PIMCO

Bond Bootcamp:

Develop a Deeper Understanding of Fixed Income Investing

IMPORTANT NOTICE
Please note that the following contains the opinions of the manager as of the date noted and may not have been updated to reflect real time market developments. All opinions are subject to change without notice.

Introduction to bonds

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Defining the global bond market

The bond market connects borrowers and lenders

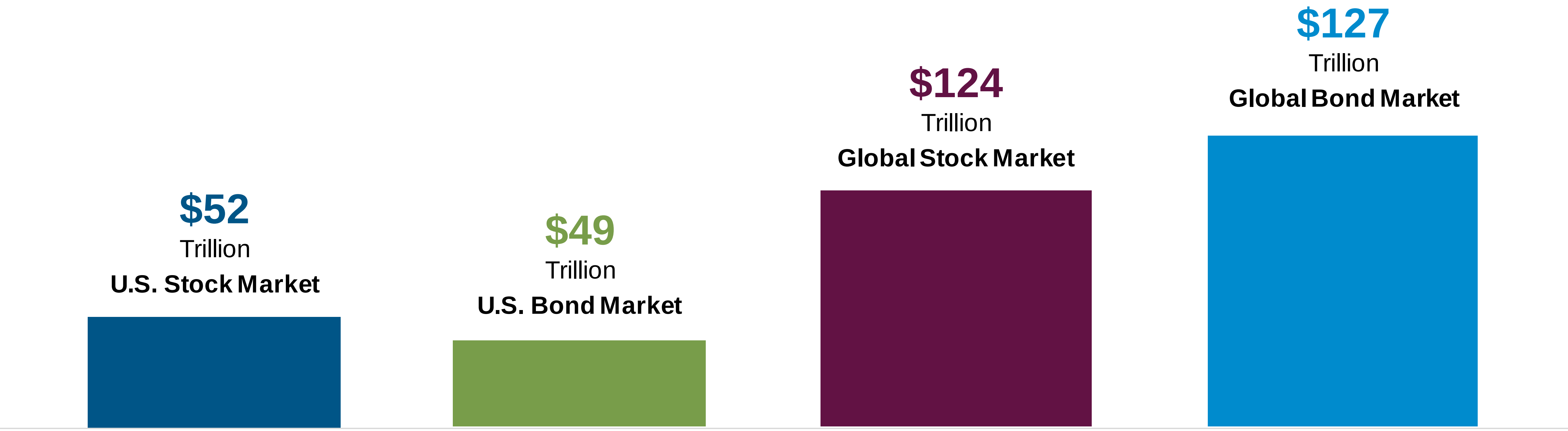
LENDER
Receives compensation in the form of interest for providing the borrower with access to funds.

Interest is the cost of borrowing money (%)

BORROWER
Pays compensation to the lender in the form of interest for immediate access to funds.

Source: PIMCO

The global bond market is large and complex



SIFMA Capital Markets Fact Book 2022, Bank of International Settlements (BIS)

Examples of bond issuers

Government bonds

Proceeds historically used to fund defense and social programs

Corporate bonds

Issued by corporations to raise money to expand business, improve operations, etc.

Municipal bonds

Issued by state or local governments to finance public projects like roads and hospitals

Source: PIMCO

For illustrative purposes only.

Bond buyers

Insurance companies

Invest premiums received to make future mortality claims

Pension funds

Invest contributions to meet future pension obligations

Individuals

Invest savings today for future uses like retirement

Source: PIMCO

For illustrative purposes only.

Bond fundamentals

Bonds usually provide lenders with interest that the borrower pays

Principal (face value)

Amount of money borrowed and repaid at maturity

Coupon

Interest paid at specific intervals for the money borrowed

Yield

Annual income (percentage) that an investor earns on an investment

If a bond has a face value of $1,000 and a coupon rate of 5% then it pays total coupons, or interest, of $50 per year (assumes annual payment)

$1,000 FACE VALUE	**5%** COUPON

$1,000	x	**0.05**	=	**$50** INTEREST PER YEAR

For Illustrative Purposes Only

Source: PIMCO

Bond prices

Here's an example of a 5.00% bond bought at par.

$1,000
Price

If the price was $1,000, we would say that this note is trading "at par."

Source: PIMCO
For illustrative purposes only.

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Bond prices

Here’s an example of a 5.00% bond bought at discount.

$950
Price

If the price was $950, we would say that this note is trading at a “discount.”

Source: PIMCO
For illustrative purposes only.

Bond prices

Here’s an example of a 5.00% bond bought at premium

$1,020
Price

In this case, the bond is trading at $1,020. We call that a “premium.”

Source: PIMCO
For illustrative purposes only.

Understanding yield-to-maturity

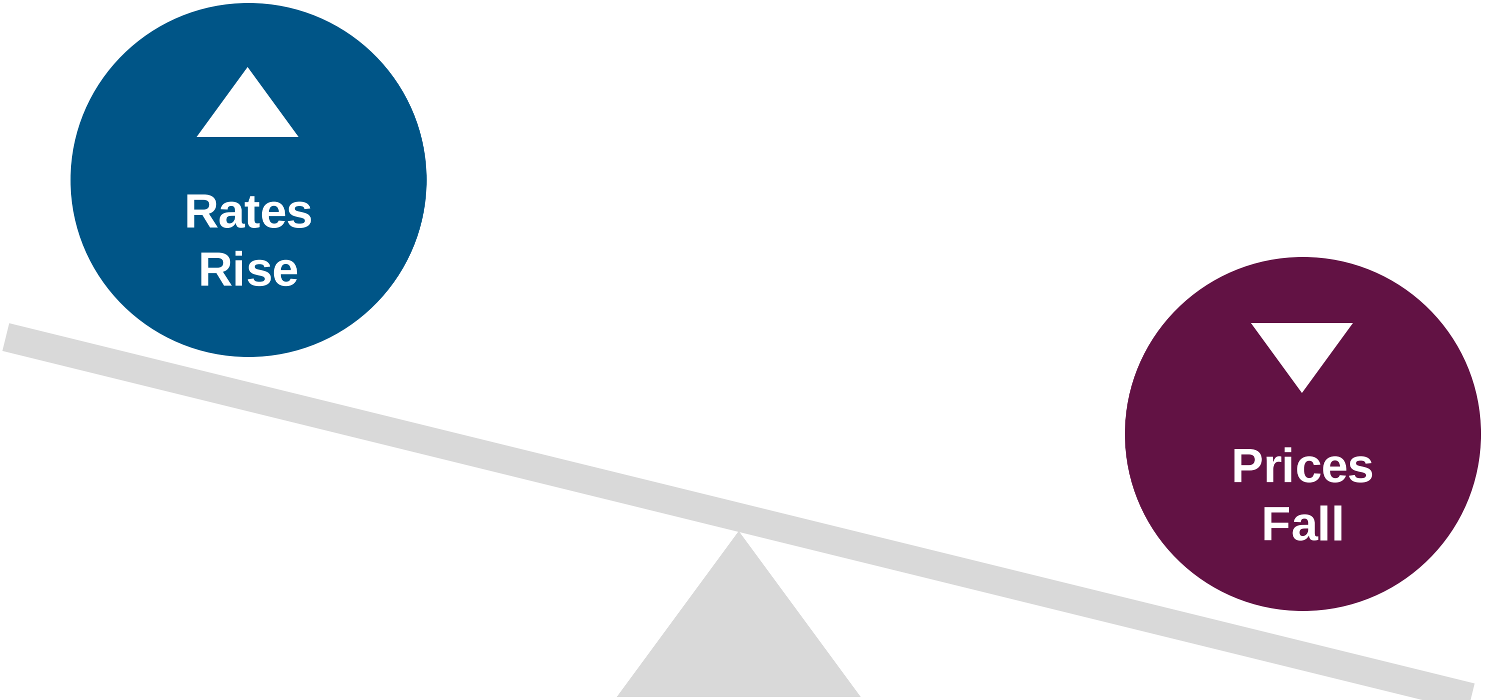
$1,000
Price

Yield-to-maturity is the estimated rate of return for a bond, assuming the investor holds that bond until its maturity date.

Source: PIMCO
For illustrative purposes only.

Bond prices are inversely related to interest rates

As yields move up and down, bond prices move up and down.



Source: PIMCO
For illustrative purposes only.

Bond prices

In a world of 3% yields, a four year note's 5% coupon is appealing.

Yield	Price
5%	$1,000.00
3%	**$1,020.00**
7%	**$950.00**

In a world of 7% yields, a four year note's 5% coupon is less attractive.

Source: PIMCO
For illustrative purposes only.

Investment risks bond investors may face

Inflation Risk

Purchasing power of principal declines over time

Interest Rate Risk

Bond prices adjust as interest rates (and coupons) increase or decrease

Default Risk

Borrowers may fail to pay on obligations

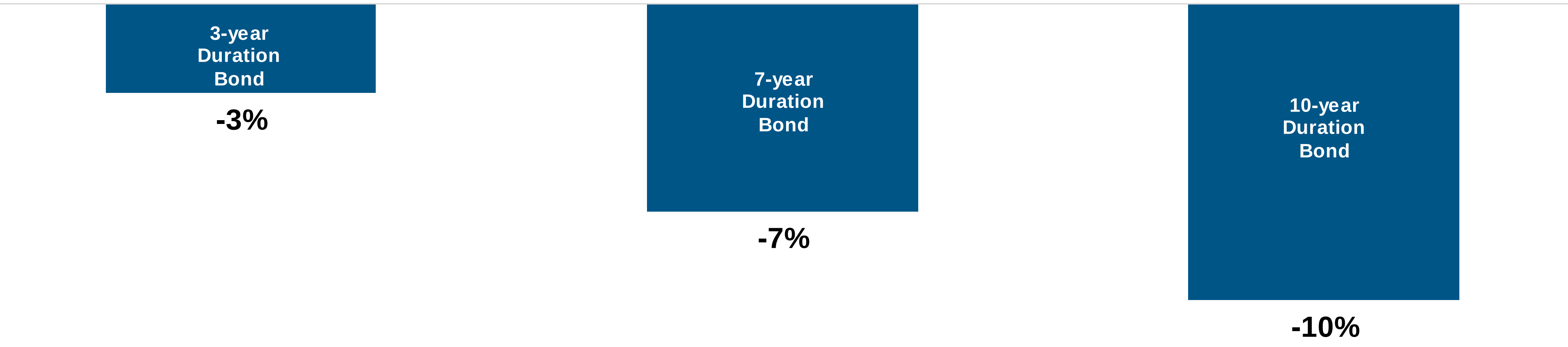
Source: PIMCO
For illustrative purposes only.

Understanding duration

Duration is a measure of risk – how much a bond price will change relative to interest rates.

Duration (measured in years) estimates the % change in a bond's price for a 1% change in yield.

How a 1% Rise in Interest Rates Can Impact Bonds with Different Durations



Source: PIMCO
For illustrative purposes only.

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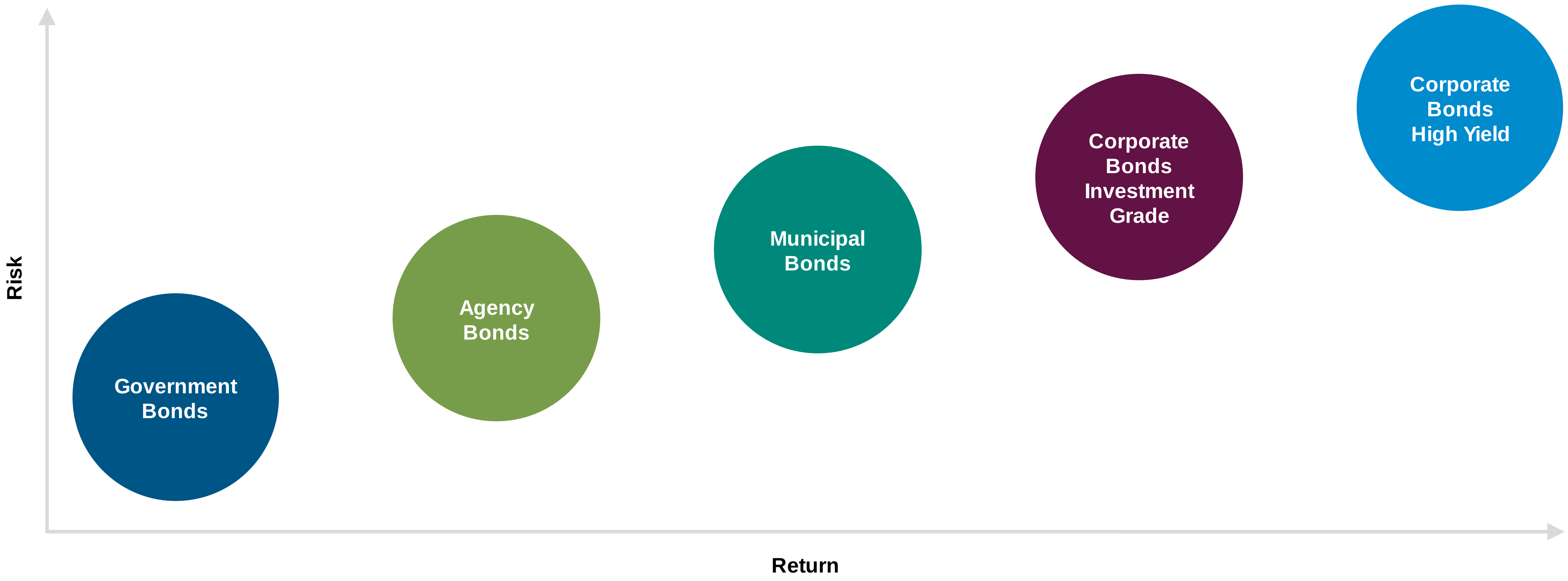
Greater risk provides greater yields



Source: PIMCO.
For illustrative purposes only
Refer to Appendix for additional risk information

Understanding credit ratings

Rating agencies set credit ratings to convey capital risk.

Investment Grade Rating Agencies

S&P Global Ratings	AAA	AA	A	BBB
Moody's	Aaa	Aa	A	Baa

Source: PIMCO, S&P, Moody's
For illustrative purposes only.
Refer to Appendix for additional credit quality and risk information.

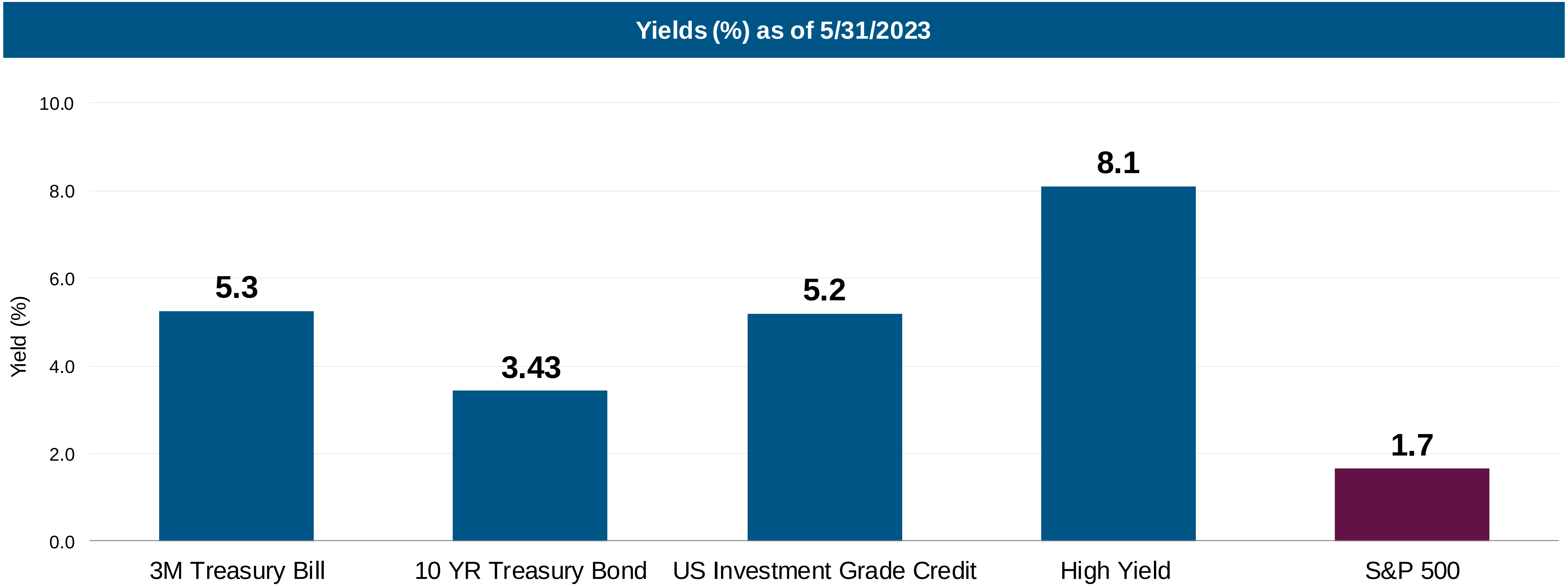
The benefits of bonds

Fixed income allocations may offer multiple benefits to a portfolio

INCOME	PRESERVATION	DIVERSIFICATION
Bonds can provide investors with a source of income in the form of coupon payments.	Barring default, the principal value of a bond is expected to be returned to the investor at maturity.	Bonds may help diversify a portfolio of riskier assets like stocks.

For illustrative purposes only.
Source: PIMCO
As of 31 December 2020
Refer to Appendix for additional investment strategy and risk information.

Benefit: Income

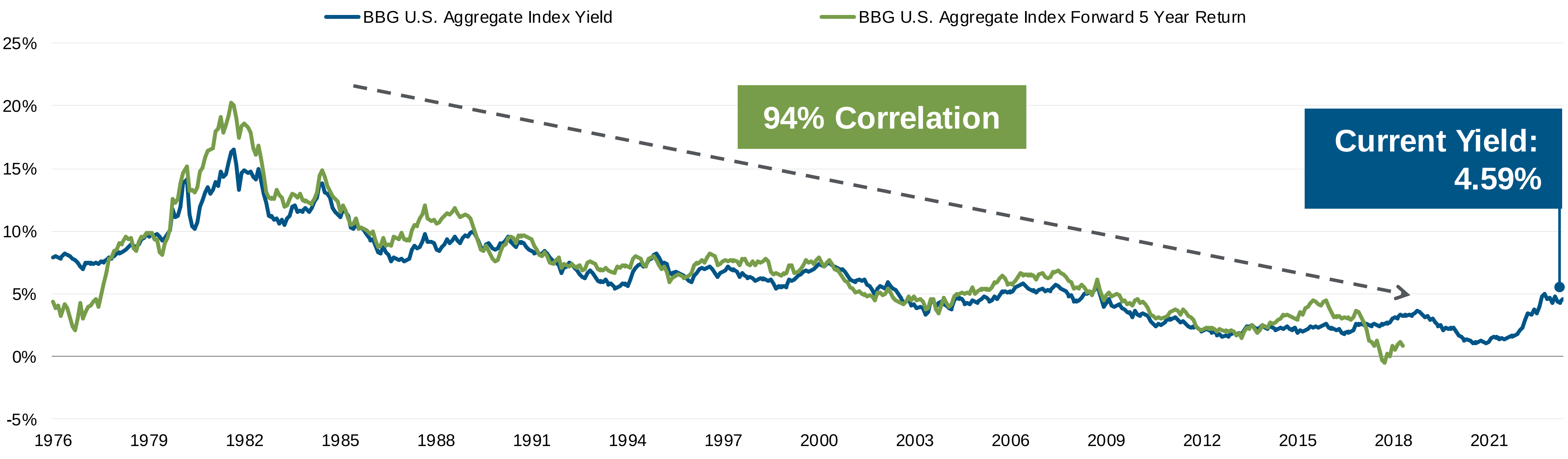


As of 31 May 2023. SOURCE: Bloomberg, PIMCO. **Past performance is not a guarantee or a reliable indicator of future results.**
Index proxies for asset classes displayed are as follows: Agency MBS: Bloomberg MBS Fixed Rate Index (incept: 1/30/76) U.S. Core: Bloomberg U.S. Aggregate (incept: 1/30/76), HY Credit: ICE BofA US HY BB-B Rated Index (incept: 12/31/96), EM: JPMorgan EMBI Global USD Hedged (incept: 12/31/93), US IG Credit: Bloomberg US Credit Index (incept: 1/31/73). S&P is the S&P 500 Index and yield displayed is dividend yield.
Refer to Appendix for additional index, investment strategy and risk information.

Benefit: Income

Long-term returns follow starting yields.

Yield vs. 5 year forward return



Past performance is not a guarantee nor a reliable indicator of future performance. Chart is provided for illustrative purposes and is not indicative of the past or future performance of any PIMCO product.
As of 31 May 2023; Source: Bloomberg, Barclays, PIMCO. Yield and return are for the Bloomberg U.S. Aggregate Bond Index. It is not possible to invest directly in an unmanaged index.
Refer to Appendix for additional correlation, index, investment strategy, outlook and risk information.

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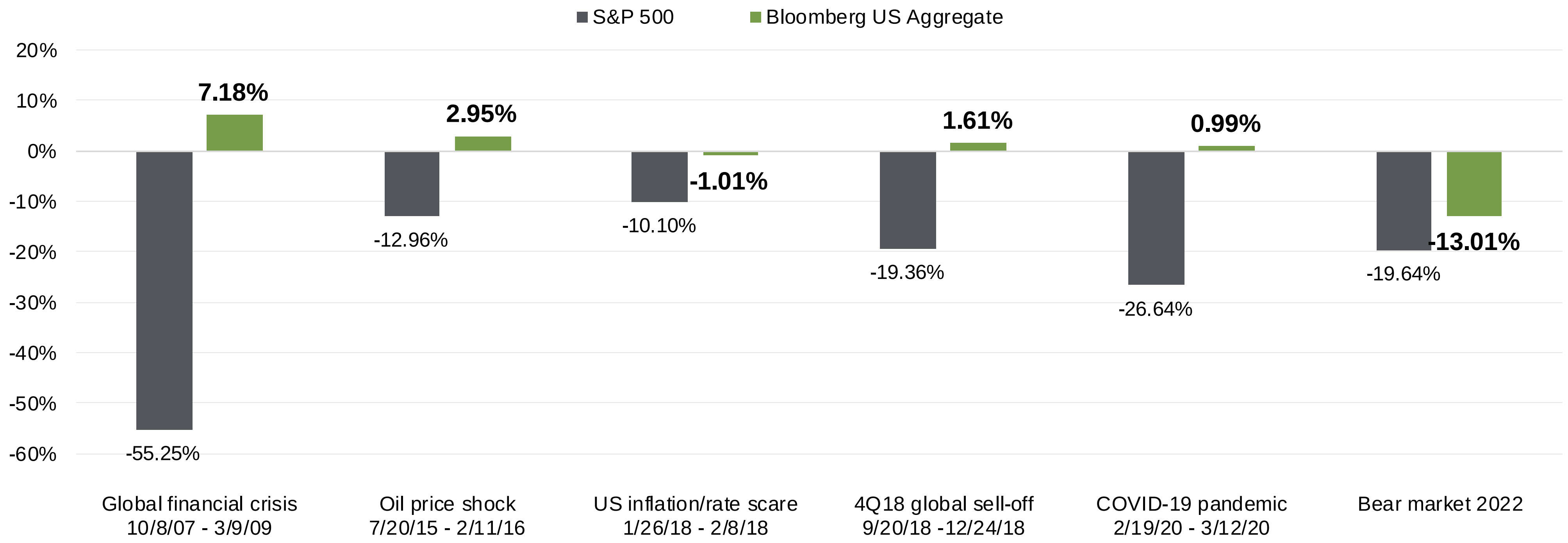
Benefit: Preservation

High quality bonds may help preserve wealth.

Historical equity drawdowns



During periods of stock volatility, bonds are your friends

As of 31 December 2022
SOURCE: PIMCO, Morningstar
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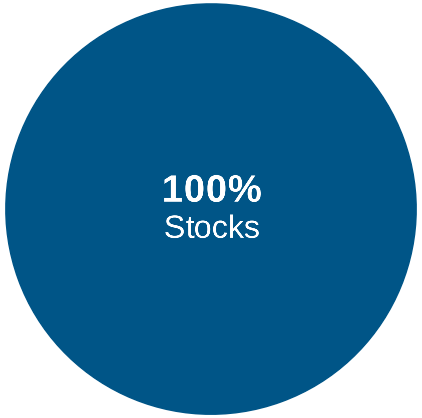
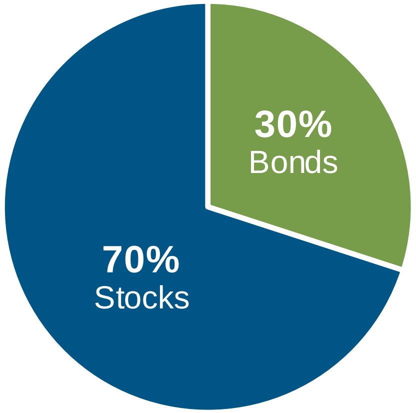
Refer to Appendix for additional index, investment strategy, outlook and risk information.

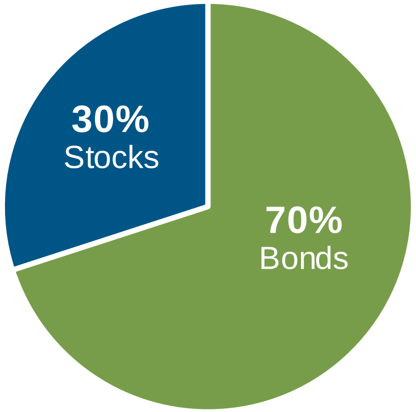
Benefit: Preservation



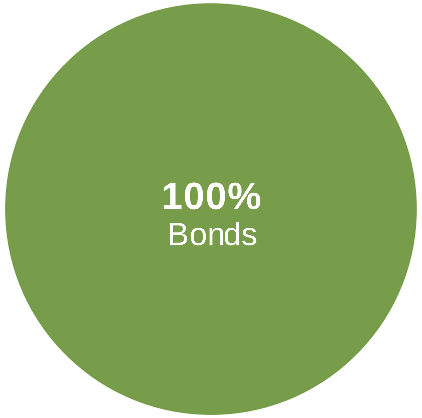
Avg annual return	11.92%
Best year (1933)	52.89%
Worst year (1931)	-43.86%
Years with a loss	26



Avg annual return	9.89%
Best year (1954)	37.63%
Worst year (1931)	-34.47%
Years with a loss	24



Avg annual return	7.18%
Best year (1982)	33.96%
Worst year (1931)	-21.96%
Years with a loss	15



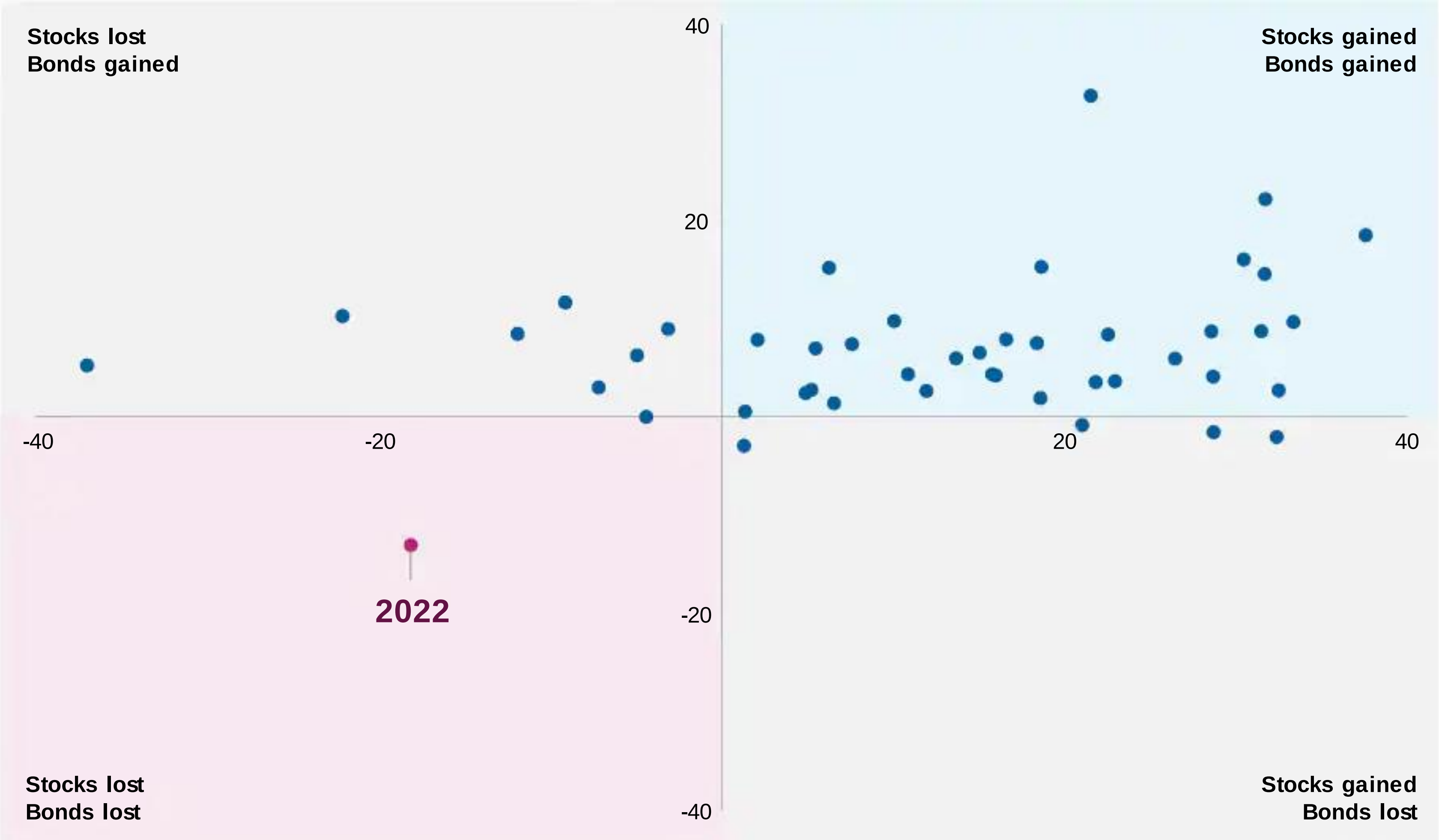
Avg annual return	5.15%
Best year (1982)	39.31%
Worst year (2022)	-16.97%
Years with a loss	20

As of 31 December 2022
Source: Global Financial Data; Equity : US Large Company Stocks (S&P 500), Fixed Income: US 10-year Treasury Bonds
For illustrative purposes only.
Past performance is not a guarantee or a reliable indicator of future results. Not indicative of the past or future performance of any PIMCO product.
Refer to Appendix for additional index, investment strategy and risk information.

Benefit: Equity Diversification

Bonds have historically performed well during periods when stocks did not.

Annual returns for stocks and bonds since 1977 (%)



Sources: Capital Group, Bloomberg Index Services Ltd., Standard & Poor's. Each dot represents an annual stock and bond market return from 1977 through 2022. Stock returns represented by the S&P 500 Index. Bond returns represented by the Bloomberg U.S. Aggregate Bond Index.
Past performance is not a guarantee or a reliable indicator of future results. Refer to Appendix for additional index, investment strategy and risk information.

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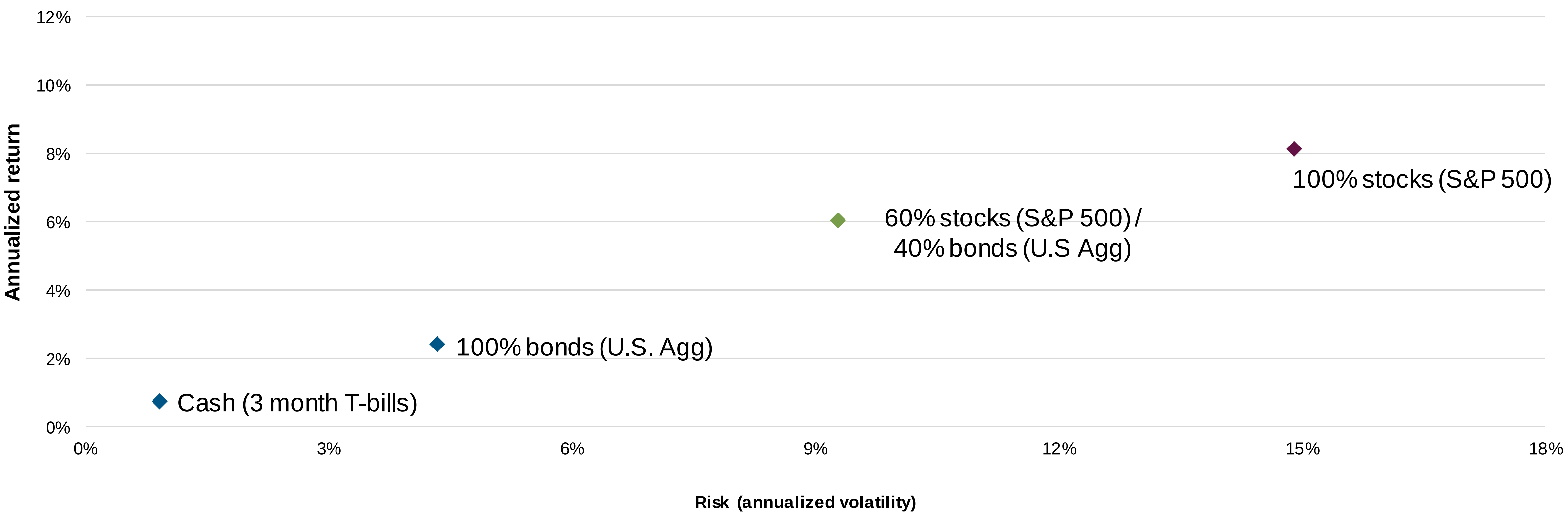
Benefit: Equity Diversification

20 Year Risk vs. Return



For illustrative purposes only.

Past performance is not a guarantee or a reliable indicator of future results.

Source: PIMCO, Bloomberg as of 31 May 2023. The 60-40 portfolio reflects a 60% allocation to stocks and 40% to bonds. The 60+cash portfolio represents the same 60% allocation to stocks with 40% to cash. All portfolios are re-balanced monthly. Stocks are represented by the S&P 500 Index, bonds by the Bloomberg U.S. Aggregate Index, and cash by the ICE BofAML U.S. 3-Month Treasury Bill Index.

Refer to Appendix for additional index, investment strategy and risk information.

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Investing in bonds

Investing in bonds

There's a variety of structures to consider.

Certificates of deposit (CDs)

- FDIC insured
- Less flexibility

Individual bonds

- Select issuer and maturity
- Lack of diversification
- Transaction costs

Bond mutual funds

- Broad market access
- Daily liquidity
- Manager selection

Bond exchange-traded funds (ETFs)

- Broad market access
- Intra-day liquidity
- Possible tax efficiency

Separately managed accounts (SMAs)

- Professional management
- Ability to generate tax managed benefits
- Manager selection

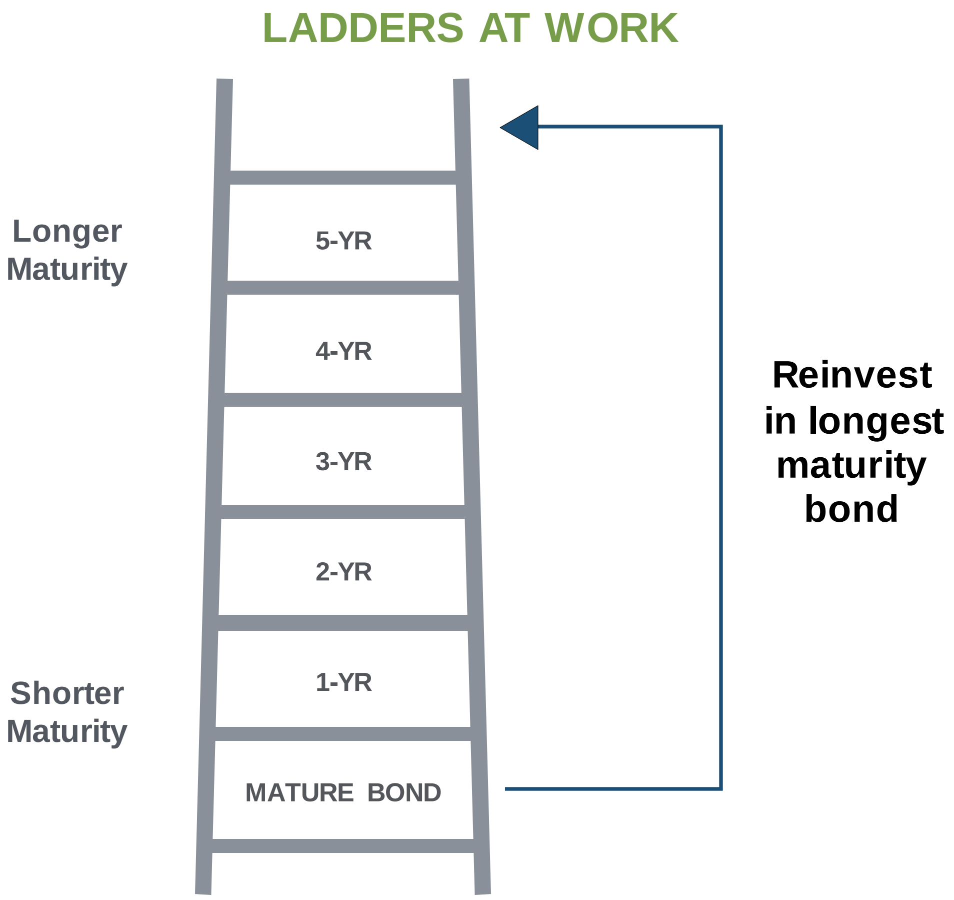
Source: PIMCO; Consolidated Appropriations Act, 2023
PIMCO does not provide legal or tax advice. Please consult your tax and/or legal counsel for specific tax or legal questions and concerns.

Bond strategies

Buy and Hold

Source: PIMCO
For illustrative purposes only.

Ladder



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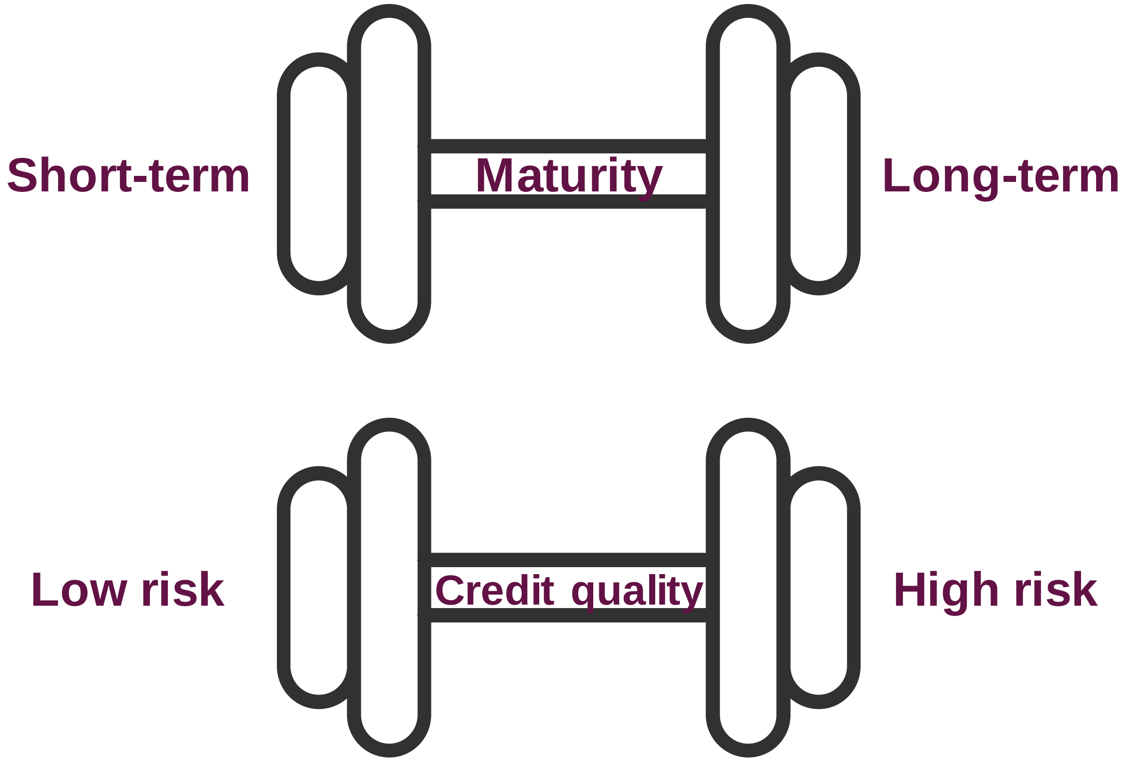
Bond strategies

Barbell



Total return

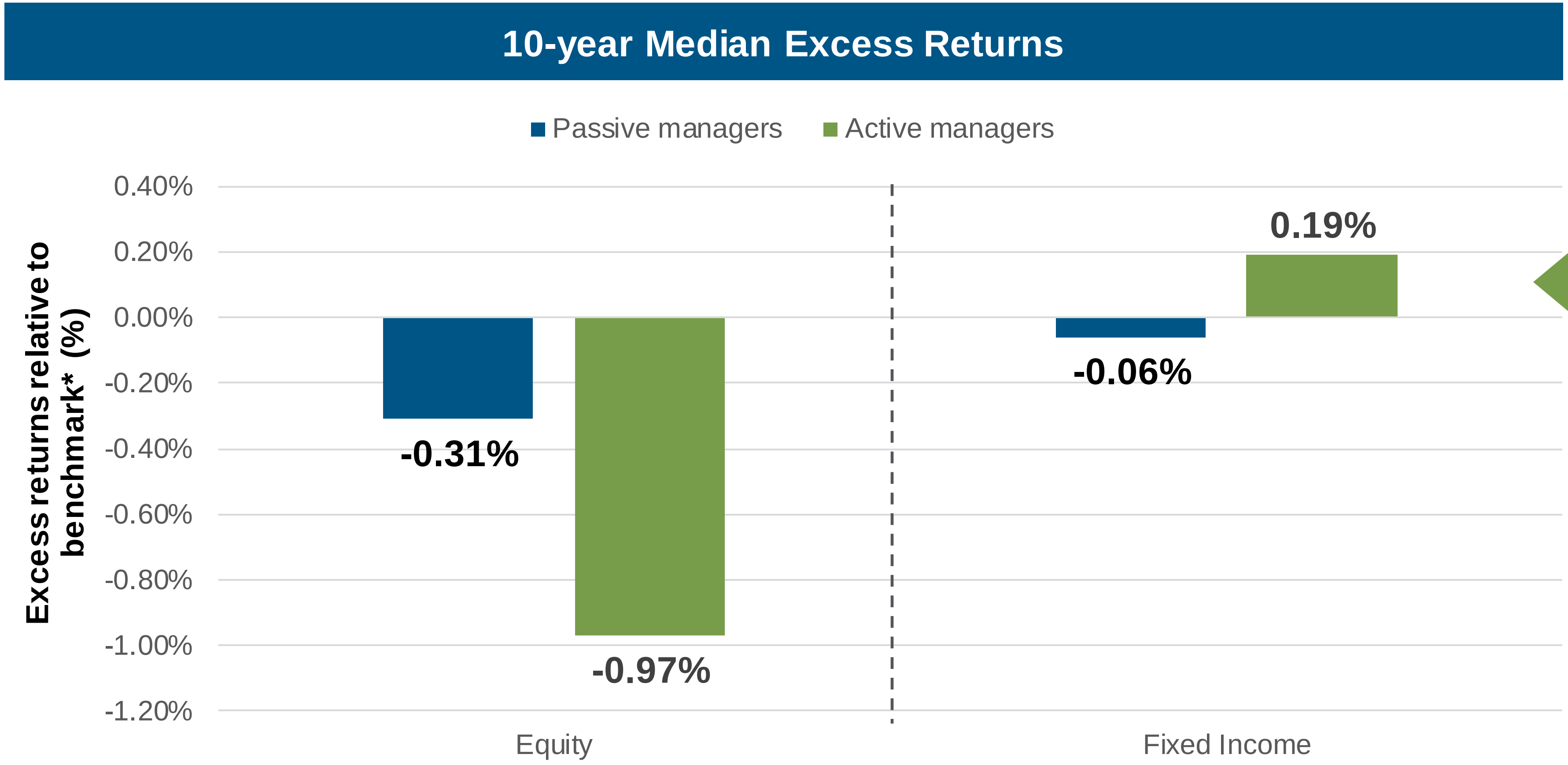
5% + 3% = 8%

Coupon income (yield) + Change in Price = Total return

Source: PIMCO
For illustrative purposes only.

Active management in bonds

Active management in bonds



There's greater opportunity for outperformance in fixed income.

Past performance is not a guarantee or a reliable indicator of future results. Chart is provided for illustrative purposes and is not indicative of the past or future performance of any PIMCO product.
As of 31 March 2023; Source: Morningstar
Based on Morningstar U.S. Fund categories (Institutional shares only). "Fixed Income" combines the Morningstar U.S. Fund Intermediate Core and Core-Plus categories. "Equities" is based on the Morningstar U.S. Fund Large Cap Blend Category.
*The Benchmark for - Fixed Income: Bloomberg U.S. Aggregate Index; Equity: S&P 500 Index
This data does not take into account all fixed income and equity categories tracked by Morningstar and does not represent all outcomes.
Refer to Appendix for additional index, Morningstar and risk information.

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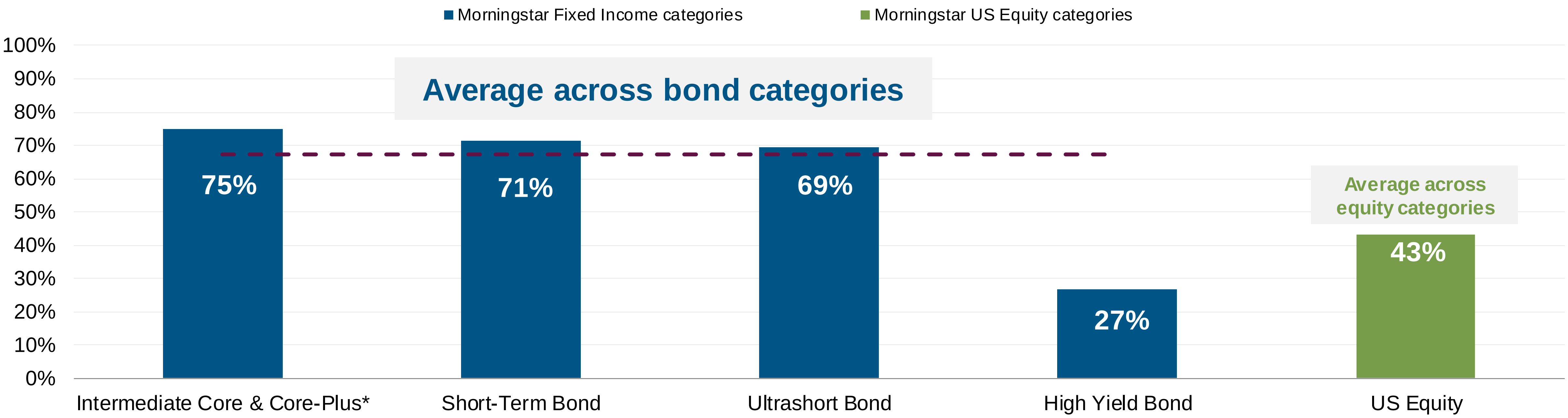
Active management in bonds

Active bond management has worked well across a range of categories.

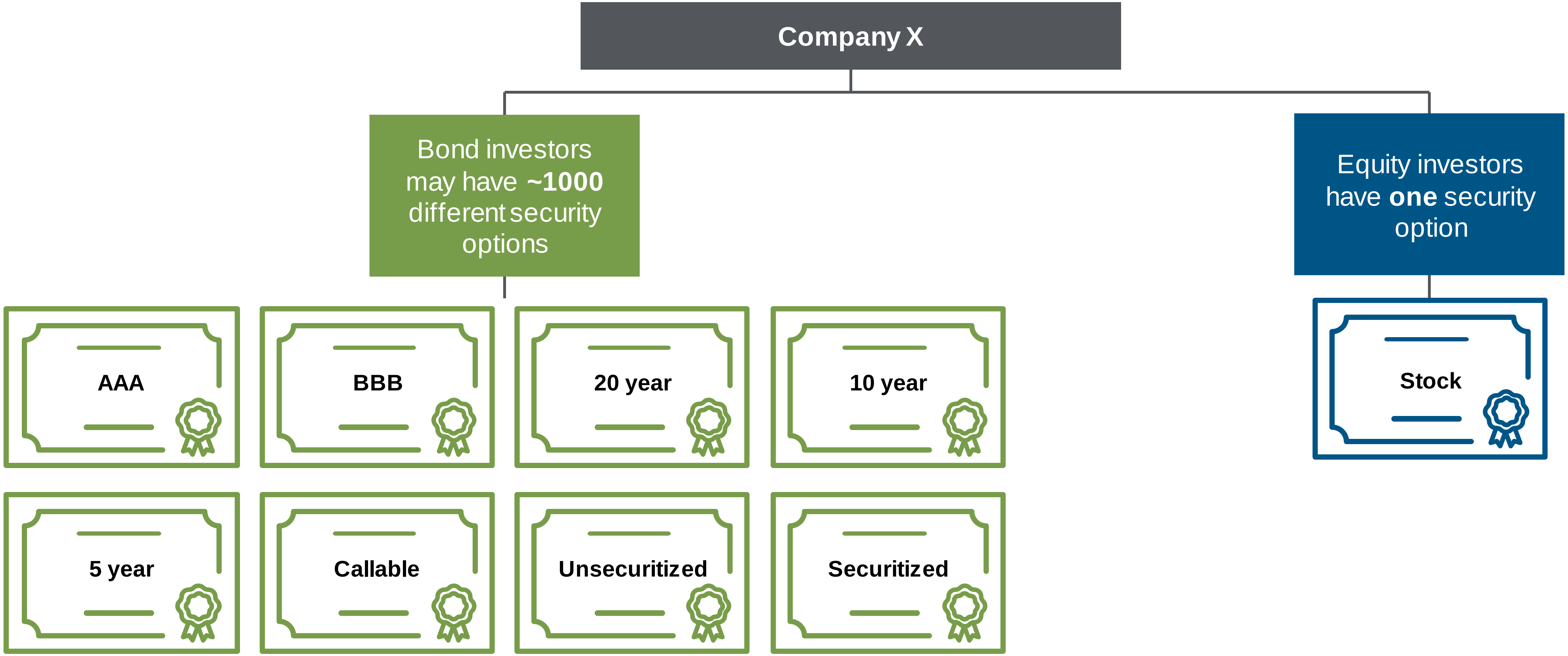
Percentage of active funds within each category that outperformed their benchmark (10-year)



As of 31 March 2023; Source: Morningstar Direct.
Past performance is not a guarantee nor a reliable indicator of future performance. Chart is provided for illustrative purposes and is not indicative of the past or future performance of any PIMCO product.
Chart shows largest five Morningstar fixed income categories arranged by AUM, in descending order. Equity data includes all Morningstar Equity categories in the Morningstar US Equity Category Group. These categories include Mid-Cap Growth, Small value, Mid-Cap Value, Small Blend, Small Growth, Mid-Cap Blend, Large Growth, Large Value and Large Blend.
Based on Morningstar U.S. Fund categories (Institutional shares only and net of fees).
* Combines the Morningstar U.S. Fund Intermediate Core and Core-Plus categories
Refer to Appendix for additional index, Morningstar and risk information.

Investing in bonds can be more challenging than stocks

Complexity in a company's debt securities can create opportunities for outperformance.



Source: PIMCO.
For illustrative purposes only.

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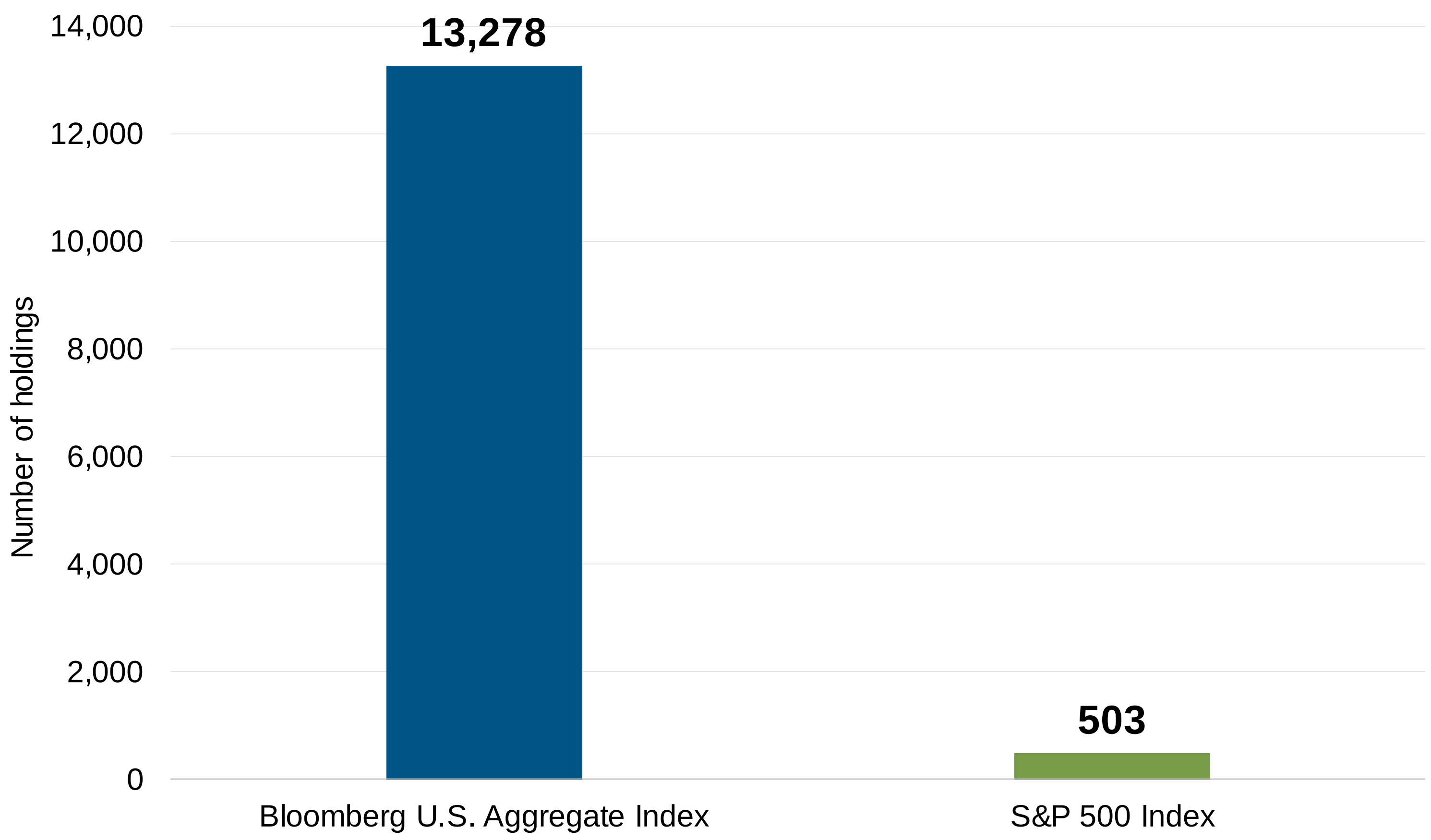
Opportunities for active management

Fixed income index structure is radically different than equities.



	Stocks	Bonds
Standardization	High	Various
Life	Perpetual	Finite
New issuance	Infrequent	Frequent
Trading	On exchanges	"Over the counter"

As of 31 March 2023; Source: Bloomberg, provider websites
Refer to Appendix for additional index, investment strategy and risk information.

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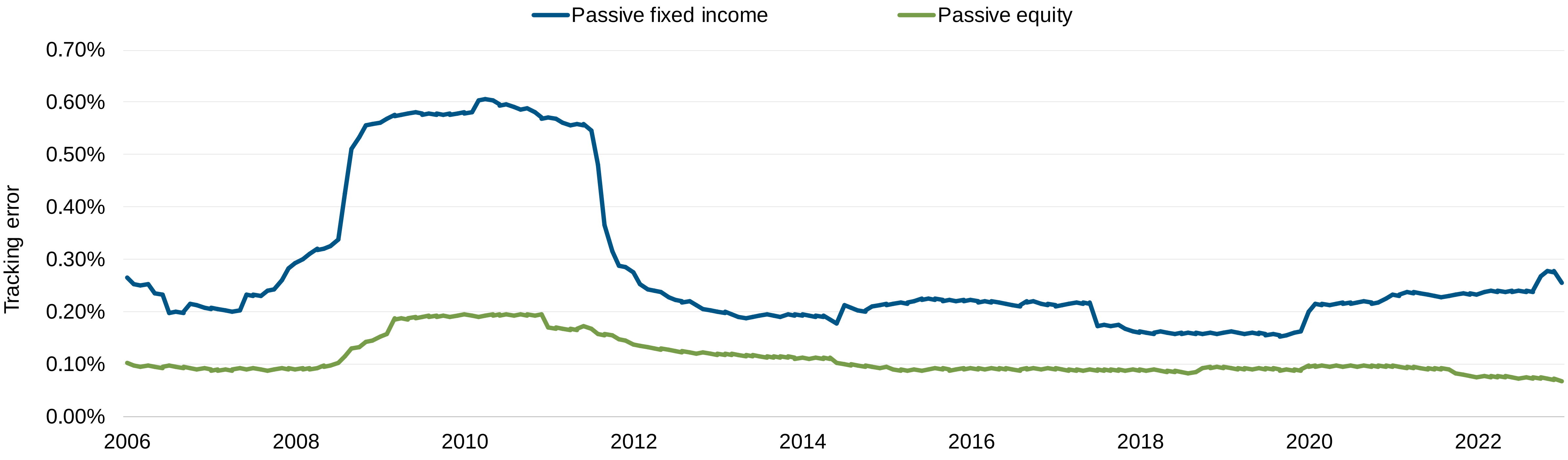
Opportunities for active management

Passive index replication has historically been more difficult for fixed income.

Rolling 3-year tracking error



As of 31 March 2023; Source: Morningstar Direct

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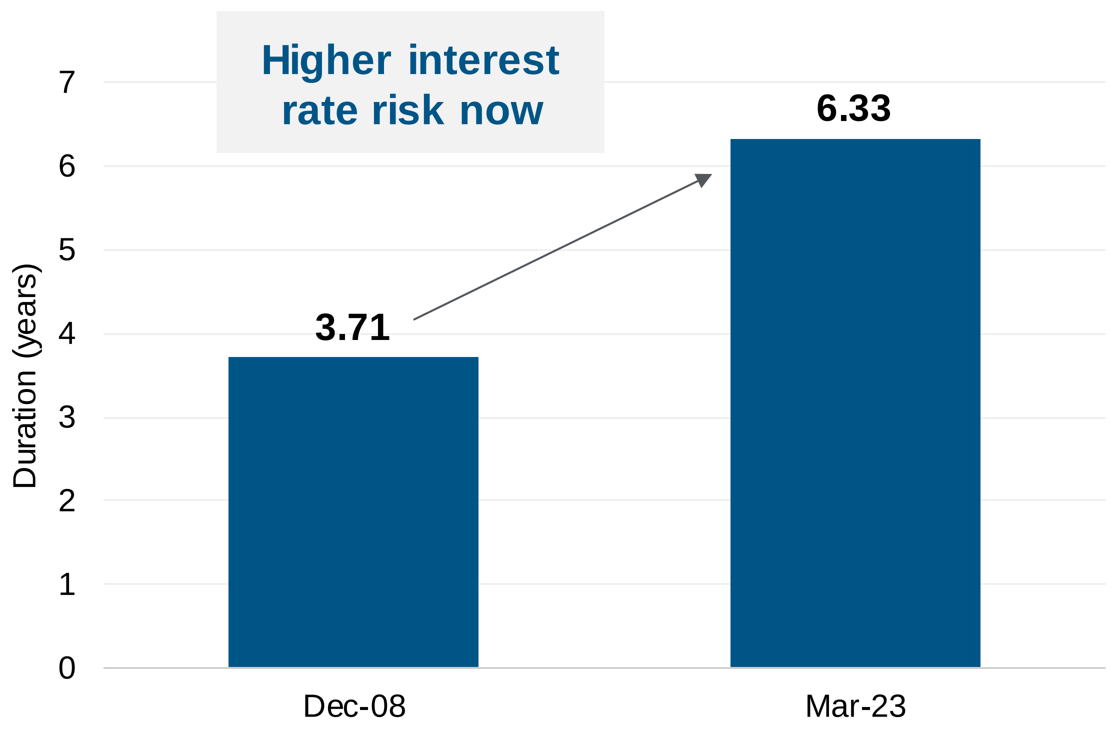
Passive equity includes all passive funds in the US Large Blend category benchmarked to the S&P 500. Passive fixed income includes all passive funds in the Intermediate Core Bond category benchmarked to the Bloomberg U.S. Aggregate index.

Refer to Appendix for additional index, investment strategy and risk information.

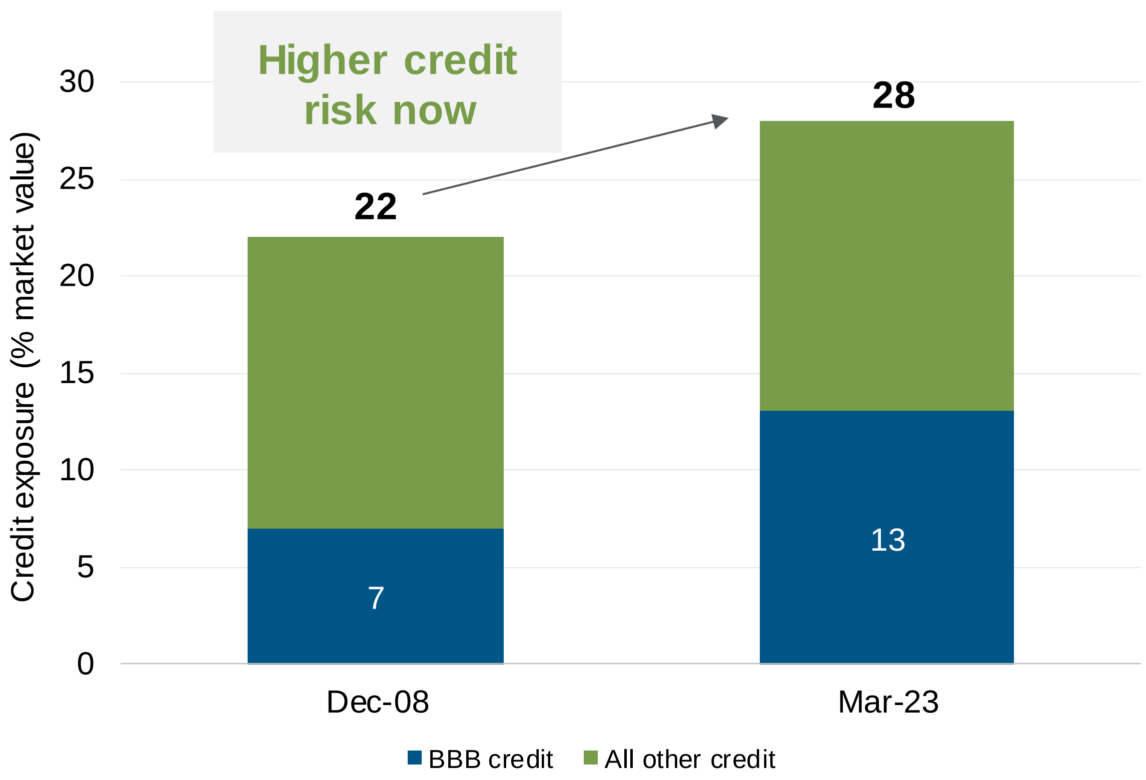
Index construction can present challenges to passive investors

Characteristics of the Bloomberg U.S. Aggregate Bond Index have changed significantly.

Interest Rate Risk (duration)



Credit risk



As of 31 March 2023; Source: Bloomberg.
Refer to Appendix for additional credit quality, index, investment strategy and risk information.

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Selecting a bond manager

Scale and access to resources and markets are important.

Independent Research	In-depth analysis to understand creditworthiness
Resources	Ability to navigate thousands of issuers and negotiate terms
Global Reach	Analysts and portfolio managers around the world uncover unique opportunities across regions
Robust Execution	Specialist teams focus on how to best implement views across capital structure and currency

Source: PIMCO
For illustrative purposes only.

Considerations for individuals

1. What is your primary objective for your fixed income holdings?
2. What experiences have you had as fixed income investor?
3. How much time do you devote to fixed income management?
4. What is your current approach to fixed income investing? How has it served you?
5. What concerns do you have about managing fixed income securities?
6. Which tools do you use to help with credit research, interest rates, yield curve, etc.?

Source: PIMCO

Summary

Appendix

Past performance is not a guarantee or a reliable indicator of future results.

CHART
Performance results for certain charts and graphs may be limited by date ranges specified on those charts and graphs; different time periods may produce different results. Charts are provided for illustrative purposes and are not indicative of the past or future performance of any PIMCO product.

CREDIT QUALITY
The credit quality of a particular security or group of securities does not ensure the stability or safety of an overall portfolio. The quality ratings of individual issues/issuers are provided to indicate the credit-worthiness of such issues/issuer and generally range from AAA, Aaa, or AAA (highest) to D, C, or D (low est) for S&P, Moody's, and Fitch respectively.

MORINGSTAR CATEGORIES
HIGH-YIELD BOND High-yield bond portfolios concentrate on lower-quality bonds, which are riskier than those of higher-quality companies. These portfolios generally offer higher yields than other types of portfolios, but they are also more vulnerable to economic and credit risk. These portfolios primarily invest in U.S. high-income debt securities where at least 65% or more of bond assets are not rated or are rated by a major agency such as Standard & Poor's or Moody's at the level of BB (considered speculative for taxable bonds) and below. **INTERMEDIATE-TERM BOND** Intermediate-term bond portfolios invest primarily in corporate and other investment-grade U.S. fixed-income issues and typically have durations of 3.5 to 6.0 years. These portfolios are less sensitive to interest rates, and therefore less volatile, than portfolios that have longer durations. Morningstar calculates monthly breakpoints using the effective duration of the Morningstar Core Bond Index in determining duration assignment. Intermediate-term is defined as 75% to 125% of the three-year average effective duration of the MCBI. **SHORT-TERM BOND** Short-term bond portfolios invest primarily in corporate and other investment-grade U.S. fixed income issues and typically have durations of 1.0 to 3.5 years. These portfolios are less sensitive to interest rates than portfolios with longer durations. Morningstar calculates monthly breakpoints using the effective duration of the Morningstar Core Bond Index in determining duration assignment. Short-term is defined as 25% to 75% of the three-year average effective duration of the MCBI. **US EQUITY** US Equity portfolios represents the combined performance and average of the nine Morningstar equity categories including large blend, large grow th, large value, mid-cap blend, mid-cap grow th, mid-cap value, small blend, small growth, and small value.

Appendix

INDEX
It is not possible to invest directly in an unmanaged index.

INVESTMENT STRATEGY
There is no guarantee that these investment strategies will work under all market conditions or are appropriate for all investors and each investor should evaluate their ability to invest long-term, especially during periods of downturn in the market.

OUTLOOK
Statements concerning financial market trends or portfolio strategies are based on current market conditions, which will fluctuate. There is no guarantee that these investment strategies will work under all market conditions or are appropriate for all investors and each investor should evaluate their ability to invest for the long term, especially during periods of downturn in the market. Outlook and strategies are subject to change without notice.

RISK
Investing in the **bond** market is subject to risks, including market, interest rate, issuer, credit, inflation risk, and liquidity risk. The value of most bonds and bond strategies are impacted by changes in interest rates. Bonds and bond strategies with longer durations tend to be more sensitive and volatile than those with shorter durations; bond prices generally fall as interest rates rise, and low interest rate environments increase this risk. Reductions in bond counterparty capacity may contribute to decreased market liquidity and increased price volatility. Bond investments may be worth more or less than the original cost when redeemed. **Inflation-linked bonds (ILBs)** issued by a government are fixed income securities whose principal value is periodically adjusted according to the rate of inflation; ILBs decline in value when real interest rates rise. **Treasury Inflation-Protected Securities (TIPS)** are ILBs issued by the U.S. government. **Sovereign** securities are generally backed by the issuing government, obligations of U.S. Government agencies and authorities are supported by varying degrees but are generally not backed by the full faith of the U.S. Government; portfolios that invest in such securities are not guaranteed and will fluctuate in value. Investing in **foreign denominated and/or domiciled securities** may involve heightened risk due to currency fluctuations, and economic and political risks, which may be enhanced in emerging markets. **Commodities** contain heightened risk including market, political, regulatory, and natural conditions, and may not be suitable for all investors. **Mortgage and asset-backed securities** may be sensitive to changes in interest rates, subject to early repayment risk, and their value may fluctuate in response to the market's perception of issuer creditworthiness; while generally supported by some form of government or private guarantee there is no assurance that private guarantors will meet their obligations. **High-yield, lower-rated, securities** involve greater risk than higher-rated securities; portfolios that invest in them may be subject to greater levels of credit and liquidity risk than portfolios that do not. Equities may decline in value due to both real and perceived general market, economic, and industry conditions. **Derivatives and commodity-linked derivatives** may involve certain costs and risks such as liquidity, interest rate, market, credit, management and the risk that a position could not be closed when most advantageous. Commodity-linked derivative instruments may involve additional costs and risks such as changes in commodity index volatility or factors affecting a particular industry or commodity, such as drought, floods, weather, livestock disease, embargoes, tariffs and international economic, political and regulatory developments. Investing in derivatives could lose more than the amount invested. **Diversification** does not ensure against loss.

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Appendix

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Appendix

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