

APOLLO

## **Credit market outlook:**

Lagged Fed hikes + tighter lending standards = volatile markets

Torsten Slok, Jyoti Agarwal, and Rajvi Shah

[tslok@apollo.com](mailto:tslok@apollo.com)

**Apollo Global Management**

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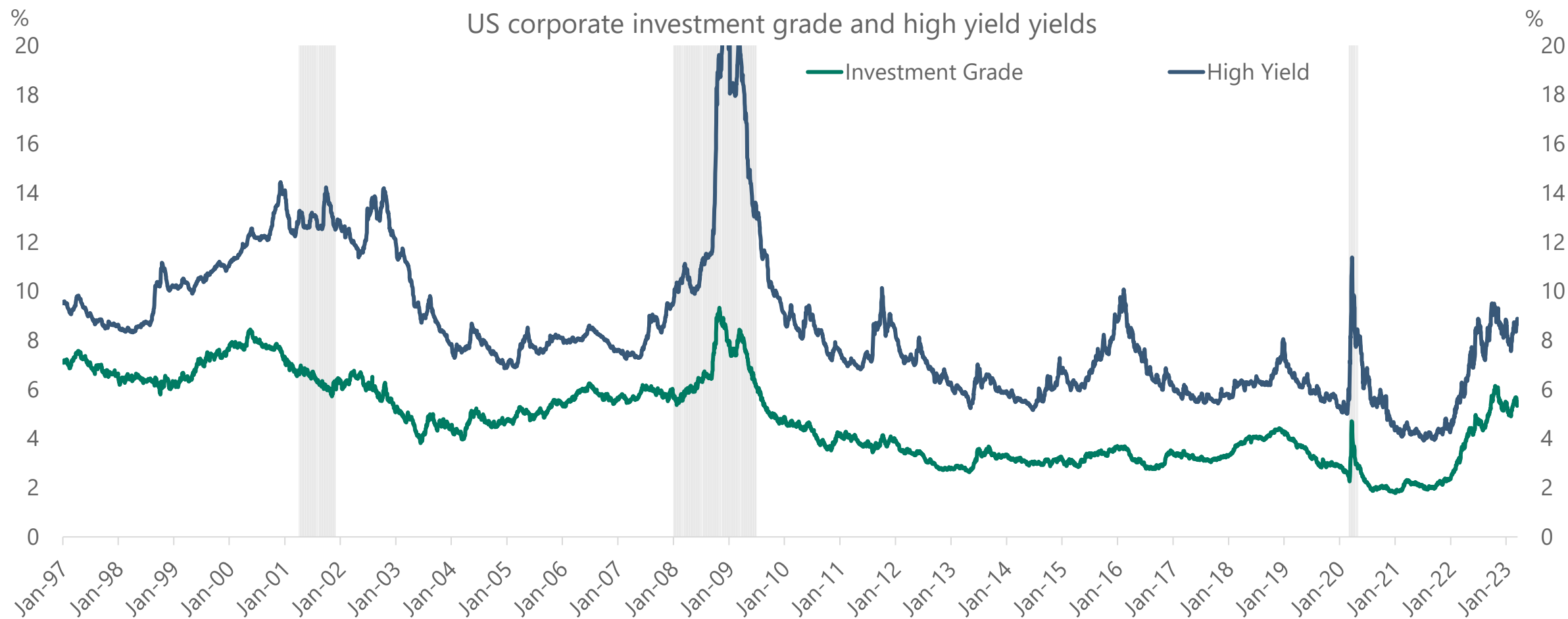
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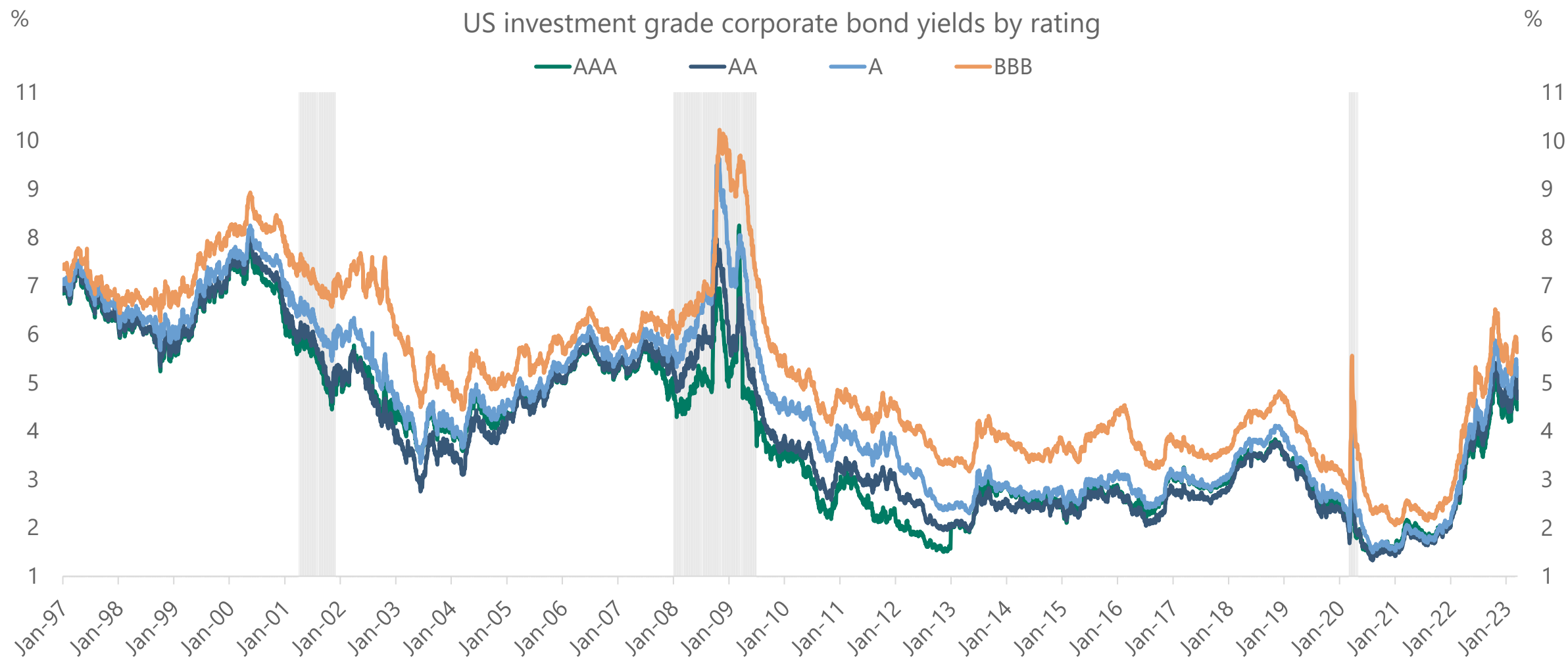
Yields



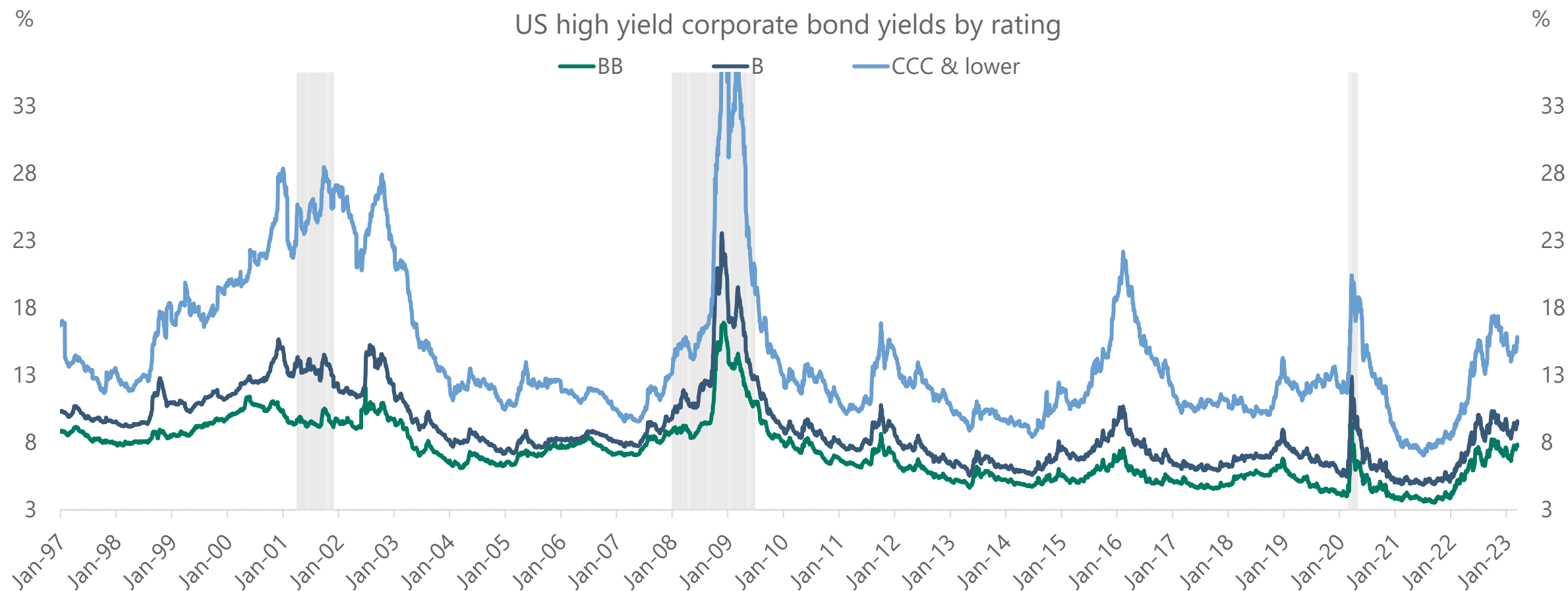
US IG yield around 5.7% and HY yield around 8.6%



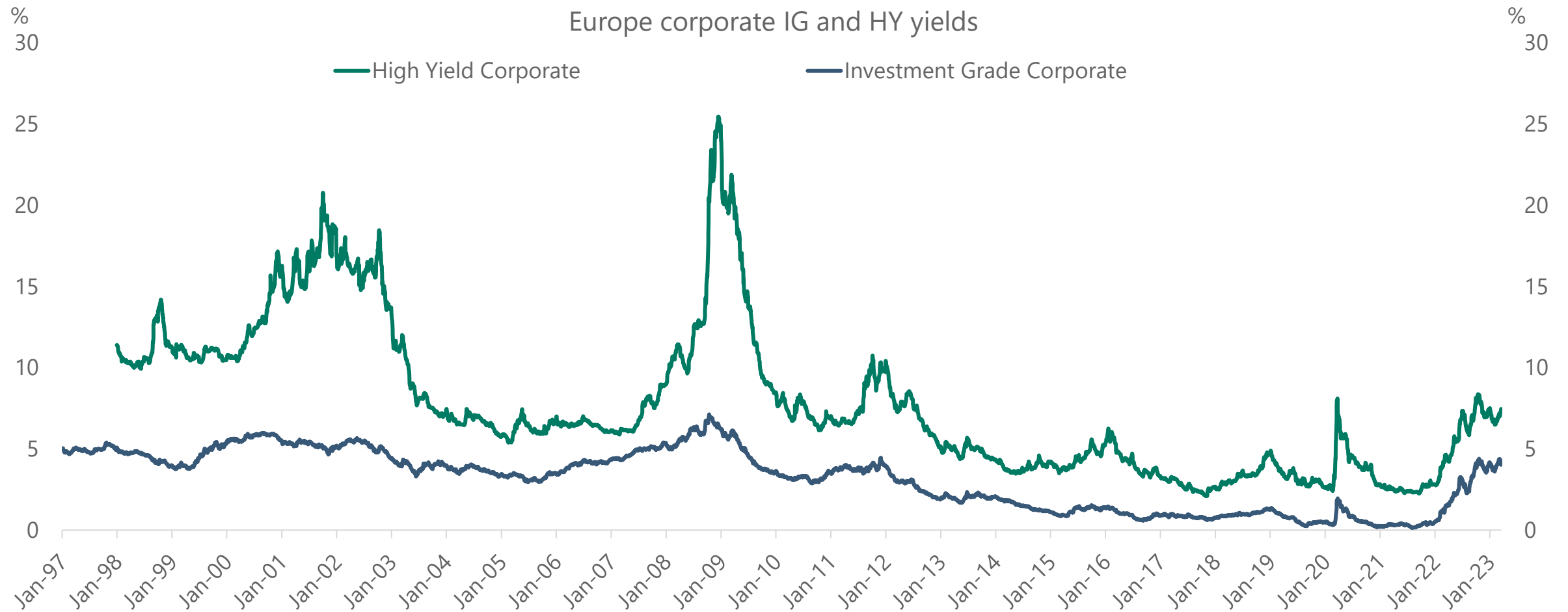
# US IG yield levels, by rating



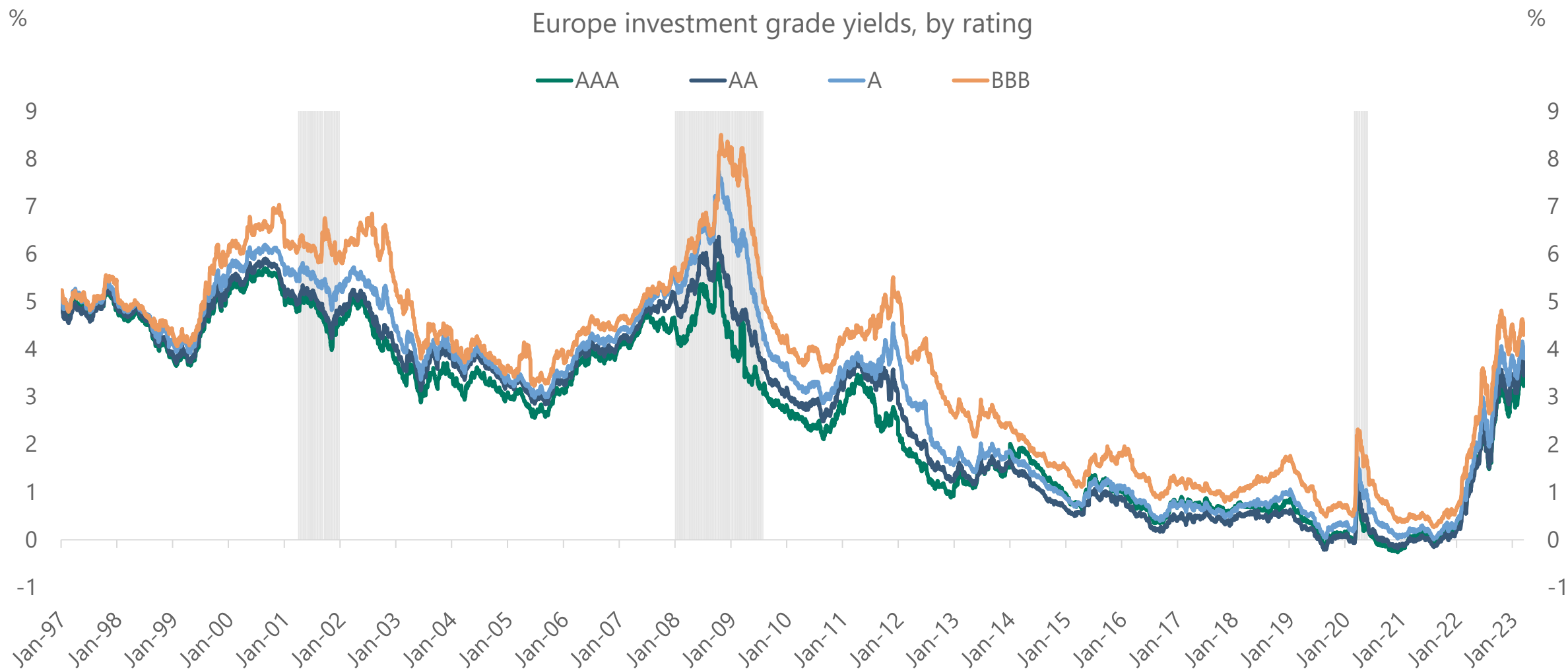
# US HY yield levels, by rating



# European corporate IG and HY yields

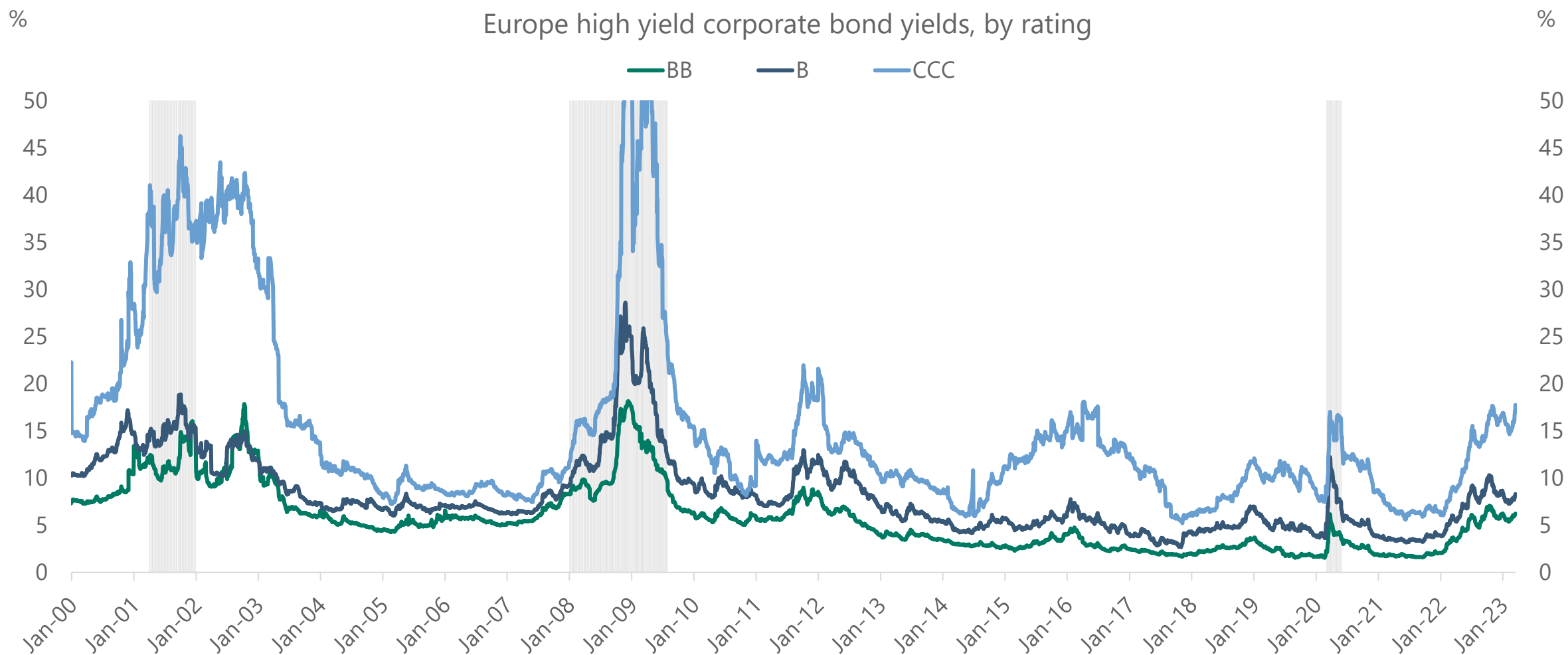


# European IG yield levels, by rating

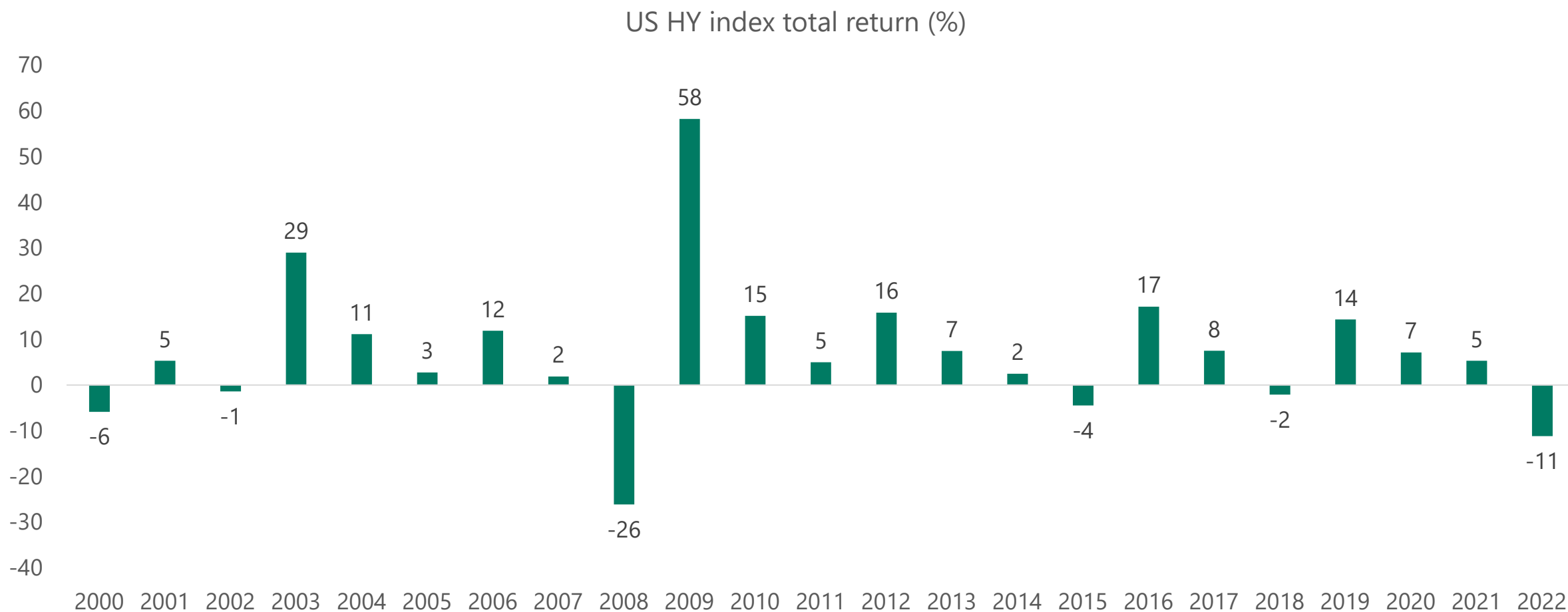




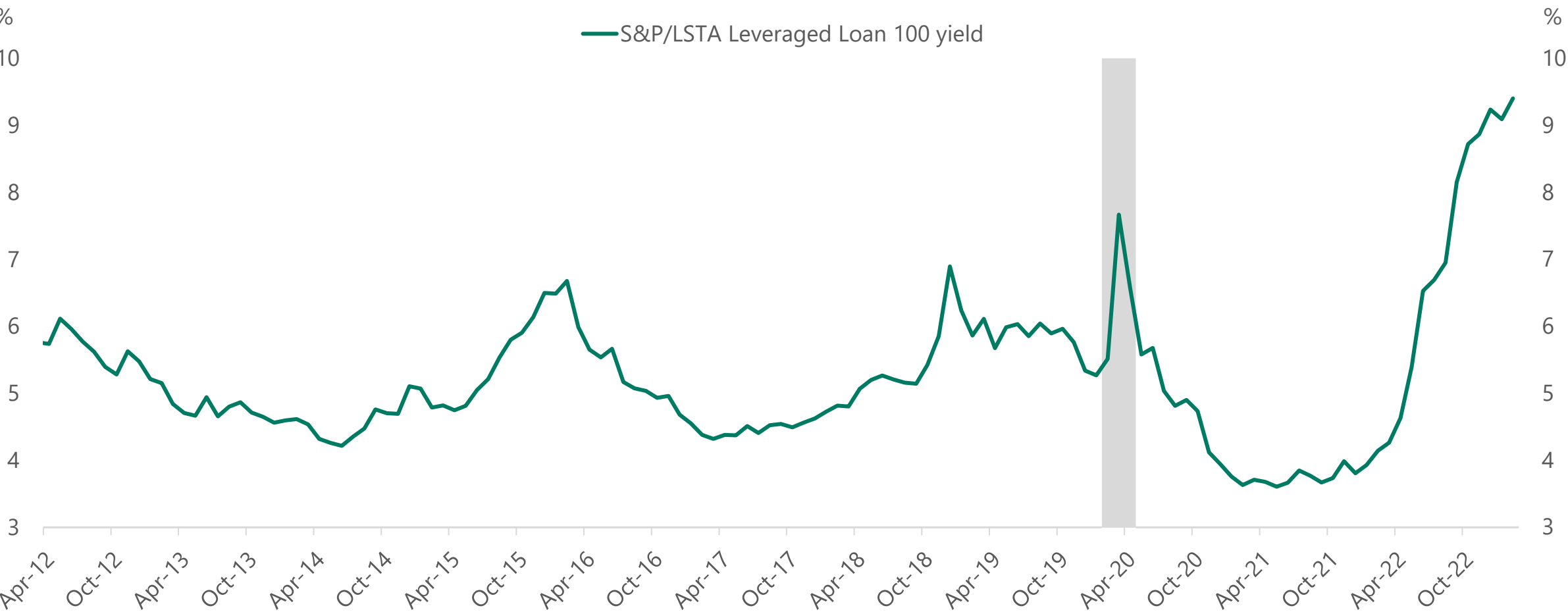
# European HY yield levels, by rating



# Annual returns for HY



# Yield for the leveraged loan index at 9.4%



Source: LCD Comps, Apollo Chief Economist

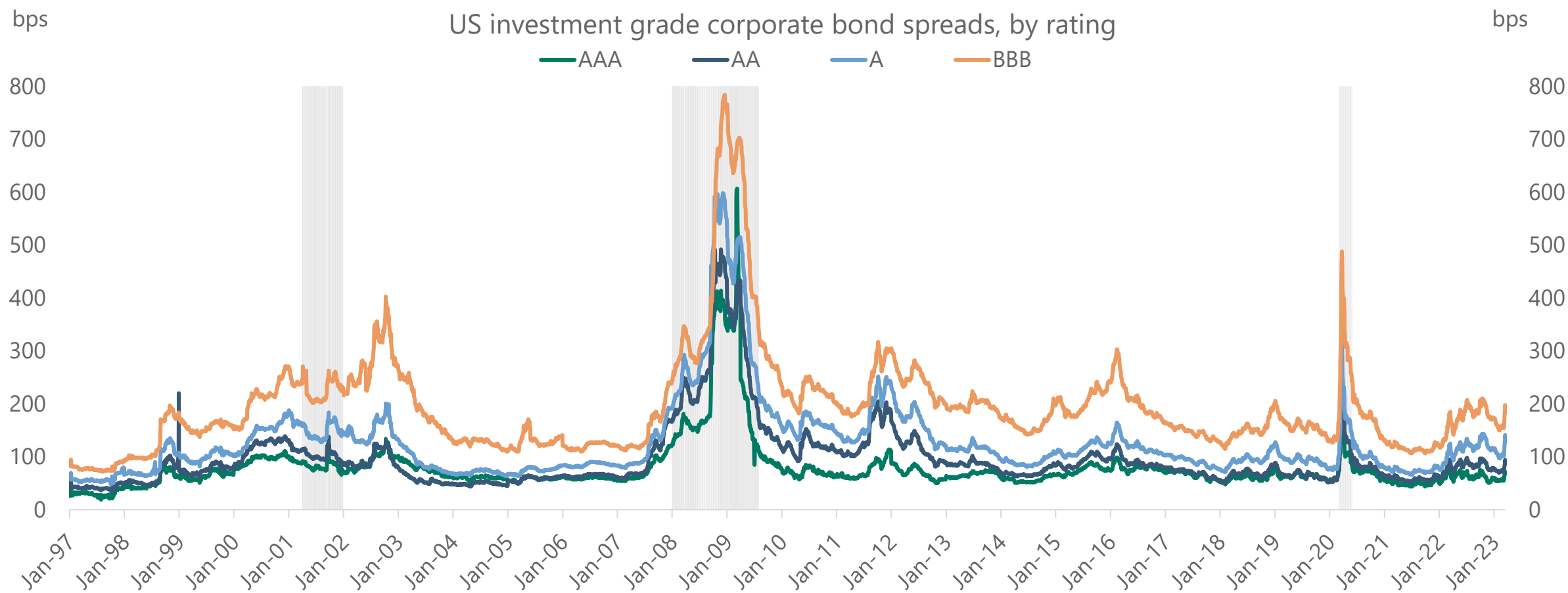
# Spreads



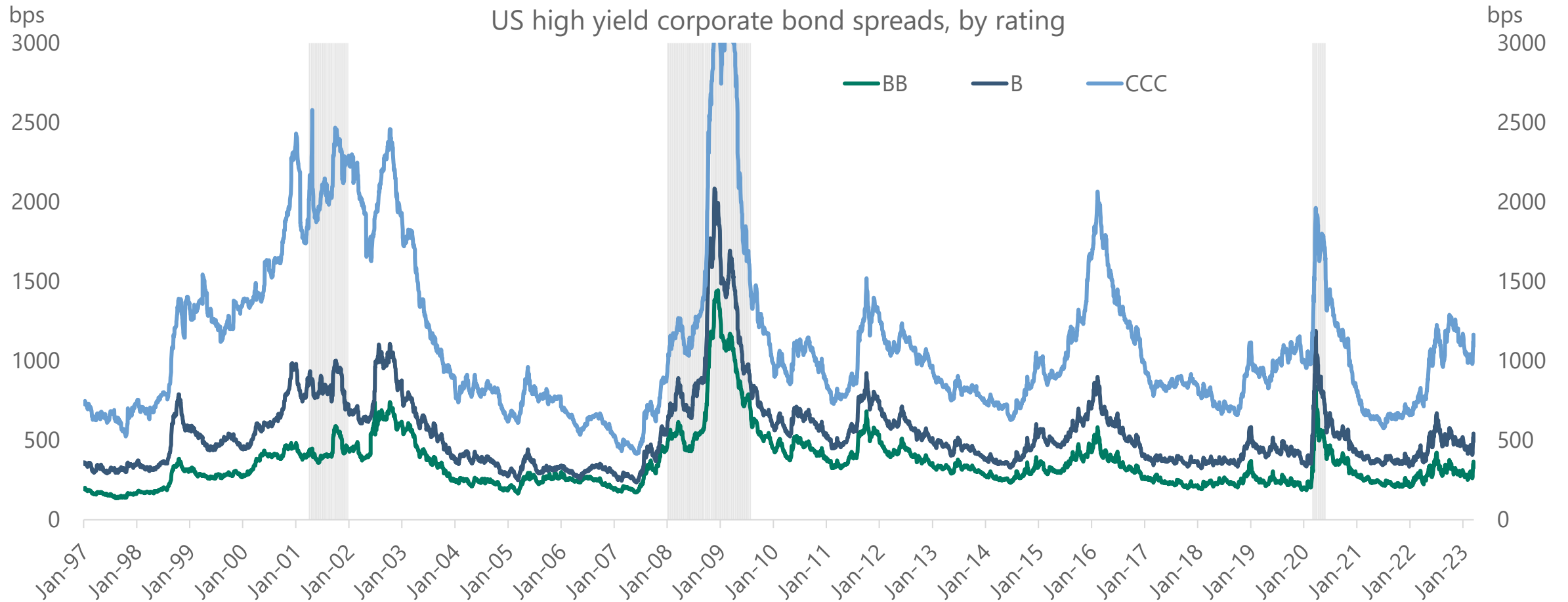
# Credit spreads wider, but still not pricing in a recession



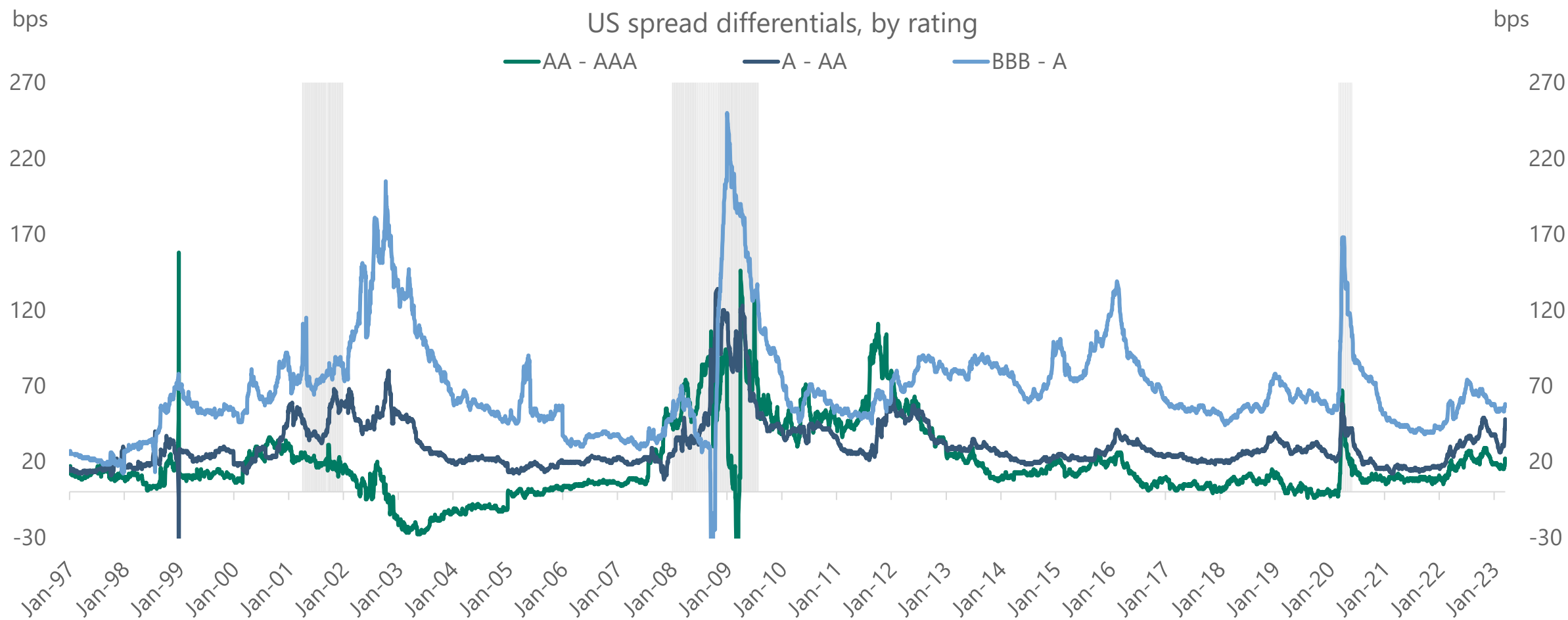
# IG spreads by rating



# HY spreads by rating

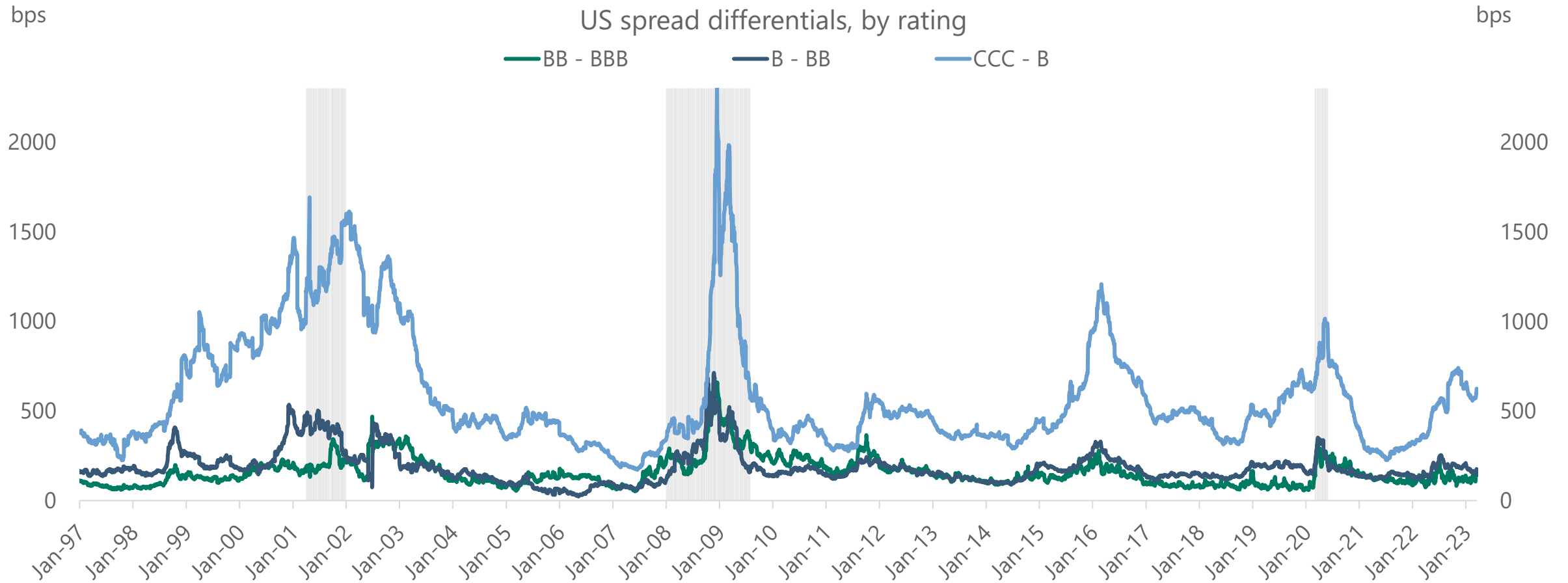


# IG quality spreads, less differentiation between BBB and single-A





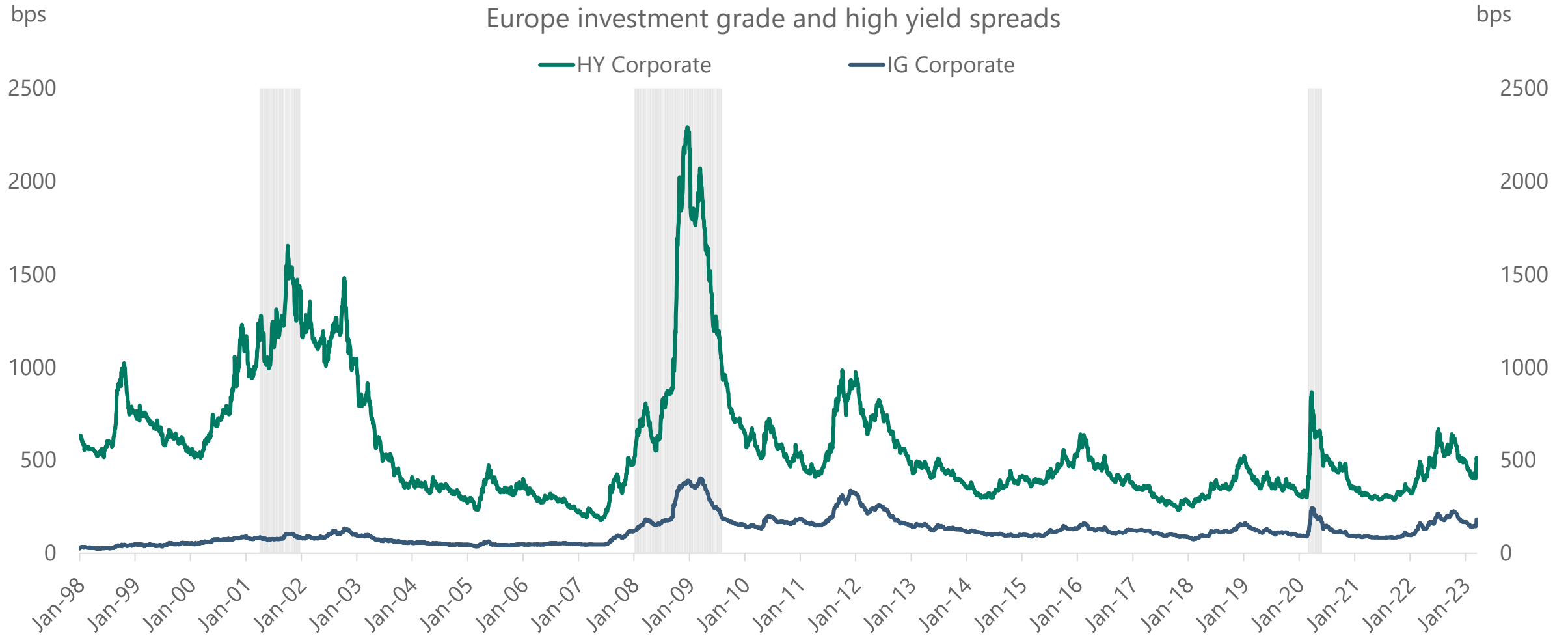
# HY quality spreads, some differentiation between CCC and B



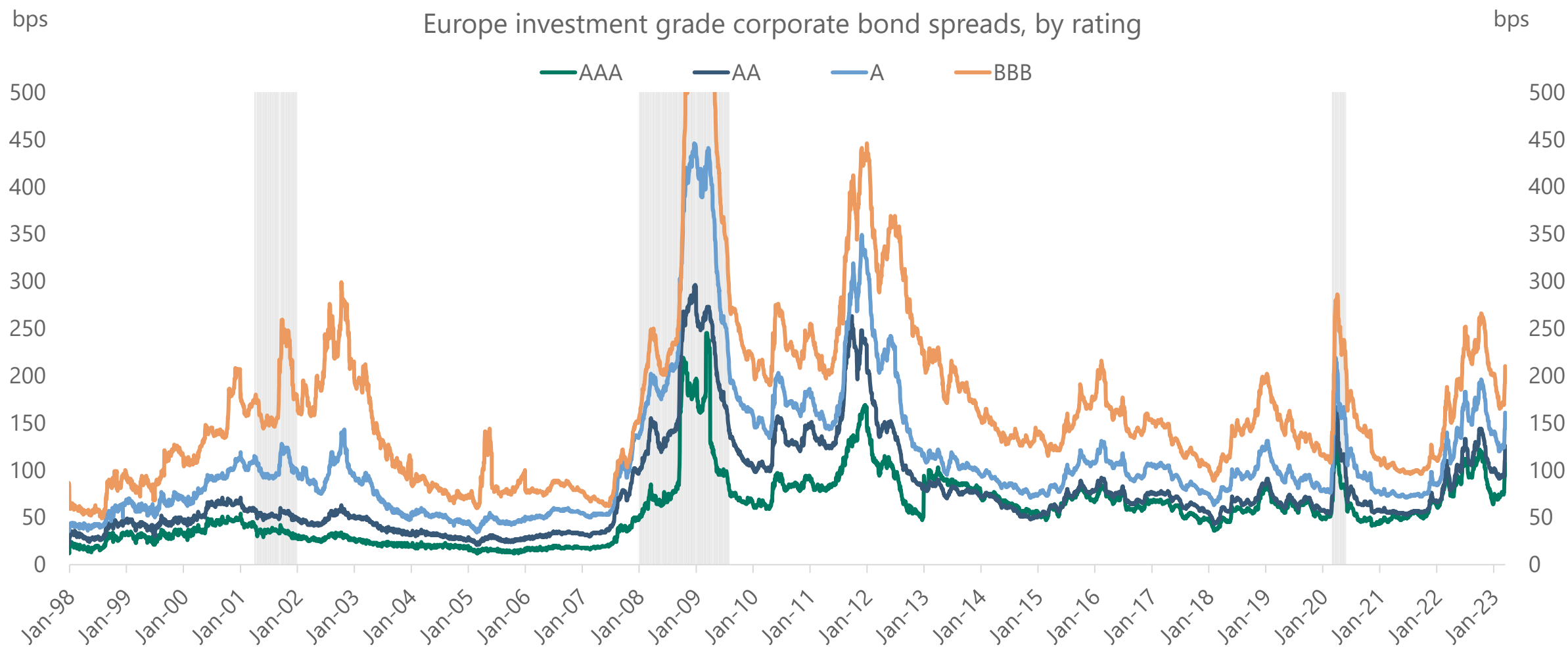
# US HY spread minus IG spread



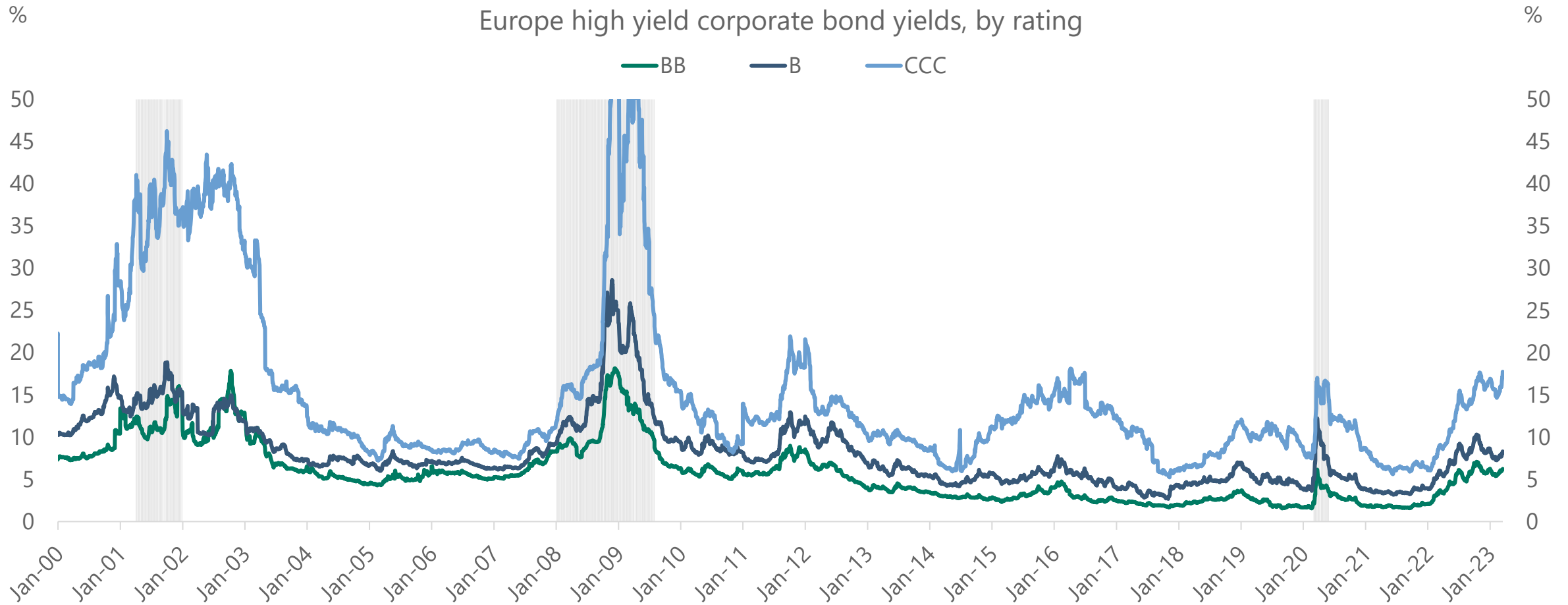
# European IG and HY spreads



# European IG spreads by rating



# European HY spreads by rating

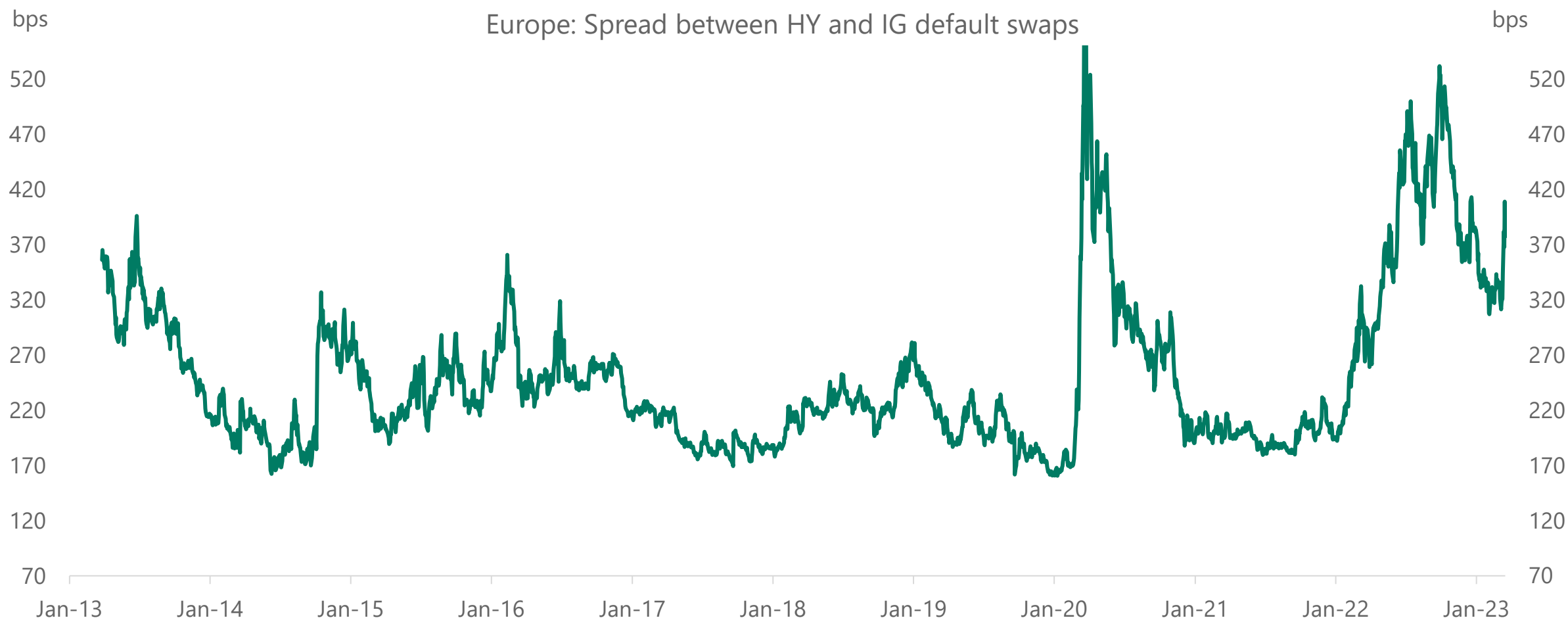


# European HY spread minus IG spread

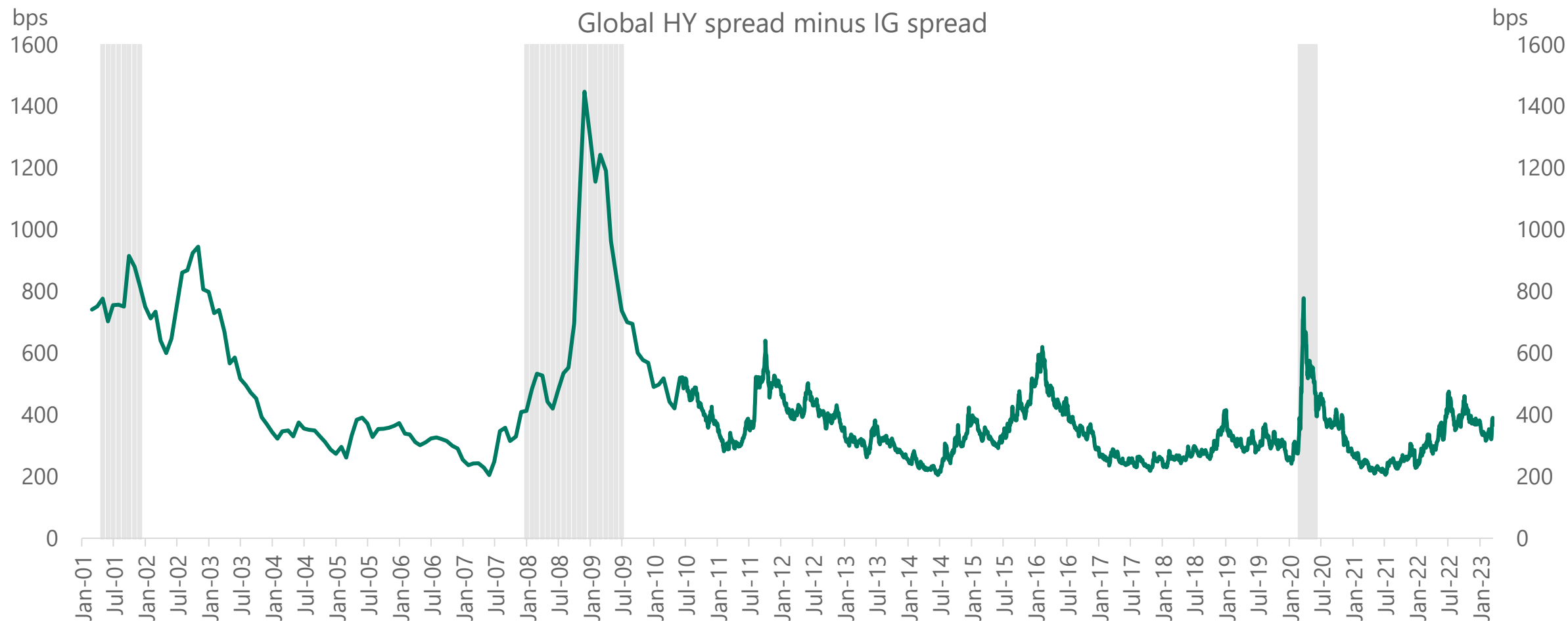


Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Ticker used HE00 Index and ER00 Index.

# Spread between Europe HY and IG default swaps

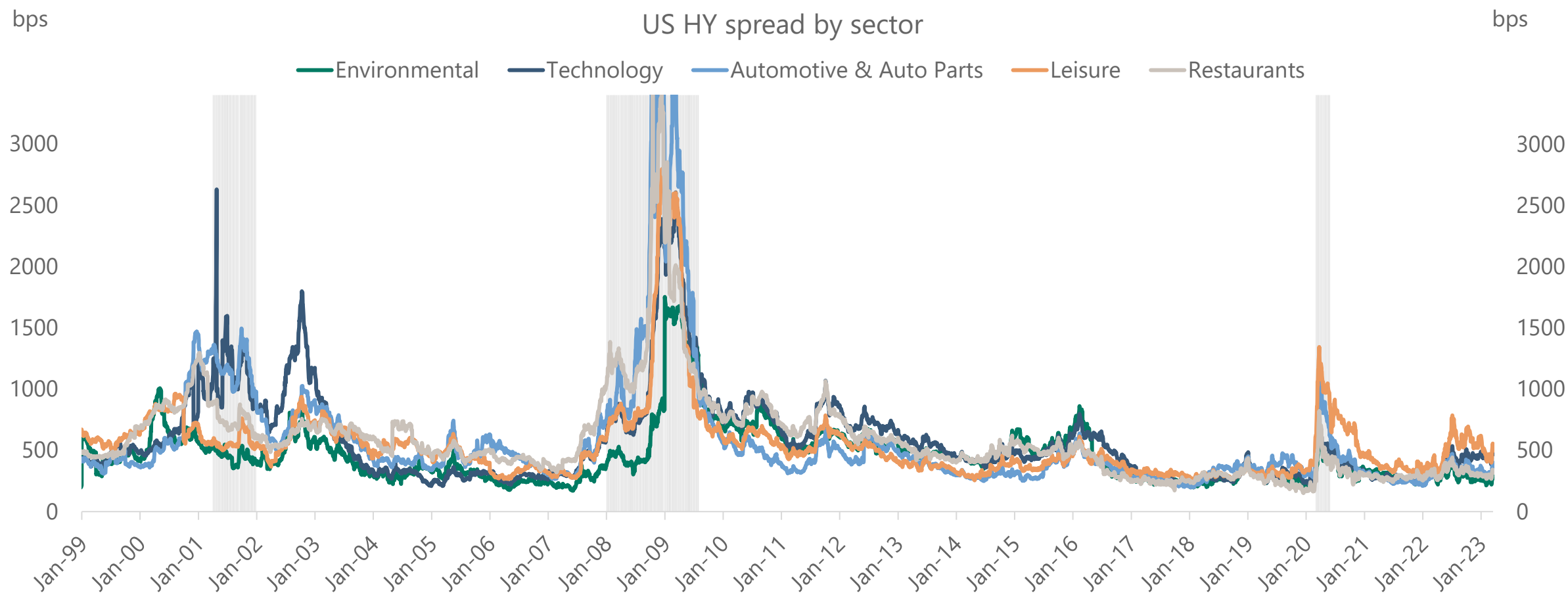


# Global HY spread minus global IG spread

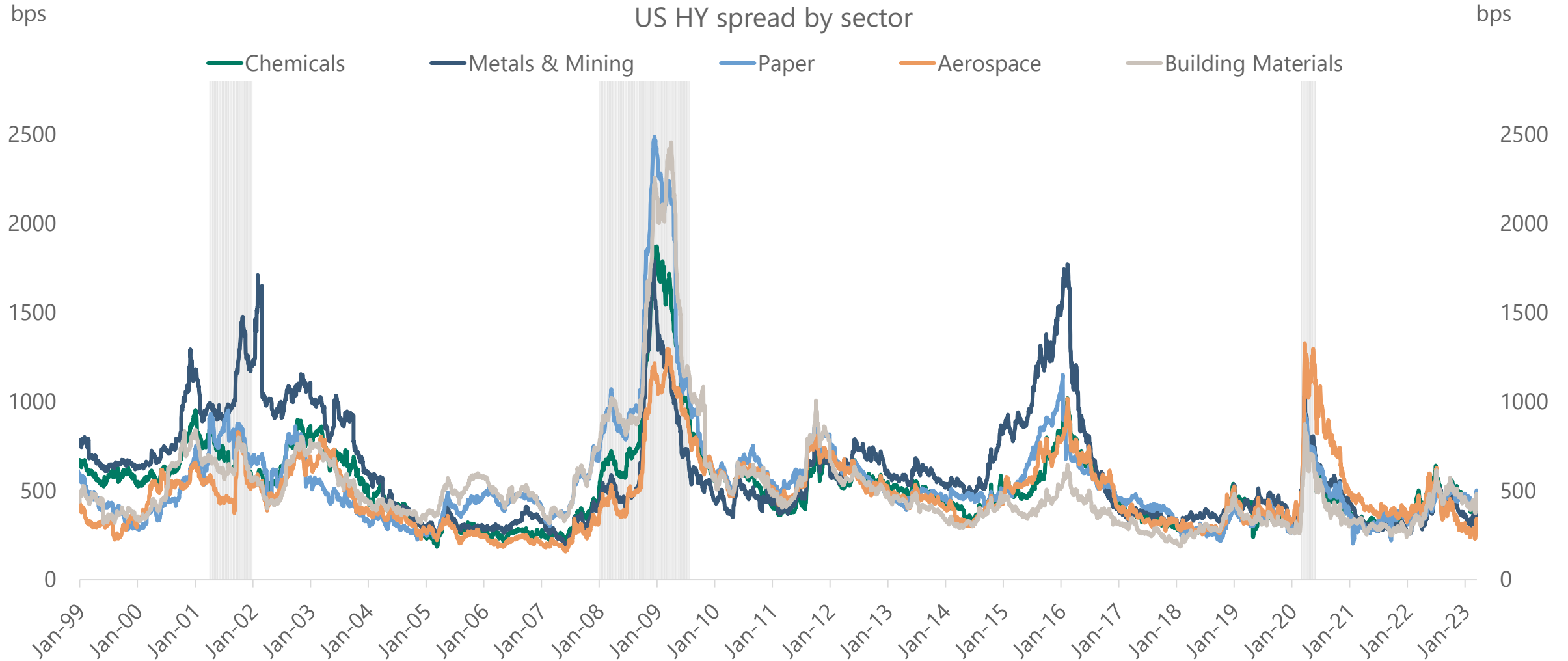




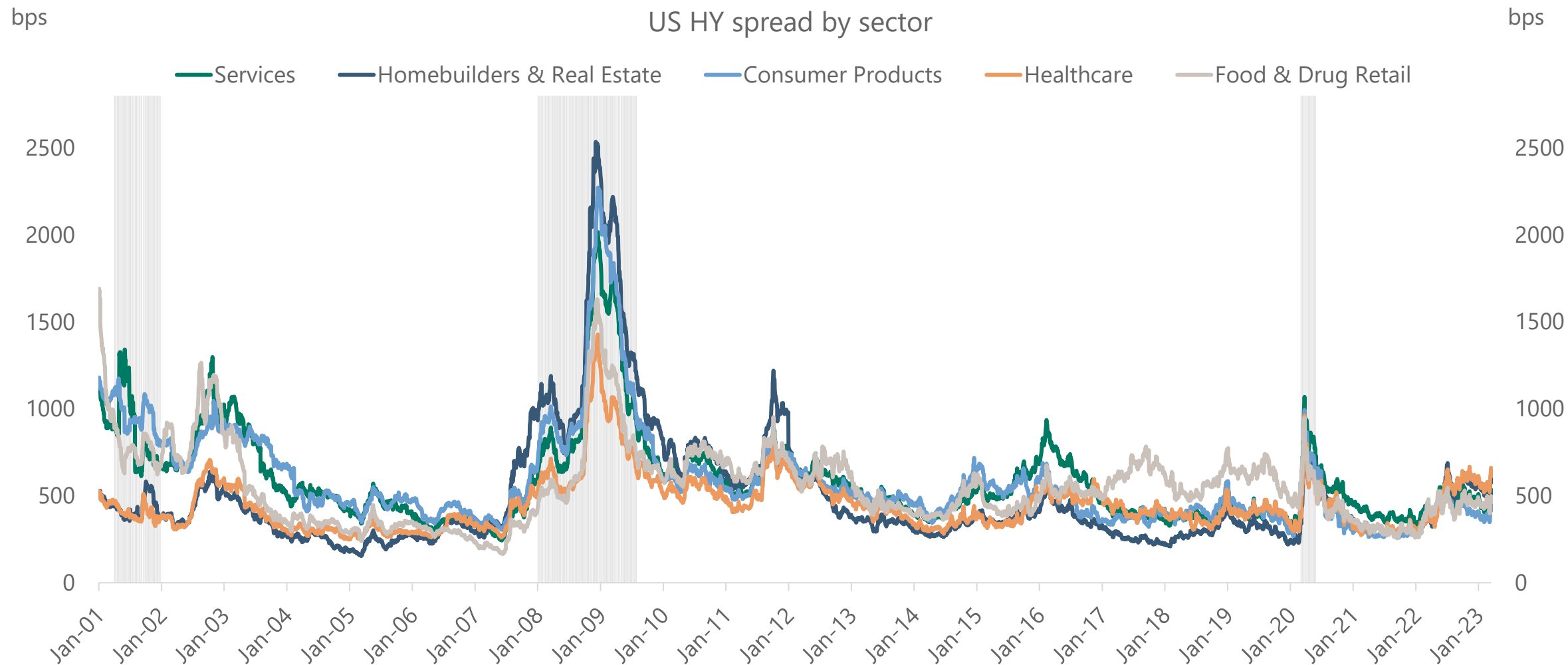
# HY spreads by sector



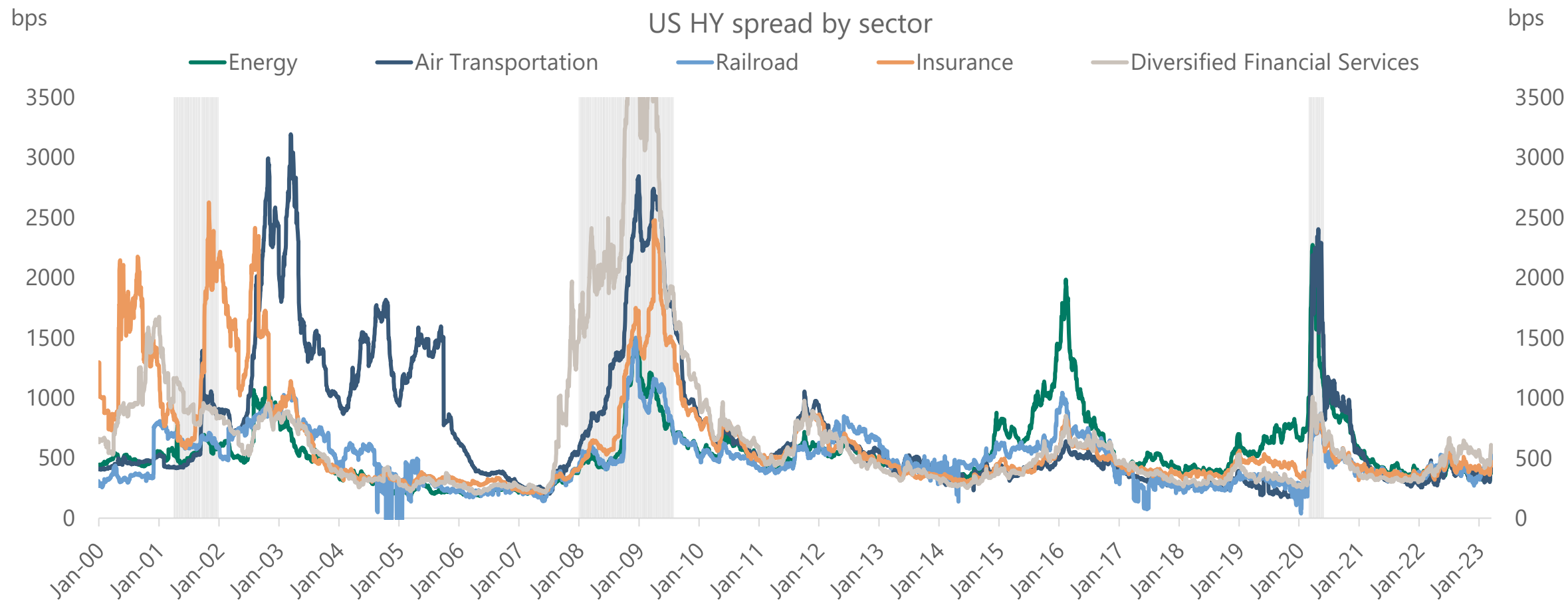
# HY spreads by sector



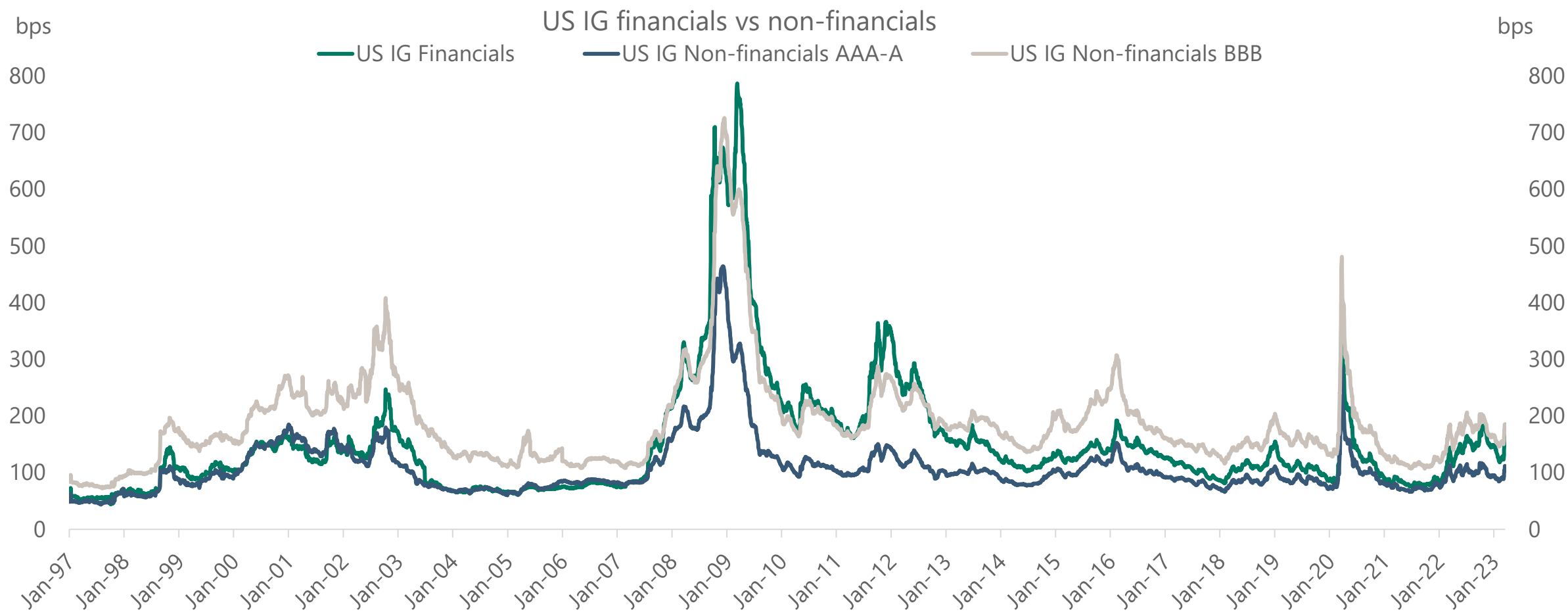
# HY spreads by sector



# HY spreads by sector

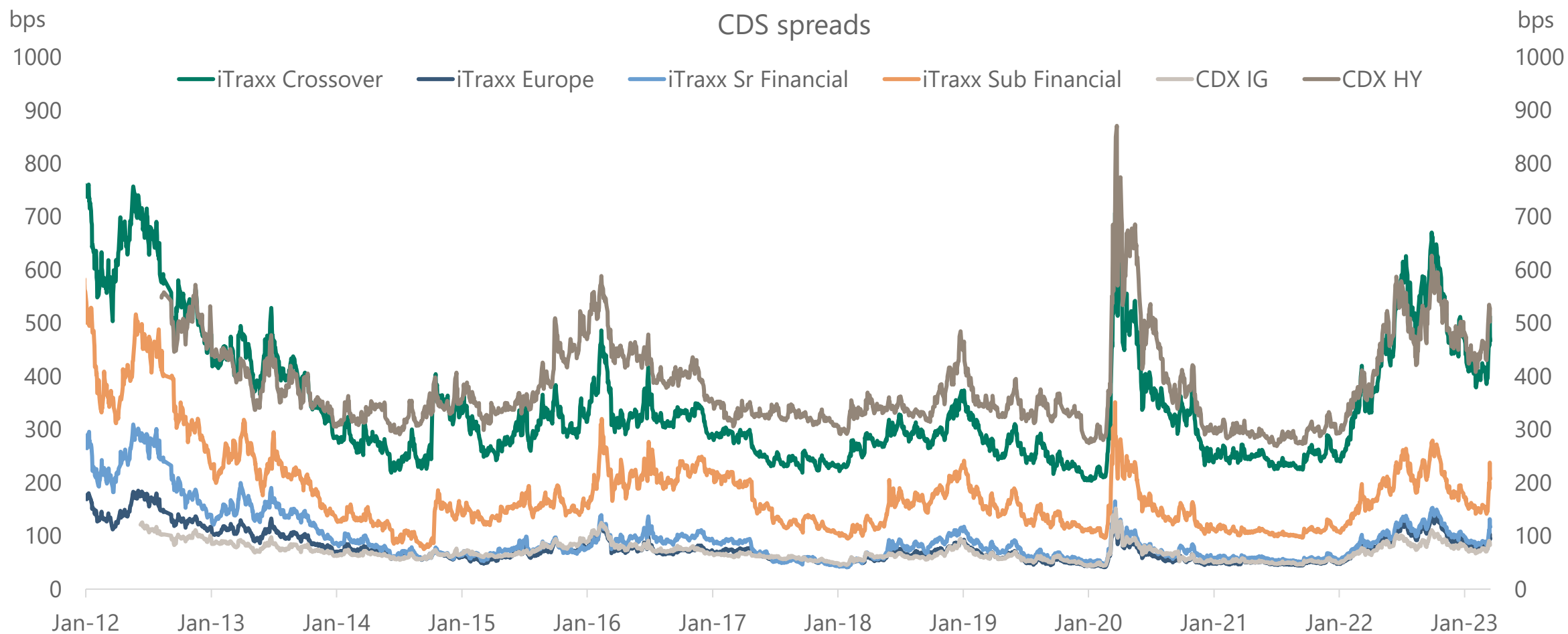


# IG spreads for financials and non-financials

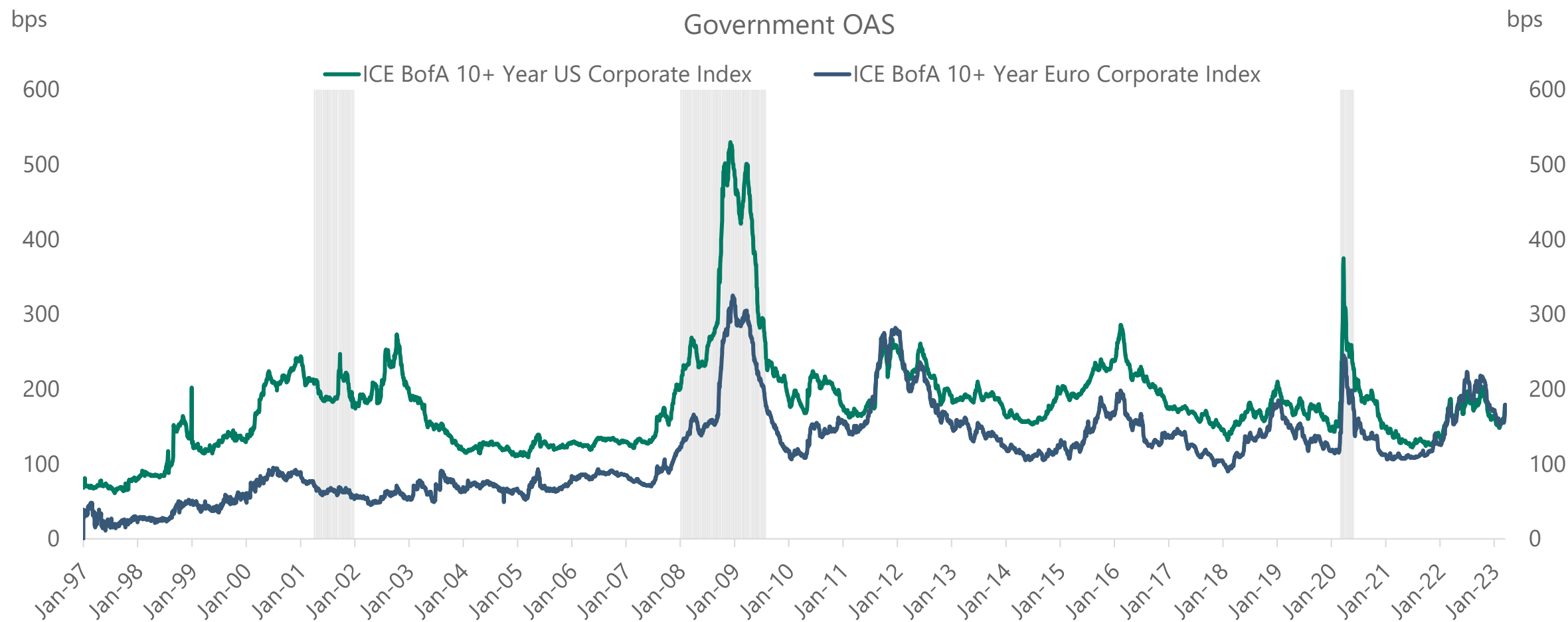


Source: ICE BofA, Bloomberg, Apollo Chief Economist

# CDS spreads



# Long-duration IG spreads in US and Europe

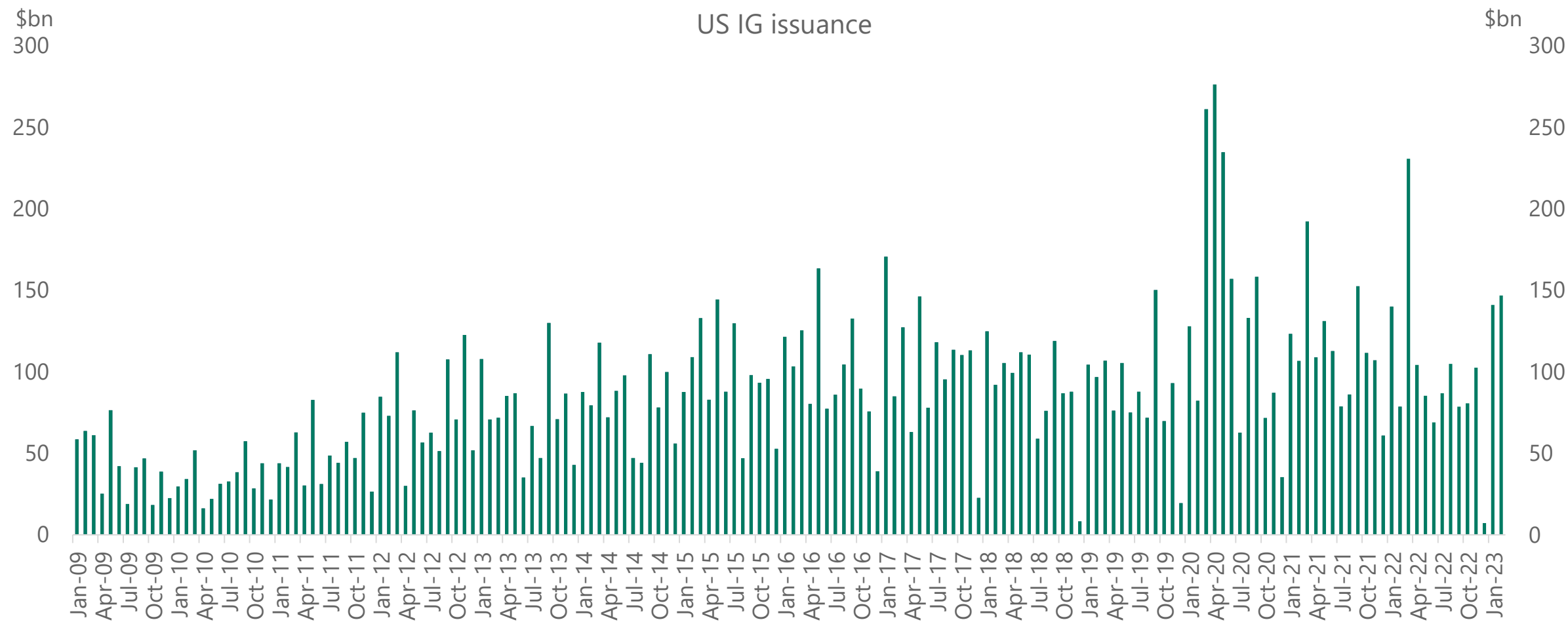


New issuance



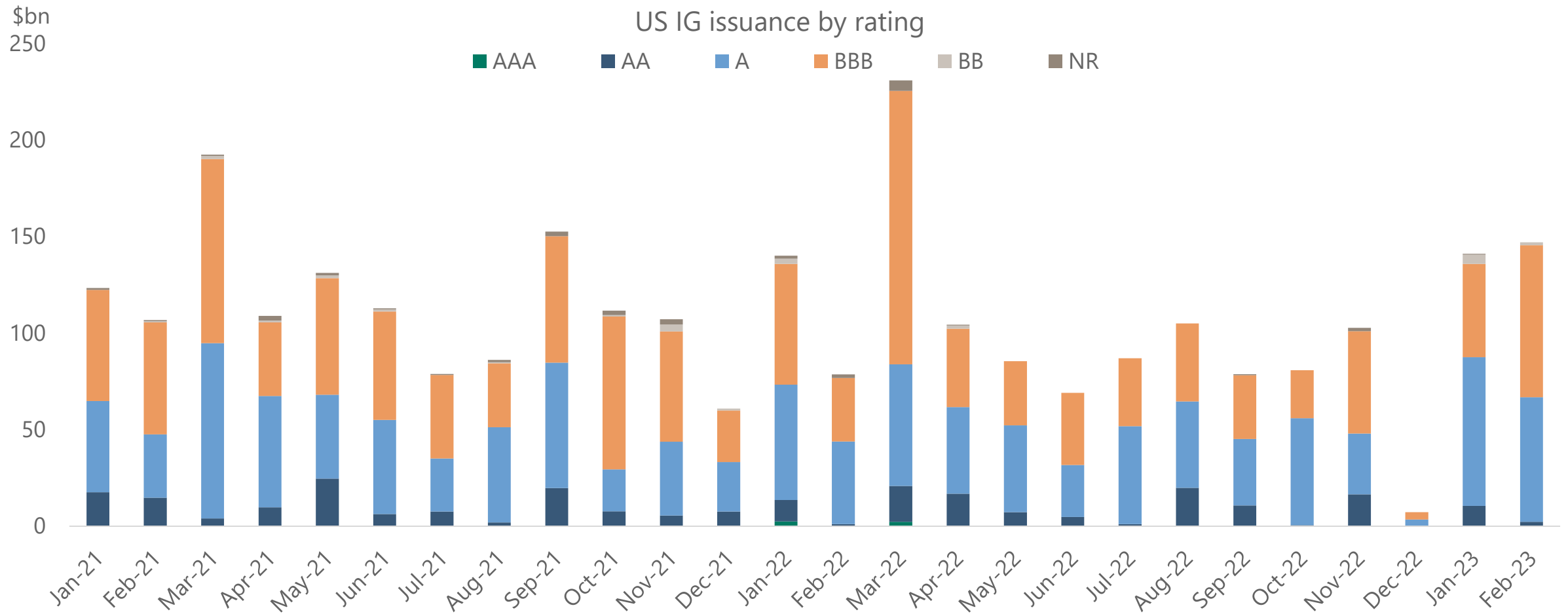


# US IG issuance

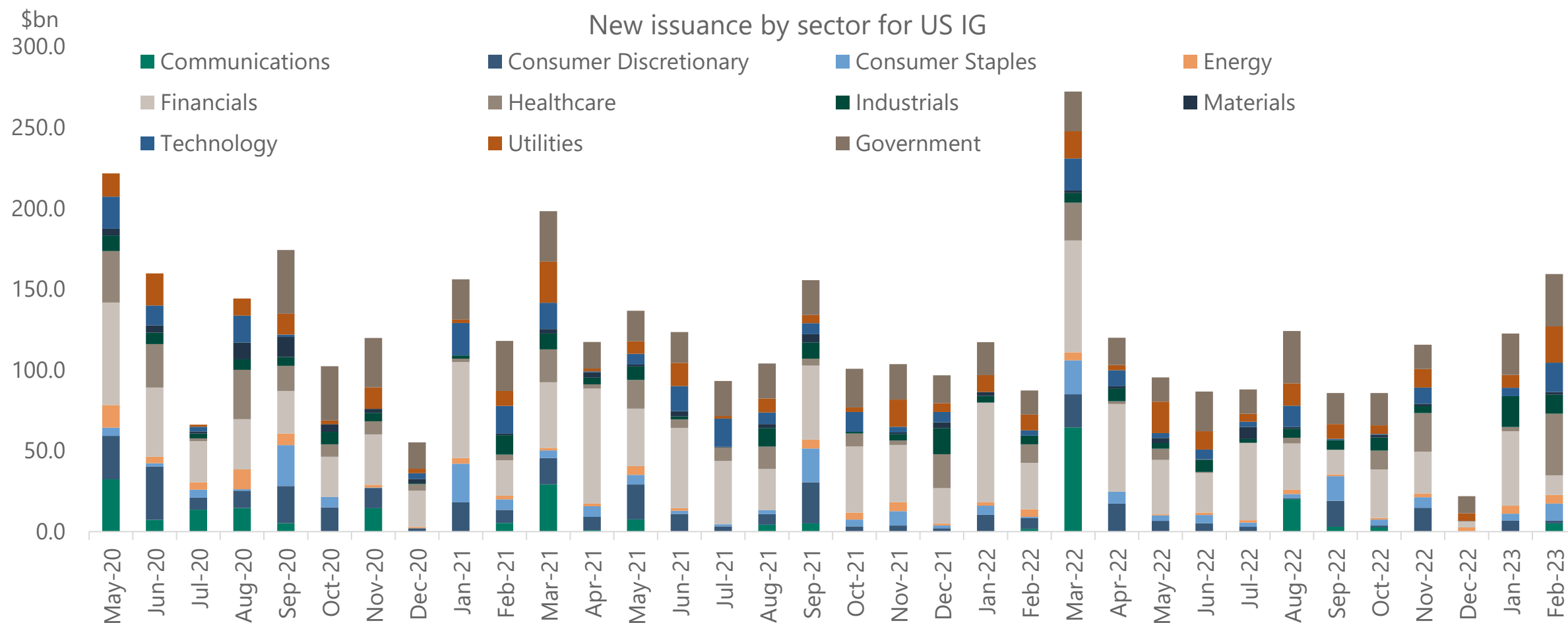


Source: S&P LCD, Apollo Chief Economist

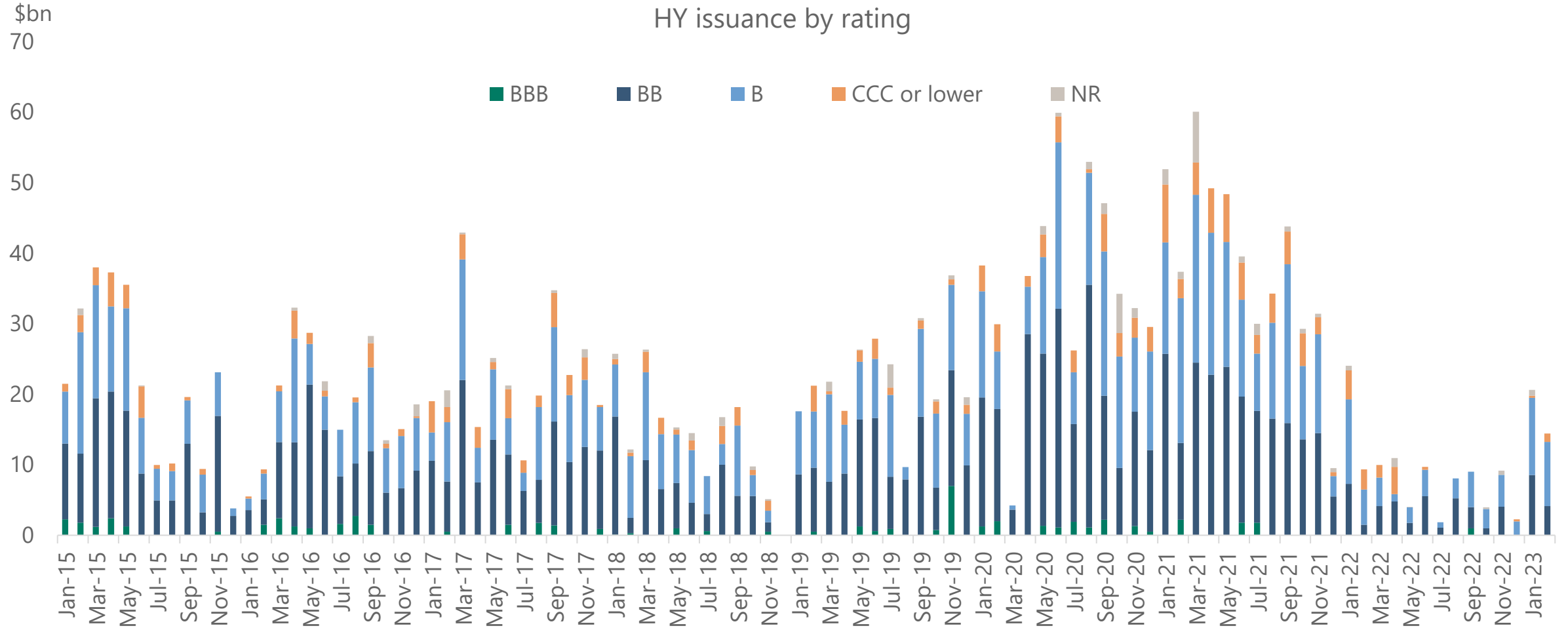
# IG issuance by rating



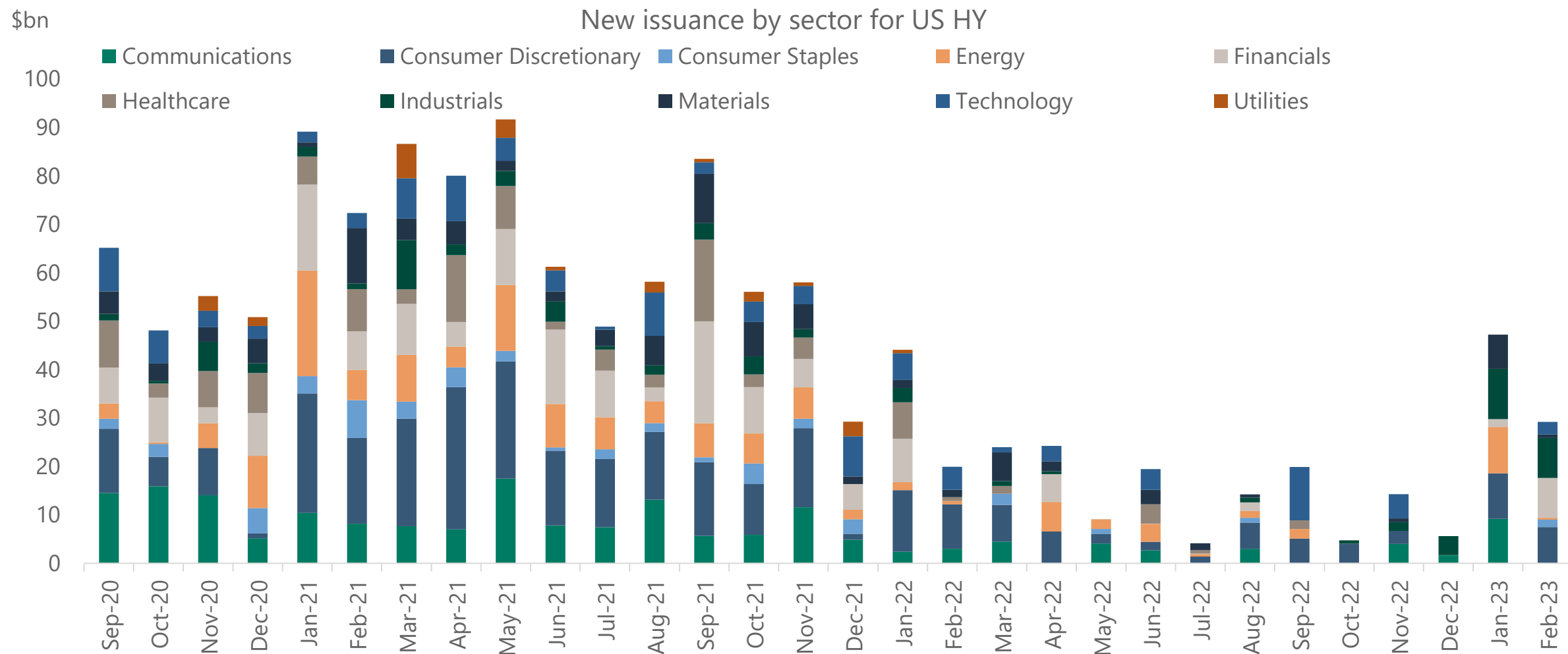
# Sector distribution of new IG issuance



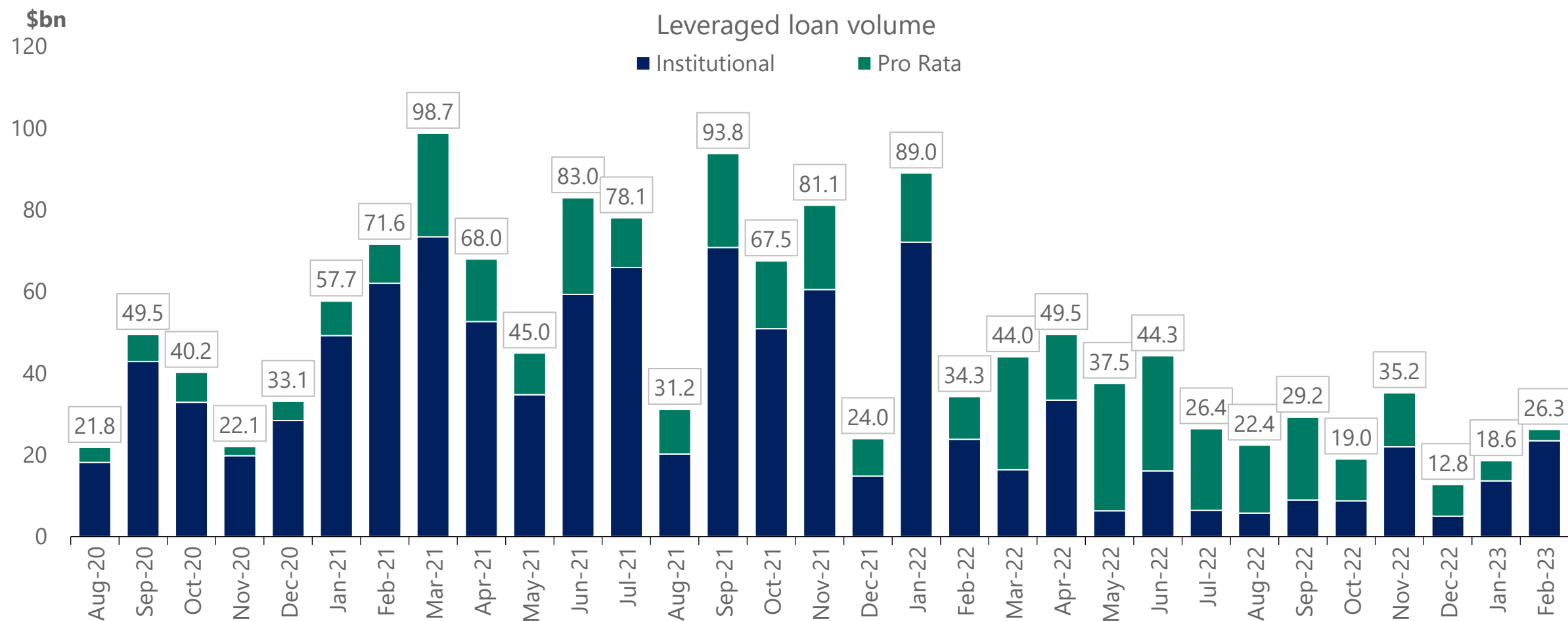
# HY issuance by rating



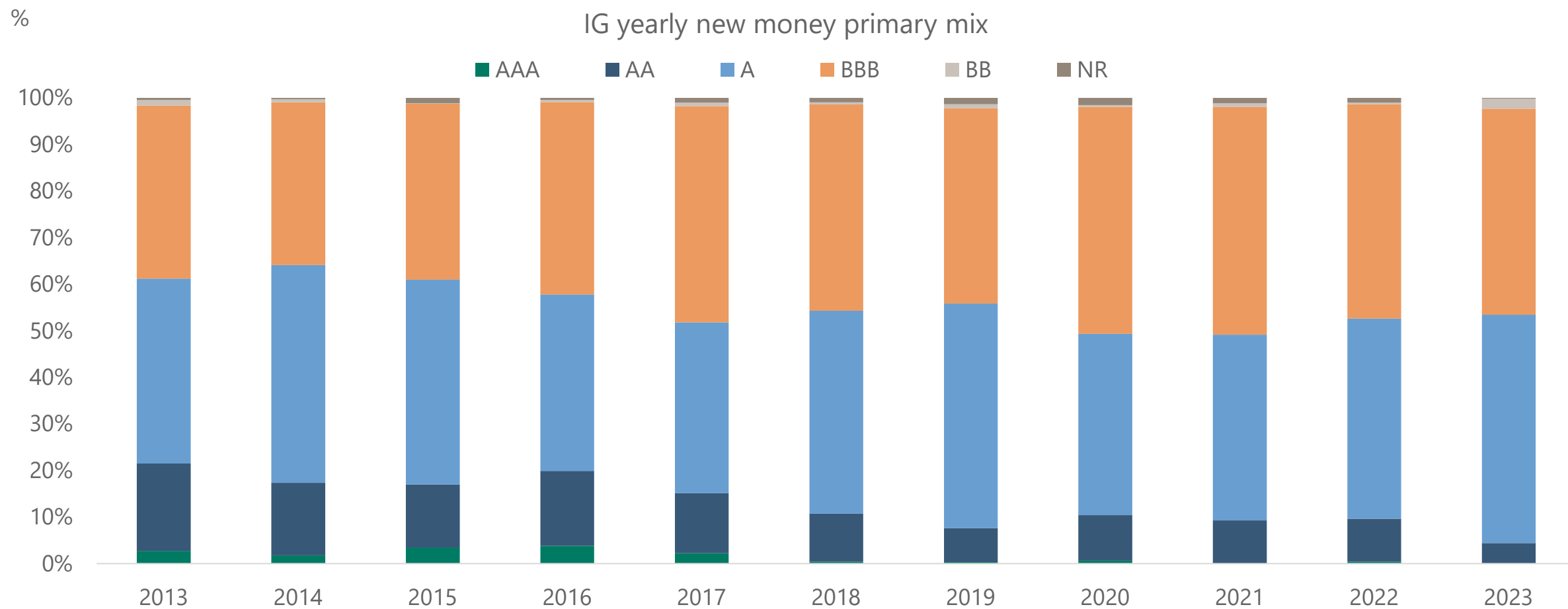
# Sector distribution of new HY issuance



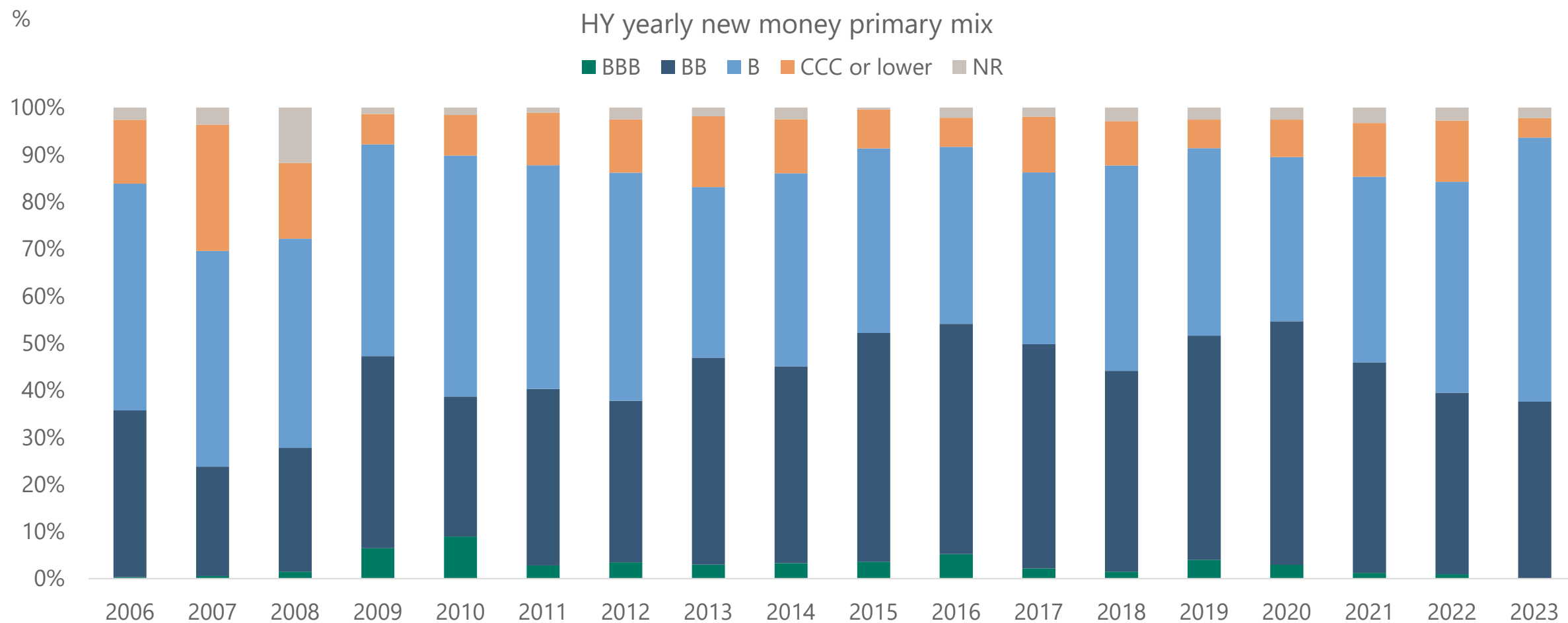
# Leveraged loan volume



# IG new money primary mix

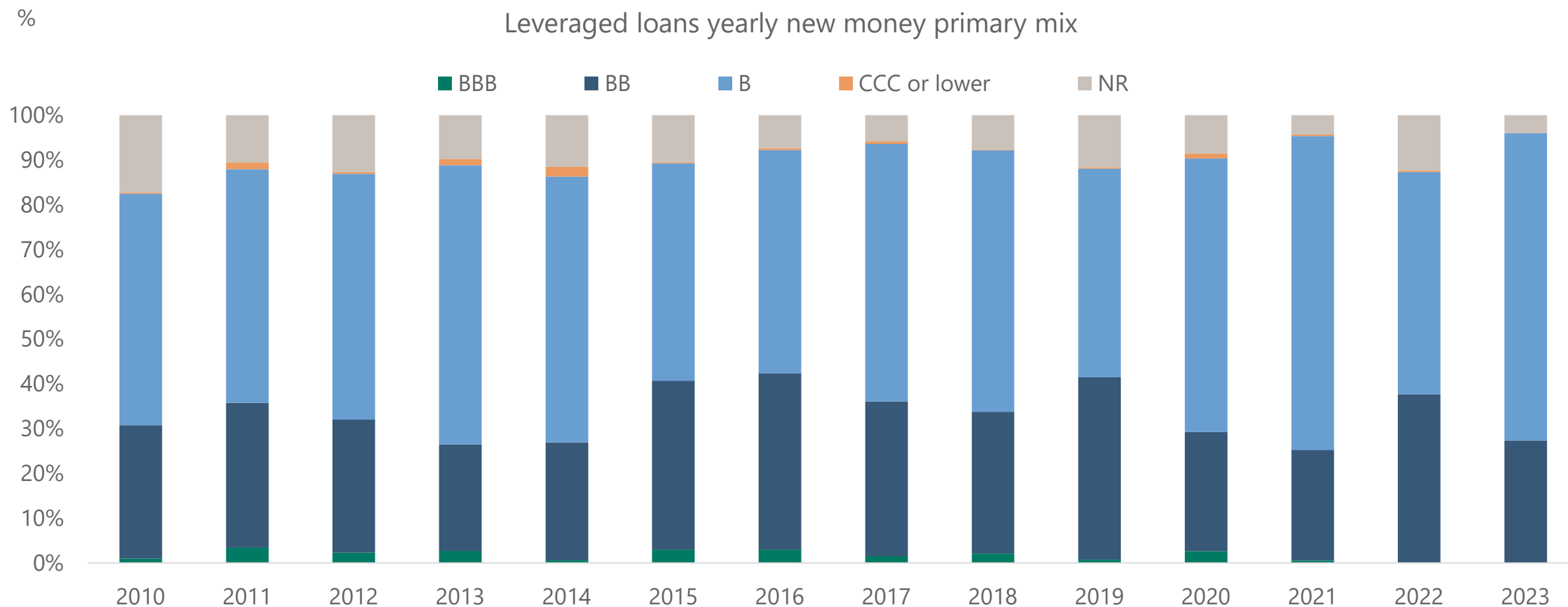


# HY new money primary mix

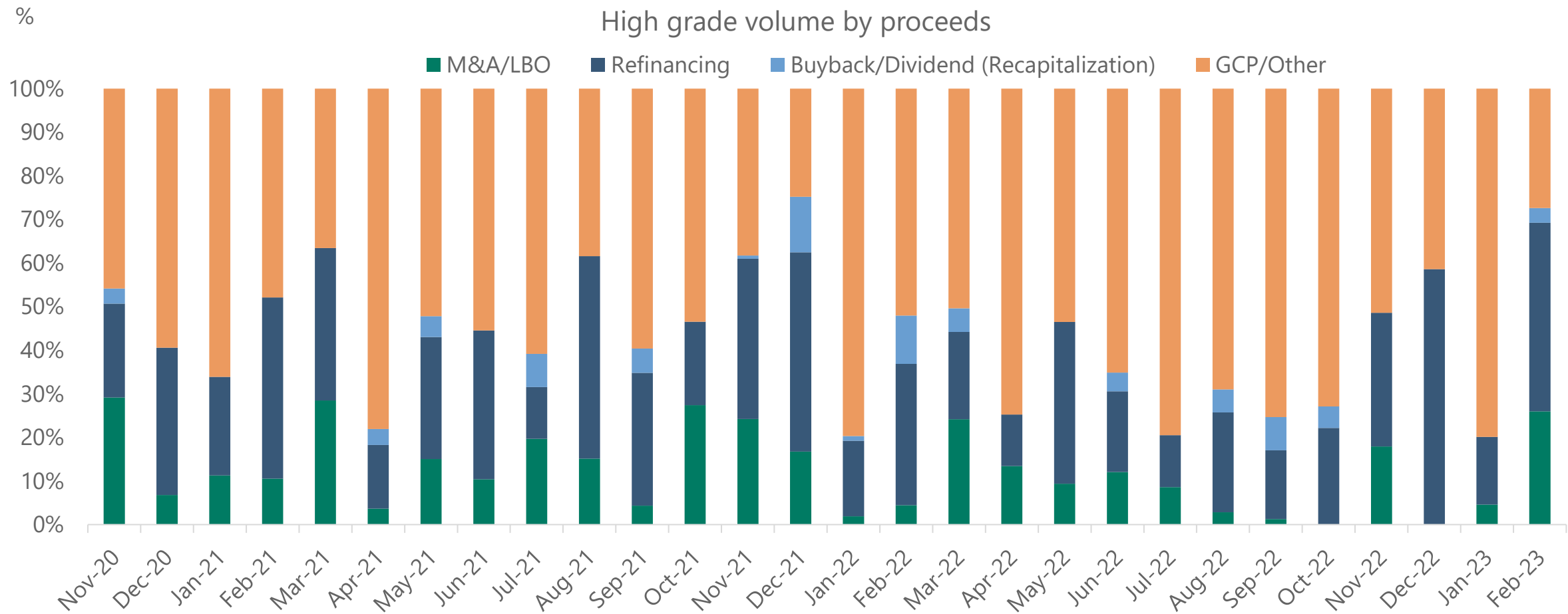




# Loans new money primary mix

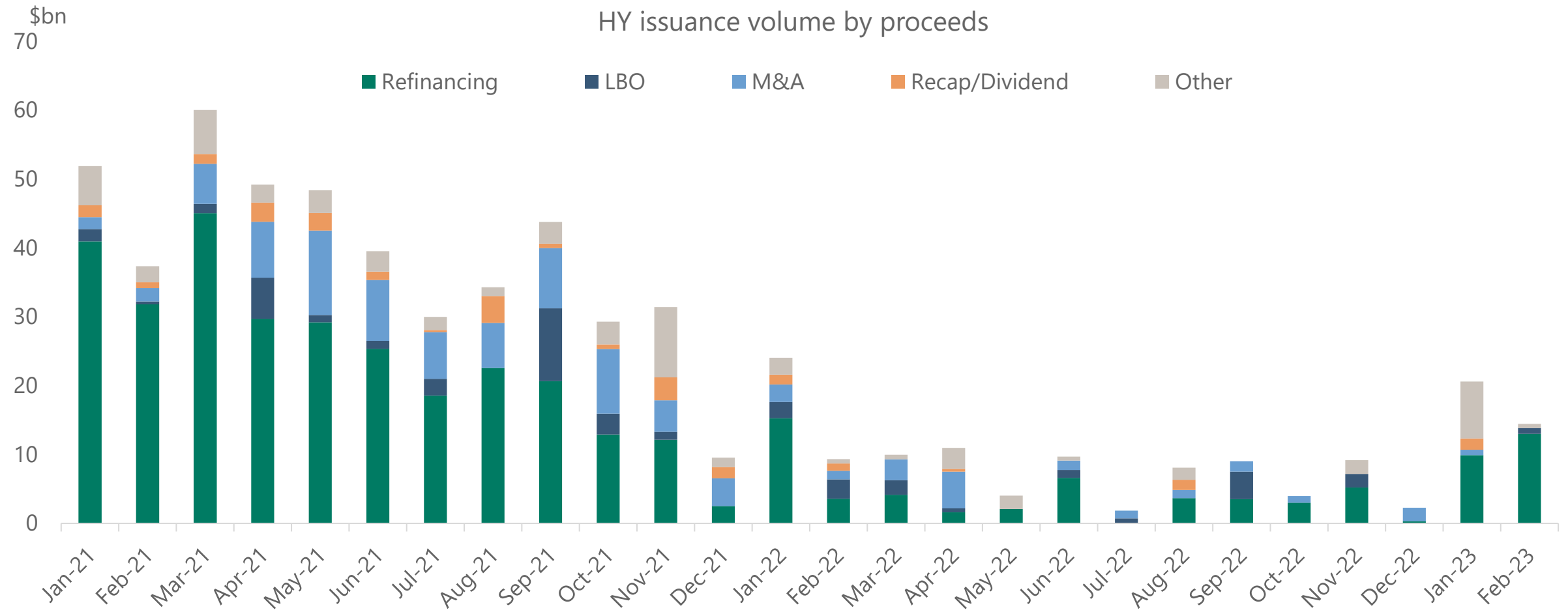


# High grade volume by proceeds

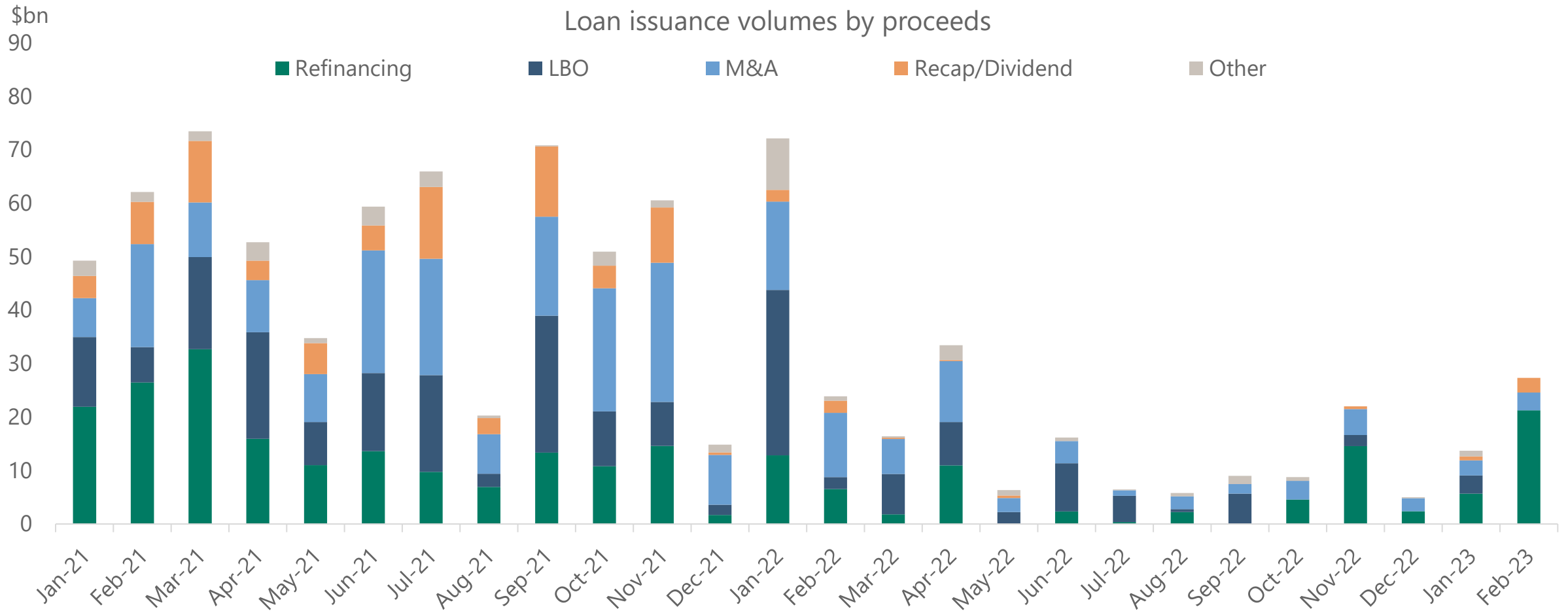


Source: S&P LCD, Apollo Chief Economist

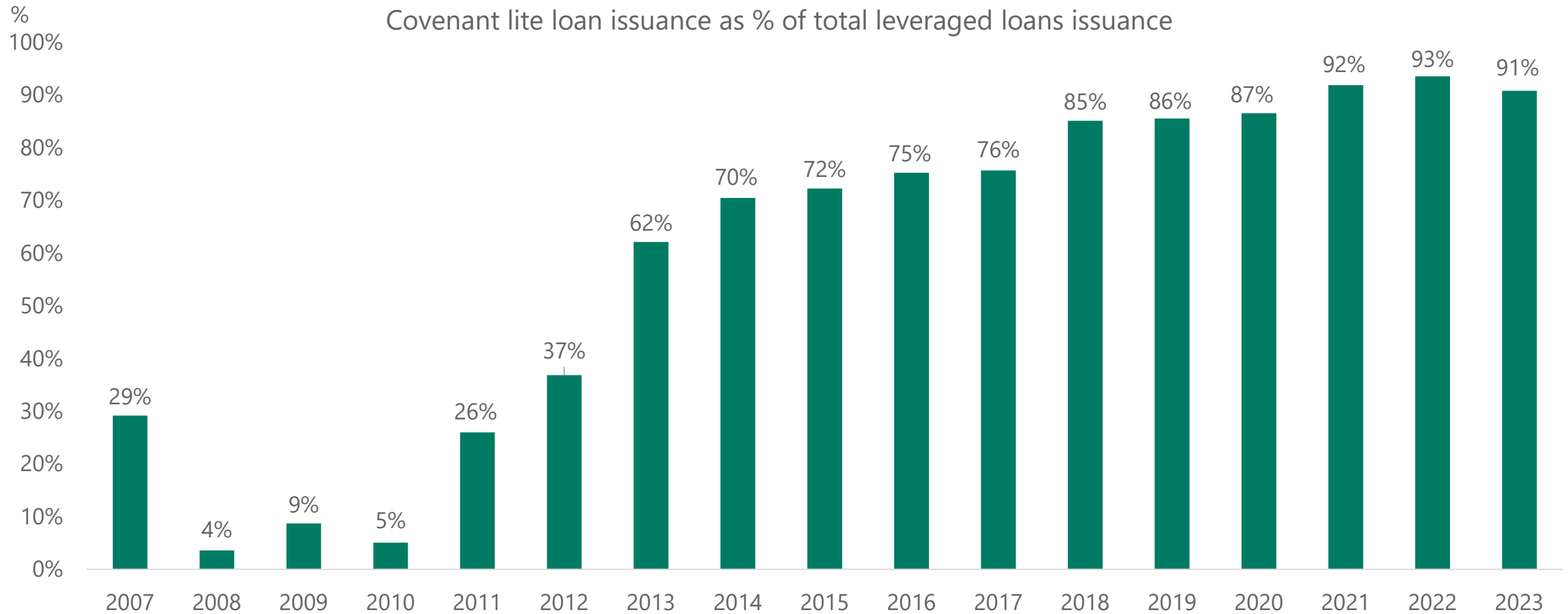
# High yield volumes by proceeds



# Loan volumes by proceeds

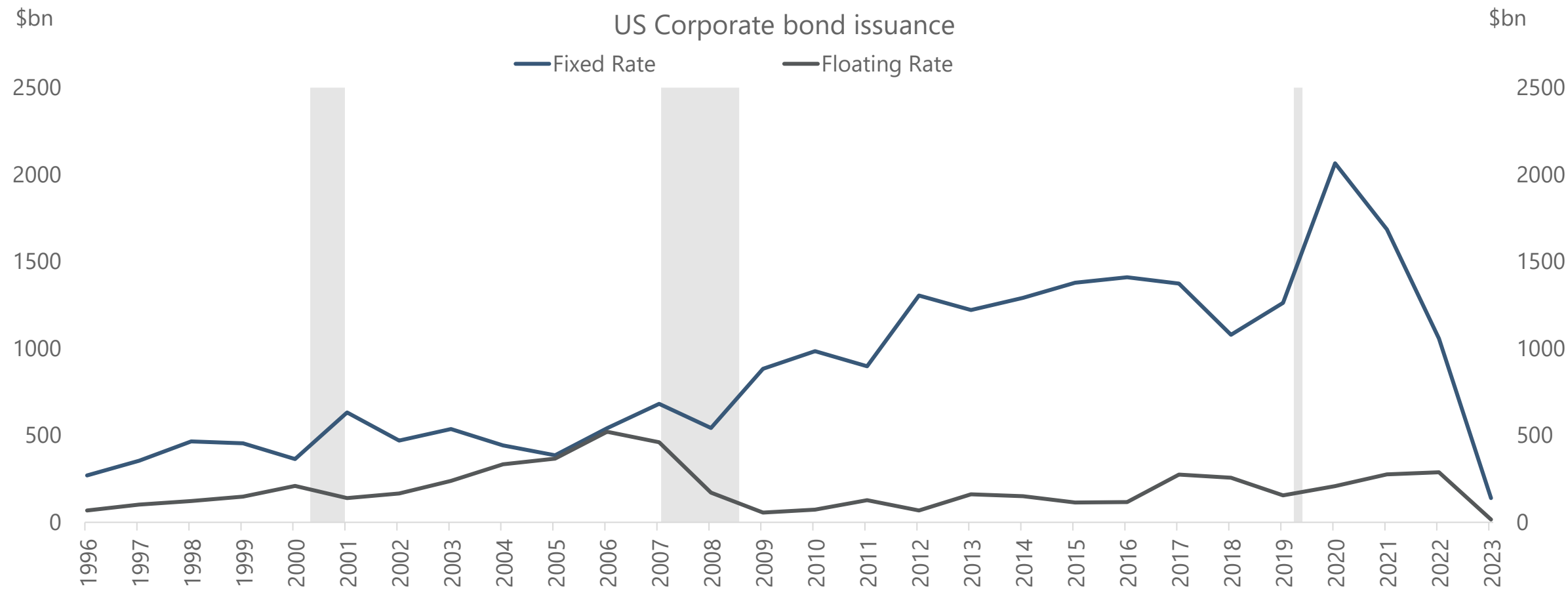


# Covenant lite loan issuance



Source: S&P LCD, Apollo Chief Economist.. Note: A covenant-lite loan is a type of financing with fewer restrictions on the borrower and fewer protections for the lender, often used in leveraged buyouts. Data as of 28<sup>th</sup> February 2023

# Corporate bond issuance

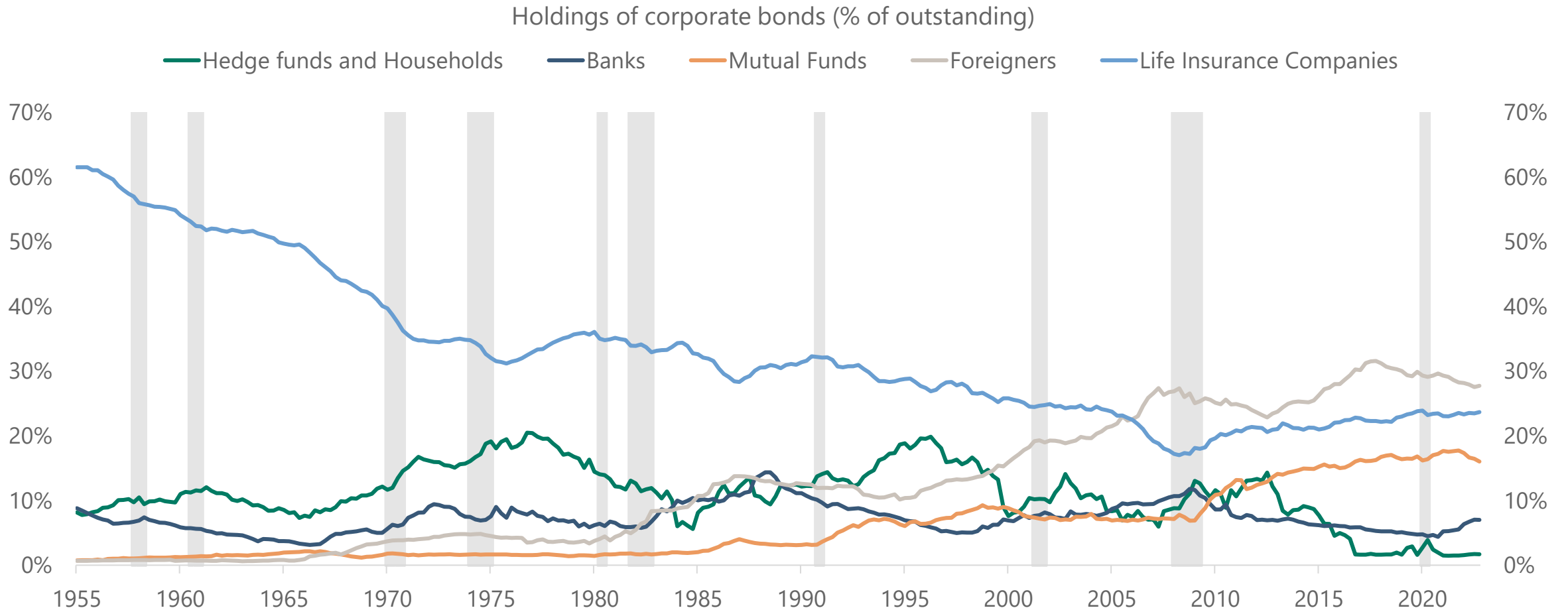


Source: SIFMA, Apollo Chief Economist.

Corporate bond holdings

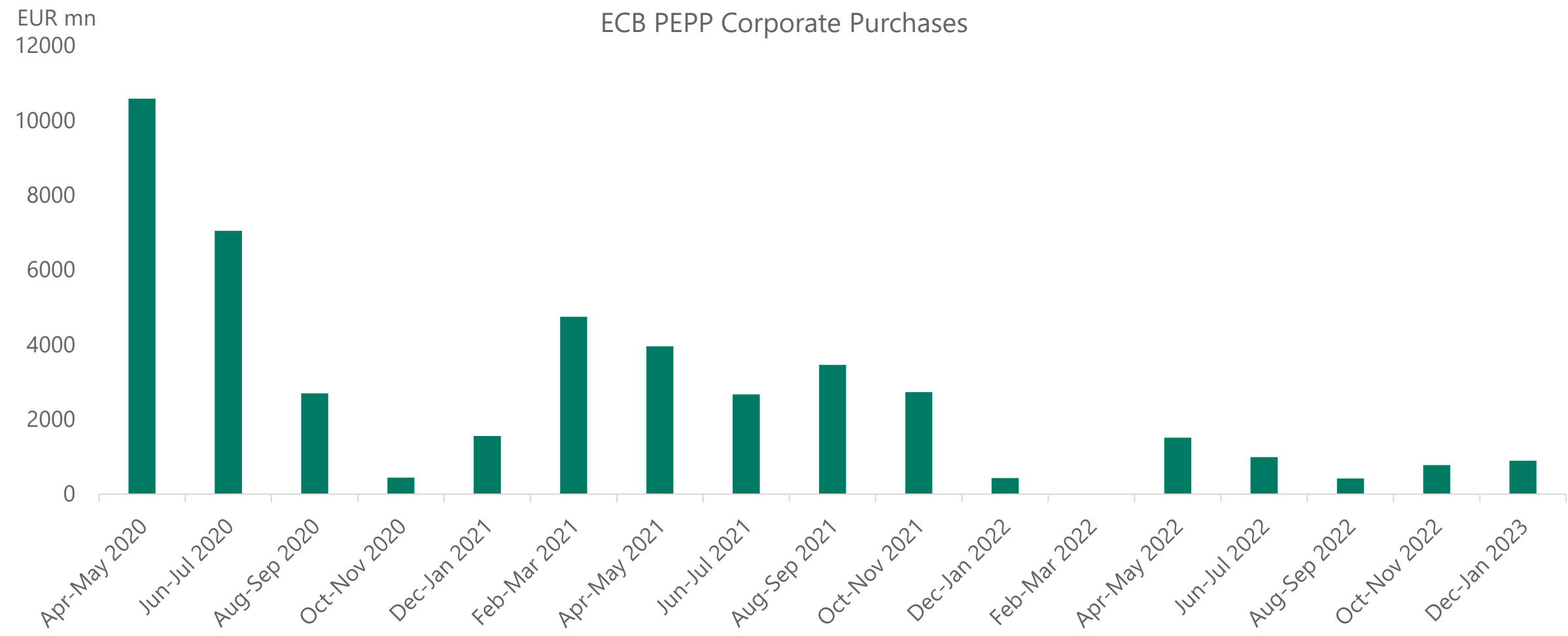


# The biggest holder of US corporate bonds is foreigners



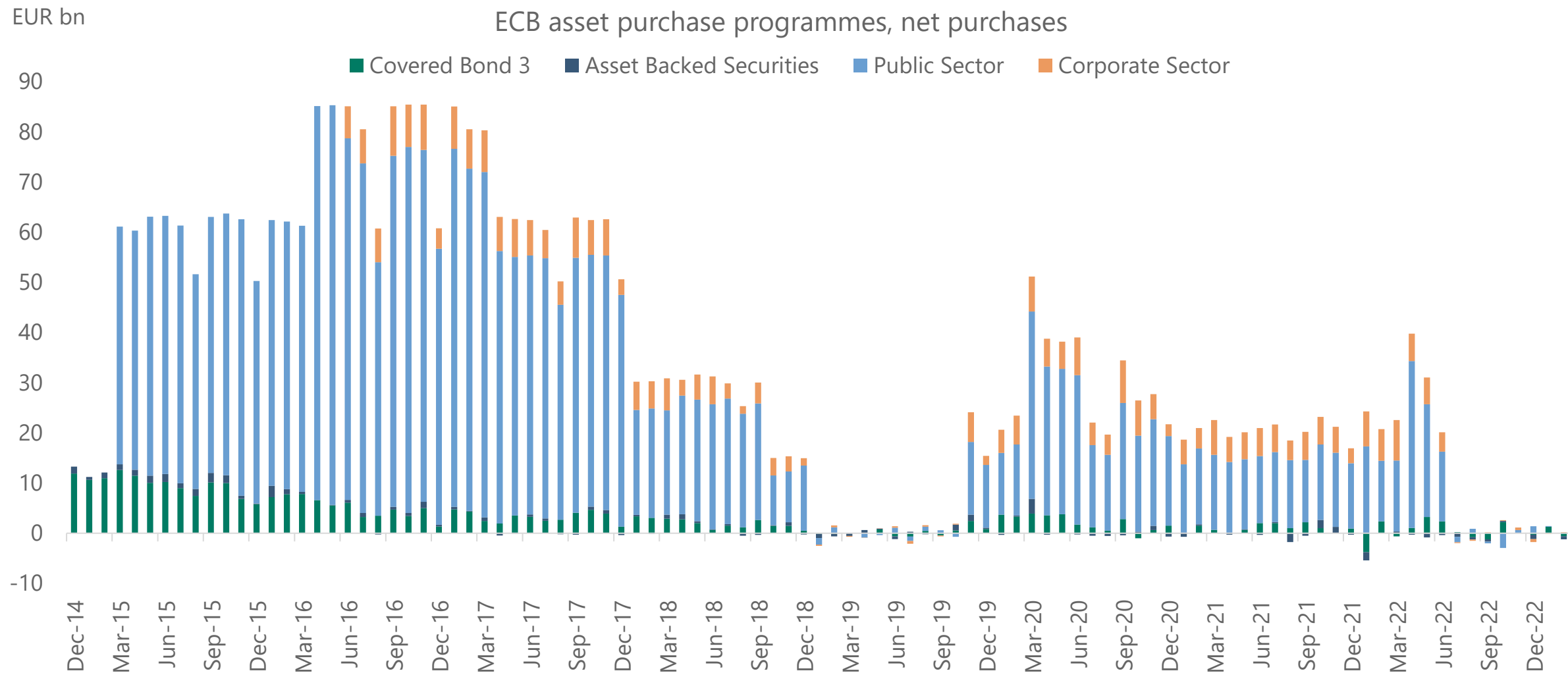


# ECB purchases of corporate bonds



Source: ECB, Bloomberg, Apollo Chief Economist

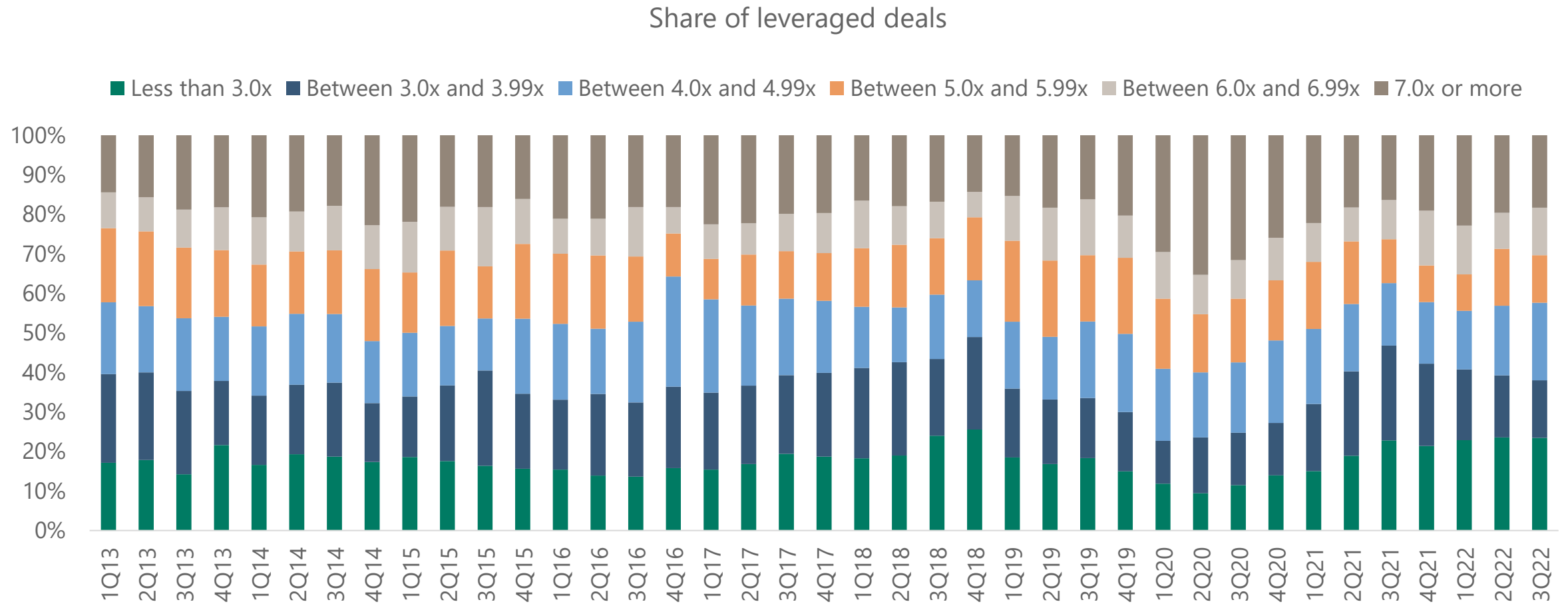
# ECB QE ending



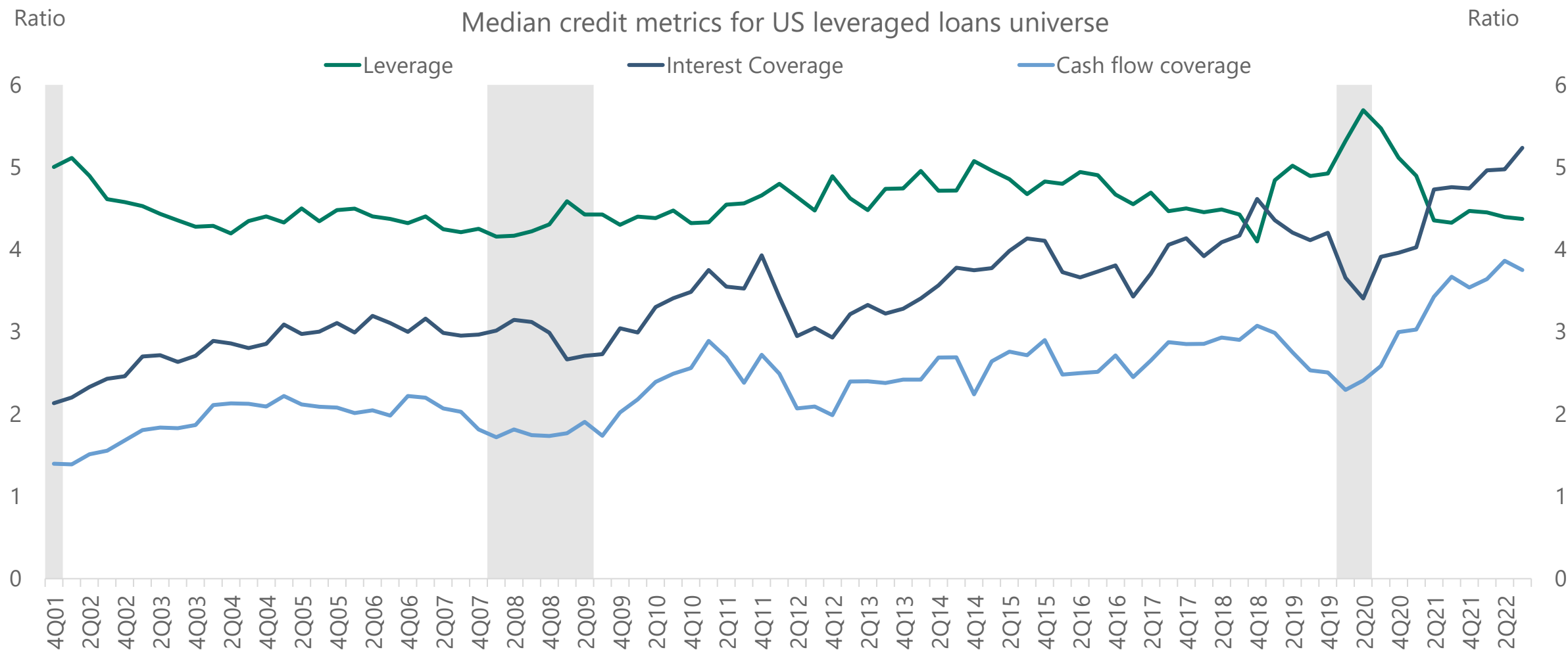
Loans



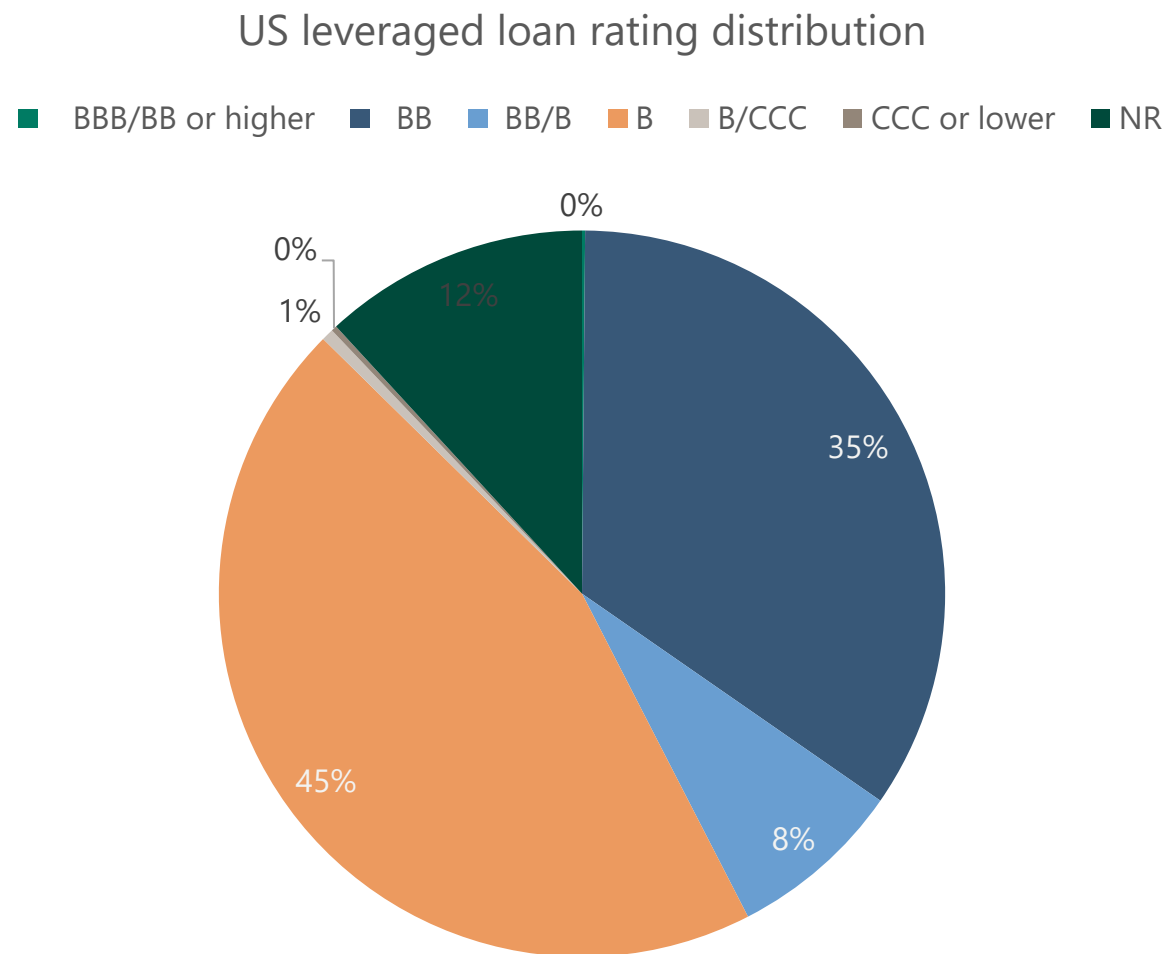
# Leveraged loan deals, by multiple



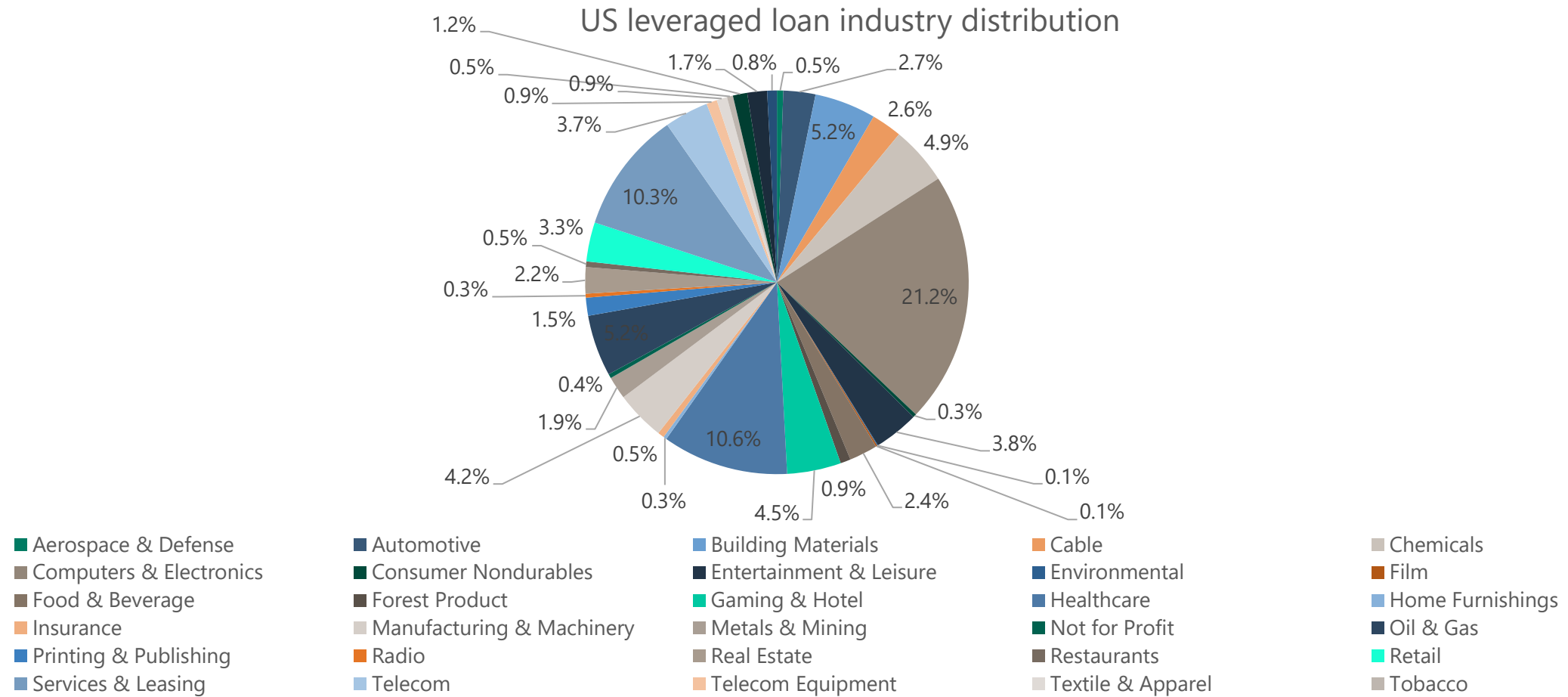
# Credit metrics for leveraged loan deals



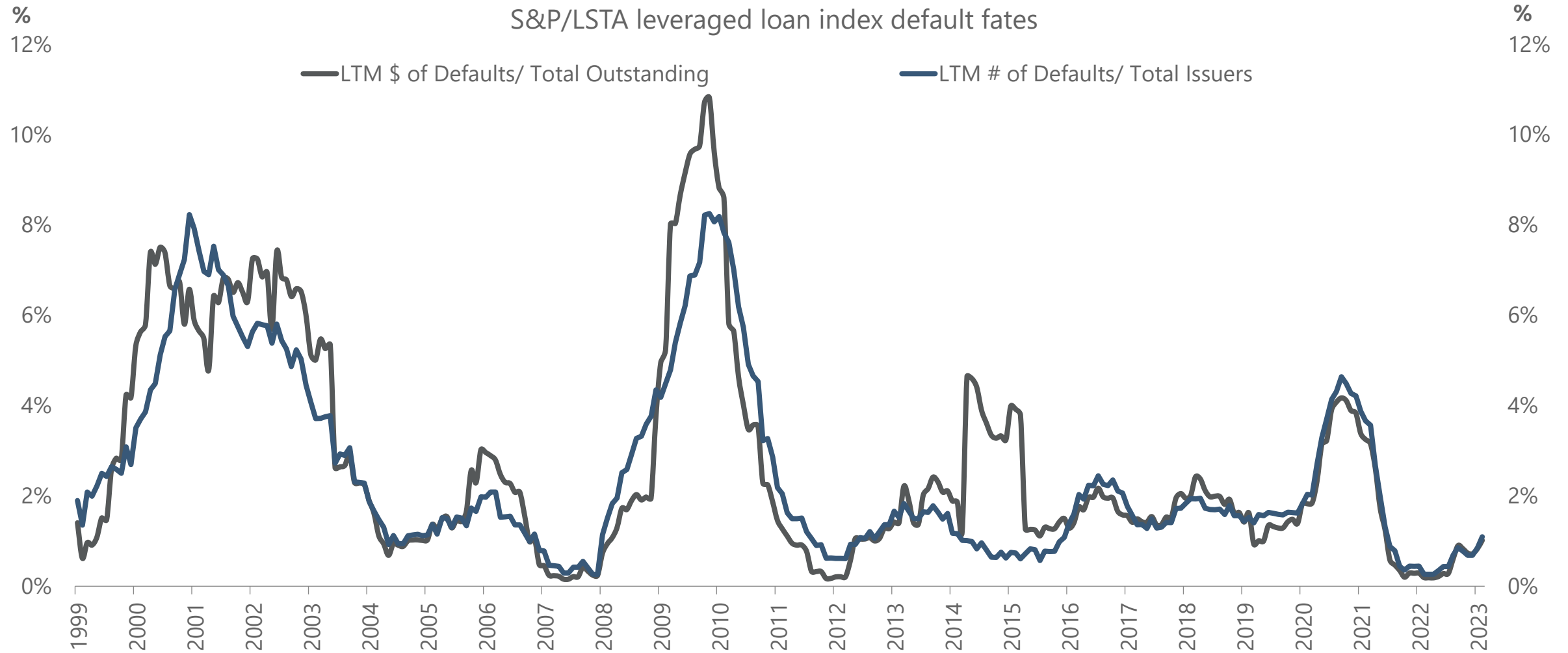
# Leveraged loans rating distribution, 2022Q4



# Leveraged loans distribution, by industry, 2022Q4

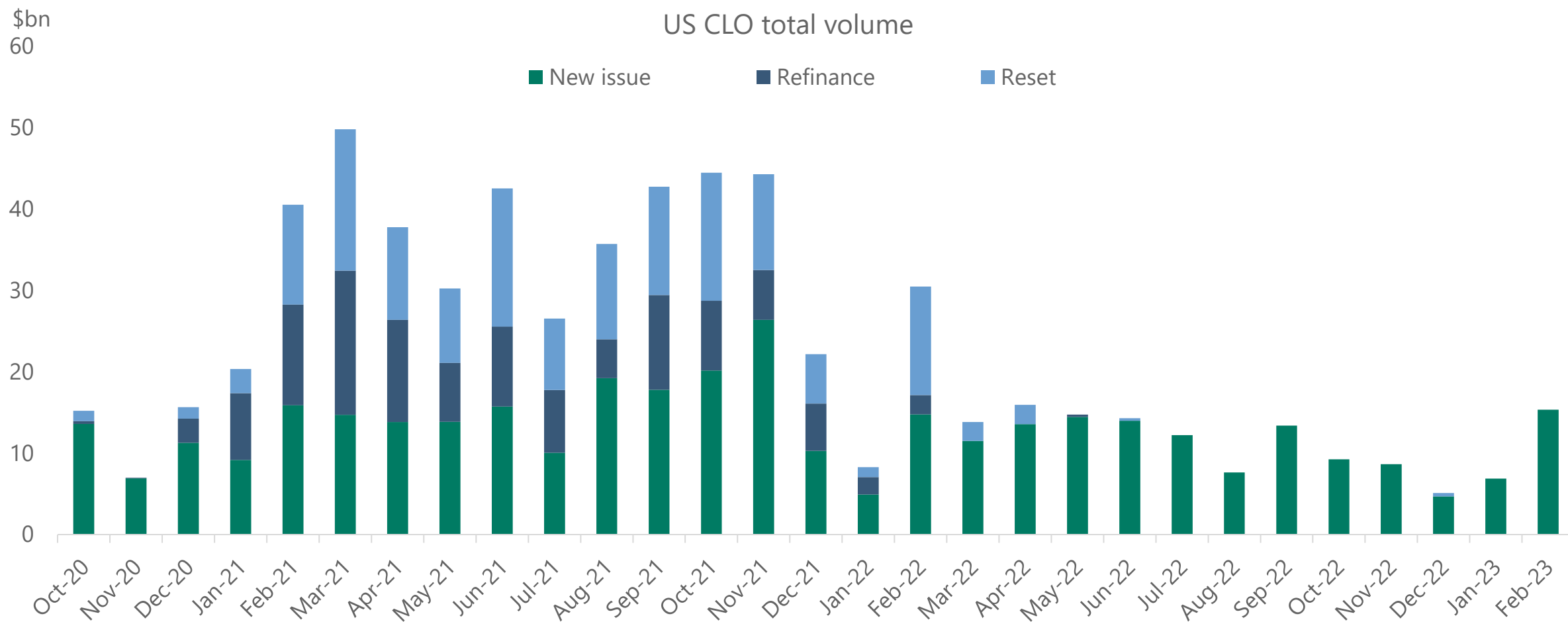


# Leveraged loan index default rates starting to rise





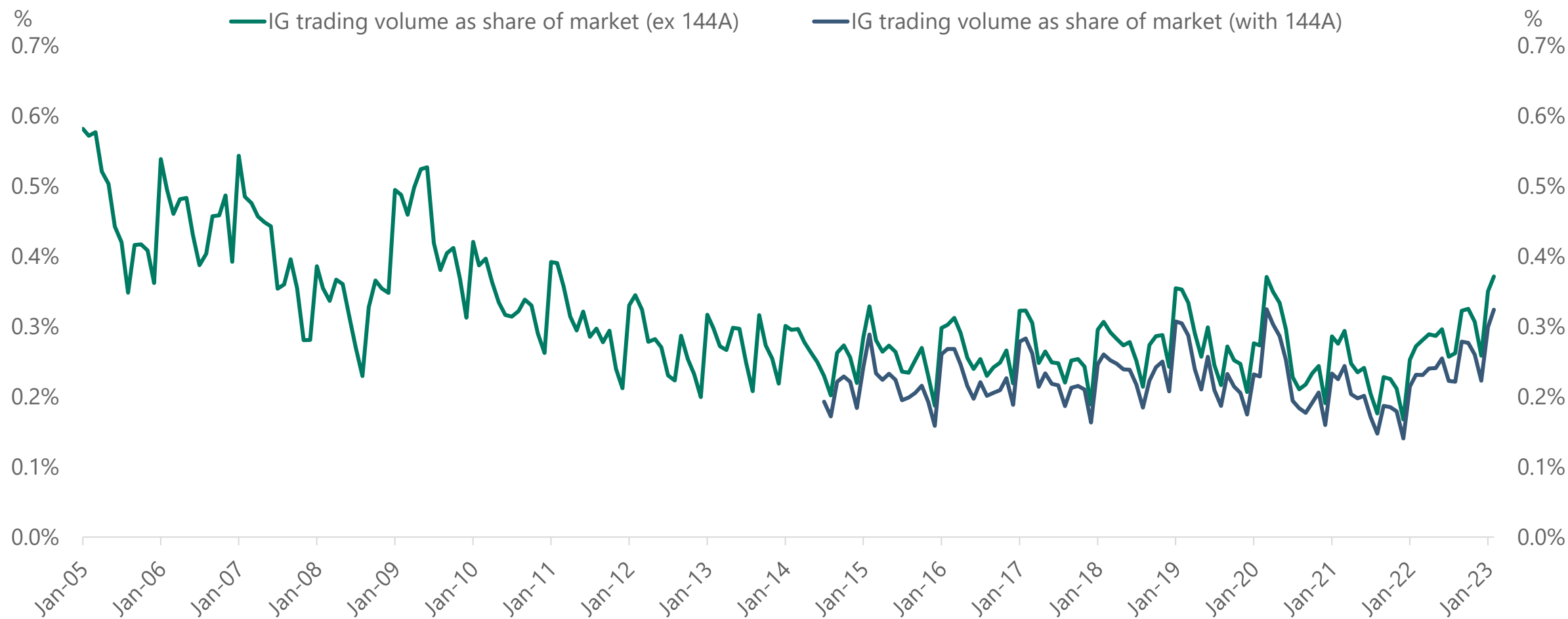
# US CLO total volume



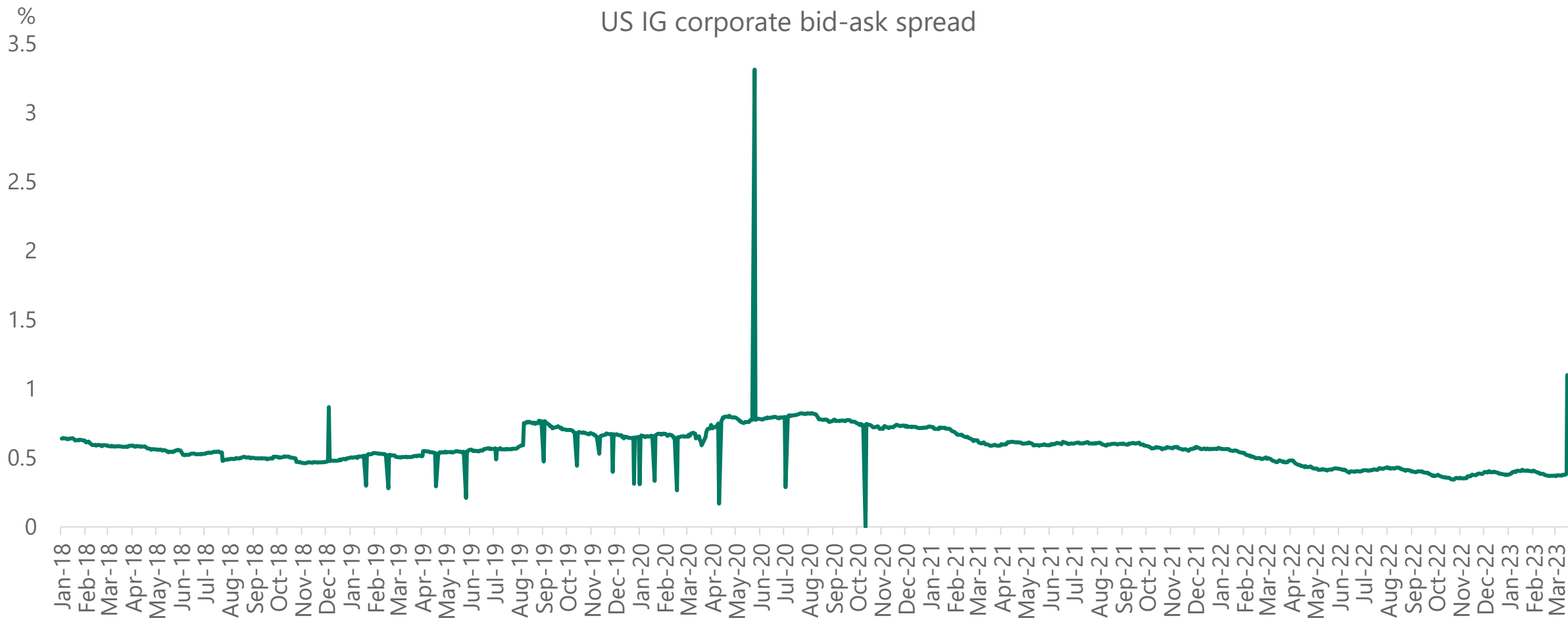
# Liquidity in US credit markets



# IG trading liquidity

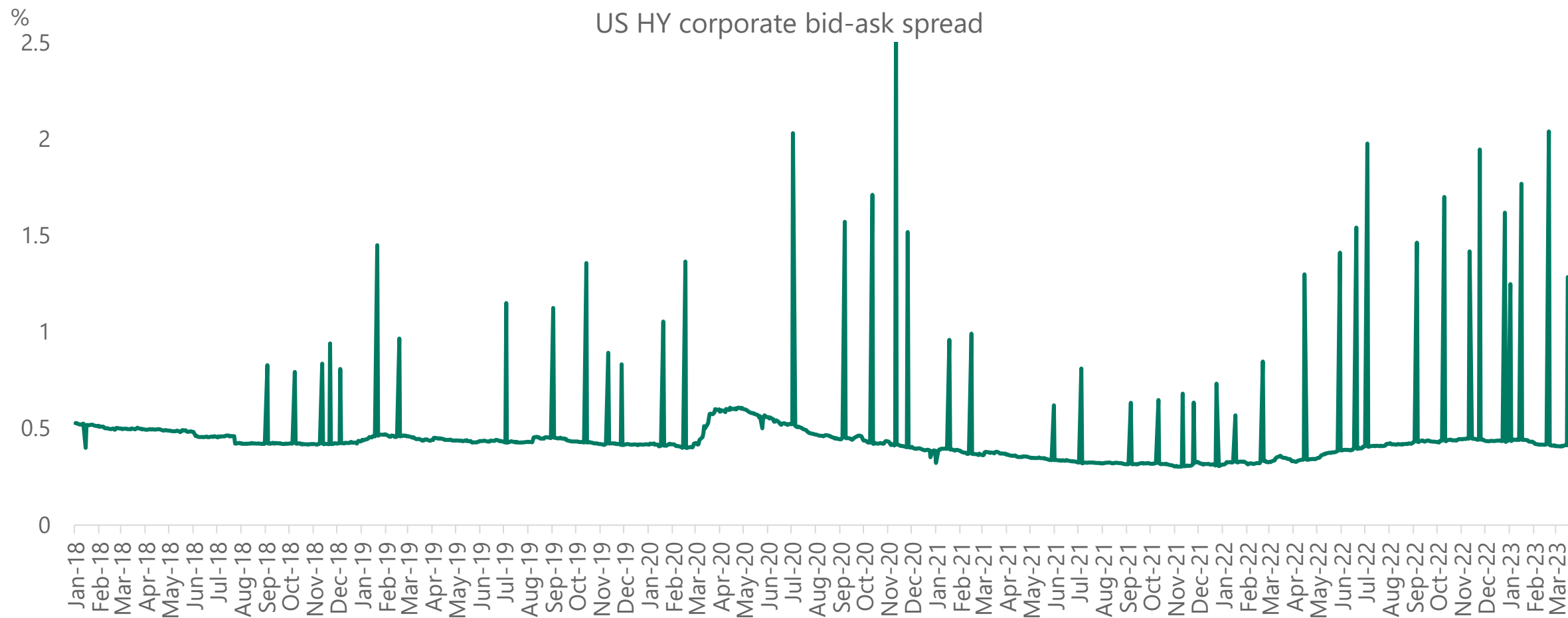


# Bid-ask spread for US IG

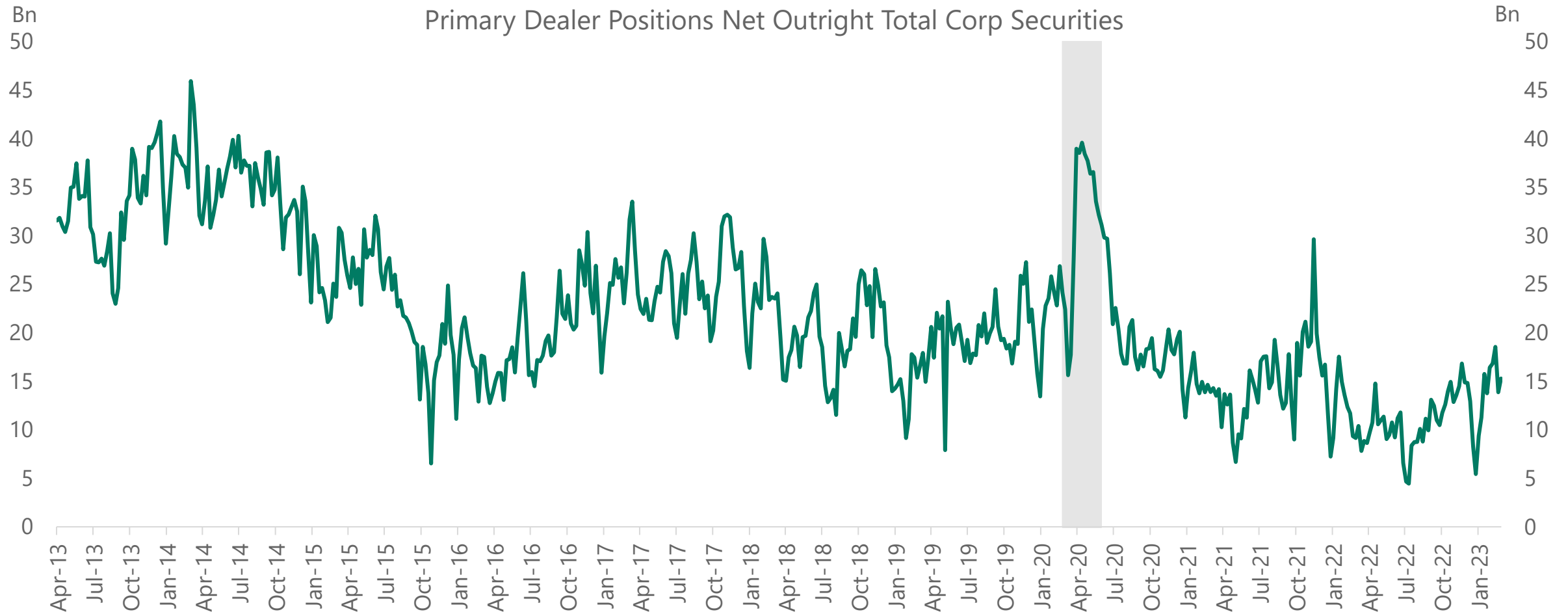


Source: Bloomberg, Apollo Chief Economist. Note: The bid-ask spread is the weighted average of Bloomberg Barclays US IG Index

# Bid-ask spread for US HY



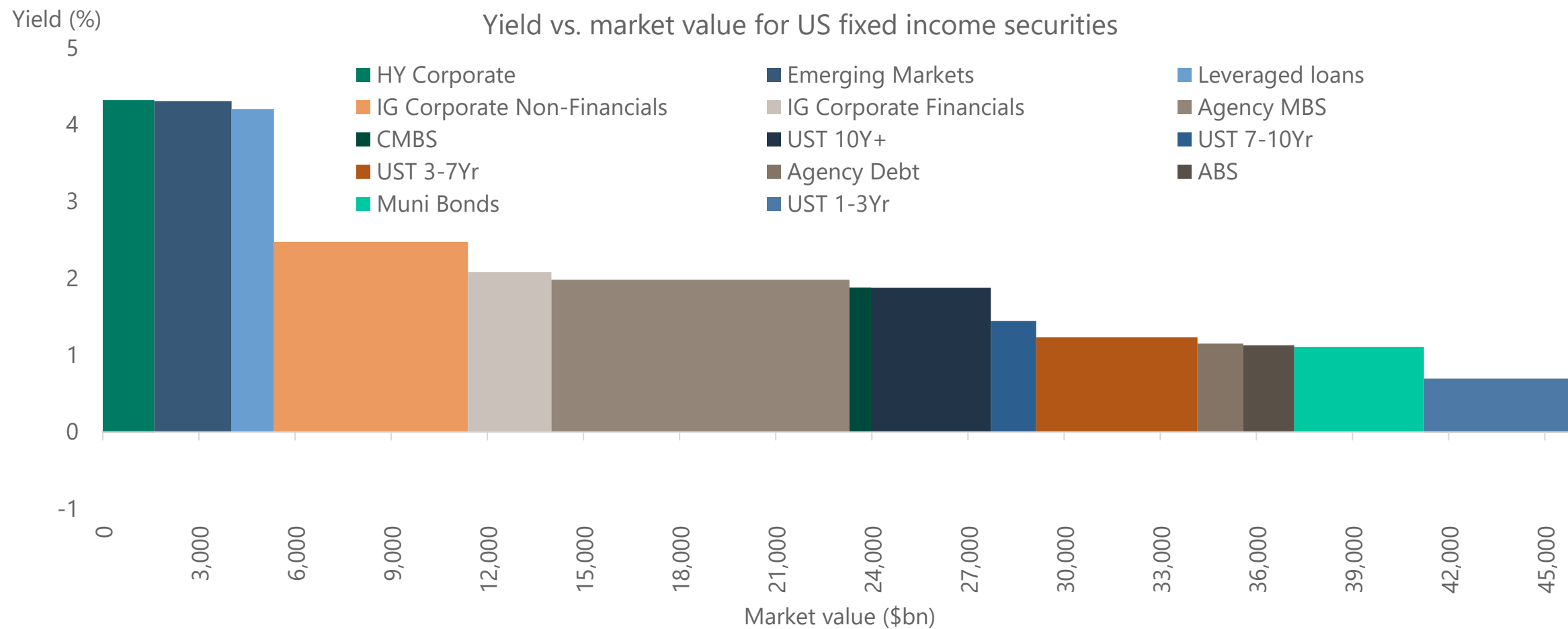
# Small uptrend in dealer inventory of corporate bonds (IG+HY)



# Credit markets in a broader perspective

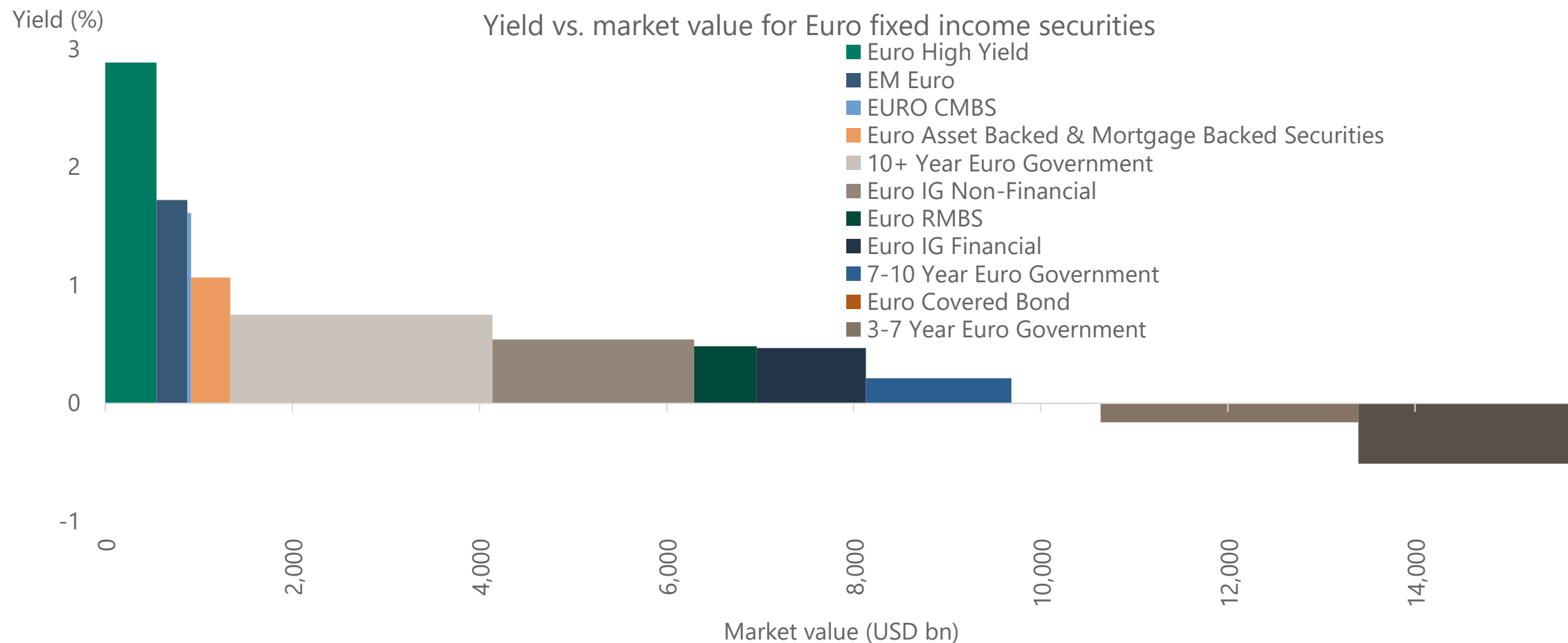


# US fixed income markets by yield and size

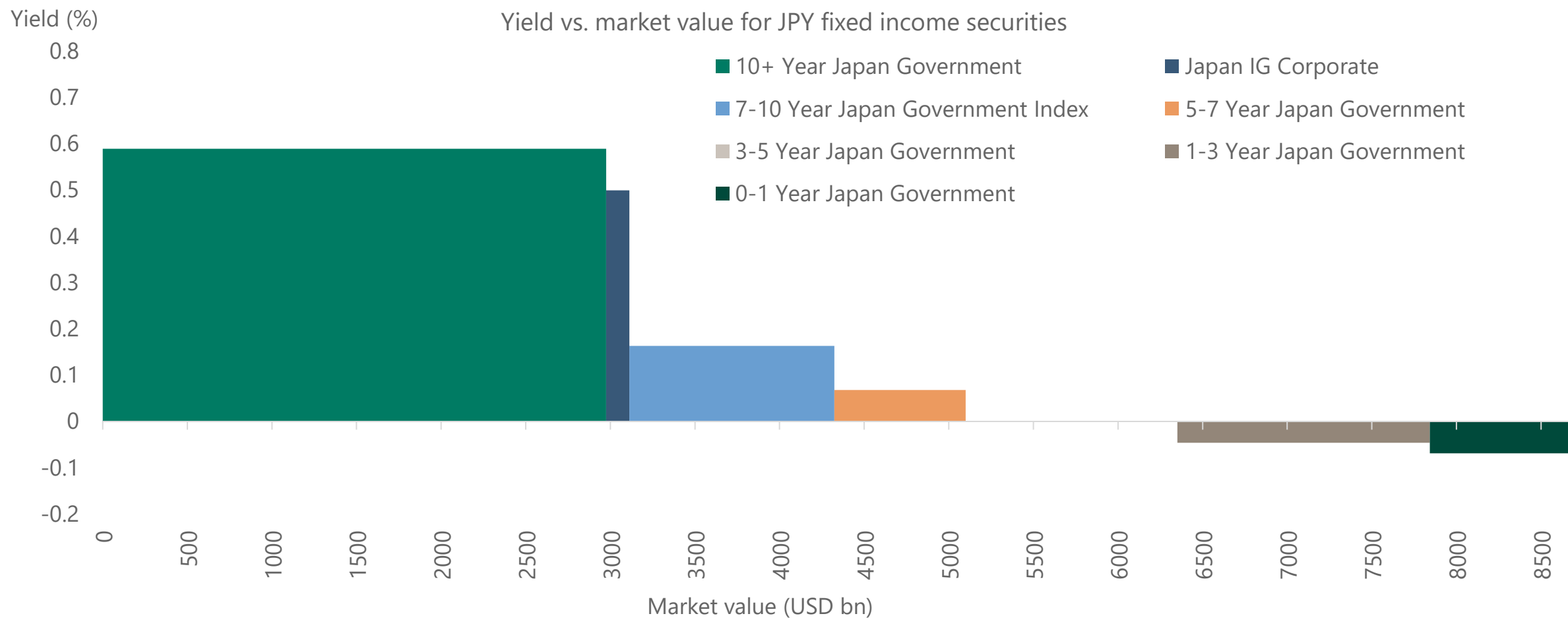




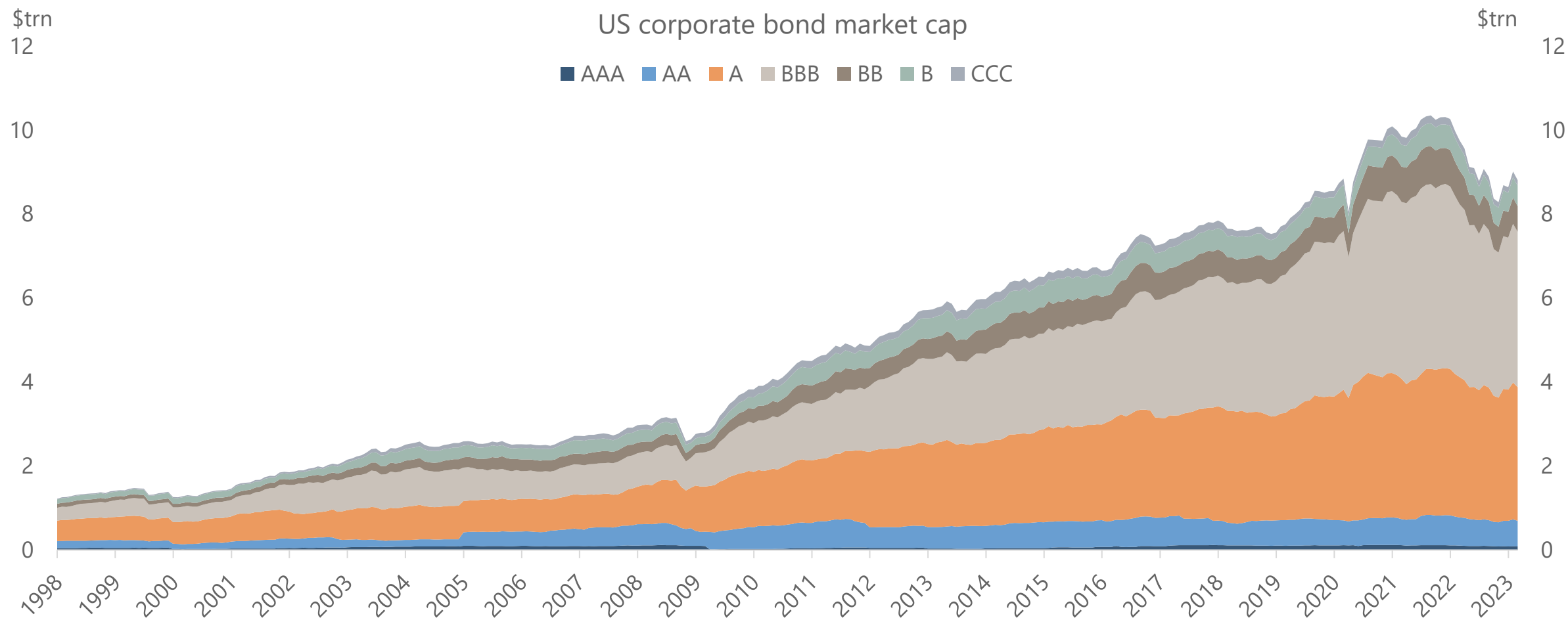
# European fixed income markets by yield and size



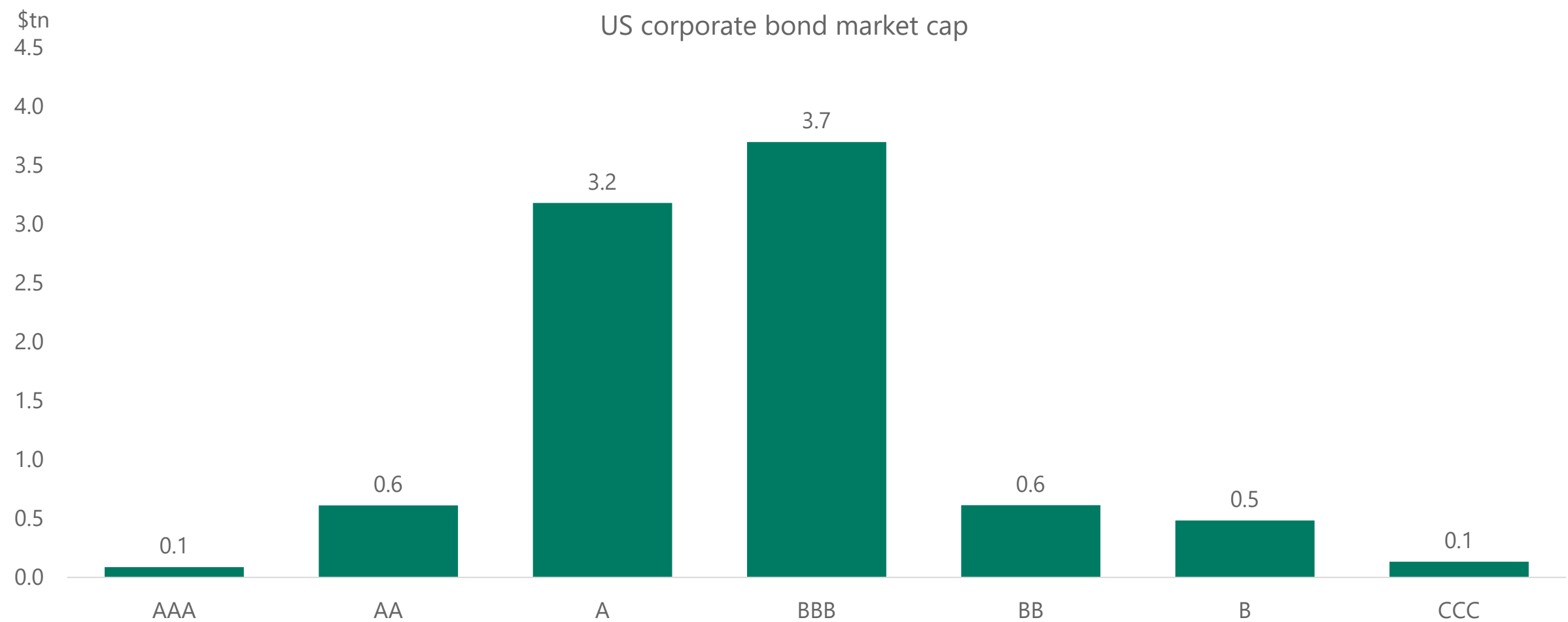
# Japanese fixed income markets by yield and size



# Market cap of US credit markets

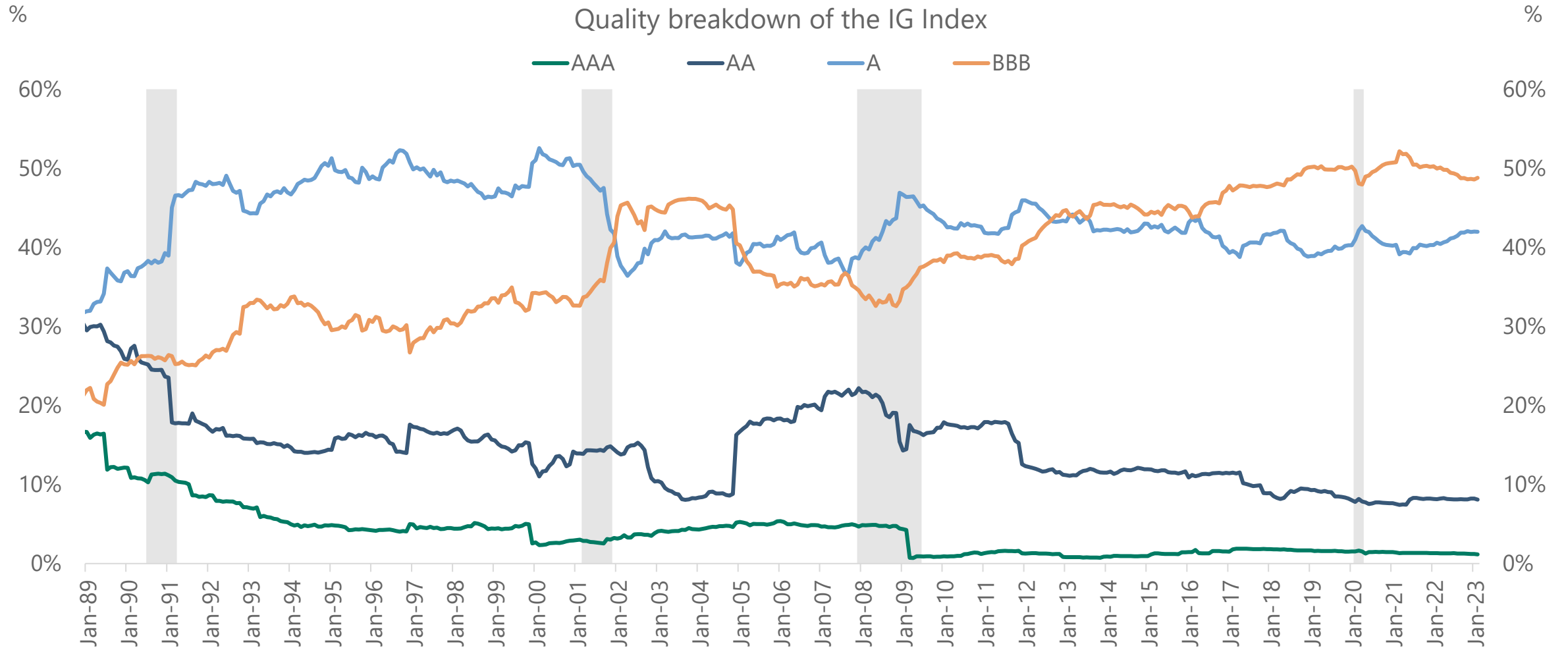


# Corporate bond market cap, by rating

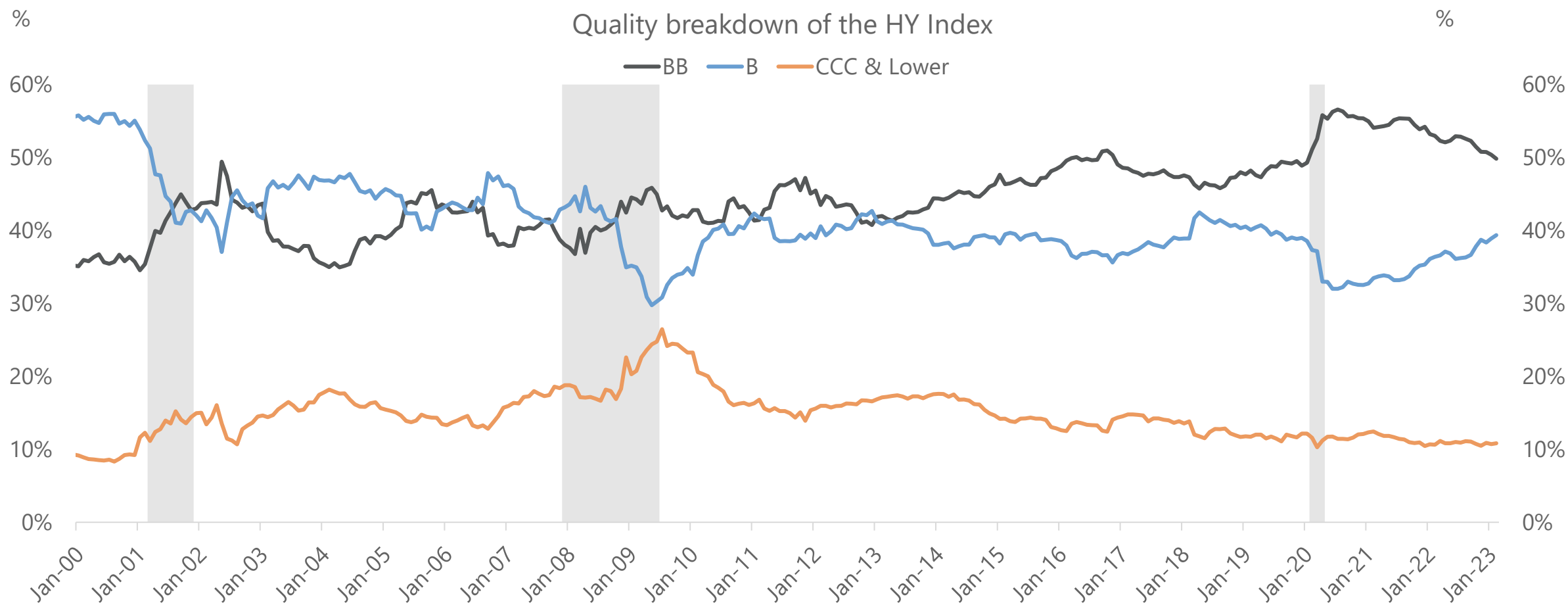


Source: ICE BofA, Bloomberg, Apollo Chief Economist. Data as of 28<sup>th</sup> February 2023

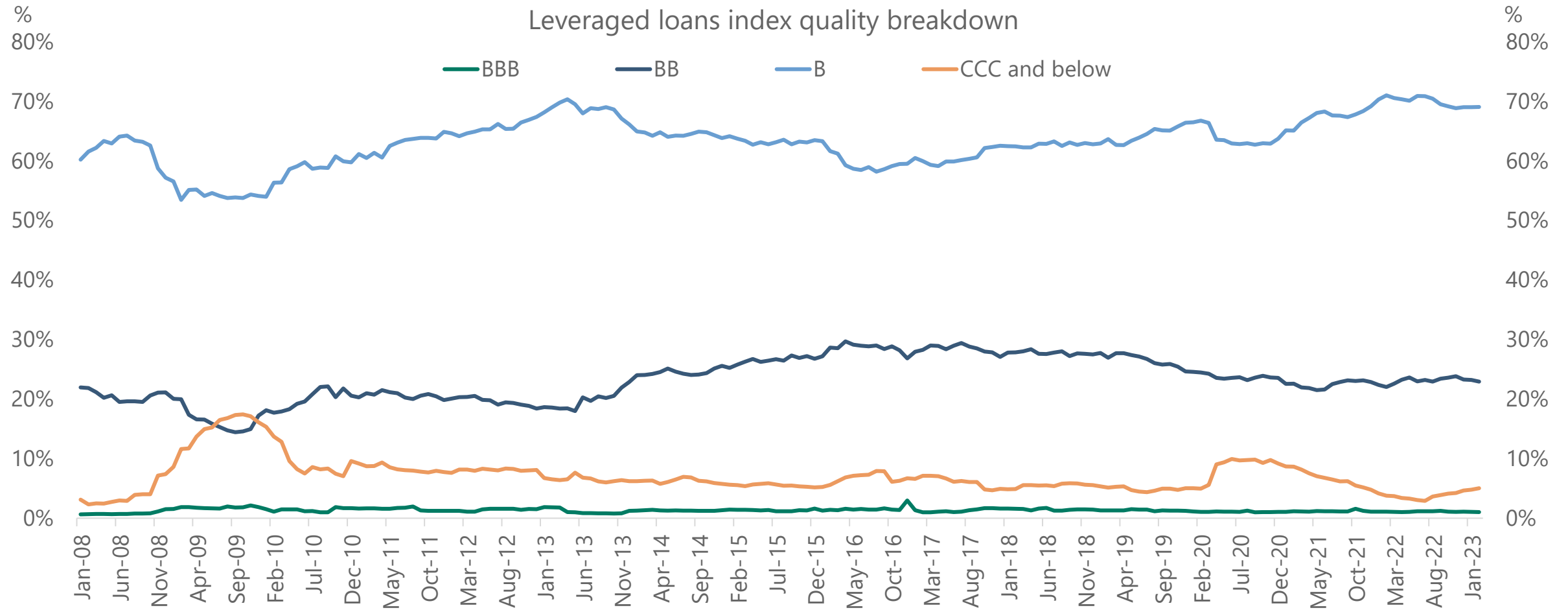
# Quality composition of the IG Index



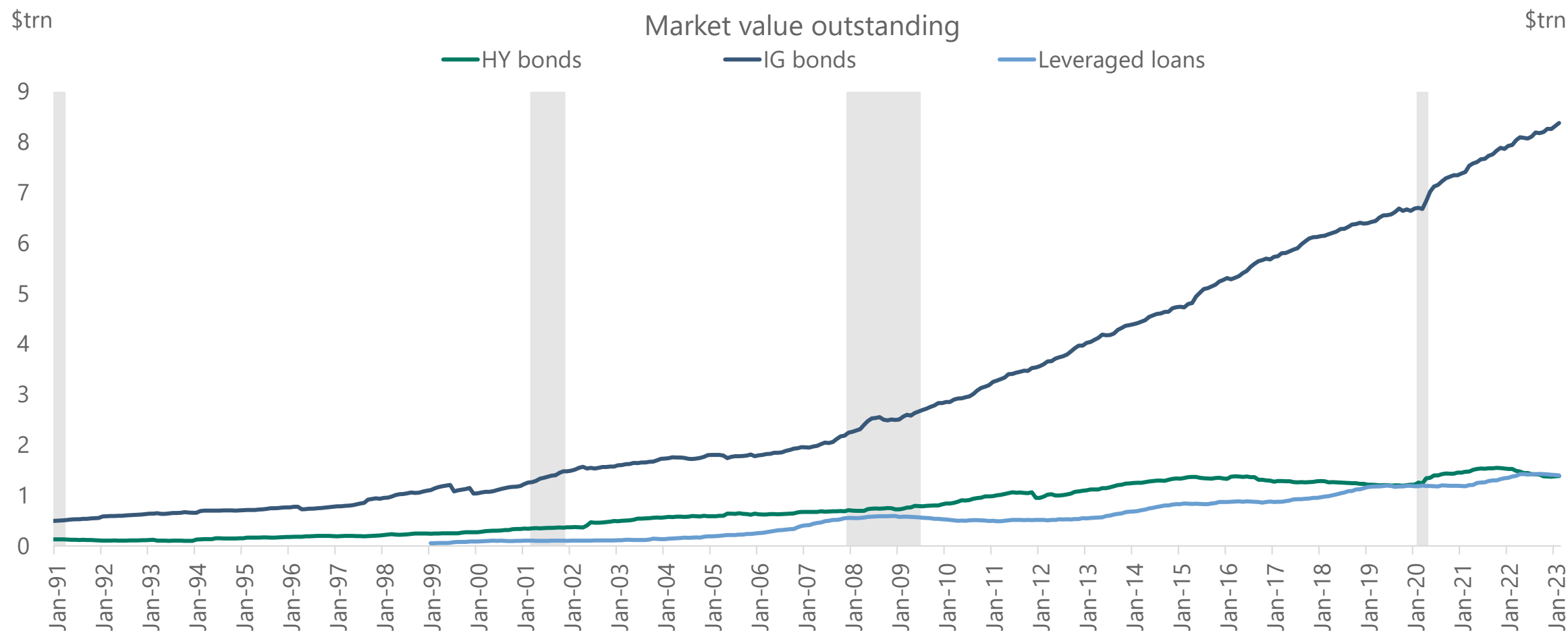
# Quality composition of the HY Index



# Quality composition of the leveraged loans index

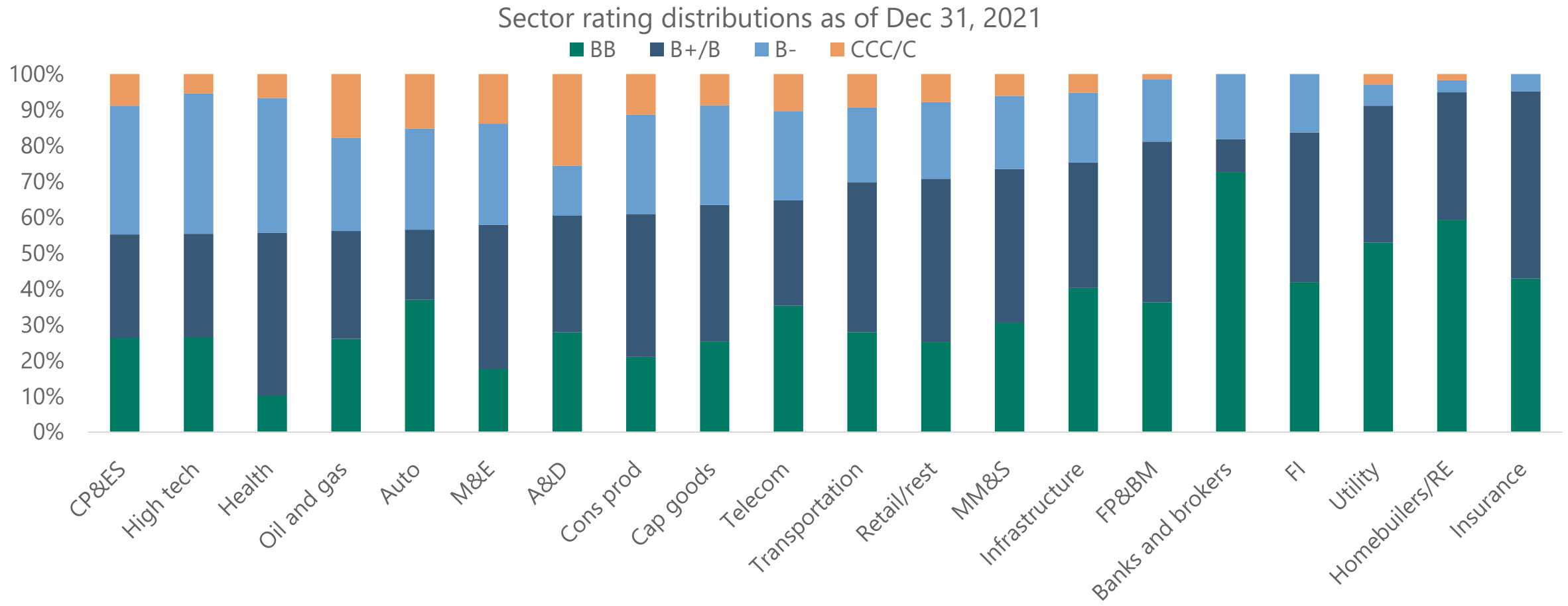


IG market is seven times bigger than HY and seven times bigger than the loan market



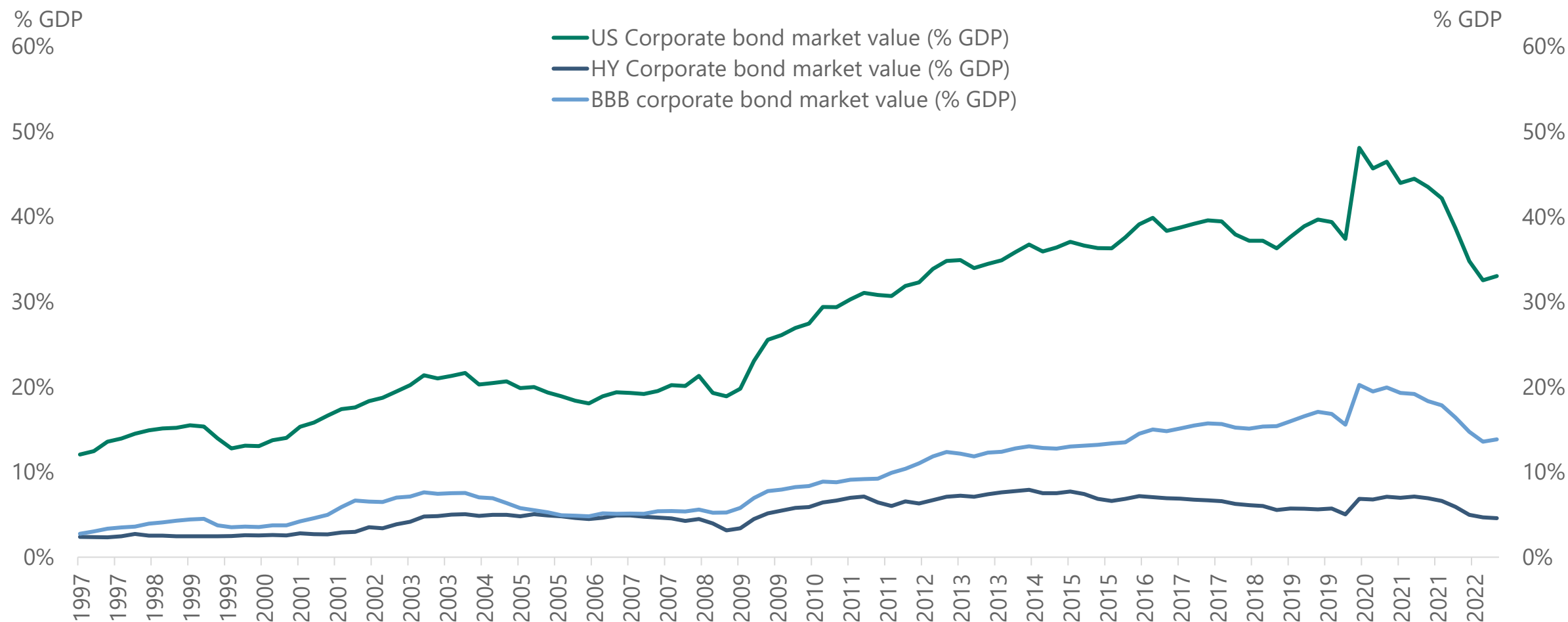


# HY sector rating distributions

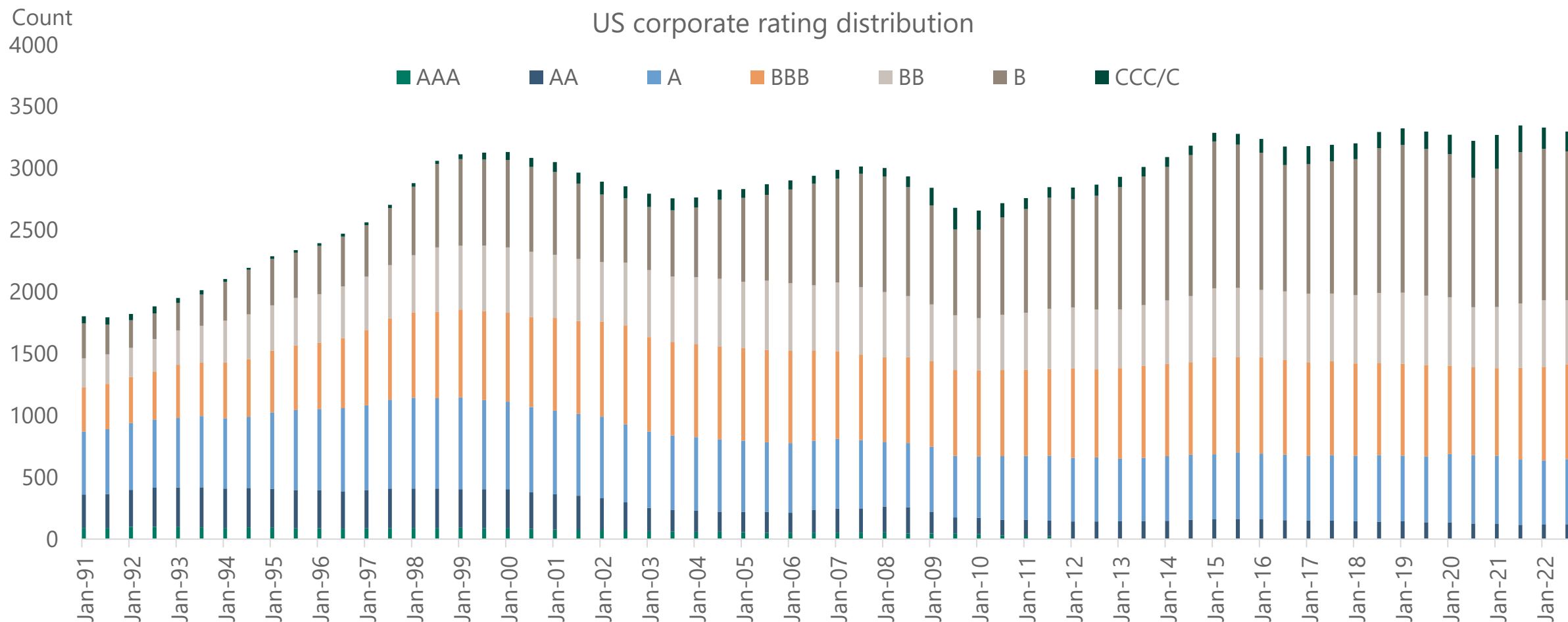


Source: S&P Global Ratings Research and S&P Global Market Intelligence's CreditPro®, Apollo Chief Economist. Note: Numbers in parentheses represent overall sector's proportion of the speculative-grade population. CP&ES--Chemicals, packaging, and environmental services. FP&BM--Forest products and building materials. Home/RE--Homebuilders and real estate companies.

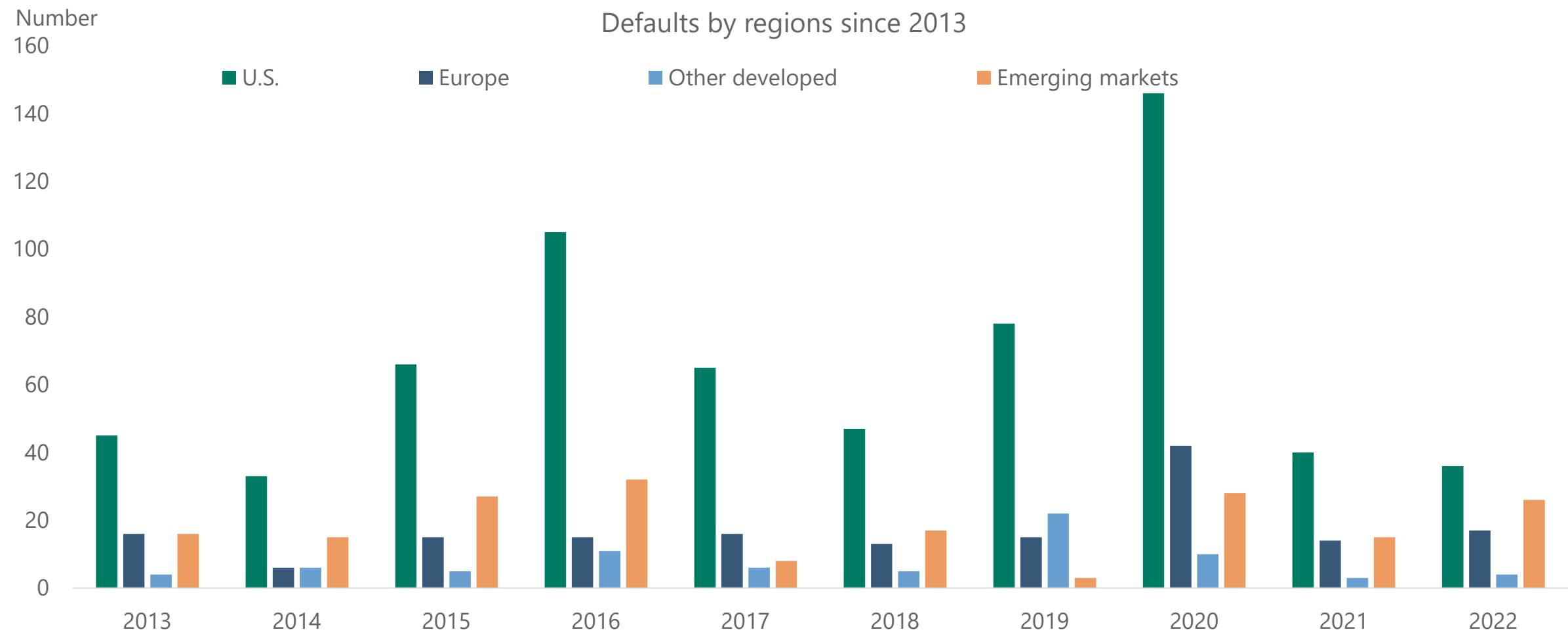
# US corporate bond markets as a share of GDP



# Distribution of corporate credit ratings

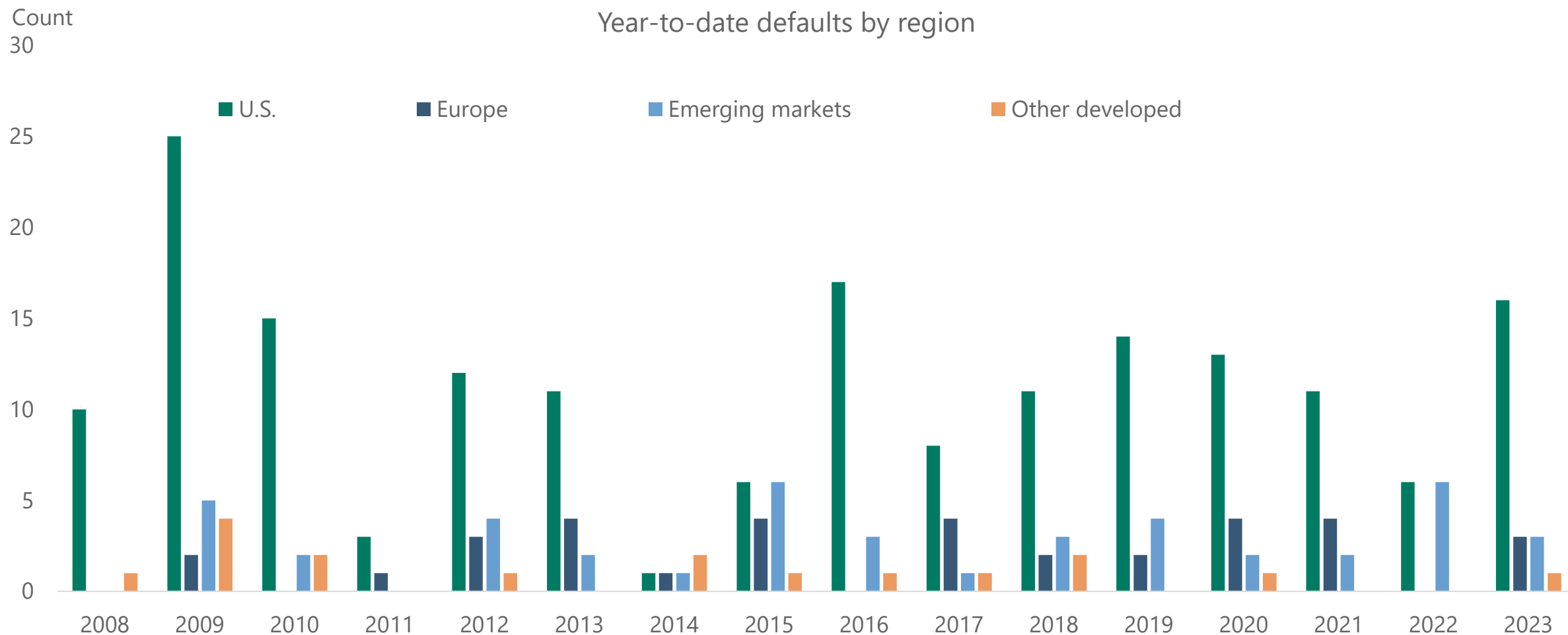


# Global default rates remain low

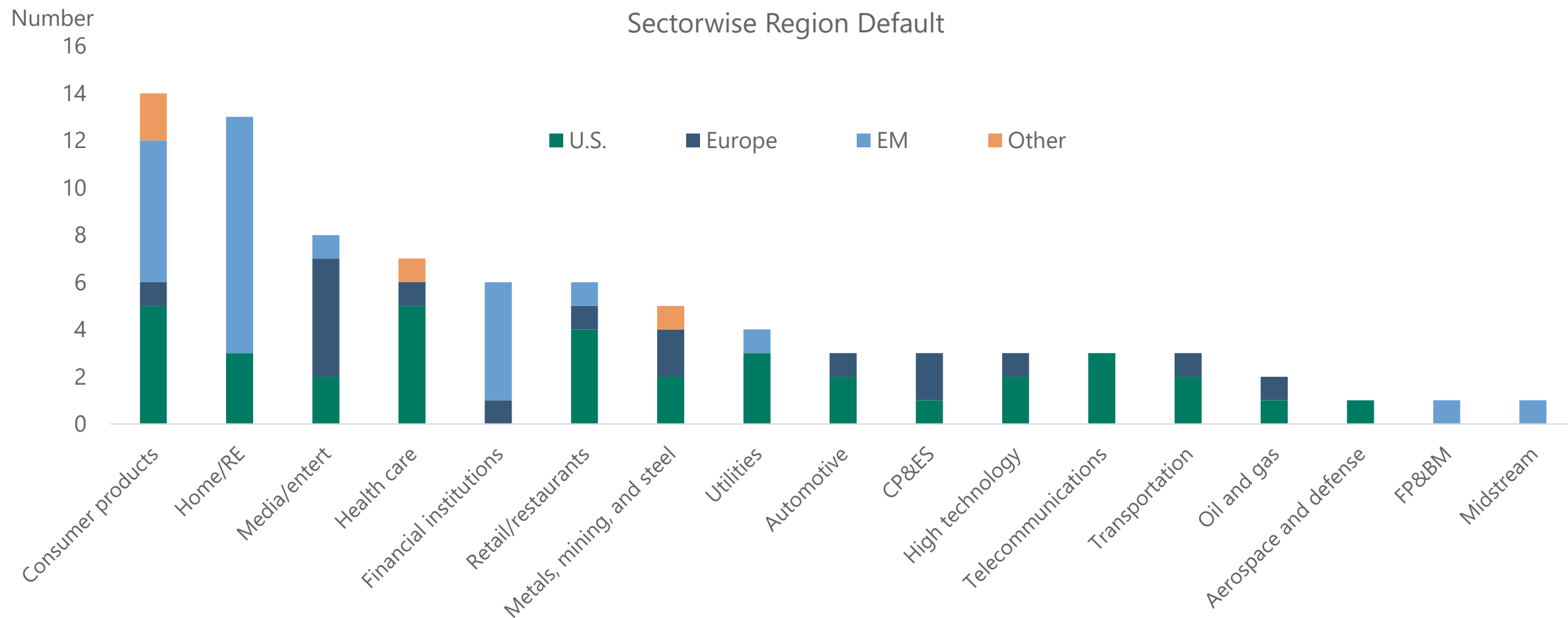


Sources: S&P Global Ratings Research and S&P Global Market Intelligence's CreditPro®, Apollo Chief Economist.

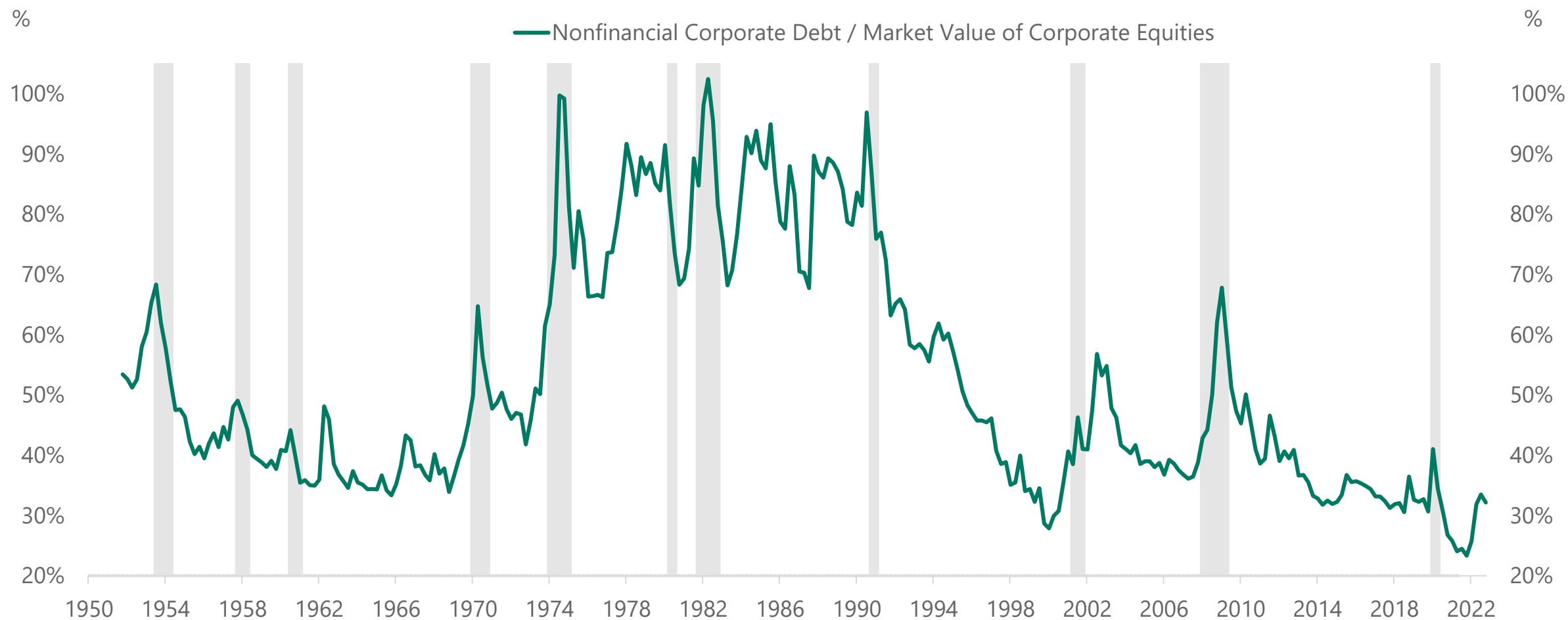
# Global default rates remain low



# Default rates differ across sectors

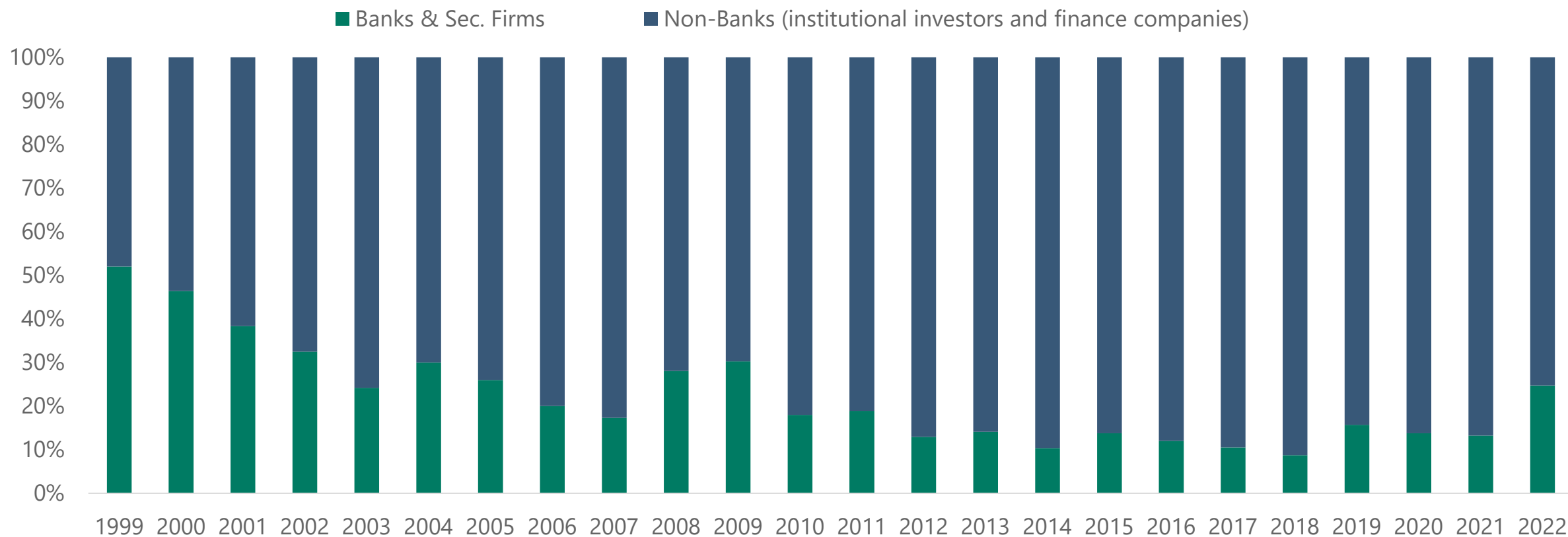


# Debt-to-equity ratio is very low for corporate America



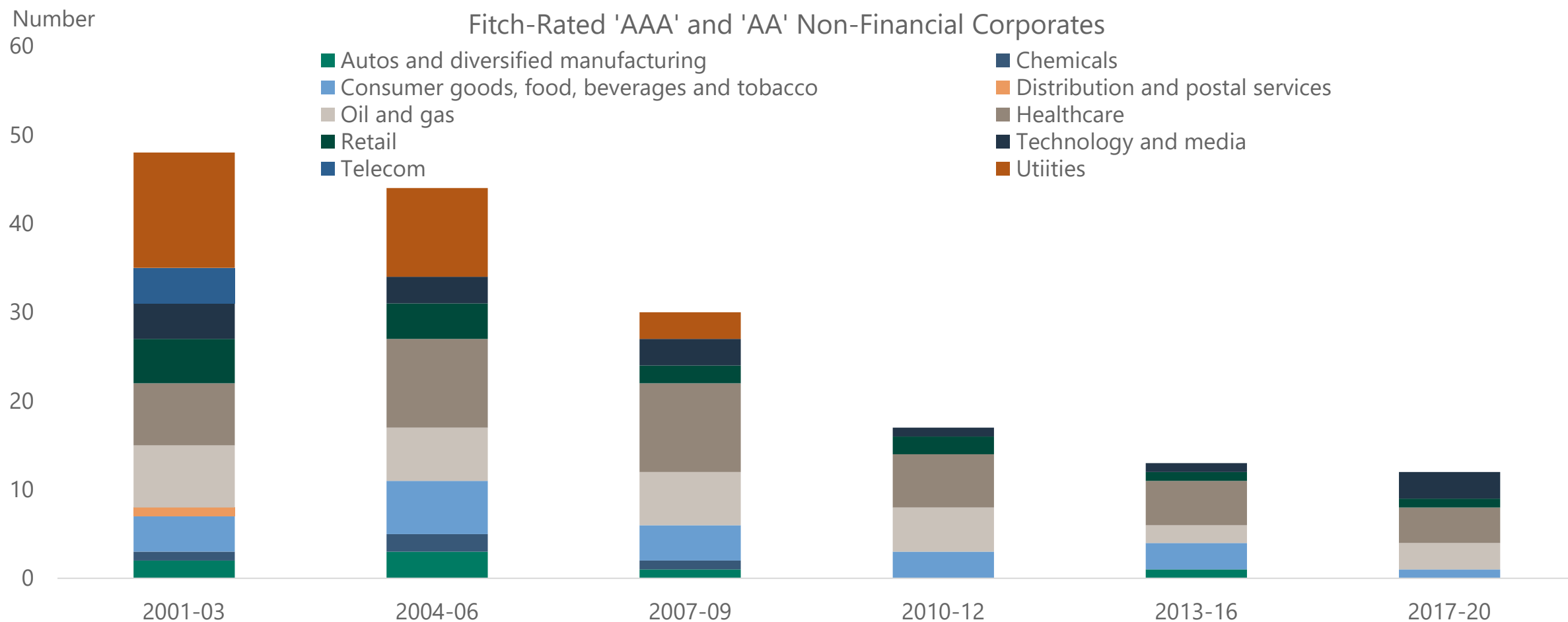
# More leveraged loans are held by banks

Primary investor market: leveraged loans

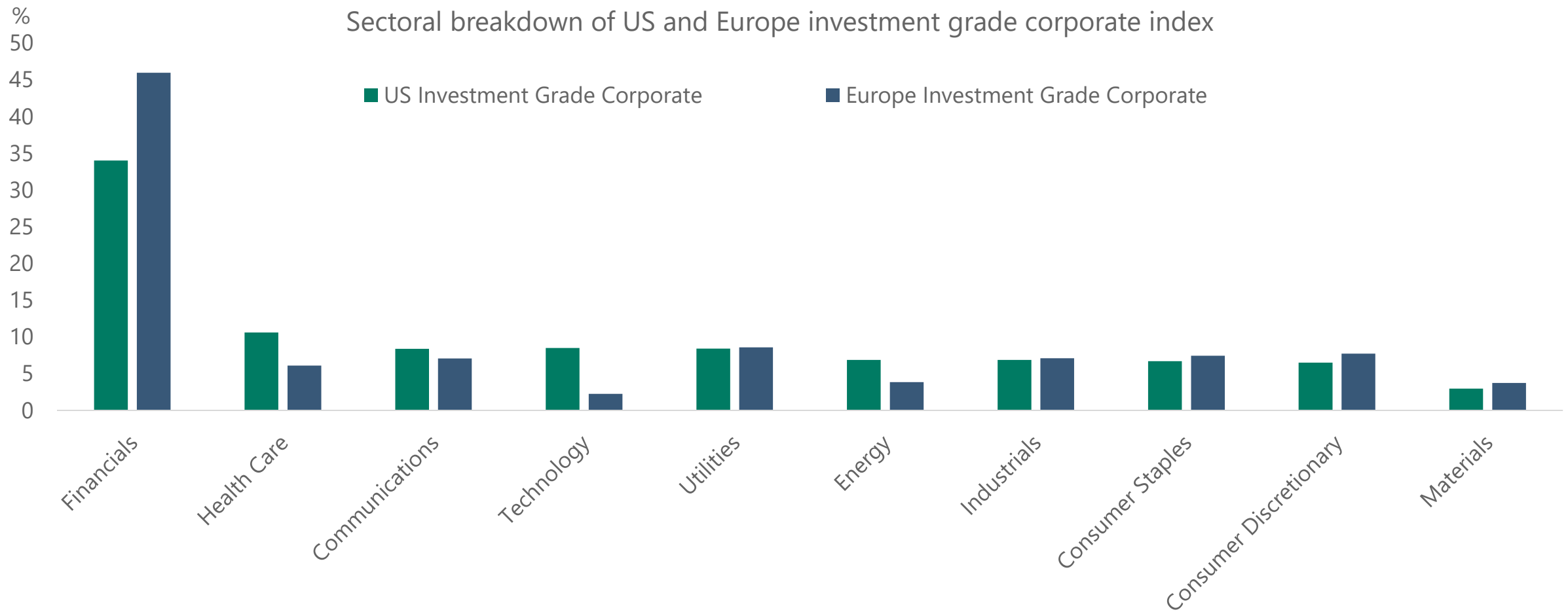




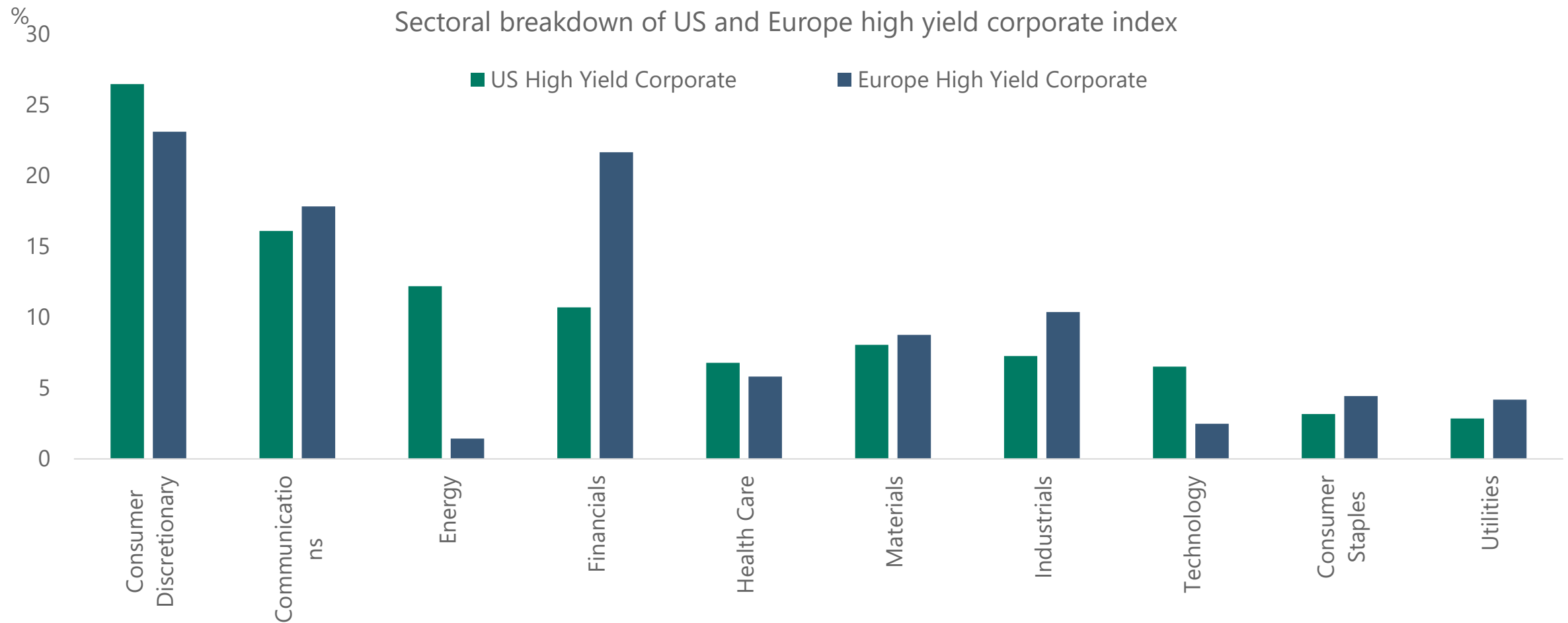
# Fewer and fewer corporate bonds are rated AAA and AA



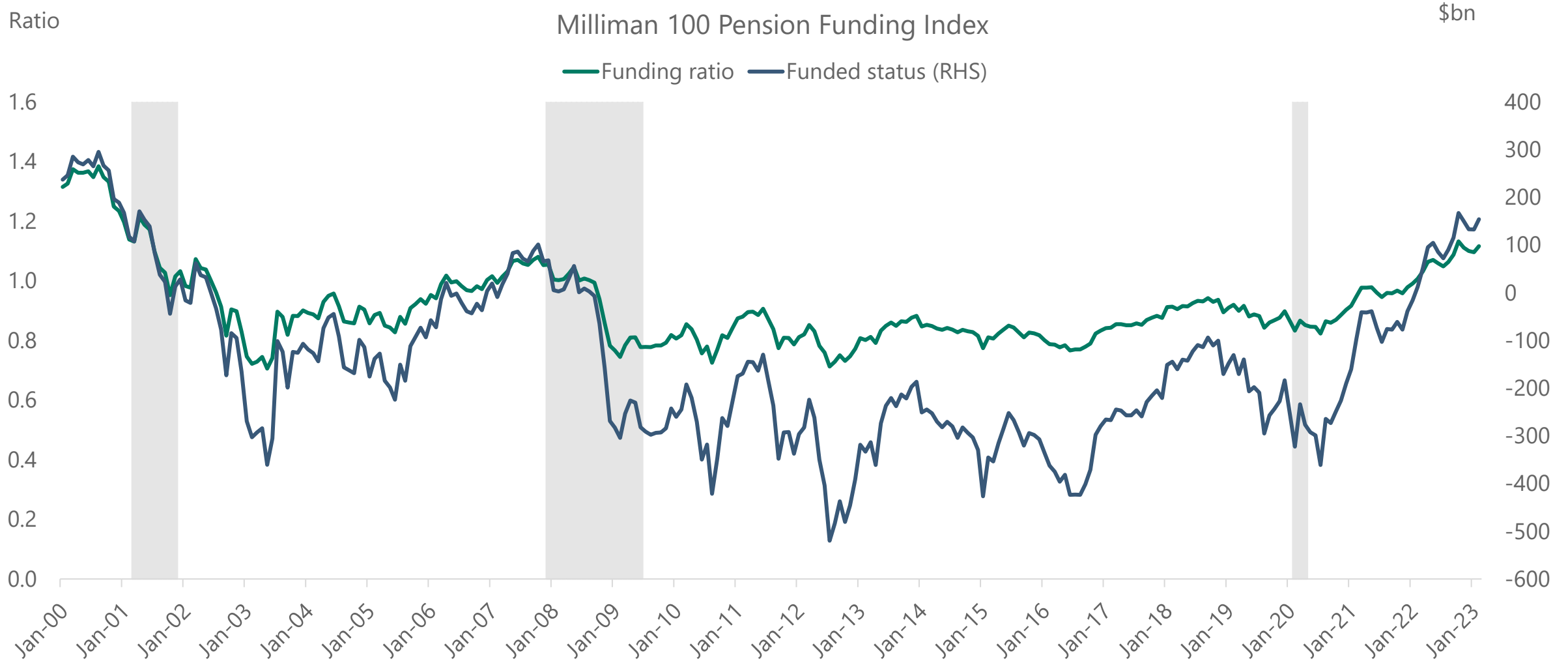
# EU IG index: Bigger weight to financials, lower weight to energy, healthcare and tech



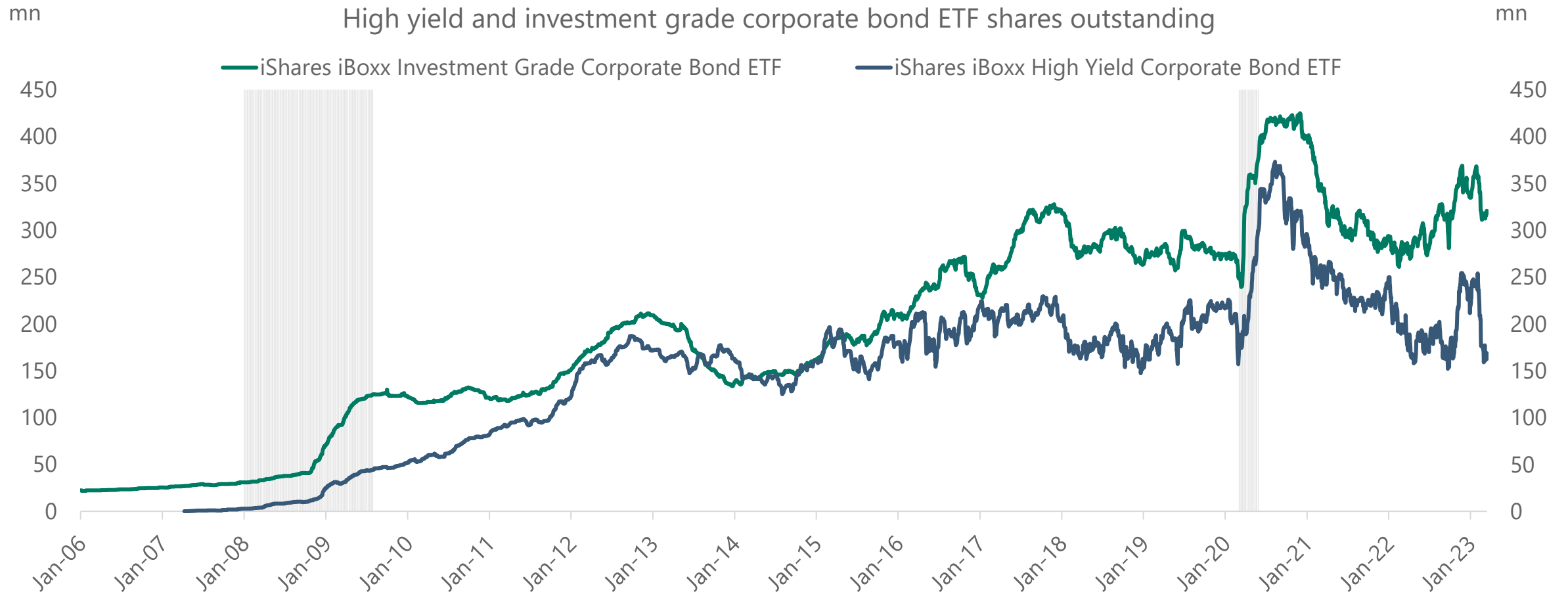
EU HY index: Bigger weight to financials and industrials.  
Lower weight to energy, healthcare, and tech



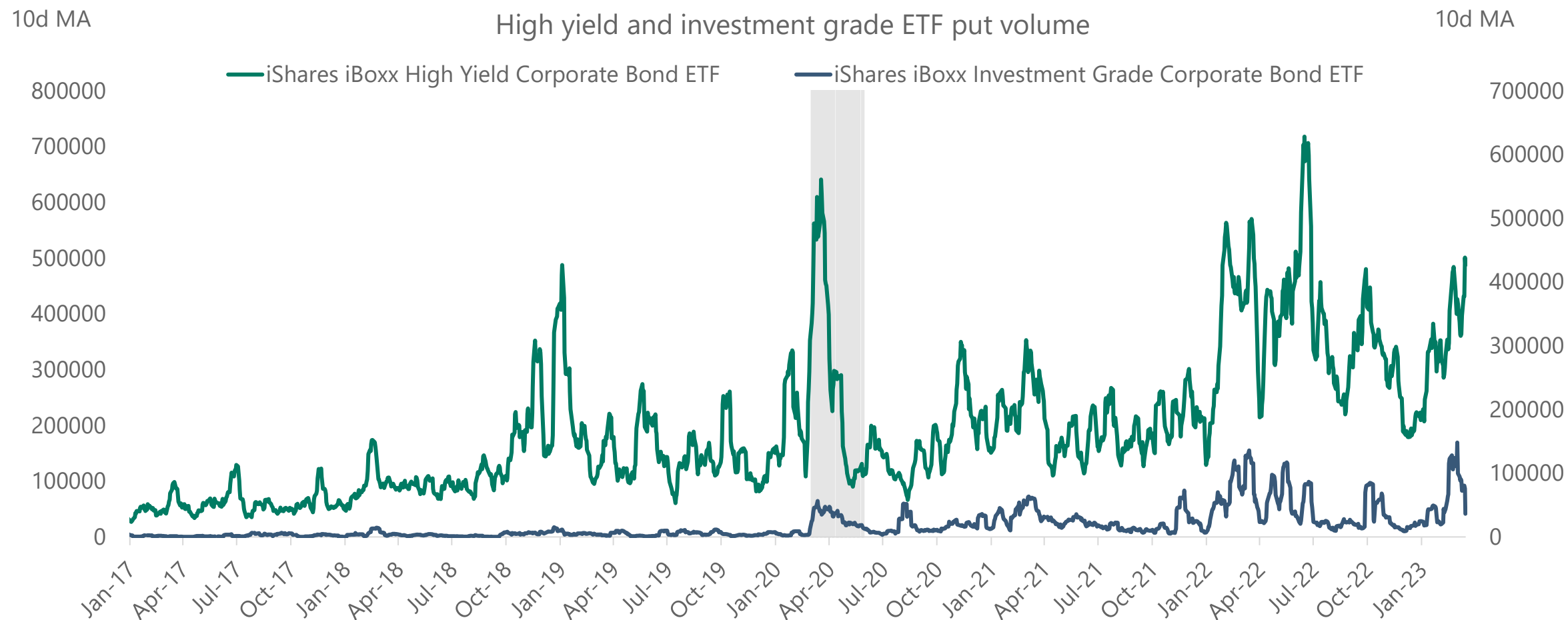
# Pension funding status has improved



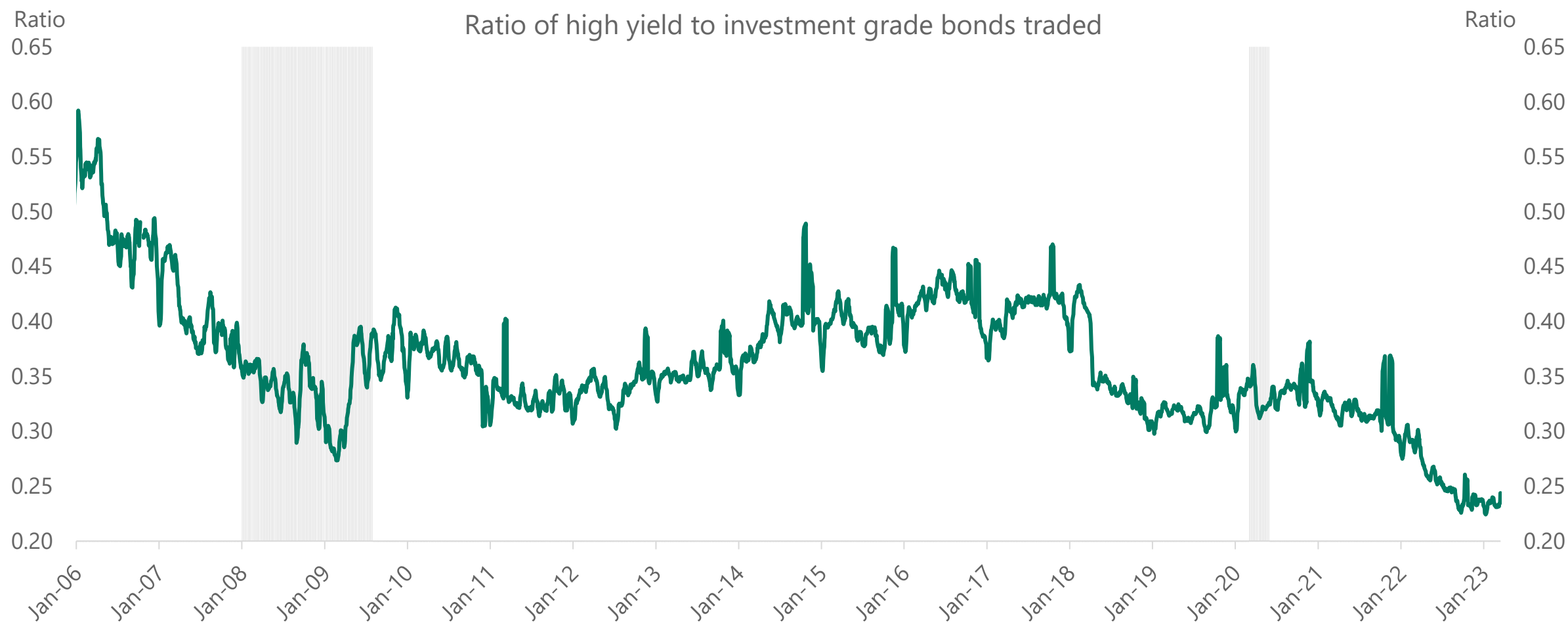
# Retail investors have recently been selling IG and HY



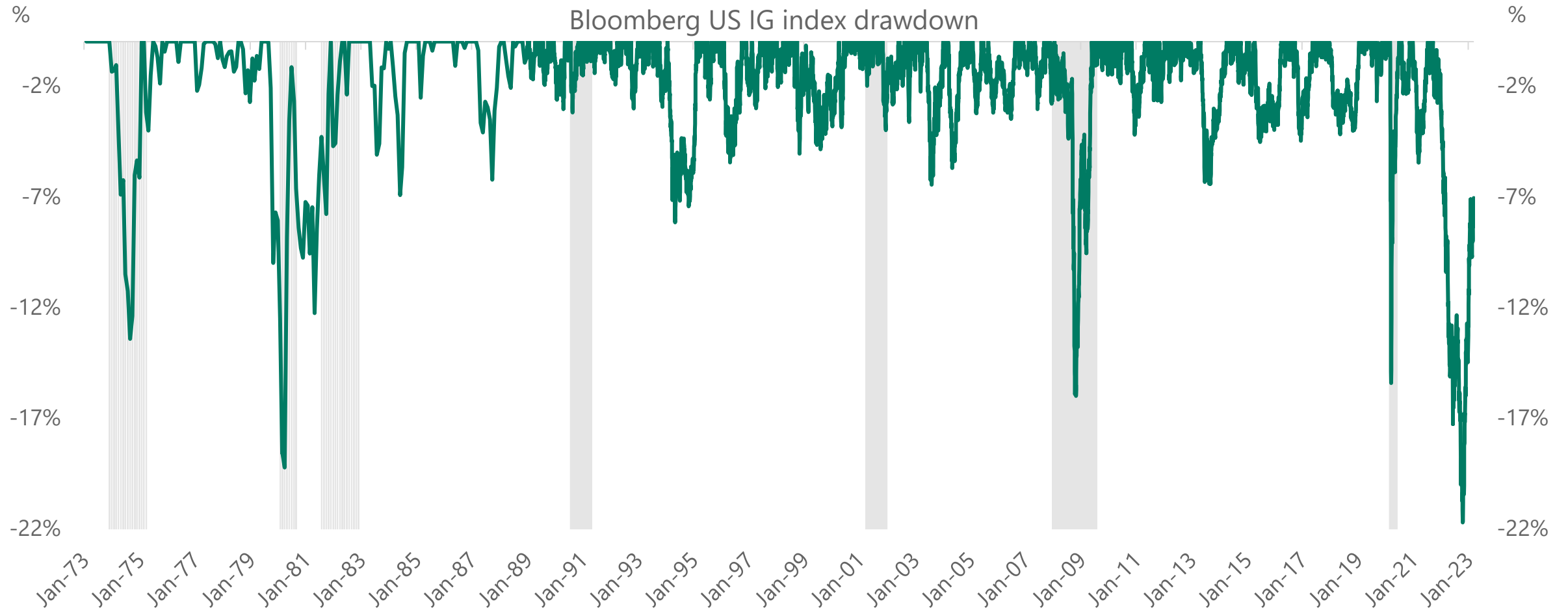
# Put volumes trending up for HY ETF



# Fewer high yield bonds being traded



# Passive IG investors down 7% from peak





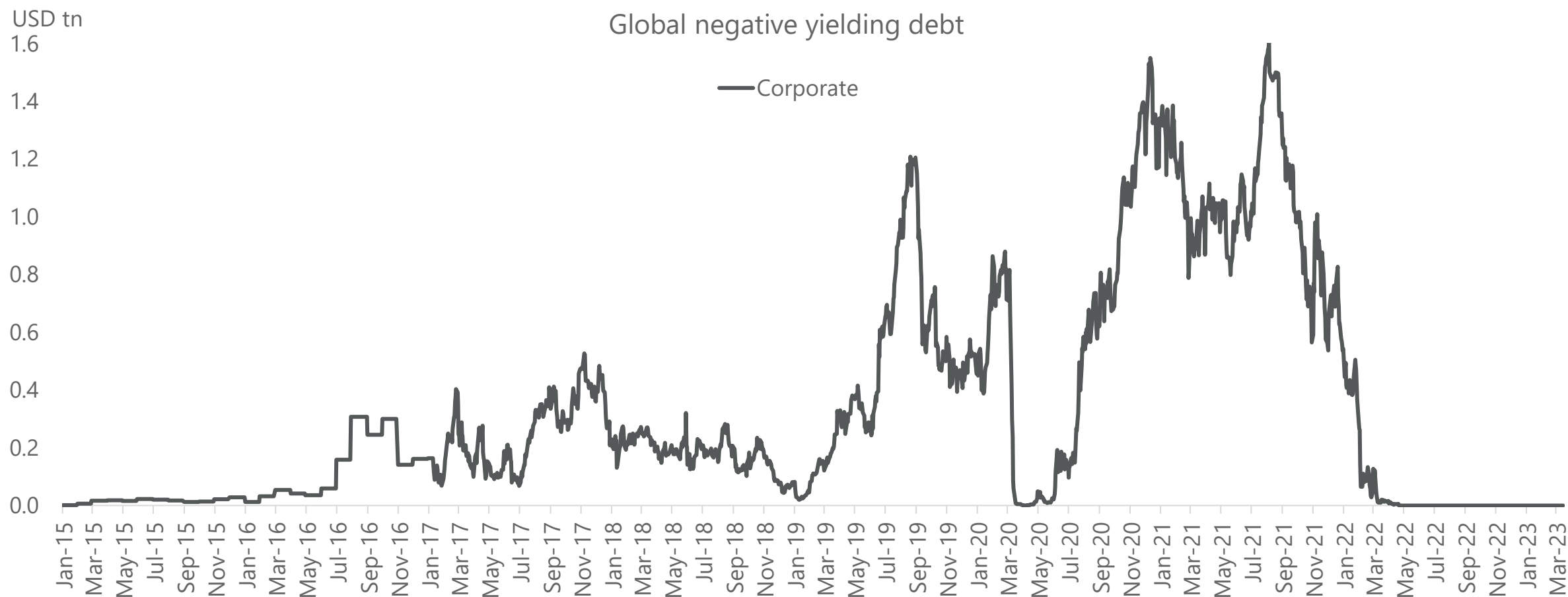
# Bonds outstanding trading at negative interest rates



# The total value of negative yielding debt in the world: \$1.2trn



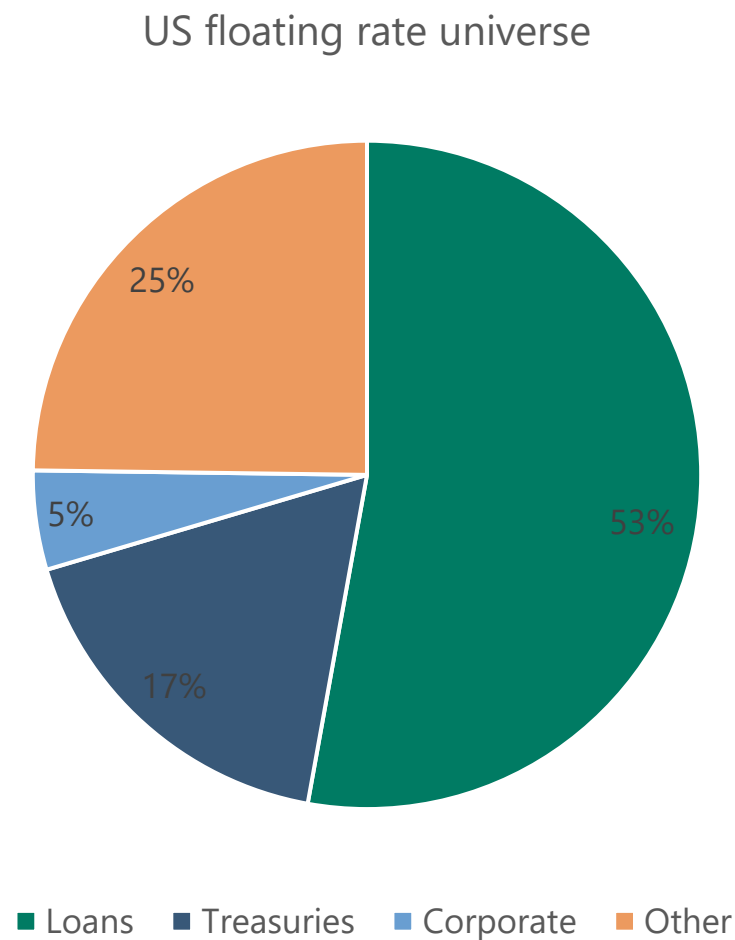
# All corporate bonds now have positive yields



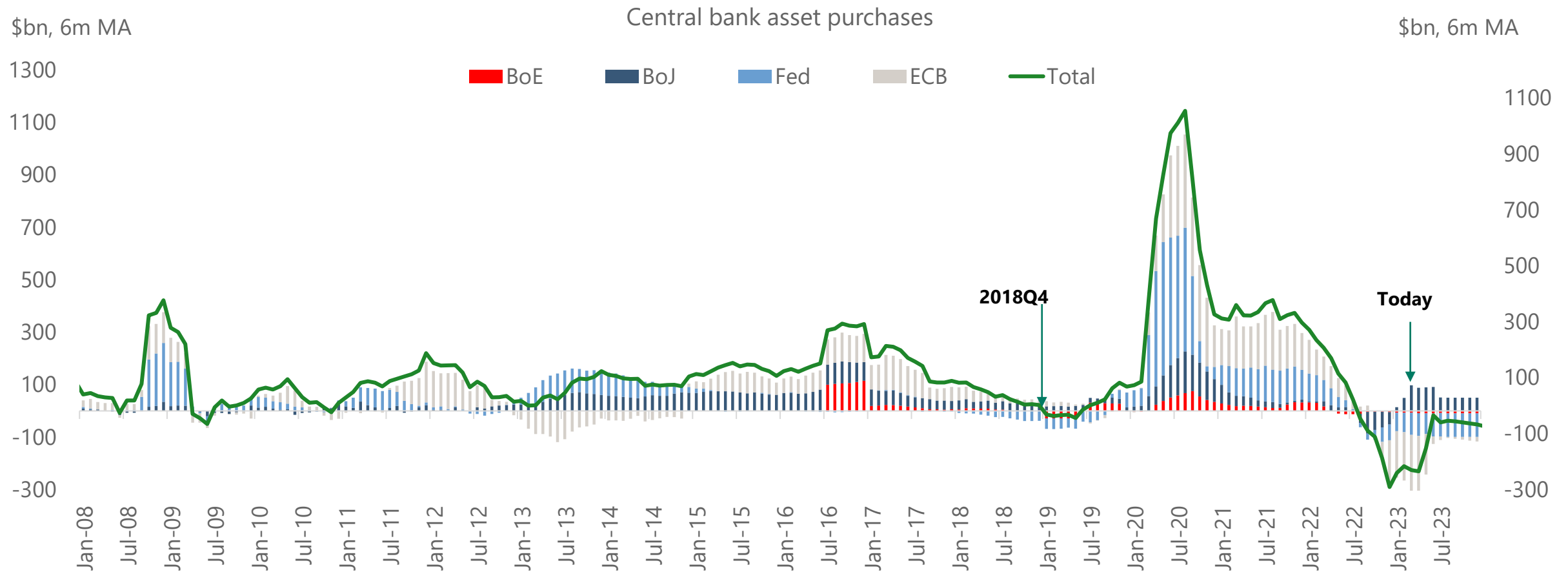
# Fed hiking and credit spreads widening



# US: Floating rate bonds outstanding, March 2023

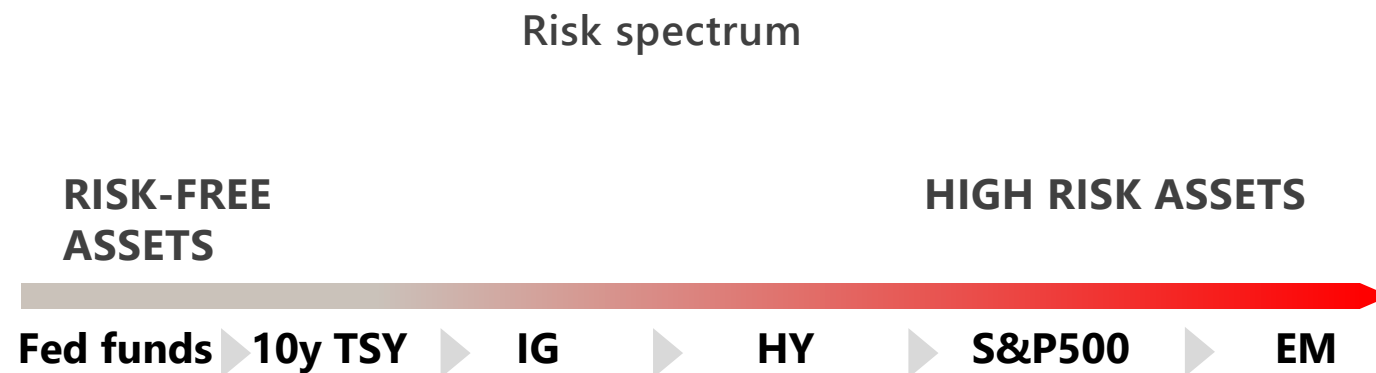


# From QE to QT to BoJ QE (to maintain YCC)

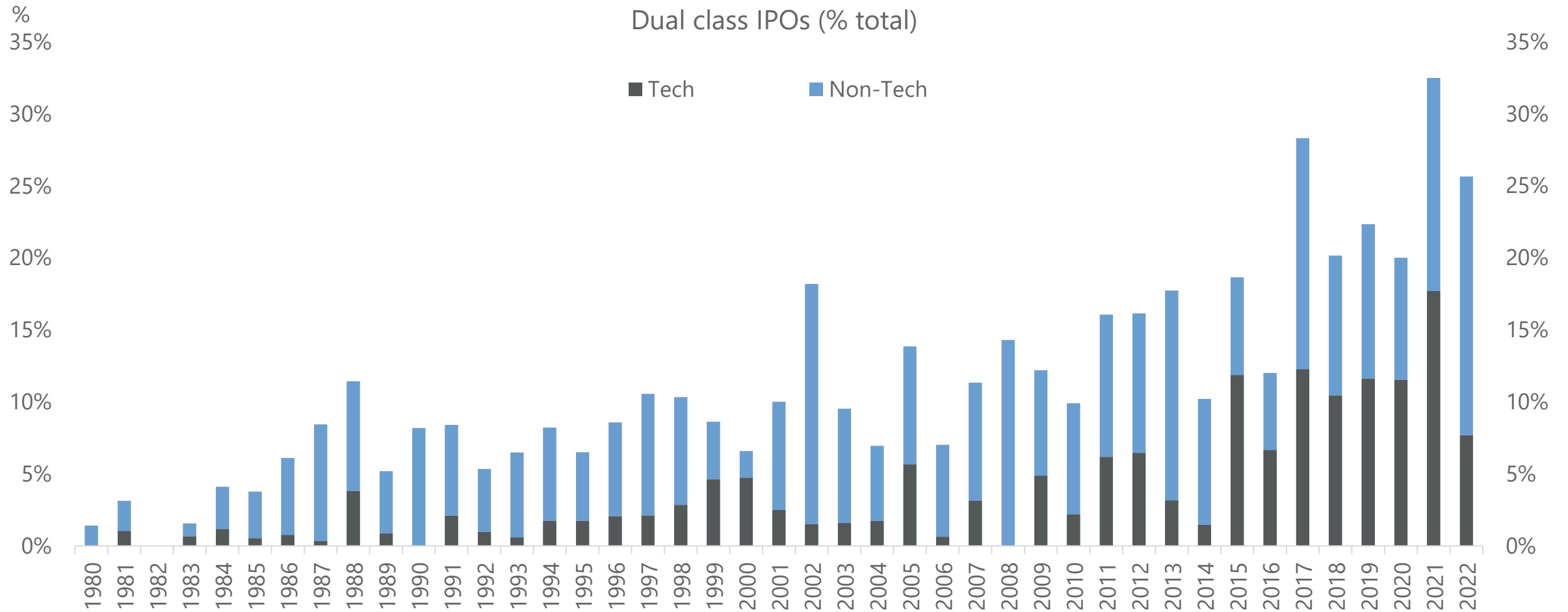


Source: Bloomberg, Apollo Chief Economist. Pace of purchases for 2021: BOE: £3.4bn per week till mid December 2021, FED: USD120bn per month with wind down from December with purchases ending in March 2022, ECB: Euro 90bn per month (20 bn APP + 60 bn PEPP), PEPP till March 2022, Euro 40bn in April, Euro 30bn in May and Euro 20bn in June, and only redemptions reinvested from August. BOJ: USD 60bn per month. For 2022: All programs are expected to wind down linearly from January 2022 to December 2022. Fed QT \$ 95 per month from May 2022. BoE starts to sell GBP80 bn in the next 12 months and ECB starts QT in 2Q23

# Inflation is reversing the hunt for yield

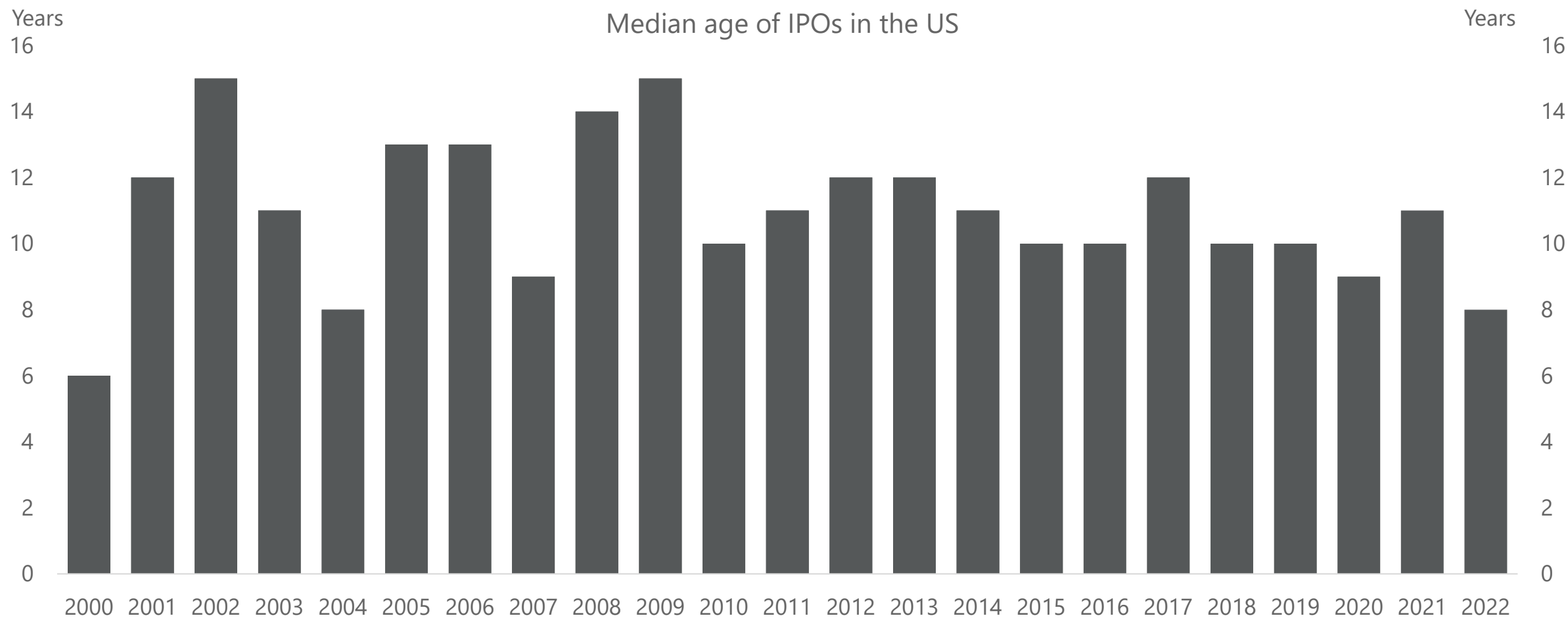


# Dual class IPOs, driven by tech

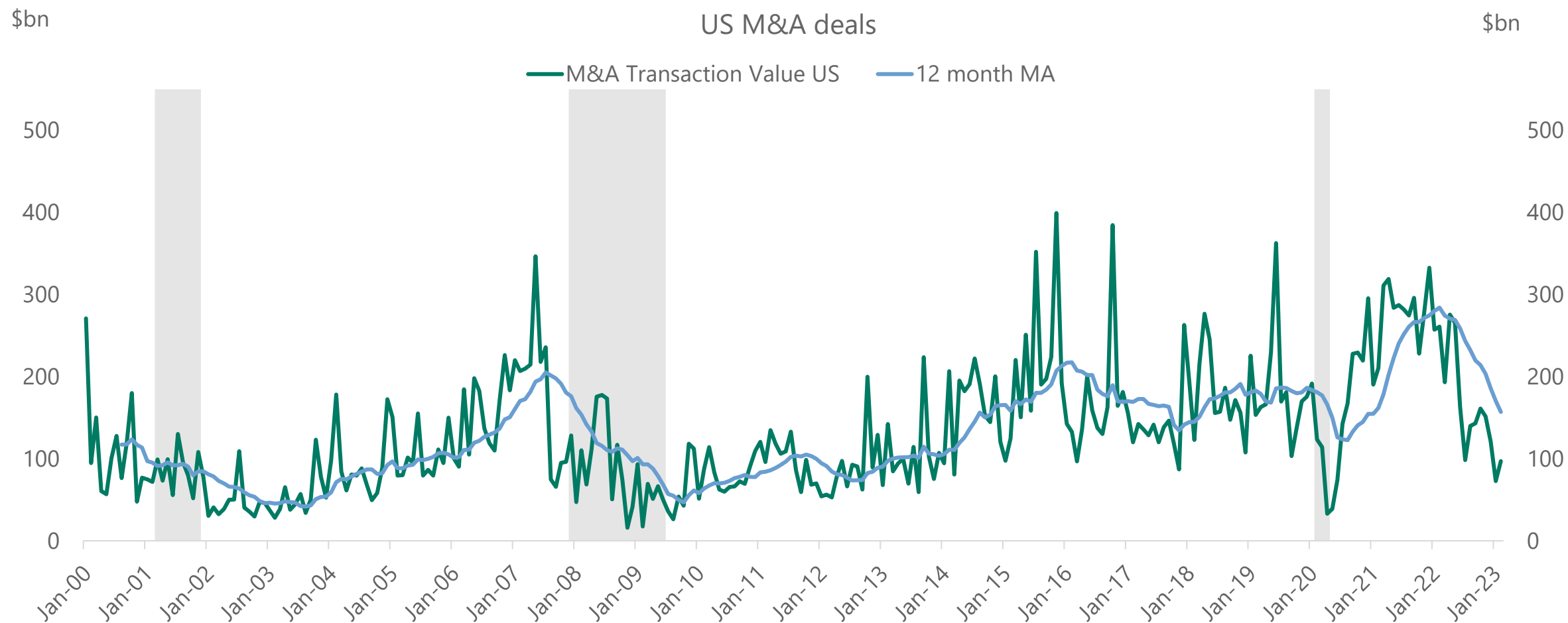




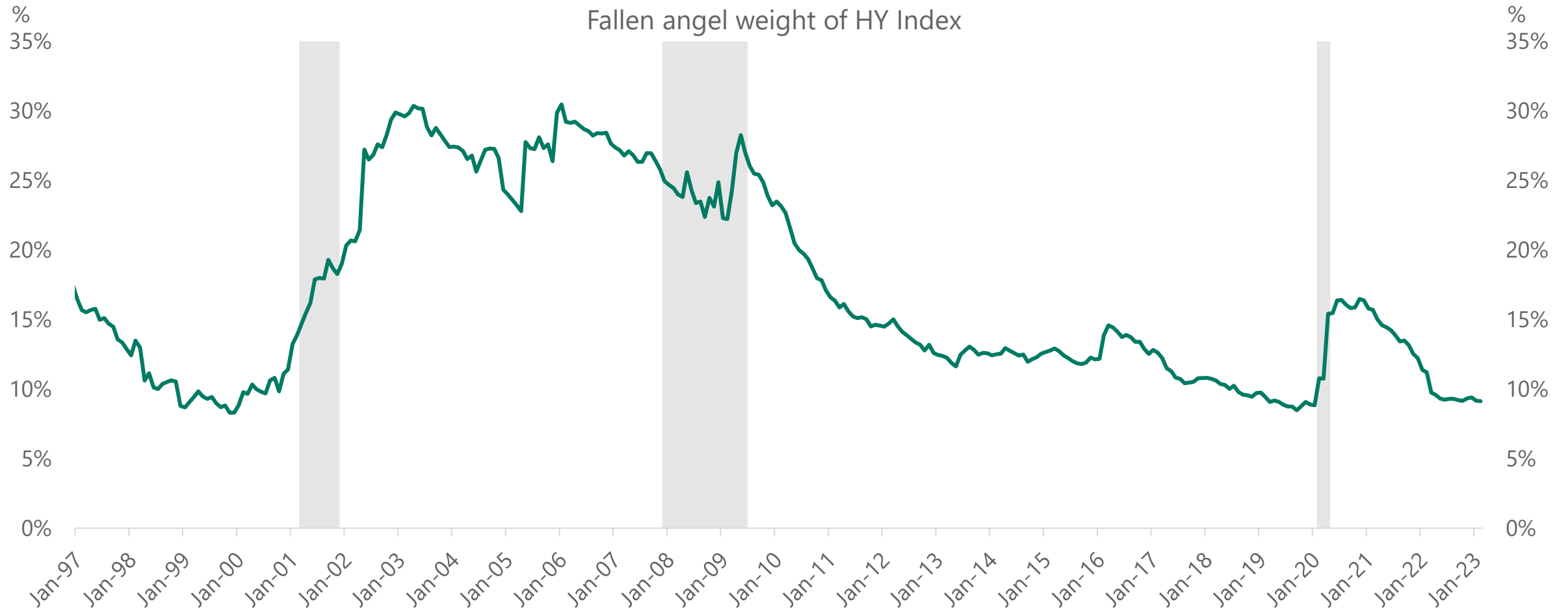
# Median age of IPOs



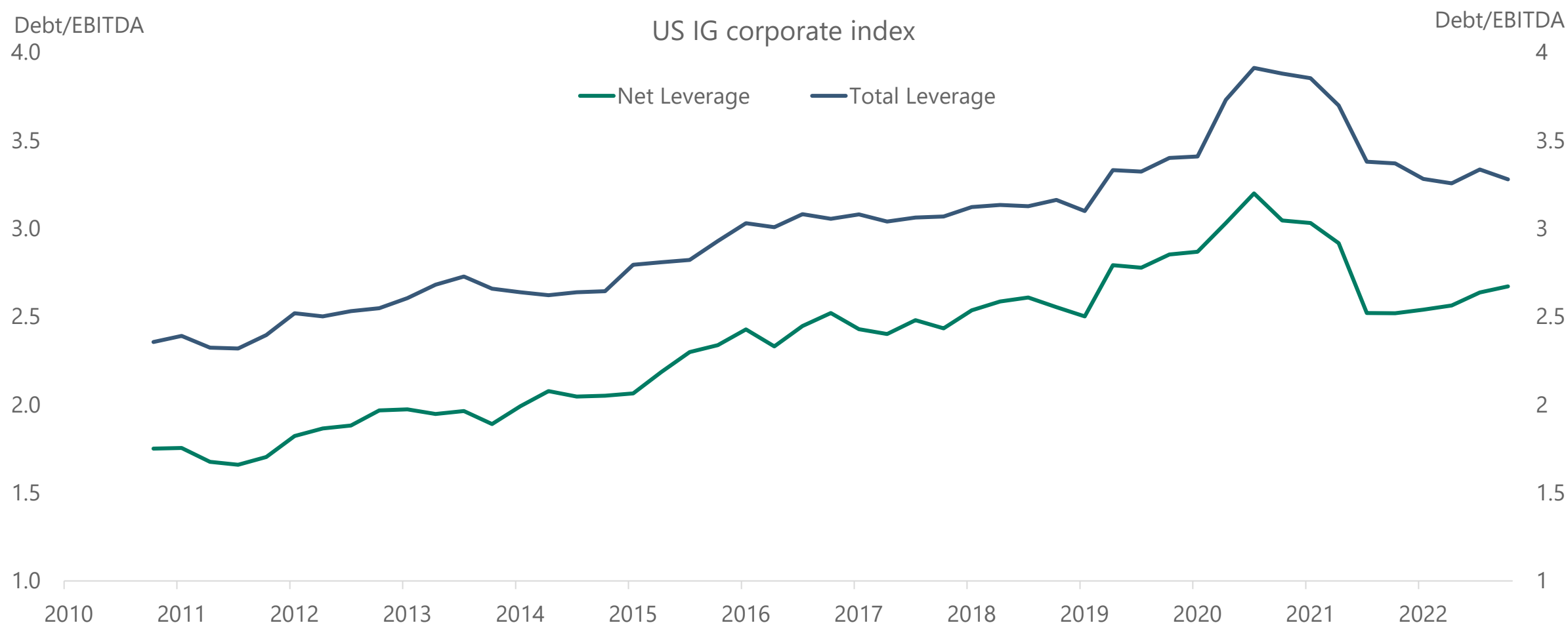
# M&A activity declining



# Declining share of fallen angels in the HY index

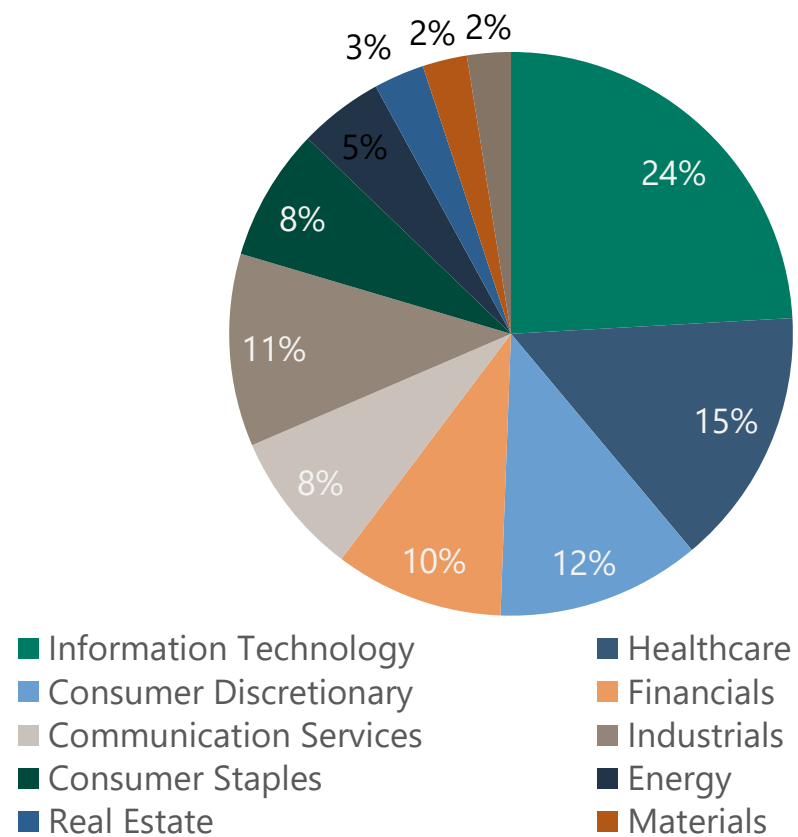


# IG leverage down after the pandemic

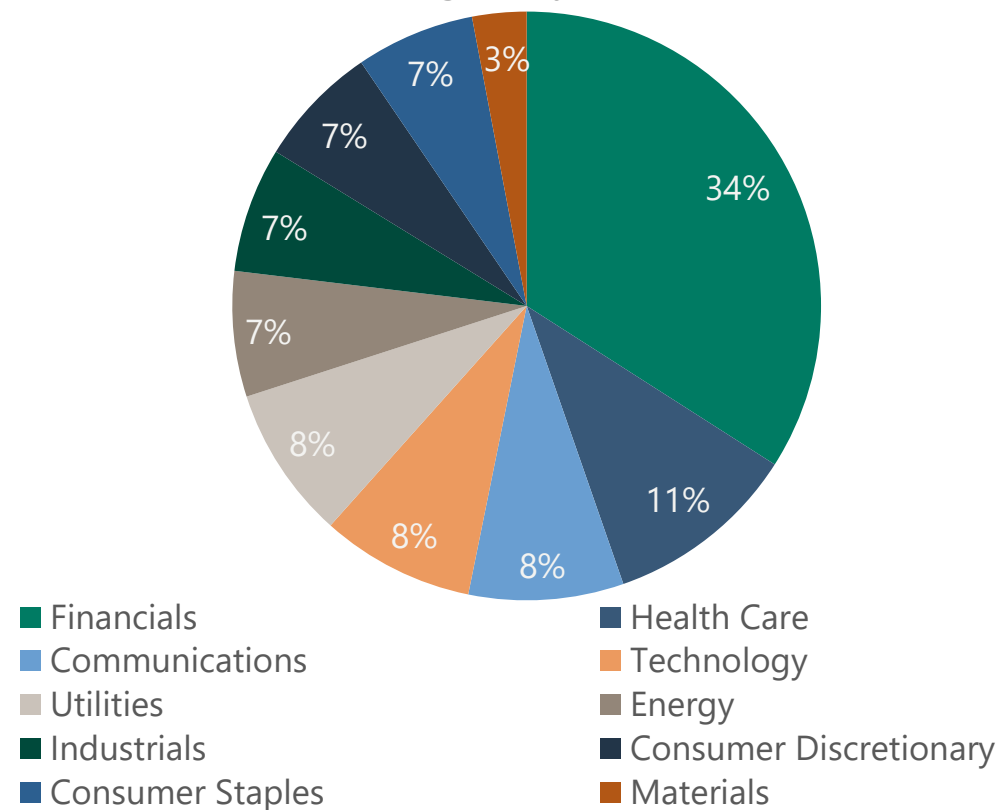


# Big differences between weights in S&P500 and IG index

S&P 500 Index weight by market cap

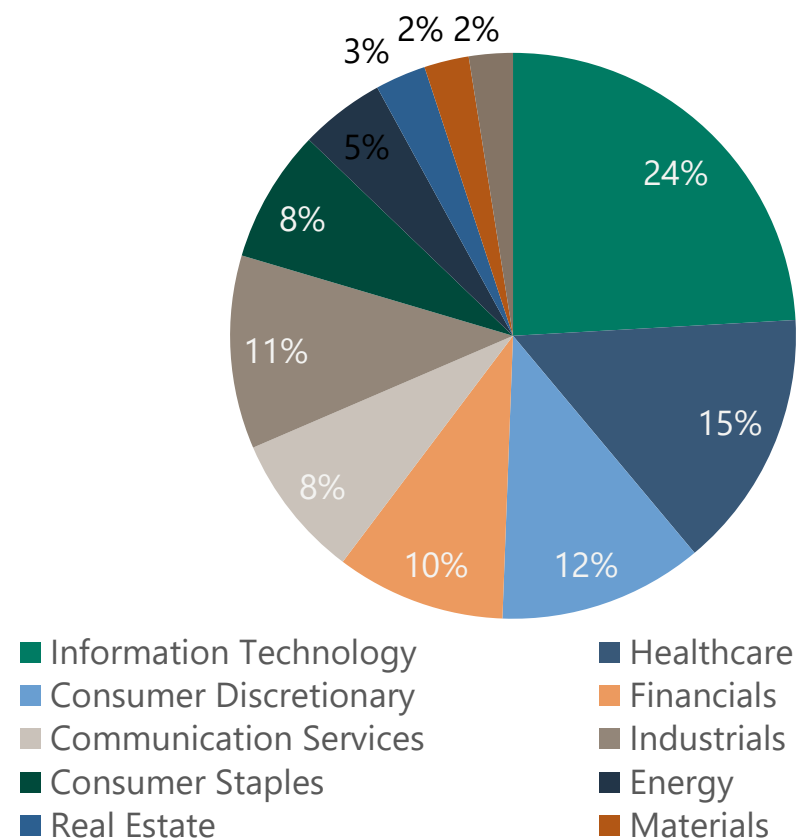


Barclays corporate IG index weights by market cap

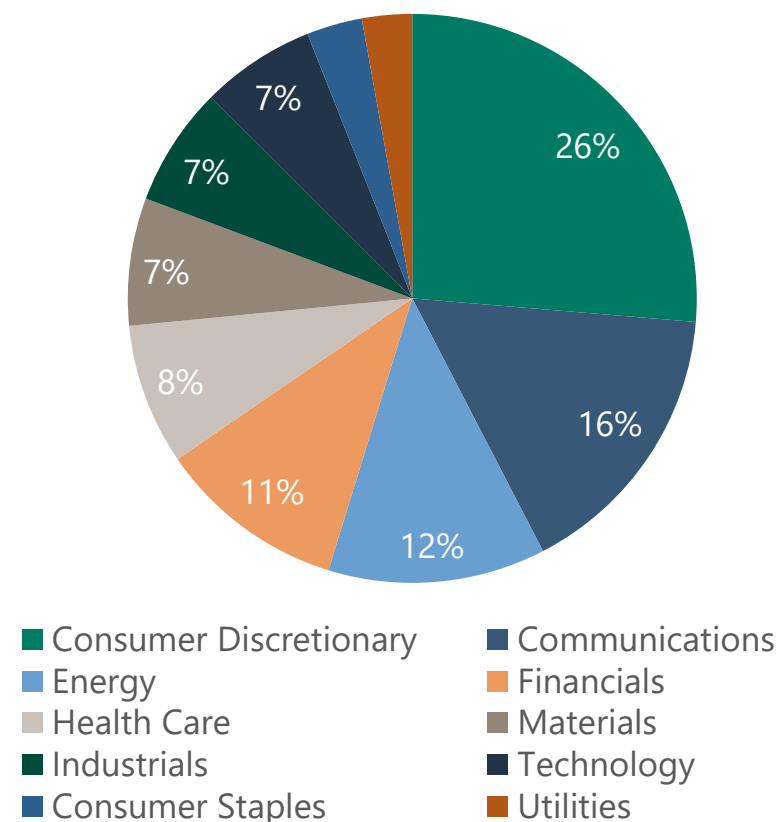


# Big differences between weights in S&P500 and HY index

S&P 500 index weight by market cap



Bloomberg Barclays HY index weights by mkt cap



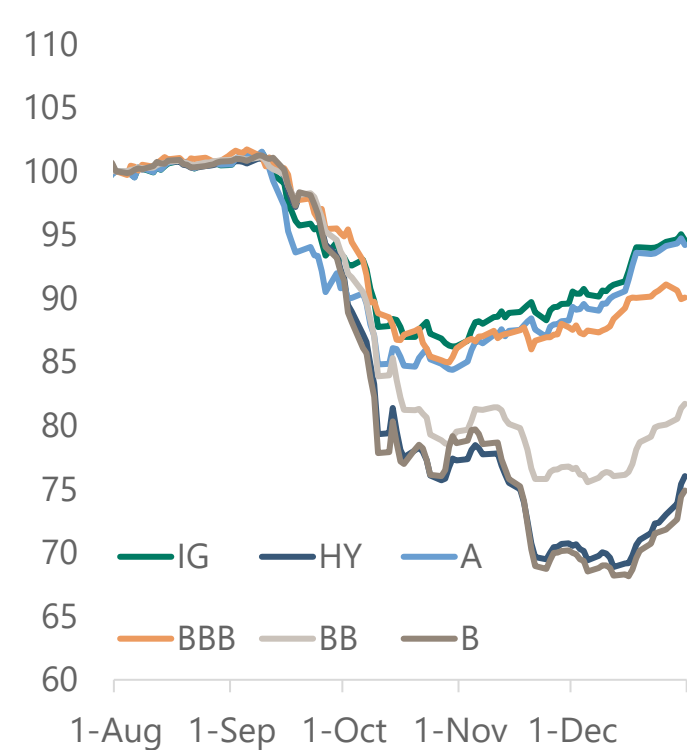
# Top issuer names for IG and HY

APOLLO

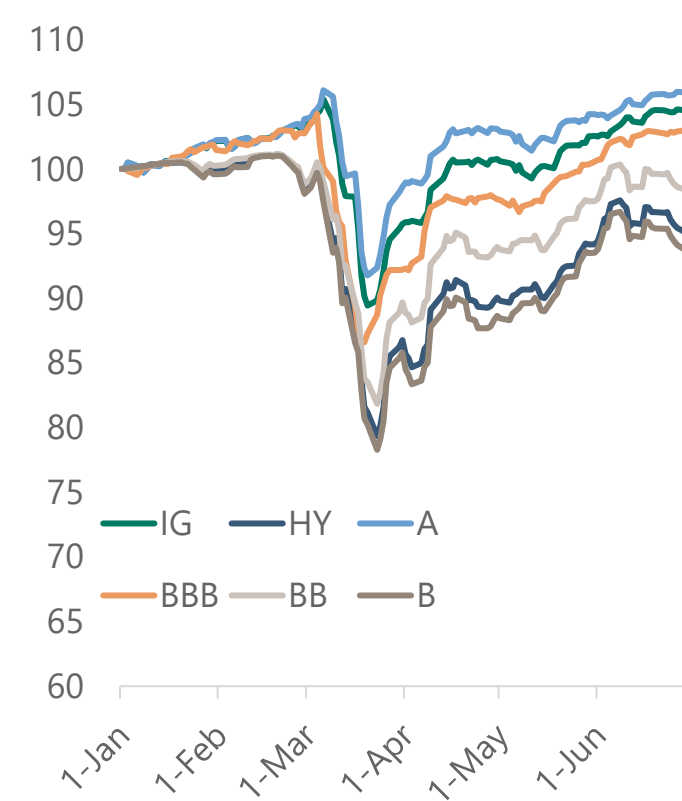
	Top 50 Investment Grade corporate bond issuers	Top 50 High Yield corporate bond issuers
1	Bank of America Corporation	Ford Motor Credit Company LLC
2	JPMorgan Chase & Co.	CCO Holdings LLC/ CCO Holdings Capital Corp.
3	Goldman Sachs Group Inc.	Occidental Petroleum Corporation
4	Morgan Stanley	Tenet Healthcare Corporation
5	Citigroup Inc.	Centene Corporation
6	Wells Fargo & Company	CSC Holdings LLC
7	Apple Inc.	TransDigm Inc.
8	AT&T Inc	Ford Motor Company
9	Verizon Communications Inc.	T-Mobile US Inc
10	HSBC Holdings PLC	Carnival Corporation
11	Comcast Corporation	DISH DBS Corporation
12	Oracle Corporation	Bausch Health Companies Inc
13	Amazon.com Inc.	Community Health Systems Incorporated
14	AbbVie Inc.	Lumen Technologies Inc
15	The Boeing Company	Sirius Xm Radio Inc
16	Microsoft Corporation	OneMain Financial Corporation
17	T-Mobile USA Inc.	Royal Caribbean Group
18	UnitedHealth Group Inc.	Altice France S.A
19	CVS Health Corp	AAdvantage Loyalty IP Ltd/ American Airlines Inc
20	Mitsubishi UFJ Financial Group Inc.	Bombardier Inc.
21	Charter Communications Operating LLC/Charter Communications Operating Capital Corp.	Caesars Entertainment Inc New
22	Walt Disney Company	Mozart Debt Merger Subordinated Inc.
23	Sumitomo Mitsui Financial Group Inc	Equitrans Midstream Corporation
24	The Home Depot Inc.	Western Midstream Operating LP
25	Intel Corporation	1011778 B.C. Unlimited Liability Company / New Red Finance Inc.
26	BNP Paribas SA	Iron Mountain Incorporated
27	Amgen Inc.	Albertsons Cos Inc / Safeway Inc / New Albertsons LP / Albertsons LLC
28	Anheuser-Busch InBev Worldwide Inc.	Sprint Capital Corporation
29	Barclays PLC	Icahn Enterprises L.P. / Icahn Enterprises Finance Corporation
30	Bristol-Myers Squibb Company	FirstEnergy Corp.
31	International Business Machines Corporation	Post Holdings Inc.
32	HCA Inc.	Calpine Corporation
33	Shell International Finance B.V.	Hilton Domestic Operating Co Inc.
34	Broadcom Inc	Univision Communications Inc.
35	Energy Transfer LP	Navient Corporation
36	Pacific Gas and Electric Company	Vistra Operations Co LLC
37	Aercap Ireland Capital DAC	Deutsche Bank AG New York Branch
38	General Motors Financial Company Inc	The Goodyear Tire & Rubber Company
39	Exxon Mobil Corporation	Ball Corporation
40	Raytheon Technologies Corporation	Level 3 Financing Inc.
41	Pepsico Inc	Intesa Sanpaolo S.p.A.
42	Magallanes Inc.	YUM Brands Inc
43	The Toronto-Dominion Bank	Service Properties Trust
44	Societe Generale S.A.	Bath & Body Works Inc
45	Cigna Corporation	GFL Environmental Inc.
46	Royal Bank of Canada	Prime Securities Services Borrower LLC and Prime Finance Inc.
47	Toyota Motor Credit Corp.	Uber Technologies Inc
48	Pfizer Inc.	United Rentals (North America) Inc.
49	Lowe's Companies Inc.	Uniti Group LP/Uniti Fiber Holdings Inc/Uniti Group Finance 2019 Inc/CSL Capital LLC
50	Capital One Financial Corporation	NRG Energy Inc.

Synchronized sell-off in credit so far. Little differentiation between credits compared with 2008 and March 2020 episodes.

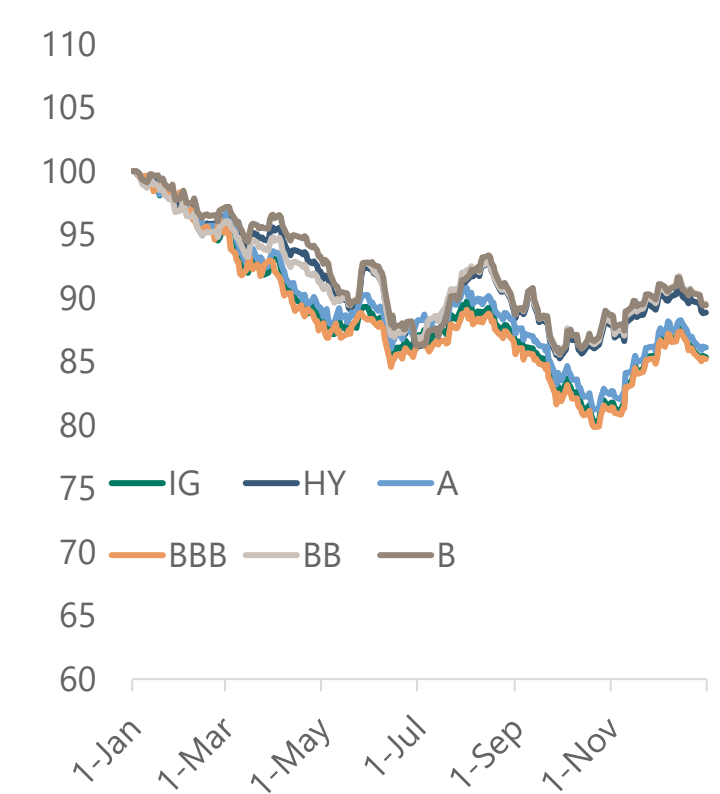
Aug 1st=100 US total returns, 2008



Jan 1st=100 US total returns, 2020

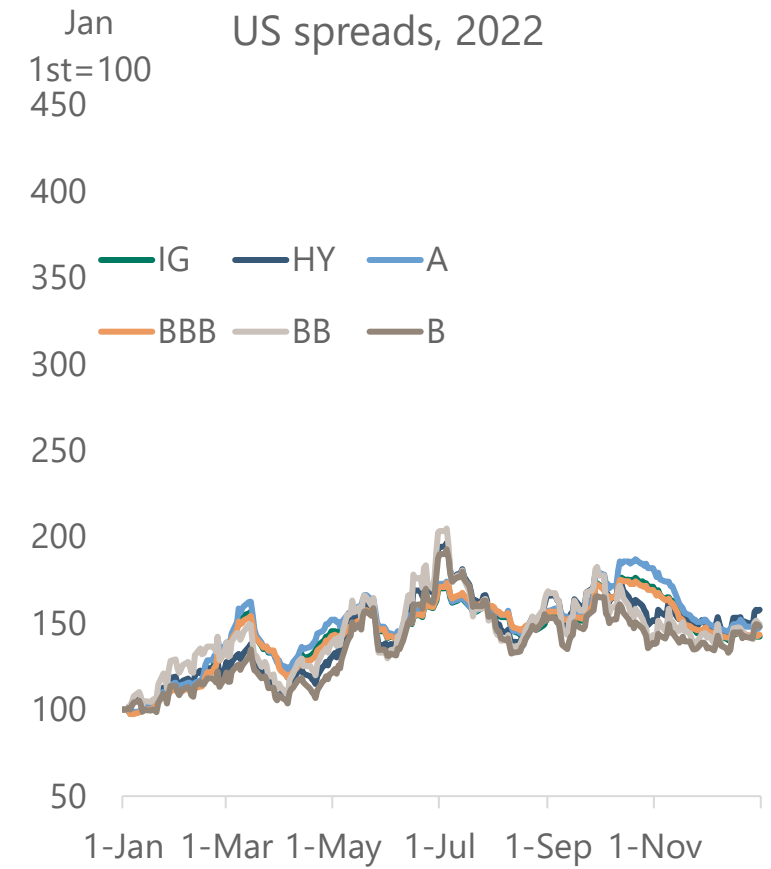
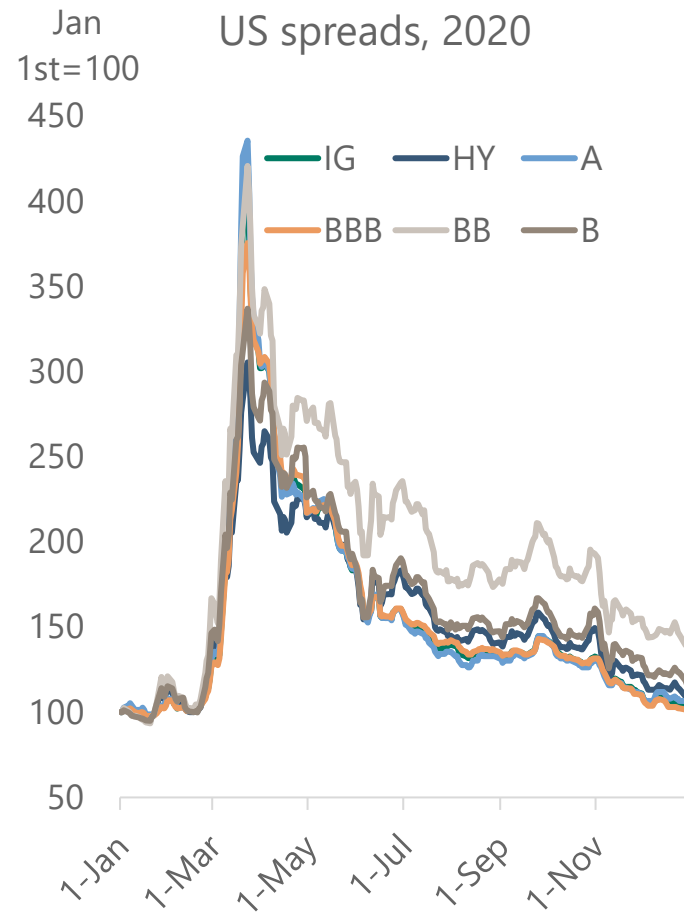
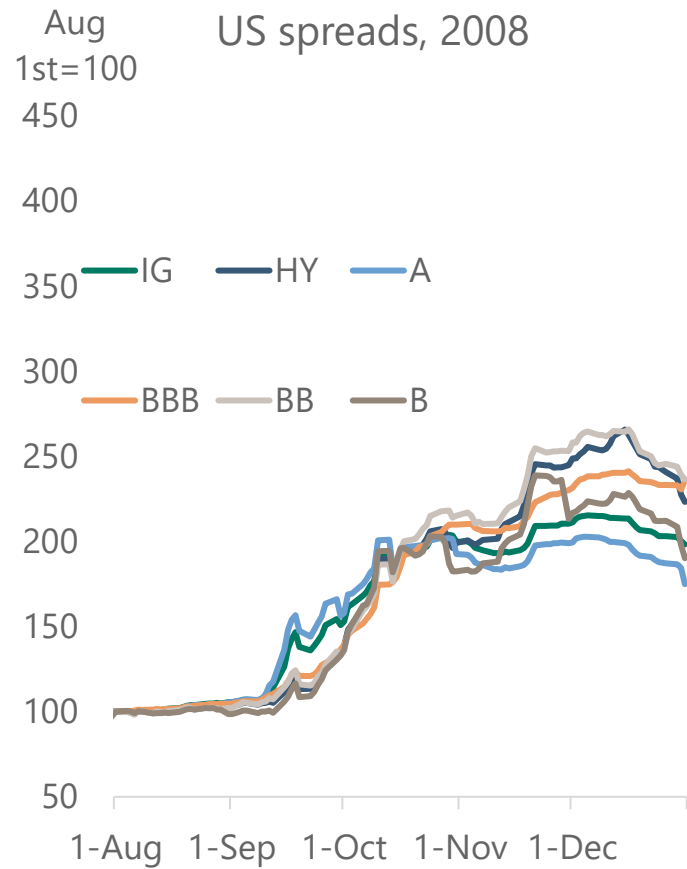


Jan 1st=100 US total returns, 2022

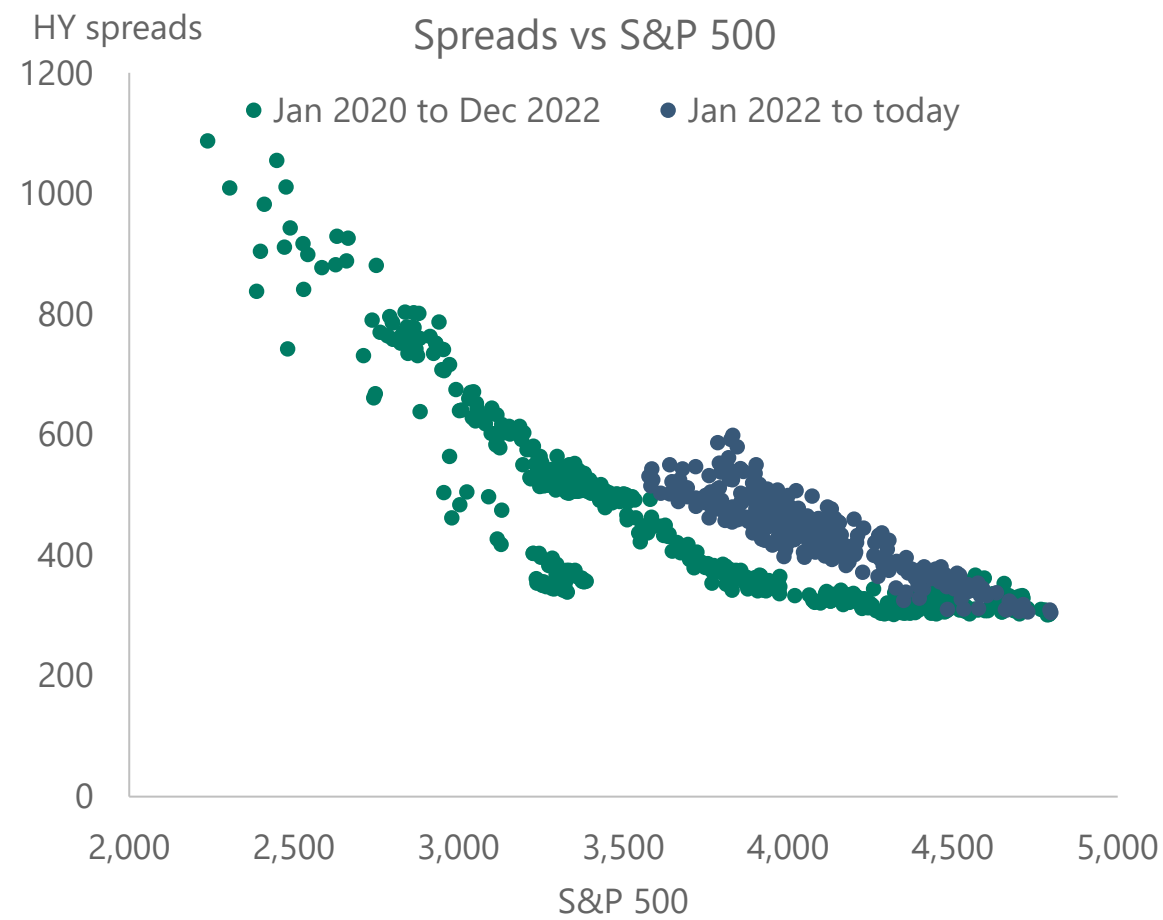
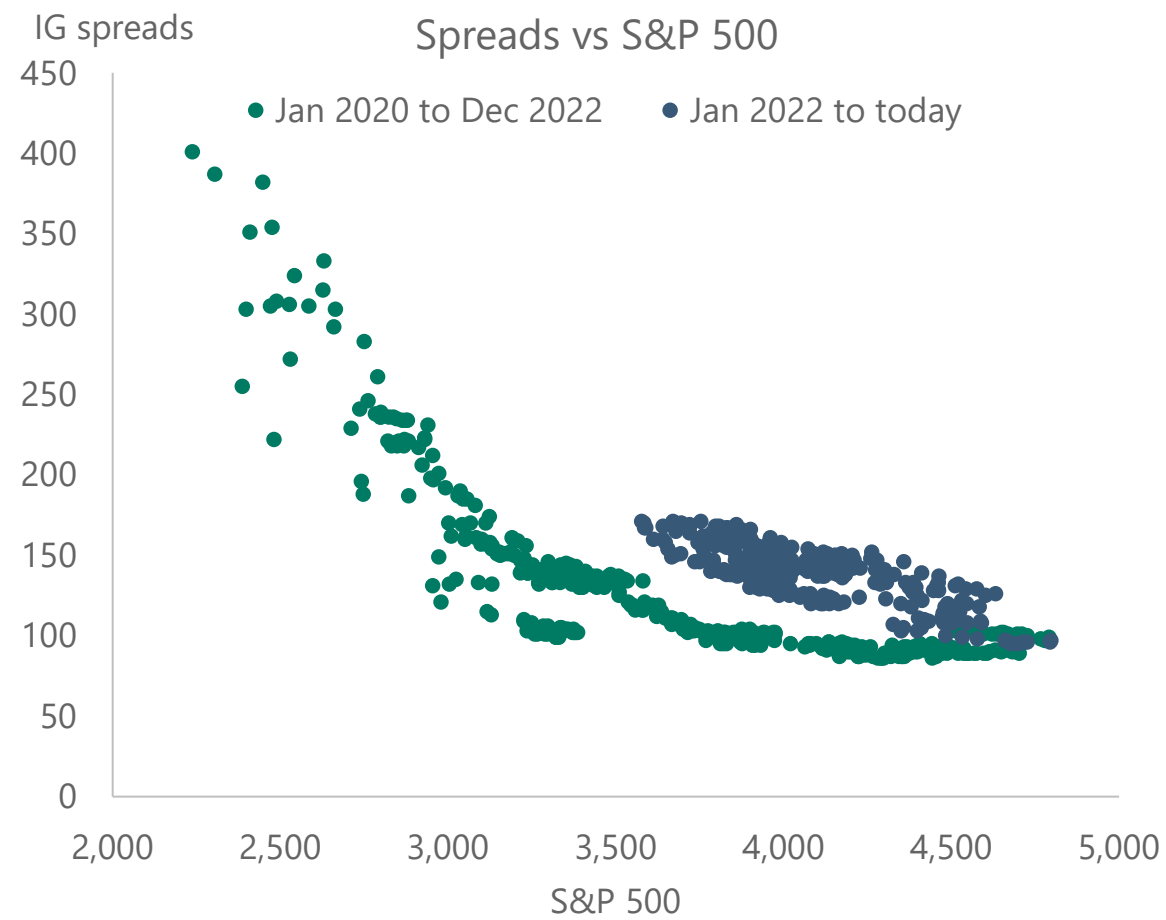




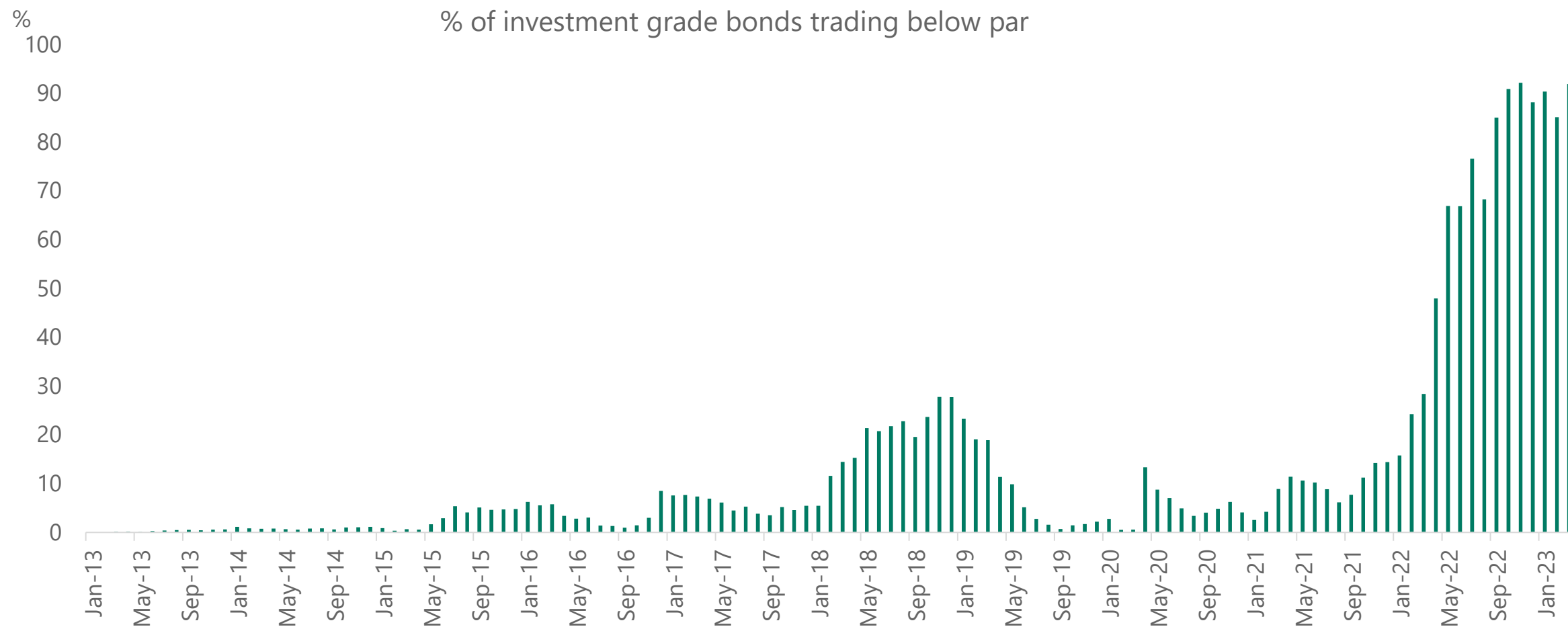
Synchronized sell-off in credit so far. Little differentiation between credits compared with 2008 and March 2020 episodes.



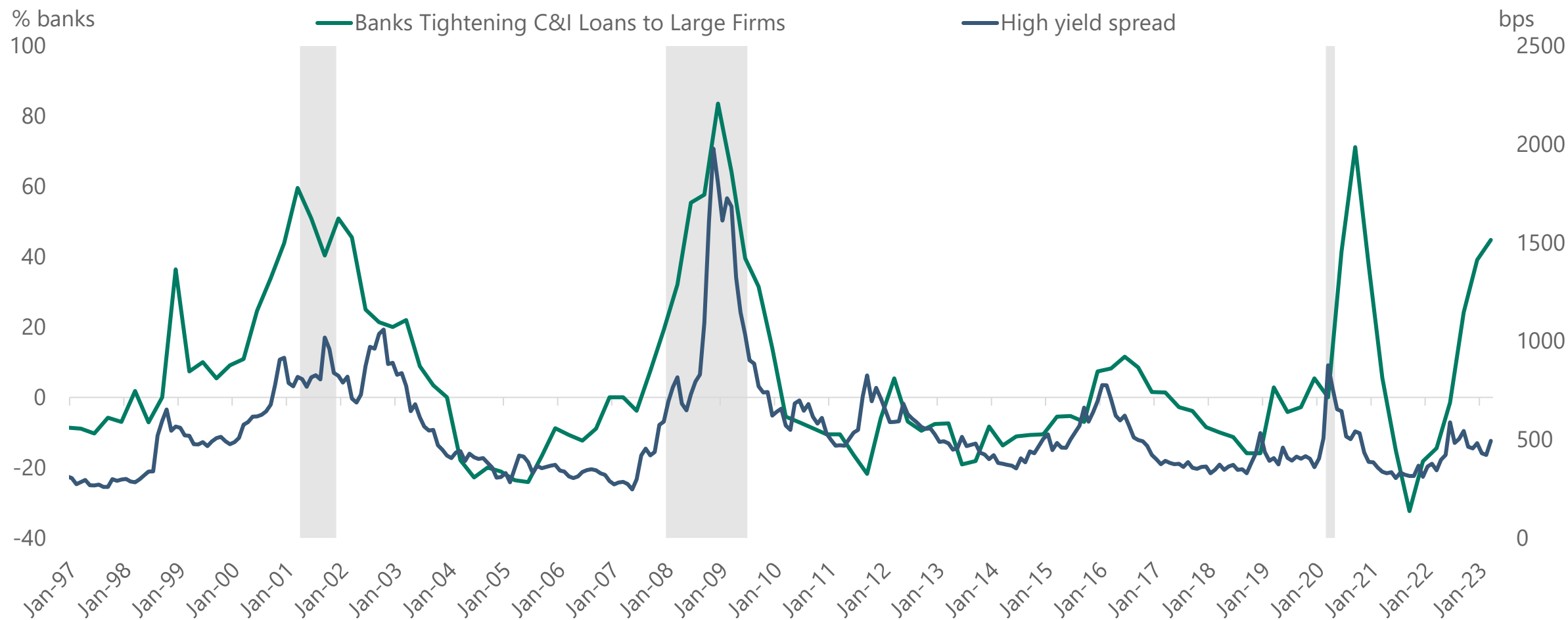
# Valuation of credit versus equities



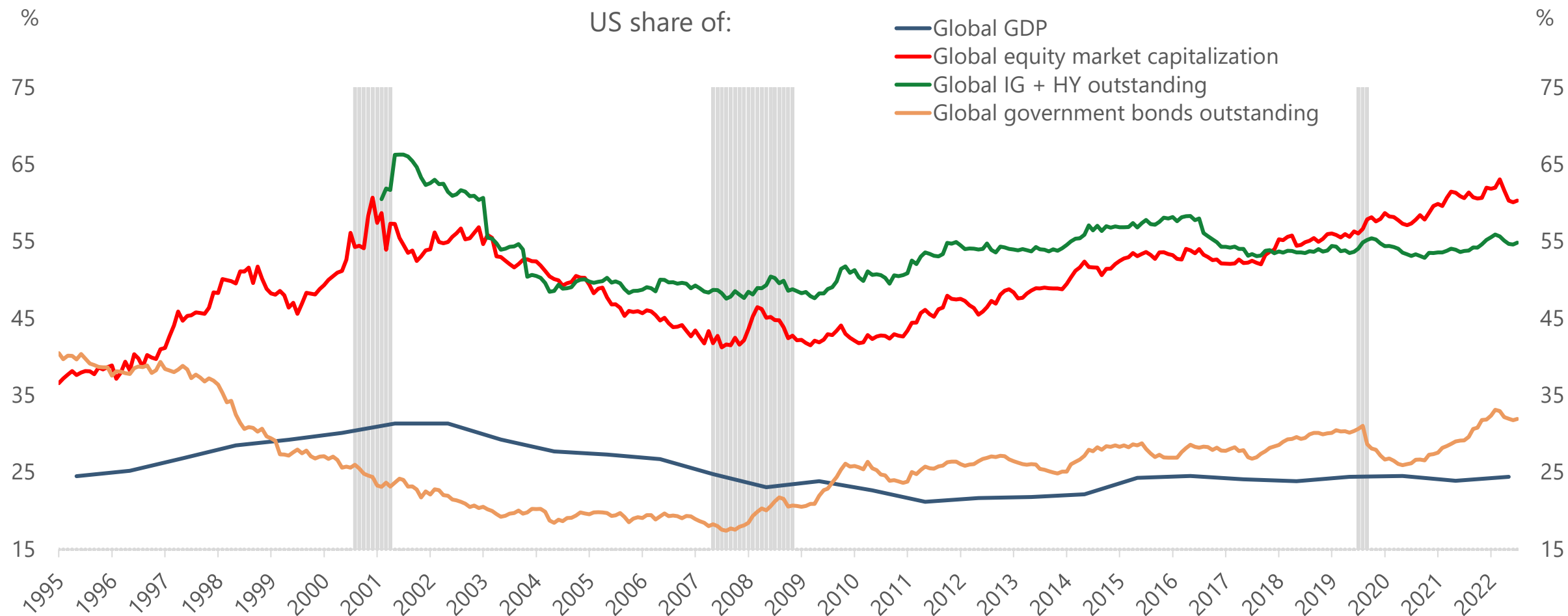
# 92% of the US IG market trading below par



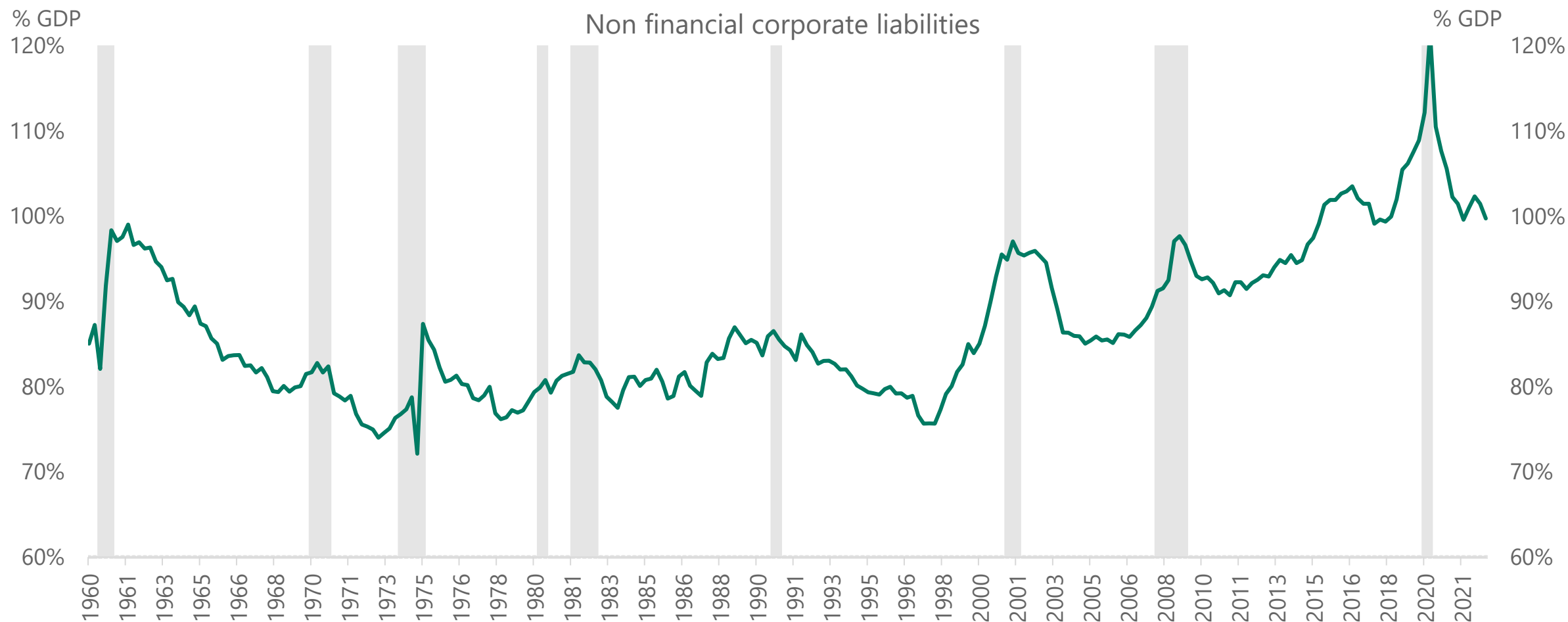
# Banks tightening credit conditions, HY spread should be trading wider



# US share of the world economy and global financial markets

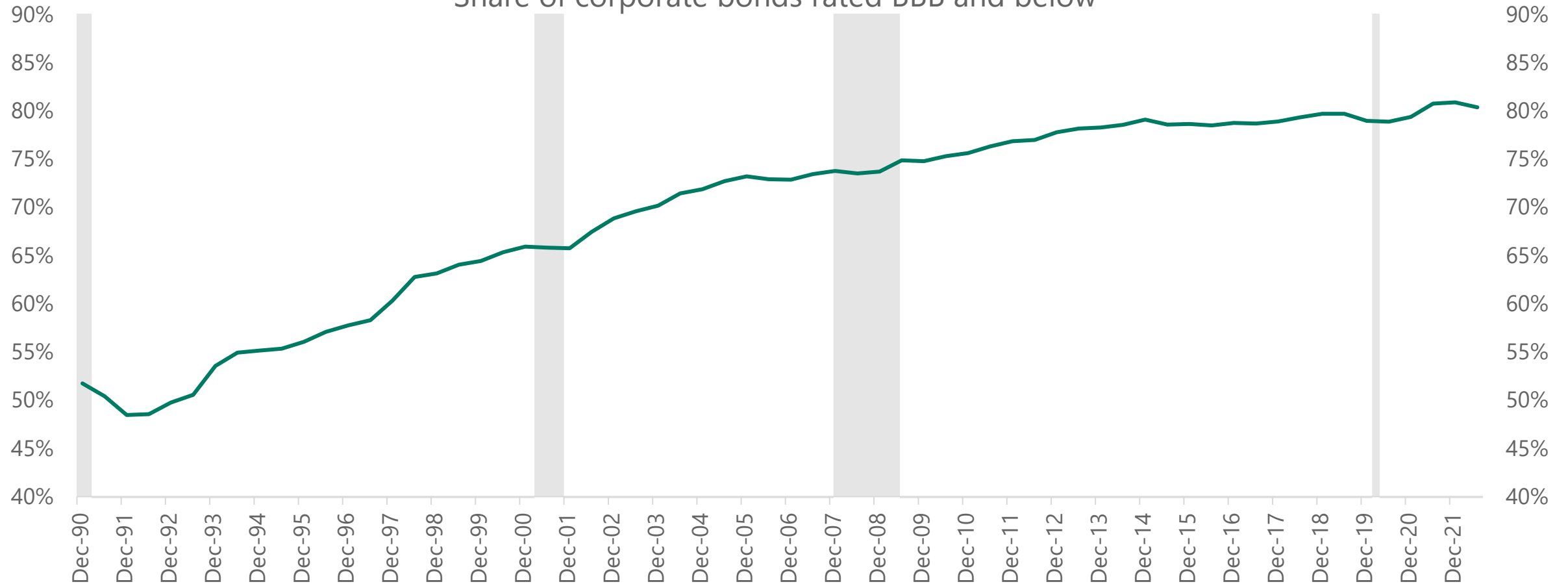


# Corporate debt is coming down as a share of GDP

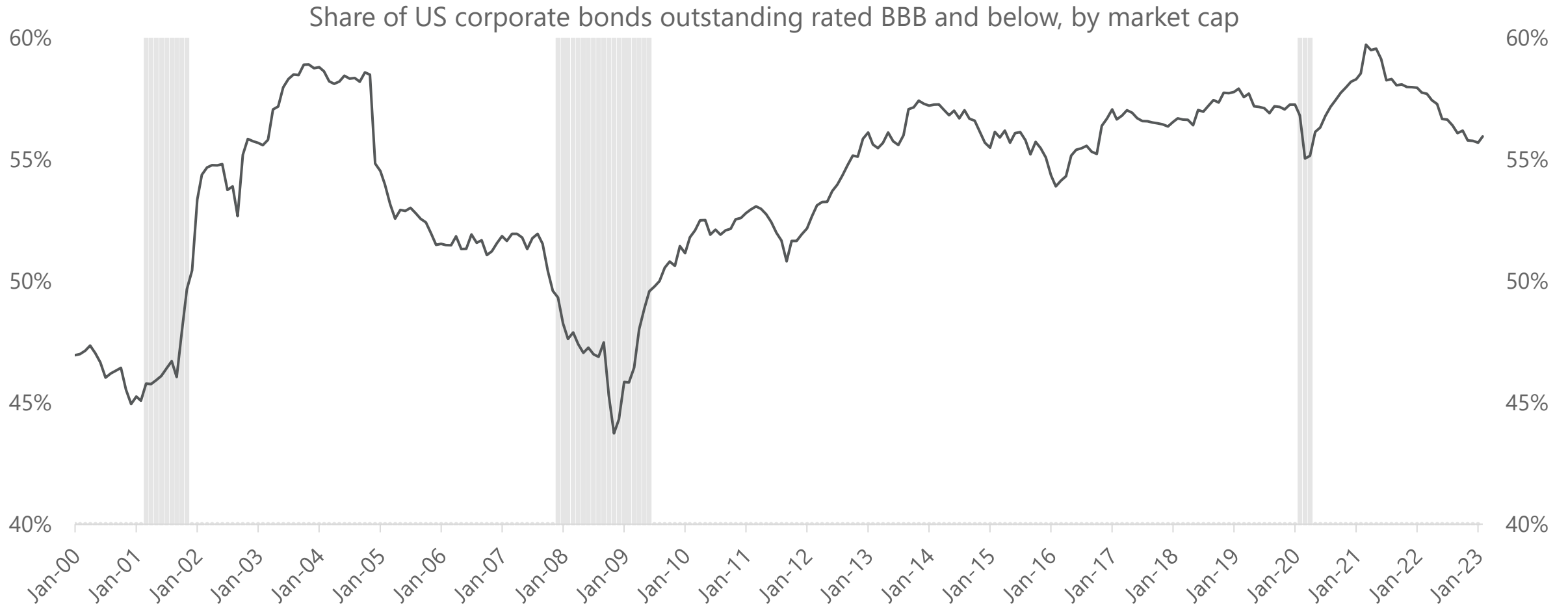


# Lower-rated firms are by definition more vulnerable to rising interest rates

Share of corporate bonds rated BBB and below

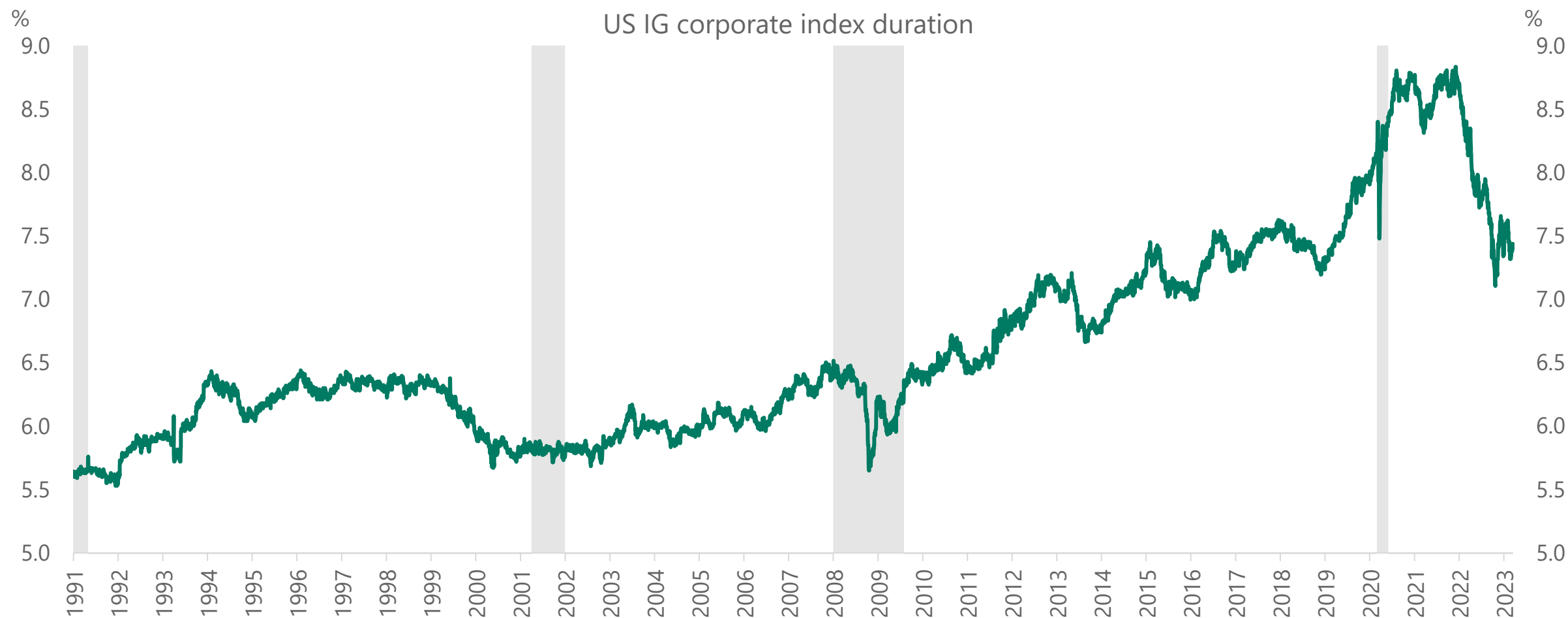


# Share of corporate bond market value outstanding rated BBB and below

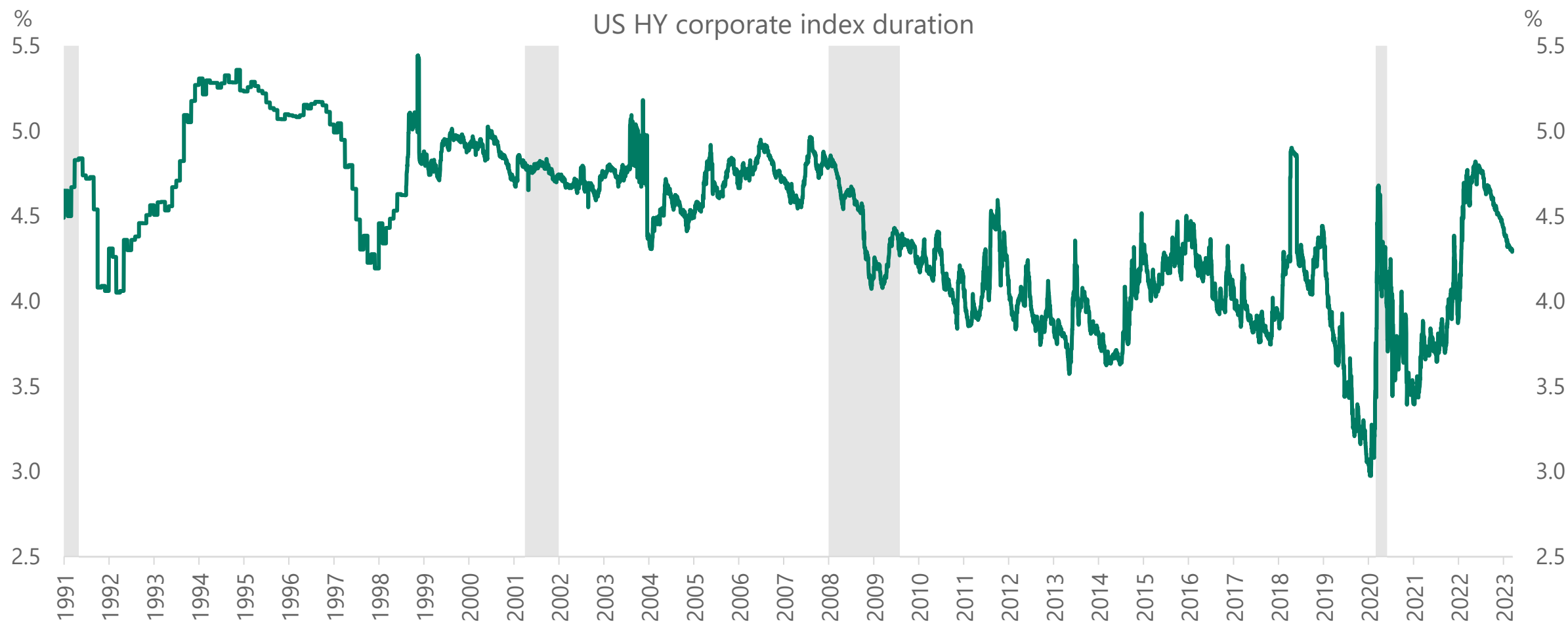




# IG credit index duration declining

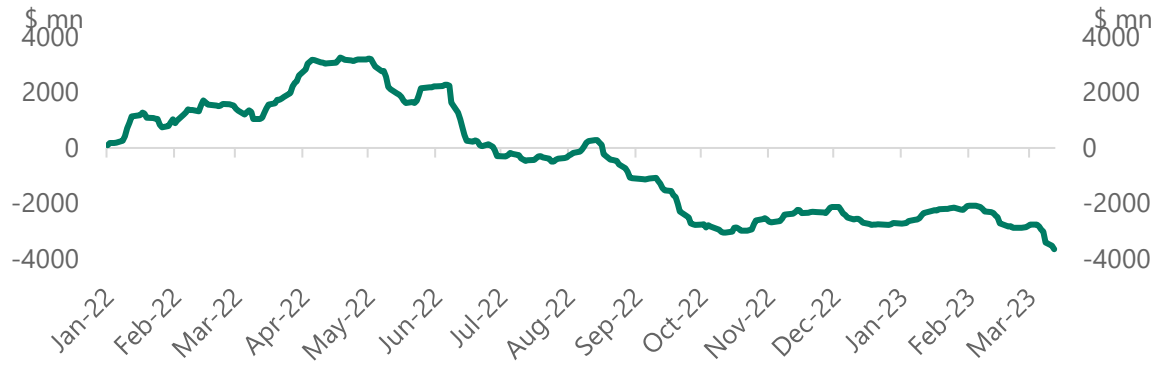


# HY credit index duration

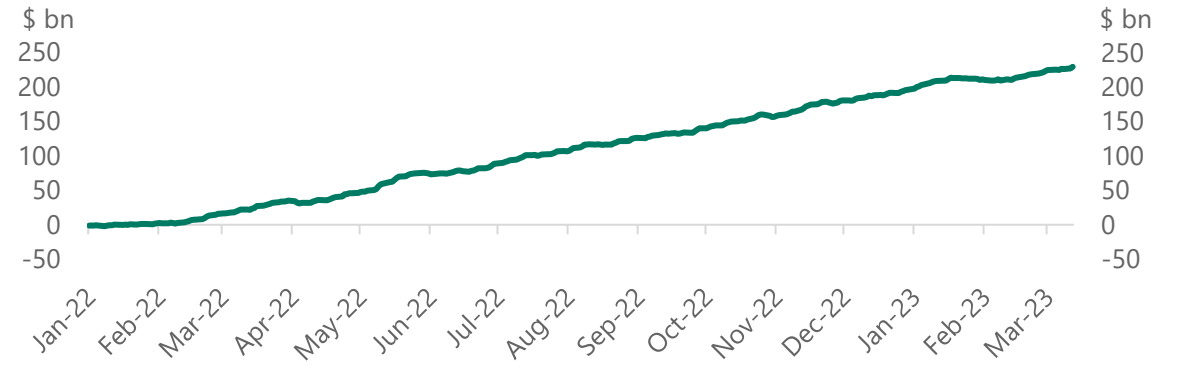


# Flow monitor

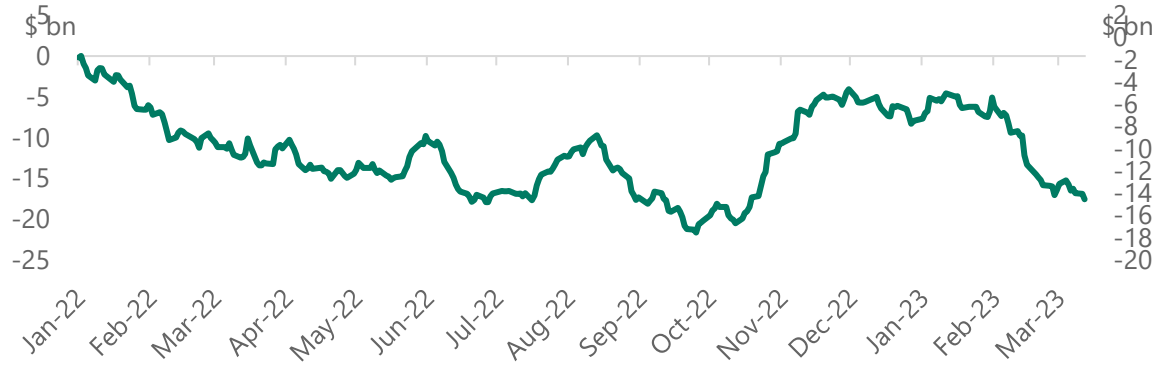
US bank loans ETF flows



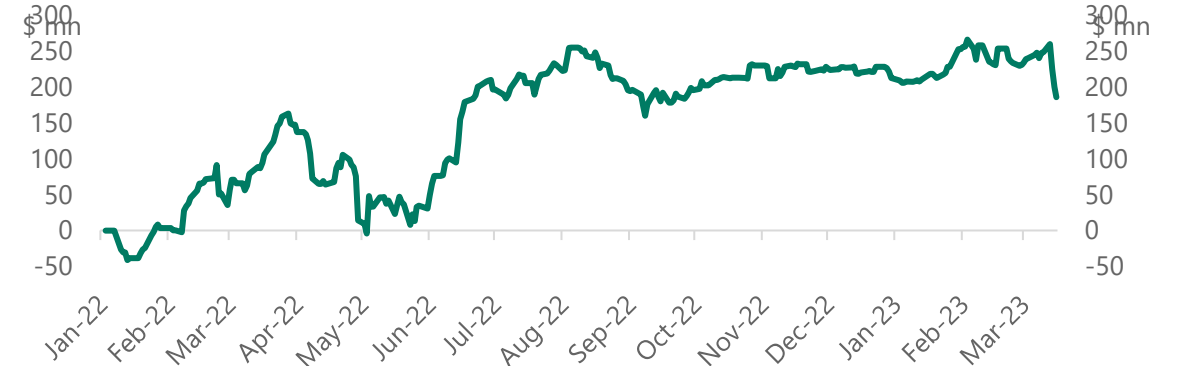
IG ETF flows



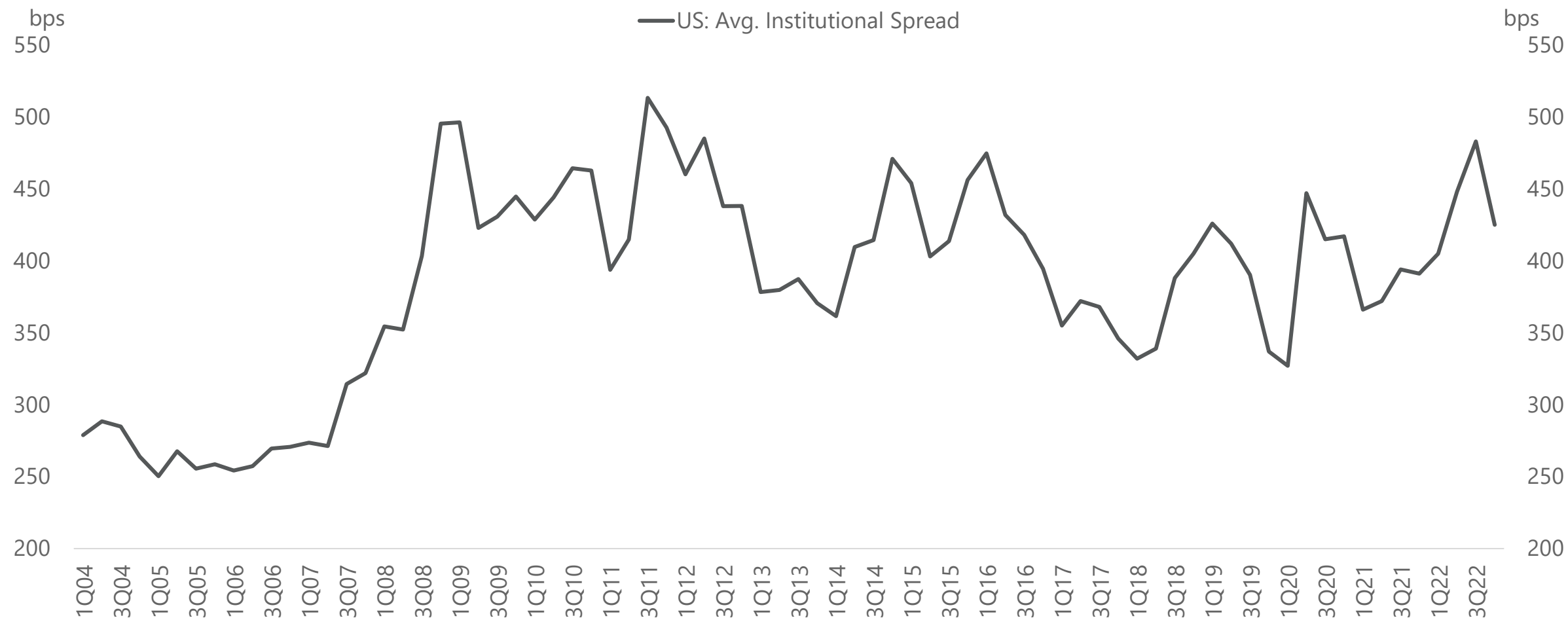
HY ETF Flows



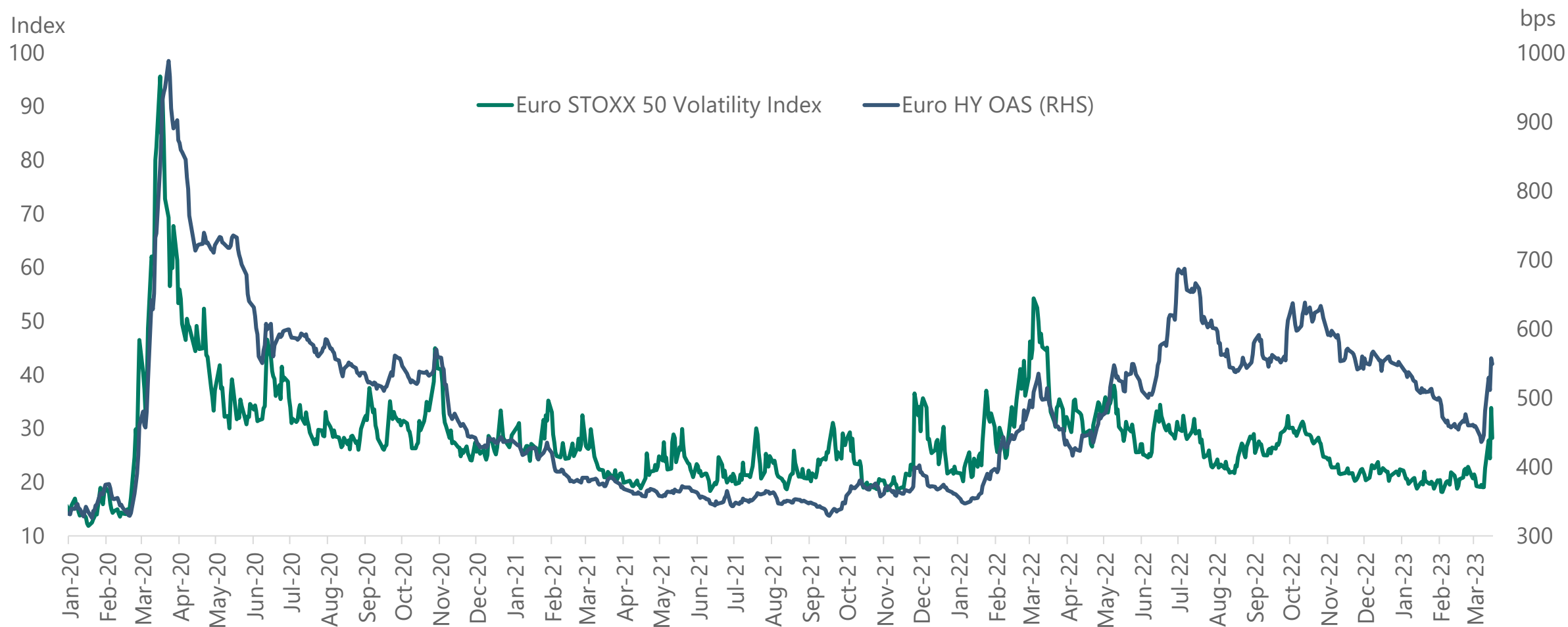
Crypto ETF flows



# Loans: Institutional spread relative to bespoke loans



# Convergence between EU equity vol and EU HY spreads

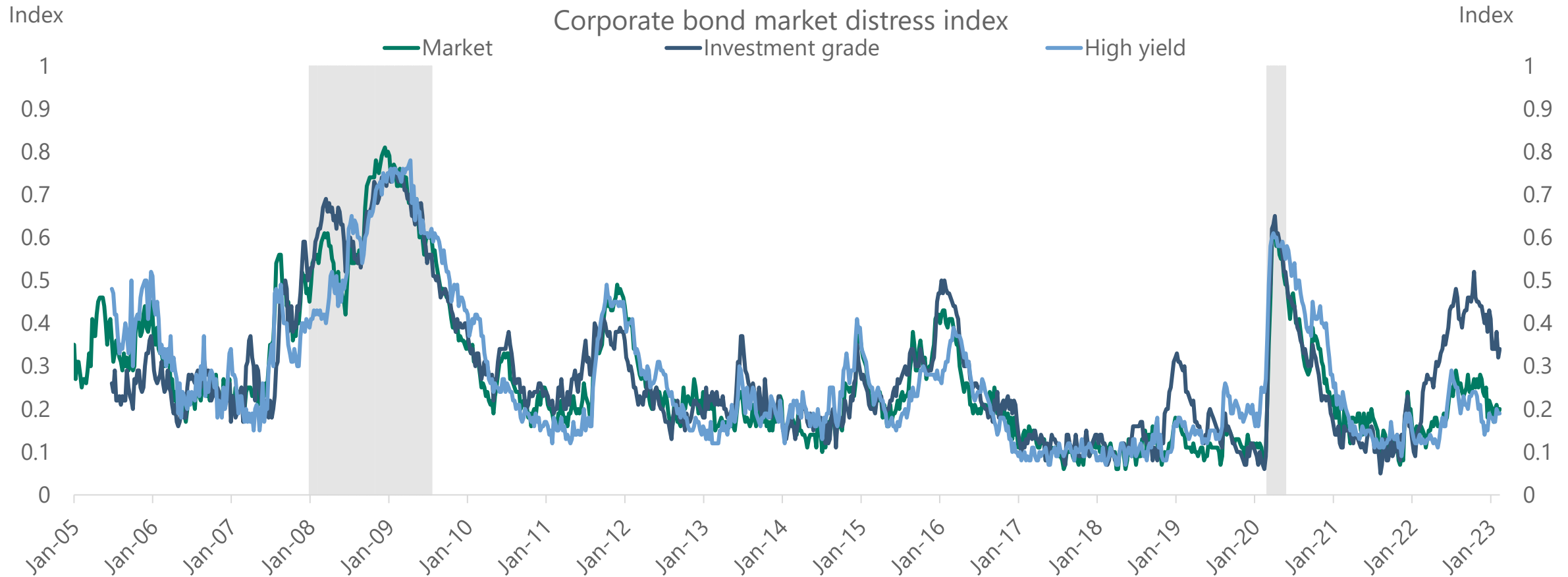


# 12% of bonds in the world trading at less than 2% yield

% global bonds outstanding



# NY Fed measure of corporate bond market functioning shows less distress in IG



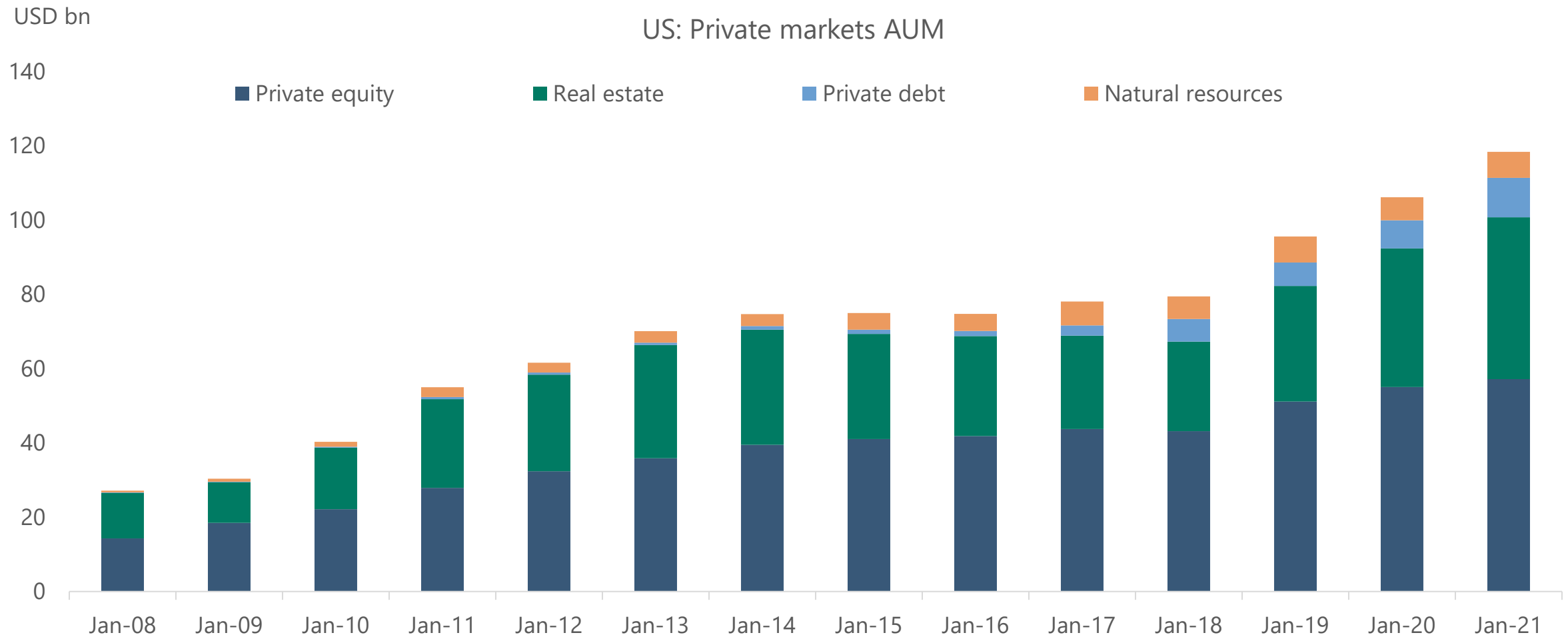
Source: FRB of New York, Apollo Chief Economist (Note: Corporate bonds are a key source of funding for U.S. non-financial corporations and a key investment security for insurance companies, pension funds, and mutual funds. Distress in the corporate bond market can thus both impair access to credit for corporate borrowers and reduce investment opportunities for key financial sub-sectors. CMDI offers a single measure to quantify joint dislocations in the primary and secondary corporate bond markets. Ranging from 0 to 1, a higher level of CMDI corresponds with historically extreme levels of dislocation. CMDI links bond market functioning to future economic activity through a new measure.

# Percentage of HY bonds trading with yield higher than 10%

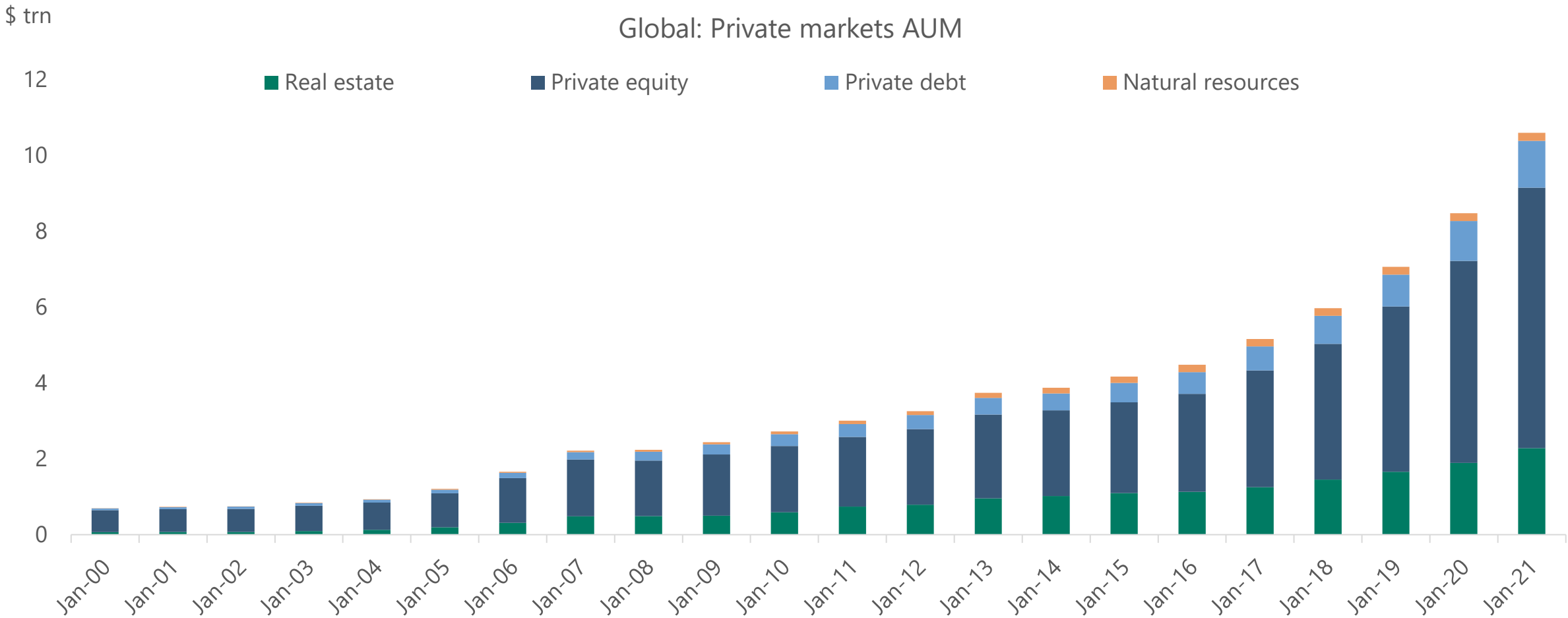




# US: Total assets under management in private markets

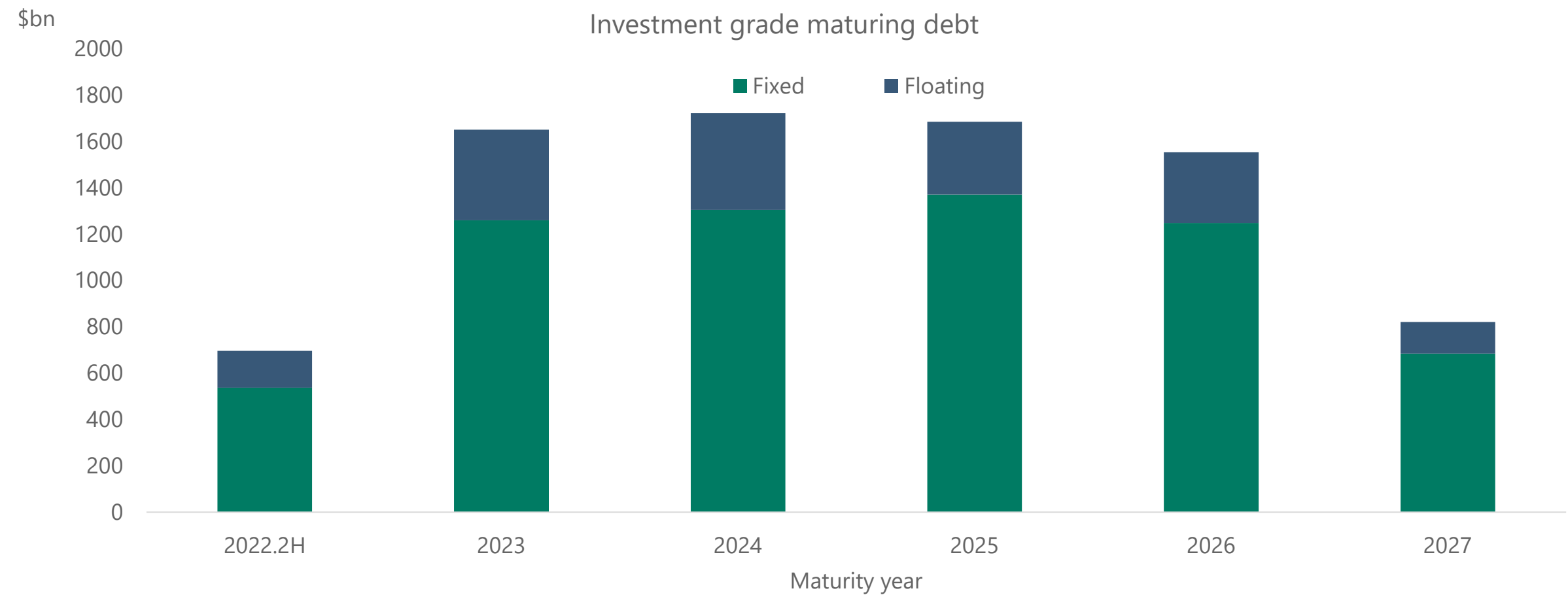


# Total assets under management in private markets funds globally



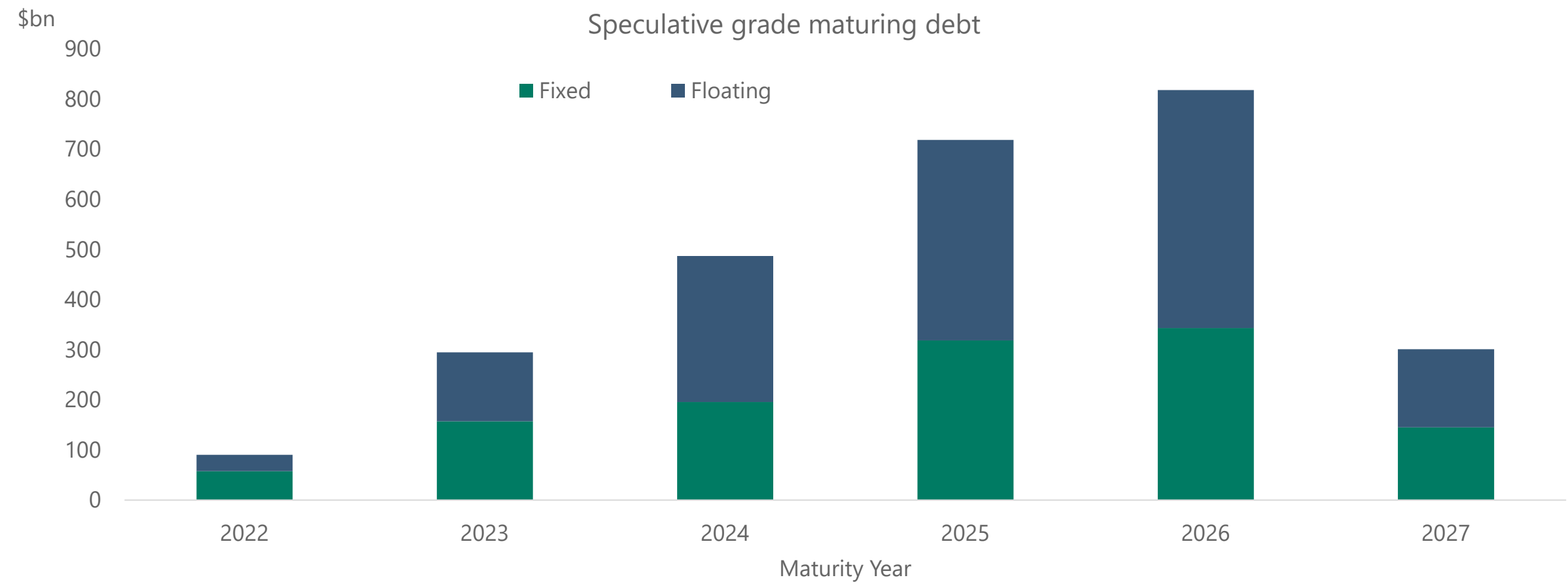
Source: Preqin, Apollo Chief Economist (Note: Real estate includes private real estate and infrastructure funds)

# Investment grade maturity wall



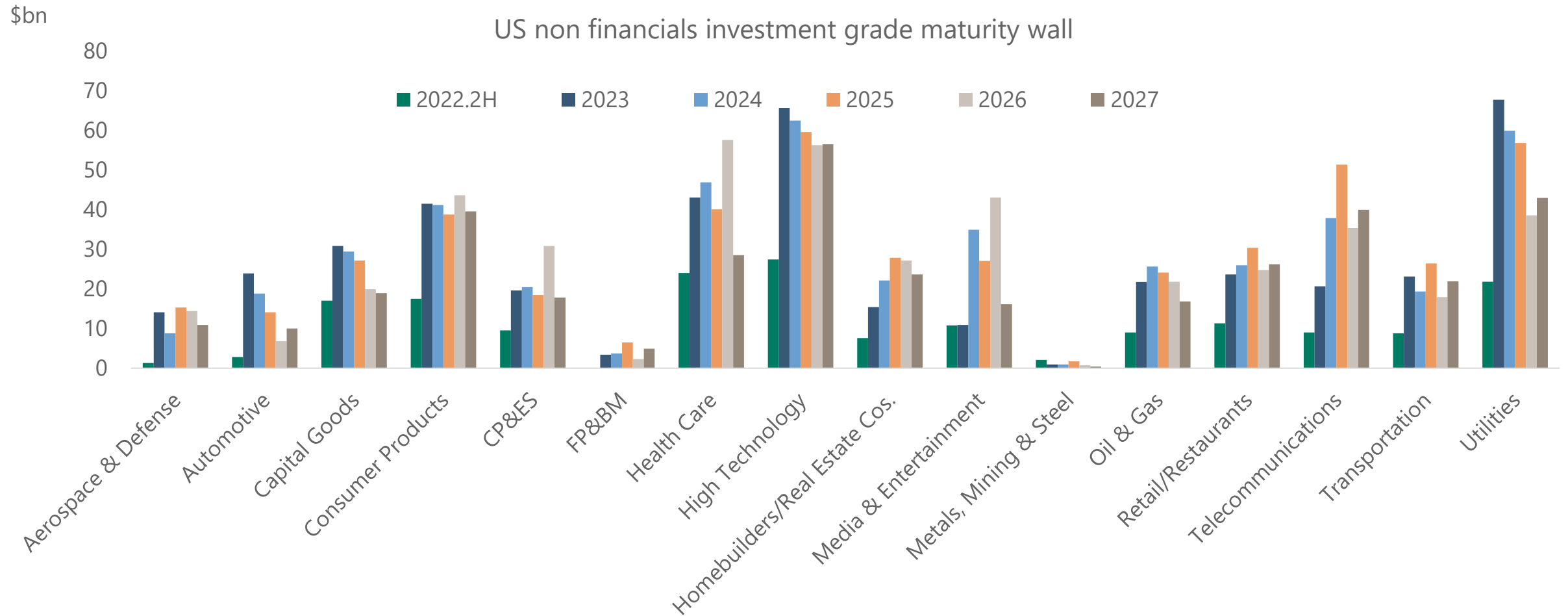
Source: S&P Global ratings Research, Apollo Chief Economist. Note: Data as of July 1, 2022. Includes issuers' investment-grade bonds, loans, and revolving credit facilities that are rated by S&P Global Ratings.

# High yield maturity wall



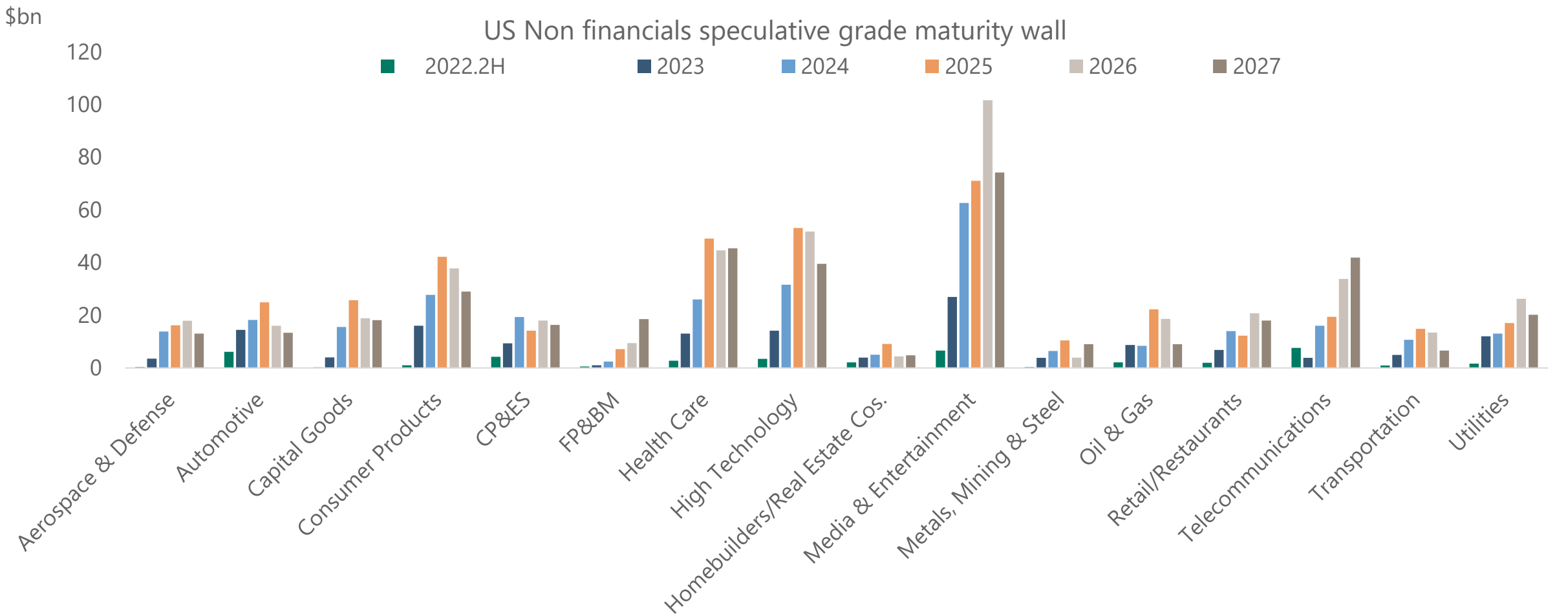
Source: S&P Global ratings Research, Apollo Chief Economist. Note: Data as of July 1, 2022. Includes issuers' speculative-grade bonds, loans, and revolving credit facilities that are rated by S&P Global Ratings.

# IG: US Non financials maturity wall



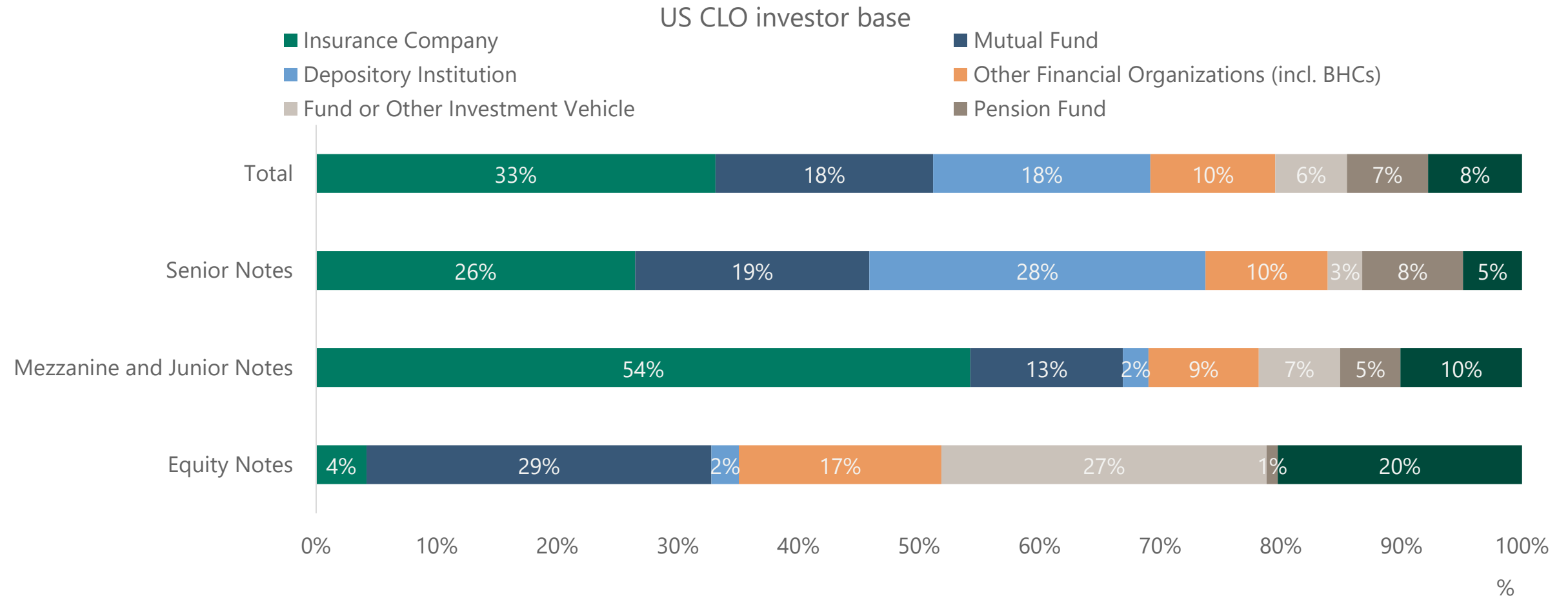
Source: S&P, Apollo Chief Economist. Note: CP&ES--Chemicals, packaging, and environmental services. FP&BM--Forest products and building materials. Media and entertainment includes the leisure sector. Includes bonds, loans, and revolving credit facilities that are rated by S&P Global Ratings. Data as of July 1, 2022.

# HY: US Non financials maturity wall

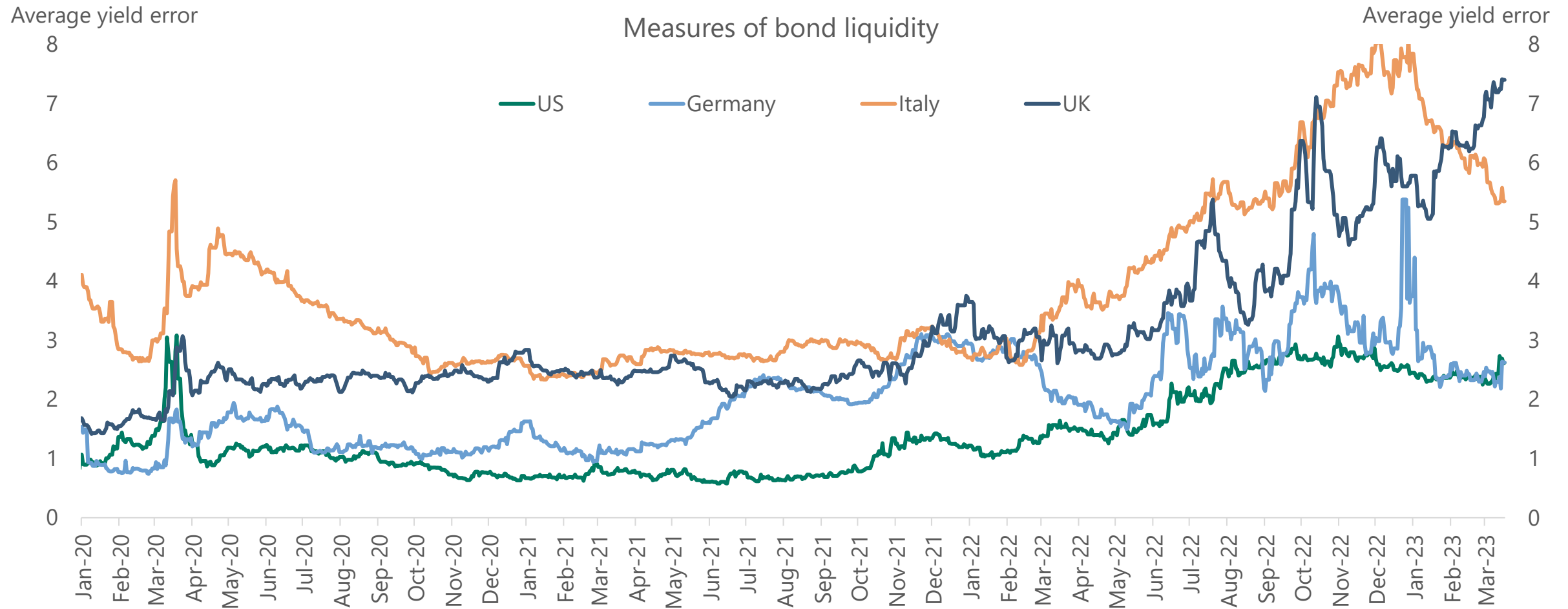


Source: S&P, Apollo Chief Economist. Note: CP&ES--Chemicals, packaging, and environmental services. FP&BM--Forest products and building materials. Media and entertainment includes the leisure sector. Includes bonds, loans, and revolving credit facilities that are rated by S&P Global Ratings. Data as of July 1, 2022.

# US CLO investor base by tranche



# Liquidity deteriorating in UK bond market

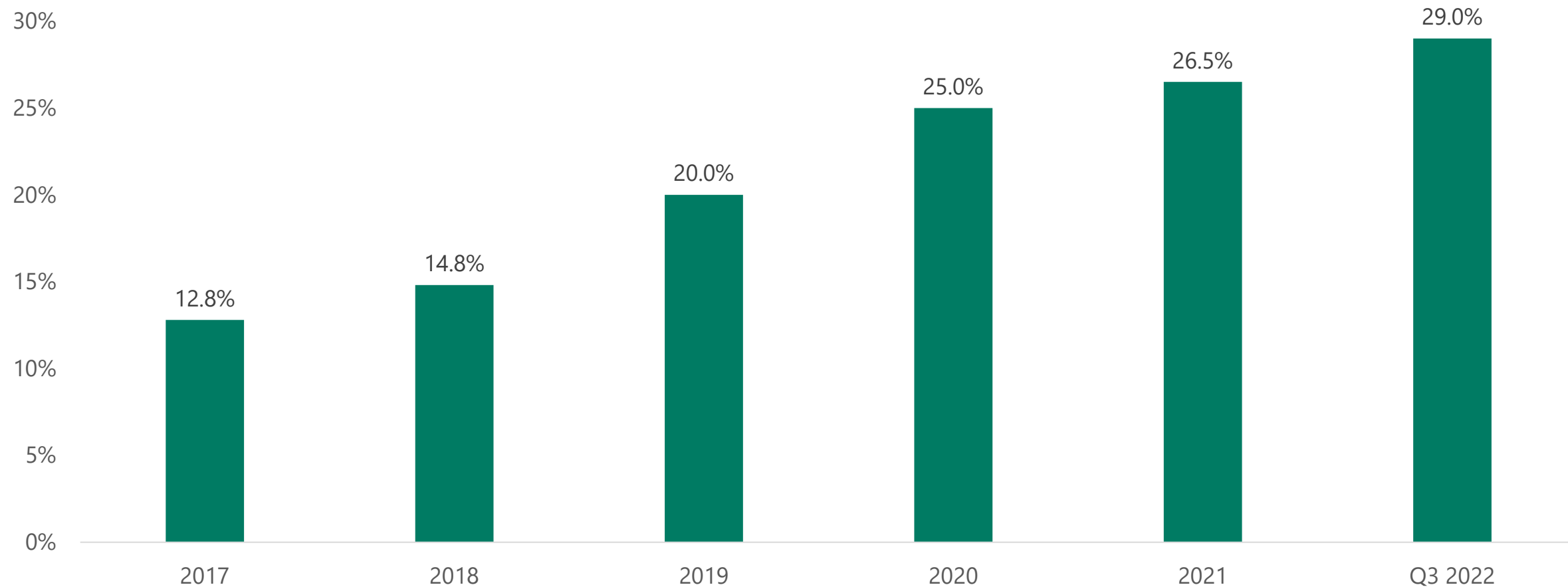


Source: Bloomberg, Apollo Chief Economist. Note: The index displays the average yield error across the universe of government notes and bonds with remaining maturity 1-year or greater, based off the intra-day Bloomberg relative value curve fitter. When liquidity conditions are favorable the average yield errors are small as any dislocations from fair values are normalized within a short time frame. Average yield error is defined as an aggregate measure for dislocations in Treasury securities across the curve.



# 29% of the loans in the S&P LSTA Leveraged Loan Index are rated B-

% of B- loans in S&P rates US BSL CLOs



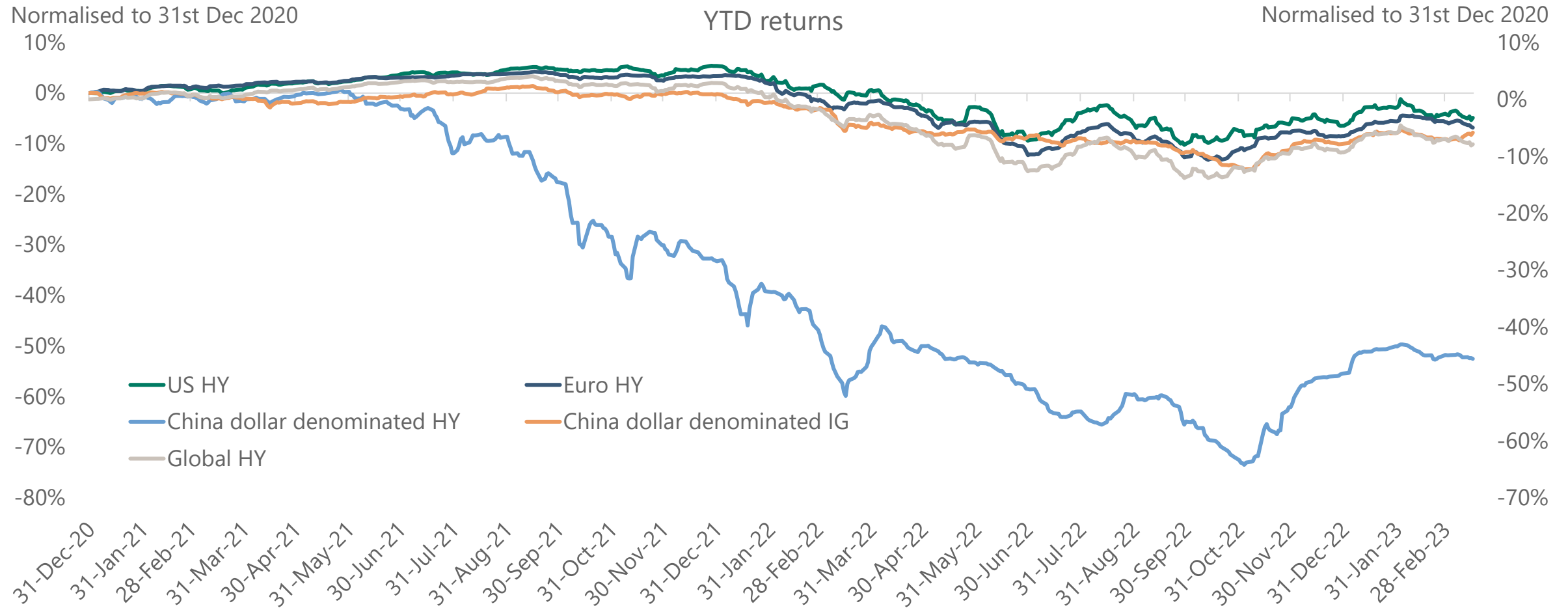
China HY



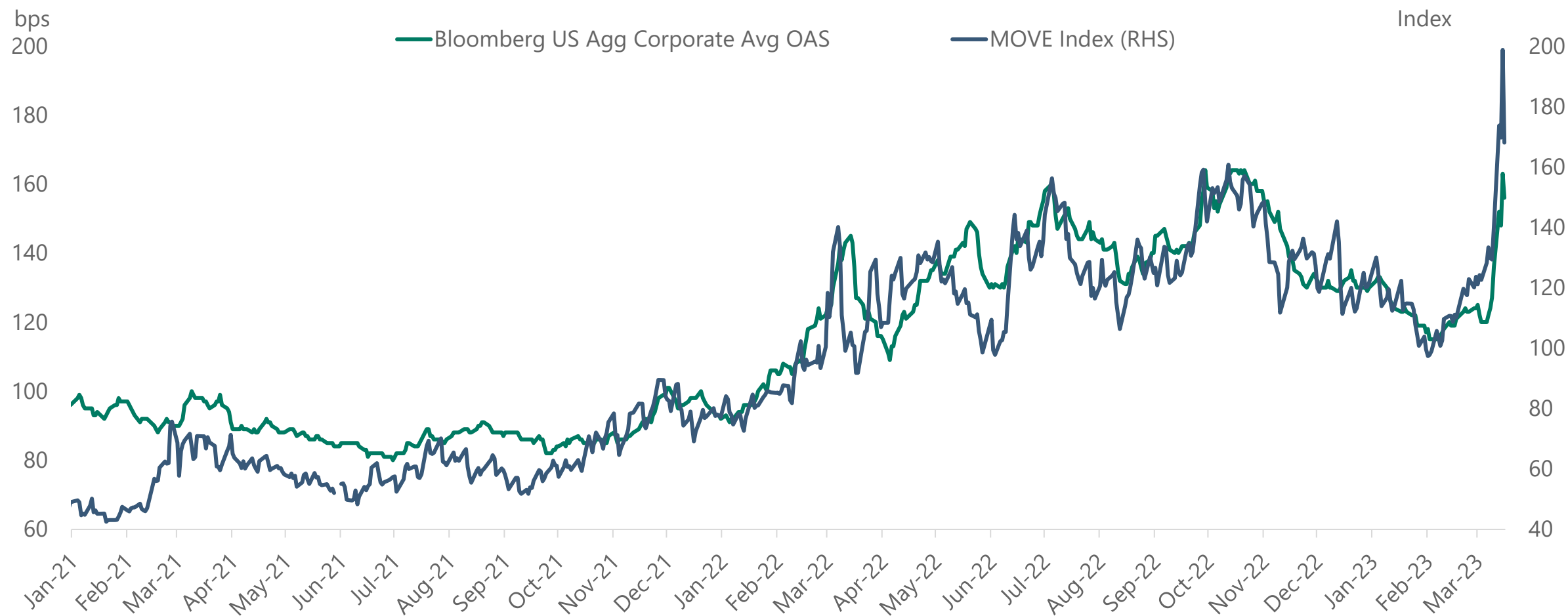
The yield on China HY has declined significantly, now at 16%



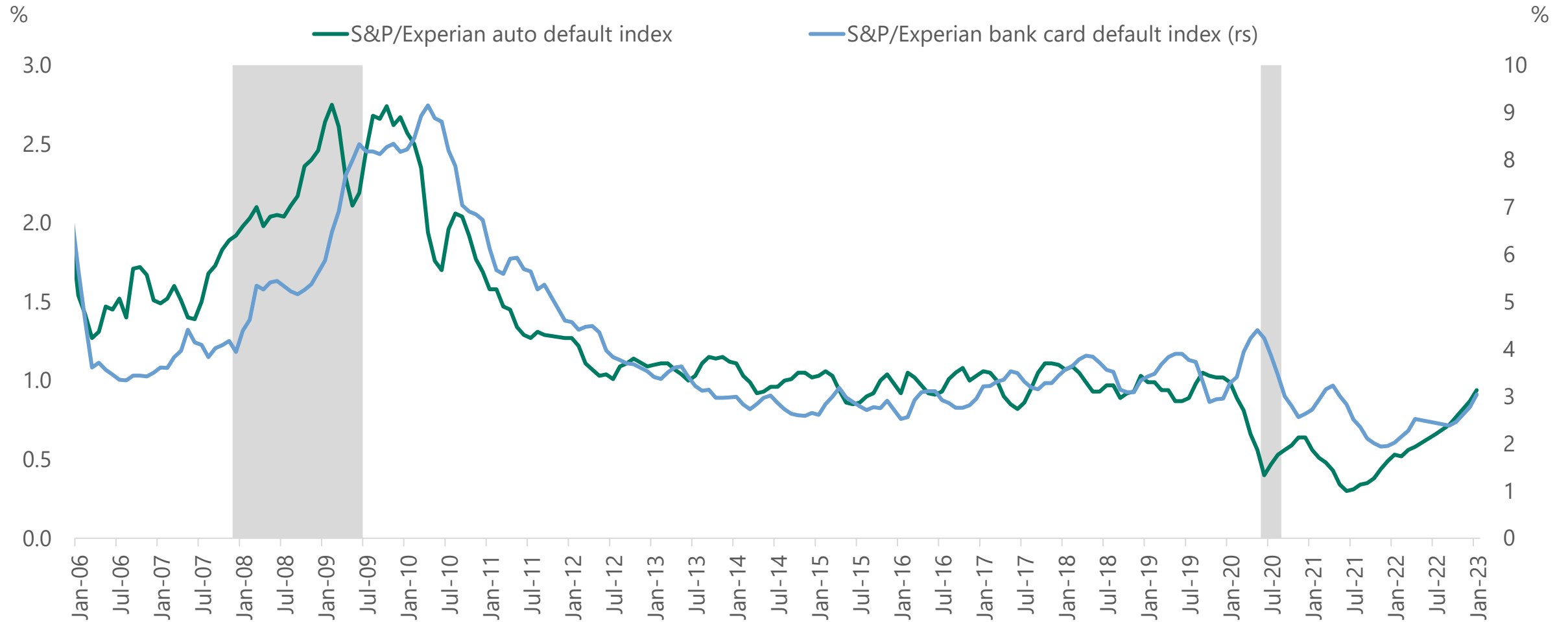
# Little contagion from China HY to US and EU credit markets



# US IG spread widening



# Default rates for auto loans and credit cards are moving higher





# Torsten Slok, Ph.D.

## Chief Economist

Apollo Global Management

[tslok@apollo.com](mailto: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.