



# CLIENT RESOURCE KIT

## FIXED INCOME

 First Trust

## INVESTMENT MANAGEMENT TEAMS

### LEVERAGED FINANCE

William Housey, CFA, MBA, 25 years  
 Jeffrey Scott, CFA, MBA, 31 years  
 Scott D. Fries, CFA, MBA, 27 years  
 Gregory Olsen, CFA, MBA, 29 years  
 Brian Kessler, CFA, CMT, 17 years  
 Sebastian Dassouli, 13 years  
 Peter Fasone, CFA, MBA, 36 years  
 Howard Tiffen, AM, 40+ years  
 Andy Rybak, CFA, MBA, 22 years  
 Dave Tanny, 25 years  
 Jeffrey Johnson, CFA, 7 years  
 Ryan Kommers, 24 years  
 Cory Starkey, CFA, MS, 4 years  
 Daniel Nagode, CFA, 4 years  
 Daniel Waldron Jr., 4 years  
 Sam Cafi, MBA, 11 years  
 Brandon Nelson, 0 years

### SECURITIZED PRODUCTS

Jim Snyder, MBA, 32 years  
 Jeremiah Charles, MS, 18 years  
 Jud Tigerman, MBA, 25 years  
 Austin Stockfisch, 10 years  
 Alex DeRochie, 4 years  
 Minhua Wu, 4 years  
 Owen Aronson, 14 years  
 Stephen Pennington, MS, 17 years  
 Samuel Cecil, MBA, 9 years  
 Danielle Vandolder-Beaudin, 0 years  
 Jordan Pflum, MS, 0 Years

### MODEL INVESTMENT COMMITTEE

Daniel J. Lindquist, CFA, MBA  
 Chairman and Managing Director  
 29 years

David McGarel, CFA, CPA  
 CIO, COO and Managing Director  
 31 years

### INVESTMENT GRADE

Todd Larson, CFA, 29 years  
 Eric Maisel, CFA, MBA, 29 years  
 Ying Timmerman, CFA, CPA, 14 years  
 David Worniak, CFA, 11 years  
 Nathan Simons, CFA, 10 years  
 Michael Doyle, MBA, 23 years  
 Matthew Franz, 3 years  
 Charles Kovarik, 3 years

### GLOBAL BONDS

(First Trust Global Portfolios Limited)  
 Derek Fulton, 25 years  
 Leonardo DaCosta, CFA, 17 years  
 Anthony Beevers, CFA, 11 years

### CLOSED-END FUNDS

Ken Fincher, MBA, 25 years  
 Jordan Ramsland, 8 years

### MUNICIPAL SECURITIES

Tom Futrell, CFA, MBA, 40 years  
 Johnathan Wilhelm, JD, 29 years  
 Nick Novosad, CFA, 9 years  
 Jeff Samuel, 27 years  
 Sarah Schusler, CFA, 16 years  
 Shari Sikes, MS, 26 years  
 Brendan Stewart, CFA, CPA, 9 years  
 John Loch, MBA, 26 years  
 Andrew Folland, MBA, 25 years  
 Allison Keller, 2 years

William Housey, CFA, MBA  
 Managing Director of Fixed-Income  
 25 years

Chris Peterson, CFA, MBA  
 SVP, Head of Strategy Research  
 22 years

### PREFERRED SECURITIES

(Stonebridge Advisors LLC)  
 Scott Fleming, MBA, 40 years  
 Robert Wolf, MBA, 22 years  
 Eric Weaver, MS, 14 years  
 Angelo Graci, CFA, MBA, 26 years  
 Allen Shepard, PhD, 28 years  
 Connor Fleming, CFA, CIPM, 9 years  
 Scott Hubbell, CFA, 13 years  
 Jeff Vinca, 17 years  
 Marie-Belle Mikue, 8 years

### ECONOMICS

Brian Wesbury, MBA, 38 years  
 Robert Stein, CFA, 25 years  
 Strider Ellass, 14 years  
 Andrew Opdyke, CFA, MBA, 9 years  
 Gill Bryce, 6 years  
 Mary Buchanan, 17 years

### MARKET ANALYSIS

Bob Carey, CFA, 34 years  
 Steve Claiborne, 32 years

Chris Fallow, CFA  
 SVP, Portfolio Oversight  
 21 years

Steve Collins, CFA, MBA  
 SVP, Senior Fixed-Income Analyst  
 15 years

## RESEARCH

David McGarel, CFA, CPA, 31 years  
 Jon Erickson, CFA, MBA, 31 years  
 Chris Peterson, CFA, MBA, 22 years

### EQUITY RESEARCH

John Sherren, CFA, MBA, 23 years  
 Jared Wollen, CFA, MS, 12 years  
 Tom Marsh, 7 years  
 Eric Glombicki, 1 year

### FIXED INCOME RESEARCH

Jim Vavrek, CFA, 22 years  
 Tom Evans, CFA, JD, 19 years  
 Steve Collins, CFA, MBA, 15 years  
 Orlando Becerra, 8 years

### PRODUCT SPECIALIST

Jeff Margolin, MBA, 25 years  
 Ryan O. Issakainen, CFA, MA, 20 years  
 Andrew Hull, 12 years

### STRATEGY RESEARCH

Chris Bush, CFA, 15 years  
 Bob Hensley, CFA, MS, 18 years  
 Omar Sepulveda, CFA, 23 years  
 Graham Homberg, CFA, 14 years  
 Elliott Papineau, 13 years  
 Brad Phillips, CFA, 10 years  
 Steve Rinn, CFA, 5 years  
 John Bria, 7 years  
 Chris Swade, 2 year  
 Tyler Jones, 2 year  
 Simon Peterson, 0 years

### QUANT TECH

Dan Godoy, CFA, MBA, 14 years  
 John Hagerson, CFA, 21 years  
 Jeff Sommars, PhD, CFA, 6 years  
 Landon Kavlie, PhD, 5 years  
 Nathan Bliss, PhD, CFA 3 years  
 Robby Teevans, 2 years  
 Evan Cameron, 1 year  
 Michael Kietzman, 1 year  
 Jon Larson, 1 year  
 Matt Adomshick, 1 year

## MARKET DATA

3. SECULAR BULL AND BEAR EQUITY MARKETS
4. WEEKLY S&P 500 INDEX
5. WEEKLY 2 YR AND 5 YR U.S. TREASURY YIELD
6. WEEKLY 10 YR AND 30 YR U.S. TREASURY YIELD
7. 40-YEAR MONTHLY 10 YR U.S. TREASURY YIELD
8. 10 YR U.S. TREASURY REAL YIELD
9. INFLATION: BREAKEVENS
10. 10 YR U.S. TREASURY YIELD AND 10 YR GERMAN BUND YIELD
11. WEEKLY 10 YR GOVERNMENT BOND YIELDS (GERMANY & JAPAN)
12. WEEKLY 10 YR GOVERNMENT BOND YIELDS (U.K. & ITALY)
13. CENTRAL BANK BALANCE SHEETS
14. NET DEALER TREASURY HOLDINGS
15. GLOBAL NEGATIVE YIELDING DEBT
16. WEEKLY U.S. DOLLAR INDEX (DXY)

## LEADING INDICATORS

17. THE BUSINESS CYCLE
18. 2 YR VS 10 YR U.S. TREASURY YIELD SPREAD & 3 MO VS 10 YR U.S. TREASURY YIELD SPREAD
19. REAL FEDERAL FUNDS RATE
20. TOTAL PICKUP TRUCK SALES
21. ECONOMIC SURPRISE INDEX
22. COMMODITIES
23. CHEMICAL ACTIVITY BAROMETER (CAB INDEX)

## FIXED INCOME OPPORTUNITY SET

24. FIXED INCOME DASHBOARD
25. MUNICIPAL BONDS
26. MONEY MARKET RATES
27. FIXED INCOME ASSET CLASS PRICE ANALYSIS
28. YIELD PER UNIT OF DURATION
29. FIXED INCOME OPPORTUNITY SET – DURATION VS YTM
30. SIZE AND GROWTH OF THE U.S. DEBT MARKET
31. SIZE AND CREDIT QUALITY OF THE U.S. CORPORATE DEBT MARKET
32. YTM DIFFERENCE OF HIGH-YIELD BONDS VS LOANS
33. SENIOR LOAN AND HIGH-YIELD BOND DEFAULT RATE
34. FIXED INCOME ASSET CLASS RETURNS
35. ASSET CLASS CORRELATION
36. DEFINITIONS

All index data shown herein is for illustrative purposes only and not indicative of any actual investment. Index returns do not reflect any fees, expenses, or sales charges. Investors cannot invest directly in an index.

The information presented is not intended to constitute an investment recommendation for, or advice to, any specific person. By providing this information, First Trust is not undertaking to give advice in any fiduciary capacity within the meaning of ERISA, the Internal Revenue Code or any other regulatory framework. Financial professionals are responsible for evaluating investment risks independently and for exercising independent judgment in determining whether investments are appropriate for their clients.

# SECULAR BULL AND BEAR EQUITY MARKETS

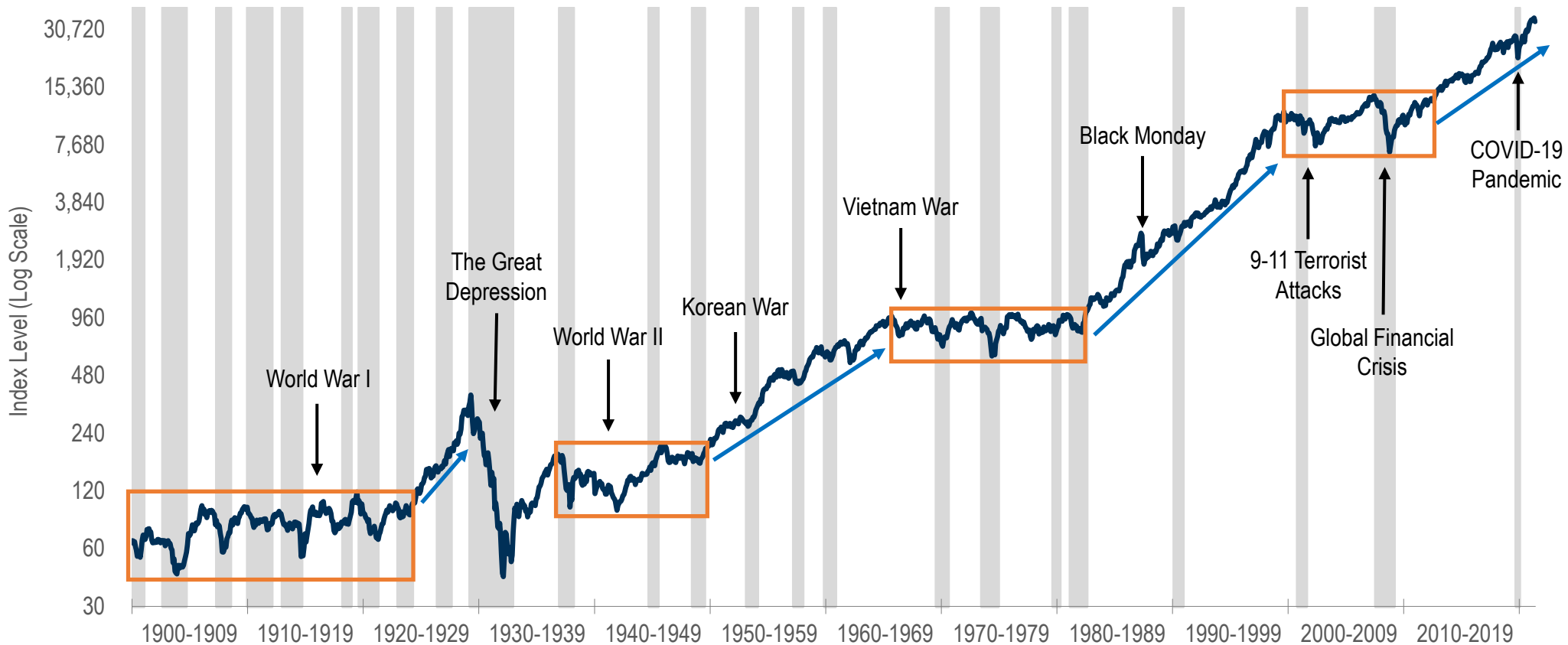
Dow Jones Industrial Average (January 31, 1900 – September 30, 2021)

## MARKET DATA

**Secular Consolidations:** Range 13 yrs – 25 yrs

**Secular Bull Markets:** Range 4 yrs – 17 yrs

**Recession**



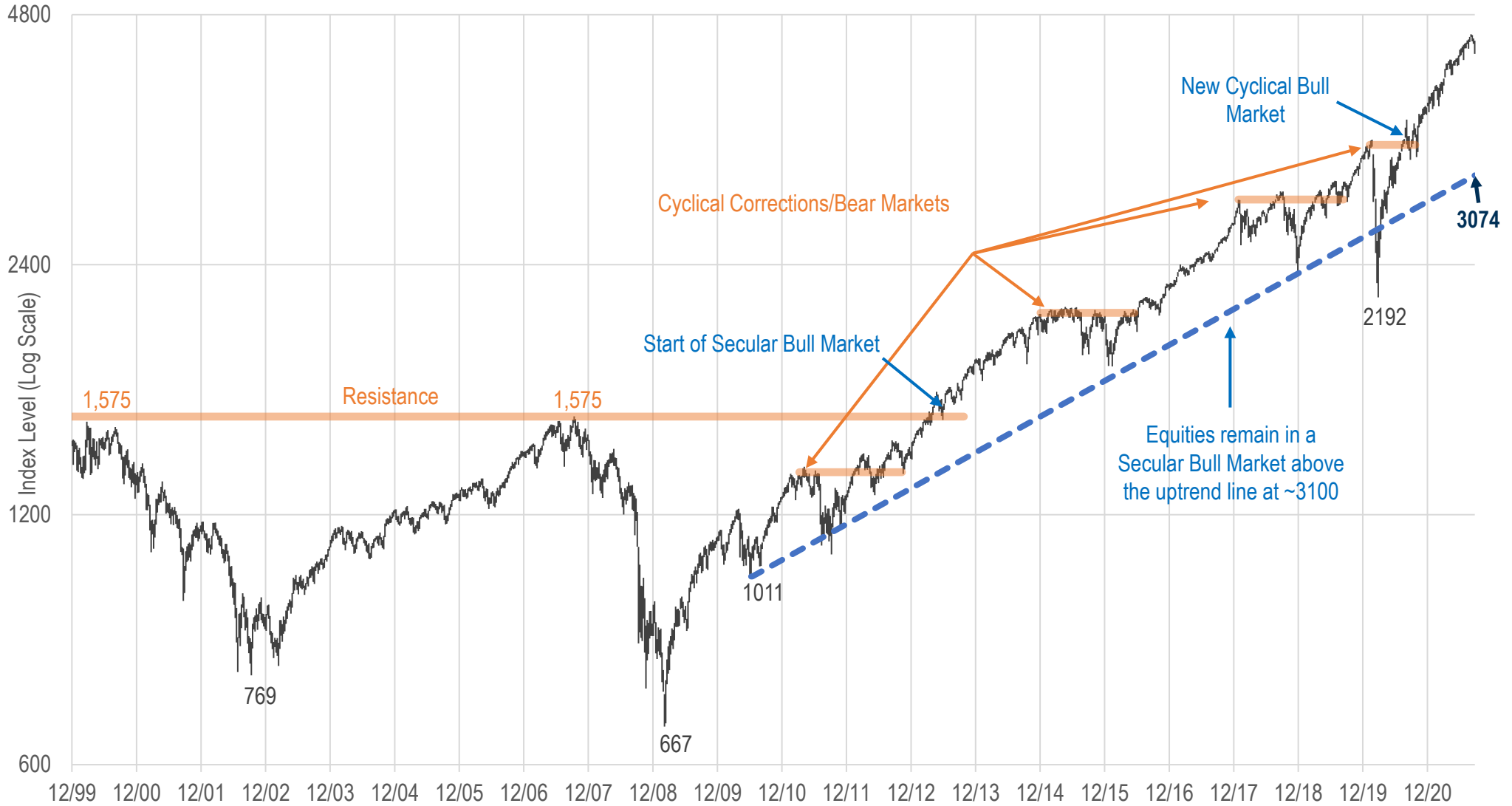
Source: Bloomberg

Past performance is no guarantee of future results.

# WEEKLY S&P 500 INDEX

December 31, 1999 – September 24, 2021

## MARKET DATA



Source: Bloomberg

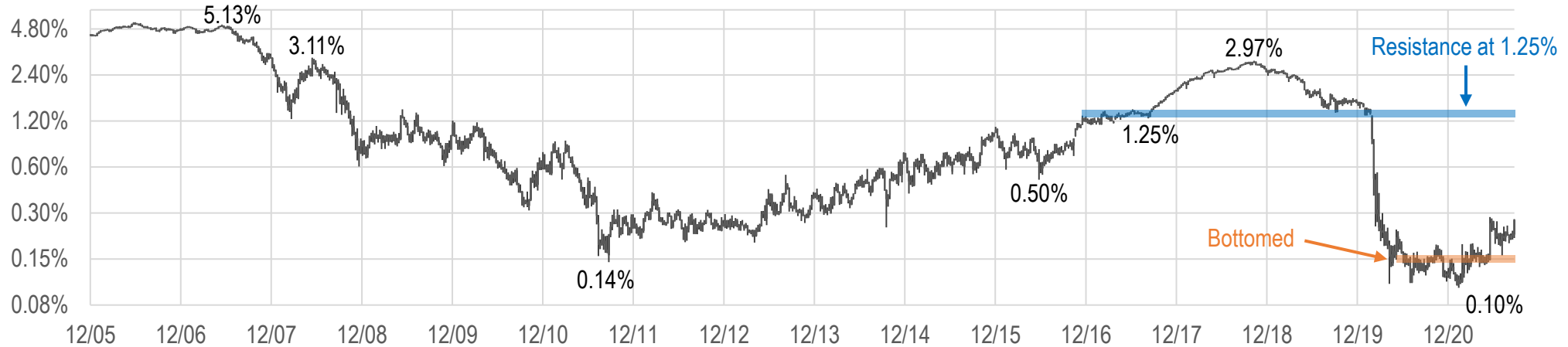
Past performance is no guarantee of future results.

# WEEKLY 2 YEAR AND 5 YEAR U.S. TREASURY YIELD

December 31, 2005 – September 24, 2021

## MARKET DATA

### 2 YEAR U.S. TREASURY Q3 2021 RETURN: 0.09%



### 5 YEAR U.S. TREASURY Q3 2021 RETURN: -0.25%



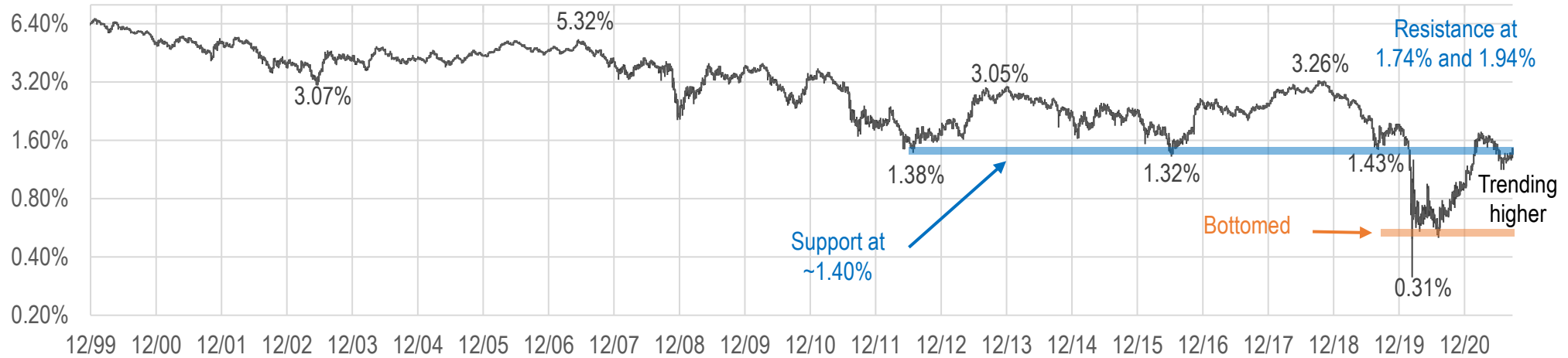
Source: Bloomberg. **Past performance is no guarantee of future results.** The 2 Year U.S. Treasury return is represented by the ICE BofA Current 2-Year U.S. Treasury Index and is a one-security index comprised of the most recently issued 2-year U.S. Treasury note. The 5 Year U.S. Treasury return is represented by the ICE BofA Current 5-Year U.S. Treasury Index and is a one-security index comprised of the most recently issued 5-year U.S. Treasury note. The Indices are rebalanced monthly.

# WEEKLY 10 YEAR AND 30 YEAR U.S. TREASURY YIELD

December 31, 1999 – September 24, 2021

## MARKET DATA

### 10 YEAR U.S. TREASURY Q3 2021 RETURN: -0.31%



### 30 YEAR U.S. TREASURY Q3 2021 RETURN: 0.03%



Source: Bloomberg. **Past performance is no guarantee of future results.** The 10 Year U.S. Treasury return is represented by the ICE BofA Current 10-Year U.S. Treasury Index and is a one-security index comprised of the most recently issued 10-year U.S. Treasury note. The 30 Year U.S. Treasury return is represented by the ICE BofA Current 30-Year U.S. Treasury Index and is a one-security index comprised of the most recently issued 30-year U.S. Treasury note. The Indices are rebalanced monthly.

# 40-YEAR MONTHLY 10 YEAR U.S. TREASURY YIELD

January 31, 1980 – September 30, 2021

## MARKET DATA



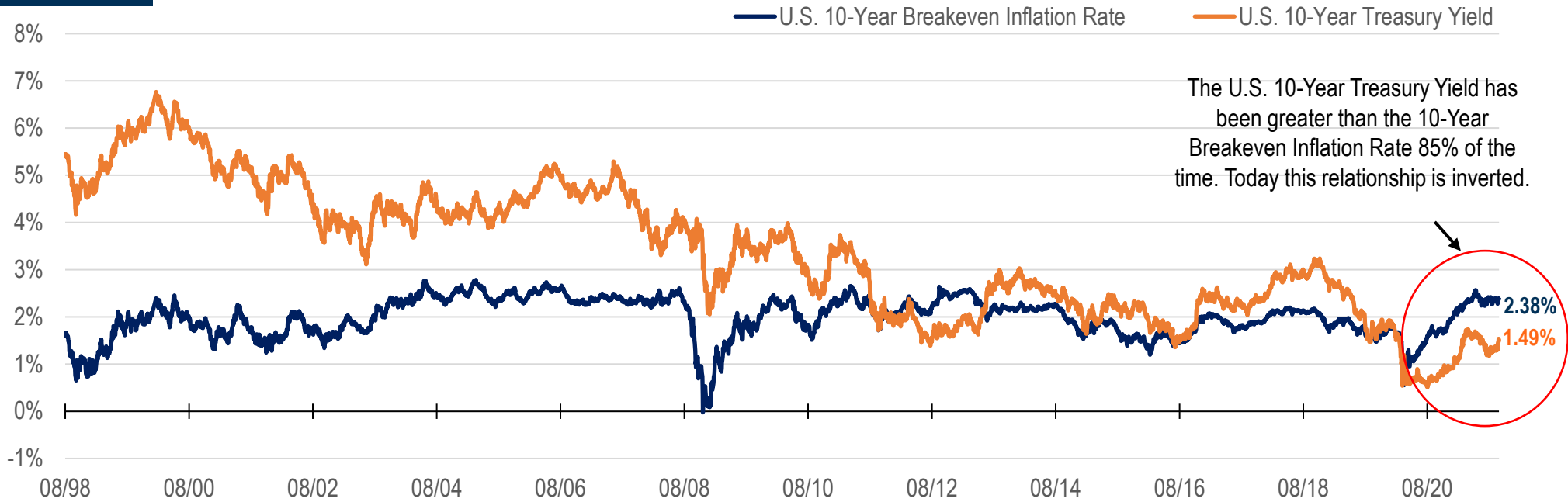
Source: Bloomberg. Past performance is no guarantee of future results.



# 10-YEAR U.S. TREASURY REAL YIELD

August 3, 1998 – September 30, 2021

## MARKET DATA



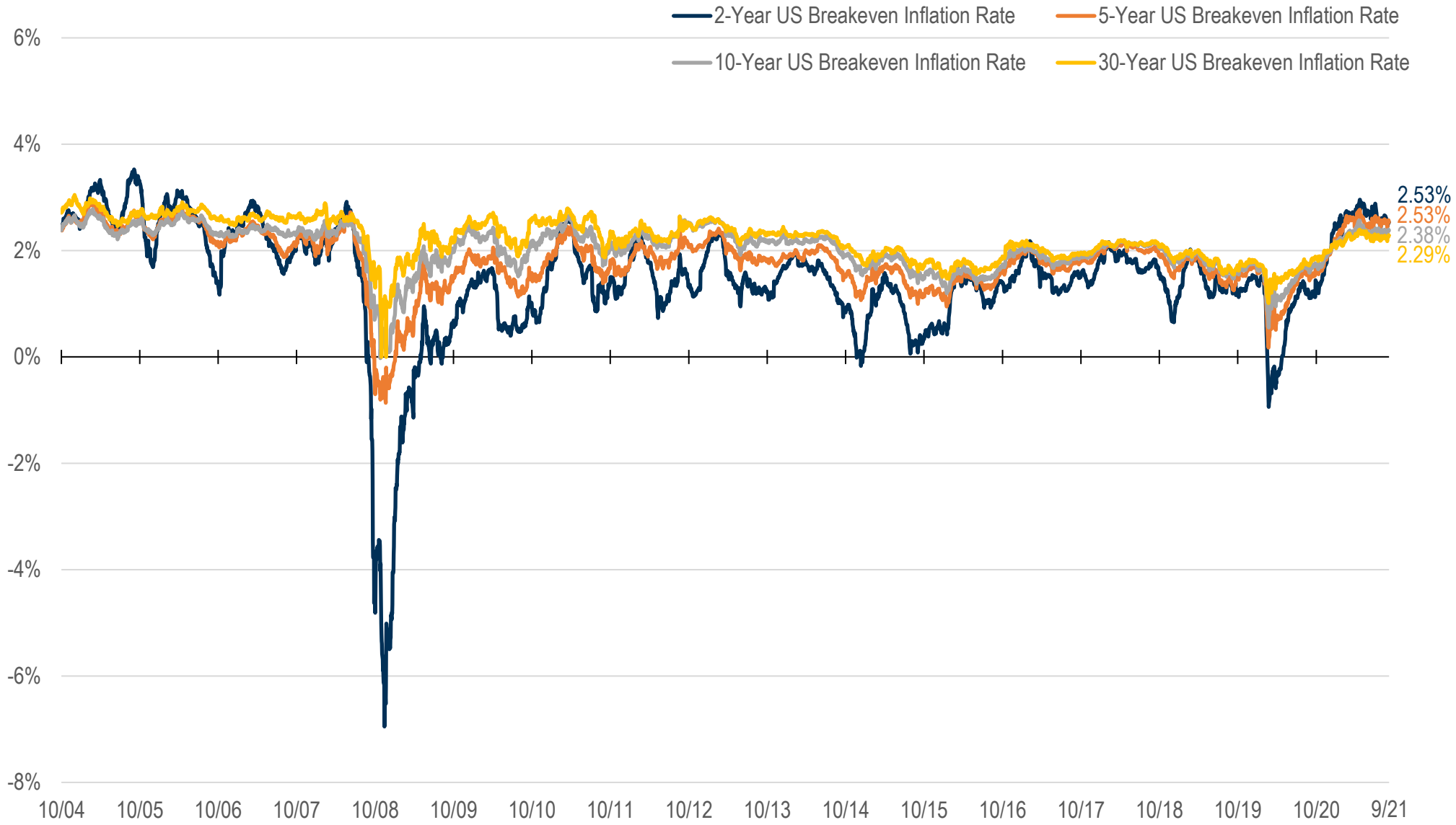
Real Yield is an interest rate that has been adjusted to remove the effects of inflation. Real Yield is calculated as the difference in yields between U.S Treasury bonds and Treasury Inflation-Protected Securities (TIPS).

Source: Bloomberg: Past performance is no guarantee of future results.

# INFLATION: BREAKEVENS

October 27, 2004 – September 30, 2021

## MARKET DATA

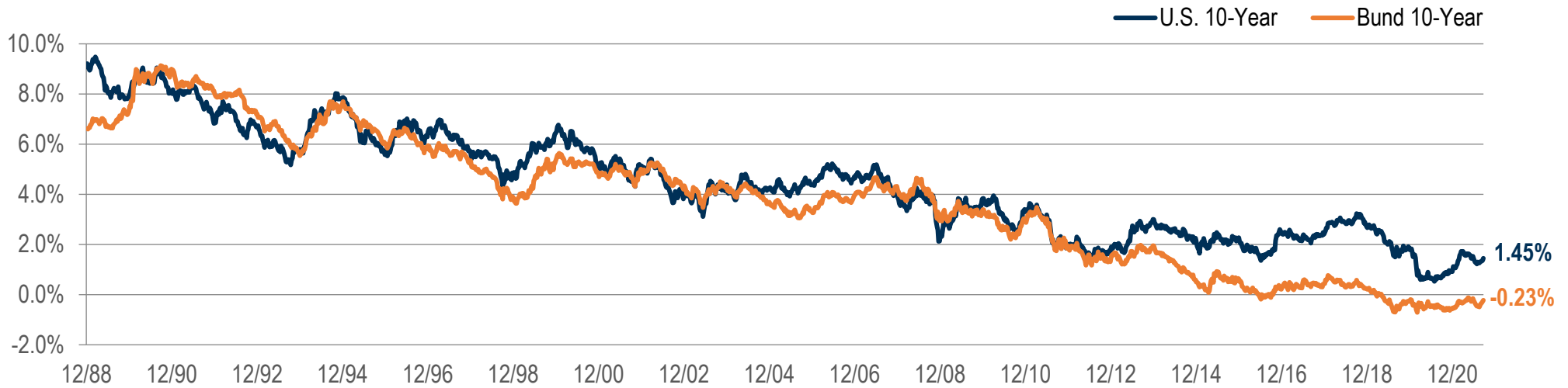


Source: Bloomberg: The breakeven rate is a market-based gauge for the expected annual inflation. Past performance is no guarantee of future results.

# 10 YEAR U.S. TREASURY YIELD AND 10 YEAR GERMAN BUND YIELD

December 31, 1988 – September 24, 2021

## MARKET DATA



## YIELD SPREAD BETWEEN THE 10 YEAR U.S. TREASURY YIELD AND THE 10 YEAR GERMAN BUND YIELD



Source: Bloomberg

Past performance is no guarantee of future results.

# WEEKLY 10 YEAR GOVERNMENT BOND YIELDS (GERMANY & JAPAN)

December 31, 2005 – September 24, 2021

## MARKET DATA

### WEEKLY 10 YEAR GERMAN BUND YIELD



### WEEKLY 10 YEAR JAPANESE GOVERNMENT BOND YIELD



Source: Bloomberg

Past performance is no guarantee of future results.

# WEEKLY 10 YEAR GOVERNMENT BOND YIELDS (U.K. & ITALY)

December 31, 2005 – September 24, 2021

## MARKET DATA

### WEEKLY 10 YEAR U.K. GOVERNMENT BOND YIELD



### WEEKLY 10 YEAR ITALIAN GOVERNMENT BOND YIELD

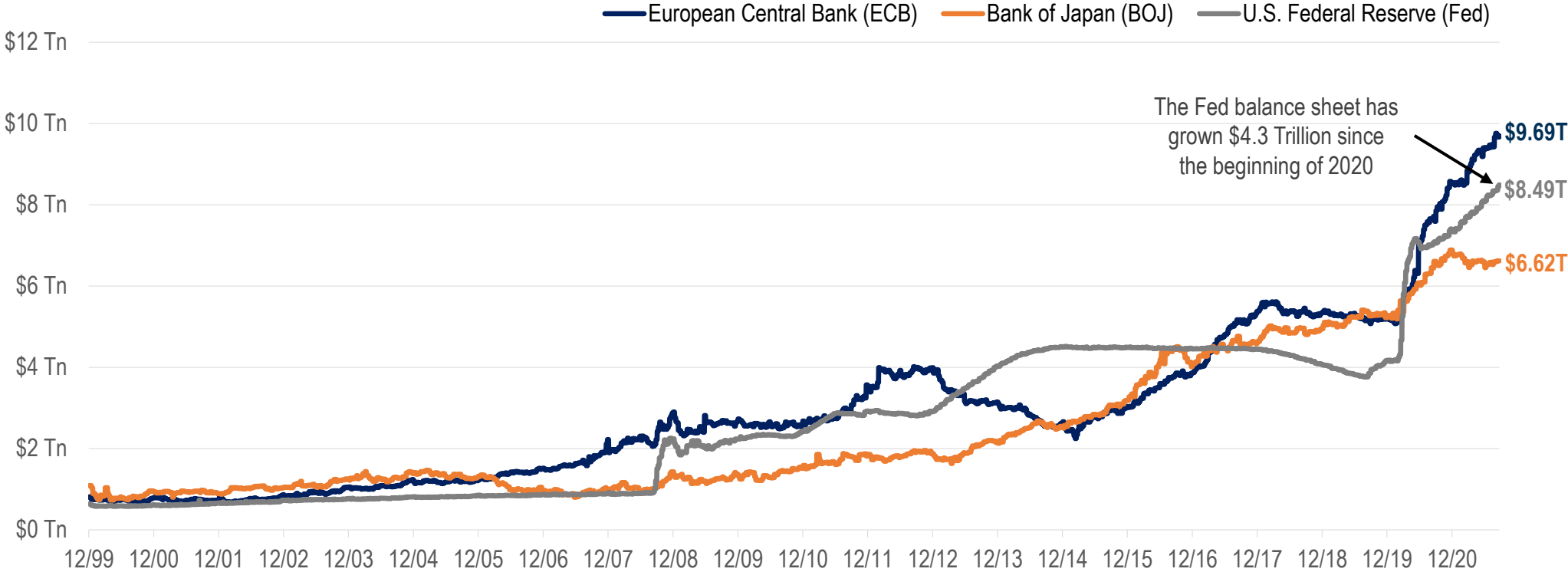


Source: Bloomberg  
Past performance is no guarantee of future results.

# CENTRAL BANK BALANCE SHEETS

December 31, 1999 – September 24, 2021

## MARKET DATA



Source: Bloomberg

# NET DEALER TREASURY HOLDINGS

December 31, 2014 – September 22, 2021

## MARKET DATA



Source: Bloomberg, Federal Reserve

# GLOBAL NEGATIVE YIELDING DEBT

December 31, 2013 – September 30, 2021

## MARKET DATA



Source: Bloomberg  
Global negative yielding debt is comprised by summing the negative yielding debt within the Bloomberg Barclays Global-Aggregate Index, which is a flagship measure of global investment grade debt from twenty-four local currency markets which includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging market issuers.



# WEEKLY U.S. DOLLAR INDEX (DXY)

January 3, 2014 – September 24, 2021

## MARKET DATA

DXY is a measure of the U.S. dollar's value relative to the following currencies:

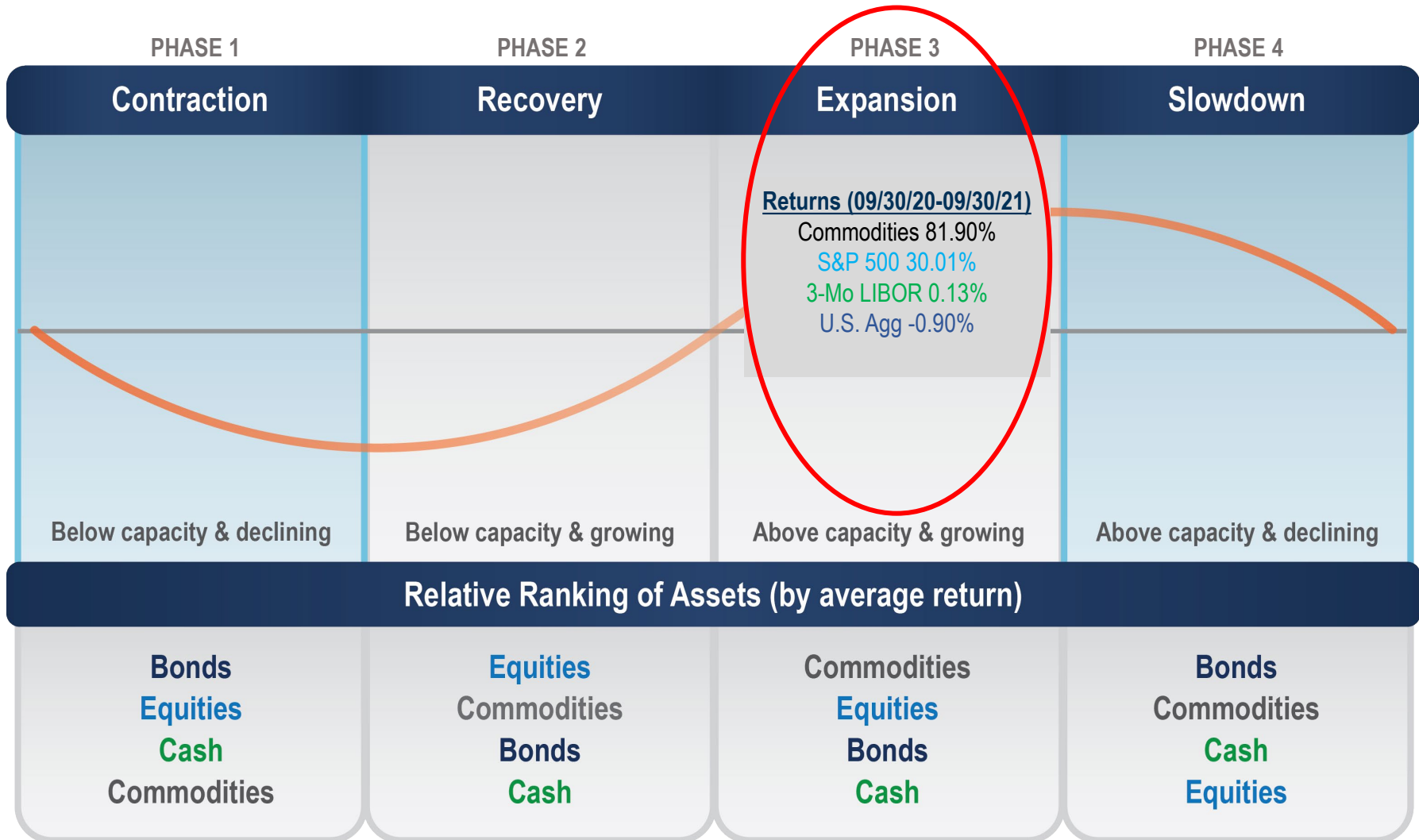
- Euro: 57.6%
- Japanese Yen: 13.6%
- British Pound: 11.9%
- Canadian Dollar: 9.1%
- Swedish Krona: 4.2%
- Swiss Franc: 3.6%



Source: Bloomberg

**Past performance is no guarantee of future results.** The U.S. Dollar Index (DXY) indicates the general international value of the U.S. Dollar (USD). The index calculates this by averaging the exchange rates between the USD and major world currencies.

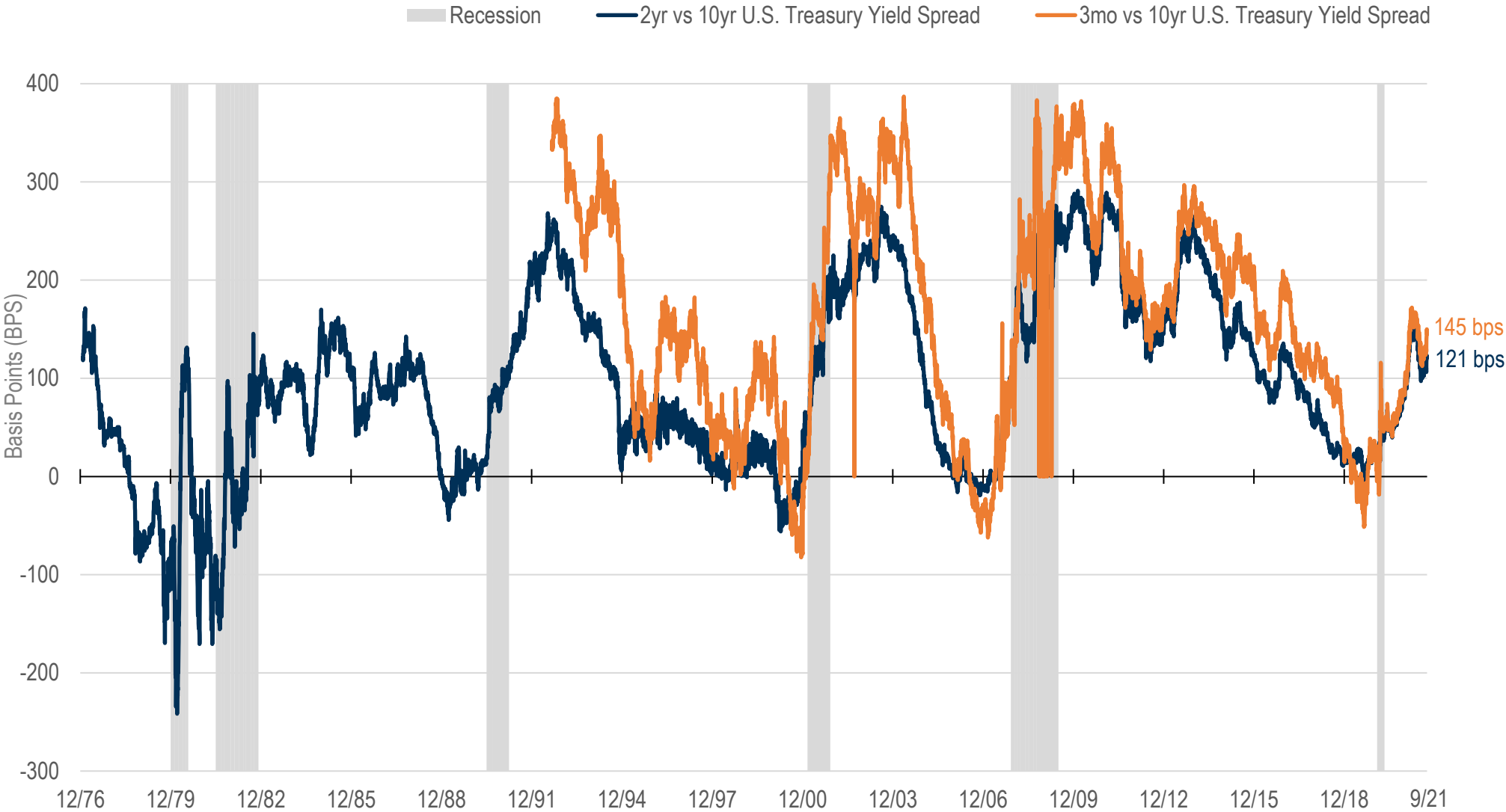
## LEADING INDICATORS



Source: Goldman Sachs Global Investment Research  
 Past performance is no guarantee of future results. This chart is for illustrative purposes only and not indicative of any actual investment.

# 2 YEAR VS 10 YEAR U.S. TREASURY YIELD SPREAD & 3 MONTH VS 10 YEAR U.S. TREASURY YIELD SPREAD

LEADING INDICATORS



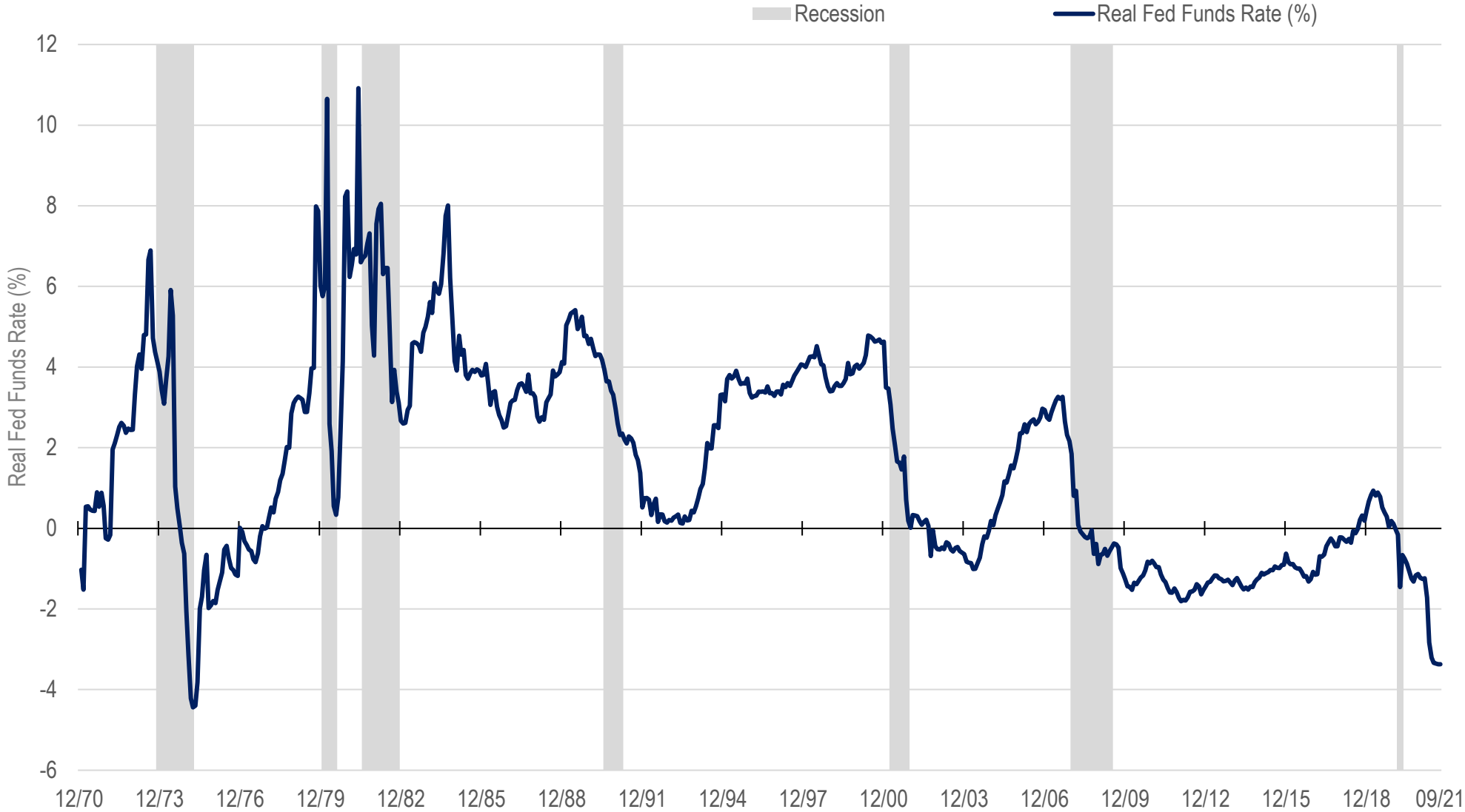
Source: Bloomberg, as of 9/30/2021.

**Past performance is no guarantee of future results.** The yield spread is the difference between yields on the varying Treasury maturities. A basis point is a common unit of measure for interest rates and is equal to 1/100th of 1% percent or 0.01%. A 1% change is equal to 100 basis points.

# REAL FEDERAL FUNDS RATE

December 31, 1970 – September 30, 2021

## LEADING INDICATORS



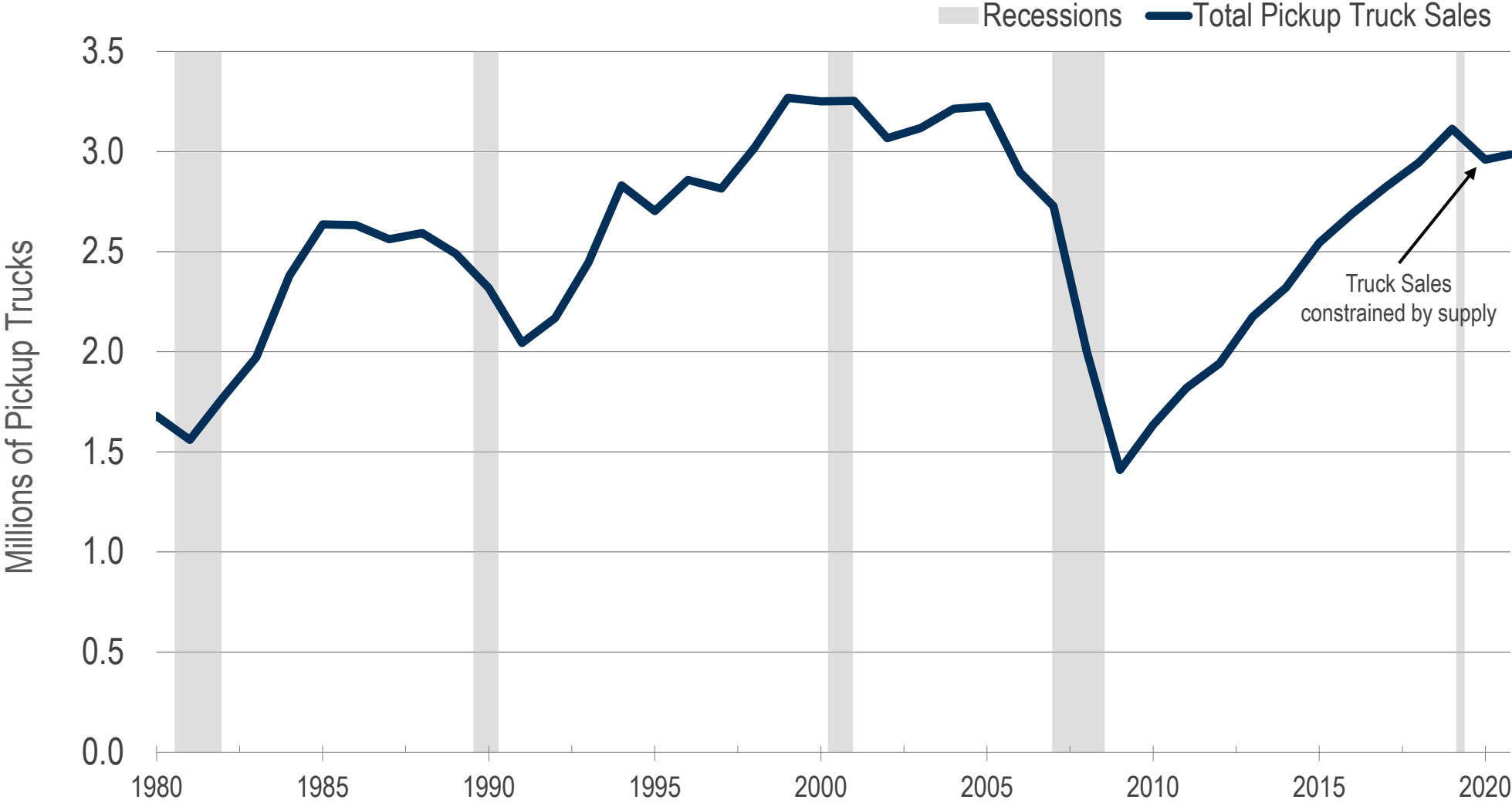
Source: Bloomberg, FRED

Real Federal Funds Rate is the effective Federal Funds Rate minus 12-month core PCE inflation. The Effective Federal Funds Rate is the interest rate banks charge each other for overnight lending.

# TOTAL PICKUP TRUCK SALES

1980 – 3Q 2021

## LEADING INDICATORS

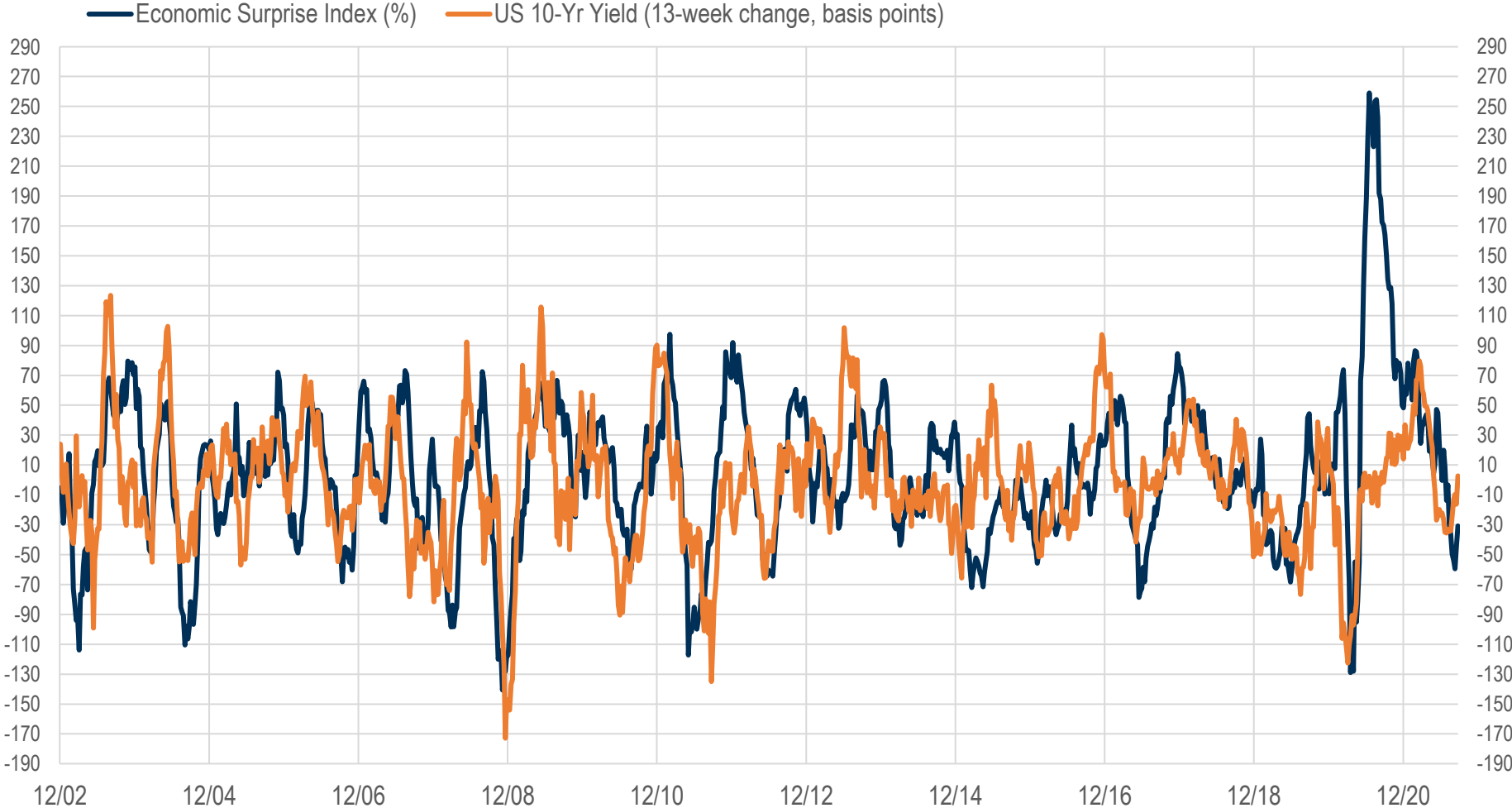


Source: Motor Intelligence, Good Car Bad Car

# ECONOMIC SURPRISE INDEX & 10-YEAR U.S. TREASURY YIELD

December 31, 2002 – September 24, 2021

## LEADING INDICATORS

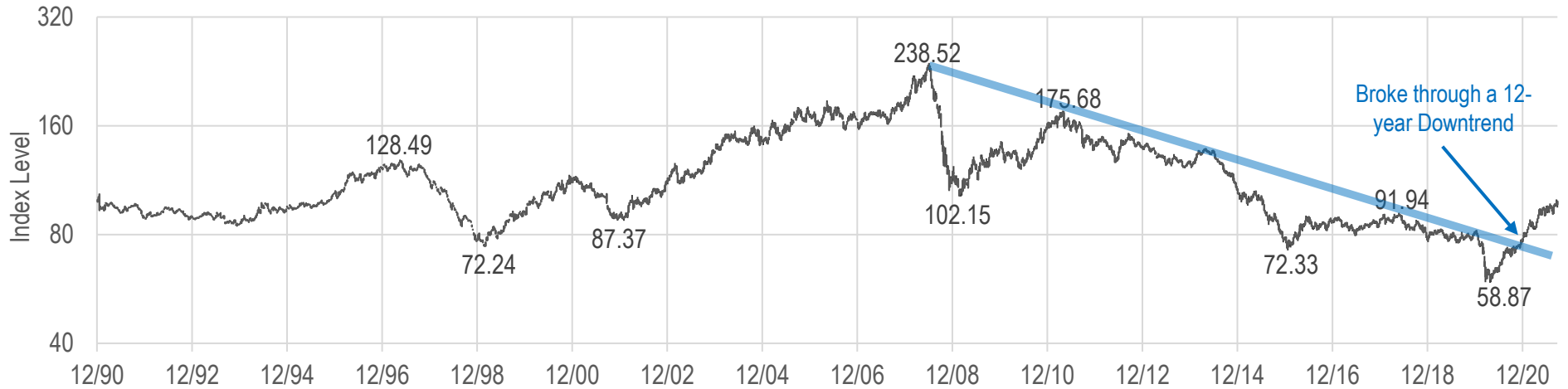


A positive reading means that data releases have been stronger than expected and a negative reading means that data releases have been worse than expected. The Economic Surprise Index has historically exhibited a positive correlation with 10-Year U.S. Treasury yields.

Source: Bloomberg, Citigroup Global Markets Inc.  
Past performance is no guarantee of future results.

LEADING INDICATORS

WEEKLY BLOOMBERG COMMODITY (BCOM) INDEX (DECEMBER 31, 1990 – SEPTEMBER 24, 2021)



WEEKLY CRUDE OIL PRICE (APRIL 1, 1983 – SEPTEMBER 24, 2021)



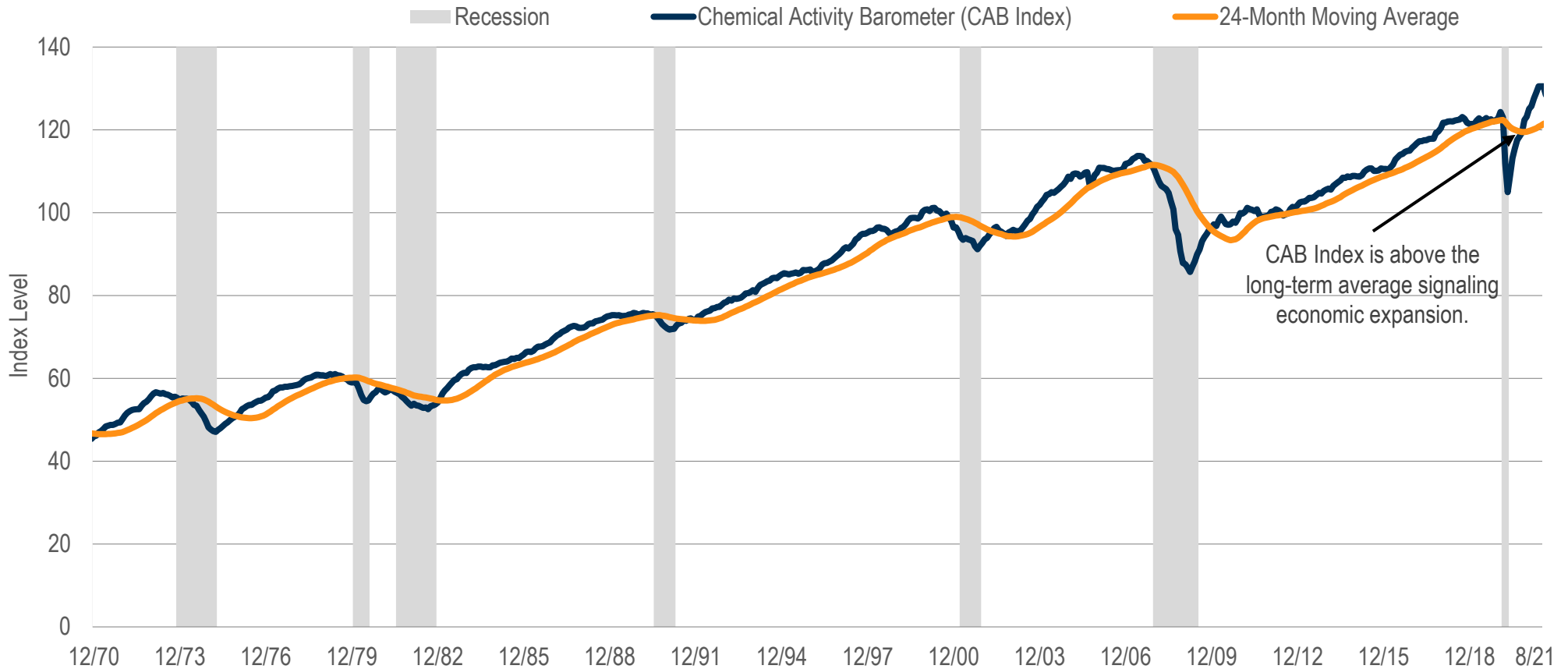
Source: Bloomberg. **Past performance is no guarantee of future results.** The Bloomberg Commodity Index (BCOM) is a highly liquid and diversified benchmark for commodity investments including but not limited to energy, grains, industrial metals, precious metals, softs and livestock.

# CHEMICAL ACTIVITY BAROMETER (CAB INDEX)

December 31, 1970 – August 31, 2021

## LEADING INDICATORS

- The CAB Index is a composite index which comprises indicators drawn from a range of chemicals and sectors, including chlorine and other alkalis, pigments, plastic resins and other selected basic industrial chemicals.
- Specific indicators used include: hours worked in chemicals; chemical company stock data; publicly sourced, chemical price information; end-use (or customer) industry sales-to-inventories; and several broader leading economic measures (building permits and ISM PMI new orders).
- According to the American Chemistry Council, the CAB has historically lead recessions by two to fourteen months, with an average lead of eight months.



Source: Bloomberg, FRED, the American Chemistry Council

**Past performance is no guarantee of future results.** The CAB is designed and prepared in compliance with ACC's Antitrust Guidelines and FTC Safe Harbor Guidelines; does not use company-specific price information as input data; and data is aggregated such that company-specific and product-specific data cannot be determined.

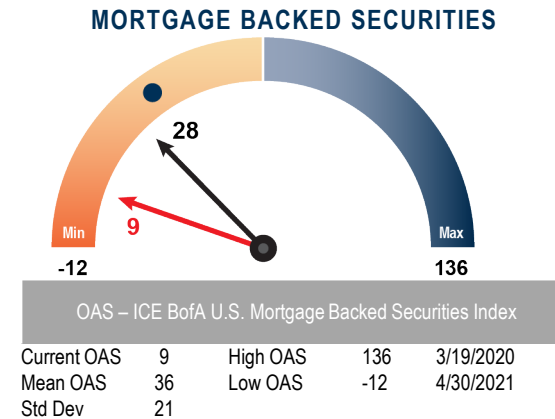
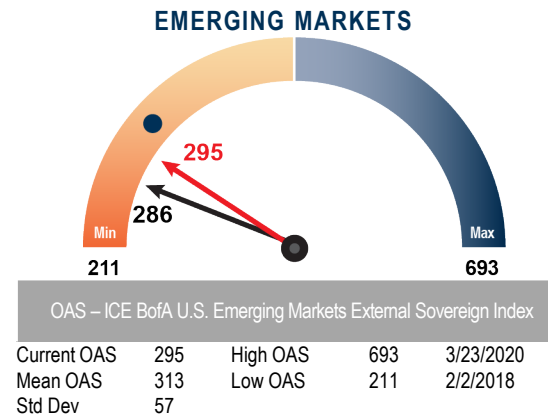
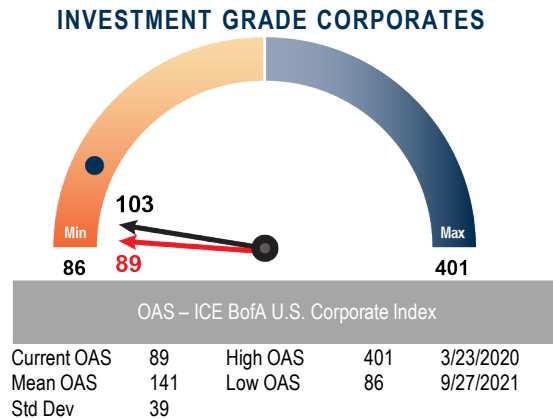
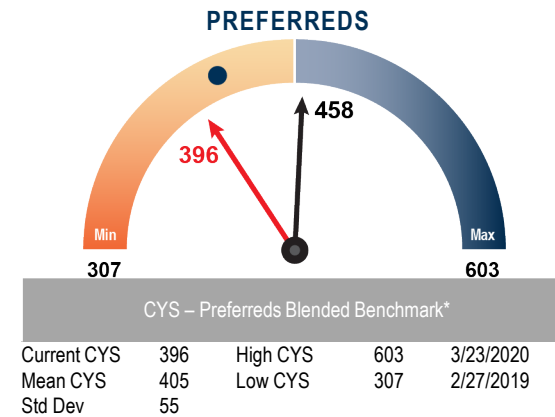
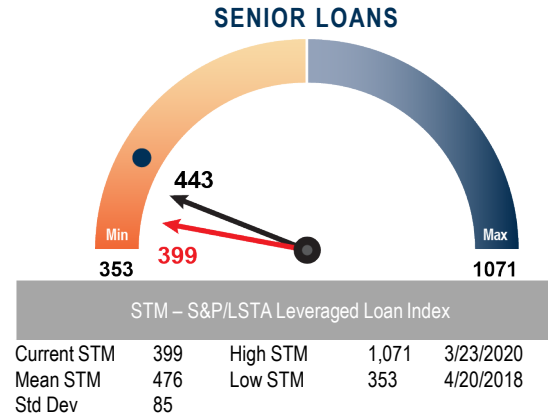
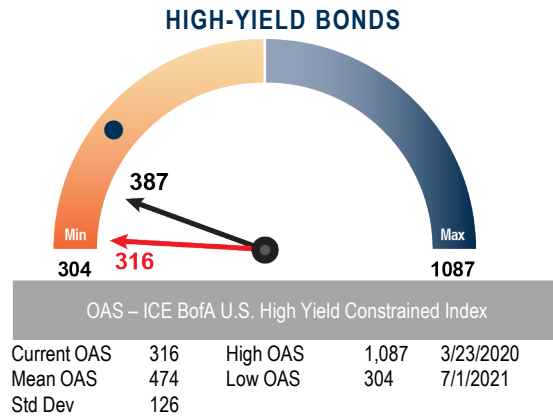


# FIXED INCOME DASHBOARD

10 Year Minimum and Maximum Option Adjusted Spreads (OAS)

## FIXED INCOME OPPORTUNITY SET

As of 12/31/2020:   
 As of 9/30/2021:   
 Mean as of 9/30/2021:



Source: ICE and Standard & Poor's Leveraged Loan Commentary and Data. **Past performance is no guarantee of future results.** Option Adjusted Spread (OAS) is the current spread over a Treasury security of similar tenor. Senior Loan STM is Spread-To-Maturity. Current yield is equivalent to the Index's annual income (face value multiplied by par weighted coupon) divided by the current price (full market value). Preferreds Current Yield Spread (CYS) is the current yield of the preferreds blended benchmark minus the current yield of the 10-Year Treasury Index (GA10), going back to 12/31/2013.

\*The blended benchmark consists of 30% ICE BofA Core Plus Fixed Rate Preferred Securities Index (P0P4) / 30% ICE BofA US Investment Grade Institutional Capital Securities Index (CIPS) / 30% ICE BofA USD Contingent Capital Index (CDLR) / 10% ICE BofA US High Yield Institutional Capital Securities Index (HIPS).

# MUNICIPAL BONDS

## 10 Year Spreads to AAA Municipals

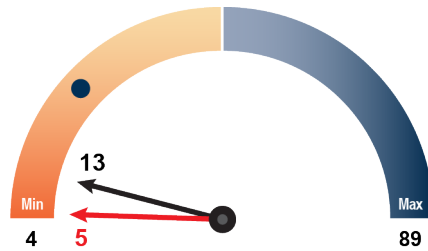
### FIXED INCOME OPPORTUNITY SET

As of 12/31/2020:

As of 9/30/2021:

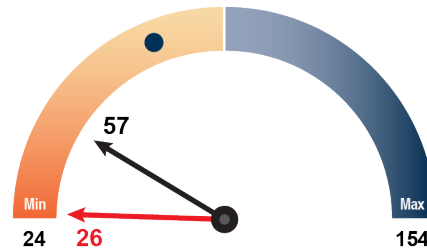
Mean as of 9/30/2021:

#### AA MUNICIPALS



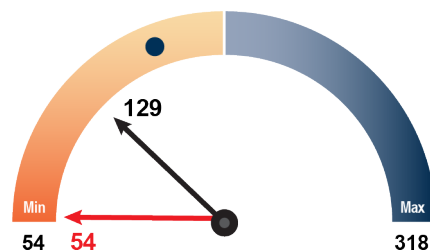
Bloomberg Barclays Municipal AA Index Total Return Index Value Unhedged USD				
Current	5	High	69	12/5/2011
Mean	25	Low	4	7/21/2021
Std Dev	18			

#### A MUNICIPALS



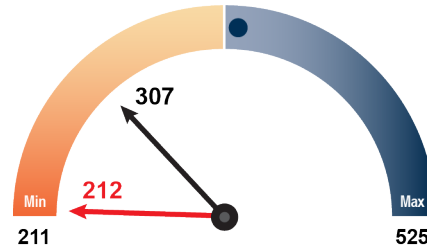
Bloomberg Barclays Municipal A Index Total Return Index Value Unhedged USD				
Current	26	High	154	12/1/2011
Mean	79	Low	24	7/21/2021
Std Dev	34			

#### BBB MUNICIPALS



Bloomberg Barclays Municipal BAA Index Total Return Index Value Unhedged USD				
Current	54	High	318	1/31/2014
Mean	161	Low	54	9/29/2021
Std Dev	61			

#### HIGH-YIELD MUNICIPALS



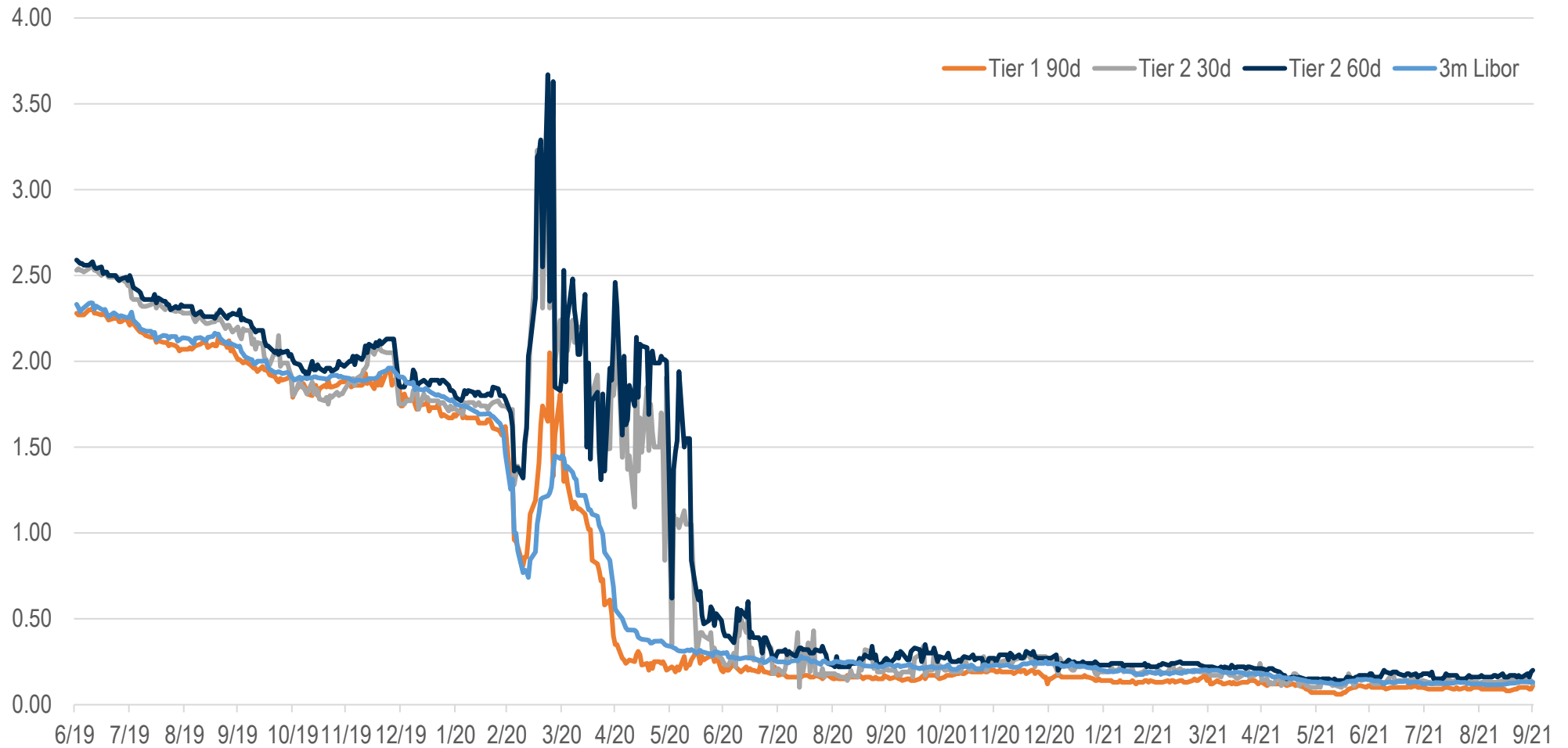
Bloomberg Barclays Muni High Yield Total Return Index Value Unhedged USD				
Current	212	High	525	2/11/2016
Mean	382	Low	218	8/30/2021
Std Dev	96			

Source: Bloomberg. **Past performance is no guarantee of future results.** The spread is the difference between the benchmark shown and the Bloomberg Barclays Municipal AAA Index Total Return Index Value Unhedged USD.

# MONEY MARKET RATES

June 30, 2019 – September 30, 2021

## FIXED INCOME OPPORTUNITY SET



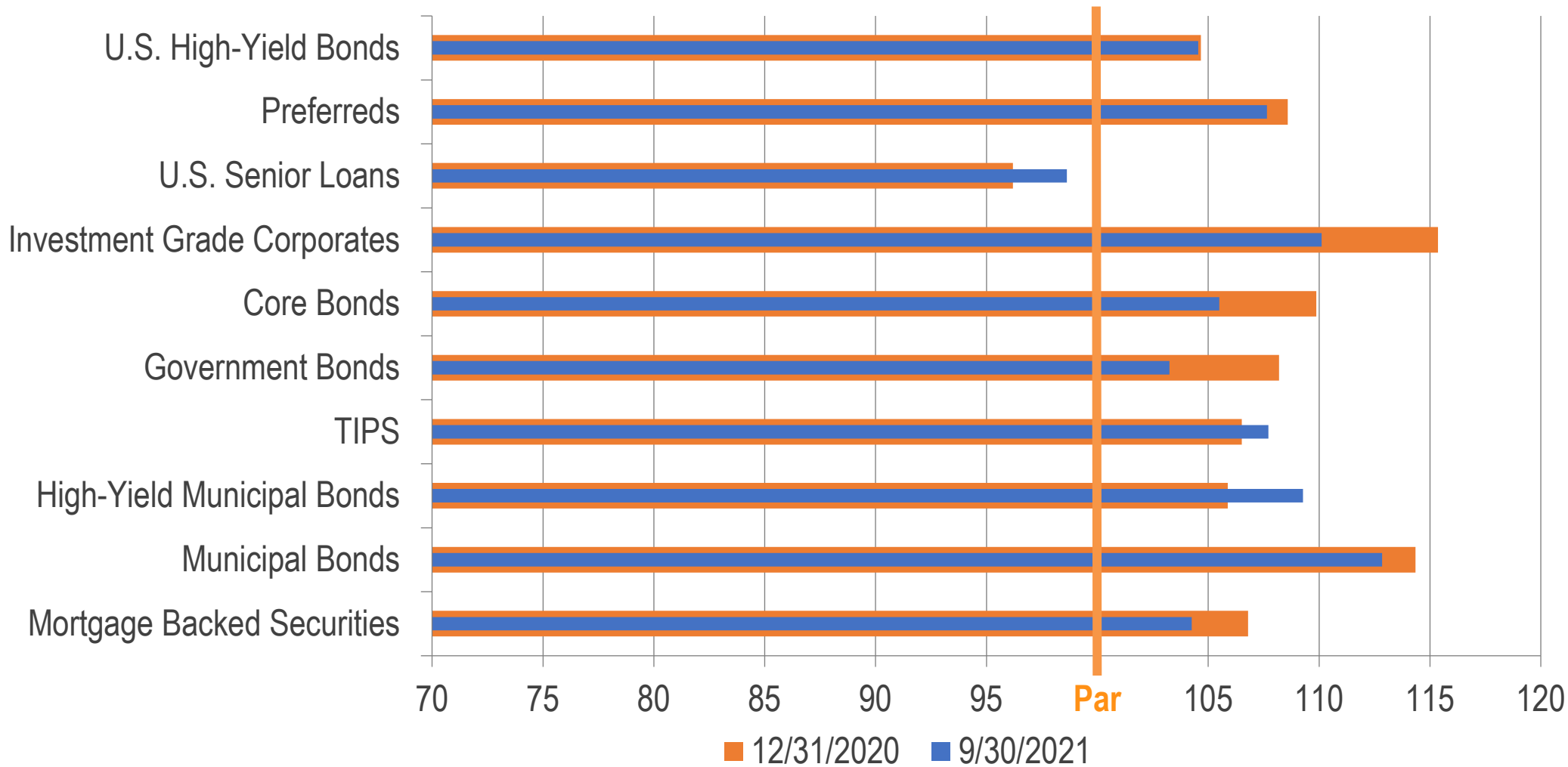
Source: Bloomberg. Tier 1 90d - U.S. Commercial Paper Placed Top 90 Day Yield (DCPB090Y Index), Tier 1 30d - U.S. Commercial Paper Dealer Placed Second 30 Day Yield (DCPD030Y Index), Tier 2 60d - U.S. Commercial Paper Dealer Placed Second 60 Day Yield (DCPD060Y Index), 3m Libor- ICE LIBOR USD 3 Month (US0003M Index).

For illustrative purposes only. Past performance is no guarantee of future results.

# FIXED INCOME ASSET CLASS PRICE ANALYSIS

As of September 30, 2021

## FIXED INCOME OPPORTUNITY SET

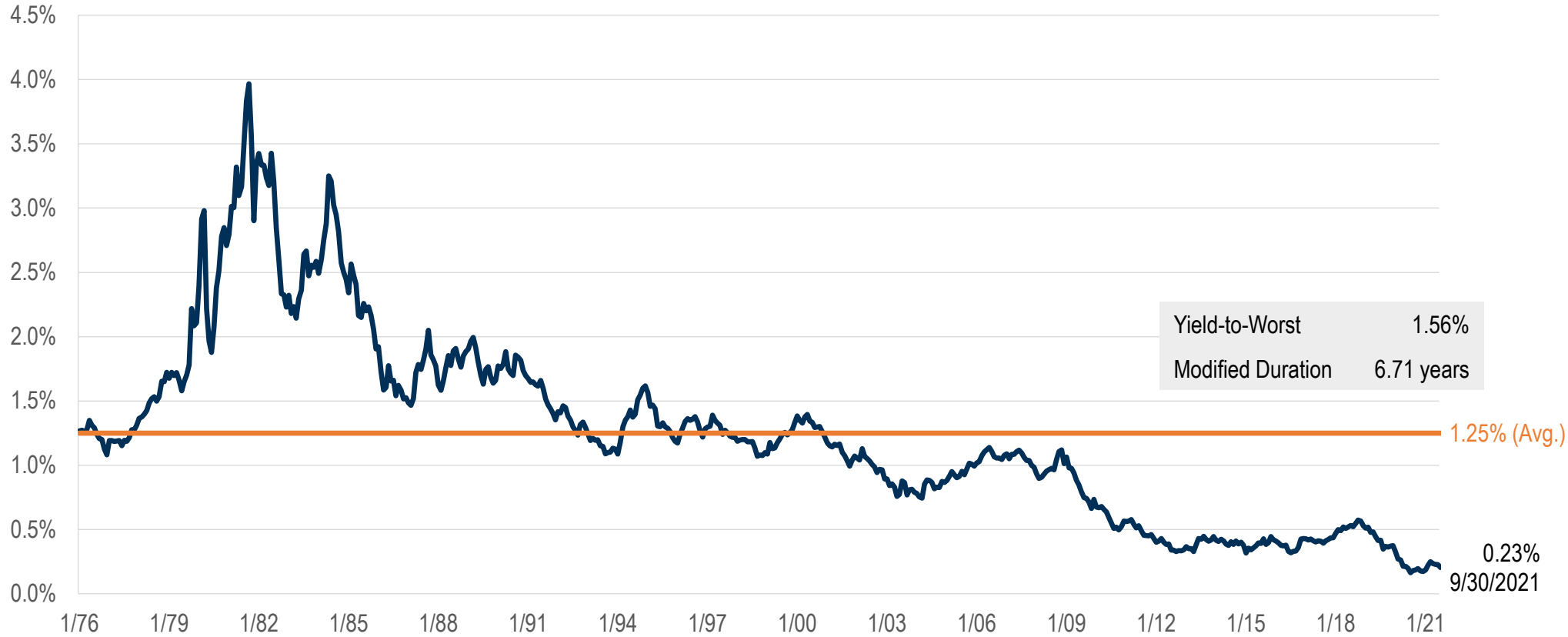


Source: Barclays, S&P LCD and Bloomberg. **Past performance is no guarantee of future results.** U.S. High-Yield Bonds are represented by the ICE BofA U.S. High Yield Constrained Index; Institutional Preferreds are represented by the ICE BofA Investment Grade Institutional Capital Securities Index; Preferreds are represented by a blended benchmark consisting of 30% ICE BofA Core Plus Fixed Rate Preferred Securities Index (POP4) / 30% ICE BofA US Investment Grade Institutional Capital Securities Index (CIPS) / 30% ICE BofA USD Contingent Capital Index (CDLR) / 10% ICE BofA US High Yield Institutional Capital Securities Index (HIPS); U.S. Senior Loans are represented by the S&P/LSTA Leveraged Loan Index; Investment Grade Corporates are represented by the Bloomberg Barclays U.S. Corporate Investment Grade Index; Core Bonds are represented by the Bloomberg Barclays U.S. Aggregate Bond Index; Government Bonds are represented by the Bloomberg Barclays U.S. Government Index; TIPS are represented by the Bloomberg Barclays U.S. Treasury TIPS 1-5 Year Index; High Yield Municipal Bonds are represented by the Bloomberg Barclays High Yield Municipal Bond Index; Municipal Bonds are represented by the Bloomberg Barclays Municipal Bond Index; Mortgage Backed Securities are represented by the ICE BofA U.S. Mortgage Backed Securities Index.

# YIELD PER UNIT OF DURATION

Bloomberg Barclays U.S. Aggregate Bond Index (January 30, 1976 – September 30, 2021)

## FIXED INCOME OPPORTUNITY SET



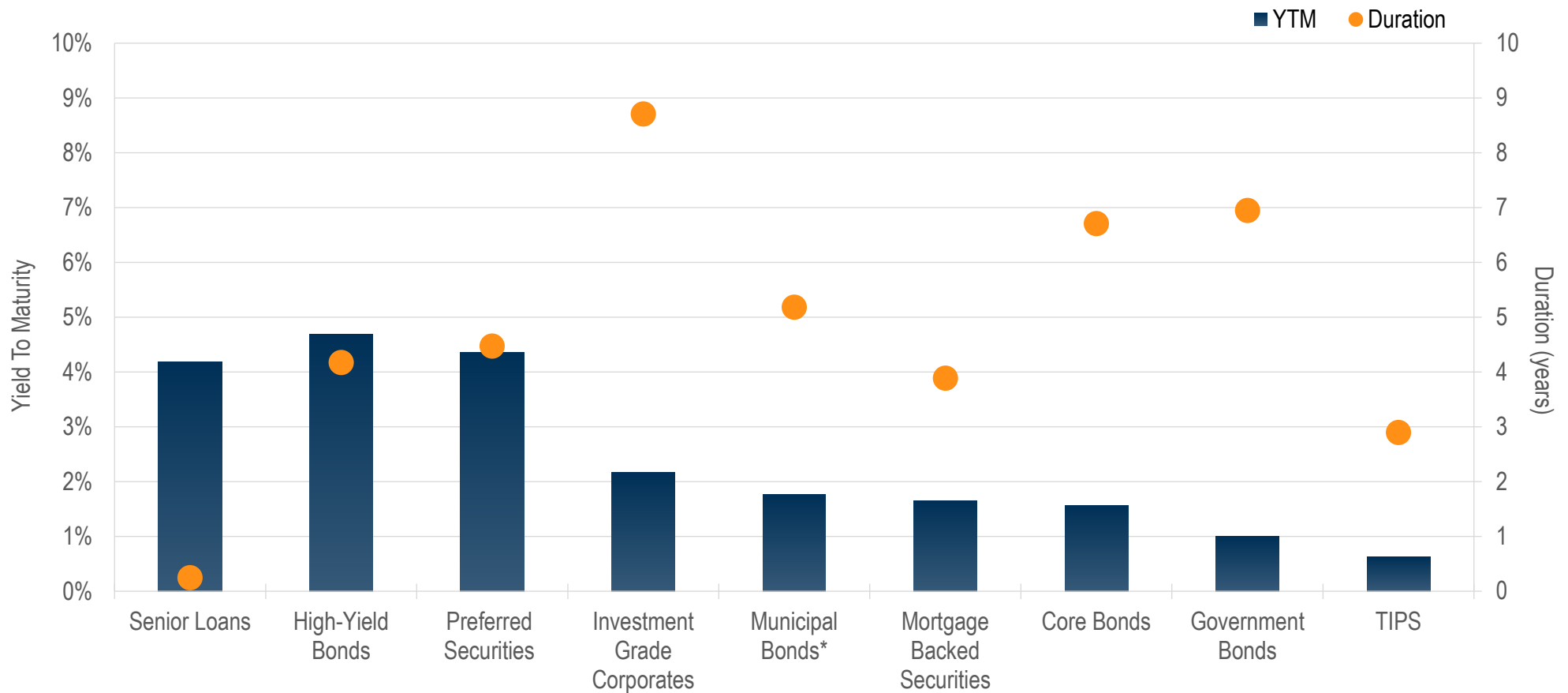
Source: Bloomberg

Duration is a measure of a bond's sensitivity to interest rate changes that reflects the change in a bond's price given a change in yield. **Past performance is no guarantee of future results.**

# FIXED INCOME OPPORTUNITY SET – DURATION VS YTM

As of September 30, 2021

## FIXED INCOME OPPORTUNITY SET



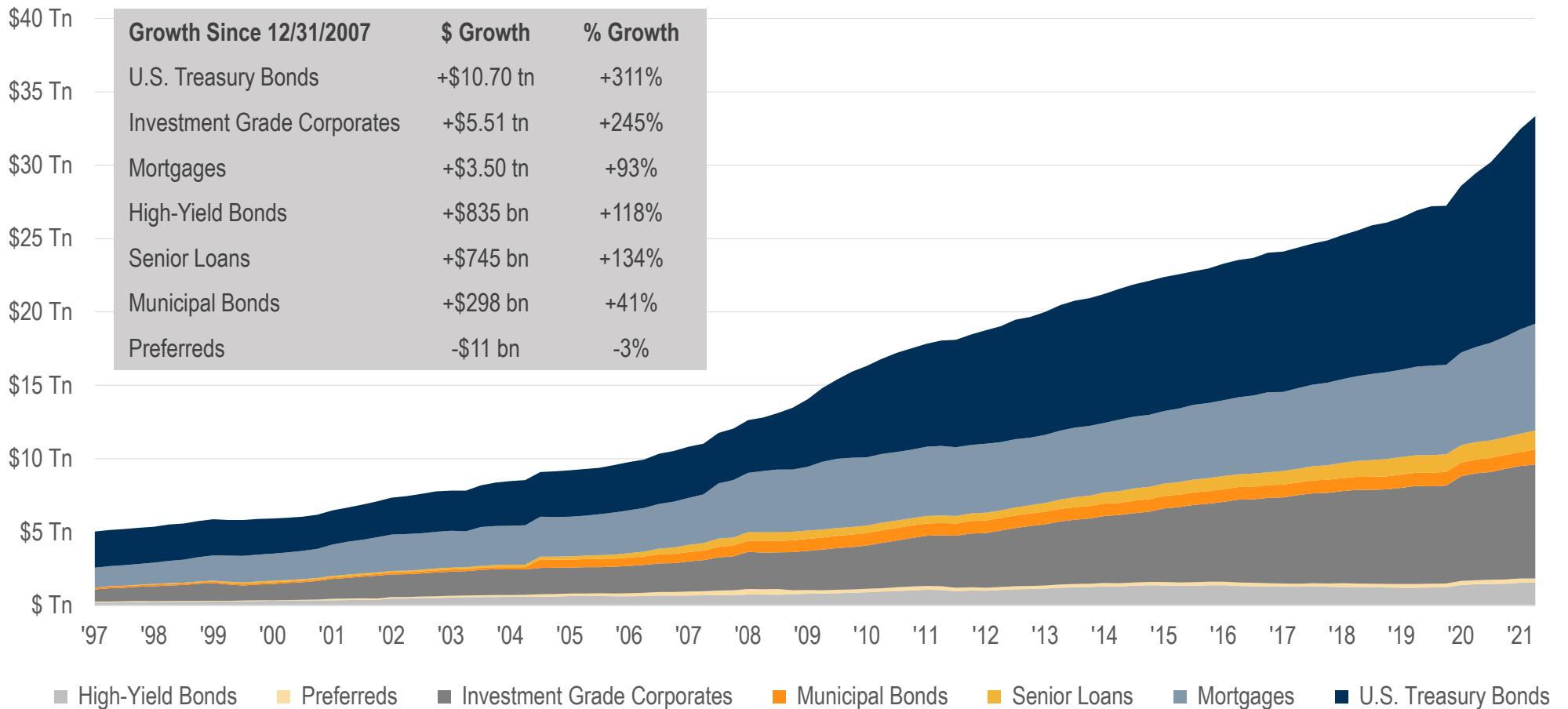
Source: Barclays, S&P LCD, and Bloomberg.

\*YTM represents the Tax-Equivalent Yield (TEY) for the highest tax bracket of 37%. **Past performance is no guarantee of future results.** U.S. Senior Loans are represented by the S&P/LSTA Leveraged Loan Index; U.S. High-Yield Bonds are represented by the ICE BofA U.S. High Yield Constrained Index; Preferreds are represented by a blended benchmark consisting of 30% ICE BofA Core Plus Fixed Rate Preferred Securities Index (POP4) / 30% ICE BofA US Investment Grade Institutional Capital Securities Index (CIPS) / 30% ICE BofA USD Contingent Capital Index (CDLR) / 10% ICE BofA US High Yield Institutional Capital Securities Index (HIPS); Investment Grade Corporates are represented by the Bloomberg Barclays U.S. Corporate Investment Grade Index; Municipal Bonds are represented by the Bloomberg Barclays Municipal Bond Index; Mortgage Backed Securities are represented by the ICE BofA U.S. Mortgage Backed Securities Index; Core Bonds are represented by the Bloomberg Barclays U.S. Aggregate Bond Index; Government Bonds are represented by the Bloomberg Barclays U.S. Government Index; TIPS are represented by the Bloomberg Barclays U.S. Treasury TIPS 1-5 Year Index.

# SIZE AND GROWTH OF THE U.S. DEBT MARKET

March 31, 1997 – September 30, 2021

## FIXED INCOME OPPORTUNITY SET



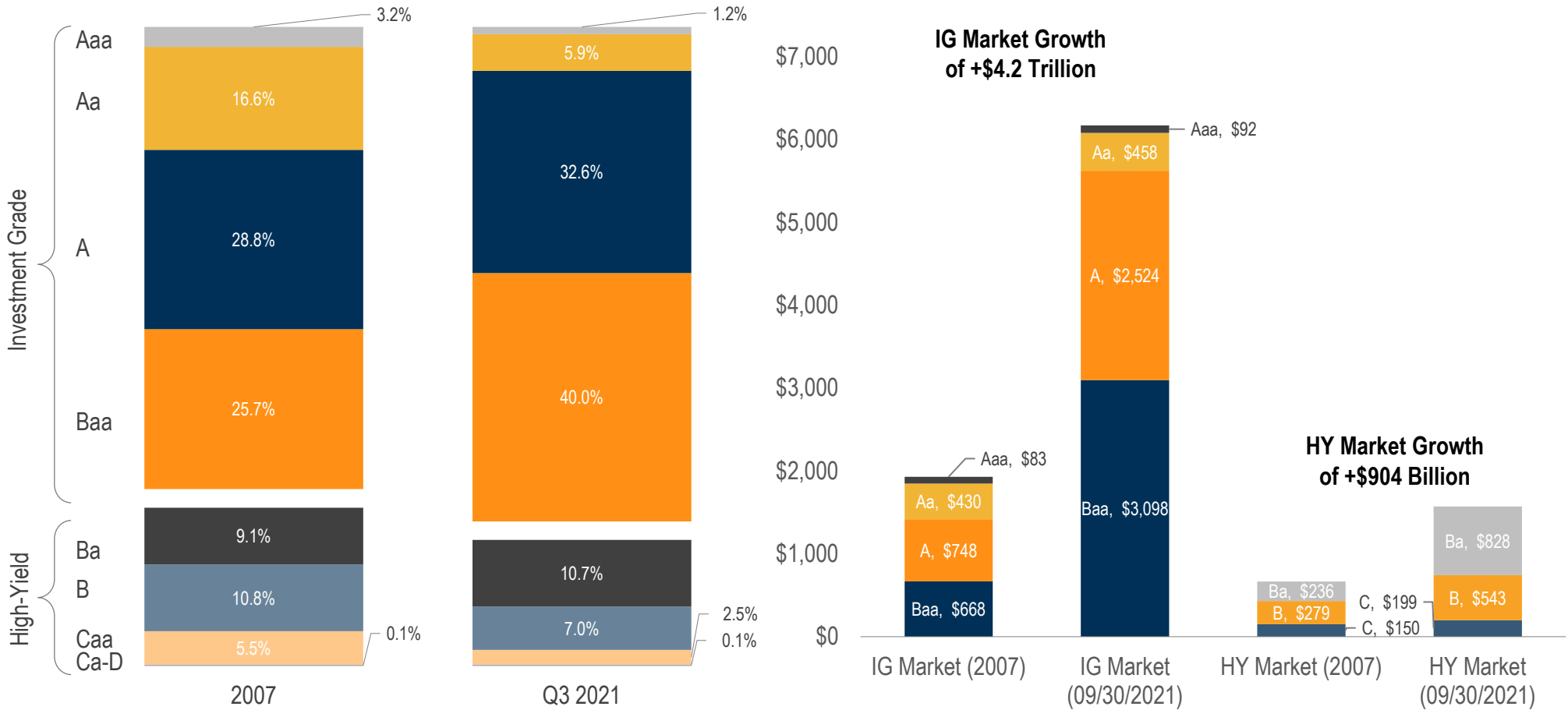
Source: ICE and Standard & Poor's Leveraged Loan Commentary and Data

U.S. High-Yield Bonds are represented by the ICE BofA U.S. High Yield Constrained Index; Preferreds are represented by the sum of ICE BofA Fixed Rate Preferred Securities Index and the BofA Investment Grade Institutional Capital Securities Index; Investment Grade Corporates are represented by the ICE BofA U.S. Corporate Index; Municipal Bonds are represented by the ICE BofA U.S. Municipal Securities Index; Senior Loans are represented by the S&P/LSTA Leveraged Loan Index; Mortgages are represented by the ICE BofA U.S. Mortgage Backed Securities Index; U.S. Treasury Bonds are represented by the ICE BofA U.S. Treasury & Agency Index.

# SIZE AND CREDIT QUALITY OF THE U.S. CORPORATE DEBT MARKET

December 31, 2007 vs. September 30, 2021

## FIXED INCOME OPPORTUNITY SET



Source: Bloomberg. U.S. Investment Grade represented by Bloomberg Barclays U.S. Corporate Bond Index and U.S. High Yield represented by Bloomberg Barclays U.S. Corporate High Yield Index. The Index composite rating is a derived value that is used to classify bonds by credit quality in Bloomberg Barclays Indices. It is set as the middle rating of Moody's, S&P and Fitch; when a rating from only two agencies is available, the lower is used; if only one agency rates a bond, that rating is taken. Investment grade bonds have a rating of at least Baa3 from Moody's or BBB- from S&P and Fitch. High-yield bonds have a rating below Baa3 from Moody's or BBB- from S&P and Fitch. Credit ratings are subject to change.

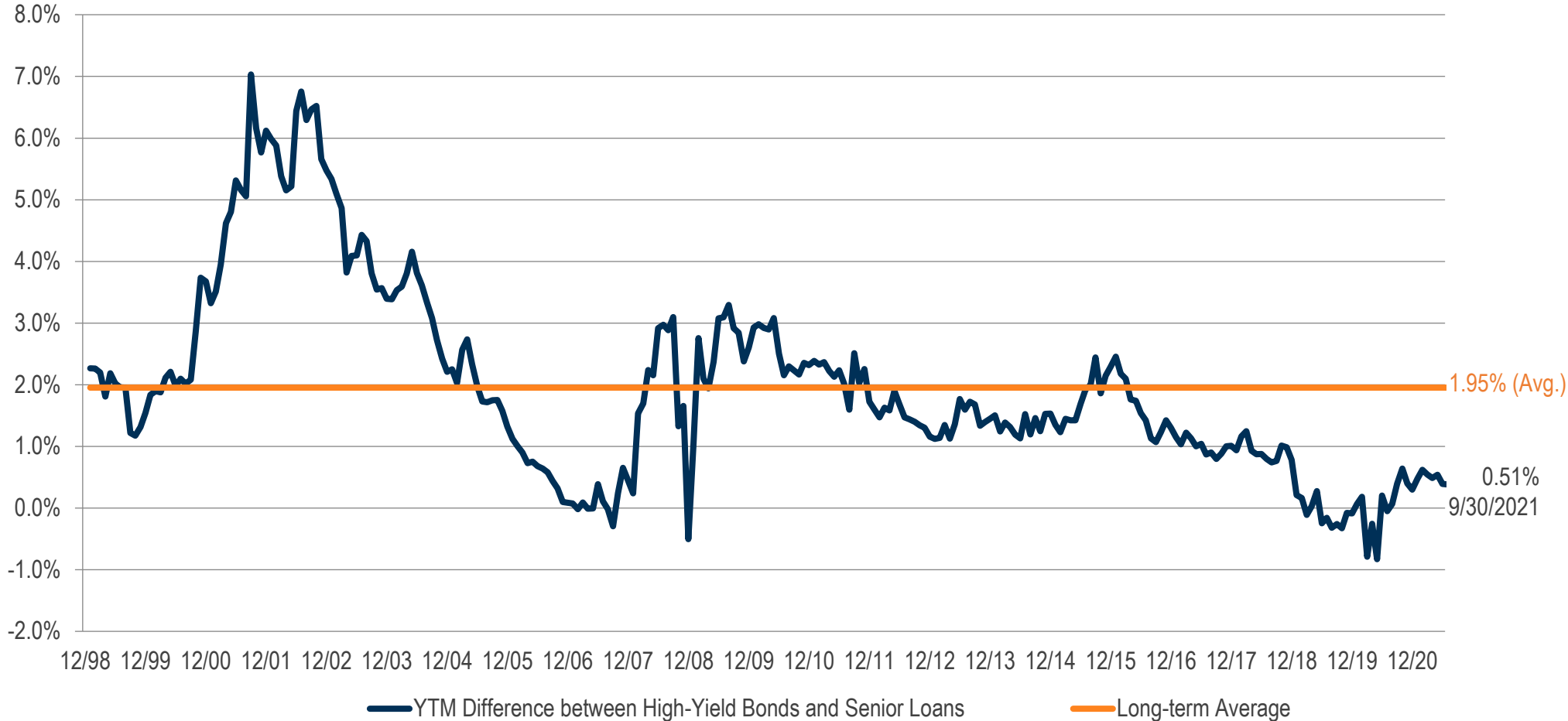


# YTM DIFFERENCE OF HIGH-YIELD BONDS VS LOANS

December 31, 1998 – September 30, 2021

## FIXED INCOME OPPORTUNITY SET

High-yield bonds yield 0.51% more than senior loans, lower than the long-term average premium to own high-yield bonds of 1.95%

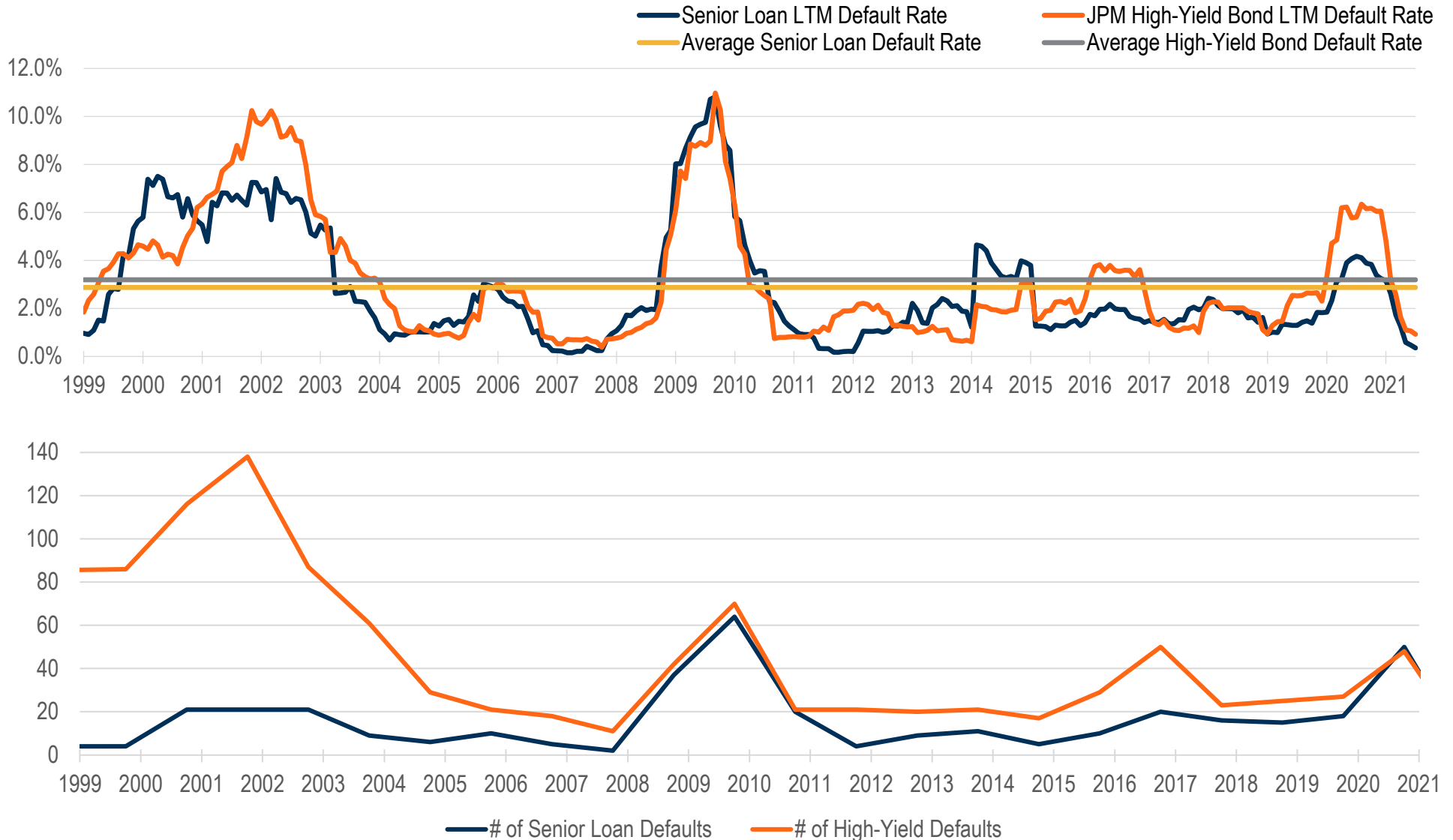


Source: Bloomberg and Standard & Poor's Leveraged Loan Commentary and Data  
High-yield bonds are represented by the ICE BofA U.S. High-Yield Constrained Index (HUC0). Senior loans are represented by the S&P/LSTA Leveraged Loan Index (LLI). **Past performance is no guarantee of future results.**

# SENIOR LOAN AND HIGH-YIELD BOND DEFAULT RATE

March 31, 1999 – September 30, 2021

## FIXED INCOME OPPORTUNITY SET



Source: Standard & Poor's LCD and JP Morgan high-yield research. High-yield bonds are represented by J.P. Morgan's high-yield bond universe based on the last twelve months (LTM). Senior loans are represented by the S&P/LSTA Leveraged Loan Index (LLI) and based on the LTM. **Past performance is no guarantee of future results.**

# FIXED INCOME ASSET CLASS RETURNS (%)

2000 – September 30, 2021

FIXED INCOME OPPORTUNITY SET																					
2000	2001	2002	2003	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	3Q '21
45.71	43.73	19.59	44.54	16.67	6.50	26.07	12.72	24.03	76.41	35.85	29.93	15.81	27.58	25.07	7.58	18.31	12.21	1.41	23.26	18.10	30.88
20.27	12.16	16.79	28.97	11.13	6.32	11.85	10.57	11.35	58.21	15.12	17.13	13.59	7.44	16.39	3.30	17.13	10.58	1.40	17.71	13.32	4.68
16.20	9.84	11.92	14.78	10.33	5.69	8.10	9.81	10.23	44.87	13.66	13.88	12.73	6.15	15.44	1.39	10.22	8.53	1.28	15.11	9.50	4.53
11.68	9.77	10.14	11.01	9.38	3.76	7.33	8.83	7.87	20.07	10.69	10.70	9.43	0.30	9.05	1.18	9.88	7.50	1.14	14.32	7.47	2.21
11.11	8.22	9.60	10.43	7.70	3.51	6.44	7.41	7.62	16.80	9.97	7.90	8.10	-0.17	5.97	0.90	3.68	7.29	1.02	10.14	7.11	0.79
10.26	8.16	9.28	9.43	5.60	3.20	4.84	6.98	-2.47	15.93	9.38	6.57	6.78	-1.34	4.80	0.41	2.32	5.45	0.01	8.17	6.95	-0.03
9.46	8.15	8.69	6.91	5.11	2.74	4.61	5.60	-2.76	12.91	7.76	6.33	4.80	-2.12	4.16	-0.38	1.65	4.25	-0.38	7.54	5.77	-0.44
9.21	5.28	7.66	5.31	4.48	1.56	4.49	3.60	-3.92	5.37	6.67	5.37	3.56	-2.55	2.57	-1.21	1.56	3.67	-1.84	6.29	5.21	-1.01
7.74	5.13	6.46	2.85	4.35	1.42	3.71	3.36	-25.24	2.63	5.90	4.98	2.42	-3.65	2.45	-3.29	1.33	1.86	-2.08	5.86	3.68	-1.15
4.94	4.21	1.12	2.48	4.08	1.36	3.51	1.88	-26.16	1.29	5.29	4.11	1.83	-4.30	2.06	-4.47	1.06	1.14	-4.34	5.59	3.07	-2.66
1.43	2.65	-1.41	2.20	2.02	0.96	3.47	1.87	-28.75	-1.41	2.38	1.82	1.71	-6.62	0.66	-4.56	0.64	0.25	-6.76	5.22	2.78	-5.67
-5.86	-1.37	-3.36	2.11	0.89	-6.66	1.85	-11.31	-36.91	-12.92	2.35	1.53	0.31	-12.66	-0.79	-32.59	0.25	-6.52	-12.42	3.31	-28.84	-7.63

■ Floating Rate 
 ■ Global Treasury 
 ■ GNMA 
 ■ High Yield 
 ■ Intermediate Corporate 
 ■ Intermediate Treasury 
 ■ Long Corporate 
 ■ Long Treasury 
 ■ MLP 
 ■ Municipal 
 ■ Preferred 
 ■ Short Treasury

Source: Bloomberg. **Past performance is no guarantee of future results.** All of the indices are unmanaged, statistical composites that cannot be purchased directly by investors. An index does not charge management fees or brokerage expenses, and no such fees or expenses were deducted from the performance shown. The asset classes shown here offer different characteristics in terms of income, tax treatment, capital appreciation and risk. High-yield securities, or “junk” bonds, are subject to greater market fluctuations and risk of loss than securities with higher ratings, and therefore, may be highly speculative. Fixed rate investment grade (IG) bonds are subject to fluctuations due to higher interest rates, economic recession, deterioration of the bond market or investors’ perception thereof, possible downgrades and defaults of interest and/or principal. Diversification does not guarantee a profit or protect against loss.

Asset classes are represented by the following indices: **High Yield** - Bloomberg Barclays U.S. Corporate High-Yield Bond Index consists of the universe of fixed-rate, non-IG debt. **Intermediate Corporate** - Bloomberg Barclays U.S. Intermediate Credit Index measures the IG, U.S. dollar (USD)-denominated, fixed-rate, taxable corporate and gov’t-related bond markets with a maturity greater than 1 yr. and less than 10 yrs. **Municipal** - Bloomberg Barclays U.S. Municipal Index covers the USD-denominated long-term tax exempt bond market. **Long Corporate** - Bloomberg Barclays U.S. Long Credit Index measures the IG, USD-denominated, fixed-rate, taxable corporate and gov’t-related bond markets with 10 or more years to maturity. **Intermediate Treasury** - Bloomberg Barclays U.S. Intermediate Treasury Index consists of public obligations of the U.S. Treasury with maturities from 1 and up to 10 yrs. **Long Treasury** - Bloomberg Barclays U.S. Long Treasury Index consists of public obligations of the U.S. Treasury with 10 or more years to maturity. **Global Treasury** - Bloomberg Barclays Global Treasury Index tracks fixed-rate, local currency gov’t debt of IG countries, including both developed and emerging markets. **Floating Rate** - Credit Suisse Leveraged Loan Index tracks the investable market of the USD-denominated leveraged loan market. All loans are funded term loans with a maturity of at least 1 year and are made by issuers domiciled in developed countries. **GNMA** - Bloomberg Barclays GNMA Index consists of 30-yr and 15-yr pass-through GNMA and GNMA Graduated Payment Mortgages. **Short Treasury** - Bloomberg Barclays 2-Yr U.S. Treasury Bellwethers Index consists of U.S. Treasury bonds with an average maturity of 2 years. **MLP** - Alerian MLP Index is a composite of 50 prominent energy Master Limited Partnerships (MLPs). **Preferred** - ICE BofA Fixed Rate Preferred Securities Index tracks the performance of fixed rate USD-denominated preferred securities issued in the domestic market.

# ASSET CLASS CORRELATION

June 30, 2011 – September 30, 2021

## FIXED INCOME OPPORTUNITY SET

	S&P 500	Core Bonds	Senior Loans	High-Yield Bonds	Preferreds	EM	U.S. Convertibles	U.S. MBS	Municipals	IG Corporates	U.S. Treasury	MLPs	Commodities	Ann. Volatility
S&P 500	1.00													13.26
Core Bonds	-0.01	1.00												2.99
Senior Loans	0.65	0.08	1.00											5.20
High-Yield Bonds	0.75	0.24	0.87	1.00										6.81
Preferreds	0.58	0.45	0.64	0.72	1.00									5.69
EM	0.56	0.46	0.65	0.80	0.65	1.00								7.52
U.S. Convertibles	0.84	0.08	0.72	0.77	0.55	0.56	1.00							12.27
U.S. MBS	-0.16	0.85	-0.17	0.01	0.27	0.27	-0.08	1.00						2.04
Municipals	0.05	0.73	0.28	0.35	0.48	0.57	0.15	0.60	1.00					3.61
IG Corporates	0.24	0.91	0.37	0.51	0.64	0.64	0.30	0.64	0.69	1.00				4.82
U.S. Treasury	-0.34	0.89	-0.33	-0.18	0.10	0.08	-0.26	0.82	0.55	0.66	1.00			3.57
MLPs	0.70	0.07	0.75	0.72	0.59	0.48	0.66	-0.10	0.12	0.32	-0.27	1.00		29.81
Commodities	0.49	-0.09	0.54	0.62	0.33	0.49	0.51	-0.17	0.06	0.08	-0.34	0.49	1.00	13.29

Source: Morningstar. **Past performance is no guarantee of future results.** Volatility is based on standard deviation which is a measure of price variability (risk). Core Bonds are represented by the Bloomberg Barclays U.S. Aggregate Bond Index; Senior Loans are represented by the S&P/LSTA Leveraged Loan Index; High-Yield Bonds are represented by the ICE BofA U.S. High Yield Constrained Index; Preferreds are represented by the ICE BofA Fixed Rate Preferred Securities Index; EM is represented by the ICE BofA U.S. Emerging Markets External Sovereign Index; U.S. Convertibles are represented by the ICE BofA U.S. Convertible Index; U.S. MBS is represented by the Bloomberg Barclays U.S. MBS Index; Municipals are represented by the Bloomberg Barclays Municipal Bond Index; IG Corporates are represented by the Bloomberg Barclays U.S. Corporate Investment Grade Index; U.S. Treasury is represented by the Bloomberg Barclays U.S. Treasury Index; MLPs are represented by the Alerian MLP Index; Commodities are represented by the Bloomberg Commodity Index.

**CBOE S&P 500 3-Month Volatility Index** – VIX3M is designed to be a constant measure of 3-month implied volatility of the S&P 500.

**Citi Economic Surprise United States Index** – Measures data surprises relative to market expectations.

**Convertibles** – ICE BofA US Convertible Bonds TR USD tracks the performance of publicly issued U.S. dollar denominated convertible securities of U.S. companies.

**DJIA** – Dow Jones Industrial Average® (The Dow®) is a price-weighted measure of 30 U.S. blue-chip companies. The index covers all industries except transportation and utilities.

**Emerging Markets** – ICE BofA U.S. Emerging Markets External Sovereign Index tracks the performance of U.S. dollar emerging markets sovereign debt publicly issued in the U.S. and Eurobond markets.

**Government Debt (Agency & Treasury)** – Bloomberg Barclays U.S. Government Index consists of Securities issued by the U.S. Government.

**Government Debt (Agency & Treasury)** – ICE BofA U.S. Treasury & Agency Index tracks the performance of U.S. dollar denominated U.S. Treasury and non-subordinated U.S. agency debt issued in the U.S. domestic market.

**High-Yield Bonds** – ICE BofA U.S. High Yield Constrained Index (HUC0) tracks the performance of U.S. dollar denominated below investment grade corporate debt publicly issued in the U.S. domestic market but caps issuer exposure at 2%.

**High-Yield Bonds** – J.P. Morgan Global High Yield Indices consist of fixed income securities of domestic and foreign issuers with a maximum credit rating of BB+ or Ba1.

**High-Yield Municipal Bonds** – ICE BofA U.S. Municipal Index tracks the performance of U.S. dollar denominated below investment grade tax-exempt debt publicly issued by U.S. states and territories, and their political subdivisions, in the U.S. domestic market.

**Institutional Preferreds** – ICE BofA US Investment Grade Institutional Capital Securities Index tracks the performance of U.S. dollar denominated investment grade hybrid capital corporate and preferred securities publicly issued in the U.S. domestic market.

**Investment Grade Corporates** – Bloomberg Barclays U.S. Corporate Investment Grade Index tracks publicly issued, SEC-registered, U.S. corporate and specified foreign debentures and secured notes that have a maturity greater than one year, at least \$250 M outstanding par balance, and rated Baa3/BBB- or higher.

**Investment Grade Corporate Bonds** – ICE BofA U.S. Corporate Index tracks the performance of U.S. dollar denominated investment grade (BBB/Baa-rated or better) corporate debt publicly issued in the U.S. domestic market.

**Mortgage-Backed Securities** – Bloomberg Barclays U.S. Mortgage Backed Securities Index tracks agency mortgage backed pass-through securities (both fixed-rate and hybrid ARM) guaranteed by Ginnie Mae, Fannie Mae, and Freddie Mac.

**Mortgage-Backed Securities** – ICE BofA U.S. Mortgage Backed Securities Index tracks the performance of U.S. dollar denominated fixed rate and hybrid residential mortgage pass-through securities publicly issued by U.S. agencies in the U.S. domestic market.

**Municipal Bonds** – Bloomberg Barclays Municipal Bond Index tracks the performance of the tax-exempt bond market.

**Municipal Bonds** – ICE BofA U.S. Municipal High Yield Securities Index tracks the performance of U.S. dollar denominated investment grade tax-exempt debt publicly issued by U.S. states and territories, and their political subdivisions, in the U.S. domestic market.

**Senior Loans** – S&P/LSTA Leveraged Loan Index (LLI) is designed to track the current outstanding balance and spread over LIBOR for fully funded term loans.

**S&P 500 Index** – An unmanaged index of 500 stocks used to measure large-cap U.S. stock market performance..

**Treasury Inflation Protected Securities (TIPS)** – Bloomberg Barclays U.S. Treasury TIPS 1-5 Year Index measures the performance of inflation-protected public obligations of the U.S. Treasury that have a remaining maturity of less than five years.

**U.S. Aggregate** – Bloomberg Barclays U.S. Aggregate Bond Index is a broad-based flagship benchmark that measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market, including Treasuries, government-related and corporate securities, MBS, ABS and CMBS.

**VIX Index** – The VIX Index is the financial benchmark designed to be an up-to-the-minute market estimate of the expected volatility of the S&P 500 Index, and is calculated by using the midpoint of real-time S&P 500 Index option bid/ask quotes.



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