Morgan Stanley

WEALTH MANAGEMENT

PRIMER

Global Investment Office | July 09, 2024

An Introduction to Fixed Income

Steve Edwards, CFA
Senior Investment Strategist

Brad Fulton, CFA
Investment Strategist

Daryl Helsing, CFA
Investment Strategist

Angela P. Degis, CFA
Investment Strategist

Fixed income securities sit at the center of the global economy, serving as the link between borrowers and lenders. One of the most common type of fixed income security is the bond, which features prominently in individual and institutional portfolios, owing to its broad variety and unique benefits, including its unparalleled market depth.

This inaugural primer provides an introduction to fixed income and especially bonds – their investment properties, role in portfolio construction, and risks associated with major fixed income sectors. We intend to explore these asset classes and key market drivers in a series of primers beginning with this one, a "fixed income 101" overview.

Bond Basics

How Do Bonds "Work"?

- Bonds represent debt obligations of specific issuers (borrowers), such as governments or corporations.
- By purchasing bonds, investors effectively become lenders to the associated issuers and expect to receive a stream of defined interest payments plus a balloon principal payment at a predetermined maturity date (see Exhibit 1 for an example).
- A bond's market price is inextricably linked to its market yield. A bond's yield represents the annual rate of return that an investor can expect to earn, assuming that 1) the investor holds the bond to maturity and 2) that the bond's issuer does not default on the obligation to repay the borrowed debt.
- Over any given holding period, a bond's market price (and corresponding yield) can fluctuate, based on changes in short-term borrowing rates, macro growth and inflation, and the issuer's perceived creditworthiness. As such, should a bondholder decide to sell a bond prior to maturity, the realized holding-period return will likely differ from the bond's stated yield at the time of purchase.

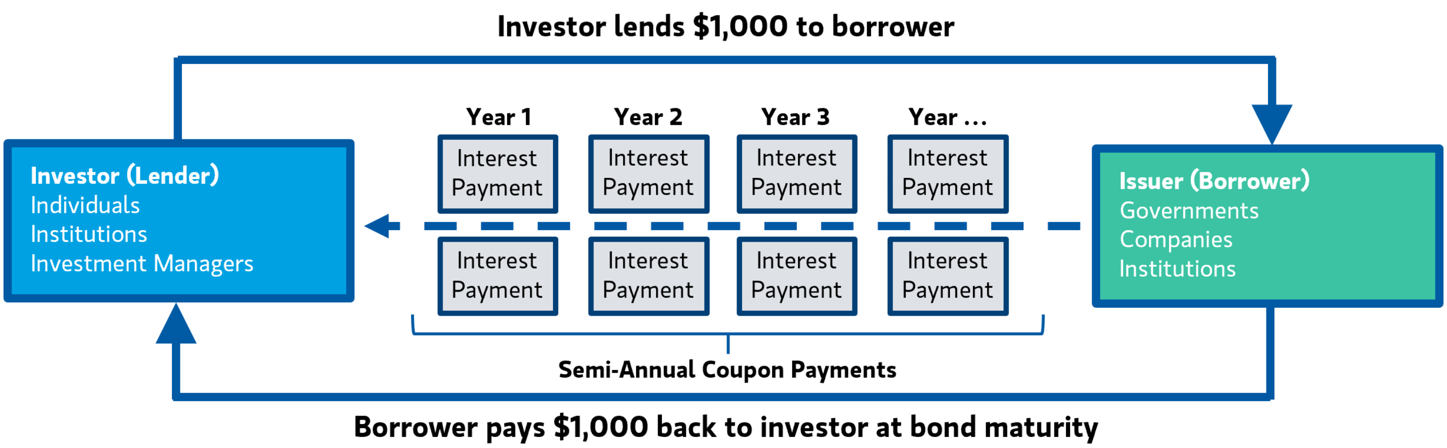
Fixed Income's Role in Portfolio Construction

- Bonds often play a crucial role in investors' portfolios: based on their varying characteristics, fixed income allocations allow investors to satisfy return objectives while taking appropriate risk.
- Bonds offer several benefits within an investor's portfolio, including income, capital preservation, and diversification, among others.
- For individual investors, typical bond portfolios will consist predominantly (60% to 90%) of allocations to **core** asset classes, such as US Treasuries, agency mortgage-backed securities, investment grade corporate bonds, and municipal bonds. Core fixed income asset classes tend to experience relatively lower return volatility and to offer greater portfolio diversification benefits, due to their typically lower correlations to equities.
- Investors usually spread their remaining fixed income exposures among **opportunistic** asset classes, including high yield corporates, leveraged loans, emerging market debt, and preferreds. These asset classes generally offer higher yields and greater total return potential than core asset classes, with the tradeoff of higher volatility, greater downside risk, and lower diversification benefits.

Risks Associated with Fixed Income Investing

- Bond prices or valuations experience volatility primarily because of two key risk characteristics: interest rate risk and credit risk.
- Interest rate risk measures the sensitivity of bond prices to changes in prevailing market yields. While multiple factors influence this degree of sensitivity, a bond's time to maturity serves as the most impactful driver. A bond's price and its yield are inversely related: when the yield rises, the price falls—and vice versa.
- Credit risk varies based on a bond issuer's capacity and willingness to pay coupon and maturity payments in full and on time. Particularly for investment grade corporate bonds and opportunistic fixed income asset classes, bond valuations are sensitive to investors' ongoing assessment of issuers' creditworthiness. That is, the evolving broad-market perception of any issuer's credit quality will influence a bond's yield and price.

Exhibit 1: Bonds' Cash Flows Typically Include Both Ongoing Interest Payments (Coupons) and a Balloon Repayment of Principal at Final Maturity



Source: Morgan Stanley Wealth Management Global Investment Office

How Do Bonds "Work"?

The global fixed income market is composed predominantly of debt obligations, or bonds. A bond represents the debt obligation of a specified entity, called the issuer or borrower, with covenants to make interest and principal payments to bondholders on predetermined future dates. The market's assessment of the present value of a bond's series of cash flows determines its real-time price and yield values.

Issuers typically deliver periodic interest payments, called coupons, based on a bond's stated coupon yield and the par value of debt outstanding. A bond's par or principal value represents the issuer's obligation payable to bondholders in a lump sum at the maturity date. Based on historical conventions, bonds typically feature $1,000 face values at issuance, which later serve as their trading lot size for primary and secondary market transactions. In the period between coupon payments, a bond accrues interest, payable to the bondholder at the next coupon date. Once the issuer has repaid its outstanding principal at maturity, the bond moves to "redeemed" status, with no further coupon payments or interest accruals. Most bonds pay a fixed or level coupon. Many investors find these steady and reliable income streams to be attractive, and this feature gives the broad asset class its name: fixed income.

Between a bond's issuance in the primary market and its redemption, a bond's price will fluctuate based on the interplay of multiple risk factors, with the most impactful ones listed in Exhibit 5. On an ongoing basis, broker-dealers provide bid and offer indications for bonds trading in the secondary market, which allow investors to "mark-to-market" their bonds' values. Investors may expect some degree of interim price volatility for most bonds, driven by changes in 1) prevailing levels for reference interest rates like those for US Treasuries and 2) issuer creditworthiness.

The Relationship Between Bond Prices and Yields

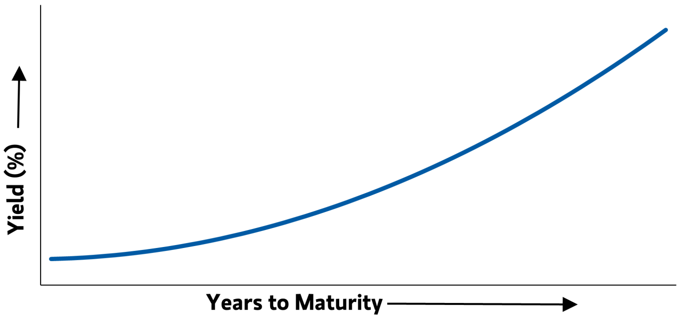
A bond's market yield determines its price, typically measured with a starting value of 100. One common yield metric, yield to maturity, captures the annual rate of return that an investor may expect to earn *if* holding the bond to maturity. A bond’s yield to maturity represents an internal rate of return, as it accounts for the present value of a bond’s future cash flows, including coupon and principal payments. The realized holding-period return on a bond may diverge from the bond's quoted yield at the time of purchase, however, if the investor sells the bond in the secondary market prior to maturity. Those bonds with coupon yields equal to the yield to maturity trade at 100. When a bond's yields to maturity rate falls below (or rises above) its coupon yield, it will trade at a premium (or a discount) to its par value, leading to a higher (or lower) price than 100, as indicated in Exhibit 2.

Investors typically consider the relative value of fixed income securities, particularly the yields for a single issuer's or multiple related issuers' bonds across a range of maturities, such as the outstanding universe of US Treasury coupon securities. The yield curve, illustrated in Exhibit 3, provides a graphical representation of the relationship between yield and maturity. Holding other factors constant, bonds with longer maturities will tend to offer higher yields than those with shorter maturities, leading to a "normal" upward slope for the yield curve. Bond investors generally require greater yield or return compensation to assume the increased risk of longer-maturity debt, owing to their increased default and interest rate risk (further discussed in Exhibit 5). The shape of the US Treasury yield curve has historically served as a valuable macroeconomic indicator, providing insights into the perceived restrictiveness of monetary policy and market expectations for future economic growth and inflation.

Exhibit 2: Bond Yields and Prices Are Inversely Related

Source: Morgan Stanley Wealth Management Global Investment Office

Exhibit 3: This Yield Curve Visualizes the "Normal" Relationship Between Yields and Time to Maturity



Source: Morgan Stanley Wealth Management Global Investment Office

Fixed Income's Role in Multi-Asset Portfolio Construction

To meet their unique goals, many investors build multi-asset portfolios to take advantage of diversification and asset classes' shifting characteristics across the business cycle. Fixed income typically plays a critical role within such multi-asset portfolios, owing to the asset class's unique characteristics, discussed below. While this section contemplates holding individual bonds, investors often allocate to fixed income through separate accounts or commingled vehicles like exchange-traded or mutual funds, with an asset manager overseeing a portfolio of multiple bonds.

Potential Total Return

As of any given trading date, a bond's quoted yield communicates the prospective annual total return through the bond's maturity date, which carries particular significance for buy-and-hold investors. More tactical, total return-driven investors may look to hold bonds over relatively shorter periods, without intending to hold them until maturity. These investors often seek potential price appreciation as a supplement to bond's income returns over a given holding period. These investors may consider macroeconomic, fundamental, or technical factors to determine their fixed income positioning.

Income

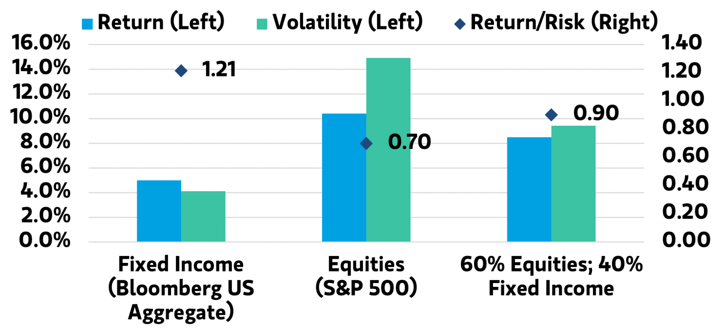
Bonds afford investors the opportunity to receive regular cash flows into their portfolios. As such, investors can employ bonds to help meet their income needs and address anticipated future liabilities. For this reason, appropriately constructed fixed income exposures can play an integral role in helping investors successfully meet their investment objectives. In some cases, the coupon payments from a bond may be tax-advantaged to some degree. Most notably, investors' coupon income from most municipal bonds issued by state and local governments is exempt from federal taxation. Meanwhile, coupon income from US Treasuries is exempt from state taxation.

Capital Preservation

Given the issuers' legal obligation to repay bonds' principal value to bondholders at maturity, bonds offer investors the opportunity to earn coupon yield, while maintaining a relatively steady market value over time. Historically, "higher-quality" issuers, or those assigned with relatively higher, investment grade credit ratings, have demonstrated a strong track record of making coupon and principal payments on schedule. Furthermore, **core** fixed income usually experience lower volatility and smaller performance drawdowns compared with riskier assets such as equities.

As with all investments, fixed income holdings are subject to the tendency of inflation to erode purchasing power over time. Since most bonds' coupon yields are nominal and fixed, rising inflation can cause bond prices to decline.

Exhibit 4: Due to Their Diversifying Characteristics, Bonds Have Historically Improved Multi-Asset Portfolios' Risk-Adjusted Performance



Source: Bloomberg, Morgan Stanley Wealth Management Global Investment Office, covering the period from January 1, 1990, to May 31, 2024

Diversification

When combined with other asset classes, such as equities and alternatives, fixed income allocations can provide diversification benefits within a multi-asset portfolio, as indicated in Exhibit 4 above. Historically, core fixed income has exhibited correlation values below 1.00 with equities, with certain periods of particular de-correlation for equities and US Treasuries. Building multi-asset portfolios with asset classes that exhibit lower correlations allows investors to effectively reduce their portfolio-level risk. High-quality bonds' diversification benefits have tended to shine during periods of equity market stress. During such episodes, Treasuries and other safe-haven fixed income has tended to benefit from a "flight-to-quality" dynamic in which investors' demand for safer investments increases, in an effort to avoid the larger performance drawdowns experienced in riskier asset classes like equities.

Liquidity

Unlike equities, which are usually traded on exchanges, investors typically buy and sell bonds “over the counter” through dealer trading desks. Due to bond markets' greater fragmentation and the inherent characteristics of each fixed income sector, individual bonds' liquidity—the ability to transact quickly, in size, and close to current quoted levels—varies. Under normal market conditions, investors can generally sell existing positions in investment grade bonds with relative ease. This feature gives investors flexibility in managing and rebalancing their fixed income portfolios.

The Role of Bonds in the Global Economy and Broader Financial Markets

Fixed income securities play an essential role in the global economy (connecting borrowers and lenders) and in investor portfolios (offering potential income and capital appreciation, leading to relatively steady total returns). Governments, corporations, and municipalities issue bonds to raise capital for multiple purposes, including short-term cash flow needs, infrastructure projects, investment opportunities, or funding for corporate acquisitions. Investors often incorporate multiple fixed income asset classes into their portfolios, looking to benefit from their differentiated properties. We discuss several major fixed income asset classes, further summarized in Exhibit 6.

We plan to explore multiple fixed income asset classes' unique characteristics and market structures in additional forthcoming primers.

Government bonds, such as US Treasury securities, help to finance public spending and cover revenue shortfalls from fiscal deficits. Especially in the developed markets, these bonds carry relatively low risk, given the low probability of default for governments—and particularly if issuing in their own currency.

State and local governments issue **municipal bonds** to finance public projects like roads, hospitals, and schools. Municipals often received the label of "tax-exempt," given their coupon payments' exemption from federal taxation. Moreover, coupon income earned from municipal bonds issued within an individual investor's state of residence usually receives a state tax exemption. These potential tax advantages make allocations to municipals appealing for investors in higher income tax brackets.

Companies issue **corporate** bonds to raise capital for day-to-day operations, corporate expansion, and mergers and acquisitions. Corporate bonds typically trade with a yield premium (or spread) to government bonds, reflecting their risk of potential default. These spreads may fluctuate with changes in overall macro conditions or in the issuer's income statement and balance sheet metrics.

Agency mortgage-backed securities represent packaged pools of residential mortgages that meet the underwriting standards of government-sponsored entities like Fannie Mae, Freddie Mac, and Ginnie Mae. These securities have pass-through features, whereby individual homeowners' monthly interest payments and prepayments flow through to their holders.

Exhibit 5: Fixed Income Investors Face Multiple Sources of Risks

Risks	Definition	Which Bonds Have Increased Risk?
Interest Rates	The risk of price fluctuations due to changes in interest rates	Longer-term bonds generally have greater interest rate risk than shorter-term bonds. When interest rates rise, the value of outstanding bonds that pay lower interest coupons typically fall because they become less appealing to investors
Reinvestment	The risk of reinvesting recycled capital in bonds with lower interest rates in the future, due to a general decline in market yields	Reinvestment risk increases for holders of higher-coupon or shorter-maturity bonds
Call or Pre-payment	The risk that a borrower will “retire” a bond before its maturity, leading potentially to an early trigger of reinvestment risk	Many corporate bonds have call or prepayment features that allow borrowers to redeem them prior to the stated maturity date. This risk becomes greater if market interest rates fall, lowering new-issuance borrowing costs
Credit or Default	The risk of borrowers’ defaulting on their payment covenants, which will likely trigger sharp declines in bond prices	This risk typically increases for lower-quality borrowers, such as smaller companies or more indebted sovereigns
Inflation	The risk of loss in purchasing power due to higher inflation levels, which can weigh on bond prices	Since most bonds’ cash flows (coupon and principal repayments) are typically fixed and nominal, increasing inflation erodes their real purchasing power. Periods of high or volatile inflation cause this risk to increase
Liquidity	The risk of loss from the inability to sell a bond in the secondary market without undercutting its price	Opportunistic fixed income, such as high yield, leveraged loans, emerging market debt, and preferreds, typically face greater liquidity risk than core fixed income, including Treasuries, agency mortgage-backed securities, and investment grade corporates
Currency	The risk of loss from fluctuations in foreign exchange rates, particularly for bonds not denominated in US dollars	Currency risk, which also reflects sovereign default risk, increases for countries with more volatile macroeconomic conditions and greater debt-to-GDP ratios

Source: Morgan Stanley Wealth Management Global Investment Office

Exhibit 6: Taxable Fixed Income Includes Both Core and Opportunistic Asset Classes, With Differentiated Risk-Reward Characteristics

Sector	Description	Credit Quality	Potential Total Return	Income	Capital Preservation	Liquidity	Diversification[1]
Core							
US Treasuries	Highly liquid debt securities issued by the US Treasury, ranging from ultra-short to long-term (30-year) range of maturities	•••	•	•	•••	•••	•••
Agency MBS	Securitized bonds backed by pools of residential mortgages issued and guaranteed by US government agencies	•••	•	•	•••	••	•••
Investment Grade Corporates	Bonds issued by corporations with higher credit ratings (BBB or higher), indicating a lower level of expected default risk	••	••	••	••	••	••
Opportunistic							
Treasury Inflation-Protected Securities (TIPS)	US Treasury securities that receive inflation-indexed coupon and principal cash flows	•••	•	•	•••	••	••
Emerging Markets	Bonds issued by foreign governments with developing economies and corporations domiciled there, denominated in both the US dollar or foreign currencies	••	•••	•••	•	•	•
Preferreds	Hybrid securities issued by corporations, predominantly banks, which possess characteristics of both equities and fixed income and generally offer higher yields to compensate for the embedded capital subordination risk	••	•••	•••	•	•	•
High Yield Corporates	Bonds issued by corporations with lower credit ratings (BB or lower), indicating a greater vulnerability to potential default risk	•	•••	•••	•	•	•
Leveraged Loans	Corporate borrowings secured by issuer cash flows and assets, which typically deliver variable-rate coupon payments	•	•••	•••	•	•	•

[1]Diversification refers to the sector's potential diversification benefits when including a multi-asset portfolio that includes equities. In the table, "•••" means high; "••" means medium; and "•" means low.
Source: Morgan Stanley Wealth Management Global Investment Office

Disclosure Section

Glossary of Terms

Correlation This is a statistical measure of how two securities move in relation to each other. This measure is often converted into what is known as correlation coefficient, which ranges between -1 and +1. Perfect positive correlation (a correlation coefficient of +1) implies that as one security moves, either up or down, the other security will move in lockstep, in the same direction. Alternatively, perfect negative correlation means that if one security moves in either direction the security that is perfectly negatively correlated will move in the opposite direction. If the correlation is 0, the movements of the securities are said to have no correlation; they are completely random. A correlation greater than 0.8 is generally described as strong, whereas a correlation less than 0.5 is generally described as weak.

Illiquidity premium is the extra yield investors expect to earn for giving up control to liquidate their capital for a certain period of time.

Internal rate of return (IRR) is the interest rate at which the net present value of all the cash flows (both positive and negative) from a project or investment equal zero. Internal rate of return is used to evaluate the attractiveness of a project or investment.

Volatility - Projected annualized standard deviation, based on the model and portfolio holdings. Commonly, the higher the volatility is, the riskier the security or portfolio.

Yield-to-maturity (YTM) is the rate of return that will be earned if the bond is held until it reaches its maturity date.

Important Disclosures

For index, indicator and survey definitions referenced in this report please visit the following:
https://www.morganstanley.com/wealth-investmentsolutions/wmir-definitions

Risk Considerations

Equity securities may fluctuate in response to news on companies, industries, market conditions and general economic environment.

Investing in foreign markets entails risks not typically associated with domestic markets, such as currency fluctuations and controls, restrictions on foreign investments, less governmental supervision and regulation, and the potential for political instability. These risks may be magnified in countries with emerging markets and frontier markets, since these countries may have relatively unstable governments and less established markets and economies.

Investing in currency involves additional special risks such as credit, interest rate fluctuations, derivative investment risk, and domestic and foreign inflation rates, which can be volatile and may be less liquid than other securities and more sensitive to the effect of varied economic conditions. In addition, international investing entails greater risk, as well as greater potential rewards compared to U.S. investing. These risks include political and economic uncertainties of foreign countries as well as the risk of currency fluctuations. These risks are magnified in countries with emerging markets, since these countries may have relatively unstable governments and less established markets and economies. Bonds are subject to interest rate risk. When interest rates rise, bond prices fall; generally the longer a bond's maturity, the more sensitive it is to this risk. Bonds may also be subject to call risk, which is the risk that the issuer will redeem the debt at its option, fully or partially, before the scheduled maturity date. The market value of debt instruments may fluctuate, and proceeds from sales prior to maturity may be more or less than the amount originally invested or the maturity value due to changes in market conditions or changes in the credit quality of the issuer. Bonds are subject to the credit risk of the issuer. This is the risk that the issuer might be unable to make interest and/or principal payments on a timely basis.

Bonds are also subject to reinvestment risk, which is the risk that principal and/or interest payments from a given investment may be reinvested at a lower interest rate.

High yield bonds (bonds rated below investment grade) may have speculative characteristics and present significant risks beyond those of other securities, including greater credit risk, price volatility, and limited liquidity in the secondary market. High yield bonds should comprise only a limited portion of a balanced portfolio.

Interest on municipal bonds is generally exempt from federal income tax; however, some bonds may be subject to the alternative minimum tax (AMT). Also, municipal bonds acquired in the secondary market at a discount may be subject to the market discount tax provisions, and therefore could give rise to taxable income. Typically, state tax-exemption applies if securities are issued within one's state of residence and, if applicable, local tax-exemption applies if securities are issued within one's city of residence. The tax-exempt status of municipal securities may be changed by legislative process, which could affect their value and marketability.

A taxable equivalent yield is only one of many factors that should be considered when making an investment decision. Morgan Stanley Wealth Management and its Financial Advisors do not offer tax advice; investors should consult their tax advisors before making any tax-related investment decisions.

Treasury Inflation Protection Securities' (TIPS) coupon payments and underlying principal are automatically increased to compensate for inflation by tracking the consumer price index (CPI). While the real rate of return is guaranteed, TIPS tend to offer a low return. Because the return of TIPS is linked to inflation, TIPS may significantly underperform versus conventional U.S. Treasuries in times of low inflation.

The majority of $25 and $1000 par **preferred securities** are "callable" meaning that the issuer may retire the securities at specific prices and dates prior to maturity. Interest/dividend payments on certain preferred issues may be deferred by the issuer for periods of up to 5 to 10 years, depending on the particular issue. The investor would still have income tax liability even though payments would not have been received. Price quoted is per $25 or $1,000 share, unless otherwise specified. Current yield is calculated by multiplying the coupon by par value divided by the market price.

Some $25 or $1000 par **preferred securities** are QDI (Qualified Dividend Income) eligible. Information on QDI eligibility is obtained from third party sources. The dividend income on QDI eligible preferreds qualifies for a reduced tax rate. Many traditional 'dividend paying' perpetual preferred securities (traditional preferreds with no maturity date) are QDI eligible. In order to qualify for the preferential tax treatment all qualifying preferred securities must be held by investors for a minimum period – 91 days during a 180-day window period, beginning 90 days before the ex-dividend date.

The market value of **convertible bonds** and the underlying common stock(s) will fluctuate and after purchase may be worth more or less than original cost. If sold prior to maturity, investors may receive more or less than their original purchase price or maturity value, depending on market conditions. Callable bonds may be redeemed by the issuer prior to maturity. Additional call features may exist that could affect yield.

Floating-rate securities The initial interest rate on a floating-rate security may be lower than that of a fixed-rate security of the same maturity because investors expect to receive additional income due to future increases in the floating security's underlying reference rate. The reference rate could be an index or an interest rate. However, there can be no assurance that the reference rate will increase. Some floating-rate securities may be subject to call risk.

Ultrashort-term fixed income asset class is comprised of fixed income securities with high quality, very short maturities. They are therefore subject to the risks associated with debt securities such as credit and interest rate risk.
Yields are subject to change with economic conditions. Yield is only one factor that should be considered when making an investment decision.

Duration, the most commonly used measure of bond risk, quantifies the effect of changes in interest rates on the price of a bond or bond portfolio. The longer the duration, the more sensitive the bond or portfolio would be to changes in interest rates. Generally, if interest rates rise, bond prices fall and vice versa. Longer-term bonds carry a longer or higher duration than shorter-term bonds; as such, they would be affected by changing interest rates for a greater period of time if interest rates were to increase. Consequently, the price of a long-term bond would drop significantly as compared to the price of a short-term bond.

Credit ratings are subject to change.

An investment in an **exchange-traded fund** involves risks similar to those of investing in a broadly based portfolio of equity securities traded on an exchange in the relevant securities market, such as market fluctuations caused by such factors as economic and political developments, changes in interest rates and perceived trends in stock and bond prices. Investing in an international ETF also involves certain risks and considerations not typically associated with investing in an ETF that invests in the securities of U.S. issues, such as political, currency, economic and market risks. These risks are magnified in countries with emerging markets, since these countries may have relatively unstable governments and less established markets and economics. ETFs investing in physical commodities and commodity or currency futures have special tax considerations. Physical commodities may be treated as collectibles subject to a maximum 28% long-term capital gains rates, while futures are marked-to-market and may be subject to a blended 60% long- and 40% short-term capital gains tax rate. Rolling futures positions may create taxable events. For specifics and a greater explanation of possible risks with ETFs¸ along with the ETF's investment objectives, charges and expenses, please consult a copy of the ETF's prospectus. Investing in sectors may be more volatile than diversifying across many industries. The investment return and principal value of ETF investments will fluctuate, so an investor's ETF shares (Creation Units), if or when sold, may be worth more or less than the original cost. ETFs are redeemable only in Creation Unit size through an Authorized Participant and are not individually redeemable from an ETF.

Please consider the investment objectives, risks, charges and expenses of the fund(s) carefully before investing. The prospectus contains this and other information about the fund(s). To obtain a prospectus, contact your financial advisor. Please read the prospectus carefully before investing.

Principal is returned on a monthly basis over the life of a **mortgage-backed security**. Principal prepayment can significantly affect the monthly income stream and the maturity of any type of MBS, including standard MBS, CMOs and Lottery Bonds. Yields and average lives are estimated based on prepayment assumptions and are subject to change based on actual prepayment of the mortgages in the underlying pools. The level of predictability of an MBS/CMO's average life, and its market price, depends on the type of MBS/CMO class purchased and interest rate movements. In general, as interest rates fall, prepayment speeds are likely to increase, thus shortening the MBS/CMO's average life and likely causing its market price to rise. Conversely, as interest rates rise, prepayment speeds are likely to decrease, thus lengthening average life and likely causing the MBS/CMO's market price to fall. Some MBS/CMOs may have "original issue discount" (OID). OID occurs if the MBS/CMO's original issue price is below its stated redemption price at maturity, and results in "imputed interest" that must be reported annually for tax purposes, resulting in a tax liability even though interest was not received. Investors are urged to consult their tax advisors for more information.

Asset-backed securities generally decrease in value as a result of interest rate increases, but may benefit less than other fixed-income securities from declining interest rates, principally because of prepayments.

Environmental, Social and Governance ("ESG") investments in a portfolio may experience performance that is lower or higher than a portfolio not employing such practices. Portfolios with ESG restrictions and strategies as well as ESG investments may not be able to take advantage of the same opportunities or market trends as portfolios where ESG criteria is not applied. There are inconsistent ESG definitions and criteria within the industry, as well as multiple ESG ratings providers that provide ESG ratings of the same subject companies and/or securities that vary among the providers. Certain issuers of investments may have differing and inconsistent views concerning ESG criteria where the ESG claims made in offering documents or other literature may overstate ESG impact. ESG designations are as of the date of this material, and no assurance is provided that the underlying assets have maintained or will maintain and such designation or any stated ESG compliance. As a result, it is difficult to compare ESG investment products or to evaluate an ESG investment product in comparison to one that does not focus on ESG. Investors should also independently consider whether the ESG investment product meets their own ESG objectives or criteria. There is no assurance that an ESG investing strategy or techniques employed will be successful. Past performance is not a guarantee or a dependable measure of future results.

Asset allocation and diversification do not assure a profit or protect against loss in declining financial markets.
Because of their narrow focus, sector investments tend to be more volatile than investments that diversify across many sectors and

companies.

Nondiversification: For a portfolio that holds a concentrated or limited number of securities, a decline in the value of these investments would cause the portfolio's overall value to decline to a greater degree than a less concentrated portfolio. Portfolios that invest a large percentage of assets in only one industry sector (or in only a few sectors) are more vulnerable to price fluctuation than those that diversify among a broad range of sectors.

Rebalancing does not protect against a loss in declining financial markets. There may be a potential tax implication with a rebalancing strategy. Investors should consult with their tax advisor before implementing such a strategy.

The **indices** are unmanaged. An investor cannot invest directly in an index. They are shown for illustrative purposes only and do not represent the performance of any specific investment. The indices are not subject to expenses or fees and are often comprised of securities and other investment instruments the liquidity of which is not restricted. A particular investment product may consist of securities significantly different than those in any index referred to herein. Comparing an investment to a particular index may be of limited use.

The **indices** selected by Morgan Stanley Wealth Management to measure performance are representative of broad asset classes. Morgan Stanley Wealth Management retains the right to change representative indices at any time.

Performance of indices may be more or less volatile than any investment product. The risk of loss in value of a specific investment (such as with an investment manager or in a fund) is not the same as the risk of loss in a broad market index. Therefore, the historical returns of an index will not be the same as the historical returns of a particular investment product.

Disclosures

Morgan Stanley Wealth Management is the trade name of Morgan Stanley Smith Barney LLC, a registered broker-dealer in the United States. This material has been prepared for informational purposes only and is not an offer to buy or sell or a solicitation of any offer to buy or sell any security or other financial instrument or to participate in any trading strategy. Past performance is not necessarily a guide to future performance.

The author(s) (if any authors are noted) principally responsible for the preparation of this material receive compensation based upon various factors, including quality and accuracy of their work, firm revenues (including trading and capital markets revenues), client feedback and competitive factors. Morgan Stanley Wealth Management is involved in many businesses that may relate to companies, securities or instruments mentioned in this material.

This material has been prepared for informational purposes only and is not an offer to buy or sell or a solicitation of any offer to buy or sell any security/instrument, or to participate in any trading strategy. Any such offer would be made only after a prospective investor had completed its own independent investigation of the securities, instruments or transactions, and received all information it required to make its own investment decision, including, where applicable, a review of any offering circular or memorandum describing such security or instrument. That information would contain material information not contained herein and to which prospective participants are referred. This material is based on public information as of the specified date, and may be stale thereafter. We have no obligation to tell you when information herein may change. We make no representation or warranty with respect to the accuracy or completeness of this material. Morgan Stanley Wealth Management has no obligation to provide updated information on the securities/instruments mentioned herein.

The securities/instruments discussed in this material may not be appropriate for all investors. The appropriateness of a particular investment or strategy will depend on an investor's individual circumstances and objectives. Morgan Stanley Wealth Management recommends that investors independently evaluate specific investments and strategies, and encourages investors to seek the advice of a financial advisor. The value of and income from investments may vary because of changes in interest rates, foreign exchange rates, default rates, prepayment rates, securities/instruments prices, market indexes, operational or financial conditions of companies and other issuers or other factors. Estimates of future performance are based on assumptions that may not be realized. Actual events may differ from those assumed and changes to any assumptions may have a material impact on any projections or estimates. Other events not taken into account may occur and may significantly affect the projections or estimates. Certain assumptions may have been made for modeling purposes only to simplify the presentation and/or calculation of any projections or estimates, and Morgan Stanley Wealth Management does not represent that any such assumptions will reflect actual future events. Accordingly, there can be no assurance that estimated returns or projections will be realized or that actual returns or performance results will not materially differ from those estimated herein.

The summary at the beginning of the report may have been generated with the assistance of artificial intelligence (AI).

This material should not be viewed as advice or recommendations with respect to asset allocation or any particular investment. This information is not intended to, and should not, form a primary basis for any investment decisions that you may make. Morgan Stanley Wealth Management is not acting as a fiduciary under either the Employee Retirement Income Security Act of 1974, as amended or under section 4975 of the Internal Revenue Code of 1986 as amended in providing this material except as otherwise provided in writing by Morgan Stanley and/or as described at www.morganstanley.com/disclosures/dol.

Morgan Stanley Smith Barney LLC, its affiliates and Morgan Stanley Financial Advisors do not provide legal or tax advice. Each client should always consult his/her personal tax and/or legal advisor for information concerning his/her individual situation and to learn about any potential tax or other implications that may result from acting on a particular recommendation. This material is disseminated in Australia to "retail clients" within the meaning of the Australian Corporations Act by Morgan Stanley Wealth Management Australia Pty Ltd (A.B.N. 19 009 145 555, holder of Australian financial services license No. 240813).

Morgan Stanley Wealth Management is not incorporated under the People's Republic of China ("PRC") law and the material in relation to this report is conducted outside the PRC. This report will be distributed only upon request of a specific recipient. This report not constitute an offer to sell or the solicitation of an offer to buy any securities in the PRC. PRC investors must have the relevant qualifications to invest in such securities and must be responsible for obtaining all relevant approvals, licenses, verifications and or registrations from PRC's relevant governmental authorities.

If your financial adviser is based in Australia, Switzerland or the United Kingdom, then please be aware that this report is being distributed by the Morgan Stanley entity where your financial adviser is located, as follows: Australia: Morgan Stanley Wealth Management Australia Pty Ltd (ABN 19 009 145 555, AFSL No. 240813); Switzerland: Morgan Stanley (Switzerland) AG regulated by the Swiss Financial Market Supervisory Authority; or United Kingdom: Morgan Stanley Private Wealth Management Ltd, authorized and regulated by the Financial Conduct Authority, approves for the purposes of section 21 of the Financial Services and Markets Act 2000 this material for distribution in the United Kingdom.

Morgan Stanley Wealth Management is not acting as a municipal advisor to any municipal entity or obligated person within the meaning of Section 15B of the Securities Exchange Act (the “Municipal Advisor Rule”) and the opinions or views contained herein are not intended to be, and do not constitute, advice within the meaning of the Municipal Advisor Rule.

This material is disseminated in the United States of America by Morgan Stanley Smith Barney LLC.

Third-party data providers make no warranties or representations of any kind relating to the accuracy, completeness, or timeliness of the data they provide and shall not have liability for any damages of any kind relating to such data.

RSI1720465718415 07/2024