## INVESTMENT EXPERTISE

### INVESTMENT MANAGEMENT TEAMS

#### LEVERAGED FINANCE
- William Housey, CFA, MBA, 27 years
- Jeffrey Scott, CFA, MBA, 34 years
- Scott D. Fries, CFA, MBA, 29 years
- Gregory Olsen, CFA, MBA, 31 years
- Henry Reukau, CFA, MBA, 29 years
- Brian Kessler, CFA, CMT, 19 years
- Sebastian Dassouli, CFA, CMT, 19 years
- Natasha Kennedy, MBA, 8 years
- Berk Kimal, MBA, 26 years
- Andy Rybak, CFA, MBA, 24 years
- Jeffrey Johnson, MBAR, 24 years

#### GOVERNMENT AND SECURITIZED PRODUCTS GROUP
- Jim Snyder, MBA, 34 years
- Jeremiah Charles, MS, 21 years
- Jud Tigerman, MBA, 27 years
- Austin Stockfisch, 12 years
- Alex DeRochie, 6 years
- Minhua Wu, MS, 6 years
- Owen Aronson, 16 years
- Samuel Cecil, MBA, 11 years
- Jordan Pflum, MS, 2 years
- Brij Dholra, 5 years
- Aidan Cremins, < 1 year
- Amrit Sandhu, < 1 year

#### INVESTMENT GRADE
- Todd Larson, CFA, 29 years
- Eric Maisel, CFA, MS, 29 years
- Scott Skowronska, CFA, 26 years
- Zach Natale, 15 years
- Ying Timmerman, CFA, CPA, 14 years
- Jordan Worniak, CFA, 11 years
- Nathan Simons, CFA, 10 years
- Charles Kovarik, 3 years
- Lee Mizell, < 1 year

#### CLOSED-END FUNDS
- Ken Fincher, MBA, 33 years
- Nick Grant, 1 year

#### MUNICIPAL SECURITIES
- Tom Byron, 42 years
- Johnathan Wilhelm, JD, 32 years
- Nick Novosad, CFA, 12 years
- Jeff Samuel, 30 years
- Sarah Galpin, CFA, 19 years
- Shari Sikes, MS, 29 years
- Aaron Cook, 22 years
- John Loch, MBA, 29 years
- Andrew Folland, MBA, 28 years
- Andrea McKeague, 32 years

#### PREFERRED SECURITIES
- (Stonebridge Advisors LLC)
  - Scott Fleming, CFA, 40 years
  - Robert Wolf, MBA, 23 years
  - Eric Weaver, MS, 15 years
  - Angelo Graci, CFA, MBA, 27 years
  - Connor Fleming, CFA, CIPM, 10 years
  - Scott Hubbell, CFA, 14 years
  - Jeff Vinca, 18 years
  - Marie-Belle Mikue, 9 years
  - Jeff Bernstein, MBA, CPA, 33 years
  - Celeste Guerrero, 16 years

### RESEARCH

#### EQUITY RESEARCH
- John Sherren, CFA, MBA, 25 years
- Jared Wollen, CFA, MS, 14 years
- Eric Glombicki, 3 years
- Jack Wagner, 2 years
- Connor Fries, < 1 year

#### QUANT TECH
- Dan Godoy, CFA, MBA, 17 years
- Jeff Sommers, PhD, CFA, MBA, 8 years
- John Hagerson, CFA, 23 years
- Landon Kavlie, Phd, MBA, 8 years
- Matthew Goldsberry, 8 years
- Nathan Bliss, Phd, CFA, 5 years
- Jordan Freeberg, 2 years
- Matt Adomski, 2 years
- Nathan Jara, 2 years
- Joel Stapleton, PhD, 1 year
- Matthew Milone, 1 year
- Johannes Byler, 1 year
- Josiah Elliott, 1 year
- Matthew Erickson, < 1 year
- Stephen Lovett, PhD, < 1 year
- Stephen Kil, < 1 year
- Jonathan Barrett, < 1 year

#### MODEL INVESTMENT COMMITTEE

<table>
<thead>
<tr>
<th>Position</th>
<th>Name</th>
<th>Years</th>
</tr>
</thead>
<tbody>
<tr>
<td>Chairman and Managing Director</td>
<td>William Housey, CFA, MBA</td>
<td>30</td>
</tr>
<tr>
<td>CIO, COO and Managing Director</td>
<td>David McGarel, CFA, CPA</td>
<td>33</td>
</tr>
<tr>
<td>Managing Director of Fixed-Income</td>
<td>William Housey, CFA, MBA</td>
<td>27</td>
</tr>
<tr>
<td>Head of Strategy Research</td>
<td>Chris Peterson, CFA, MBA</td>
<td>25</td>
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<tr>
<td>Portfolio Oversight</td>
<td>Chris Fallow, CFA, SVP</td>
<td>21</td>
</tr>
<tr>
<td>Senior Fixed-Income Analyst</td>
<td>Steve Collins, CFA, MBA</td>
<td>16</td>
</tr>
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#### ECONOMICS
- Brian Wesbury, MBA, 40 years
- Robert Stein, CFA, 27 years
- Strider Elsass, 15 years
- Andrew Opdyke, CFA, MBA, 11 years
- Bryce Gill, MBA, 9 years
- Nate Gerze, 3 years
- Mary Buchanan, 19 years

#### MARKET ANALYSIS
- Bob Carey, CFA, 34 years
- Peter Leonides, 15 years
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<th>LEADING INDICATORS</th>
<th>FIXED INCOME OPPORTUNITY SET</th>
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<td>27. FIXED INCOME DASHBOARD</td>
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<td>34. SIZE AND GROWTH OF THE U.S. DEBT MARKET</td>
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<td>11. 10 YR U.S. TREASURY REAL YIELD</td>
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<td>35. SIZE AND CREDIT QUALITY OF THE U.S. CORPORATE DEBT MARKET</td>
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<td>15. US TREASURY YIELD CURVE</td>
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<td>22. CENTRAL BANK BALANCE SHEETS</td>
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<td>23. WEEKLY U.S. DOLLAR INDEX (DXY)</td>
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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 – November 30, 2023)

MARKET DATA

- **Secular Consolidations**: Range 13 yrs – 25 yrs
- **Secular Bull Markets**: Range 4 yrs – 17 yrs
- **Recession**

Source: Bloomberg. See Index Definitions.
Past performance is no guarantee of future results.
Equities remain in a Secular Bull Market above the uptrend line at 3806.

Source: Bloomberg. See Index Definitions.
Past performance is no guarantee of future results.
WEEKLY 2 YEAR AND 5 YEAR U.S. TREASURY YIELD
December 31, 2005 – November 24, 2023

MARKET DATA

2 YEAR U.S. TREASURY QTD RETURN: +1.31%

5 YEAR U.S. TREASURY QTD 2023 RETURN: +2.06%

Broke support of 5.05% (making that level the next upper resistance). Additional support levels are 4.58% and 4.37%.

Broke support of 4.50% (making that level the next upper resistance). Additional support levels are 3.93% and 3.35%.

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. The 5 Year U.S. Treasury return is represented by the ICE BofA Current 5-Year U.S. Treasury Index. See Index Definitions.
10 YEAR U.S. TREASURY QTD RETURN: +2.45%

Broke support of 4.34% (making that level the new upper resistance). Additional support levels are 4.00% and 3.26%.

30 YEAR U.S. TREASURY QTD RETURN: +3.74%

Testing support of 4.42%. Additional support levels are 4.00% and 3.49%.

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. The 30 Year U.S. Treasury return is represented by the ICE BofA Current 30-Year U.S. Treasury Index. See Index Definitions.
Broke 30 year downtrend at 2.66%.
WEEKLY 10 YEAR GOVERNMENT BOND YIELDS (GERMANY & JAPAN)

December 31, 2005 – November 24, 2023

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. See Index Definitions.
WEEKLY 10 YEAR GOVERNMENT BOND YIELDS (U.K. & ITALY)
December 31, 2005 – November 24, 2023

MARKET DATA

WEEKLY 10 YEAR U.K. GOVERNMENT BOND YIELD

U.K. Gilt Yields at levels not seen since October 2008.

WEEKLY 10 YEAR ITALIAN GOVERNMENT BOND YIELD

Italian Bond Yields at levels not seen since September 2013.

Source: Bloomberg. Past performance is no guarantee of future results. See Index Definitions.
10 YEAR U.S. TREASURY YIELD AND 10 YEAR GERMAN BUND YIELD

December 31, 1988 – November 24, 2023

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. See Index Definitions.
The U.S. 10-Year Treasury Yield sustained its normal relationship higher than the 10-Year Breakeven Inflation Rate.

The U.S. 10-Year Treasury Real Yield is the highest it has been since March 2009.

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).

The breakeven rate is a market-based gauge for the expected annual inflation. See Index Definitions.

Source: Bloomberg. Past performance is no guarantee of future results.
INFLATION: BREAKEVENS
October 27, 2004 – November 30, 2023

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. See Index Definitions.
As of November 30, 2023

The ICE BofA MOVE Index is shown above. See Index Definitions. The area shaded in gray represents 2 standard deviations above and below the mean of the MOVE Index inception to date.

Interest rate volatility remains elevated.

Source: Bloomberg. Data from 4/4/88 – 11/30/23. Past performance is no guarantee of future results. The ICE BofA MOVE Index is shown above. See Index Definitions. The area shaded in gray represents 2 standard deviations above and below the mean of the MOVE Index inception to date.
Federal Funds Futures indicate an implied forward rate peaking in December of 2023 at 5.34%, which indicates an approximately 3.6% chance of one additional hike, before implied rate cuts are expected to begin in early 2024.

Source: Bloomberg.
The assumed rate movement for one rate hike or cut is equivalent to +/- 0.25%. There is no assurance forecasts will be achieved.
The Federal Funds Rate is the interbank overnight lending rate for commercial banks’ excess reserves. The Implied Federal Funds Rate for the US is the estimated forward rate for the United States and is derived from Federal Funds Futures contracts to determine the probability of the Federal Reserve changing monetary policy at a particular meeting.
US TREASURY YIELD CURVE
As of November 30, 2023

Source: Bloomberg. Past performance is no guarantee of future results.
2-YR/10 YR U.S YIELD CURVE & 3-MO/10 YR U.S YIELD CURVE

MARKET DATA

- Recession
- 2yr vs 10yr U.S. Treasury Yield Spread
- 3mo vs 10yr U.S. Treasury Yield Spread

Source: Bloomberg, as of 11/30/2023. 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% or 0.01%. A 1% change is equal to 100 basis points. See Index Definitions.
LONG AND VARIABLE POLICY LAGS

MARKET DATA

<table>
<thead>
<tr>
<th>2-yr/10-yr US Yield Curve Inversion Date</th>
<th>3-mo/10-yr US Yield Curve Inversion Date</th>
<th>Recession following Inversion</th>
<th>Days Since 2-yr/10-yr US Yield Curve Inversion</th>
<th>Days Since 3-mo/10-yr US Yield Curve Inversion</th>
<th>S&amp;P 500 All Time High After Curve Inversion</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/5/2022</td>
<td>11/8/2022</td>
<td>TBD</td>
<td>513*</td>
<td>387*</td>
<td>TBD</td>
</tr>
</tbody>
</table>

*Measures the time since inversion.

Mean | 478 | 352 |
Median | 502 | 382 |

MUNICIPAL YIELD CURVE
As of November 30, 2023

MARKET DATA

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

*YTM represents the Tax-Equivalent Yield (TEY) for the highest tax bracket of 37% plus a Medicare tax rate of 3.8% for a total tax rate of 40.8%.
The Real Federal Funds Rate is the highest it has been since November 2007.
Source: Bloomberg, Federal Reserve. See Index Definitions.
GLOBAL NEGATIVE YIELDING DEBT
December 31, 2013 – November 30, 2023

Source: Bloomberg. Global negative yielding debt is comprised by summing the negative yielding debt within the Bloomberg Global Aggregate Index. See Index Definitions.
The Fed’s and ECB’s balance sheets are $1.2 Trillion and $2.2 Trillion, respectively, below peak levels in Q1 2022.
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%

Support of 105 failed to hold (and is now resistance). Support levels remain 100 and 95 on a resumption of the downtrend.

Source: Bloomberg. Past performance is no guarantee of future results. See Index Definitions.
THE BUSINESS CYCLE

LEADING INDICATORS

<table>
<thead>
<tr>
<th>PHASE 1</th>
<th>PHASE 2</th>
<th>PHASE 3</th>
<th>PHASE 4</th>
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</thead>
<tbody>
<tr>
<td>Contraction</td>
<td>Recovery</td>
<td>Expansion</td>
<td>Slowdown</td>
</tr>
</tbody>
</table>

Below capacity & declining
Below capacity & growing
Above capacity & growing
Above capacity & declining

Returns (11/30/22-11/30/23)
- S&P 500 13.84%
- 3-Mo LIBOR 5.53%
- Commodities 3.47%
- U.S. Agg 1.18%

Relative Ranking of Assets (by average return)
- Bonds
- Equities
- Cash
- Commodities

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. See Index Definitions.
TOTAL U.S. PICKUP TRUCK SALES (DECEMBER 31, 1980 – SEPTEMBER 30, 2023)

TOTAL U.S. MOTOR VEHICLE SALES (JANUARY 1, 1980 – NOVEMBER 30, 2023)

Source: Bloomberg, Citigroup Global Markets Inc., Motor Intelligence, GoodCarBadCar. Total U.S. Pickup Truck Sales through 9/30/23. (Most Recent Available Data)

U.S. Motor Vehicle Sales reflect the seasonally adjusted annual rate (SAAR) where data has been adjusted for the effects of seasonal patterns.
LEADING INDICATORS

WEEKLY BLOOMBERG COMMODITY (BCOM) INDEX (DECEMBER 31, 1990 – NOVEMBER 24, 2023)

Holding support. Prices are consolidating.

Broke through a 12-year Downtrend

WEEKLY CRUDE OIL PRICE (APRIL 1, 1983 – NOVEMBER 24, 2023)

Source: Bloomberg. *Past performance is no guarantee of future results.* See Index Definitions.
FIXED INCOME DASHBOARD
10 Year Minimum and Maximum Option Adjusted Spreads (OAS)

FIXED INCOME OPPORTUNITY SET

HIGH-YIELD BONDS

OAS – ICE BofA U.S. High Yield Constrained Index

- Current OAS: 384
- Mean OAS: 444
- Std Dev: 113
- High OAS: 1,087
- Low OAS: 303
- As of 3/23/2020

SENIOR LOANS

STM – Morningstar® LSTA® US Leveraged Loan Index

- Current STM: 485
- Mean STM: 464
- Std Dev: 79
- High STM: 1,071
- Low STM: 353
- As of 3/23/2020

INVESTMENT-GRADE CORPORATES

OAS – ICE BofA U.S. Corporate Index

- Current OAS: 111
- Mean OAS: 131
- Std Dev: 30
- High OAS: 401
- Low OAS: 86
- As of 3/23/2020

EMERGING MARKETS

OAS – ICE BofA U.S. Emerging Markets External Sovereign Index

- Current OAS: 309
- Mean OAS: 325
- Std Dev: 57
- High OAS: 693
- Low OAS: 211
- As of 3/23/2020

MORTGAGE-BACKED SECURITIES

OAS – ICE BofA U.S. Mortgage Backed Securities Index

- Current OAS: 64
- Mean OAS: 35
- Std Dev: 21
- High OAS: 136
- Low OAS: -12
- As of 3/19/2020

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). See Index Definitions.
MUNICIPAL BONDS
10 Year Spreads to AAA Municipals

FIXED INCOME OPPORTUNITY SET

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

As of 12/30/2022:  
As of 11/30/2023:  
Mean as of 11/30/2023:  

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**AA MUNICIPALS**

<table>
<thead>
<tr>
<th>Bloomberg Municipal AA Index Total Return Index Value Unhedged USD</th>
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<tr>
<td><strong>Current</strong></td>
</tr>
<tr>
<td><strong>Mean</strong></td>
</tr>
<tr>
<td><strong>Std Dev</strong></td>
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**A MUNICIPALS**

<table>
<thead>
<tr>
<th>Bloomberg Municipal A Index Total Return Index Value Unhedged USD</th>
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</thead>
<tbody>
<tr>
<td><strong>Current</strong></td>
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<tr>
<td><strong>Mean</strong></td>
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<tr>
<td><strong>Std Dev</strong></td>
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</table>

**BBB MUNICIPALS**

<table>
<thead>
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<th>Bloomberg Municipal BAA Index Total Return Index Value Unhedged USD</th>
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</thead>
<tbody>
<tr>
<td><strong>Current</strong></td>
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<tr>
<td><strong>Mean</strong></td>
</tr>
<tr>
<td><strong>Std Dev</strong></td>
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</table>

**HIGH-YIELD MUNICIPALS**

<table>
<thead>
<tr>
<th>Bloomberg Municipal High Yield Total Return Index Value Unhedged USD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Current</strong></td>
</tr>
<tr>
<td><strong>Mean</strong></td>
</tr>
<tr>
<td><strong>Std Dev</strong></td>
</tr>
</tbody>
</table>
Municipal / Treasury Yield Ratio
January 2, 2001 – November 30, 2023

Source: Bloomberg. Past performance is no guarantee of future results. The Municipal/Treasury ratio is a percentage of municipal yields against equivalent Treasury yields.
As of November 30, 2023

Source: 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. U.S. Senior Loans are represented by the Morningstar® LSTA® US Leveraged Loan Index. Investment Grade Corporates are represented by the ICE BofA U.S. Corporate Index. Core Bonds are represented by the Bloomberg U.S. Aggregate Bond Index. Government Bonds are represented by the Bloomberg U.S. Government Index. TIPS are represented by the Bloomberg US Treasury Inflation-Linked Bond Index. Municipal Bonds are represented by the Bloomberg U.S. Municipal Index. Mortgage Backed Securities are represented by the ICE BofA U.S. Mortgage Backed Securities Index. See Index Definitions.
FIXED INCOME OPPORTUNITY SET – DURATION VS YTM
As of November 30, 2023

Source: S&P LCD, and Bloomberg. Past performance is no guarantee of future results. *YTM represents the Tax-Equivalent Yield (TEY) for the highest tax bracket of 37% plus a Medicare tax rate of 3.8% for a total tax rate of 40.8%. U.S. Senior Loans are represented by the Morningstar® LSTA® US Leveraged Loan Index. High-Yield Bonds are represented by the ICE BofA U.S. High Yield Constrained Index. Investment Grade Corporates are represented by the ICE BofA U.S. Corporate Index. Municipal Bonds are represented by the Bloomberg U.S. Municipal Index. Mortgage Backed Securities are represented by the ICE BofA U.S. Mortgage Backed Securities Index. Core Bonds are represented by the Bloomberg U.S. Aggregate Bond Index. Government Bonds are represented by the Bloomberg U.S. Government Index. TIPS are represented by the Bloomberg US Treasury Inflation-Linked Bond Index. See Index Definitions.
As of November 30, 2023

**FIXED INCOME OPPORTUNITY SET – NOMINAL & REAL YIELDS**

**Past performance is no guarantee of future results.** YTM represents the Tax-Equivalent Yield (TEY) for the highest tax bracket of 37% plus a Medicare tax rate of 3.8% for a total tax rate of 40.8%. Real yield is represented by nominal yield-to-maturity minus the 5-yr inflation breakeven rate of 2.91%, which is calculated as the difference in yields between U.S Treasury bonds and Treasury Inflation-Protected Securities (TIPS). Senior Loans are represented by the Morningstar® LSTA® US Leveraged Loan Index. High-Yield Bonds are represented by the ICE BofA U.S. High Yield Constrained Index. Investment Grade Corporates are represented by the ICE BofA U.S. Corporate Index. Municipal Bonds are represented by the Bloomberg U.S. Municipal Index. Mortgage Backed Securities are represented by the ICE BofA U.S. Mortgage Backed Securities Index. Core Bonds are represented by the Bloomberg U.S. Aggregate Bond Index. TIPS are represented by the Bloomberg US Treasury Inflation-Linked Bond Index. See Index Definitions.

Source: S&P LCD, and Bloomberg.

Yield To Maturity

- **Senior Loans**: 10.44%
- **High-Yield Bonds**: 8.56%
- **Investment Grade Corporates**: 6.39%
- **Municipal Bonds***: 5.71%
- **Mortgage Backed Securities**: 5.67%
- **Core Bonds**: 5.32%
- **TIPS**: 5.05%
- **Government Bonds**: 4.74%
- **Government Bonds**: 4.56%

Graph showing yield to maturity for various fixed income categories.
YIELD PER UNIT OF DURATION
Bloomberg U.S. Aggregate Bond Index (January 30, 1976 – November 30, 2023)

FIXED INCOME OPPORTUNITY SET

Yield-to-Worst: 5.05%
Modified Duration: 6.24 years

Recent highs in yield per unit of duration were last experienced in November 2008.

Source: Bloomberg. Past performance is no guarantee of future results. 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. See Index Definitions.
# Size and Growth of the U.S. Debt Market

**March 31, 1997 – September 30, 2023**

## Fixed Income Opportunity Set

<table>
<thead>
<tr>
<th></th>
<th>Growth Since 12/31/2007</th>
<th>$ Growth</th>
<th>% Growth</th>
</tr>
</thead>
<tbody>
<tr>
<td>U.S. Treasury Bonds</td>
<td>+$12.24 tn</td>
<td>+356%</td>
<td></td>
</tr>
<tr>
<td>Investment Grade Corporates</td>
<td>+$6.38 tn</td>
<td>+284%</td>
<td></td>
</tr>
<tr>
<td>Mortgages</td>
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<td>Municipal Bonds</td>
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<td>Preferreds</td>
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Source: ICE and Standard & Poor’s Leveraged Loan Commentary and Data. Data as of 9/30/23 (Most Recent Available 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 ICE 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 Bloomberg U.S. Municipal Index. Senior Loans are represented by the Morningstar® LSTA® US 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. See Index Definitions.
SIZE AND CREDIT QUALITY OF THE U.S. CORPORATE DEBT MARKET

December 31, 2007 vs. November 30, 2023

Source: Bloomberg. Investment Grade represented by the ICE BofA U.S. Corporate Index. High Yield represented by the ICE BofA U.S. High Yield Constrained Index. The index composite rating is a derived value that is used to classify bonds by credit quality in Bloomberg 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. See Index Definitions.
High-yield bonds are yielding 1.88% less than senior loans, which represents an inversion of the long-term average relationship where high-yield bonds have historically garnered a 1.77% premium to own.
Past performance is no guarantee of future results. 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 Morningstar® LSTA® US Leveraged Loan Index (LLI) and based on the LTM. See Index Definitions.
MONEY MARKET RATES
June 30, 2019 – November 30, 2023

Source: Bloomberg. Past performance is no guarantee of future results. Tier 1 90d - U.S. Commercial Paper Placed Top 90 Day Yield (DCPB090Y Index), Tier 2 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), 1m SOFR- CME Term SOFR 1 Month (TSFR1M Index), 3m SOFR- CME Term SOFR 3 Month (TSFR3M Index). For illustrative purposes only.
### FIXED INCOME ASSET CLASS RETURNS (%)

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### FIXED INCOME OPPORTUNITY SET

- **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.** 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 U.S. Corporate High-Yield Bond Index. **Intermediate Corporate** - Bloomberg U.S. Intermediate Credit Index. **Municipal** - Bloomberg U.S. Municipal Index. **Long Corporate** - Bloomberg U.S. Long Credit Index. **Intermediate Treasury** - Bloomberg U.S. Intermediate Treasury Index. **Long Treasury** - Bloomberg U.S. Long Treasury Index. **Global Treasury** - Bloomberg Global Treasury Index. **Floating Rate** - Credit Suisse Leveraged Loan Index. **GNMA** - Bloomberg GNMA Index. **Short Treasury** - Bloomberg 2-Yr U.S. Treasury Bellwethers Index. **MLP** - Alerian MLP Index. **Preferred** - ICE BofA Fixed Rate Preferred Securities Index. See Index Definitions.
# Asset Class Correlation

**November 30, 2013 – November 30, 2023**

## Fixed Income Opportunity Set

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<tr>
<th></th>
<th>Equities</th>
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<th>Senior Loans</th>
<th>High-Yield Bonds</th>
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Source: Morningstar. **Past performance is no guarantee of future results.** Annual (Ann) Volatility is based on standard deviation which is a measure of price variability (risk). Equities are represented by the S&P 500 Index. Core Bonds are represented by the Bloomberg U.S. Aggregate Bond Index. Senior Loans are represented by the Morningstar® LSTA® US 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 ICE BofA U.S. Mortgage Backed Securities Index. Municipals are represented by the Bloomberg U.S. Municipal Index. IG Corporates are represented by the ICE BofA U.S. Investment Grade Corporate Index. Government Bonds are represented by the Bloomberg US Government Index. MLPs are represented by the Alerian MLP Index. Commodities are represented by the Bloomberg Commodity Index. See Index Definitions.
**DEFINITIONS**

**Alerian MLP Index** - A composite of 50 prominent energy Master Limited Partnerships (MLPs).

**CAB Index** - 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.

**Bloomberg Commodity Index (BCOM)** - A highly liquid and diversified benchmark for commodity investments including but not limited to energy, grains, industrial metals, precious metals, softs and livestock.

**Bloomberg GNMA Index** - Consists of 30-yr and 15-yr pass-through GNMA and GNMA Graduated Payment Mortgages.

**Bloomberg Global Aggregate Index** - Measures the global investment grade debt from 24 local currency markets which includes treasury, government-related, corporate and securitized fixed-rate bonds from both developed and emerging market issuers.

**Bloomberg Global Treasury Index** - Tracks fixed-rate, local currency government debt of IG countries, including both developed and emerging markets.

**Bloomberg High Yield Municipal Bond Index** - Measures the performance of U.S. dollar-denominated high-yield municipal bonds.

**Bloomberg Municipal Bond Index** - Tracks the performance of the tax-exempt bond market.

**Bloomberg Muni High Yield Index** – A flagship measure of the non-investment grade and non-rated USD-denominated tax exempt bond market.

**Bloomberg U.S. Aggregate Bond Index** - Measures the investment grade, U.S. dollar-denominated, fixed-rate taxable bond market, including Treasuries, government-related and corporate securities, MBS, ABS and CMBS.

**Bloomberg U.S. Corporate Bond Index** - Measures the investment grade, fixed-rate, taxable corporate bond market. It includes USD-denominated securities publicly issued by U.S. and non-U.S. industrial, utility and financial issuers.

**Bloomberg U.S. Corporate High Yield Index** - Measures the USD-denominated, high yield, fixed-rate corporate bond market.

**Bloomberg 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.

**Bloomberg U.S. Government Index** - Consists of securities issued by the U.S. Government.

**Bloomberg U.S. Intermediate Credit Index** - Measures the Investment Grade (IG), U.S. dollar (USD)-denominated, fixed-rate, taxable corporate and govt-related bond markets with a maturity greater than 1 yr. and less than 10 yrs.

**Bloomberg U.S. Intermediate Treasury Index** - Consists of public obligations of the U.S. Treasury with maturities from 1 and up to 10 yrs.

**Bloomberg U.S. Long Credit Index** - Measures the IG, USD-denominated, fixed-rate, taxable corporate and govt-related bond markets with 10 or more years to maturity.

**Bloomberg U.S. Long Treasury Index** - Consists of public obligations of the U.S. Treasury with 10 or more years to maturity.

**Bloomberg U.S. MBS Index** - Tracks agency mortgage backed pass-through securities (both fixed-rate and hybrid ARM) guaranteed by Ginnie Mae, Fannie Mae, and Freddie Mac.

**Bloomberg U.S. Municipal Index** - Covers the USD-denominated long-term tax exempt bond market.


**Bloomberg 2-Yr U.S. Treasury Bellwethers Index** - Consists of U.S. Treasury bonds with an average maturity of 2 years.

**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.

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

**Economic Surprise Index** - Measures data surprises relative to market expectations and has historically exhibited a positive correlation with 10-Year U.S. Treasury Yields.
ICE BofA Current 2-Year U.S. Treasury Index - A one-security index comprised of the most recently issued 2-year U.S. Treasury note.

ICE BofA Current 5-Year U.S. Treasury Index - A one-security index comprised of the most recently issued 5-year U.S. Treasury note.

ICE BofA Current 10-Year U.S. Treasury Index - A one-security index comprised of the most recently issued 10-year U.S. Treasury note.

ICE BofA Current 30-Year U.S. Treasury Index - A one-security index comprised of the most recently issued 30-year U.S. Treasury note.

ICE BofA Fixed Rate Preferred Securities Index (POP1) - Tracks the performance of fixed rate USD-denominated preferred securities issued in the domestic market.

ICE BofA MOVE Index - A yield curve weighted index of the normalized implied volatility on 1-month Treasury options. It is the weighted average of volatilities on the CT2, CT5, CT10, and CT30 (weighted average of 1m2y, 1m5y, 1m10y, 1m30y Treasury implied vols with weights 0.2/0.2/0.4/0.2, respectively).

ICE BofA U.S. Convertible Index - Tracks the performance of publicly issued U.S. dollar denominated convertible securities of U.S. companies.

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.

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.

ICE BofA U.S. High Yield Constrained Index - 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%.

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.

ICE BofA U.S. Municipal 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.


ICE LIBOR - A benchmark designed to produce an average rate that is representative of the rates at which large, leading, internationally active banks with access to the wholesale, unsecured funding market could fund themselves in the market in particular currencies for certain tenors.

J.P. Morgan's High-yield Bond Universe - Consists of fixed income securities of domestic and foreign issuers with a maximum credit rating of BB+ or Ba1.

Morningstar® LSTA® US Leveraged Loan Index - The Index, formerly the S&P/LSTA Leveraged Loan Index, is a leveraged loan index which covers the U.S. Loan market. The Index reflects the market-weighted performance of institutional leveraged loans in the U.S. loan market based upon real-time market weightings, spreads and interest payments.

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

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.

Indices are unmanaged and investors cannot invest directly in an index.