

APOLLO

Credit market outlook:

Lagged Fed hikes + elevated inflation + tighter lending standards =
volatile markets

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Apollo Global Management

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Unless otherwise noted, information as of April 2023.

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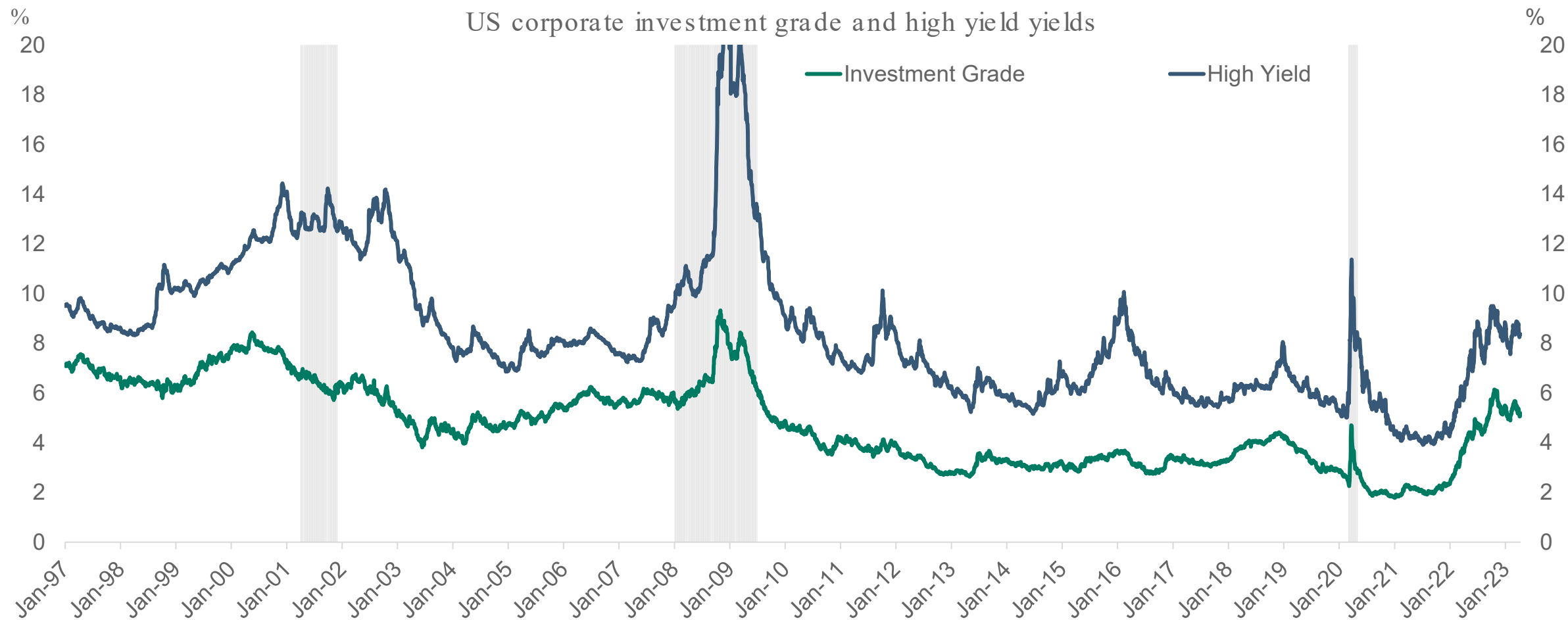
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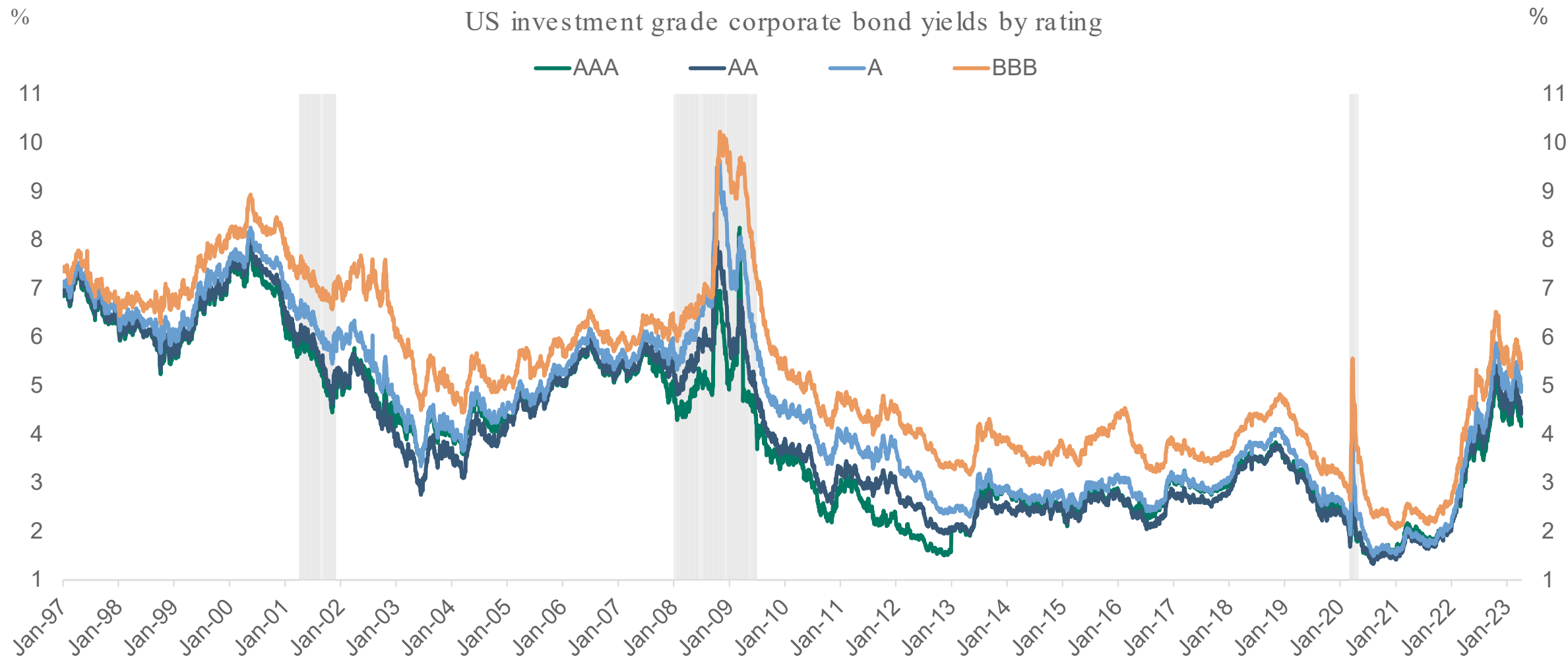
Yields



US IG yield around 5.2% and HY yield around 8.3%



US IG yield levels, by rating

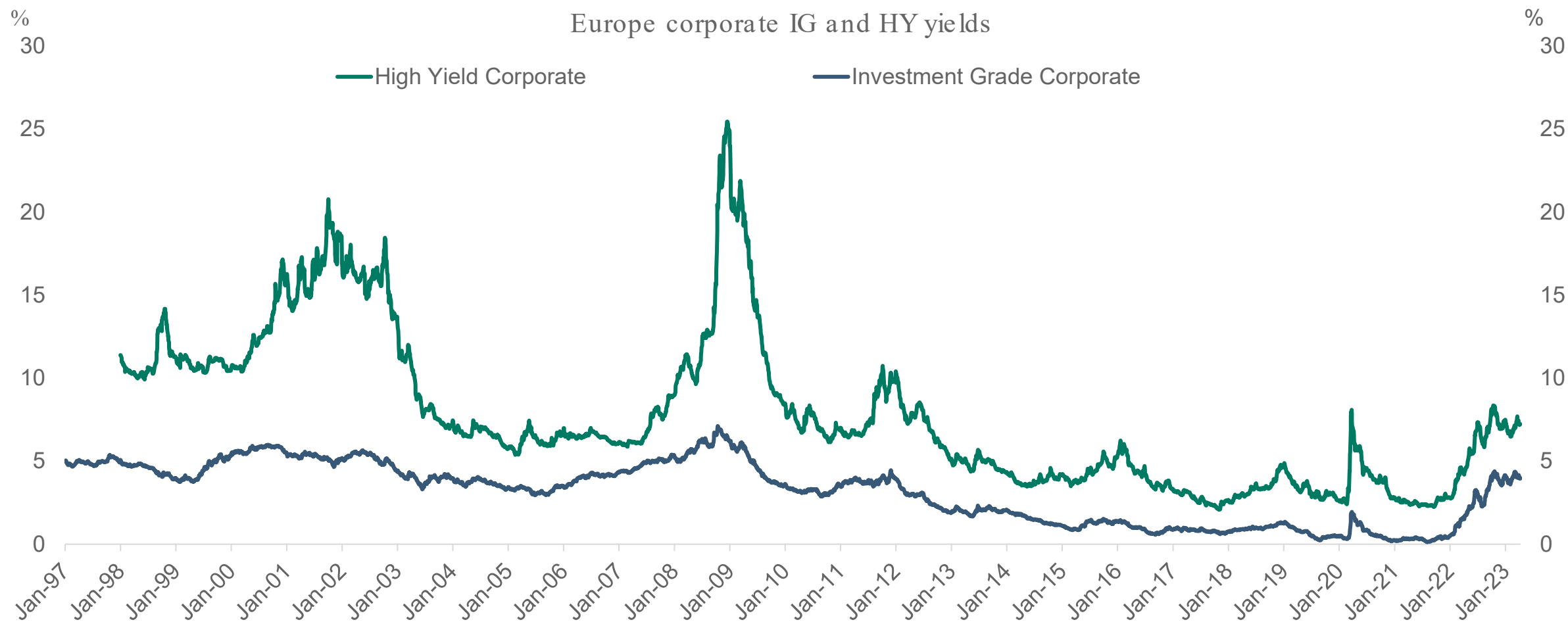


Source: ICE BofA, Haver Analytics, Apollo Chief Economist

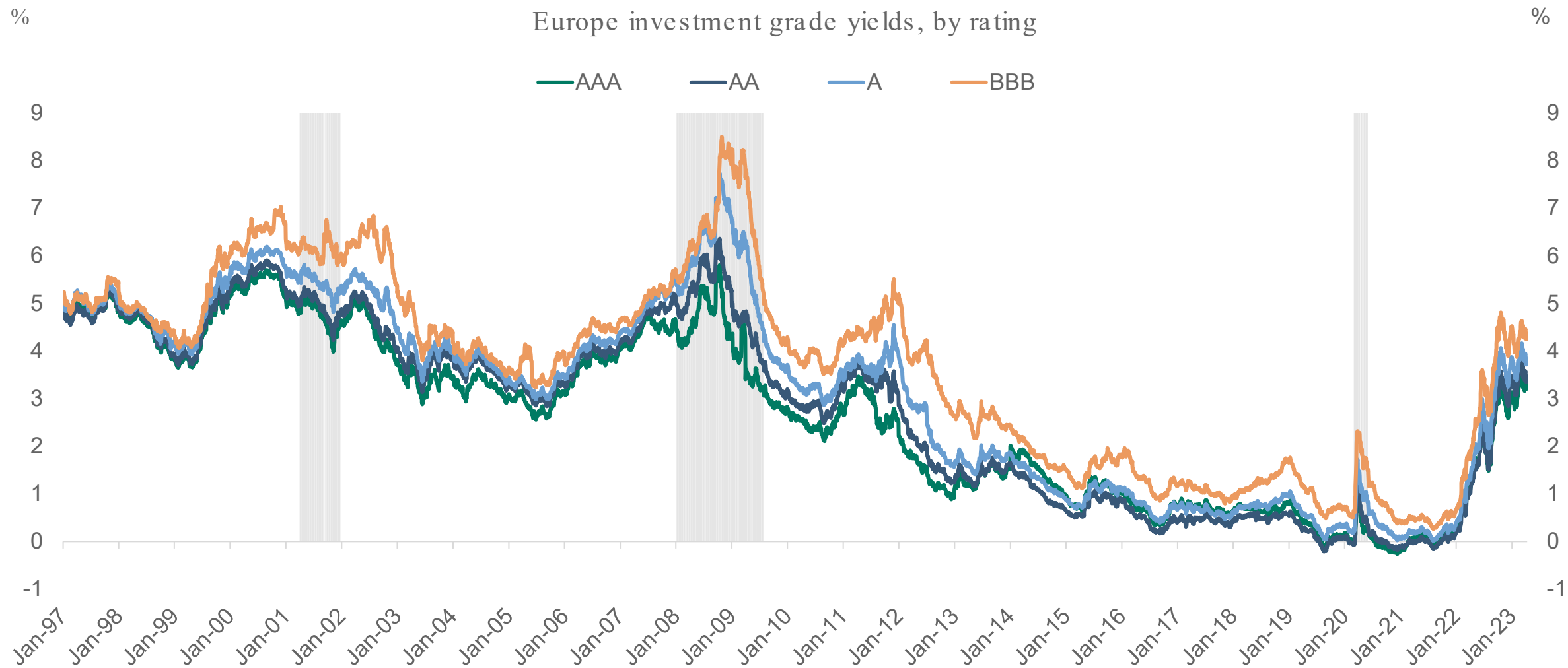
US HY yield levels, by rating



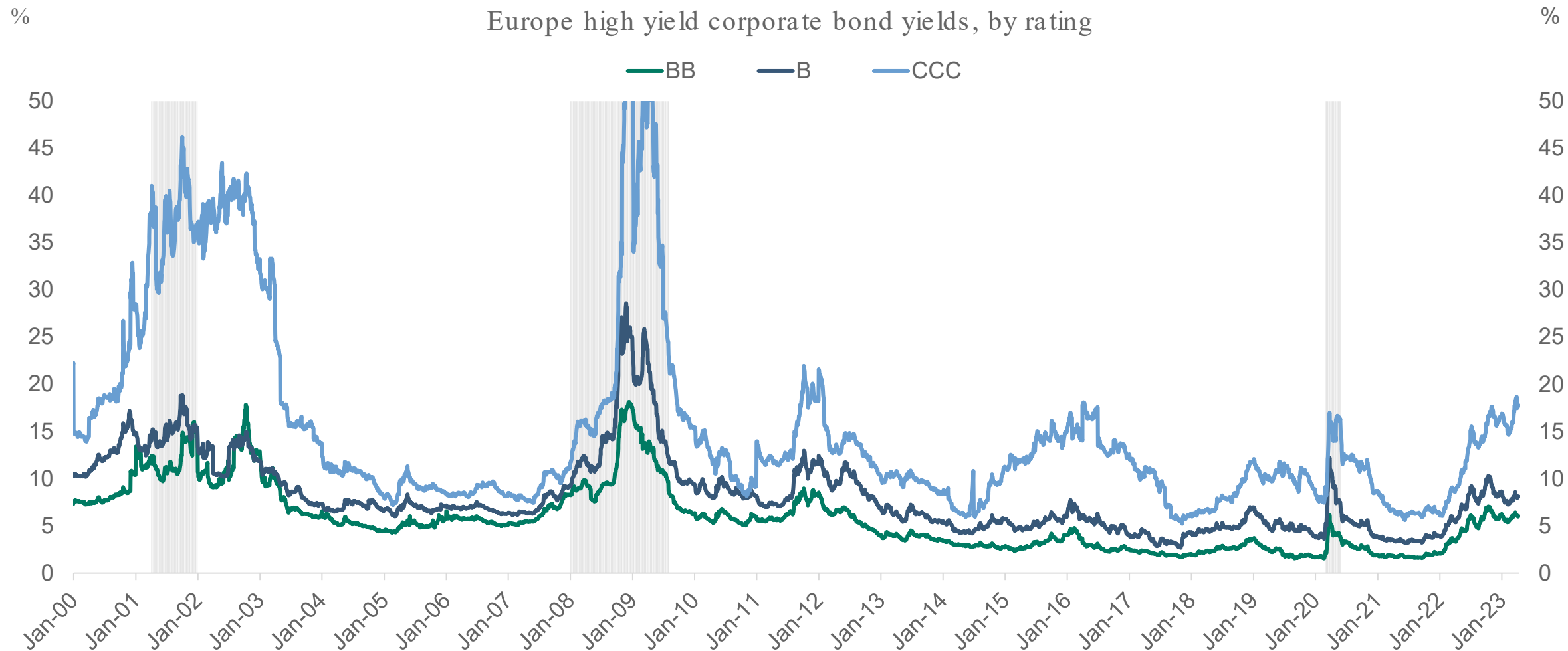
European corporate IG and HY yields



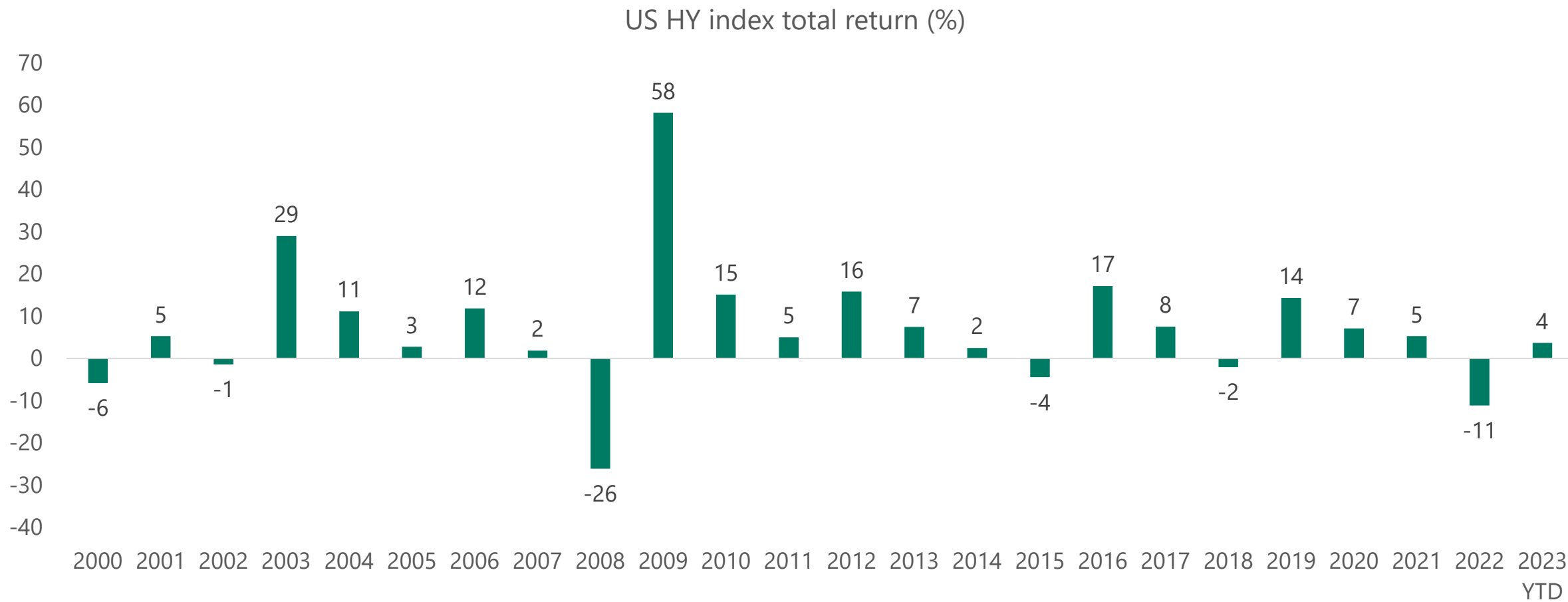
European IG yield levels, by rating



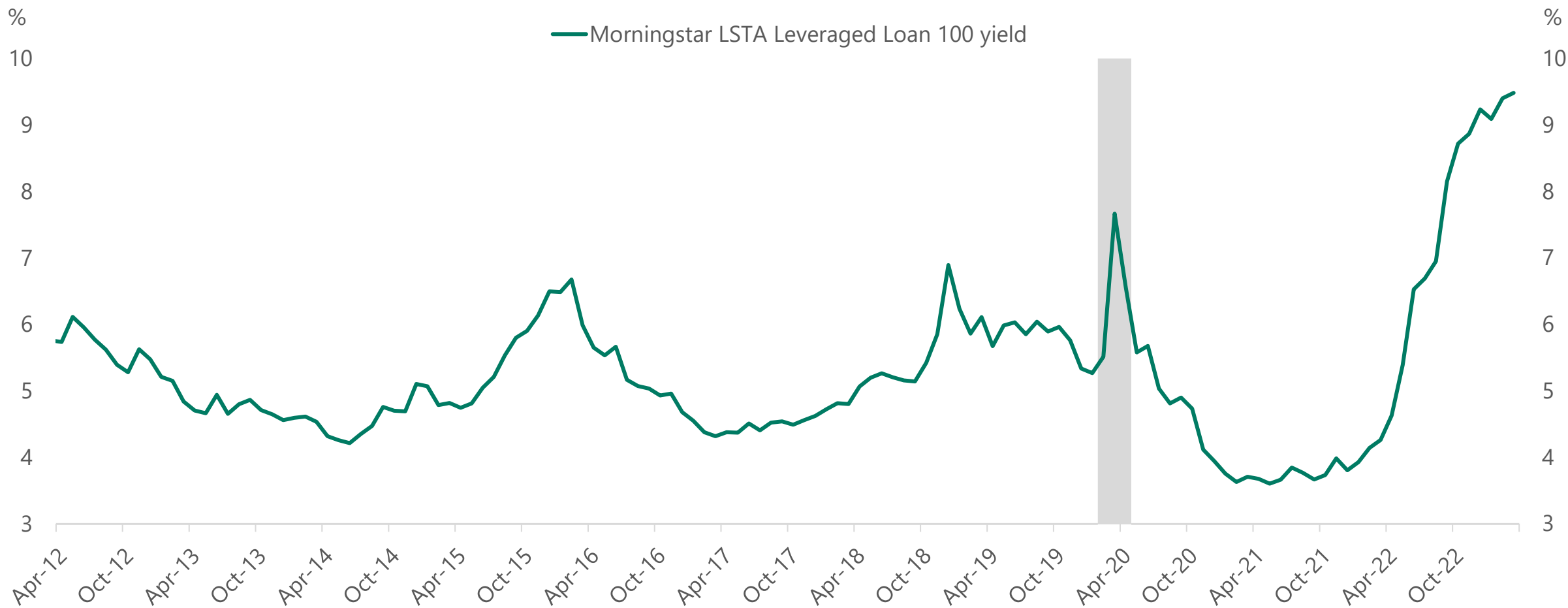
European HY yield levels, by rating



Annual returns for HY



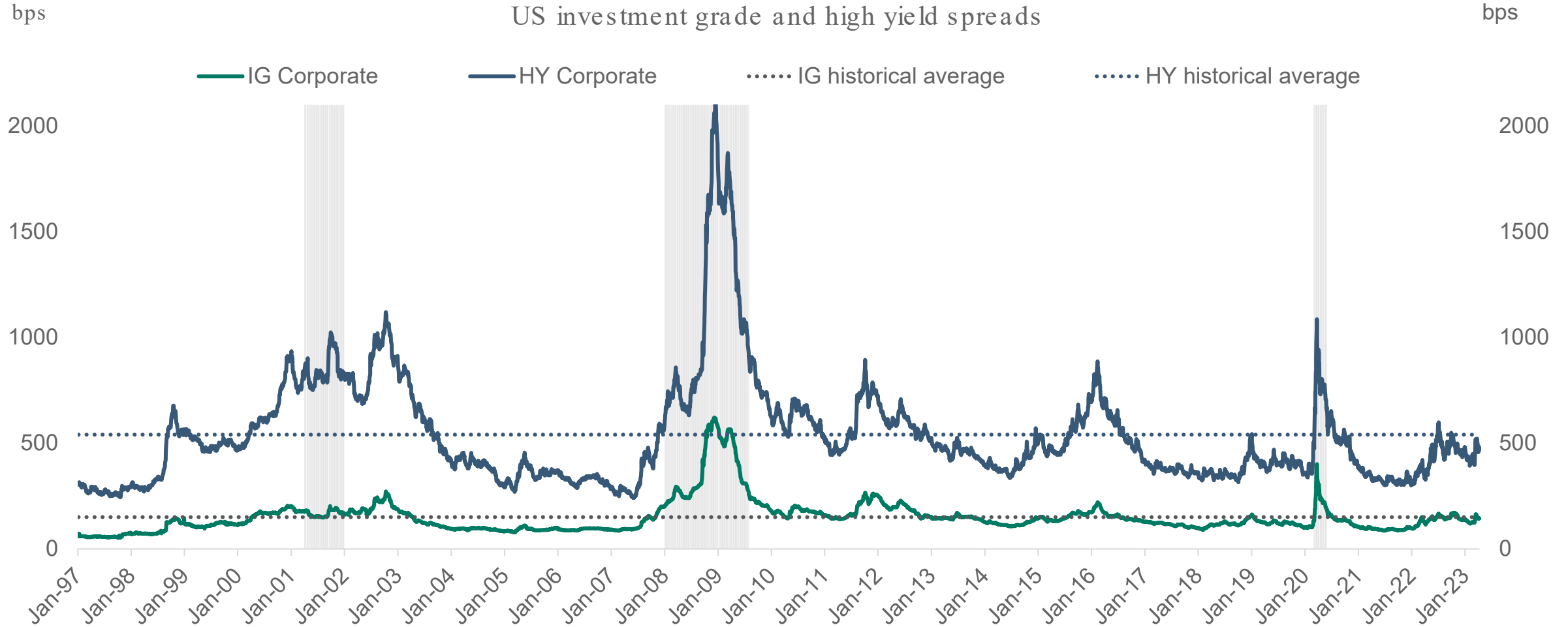
Yield for the leveraged loan index at 9.4%



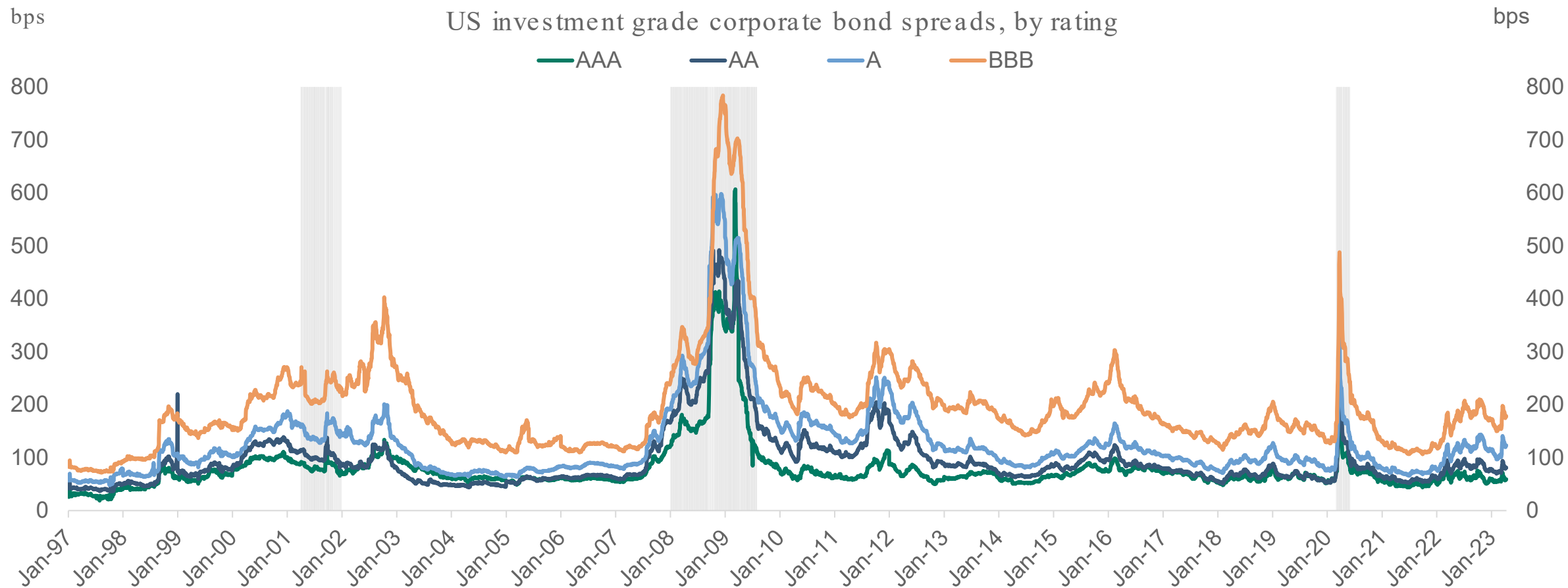
Spreads



Credit spreads wider, but not pricing in a recession



IG spreads by rating



HY spreads by rating

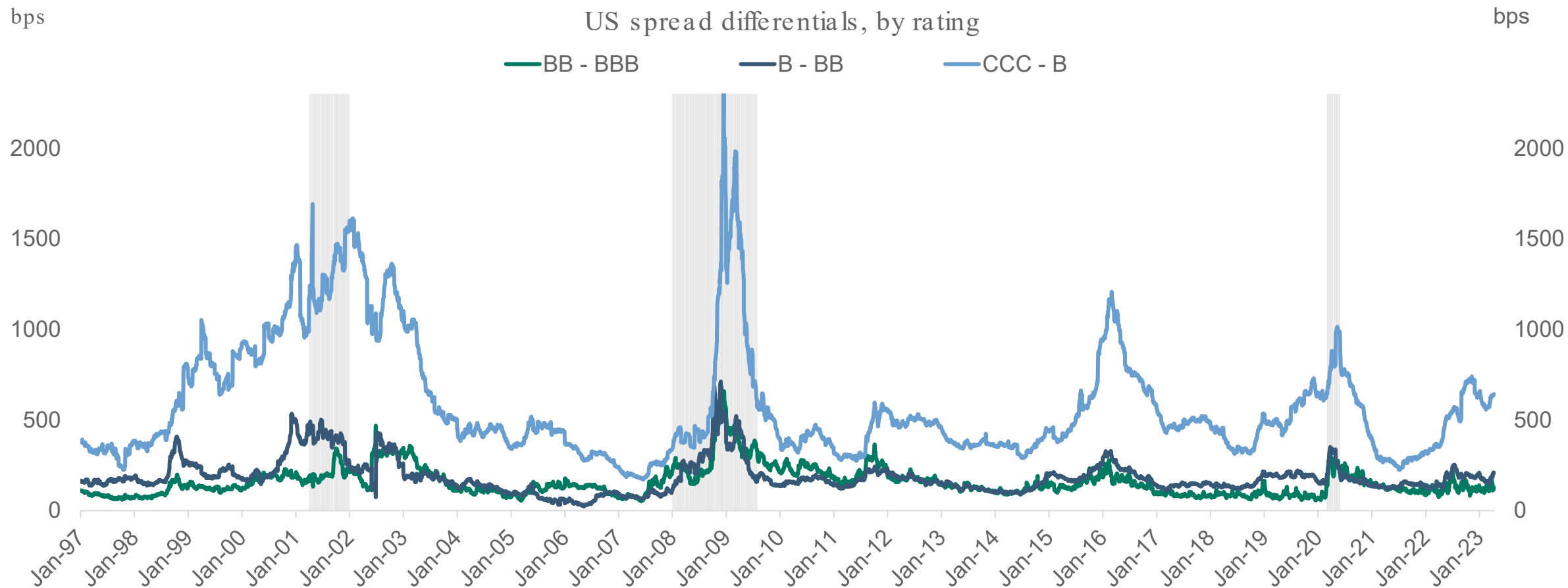


Source: ICE BofA, Bloomberg, Apollo Chief Economist

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



HY quality spreads, some differentiation between CCC and B

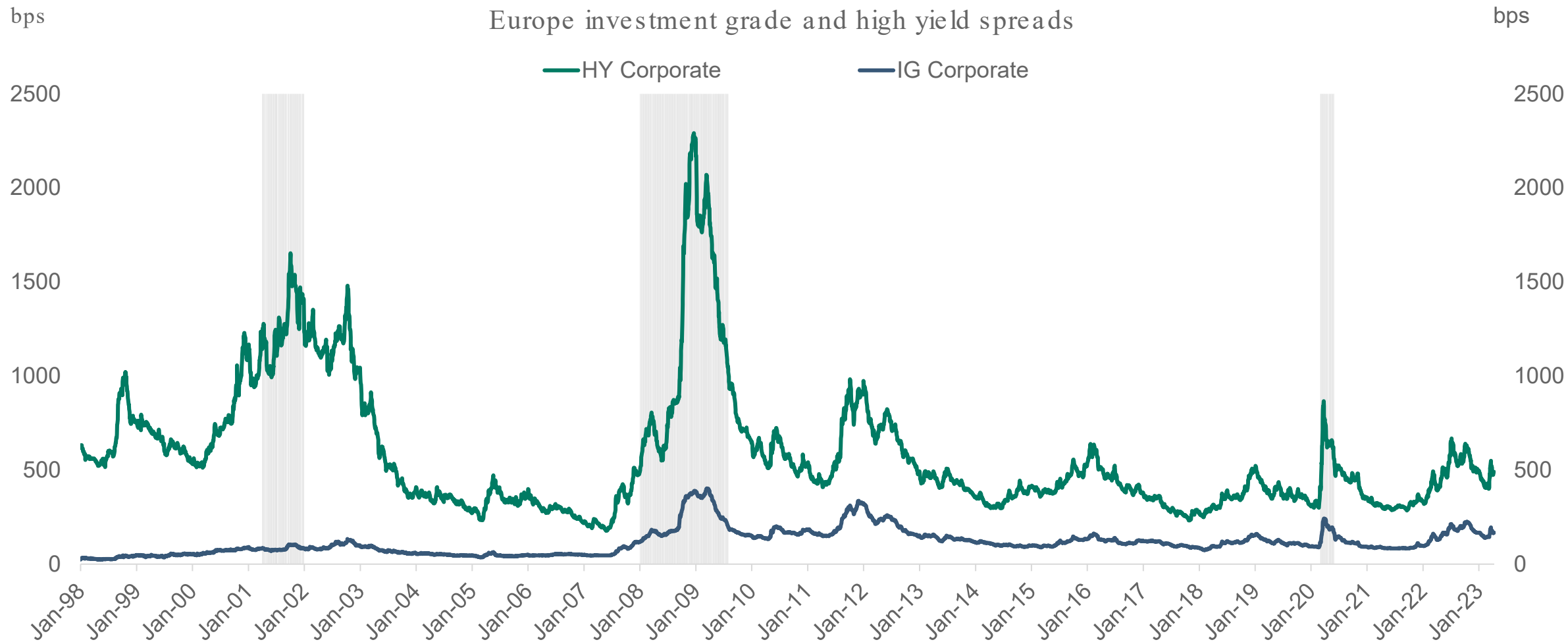


US HY spread minus IG spread



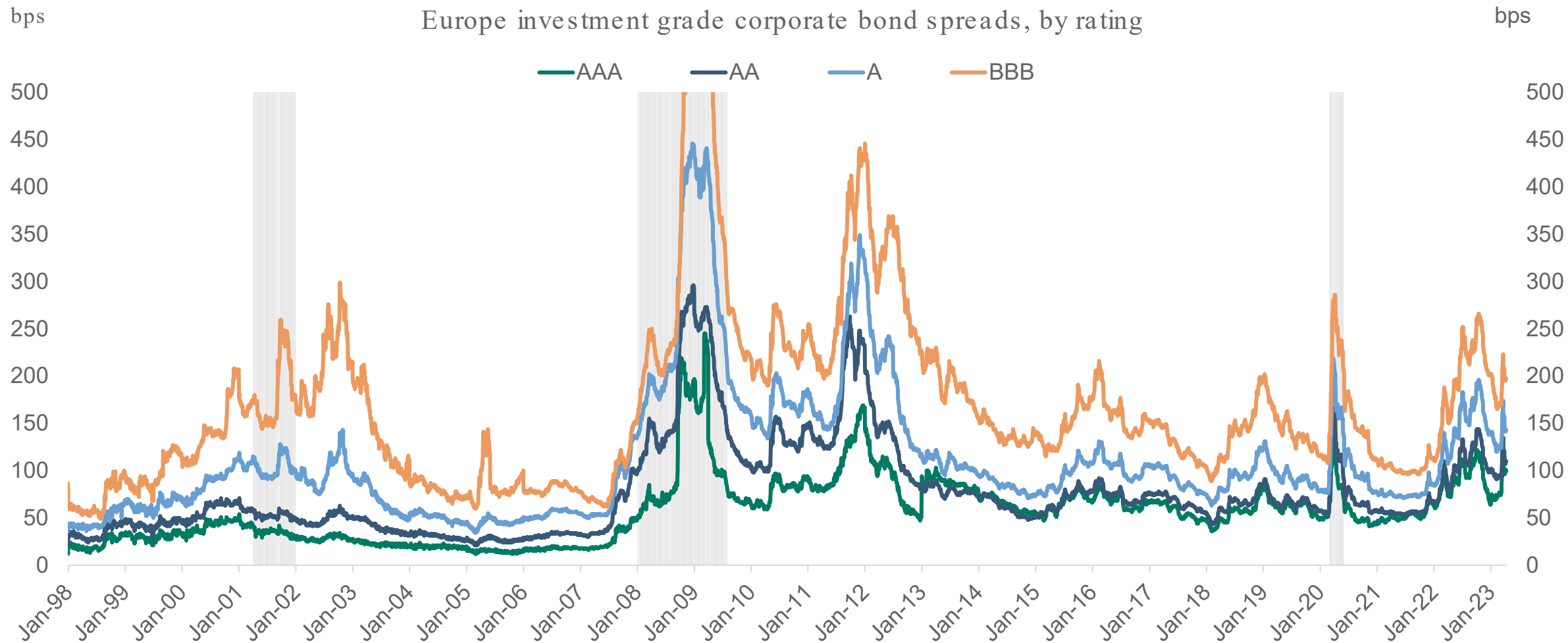
Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Bloomberg Index used COA0 Index and H0A0 Index

European IG and HY spreads

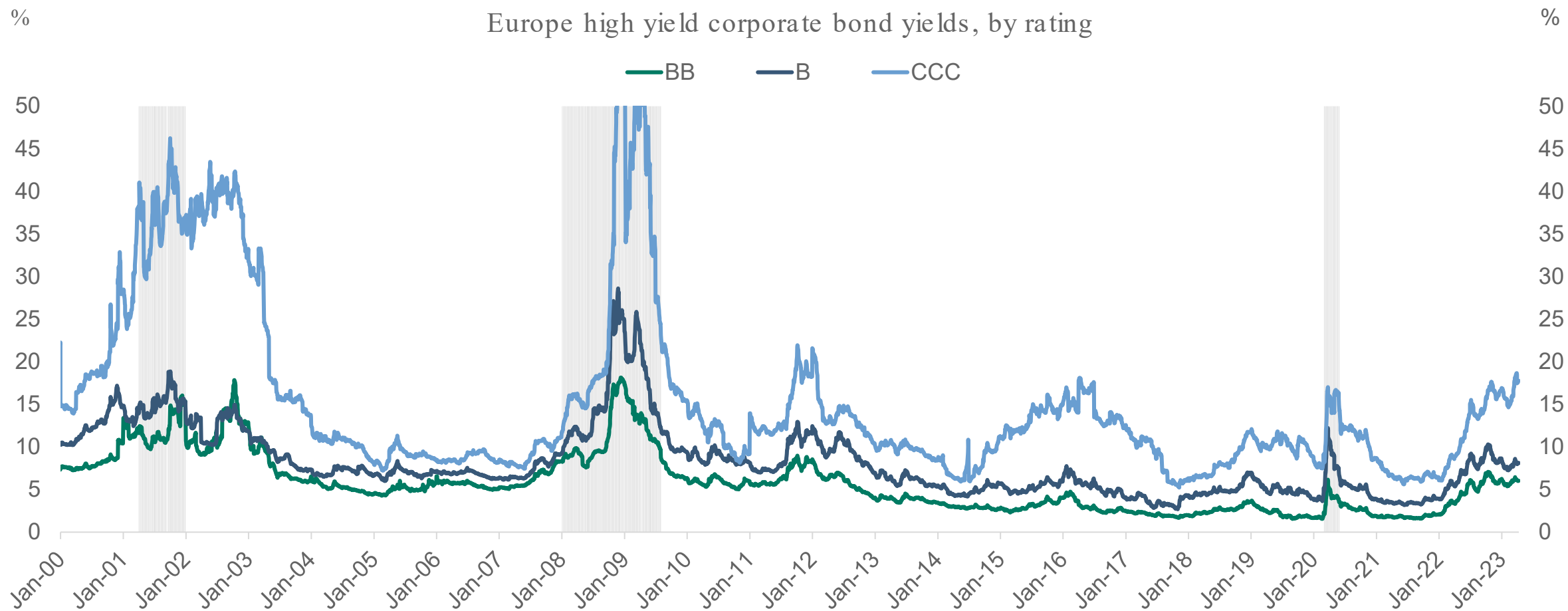


Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Ticker used HE00 Index and ER00 Index.

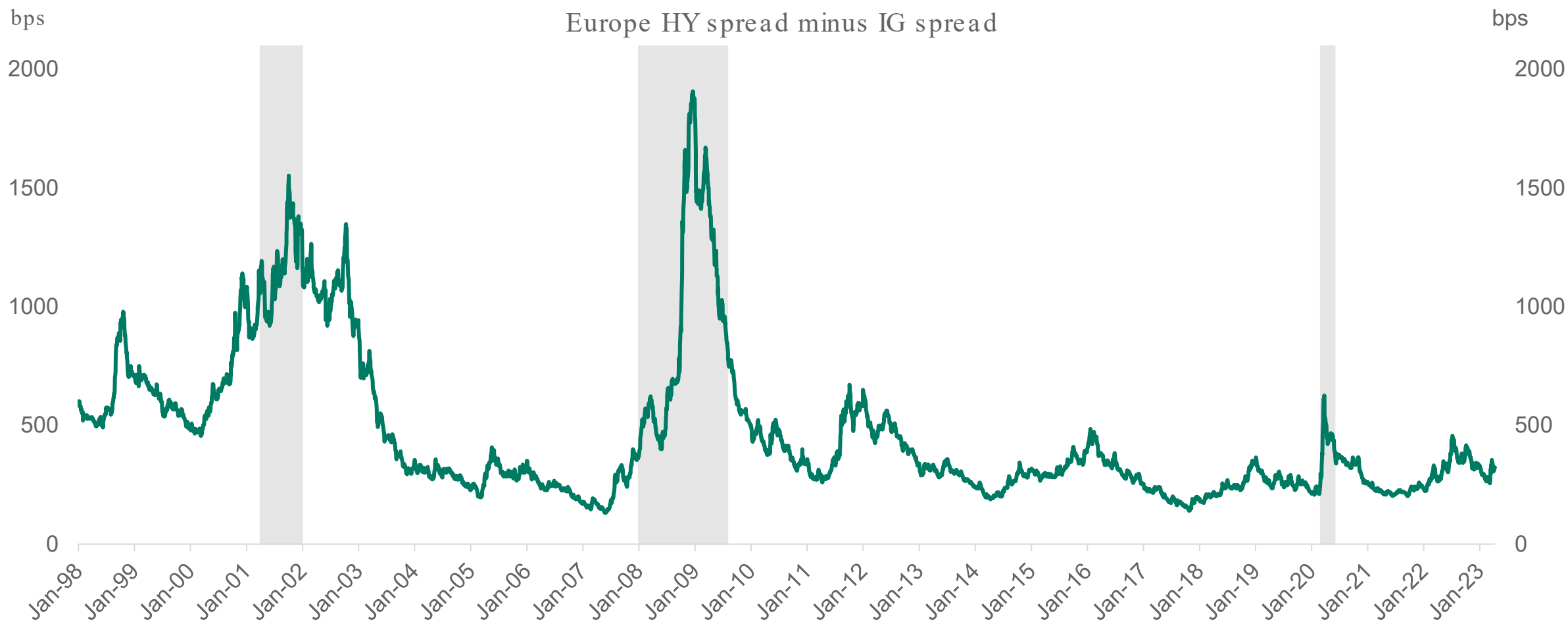
European IG spreads by rating



European HY spreads by rating

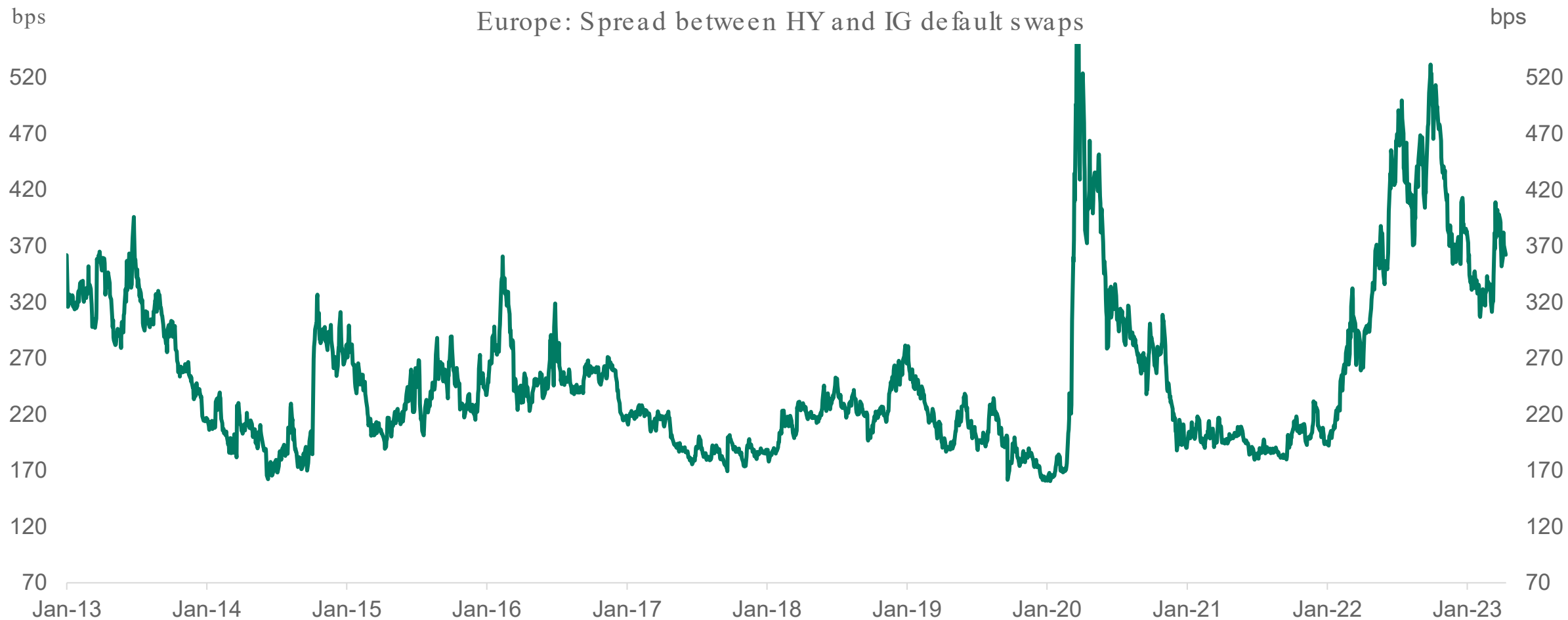


European HY spread minus IG spread



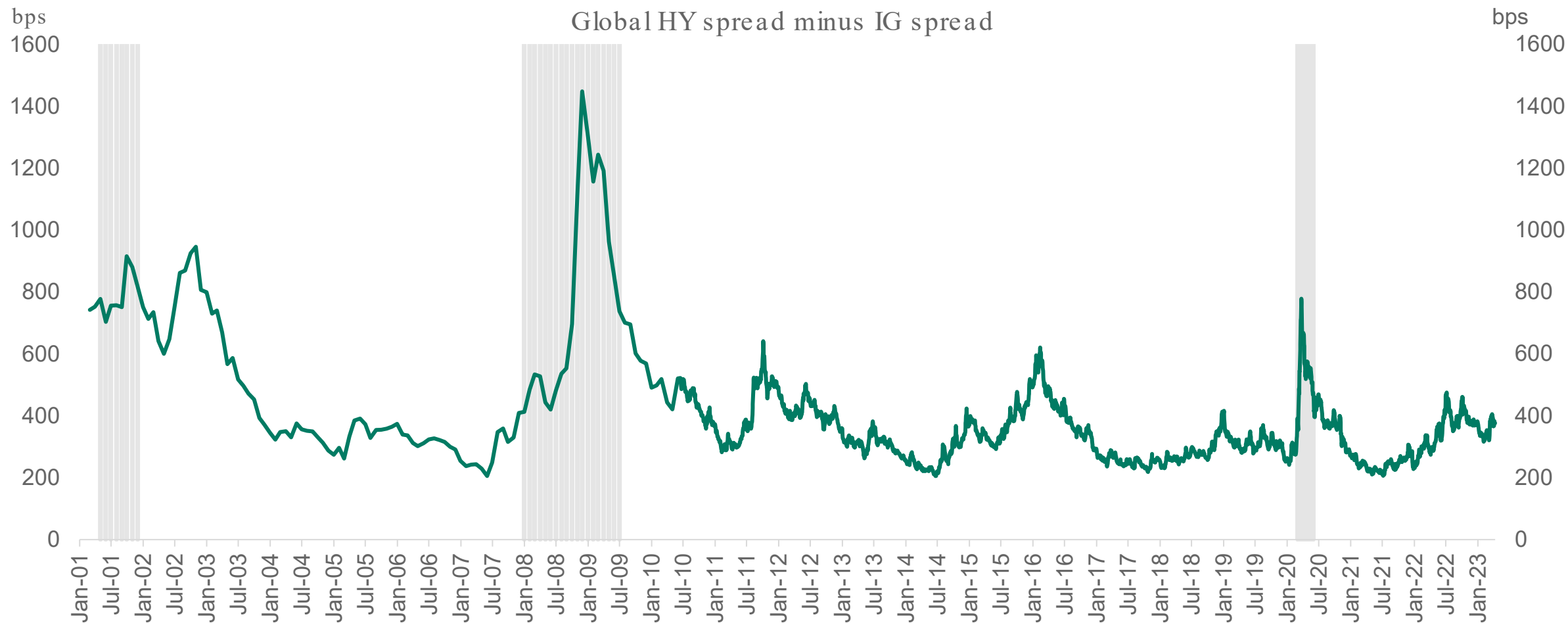
Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Ticker used HE00 Index and ER00 Index.

Spread between Europe HY and IG default swaps



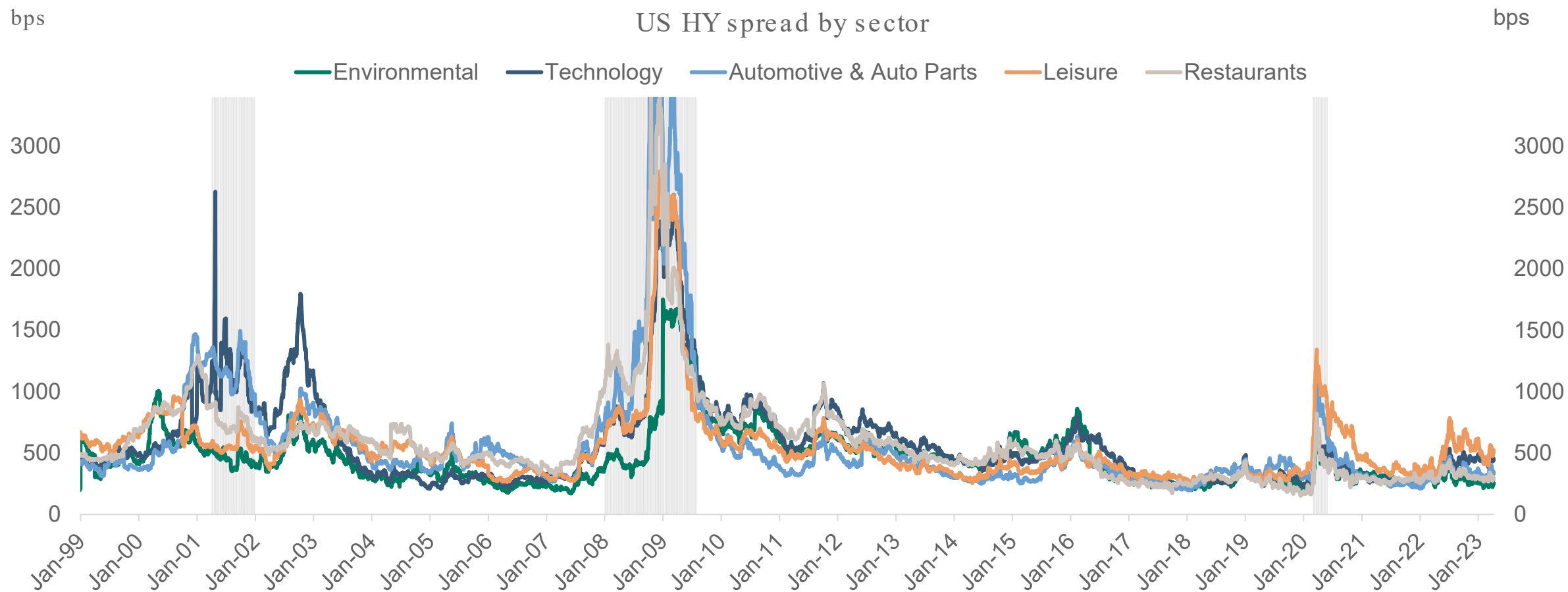
Source: Bloomberg, Apollo Chief Economist. Note: Tickers used ITRXEXE CBBT Curncy and ITRXEBE CBBT Curncy

Global HY spread minus global IG spread

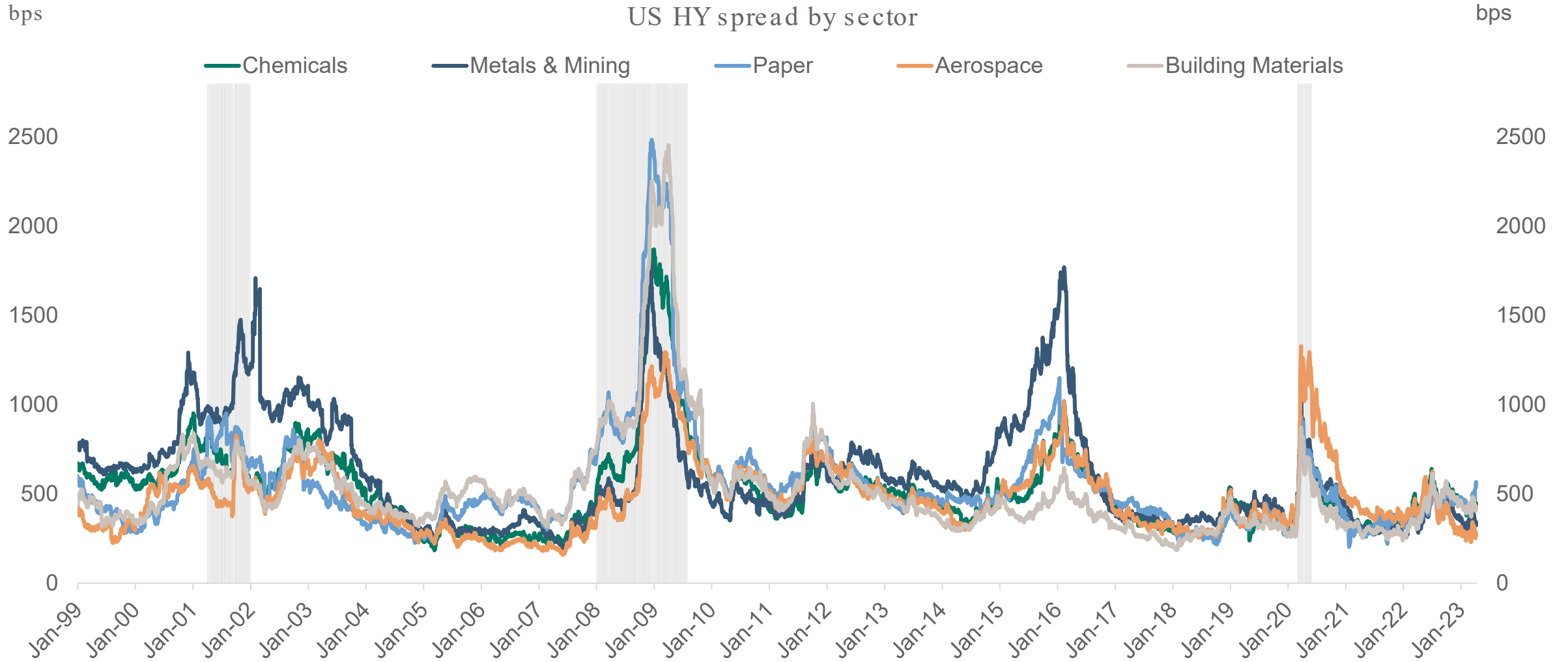


Source: Bloomberg, Apollo Chief Economist. Note: Bloomberg Index used BGLCTRUU index and LG50TRUU Index

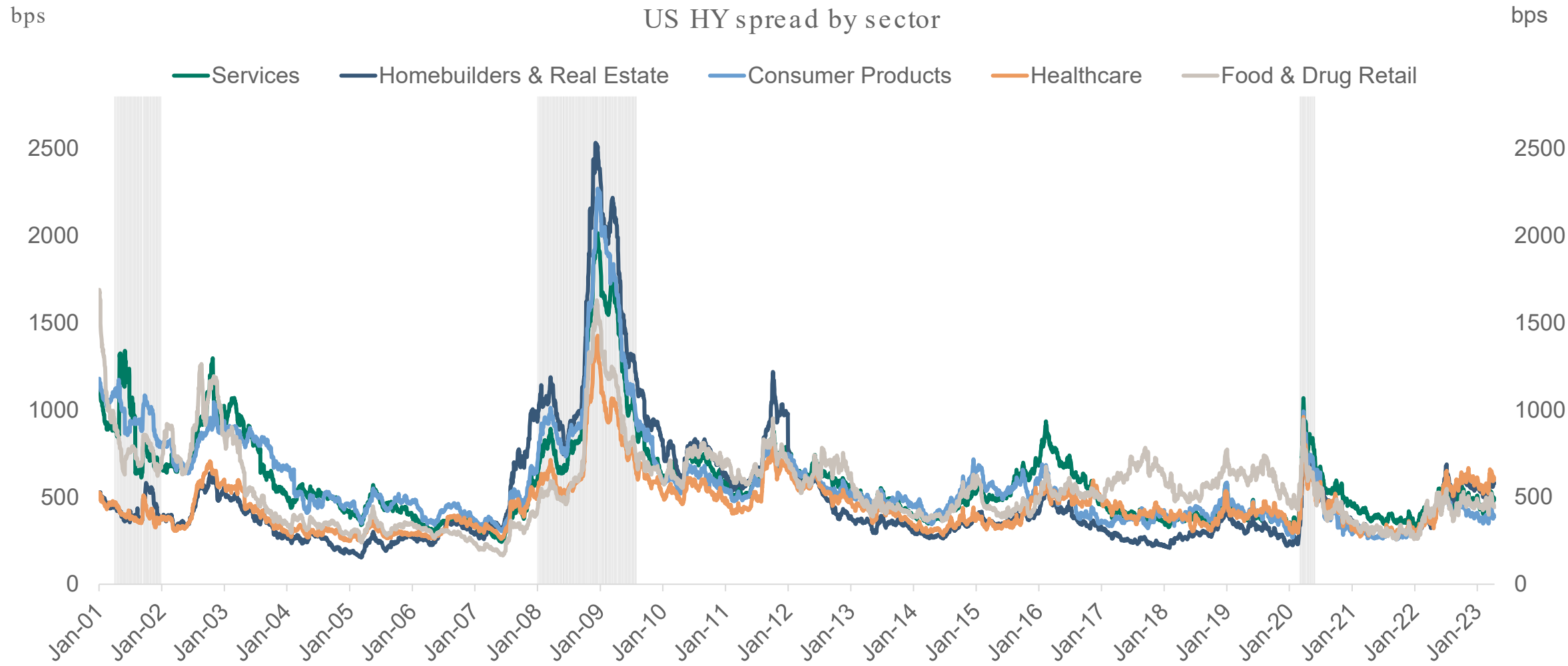
HY spreads by sector



HY spreads by sector

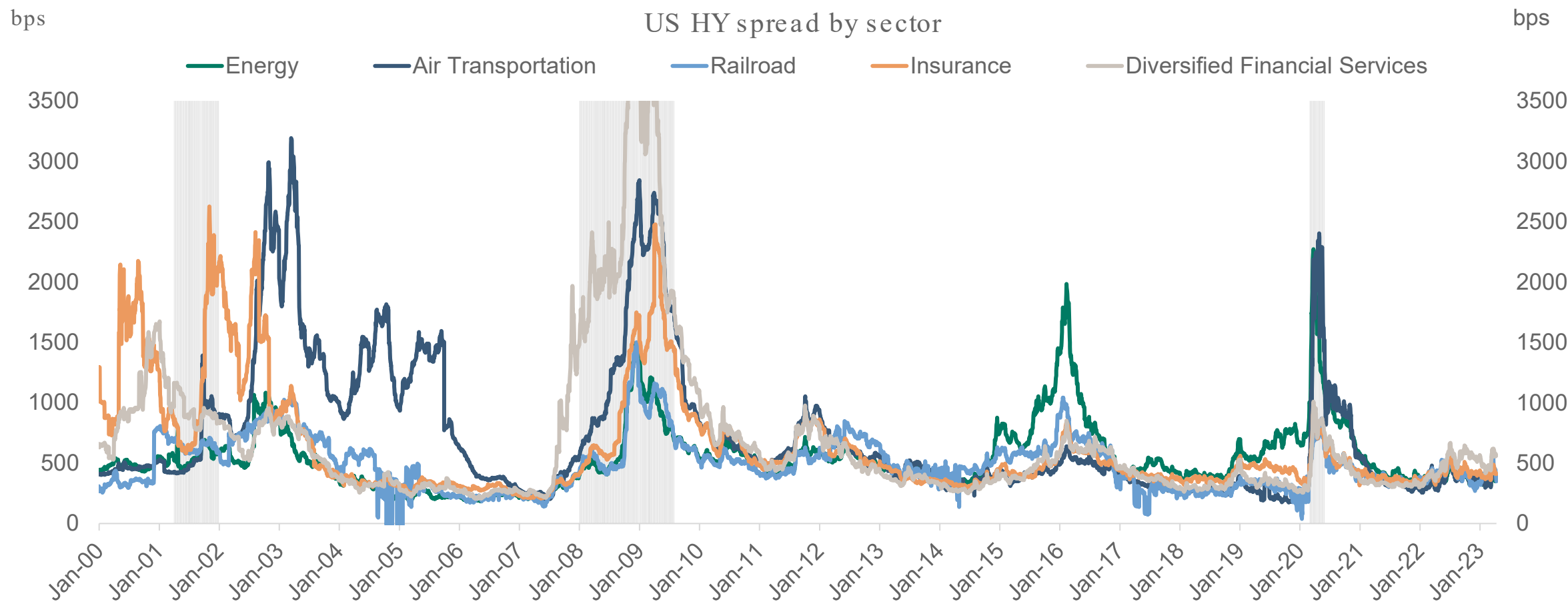


HY spreads by sector



Source: ICE BofA, Bloomberg, Apollo Chief Economist

HY spreads by sector



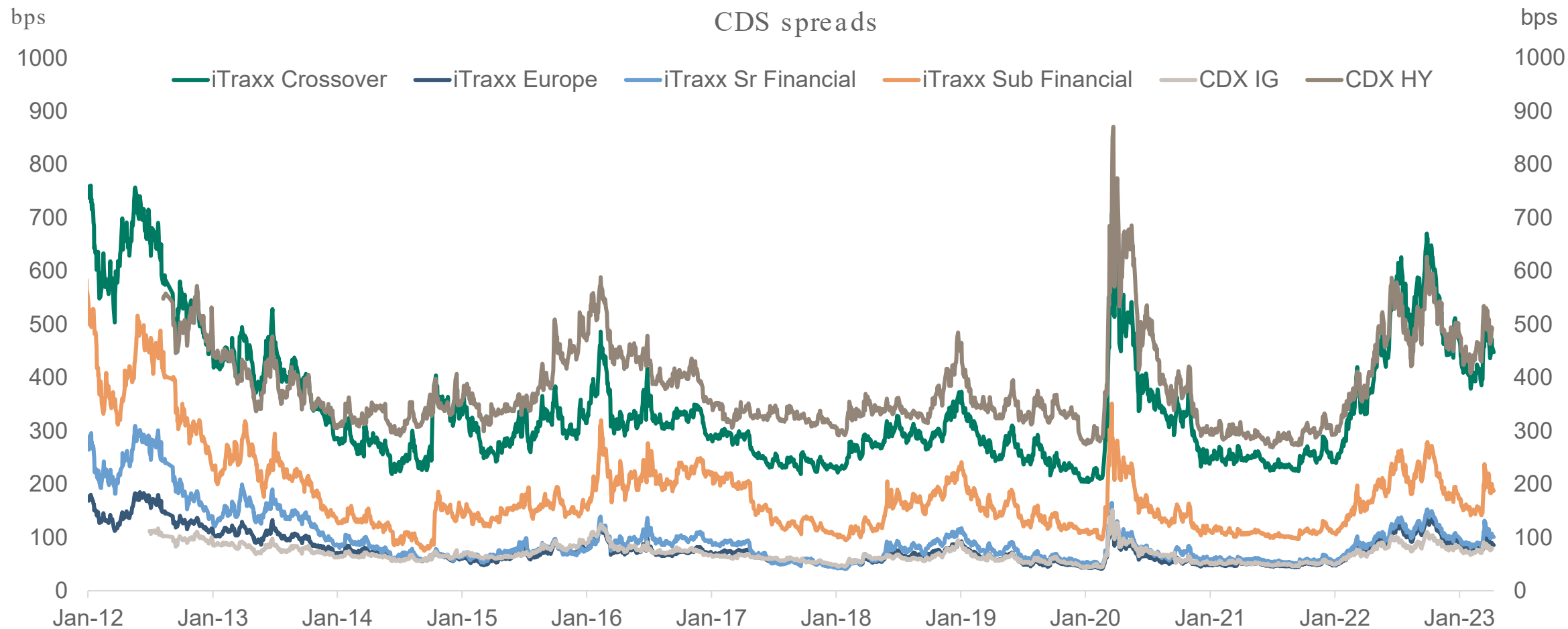
Source: ICE BofA, Bloomberg, Apollo Chief Economist

IG spreads for financials and non-financials

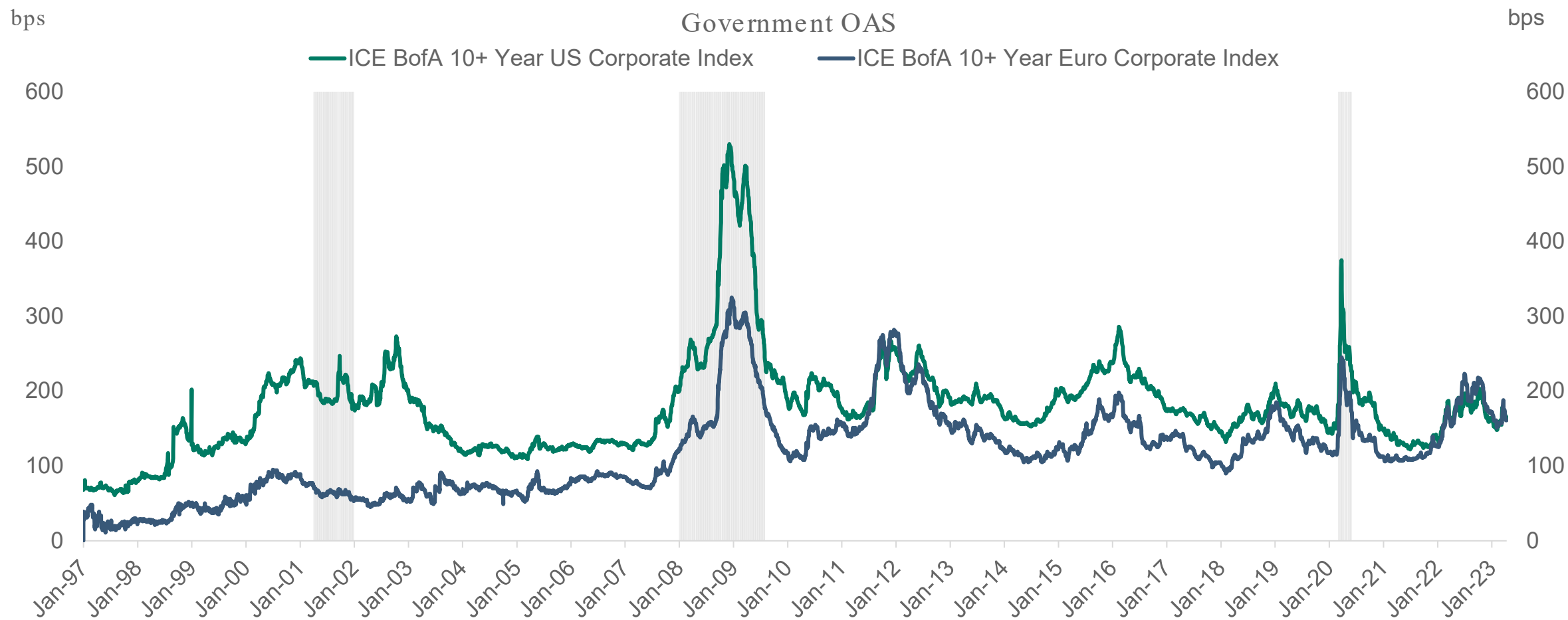


Source: ICE BofA, Bloomberg, Apollo Chief Economist

CDS spreads



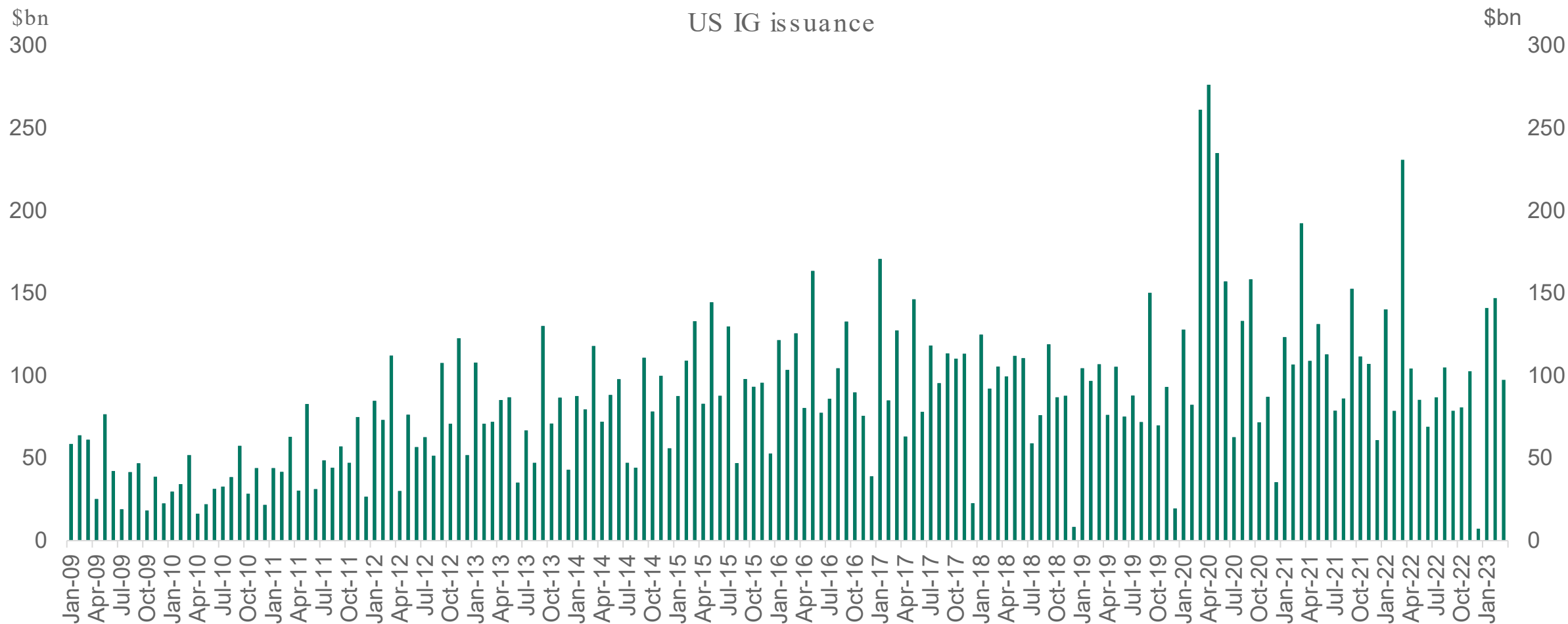
Long-duration IG spreads in US and Europe



New issuance

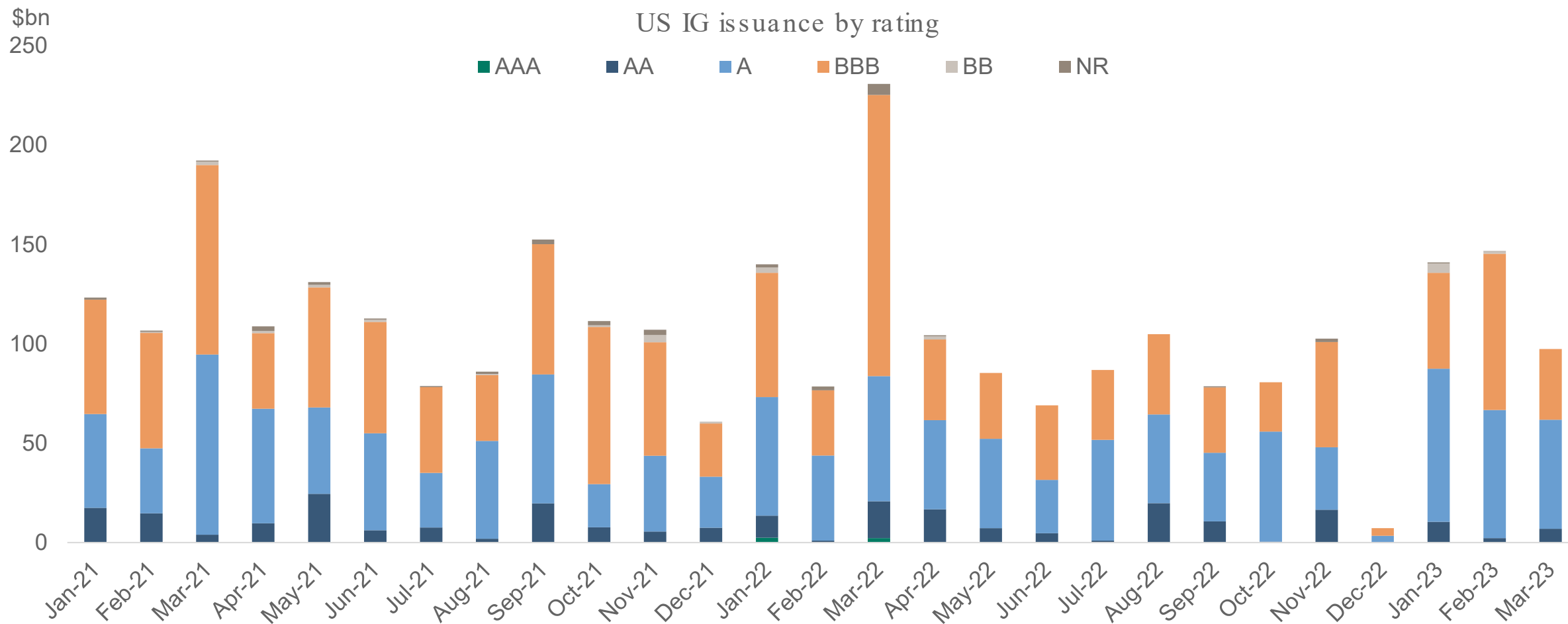


US IG issuance



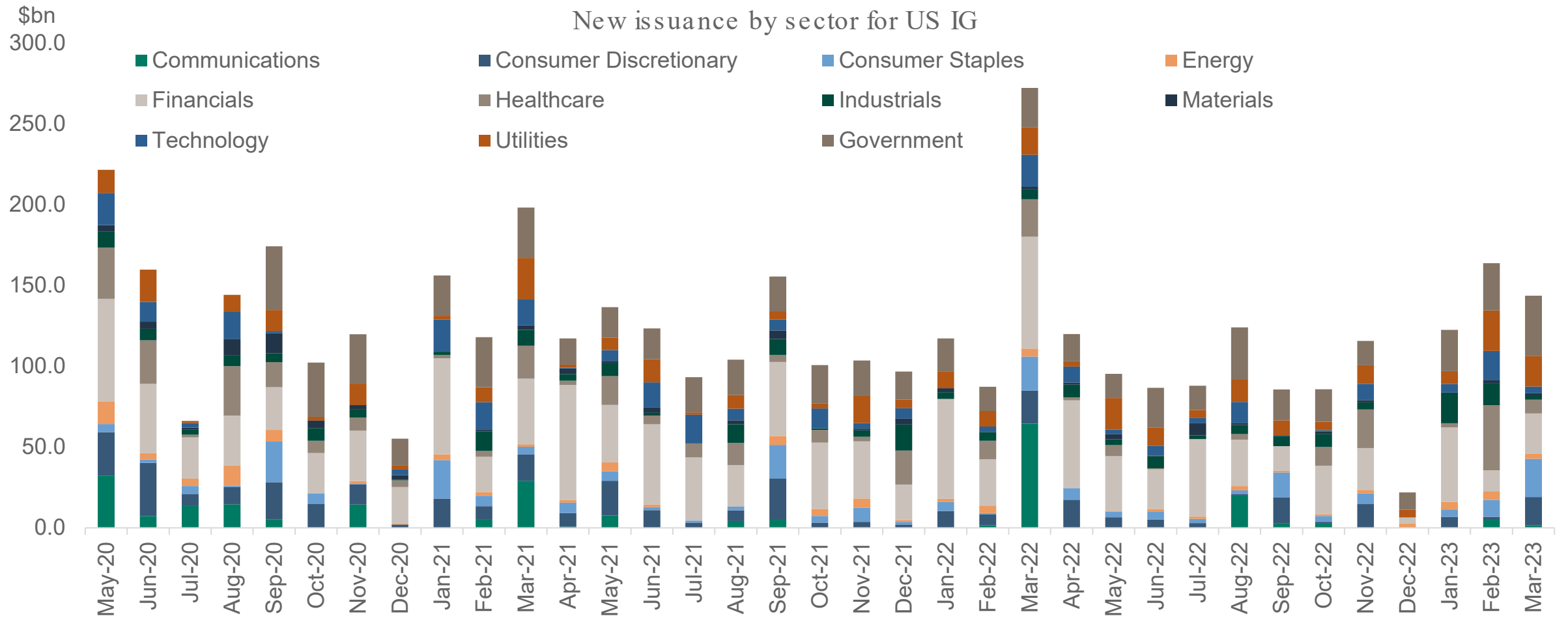
Source: Pitchbook LCD, Apollo Chief Economist

IG issuance by rating



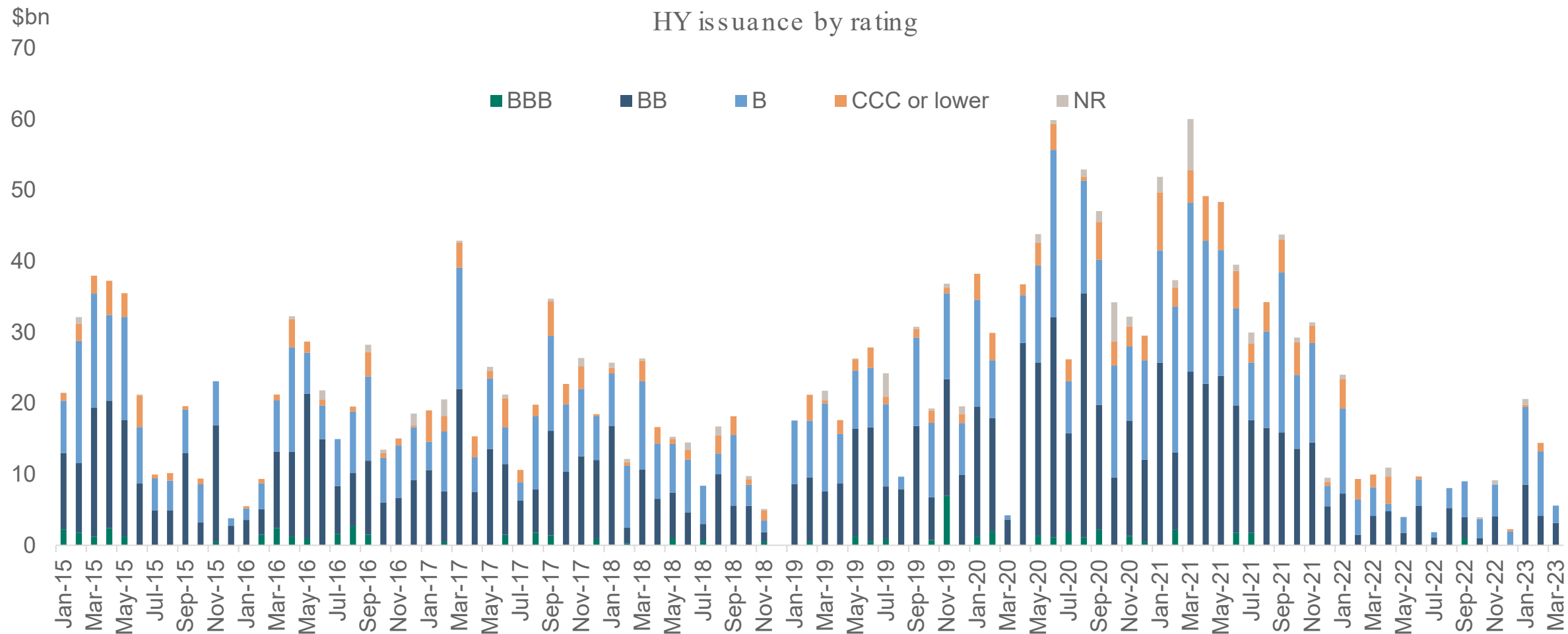
Source: Pitchbook LCD, Apollo Chief Economist.

Sector distribution of new IG issuance

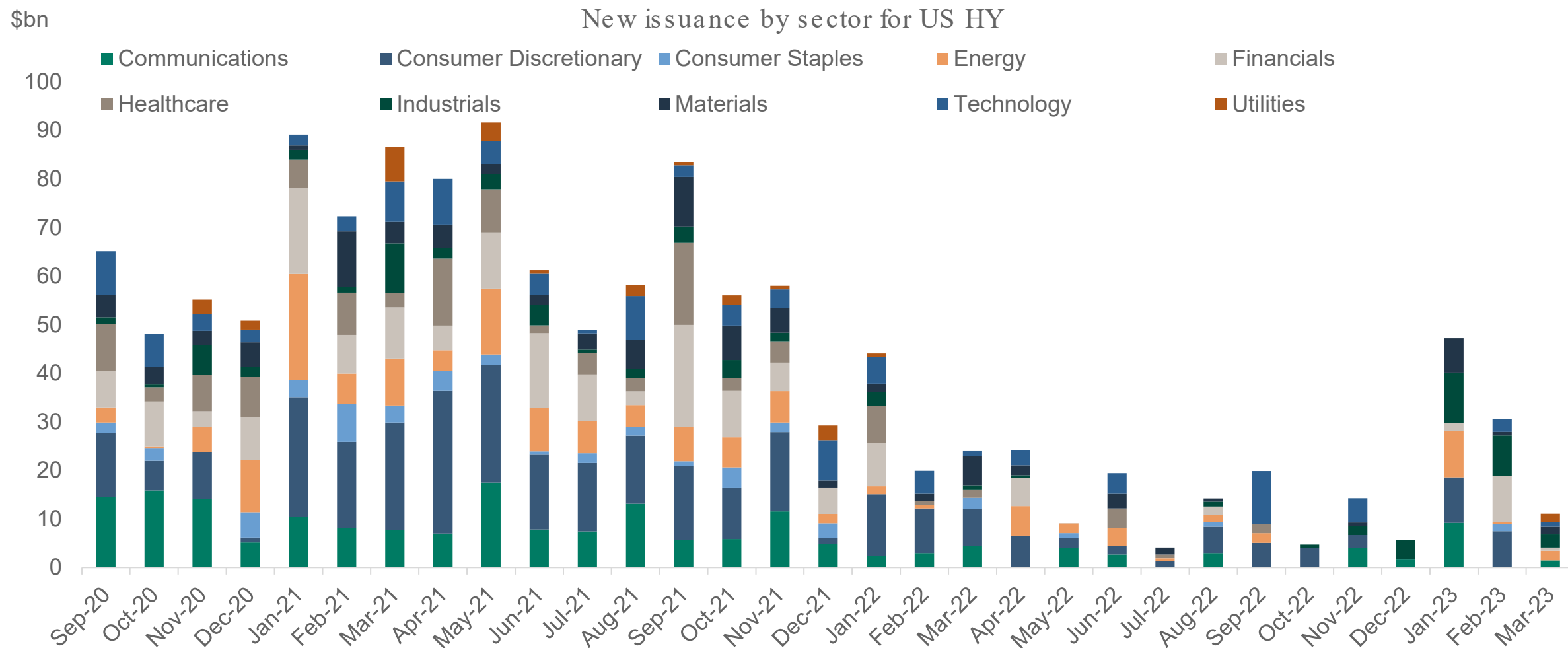


Source: Bloomberg, Apollo Chief Economist. Note: Issuance includes bonds, loans, leveraged loans, and preferred.

HY issuance by rating

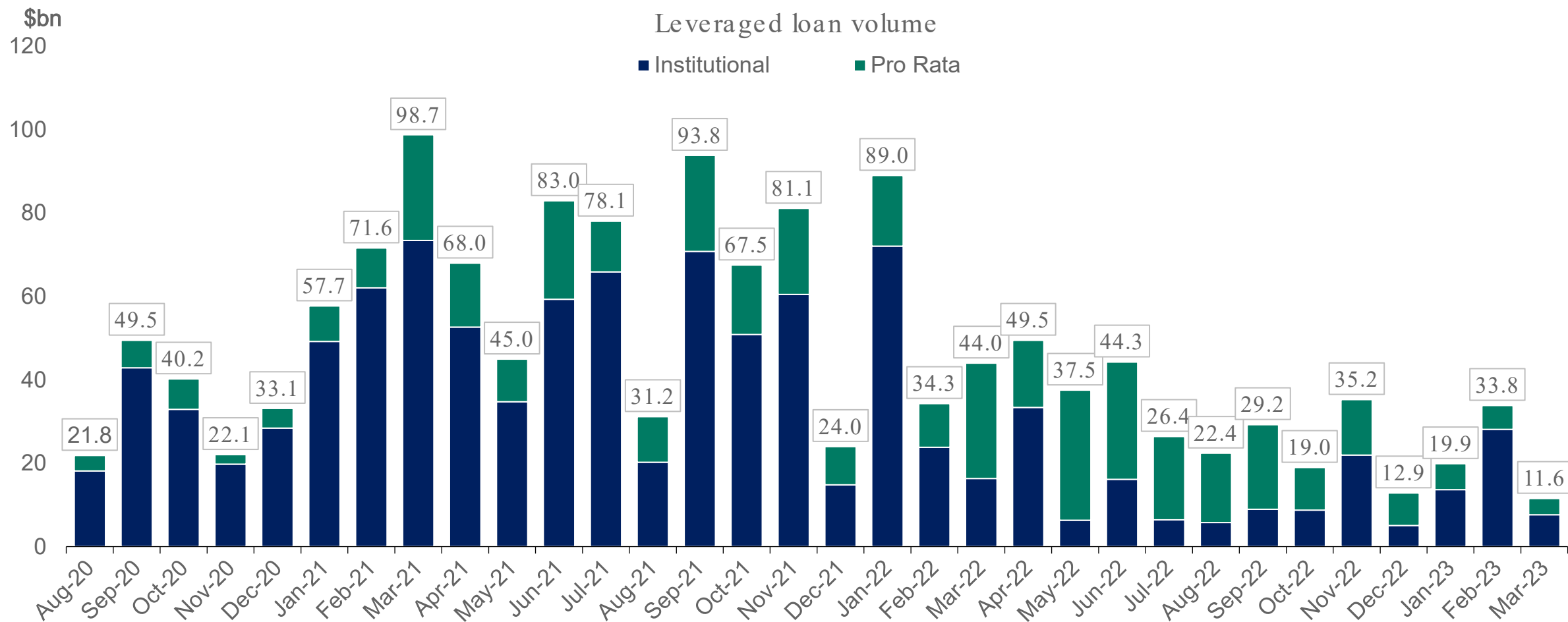


Sector distribution of new HY issuance



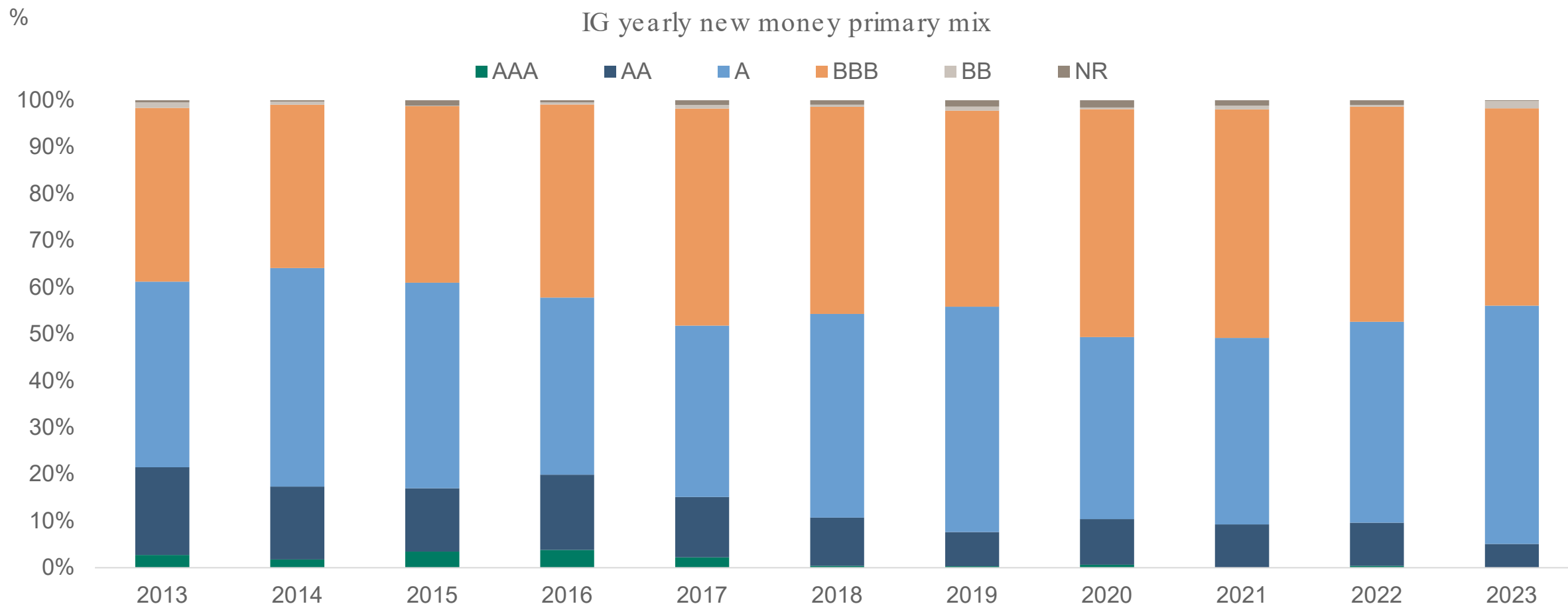
Source: Bloomberg, Apollo Chief Economist. Note: Issuance includes bonds, loans, leveraged loans and preferred.

Leveraged loan volume

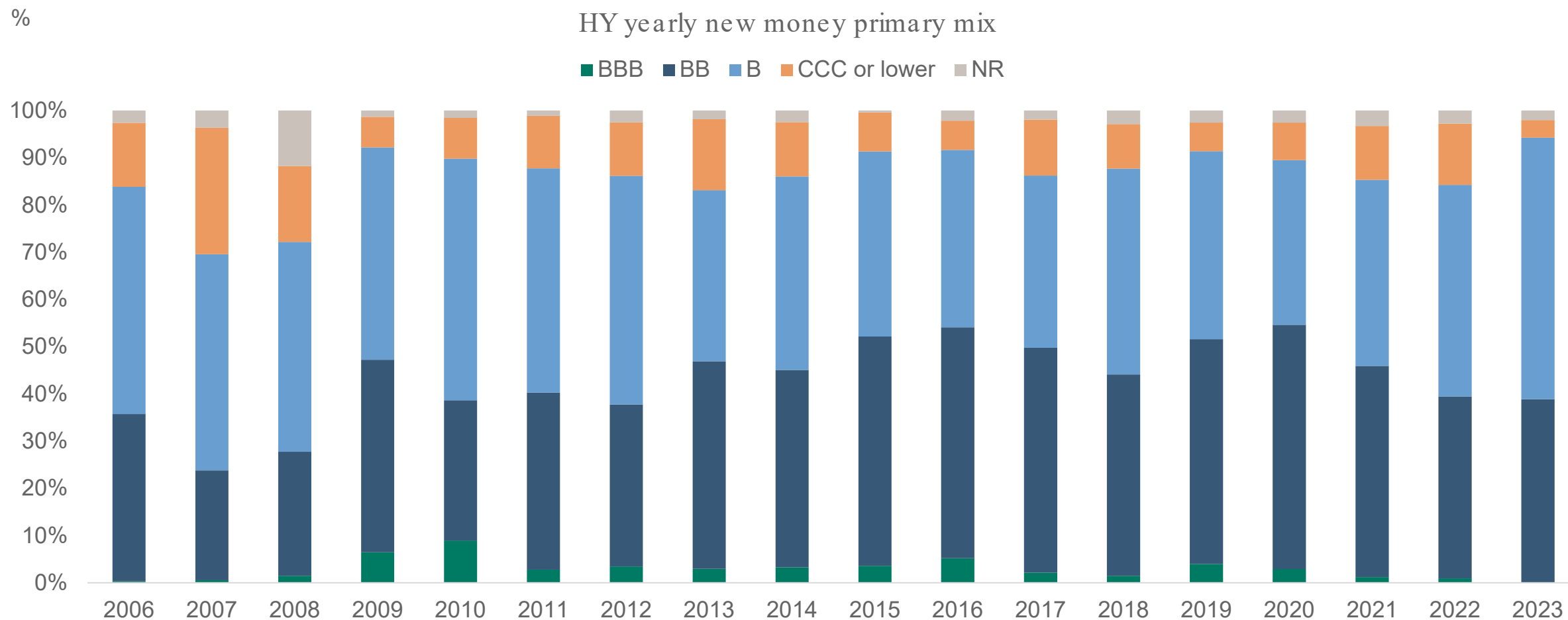


Source: Pitchbook LCD, Apollo Chief Economist.

IG new money primary mix

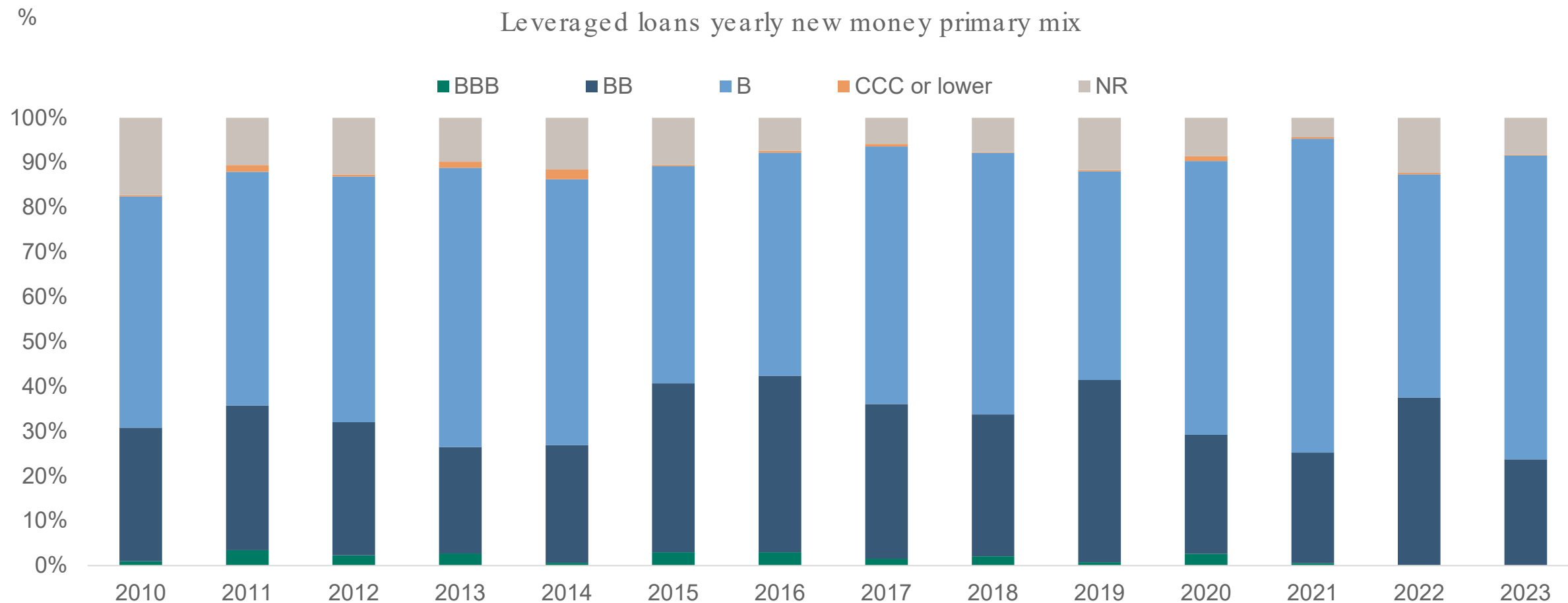


HY new money primary mix



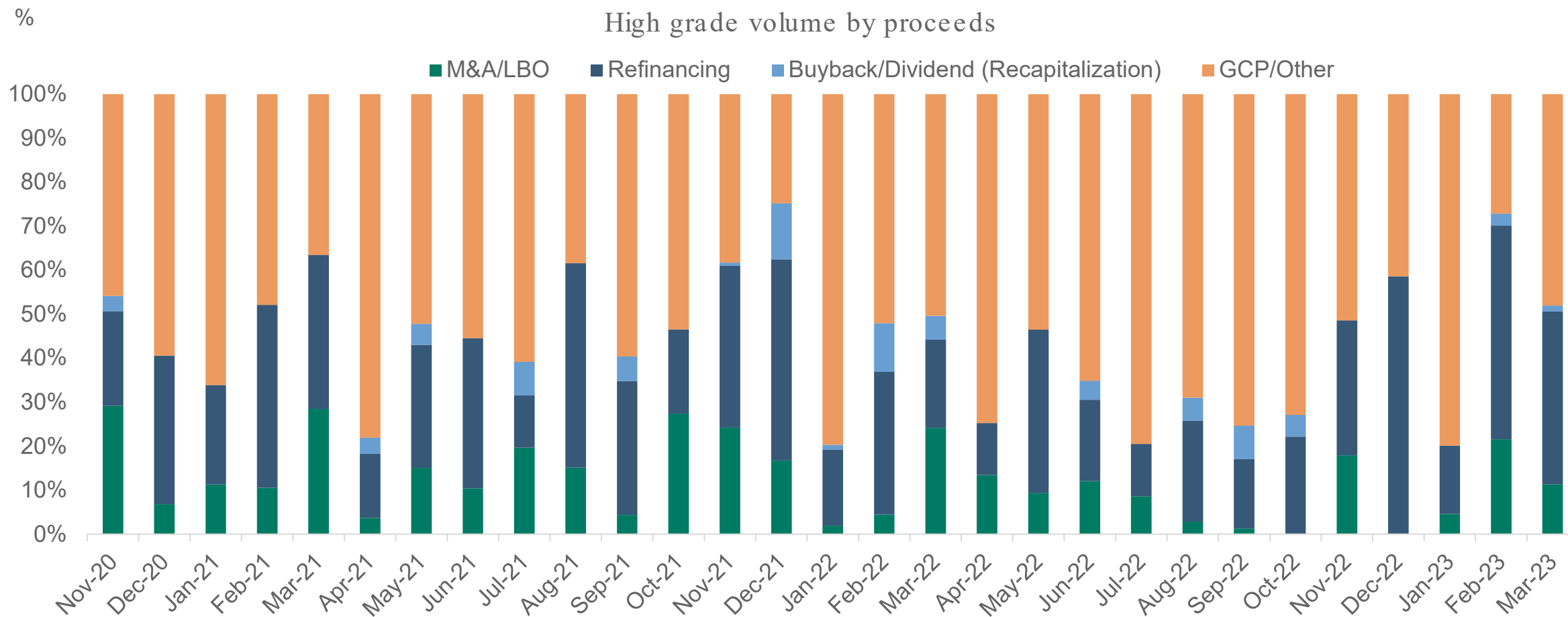
Loans new money primary mix

Leveraged loans yearly new money primary mix

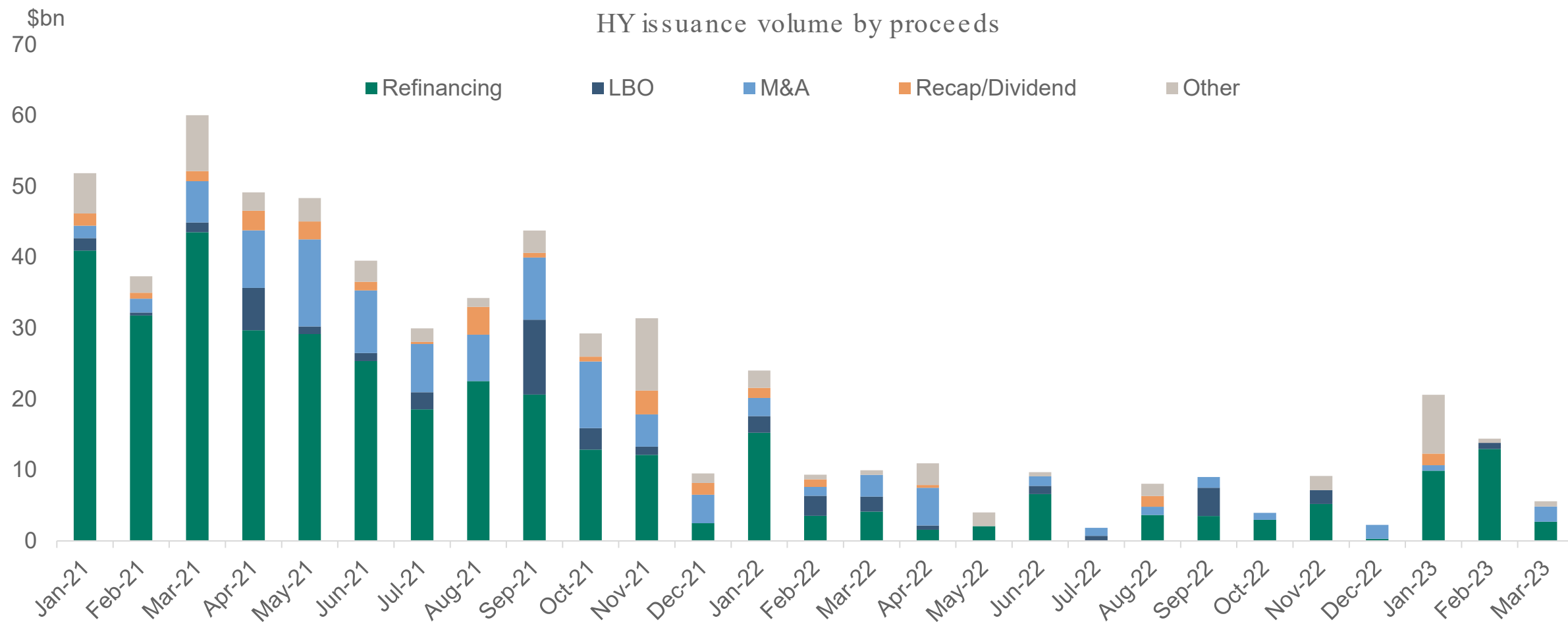


Source: Pitchbook LCD, Apollo Chief Economist. Note: 2022 YTD till 31st March 2023

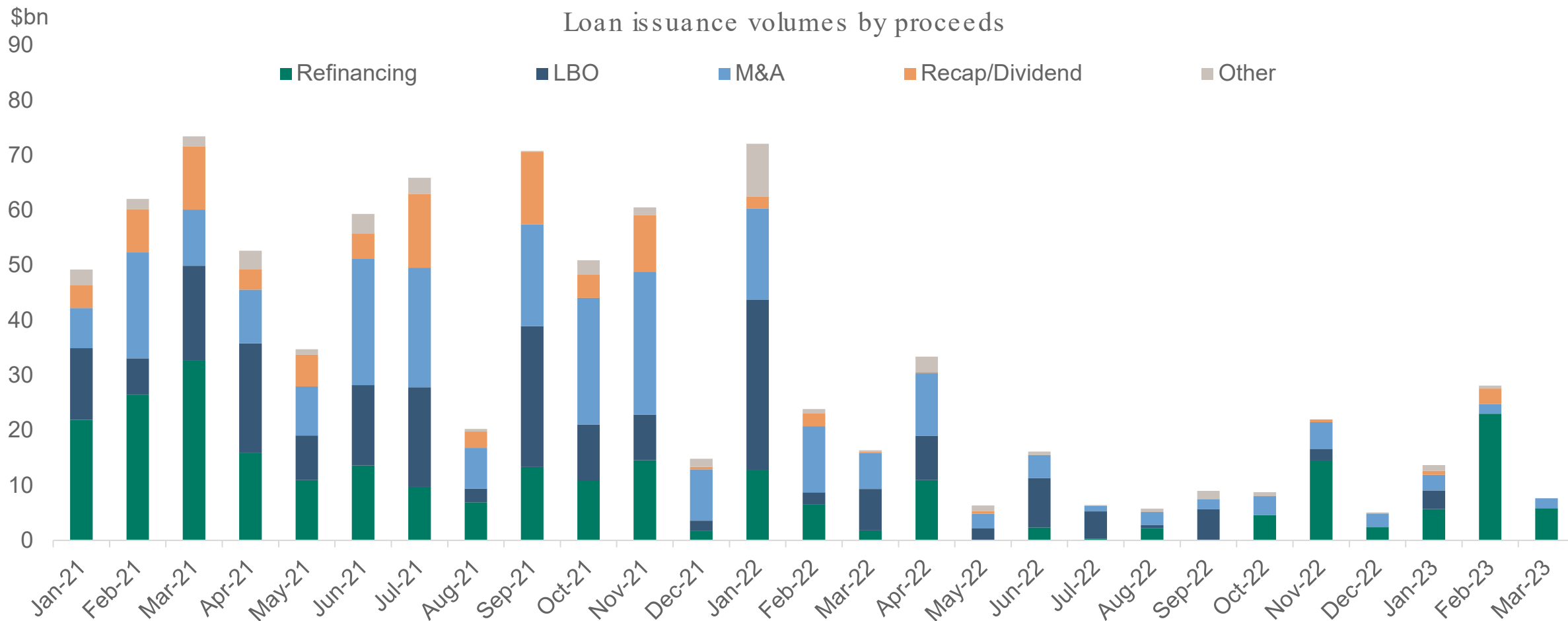
High grade volume by proceeds



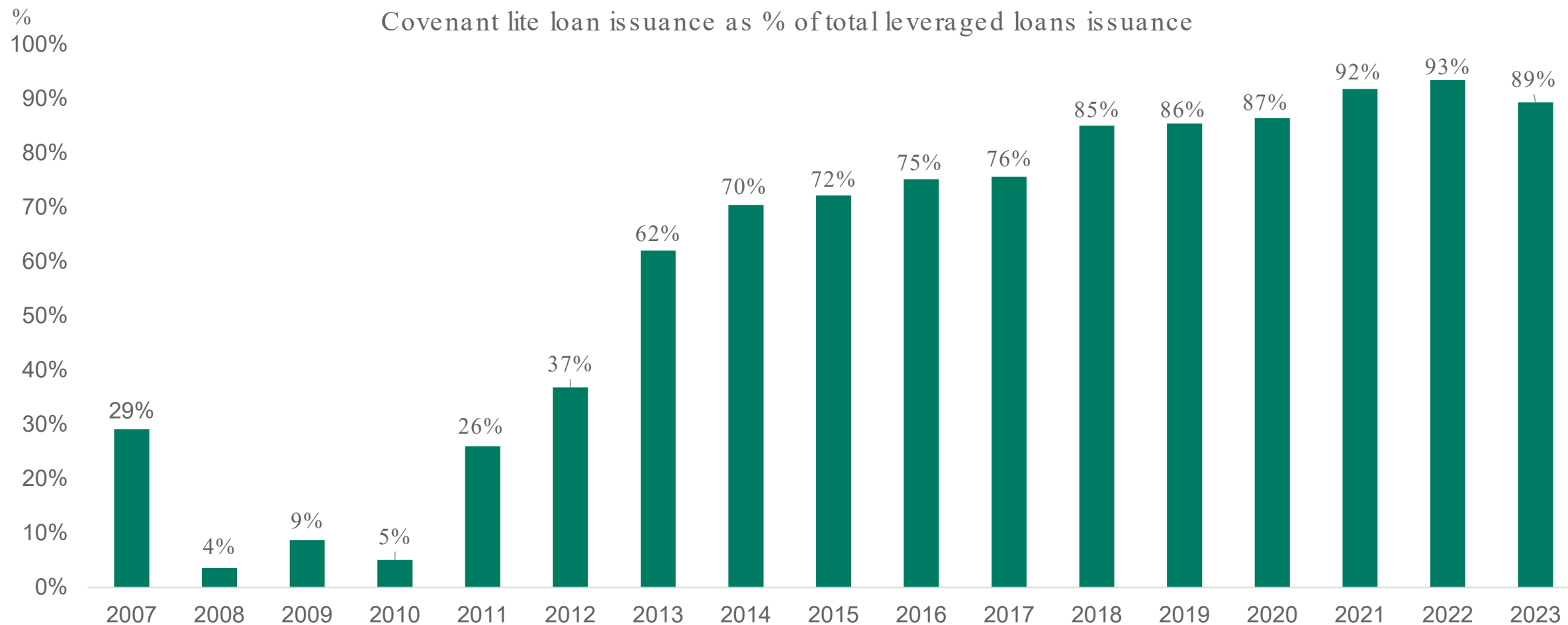
High yield volumes by proceeds



Loan volumes by proceeds

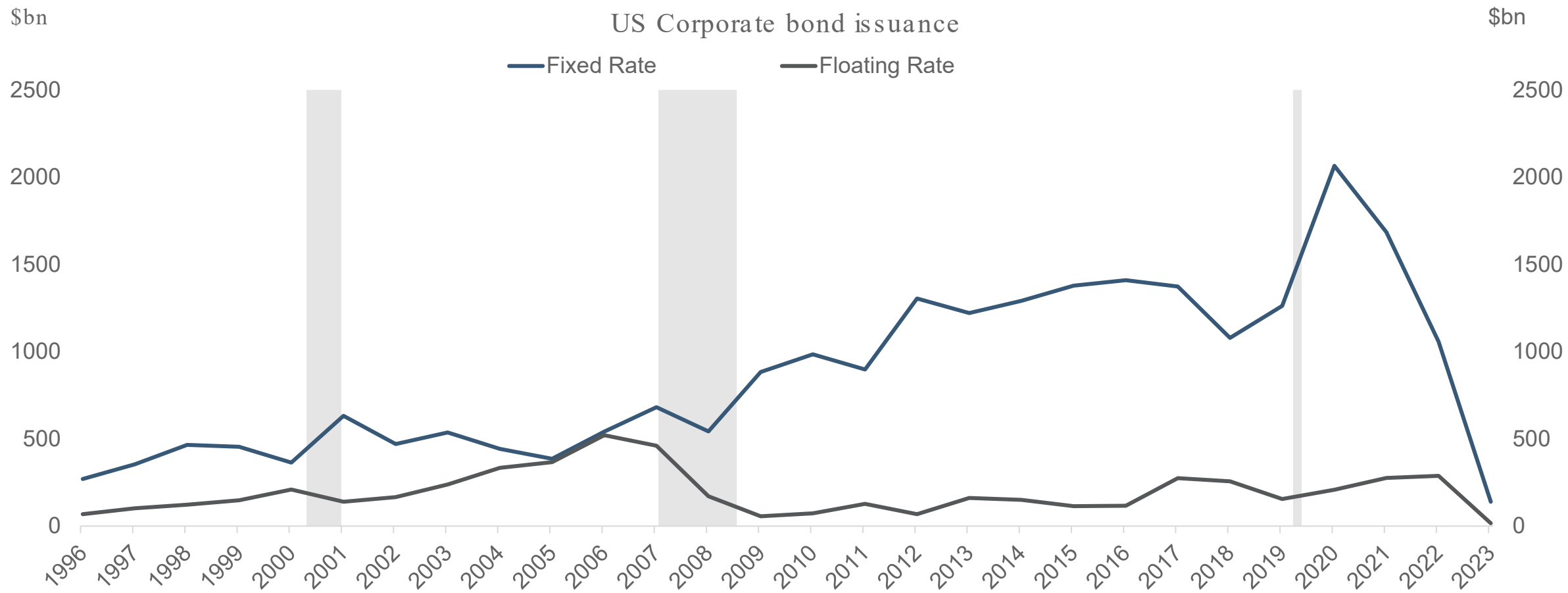


Covenant lite loan issuance



Source: Pitchbook 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 March 2023

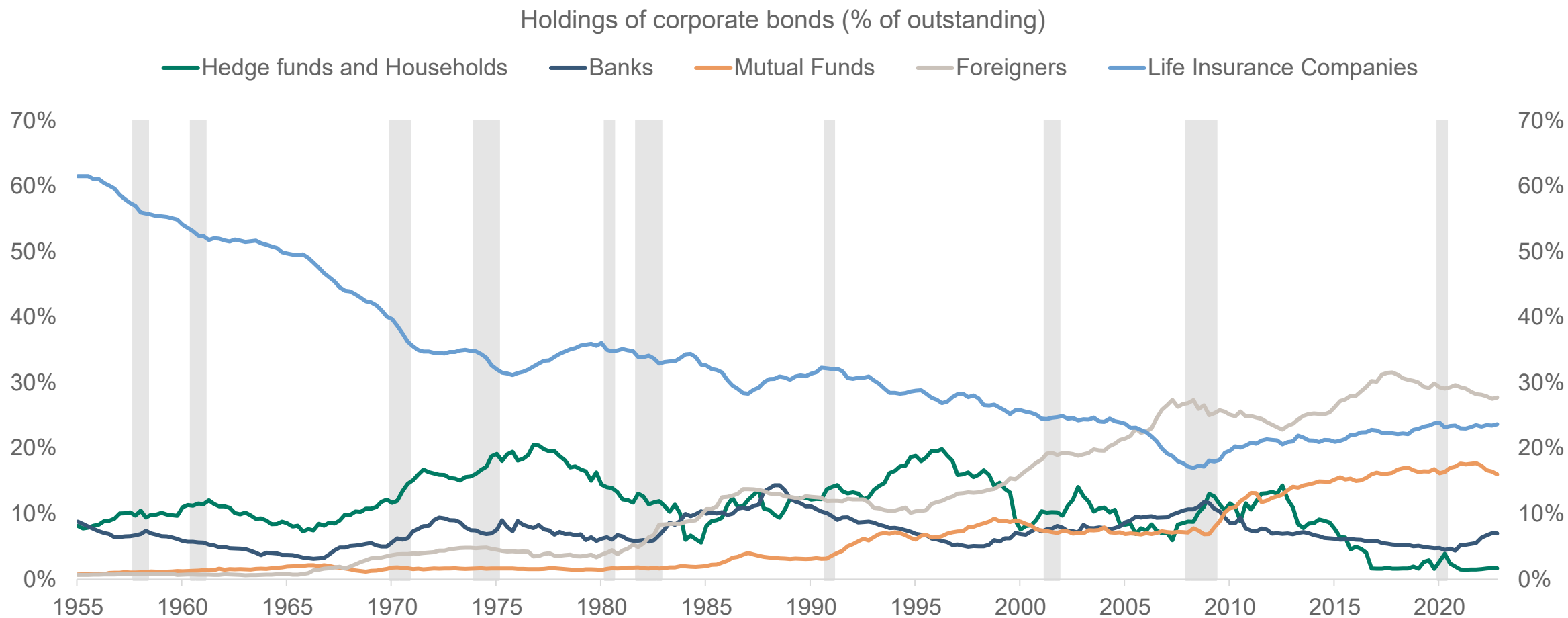
Corporate bond issuance



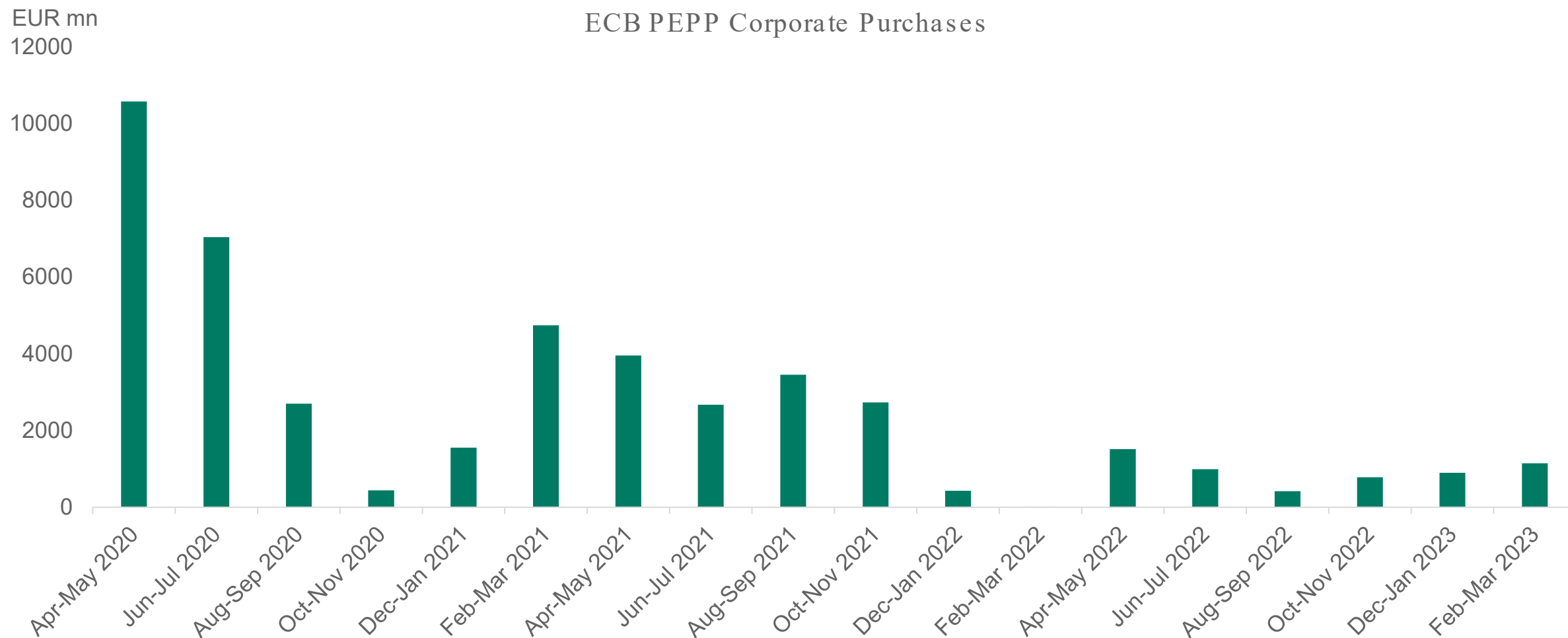
Corporate bond holdings



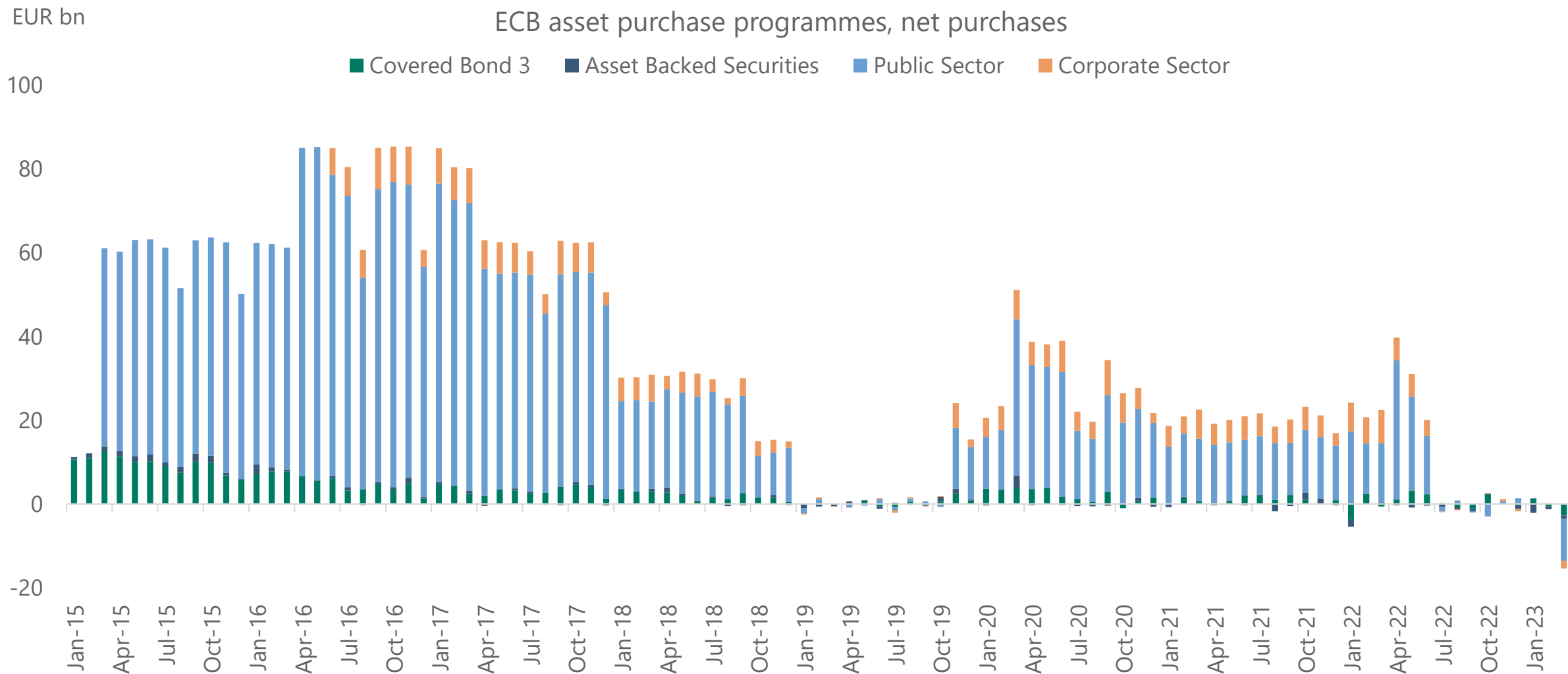
The biggest holder of US corporate bonds is foreigners



ECB purchases of corporate bonds



ECB QE ending



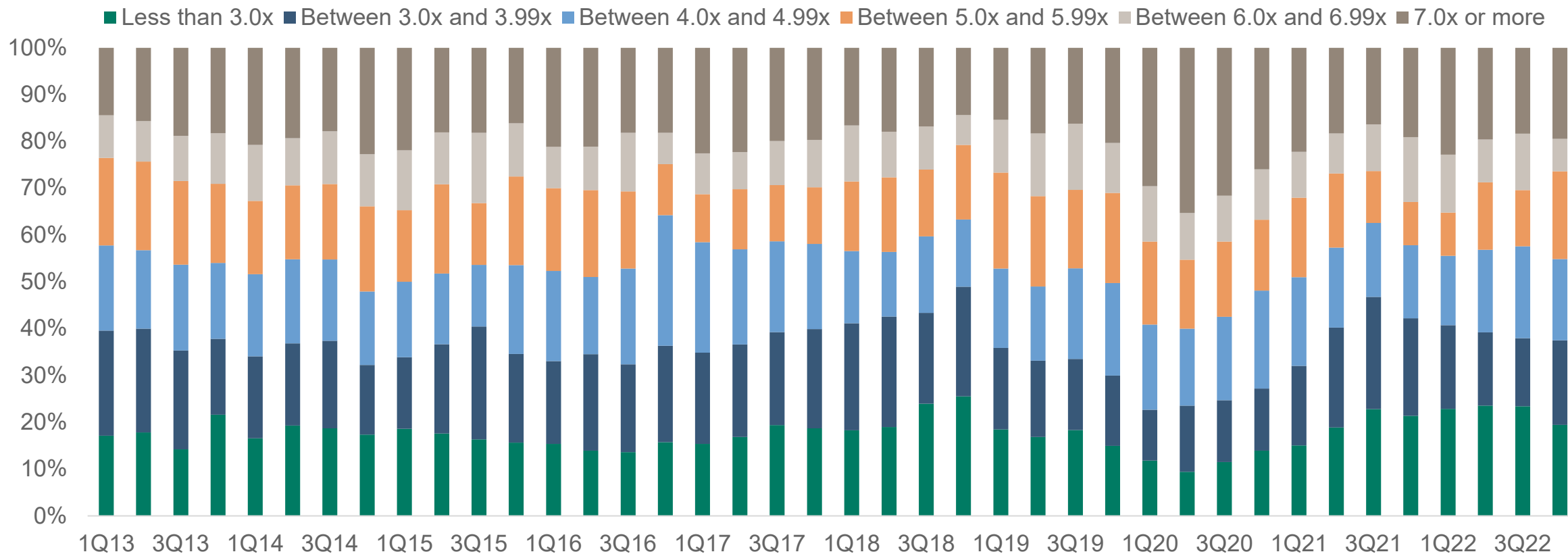
Source: ECB, Bloomberg, Apollo Chief Economist

Loans

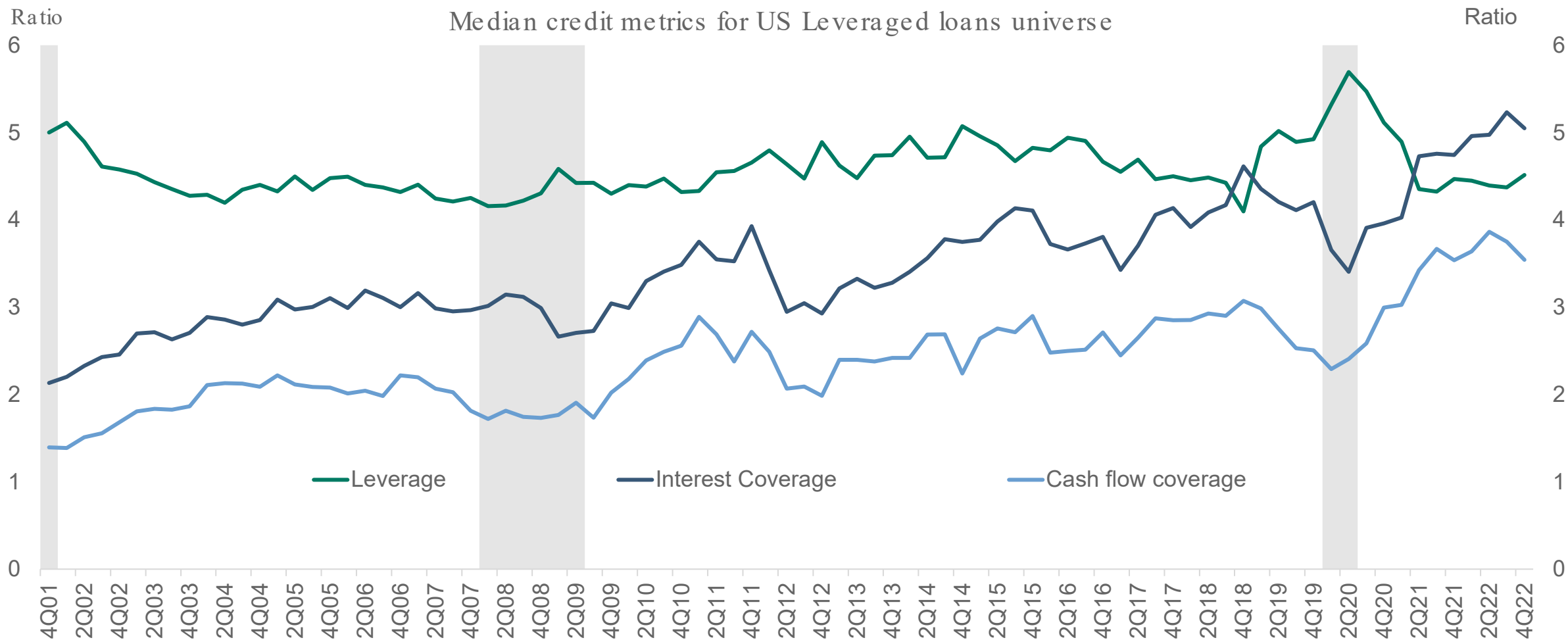


Leveraged loan deals, by multiple

Share of leveraged deals

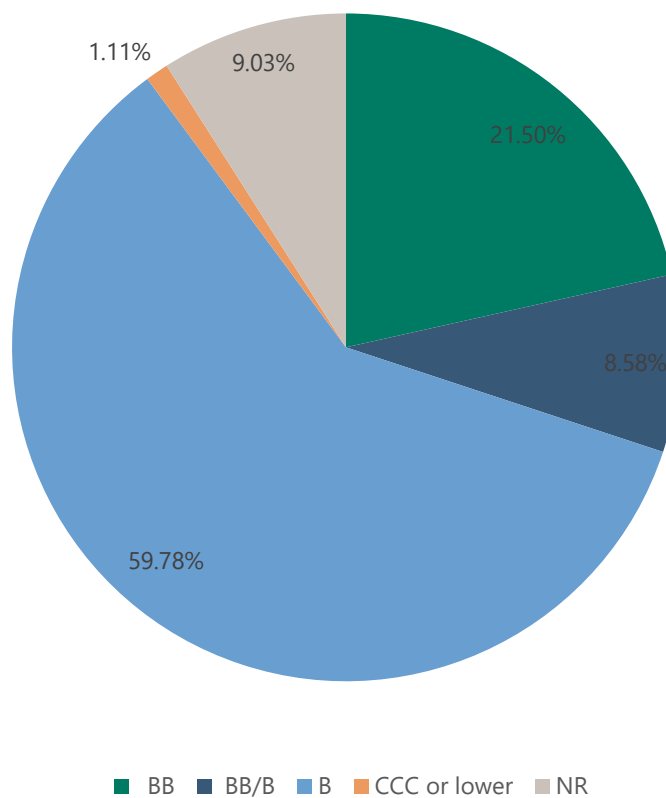


Credit metrics for leveraged loan deals



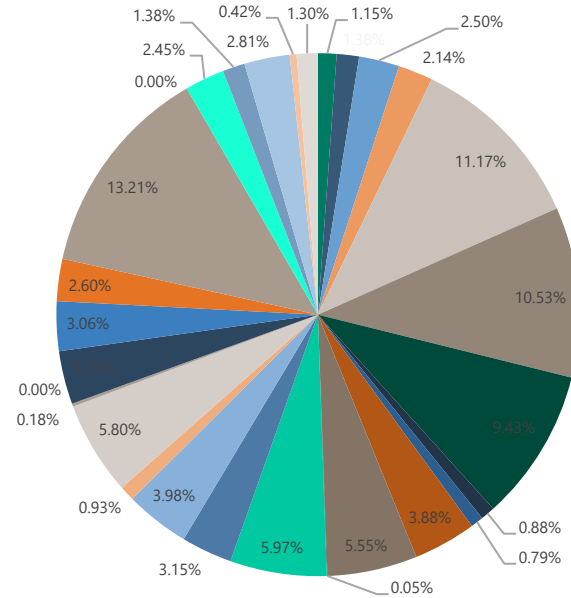
Leveraged loans rating distribution, 2023Q1

US leveraged loan rating distribution



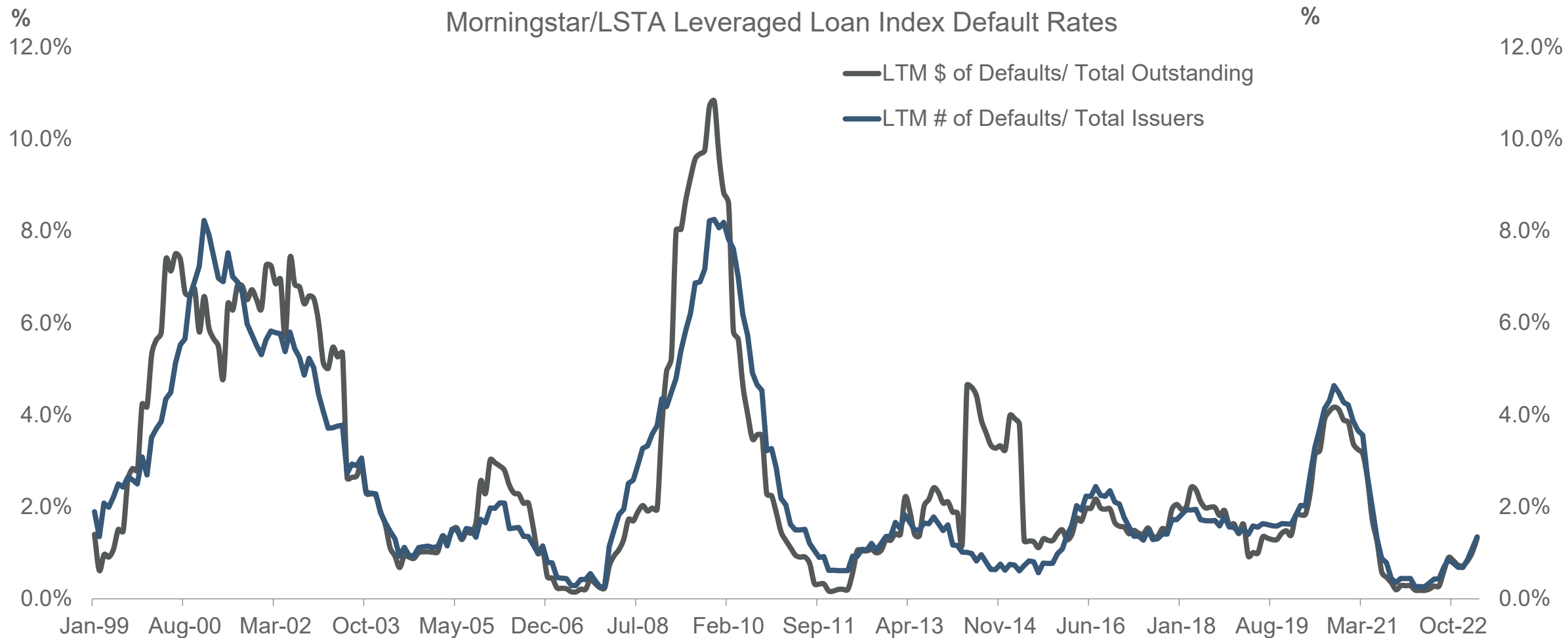
Leveraged loans distribution, by industry, 2023Q1

US leveraged loan industry distribution

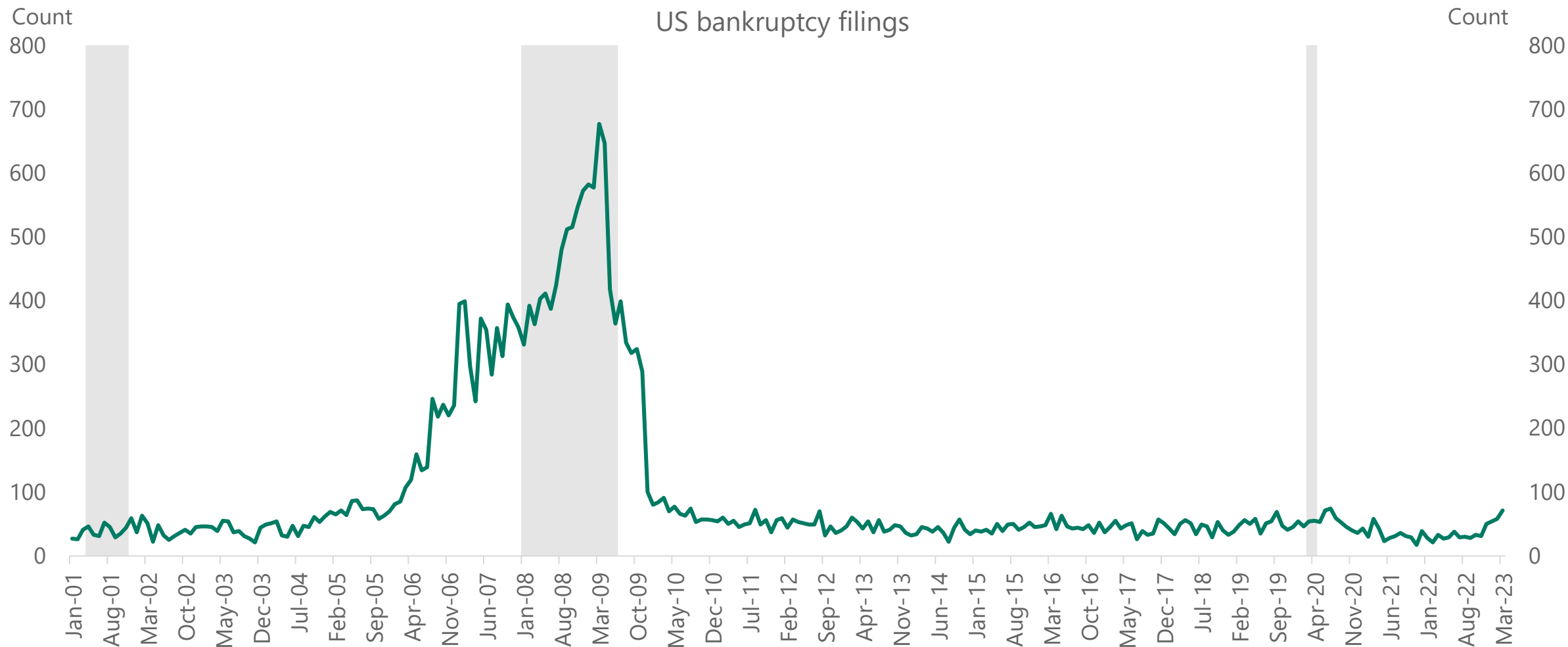


- Aerospace & Defense
- Automotive
- Building Materials
- Cable
- Chemicals
- Computers & Electronics
- Entertainment & Leisure
- Food & Beverage
- Forest Product
- Gaming & Hotel
- Healthcare
- Home Furnishings
- Insurance
- Manufacturing & Machinery
- Metals & Mining
- Not for Profit
- Oil & Gas
- Printing & Publishing
- Real Estate
- Restaurants
- Retail
- Retail Food & Drug
- Services & Leasing
- Telecom
- Telecom Equipment
- Textile & Apparel
- Transportation
- TV
- Utilities

Leveraged loan index default rates starting to rise

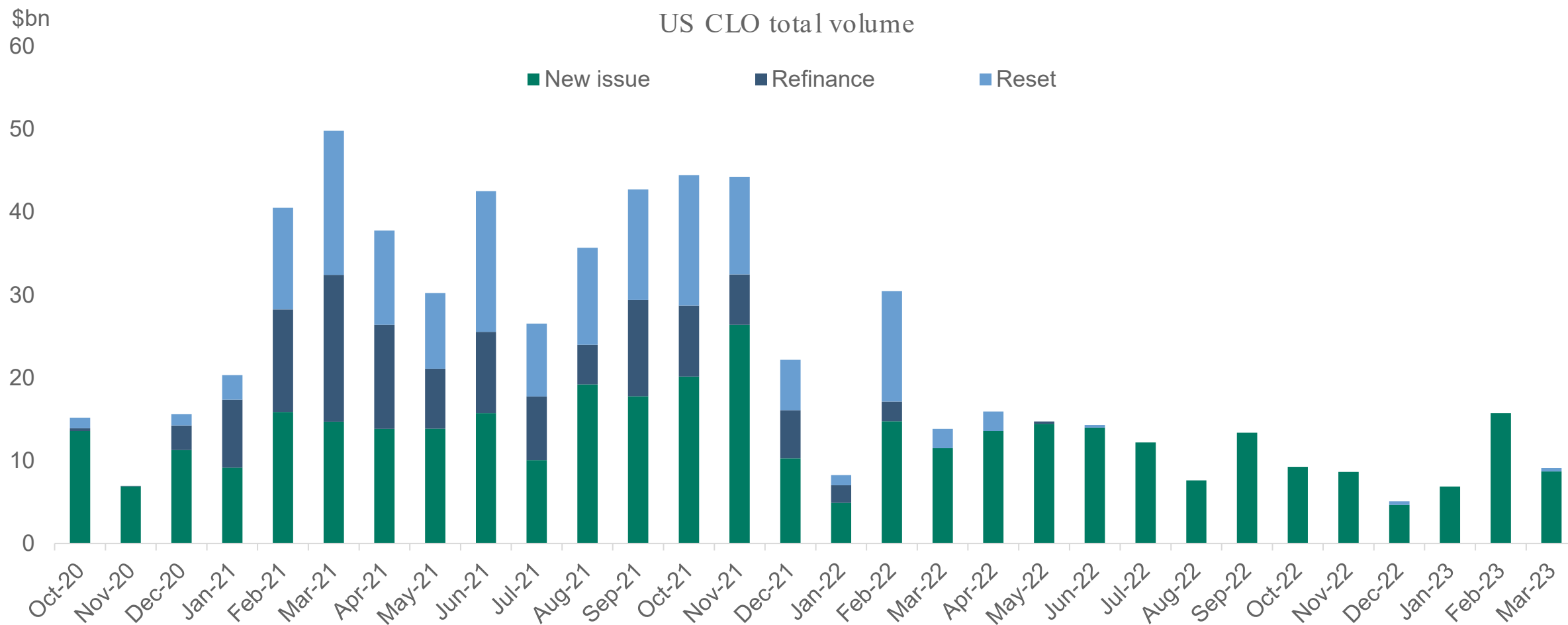


Bankruptcy filings rising from a low level



Source: S&P Capital IQ, Bloomberg, Apollo Chief Economist. Note: Bankruptcy figures include public companies or private companies with public debt with a minimum of \$2 million in assets or liabilities at the time of filing, in addition to private companies with at least \$10 million in assets or liabilities.

US CLO total volume

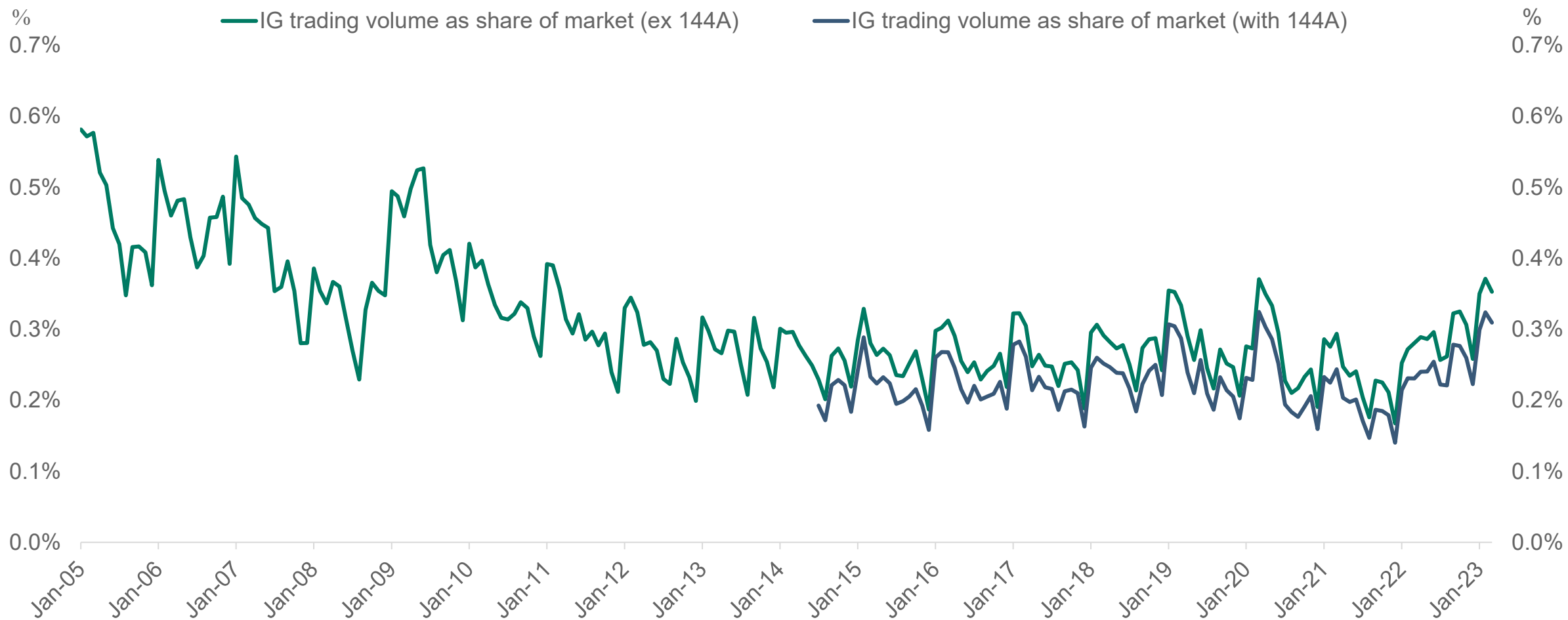


Source: Pitchbook LCD, Apollo Chief Economist.

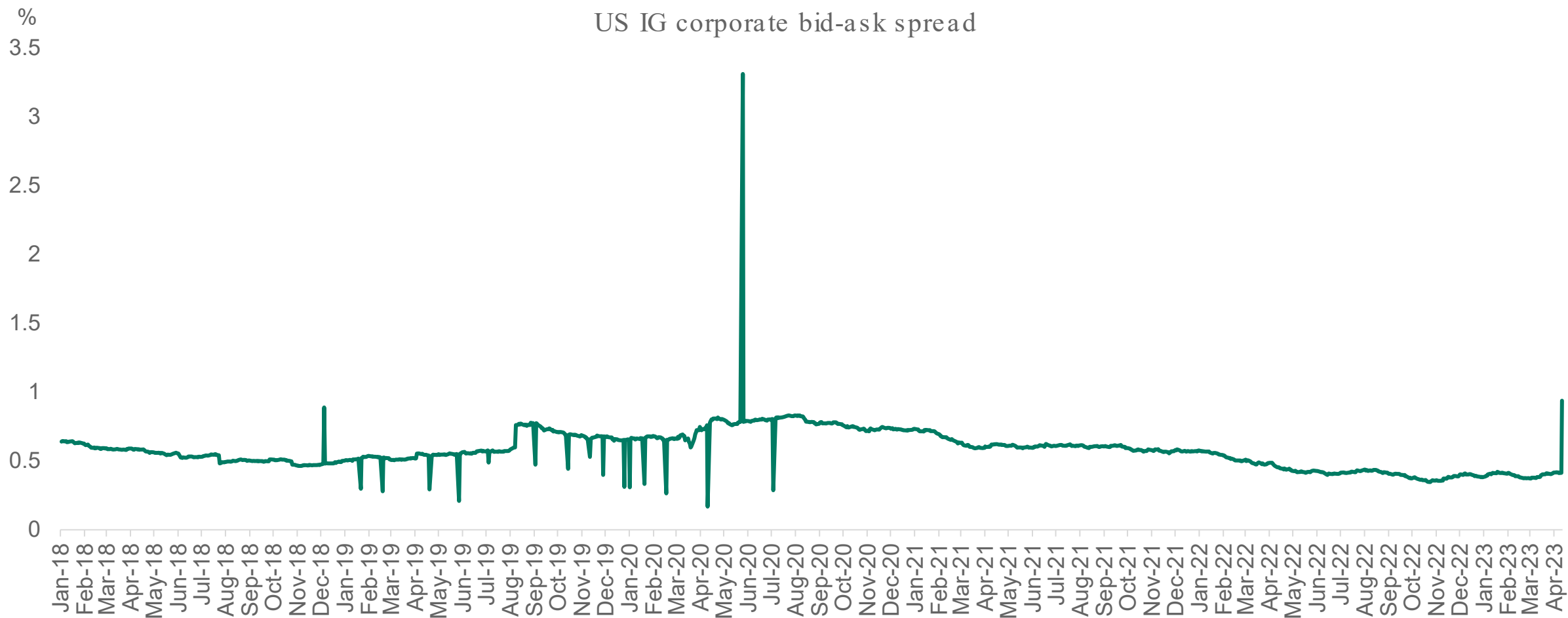
Liquidity in US credit markets



IG trading liquidity

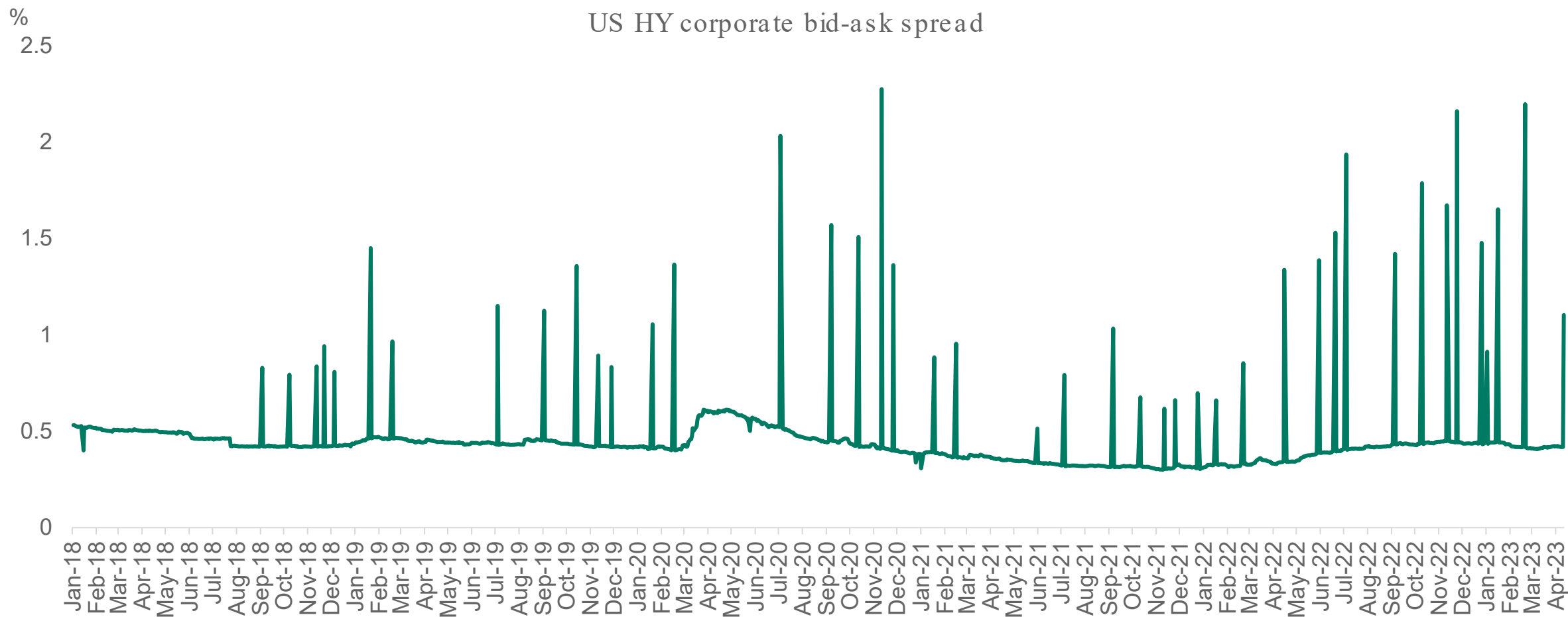


Bid-ask spread for US IG



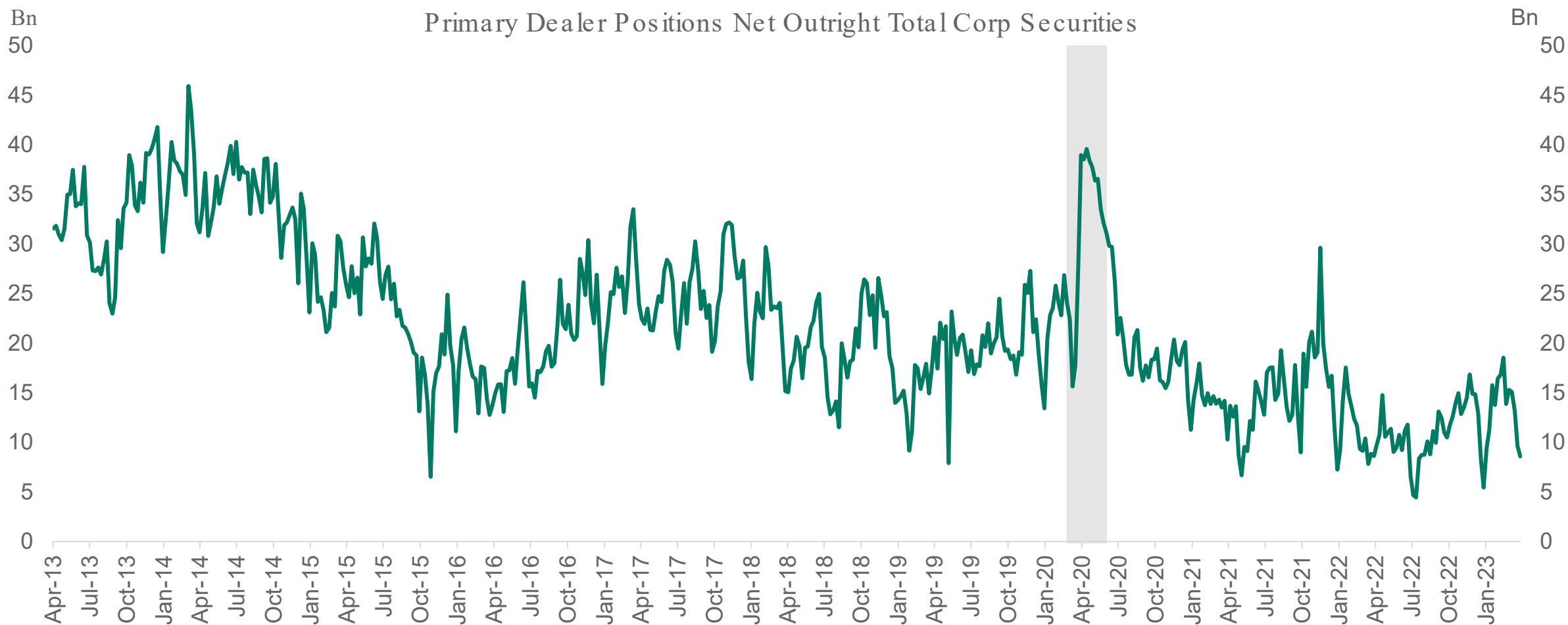
Source: Bloomberg, Apollo Chief Economist. Note: The bid-ask spread is the weighted average of Bloomberg Barclays US IG Index

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

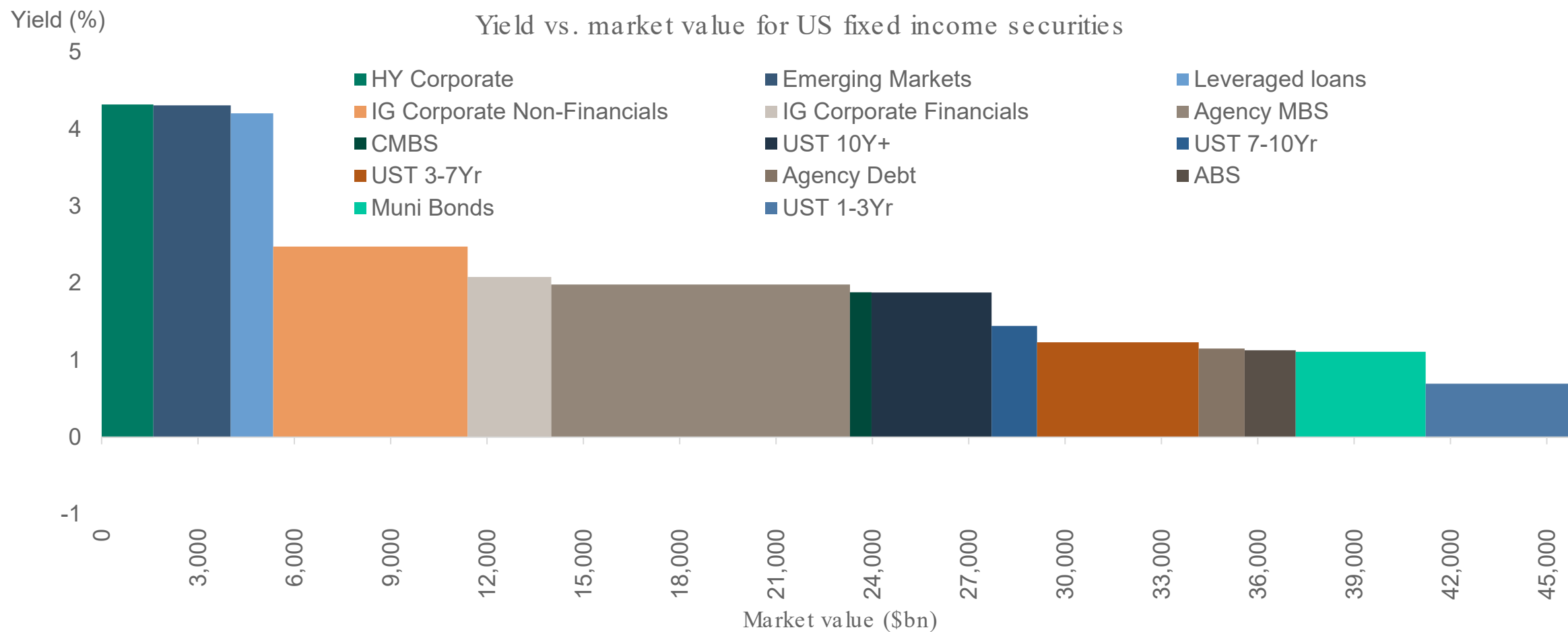
Dealer inventory of corporate bonds (IG+HY)



Credit markets in a broader perspective

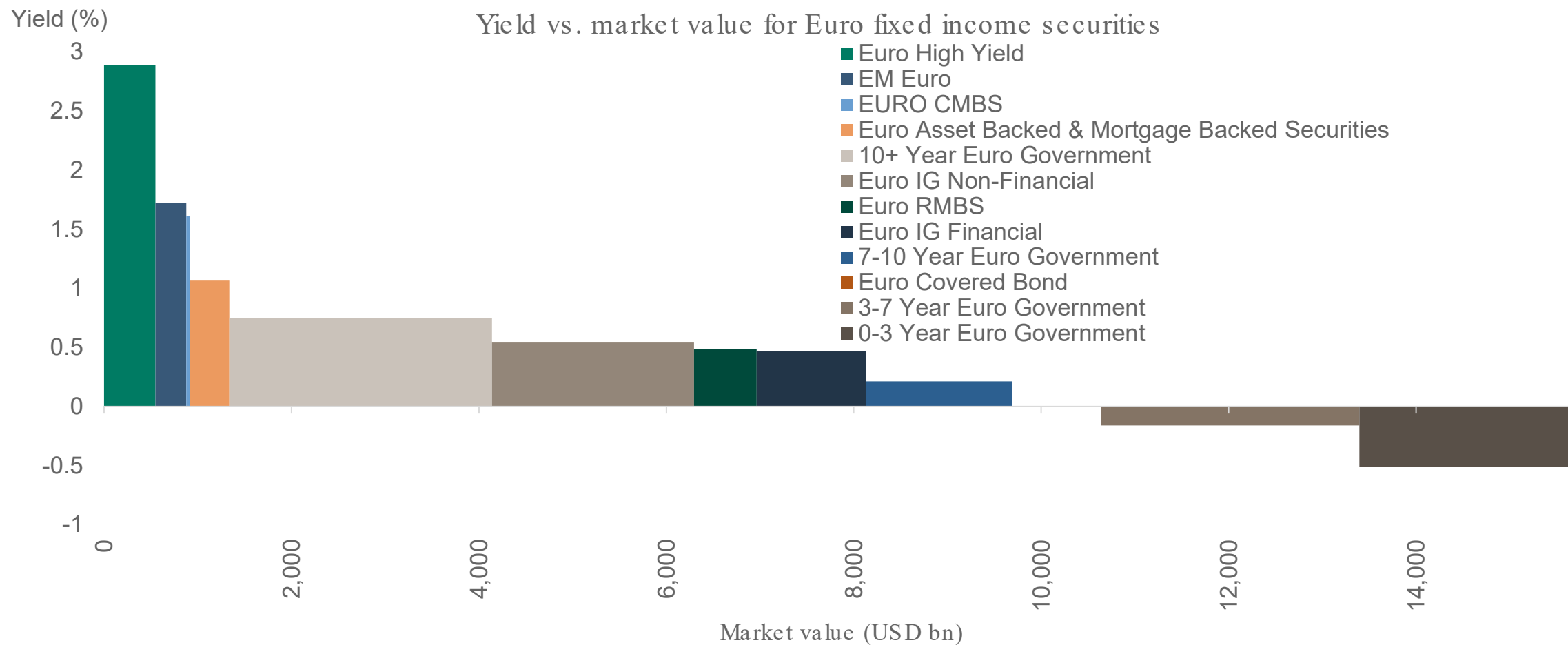


US fixed income markets by yield and size



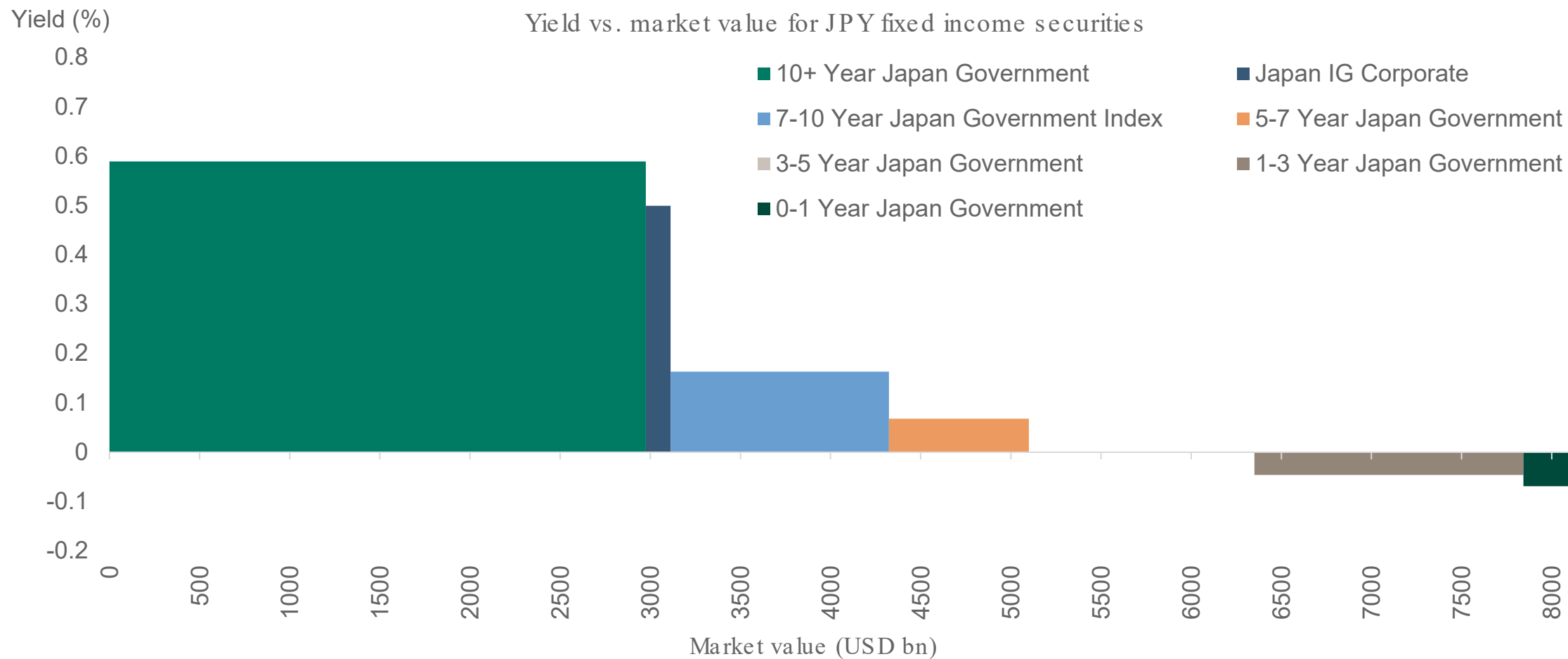
Source: Bloomberg Barclays, SIFMA, ICE BofA, Pitchbook LCD, Bloomberg, Apollo Chief Economist. Note: data as of 4Q21

European fixed income markets by yield and size



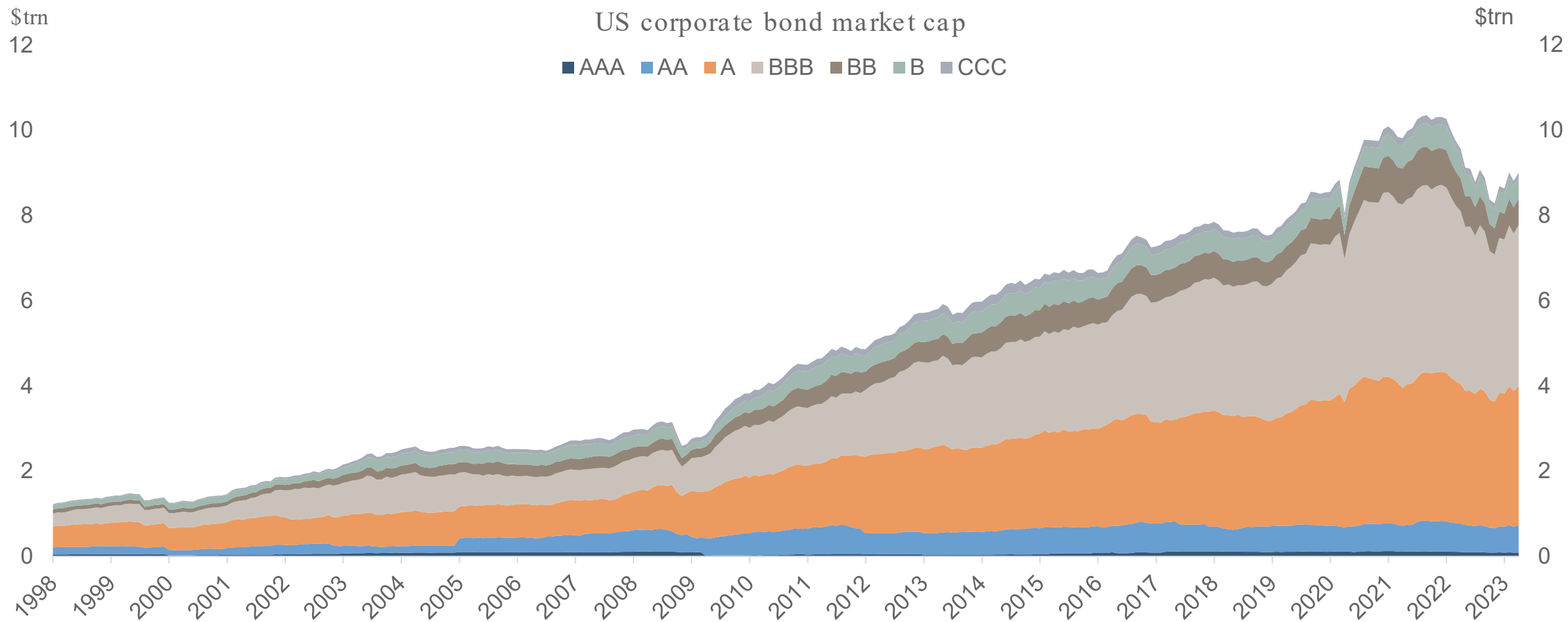
Source: Bloomberg Barclays, AFME, ICE BofA, Pitchbook LCD, Bloomberg, Apollo Chief Economist. Note: data as of 4Q21

Japanese fixed income markets by yield and size



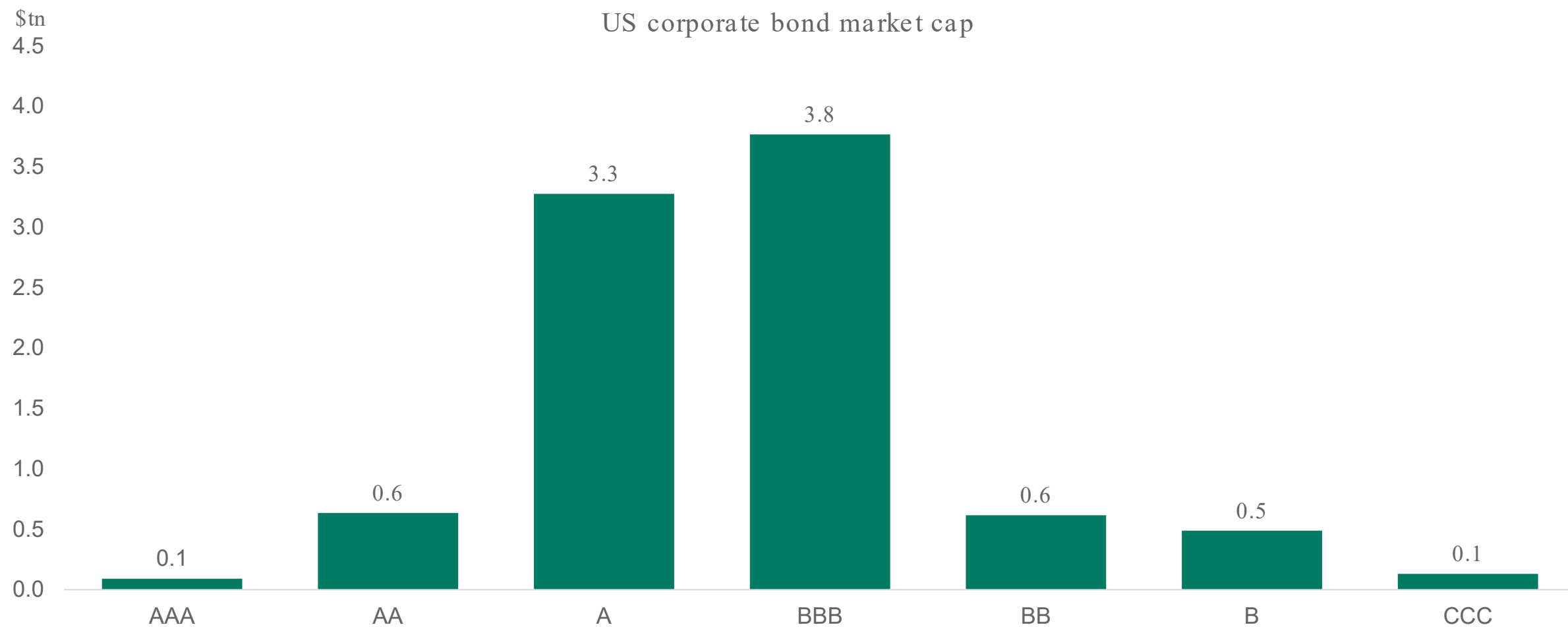
Source: ICE BofA, Bloomberg, Apollo Chief Economist. Data as of 1Q22

Market cap of US credit markets

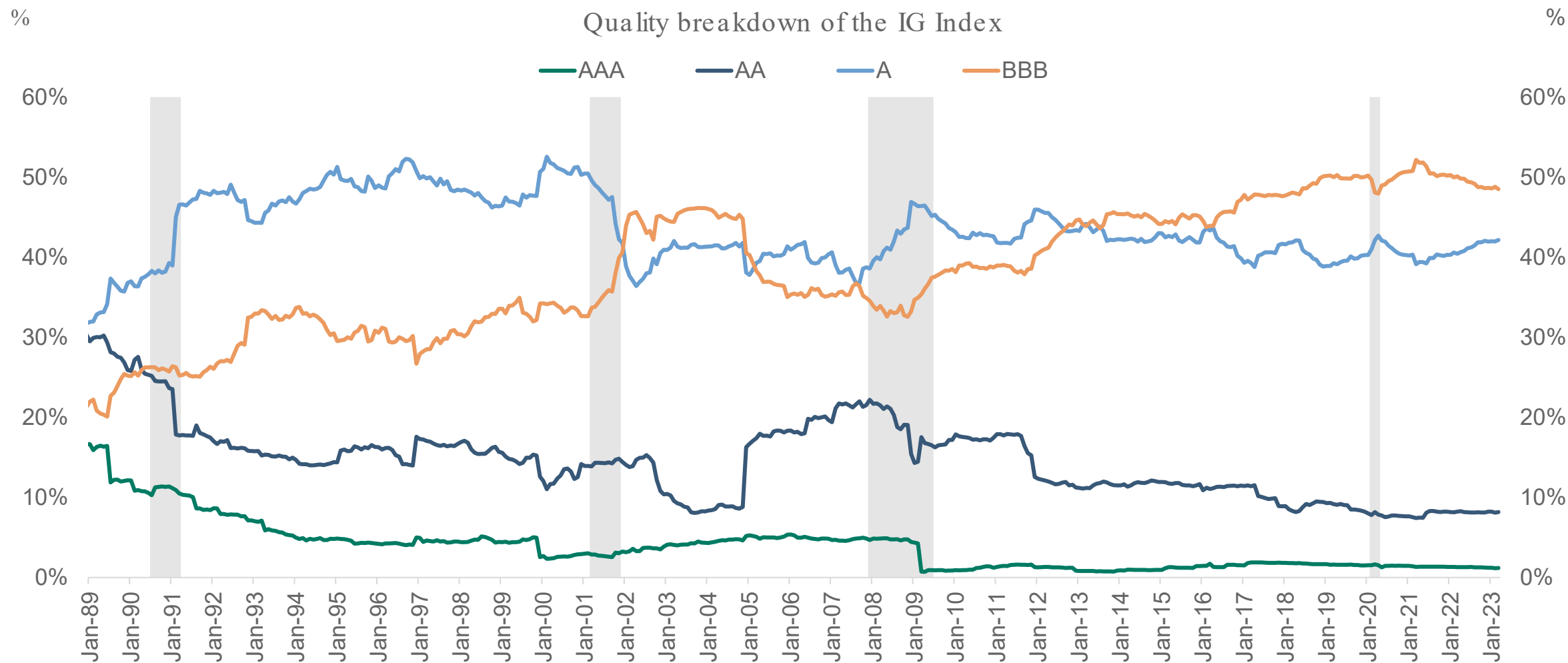


Source: ICE BofA, Bloomberg, Apollo Chief Economist. Data as of 31st March 2023

Corporate bond market cap, by rating

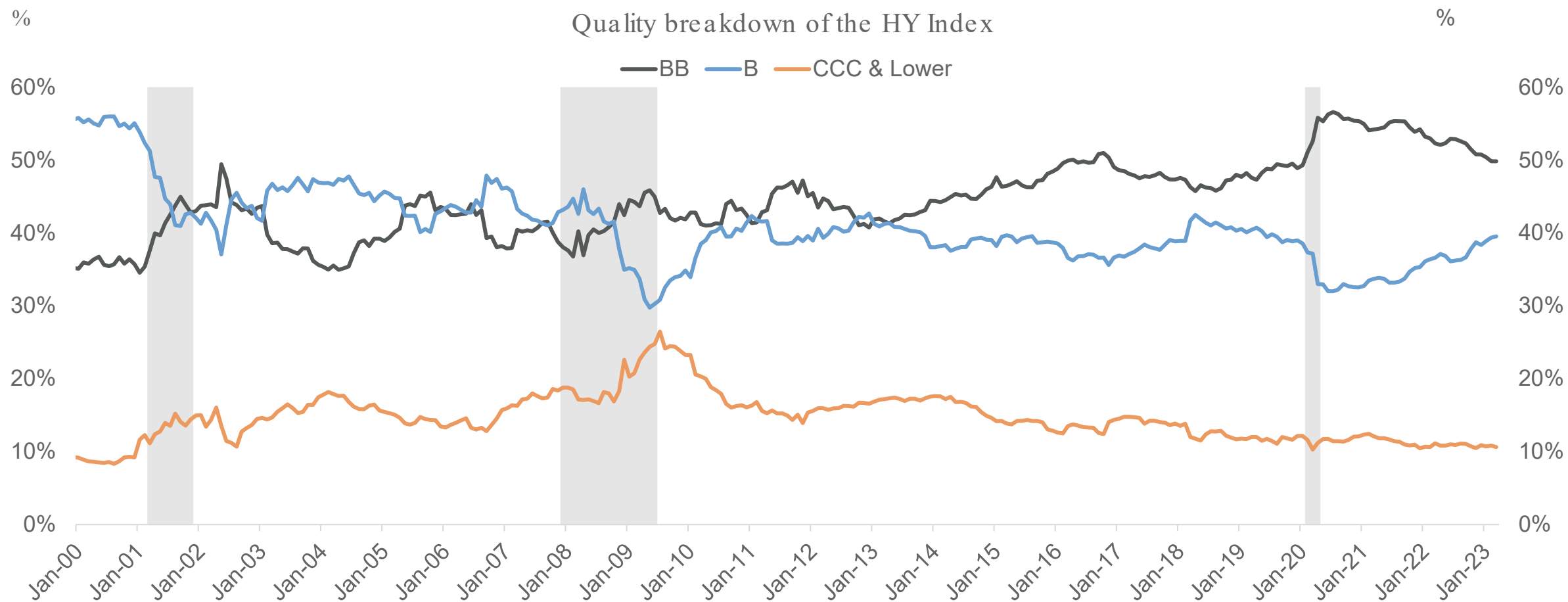


Quality composition of the IG Index



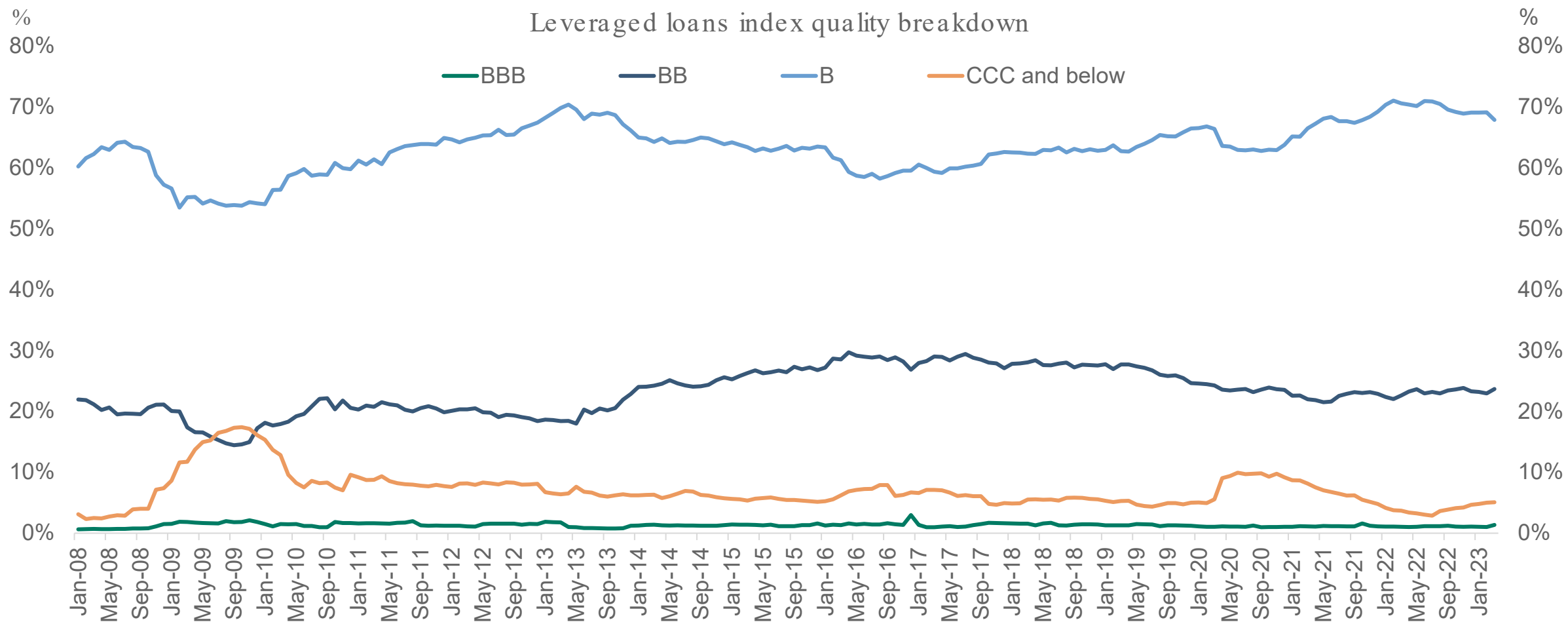
Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Breakdown by market value. Data as of 31st March 2023

Quality composition of the HY Index

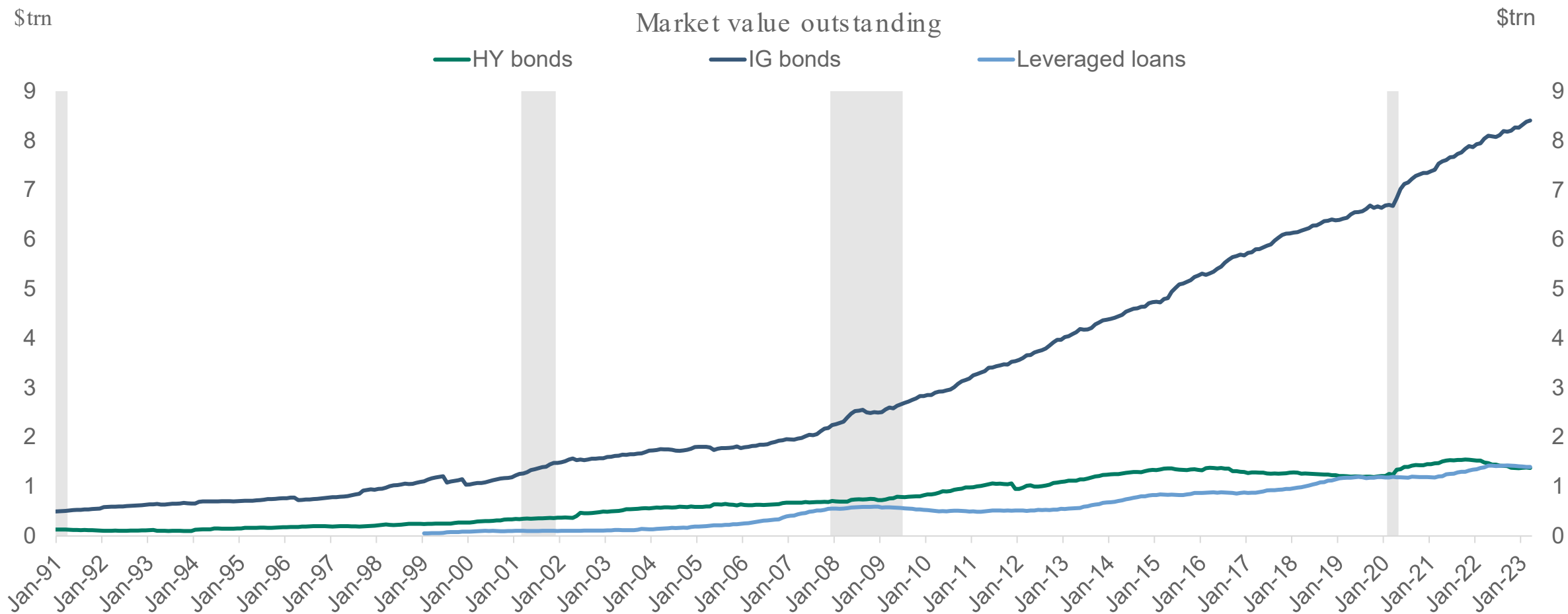


Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Breakdown by market value. Data as of 31st March 2023

Quality composition of the leveraged loans index

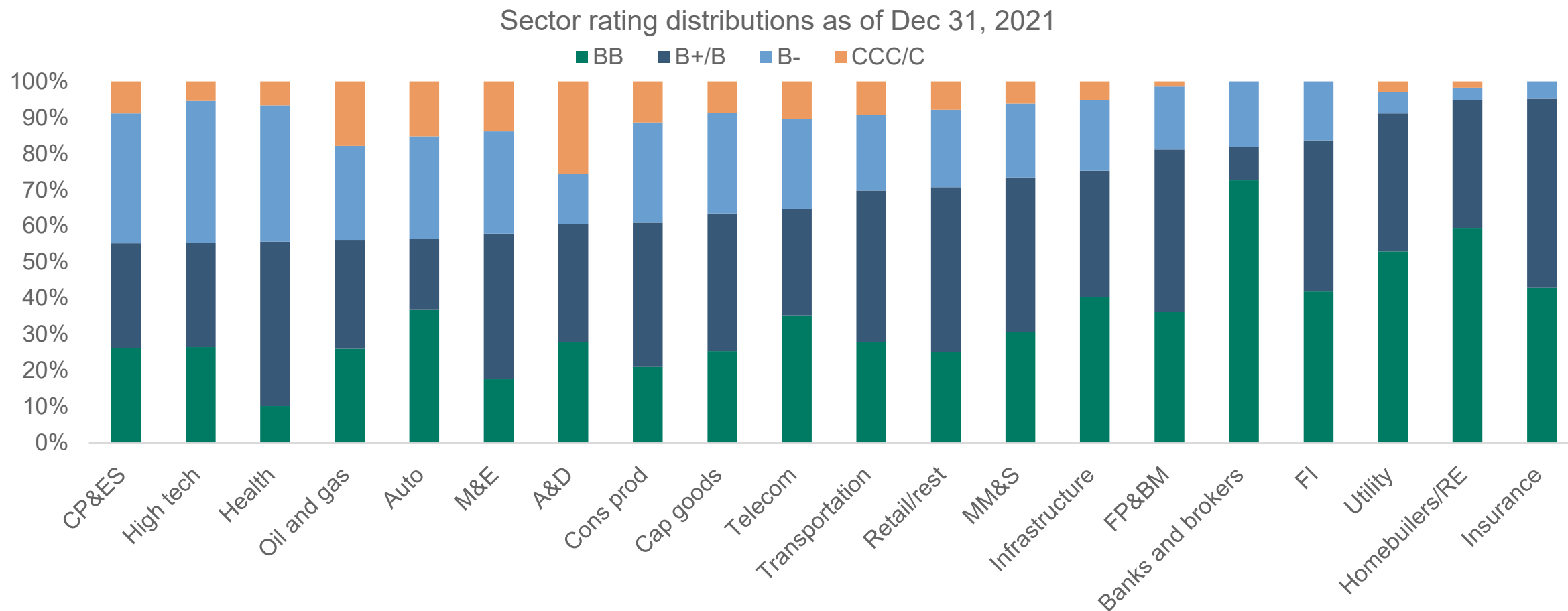


IG market is seven times bigger than HY and seven times bigger than the loan market



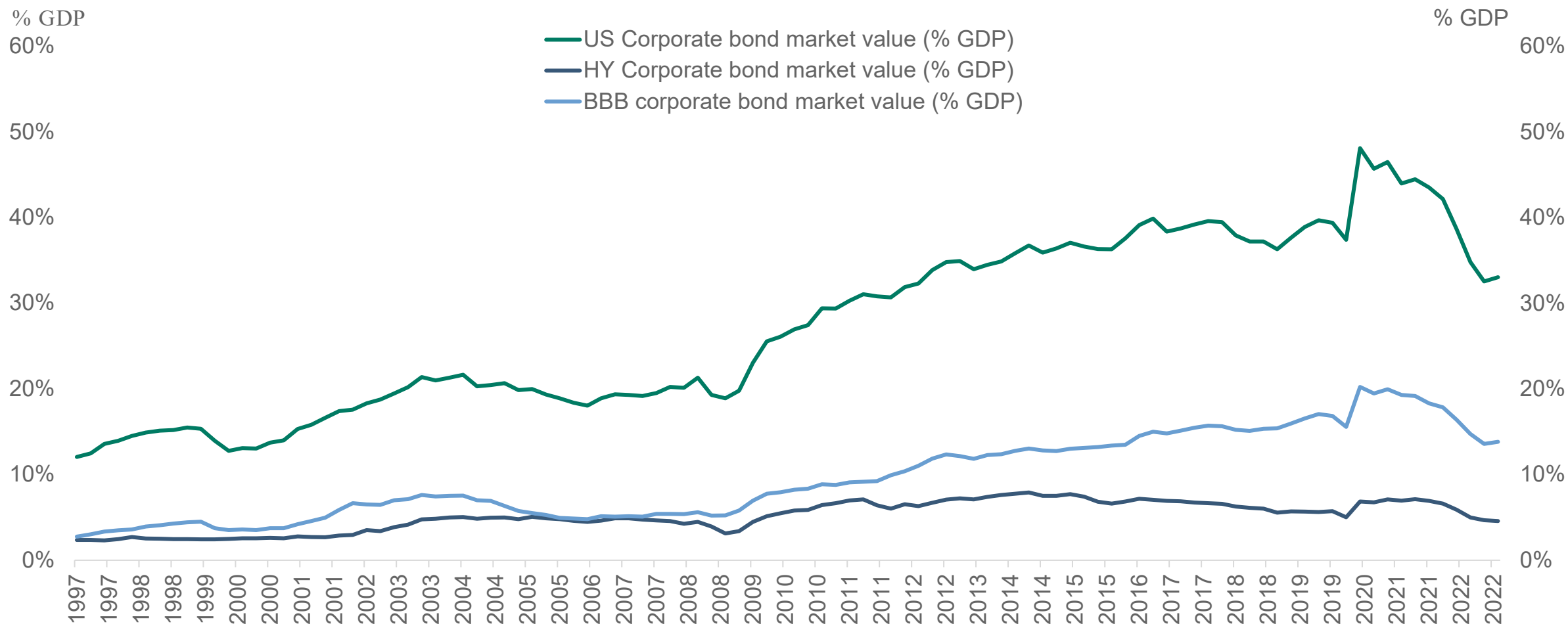
Source: ICE BofA, Bloomberg, Pitchbook LCD, Apollo Chief Economist. Note: Ticker used for HY is HOA0 Index and for IG it is COA0 Index and for Loans it is SPBDALB Index.

HY sector rating distributions

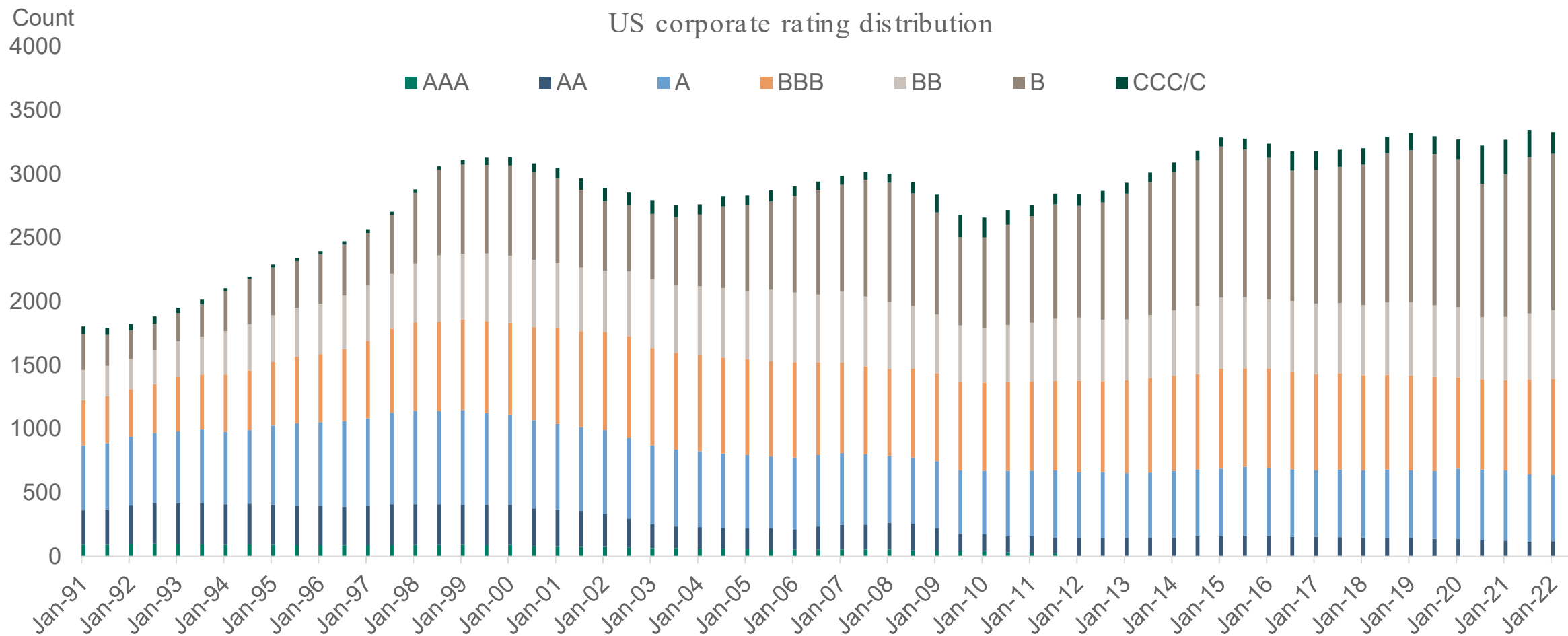


Source: S&P Global Ratings Research and S&P Global Market Intelligence's CreditPro®, Apollo Chief Economist. Note: Numbers in parentheses represent overall sector's proportion of the speculative-grade population. CP&ES--Chemicals, packaging, and environmental services. FP&BM--Forest products and building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

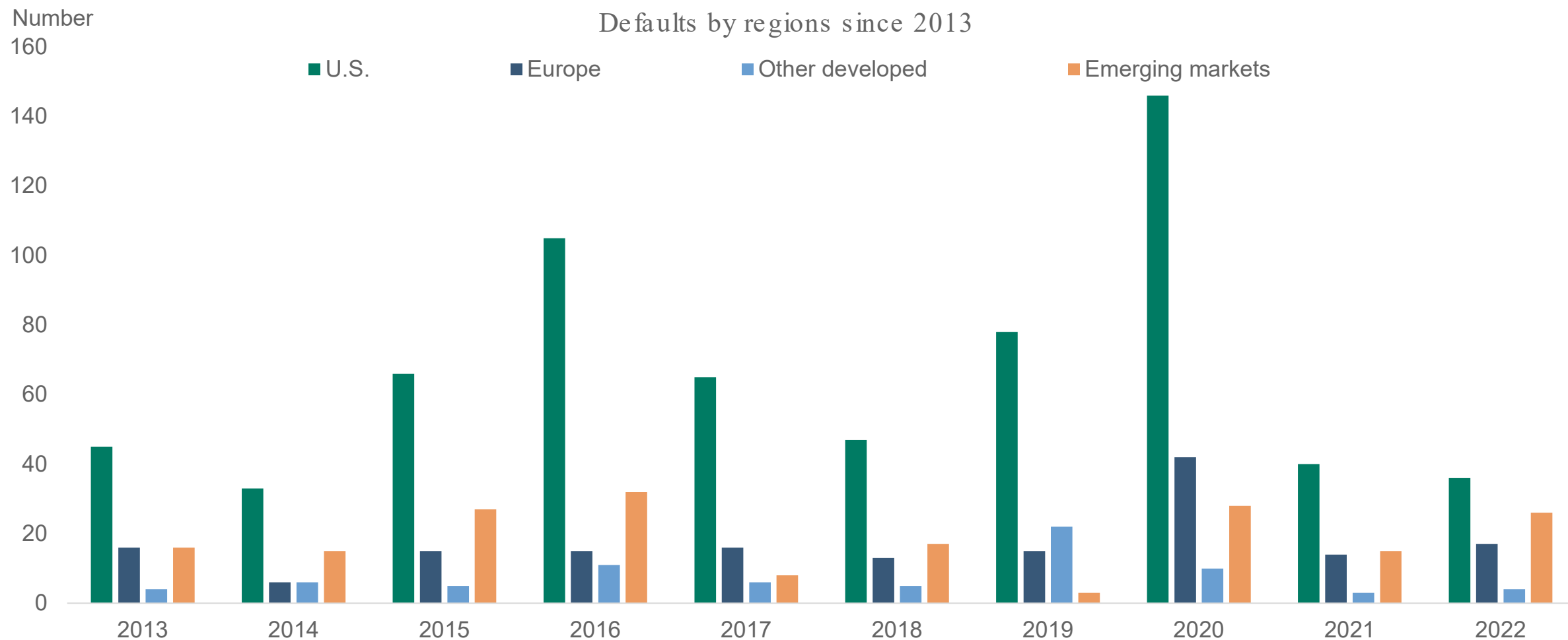
US corporate bond markets as a share of GDP



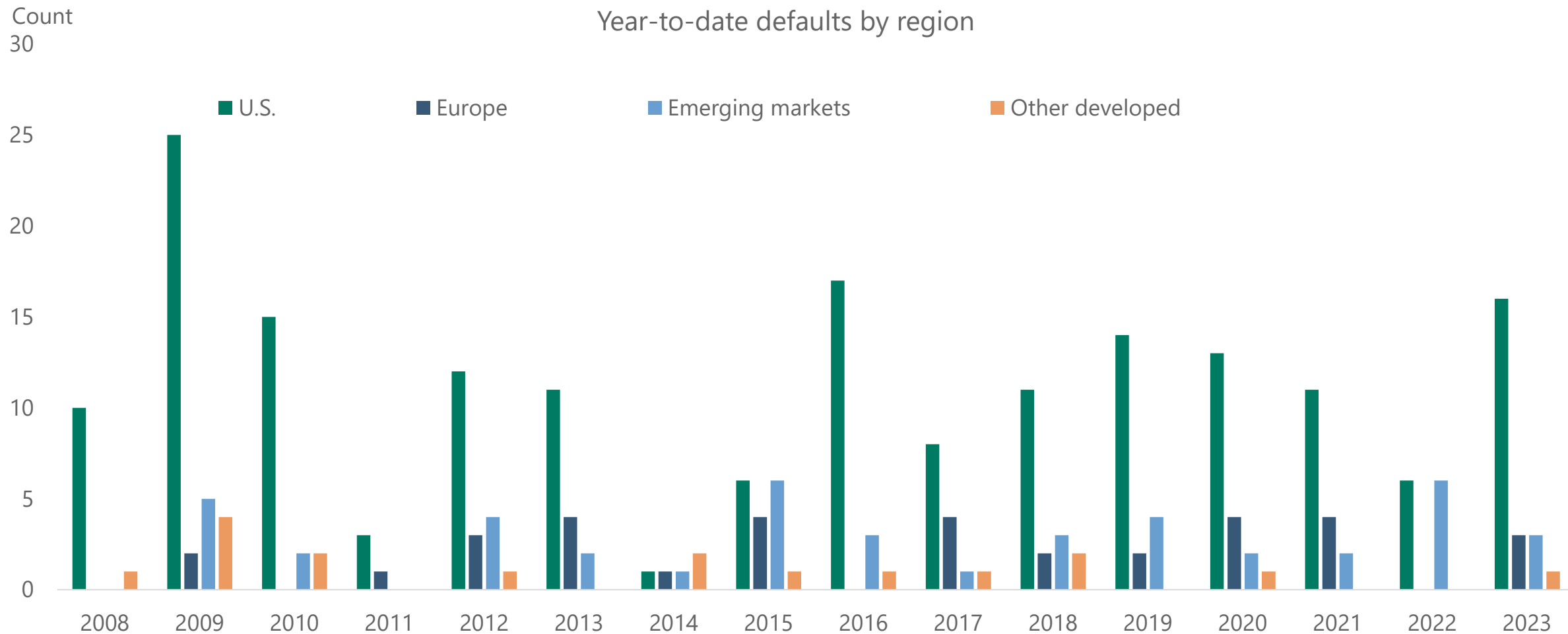
Distribution of corporate credit ratings



Global default rates remain low

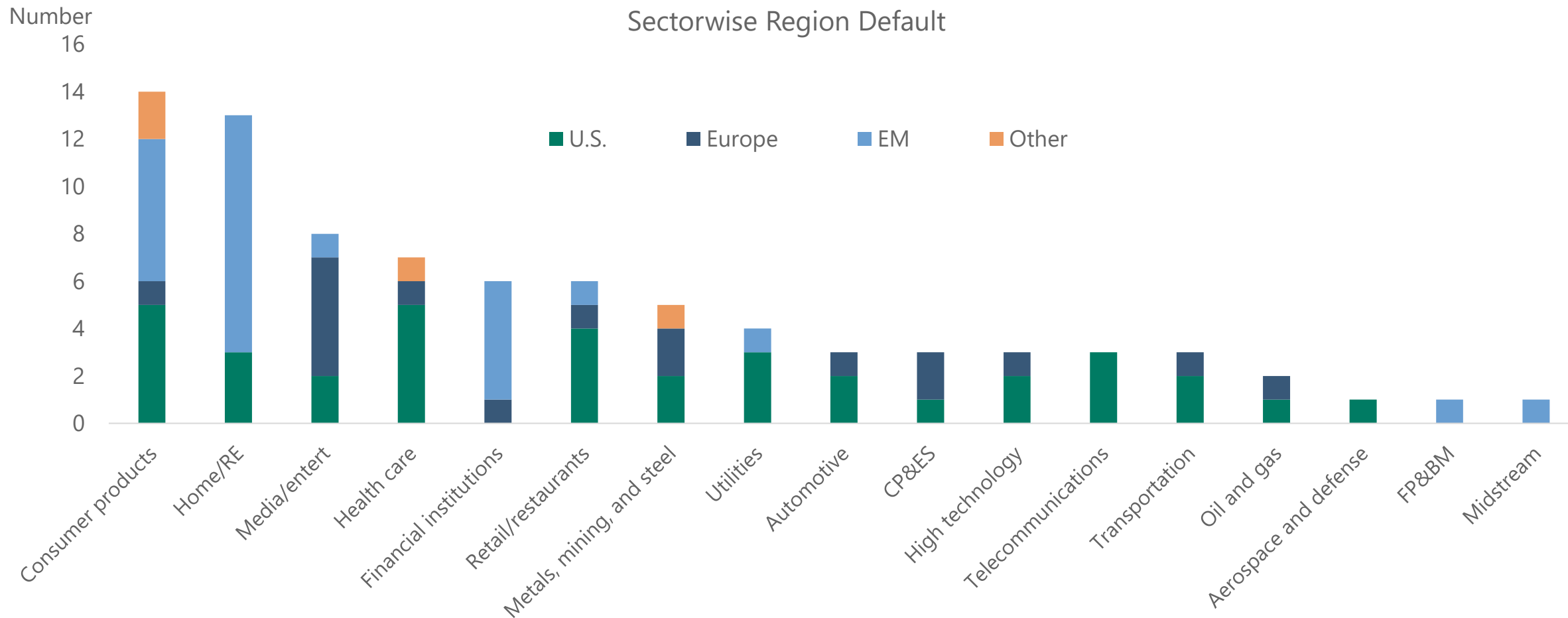


Global default rates remain low

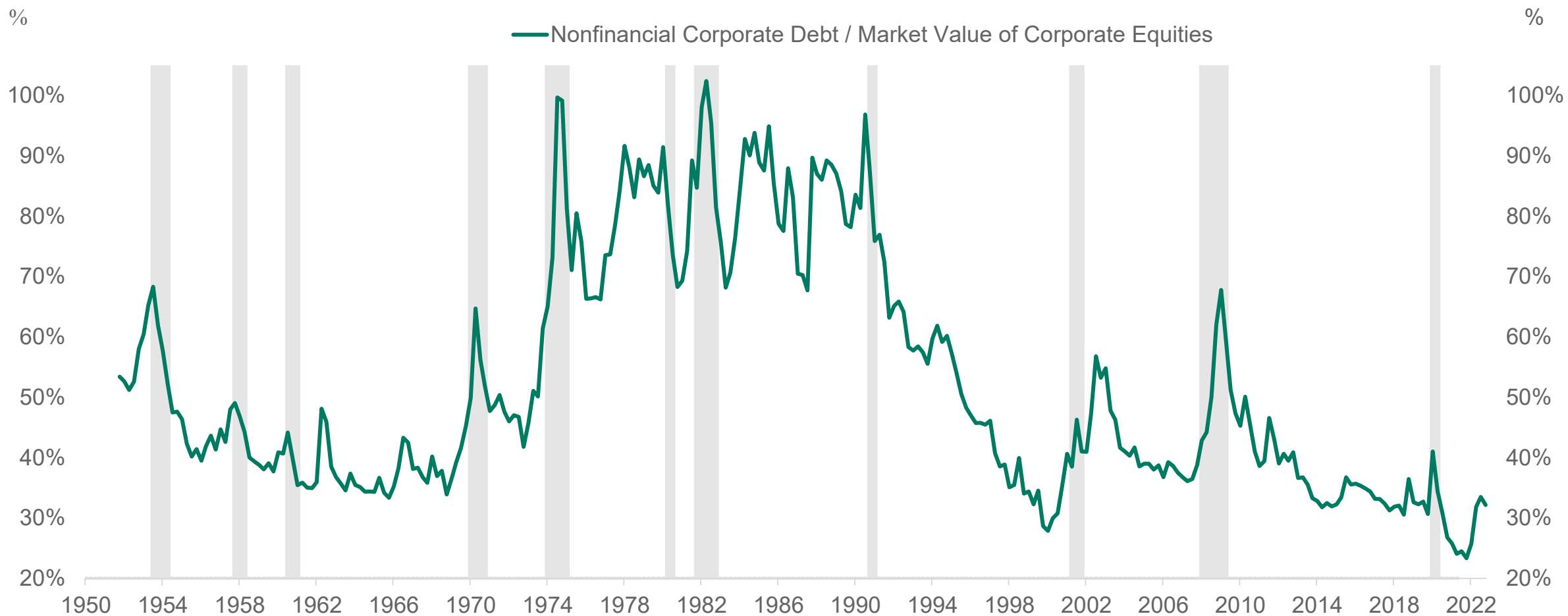


Sources: S&P Global Ratings Research and S&P Global Market Intelligence's CreditPro®, Apollo Chief Economist. Note: Data as of 28th February 2023

Default rates differ across sectors

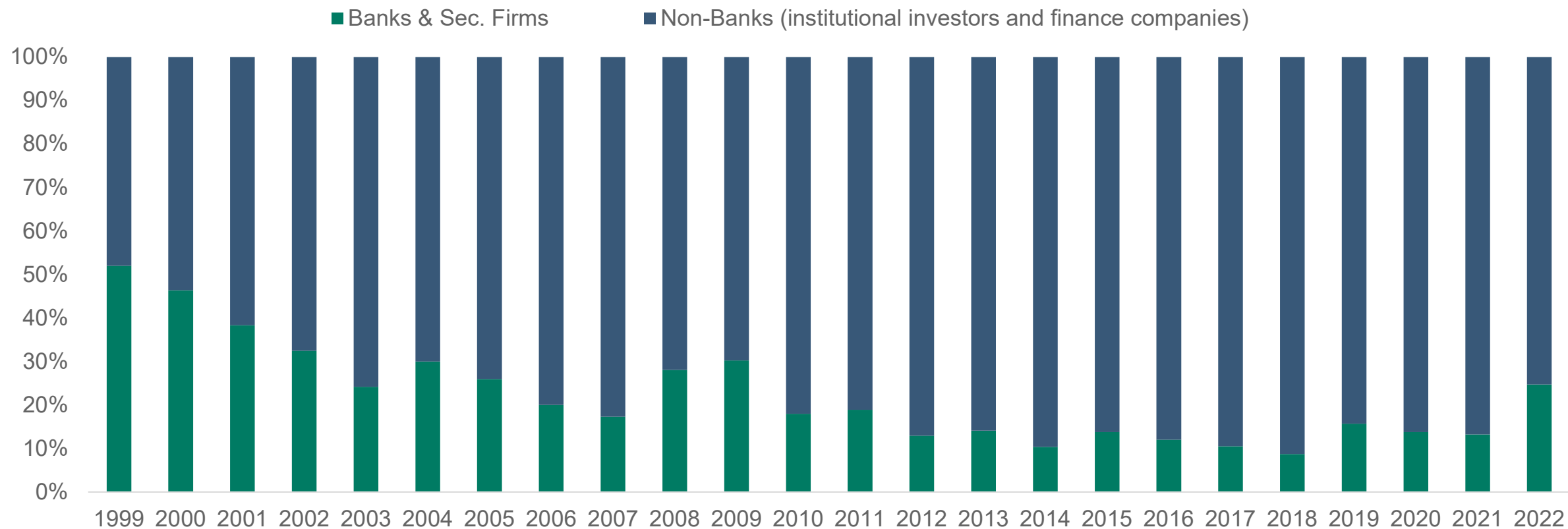


Debt-to-equity ratio is very low for corporate America

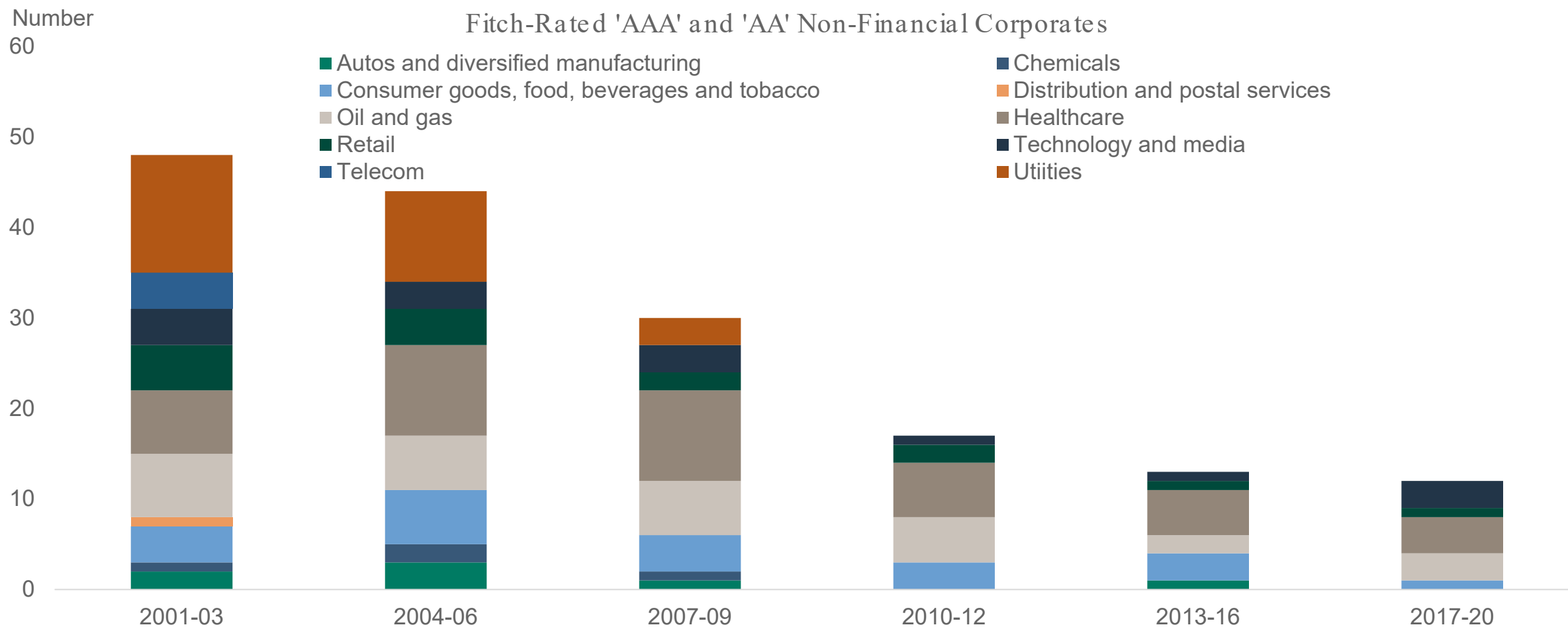


More leveraged loans are held by banks

Primary investor market: leveraged loans

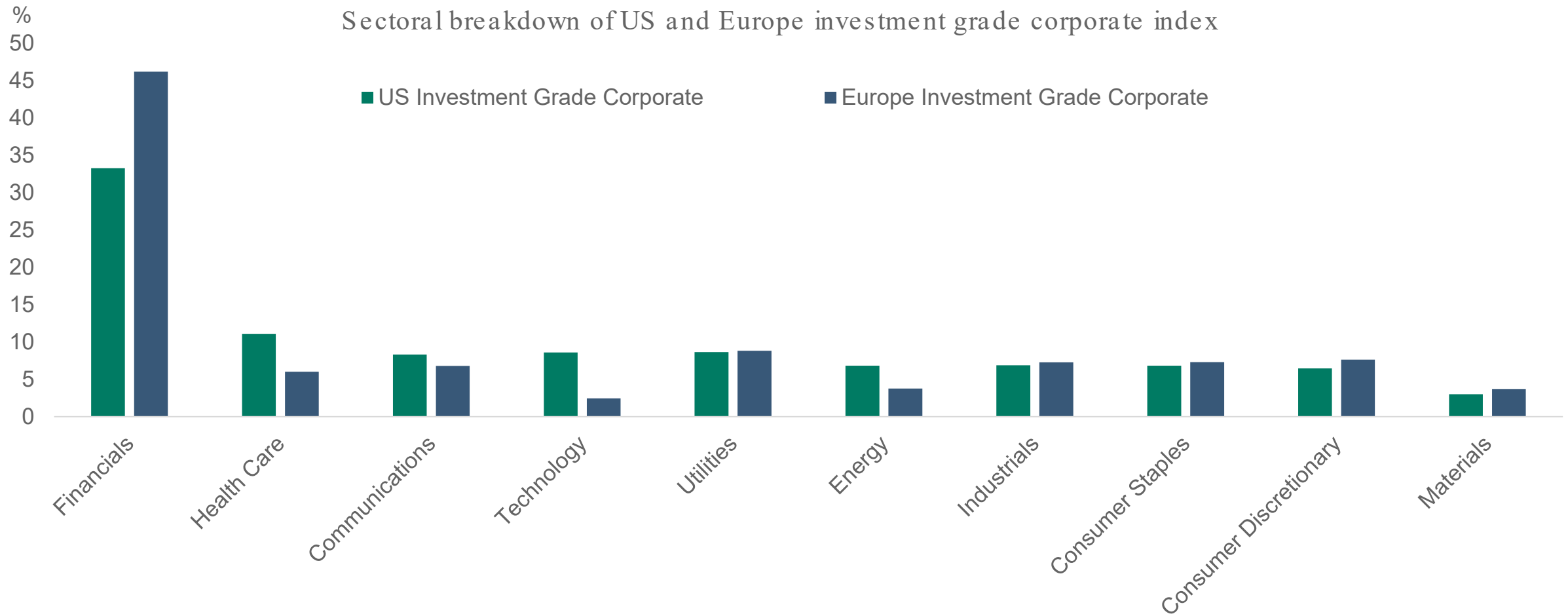


Fewer and fewer corporate bonds are rated AAA and AA

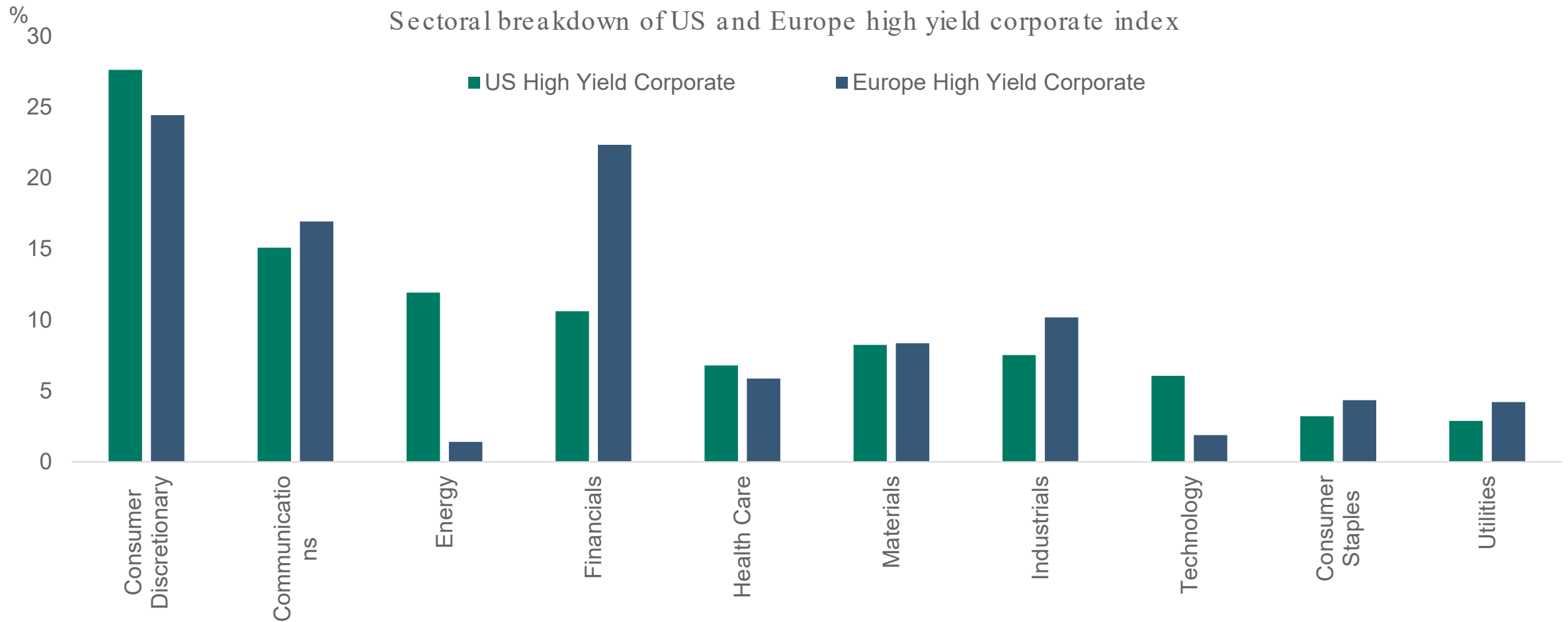


Source: Fitch Ratings, Apollo Chief Economist. Note: Including state-linked issuers with Standalone Credit Profiles in the 'AA' category. Data cover issuers that have been rated for at least six years or at end-2020.

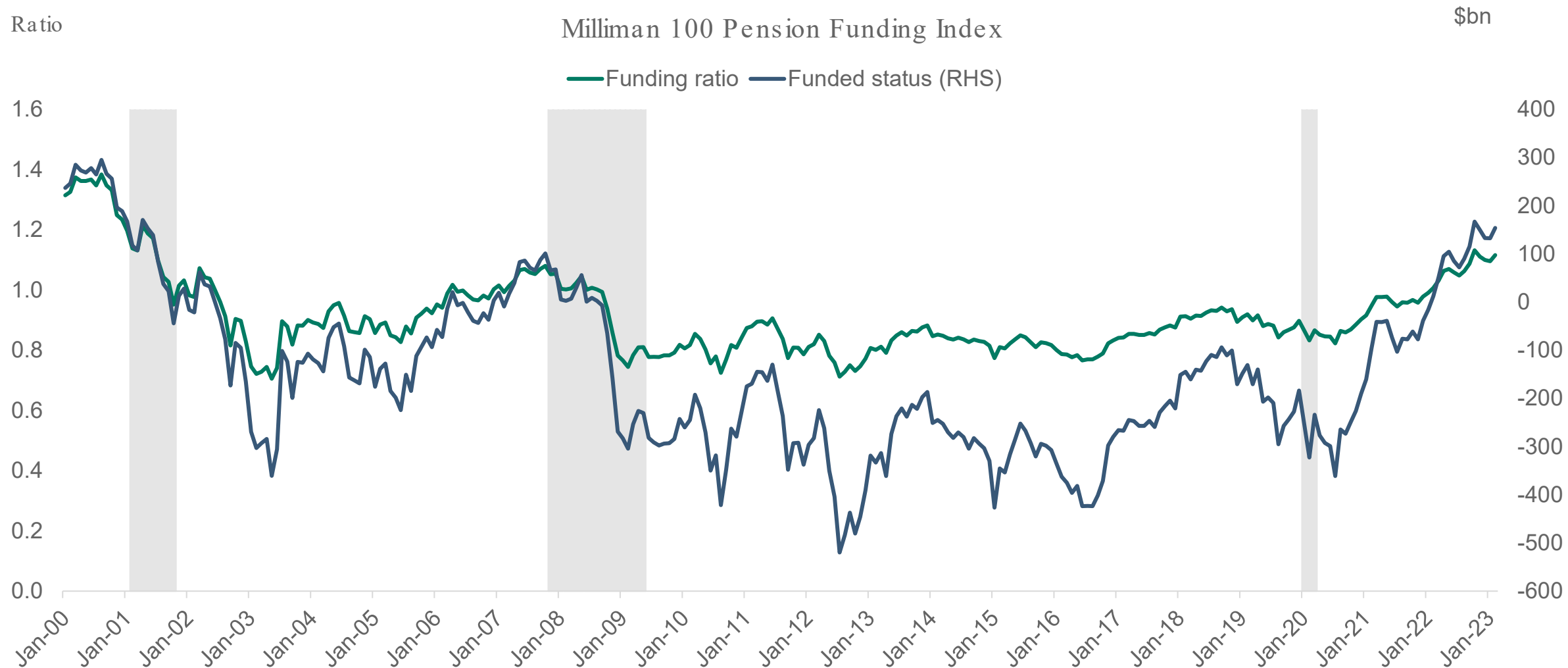
EU IG index: Bigger weight to financials, lower weight to energy, healthcare and tech



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

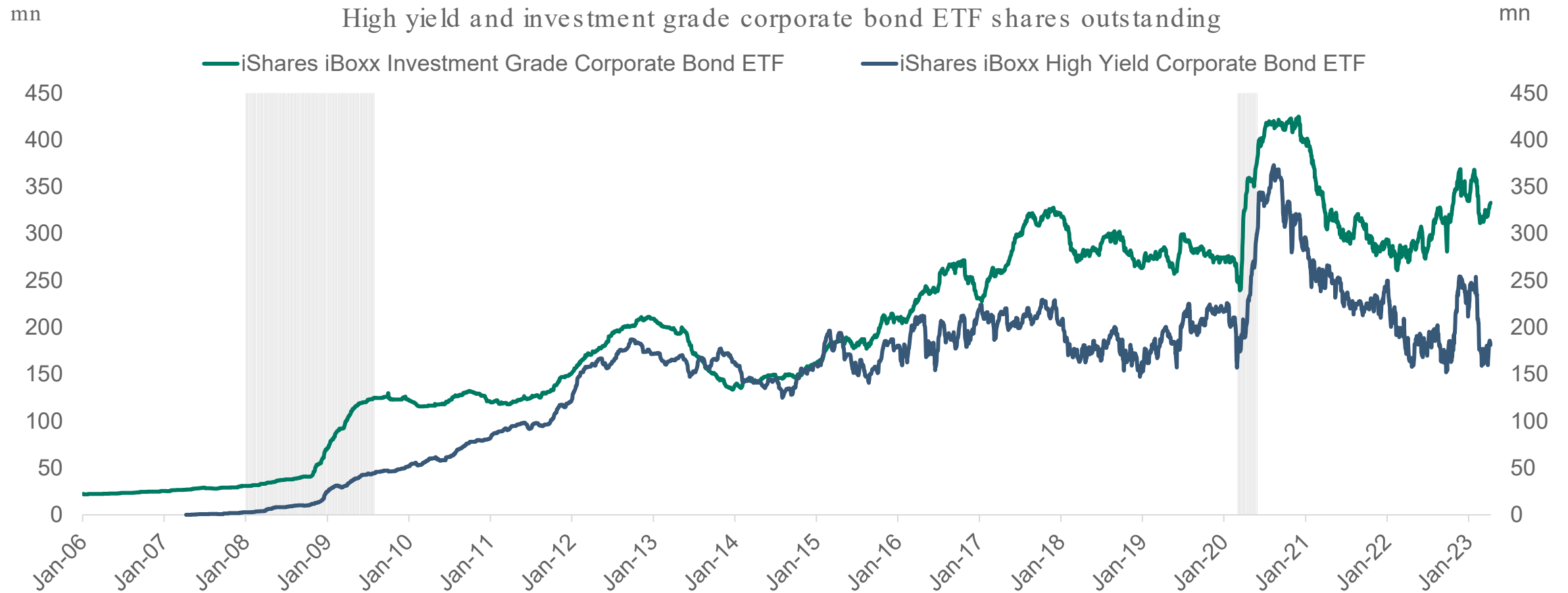


Pension funding status has improved



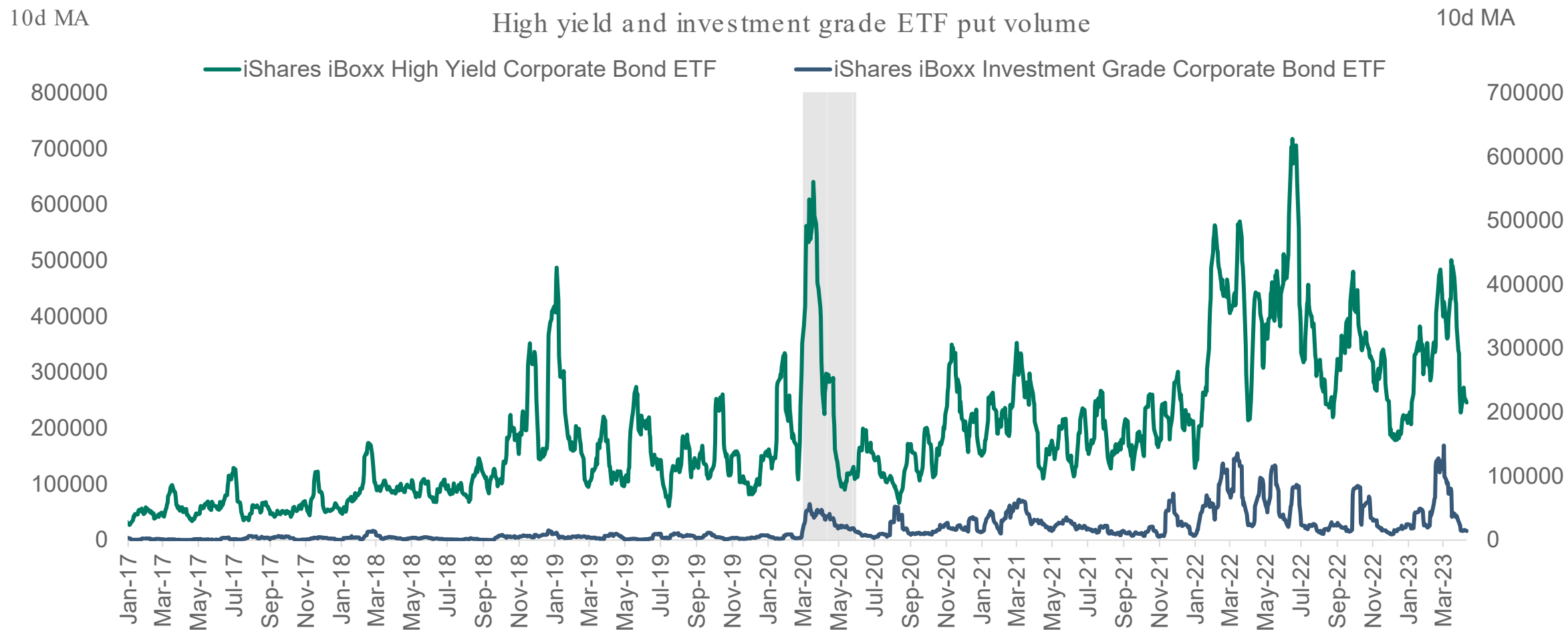
Source: Milliman, Bloomberg, Apollo Chief Economist. Note: Funded status measures planned assets minus projected benefit obligation

Retail investor activity in IG and HY



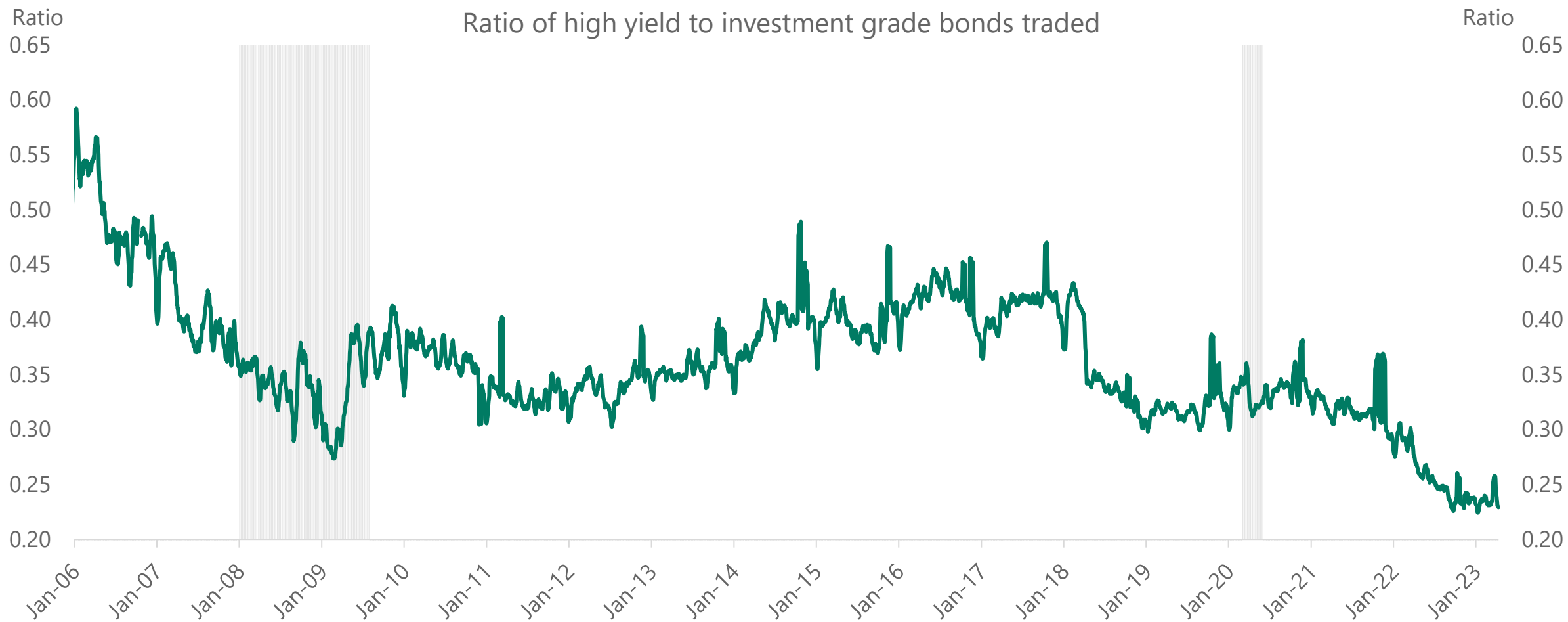
Source: Bloomberg, Apollo Chief Economist. Note: Tickers used HYG US Equity and LQD US Equity

Put volumes trending down for IG and HY ETF

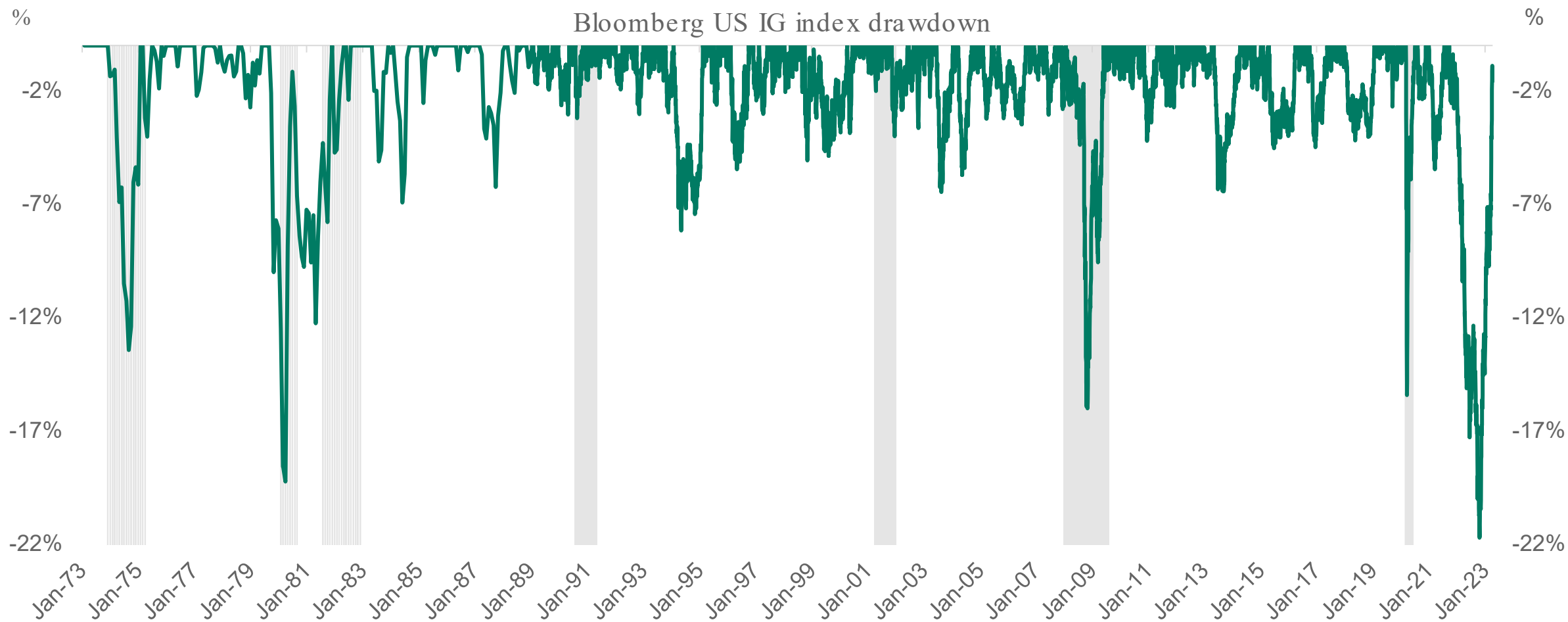


Fewer high yield bonds being traded

Ratio of high yield to investment grade bonds traded



IG index drawdown



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

Bonds outstanding trading at negative interest rates



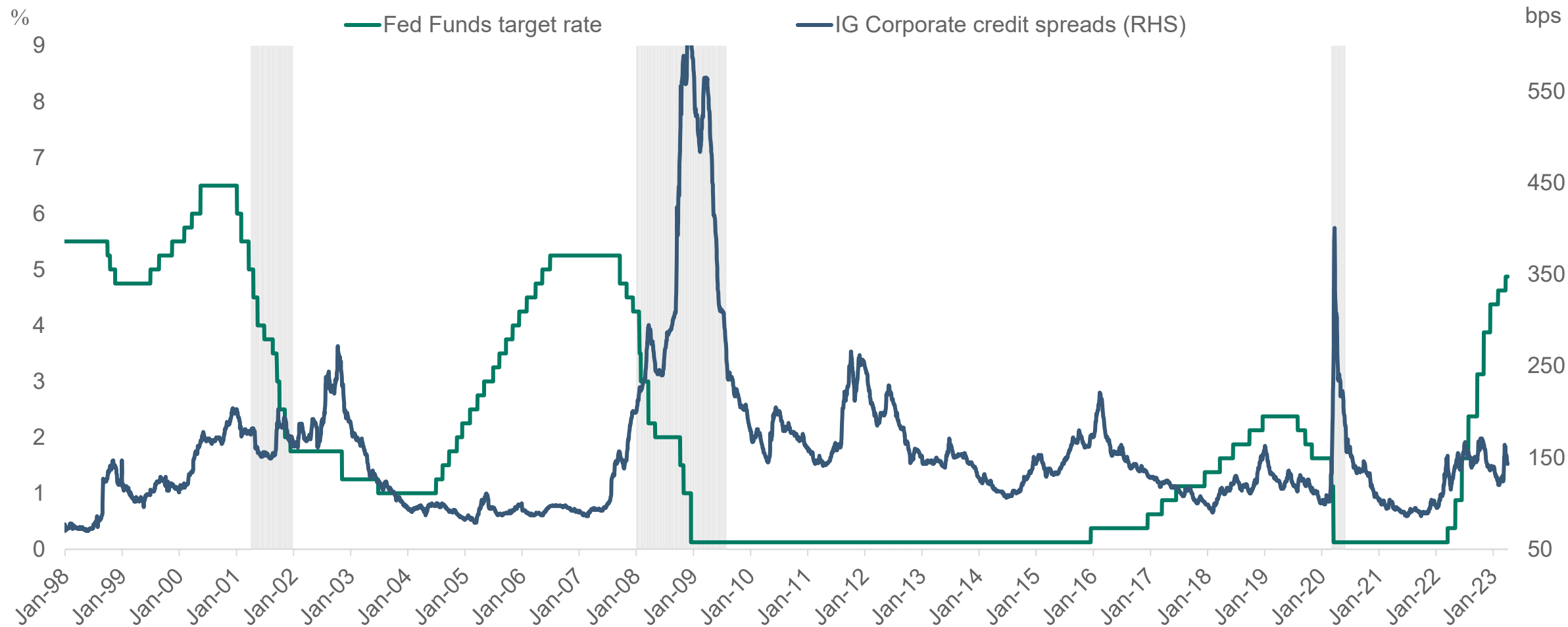
The total value of negative yielding debt in the world



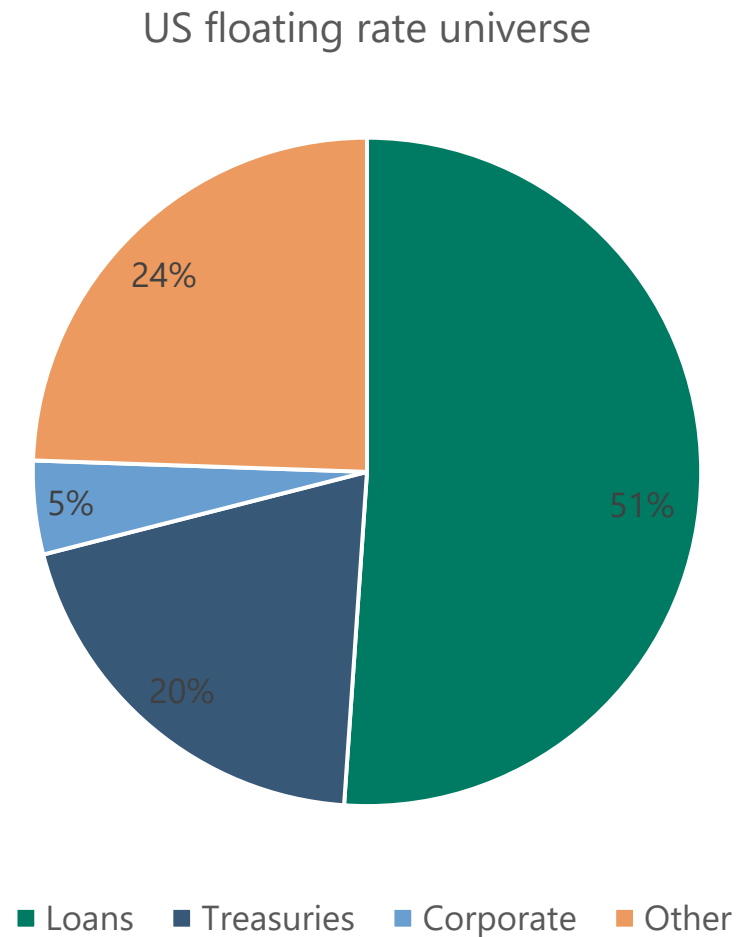
All corporate bonds now have positive yields



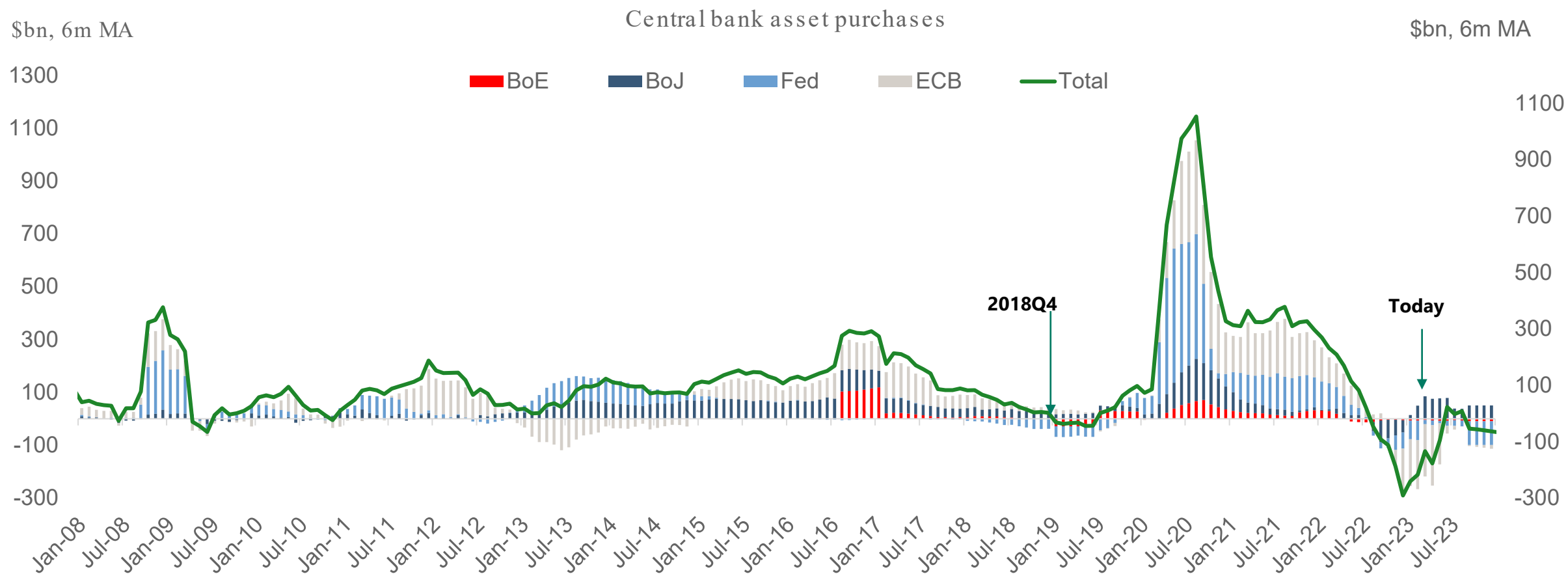
Fed hiking and credit spreads widening



US: Floating rate bonds outstanding, April 2023



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



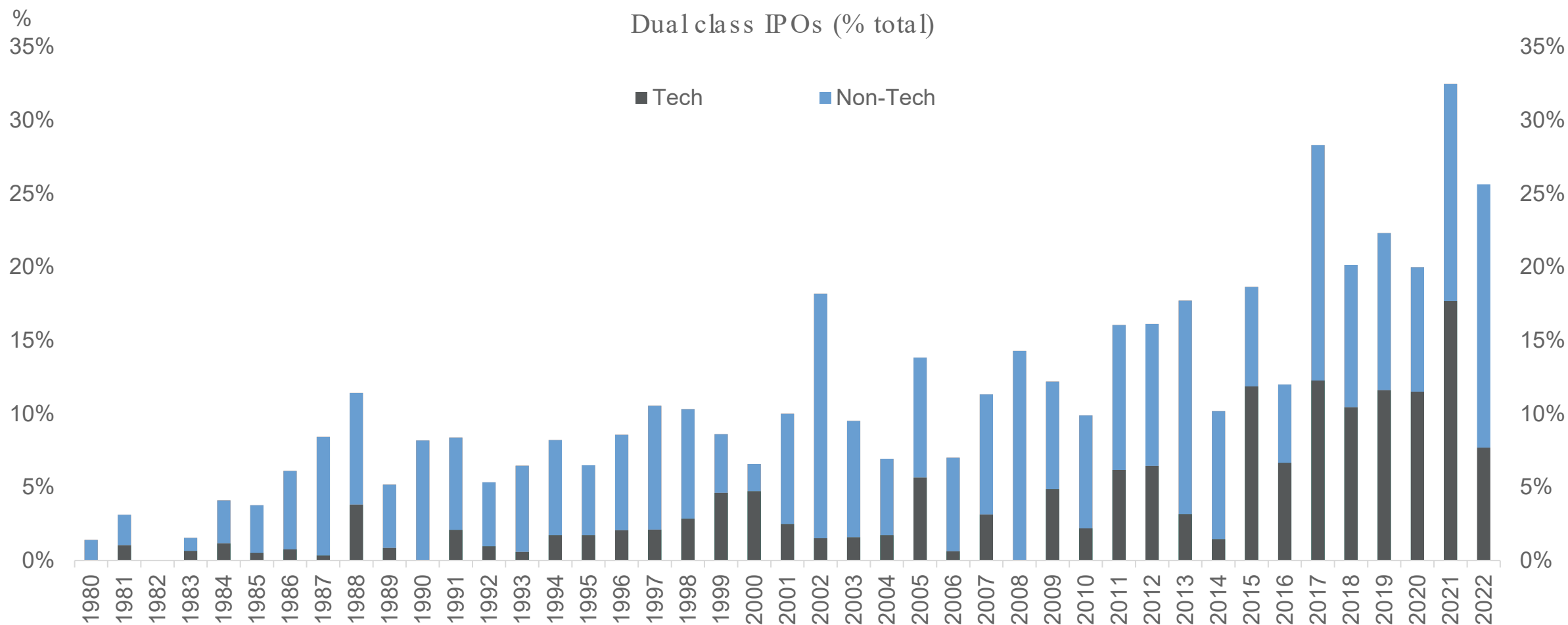
Source: Bloomberg, Apollo Chief Economist. Pace of purchases for 2021: BOE: £3.4bn per week till mid December 2021, FED: USD120bn per month with wind down from December with purchases ending in March 2022, ECB: Euro 90bn per month (20 bn APP + 60 bn PEPP), PEPP till March 2022, Euro 40bn in April, Euro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

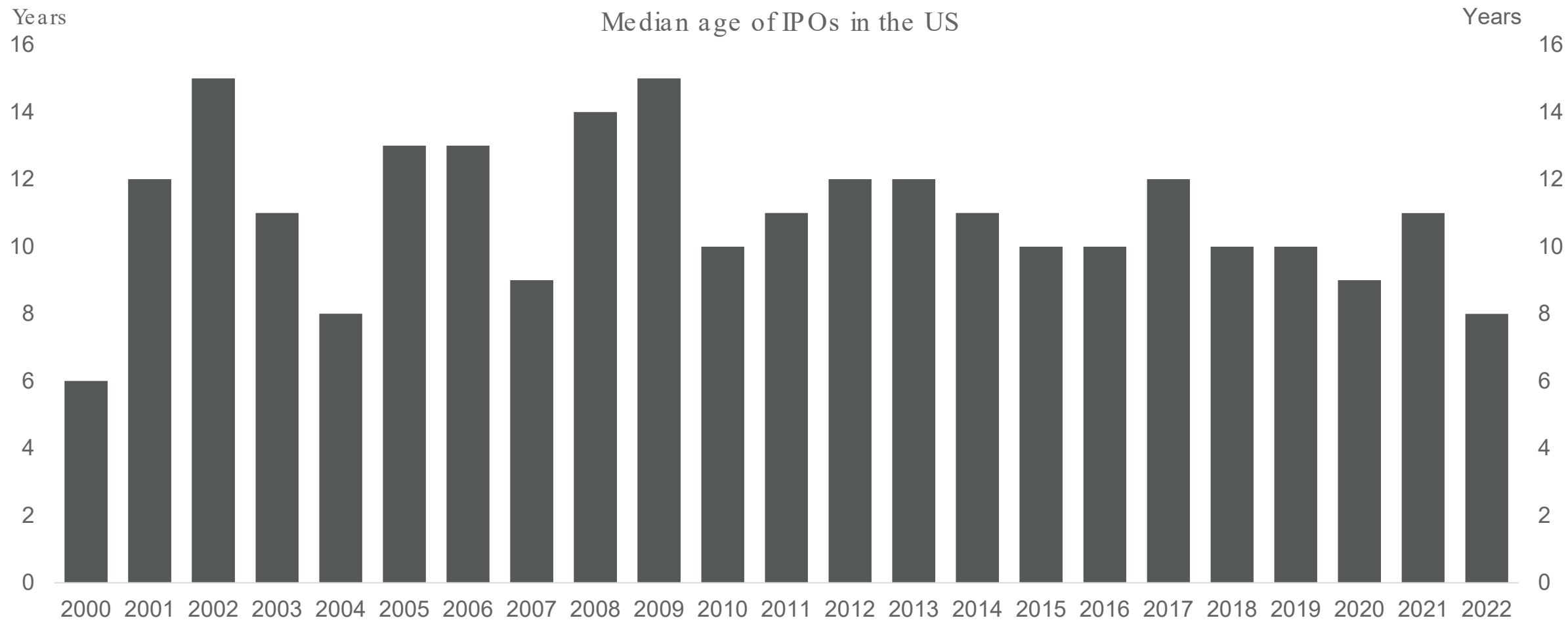
Risk spectrum



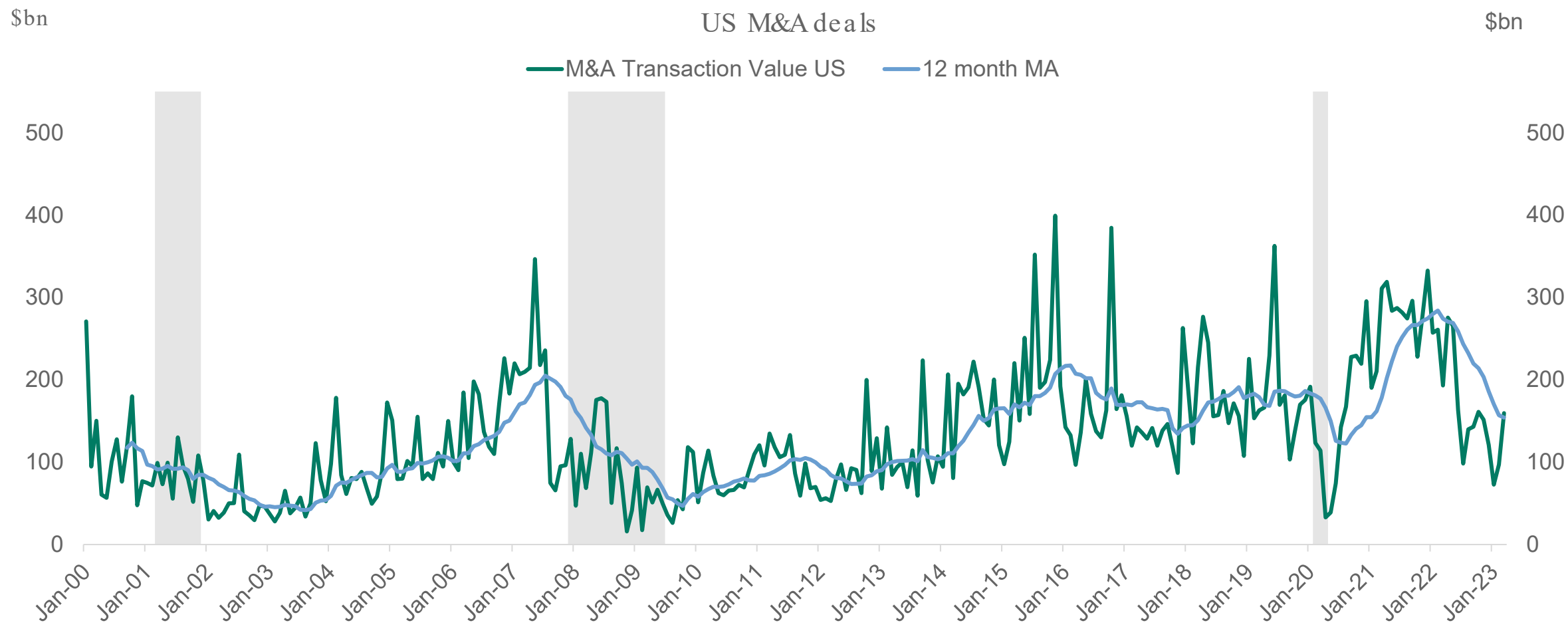
Dual class IPOs, driven by tech



Median age of IPOs

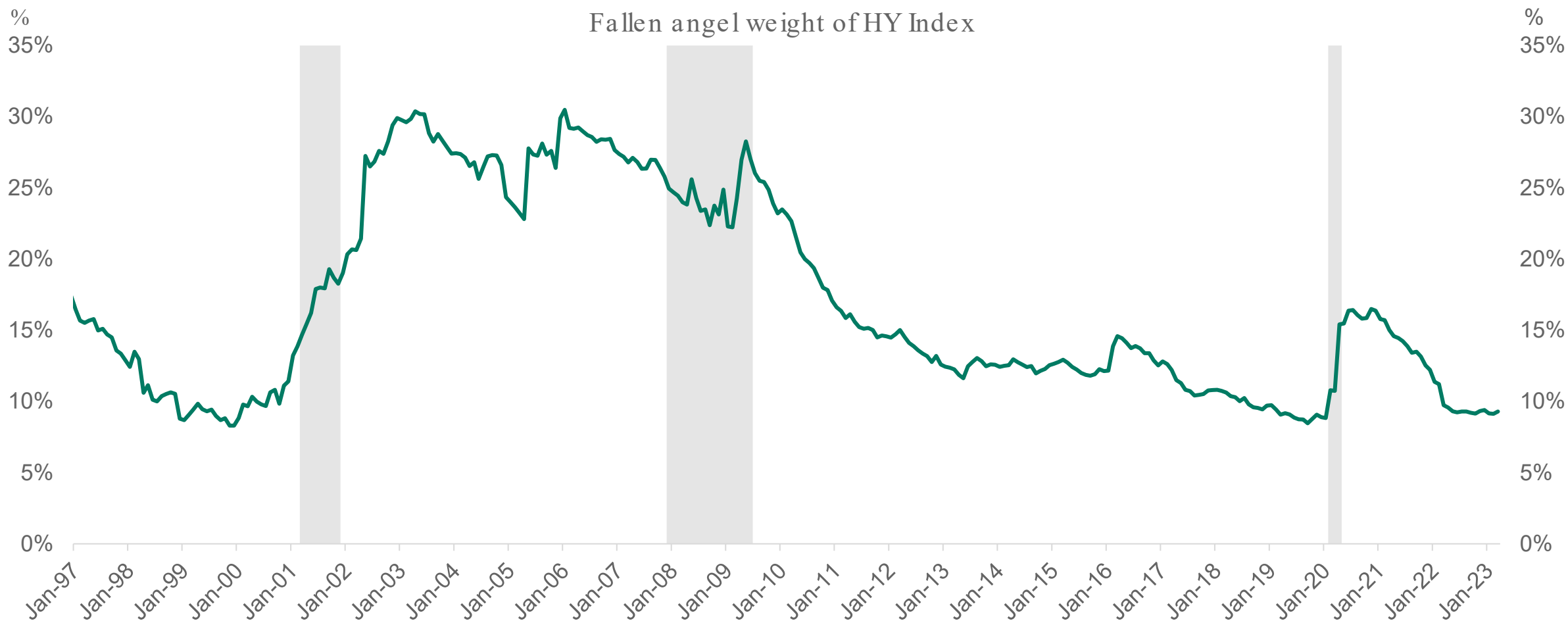


M&A activity declining



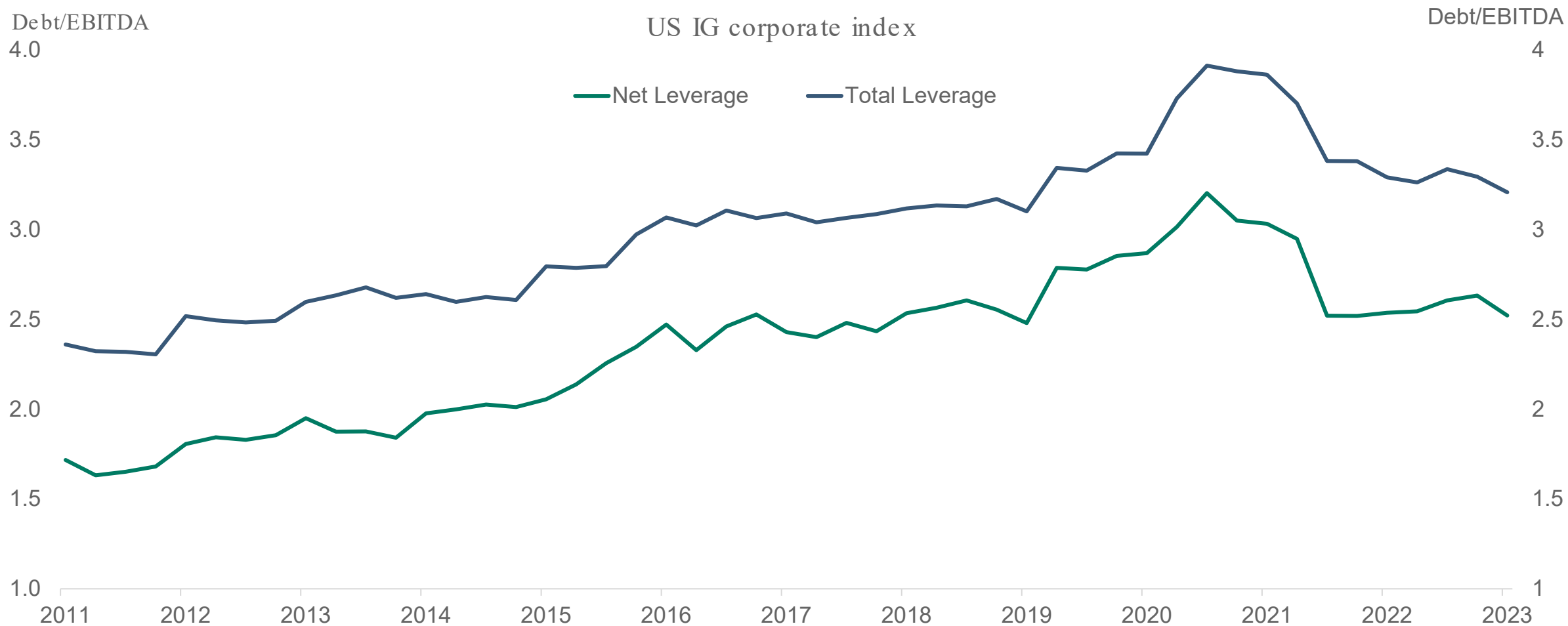
Source: Bloomberg, Apollo Chief Economist. Note: Ticker used is MAATUS Index

Declining share of fallen angels in the HY index



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

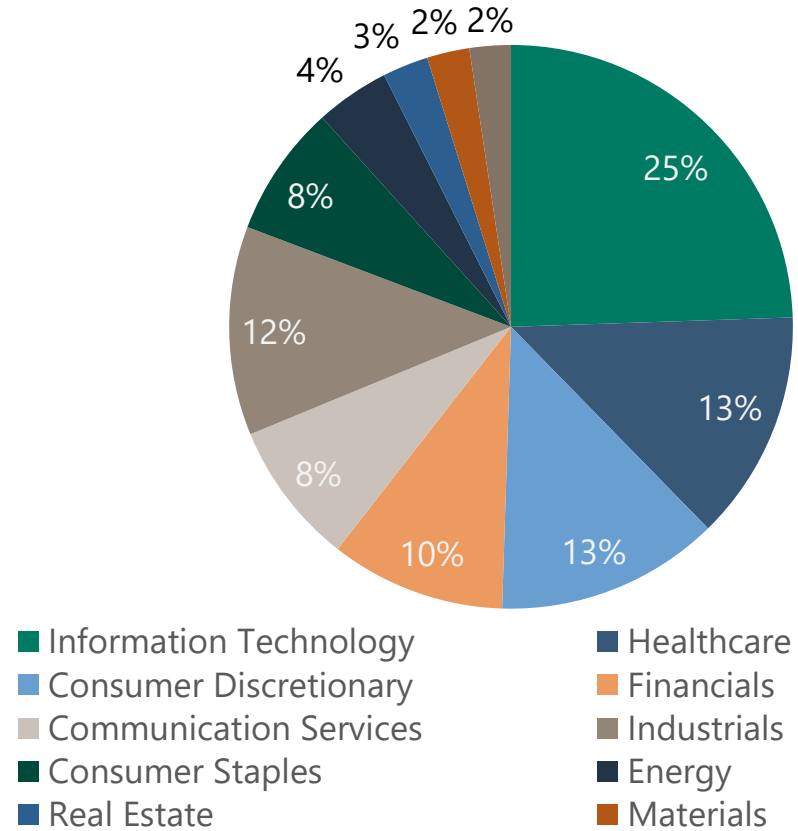
IG leverage down after the pandemic



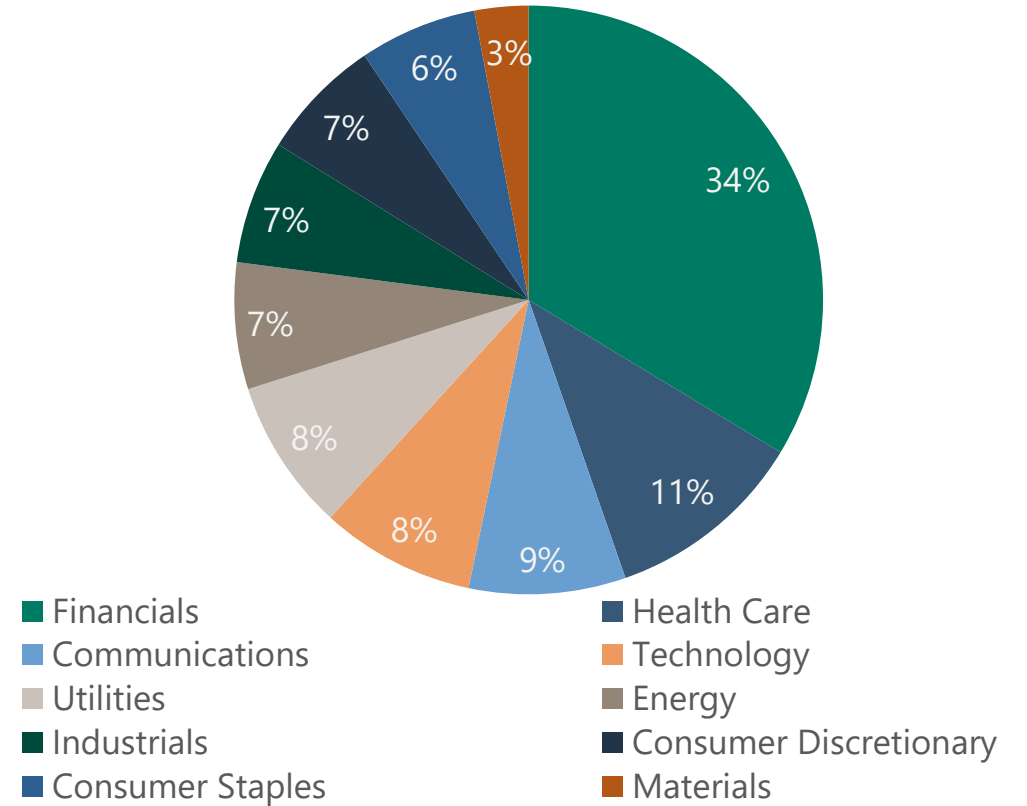
Source: ICE BofA, Bloomberg, Apollo Chief Economist. Note: Index used COA0 Index

Big differences between weights in S&P500 and IG index

S&P 500 Index weight by market cap



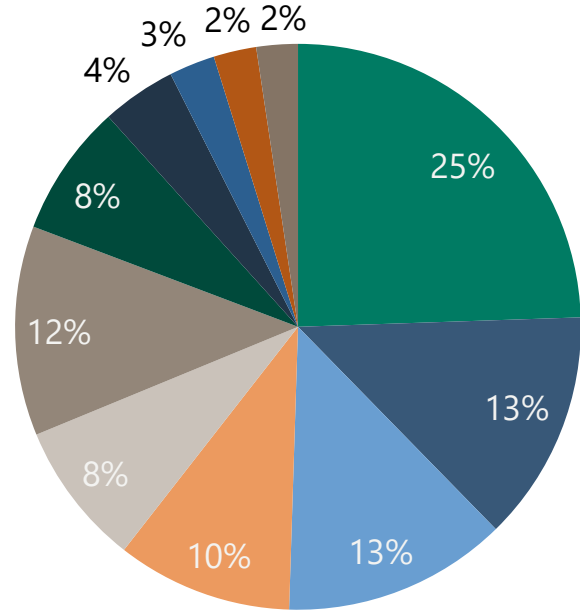
Barclays corporate IG index weights by market cap



Note: Data as of 31st March 2023. Source: Bloomberg, Apollo Chief Economist

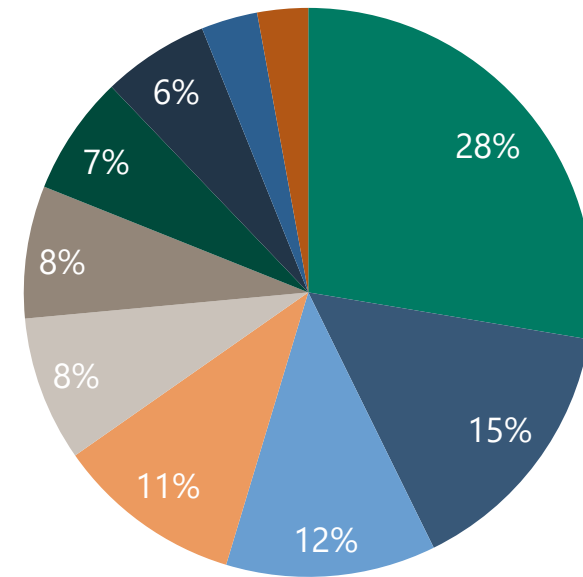
Big differences between weights in S&P500 and HY index

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



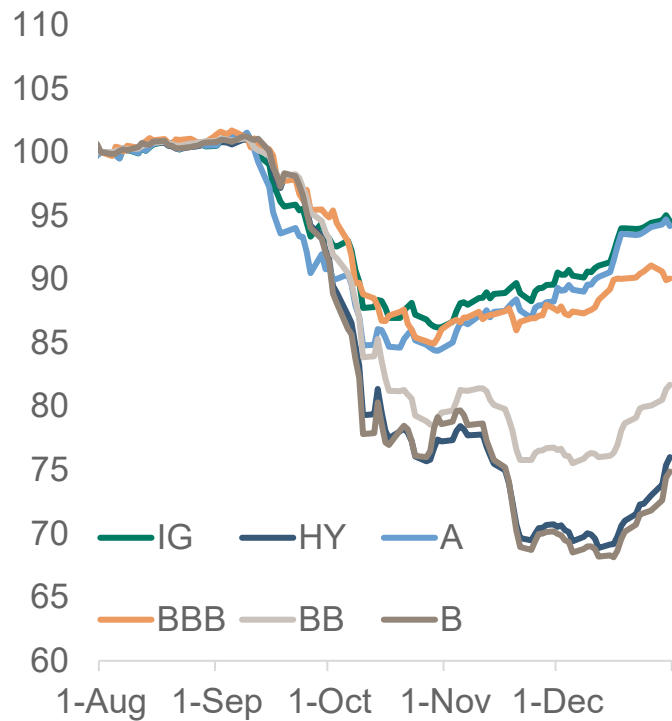
- Consumer Discretionary
- Energy
- Health Care
- Industrials
- Consumer Staples
- Communications
- Financials
- Materials
- Technology
- Utilities

Top issuer names for IG and HY

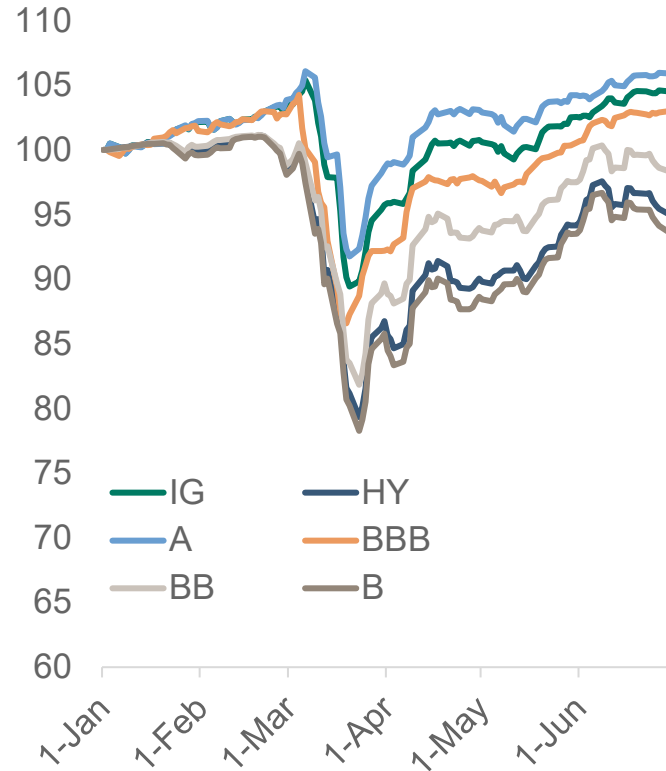
	Top 50 Investment Grade corporate bond issuers	Top 50 High Yield corporate bond issuers
1	Bank of America Corporation	Ford Motor Credit Company LLC
2	JPMorgan Chase & Co.	CCO Holdings LLC/ CCO Holdings Capital Corp.
3	Morgan Stanley	Occidental Petroleum Corporation
4	Citigroup Inc.	Tenet Healthcare Corporation
5	Goldman Sachs Group Inc.	TransDigm Inc.
6	Wells Fargo & Company	Carnival Corporation
7	HSBC Holdings PLC	Ford Motor Company
8	Apple Inc.	Royal Caribbean Group
9	AT&T Inc	CSC Holdings LLC
10	Verizon Communications Inc.	Community Health Systems Incorporated
11	Oracle Corporation	DISH DBS Corporation
12	Comcast Corporation	Caesars Entertainment Inc New
13	Amazon.com Inc.	Bausch Health Companies Inc
14	UnitedHealth Group Inc.	Sirius Xm Radio Inc
15	Amgen Inc.	Altice France S.A
16	T-Mobile USA Inc.	AAAdvantage Loyalty IP Ltd/ American Airlines Inc
17	AbbVie Inc.	Albertsons Cos Inc / Safeway Inc / New Albertsons LP / Albertsons LLC / (Albertsons Safeway LLC)
18	CVS Health Corp	Nissan Motor Co Ltd
19	Mitsubishi UFJ Financial Group Inc.	Mozart Debt Merger Subordinated Inc.
20	Intel Corporation	1011778 B.C. Unlimited Liability Company / New Red Finance Inc.
21	The Boeing Company	Equitrans Midstream Corporation
22	Sumitomo Mitsui Financial Group Inc	OneMain Financial Corporation
23	Microsoft Corporation	Iron Mountain Incorporated
24	Barclays PLC	T-Mobile US Inc
25	Walt Disney Company	Bombardier Inc.
26	Home Depot Inc	Sprint Capital Corporation
27	Charter Communications Operating LLC/Charter Communications Operating Capital Corp.	Icahn Enterprises L.P. / Icahn Enterprises Finance Corporation
28	Anheuser-Busch InBev Worldwide Inc.	Hilton Domestic Operating Co Inc.
29	International Business Machines Corporation	Calpine Corporation
30	Broadcom Inc	Post Holdings Inc.
31	Energy Transfer LP	United Rentals (North America) Inc.
32	BNP Paribas SA	FirstEnergy Corp.
33	Bristol-Myers Squibb Company	Univision Communications Inc.
34	Raytheon Technologies Corporation	Vistra Operations Co LLC
35	Lowe's Companies Inc.	The Goodyear Tire & Rubber Company
36	Walmart Inc	Bath & Body Works Inc
37	Pacific Gas and Electric Company	Intesa Sanpaolo S.p.A.
38	Shell International Finance B.V.	Venture Global Calcasieu Pass LLC
39	HCA Inc.	Ball Corporation
40	General Motors Financial Company Inc	Newell Brands Inc.
41	Toyota Motor Credit Corp.	Service Properties Trust
42	The Toronto-Dominion Bank	GFL Environmental Inc.
43	Royal Bank of Canada	YUM Brands Inc
44	Exxon Mobil Corporation	Prime Securities Services Borrower LLC and Prime Finance Inc.
45	Pepsico Inc	Uber Technologies Inc
46	The Cigna Group	Transocean Inc.
47	Societe Generale S.A.	FMG Resources (August 2006) Pty Ltd.
48	Union Pacific Corporation	Uniti Group LP/Uniti Fiber Holdings Inc/Uniti Group Finance 2019 Inc/CSL Capital LLC
49	Enterprise Products Operating LLC	Mauser Packaging Solutions Holding Company
50	WarnerMedia Holdings Inc.	Standard Buildings Solutions Inc.

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

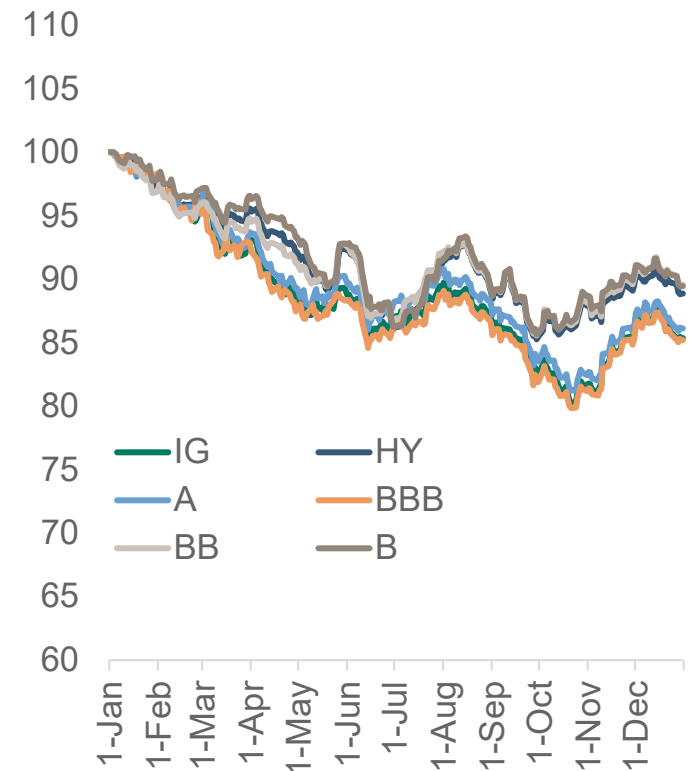
Aug 1st=100 US total returns, 2008



Jan 1st=100 US total returns, 2020

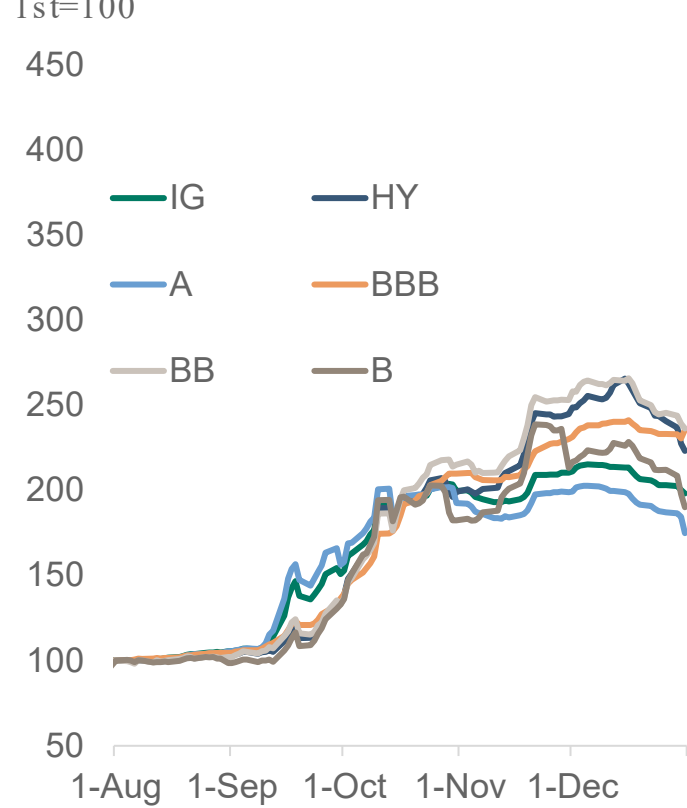


Jan 1st=100 US total returns, 2022

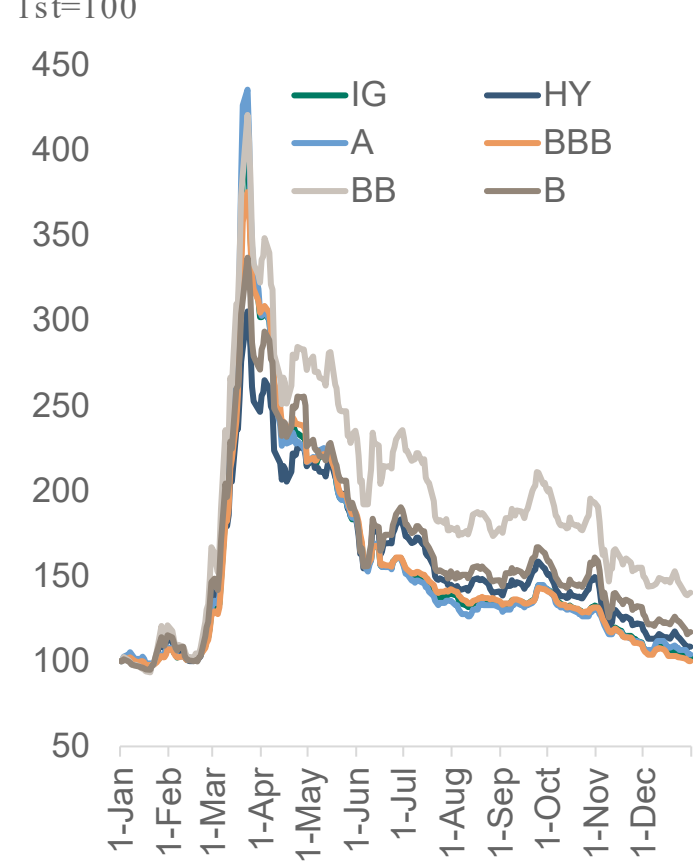


Synchronized sell-off in credit so far. Little differentiation between credits compared with 2008 and March 2020 episodes.

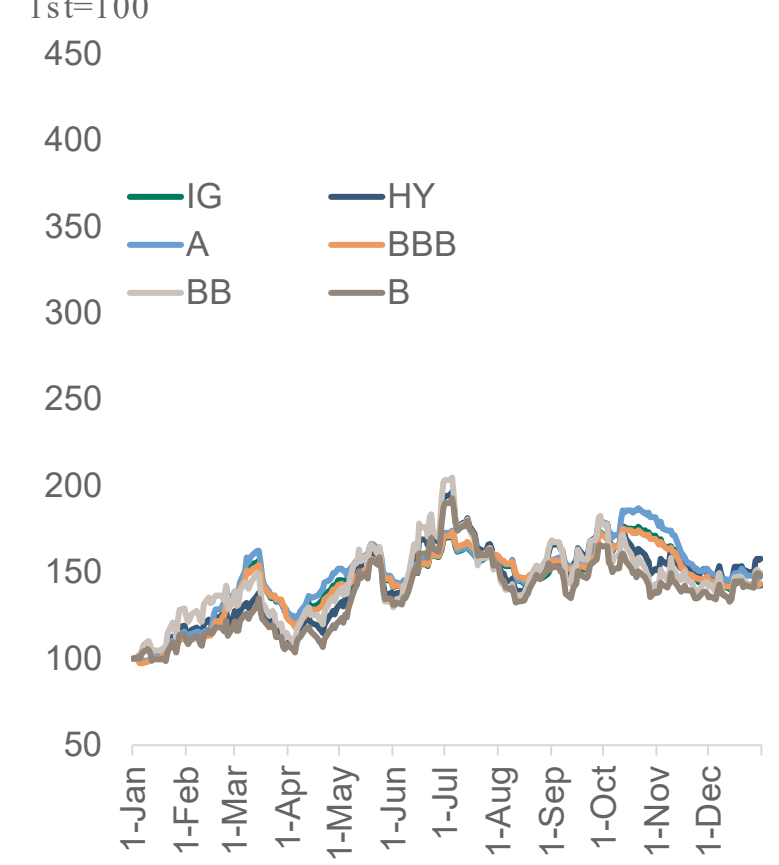
Aug 1st=100 US spreads, 2008



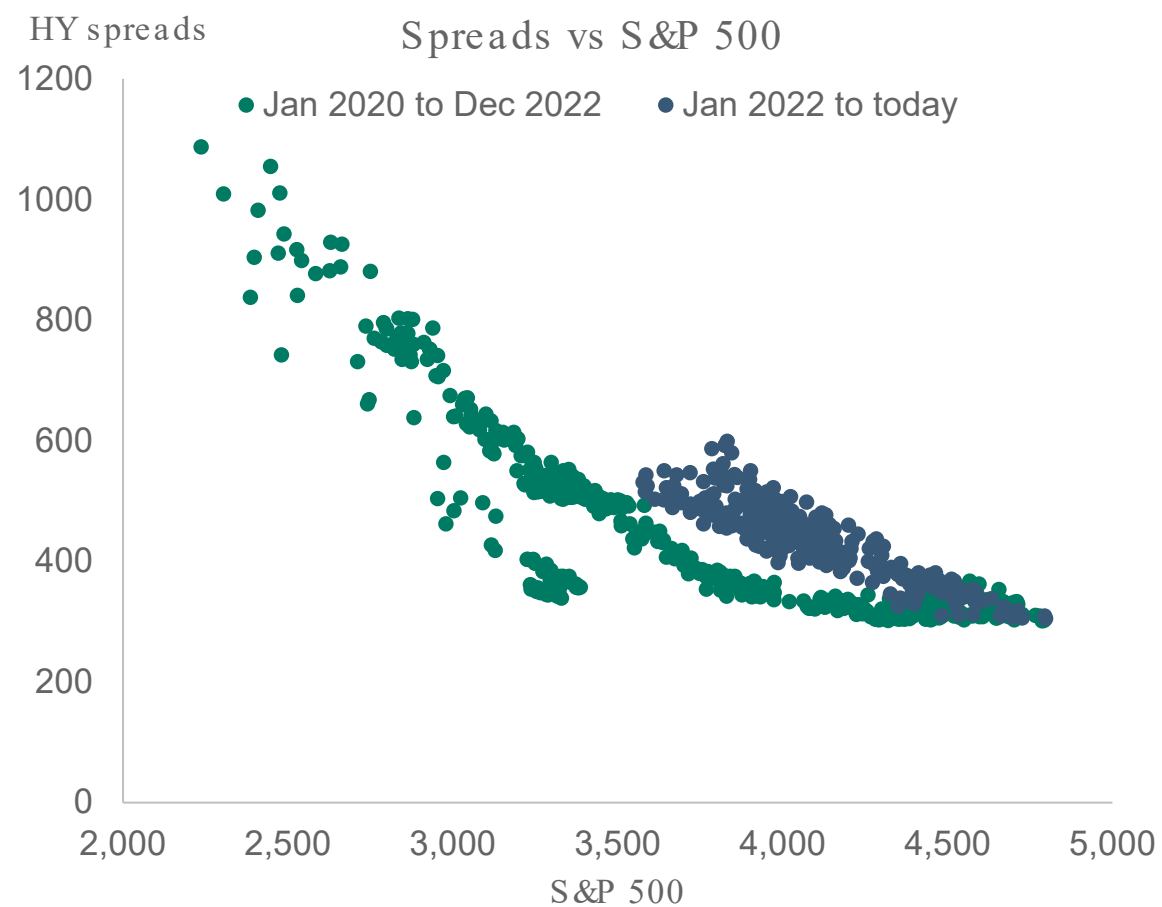
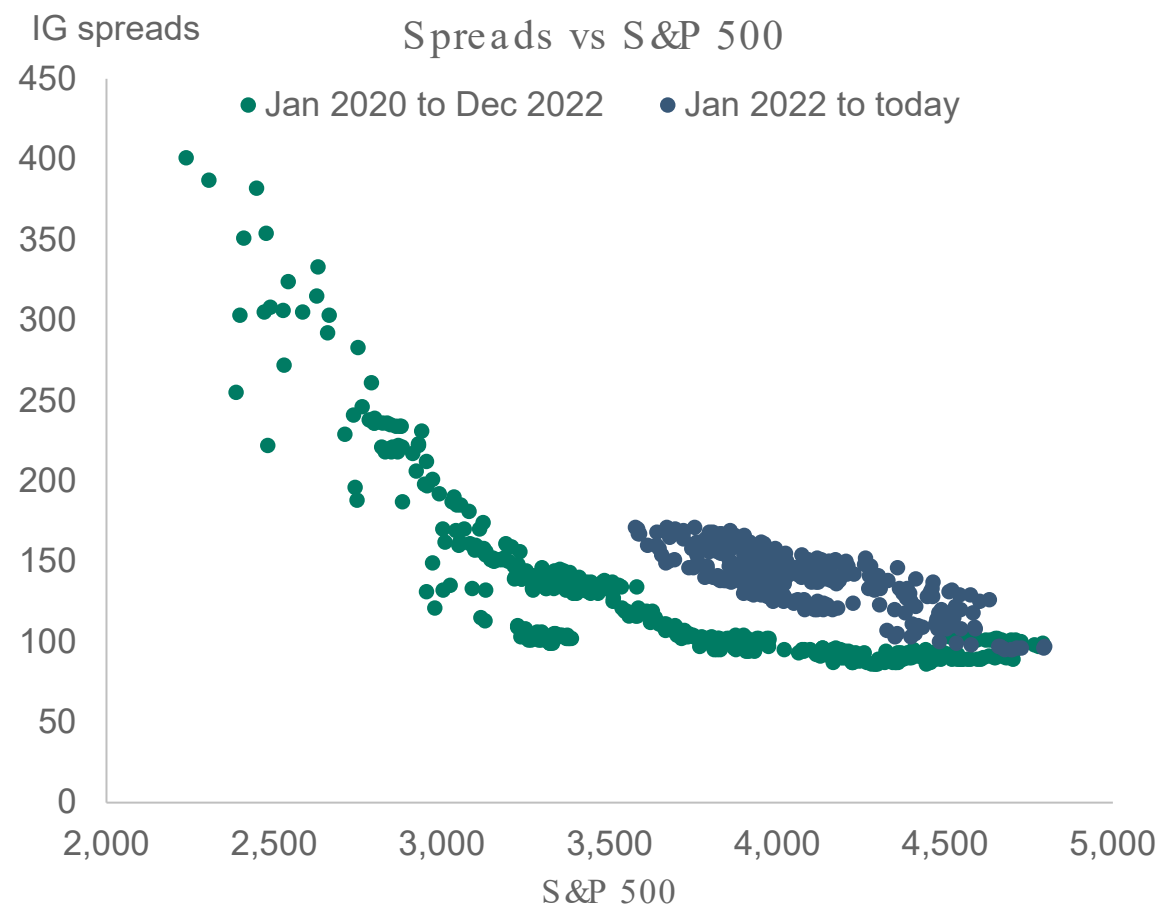
Jan 1st=100 US spreads, 2020



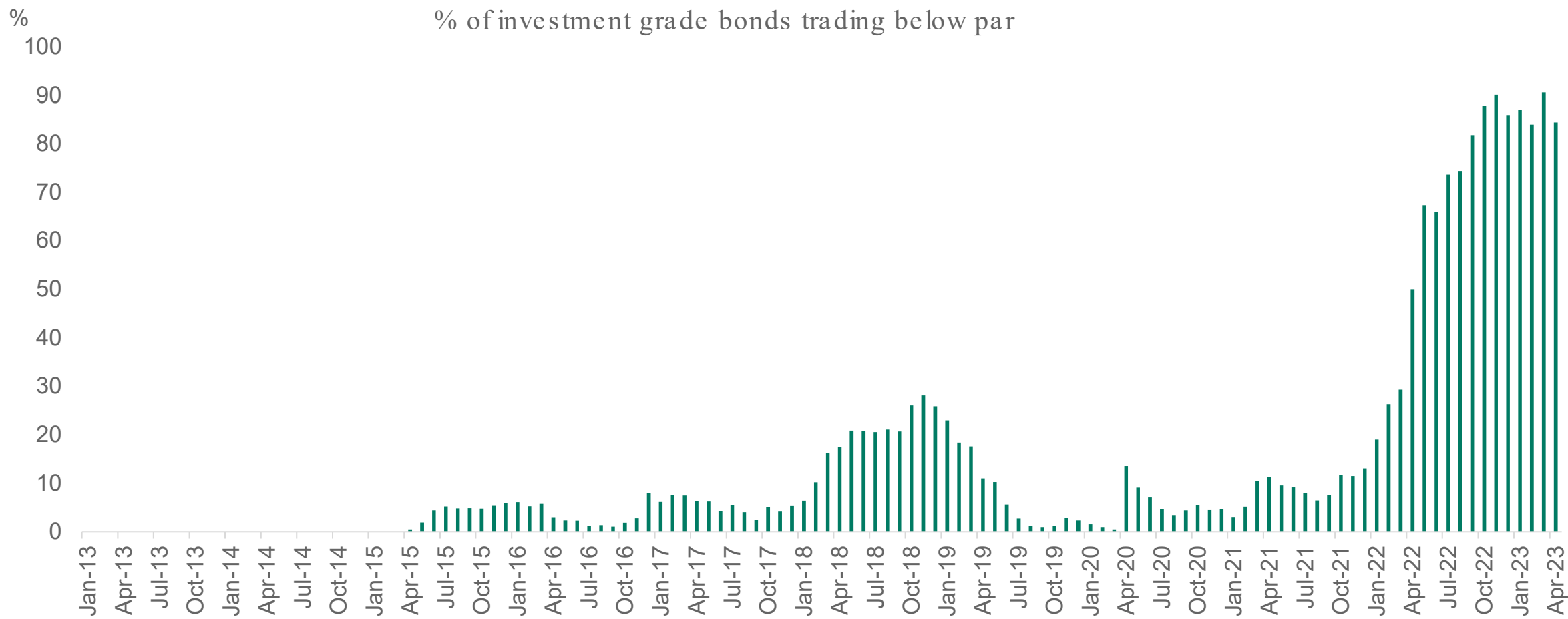
Jan 1st=100 US spreads, 2022



Valuation of credit versus equities

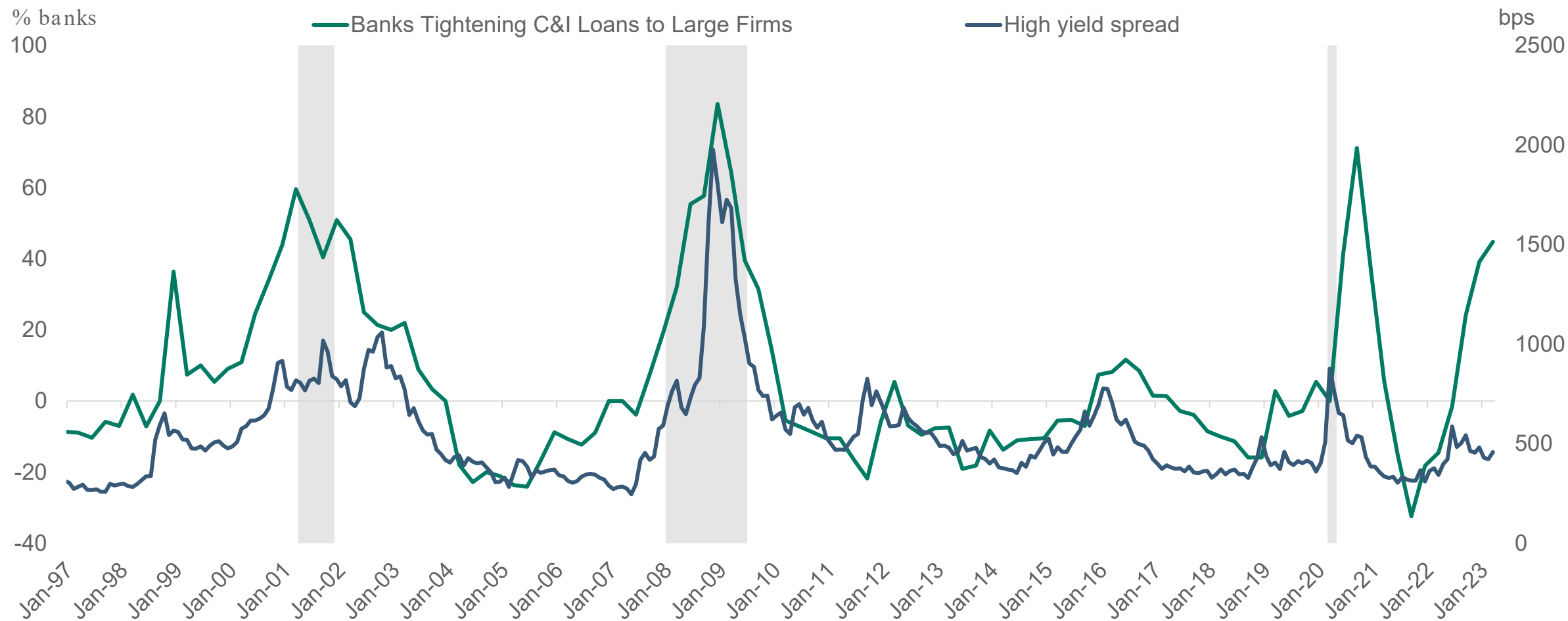


84% of the US IG market trading below par

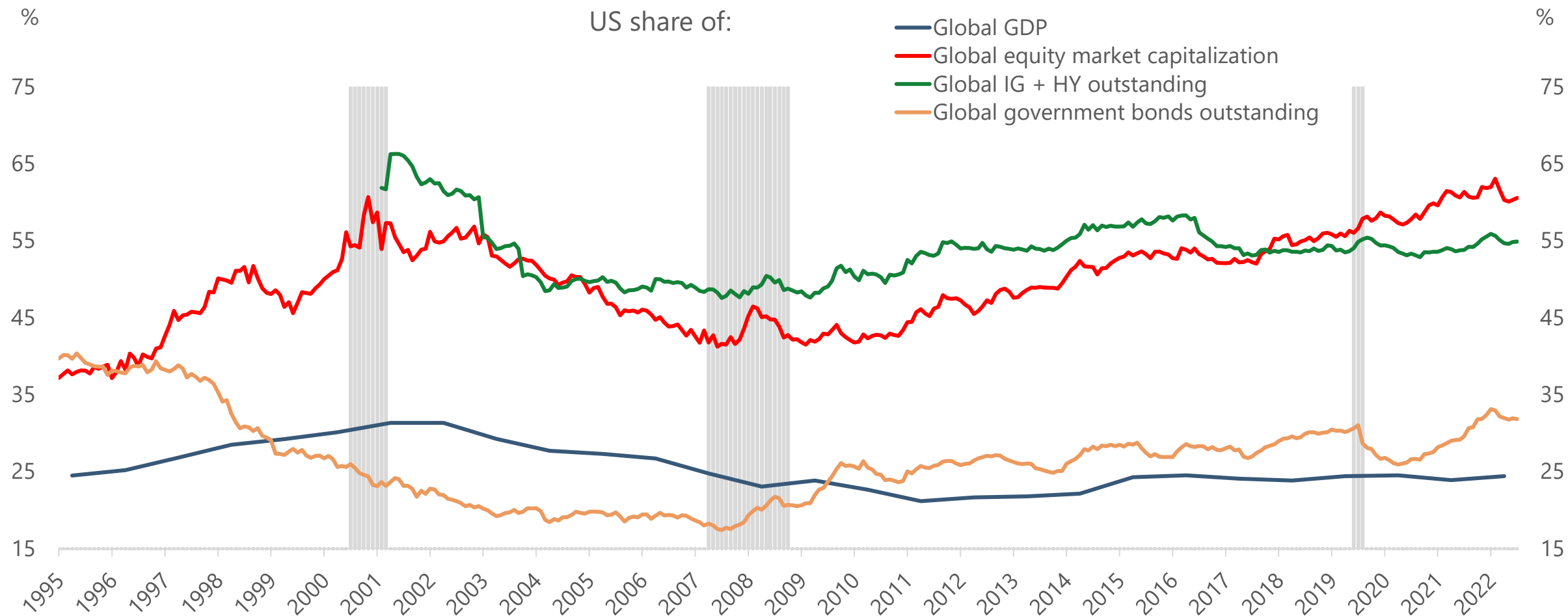


Source: Bloomberg, Apollo Chief Economist. Note: Data used for members in the LBUSTRUU Index as of 5th April 2023

Banks tightening credit conditions, HY spread should be trading wider

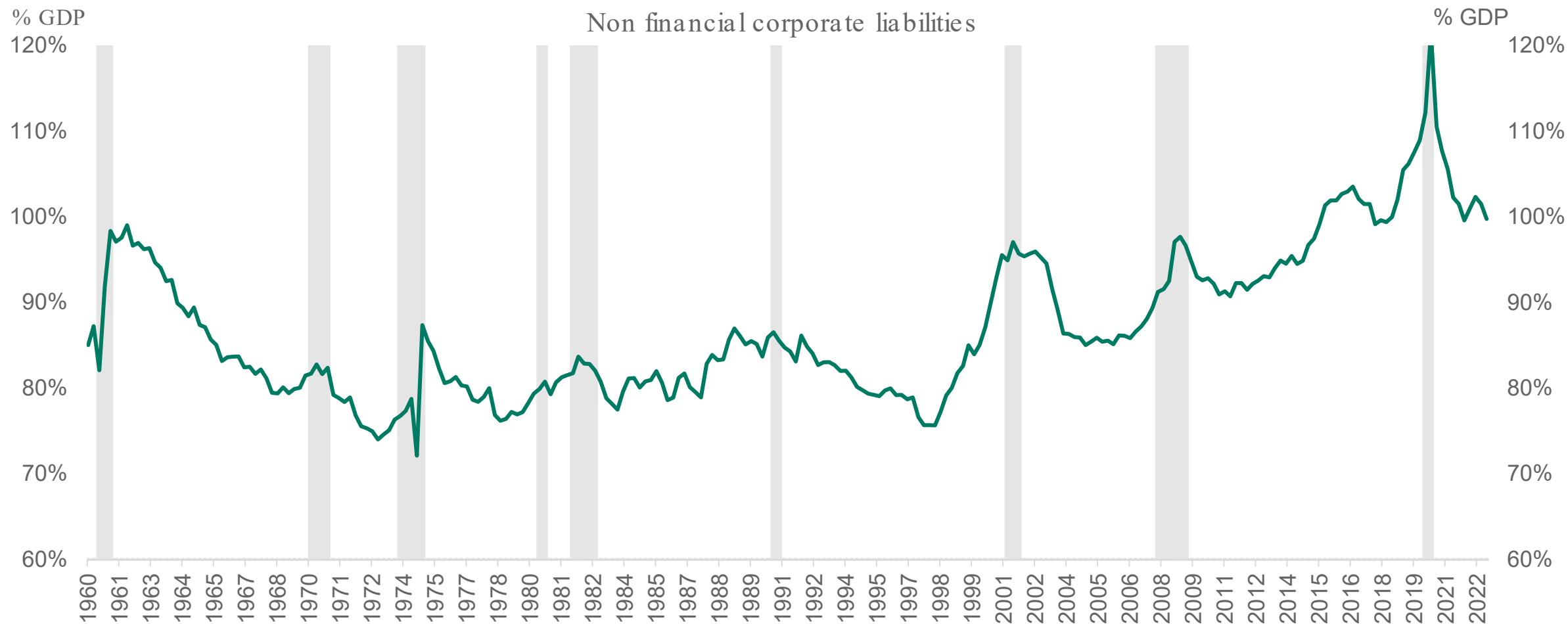


US share of the world economy and global financial markets



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)

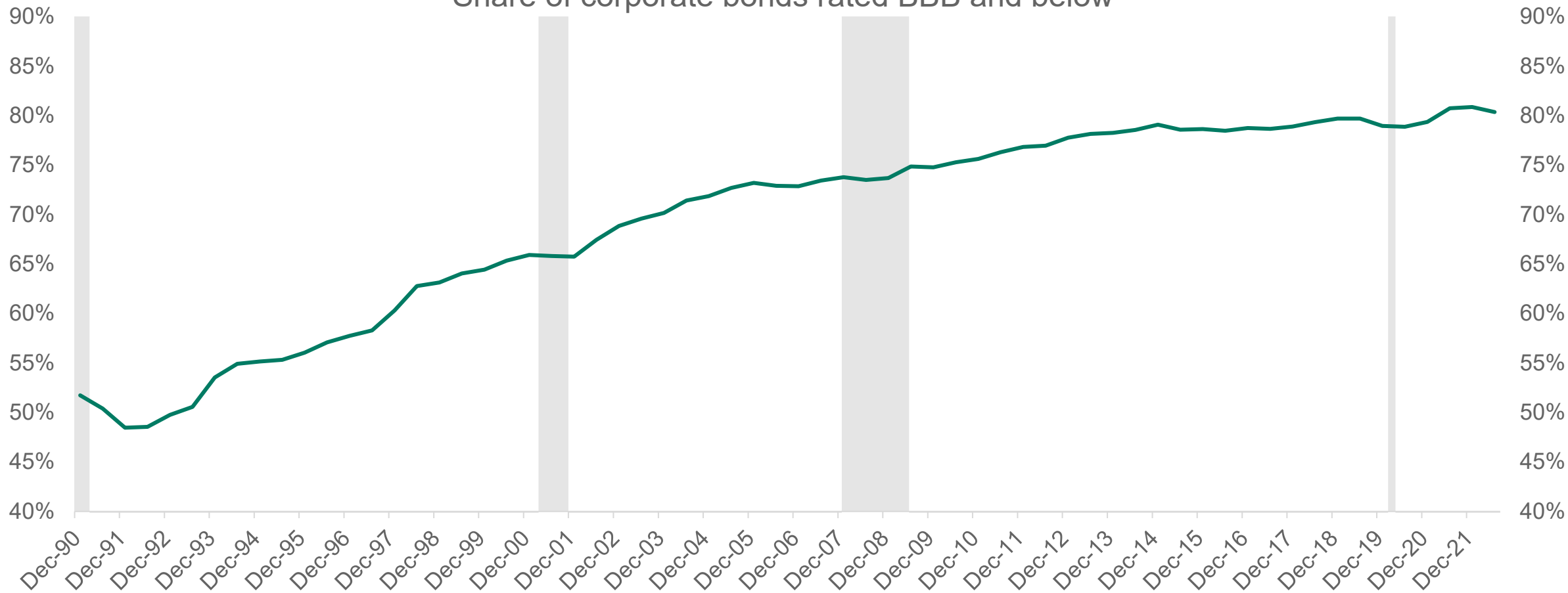
Corporate debt is coming down as a share of GDP



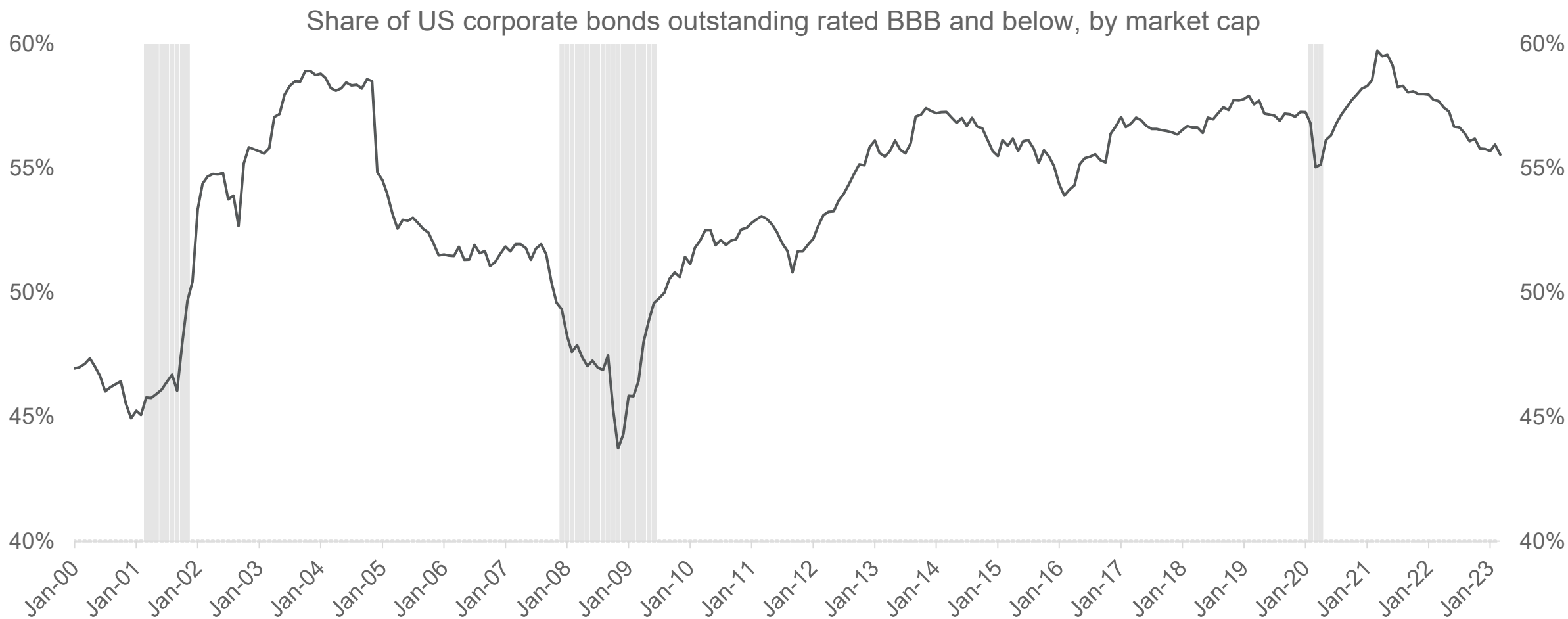
Source: FRB, Haver Analytics, Apollo Chief Economist

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

Share of corporate bonds rated BBB and below

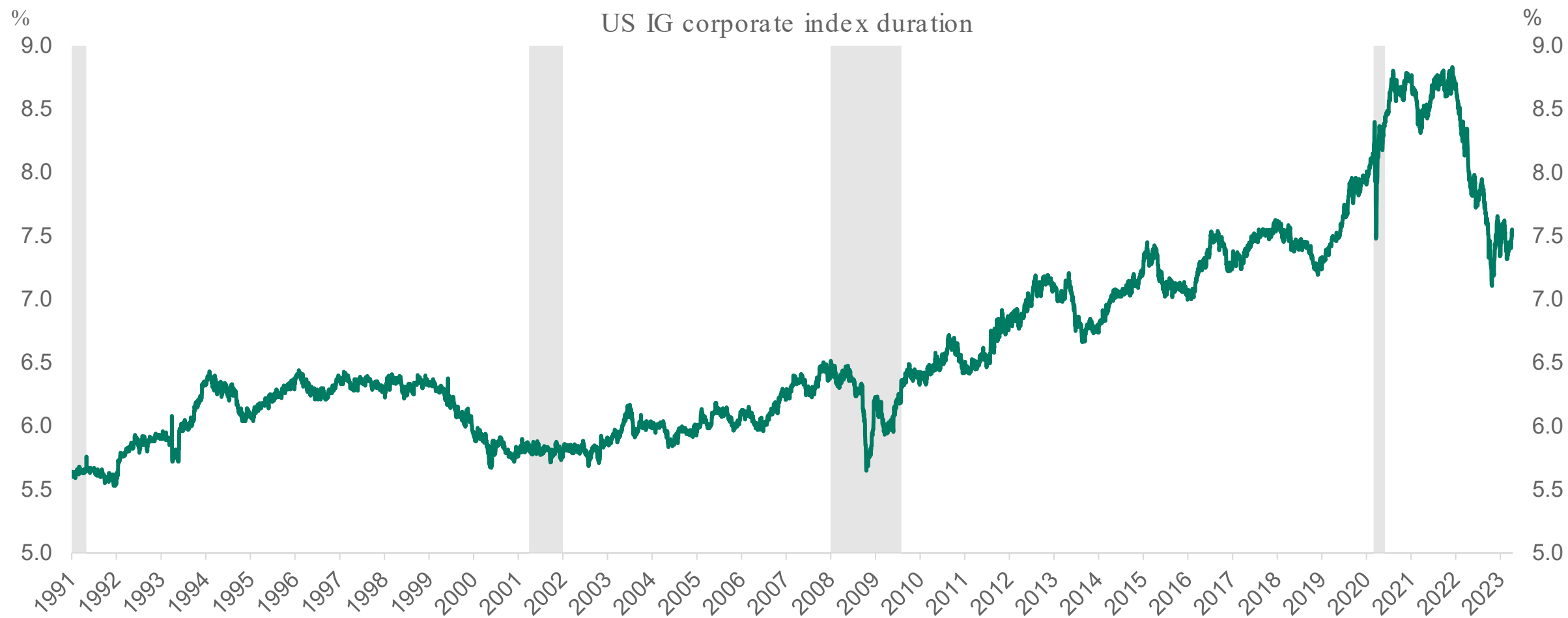


Share of corporate bond market value outstanding rated BBB and below

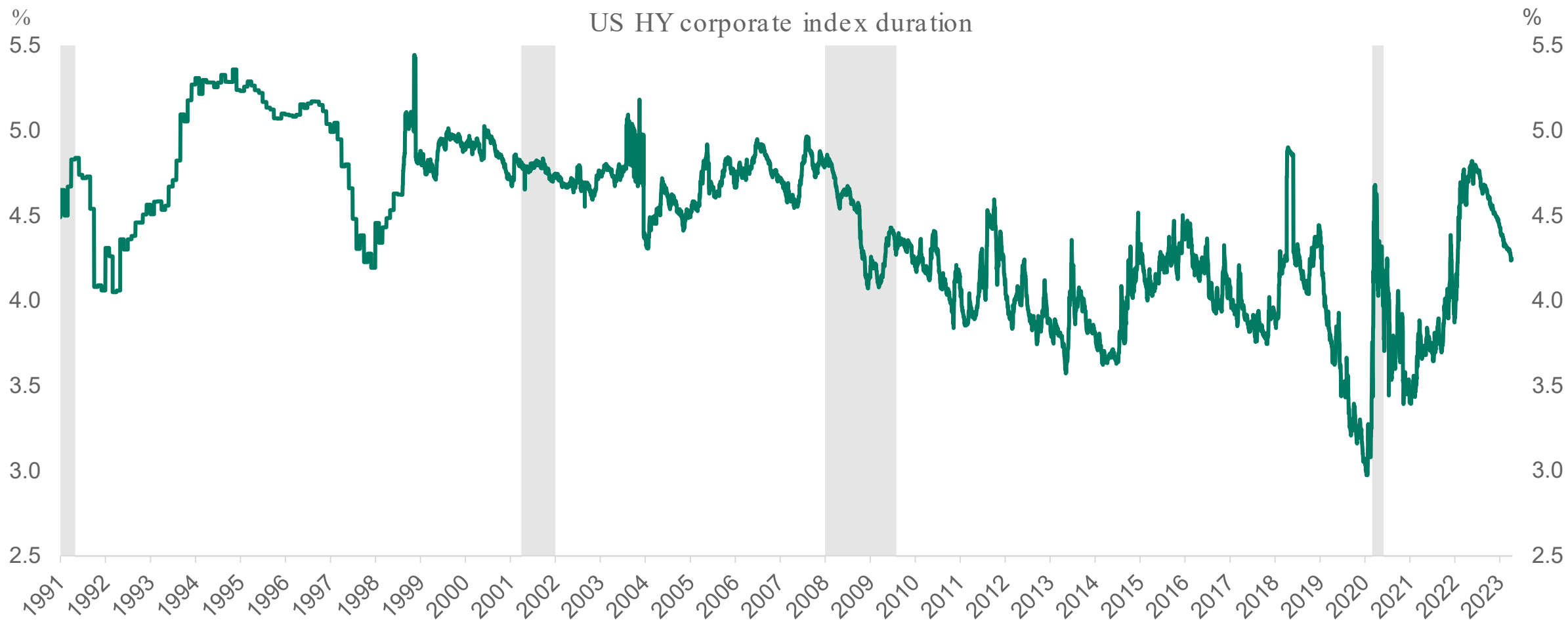


Source: ICE BofA, Bloomberg, Apollo Chief Economist. Data as of 31st March 2023

IG credit index duration declining



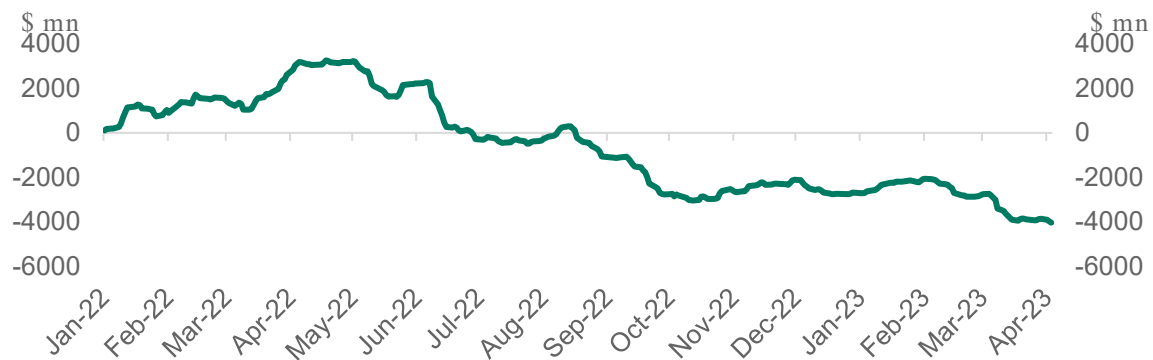
HY credit index duration



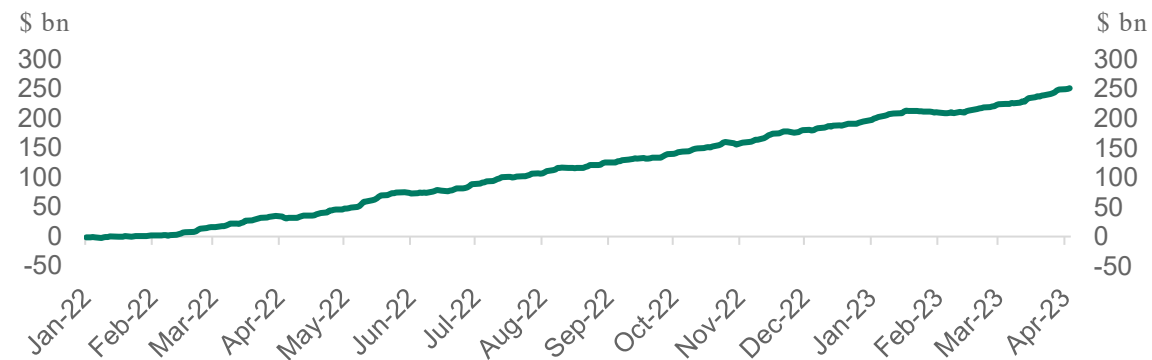
Source: Bloomberg, Apollo Chief Economist. Note: The measure used is modified duration, which measures the expected change in a bond's price to a 1% change in interest rates.

Flow monitor

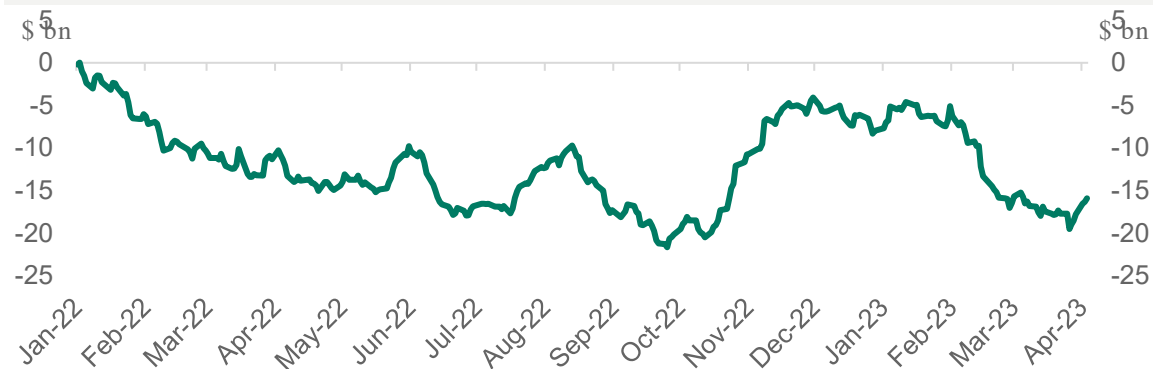
US bank loans ETF flows



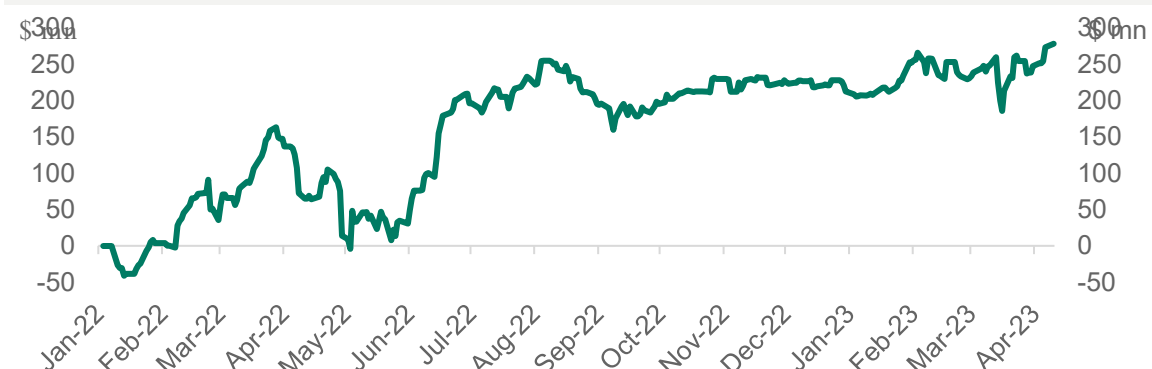
IG ETF flows



HY ETF Flows

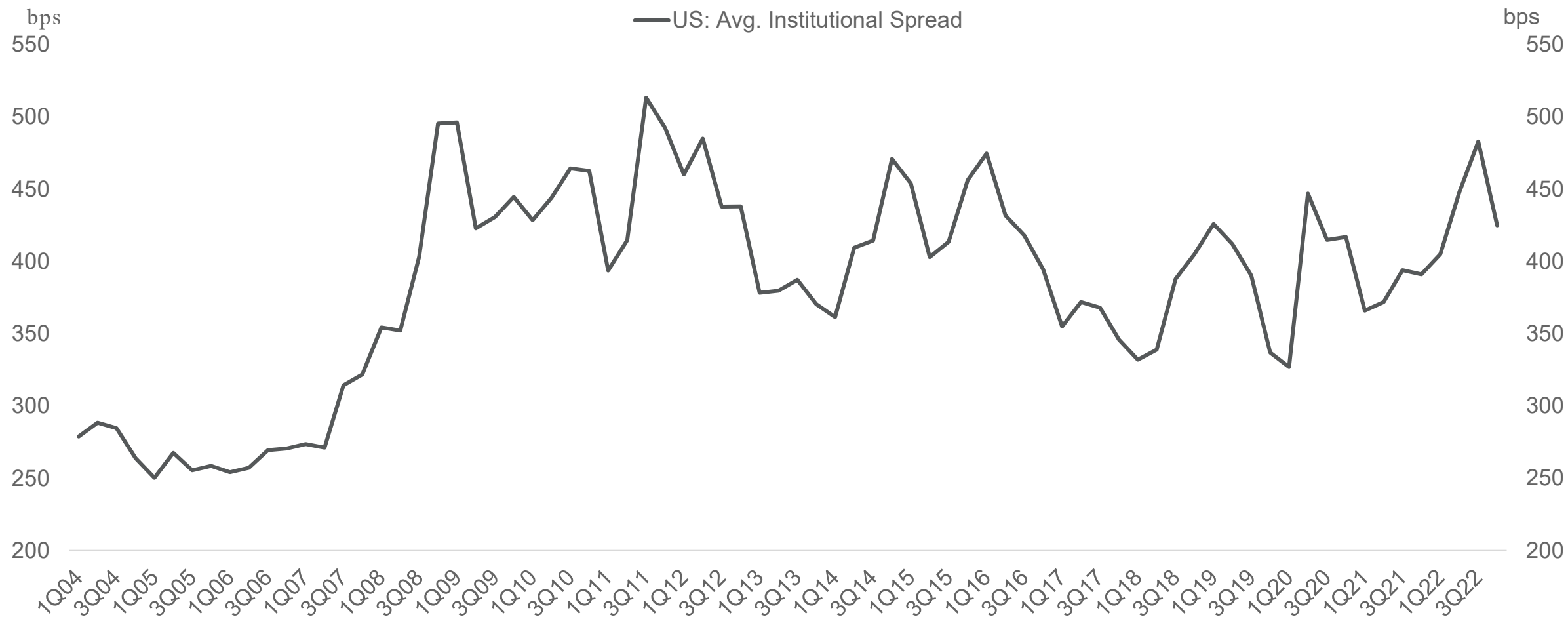


Crypto ETF flows

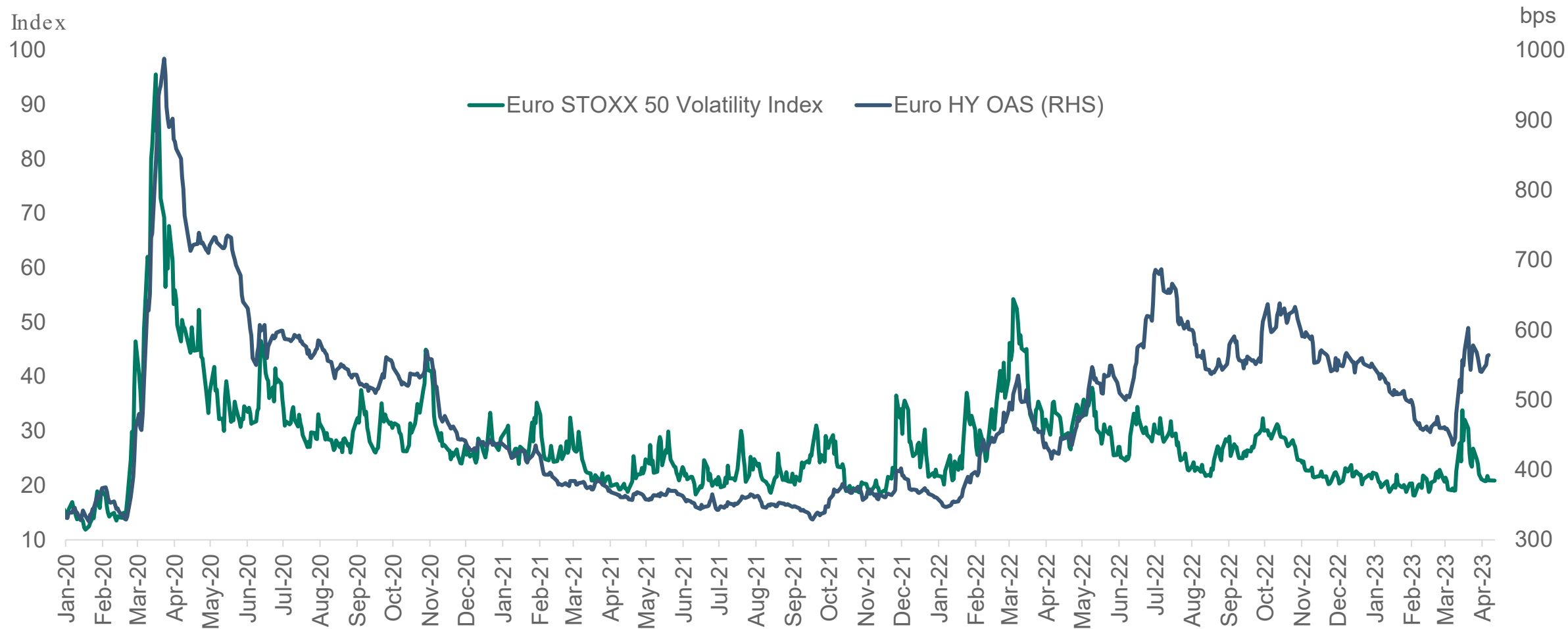


Source: Bloomberg, Apollo Chief Economist (Note: bito US equity: Crypto ETF flows, BFFUEBK Index: US Bank loans ETF flows, BFFUEHY Index: HY ETF flows; BFFUEIG Index: US IG ETF flows)

Loans: Institutional spread relative to bespoke loans



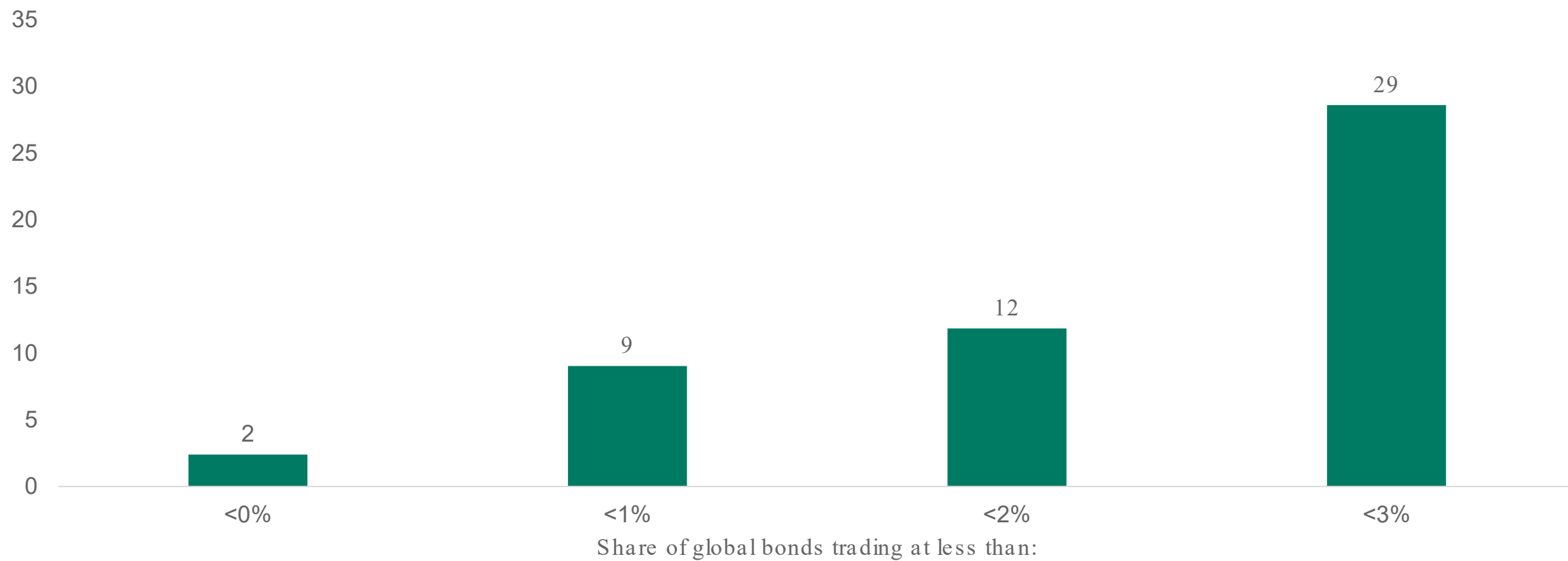
Convergence between EU equity vol and EU HY spreads



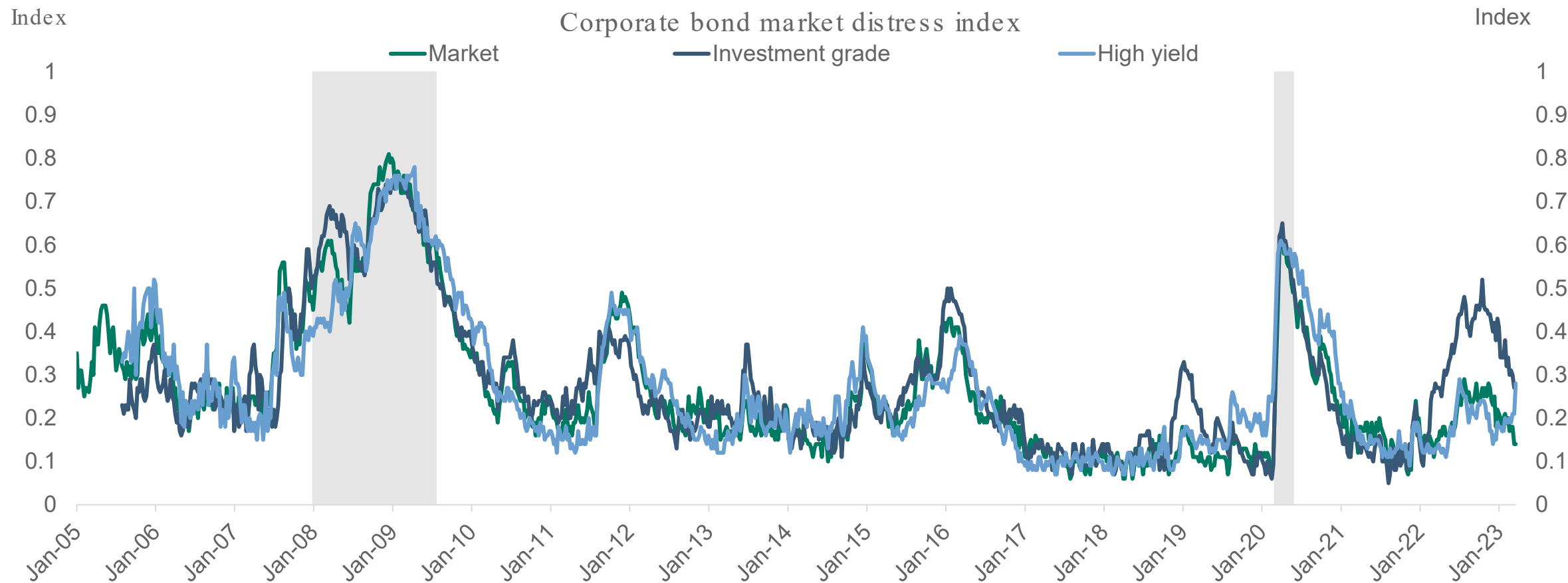
Source: Bloomberg, Apollo Chief Economist. Note: Tickers used are V2X Index and LP01OAS Index

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

% global bonds outstanding

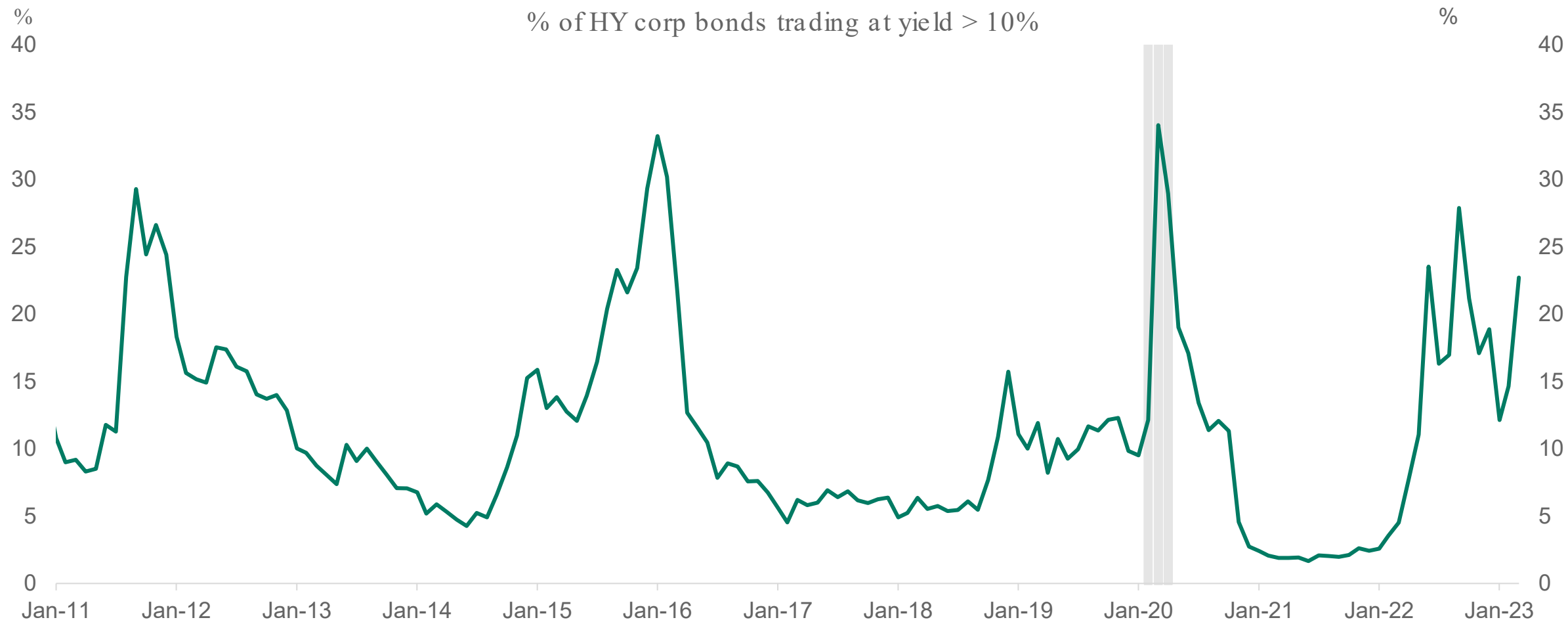


NY Fed measure of corporate bond market functioning shows less distress in IG



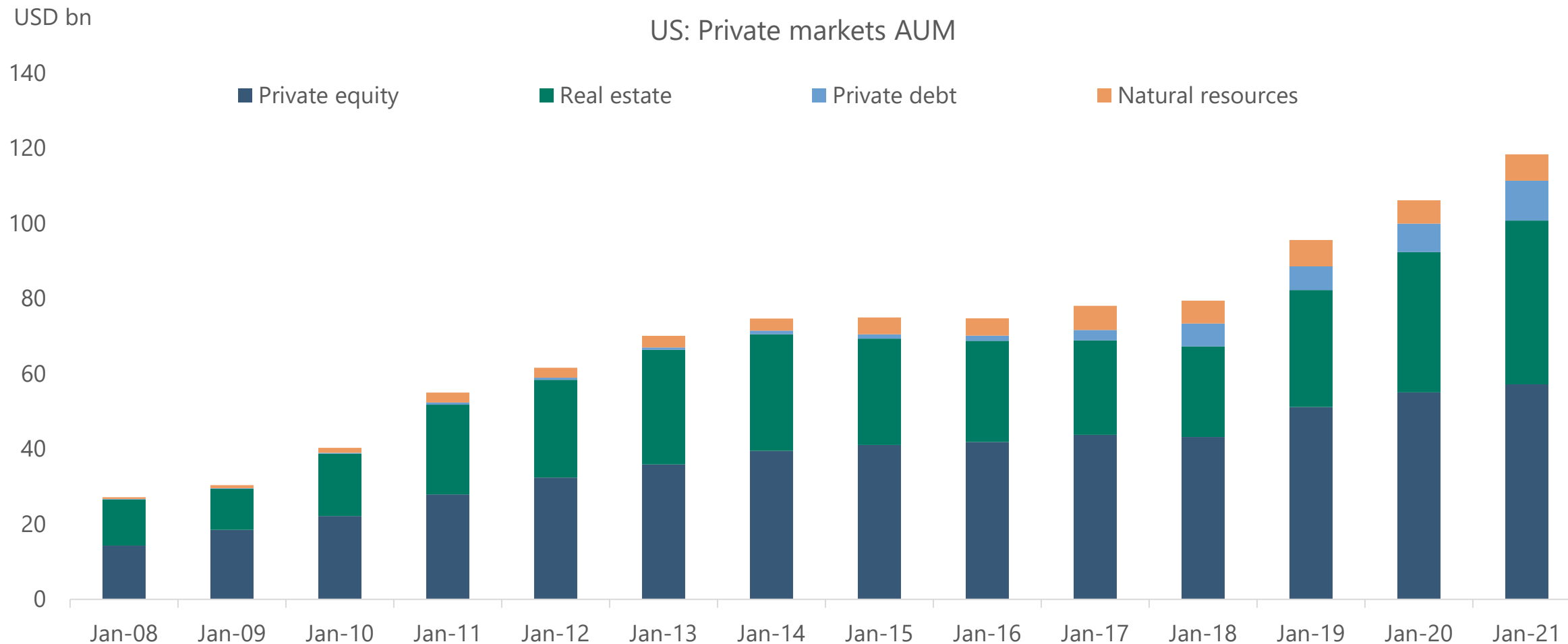
Source: FRB of New York, Apollo Chief Economist (Note: Corporate bonds are a key source of funding for U.S. non-financial corporations and a key investment security for insurance companies, pension funds, and mutual funds. Distress in the corporate bond market can thus both impair access to credit for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



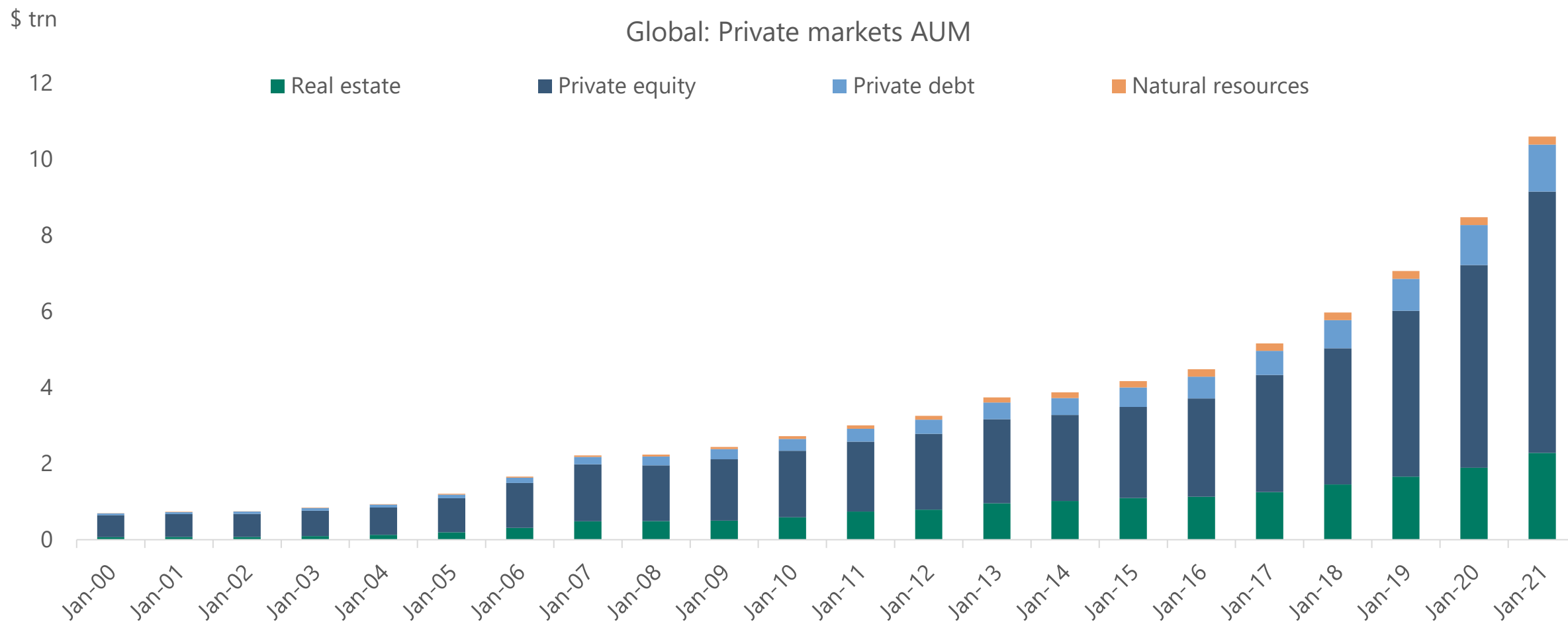
Source: Bloomberg, Apollo Chief Economist. Note: HY bond universe is H0A0 Index

US: Total assets under management in private markets



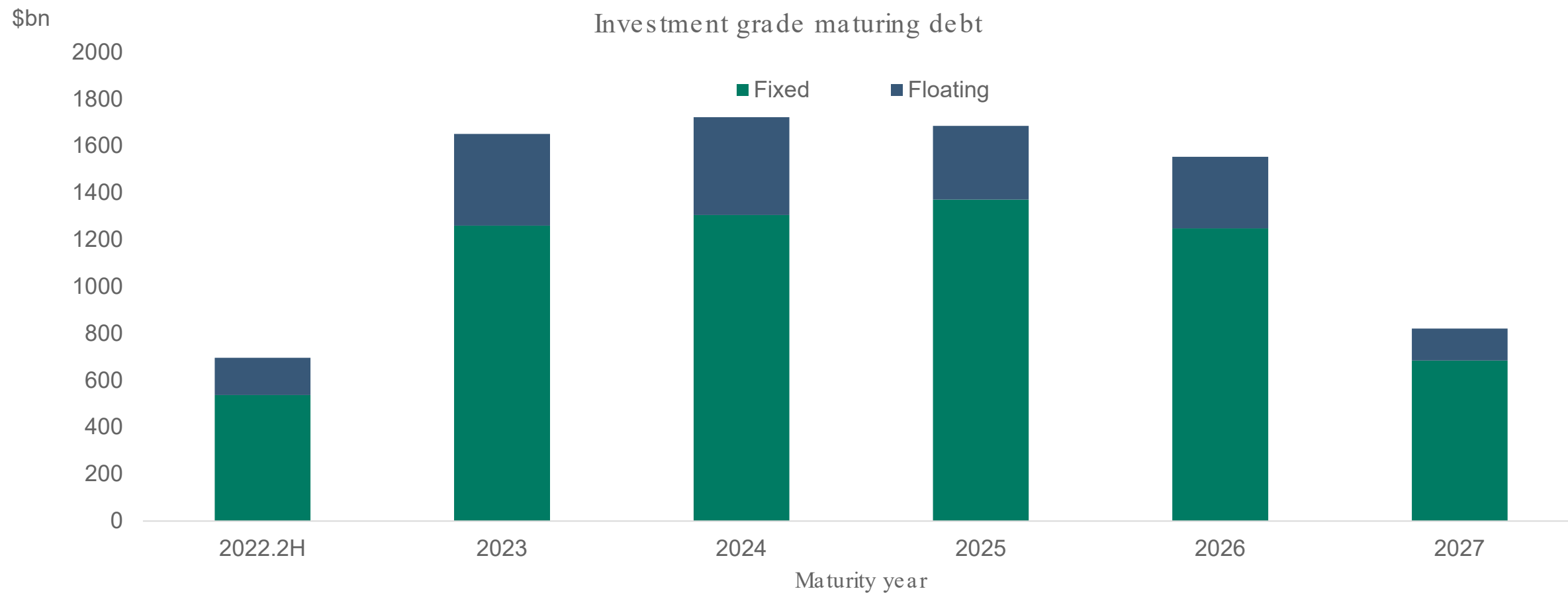
Source: Preqin, Apollo Chief Economist (Note: Real estate includes private real estate and infrastructure funds)

Total assets under management in private markets funds globally



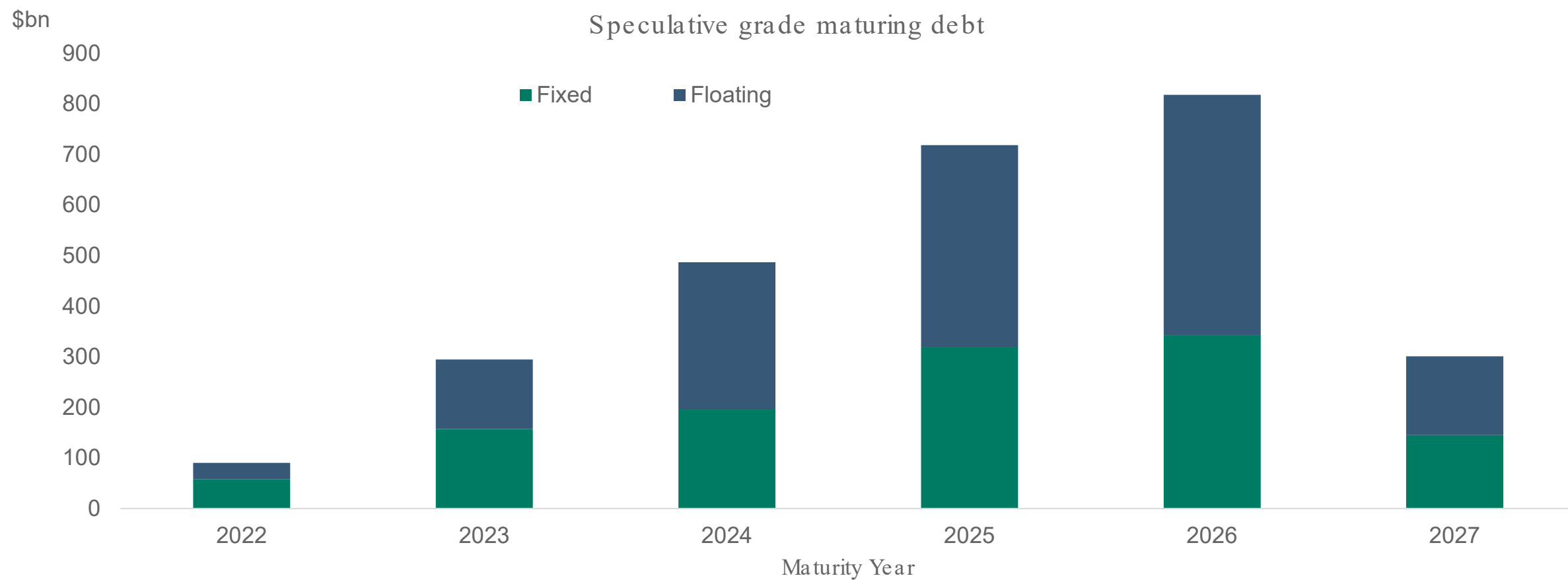
Source: Preqin, Apollo Chief Economist (Note: Real estate includes private real estate and infrastructure funds)

Investment grade maturity wall

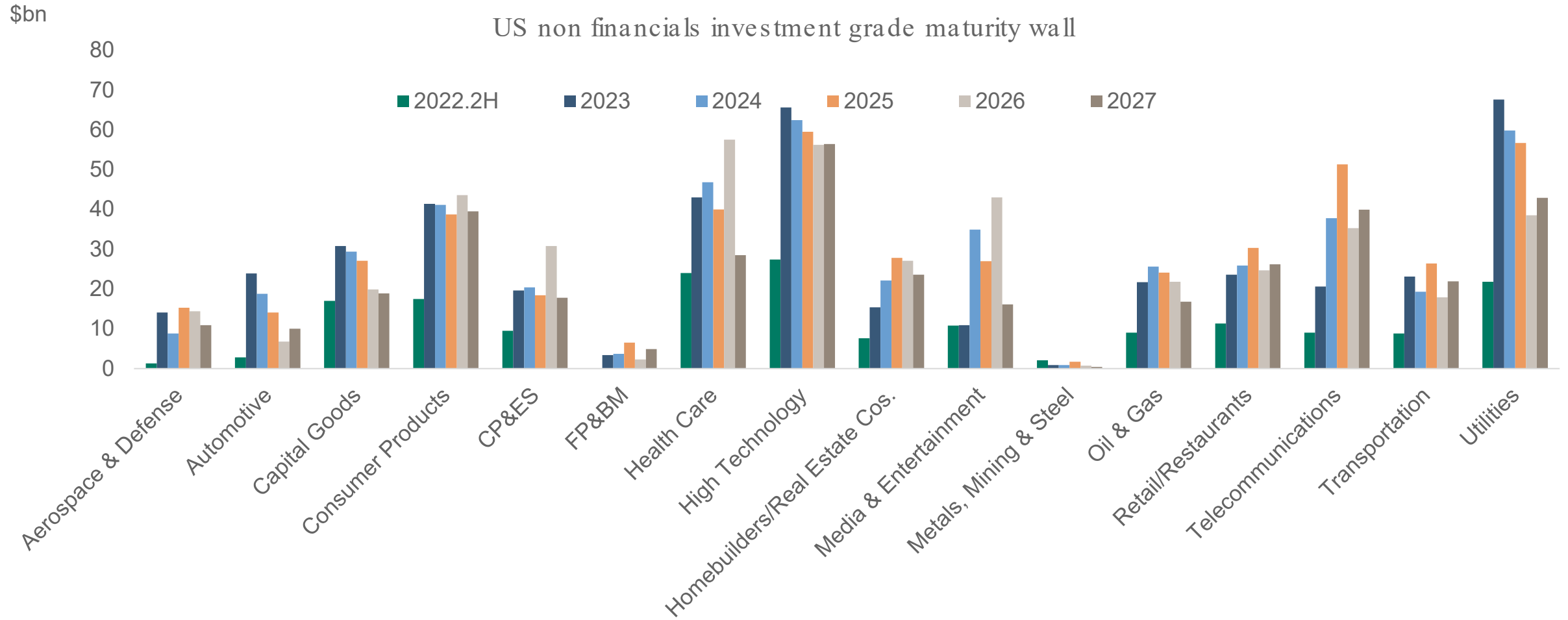


Source: S&P Global ratings Research, Apollo Chief Economist. Note: Data as of July 1, 2022. Includes issuers' investment-grade bonds, loans, and revolving credit facilities that are rated by S&P Global Ratings.

High yield maturity wall

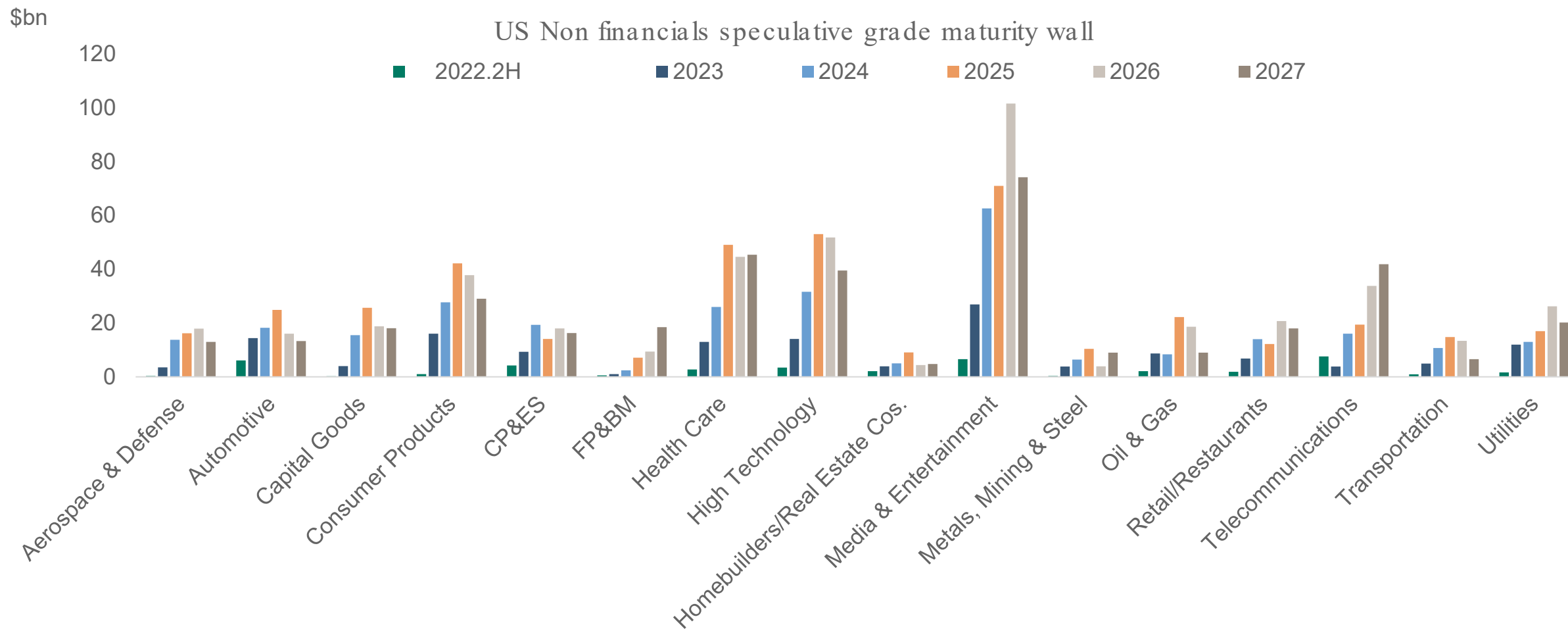


IG: US Non financials maturity wall



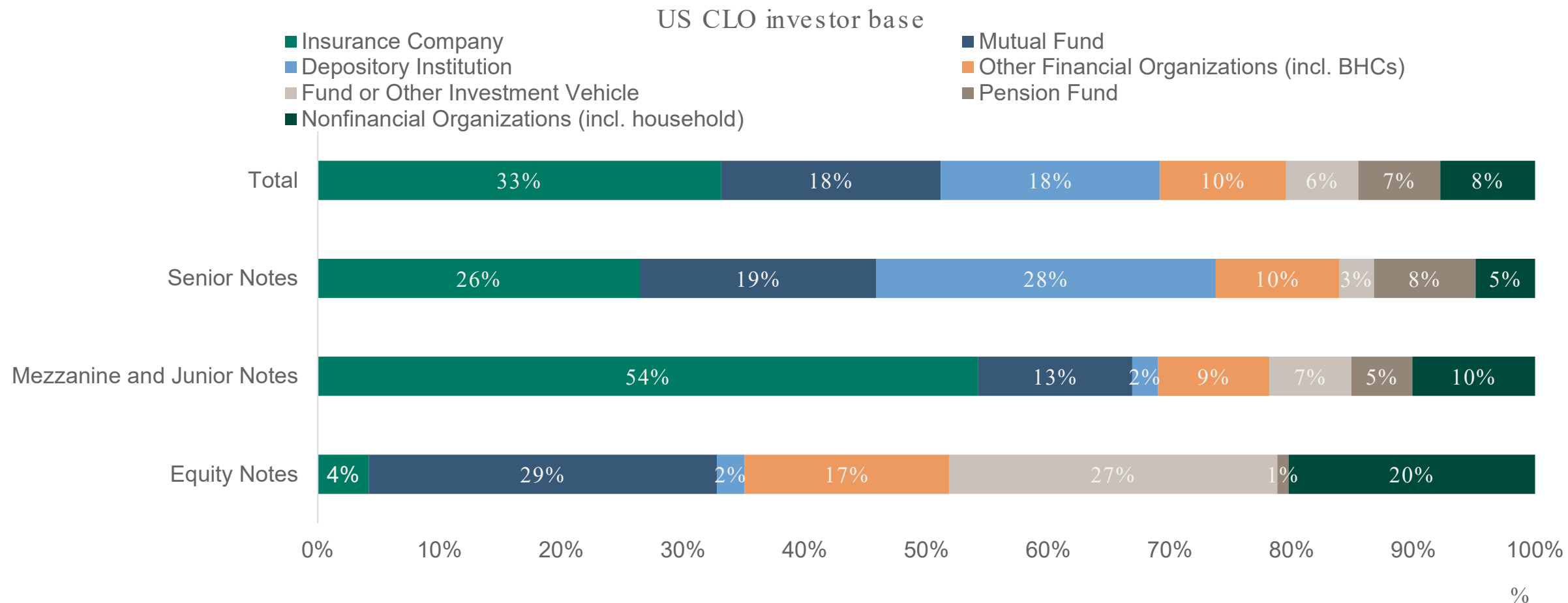
Source: S&P, Apollo Chief Economist. Note: CP&ES--Chemicals, packaging, and environmental services. FP&BM--Forest products and building materials. Media and entertainment includes the leisure sector. Includes bonds, loans, and revolving credit facilities that are rated by S&P Global Ratings. Data as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

HY: US Non financials maturity wall

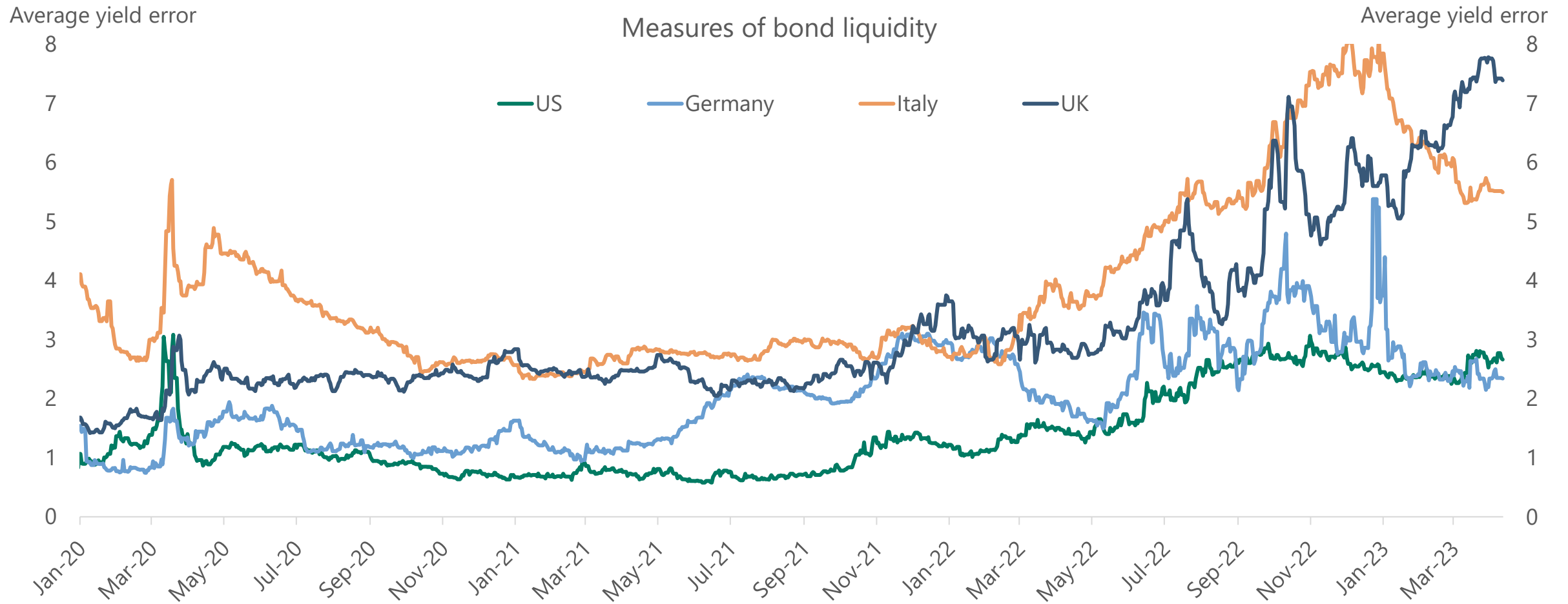


Source: S&P, Apollo Chief Economist. Note: CP&ES--Chemicals, packaging, and environmental services. FP&BM--Forest products and building materials. Media and entertainment includes the leisure sector. Includes bonds, loans, and revolving credit facilities that are rated by S&P Global Ratings. Data as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

US CLO investor base by tranche



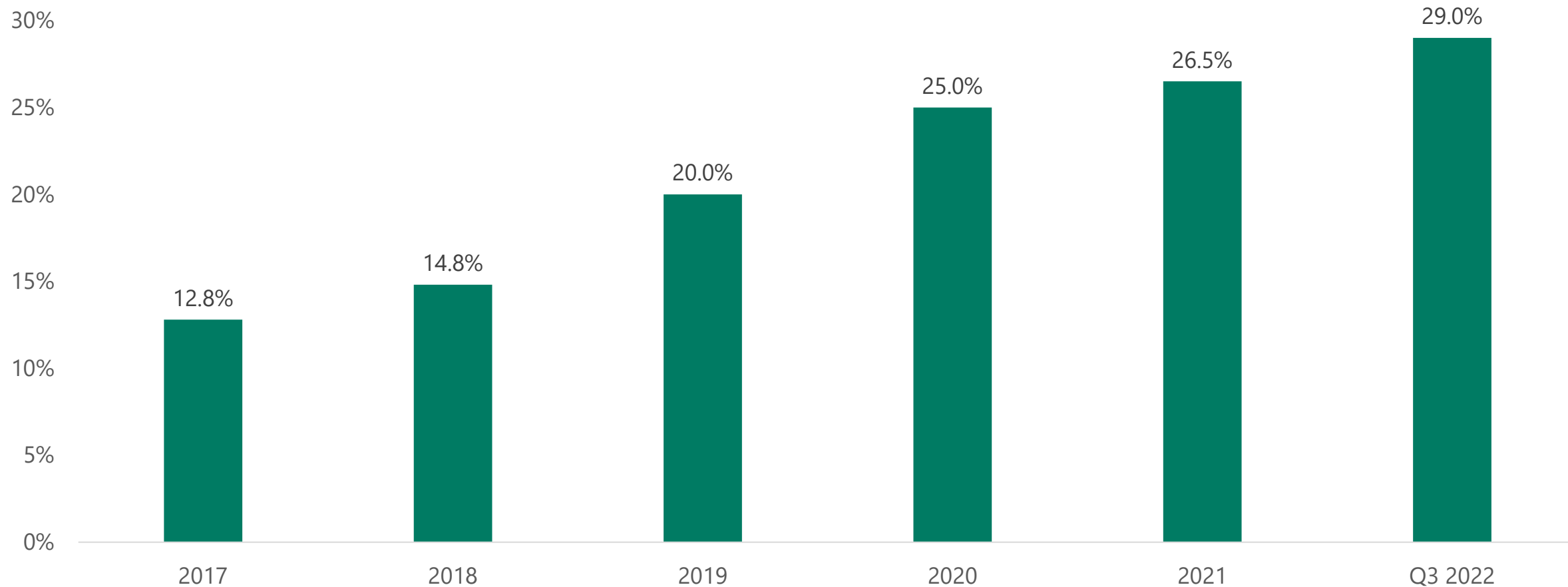
Liquidity deteriorating in UK bond market



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 Morningstar LSTA Leveraged Loan Index are rated B-

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



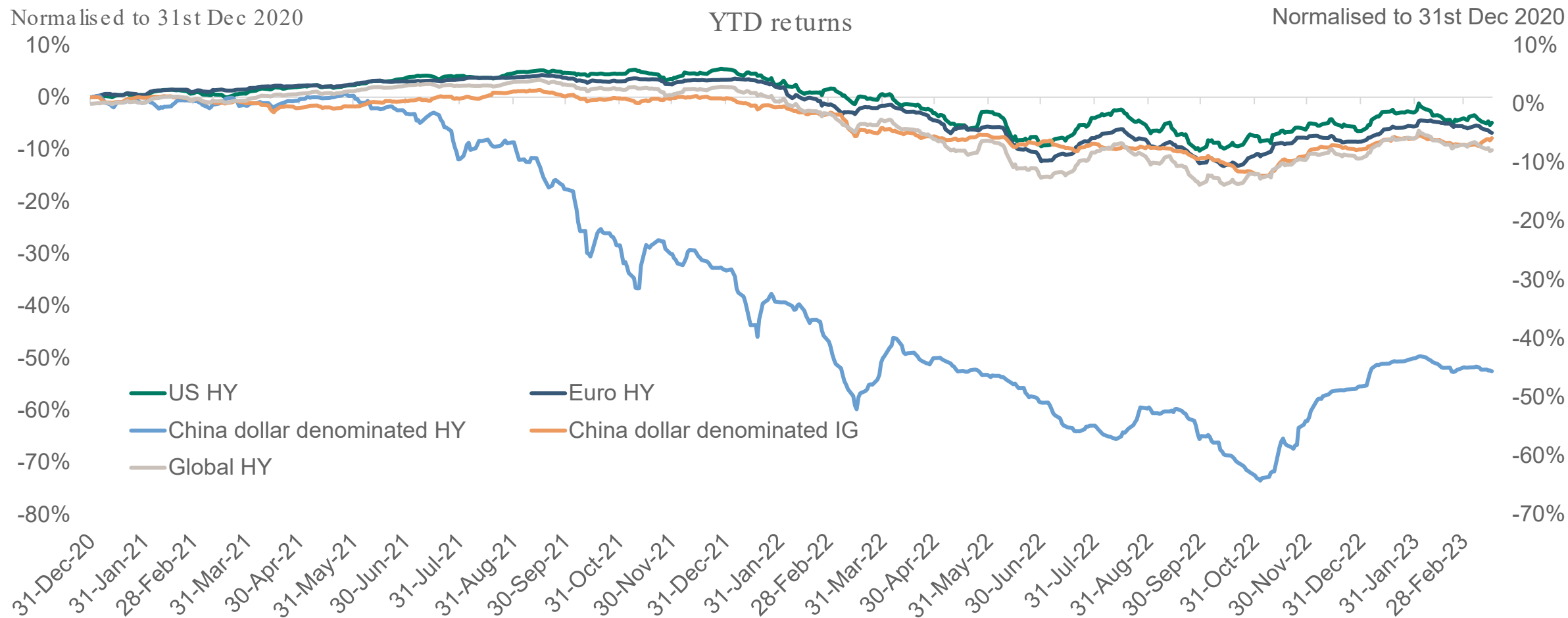
China HY



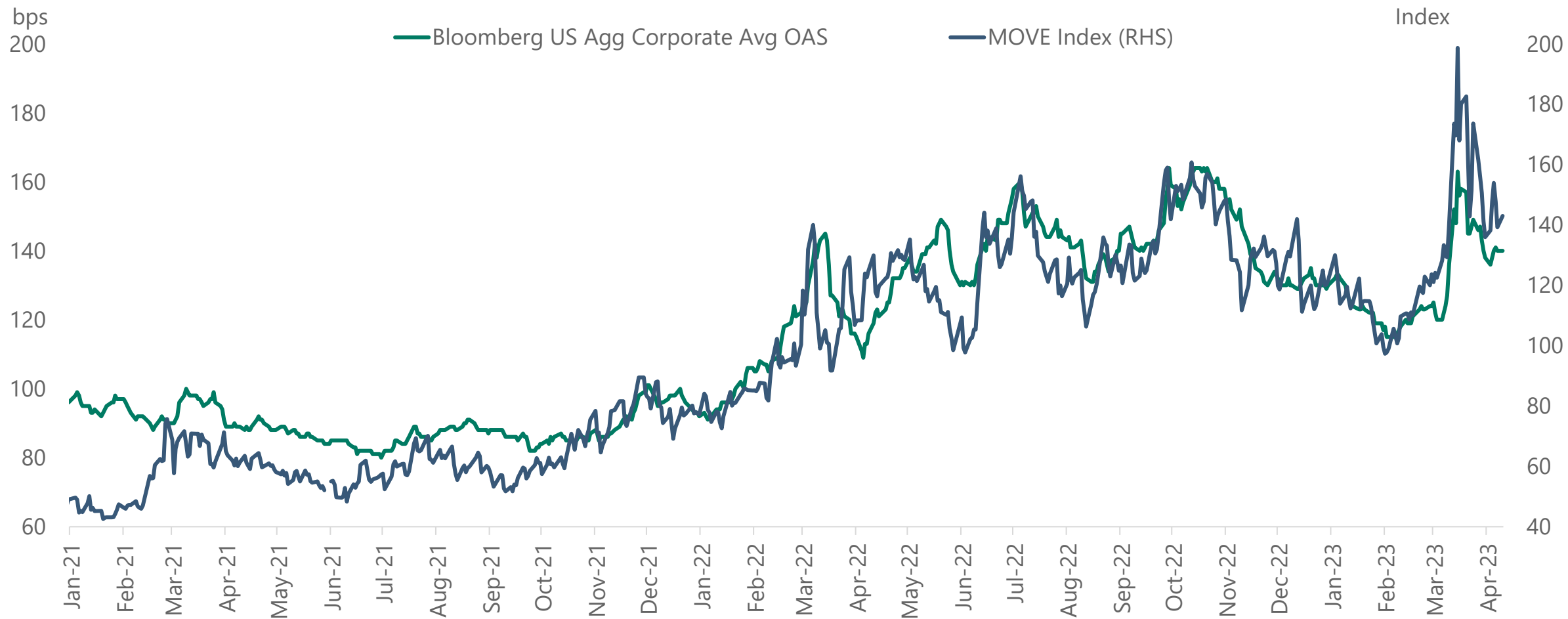
The yield on China HY has declined significantly, now at 16%



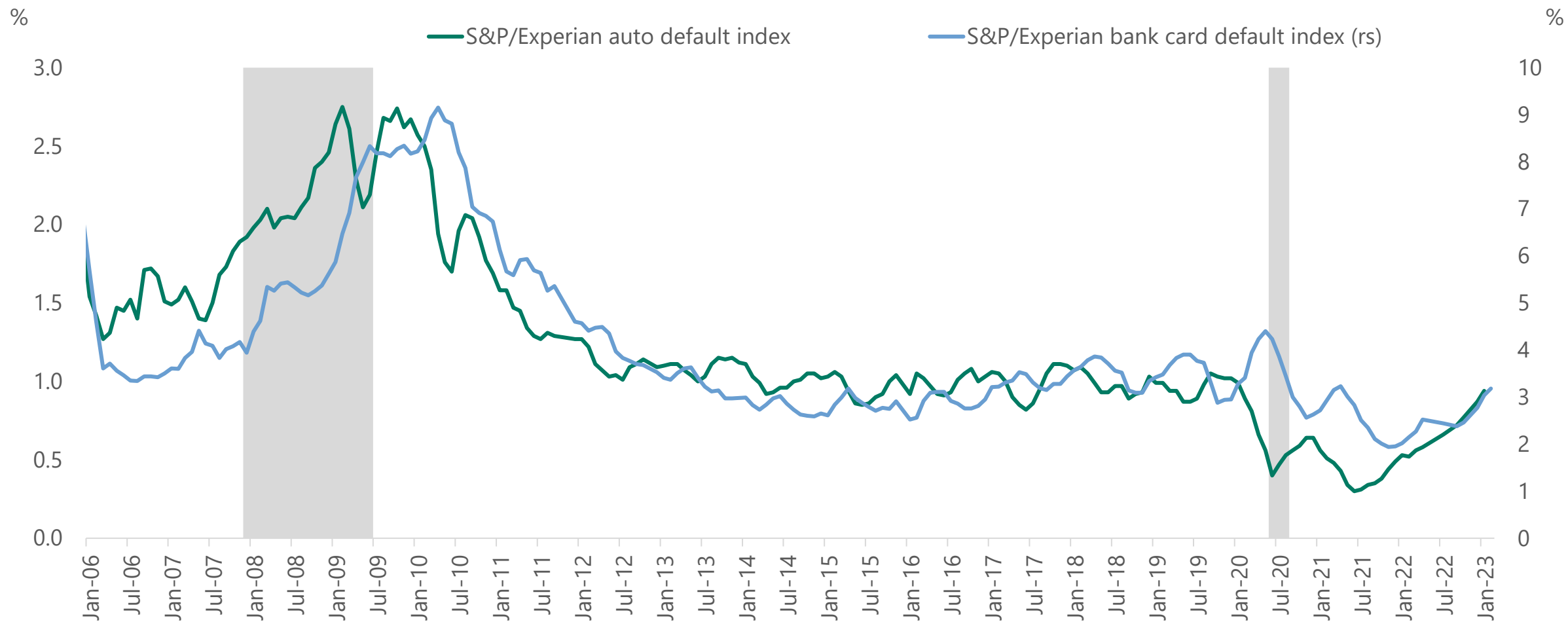
Little contagion from China HY to US and EU credit markets



US IG spread widening



Default rates for auto loans and credit cards are moving higher



Maturity profile for US fixed income





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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.