

# Finding opportunities within the High Yield market

Michael Graham, Head of US HY and Senior Portfolio Manager

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### MICHAEL GRAHAM, CFA – Head of US HY & Senior Portfolio Manager

- Mike is the Head of US High Yield and Senior US HY Portfolio Manager with AXA IM. He is also a member of the Core High Yield and Global High Yield Working Groups, which are the teams responsible for the management of our US core and global high yield portfolios.
- Since 2007, Mike has served a number of roles within the US High Yield team, including his most recent role as US High Yield Portfolio Manager. Mike joined AXA IM as a US High Yield Credit Research Analyst, covering a number of sectors including Utilities, Energy, and Healthcare.
- In 2010, his role expanded to include portfolio management. As one of the US Core High Yield portfolio managers, Mike is involved in the daily management of core high yield portfolios including AXA WF US High Yield Bonds, AXA WF US Dynamic High Yield Bonds, AXA WF Global High Yield Bonds and a variety of other funds and mandates.
- Prior to joining AXA IM in 2007, he was an Analyst in the fixed income division of Bear, Stearns & Company, where he performed financial analysis and quantitative support for the Public Power group.
- Mike holds a B.A. in Economics from Williams College and has the CFA professional designation.

## Our High Yield Product Offering

### Dedicated team of High Yield credit specialists

- ❖ Experience in managing through multiple economic and credit cycles
- ❖ Positioned to deliver performance and liquidity
- ❖ Resources to meet the needs of a large, global client base
- ❖ Offering customized solutions to meet any risk-return objectives



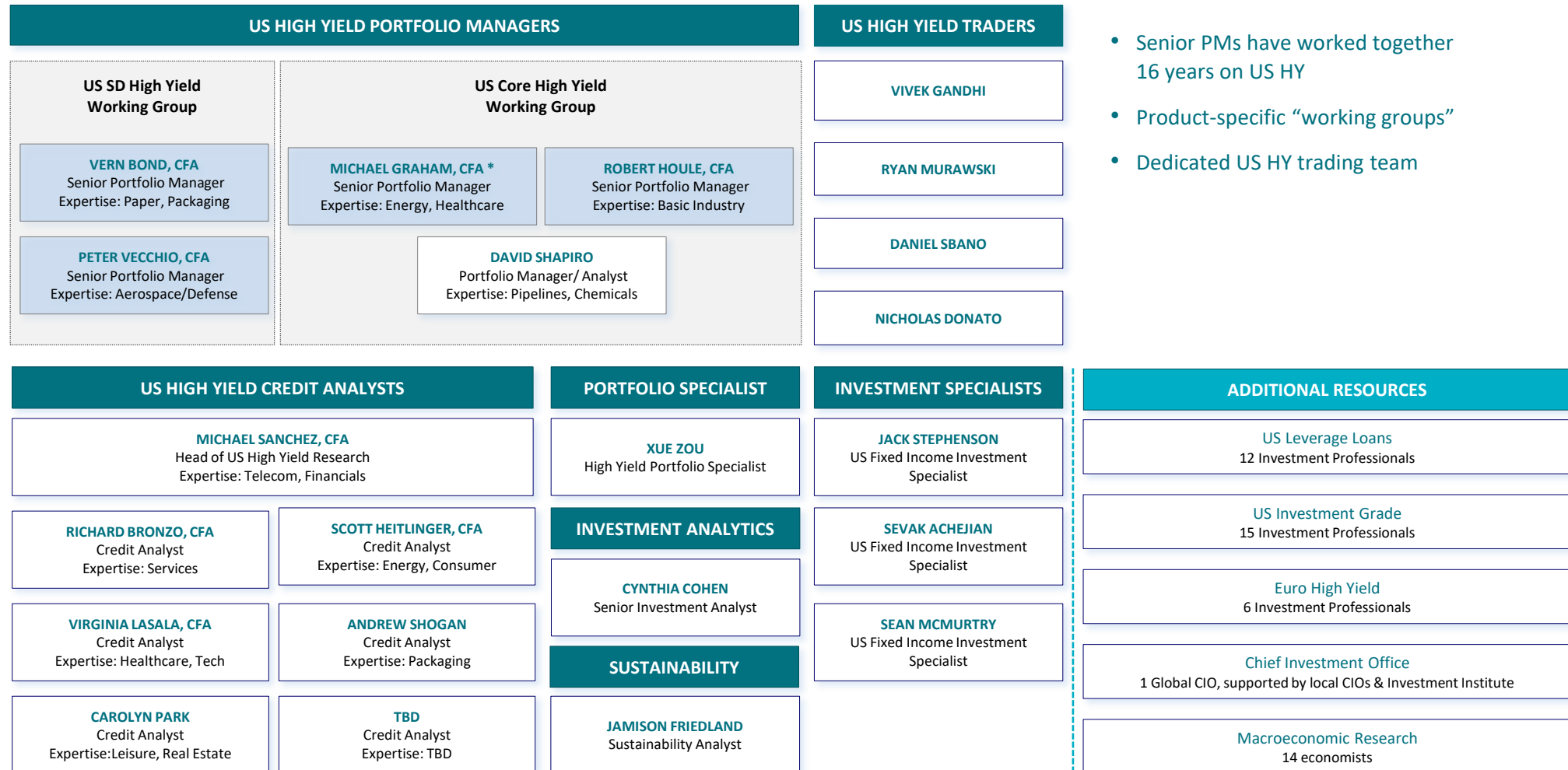
**\$15.3 billion** under management in High Yield strategies



# US High Yield Organization

US high yield investment professionals and related support teams

**MICHAEL GRAHAM, CFA - Head of US High Yield**



## Executive Summary

Finding value across the High Yield spectrum

1

High Yield market is offering a very attractive **yield / income generation** and a “fair” **spread**

2

**Fundamentals** of overall market are strong, but macro uncertainty should drive **higher level of dispersion**

3

Flexibility around the **type** of credit and duration risk is key, driven by **bottom-up convictions**

4

High Yield can offer many **distinct** risk / return outcomes to **complement** other asset class allocations



Market update

# US High Yield – a Well Diversified Market

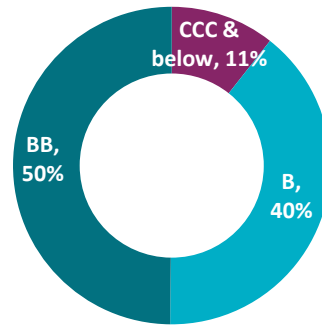
A large number of issuers across a broad range of sectors

## ICE BofA US High Yield Index

### Characteristics

|                       |         |
|-----------------------|---------|
| Yield to maturity     | 8.6%    |
| Yield to worst        | 8.5%    |
| Average price         | 88      |
| Duration              | 4.1     |
| OAS (bps)             | 458     |
| Average Maturity      | 5.3 yrs |
| Coupon Rate           | 5.8%    |
| Number of bonds       | 1,916   |
| Number of issuers     | 894     |
| Average credit rating | B1      |

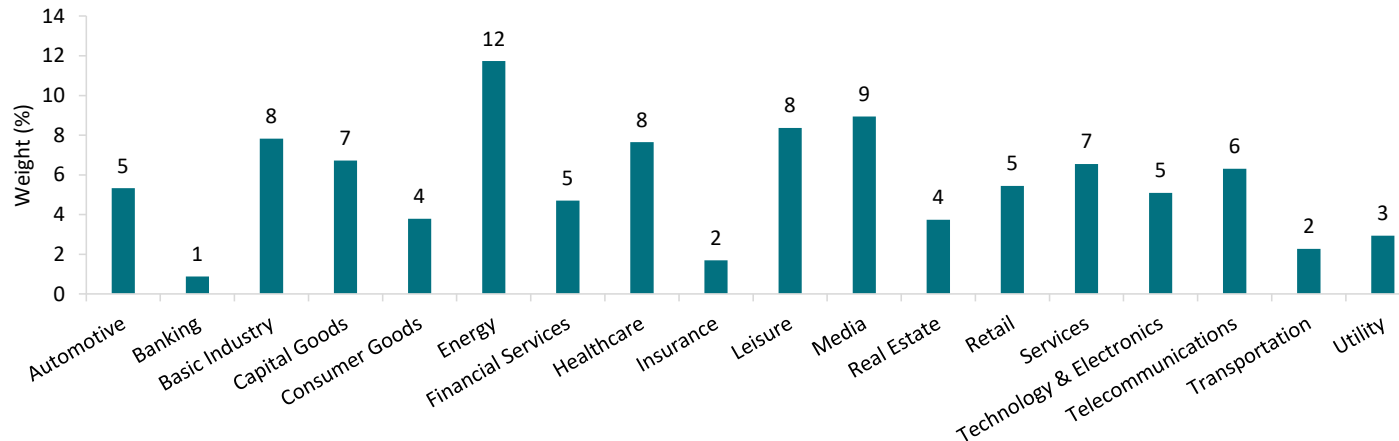
### Ratings breakdown



### Maturity/ Duration breakdown

| Weight (%)    | Maturity | Duration to worst |
|---------------|----------|-------------------|
| 0-1 Years     | 0.0%     | 2.1%              |
| 1 - 3 Years   | 18.9%    | 26.4%             |
| 3 - 5 Years   | 31.4%    | 43.0%             |
| 5 - 7 Years   | 32.1%    | 24.2%             |
| 7 - 10 Years  | 14.3%    | 2.9%              |
| Over 10 Years | 3.3%     | 1.4%              |

### Sector breakdown



Source: BofA ML US High Yield Index. Data as of March 31, 2023. Past performance is not indicative of future results. No assurance can be given that the benchmark will be successful or achieve its objectives. The examples provided above are for illustrative purposes only. There is no assurance that AXA IM will be able to identify or secure investment in securities substantially like those discussed. Diversification does not ensure profit or protection against loss.

## Asset Class Comparison - Performance and Yield Comparison

Markets rebound at the end of 2022 and into 2023

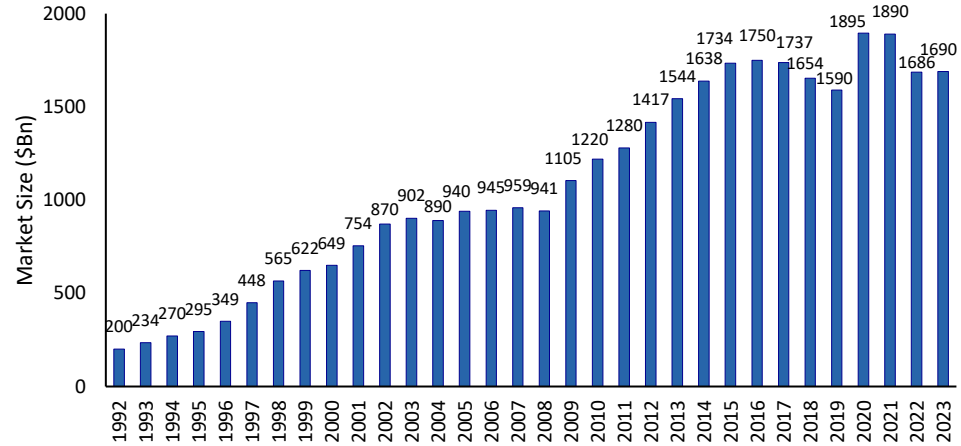
|                               | As of December 31, 2022  |                             |                       |                               | As of April 19, 2023         |                       |                               |
|-------------------------------|--------------------------|-----------------------------|-----------------------|-------------------------------|------------------------------|-----------------------|-------------------------------|
| <b>USD (H) Currency</b>       | <b>2022 Total Return</b> | <b>2022 4Q Total Return</b> | <b>Yield-to-Worst</b> | <b>Option Adjusted Spread</b> | <b>2023 YTD Total Return</b> | <b>Yield-to-Worst</b> | <b>Option Adjusted Spread</b> |
| Credit Suisse Lev Loan Index  | -1.06                    | 2.33                        | 10.28                 | 369                           | 3.96                         | 9.72                  | 374                           |
| Euro High Yield Index (H USD) | -9.33                    | 5.71                        | 7.96                  | 515                           | 4.02                         | 7.65                  | 464                           |
| US Corporates 1-10yrs         | -9.63                    | 2.70                        | 5.43                  | 127                           | 2.59                         | 5.24                  | 126                           |
| US High Yield BB Rated        | -10.57                   | 4.33                        | 7.26                  | 308                           | 3.66                         | 6.80                  | 277                           |
| US High Yield B Rated         | -10.58                   | 4.33                        | 9.34                  | 515                           | 4.41                         | 8.81                  | 473                           |
| <b>US High Yield Index</b>    | <b>-11.22</b>            | <b>3.98</b>                 | <b>8.99</b>           | <b>481</b>                    | <b>4.21</b>                  | <b>8.45</b>           | <b>441</b>                    |
| Euro Corporate Index (H USD)  | -11.92                   | 2.10                        | 4.22                  | 167                           | 2.31                         | 4.24                  | 154                           |
| US Corporate Index            | -15.44                   | 3.53                        | 5.51                  | 138                           | 3.30                         | 5.30                  | 137                           |
| US Corporates BBB Rated       | -15.86                   | 4.06                        | 5.83                  | 172                           | 3.45                         | 5.60                  | 169                           |
| US Treasury 10 year           | -16.28                   | 0.65                        | 3.83                  | N/A                           | 2.89                         | 3.60                  | 3                             |
| US High Yield CCC and lower   | -16.32                   | 1.12                        | 15.87                 | 1170                          | 5.82                         | 14.78                 | 1082                          |
| S&P 500 Index                 | -18.11                   | 7.56                        | 1.76*                 | N/A                           | 8.75                         | 1.67*                 | N/A                           |
| Russell 2000 Index            | -20.44                   | 6.23                        | 1.63*                 | N/A                           | 2.61                         | 1.67*                 | N/A                           |

\*12M Gross Dividend Yield

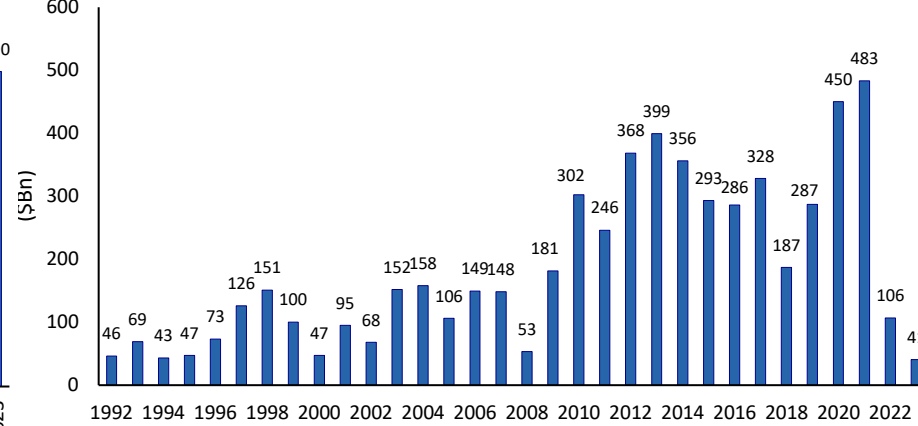


# High Yield Market – A Brief Update

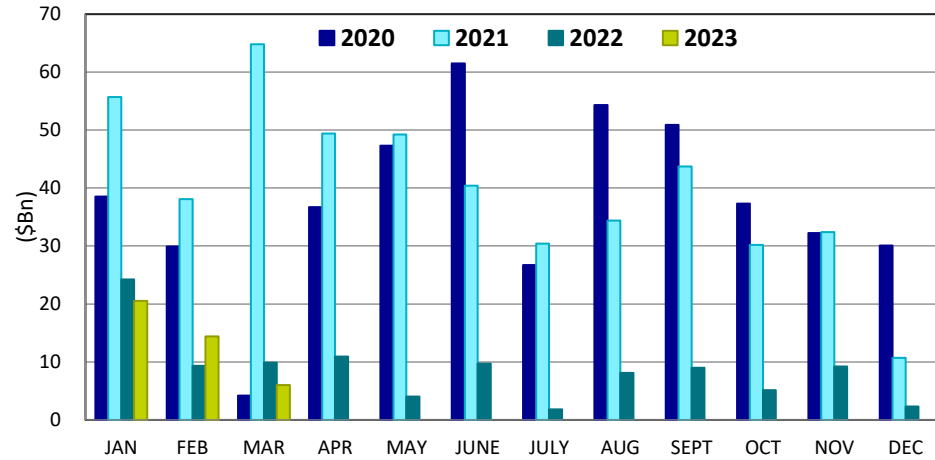
High Yield Market Growth <sup>1</sup>



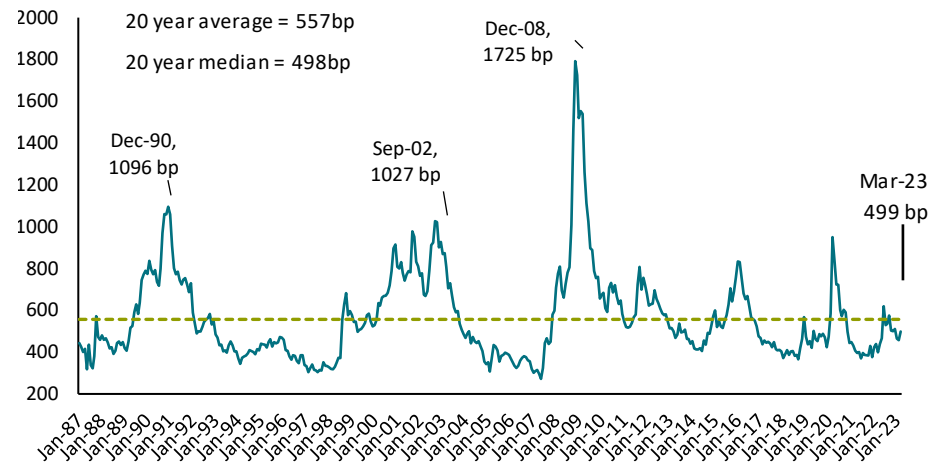
Annual High Yield New Issue Volume <sup>2</sup>



High Yield New-Issue Volume by month <sup>3</sup>

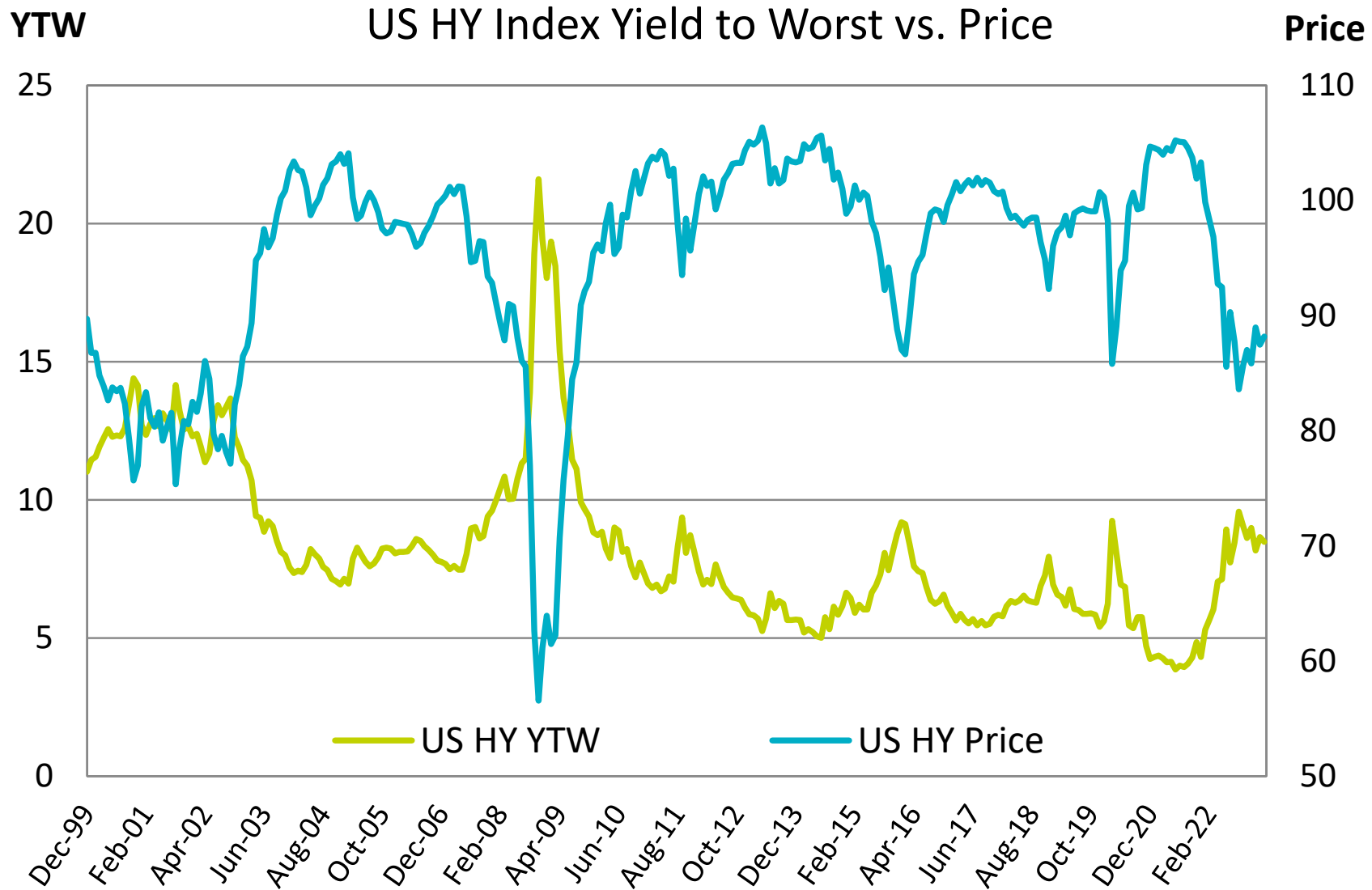


Spread to Worst <sup>4</sup>



Source: J.P. Morgan: 1) Credit Strategy Weekly as of March 24, 2023; 2) HY Bond and Leveraged Loan Market Monitor as of April 1, 2023; 3) HY Bond and Leveraged Loan Market Monitor as of April 1, 2023; 4) As of March 31, 2023. For illustrative purposes only. Past performance is not indicative of future results.

## High Yield Market – Attractive Yields, Discounted Prices



## Higher Returns Follow Higher Yields

### ICE US High Yield Index (H0A0)

| Year | YTW at beginning of year | Annual Return (%) |
|------|--------------------------|-------------------|
| 2000 | 11.02                    | -5.12             |
| 2001 | 14.14                    | 4.48              |
| 2002 | 12.67                    | -1.89             |
| 2003 | 11.9                     | 28.15             |
| 2004 | 7.56                     | 10.87             |
| 2005 | 6.93                     | 2.74              |
| 2006 | 8.24                     | 11.77             |
| 2007 | 7.75                     | 2.19              |
| 2008 | 9.61                     | -26.39            |
| 2009 | 19.43                    | 57.51             |
| 2010 | 8.83                     | 15.19             |
| 2011 | 7.38                     | 4.38              |

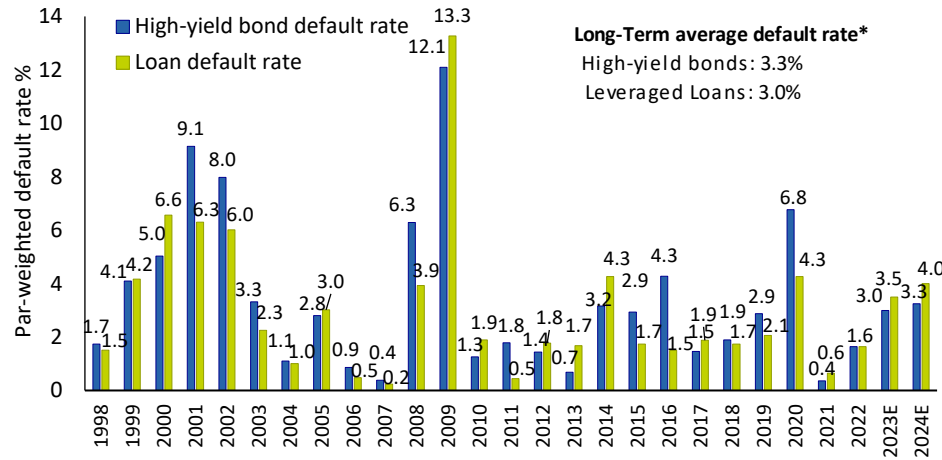
| Year | YTW at beginning of year | Annual Return (%) |
|------|--------------------------|-------------------|
| 2012 | 8.09                     | 15.58             |
| 2013 | 6.11                     | 7.42              |
| 2014 | 5.67                     | 2.5               |
| 2015 | 6.65                     | -4.64             |
| 2016 | 8.76                     | 17.49             |
| 2017 | 6.17                     | 7.48              |
| 2018 | 5.84                     | -2.27             |
| 2019 | 7.95                     | 14.41             |
| 2020 | 5.41                     | 6.17              |
| 2021 | 4.24                     | 5.36              |
| 2022 | 4.32                     | -11.22            |
| 2023 | 8.99                     | ???               |

### Since 1999:

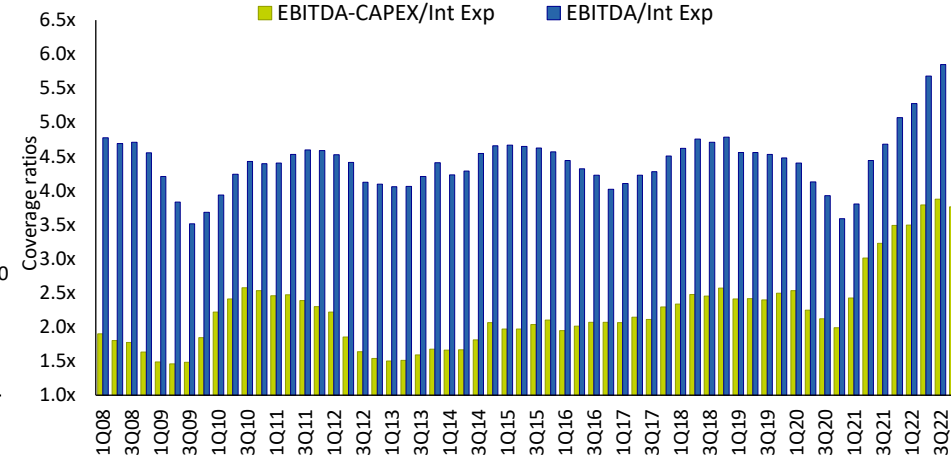
- The US high yield market has **never experienced back-to-back calendar years of negative returns.**
- **Following years with negative returns, the average return in the next year was +24.4%.**
- **Following negative returning years, the next year had double-digit returns 80% of the time.**
- When the Dec. 31<sup>st</sup> yield-to-worst of the preceding year was greater than 8%, **only three years (2000, 2002 and 2008) followed with a negative return**

# High Yield Market – A Brief Update

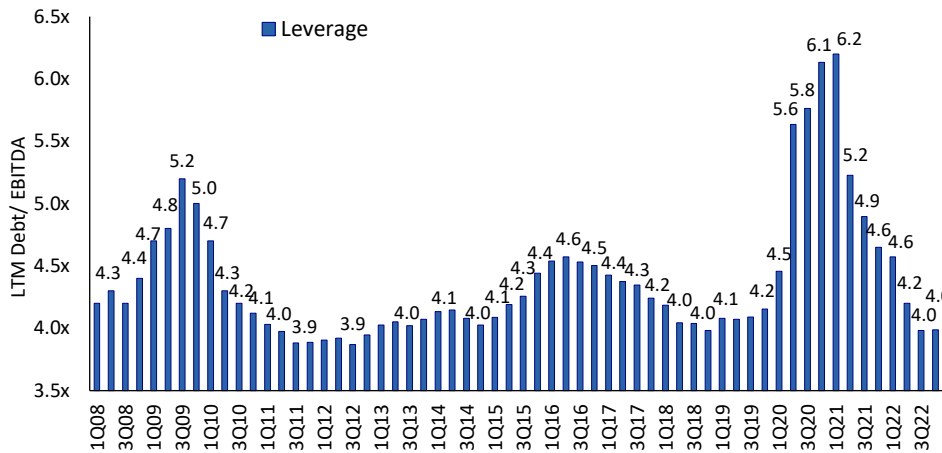
### High-yield bond and loan default rates <sup>1</sup>



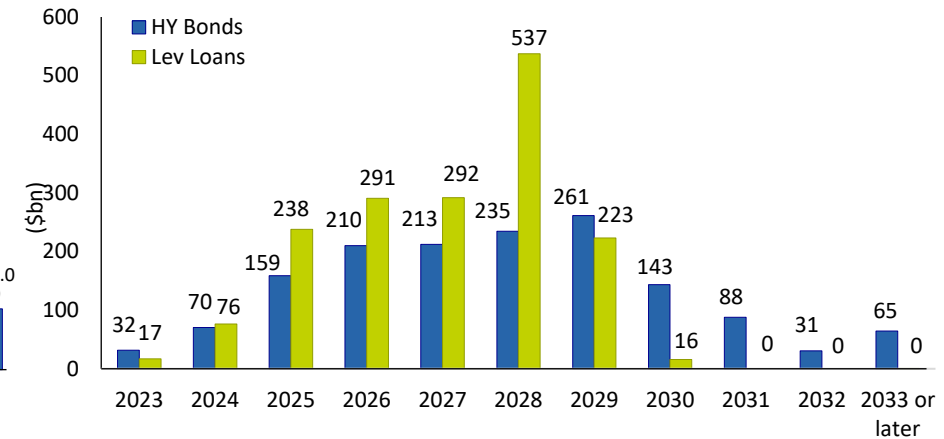
### High yield coverage ratio <sup>2</sup>



### High yield leverage ratio <sup>3</sup>

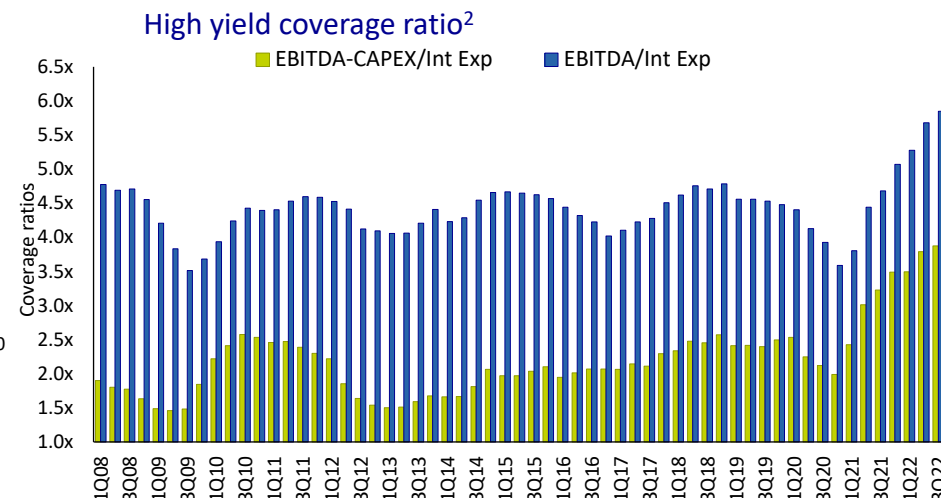
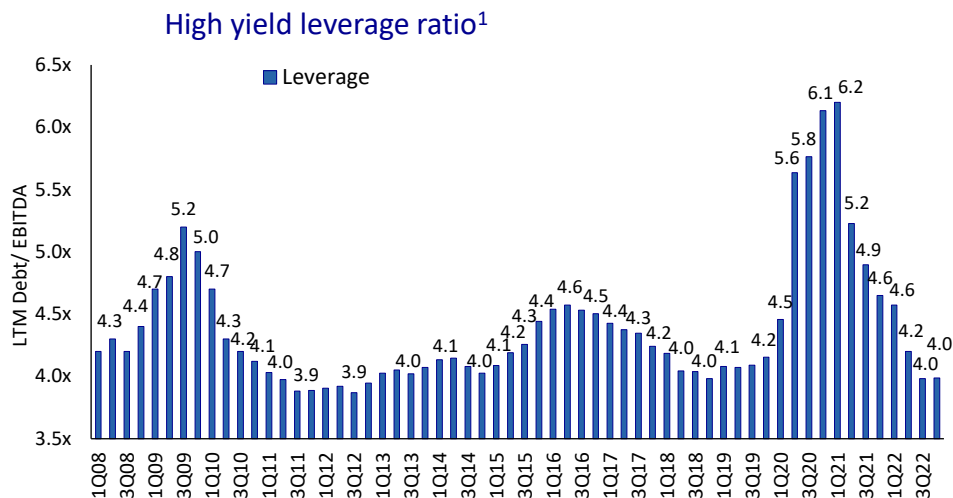


### High yield and institutional loan maturities <sup>4</sup>



# Market Fundamentals

## Leverage and coverage metrics



### Leverage by Rating<sup>3</sup>

|            | Debt/EBITDA<br>4Q22* | Debt/EBITDA<br>4Q21* | Change<br>y/y | Change<br>y/y |
|------------|----------------------|----------------------|---------------|---------------|
| <b>BB</b>  | 3.33x (3.12x)        | 4.00x (3.53x)        | -0.67x        | -17%          |
| <b>B</b>   | 4.72x (3.95x)        | 6.16x (4.70x)        | -1.44x        | -23%          |
| <b>CCC</b> | 7.44x (6.48x)        | 7.72x (6.27x)        | -0.27x        | -4%           |

### Coverage by Rating<sup>3</sup>

|            | EBITDA/Net<br>Interest Expense<br>4Q22 | EBITDA/Net<br>Interest Expense<br>4Q21 | Change<br>y/y | Change<br>y/y % |
|------------|--|--|---------------|-----------------|
| <b>BB</b>  | 8.36x (8.96x)                          | 6.60x (7.53x)                          | 1.76x         | 27%             |
| <b>B</b>   | 4.42x (5.16x)                          | 3.52x (4.64x)                          | 0.90x         | 25%             |
| <b>CCC</b> | 2.34x (2.57x)                          | 2.36x (2.82x)                          | -0.01x        | -1%             |

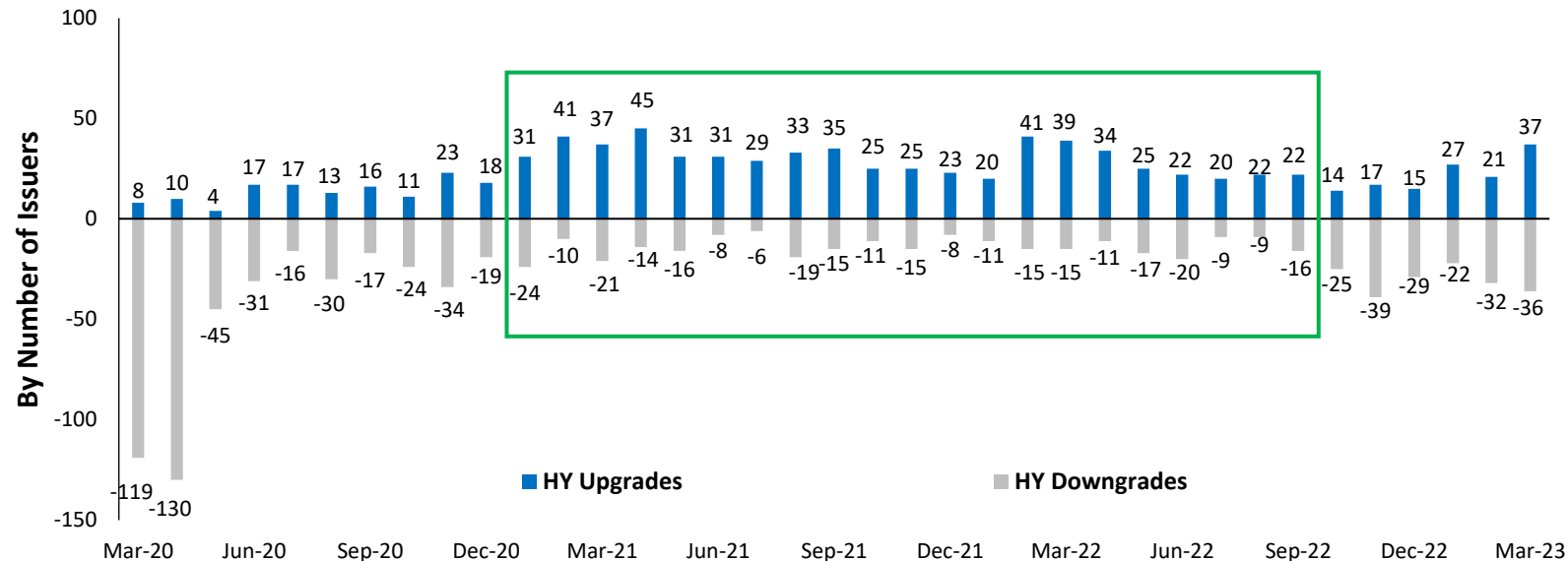
Note: Issuer ratings are computed based on weighted average debt outstanding. BB includes Split BBB and BB, B includes Split BB and B, while CCC includes Split B and CCC.

\*Numbers shown in parenthesis are excluding the Gaming/Leisure and Transportation sectors

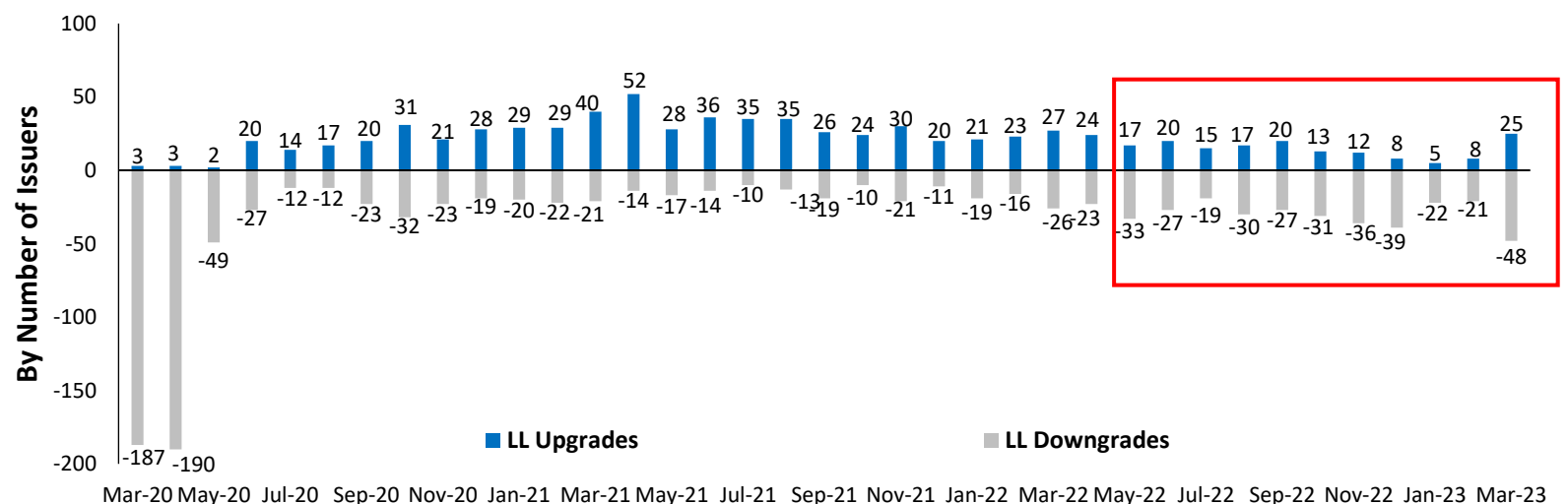
## Credit Rating Trends

### US High Yield and US Leveraged Loans

- US High Yield experienced more upgrades than downgrades from Jan-21 to Sept-22.



- The US Leverage Loan market has experienced 11 consecutive months where downgrades have exceeded upgrades.
- Key focus in this market will be the downgrades from single B to triple C ratings.



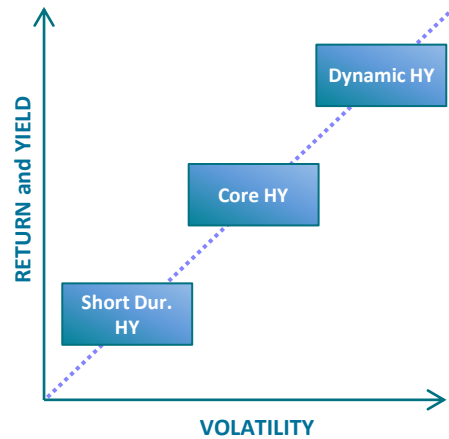


# Accessing the High Yield market in the current environment

# AXA IM High Yield Products

A comprehensive range of strategies to meet client's interest rate outlook and volatility appetite

A choice of high yield strategies to meet clients' needs.



|   | US SHORT DUR. HY WORKING GROUP                        |   | US CORE HY WORKING GROUP                    |   |
|---|---|---|---|---|
|   | US Short Duration High Yield                          | US Enhanced High Yield                                | US Core High Yield                          | US Dynamic High Yield                       |
| <b>Benchmark</b>  | Not managed against a benchmark                       | Not managed against a benchmark                       | ICE BofA US High Yield                      | ICE BofA US High Yield                      |
| <b>Maturity Spectrum</b>                                | Securities with expected take-outs of 3 years or less | Securities with expected take-outs of 3 years or less | Full spectrum of the US high yield universe | Full spectrum of the US high yield universe |
| <b>Targeted Volatility vs. broad US HY market</b>       | Significantly lower (less than half)                  | In line with to slightly higher                       | Lower (approximately 2/3)                   | In line with to slightly higher             |
| <b>Strategy AUM</b>                                     | \$6,155MM   | \$149MM   | \$5,855MM                                   | \$945MM                                     |
| <b>Inception Date</b>                                   | September 2001  | December 2018   | September 2001                              | February 2014                               |
| <b>Derivatives?</b>                                     | No  | Yes<br>total return swaps                             | No  | Yes<br>credit default swaps                 |
| <b>Market exposure</b>                                  | Total exposure up to 100%                             | Total exposure up to 300%                             | Total exposure up to 100%                   | Total exposure up to 150%                   |
| <b>Duration to Worst<sup>1</sup></b>                    | 2.4   | Unlev: 2.5<br>Lev: 5.9                                | 4.0   | 4.0 *                                       |
| <b>Yield to Worst<sup>1</sup></b>                       | 7.48%   | Unlev: 7.57%<br>Lev: 9.51%                            | 8.51%                                       | 11.57% *                                    |
| <b>Avg. Rating / %CCC<sup>1</sup></b>                   | B1 / 7.8% CCC   | B1 / 9.4% CCC   | B2 / 17.9% CCC                              | CCC1 / 58.9% CCC                            |
| <b>Is a Low Carbon version available?</b>               | Yes   | No  | Yes   | No  |
| <b>FIVE YEAR GIPS COMPOSITE COMPARISON (Annualized)</b> |   |   |   |   |
| <b>Net Returns</b>                                      | 2.7%  | N/A   | 3.2%  | 4.4%  |
| <b>Gross Returns</b>                                    | 3.2%  | N/A   | 3.7%  | 5.0%  |
| <b>Volatility</b>                                       | 5.4%  | N/A   | 8.1%  | 11.7%                                       |

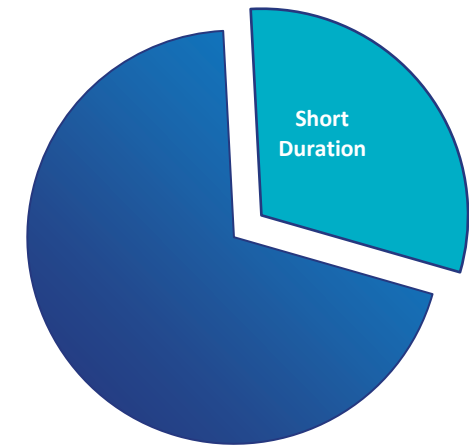


# US Short Duration High Yield Strategy

Provides opportunity to invest in the US HY Market, but with lower volatility

## How AXA IM's US Short Duration High Yield strategy differs from other high yield strategies

- 1. Strategy is not managed against an index**
- 2. Seeks to capture income and reduce risk through active management**
  - ▶ Invests in securities with **expected take-outs of 3 years or less**
  - ▶ Focus on better quality and improving high yield credits
  - ▶ Internally generated cash flow of 4-6% a month from natural turnover plus coupon interest
  - ▶ Less sensitivity to interest rate movements
- 3. Straightforward, easy-to-understand investment process**
  - ▶ No derivatives
  - ▶ No bank loans
  - ▶ Long only, cash bonds only
- 4. Short duration securities make up the most liquid portion of the high yield market**



**US High Yield Market**

US HY universe is approx. \$1.7 trillion\*  
SD is approximately 1/3 of the HY universe

**Primary goal of the strategy is to generate consistent income with lower volatility**

# US Short Duration High Yield

Favorable comparison versus the broad US high yield market

Compared to the broad US high yield market, our Short Duration HY strategy has historically<sup>1</sup> provided:

|  | AXA IM US SDHY GIPS Composite   | ICE BofA US High Yield Index | AXA Net as a % of Index | AXA Gross as a % of Index |                               |      |      |            |      |      |      |     |     |              |      |      |      |     |     |
|--|---|------------------------------|-------------------------|---------------------------|-------------------------------|------|------|------------|------|------|------|-----|-----|--------------|------|------|------|-----|-----|
| <b>Lower volatility with consistent performance</b><br><i>Attractive Sharpe ratio</i>                | <table border="1"> <thead> <tr> <th></th> <th>Net Returns</th> <th>Gross Returns</th> </tr> </thead> <tbody> <tr> <td>Annualized Return</td> <td>4.7%</td> <td>5.2%</td> </tr> <tr> <td>Volatility</td> <td>4.1%</td> <td>4.1%</td> </tr> <tr> <td>Beta</td> <td>0.4</td> <td>0.4</td> </tr> <tr> <td>Sharpe-ratio</td> <td>0.83</td> <td>0.94</td> </tr> </tbody> </table> |                              | Net Returns             | Gross Returns             | Annualized Return             | 4.7% | 5.2% | Volatility | 4.1% | 4.1% | Beta | 0.4 | 0.4 | Sharpe-ratio | 0.83 | 0.94 | 7.0% | 68% | 75% |
|  | Net Returns   | Gross Returns                |                         |                           |                               |      |      |            |      |      |      |     |     |              |      |      |      |     |     |
| Annualized Return  | 4.7%  | 5.2%                         |                         |                           |                               |      |      |            |      |      |      |     |     |              |      |      |      |     |     |
| Volatility   | 4.1%  | 4.1%                         |                         |                           |                               |      |      |            |      |      |      |     |     |              |      |      |      |     |     |
| Beta   | 0.4   | 0.4                          |                         |                           |                               |      |      |            |      |      |      |     |     |              |      |      |      |     |     |
| Sharpe-ratio   | 0.83  | 0.94                         |                         |                           |                               |      |      |            |      |      |      |     |     |              |      |      |      |     |     |
| <b>Attractive up-market capture</b><br><i>With low participation in down markets</i>                 | <table border="1"> <tbody> <tr> <td>Upside market capture ratio</td> <td>46%</td> <td>49%</td> </tr> <tr> <td>Downside market capture ratio</td> <td>35%</td> <td>33%</td> </tr> </tbody> </table>  | Upside market capture ratio  | 46%                     | 49%                       | Downside market capture ratio | 35%  | 33%  | 100%       |      |      |      |     |     |              |      |      |      |     |     |
| Upside market capture ratio  | 46%   | 49%                          |                         |                           |                               |      |      |            |      |      |      |     |     |              |      |      |      |     |     |
| Downside market capture ratio  | 35%   | 33%                          |                         |                           |                               |      |      |            |      |      |      |     |     |              |      |      |      |     |     |
| <b>Low historical default rate</b><br><i>Due to lower risk tolerance than traditional high yield</i> | Defaults since strategy inception   | 2                            | 661*                    | 0.3%                      |                               |      |      |            |      |      |      |     |     |              |      |      |      |     |     |

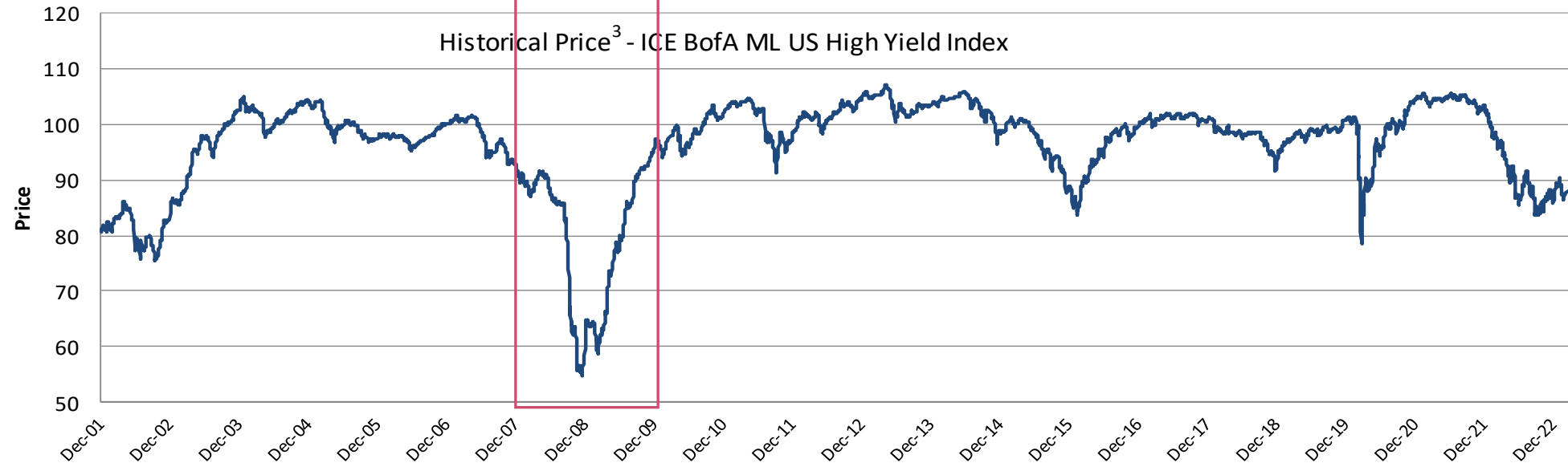
18 Sources: AXA Investment Managers. ICE BofA US High Yield Index is shown for illustrative purposes only. \*J.P. Morgan Default Monitor as of April 1, 2023. <sup>1</sup>All data is from composite inception date of September 30, 2001 through March 31, 2023. Past performance is not indicative of future results. Net Performance: Performance shown net of fees is calculated after the deduction of all management fees. Return may increase or decrease as a result of currency fluctuations. The above information presented is supplemental to the GIPS-compliant presentation included in the GIPS Disclosure Notes. No assurance can be given that the strategy will be successful or achieve its objectives.

# Historical Default & Significant Losses

Active management of US high yield has substantially minimized default risk

AXA IM Short Duration High Yield Strategy vs. US High Yield Broad Market

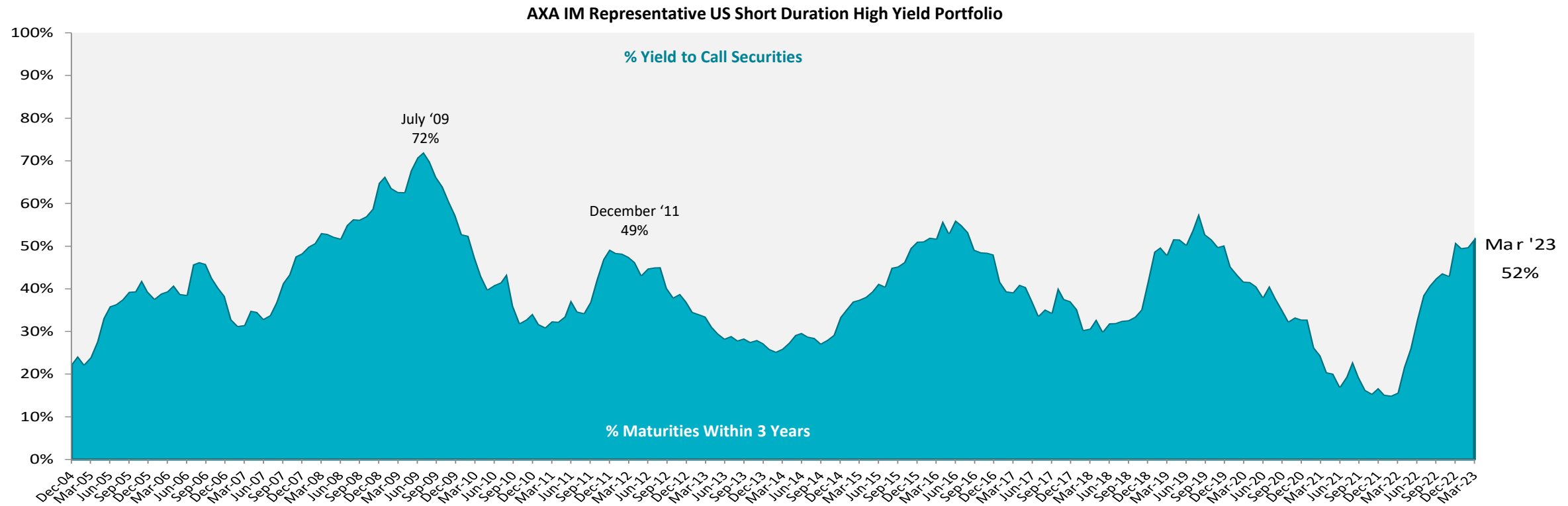
|                                 | 2002 | 2003 | 2004 | 2005 | 2006 | 2007 | 2008 | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015 | 2016 | 2017 | 2018 | 2019 | 2020 | 2021 | 2022 | 2023 | Total since 2002 |
|---------------------------------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------|------------------|
| <b>Number of Defaults</b>       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                  |
| US HY Broad Market <sup>1</sup> | 87   | 61   | 29   | 21   | 18   | 11   | 42   | 70   | 21   | 21   | 20   | 21   | 17   | 29   | 50   | 23   | 25   | 27   | 48   | 9    | 7    | 4    | 661              |
| AXA IM US SDHY <sup>2</sup>     | --   | --   | --   | --   | --   | --   | --   | 1    | --   | 1    | --   | --   | --   | --   | --   | --   | --   | --   | --   | --   | --   | --   | 2                |
| <b>Significant Losses</b>       |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |      |                  |
| Bonds sold at loss > 30%        | --   | --   | --   | --   | --   | --   | 1    | 8    | --   | --   | --   | --   | 1    | 1    | 5    | --   | --   | --   | 2    | --   | 1    | 1    | 20               |
| Bonds sold at loss 20-30%       | --   | --   | 1    | --   | --   | --   | 2    | 4    | --   | --   | 1    | --   | 2    | 1    | 1    | --   | --   | --   | --   | --   | 1    | --   | 13               |



Sources: <sup>1</sup>J.P. Morgan Default Monitor as of April 1, 2023, <sup>2</sup>AXA IM SDHY Representative Portfolio stream (data prior to March 2004 is based on legacy portfolios managed in the same investment strategy), <sup>3</sup>ICE BofA, data from January 1, 2002 to March 31, 2023. ICE BofA US High Yield Index is shown for illustrative purposes only. The representative accounts shown have been selected because they utilize an investment setup that is typical for accounts in the relevant strategy and/or on the basis that they had adequate assets under management to effectuate a fair comparison. Please refer to the appendix for additional information. All significant loss calculations include coupon payments received during the holding period. Past performance is not indicative of future results. For illustrative purposes only.



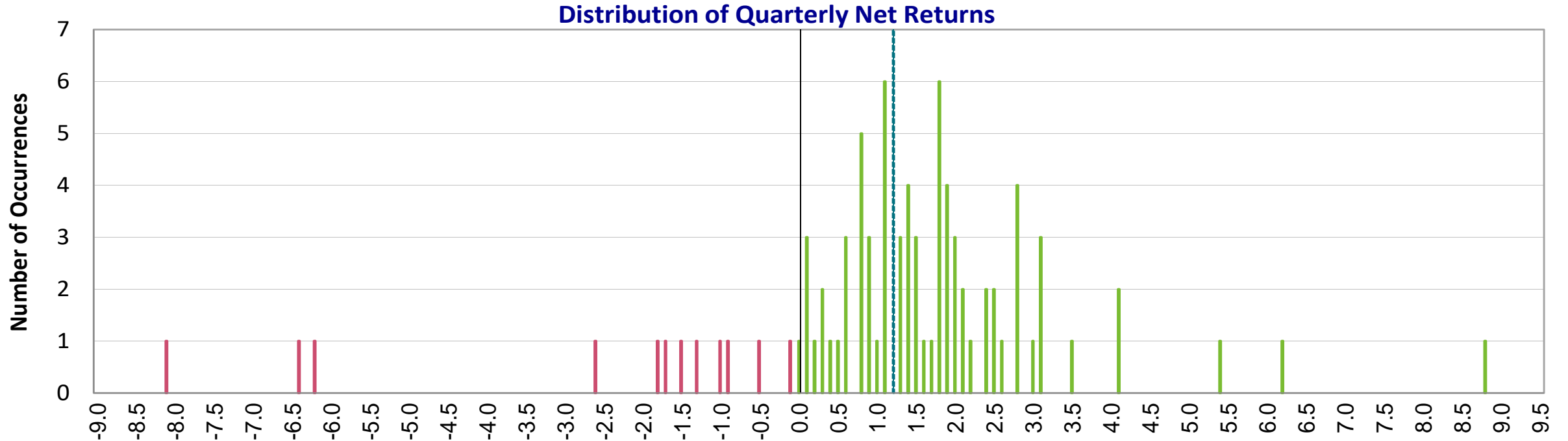
## Managing risk through portfolio construction



- ▶ At the onset of the credit crisis, we increased securities with maturities of 3 years or less from **30% to over 70%** of the portfolio to better insulate the portfolio from duration extension risk.
- ▶ In late 2011, market conditions gave us the opportunity to increase our exposure to the least volatile portion of the SDHY market without suffering the normal yield penalty.
- ▶ Since then, the percentage of outright maturities vs YTC bonds has ebbed and flowed based on market conditions, volatility, and relative value.

# Quarterly Performance Distribution

AXA IM Short Duration High Yield GIPS composite

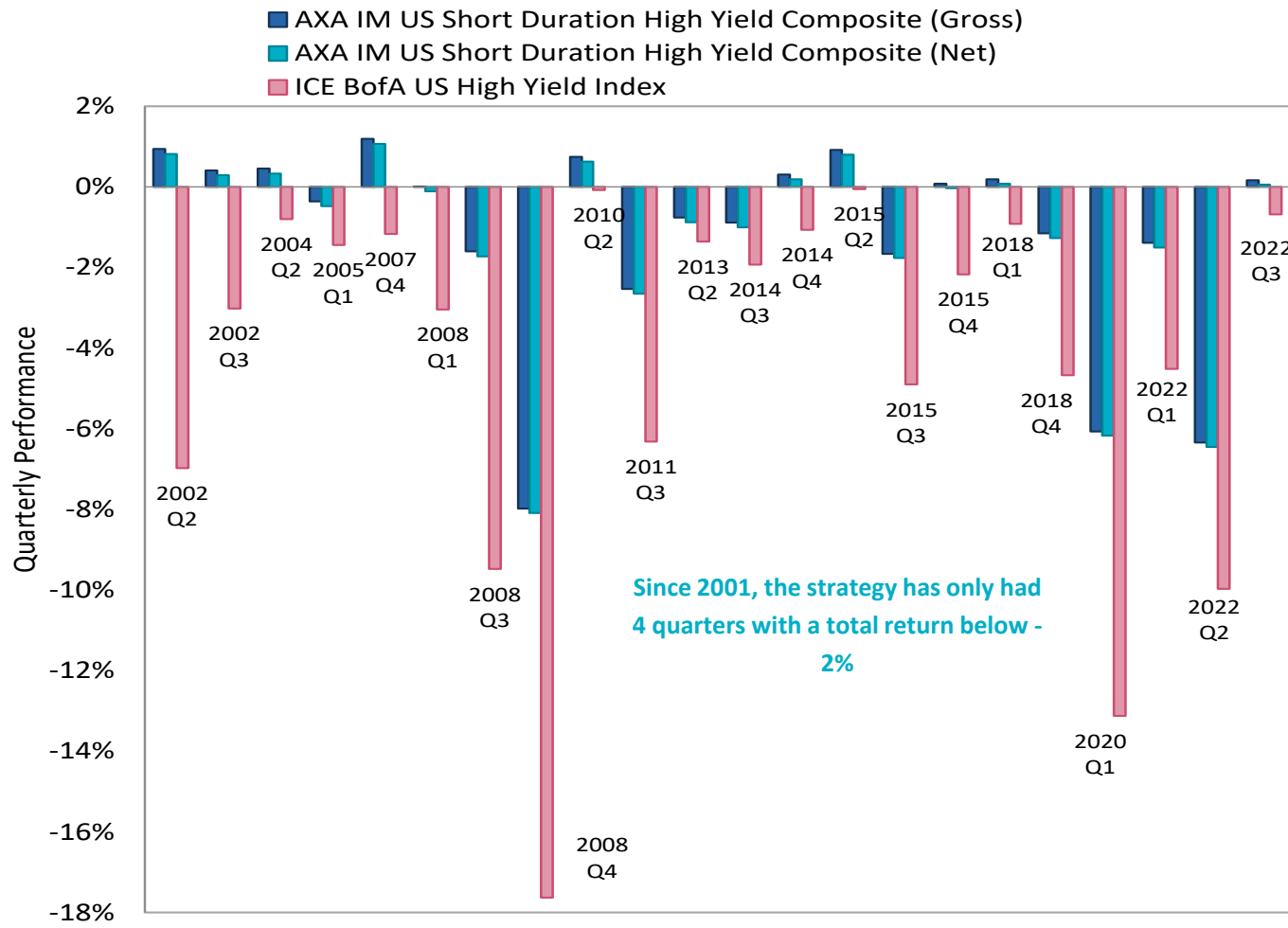


- ▶ Average net quarterly return of 1.20% (1.30% gross)
- ▶ Of 86 net quarterly observations, 85% (73) were zero or positive, while 15% (13) were negative
  - ▶ Of 86 gross quarterly observations, 75 were zero or positive and 11 were negative
- ▶ Only 8 quarters had returns under -1.0% (Q3'08, Q4'08, Q3'11, Q3'15, Q4'18, Q1'20, Q1'22, Q2'22)

## Lower drawdowns during down markets

Our investment discipline has historically limited downside risk

### Negative Quarters in US High Yield since 2001



- ▶ Since 2001, the market had 22 quarters with negative total returns, while our US Short Duration High Yield strategy produced a negative total return in only 11 of these periods gross of fees, and 13 periods net of fees.
- ▶ Our average downside capture ratio during these 22 negative periods for the broad US HY market was only 28% gross of fees, and 31% net of fees.
- ▶ Our low downside capture is driven by our disciplined credit selection process which is focused on better quality credits and improving high yield companies.

## Resiliency following down markets

SDHY has historically bounced-back following periods of negative returns

US Short Duration High Yield Composite **NET OF FEES**  
Forward Performance after 2 Consecutive Negative Months

| Negative 2 Months Ending | 2 Consecutive         |                                   | Avg. Price at end of period <sup>1</sup> | 1M forward Return | 3M forward return | 6M forward return | 12M forward return |
|--------------------------|-----------------------|-----------------------------------|--|-------------------|-------------------|-------------------|--------------------|
|                          | Month Negative Return | YTW at end of period <sup>1</sup> |  |                   |                   |                   |                    |
| July-2002                | -0.59                 | 10.75                             | --                                       | 0.49              | 1.20              | 4.41              | 9.86               |
| April-2005               | -1.40                 | 7.42                              | --                                       | 0.82              | 2.65              | 3.07              | 6.77               |
| July-2007                | -1.31                 | 10.16                             | 101                                      | 0.78              | 2.80              | 2.69              | 5.11               |
| October-2008             | -10.10                | 14.53                             | 87                                       | -2.62             | 2.80              | 6.29              | 19.06              |
| November-2008            | -10.13                | 17.11                             | 84                                       | 2.28              | 3.92              | 12.10             | 23.36              |
| September-2011           | -3.40                 | 7.99                              | 101                                      | 3.19              | 4.11              | 7.02              | 10.29              |
| June-2013                | -1.67                 | 4.77                              | 105                                      | 1.55              | 2.43              | 4.39              | 6.34               |
| December-2014            | -0.82                 | 4.89                              | 103                                      | 0.46              | 1.81              | 2.63              | 0.78               |
| September-2015           | -1.94                 | 5.91                              | 100                                      | 1.74              | -0.03             | 1.39              | 5.40               |
| December-2015            | -1.74                 | 6.02                              | 99                                       | -0.49             | 1.42              | 3.29              | 5.89               |
| January-2016             | -1.56                 | 5.90                              | 99                                       | 0.58              | 3.34              | 4.86              | 6.80               |
| March-2020               | -6.23                 | 7.65                              | 94                                       | 2.66              | 5.44              | 8.39              | 11.76              |
| February-2022            | -1.23                 | 4.79                              | 101                                      | -0.27             | -1.95             | -4.13             | -2.13              |
| March-2022               | -0.53                 | 5.05                              | 100                                      | -1.83             | -6.45             | -6.39             | -1.00              |
| April-2022               | -2.10                 | 6.02                              | 98                                       | 0.15              | -0.24             | -2.05             | --                 |
| September-2022           | -4.42                 | 8.42                              | 92                                       | 2.72              | 3.06              | 5.77              | --                 |

- ▶ Only 12 periods prior to 2022 when SDHY had 2 consecutive negative monthly returns
- ▶ In 10 out of the 12 periods, the 1M forward return was positive
- ▶ In all 12 periods, the 3M, 6M, and 12M forward returns were positive

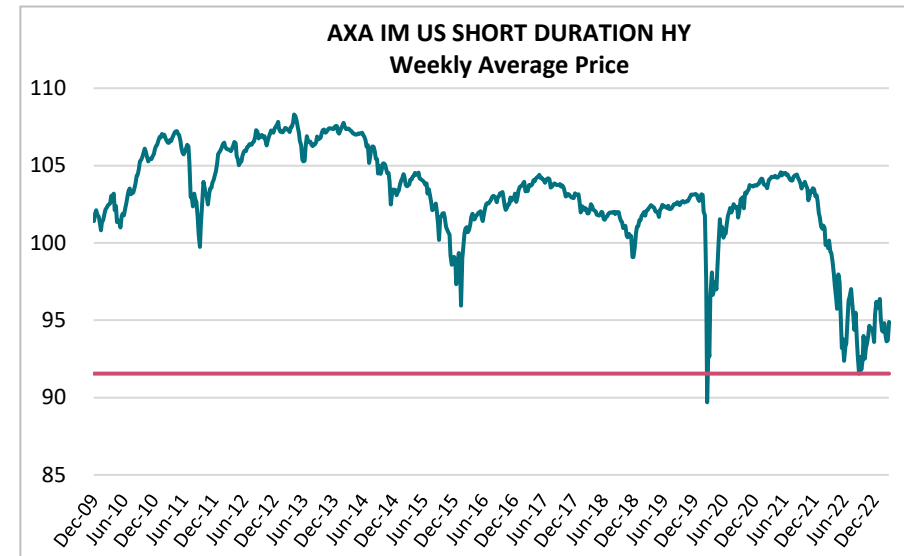
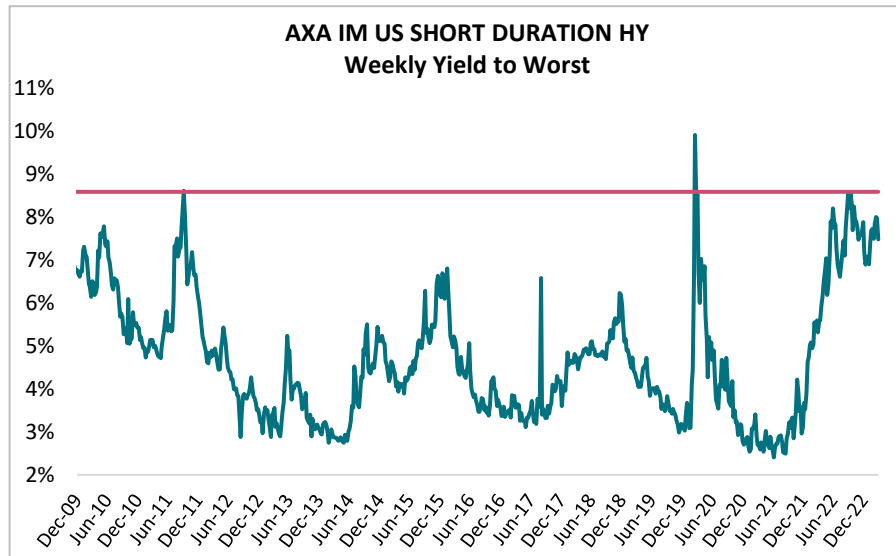
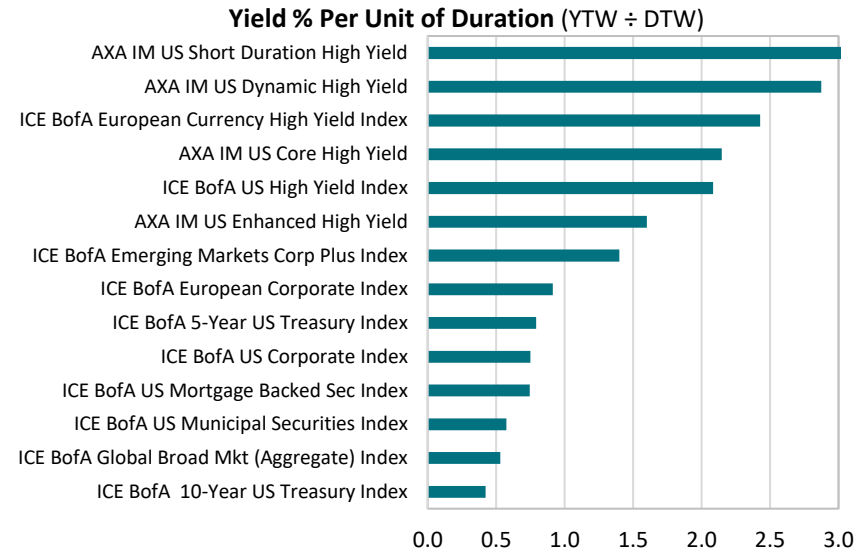
# US Short Duration High Yield

Yield-to-worst near highest since the Credit Crisis

As of December month-end, US SDHY was capturing almost 90% of the yield-to-worst of the broad US high yield market.

Since the 2008-2009 Credit Crisis, there were only:

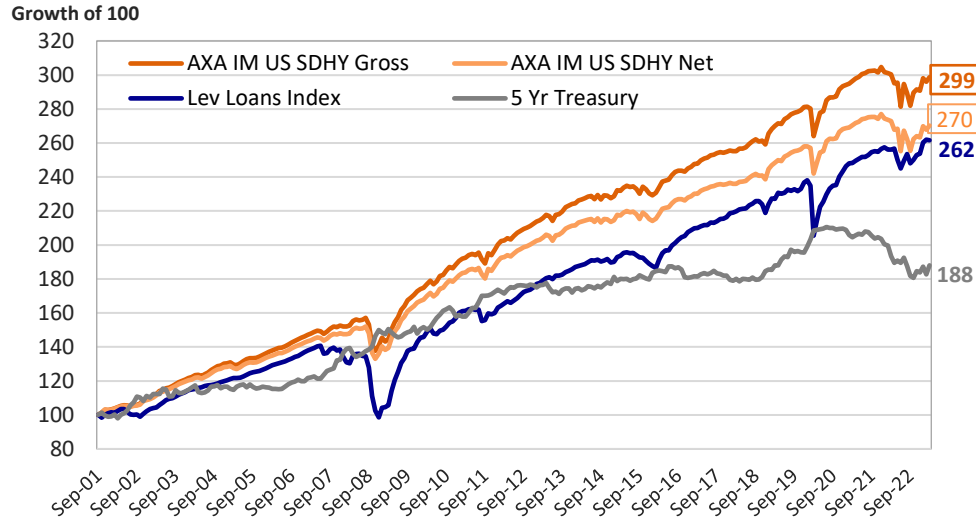
- **2 other (brief) periods where SDHY had higher yields:**
  - Late Sept/early Oct. 2011: US downgrade
  - Late Mar/ early April 2020: Onset of the pandemic
- **1 week where SDHY had a lower average price :**
  - Late March 2020: Onset of pandemic





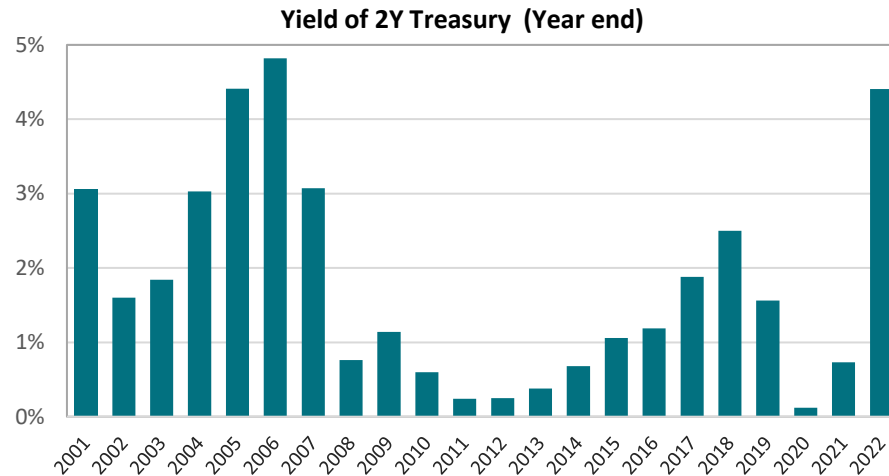
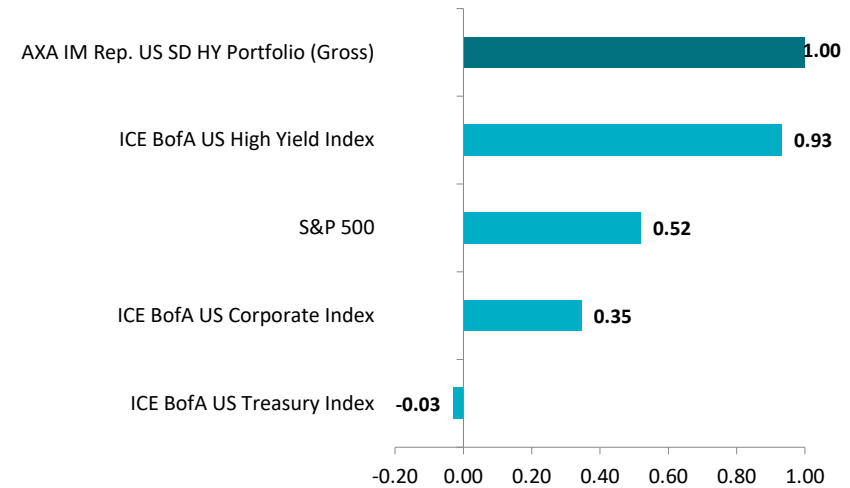
# US Short Duration High Yield

## Historical Performance versus Treasury and Leverage Loan Markets



| Since inception *                     | Returns      | Volatility   | Sharpe Ratio |
|---------------------------------------|--------------|--------------|--------------|
| <b>AXA IM US SDHY Composite Gross</b> | <b>5.22%</b> | <b>4.10%</b> | <b>0.94</b>  |
| <b>AXA IM US SDHY Composite Net</b>   | <b>4.73%</b> | <b>4.10%</b> | <b>0.83</b>  |
| CS Leveraged Loan Index               | 4.58%        | 6.36%        | 0.51         |
| 5 Year Treasury                       | 2.98%        | 4.34%        | 0.38         |

Correlation of US SD HY to other asset classes  
10Y daily returns



Sources: AXA Investment Managers, ICE BofA, Credit Suisse. As of March 31, 2023. ICE BofA and Credit Suisse Indices shown for illustrative purposes only. \*Composite inception date: September 30, 2001. AXA IM SDHY Representative portfolio. The representative account shown has been selected because it utilizes an investment setup that is typical for accounts in the relevant strategy and/or on the basis that it has adequate assets under management to effectuate a fair comparison. Past performance is not indicative of future results. Net Performance: Performance shown net of fees is calculated after the deduction of all management fees. Return may increase or decrease as a result of currency fluctuations. The above information presented is supplemental to the GIPS-compliant presentation included in the GIPS Disclosure Notes. No assurance can be given that the strategy will be successful or achieve its objectives.



# AXA IM Short Duration High Yield GIPS Composite

## Performance

| Last 12 Months | Apr-22 | May-22 | Jun-22 | Jul-22 | Aug-22 | Sep-22 | Oct-22 | Nov-22 | Dec-22 | Jan-23 | Feb-23 | Mar-23 |
|----------------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|--------|
| SDHY Net       | (1.83) | 0.15   | (4.84) | 4.69   | (1.85) | (2.62) | 2.72   | 0.65   | (0.33) | 2.51   | (0.76) | 0.89   |
| SDHY Gross     | (1.79) | 0.18   | (4.81) | 4.73   | (1.81) | (2.59) | 2.76   | 0.69   | (0.29) | 2.55   | (0.72) | 0.92   |
| Index          | (3.64) | 0.25   | (6.81) | 6.02   | (2.39) | (4.02) | 2.85   | 1.87   | (0.75) | 3.91   | (1.29) | 1.13   |

| 2020       | Q1      | Q2   | Q3   | Q4   | FY 2020 |
|------------|---------|------|------|------|---------|
| SDHY Net   | (6.17)  | 5.44 | 2.81 | 2.18 | 3.93    |
| SDHY Gross | (6.07)  | 5.56 | 2.92 | 2.29 | 4.38    |
| Index      | (13.12) | 9.61 | 4.71 | 6.48 | 6.17    |

| 2021       | Q1   | Q2   | Q3   | Q4   | FY 2021 |
|------------|------|------|------|------|---------|
| SDHY Net   | 0.91 | 1.28 | 0.51 | 0.60 | 3.34    |
| SDHY Gross | 1.03 | 1.39 | 0.62 | 0.72 | 3.80    |
| Index      | 0.90 | 2.77 | 0.94 | 0.66 | 5.36    |

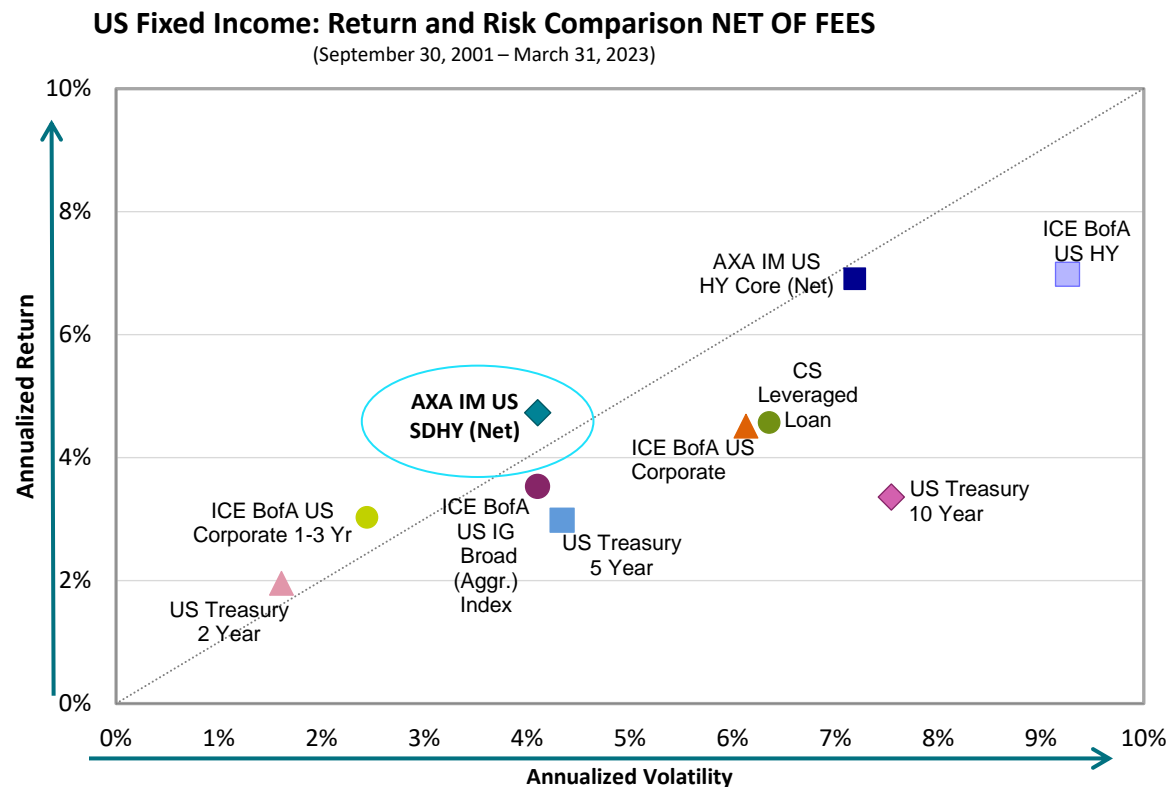
| 2022       | Q1     | Q2     | Q3     | Q4   | FY 2022 |
|------------|--------|--------|--------|------|---------|
| SDHY Net   | (1.50) | (6.45) | 0.06   | 3.06 | (4.98)  |
| SDHY Gross | (1.39) | (6.34) | 0.17   | 3.17 | (4.55)  |
| Index      | (4.51) | (9.97) | (0.68) | 3.98 | (11.22) |

| 2023       | Q1   | Q2 | Q3 | Q4 | YTD 2023 |
|------------|------|----|----|----|----------|
| SDHY Net   | 2.63 |    |    |    | 2.63     |
| SDHY Gross | 2.74 |    |    |    | 2.74     |
| Index      | 3.72 |    |    |    | 3.72     |

- ▶ During 2018, our US Short Duration High Yield strategy was able to produce a positive total return despite the negative return generated by the US High Yield Index. Our strategy also outperformed most other asset classes in what was a particularly difficult year.
- ▶ During 2019, we posted a return of 8.5% gross and 8.1% net, compared to the 5-7% expectation that we gave to investors at the beginning of the year. SDHY returns continue to be more stable and predictable than most other asset classes.
- ▶ During 2020, the strategy posted a total return of 4.4% gross and 3.9% net, which was at the higher end of the 3-5% forecast that we gave at the beginning of 2020. This was achieved despite all the Covid-related disruption in the market.
- ▶ During 2021, the strategy returned 3.8% gross and 3.3% net, right in-line with our +3-5% expectation, and captured over 70% of the market return gross and 62% net, in-line with our historical average.
- ▶ During 2022, the strategy returned -4.6% gross and -5.0% net, only the second negative annual return since inception. Despite the negative absolute return, the strategy performed very well from a relative perspective, significantly outperforming the market and only capturing roughly 40-45% (gross and net, respectively) of the market's -11.22% decline

# Risk-Return Profile – US Short Duration High Yield Strategy

Return and risk comparison since inception



| Annualized Returns                      | 1 Year        | 3 Year      | 5 Year      | 10 Year     | Since Incep* |
|---|---------------|-------------|-------------|-------------|--------------|
| <b>AXA IM US SDHY Composite - Net</b>   | <b>(0.99)</b> | <b>3.74</b> | <b>2.74</b> | <b>2.83</b> | <b>4.73</b>  |
| <b>AXA IM US SDHY Composite - Gross</b> | <b>(0.55)</b> | <b>4.20</b> | <b>3.19</b> | <b>3.30</b> | <b>5.22</b>  |
| ICE BofA US HY Index                    | (3.56)        | 5.84        | 3.06        | 4.03        | 6.98         |

| Annualized Volatility           | 1 Year      | 3 Year      | 5 Year      | 10 Year     | Since Incep* |
|---------------------------------|-------------|-------------|-------------|-------------|--------------|
| <b>AXA IM US SDHY Composite</b> | <b>9.03</b> | <b>5.71</b> | <b>5.38</b> | <b>4.14</b> | <b>4.10</b>  |
| ICE BofA US HY Index            | 12.69       | 9.03        | 9.39        | 7.58        | 9.26         |

| Performance Returns                  | 2002  | 2003 | 2004 | 2005 | 2006 | 2007 | 2008   | 2009 | 2010 | 2011 | 2012 | 2013 | 2014 | 2015  | 2016 | 2017 | 2018  | 2019 | 2020 | 2021 | 2022   | YTD 2023 |
|--------------------------------------|-------|------|------|------|------|------|--------|------|------|------|------|------|------|-------|------|------|-------|------|------|------|--------|----------|
| <b>AXA IM SDHY Composite - Net</b>   | 5.8   | 9.9  | 7.1  | 3.5  | 6.9  | 4.5  | (8.1)  | 22.1 | 8.6  | 4.0  | 7.4  | 5.0  | 1.0  | 0.8   | 5.9  | 3.5  | 1.2   | 8.1  | 3.9  | 3.3  | (5.0)  | 2.6      |
| <b>AXA IM SDHY Composite - Gross</b> | 6.3   | 10.4 | 7.7  | 4.0  | 7.4  | 5.0  | (7.7)  | 22.6 | 9.1  | 4.5  | 7.9  | 5.5  | 1.5  | 1.2   | 6.4  | 4.0  | 1.7   | 8.5  | 4.4  | 3.8  | (4.5)  | 2.7      |
| ICE BofA US HY Index                 | (1.9) | 28.2 | 10.9 | 2.7  | 11.8 | 2.2  | (26.4) | 57.5 | 15.2 | 4.4  | 15.6 | 7.4  | 2.5  | (4.6) | 17.5 | 7.5  | (2.3) | 14.4 | 6.2  | 5.4  | (11.2) | 3.7      |

27 Sources: AXA Investment Managers, ICE BofA. As of March 31, 2023. \*Composite Inception Date: September 30, 2001. ICE BofA US High Yield Index is shown for illustrative purposes only. Past performance is not indicative of future results. Net Performance: Performance shown net of fees is calculated after the deduction of all management fees. Return may increase or decrease as a result of currency fluctuations. The above information presented is supplemental to the GIPS-compliant presentation included in the GIPS Disclosure Notes. No assurance can be given that the strategy will be successful or achieve its objectives. ICE BofA High Yield index is shown for illustrative purposes only.



## Summary Statistics

AXA IM Short Duration HY Strategy – March 31, 2023

| ASSETS UNDER MANAGEMENT (\$millions) |         |
|--------------------------------------|---------|
| Representative Portfolio             | \$3,522 |
| US SD High Yld Strategy              | \$6,155 |

| CHARACTERISTICS        | AXA IM | Index |
|------------------------|--------|-------|
| Ave Years to Maturity  | 3.0    | 5.3   |
| Yield to Maturity      | 7.51%  | 8.55% |
| Yield To Worst         | 7.48%  | 8.50% |
| Current Yield          | 6.02%  | 6.64% |
| Duration To Worst      | 2.4    | 4.1   |
| Average Coupon         | 5.71%  | 5.82% |
| Option Adjusted Spread | 322    | 458   |
| Duration Times Spread  | 7.4    | 16.9  |
| Average Price          | 95     | 88    |
| Cash Position          | 2.9%   | N/A   |
| Number of Issuers      | 133    | 894   |
| Number of Positions    | 183    | 1916  |
| Average ML Rating      | B1     | B1    |

| DATA AS OF | 3/31/2023 |
|------------|-----------|
|------------|-----------|

| INDEX | ICE BofA ML US HY Index |
|-------|-------------------------|
|-------|-------------------------|

| ICE BofA ML RATING | AXA IM | Index |
|--------------------|--------|-------|
| AAA Holdings       | 0.0%   | 0.0%  |
| BBB Holdings       | 2.1%   | 0.0%  |
| BB Holdings        | 44.9%  | 49.8% |
| B Holdings         | 43.7%  | 39.5% |
| CCC or Under       | 7.8%   | 10.6% |
| Not Rated          | 1.5%   | 0.0%  |

| YEARS TO MATURITY | AXA IM | Index |
|-------------------|--------|-------|
| Less than 1 Year  | 0.9%   | 0.0%  |
| 1-3 Years         | 49.4%  | 18.9% |
| 3-5 Years         | 49.7%  | 31.4% |
| 5-7 Years         | 0.0%   | 32.1% |
| 7-10 Years        | 0.0%   | 14.3% |
| Over 10 Years     | 0.0%   | 3.3%  |

| ICE BofA ML SECTOR       | AXA IM | Index | AXA/ Index |
|--------------------------|--------|-------|------------|
| Services                 | 14.5%  | 6.6%  | 221%       |
| Media                    | 10.6%  | 8.9%  | 119%       |
| Consumer Goods           | 8.5%   | 3.8%  | 224%       |
| Real Estate              | 8.2%   | 3.7%  | 220%       |
| Capital Goods            | 8.1%   | 6.7%  | 120%       |
| Technology & Electronics | 6.8%   | 5.1%  | 133%       |
| Leisure                  | 6.5%   | 8.4%  | 78%        |
| Financial Services       | 6.5%   | 4.7%  | 138%       |
| Basic Industry           | 6.0%   | 7.8%  | 77%        |
| Healthcare               | 5.9%   | 7.6%  | 77%        |
| Energy                   | 5.3%   | 11.7% | 45%        |
| Retail                   | 5.1%   | 5.4%  | 93%        |
| Telecommunications       | 4.4%   | 6.3%  | 69%        |
| Automotive               | 2.0%   | 5.3%  | 38%        |
| Transportation           | 1.1%   | 2.3%  | 47%        |
| Insurance                | 0.7%   | 1.7%  | 42%        |
| Banking                  | 0.0%   | 0.9%  | 0%         |
| Utility                  | 0.0%   | 2.9%  | 0%         |

| TOP FIVE SECURITIES             | Coupon (%) | Maturity  | ICE BofA Rating | Issue Size (\$MM) | ICE BofA ML Industry      | Current Price | Yield to Worst (%) | Duration to Worst | % of Portfolio |
|---------------------------------|------------|-----------|-----------------|-------------------|---------------------------|---------------|--------------------|-------------------|----------------|
| CommScope Finance LLC           | 6.000      | 3/01/2026 | B2              | 1,500             | Tech Hardware & Equipment | 96.51         | 7.35               | 2.6               | 1.5            |
| IRB Holding Corp.               | 7.000      | 6/15/2025 | B2              | 750               | Restaurants               | 100.30        | 6.72               | 1.1               | 1.4            |
| Aramark Services, Inc.          | 6.375      | 5/01/2025 | B1              | 1,500             | Support-Services          | 100.74        | 5.66               | 1.0               | 1.4            |
| Labl Escrow Issuer LLC          | 6.750      | 7/15/2026 | B3              | 700               | Printing & Publishing     | 96.40         | 8.01               | 2.8               | 1.4            |
| Crestwood Midstream Partners LP | 5.750      | 4/01/2025 | BB3             | 500               | Gas Distribution          | 97.65         | 7.03               | 1.9               | 1.3            |

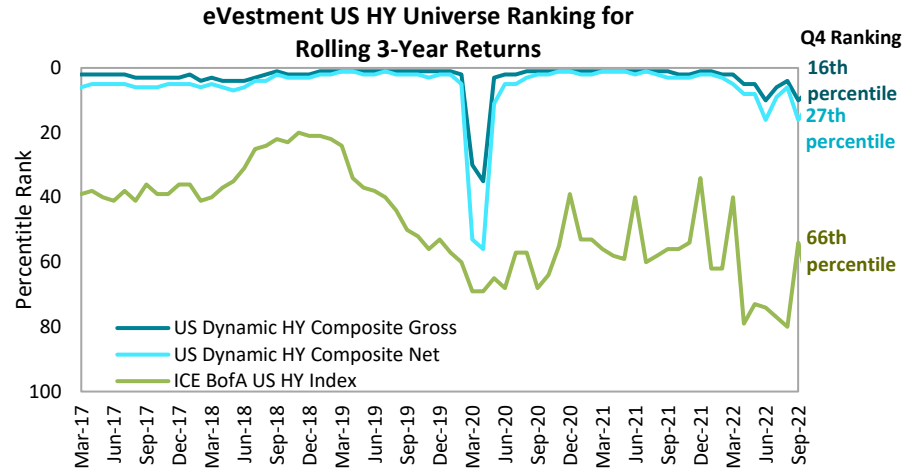
## Other ways to access the High Yield market in the current environment

|  | US Dynamic High Yield strategy | Global High Yield strategy                             | BB/B High Yield strategy                      |
|--|--------------------------------|--|---|
| <b>Inception Date</b>                  | February 2014                  | September 2006   | December 2014                                 |
| <b>Benchmark</b>                       | ICE BofA US High Yield Index   | ICE BofA Developed Market High Yield Constrained Index | ICE BofA BB-B US High Yield Constrained Index |
| <b>Strategy AUM</b>                    | \$945MM                        | \$1,291MM  | \$308MM                                       |
| <b>Duration to Worst<sup>1</sup></b>   | 4.0*                           | 3.8  | 4.1   |
| <b>Yield to Worst<sup>1</sup></b>      | 11.57%*                        | 8.15%  | 7.03%   |
| <b>Avg. Rating / % CCC<sup>1</sup></b> | CCC1 / 58.9% CCC               | B1 / 14.8% CCC   | B1 / 0.0% CCC                                 |

### A holistic product suite to suit our clients' needs

# AXA IM Dynamic High Yield

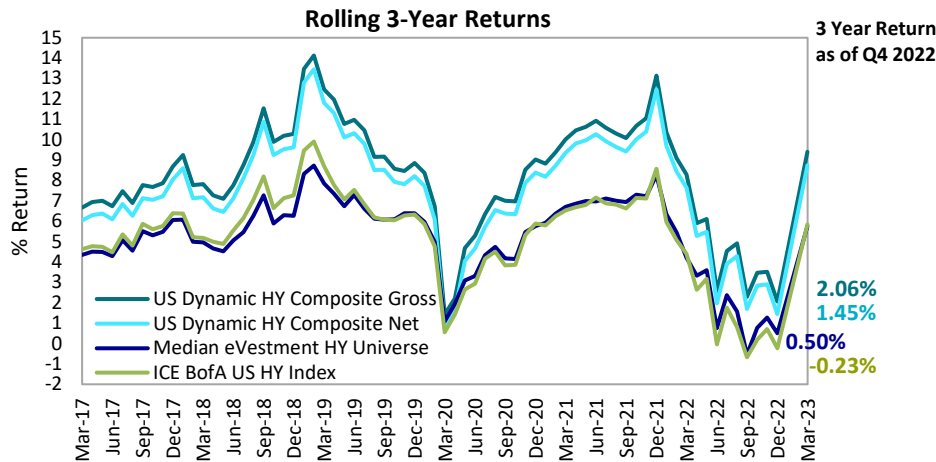
Do you need to time an ideal entry point into the strategy?



## Average 3-year Return Annualized (rolling):

- 8.18%** AXA IM US Dynamic HY Composite (Gross)
- 7.53%** AXA IM US Dynamic HY Composite (Net)
- 5.19% eVestment US HY Universe – Median
- 5.24% ICE BofA US High Yield Index

**+299 bps** AXA IM US Dynamic HY composite's outperformance vs. median return of eVestment US High Yield Universe (200+ US high yield products.)



Since inception in Q1 2014, our US Dynamic High Yield strategy has significantly outperformed the benchmark and the eVestment peer group during every three year holding period, regardless of market timing.

Source: AXA IM, as of March 31, 2022. Benchmark: ICE BofA US High Yield Index. eVestment US HY Universe rankings reflect the performance of the US High Yield peer group of competitors as of April 6, 2023. The rankings are not indicative of future performance, nor any investor's specific experience. Composite inception date: Feb. 28, 2014. Net Performance: Performance shown net of fees is calculated after the deduction of all management fees. Return may increase or decrease as a result of currency fluctuations. The above is supplemental information to the US Dynamic High Yield GIPS composite presentation provided in the GIPS Disclosure Notes. No assurance can be given that the strategy will be successful or achieve its objectives.

# US Dynamic High Yield's Role in a Balanced Fixed Income and Equity Portfolio

- Each US high yield strategy offered at AXA IM has a different risk/reward profile, and each can play a different role within a balanced equity and fixed income portfolio.
- Within US asset classes, we believe US Dynamic High Yield is positioned between the US high yield market and the equity market from a risk/reward perspective.
- Dynamic High Yield can be competitive with equity returns in risk-on markets (2016, 2017, 2019) and can provide better drawdown protection and less volatility in most risk-off markets (2018, 2022).

### LEGEND:

**SDHY** AXA IM US Short Duration HY GIPS Composite

**Core HY** AXA IM US Core High Yield GIPS Composite

**Dyn HY** AXA IM US Dynamic High Yield GIPS Composite

**Enh HY** US Enhanced High Yield GIPS Composite

**US IG** ICE US Corporate Index (COA0)

**10Y Tr** ICE 10 Year Treasury (GA10)

**US HY** ICE US High Yield index (H0A0)

**Loans** Credit Suisse Leveraged Loan index

**S&P 500** Standard & Poor 500 index

**Russell** Russ = Russell 2000 index

## Performance by Calendar Years

|         | 2015 | 2016         | 2017         | 2018           | 2019         | 2020         | 2021         | 2022          | YTD 2023    |
|---------|------|--------------|--------------|----------------|--------------|--------------|--------------|---------------|-------------|
| S&P 500 | 1.4  | Dyn HY 23.7  | S&P 500 21.8 | SDHY 1.2       | S&P 500 31.5 | Russell 20.0 | S&P 500 28.7 | Loans -1.1    | S&P 500 7.5 |
| 10Y Tr  | 0.9  | Russell 21.3 | Russell 14.7 | Loans 1.1      | Russell 25.5 | S&P 500 18.4 | Russell 14.8 | SDHY -5.0     | Enh HY 5.1  |
| SDHY    | 0.8  | US HY 17.5   | Dyn HY 11.5  | 10Y Tr 0       | Dyn HY 18.9  | Dyn HY 12.0  | Dyn HY 6.8   | Core HY -9.6  | Dyn HY 4.6  |
| Loans   | -0.4 | Core HY 15.3 | Core HY 7.6  | Core HY -1.7   | Enh HY 15.2  | 10Y Tr 10.6  | Enh HY 5.5   | US HY -11.2   | US HY 3.7   |
| US IG   | -0.6 | S&P 500 12   | US HY 7.5    | US IG -2.3     | US HY 14.4   | US IG 9.8    | Loans 5.4    | Dyn HY -12.7  | 10Y Tr 3.7  |
| Russell | -4.4 | Loans 9.9    | US IG 6.5    | US HY -2.3     | US IG 14.2   | Enh HY 8.3   | US HY 5.4    | Enh HY -14.8  | Core HY 3.5 |
| US HY   | -4.6 | US IG 6.0    | Loans 4.3    | S&P 500 -4.4   | Core HY 12.8 | Core HY 7.5  | Core HY 4.5  | US IG -15.4   | US IG 3.5   |
| Core HY | -4.9 | SDHY 5.9     | SDHY 3.5     | Dyn HY -4.5    | 10Y Tr 8.9   | US HY 6.2    | SDHY 3.3     | 10Y Tr -16.3  | Loans 3.1   |
| Dyn HY  | -8.5 | 10Y Tr -0.2  | 10Y Tr 2.0   | Russell -11.01 | Loans 8.2    | SDHY 3.9     | US IG -1.0   | S&P 500 -18.1 | Russell 2.7 |
| Enh HY  | ---  | Enh HY ---   | Enh HY ---   | Enh HY ---     | SDHY 8.1     | Loans 2.8    | 10Y Tr -3.7  | Russell -20.4 | SDHY 2.6    |

Sources: AXA Investment Managers, ICE BofA. As of March 31, 2023. Market indices are shown for illustrative purposes only. **Performance shown gross of fees** is calculated before expenses, carried interest, taxation costs and other expenses the investor may incur. An investor's return will be reduced by management fees and other expenses. Please see the Appendix for further information about the effect of management fees. Past performance is not indicative of future results. The above information presented is supplemental to the GIPS-compliant presentation included in the GIPS Disclosure Notes. No assurance can be given that the strategy will be successful or achieve its objectives. **Past performance is not a guide to future performance.**

## Conclusion

1



### Attractive entry point

**Yields have risen**, thereby increasing carry and return potential

2



### Low US dollar price

Many issuers with **sound fundamentals** trading at **discount** due to market effect

3



### Quality of HY market

A **high % of the market is healthy**, entering a potential recession in a position of **fundamental strength**



# Appendix

# Breakdown of the High Yield Market

Comparison of regions and quality – March 2023

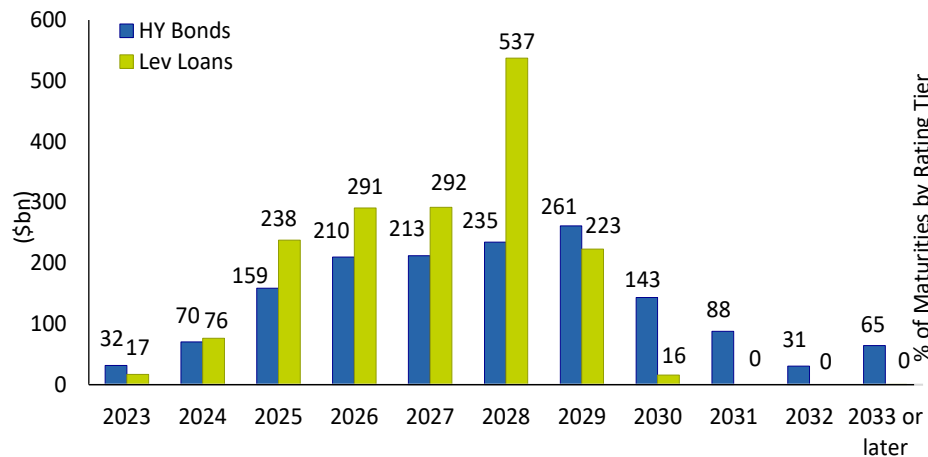
| ICE BofA INDICES               | Global High Yield Index | US High Yield Index | Euro High Yield Index | EM High Yield Index | Canada High Yield Index |
|--------------------------------|-------------------------|---------------------|-----------------------|---------------------|-------------------------|
| <b>Market Value (\$bln)</b>    | <b>2,049</b>            | <b>1,234</b>        | <b>458</b>            | <b>330</b>          | <b>14</b>               |
| % of Global High Yield         | 100%                    | 60%                 | 22%                   | 16%                 | 1%                      |
| <b># of Issuers</b>            | <b>1,554</b>            | <b>894</b>          | <b>405</b>            | <b>333</b>          | <b>27</b>               |
| <b># of Issues</b>             | <b>3,403</b>            | <b>1,916</b>        | <b>849</b>            | <b>572</b>          | <b>48</b>               |
| <b>Yield to Worst</b>          | <b>8.64</b>             | <b>8.49</b>         | <b>7.62</b>           | <b>10.66</b>        | <b>7.33</b>             |
| % Change Monthly               | 0%                      | -2%                 | 3%                    | 2%                  | 2%                      |
| % Change YTD                   | -4%                     | -5%                 | -3%                   | 1%                  | 0%                      |
| <b>Options Adjusted Spread</b> | <b>501</b>              | <b>458</b>          | <b>490</b>            | <b>681</b>          | <b>399</b>              |
| % Change Monthly               | 10%                     | 9%                  | 13%                   | 13%                 | 18%                     |
| % Change YTD                   | -3%                     | -5%                 | -5%                   | 6%                  | 9%                      |
| <b>Duration to Worst</b>       | <b>3.87</b>             | <b>4.08</b>         | <b>3.22</b>           | <b>3.99</b>         | <b>4.38</b>             |
| % Change Monthly               | -1%                     | -1%                 | -1%                   | 1%                  | 7%                      |
| % Change YTD                   | -3%                     | -4%                 | -1%                   | 0%                  | -2%                     |
| <b>Average Price</b>           | <b>87.15</b>            | <b>88.21</b>        | <b>87.14</b>          | <b>83.24</b>        | <b>90.81</b>            |
| % Change Monthly               | 0%                      | 1%                  | -1%                   | -1%                 | -1%                     |
| % Change YTD                   | 2%                      | 3%                  | 2%                    | 0%                  | 1%                      |
| <b>Total Monthly Return</b>    | <b>0.59</b>             | <b>1.13</b>         | <b>-0.41</b>          | <b>0.04</b>         | <b>0.02</b>             |
| <b>Total Return YTD</b>        | <b>3.16</b>             | <b>3.72</b>         | <b>2.77</b>           | <b>1.63</b>         | <b>1.80</b>             |
| <b>Excess Return Monthly</b>   | <b>-1.63</b>            | <b>-1.35</b>        | <b>-1.80</b>          | <b>-2.31</b>        | <b>-2.09</b>            |
| <b>Excess Return YTD</b>       | <b>1.19</b>             | <b>1.40</b>         | <b>1.96</b>           | <b>-0.59</b>        | <b>-0.43</b>            |

| ICE BofA INDICES               | US High Yield Index | BB US HY Index | B US HY Index | CCC US HY Index |
|--------------------------------|---------------------|----------------|---------------|-----------------|
| <b>Market Value (\$bln)</b>    | <b>1,234</b>        | <b>615</b>     | <b>488</b>    | <b>131</b>      |
| % of US High Yield             | 100%                | 50%            | 40%           | 11%             |
| <b># of Issuers</b>            | <b>894</b>          | <b>378</b>     | <b>429</b>    | <b>192</b>      |
| <b># of Issues</b>             | <b>1,916</b>        | <b>918</b>     | <b>730</b>    | <b>268</b>      |
| <b>Yield to Worst</b>          | <b>8.49</b>         | <b>6.79</b>    | <b>8.87</b>   | <b>15.1</b>     |
| % Change Monthly               | -2%                 | -6%            | 0%            | 4%              |
| % Change YTD                   | -5%                 | -6%            | -5%           | -4%             |
| <b>Options Adjusted Spread</b> | <b>458</b>          | <b>288</b>     | <b>491</b>    | <b>1130</b>     |
| % Change Monthly               | 9%                  | 2%             | 12%           | 12%             |
| % Change YTD                   | -5%                 | -6%            | -5%           | -3%             |
| <b>Duration to Worst</b>       | <b>4.08</b>         | <b>4.5</b>     | <b>3.75</b>   | <b>3.32</b>     |
| % Change Monthly               | -1%                 | -1%            | -2%           | -3%             |
| % Change YTD                   | -4%                 | -3%            | -5%           | -5%             |
| <b>Average Price</b>           | <b>88.21</b>        | <b>91.69</b>   | <b>88.82</b>  | <b>73.13</b>    |
| % Change Monthly               | 1%                  | 2%             | 0%            | -1%             |
| % Change YTD                   | 3%                  | 3%             | 2%            | 4%              |
| <b>Total Monthly Return</b>    | <b>1.13</b>         | <b>1.89</b>    | <b>0.88</b>   | <b>-1.53</b>    |
| <b>Total Return YTD</b>        | <b>3.72</b>         | <b>3.37</b>    | <b>3.81</b>   | <b>4.85</b>     |
| <b>Excess Return Monthly</b>   | <b>-1.35</b>        | <b>-0.72</b>   | <b>-1.50</b>  | <b>-3.76</b>    |
| <b>Excess Return YTD</b>       | <b>1.40</b>         | <b>0.93</b>    | <b>1.58</b>   | <b>2.74</b>     |

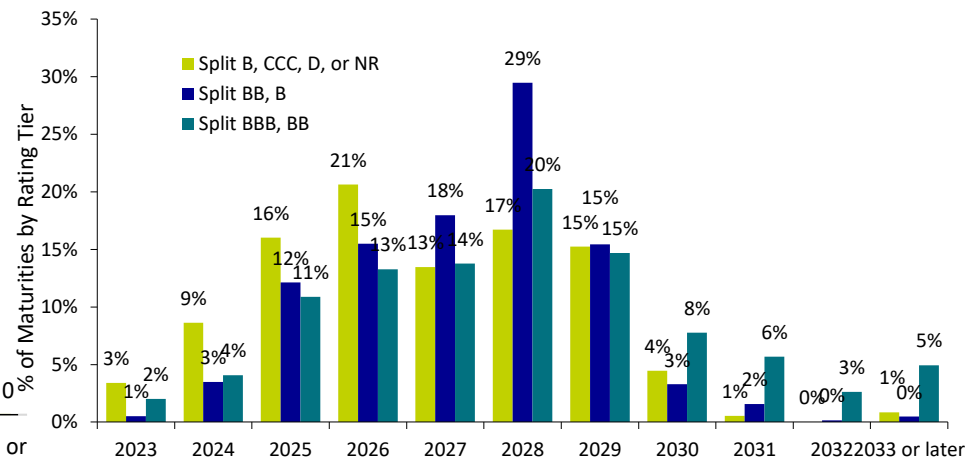
# Maturity Schedules

Maturity schedules remain manageable for most issuers

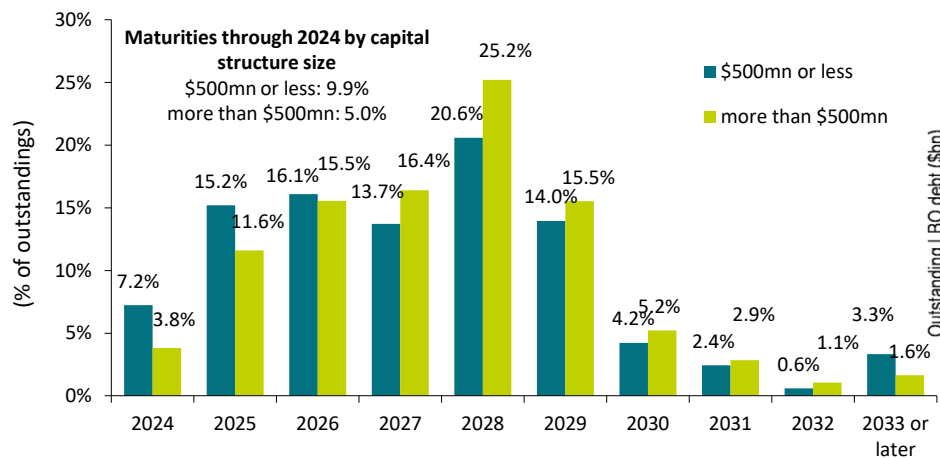
### High yield and institutional loan maturities



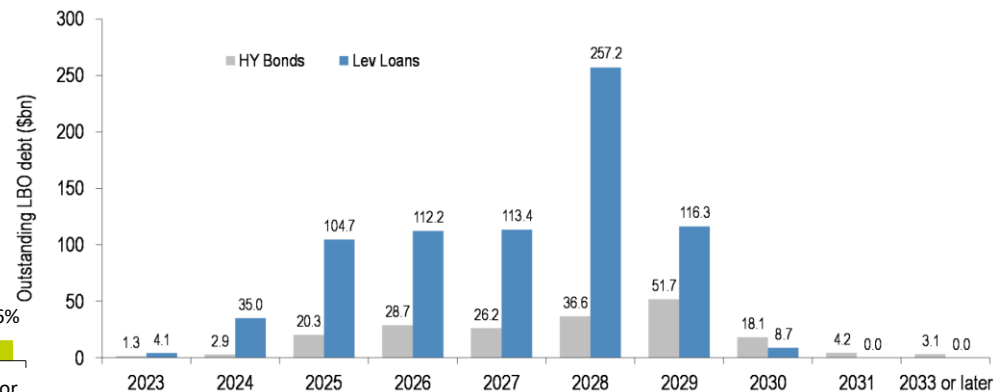
### Maturity by Rating (HY bonds and Lev Loans)



### Maturity by Capital Structure size (HY bonds and Lev Loans)



### LBO Maturity Schedule (HY bonds and Lev Loans)



# Comparison of Drawdowns

Five largest drawdowns over the past 20 years

|   |
|---|
| Drawdowns during Global Financial Crisis          |
| Drawdowns during Covid-related 2020 Q1 volatility |
| Drawdowns during current period of volatility     |
| Drawdowns during Energy Crisis                    |

- Our **US Short Duration High Yield** strategy has had **significantly lower drawdowns** than ETF SJNK, the ICE US High Yield index, and Credit Suisse Leveraged Loans Index for comparable periods.
- Surprisingly, drawdowns of US SDHY are lower than even the ICE US Corporate Investment Grade index (COAO).
- Furthermore, in the rare cases where US SDHY experienced drawdowns, **the days to recover are significantly shorter** in most cases.

### Definitions:

- Drawdown:** Period of negative performance
- Peak:** Start of the drawdown
- Trough:** Last day of the drawdown, and date on which performance recovery began.
- Days to Recover:** The day the portfolio fully recovered from the drawdown.

### AXA IM SHORT DURATION HIGH YIELD NET <sup>1</sup>

|   | Draw-down | Peak Date | Trough Date | Days to Recover |
|---|-----------|-----------|-------------|-----------------|
| 1 | -14.24%   | 8-Sep-08  | 9-Dec-08    | 237             |
| 2 | -13.00%   | 14-Feb-20 | 23-Mar-20   | 120             |
| 3 | -8.27%    | 27-Dec-21 | 29-Sep-22   | --              |
| 4 | -4.76%    | 26-Jul-11 | 4-Oct-11    | 78              |
| 5 | -4.39%    | 29-May-15 | 11-Feb-16   | 64              |

### ICE BoA 0-3 DTW US HY CONSTR. INDEX (HUCS)

|   | Draw-down | Peak Date | Trough Date | Days to Recover |
|---|-----------|-----------|-------------|-----------------|
| 1 | -28.55%   | 6-Jun-08  | 12-Dec-08   | 171             |
| 2 | -17.51%   | 20-Feb-20 | 23-Mar-20   | 249             |
| 3 | -10.07%   | 31-May-15 | 11-Feb-16   | 104             |
| 4 | -7.60%    | 28-Dec-21 | 30-Jun-22   | --              |
| 5 | -6.63%    | 26-Jul-11 | 4-Oct-11    | 107             |

### ICE BoA US HIGH YIELD INDEX (H0A0)

|   | Draw-down | Peak Date | Trough Date | Days to Recover |
|---|-----------|-----------|-------------|-----------------|
| 1 | -34.99%   | 31-May-07 | 12-Dec-08   | 237             |
| 2 | -21.54%   | 20-Feb-20 | 23-Mar-20   | 204             |
| 3 | -14.86%   | 28-Dec-21 | 29-Sep-22   | --              |
| 4 | -14.32%   | 9-Mar-01  | 10-Oct-02   | 162             |
| 5 | -13.09%   | 31-May-15 | 11-Feb-16   | 118             |

### ICE BoA US CORPORATE IG INDEX (COAO)

|   | Draw-down | Peak Date | Trough Date | Days to Recover |
|---|-----------|-----------|-------------|-----------------|
| 1 | -21.69%   | 14-Sep-21 | 21-Oct-22   | --              |
| 2 | -16.73%   | 23-Jan-08 | 30-Oct-08   | 245             |
| 3 | -15.14%   | 6-Mar-20  | 20-Mar-20   | 109             |
| 4 | -6.46%    | 2-May-13  | 5-Sep-13    | 217             |
| 5 | -6.45%    | 13-Jun-03 | 14-Aug-03   | 152             |

### AXA IM SHORT DURATION HIGH YIELD GROSS <sup>1</sup>

|   | Draw-down | Peak Date | Trough Date | Days to Recover |
|---|-----------|-----------|-------------|-----------------|
| 1 | -14.13%   | 8-Sep-08  | 9-Dec-08    | 232             |
| 2 | -12.96%   | 21-Feb-20 | 23-Mar-20   | 119             |
| 3 | -7.88%    | 27-Dec-21 | 29-Sep-22   | --              |
| 4 | -4.67%    | 27-Jul-11 | 4-Oct-11    | 76              |
| 5 | -4.08%    | 16-Jul-15 | 11-Feb-16   | 61              |

### SPDR SHORT TERM HIGH YIELD ETF (SJNK) <sup>2</sup>

|   | Draw-down | Peak Date | Trough Date | Days to Recover |
|---|-----------|-----------|-------------|-----------------|
| 1 | -19.74%   | 20-Feb-20 | 23-Mar-20   | 200             |
| 2 | -15.03%   | 7-Jul-14  | 11-Feb-16   | 200             |
| 3 | -10.18%   | 27-Dec-21 | 13-Jun-22   | --              |
| 4 | -5.36%    | 1-Oct-18  | 24-Dec-18   | 43              |
| 5 | -4.92%    | 21-May-13 | 24-Jun-13   | 87              |

### SPDR BARCLAYS HIGH YIELD ETF (JNK) <sup>3</sup>

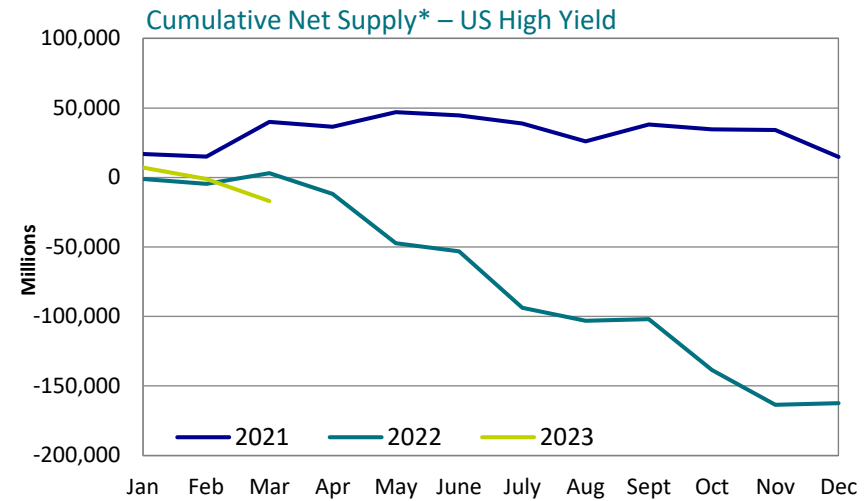
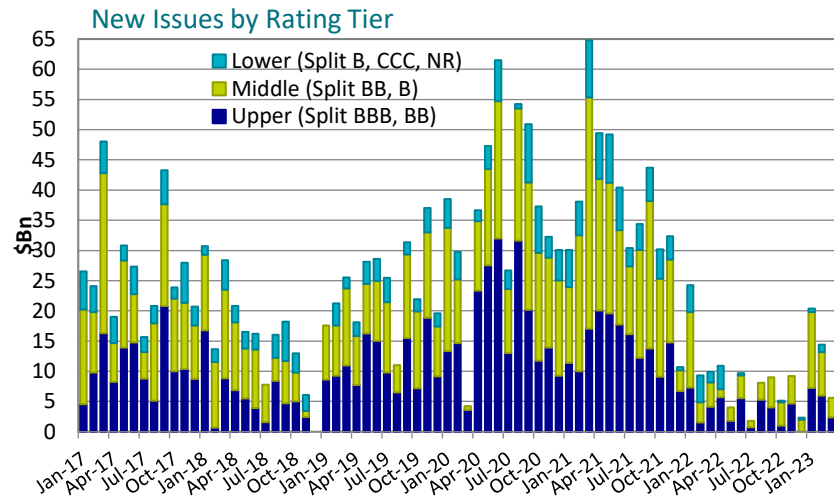
|   | Draw-down | Peak Date | Trough Date | Days to Recover |
|---|-----------|-----------|-------------|-----------------|
| 1 | -38.51%   | 2-Jan-08  | 21-Nov-08   | 335             |
| 2 | -22.90%   | 20-Feb-20 | 23-Mar-20   | 226             |
| 3 | -16.95%   | 2-Sep-14  | 11-Feb-16   | 200             |
| 4 | -16.68%   | 27-Dec-21 | 27-Sep-22   | --              |
| 5 | -10.93%   | 21-Jul-11 | 4-Oct-11    | 106             |

### CREDIT SUISSE LEVERAGED LOANS INDEX

|   | Draw-down | Peak Date | Trough Date | Days to Recover |
|---|-----------|-----------|-------------|-----------------|
| 1 | -29.94%   | 30-Jun-07 | 17-Dec-08   | 273             |
| 2 | -20.40%   | 21-Jan-20 | 23-Mar-20   | 231             |
| 3 | -5.44%    | 21-Jan-22 | 6-Jul-22    | 195             |
| 4 | -5.33%    | 10-May-11 | 26-Aug-11   | 152             |
| 5 | -5.10%    | 20-Jul-15 | 12-Feb-16   | 96              |

Source: AXA IM, Bloomberg. As of March 31, 2023. <sup>1</sup>AXA IM SD High Yield representative portfolio. The representative account shown has been selected because it utilizes an investment setup that is typical for accounts in the relevant strategy and/or on the basis that it has adequate assets under management to effectuate a fair comparison. <sup>2</sup>SJNK inceptioned in March 2012, so did not exist during the 2008 Credit Crisis. <sup>3</sup>JNK inceptioned in Dec 2007. Please refer to the appendix for additional information. Past performance is not indicative of future returns. Net Performance: Performance shown net of fees is calculated after the deduction of all management fees. Return may increase or decrease as a result of currency fluctuations. The above information presented is supplemental to the GIPS-compliant presentation included in the GIPS Disclosure Notes. No assurance can be given that the strategy will be successful or achieve its objectives. For illustrative purposes only.

# High Yield Technical Review



## New Issue Activity

| YEAR-TO-DATE (\$bn)    | Total Vol. | Avg Mo Vol. |
|------------------------|------------|-------------|
| 2023                   | 54.0       | 17.5        |
| 2022                   | 43.4       | 16.8        |
| Change from prior year | 24%        | 4%          |

| March                   | \$Bn | Count |
|-------------------------|------|-------|
| Total volume (\$bn)     | 5.6  | 11    |
| Prior month             | 14.4 |       |
| Change from prior month | -61% |       |

| USE OF PROCEEDS       | \$Bn | %   |
|-----------------------|------|-----|
| Refinancing           | 2.7  | 49% |
| Acquisition financing | 1.7  | 30% |
| General Corporate     | 1.2  | 21% |
| Dividend              | 0.0  | 0%  |

## Trading Highlights

- High yield outflows moderated in March with mutual funds reporting -\$4.9 billion of outflows during the month. This is the fourth consecutive monthly outflow and the third lightest outflow since July-21. For context, February's outflow totaled -\$10.1 billion, which was the heaviest outflow since Jan-22 and the second heaviest outflow since Mar-20. ETFs accounted for -\$3.3 billion of outflows in March and actively managed funds reported a -\$1.6 billion outflow. Notably, ETF outflows totaling -\$11.8 billion YTD already surpass 2018's record ETF outflow of -\$11.6 billion. And ETF contribution to outflows YTD is 74%, compared with 19% in FY2022, and 25% in FY2018. YTD, outflows for high yield total -\$16.0 billion (-\$11.8 billion ETF), which compares with -\$27.2 billion of outflows during the first three months in 2022.
- Amid extreme market volatility high-yield capital market activity declined significantly in March, as issuance came to a halt mid-month. That said, activity tentatively resurfaced in the last few days of March. Specifically, 11 bonds priced for \$5.6 billion in March, which followed \$14.4 billion of volume in February, \$20.5 billion in January and a monthly average of \$8.9 billion in FY22. March's volume has historically ranked third heaviest in terms of average monthly volume relative to the year's 12 calendar months, averaging \$32.4 billion since 2010; this month's \$5.6 billion was the second lightest March since the financial crises-2009. 1Q23's high yield volume of \$40.5 billion was the highest quarterly issuance since 1Q22.
- High yield bonds spreads widened in March as volatility surged in equities and rates on the back of US regional bank failures and the collapse of Credit Suisse. Improved sentiment about avoiding a global banking crisis and renewed hope in interest rate cuts later this year drove prices up over the backend of the month. Default activity declined in March off a 2.5 year high. Specifically, there were no high yield bond defaults or distressed exchanges. All of March's five defaults/distressed transactions (\$2.3 billion total) were from loan-only borrowers. In March, upper-tier bonds outperformed, as BB rated bonds provided the largest gain. Year to date, market performance has been led lower-rated bonds.

# US Short Duration High Yield Composite

## GIPS Compliant Performance Presentation

### Investment Strategy Objective

Aims to generate high current income by investing in better-quality, non-investment grade debt of U.S. companies with an expected redemption of three years or less.

### Composite Benchmark

The "US Short Duration High Yield" composite is not shown against a benchmark, since the strategy is an absolute return strategy and not managed against a benchmark.

| Annualized (%)    | 1 year | 3 year | 5 year | 10 year | Since inception |
|-------------------|--------|--------|--------|---------|-----------------|
| Composite (Gross) | -0.55  | 4.20   | 3.19   | 3.30    | 5.22            |
| Composite (Net)   | -0.99  | 3.74   | 2.74   | 2.83    | 4.73            |

| Calendar year (%)                    | 2022  | 2021 | 2020 | 2019 | 2018 | 2017 | 2016 | 2015 | 2014 | 2013 |
|--------------------------------------|-------|------|------|------|------|------|------|------|------|------|
| Composite (Gross)                    | -4.55 | 3.80 | 4.38 | 8.50 | 1.69 | 3.98 | 6.38 | 1.23 | 1.51 | 5.46 |
| Composite (Net)                      | -4.98 | 3.34 | 3.93 | 8.06 | 1.22 | 3.48 | 5.88 | 0.77 | 1.03 | 4.96 |
| Internal Dispersion (Std. Deviation) | N/A   | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | N/A  | 0.10 |

| As of end of period               | 2022  | 2021    | 2020    | 2019    | 2018    | 2017    | 2016    | 2015    | 2014    | 2013    |
|-----------------------------------|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Composite Assets (USD mil)        | 5,494 | 6,507   | 5,772   | 5,712   | 5,575   | 8,217   | 10,039  | 11,014  | 12,390  | 20,483  |
| # of Portfolios in Composite      | 4     | 5       | 5       | 7       | 4       | 4       | 5       | 4       | 3       | 12      |
| Total Strategy Assets (USD mil)   | 6,550 | 8,161   | 7,131   | 7,109   | 8,351   | 13,335  | 18,867  | 18,648  | 19,681  | 24,991  |
| Total Firm Discr.Assets (USD mil) |       | 291,036 | 250,851 | 208,569 | 191,910 | 223,150 | 177,183 | 182,303 | 215,895 | 225,582 |
| Total Firm Assets (USD mil)       |       | 618,555 | 689,782 | 618,264 | 583,866 | 650,149 | 555,036 | 558,650 | 668,139 | 686,214 |

### General Information

|                          |                    |
|--------------------------|--------------------|
| Reporting date           | March 31, 2023     |
| Composite Inception Date | September 30, 2001 |
| Composite Creation Date  | September 30, 2001 |
| Composite Currency       | USD                |

| Cumulative (%)    | 1 mo | 3 mo | 6 mo | YTD  |
|-------------------|------|------|------|------|
| Composite (Gross) | 0.92 | 2.74 | 6.00 | 2.74 |
| Composite (Net)   | 0.89 | 2.63 | 5.77 | 2.63 |

| Quarterly (%)     | 2022<br>2Q | 2022<br>3Q | 2022<br>4Q | 2023<br>1Q |
|-------------------|------------|------------|------------|------------|
| Composite (Gross) | -6.34      | 0.17       | 3.17       | 2.74       |
| Composite (Net)   | -6.45      | 0.06       | 3.06       | 2.63       |

# US Dynamic High Yield Composite

## GIPS Compliant Performance Presentation

### Investment Strategy Objective

Seeks to generate high income by investing in US high yield debt securities and credit default sw aps. This is a total return investment strategy that aims to provide risk-adjusted out-performance, given their respective benchmarks and constraints

### Composite Benchmark

BofA Merrill Lynch US High Yield Index (H0A0)

| Annualized (%)    | 1 Year | 3 Year | 5 Year | Since inception |
|-------------------|--------|--------|--------|-----------------|
| Composite (Gross) | -4.44  | 9.39   | 5.05   | 5.77            |
| Composite (Net)   | -5.01  | 8.74   | 4.42   | 5.14            |
| Benchmark         | -3.56  | 5.84   | 3.06   | 3.64            |

| Calendar year (%) | 2022   | 2021 | 2020  | 2019  | 2018  | 2017      | 2016  | 2015 | 2014 | 2013 |
|-------------------|--------|------|-------|-------|-------|-----------|-------|------|------|------|
| Composite (Gross) | -12.17 | 7.41 | 12.67 | 19.64 | -3.87 | 12.146167 | 24.4  | N/A  | N/A  | N/A  |
| Composite (Net)   | -12.70 | 6.77 | 12.01 | 18.93 | -4.45 | 11.48     | 23.67 | N/A  | N/A  | N/A  |
| Benchmark         | -11.22 | 5.36 | 6.17  | 14.41 | -2.26 | 7.483437  | 17.49 | N/A  | N/A  | N/A  |

| As of end of period               | 2022 | 2021    | 2020    | 2019    | 2018    | 2017    | 2016    | 2015    | 2014    | 2013    |
|-----------------------------------|------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Composite Assets (USD mil)        | 936  | 1,444   | 740     | 319     | 214     | 232     | 122     | N/A     | N/A     | N/A     |
| # of Portfolios in Composite      | 1    | 1       | 1       | 1       | 1       | 1       | 1       | N/A     | N/A     | N/A     |
| Total Strategy Assets (USD mil)   | 936  | 1,444   | 740     | 318     | 247     | 287     | 122     | N/A     | N/A     | N/A     |
| Total Firm Discr.Assets (USD mil) |      | 291,036 | 250,851 | 208,569 | 191,910 | 223,150 | 177,183 | 182,303 | 215,895 | 225,582 |
| Total Firm Assets (USD mil)       |      | 618,555 | 689,782 | 618,264 | 583,866 | 650,149 | 555,036 | 558,650 | 668,139 | 686,214 |

### General Information

|                          |                   |
|--------------------------|-------------------|
| Reporting date           | March 31, 2023    |
| Composite Inception Date | February 28, 2014 |
| Composite Creation Date  | February 22, 2017 |
| Composite Currency       | USD               |

| Cumulative (%)    | 1 mo | 3 mo | 6 mo | YTD  |
|-------------------|------|------|------|------|
| Composite (Gross) | 0.16 | 4.70 | 9.80 | 4.70 |
| Composite (Net)   | 0.11 | 4.55 | 9.48 | 4.55 |
| Benchmark         | 1.13 | 3.72 | 7.85 | 3.72 |

| Quarterly (%)     | 2022<br>2Q | 2022<br>3Q | 2022<br>4Q | 2023<br>1Q |
|-------------------|------------|------------|------------|------------|
| Composite (Gross) | -13.50     | 0.62       | 4.87       | 4.70       |
| Composite (Net)   | -13.64     | 0.47       | 4.72       | 4.55       |
| Benchmark         | -9.97      | -0.68      | 3.98       | 3.72       |

# AXA IM Global High Yield (GBP hedged) GIPS Composite

## GIPS Compliant Performance Presentation

### Investment Strategy Objective

The objective is to generate superior long-term returns by compounding current high income, and mitigating the risk of principal losses through detailed fundamental credit analysis of mostly US and European issuers. Our approach is to invest in companies with improving fundamentals which are undervalued relative to our perception of credit risk. Portfolios in this composite have a GBP base currency. Benchmarks are used only as a reference for evaluating absolute performance.

### Composite Benchmark

Global HY BM\_GBP (HW00 GBP\_H Incept. to Dec 31 2021 and HYDC GBP\_H from Jan 1 2022)

| Annualized (%)    | 1 year | 3 year | 5 year | 10 year | Since inception |
|-------------------|--------|--------|--------|---------|-----------------|
| Composite (Gross) | -4.49  | 5.62   | 2.21   | 3.80    | 6.12            |
| Composite (Net)   | -4.95  | 5.12   | 1.72   | 3.30    | 5.62            |
| Benchmark         | -4.68  | 4.68   | 1.49   | 3.29    | 5.77            |

| Calendar year (%)                    | 2022   | 2021 | 2020 | 2019  | 2018  | 2017 | 2016  | 2015  | 2014 | 2013  |
|--------------------------------------|--------|------|------|-------|-------|------|-------|-------|------|-------|
| Composite (Gross)                    | -9.84  | 4.85 | 5.63 | 11.67 | -3.07 | 7.35 | 14.87 | -3.06 | 2.97 | 10.05 |
| Composite (Net)                      | -10.27 | 4.34 | 5.13 | 11.14 | -3.53 | 6.84 | 14.33 | -3.52 | 2.48 | 9.53  |
| Benchmark                            | -11.77 | 2.78 | 5.10 | 12.32 | -3.61 | 6.73 | 15.66 | -2.11 | 2.71 | 7.31  |
| Internal Dispersion (Std. Deviation) | N/A    | N/A  | N/A  | N/A   | N/A   | N/A  | N/A   | N/A   | N/A  | N/A   |

| As of end of period               | 2022  | 2021    | 2020    | 2019    | 2018    | 2017    | 2016    | 2015    | 2014    | 2013    |
|-----------------------------------|-------|---------|---------|---------|---------|---------|---------|---------|---------|---------|
| Composite Assets (GBP mil)        | 81    | 130     | 133     | 110     | 103     | 121     | 93      | 114     | 171     | 171     |
| # of Portfolios in Composite      | 1     | 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       | 1       |
| Total Strategy Assets (USD mil)   | 1,341 | 1,688   | 1,612   | 1,441   | 1,284   | 1,399   | 1,182   | 1,395   | 1,409   | 1,265   |
| Total Firm Discr.Assets (USD mil) |       | 291,036 | 250,851 | 208,569 | 191,910 | 223,150 | 177,183 | 182,303 | 215,895 | 225,582 |
| Total Firm Assets (USD mil)       |       | 618,555 | 689,782 | 618,264 | 583,866 | 650,149 | 555,036 | 558,650 | 668,139 | 686,214 |

### General Information

|                          |                   |
|--------------------------|-------------------|
| Reporting date           | March 31, 2023    |
| Composite Inception Date | December 31, 2005 |
| Composite Creation Date  | December 31, 2005 |
| Composite Currency       | GBP               |

| Cumulative (%)    | 1 mo | 3 mo | 6 mo | YTD  |
|-------------------|------|------|------|------|
| Composite (Gross) | 0.29 | 2.41 | 7.15 | 2.41 |
| Composite (Net)   | 0.25 | 2.29 | 6.90 | 2.29 |
| Benchmark         | 0.67 | 3.30 | 7.35 | 3.30 |

| Quarterly (%)     | 2022<br>2Q | 2022<br>3Q | 2022<br>4Q | 2023<br>1Q |
|-------------------|------------|------------|------------|------------|
| Composite (Gross) | -9.72      | -1.27      | 4.63       | 2.41       |
| Composite (Net)   | -9.83      | -1.39      | 4.51       | 2.29       |
| Benchmark         | -10.32     | -0.98      | 3.92       | 3.30       |



# GIPS® Performance Disclosure Notes

## Claim of Compliance

AXA IM claims compliance with the Global Investment Performance Standards (GIPS®) and has prepared and presented this report in compliance with the GIPS standards. AXA IM has been independently verified for the periods from December 31, 1999 through December 31, 2018. Verification assesses whether (1) the firm has complied with all the composite construction requirements of the GIPS standards on a firm-wide basis and (2) the firm's policies and procedures are designed to calculate and present performance in compliance with GIPS standards. The US Core High Yield and the US Short Duration High Yield Composites have been examined since inception. GIPS verification and performance examination reports are available upon request. Select AXA IM funds under management that are included in select GIPS composites are subject from time to time to "swing" pricing. In order to ensure that AXA IM maintains its GIPS compliance standards, it has developed a comprehensive set of policies and procedures to account for such swing price impacts. As with other policies and procedures, the GIPS standards are reviewed and revised on an as needed basis.

## Presentation of the Firm

AXA IM is an active long-term, responsible multi-asset manager with investment centers in the Americas, Asia Pacific and Europe offering the following investment capabilities:

**Framlington Equity** - an active, fundamental, bottom-up stock selection approach for core equities and thematic equity strategies incorporating specialist investment capabilities and responsible investing (RI).

**Equity QI (Quant Investing)** - offering quantitative investing by the use of technology and modelling to deliver fundamental strategies including advanced factor, systematic alpha and targeted outcome, underpinned by environmental, social and governance (ESG) principles.

**Active Fixed Income Europe & Asia** - a robust, repeatable process, which involves bottom-up credit analysis and top-down macroeconomic research to deliver outcome-oriented solutions that span the fixed income spectrum.

**US Active Fixed Income and European & Global High Yield** - a range of high yield strategies investing within and across regions, sectors and maturities. Dedicated high yield teams employ a consistent investment process which has been tested over a range of market cycles and conditions.

**Fixed Income for AXA and Buy & Maintain** - a strong bottom-up credit analysis and top-down macroeconomic research approach for traditional, benchmarked to fully flexible strategies which employ several different investment styles, including active and buy-and-maintain.

**Structured Finance** - a broad range of alternative sources of return from across the credit continuum, beyond traditional credit investments, to suit various risk/return and liquidity profiles through standalone and multi-strategy investments.

**Multi Asset** - a combined fundamental top-down and bottom-up analysis with embedded risk monitoring to all client types for outcome-oriented and customized multi-asset solutions.

**Chorus** - a research and technology-driven approach to deliver stable and sustainable, positive returns regardless of market conditions offering clients a differentiated proposition with low correlation to traditional assets..

## Composite List and Description

A complete list and description of all composites is available on request.

## Portfolio Valuation

Portfolios are valued according to the market closing prices each day, except for certain portfolios valued in Germany, which use the closing price of the previous day, and the UK, where the price used is the 2pm price of the same day. In order to apply this valuation policy, the NAV of the day following the valuation date is used for certain portfolios. Dividends paid on securities in the portfolio are accounted for using ex-dividend date and are gross of any withholding taxes. Buy and sell transactions are taken into account using trade-date valuation after confirmation of the trade by the counterparty, except in Germany where settlement date valuation is used. Accrued interest on debt securities is recorded each time the portfolio is valued. All proceeds, including realized and unrealized gains or losses in the portfolio are included in the value of assets. There are minor exceptions to these general rules for specific types of portfolios. Some securities in portfolios of US High Yield composites are valued by reference to broker quotes.

## Minimum Asset Level & Total Firm Assets

The minimum portfolio size for the US High Yield and US Investment Grade composites is 10,000,000 USD. If the portfolio falls below 10,000,000 USD for more than three months it is excluded from the performance calculations for the following month. For all other composites, the upper threshold is defined at 10,000,000 EUR the lower threshold at 8,000,000 EUR, with a 6-month grace period. AUM figures for the Firm include all portfolios falling within the definition of the Firm.

# GIPS® Performance Disclosure Notes (Continued)

## Significant Cash Flows

If the average cash balance of a portfolio is above 10% for a specific month, the entire portfolio is temporarily removed from the composite performance for that particular month. Additional information regarding the treatment of significant cash flows is available upon request.

## Currency Used to Express Performance

Composite performance figures are presented in the currency of the composite.

## Performance Results / Fees

Composite returns are calculated gross of fees. Gross of fees returns are calculated gross of management and custodial fees and net of all trading expenses. The management fee schedule is as follows:

US Core High Yield Composite: First \$50 million: 0.48%; next \$50 million: 0.44%, next \$50 million: 0.41%, next \$50 million: 0.39%, Amount above \$200 million: 0.37%.

US Short Duration High Yield Composite: Flat fee: 0.45%.

US Dynamic High Yield Composite: Flat fee: 0.60%.

US Enhanced High Yield Composite: Flat fee: 0.95%

US Investment Grade Corporate Bond Composites: First \$50 Million: 0.26%; next \$50 million: 0.24%; next \$50 million: 0.20%; next \$50 million: 0.18%. Amount above \$200 million: 0.17%.

## Benchmarks

The composite may be managed against a specific benchmark as indicated on the composite page. The extent to which any given composite invests in countries or regions not included in the benchmark depends on the limits (if any) specified in the investment management contracts of the individual portfolios in the composite. In general, such investment is marginal and is typically less than 10% for any given portfolio.

## Compliance with Local Laws

This performance presentation does not conflict with any relevant local laws in any of the AXA IM management centers included in the Firm perimeter as at 31/12/2016.

## Calculation Methods

Composite performance is calculated on a monthly basis as follows:

- The portfolios entering the performance calculation are determined according to the Minimum Asset Level described above.
- Each portfolio brings its own specific start and end dates to the calculation, depending on the particular valuation dates of the portfolio.
- The performance of each portfolio is calculated using the start and end dates relevant to the period in question, and using daily-weighted cash flows.
- The performance of a composite is calculated as a weighted average (using each portfolio's assets under management as at each portfolio's specific start date for the period in question) of the performances of the portfolios.
- Quarterly, annual, cumulative and since-inception returns are calculated by linking the composite monthly returns through compounded multiplication.

The benchmark performance is calculated in a similar fashion, using the same portfolio-related weights and date values, and replacing the portfolio values by the composite benchmark values. The calculation of the composite benchmark return is always comparable in terms of time periods and asset-weightings to the calculation of the composite return.

## Dispersion

Dispersion is the weighted average (using the AUM of each portfolio at the start of the period) of the tracking error between the composite and those portfolios satisfying the Minimum Asset Level test (see above) for the whole period. Composites dispersion is defined as the standard deviation of the returns of the portfolios for the period in question, taking into account the relative size of the portfolios. It is only displayed if there are at least 5 such portfolios.

## Representative Portfolios and Indices used

**Gross Performance:** Performance shown gross of fees is calculated before the deduction of applicable management fees and other expenses. An investor's actual return will be reduced by management fees and other expenses the investor may incur. Further information on the firm's fees may be found in its Form ADV Part 2 (for US investors) or provided upon request. The collection of management fees produces a compounding effect on the total rate of return net of management fees. [As an example, the effect of management fees on the total value of an investor's portfolio assuming a) quarterly fee assessment, b) \$1,000,000 investment, c) portfolio return of 8% a year, and d) 1.00% annual investment management fee would be \$10,416 in the first year, and cumulatively \$59,816 over five years and \$143,430 over ten years.] **Net Performance:** Performance shown net of fees is calculated after the deduction of management fees and other applicable expenses. The risk information provided herein is not sufficient to support an investment decision, and is qualified in its entirety by the more complete disclosures, risk factors and other terms available upon request from AXA Investment Managers.

**Representative Accounts:** Such accounts have been selected based on objective, non-performance based criteria, including, but not limited to the size and the overall duration of the management of the account, the type of investment strategies and the asset selection procedures in place. Therefore, the results portrayed relate only to such accounts and are not indicative of the future performance of such accounts or other accounts, products and/or services described herein. In addition, these results may be similar to the applicable GIPS composite results, but they are not identical and are not being presented as such. Account performance will vary based upon the inception date of the account, restrictions on the account, along with other factors, and may not equal the performance of the representative accounts presented herein. The performance results for representative accounts are gross of all fees and do reflect the reinvestment of dividends or other earnings. The examples of securities provided for each representative account presentation are for illustrative purposes only and are intended to reflect the typical securities, sectors, and/or geographies that could be deployed by the strategy to generate the target returns. These examples do not represent all of the securities purchased, sold or recommended for the client's accounts, and should not be considered a buy/sell recommendation. An investor's actual experience may vary.

The ICE BofA US High Yield Index is composed of high-yield corporate bonds and other distressed securities. Taxable and tax-exempt US municipal, DRD eligible and defaulted securities are excluded from the Index. Indices are rebalanced monthly by market capitalization. The BofA Merrill Lynch High Yield Index is an unmanaged index consisting of U.S. dollar denominated bonds that are rated BB1/BB+ or lower, but not currently in default. No assurance can be given that the strategy/fund will be successful or that investors will not lose some or all of their capital.

The ICE BofA US Corporate Master Index is composed investment grade corporate bonds. Taxable and tax-exempt US municipal, DRD eligible and defaulted securities are excluded from the Index. Indices are rebalanced monthly by market capitalization.

The ICE BofA 1-3 Year US corporate Index is composed of investment grade corporate bonds including securities with a remaining term to final maturity of less than 3 years. Taxable and tax-exempt US municipal, DRD eligible and defaulted securities are excluded from the Index. Indices are rebalanced monthly by market capitalization.

The Bloomberg Barclays Capital US Corporate Credit – Intermediate Index is composed dollar-denominated investment grade debt from U.S. and non-U.S. industrial, utility, and financial institutions issuers of intermediate maturities (1-10 years). Subordinated issues, securities with normal call and put provisions and sinking funds, medium-term notes (if they are publicly underwritten), 144A securities with registration rights, and global issues that are SEC-registered are included. Structured notes with embedded swaps or other special features, as well as private placements, floating-rate securities, and Eurobonds are excluded from the U.S. Corporate Index.

The Bloomberg Barclays Capital US Corporate Credit Index is composed of dollar-denominated investment grade debt from U.S. and non-U.S. industrial, utility, and financial institutions issuers. Subordinated issues, securities with normal call and put provisions and sinking funds, medium-term notes (if they are publicly underwritten), 144A securities with registration rights, and global issues that are SEC-registered are included. Structured notes with embedded swaps or other special features, as well as private placements, floating-rate securities, and Eurobonds are excluded from the U.S. Corporate Index.

An index is unmanaged and is not available for direct investment.

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