

APOLLO

Credit market outlook: Fed hawkishness will keep markets volatile

Torsten Slok, Jyoti Agarwal, and Rajvi Shah

tslok@apollo.com

Apollo Global Management

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Unless otherwise noted, information as of February 2023.

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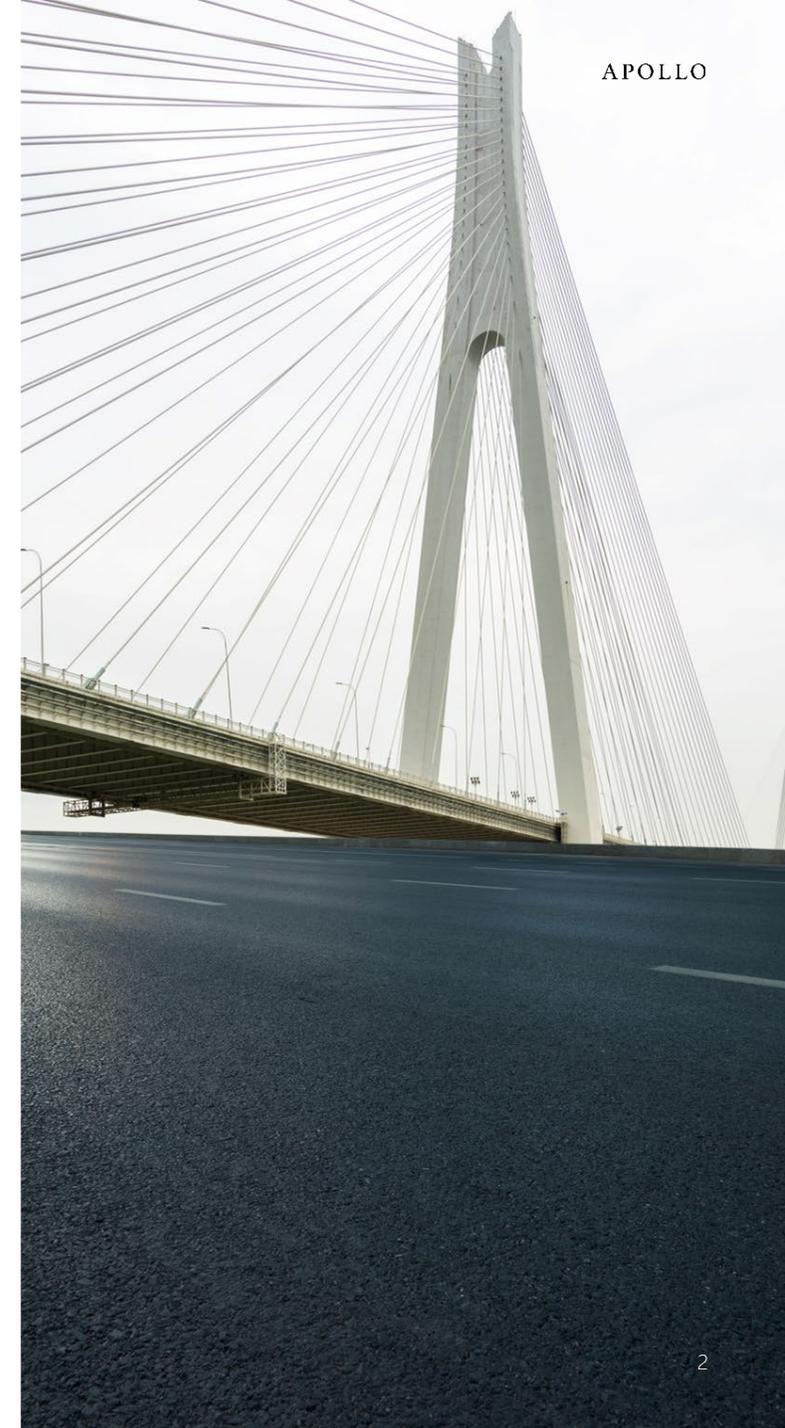
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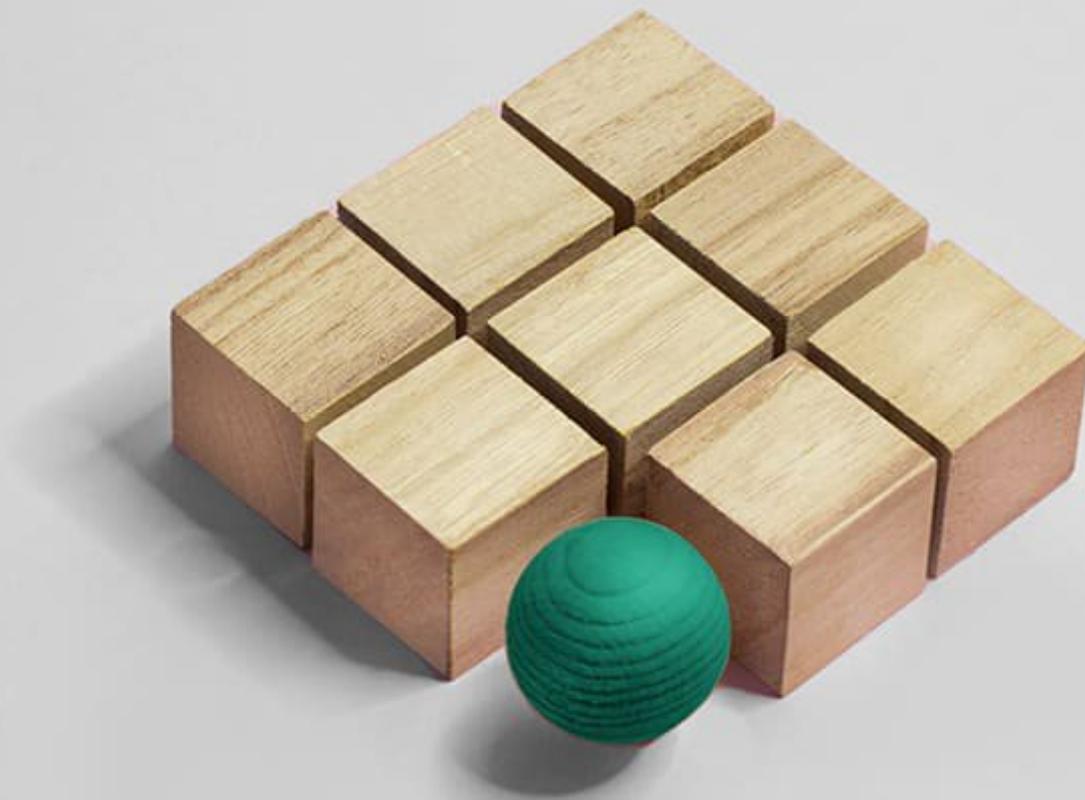
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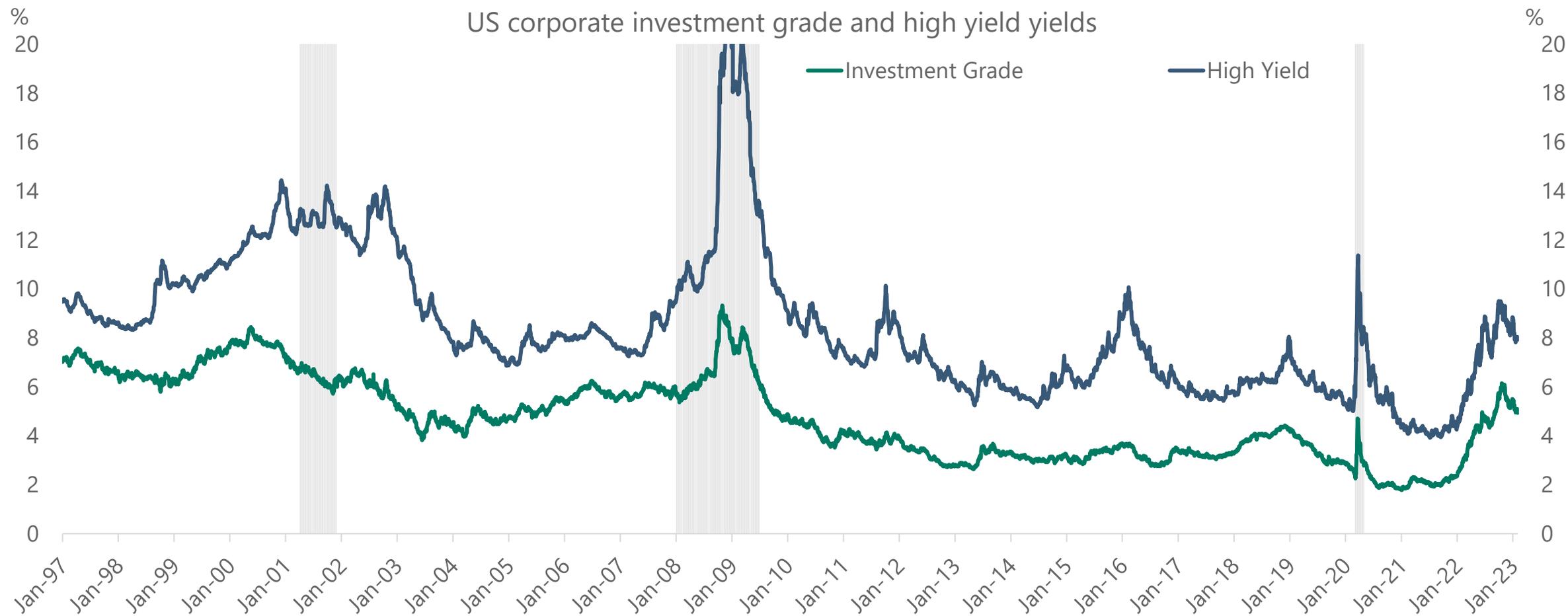
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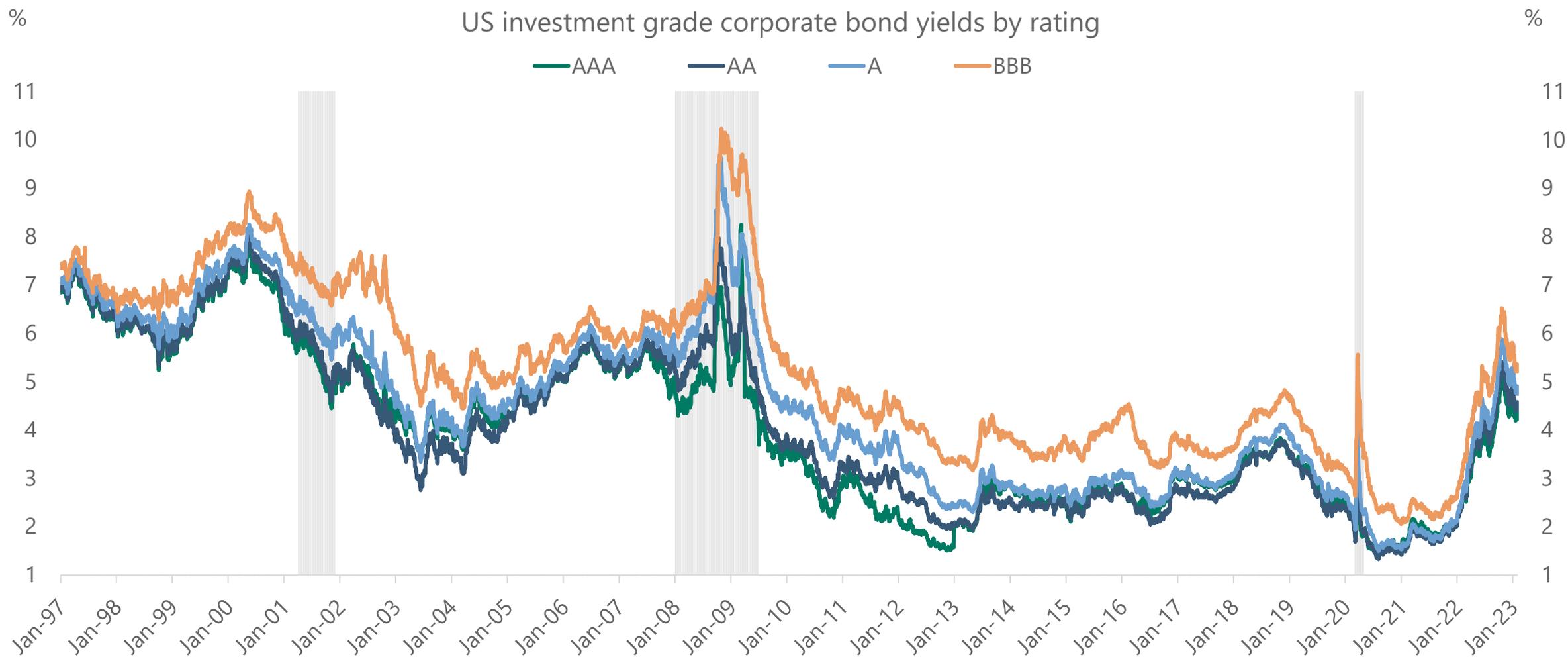
Yields



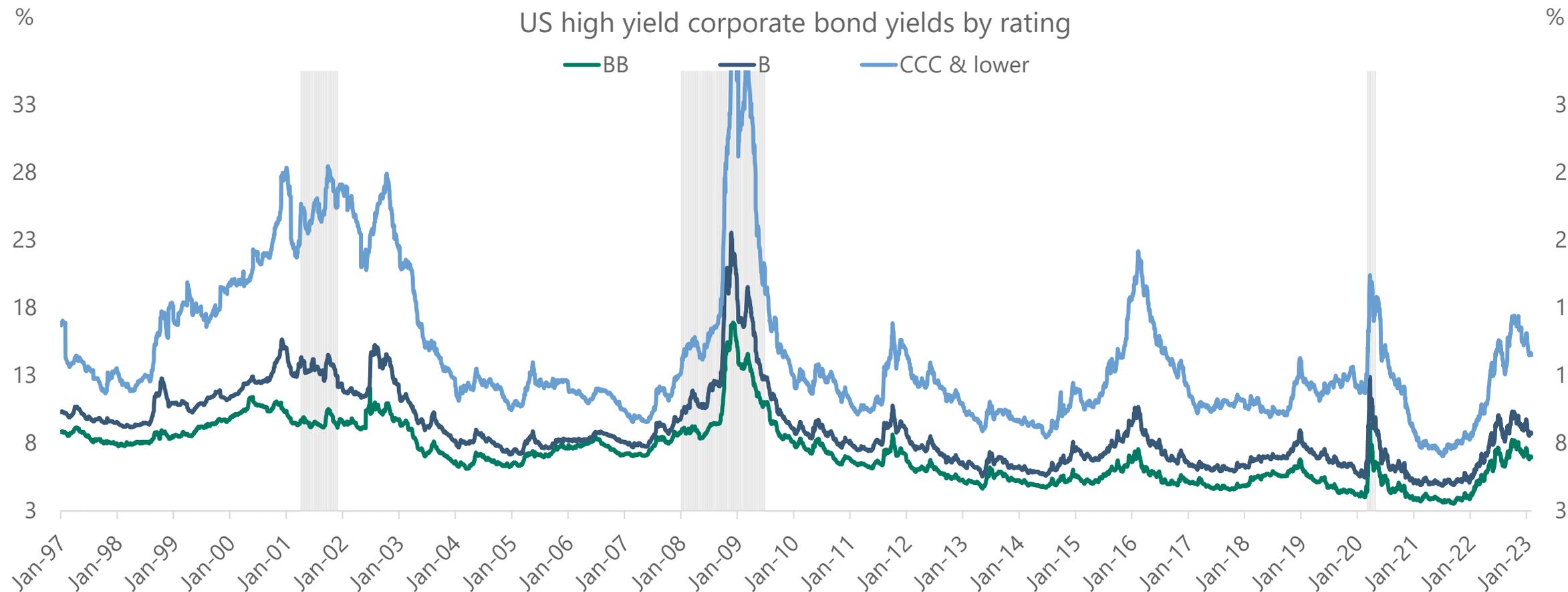
US IG yields around 5% and HY yield around 8%



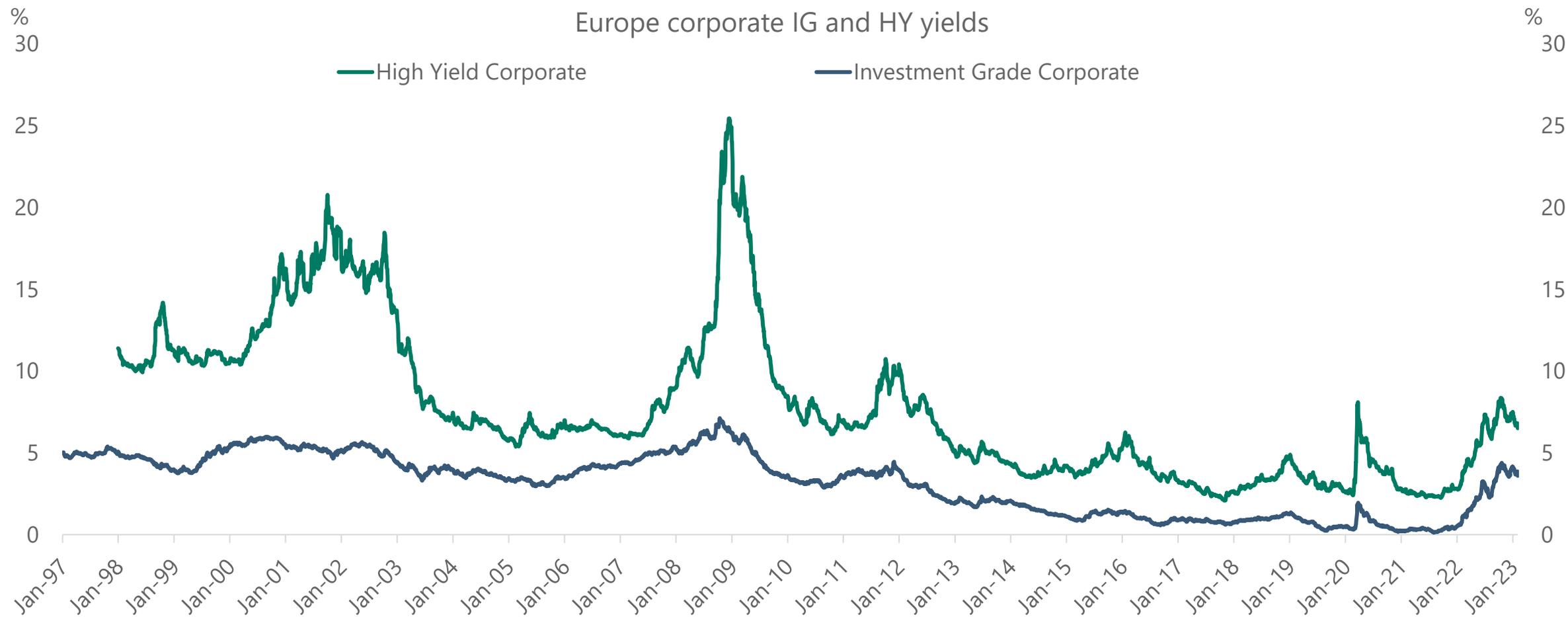
US IG yield levels, by rating



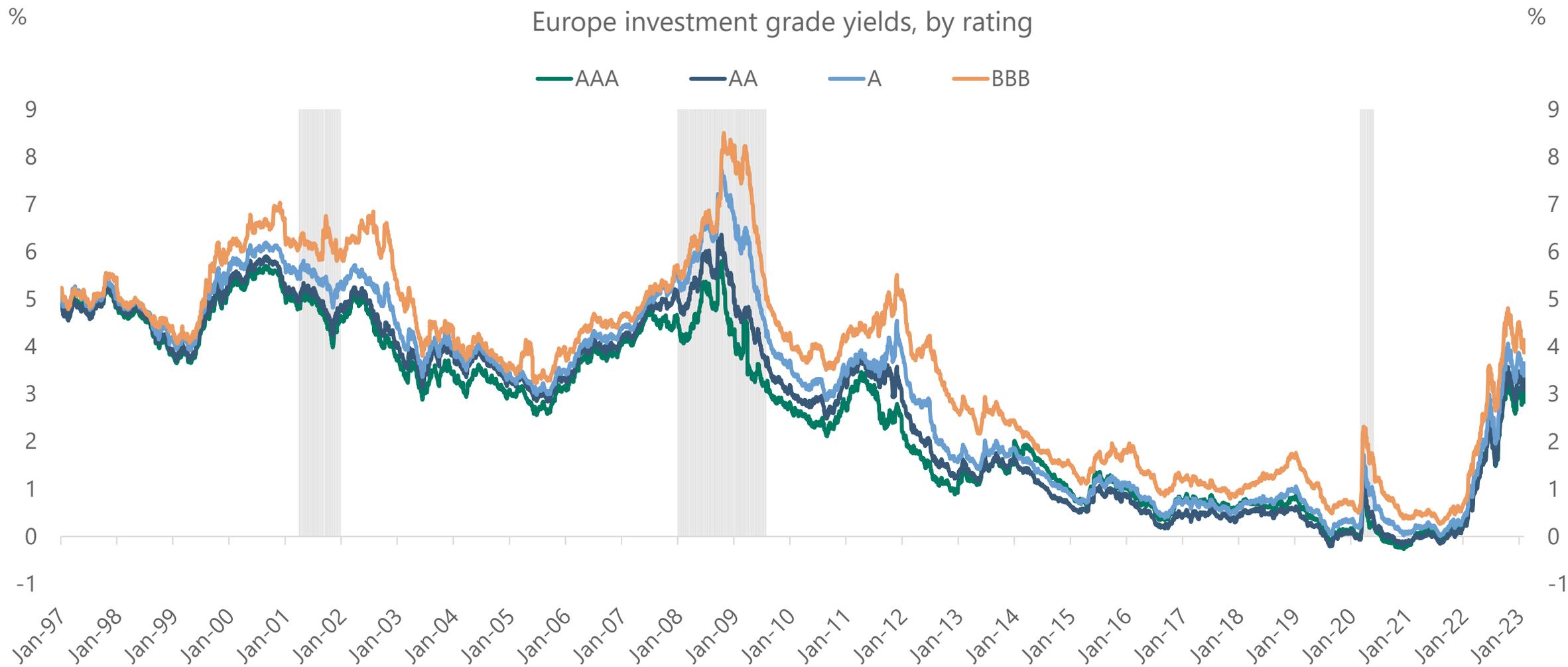
US HY yield levels, by rating



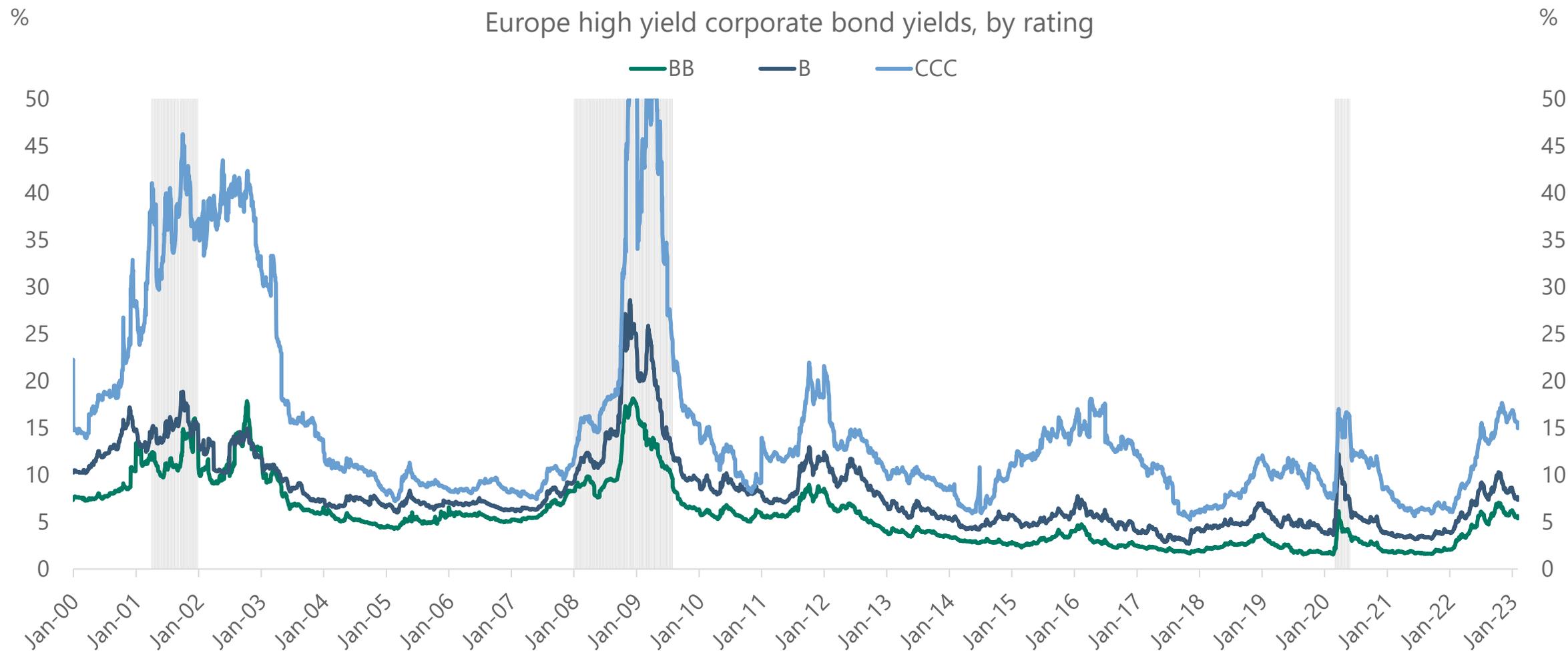
European corporate IG and HY yields



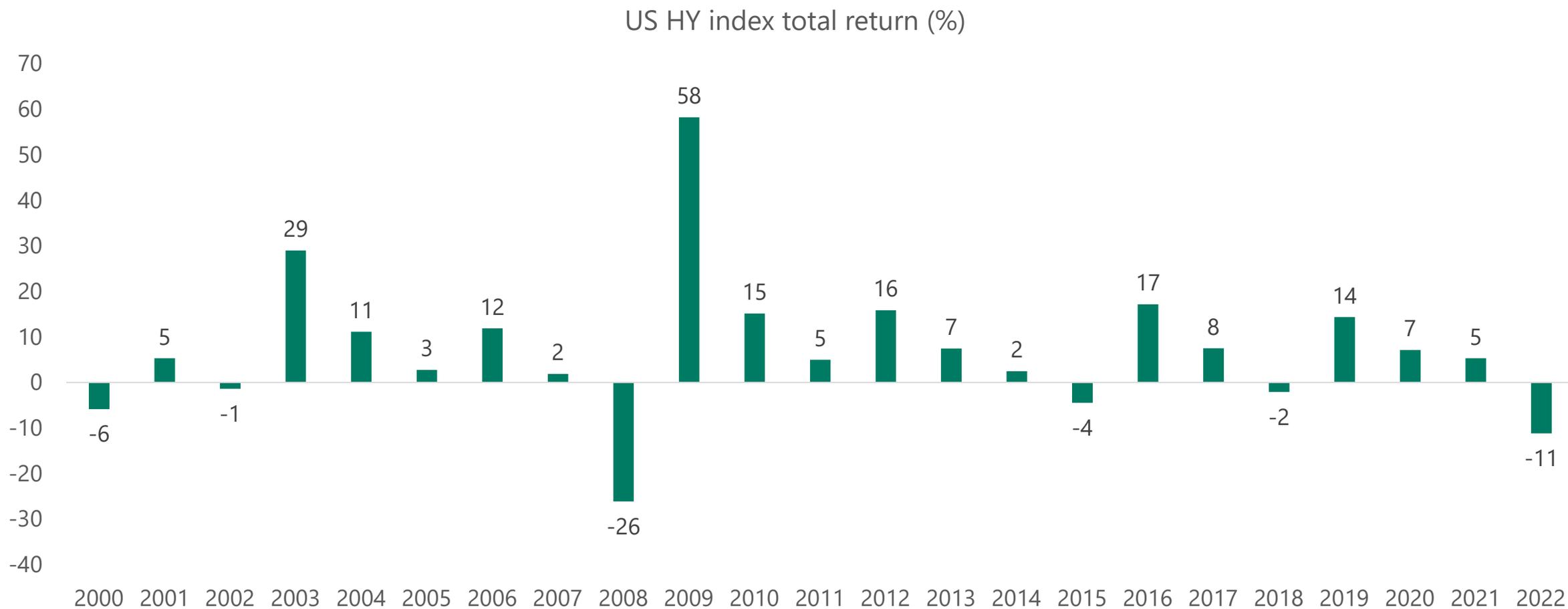
European IG yield levels, by rating



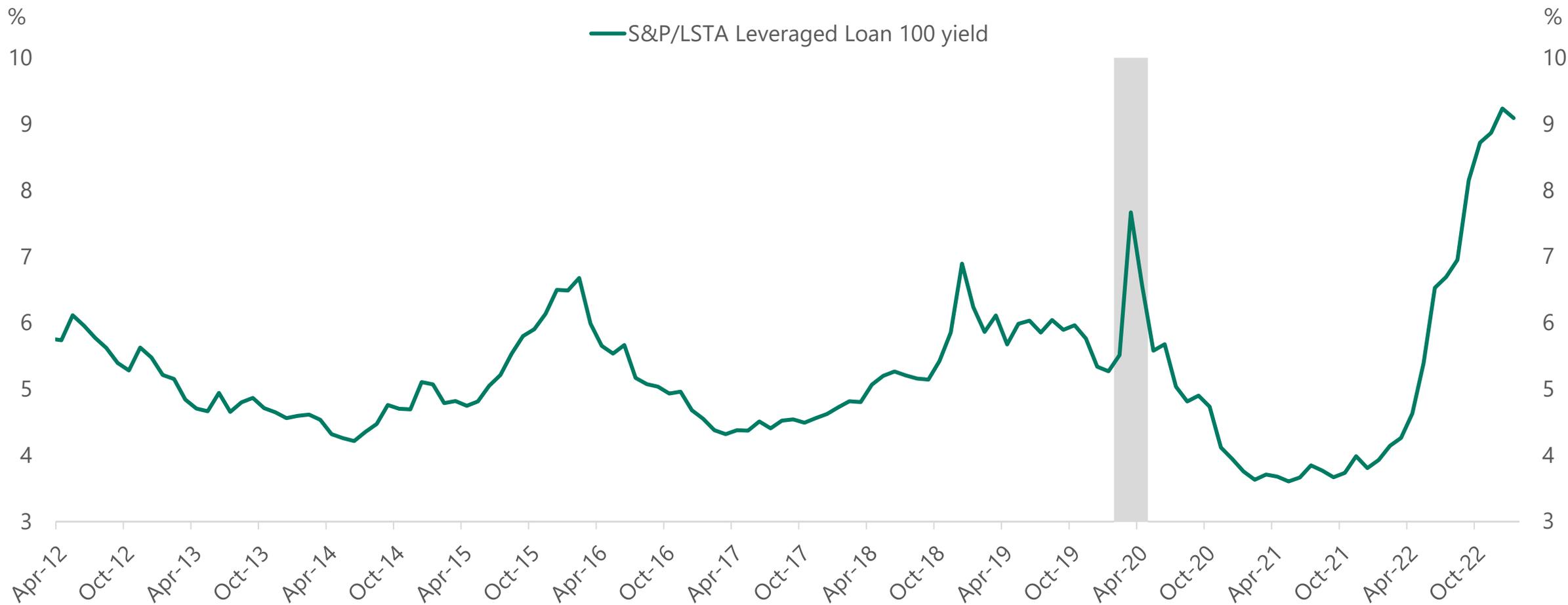
European HY yield levels, by rating



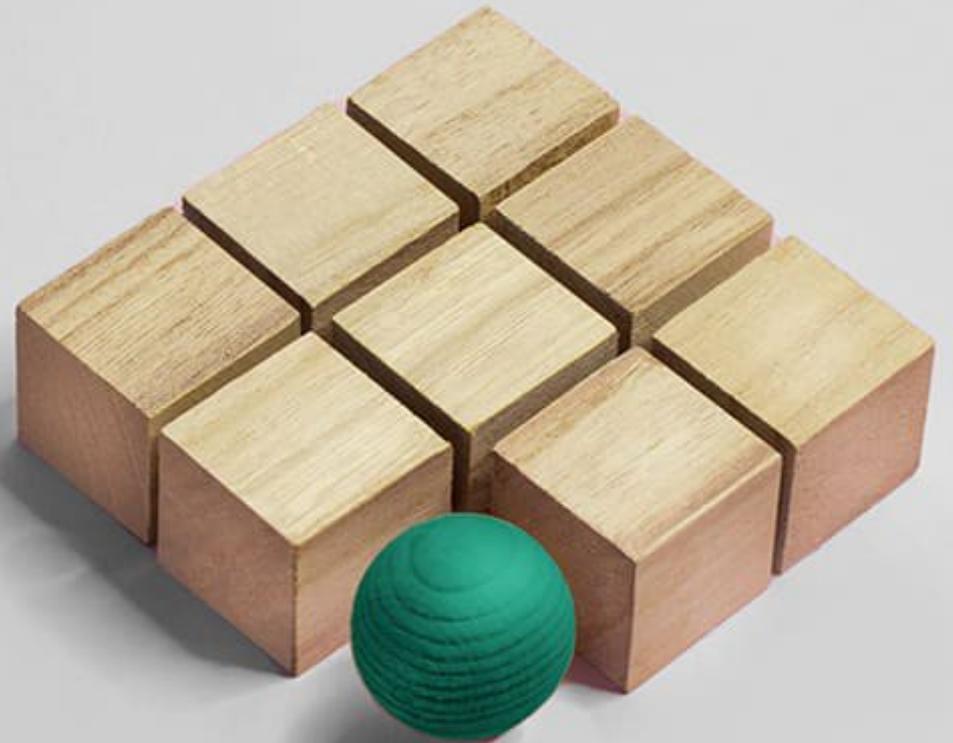
Annual returns for HY



Yields for the leveraged loan index at 9%



Spreads

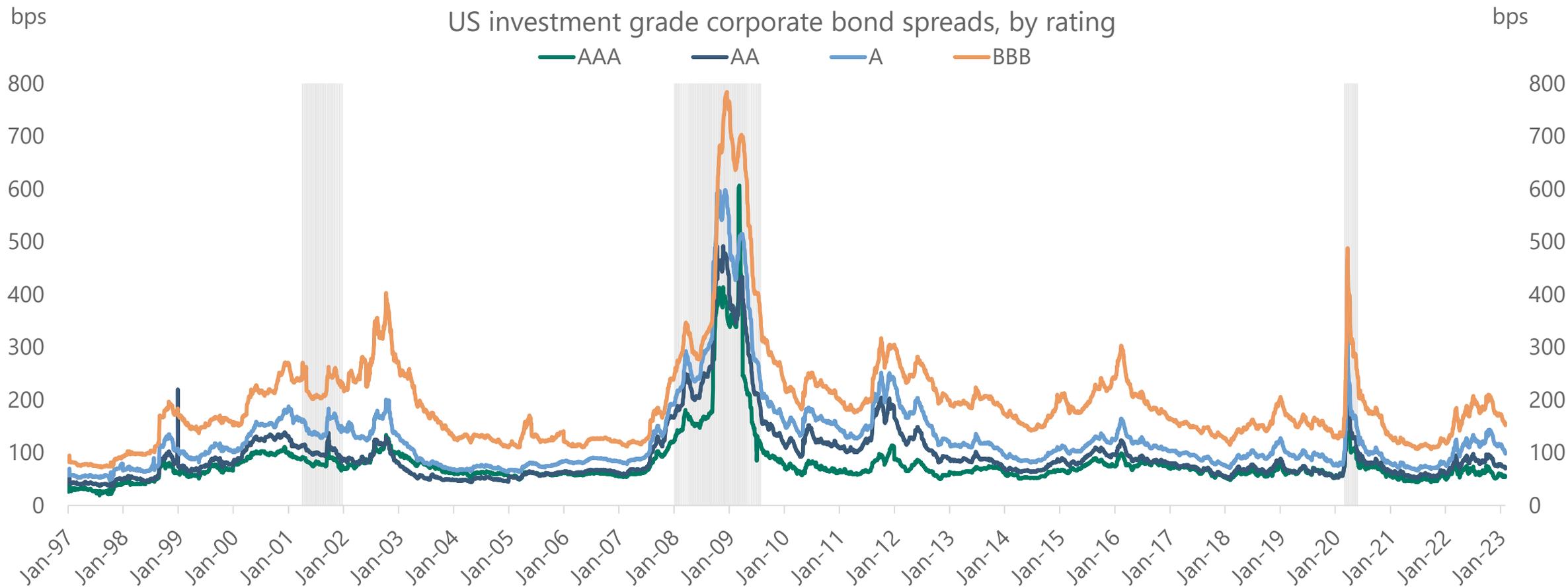


Credit spreads not pricing in a recession

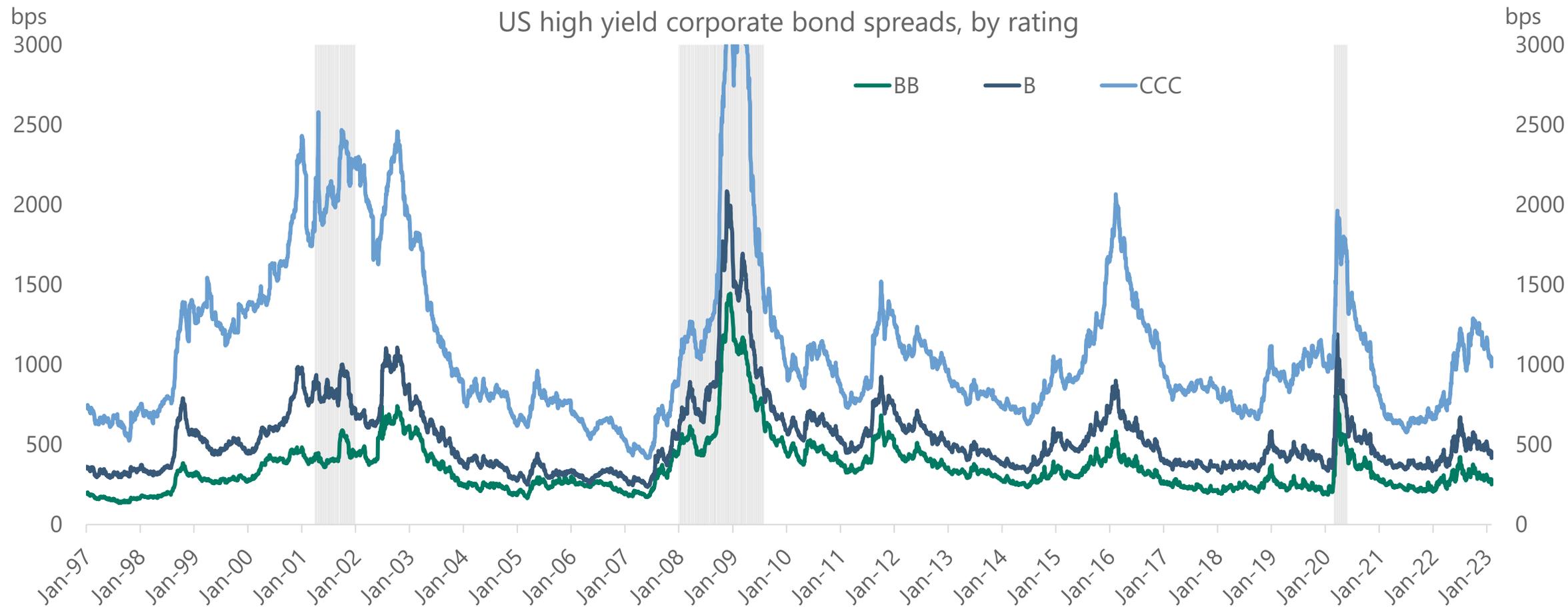


Source: ICE BofA, Bloomberg, Apollo Chief Economist

IG spreads by rating

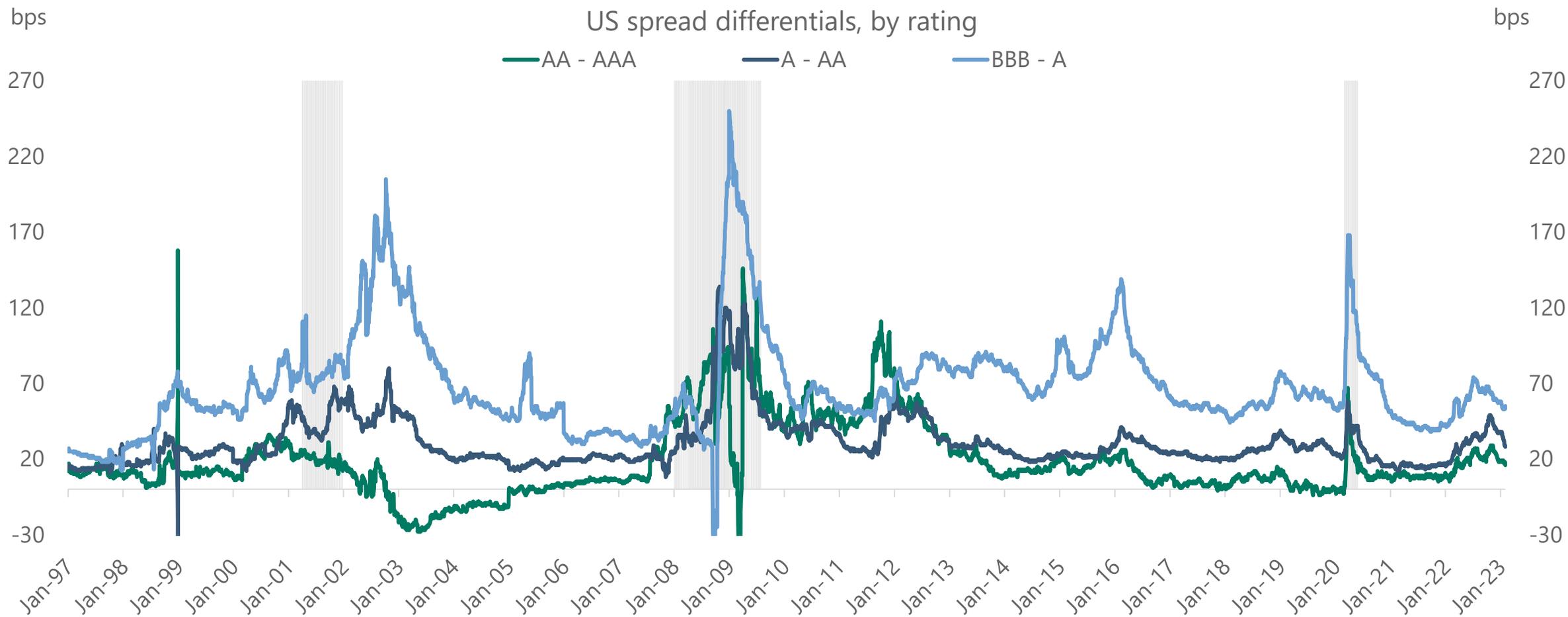


HY spreads by rating

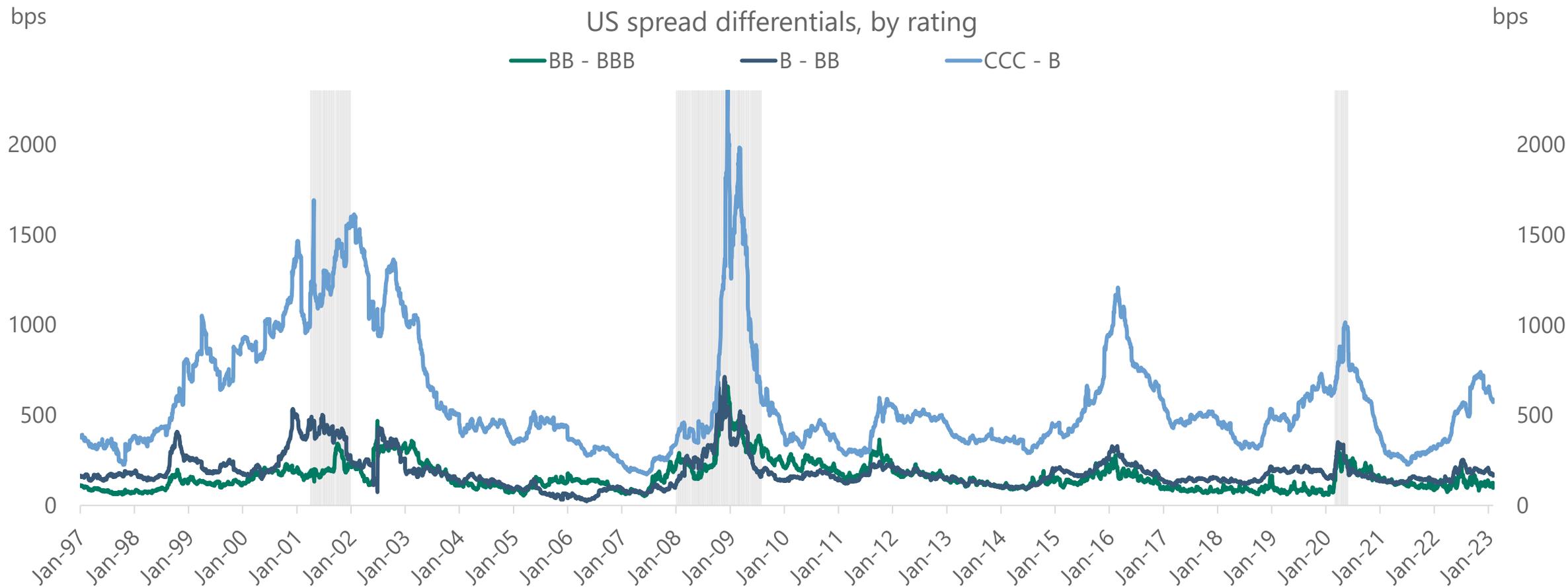


Source: ICE BofA, Bloomberg, Apollo Chief Economist

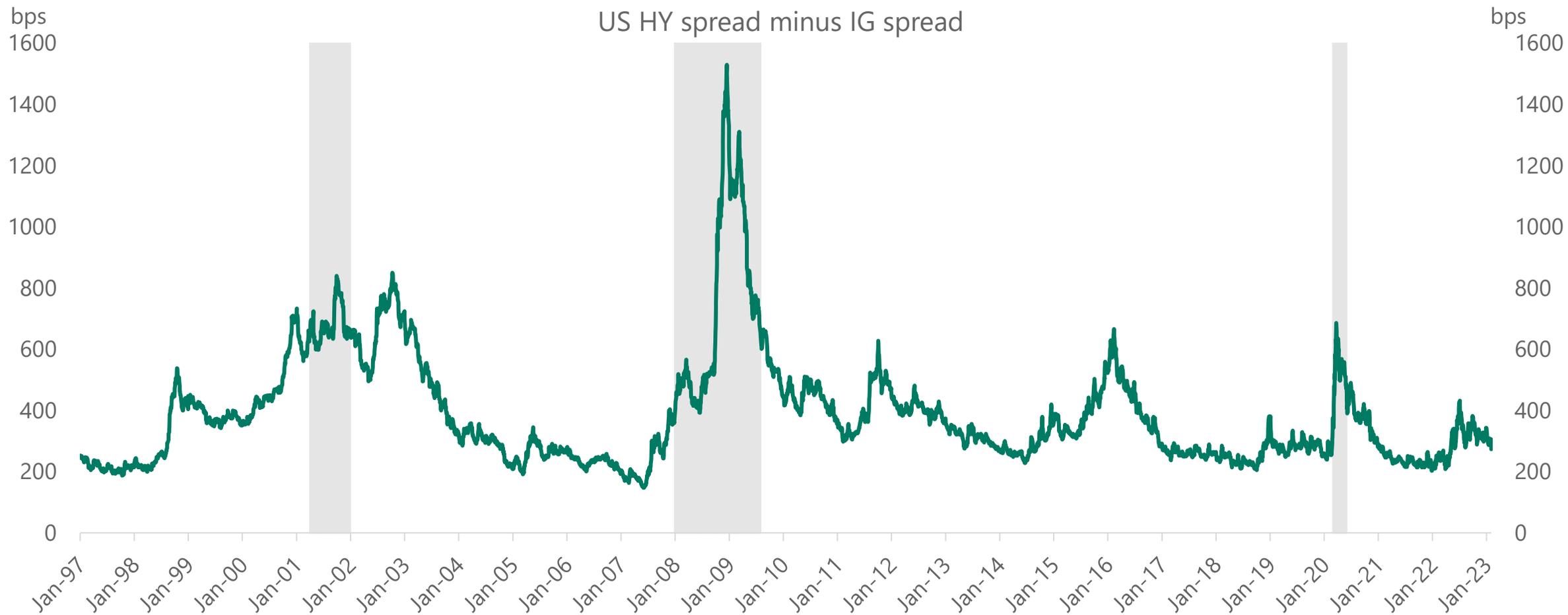
IG quality spreads, less differentiation between BBB and single-A



HY quality spreads, more differentiation between CCC and B

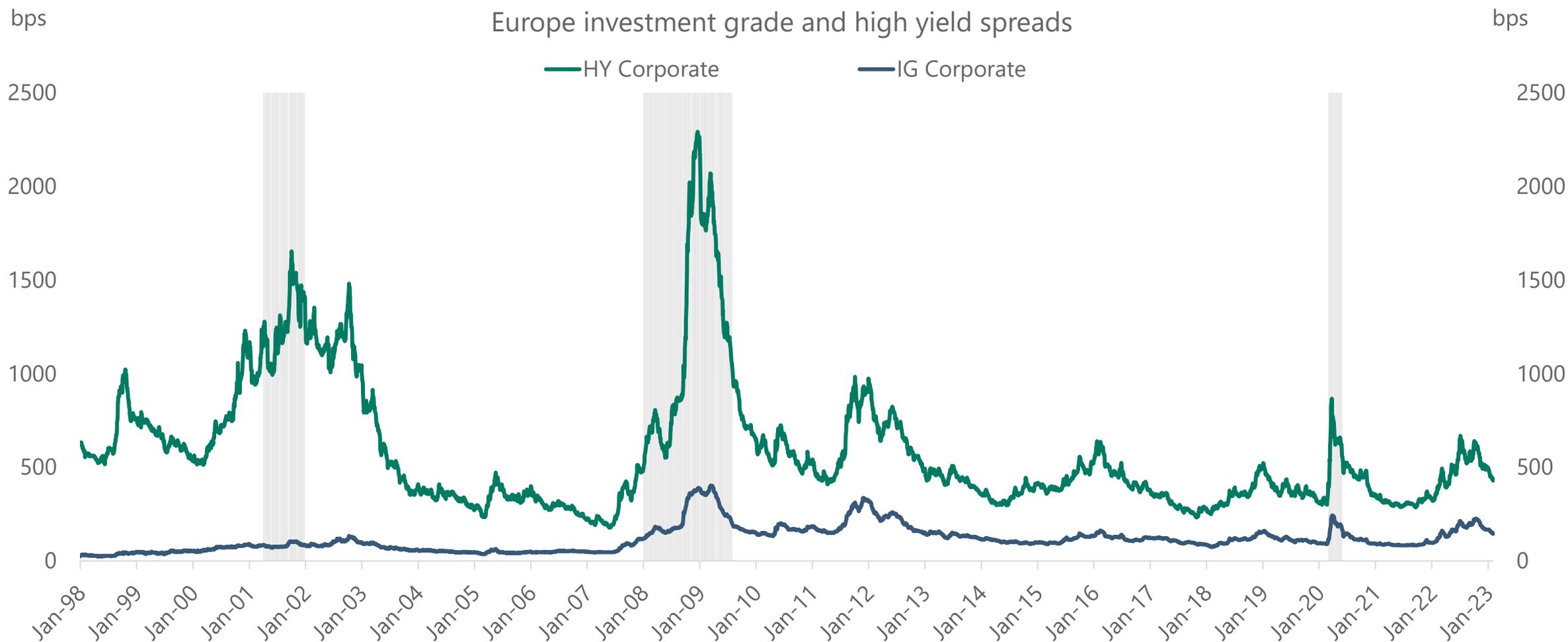


US HY spread minus IG spread



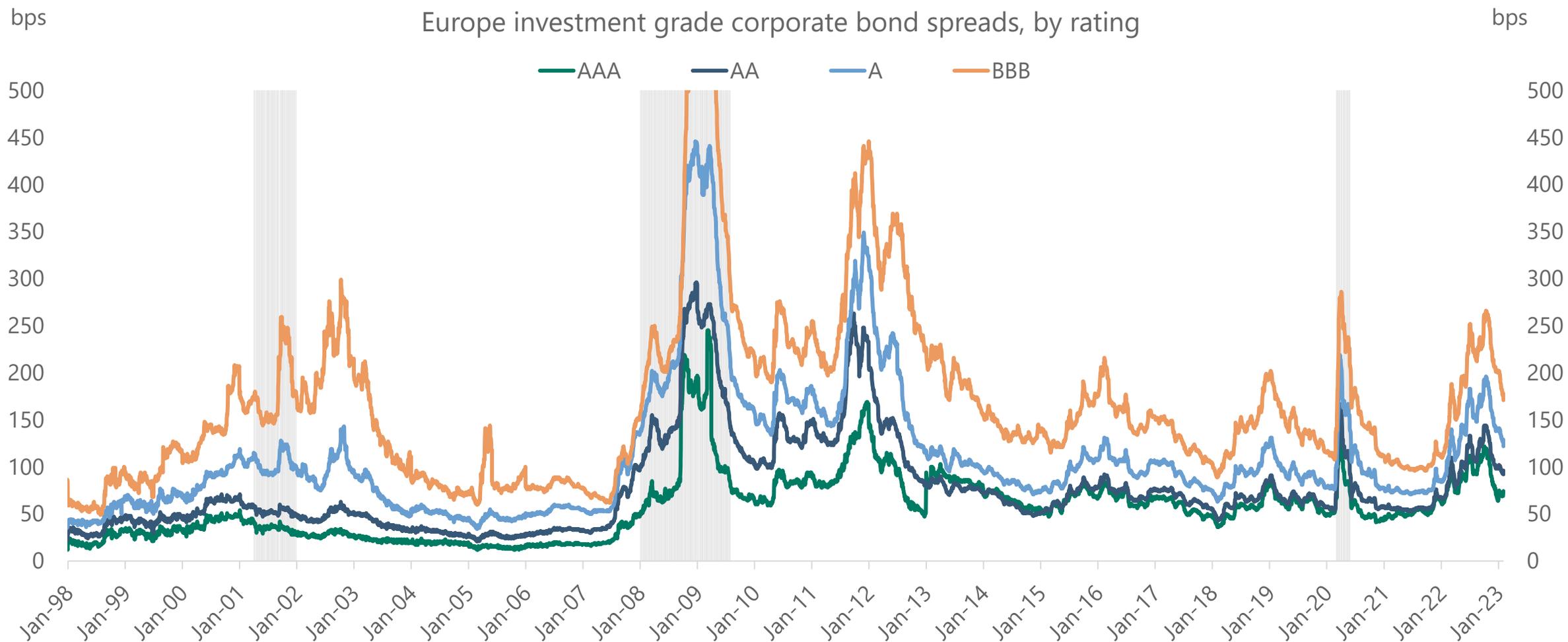
Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Bloomberg Index used COA0 Index and H0A0 Index

European IG and HY spreads



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

European IG spreads by rating

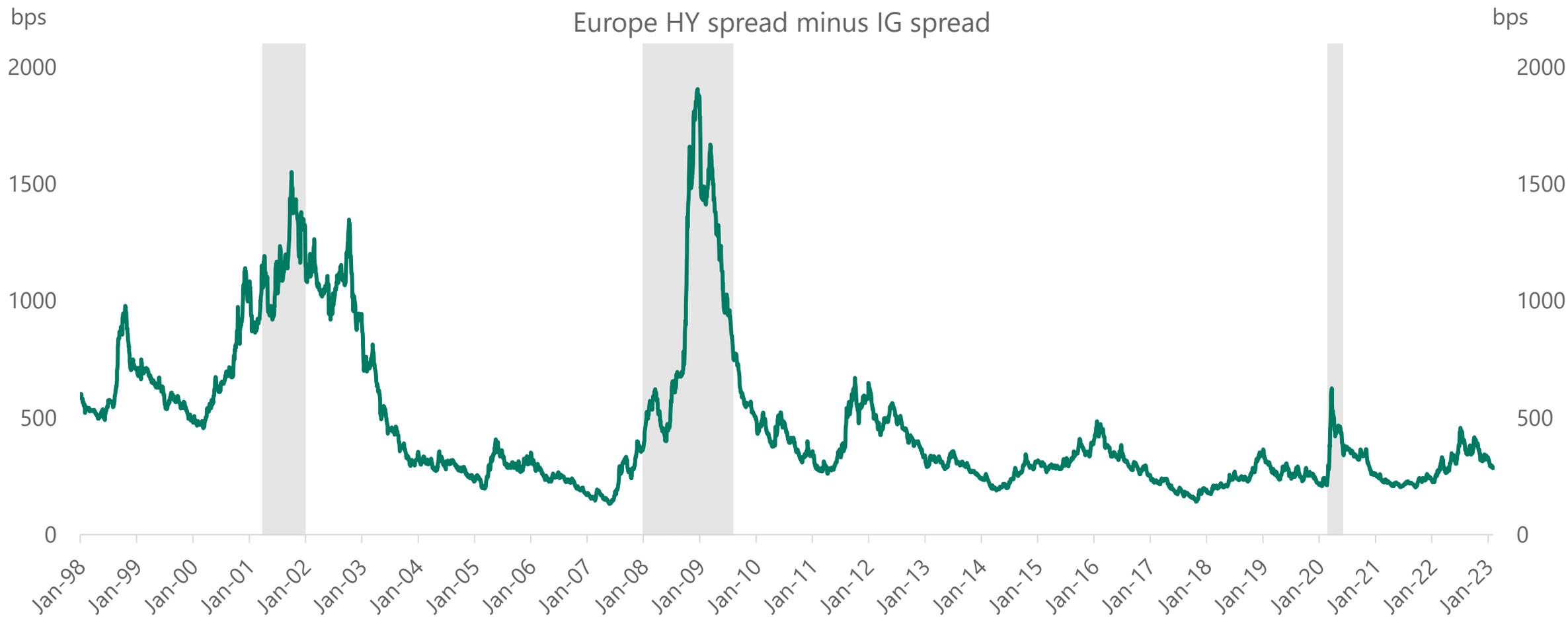


European HY spreads by rating



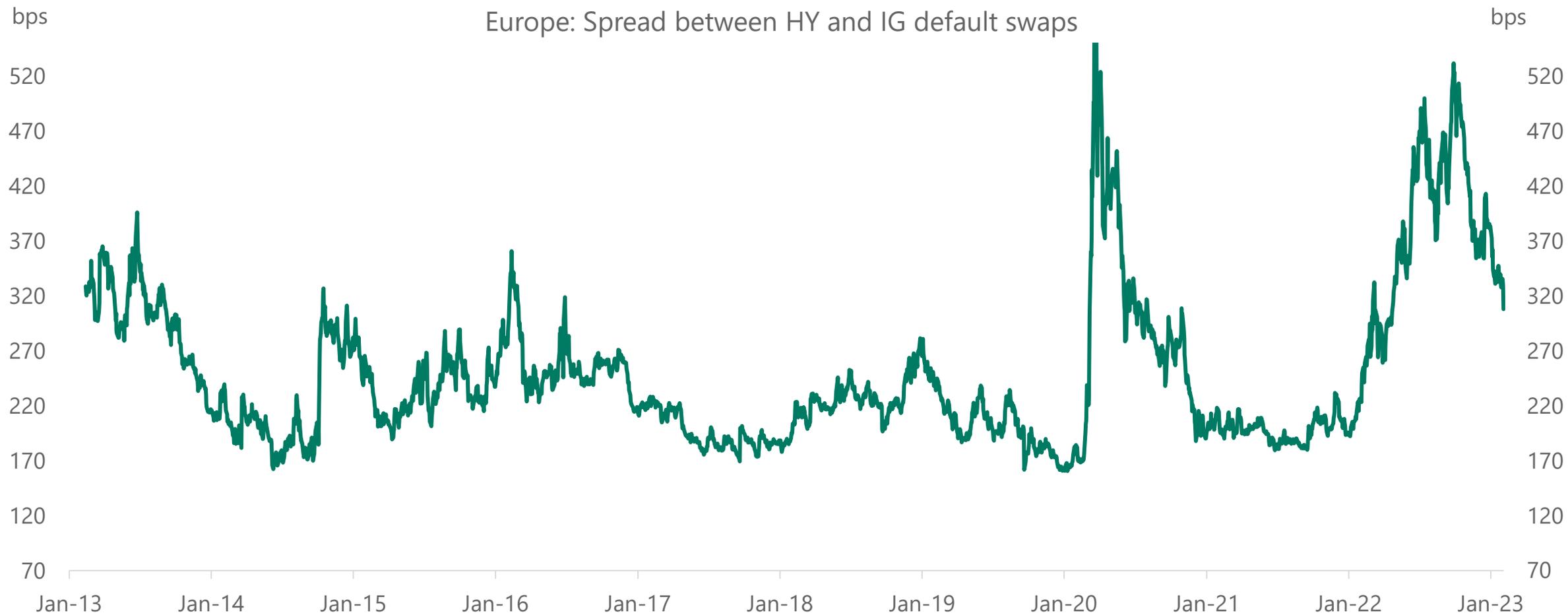
Source: ICE BofA, Bloomberg, Apollo Chief Economist.

European HY spread minus IG spread



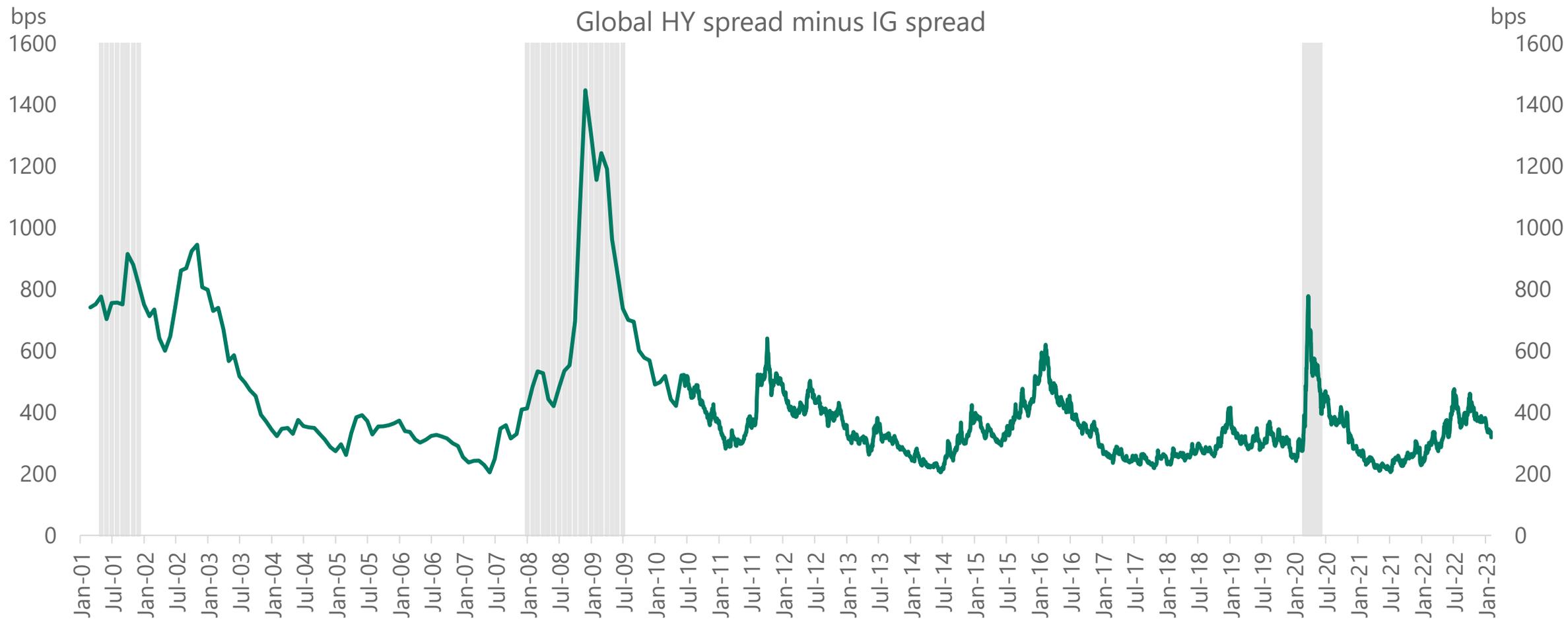
Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Ticker used HE00 Index and ER00 Index.

Spread between Europe HY and IG default swaps



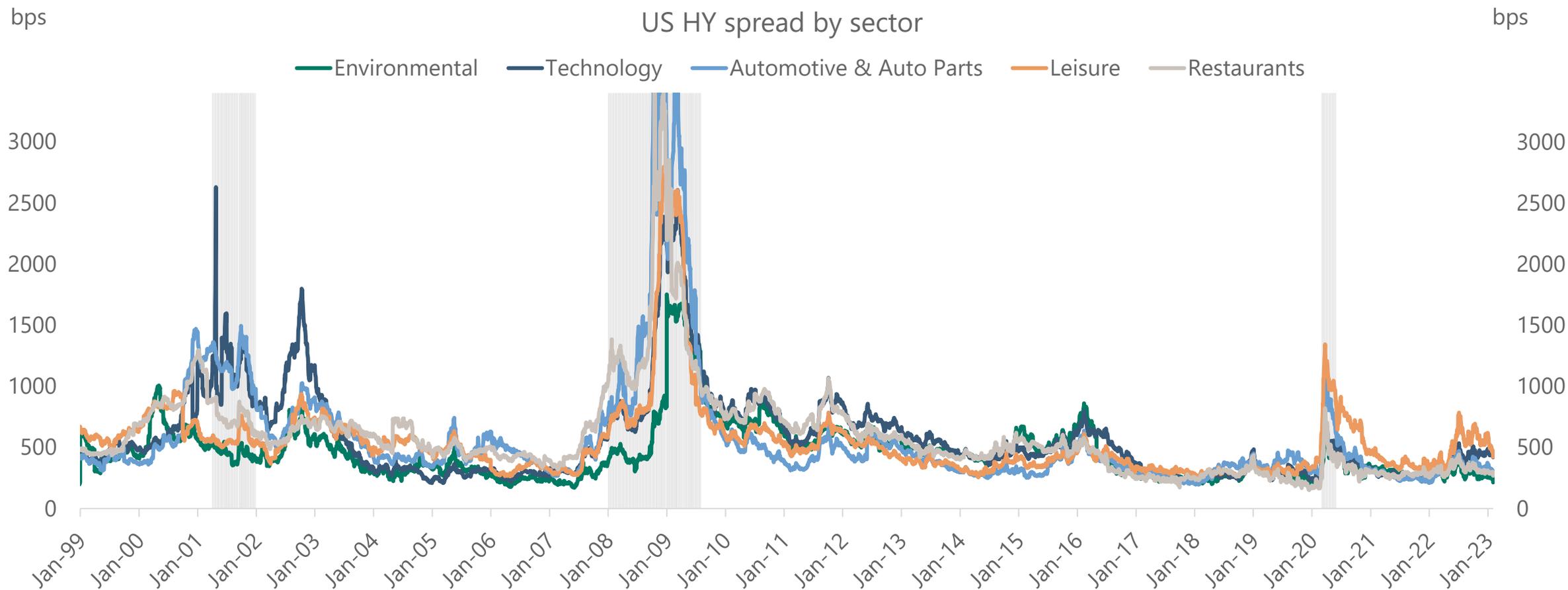
Source: Bloomberg, Apollo Chief Economist. Note: Tickers used ITRXEXE CBBT Curncy and ITRXEBE CBBT Curncy

Global HY spread minus IG spread

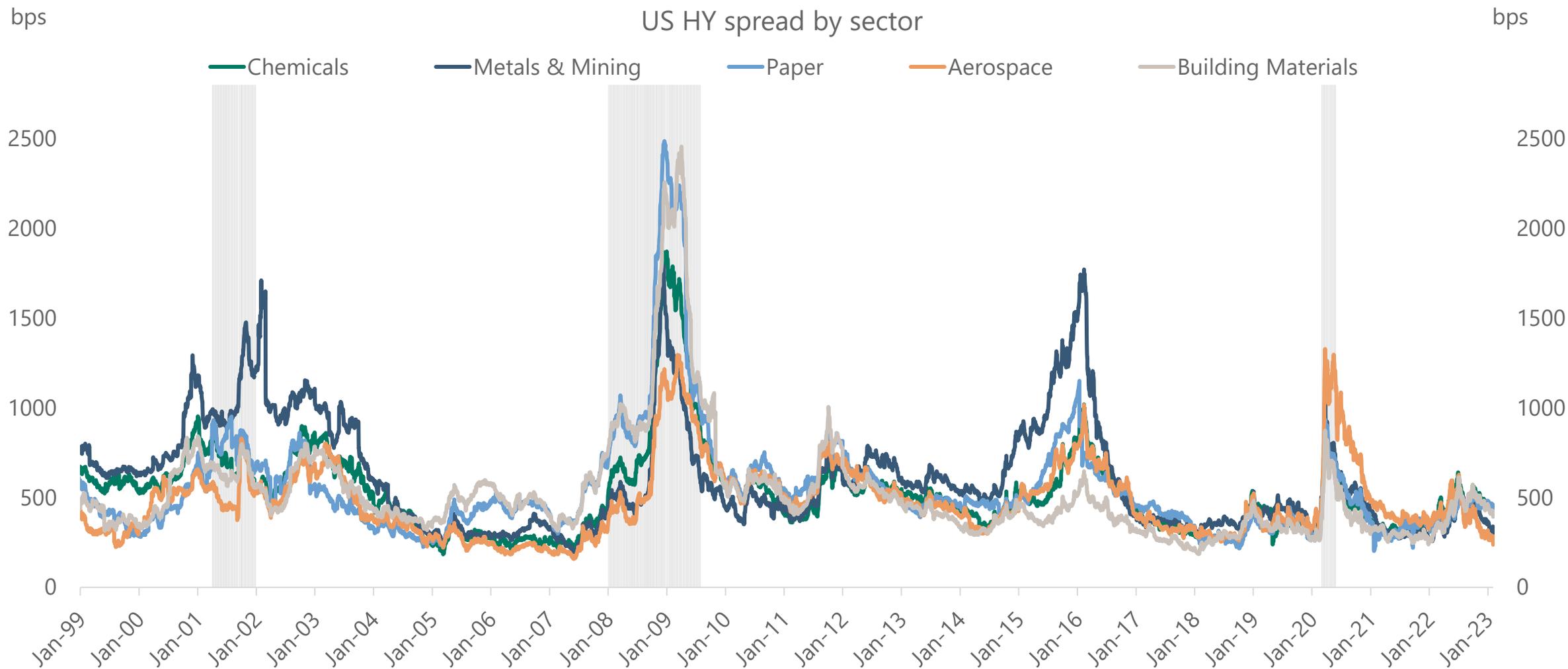


Source: Bloomberg, Apollo Chief Economist. Note: Bloomberg Index used BGLCTRUU index and LG50TRUU Index

HY spreads by sector

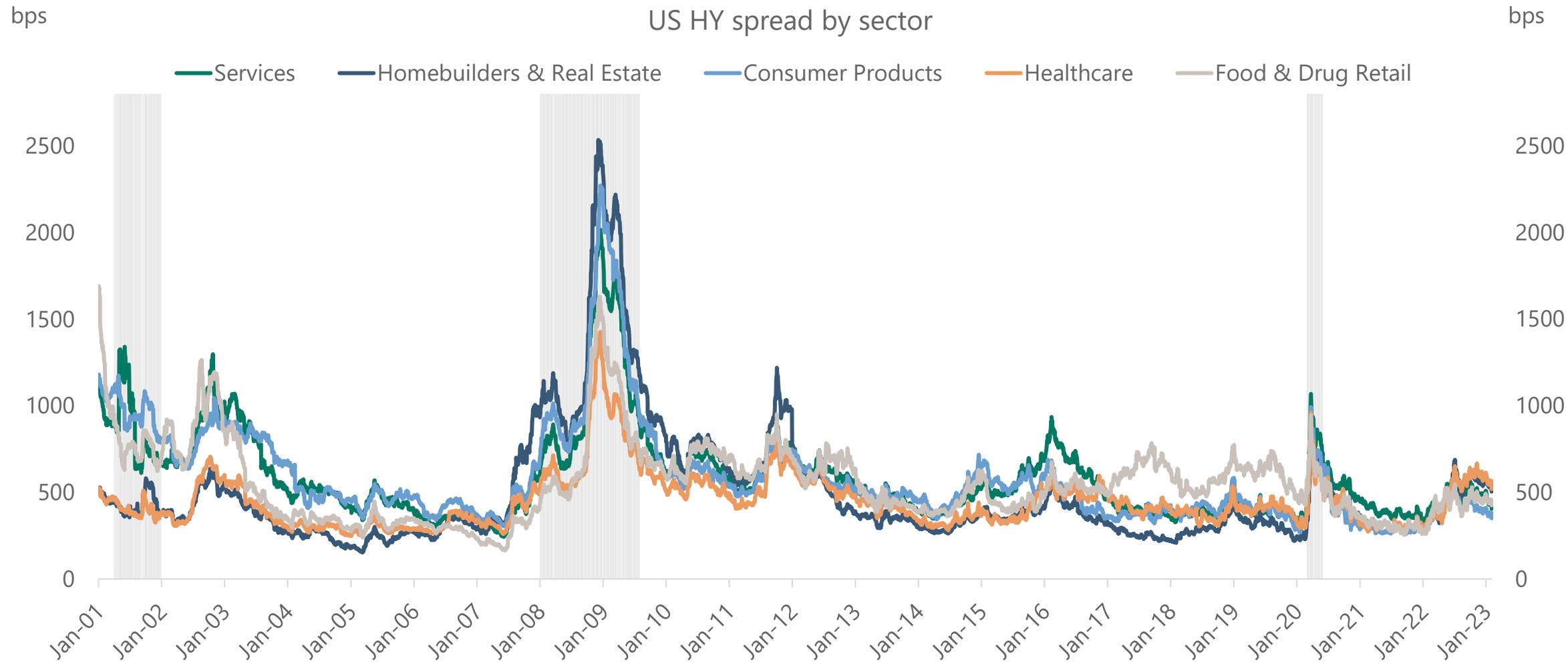


HY spreads by sector

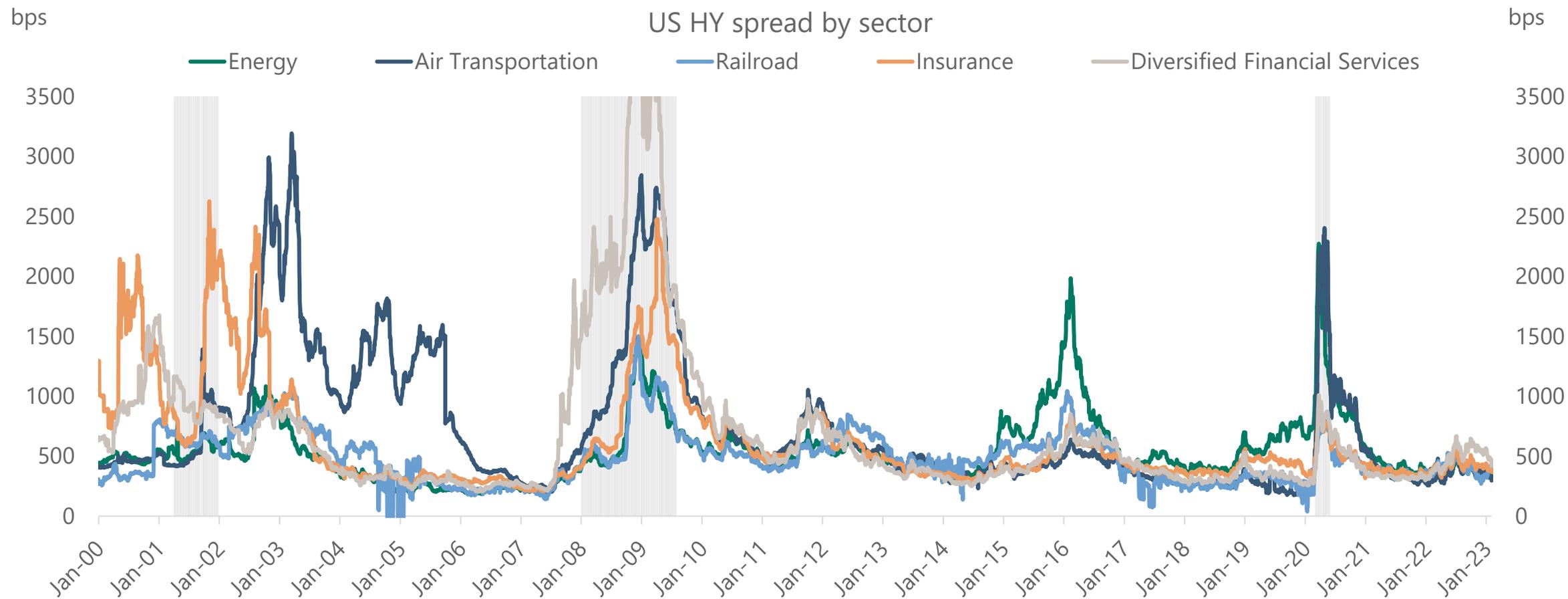


Source: ICE BofA, Bloomberg, Apollo Chief Economist

HY spreads by sector

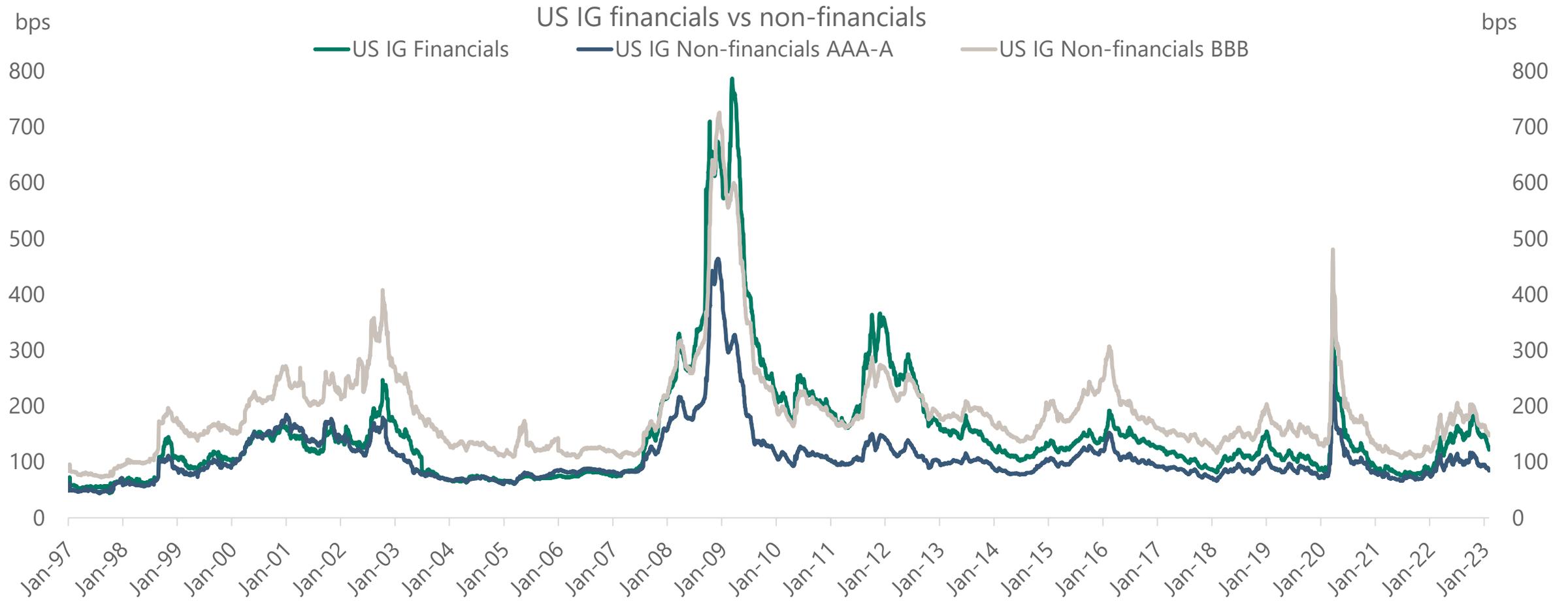


HY spreads by sector



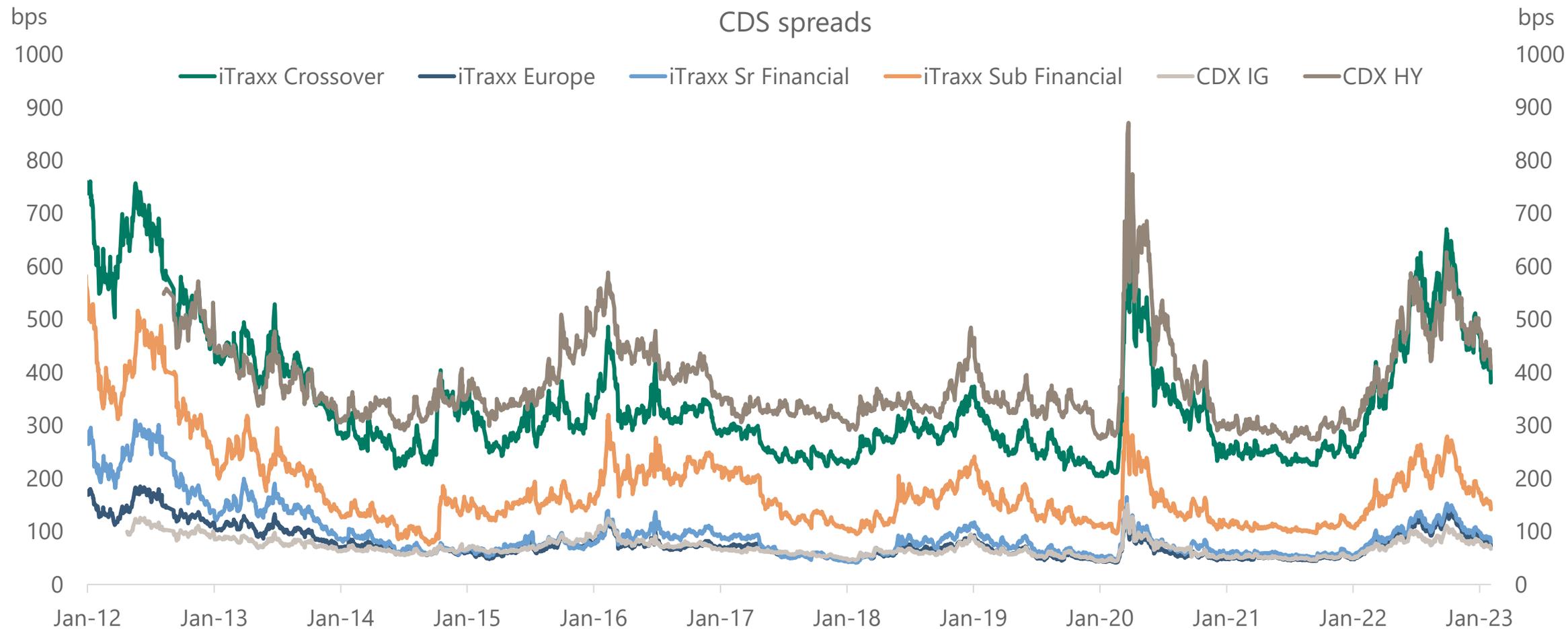
Source: ICE BofA, Bloomberg, Apollo Chief Economist

IG spreads for financials and non-financials

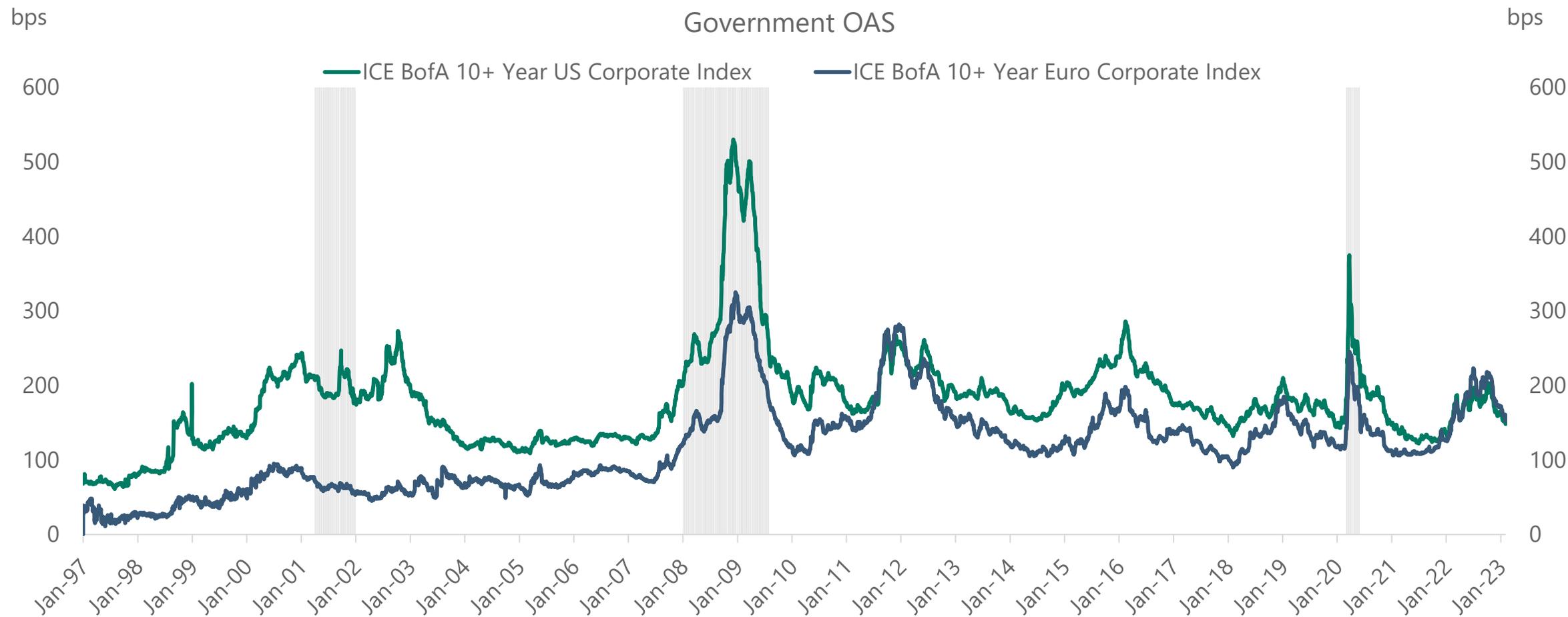


Source: ICE BofA, Bloomberg, Apollo Chief Economist

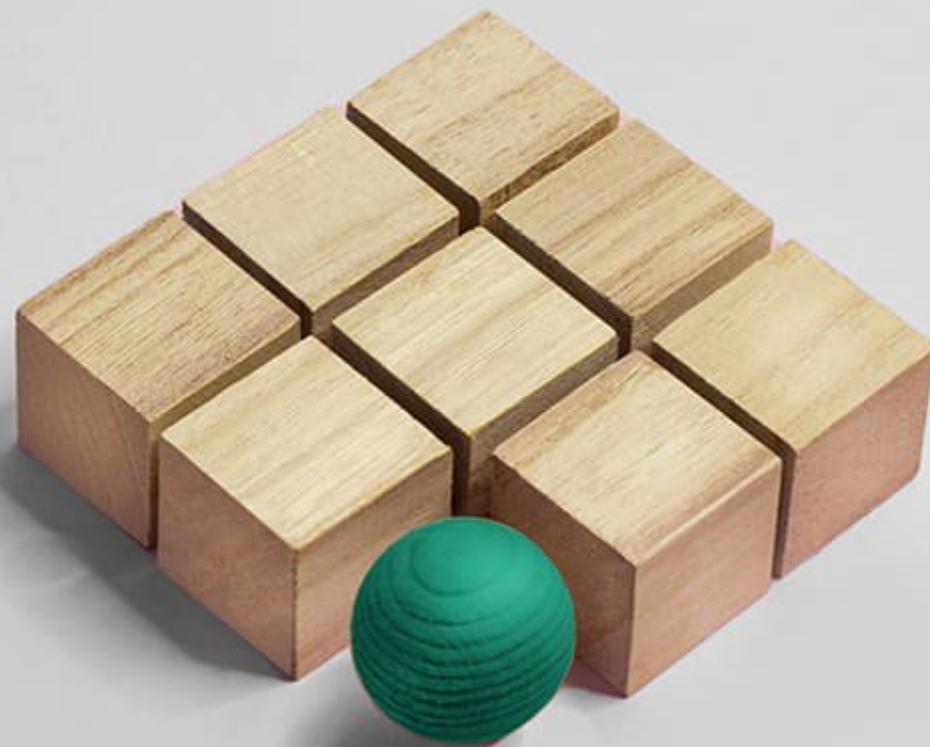
CDS spreads



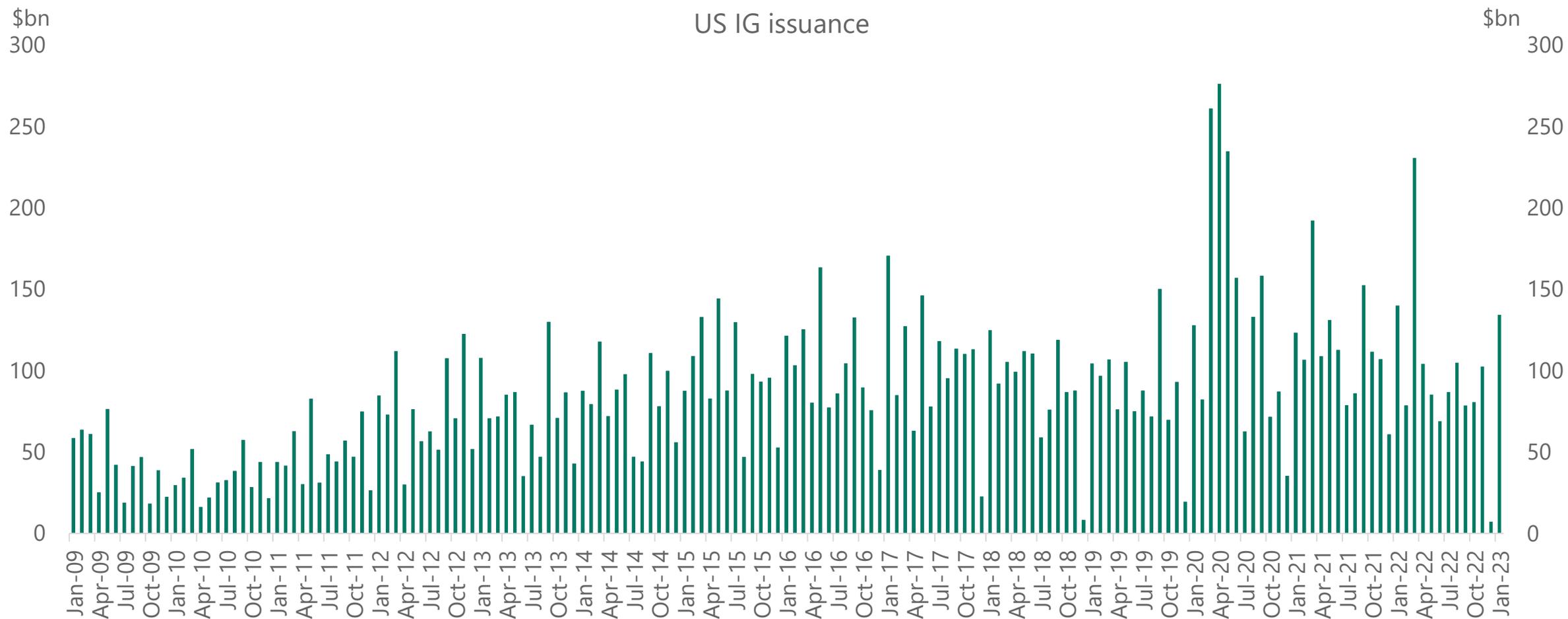
Long-duration IG spreads in US and Europe



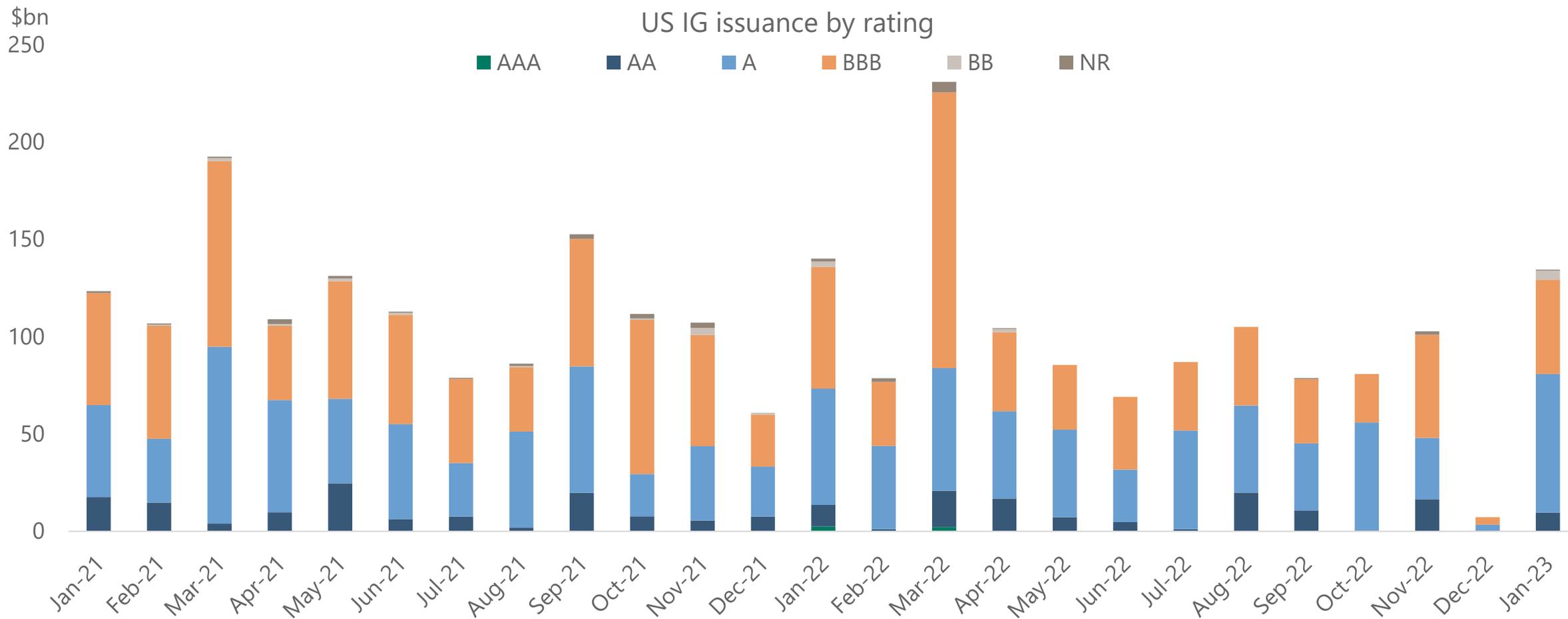
New issuance



US IG issuance

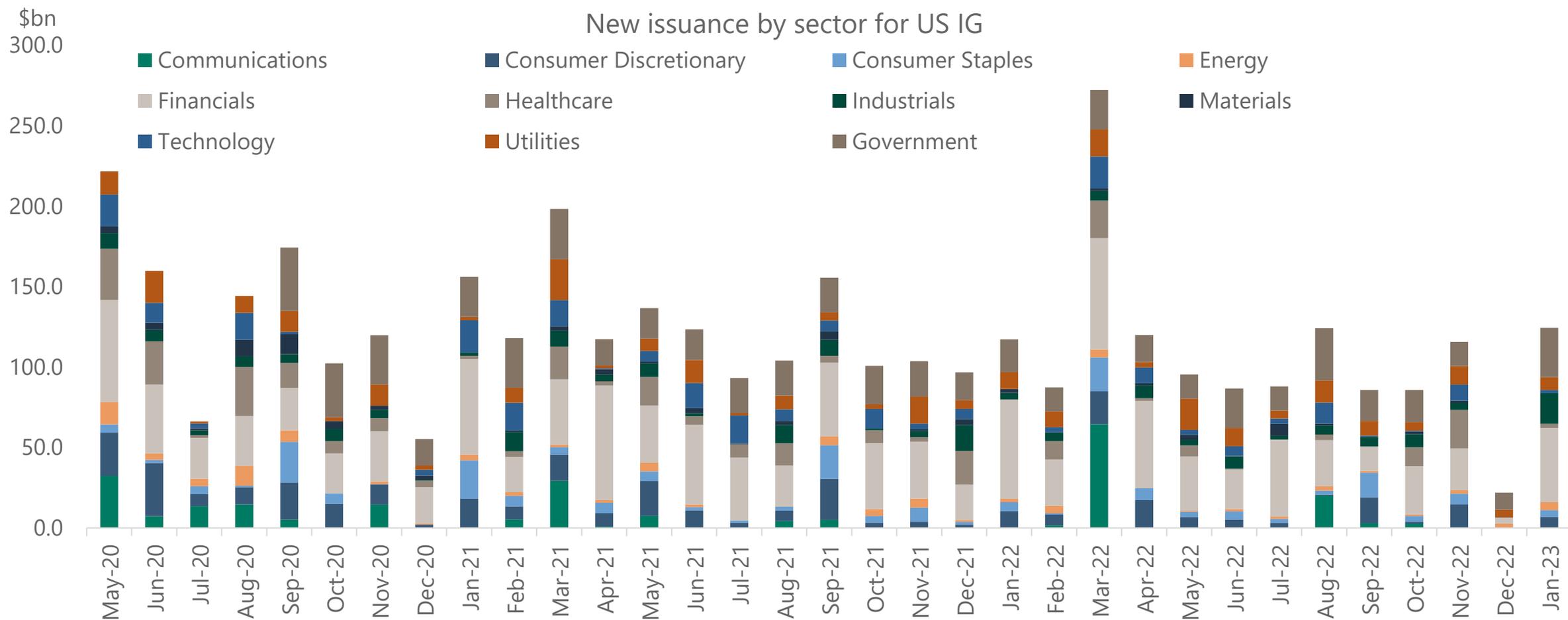


IG issuance by rating



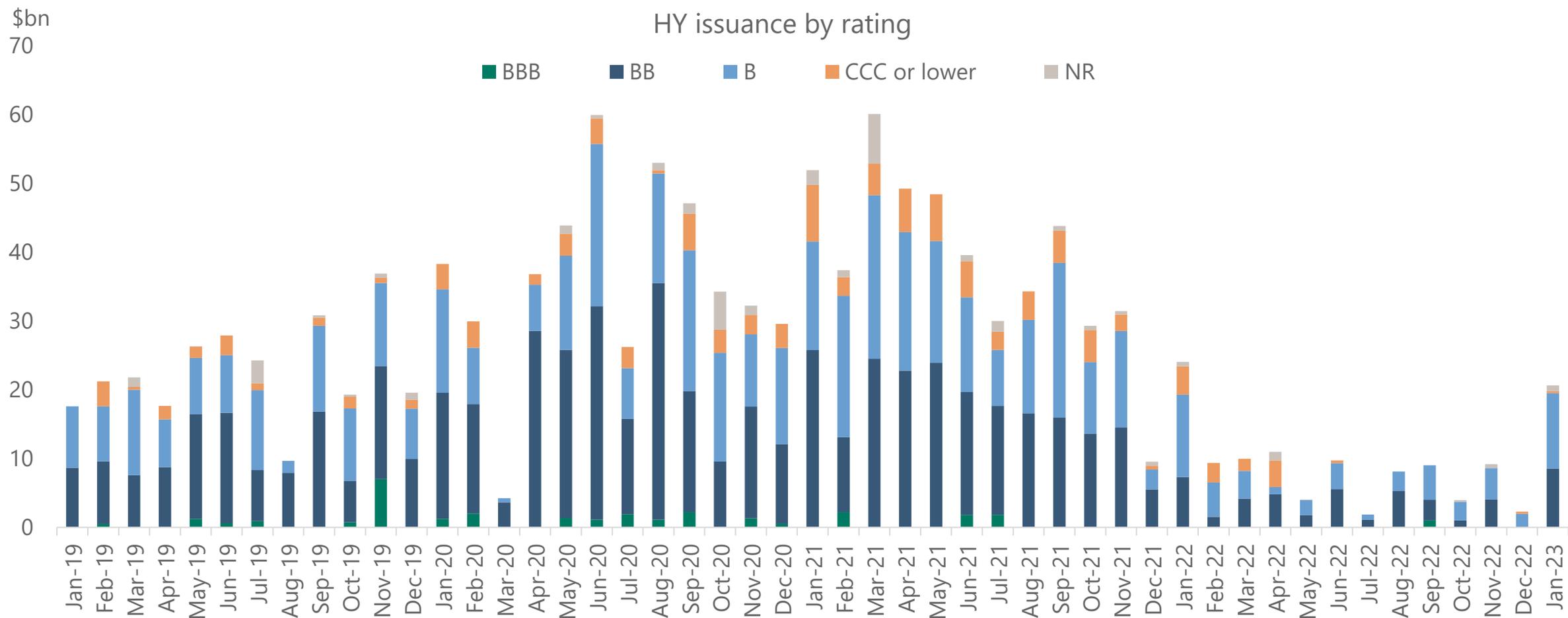
Source: S&P LCD, Apollo Chief Economist.

Sector distribution of new IG issuance



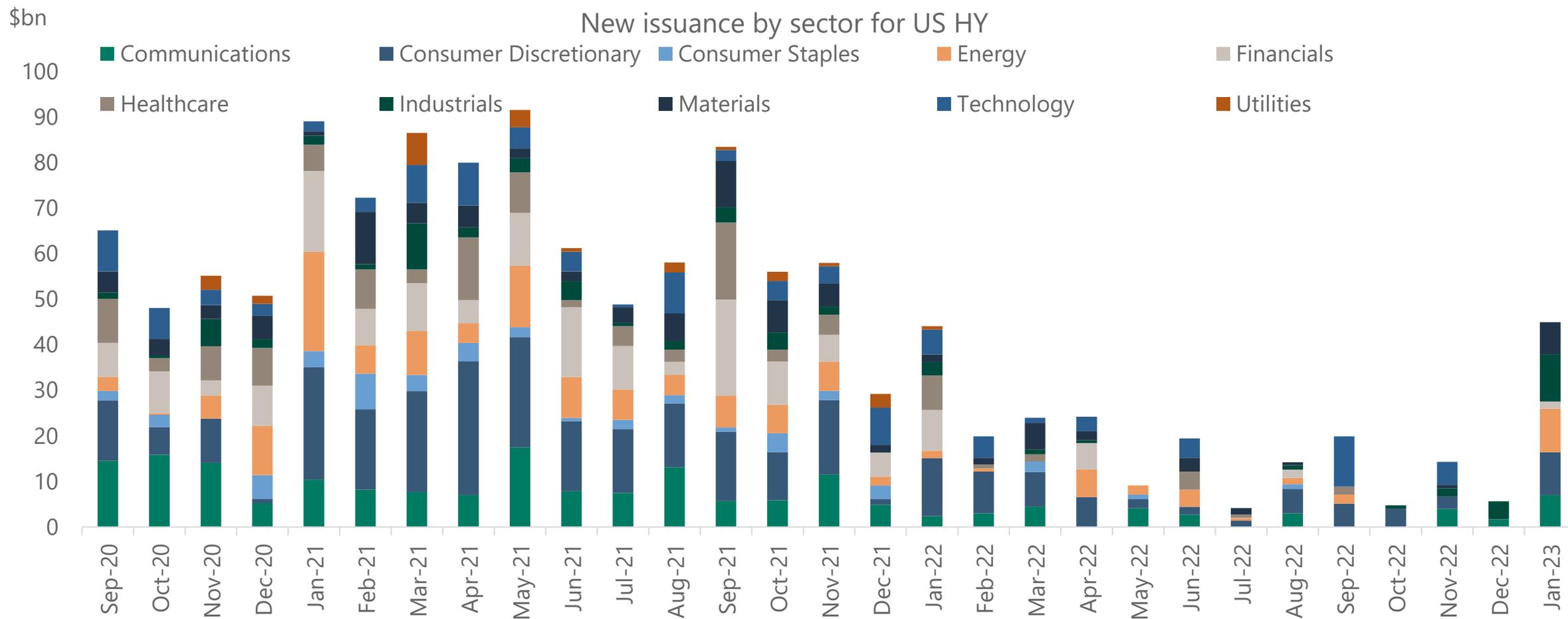
Source: Bloomberg, Apollo Chief Economist. Note: Issuance includes bonds, loans, leveraged loans, and preferred.

HY issuance by rating



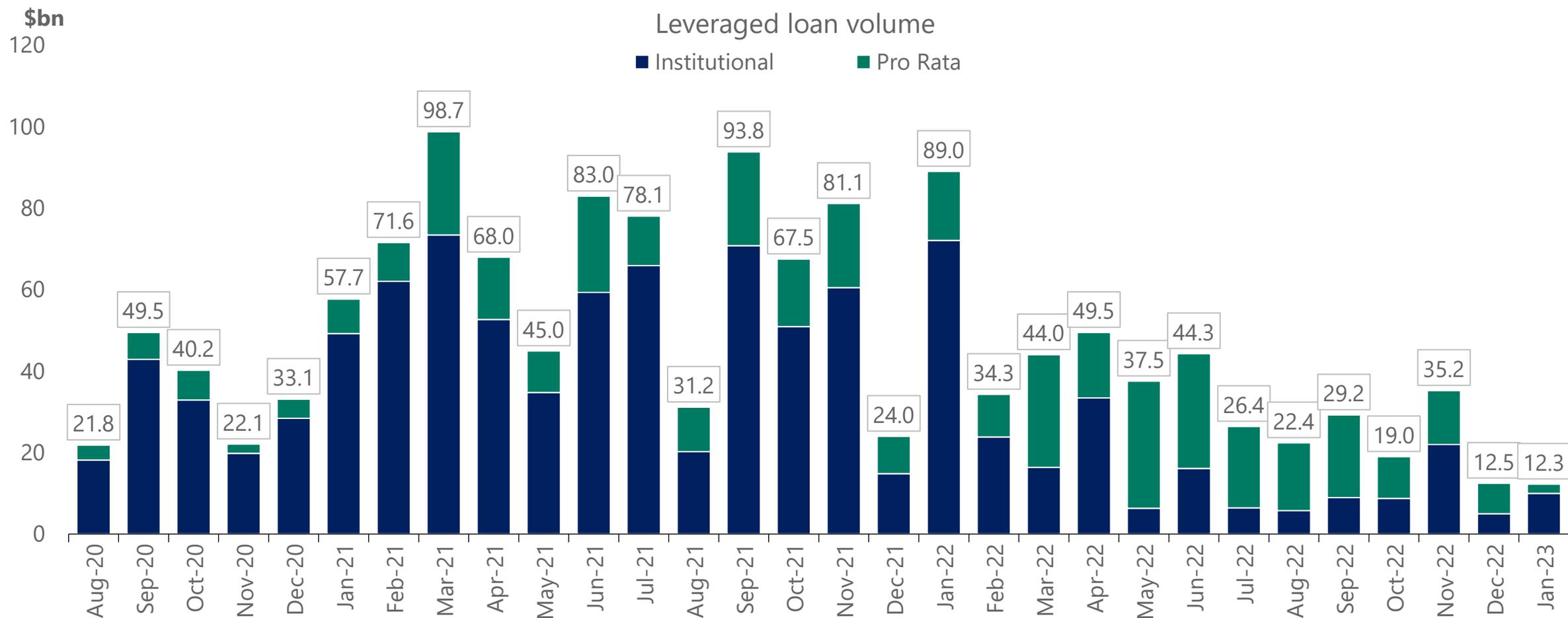
Source: S&P LCD, Apollo Chief Economist.

Sector distribution of new HY issuance



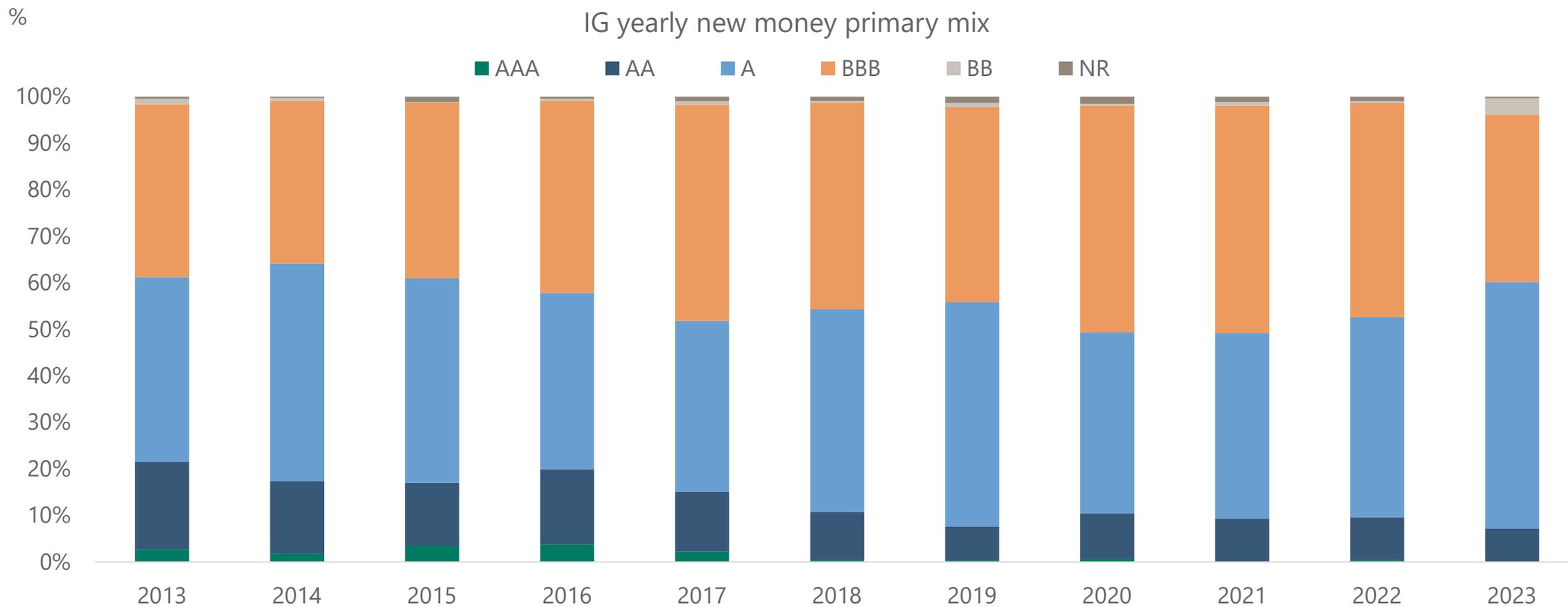
Source: Bloomberg, apollo Chief Economist. Note: Issuance includes bonds, loans, leveraged loans and preferred.

Leveraged loan volume



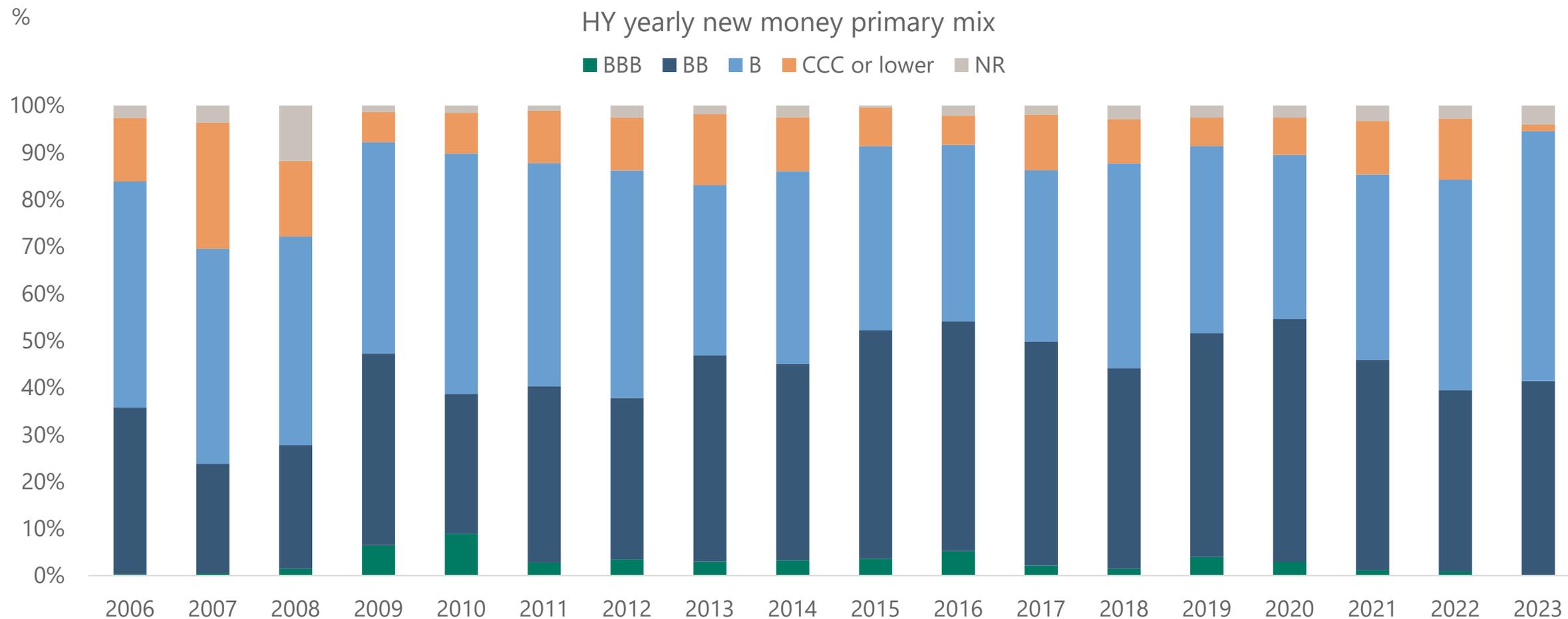
Source: S&P LCD, Apollo Chief Economist.

IG new money primary mix



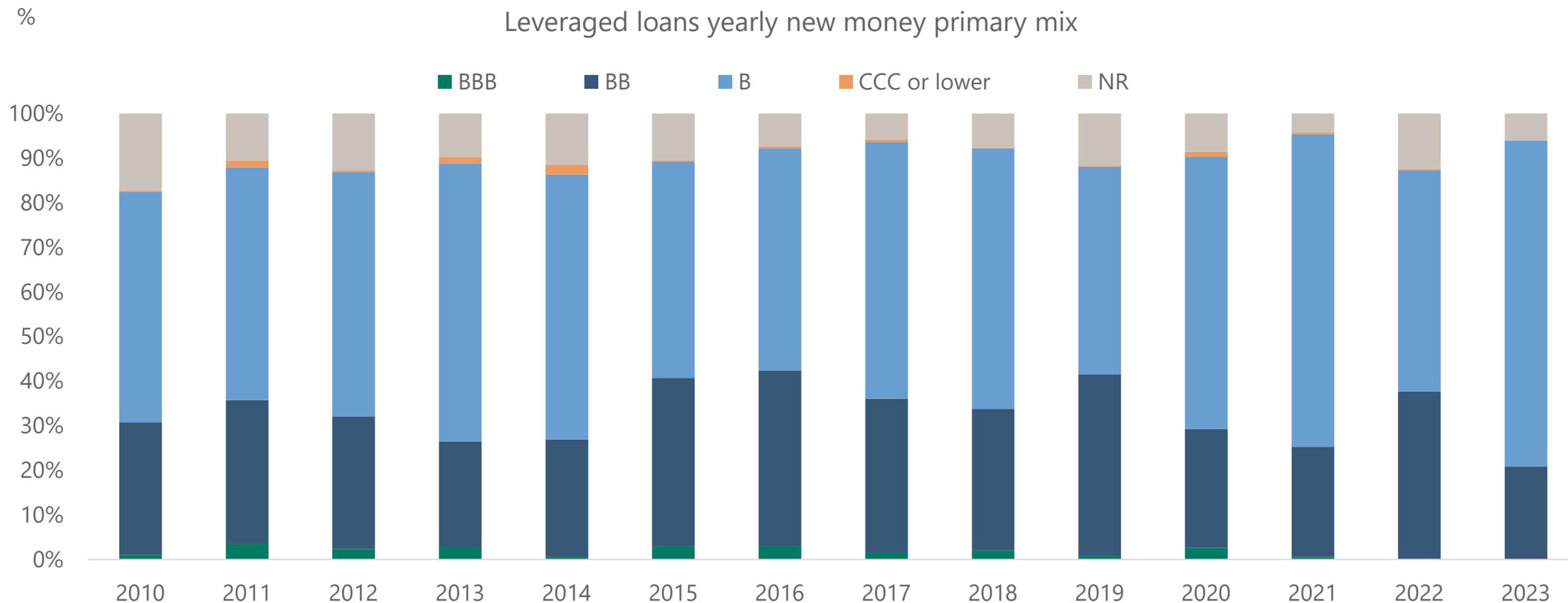
Source: S&P LCD, Apollo Chief Economist. Note: Data as of 31st January 2023.

HY new money primary mix



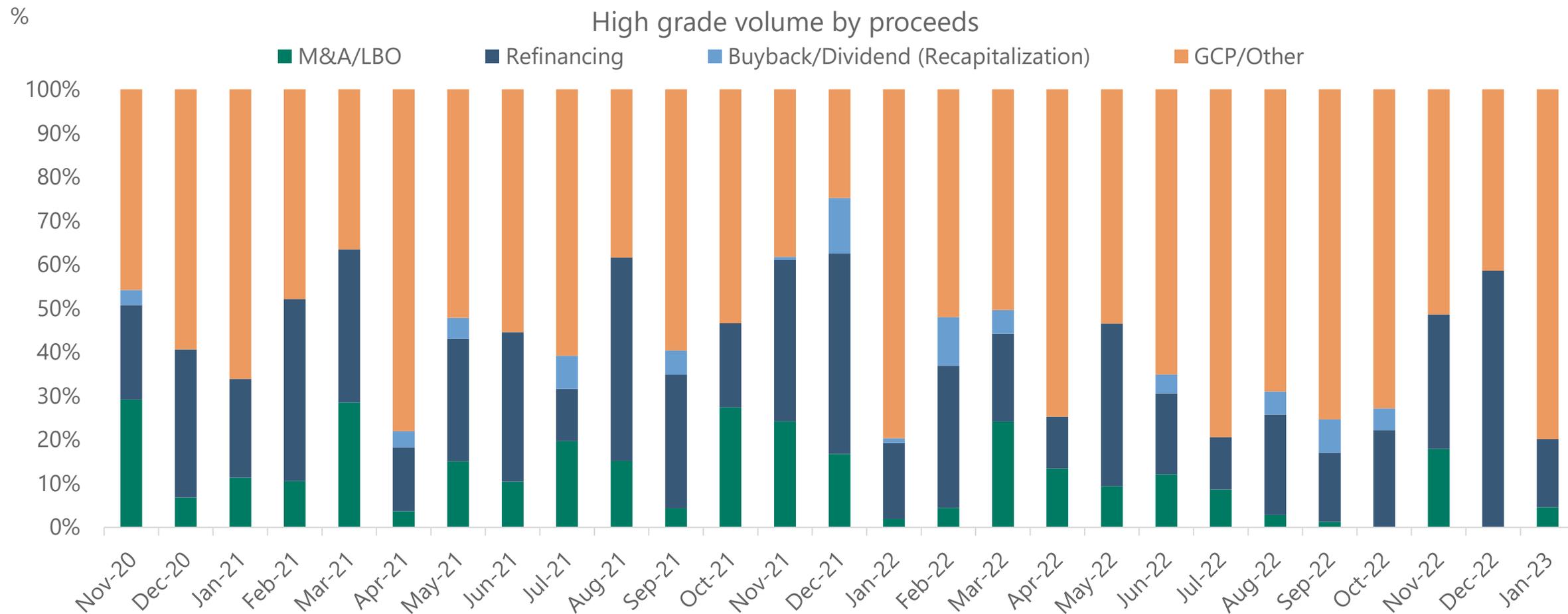
Source: S&P LCD, Apollo Chief Economist. Note: Data as of 31st January 2023

Loans new money primary mix



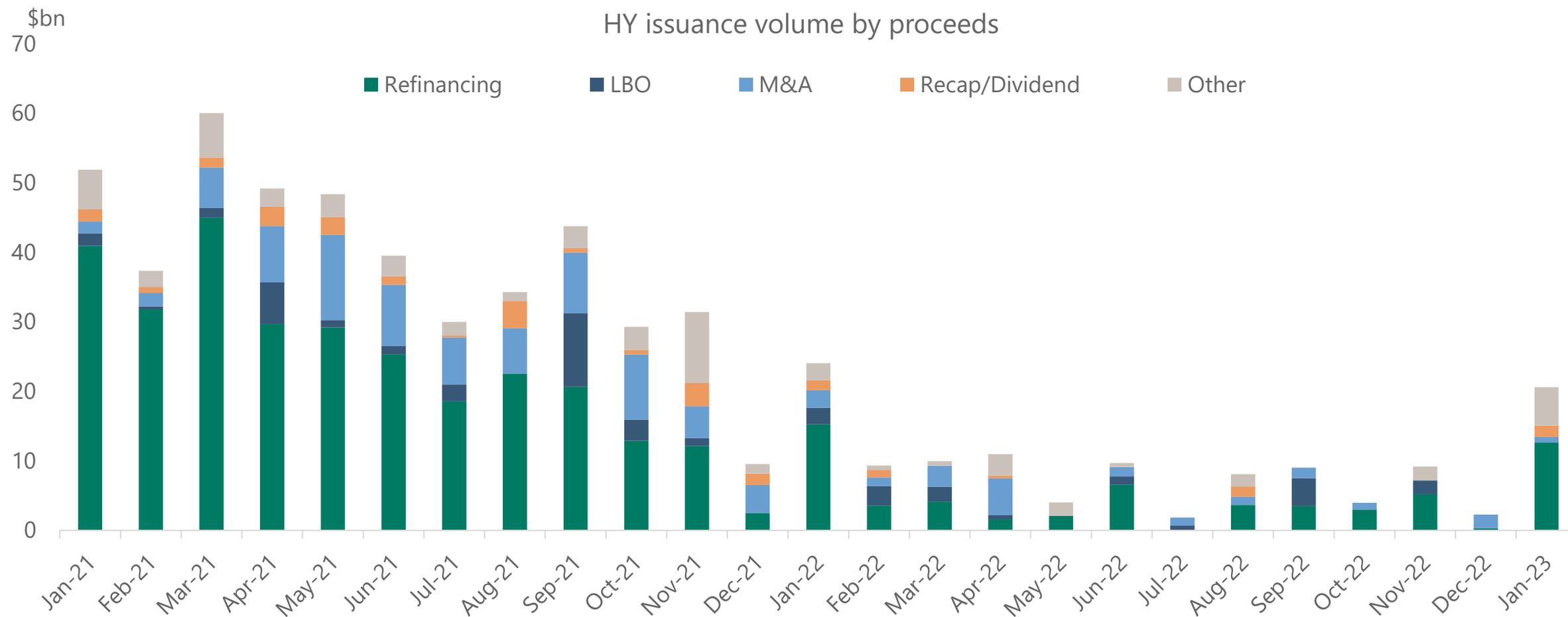
Source: S&P LCD, Apollo Chief Economist. Note: 2022 YTD till 31st January 2023

High grade volume by proceeds



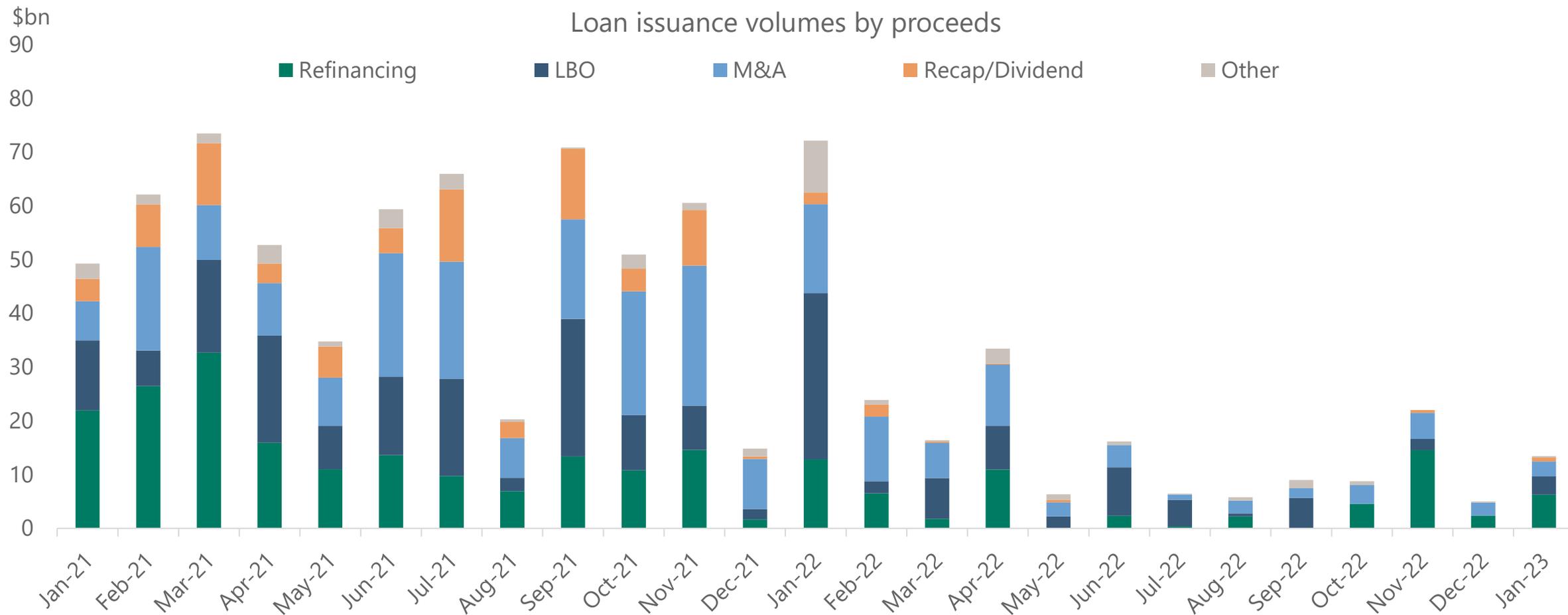
Source: S&P LCD, Apollo Chief Economist

High yield volumes by proceeds



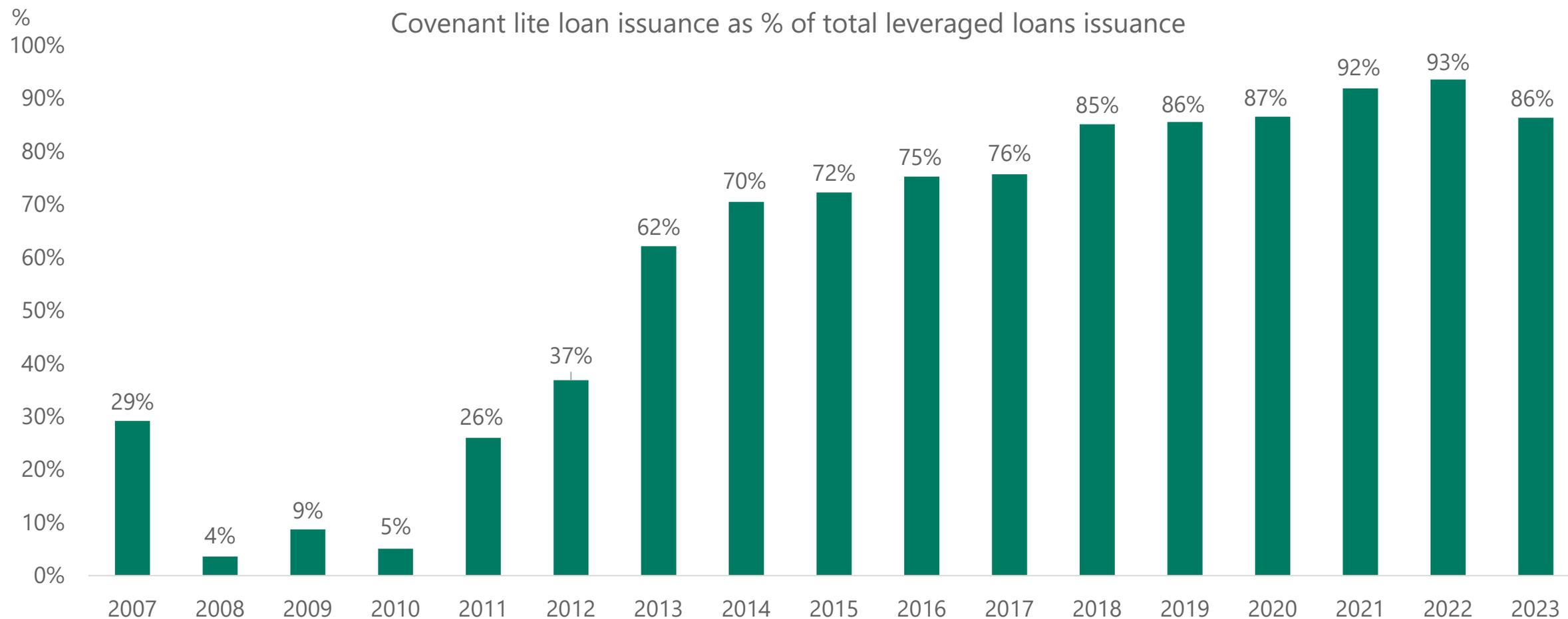
Source: S&P LCD, Apollo Chief Economist

Loan volumes by proceeds



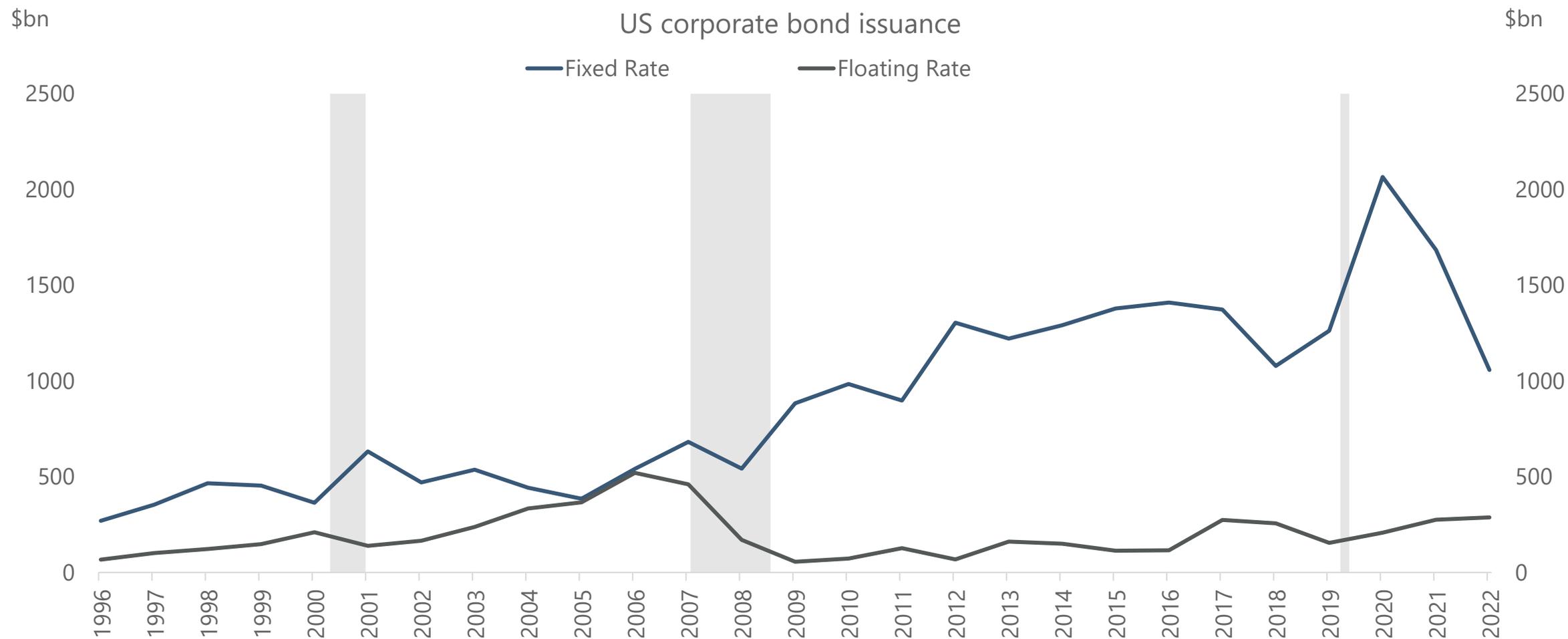
Source: S&P LCD, Apollo Chief Economist

Covenant lite loan issuance



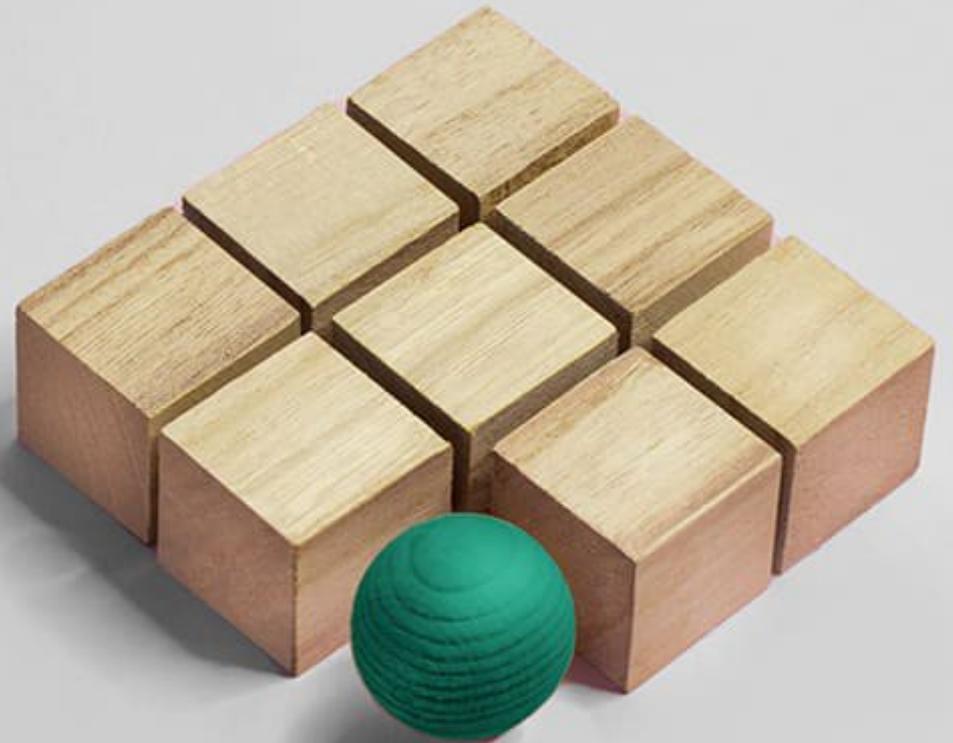
Source: S&P LCD, Apollo Chief Economist.. Note: A covenant-lite loan is a type of financing with fewer restrictions on the borrower and fewer protections for the lender, often used in leveraged buyouts. Data as of 31st January 2023

Corporate bond issuance

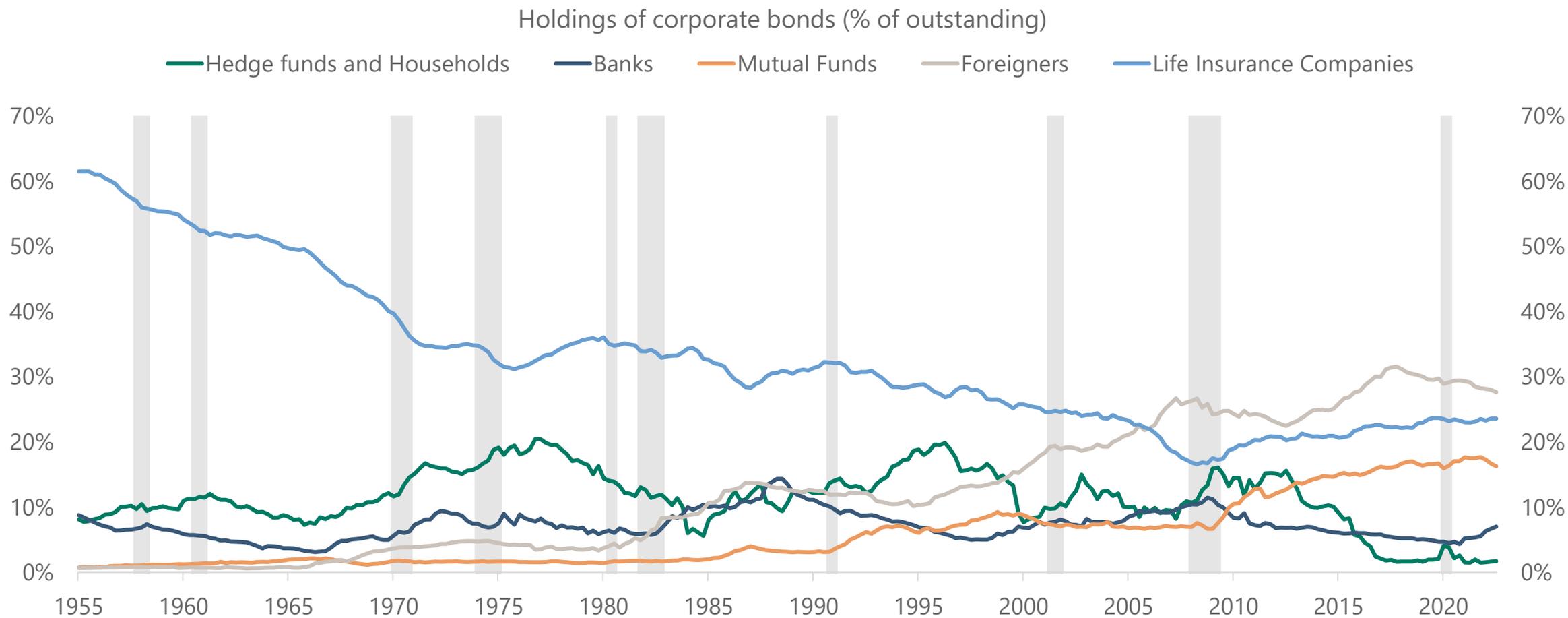


Source: SIFMA, Apollo Chief Economist.

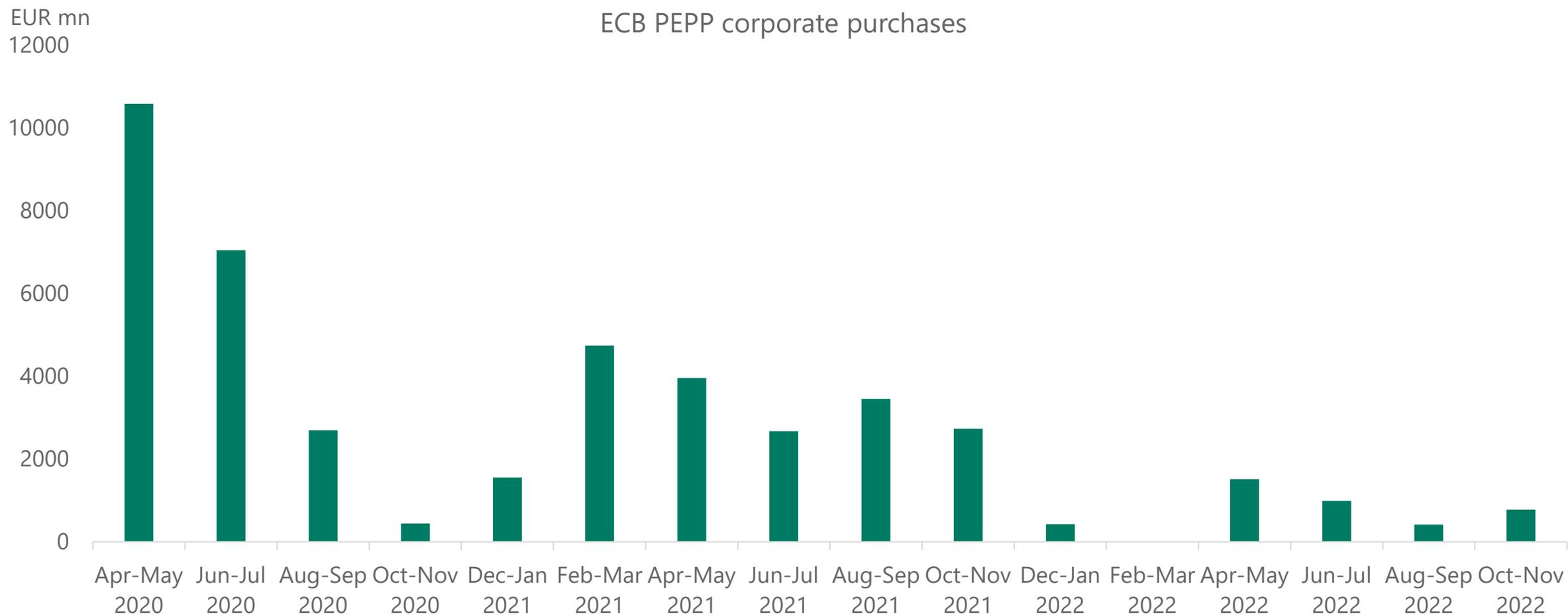
Corporate bond holdings



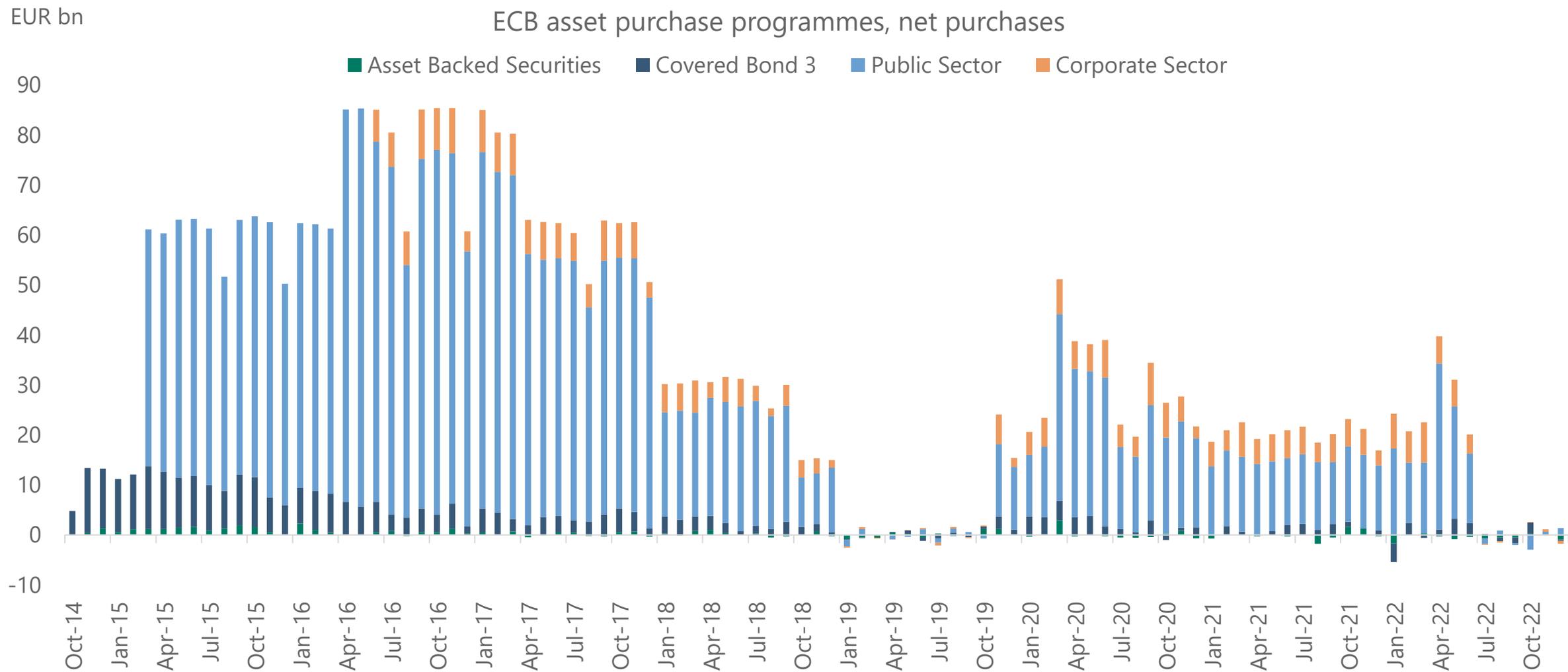
The biggest holder of US corporate bonds is foreigners



ECB purchases of corporate bonds

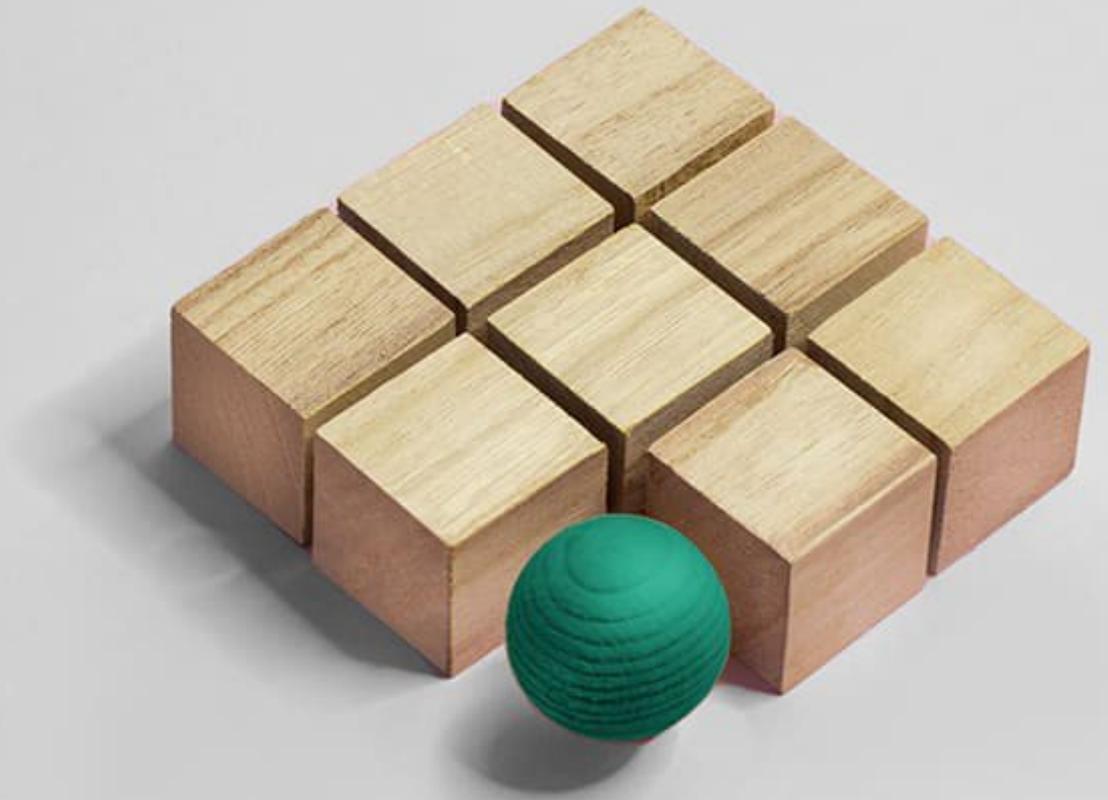


ECB QE ending



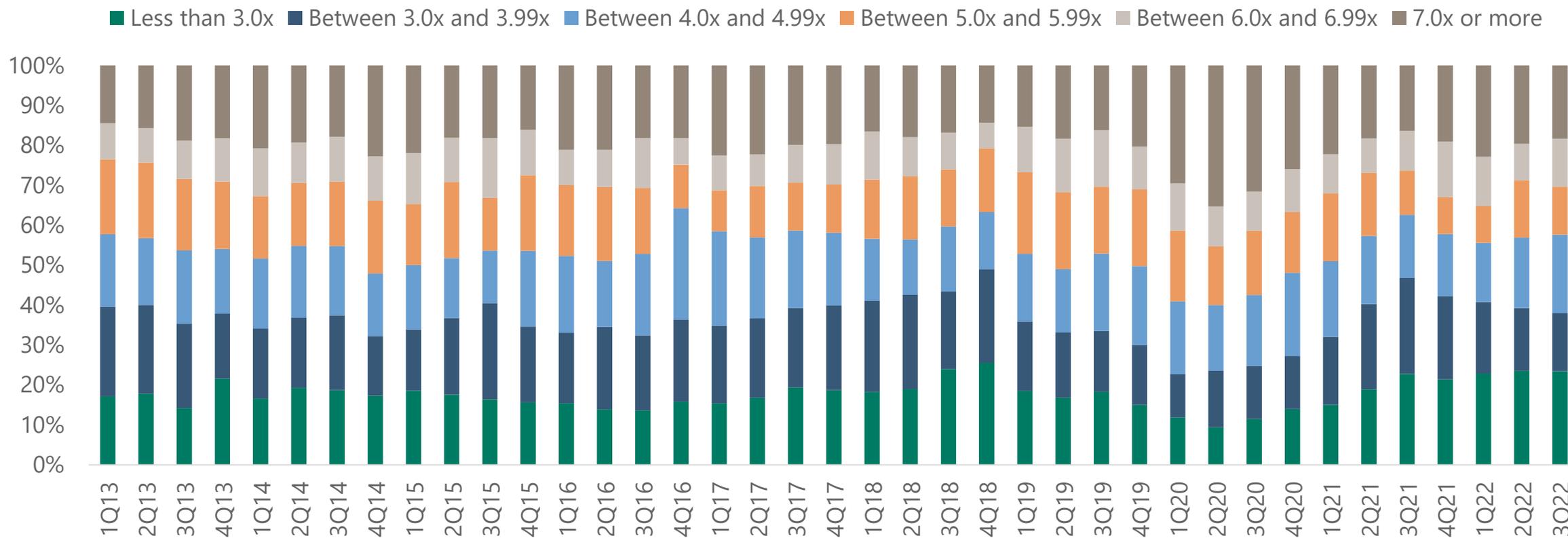
Source: ECB, Bloomberg, Apollo Chief Economist

Loans

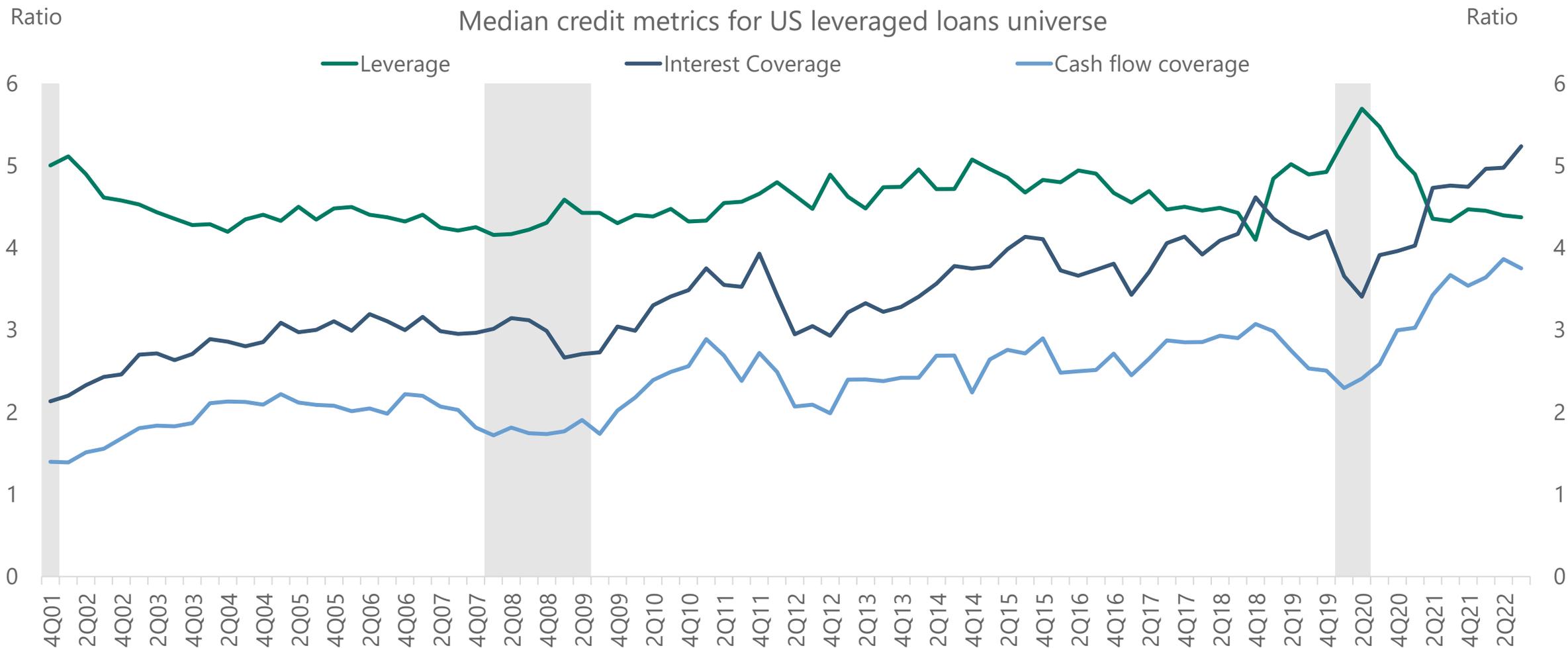


Leveraged loan deals, by multiple

Share of leveraged deals



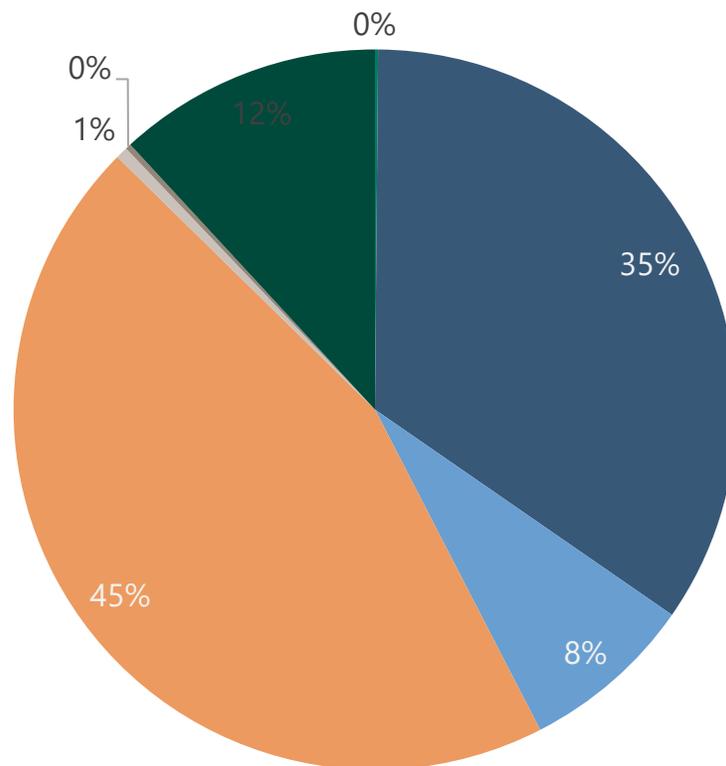
Credit metrics for leveraged loan deals



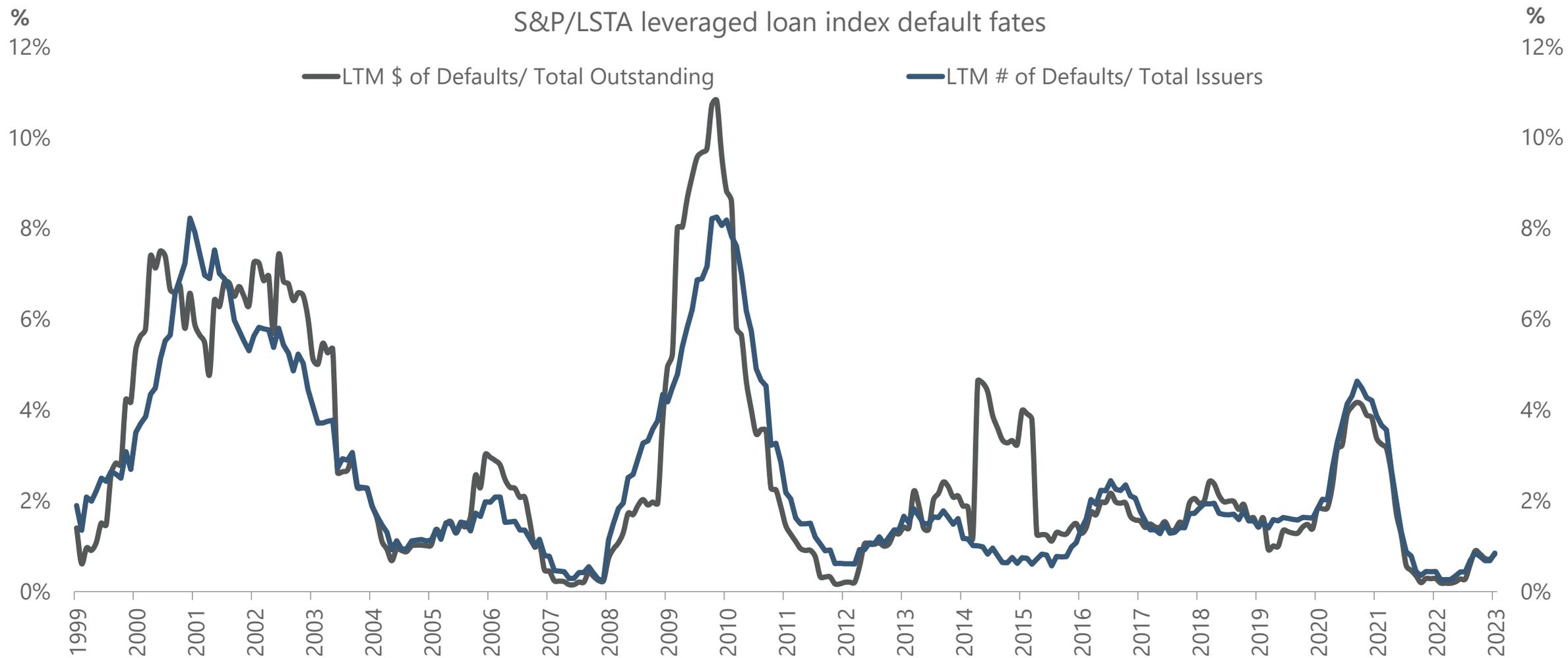
Leveraged loans rating distribution, 2022Q4

US leveraged loan rating distribution

■ BBB/BB or higher ■ BB ■ BB/B ■ B ■ B/CCC ■ CCC or lower ■ NR

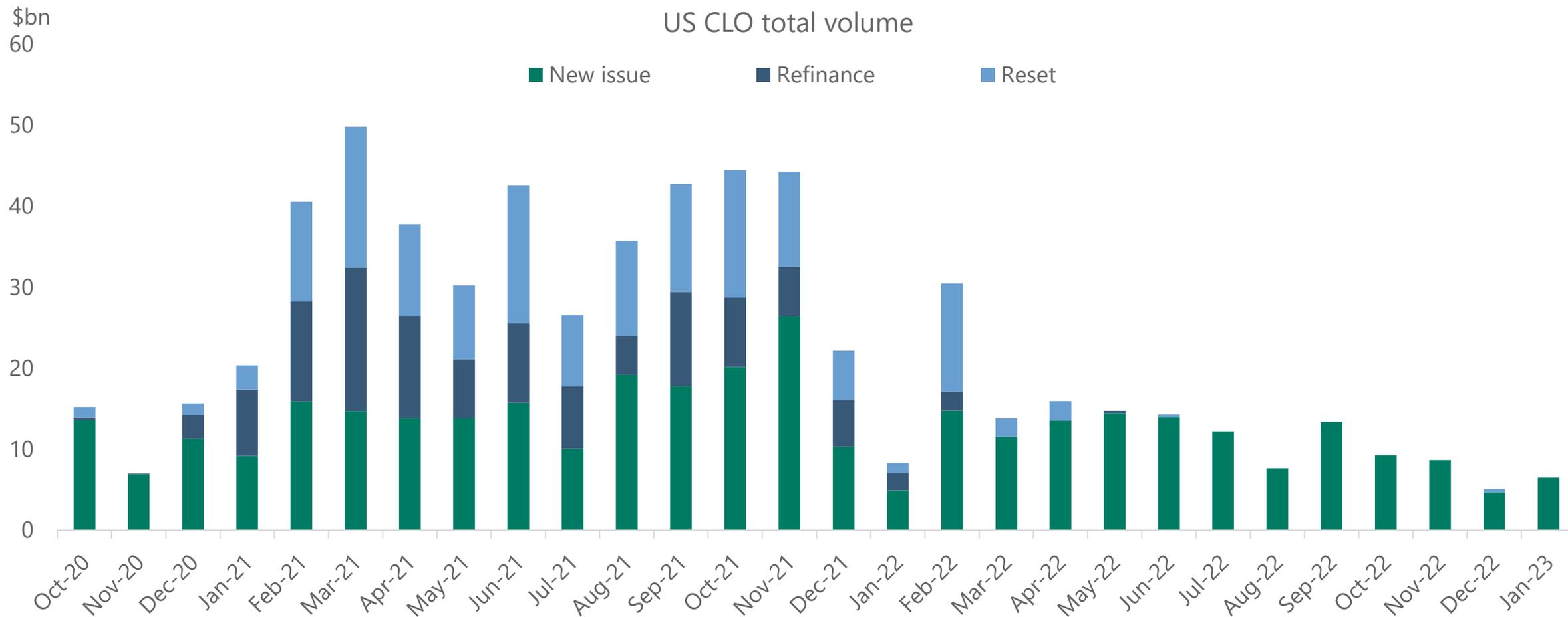


Leveraged loan index default rates starting to rise



Source: S&P LCD, Apollo Chief Economist

US CLO total volume

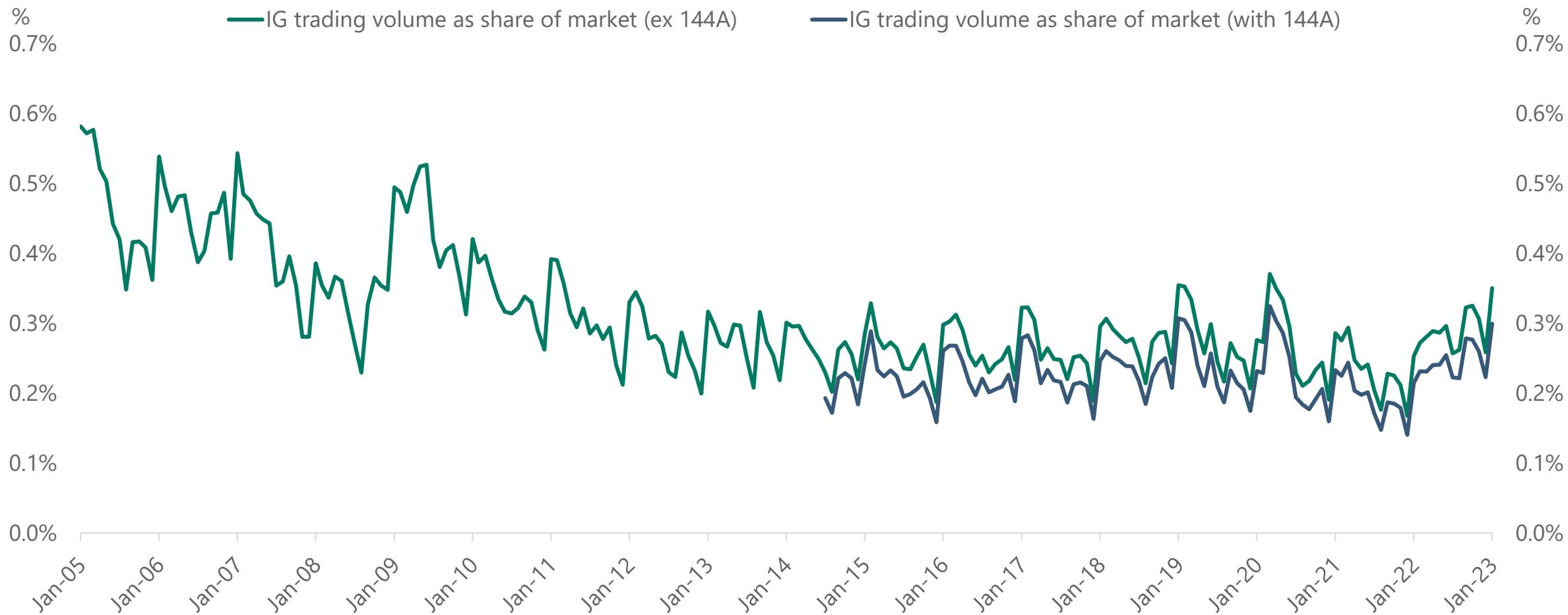


Source: S&P LCD, Apollo Chief Economist.

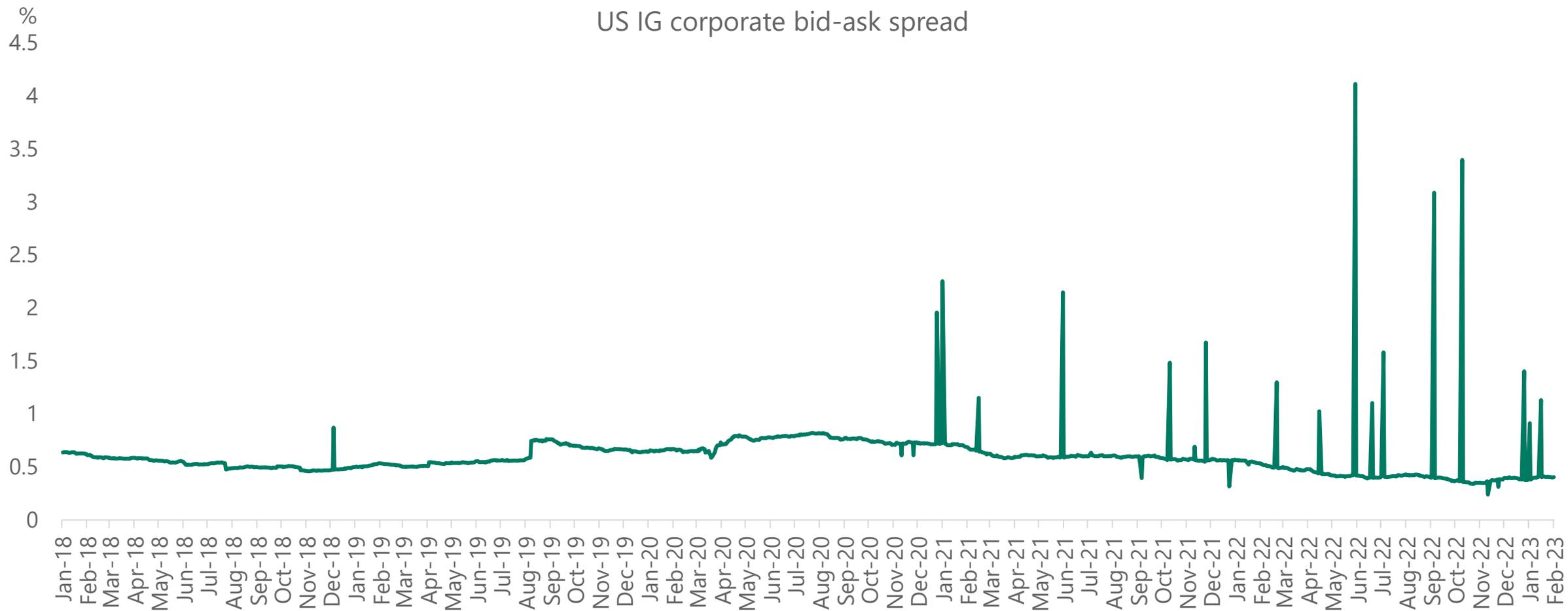
Liquidity in US credit markets



IG trading liquidity

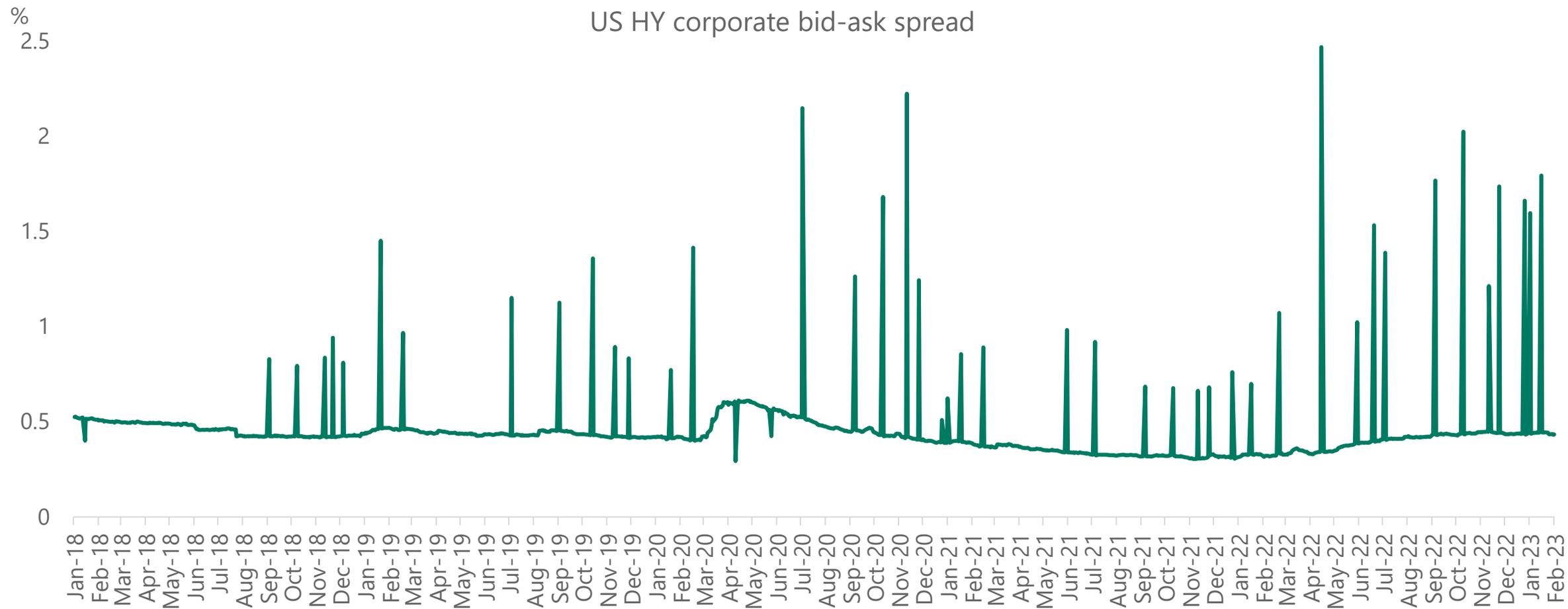


Bid-ask spread for US IG



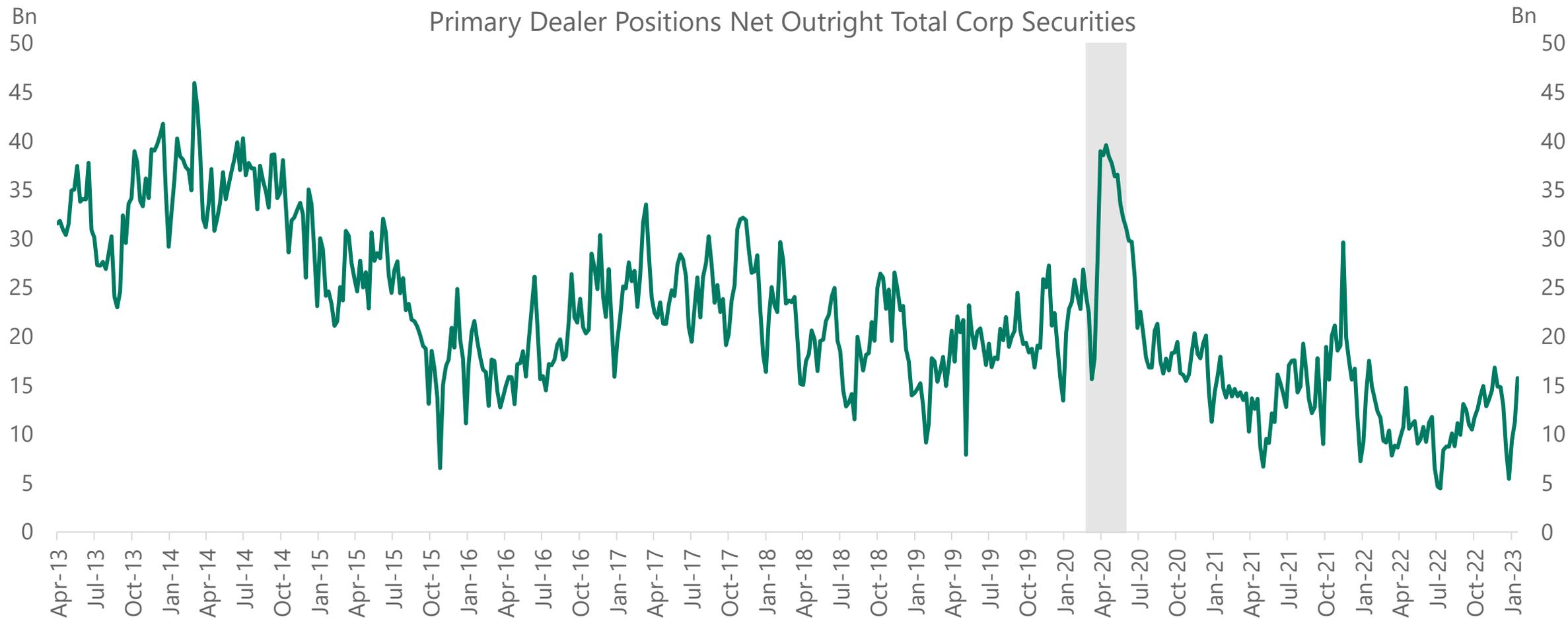
Source: Bloomberg, Apollo Chief Economist. Note: The bid-ask spread is the weighted average of Bloomberg Barclays US IG Index

Bid-ask spread for US HY



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

Rising dealer inventory of corporate bonds (IG+HY)

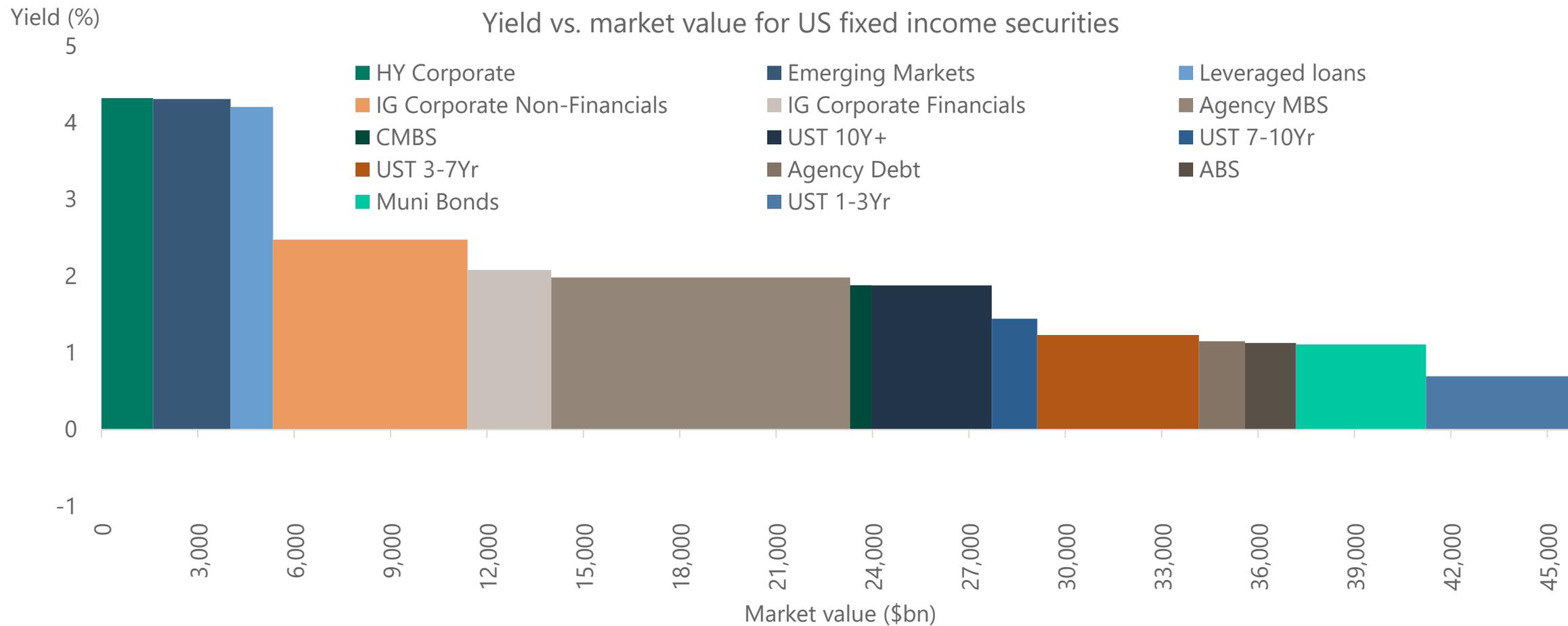


Source: Bloomberg, Apollo Chief Economist

Credit markets in a broader perspective

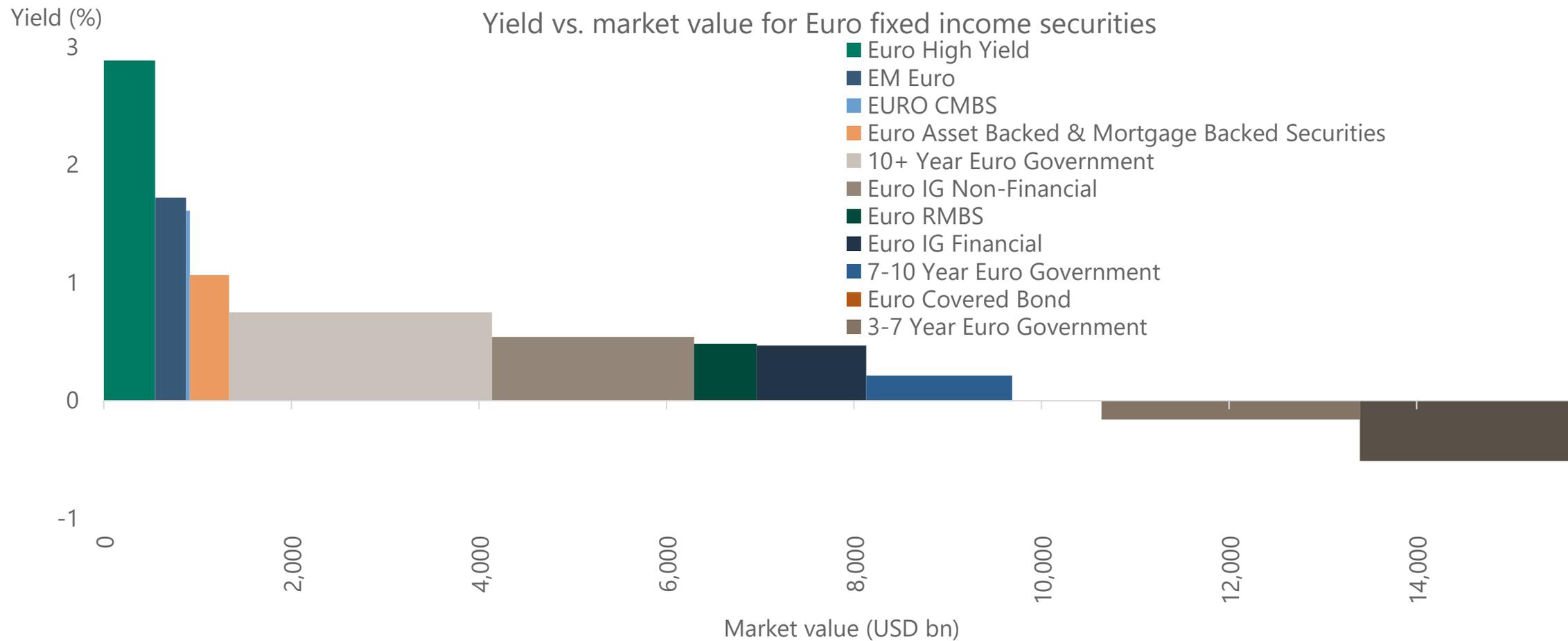


US fixed income markets by yield and size



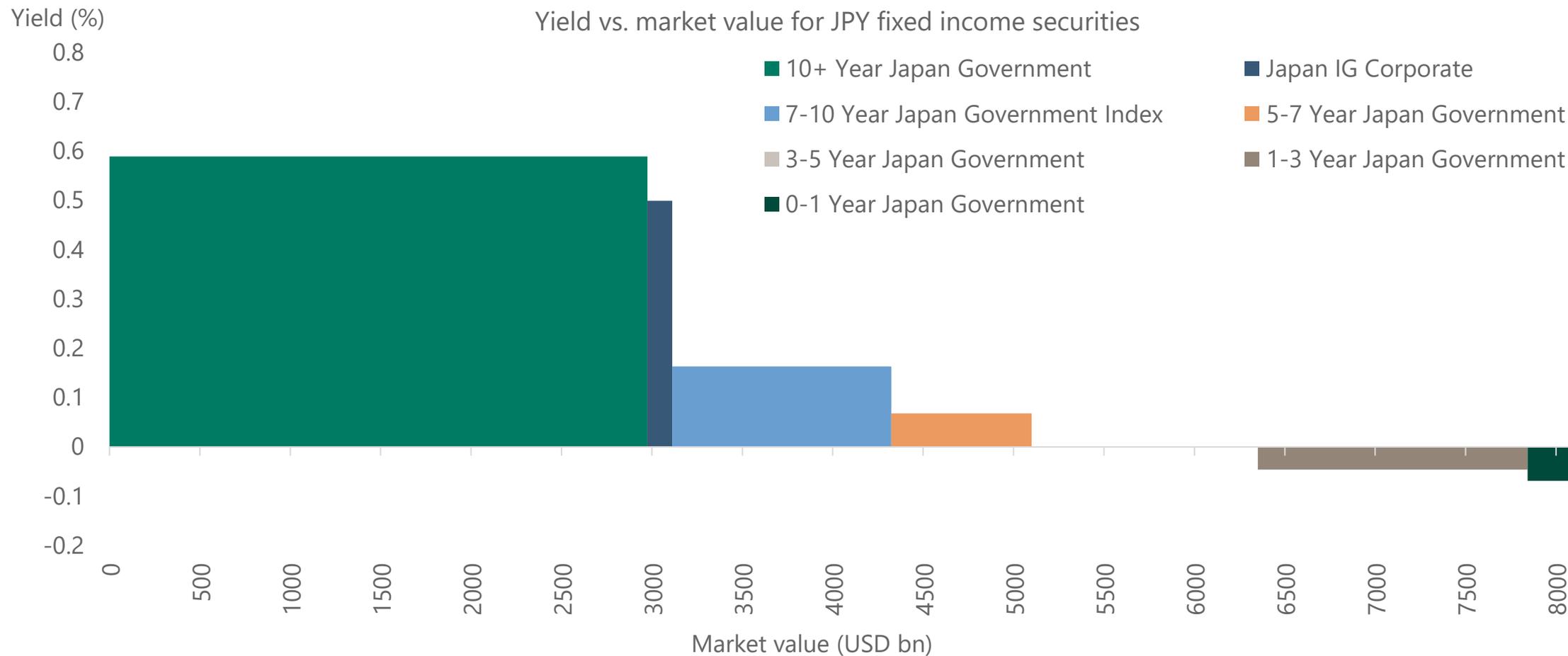
Source: Bloomberg Barclays, SIFMA, ICE BofA, S&P LCD, Bloomberg, Apollo Chief Economist. Note: data as of 4Q21

European fixed income markets by yield and size

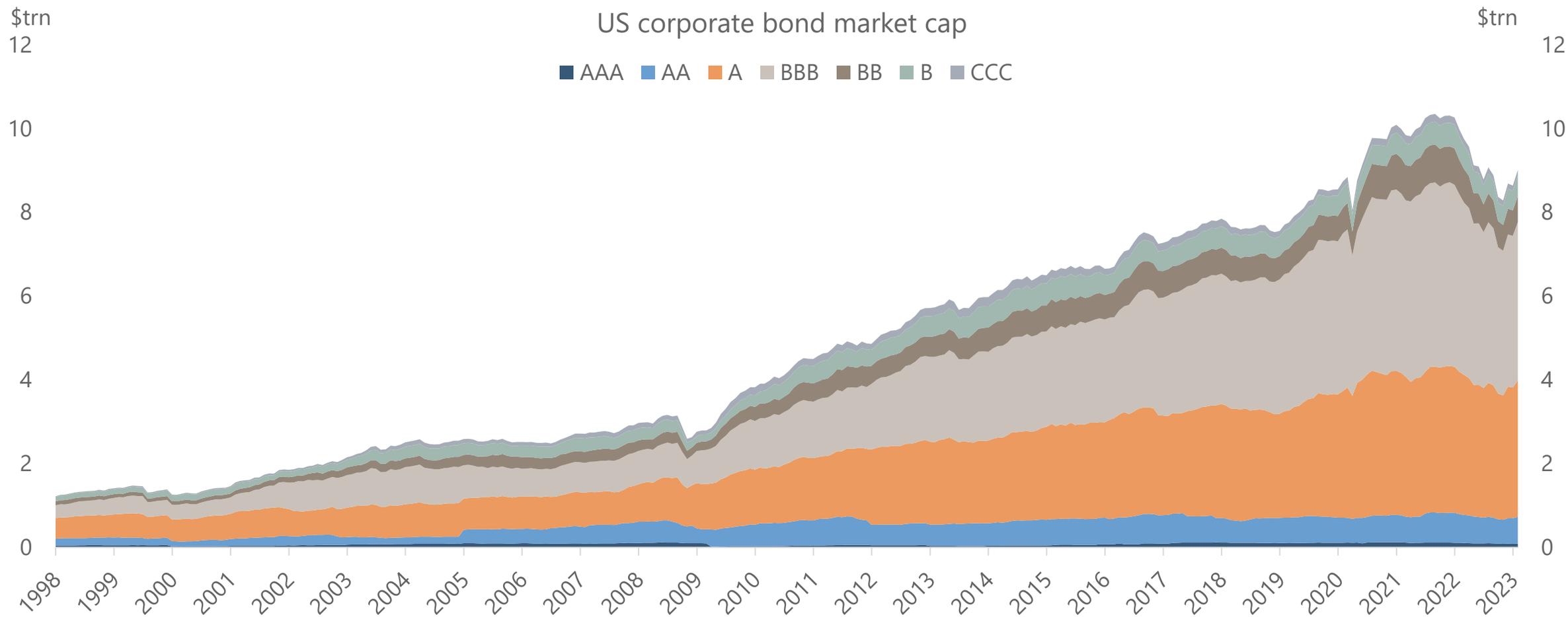


Source: Bloomberg Barclays, AFME, ICE BofA, S&P LCD, Bloomberg, Apollo Chief Economist. Note: data as of 4Q21

Japanese fixed income markets by yield and size

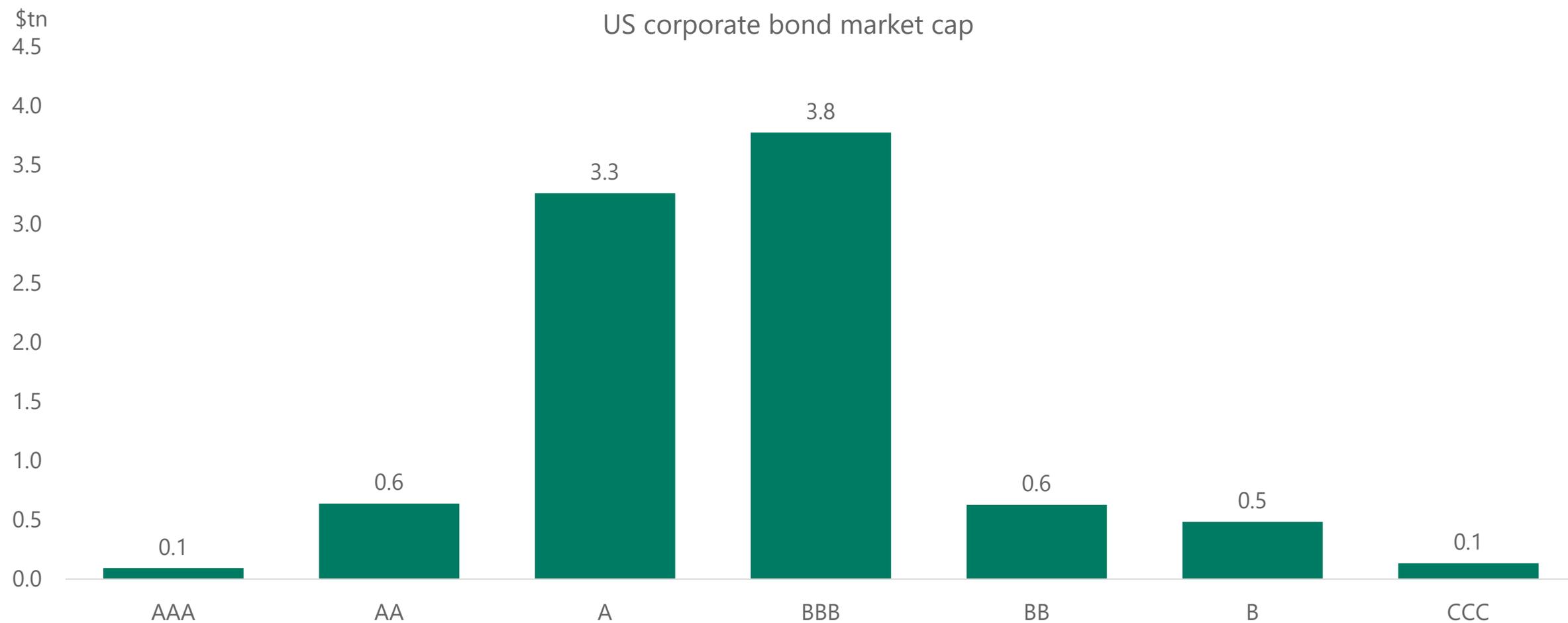


Market cap of US credit markets

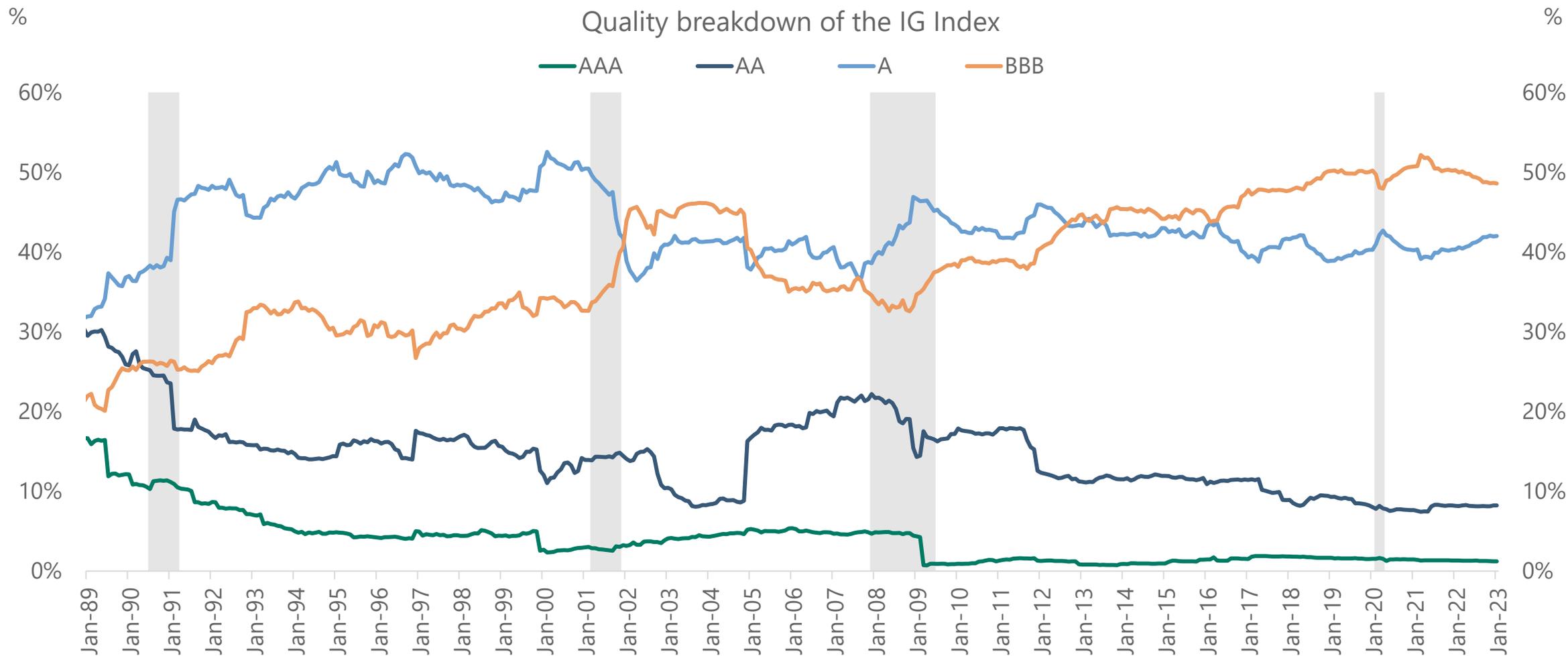


Source: ICE BofA, Bloomberg, Apollo Chief Economist. Data as of 31st December 2022

Corporate bond market cap, by rating

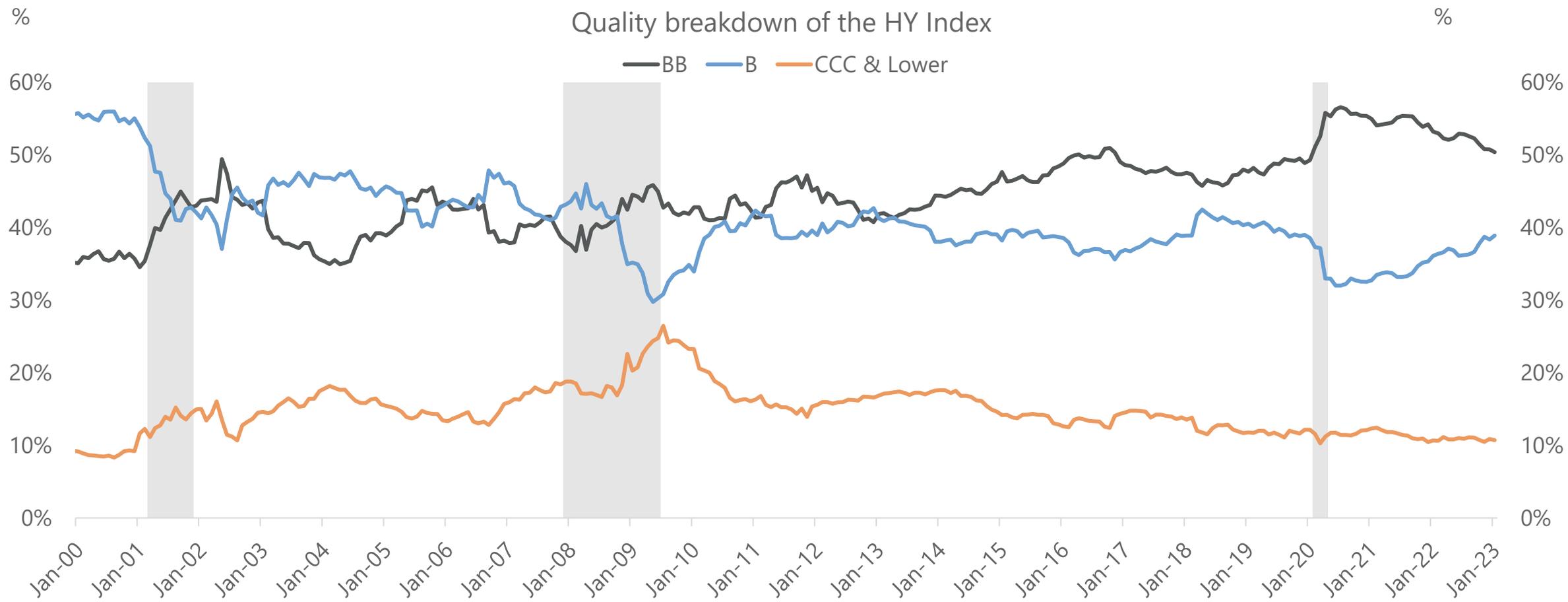


Quality composition of the IG Index



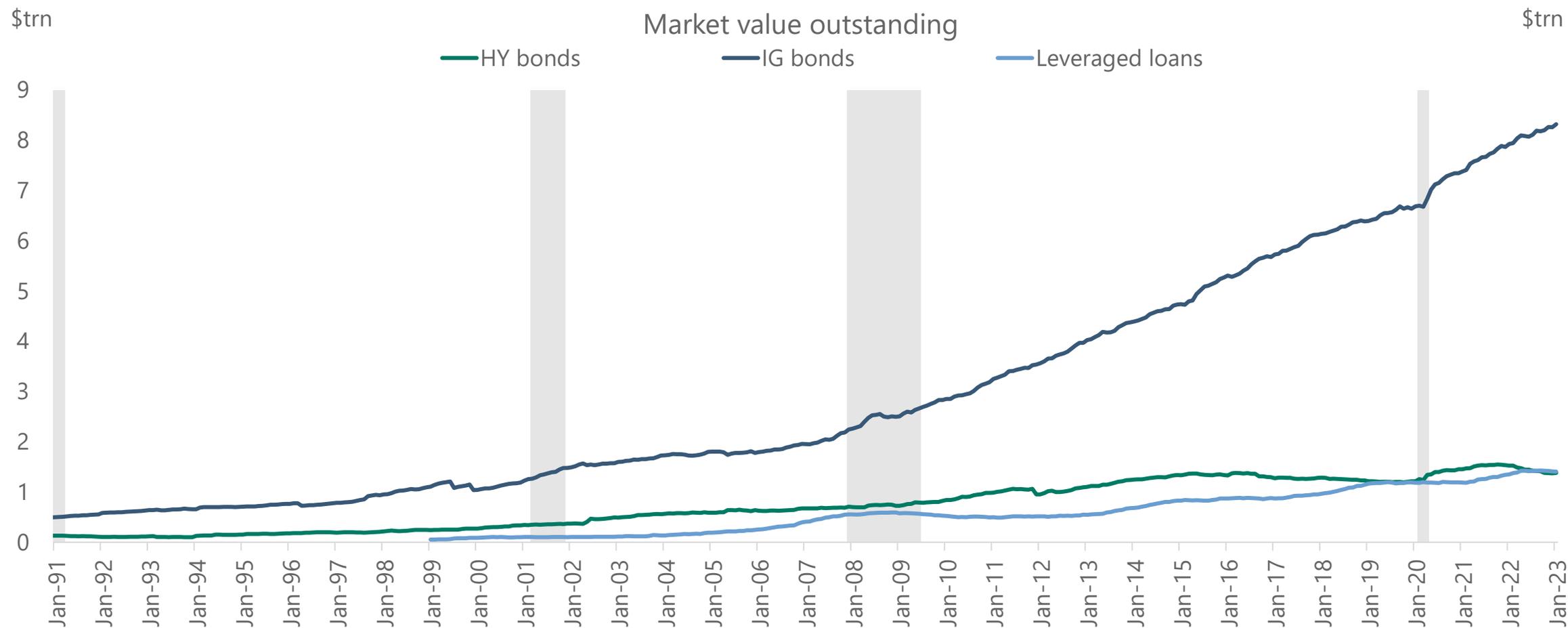
Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Breakdown by market value. Data as of 31st January 2023

Quality composition of the HY Index



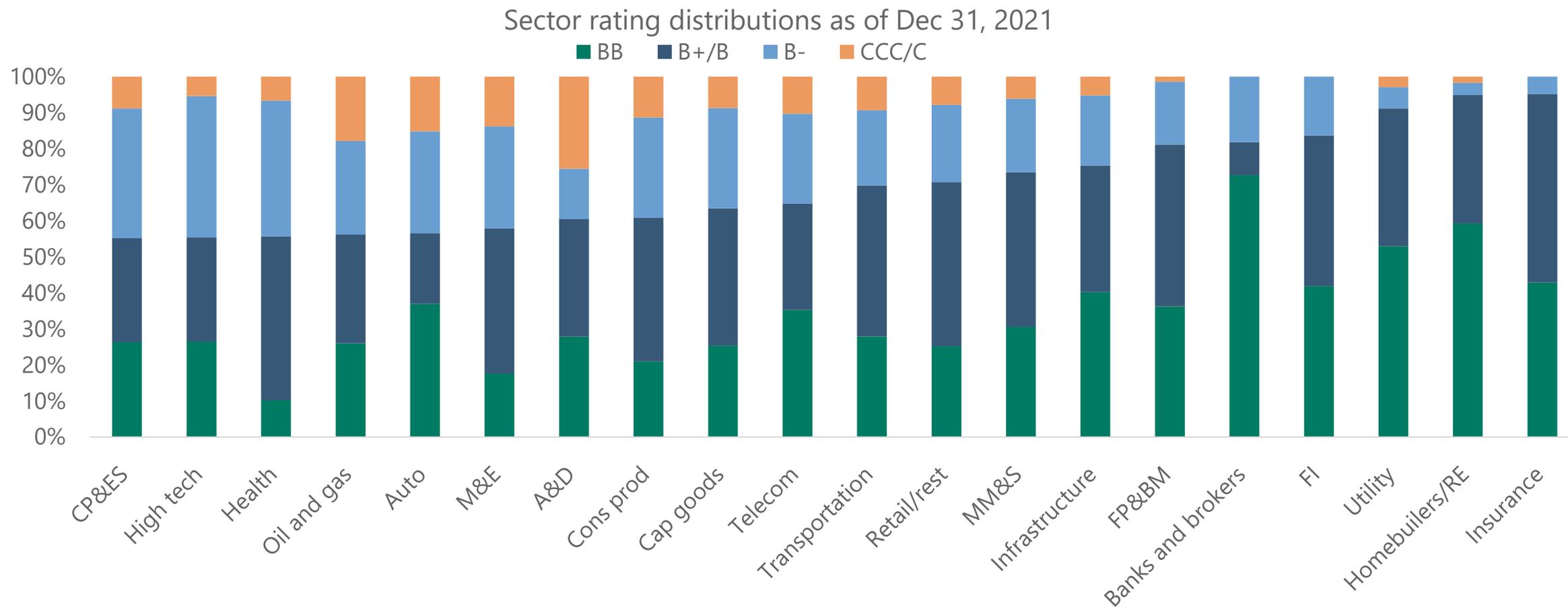
Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Breakdown by market value. Data as of 31st January 2023

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



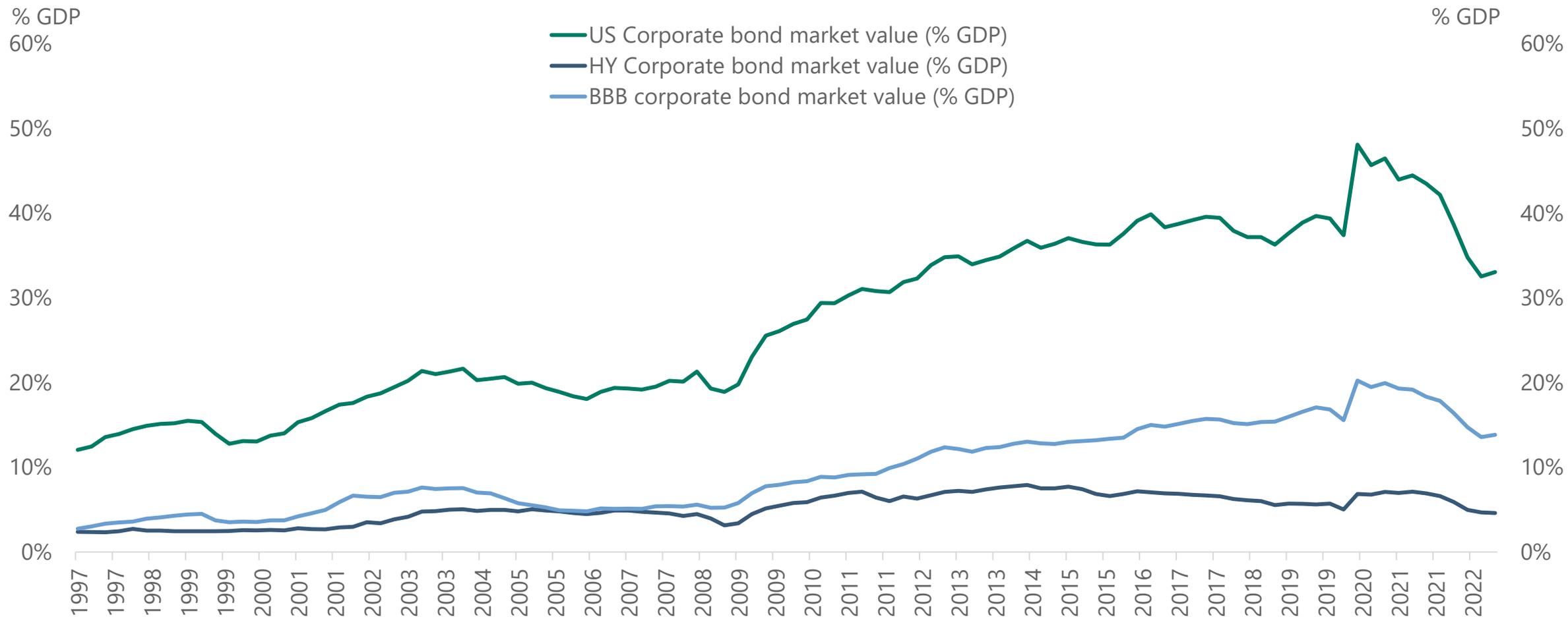
Source: ICE BofA, Bloomberg, S&P LCD, Apollo Chief Economist. Note: Ticker used for HY is H0A0 Index and for IG it is C0A0 Index and for Loans it is SPBDALB Index.

HY sector rating distributions

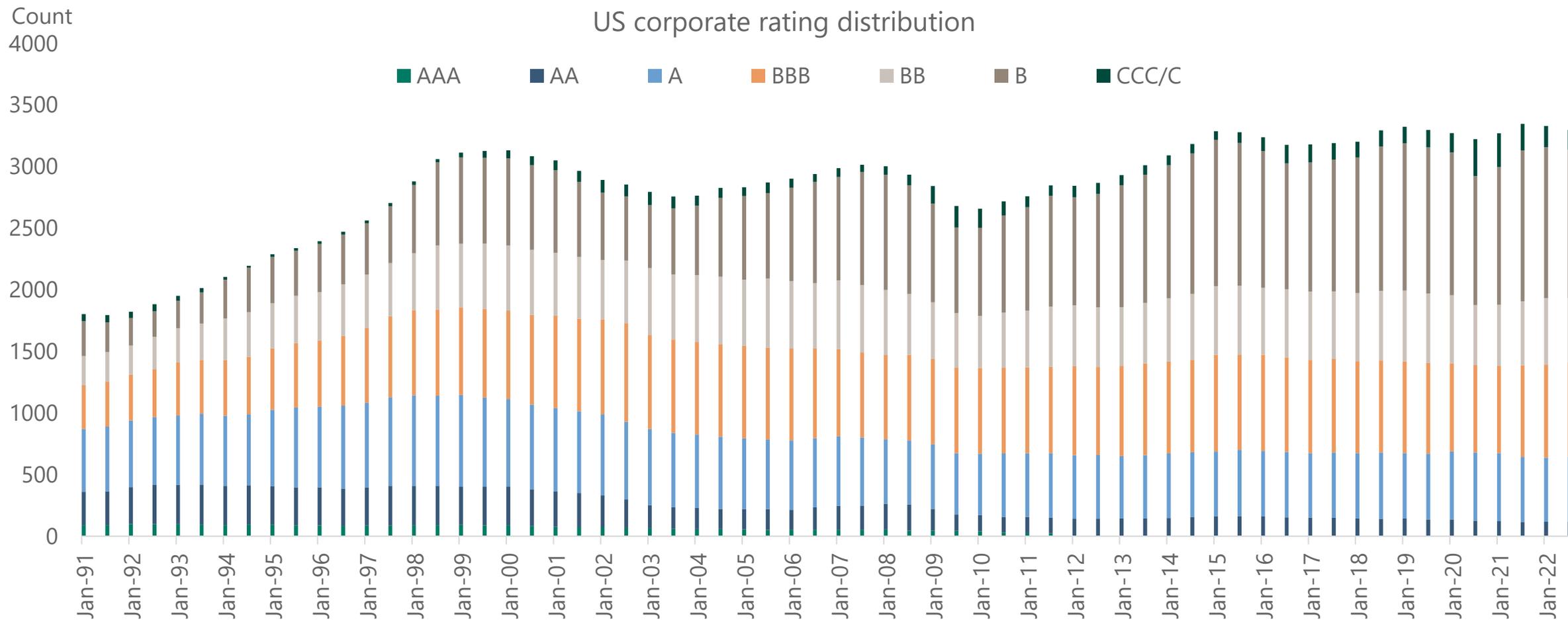


Source: S&P Global Ratings Research and S&P Global Market Intelligence's CreditPro®, Apollo Chief Economist. Note: Numbers in parentheses represent overall sector's proportion of the speculative-grade population. CP&ES--Chemicals, packaging, and environmental services. FP&BM--Forest products and building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

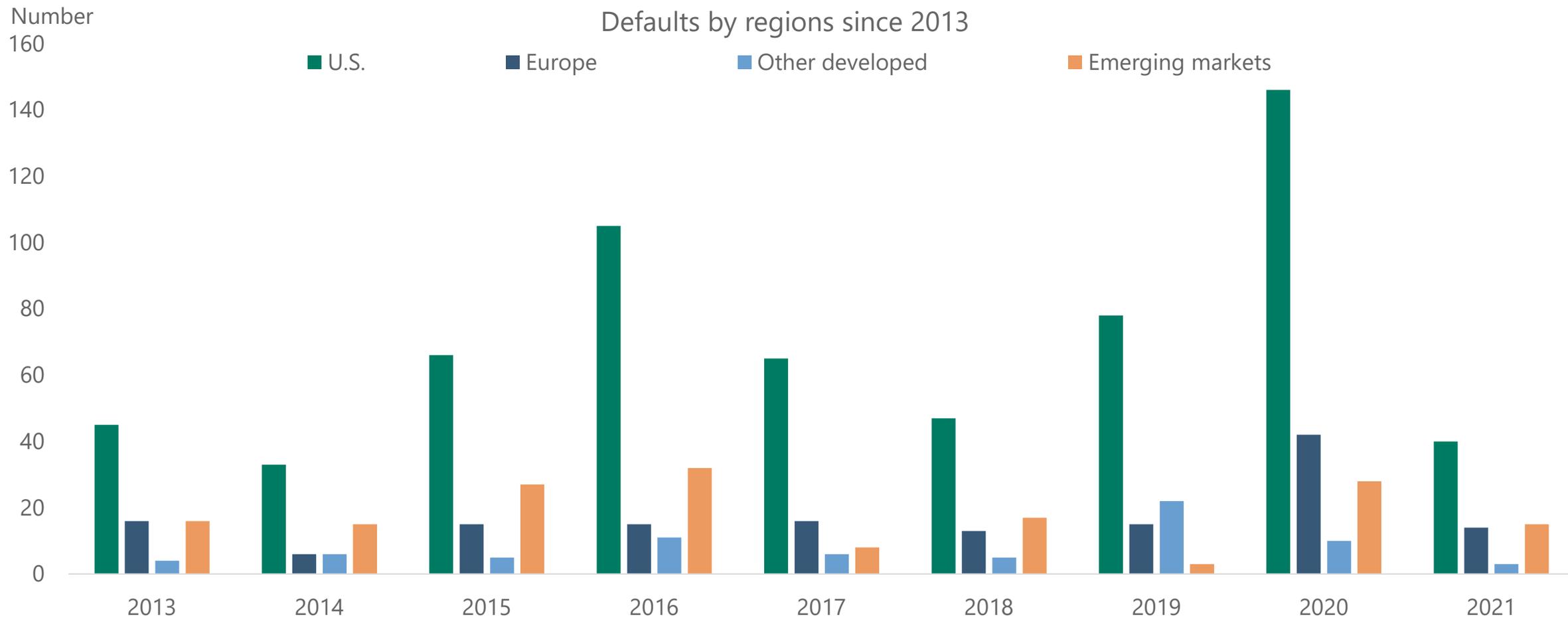
US corporate bond markets as a share of GDP



Distribution of corporate credit ratings

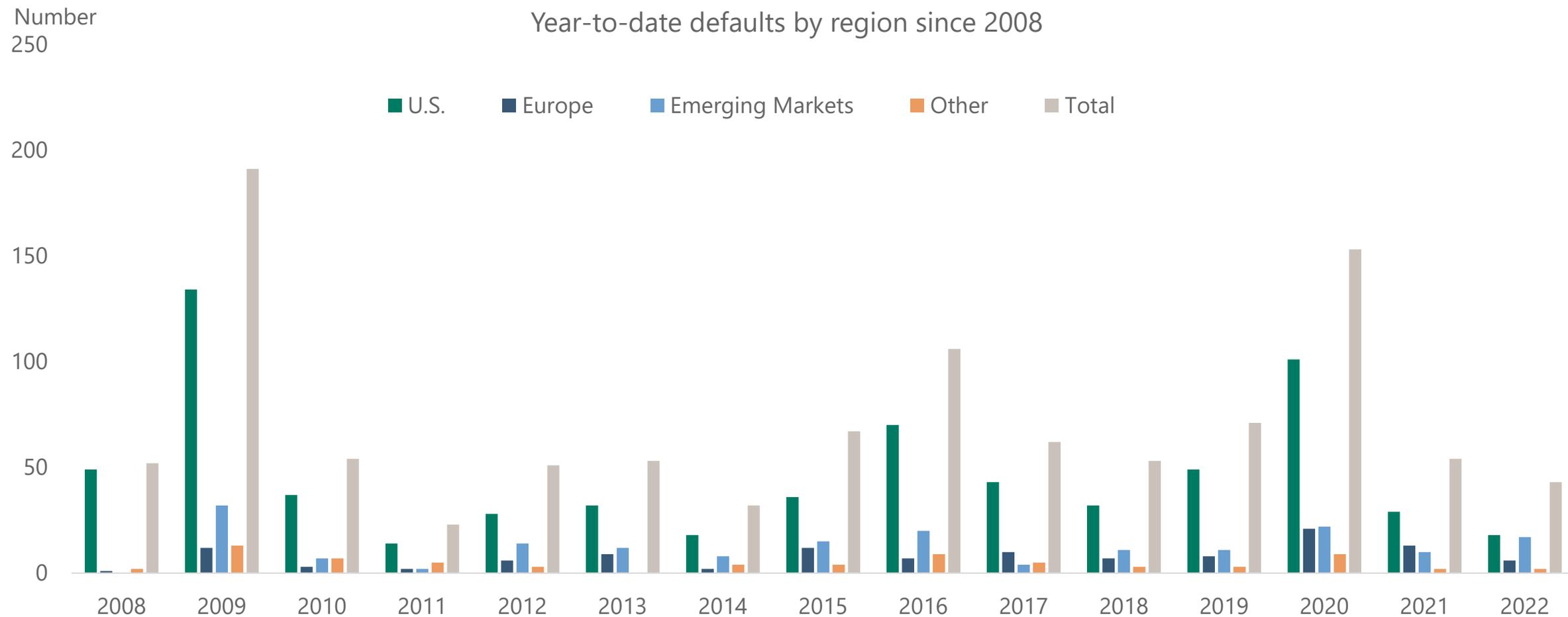


Global default rates remain low



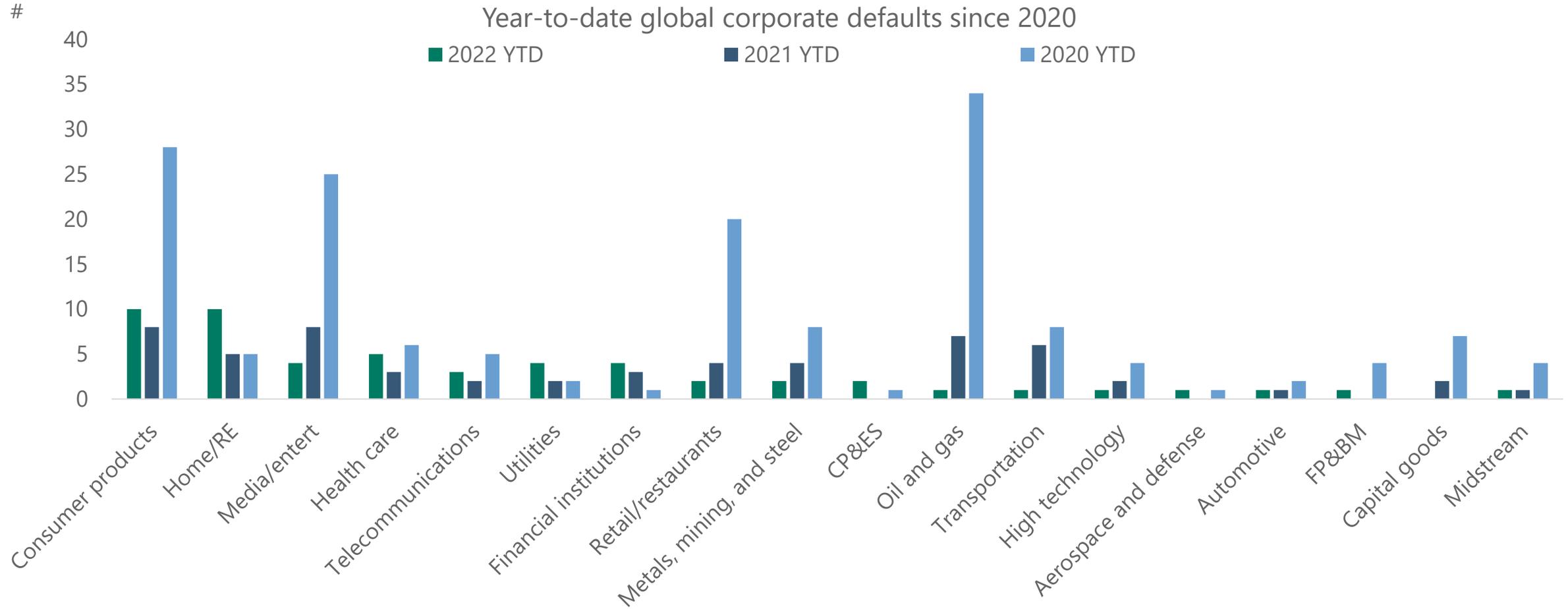
Sources: S&P Global Ratings Research and S&P Global Market Intelligence's CreditPro®, Apollo Chief Economist.

Global default rates remain very low

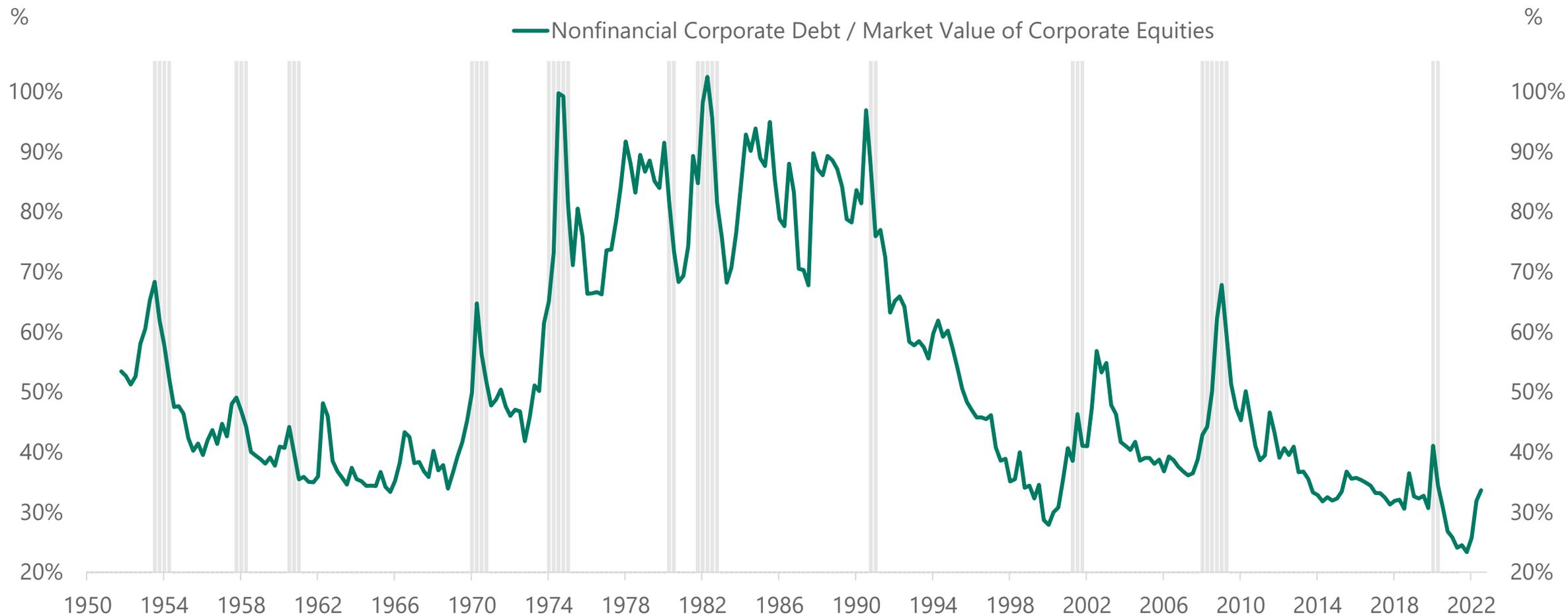


Sources: S&P Global Ratings Research and S&P Global Market Intelligence's CreditPro®, Apollo Chief Economist. Note: Data as of 31st July 2022

Default rates differ across sectors



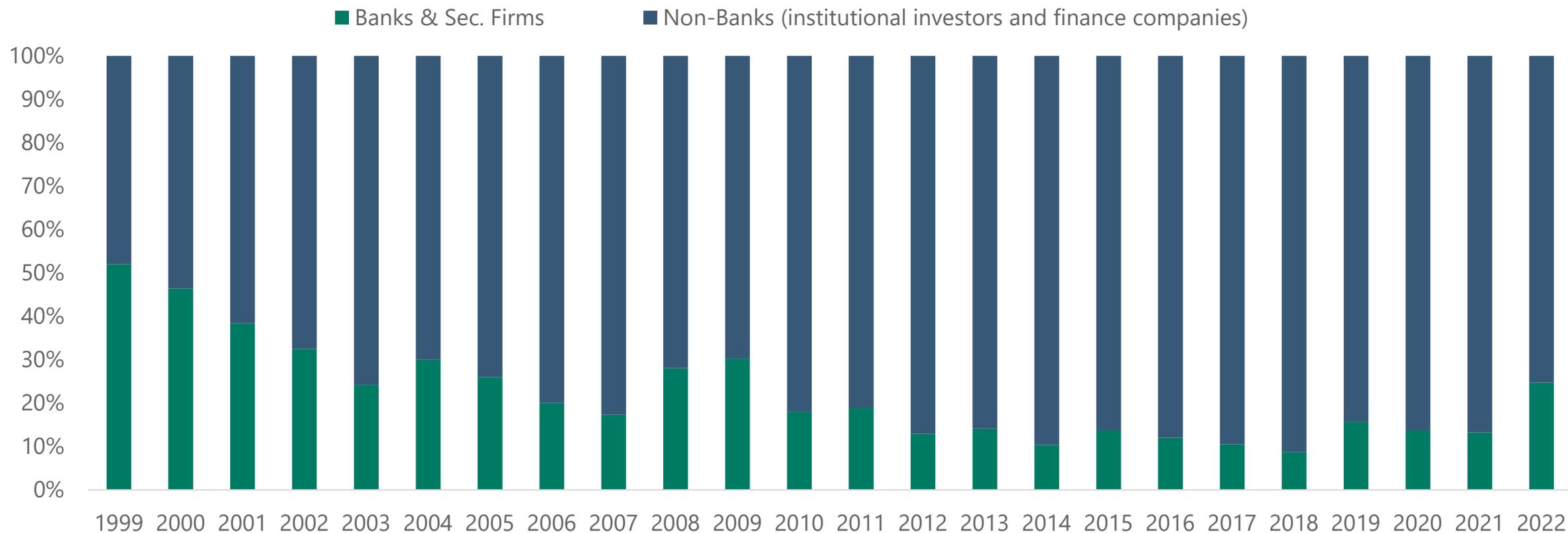
Debt-to-equity ratio is very low for corporate America



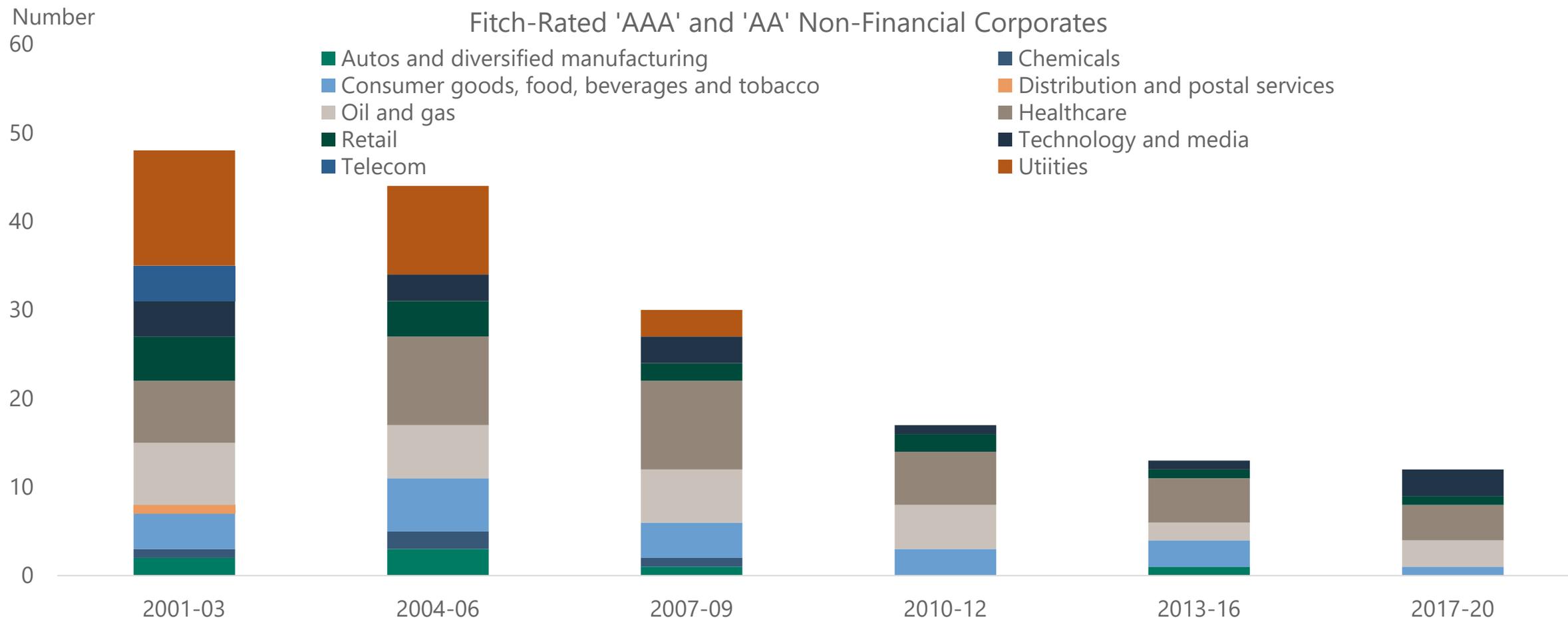
Source: FRB, Haver Analytics, Apollo Chief Economist.

More leveraged loans are bought by banks

Primary investor market: leveraged loans

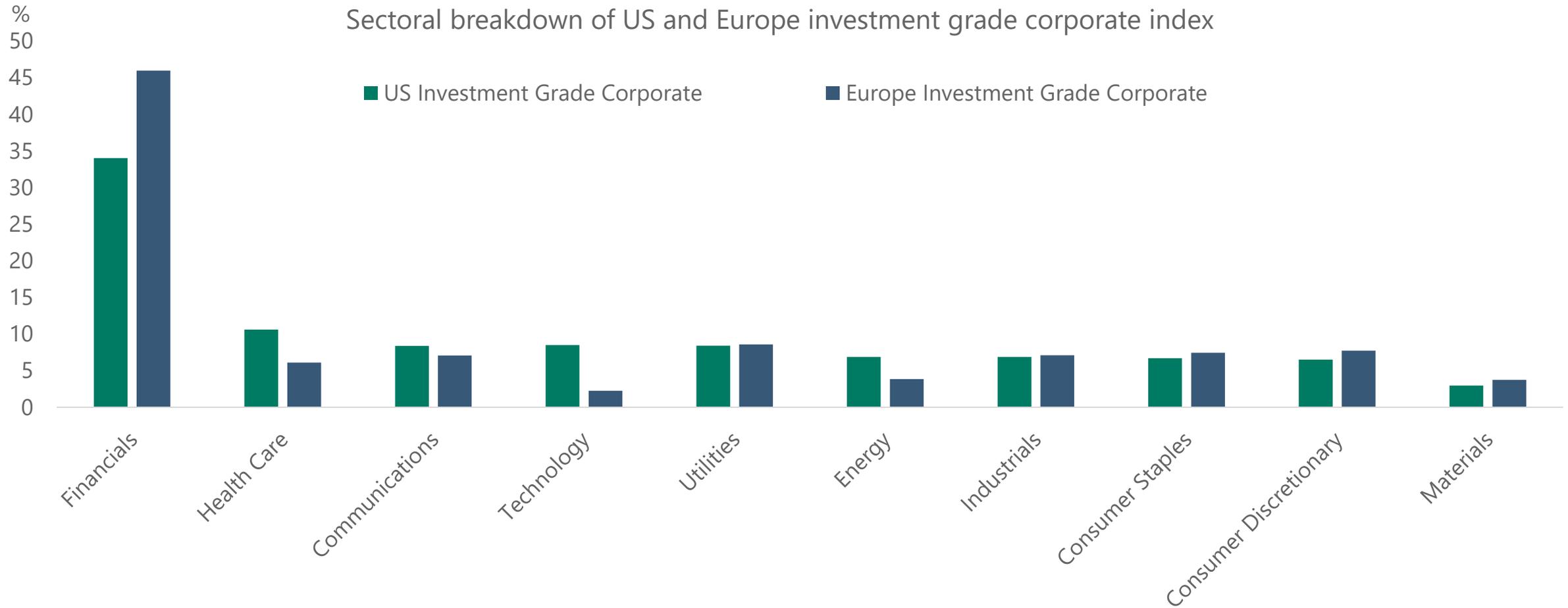


Fewer and fewer corporate bonds are rated AAA and AA



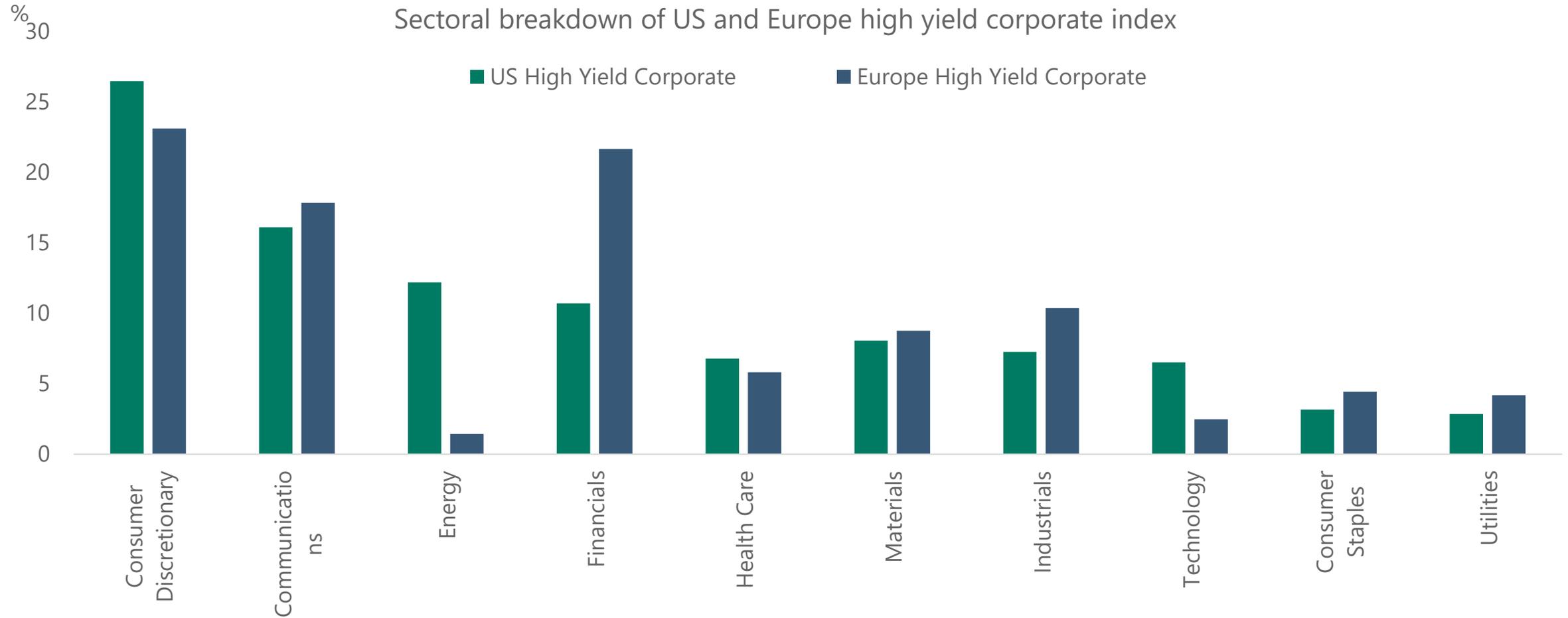
Source: Fitch Ratings, Apollo Chief Economist. Note: Including state-linked issuers with Standalone Credit Profiles in the 'AA' category. Data cover issuers that have been rated for at least six years or at end-2020.

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

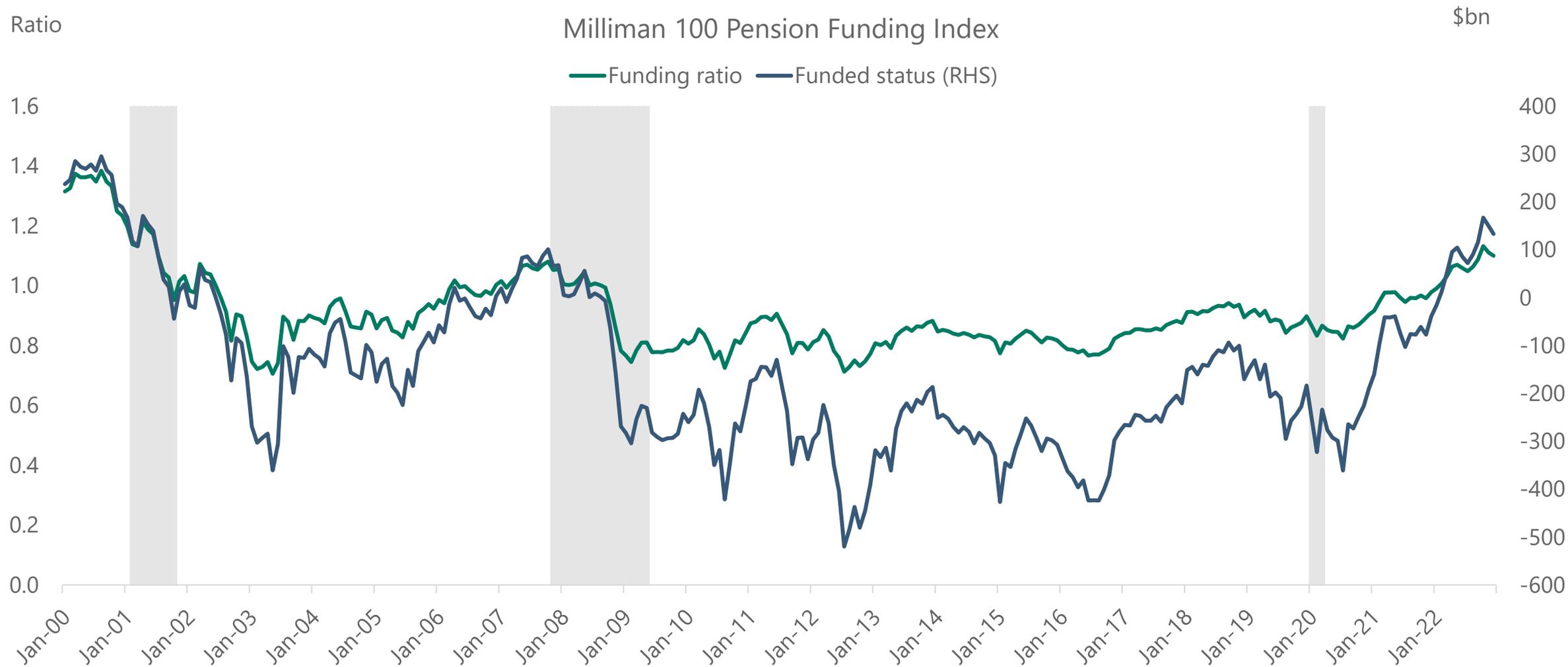


Source: Bloomberg Barclays, Bloomberg, Apollo Chief Economist. Data as of 31st December 2022

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

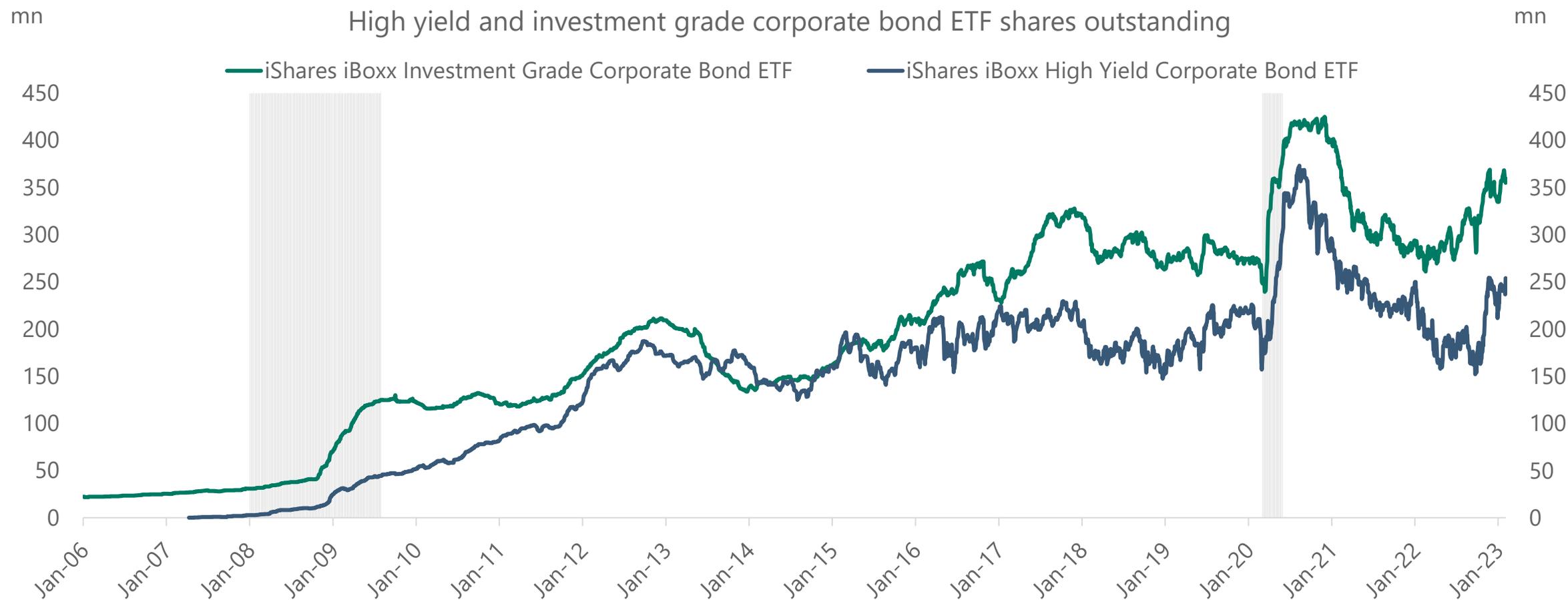


Pension funding status has improved



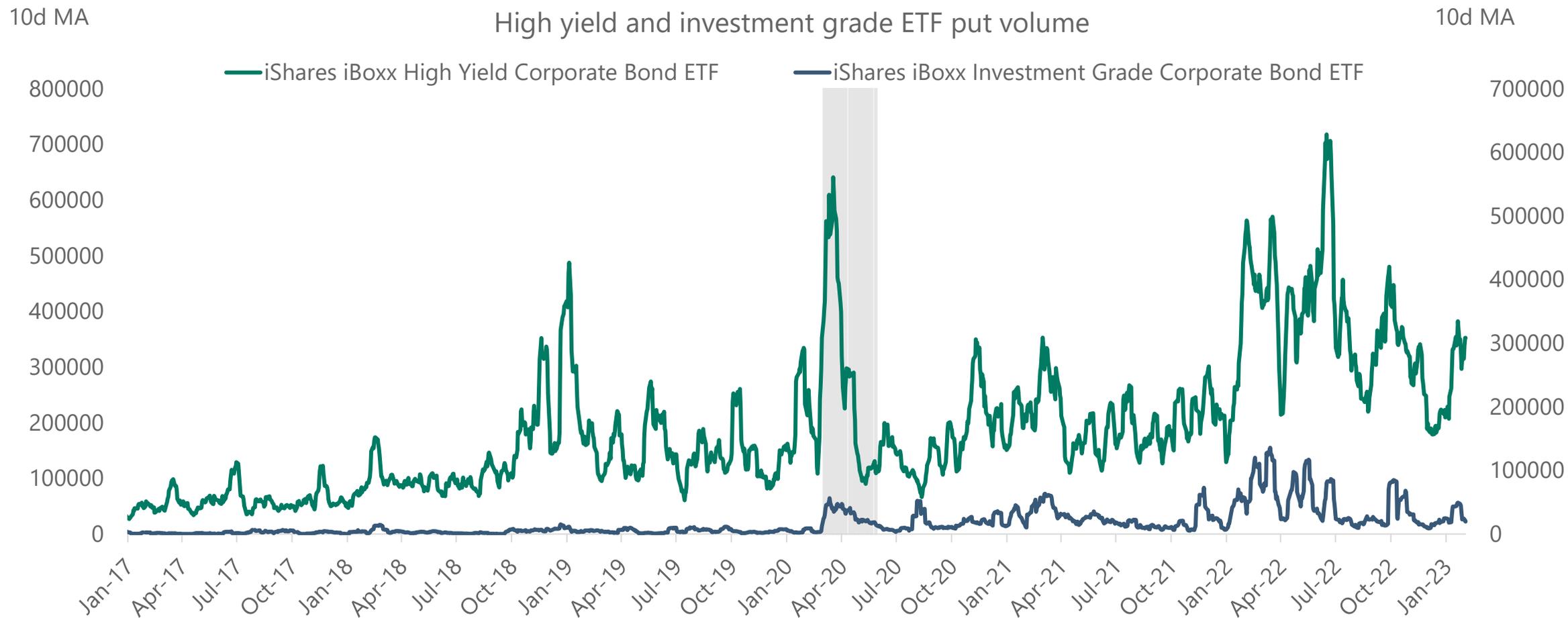
Source: Milliman, Bloomberg, Apollo Chief Economist. Note: Funded status measures planned assets minus projected benefit obligation

Retail investors buying HY

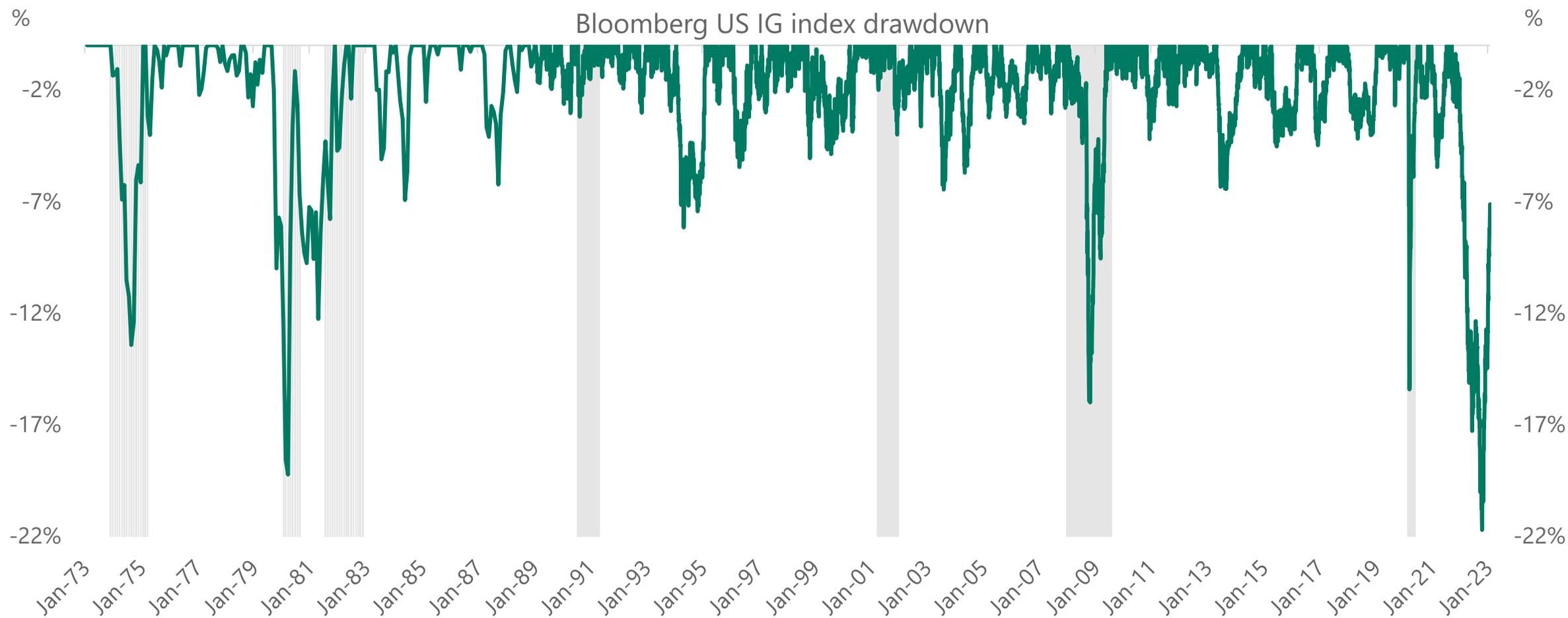


Source: Bloomberg, Apollo Chief Economist. Note: Tickers used HYG US Equity and LQD US Equity

Put volumes for IG ETF and HY ETF



Passive IG investors down 7% from peak

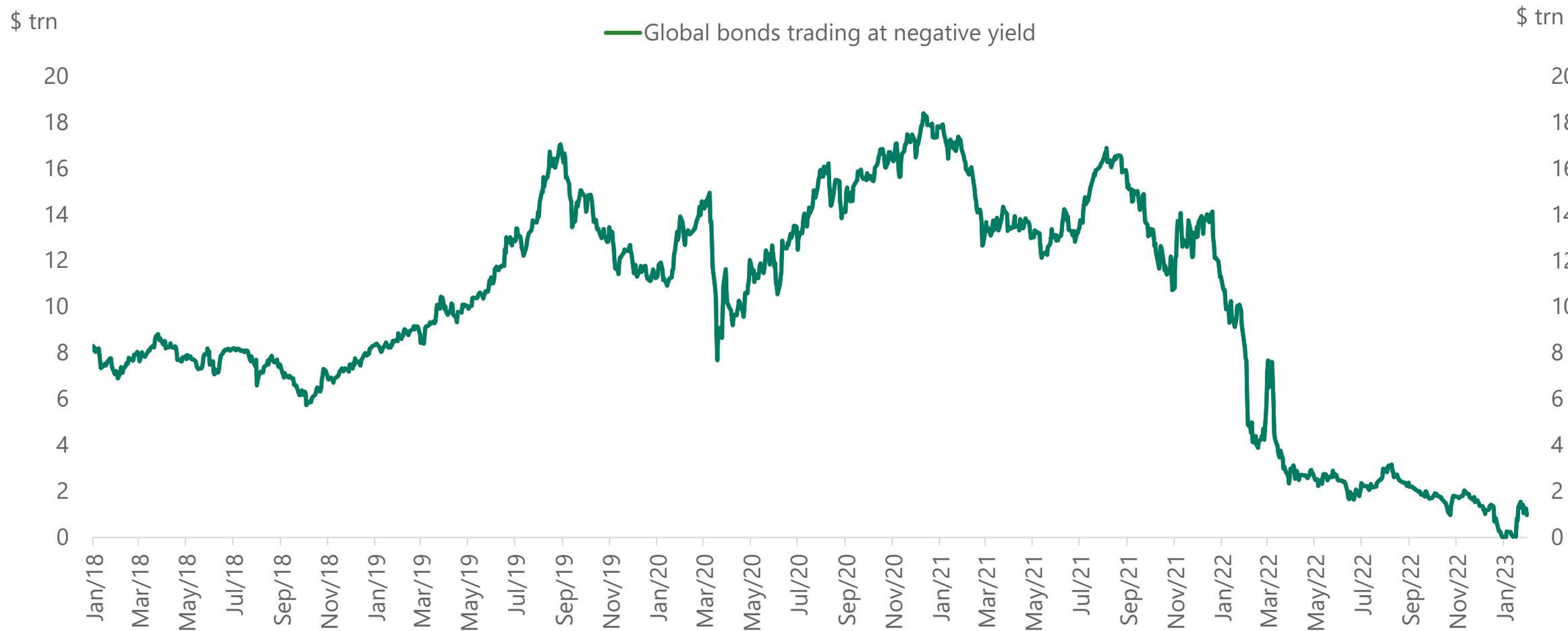


Source: Bloomberg, Apollo Chief Economist. Note: Index used LUACTRUU Index

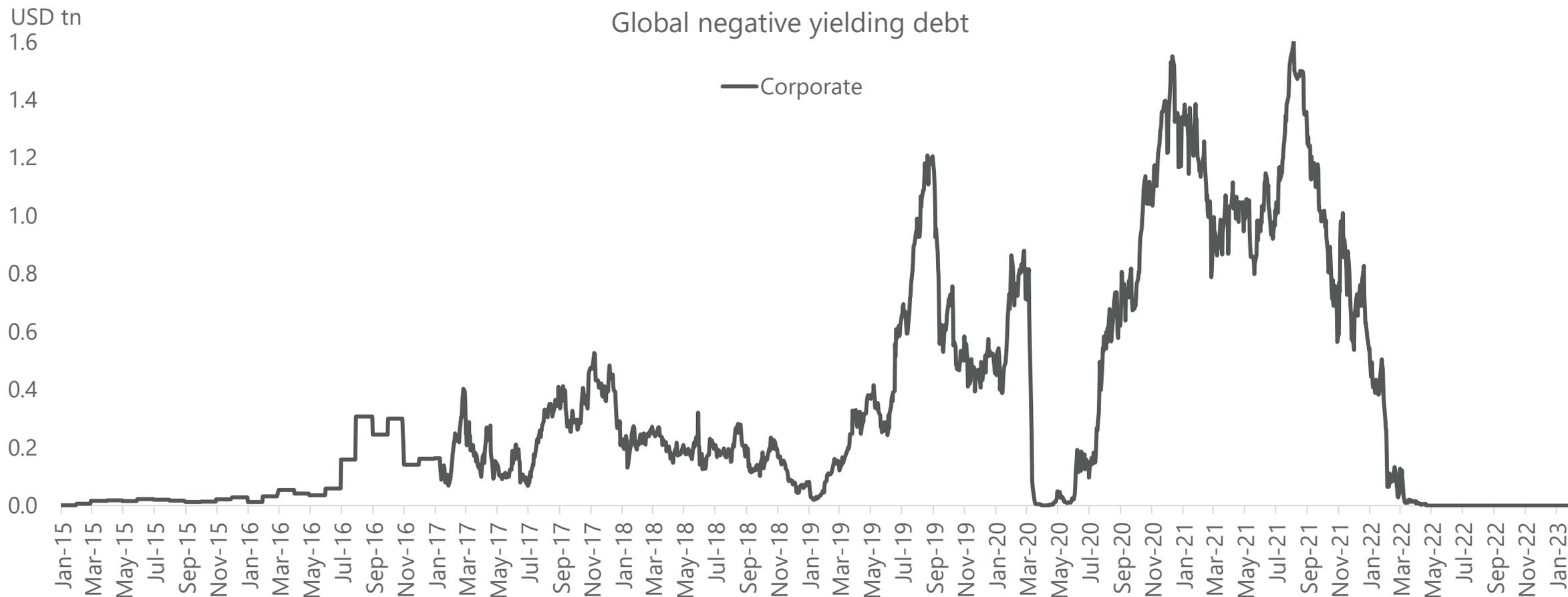
Bonds outstanding trading at negative interest rates



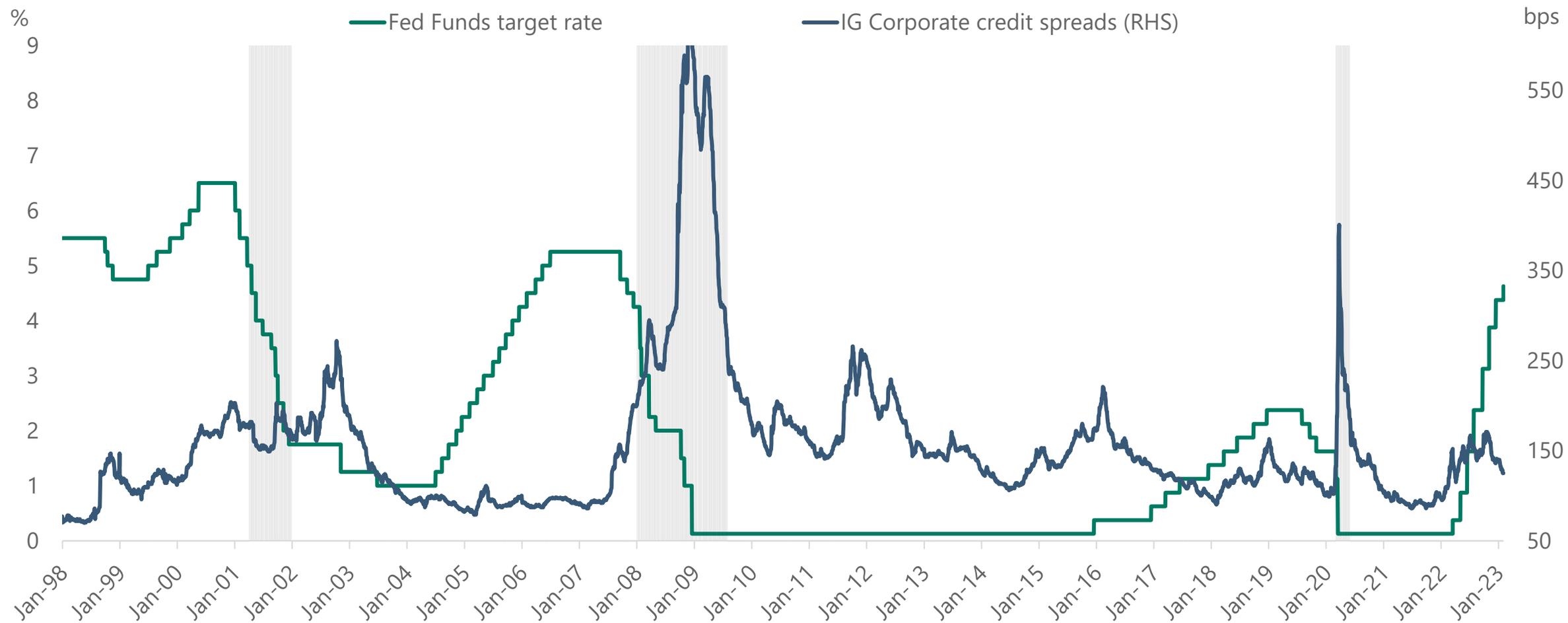
The total value of negative yielding debt in the world: \$1.3trn



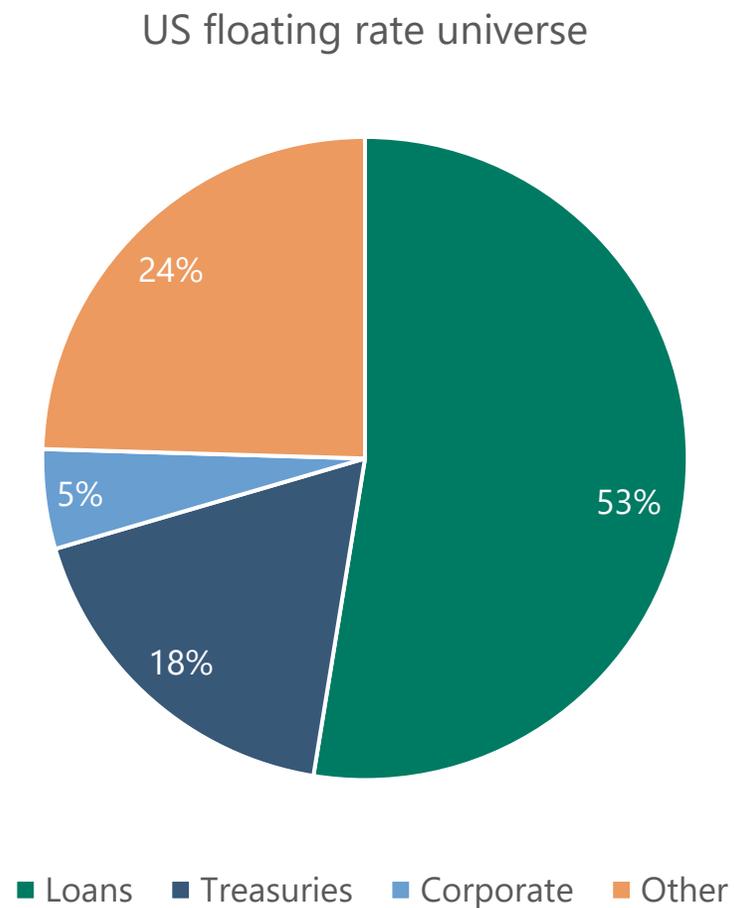
All corporate bonds now have positive yields



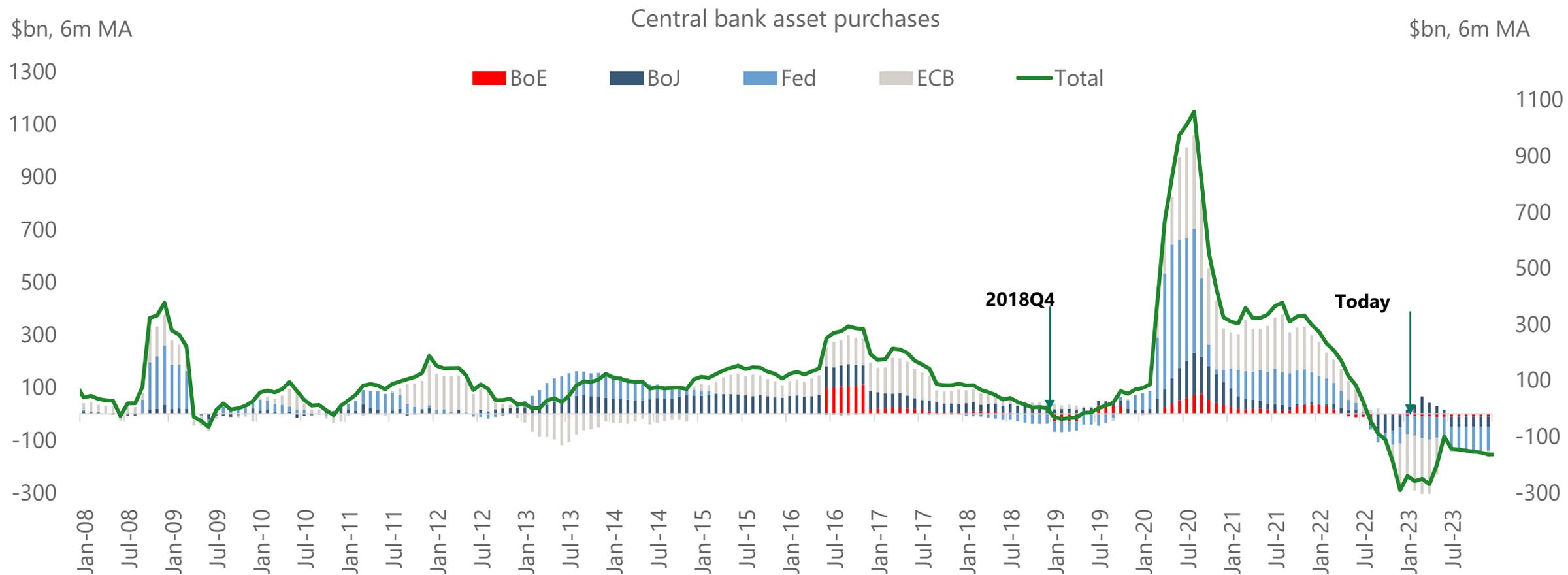
Fed hiking and credit spreads widening



US: Floating rate bonds outstanding, January 2023

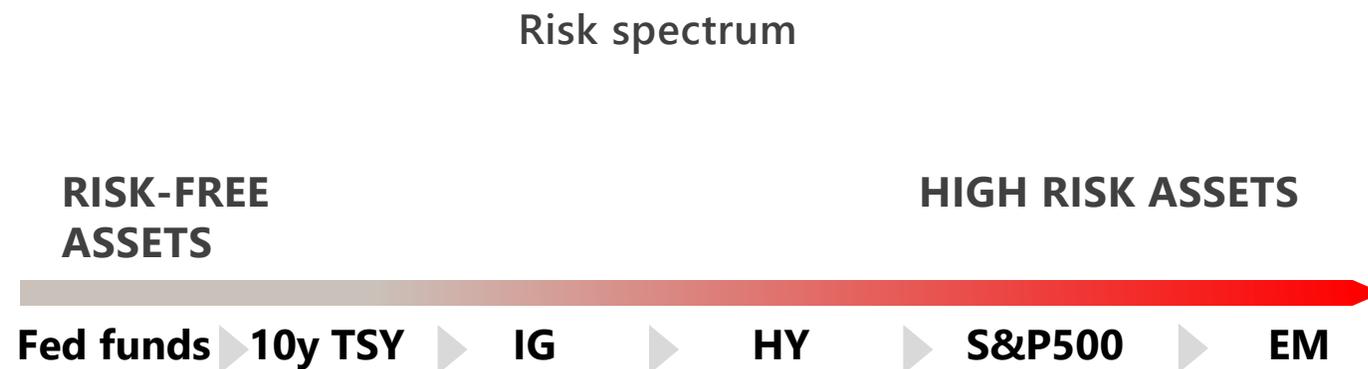


From QE to QT

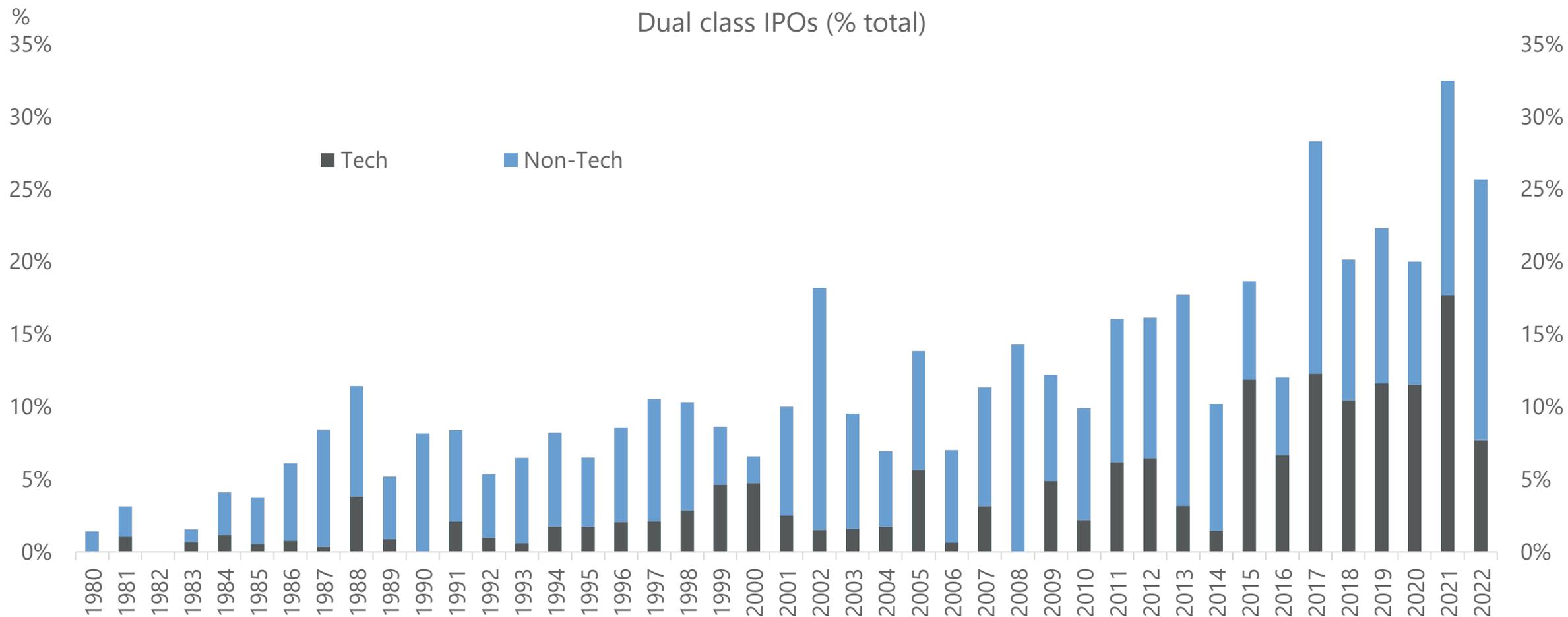


Source: Bloomberg, Apollo Chief Economist. Pace of purchases for 2021: BOE: £3.4bn per week till mid December 2021, FED: USD120bn per month with wind down from December with purchases ending in March 2022, ECB: Euro 90bn per month (20 bn APP + 60 bn PEPP), PEPP till March 2022, Euro 40bn in April, Euro 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

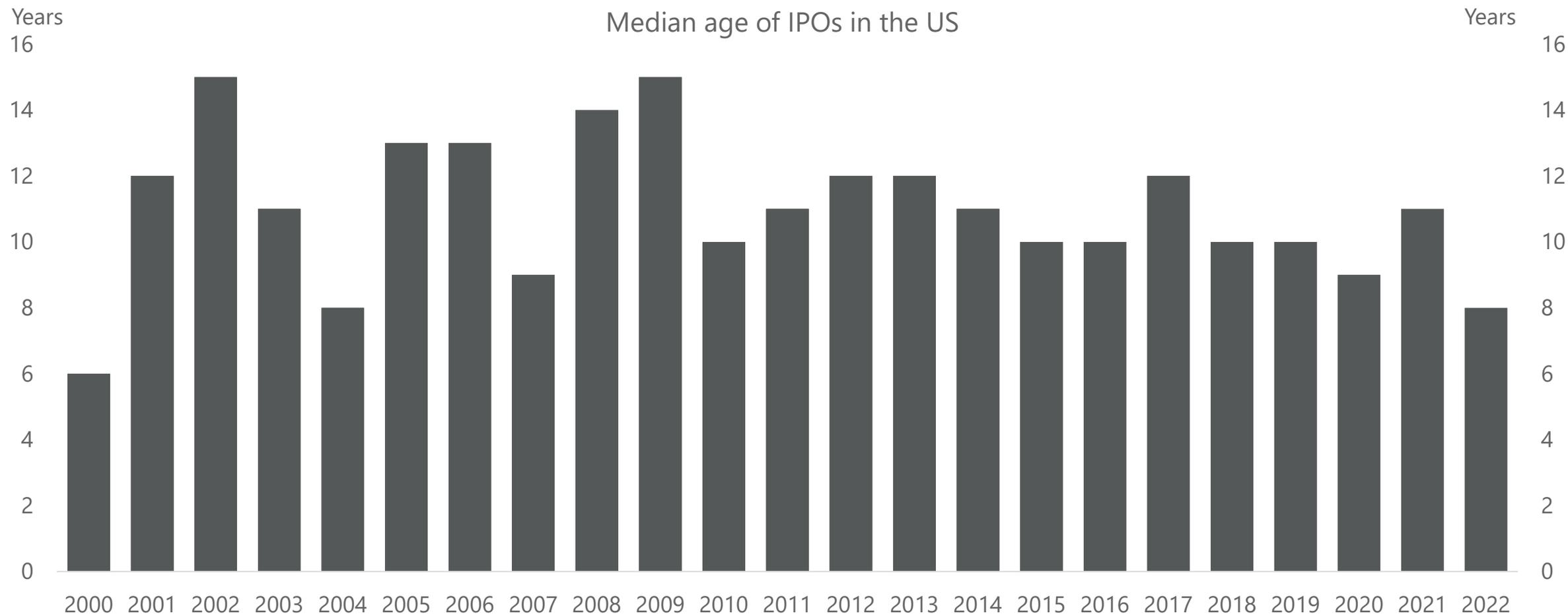
Inflation is reversing the hunt for yield



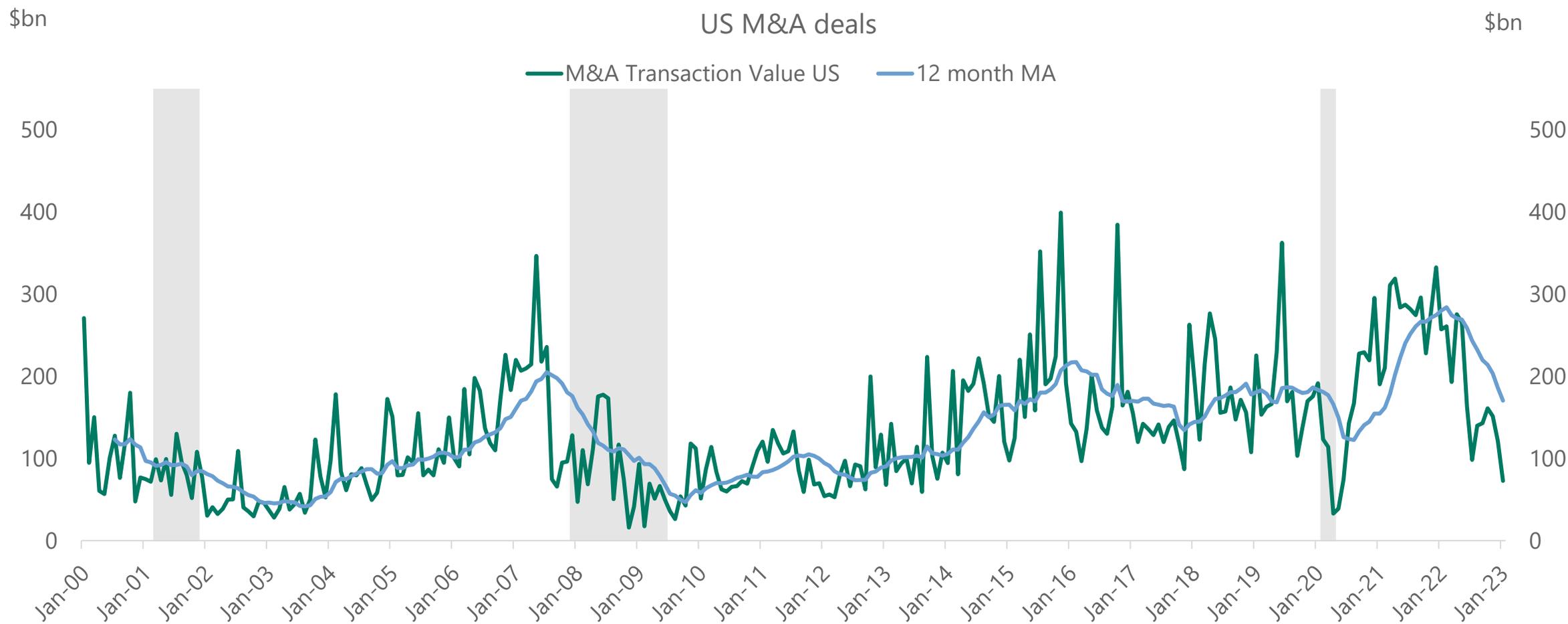
More dual class IPOs, driven by tech



Median age of IPOs

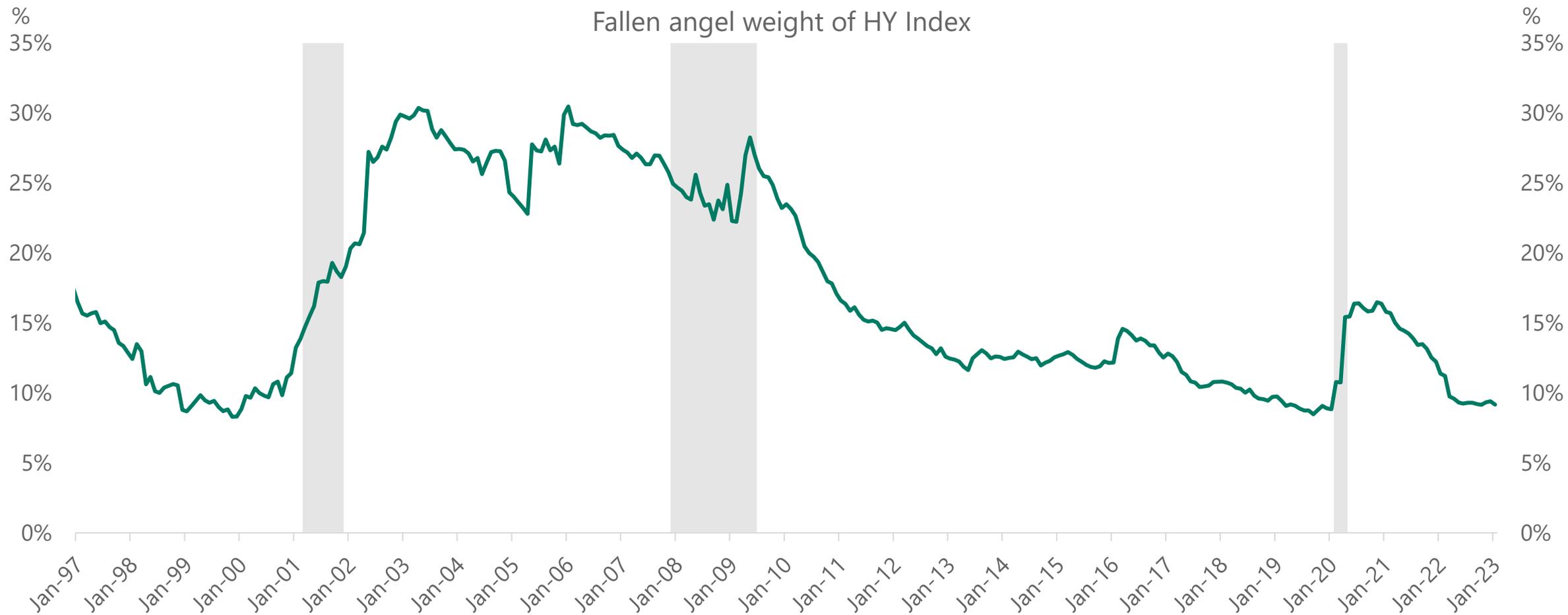


Low M&A activity in 2022



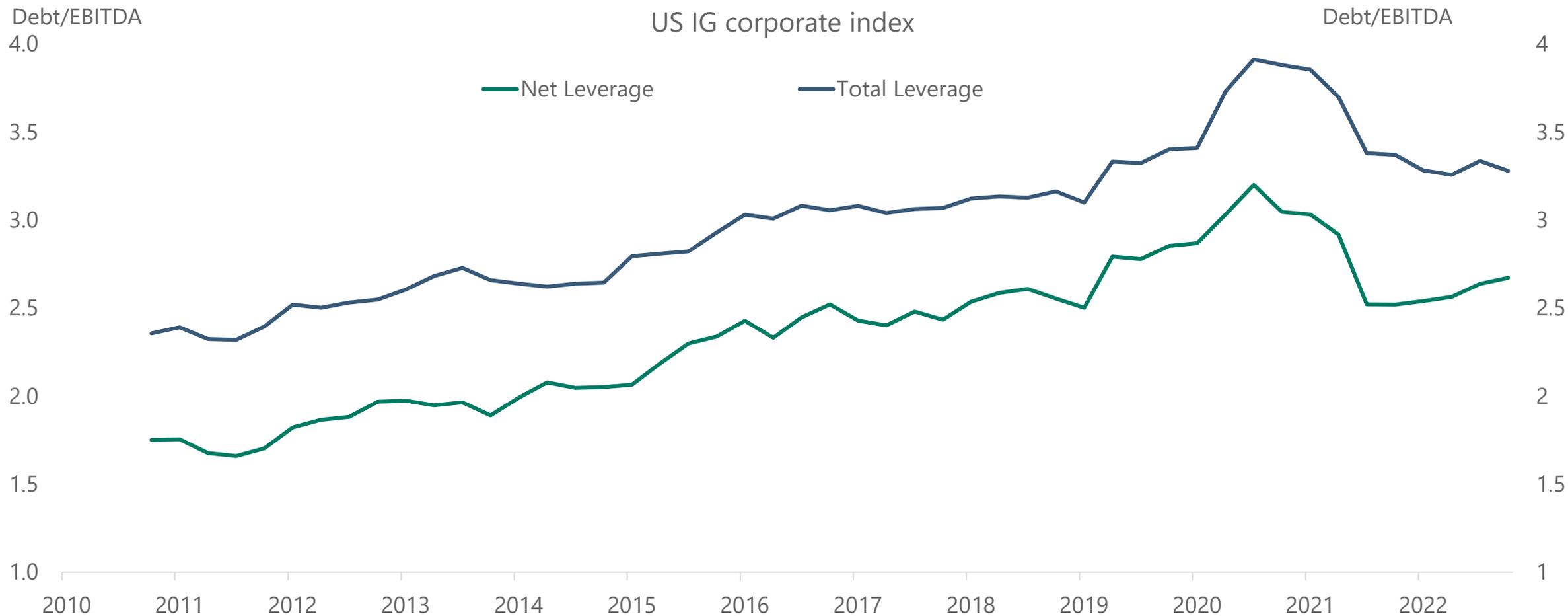
Source: Bloomberg, Apollo Chief Economist. Note: Ticker used is MAATUS Index

Declining share of fallen angels in the HY index



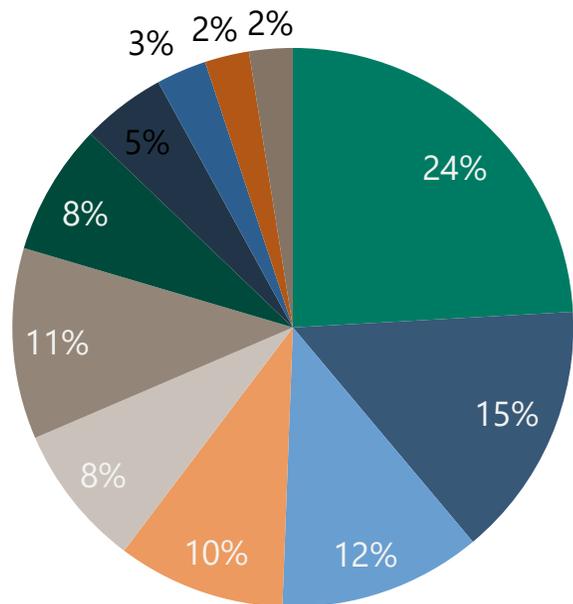
Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Tickers used H0A0 Index and H0FA Index

IG leverage down after the pandemic



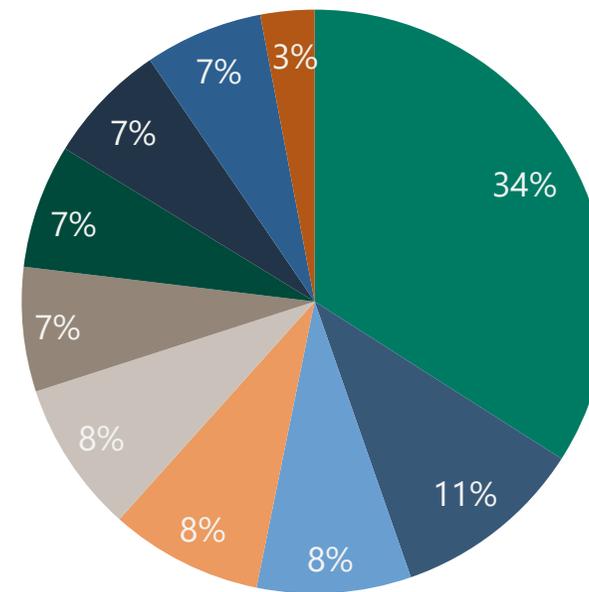
Big differences between weights in S&P500 and IG index

S&P 500 Index weight by market cap



- Information Technology
- Consumer Discretionary
- Communication Services
- Consumer Staples
- Real Estate
- Healthcare
- Financials
- Industrials
- Energy
- Materials

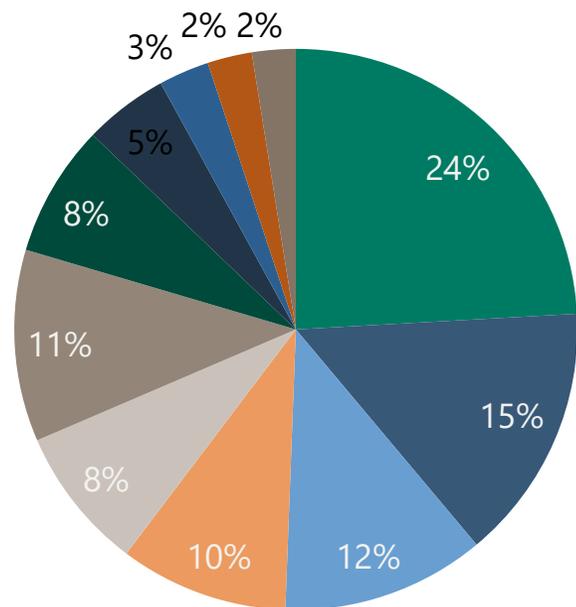
Barclays corporate IG index weights by market cap



- Financials
- Communications
- Utilities
- Industrials
- Consumer Staples
- Health Care
- Technology
- Energy
- Consumer Discretionary
- Materials

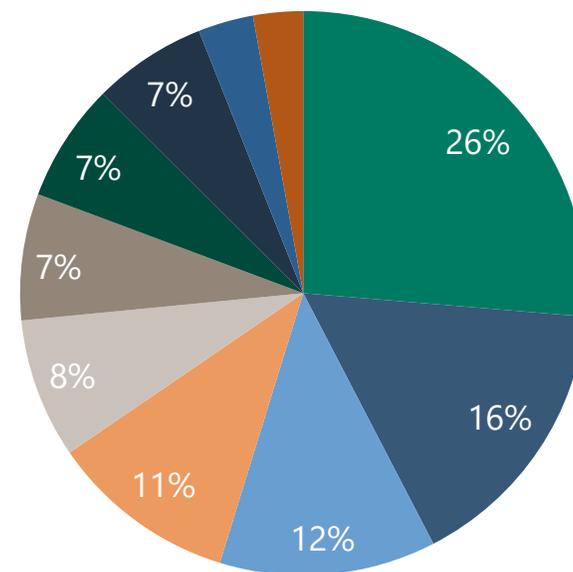
Big differences between weights in S&P500 and HY index

S&P 500 index weight by market cap



- Information Technology
- Consumer Discretionary
- Communication Services
- Consumer Staples
- Real Estate
- Healthcare
- Financials
- Industrials
- Energy
- Materials

Bloomberg Barclays HY index weights by mkt cap

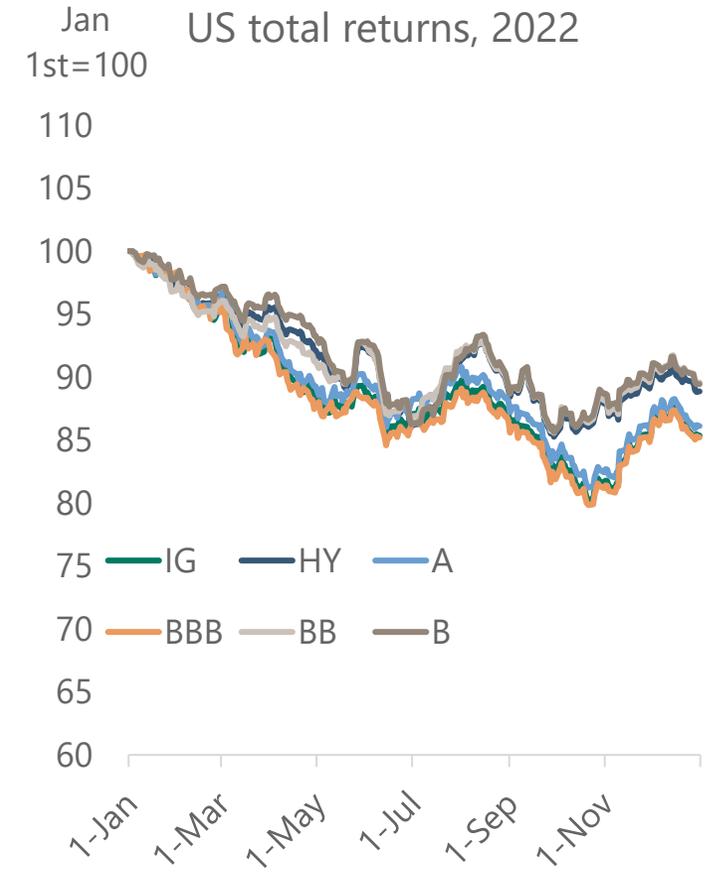
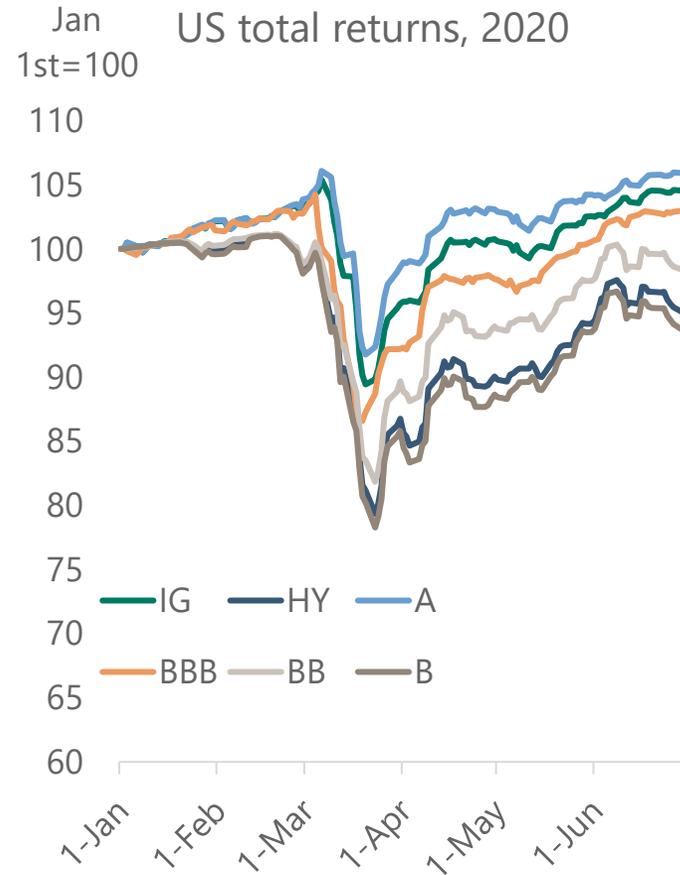
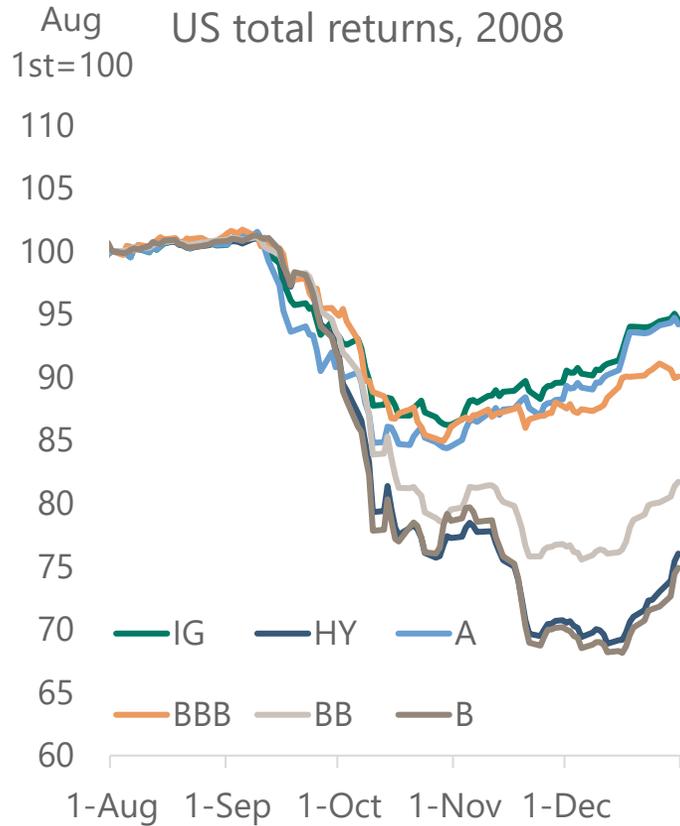


- Consumer Discretionary
- Energy
- Health Care
- Industrials
- Consumer Staples
- Communications
- Financials
- Materials
- Technology
- Utilities

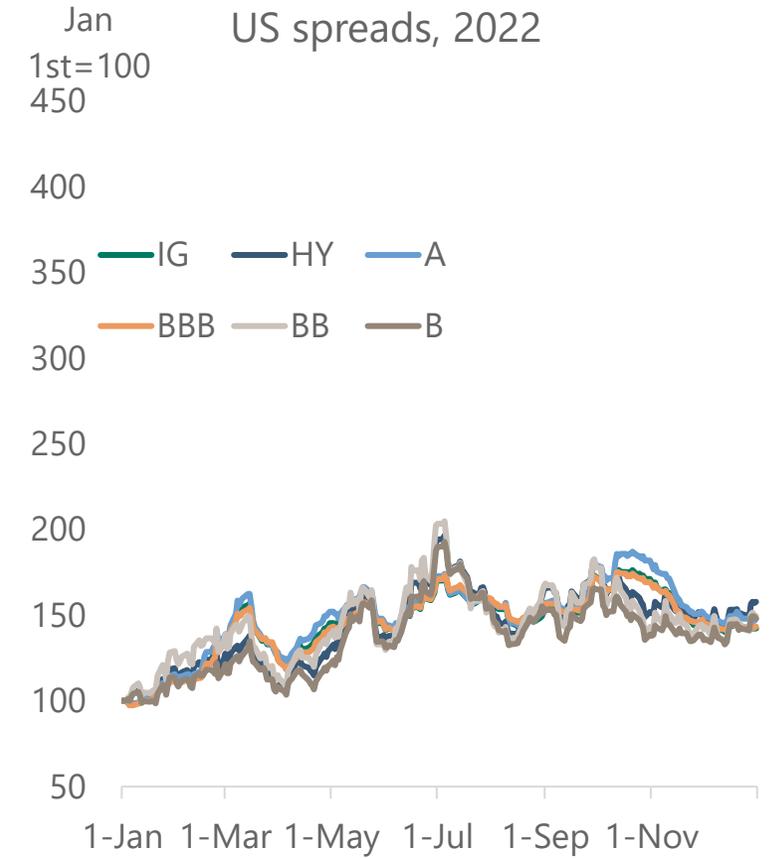
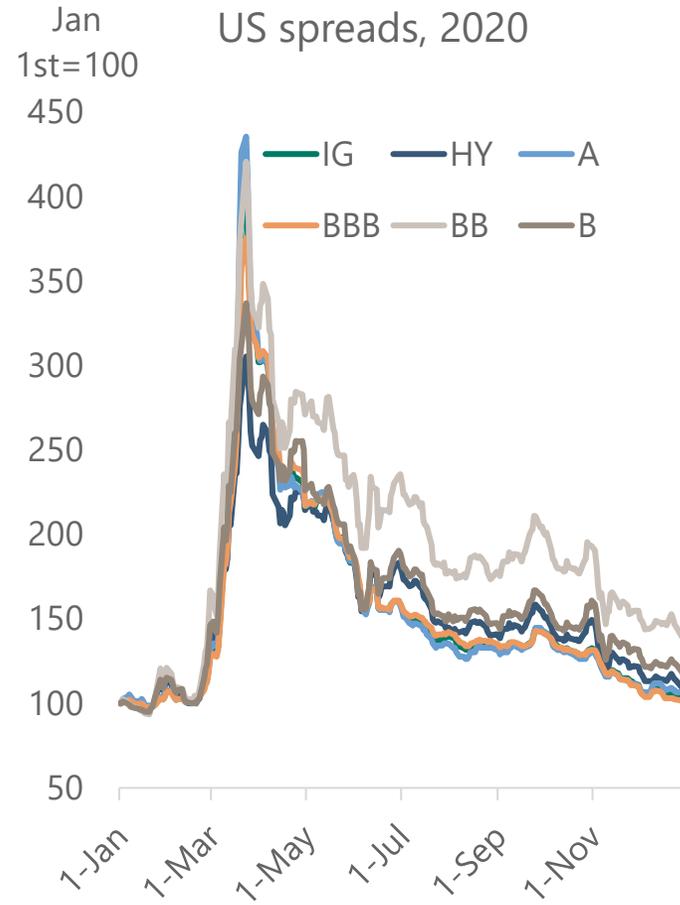
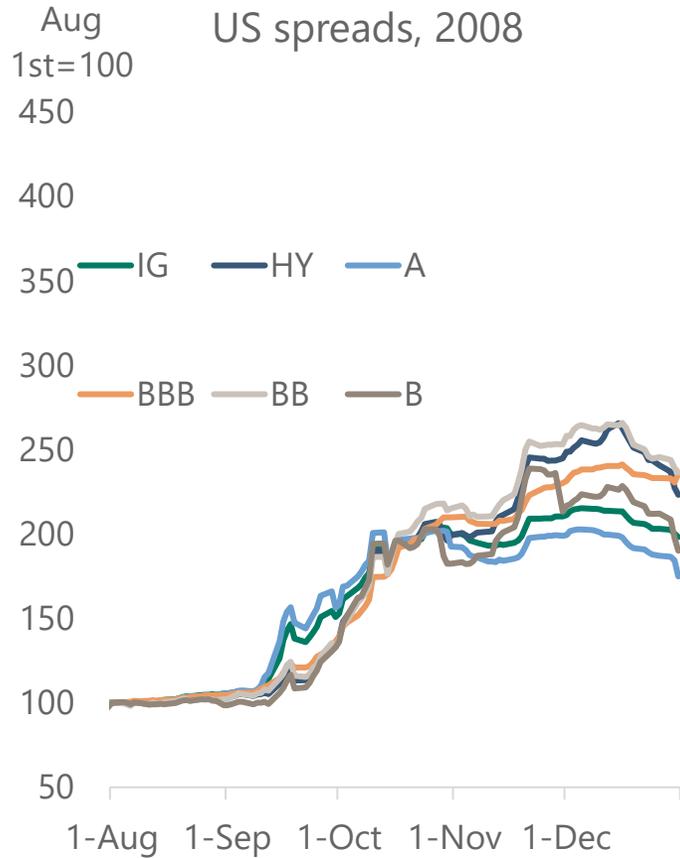
Top issuer names for IG and HY

	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.

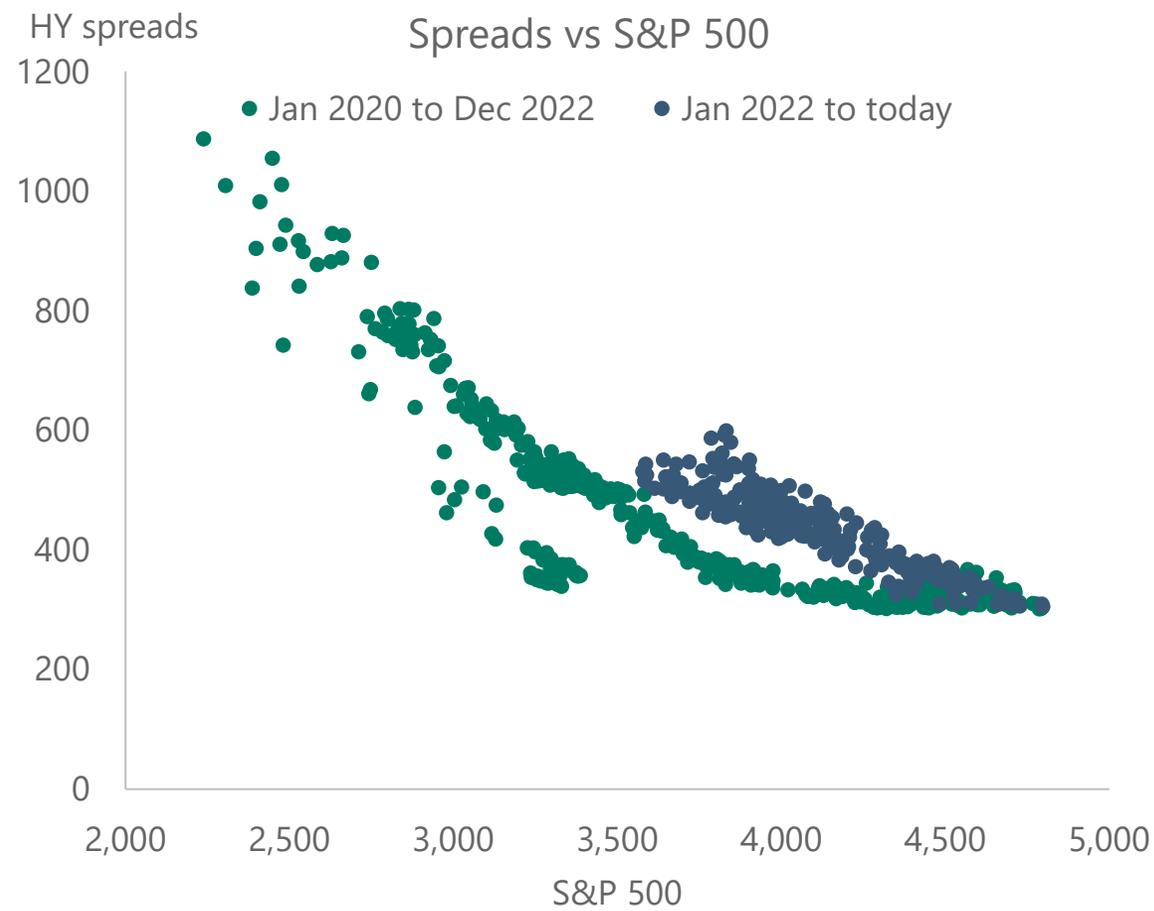
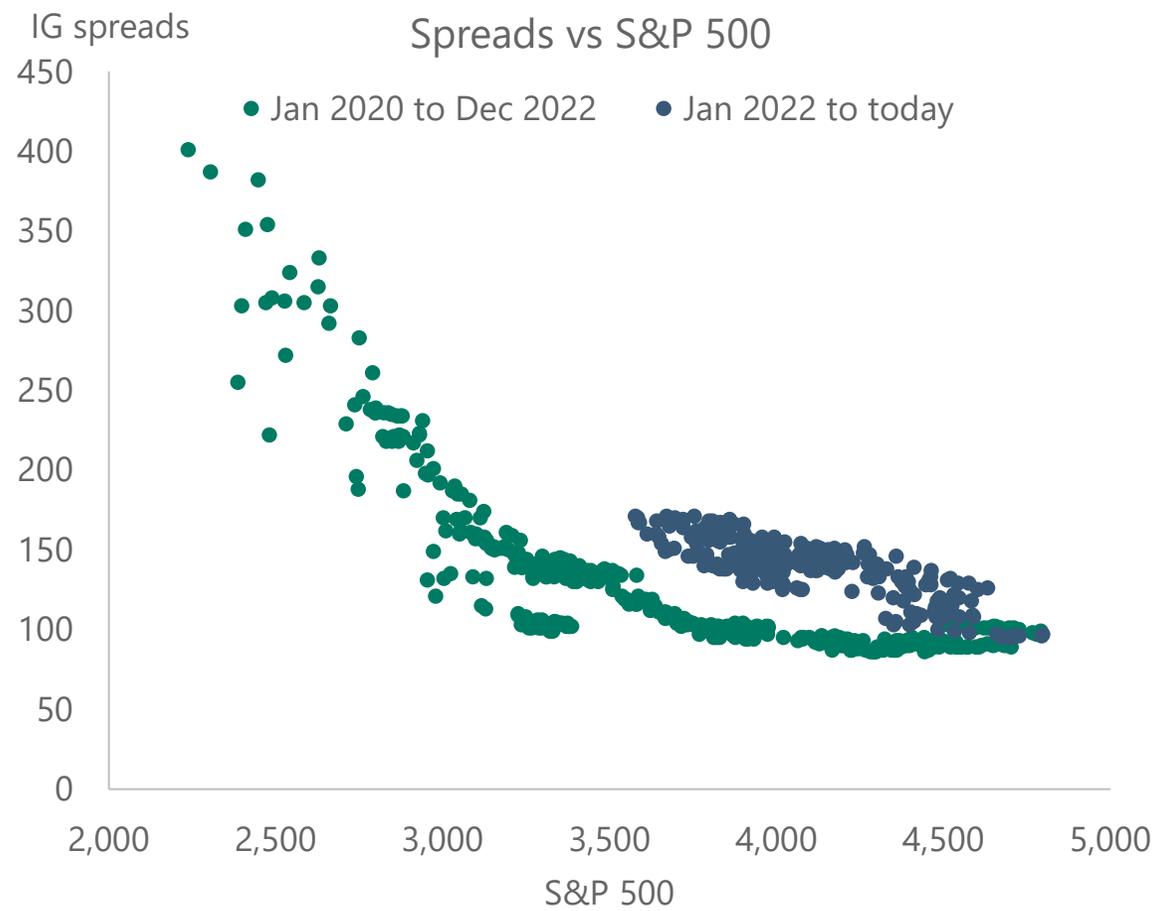
Synchronized sell-off in credit so far. Little differentiation between credits compared with 2008 and March 2020 episodes.



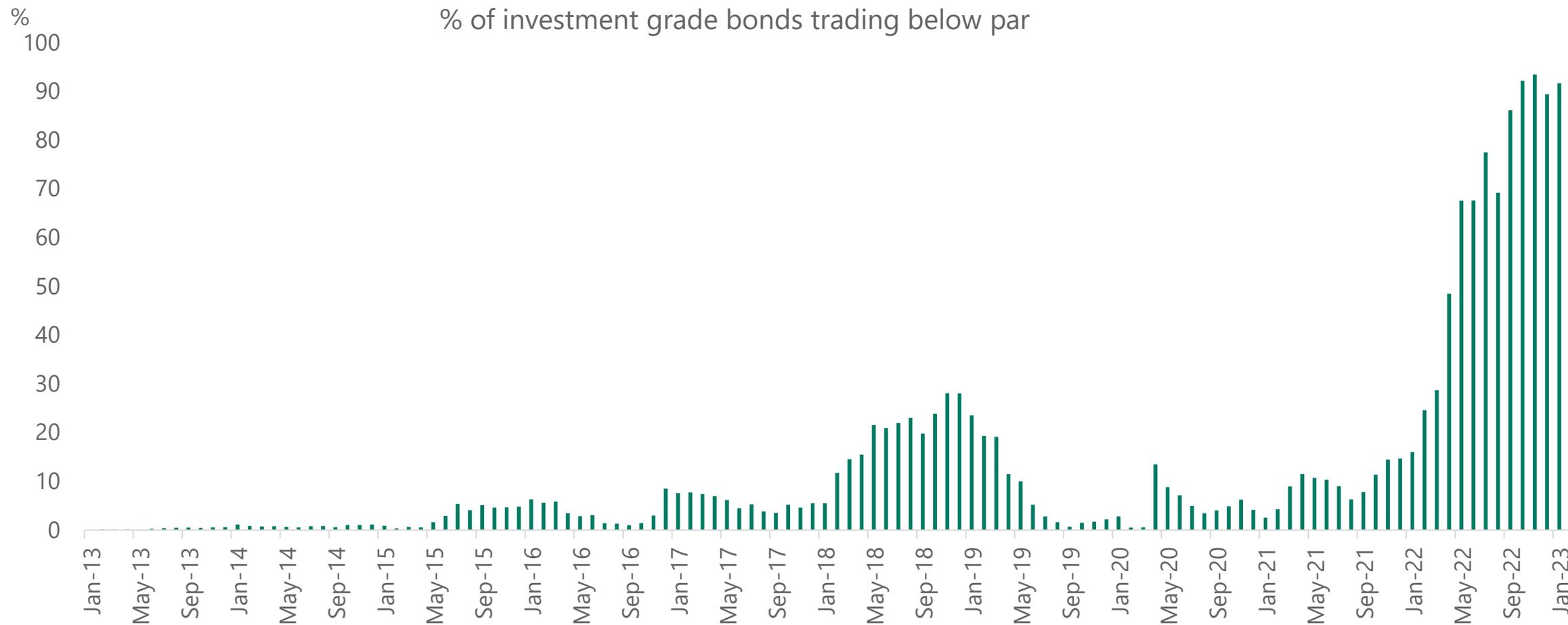
Synchronized sell-off in credit so far. Little differentiation between credits compared with 2008 and March 2020 episodes.



Valuation of credit versus equities

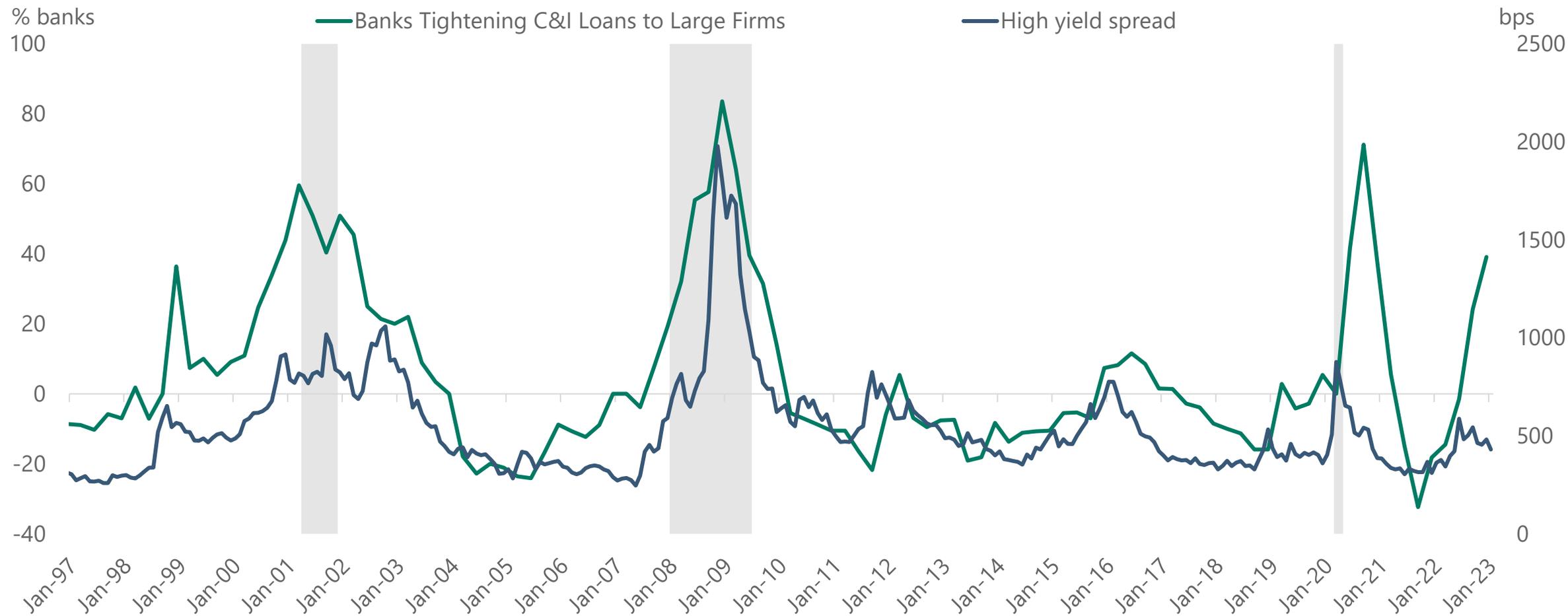


87% of the US IG market trading below par

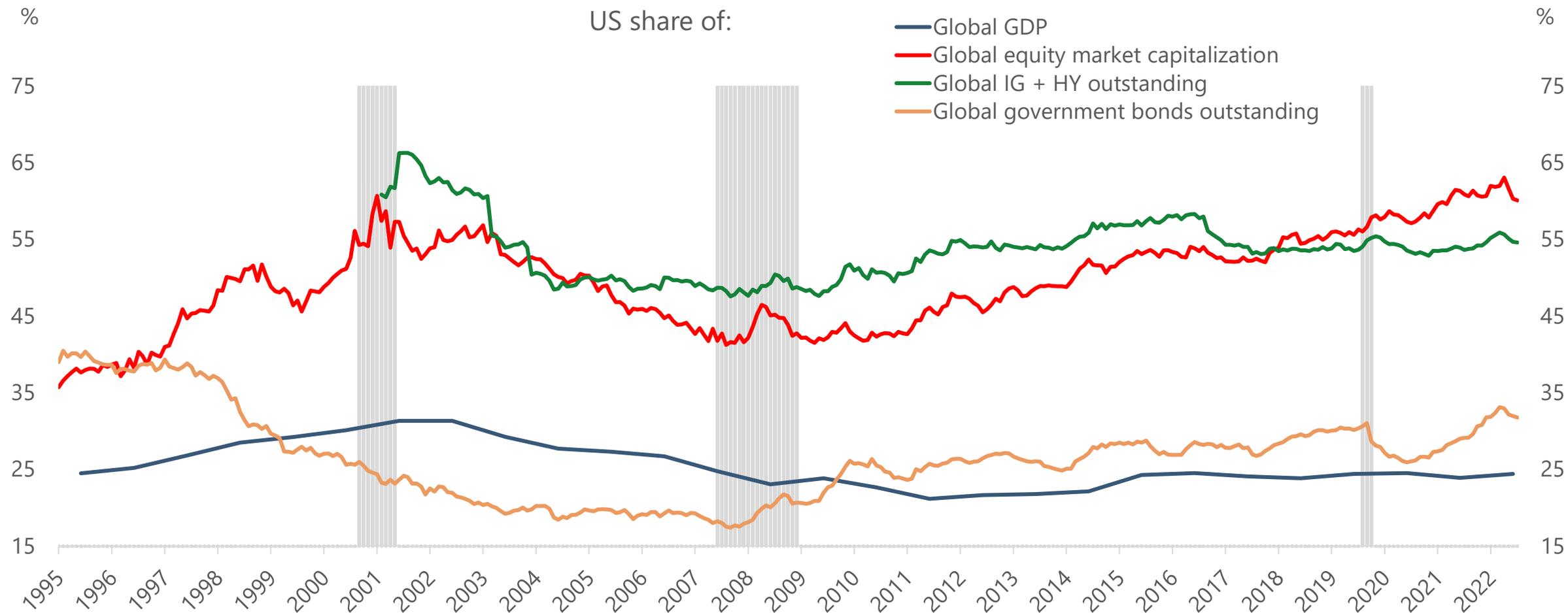


Source: Bloomberg, Apollo Chief Economist. Note: Data used for members in the LBUSTRUU Index as of 1st February 2023

Banks starting to tighten credit conditions, HY spread should be trading wider

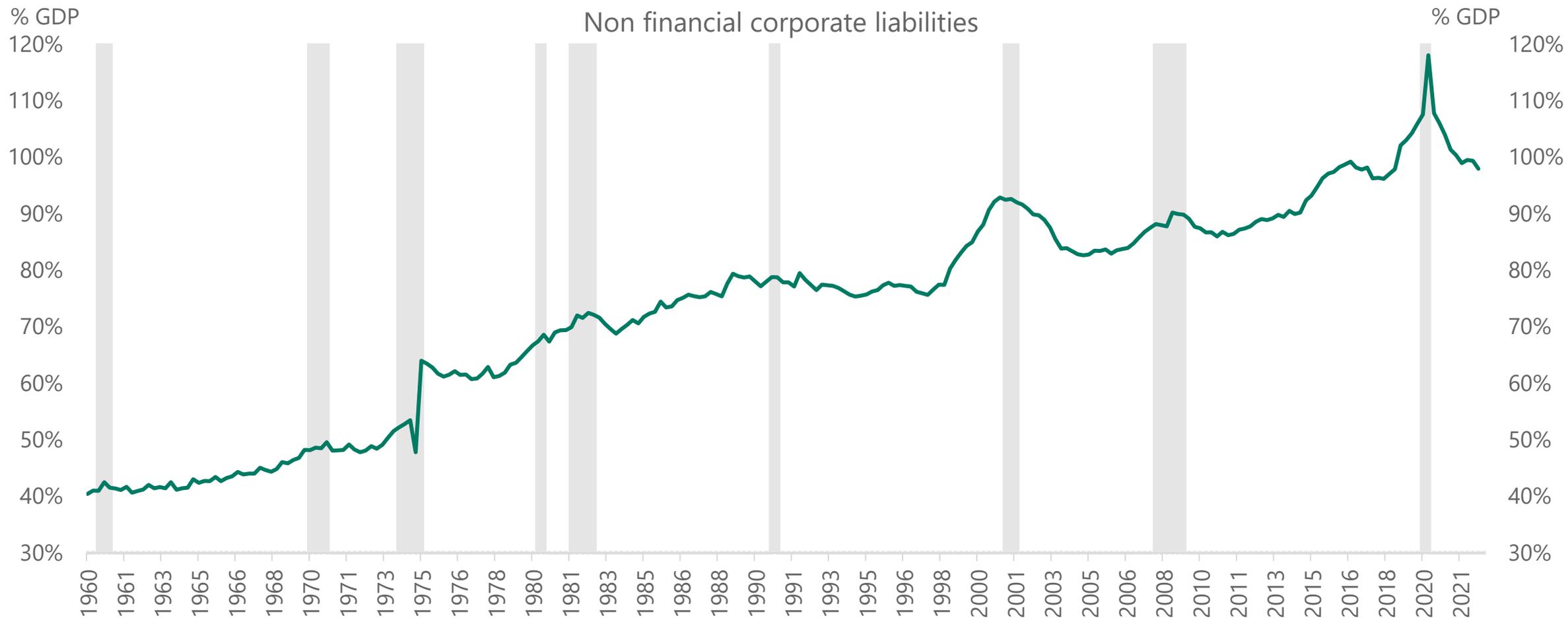


US share of the world economy and global financial markets



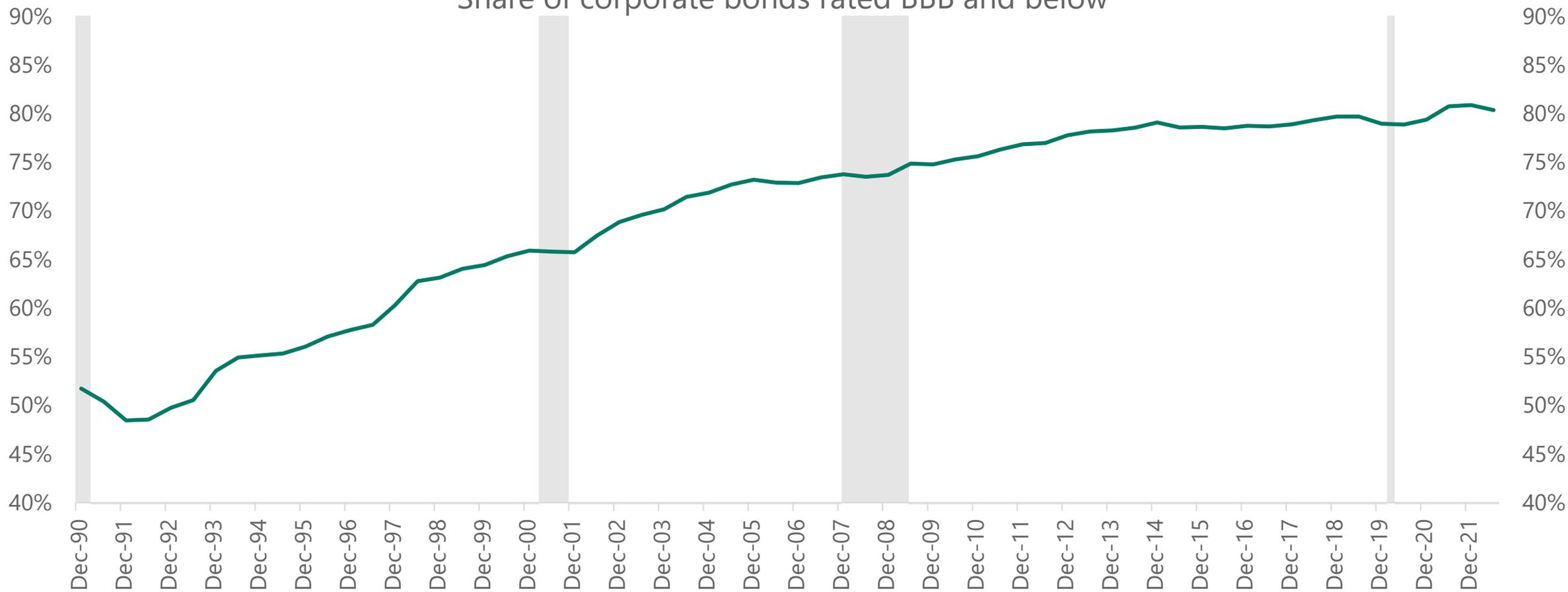
Source: Bloomberg, Haver, Apollo Chief Economist (Note: Bloomberg tickers: MXUS Index, MXWD Index, LUATTRUU Index, BTSYTRUU Index, LF98TRUU Index, LG30TRUU index, LUACTRUU Index, I09805US index)

Corporate debt is high as a share of GDP

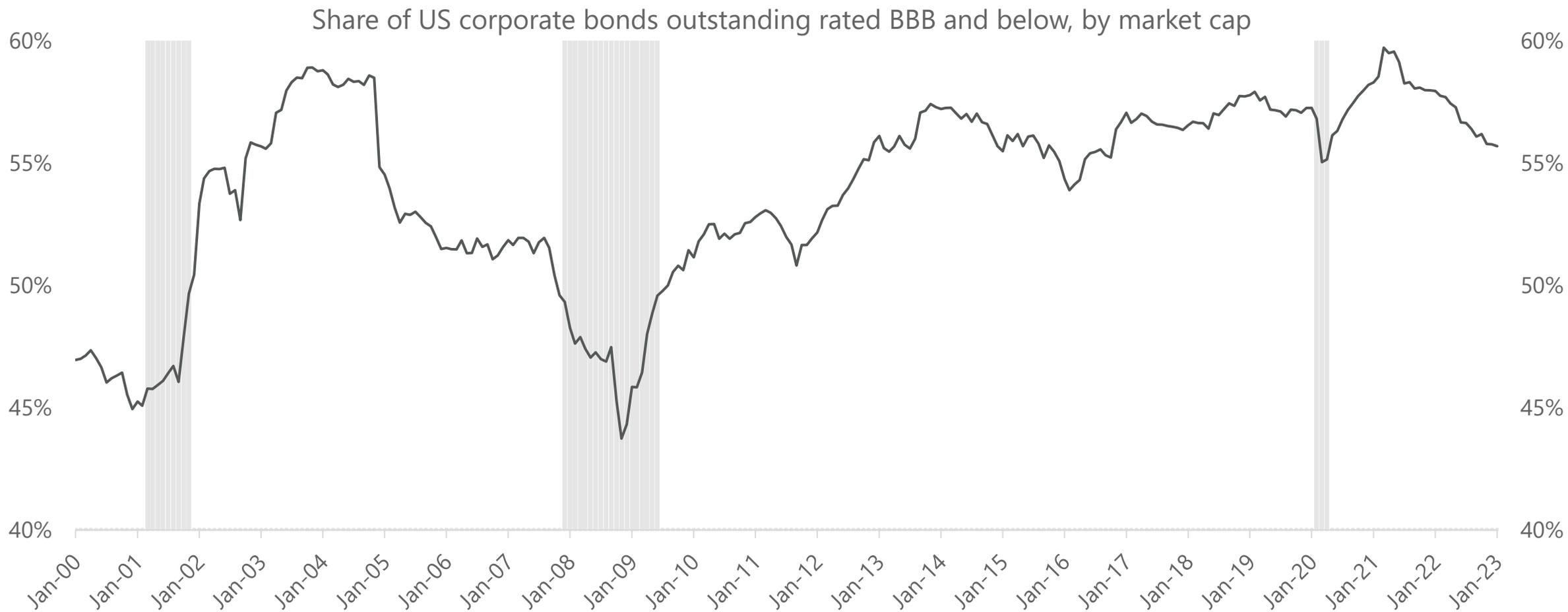


Lower-rated firms are by definition more vulnerable to rising interest rates

Share of corporate bonds rated BBB and below



Share of corporate bond market value outstanding rated BBB and below

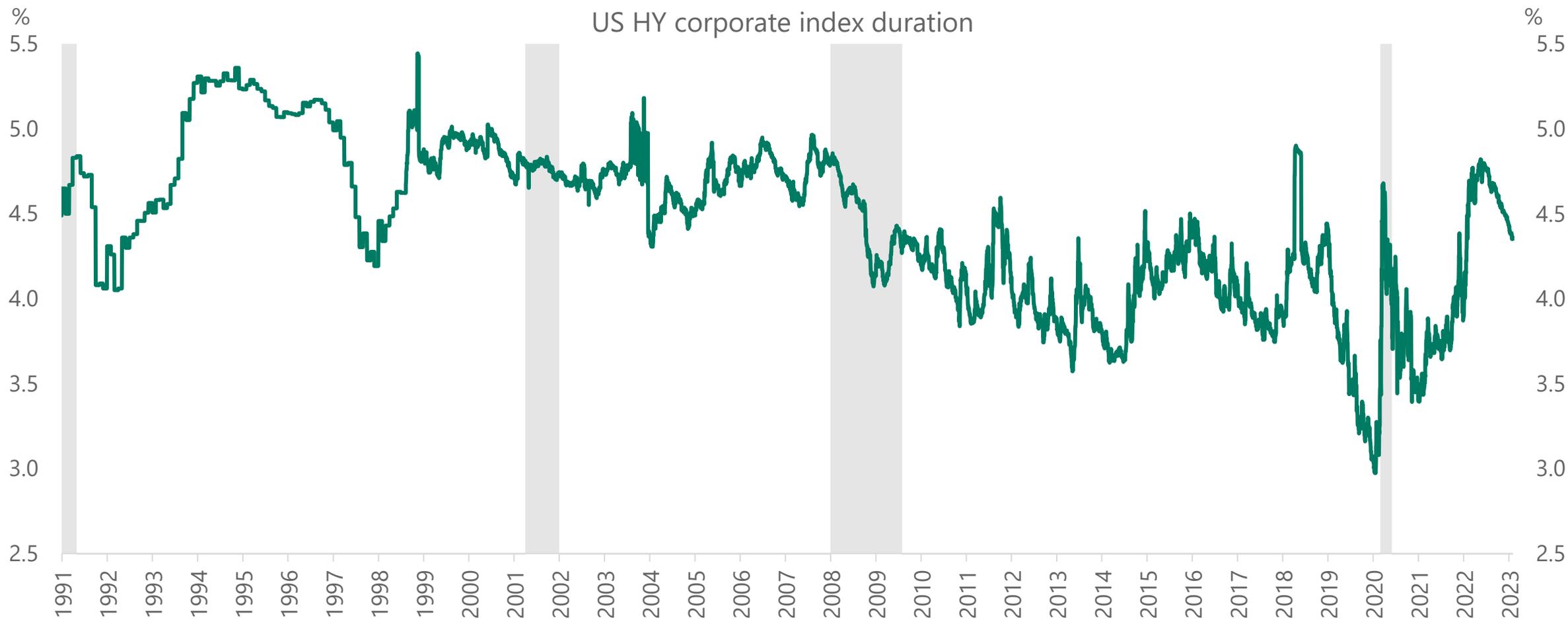


Source: ICE BofA, Bloomberg, Apollo Chief Economist. Data as of 31st December 2022

IG credit index duration declining



HY credit index duration



Source: Bloomberg, Apollo Chief Economist. Note: The measure used is modified duration, which measures the expected change in a bond's price to a 1% change in interest rates.

Flow monitor

US bank loans ETF flows



IG ETF flows



HY ETF Flows



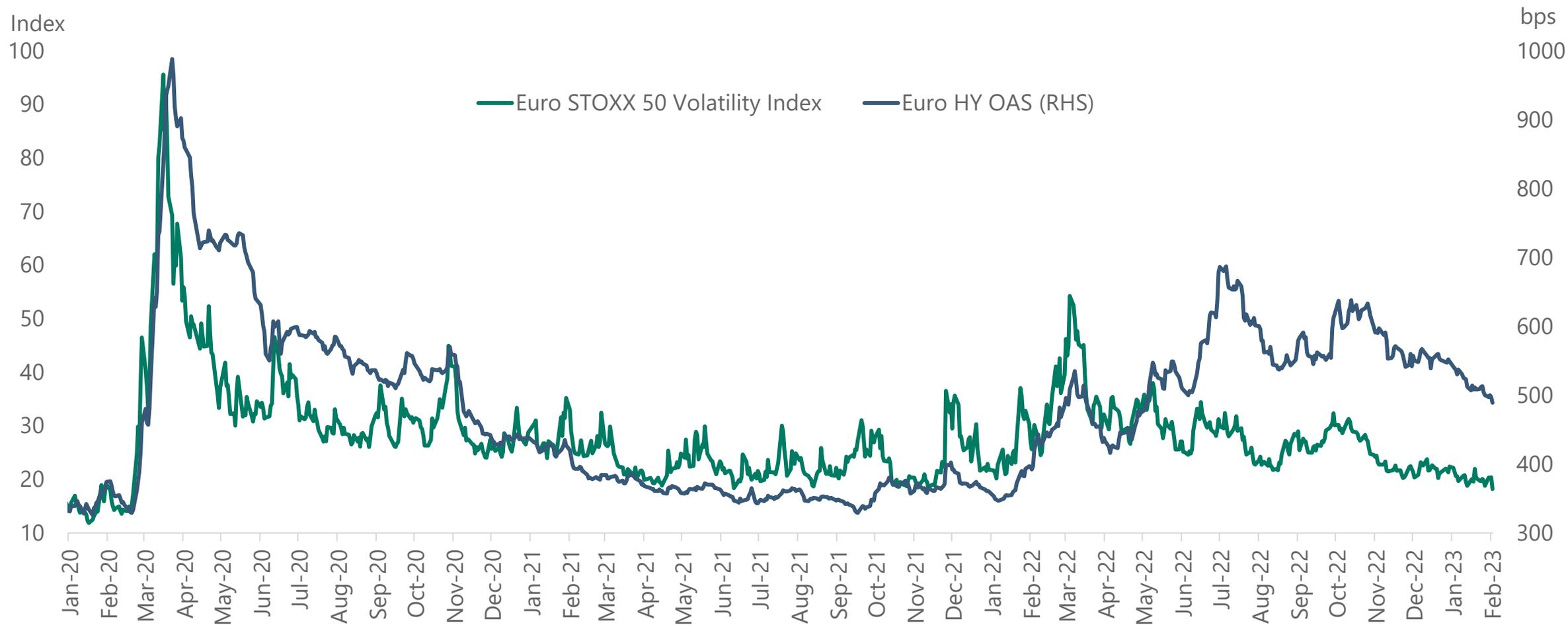
Crypto ETF flows



Loans: Institutional spread relative to bespoke loans



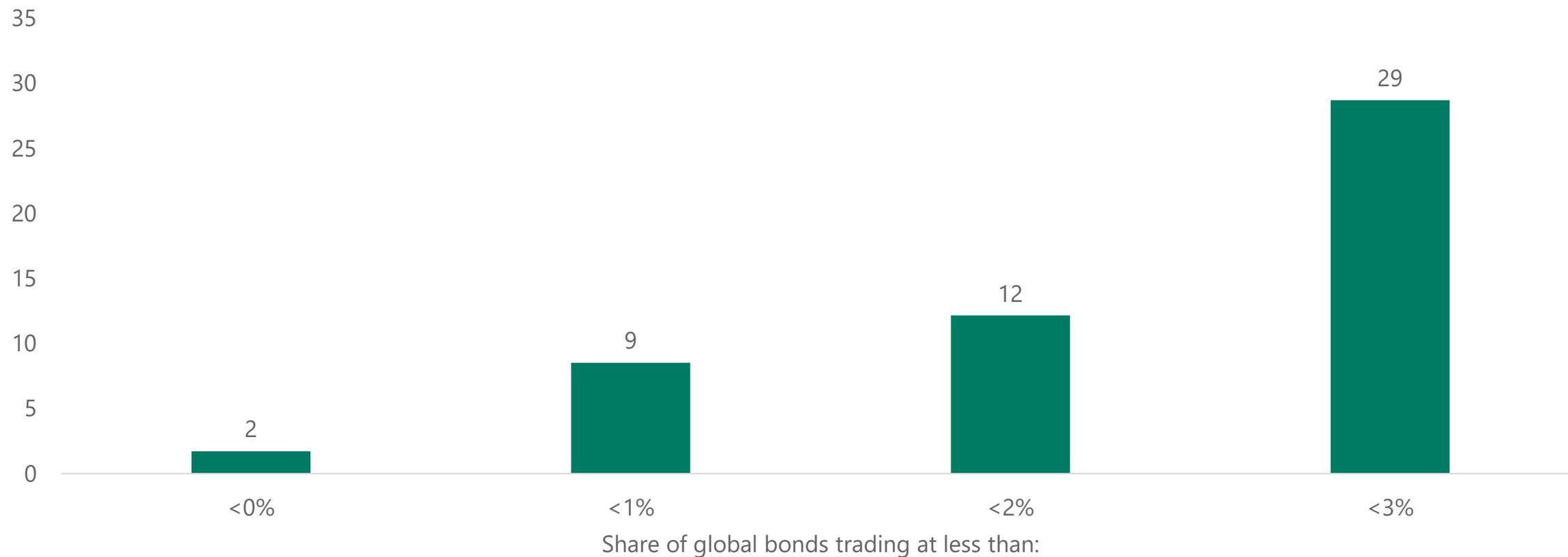
Disconnect between EU equity vol and EU HY spreads



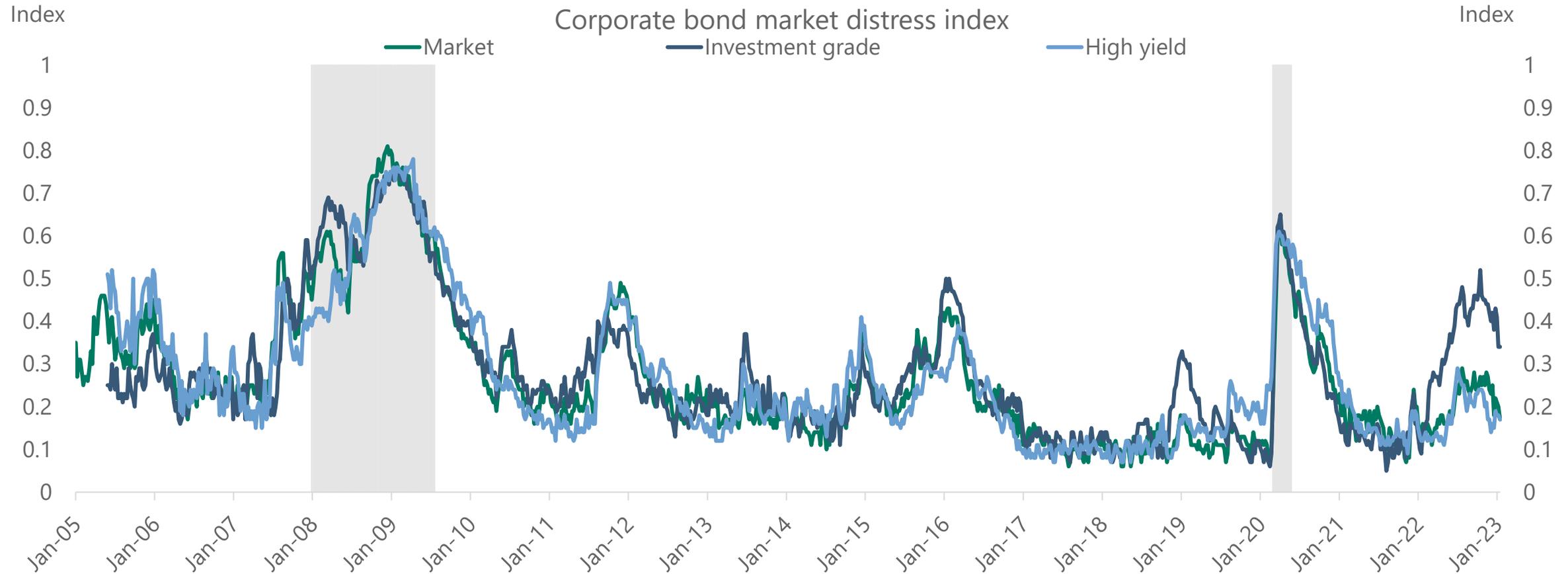
Source: Bloomberg, Apollo Chief Economist. Note: Tickers used are V2X Index and LP01OAS Index

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

% global bonds outstanding

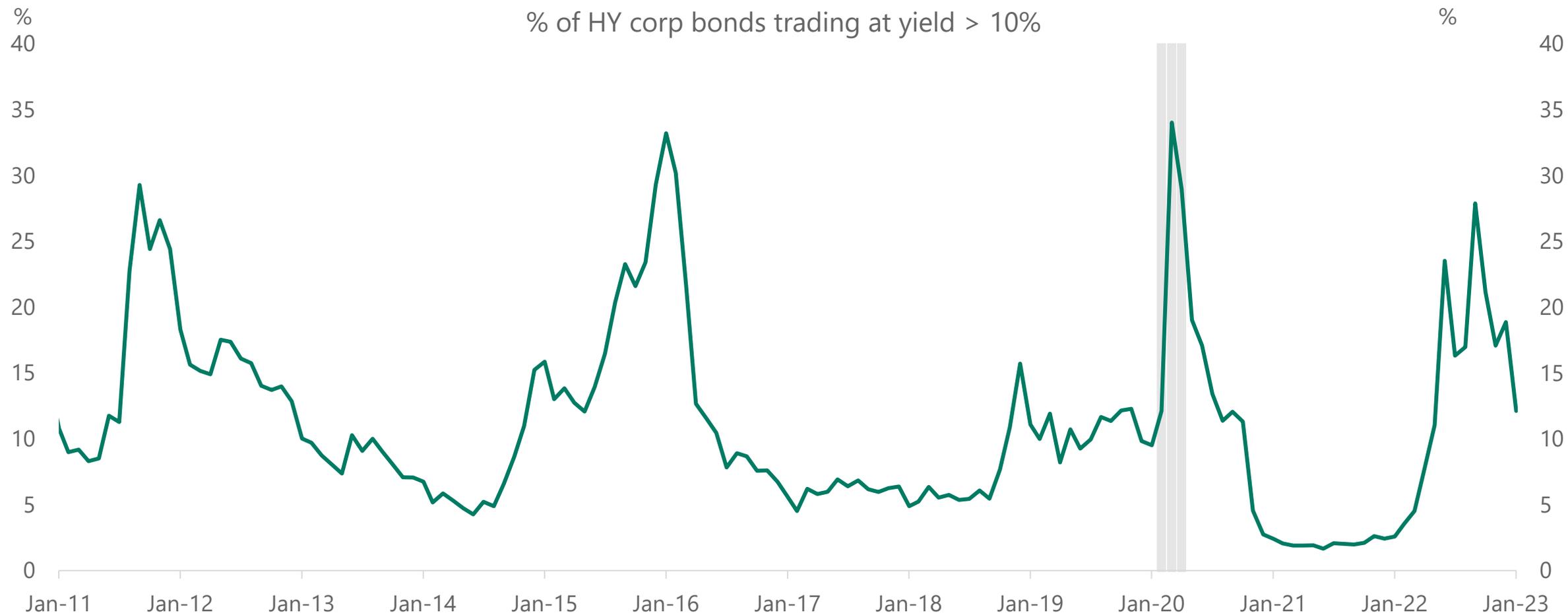


NY Fed measure of corporate bond market functioning shows less distress in IG



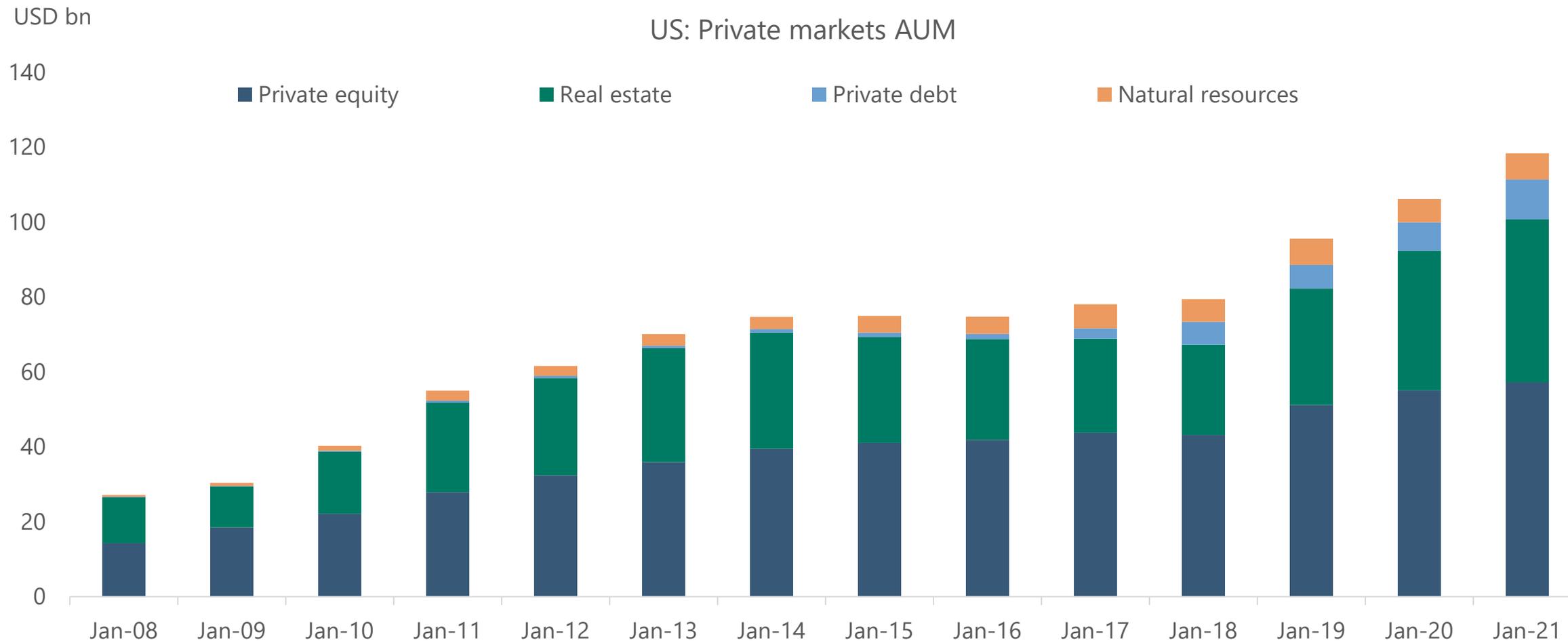
Source: FRB of New York, Apollo Chief Economist (Note: Corporate bonds are a key source of funding for U.S. non-financial corporations and a key investment security for insurance companies, pension funds, and mutual funds. Distress in the corporate bond market can thus both impair access to credit for 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%



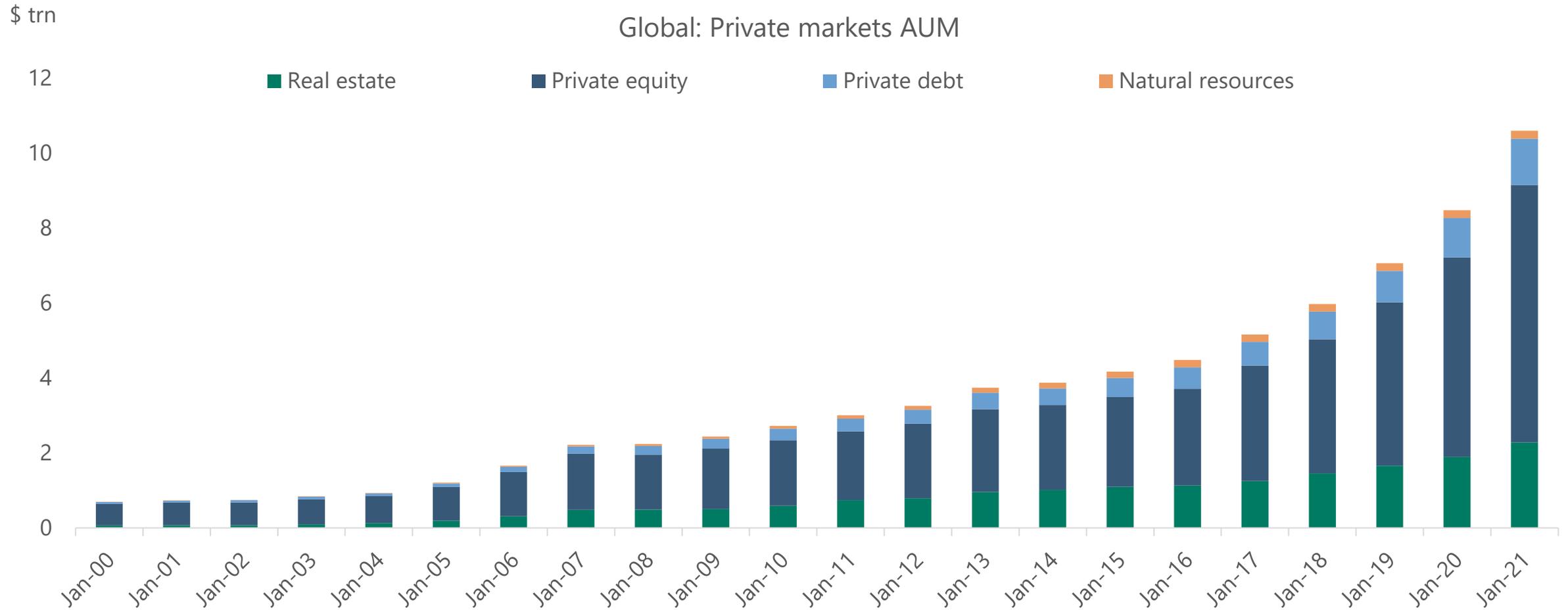
Source: Bloomberg, Apollo Chief Economist. Note: HY bond universe is H0A0 Index

US: Total assets under management in private markets



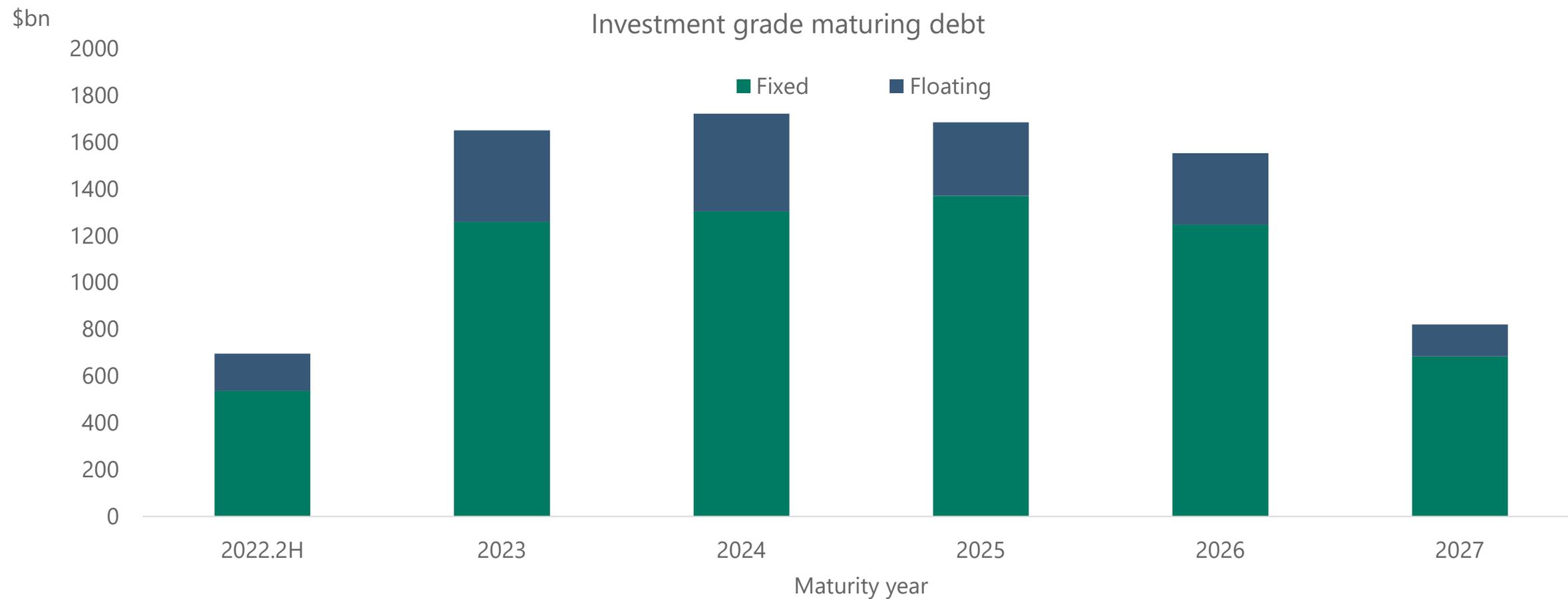
Source: Preqin, Apollo Chief Economist (Note: Real estate includes private real estate and infrastructure funds)

Total assets under management in private markets funds globally



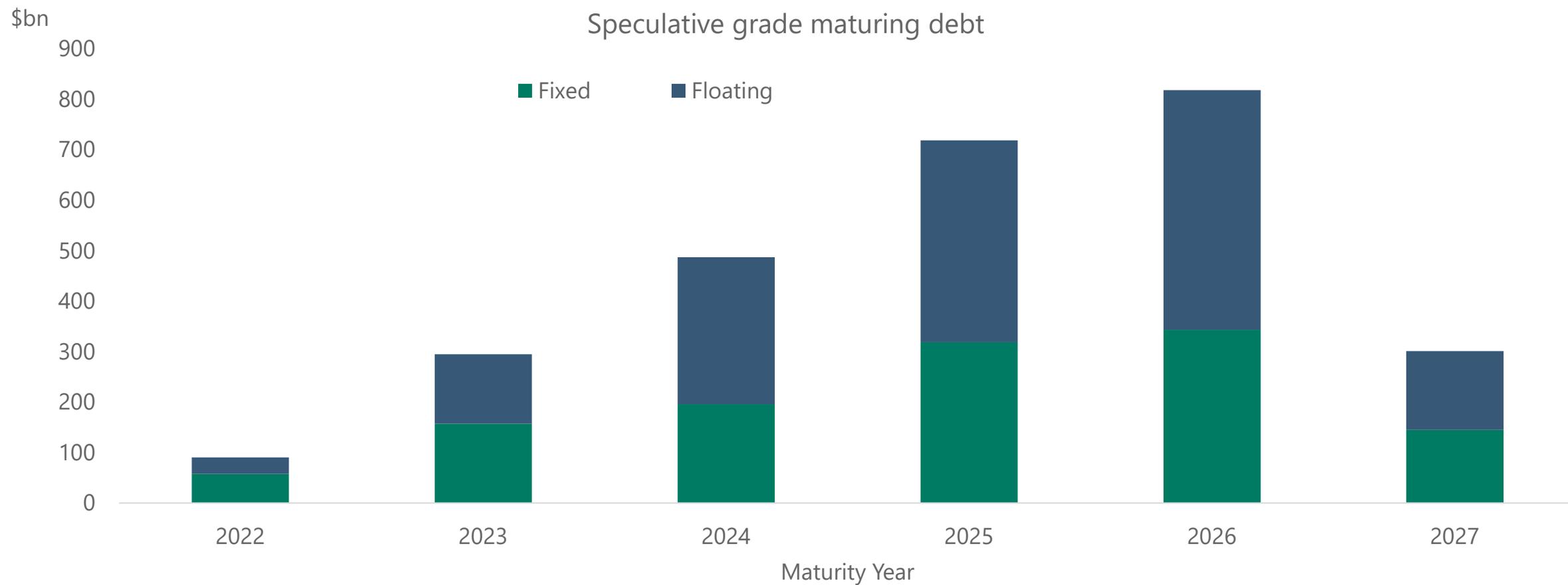
Source: Preqin, Apollo Chief Economist (Note: Real estate includes private real estate and infrastructure funds)

Investment grade maturity wall

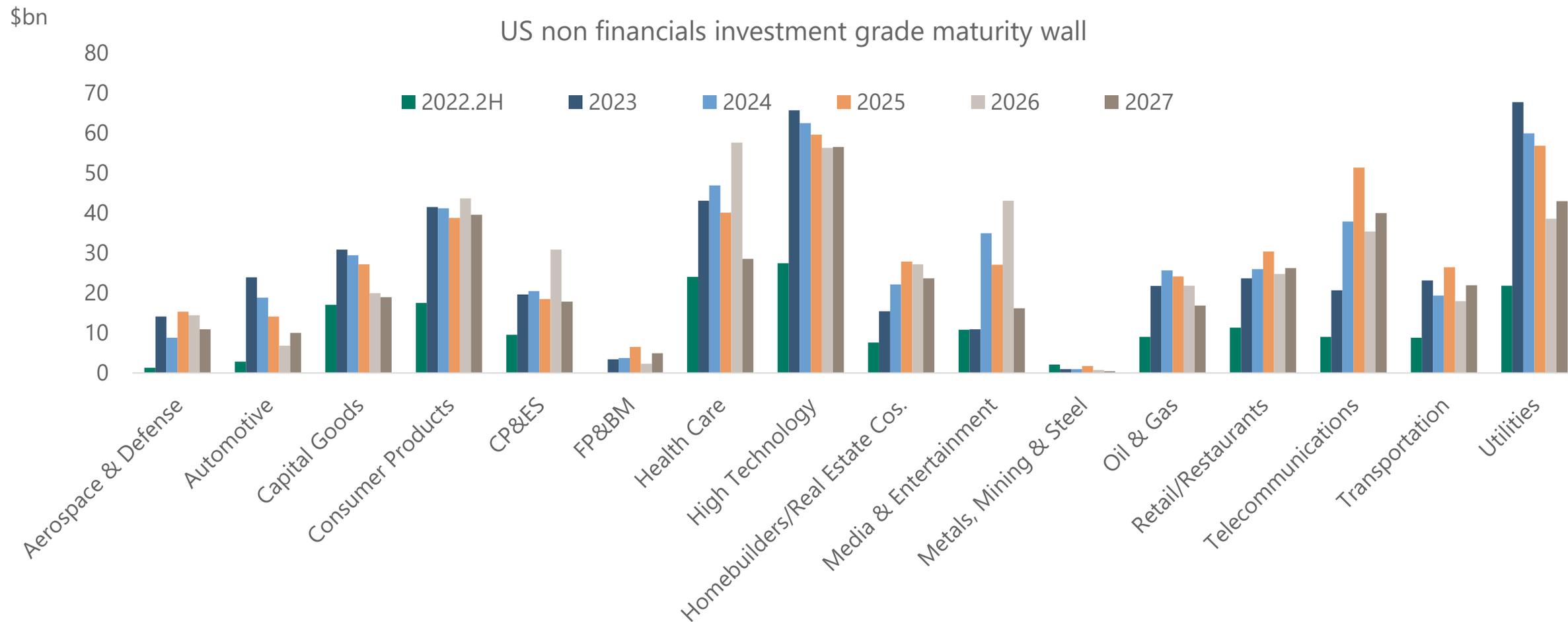


Source: S&P Global ratings Research, Apollo Chief Economist. Note: Data as of July 1, 2022. Includes issuers' investment-grade bonds, loans, and revolving credit facilities that are rated by S&P Global Ratings.

High yield maturity wall

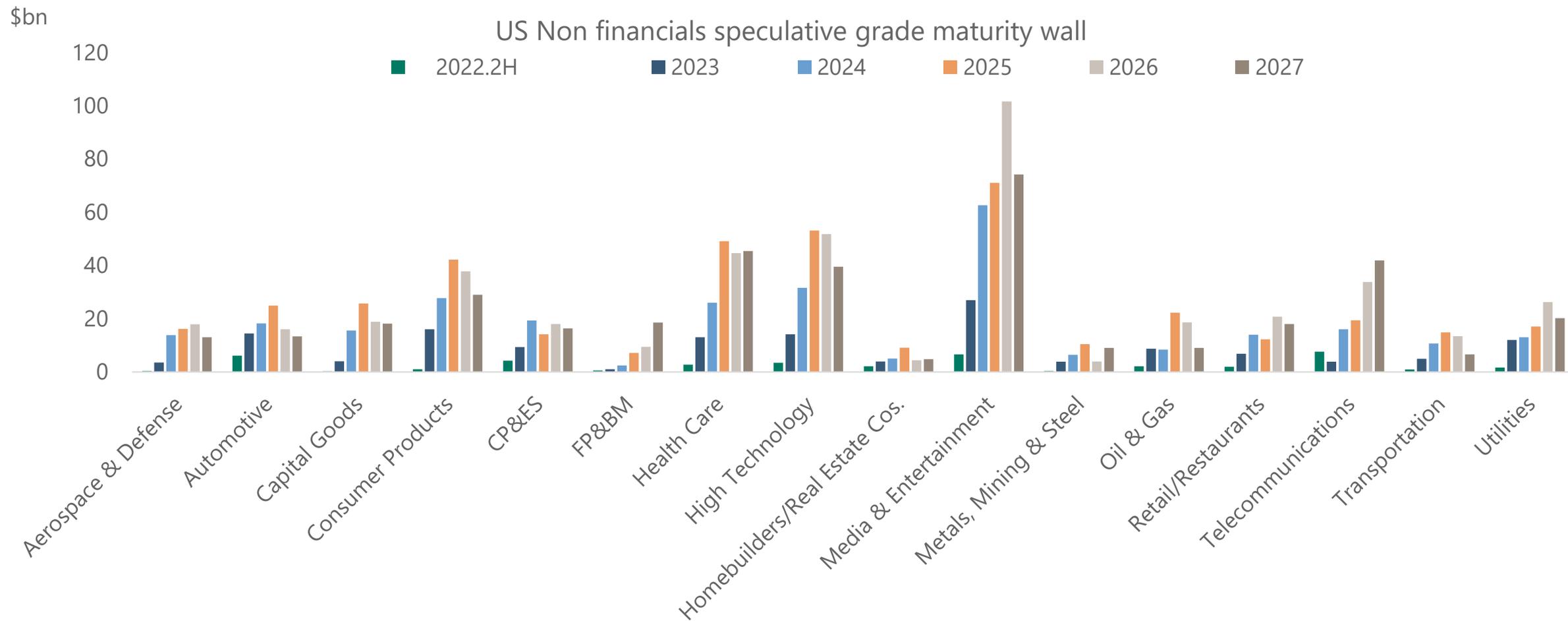


US Non financials maturity wall



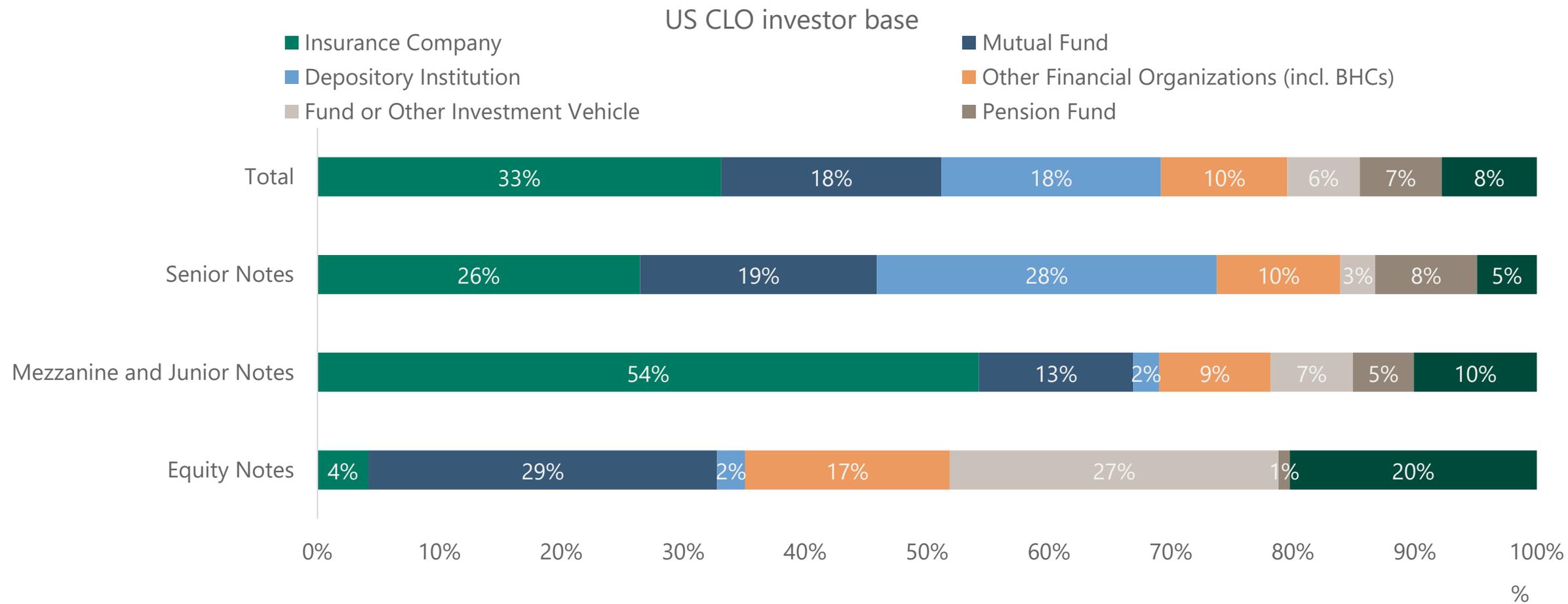
Source: S&P, Apollo Chief Economist. Note: CP&ES--Chemicals, packaging, and environmental services. FP&BM--Forest products and building materials. Media and entertainment includes the leisure sector. Includes bonds, loans, and revolving credit facilities that are rated by S&P Global Ratings. Data as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

US Non financials maturity wall

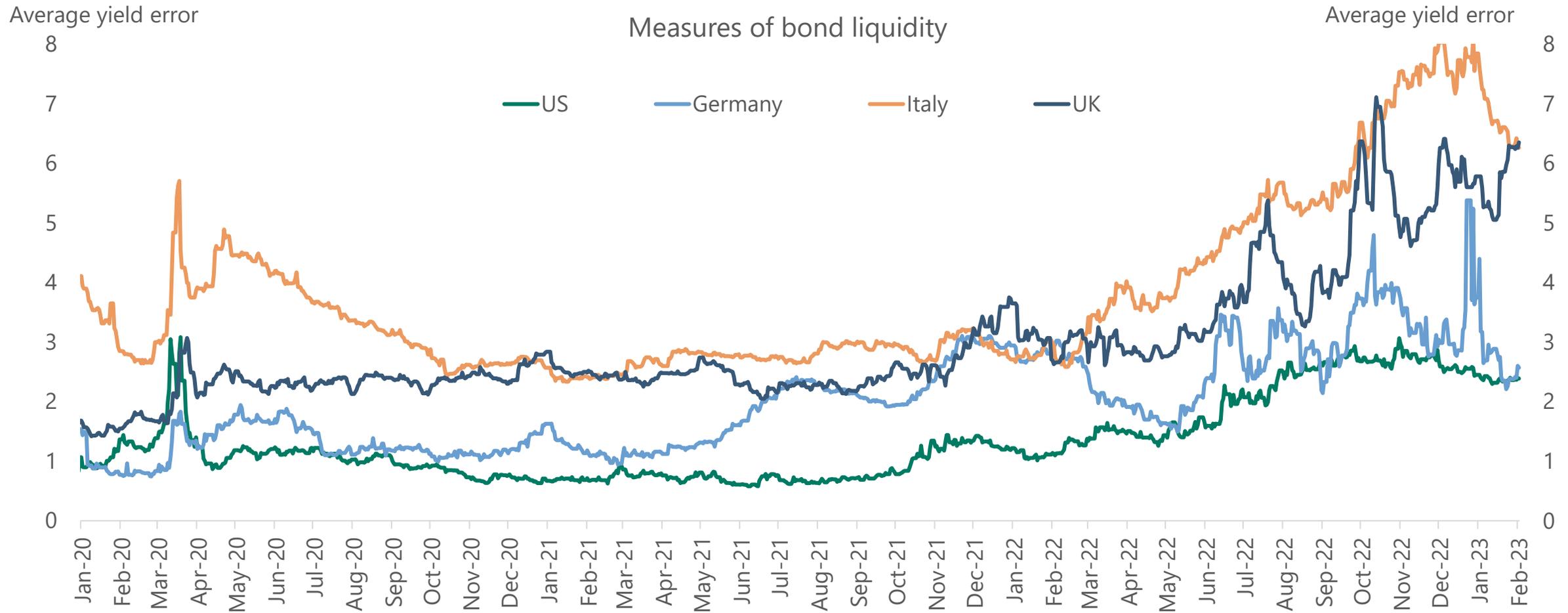


Source: S&P, Apollo Chief Economist. Note: CP&ES--Chemicals, packaging, and environmental services. FP&BM--Forest products and building materials. Media and entertainment includes the leisure sector. Includes bonds, loans, and revolving credit facilities that are rated by S&P Global Ratings. Data as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

US CLO investor base by tranche



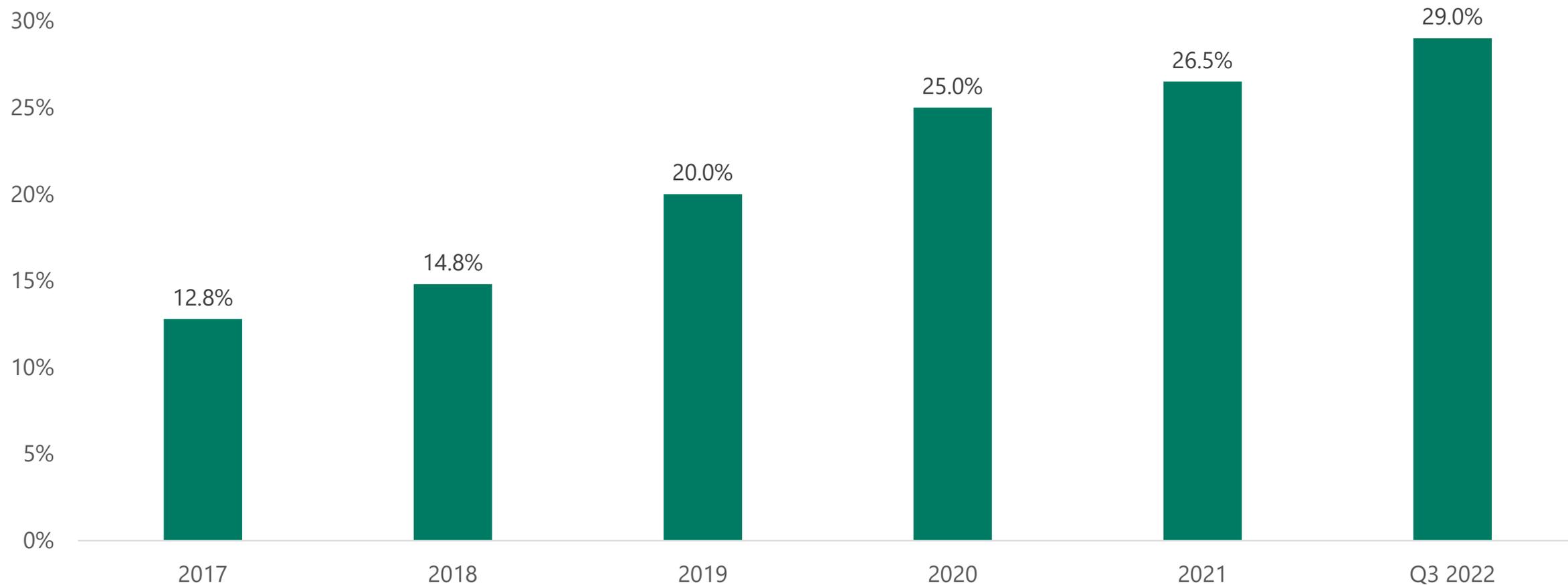
Liquidity in bond market



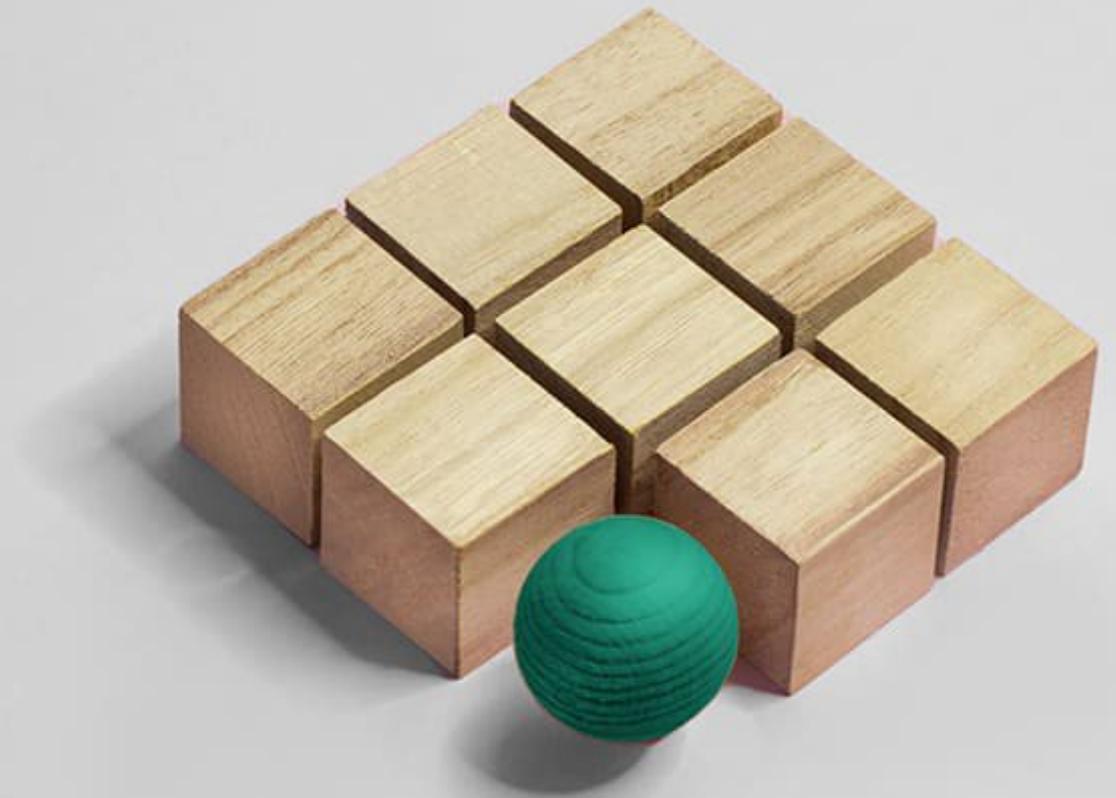
Source: Bloomberg, Apollo Chief Economist (Note: The index displays the average yield error across the universe of government notes and bonds with remaining maturity 1-year or greater, based off the intra-day Bloomberg relative value curve fitter. When liquidity conditions are favorable the average yield 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



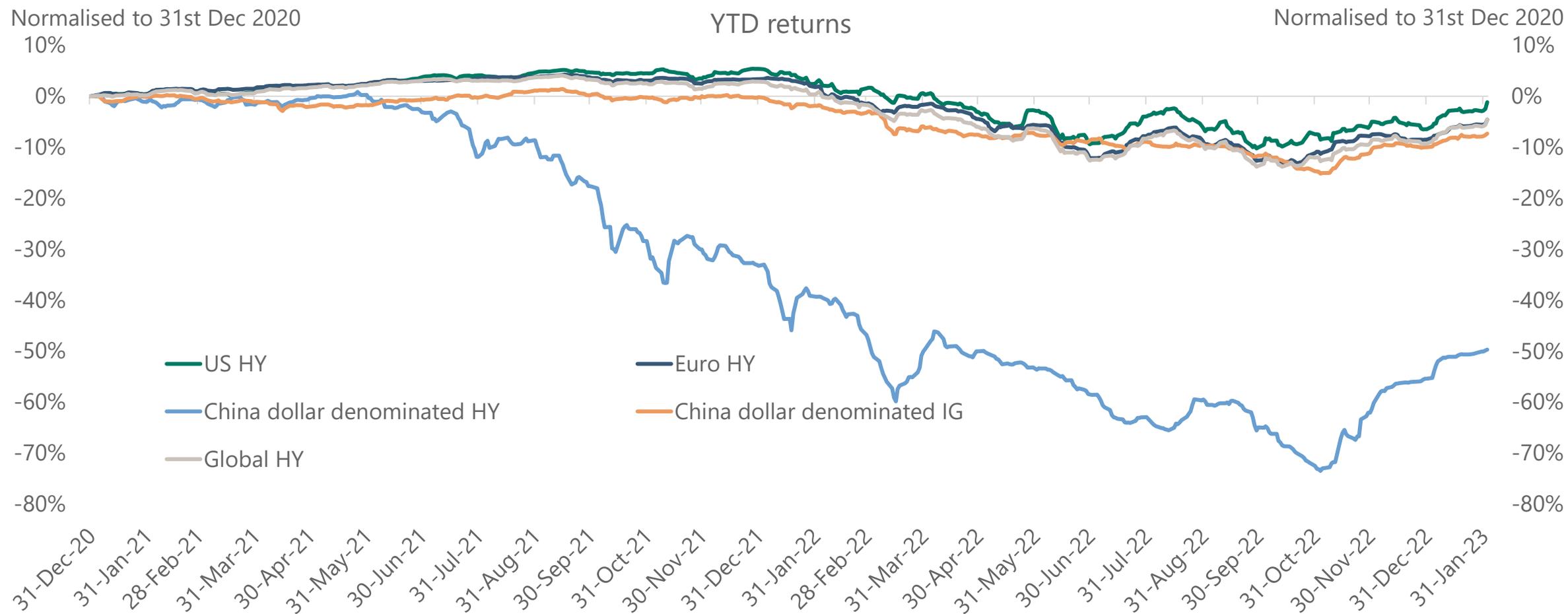
China HY



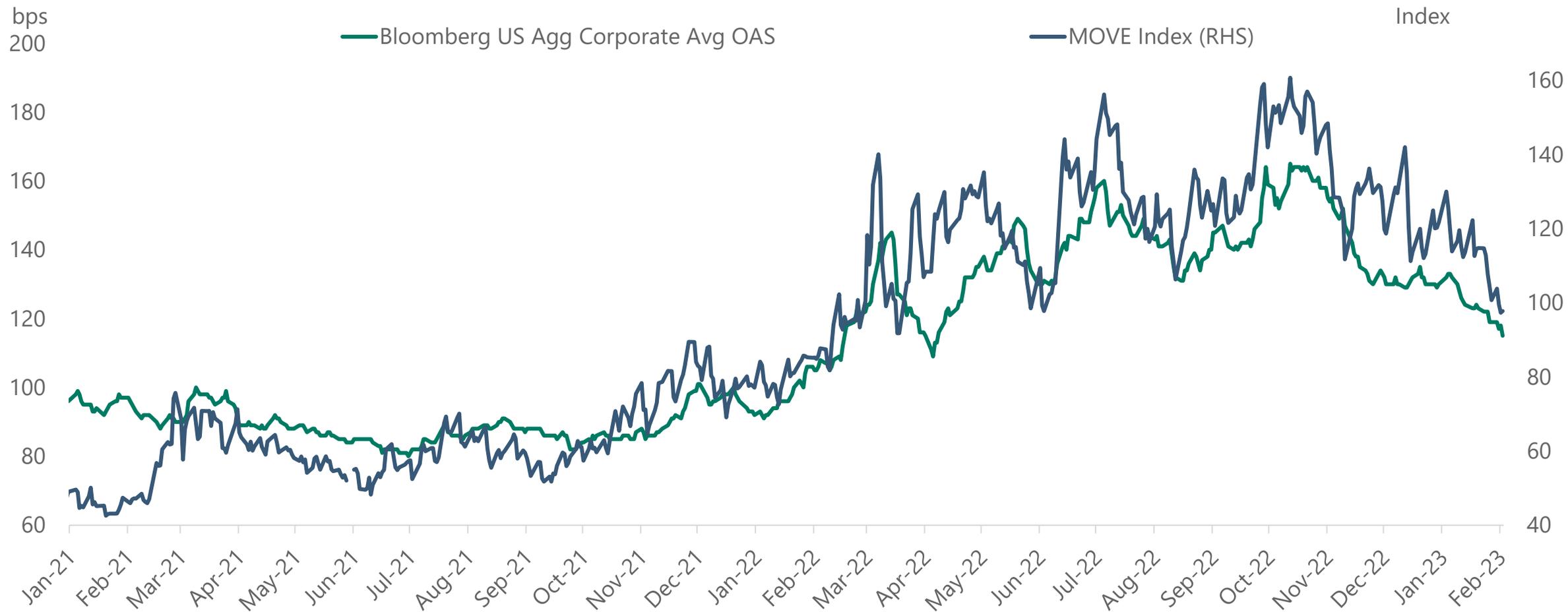
The yield on China HY has declined significantly, now at 16%



Little contagion from China HY to US and EU credit markets



US IG spread versus the MOVE index





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.