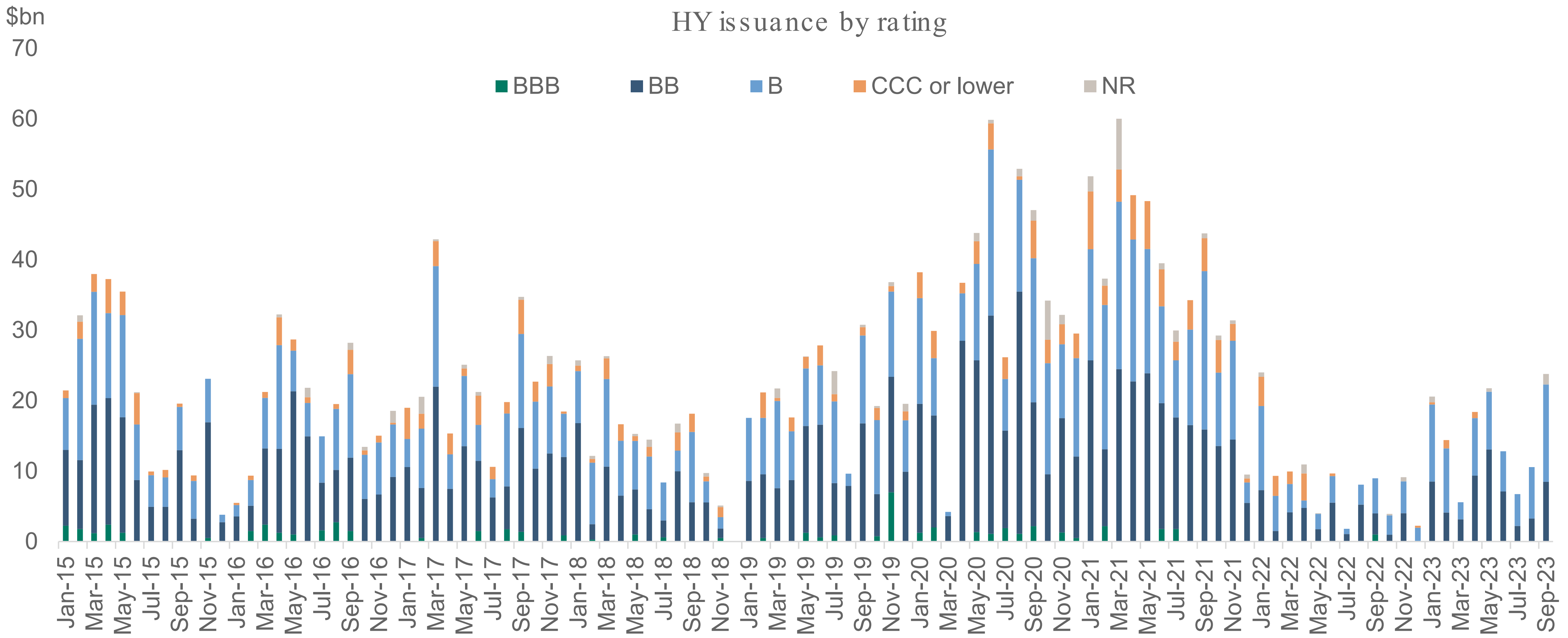
Outlook for financial markets

The Fed is trying to slow down the economy and S&P500 earnings expectations are moving higher?



Source: Bloomberg, Apollo Chief Economist

HY issuance remains subdued



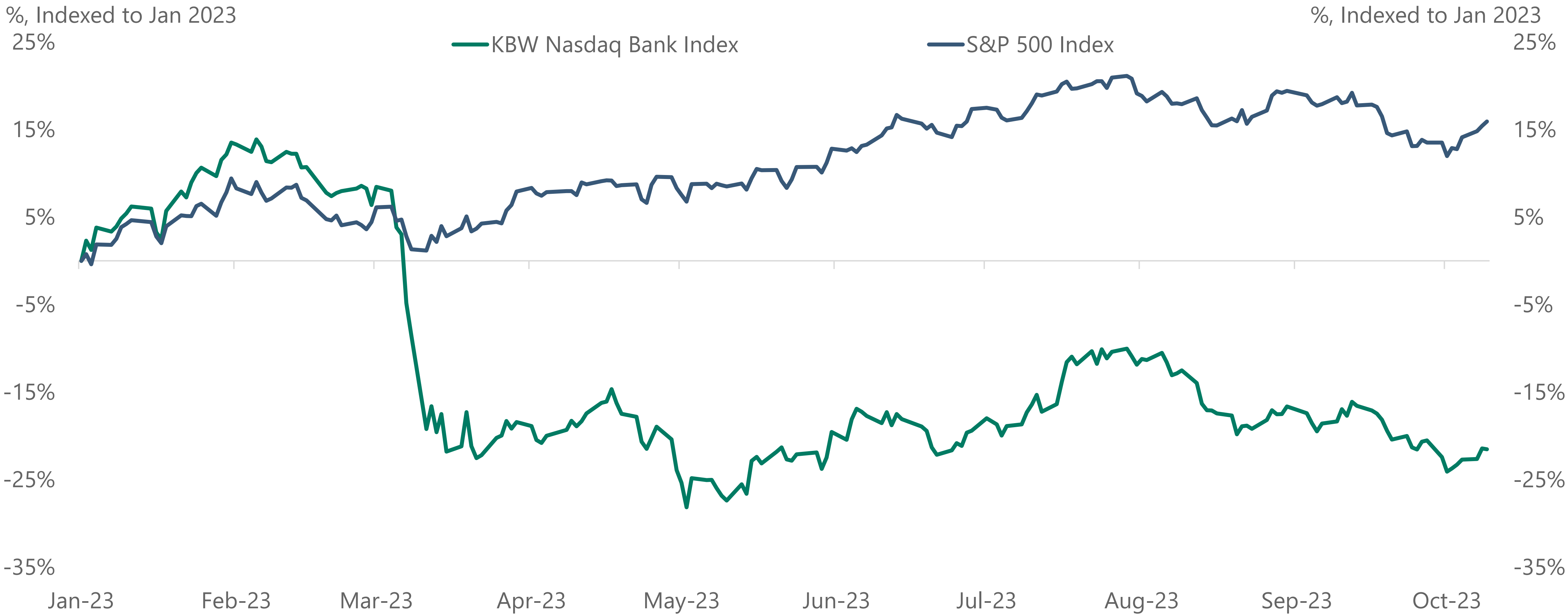
Source: S&P LCD, Apollo Chief Economist.

Why is it taking the Fed so long time to slow down the economy?

1. High savings in the household sector
2. HY and IG corporates extended the maturity of their loans
3. US households have 30-year fixed mortgages.
4. A growing share of capex spending is intangibles (i.e. software, R&D)
5. IRA and CHIPS Act are creating a boom in energy transition and manufacturing

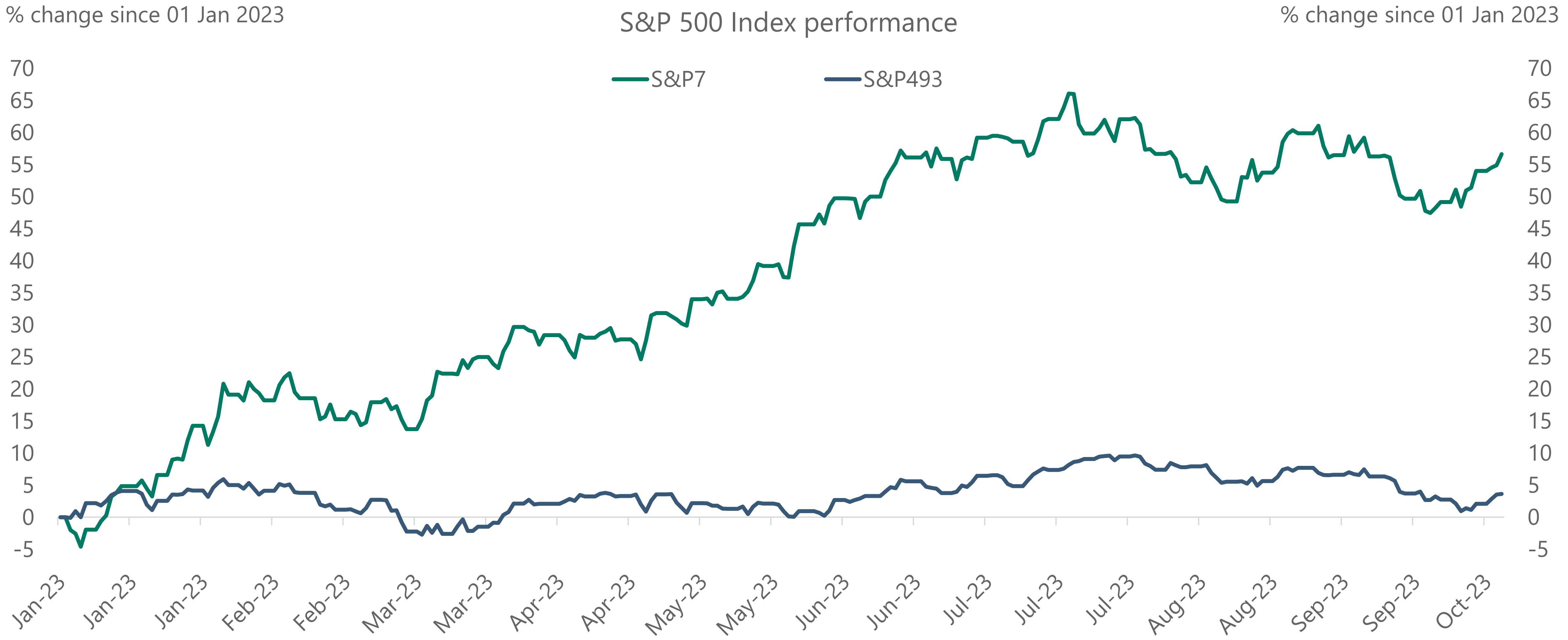
Source: Apollo Chief Economist

Bank stocks underperforming



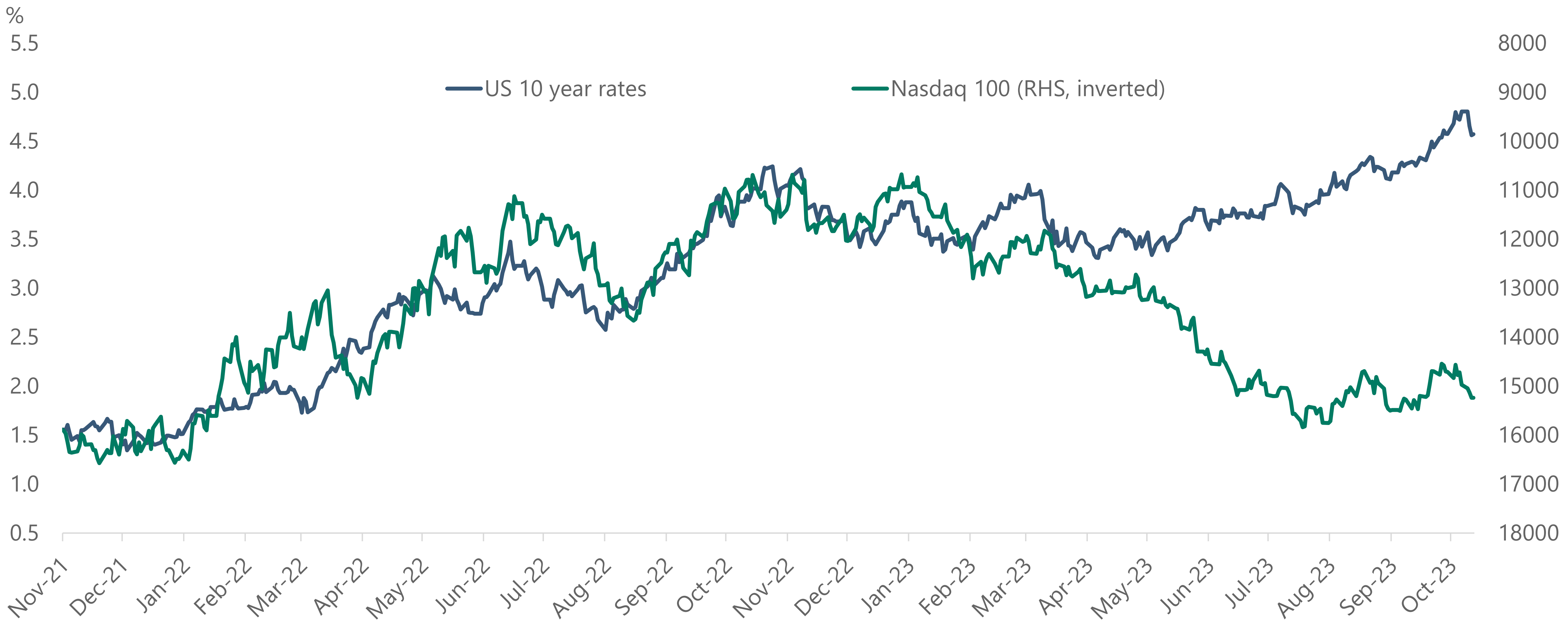
Source: Bloomberg, Apollo Chief Economist

So far in 2023 S&P7 is up more than 50%. S&P493 is basically flat



Source: Bloomberg, Apollo Chief Economist

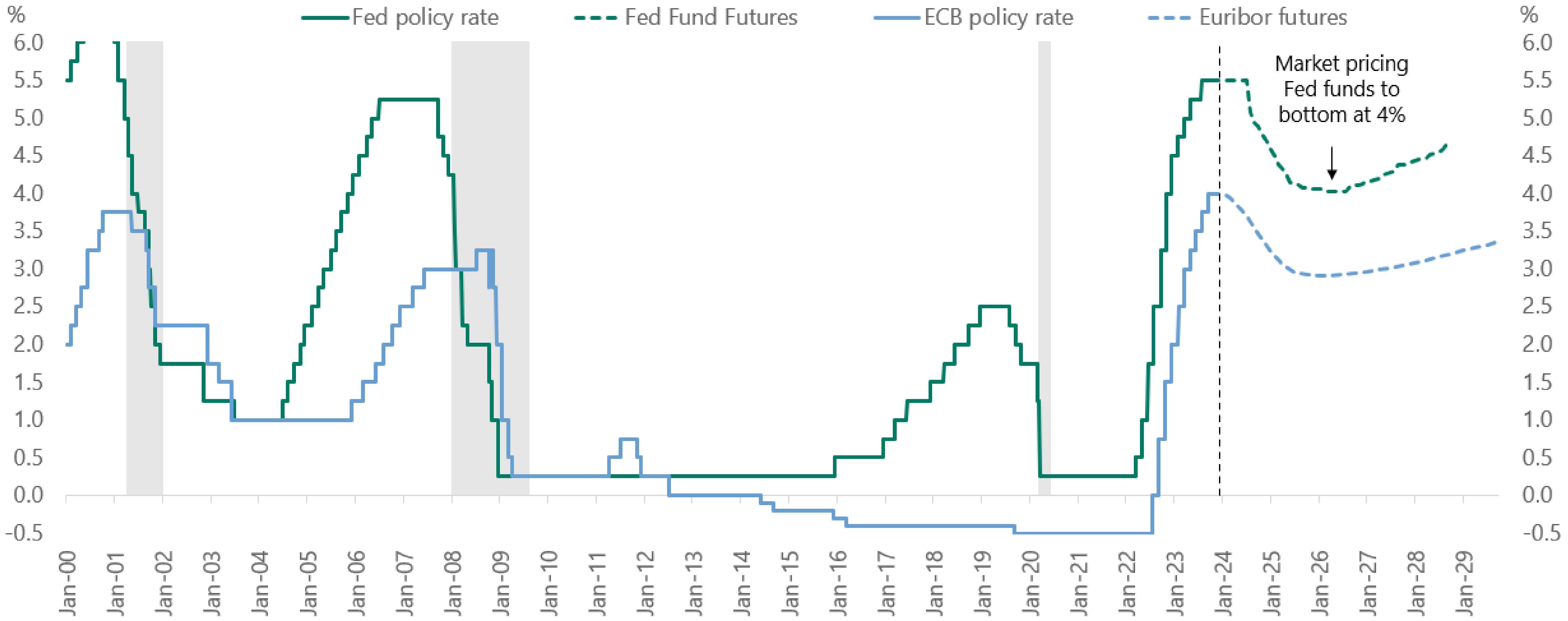
The stock market is disconnected from 10-year rates



Source: Bloomberg, Apollo Chief Economist

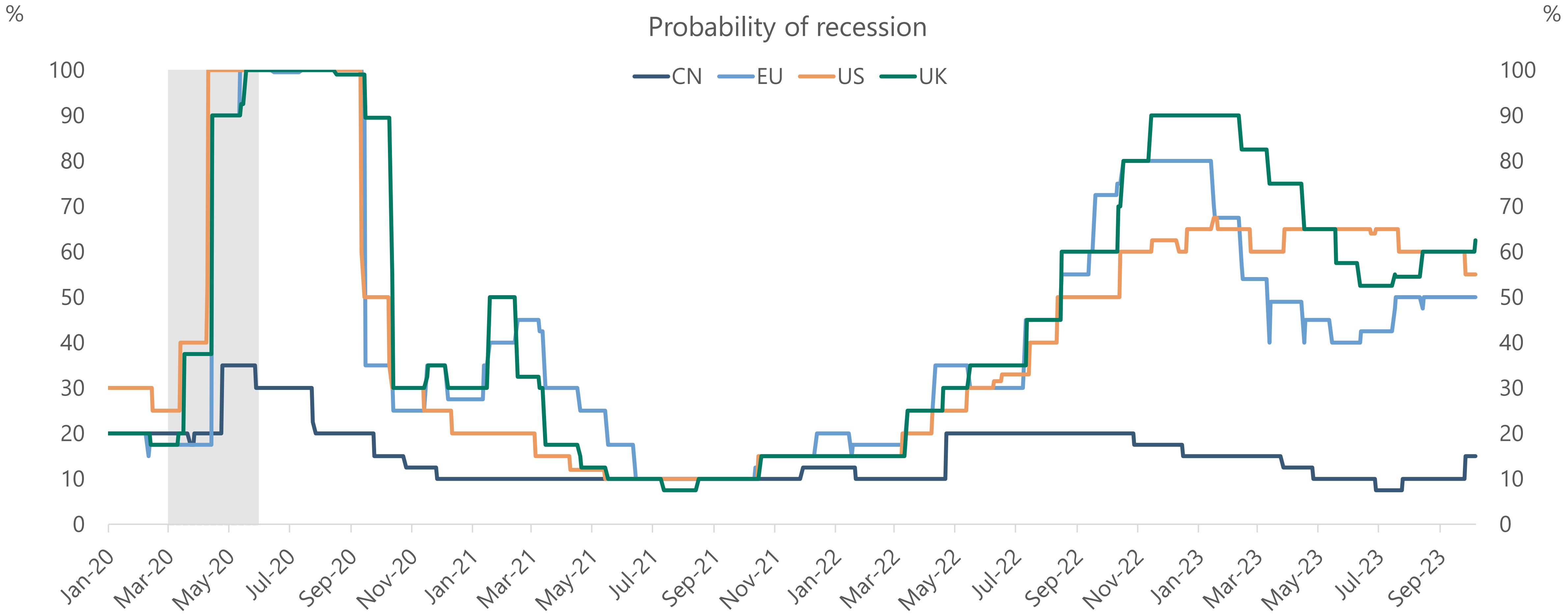
Investment implications

Rates will remain permanently higher



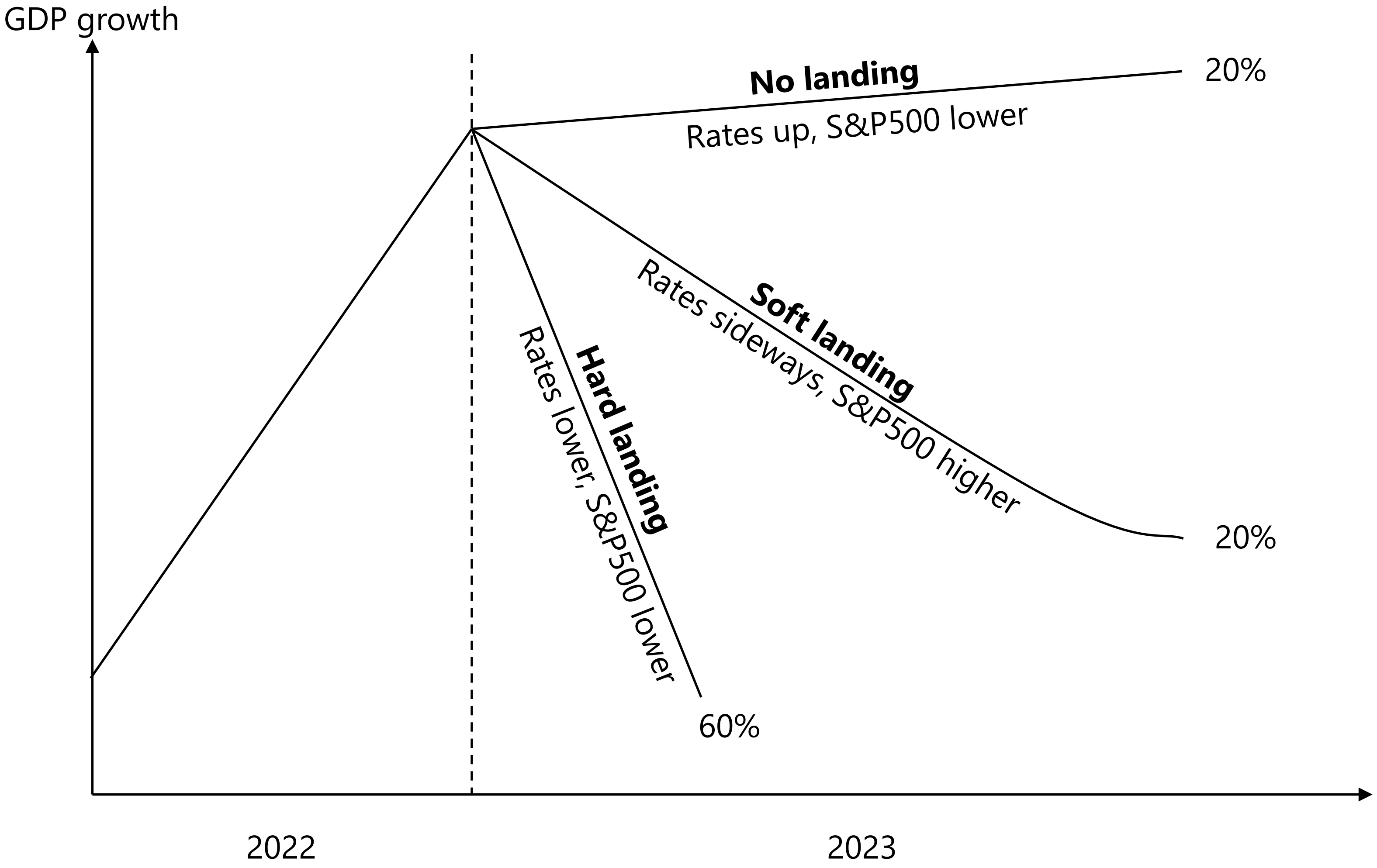
Source: Bloomberg, Apollo Chief Economist..

Consensus: 55% probability of recession in the US, and 50% probability in Europe



Source: Bloomberg, Apollo Chief Economist

Asset allocation under no landing, soft landing, and hard landing



Source: Apollo Chief Economist. Represents the views and opinions of Apollo's Chief Economist. Subject to change at any time without notice.

Torsten Slok, Ph.D.

Chief Economist
Apollo Global Management
tslok@apollo.com

Torsten Slok joined Apollo in August 2020 as Chief Economist and he leads Apollo's macroeconomic and market analysis across the platform.

Prior to joining, Mr. Slok worked for 15 years as Chief Economist at Deutsche Bank where his team was top ranked in the annual Institutional Investor survey for a decade. Prior to joining Deutsche Bank Mr. Slok worked at the IMF in Washington, DC and at the OECD in Paris.

Mr. Slok has a Ph.D in Economics and has studied at the University of Copenhagen and Princeton University.