

Financial Market Uncovered – Article 16

Fixed Income Decoded: The Backbone of Financial Markets



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1 Introduction

In global financial markets, fixed income is the structural foundation that supports capital allocation, risk management, and the implementation of monetary policy. It does not typically attract the same attention as equities or commodities, yet it is central to the functioning of both public and private finance. Governments issue bonds to fund expenditure without immediate taxation, while corporations use debt markets to raise capital without diluting shareholder equity. For investors, fixed income offers contractual cash flows, diversification benefits, and a role in preserving capital.

The asset class is also the primary channel through which interest rates influence the economy. Movements in yields affect the cost of corporate borrowing, mortgage rates, and the relative attractiveness of currencies. The shape of the yield curve is closely monitored for insights into future economic growth and inflation expectations. Central banks conduct open market operations primarily through fixed income instruments, using them to inject or withdraw liquidity from the financial system.

Beyond its mechanical role, fixed income reflects the collective assessment of creditworthiness, fiscal discipline, and macroeconomic stability. Sovereign yields can signal market confidence or highlight vulnerabilities, while corporate bond spreads provide a measure of perceived credit risk in different sectors. Because fixed income markets are large, diverse, and often less volatile than equities, they tend to attract long-term institutional investors such as pension funds and insurance companies. However, this perceived stability can mask periods of significant stress, as seen during the global financial crisis, the COVID-19 market dislocations, or the 2022 UK gilt crisis.

Current market conditions underline the importance of understanding fixed income. After an extended period of low interest rates and unconventional monetary policy, global debt levels are elevated and inflationary pressures have re-emerged. Policy makers face the challenge of balancing growth objectives with the need to maintain price stability. In such an environment, fixed income markets are not only responding to macroeconomic forces but are actively shaping them, making their analysis essential for any market participant seeking to understand risks, identify opportunities, and interpret the broader economic landscape.

2 What is Fixed Income?

Fixed income refers to a category of investment instruments that provide predictable cash flows over a defined period, typically in the form of periodic interest payments and the return of principal at maturity. These instruments are issued by sovereign states, corporations, and other entities to raise capital, with investors acting as lenders in exchange for agreed-upon terms. The defining characteristic is the contractual nature of the payments, which distinguishes fixed income from asset classes such as equities, where returns depend on corporate performance and are neither fixed nor guaranteed.

Although the concept is straightforward, the fixed income universe is highly diverse, encompassing instruments with different maturities, structures, credit qualities, and payment features. It ranges from ultra-safe short-term government bills to complex structured securities backed by pools of loans or receivables. This breadth means that fixed income serves multiple purposes for different market participants: funding sources for issuers, stable income streams for investors, and a mechanism for transmitting monetary policy across the economy. Understanding the common characteristics that bind these instruments together is the first step toward analysing their behaviour and role in financial markets.

2.1 Definition/Key Characteristics

At its core, a fixed income instrument is a debt obligation: the issuer borrows capital from the investor and commits to repaying it under specified terms. These terms are defined in a legal contract that sets out the principal amount (also called face or par value), the interest rate (coupon), the payment schedule, and the maturity date. The predictability of the cash flows depends on the issuer's ability and willingness to meet these obligations, which is why credit assessment is fundamental in fixed income analysis.

The main characteristics that define a fixed income security are:

- **Par value:** The amount that will be repaid to the investor at maturity. Prices in the secondary market are often quoted as a percentage of par.
- **Coupon rate:** The fixed or floating interest rate applied to the par value to determine periodic interest payments.
- **Maturity:** The date on which the issuer must repay the principal. Maturities can range from a few days to several decades.
- **Payment frequency:** The schedule on which coupon payments are made, commonly semi-annual or annual, though some instruments pay monthly or quarterly.
- **Credit quality:** The assessment of the issuer's likelihood of meeting its obligations, often reflected in ratings assigned by agencies such as Moody's, S&P, or Fitch.

While these features may appear standardised, the diversity of fixed income products arises from variations in each of these dimensions. Differences in maturity affect interest rate

sensitivity, differences in credit quality influence required yields, and structural features such as callability or convertibility introduce embedded options that change the instrument's risk–return profile. These variations are what make fixed income both a relatively stable asset class in aggregate and a source of specialised opportunities for investors with specific objectives or constraints.

2.2 *What Makes It “Fixed”*

The term “fixed income” originates from the contractual nature of the payments: investors know in advance the amount and timing of each cash flow if the issuer meets its obligations. This predictability is the defining characteristic of the asset class and is a key reason why it has historically been associated with stability and capital preservation. For example, a conventional government bond with a fixed coupon of 3 per cent and a maturity of ten years will pay the same interest amount every period, regardless of changes in market conditions.

However, not all instruments labelled as fixed income have entirely fixed cash flows. A significant portion of the market includes securities whose interest payments vary over time or whose principal repayment is subject to adjustment. Examples include:

- **Floating rate notes (FRNs)**, where the coupon is linked to a benchmark interest rate such as SOFR, EURIBOR, or LIBOR (historically). As the benchmark changes, so does the interest payment, which reduces interest rate risk for the investor but introduces variability in income.
- **Inflation-linked bonds**, such as US Treasury Inflation-Protected Securities (TIPS) or UK Index-Linked Gilts, where principal and coupon payments are adjusted for changes in a consumer price index. These protect real purchasing power but make nominal cash flows unpredictable.
- **Structured and asset-backed securities**, where payments depend on the performance of underlying loans, leases, or receivables. Cash flows may change due to prepayments, defaults, or changes in the underlying asset pool.

The existence of these variations reflects the flexibility of debt instruments in meeting the needs of both issuers and investors. Issuers may prefer floating coupons to avoid locking in high borrowing costs during periods of falling rates, while investors may seek inflation protection or exposure to specific types of underlying cash flows. As a result, while the asset class retains the label “fixed income,” a complete understanding requires distinguishing between instruments with truly fixed schedules and those where payments can vary according to market, economic, or contractual conditions.

2.3 *Types of Instruments*

The fixed income universe is broad, covering a range of instruments that differ in issuer type, maturity, structure, and risk profile. Each category serves distinct purposes for borrowers and

offers specific risk–return characteristics for investors. Understanding these segments is essential for interpreting market signals, assessing portfolio exposures, and identifying relative value opportunities.

2.3.1 Sovereign Bonds

Issued by national governments, sovereign bonds are often regarded as the benchmark for fixed income markets. Examples include US Treasuries, German Bunds, and Japanese Government Bonds (JGBs). Their creditworthiness is linked to the government's ability to raise revenue through taxation and, in some cases, issue currency. Sovereign yields are critical reference rates for pricing other securities and are used in setting monetary policy. While developed market sovereigns are typically viewed as low credit risk, emerging market government bonds can carry higher yields to compensate for currency, political, and default risk.

2.3.2 Corporate Bonds

These are issued by private or public companies to raise capital for business operations, expansion, or refinancing. Credit quality varies significantly, from investment-grade bonds issued by financially strong companies to high-yield (or “junk”) bonds from issuers with greater default risk. Corporate bond spreads over sovereign benchmarks reflect both the market's perception of credit risk and broader economic conditions. They are closely monitored as indicators of corporate sector health and investor risk appetite.

2.3.3 Municipal Bonds

Primarily issued by local governments, regions, or other public entities to finance infrastructure and public projects. In markets such as the United States, certain municipal bonds offer tax advantages, making them attractive to high-net-worth individuals and specific institutional investors. Credit quality can range from very strong, for well-managed municipalities, to speculative for those with fiscal pressures. Default risk, while generally low, is not absent, as seen in cases like Detroit's bankruptcy in 2013.

2.3.4 Asset-Backed Securities and Mortgage-Backed Securities

These are structured securities backed by pools of financial assets, such as mortgages, auto loans, or credit card receivables. The cash flows from the underlying assets are passed through to investors, often with different tranches that carry varying levels of risk and return. MBS markets, particularly in the United States, are large and deeply linked to housing finance. These instruments can provide diversification benefits but can also be highly sensitive to credit cycles and prepayment behaviour, as highlighted during the global financial crisis of 2008.

2.3.5 Inflation-Linked and Floating Rate Securities

Inflation-linked bonds adjust principal and coupon payments in line with inflation indices, preserving real purchasing power. Floating rate notes reset their coupons periodically based on a reference rate, reducing sensitivity to changes in interest rates. Both instruments are designed to address specific risks, inflation erosion in the first case and interest rate volatility in the second, making them useful tactical tools in certain macroeconomic environments.

By combining these categories, the fixed income market offers a spectrum of instruments that cater to different investor objectives, risk tolerances, and time horizons. The breadth of choice means that portfolio construction in fixed income is not simply a matter of selecting “bonds” but of understanding how different segments behave under varying economic and market conditions.

3 The Fixed Income Ecosystem

The fixed income market is a network of participants and infrastructures that facilitate the transfer of capital from lenders to borrowers in exchange for contractual payments. It is not a single marketplace but a collection of interconnected segments, each with its own conventions, liquidity characteristics, and regulatory frameworks. Issuers, investors, and intermediaries interact through both primary markets, where new securities are sold, and secondary markets, where existing securities change hands. The functioning of this ecosystem determines how efficiently capital flows, how risks are priced, and how monetary policy is transmitted into the real economy.

Understanding the ecosystem is essential for analysing fixed income markets in practice. The motivations of borrowers influence issuance patterns and maturities, while investor preferences affect demand, pricing, and liquidity. Intermediaries, including dealers, brokers, and trading platforms, bridge the gap between the two sides, enabling price discovery and market access. Market infrastructure and regulation shape the degree of transparency, the speed of execution, and the resilience of the system under stress.

3.1 Issuers

Issuers in the fixed income market raise capital by borrowing from investors, promising to repay principal and interest according to agreed terms. Their motivations depend on their nature, funding needs, and strategic objectives. The main categories of issuers include:

- **Governments:** Sovereign issuance funds public expenditure, including infrastructure, social programmes, and debt refinancing. In developed markets, government bonds are also a key tool of monetary policy and serve as benchmarks for pricing other securities. Issuance decisions take into account fiscal policy objectives, the maturity profile of existing debt, and market conditions. In emerging markets, government borrowing often has an added layer of currency and political risk, which can affect investor demand and borrowing costs.
- **Corporates:** Companies issue debt to finance expansion, acquisitions, working capital, or to refinance existing obligations. The choice between debt and equity financing reflects considerations such as cost of capital, tax efficiency, and control over ownership. Investment-grade issuers typically focus on minimising funding costs, while high-yield issuers often have fewer financing alternatives and must compensate investors with higher yields.
- **Supranationals:** Entities such as the World Bank or the European Investment Bank raise funds to finance projects with economic development or policy objectives. Their debt is often highly rated due to diversified funding sources and backing from multiple member states, making it attractive to conservative institutional investors.

Issuance strategy is a balance between meeting funding needs and managing refinancing risk. Decisions on maturity structure, currency denomination, and interest rate type (fixed or floating) reflect both the issuer's objectives and the market environment. For example, an issuer

may favour long-term fixed rate borrowing when interest rates are low, locking in costs for an extended period, while in times of high rates they might opt for shorter maturities to retain flexibility. Ultimately, issuer behaviour helps shape the supply side of the fixed income market, influencing yield curves, liquidity patterns, and sector performance.

3.2 *Investors*

Fixed income investors provide the capital that issuers require, in exchange for a defined set of cash flows. Their objectives vary according to mandate, regulatory constraints, liability structures, and risk appetite. Understanding the composition and behaviour of the investor base is essential, as it influences demand for different maturities, credit qualities, and structures, thereby affecting pricing and liquidity across the market.

The principal categories of fixed income investors are:

- **Pension Funds and Insurance Companies:** These institutions manage long-term liabilities and require assets with predictable cash flows to match their obligations. They are typically large buyers of investment-grade bonds, especially at the longer end of the maturity spectrum, where cash flows align with future payouts. Their demand can provide stability to certain segments of the market, but regulatory capital requirements and solvency rules often influence their investment decisions.
- **Banks and Central Banks:** Commercial banks hold fixed income securities as part of their liquidity reserves and to meet regulatory requirements such as the Liquidity Coverage Ratio (LCR). Central banks are both significant holders and active participants, using fixed income instruments for monetary policy operations, reserve management, and market stabilisation. Their participation can strongly influence market yields, particularly in sovereign debt markets.
- **Asset Managers and Mutual Funds:** These entities manage fixed income portfolios for a range of clients, from retail investors to large institutions. Their investment mandates vary widely, covering government, corporate, high-yield, and emerging market debt. Because mutual funds offer daily liquidity, their flows can be more sensitive to market sentiment, amplifying moves in yields and spreads during periods of volatility.
- **Sovereign Wealth Funds and Foreign Reserve Managers:** These investors often focus on preserving capital and maintaining liquidity, leading to significant allocations to highly rated sovereign bonds. However, some diversify into higher-yielding segments to enhance returns. Their buying or selling of specific markets can be driven by macroeconomic policy considerations, including currency management.
- **Retail Investors:** Participation can occur directly, through the purchase of individual bonds, or indirectly via fixed income mutual funds and exchange-traded funds (ETFs). Retail demand tends to be more yield-sensitive and may shift between fixed income and other asset classes depending on prevailing interest rates and market sentiment.

The diversity of the investor base means that demand for fixed income is influenced by a combination of structural factors, such as regulatory requirements and liability profiles, and cyclical factors, such as interest rate expectations and risk appetite. Large, stable investors can anchor demand and support market depth, while more tactical participants contribute to liquidity and price discovery but can also increase short-term volatility.

3.3 *Buy-Side/Sell-Side*

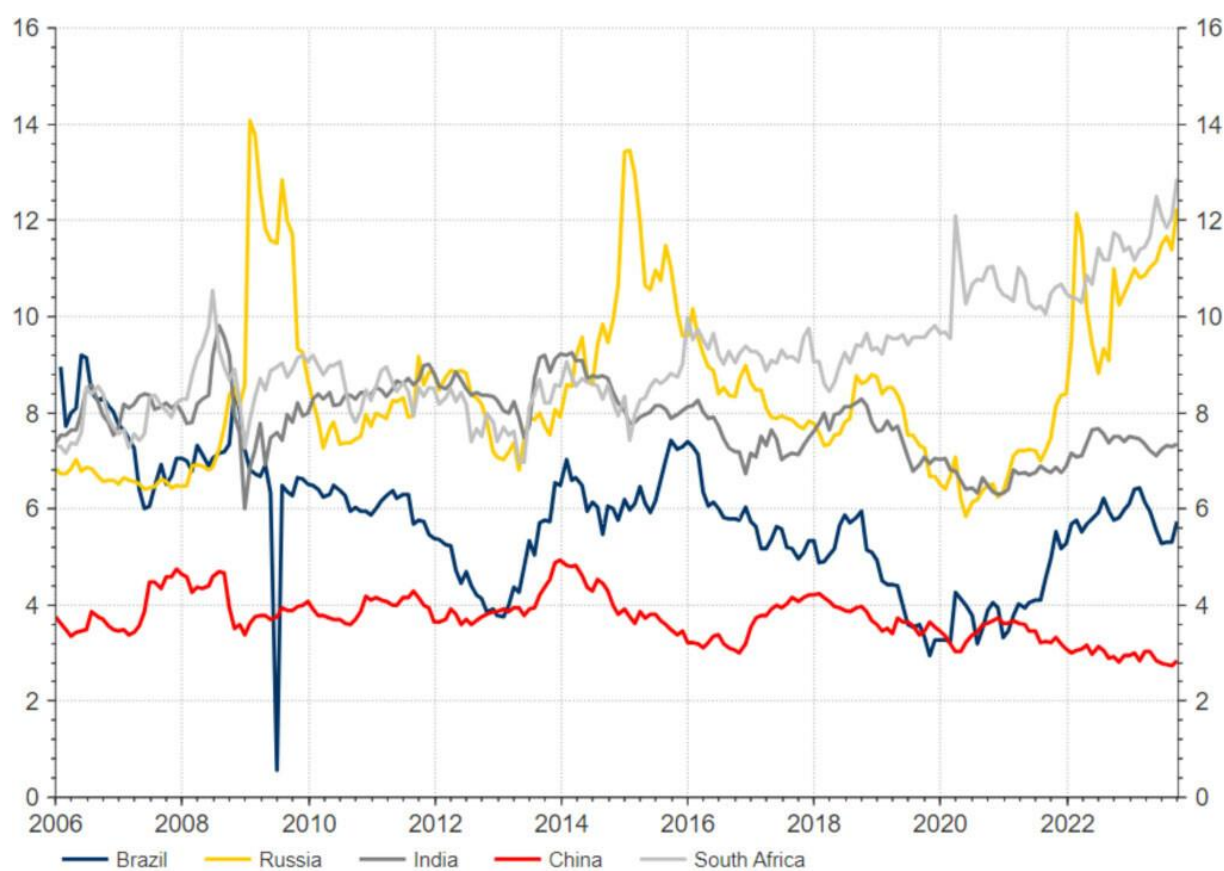
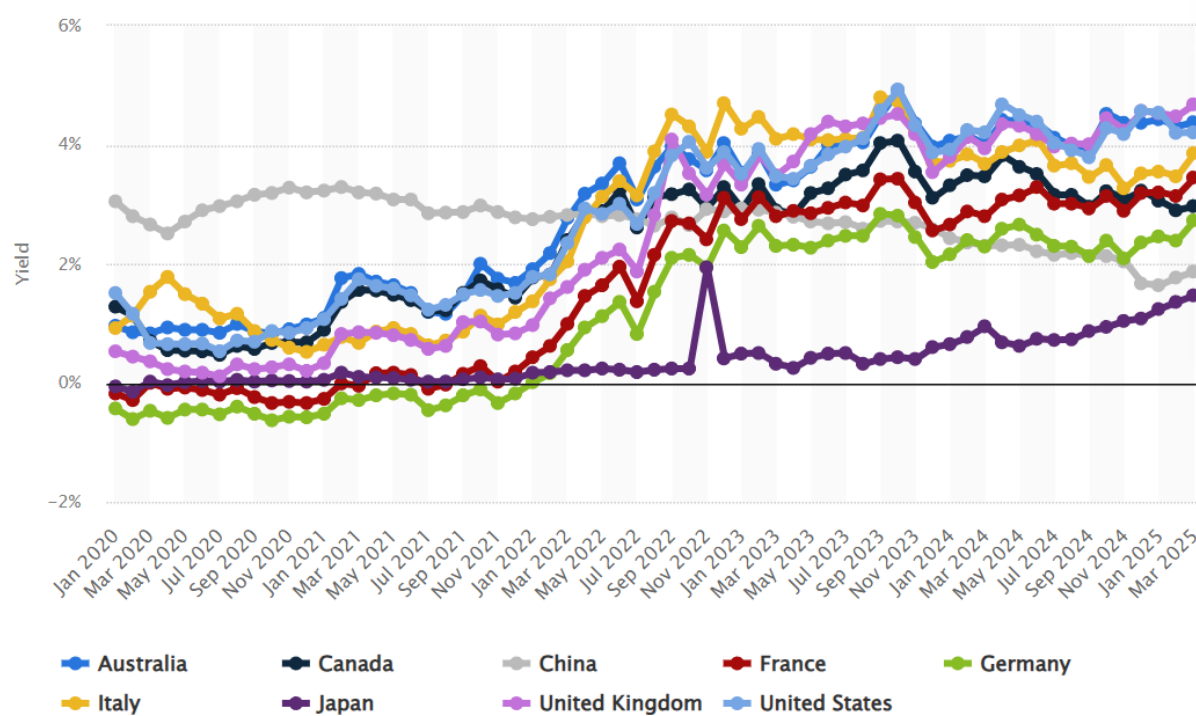
The functioning of fixed income markets depends on the interaction between the buy-side, which represents the end investors, and the sell-side, which facilitates access to the market, provides liquidity, and offers execution and advisory services. This relationship is central to primary issuance, secondary trading, and the continuous process of price discovery.

The **buy-side** includes asset managers, pension funds, insurance companies, hedge funds, and other institutional or retail investors. Their primary objective is to allocate capital efficiently within the constraints of their mandates and risk tolerance. Buy-side participants depend on market access, pricing transparency, and liquidity provision to implement their strategies, whether the focus is long-term liability matching or short-term relative value trades.

The **sell-side** is composed of investment banks, broker-dealers, and other intermediaries that underwrite new issues, make markets in outstanding securities, and facilitate transactions between buyers and sellers. In the primary market, sell-side firms work with issuers to structure debt offerings, determine appropriate pricing, and distribute the securities to investors. In the secondary market, they provide bid and offer quotes, enabling investors to adjust their portfolios and manage risk.

The **relationship** is often shaped by both commercial considerations and regulatory requirements. Large buy-side clients may receive better access to new issuance allocations or tighter bid-offer spreads in secondary trading, while sell-side firms benefit from the recurring trading flow and fee generation. Regulation, such as post-crisis capital requirements, has changed the nature of this interaction by limiting the ability of sell-side firms to hold large inventories, which in turn affects the immediacy of liquidity available to the buy-side.

The degree of trust, the quality of market intelligence, and the ability to execute large trades with minimal market impact are all crucial elements of this relationship. For less liquid instruments, such as certain high-yield bonds or structured products, established relationships between buy-side and sell-side participants can be the difference between executing at a favourable price and being forced to accept significant slippage. As such, the interaction is not purely transactional but forms an ongoing network of dependencies that sustains the market's efficiency and depth.



Source: LSEG Datastream

Figure 1: Yields on 10-year government bonds:

3.4 Primary and Secondary Markets

Fixed income activity takes place in two distinct but interconnected arenas: the primary market, where securities are first issued, and the secondary market, where existing securities are traded among investors. Both serve critical roles in the functioning of the asset class, influencing liquidity, pricing, and the cost of capital for issuers.

The **primary market** is where issuers raise new capital by selling bonds directly to investors, often through the underwriting services of sell-side institutions. The process includes structuring the terms of the security, setting the coupon and maturity, and marketing the issue to potential buyers. Pricing is determined by a combination of issuer credit quality, prevailing interest rates, market demand, and broader economic conditions. Successful issuance in the primary market provides issuers with funding at competitive terms, while also establishing a reference price for secondary market trading.

The **secondary market** enables investors to buy and sell securities after issuance, providing liquidity and allowing portfolios to be adjusted in response to changes in market conditions, risk preferences, or investment objectives. Liquidity in the secondary market can vary widely: benchmark government bonds and large corporate issues typically trade actively, while smaller, less well-known, or lower-rated issues may trade infrequently. Secondary market activity is also essential for price discovery, as it reflects the collective assessment of value based on the most recent information about the issuer and the macroeconomic environment.

The link between the two markets is mutually reinforcing. A deep and liquid secondary market makes primary issuance more attractive to investors, as it assures them they can exit positions when needed. Conversely, a healthy primary market with regular issuance supports liquidity in the secondary market by expanding the universe of tradable securities. In stressed conditions, such as during the 2020 COVID-19 market disruption, secondary market illiquidity can raise funding costs in the primary market, underscoring the interdependence between the two.

4 How Fixed Income is Valued & Analysed

Valuation in fixed income markets is based on the principle that a bond's price reflects the present value of its future cash flows, discounted at a rate that incorporates both the time value of money and compensation for risk. This framework allows investors to compare securities with different maturities, coupons, and credit qualities, and to assess whether they are being fairly compensated for the risks assumed. While the basic mechanics of valuation are straightforward, the analysis is nuanced: changes in interest rates, shifts in credit spreads, and embedded optionality can all alter a bond's value and its sensitivity to market movements.

The tools used to analyse fixed income securities go beyond simply calculating a price. Duration and convexity measure how prices are likely to respond to changes in yields, while the term structure of interest rates provides information about market expectations for growth and inflation. Credit spreads reflect perceived default risk and liquidity conditions. Together, these measures give investors a multidimensional view of risk and return, enabling them to position portfolios according to their objectives, constraints, and macroeconomic views.

4.1 The Price–Yield Relationship

A defining feature of fixed income securities is the inverse relationship between price and yield. When market interest rates rise, the present value of a bond's future cash flows declines, leading to a lower price. Conversely, when rates fall, the present value increases and prices rise. This relationship exists because the bond's coupon payments are fixed at issuance: if new bonds offer higher yields, existing bonds must be priced lower to offer an equivalent return, and vice versa.

This price–yield relationship is not linear; it is **convex**. Convexity describes the curvature of the price–yield curve and means that for a given change in yields, the price gain when yields fall is larger than the price loss when yields rise by the same amount. This asymmetry arises because as yields change, the duration of the bond, the measure of its sensitivity to interest rate changes, also changes. Convexity is generally favourable to investors, as it cushions losses in rising rate environments and amplifies gains when rates fall.

We can formalise the concept with the **bond pricing formula**:

$$P = \sum_{t=1}^N \frac{C}{(1+y)^t} + \frac{F}{(1+y)^N}$$

Where:

- P = bond price
- C = coupon payment
- y = yield per period
- N = total number of periods

- F = maturity/par/face value

This shows explicitly how the price is the present value of future coupons and principal, discounted at the required yield. It links directly to the inverse relationship between price and yield.

Understanding the inverse and convex nature of the price–yield relationship is fundamental to managing interest rate risk. It informs hedging strategies, portfolio duration positioning, and relative value analysis. For example, in a declining rate environment, investors may prefer securities with higher convexity to maximise price appreciation, while in a rising rate environment, lower-duration and lower-convexity instruments can reduce volatility. In both cases, the price–yield relationship provides the framework for evaluating how a bond will react to changes in the market's required return.

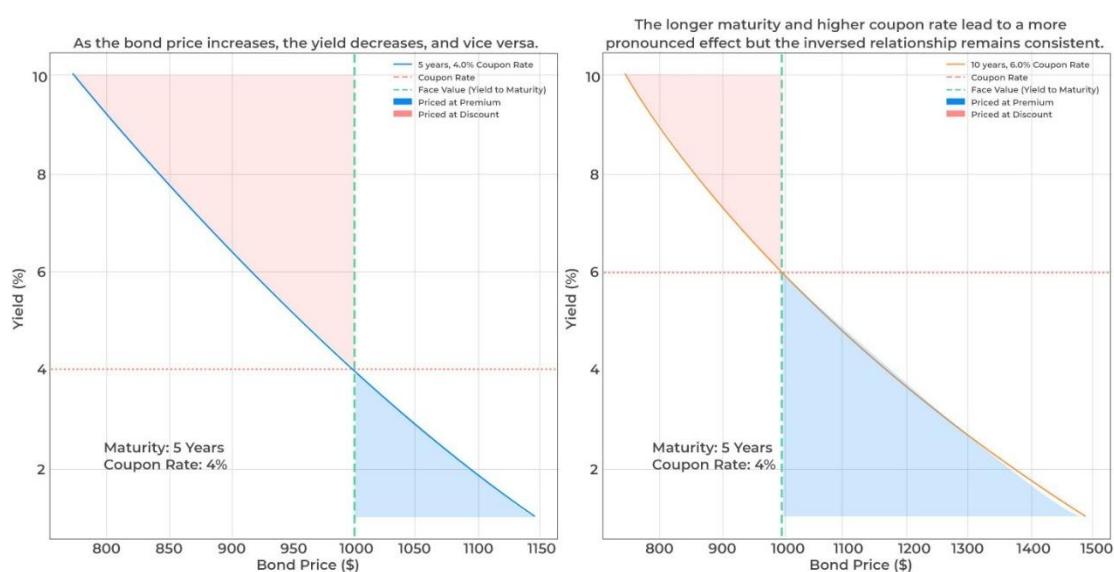


Figure 2: Bond's price and yield relationship

4.2 Key Metrics

Fixed income analysis relies on a set of standard metrics that describe a bond's return profile and its sensitivity to market variables. These measures allow investors to compare securities, assess risk, and construct portfolios aligned with their objectives. While the definitions are straightforward, their interpretation requires understanding how each metric behaves under changing market conditions.

4.2.1 Yield to Maturity (YTM)

YTM is the internal rate of return an investor would earn by holding the bond until maturity, assuming all coupon payments are reinvested at the same rate. It incorporates both the coupon income and any capital gain or loss from purchasing the bond at a price different from par. YTM is a comprehensive measure of return but is dependent on the reinvestment assumption, which may not hold in volatile interest rate environments. For bonds with embedded options, such as

callable securities, YTM can misstate expected returns because it assumes the bond will not be called early.

We can write YTM as the value of y that solves:

$$P = \sum_{t=1}^N \frac{C}{(1 + YTM)^t} + \frac{F}{(1 + YTM)^N}$$

Since this equation generally cannot be solved algebraically, YTM is typically computed using numerical methods or financial calculators.

4.2.2 Current Yield

Current yield measures annual coupon income as a percentage of the bond's current market price. It is a simpler metric than YTM and does not account for capital gains or losses if the bond is held to maturity. While useful for quickly assessing the income component of return, it can be misleading when comparing bonds with different maturities or prices significantly above or below par.

4.2.3 Duration

Duration measures the sensitivity of a bond's price to a change in yields, expressed in years. A duration of five years implies that for a 1 per cent increase in yields, the bond's price would decline by approximately 5 per cent, all else being equal. Duration is influenced by maturity, coupon rate, and yield level: longer maturities and lower coupons increase duration, making the bond more sensitive to rate changes. Duration is a cornerstone of interest rate risk management, used in portfolio immunisation, hedging, and scenario analysis.

For **Macaulay Duration**:

$$D_{Mac} = \frac{\left(\sum_{t=1}^N t * \frac{C}{(1 + y)^t} + N * \frac{F}{(1 + y)^N} \right)}{P}$$

For **Modified Duration**:

$$D_{Mod} = \frac{D_{Mac}}{1 + y}$$

Modified duration directly measures the percentage price change for a 1 per cent change in yield.

4.2.4 Convexity

Convexity refines the duration measure by accounting for the fact that the price–yield relationship is curved, not linear. It estimates how the duration itself changes as yields change. Bonds with higher convexity will experience smaller price losses when yields rise and larger gains when yields fall, relative to lower-convexity bonds with the same duration. High

convexity is generally desirable, but investors often must pay for it through lower yields or higher prices.

$$\text{Convexity} = \frac{\left(\sum_{t=1}^N t(t+1) * \frac{C}{(1+y)^{t+2}} + N(N+1) * \frac{F}{(1+y)^{N+2}} \right)}{P}$$

Convexity quantifies the curvature of the price–yield relationship and refines duration estimates for larger yield changes.

These metrics form the analytical core of fixed income valuation. Used together, they allow investors to estimate expected returns, compare securities with different structures, and assess the impact of interest rate movements on portfolio value. The choice of which metric to prioritise depends on the investor's objectives: income-focused investors may emphasise current yield, while risk managers focus on duration and convexity to control volatility.

4.3 *Term Structure of Rates*

The term structure of interest rates describes the relationship between yields and maturities for securities of similar credit quality, most often illustrated by the yield curve. It provides critical information about market expectations for future interest rates, inflation, and economic conditions. The term structure is a foundational element in fixed income analysis because it serves as the benchmark for pricing bonds, valuing derivatives, and assessing relative value opportunities.

The **yield curve** can take different shapes, each carrying distinct market implications:

4.3.1 *Yield Curve Shapes*

- **Upward-sloping (normal):** Longer maturities have higher yields than shorter ones, reflecting expectations of economic growth and the requirement for investors to be compensated for the greater risk and opportunity cost of tying up capital for longer periods.
- **Flat:** Short- and long-term yields are similar, suggesting a transition phase in the economic cycle or uncertainty about future growth.
- **Inverted:** Short-term yields are higher than long-term yields, often interpreted as a signal of an impending economic slowdown or recession. Inversions can occur when central banks raise policy rates to combat inflation, pushing short-term yields above long-term rates.

4.3.2 *What the Curve Says About Growth and Inflation*

The yield curve embodies the collective market expectations for macroeconomic variables. A steepening curve often reflects optimism about growth and inflation, prompting expectations for higher policy rates in the future. A flattening curve can signal that the market expects slower

growth or that monetary policy is approaching restrictive levels. An inverted curve, historically, has been one of the more reliable indicators of recessions in developed economies, although it is not a timing tool.

In addition to expectations, the shape of the curve is influenced by supply and demand factors, such as large-scale government issuance at certain maturities or heavy demand for long-term bonds from pension funds and insurers. Central bank asset purchase programmes can also alter the curve by removing duration from the market, as seen during quantitative easing.

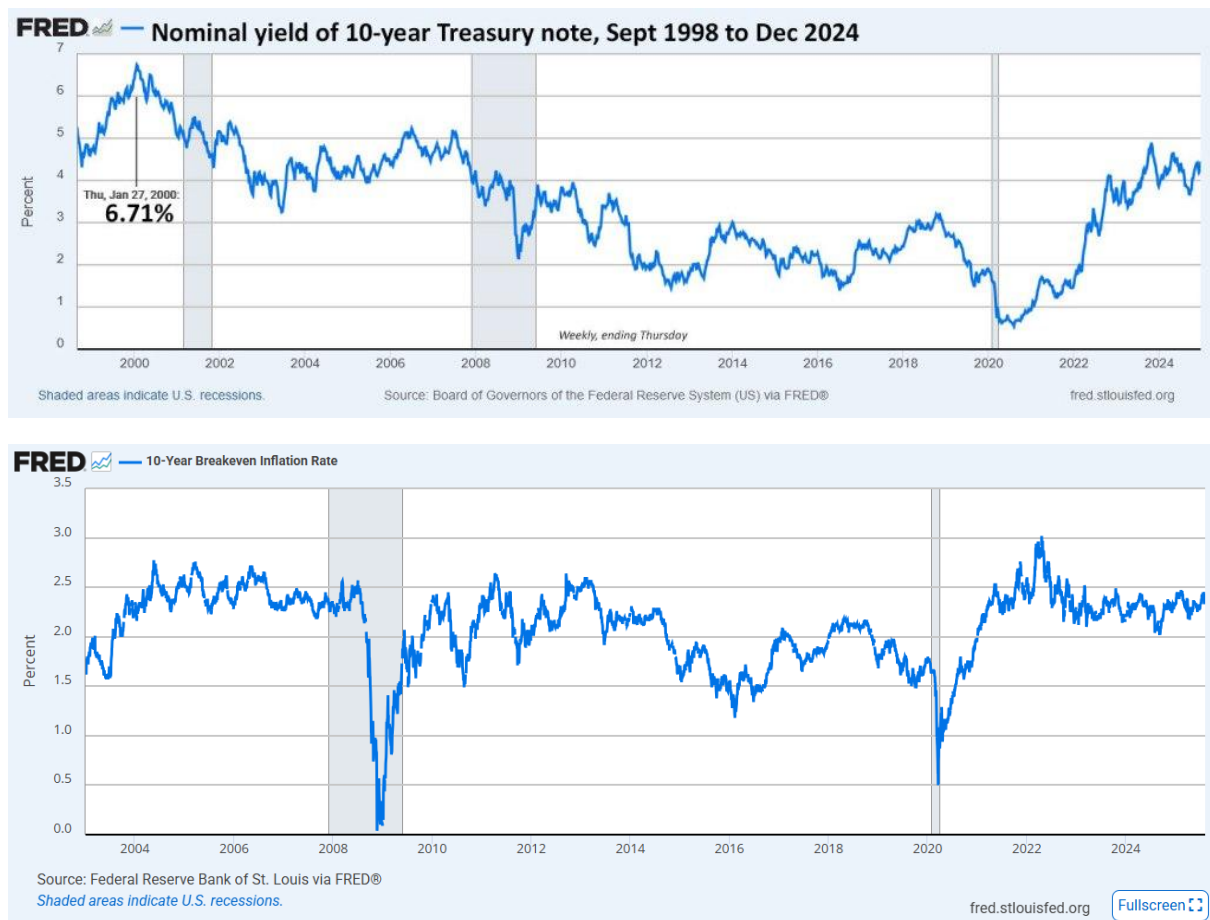


Figure 3: US 10-year Treasury Note yield and breakeven inflation rate

The first chart shows the nominal yield on the US 10-year Treasury note from 1998 to 2024, highlighting a long-term decline from above 6% in 2000 to record lows near 0.5% in 2020, followed by a sharp rise as monetary policy normalised and inflation pressures emerged. The second chart tracks the 10-year breakeven inflation rate, a market-based measure of expected average inflation over the next decade, which has typically fluctuated between 1.5% and 2.5%, with sharp drops during crisis periods such as 2008 and early 2020. When combined, these series imply that **real yields** (nominal yield minus breakeven inflation) have experienced substantial swings, influencing fixed income valuations, portfolio flows, and the attractiveness of bonds relative to other assets. Sustained higher real yields in recent years reflect both tighter monetary policy and the market's reassessment of long-term inflation risks.

4.4 Credit Spreads and Risk Premia

Credit spreads represent the additional yield investors require to hold a bond with credit risk over a risk-free benchmark of similar maturity, such as a government bond. They compensate for the possibility of default, potential downgrade, and liquidity risk, as well as for uncertainty about recovery values in the event of issuer distress. Spreads are a critical component of fixed income valuation because they link the pricing of risky bonds to the underlying risk-free yield curve.

Formally:

$$\text{Credit spread} = y_{\text{corporate}} - y_{\text{government}}$$

Where $y_{\text{corporate}}$ is the yield on the bond in question, and $y_{\text{government}}$ is the yield on the corresponding maturity government bond.

Key drivers of credit spreads include:

- **Issuer credit quality:** Higher-rated issuers command tighter spreads due to lower perceived default risk, while lower-rated or high-yield issuers must offer wider spreads to attract investors.
- **Economic cycle:** Spreads tend to narrow in periods of economic expansion when credit risk is perceived to be low, and widen in downturns as default probabilities increase.
- **Liquidity:** Less liquid bonds typically trade at wider spreads to compensate investors for the additional difficulty and cost of trading them.
- **Market risk sentiment:** Risk-off episodes, such as during financial crises or geopolitical shocks, can drive spreads sharply wider across credit markets, even for fundamentally sound issuers.

Credit spreads are closely monitored as a barometer of market sentiment toward credit risk. Tightening spreads often indicate investor confidence and a willingness to accept lower compensation for credit exposure, while widening spreads signal risk aversion or deteriorating fundamentals.

For example, during the global financial crisis of 2008, investment-grade corporate spreads in the US widened to over 600 basis points, reflecting severe stress and uncertainty in the financial system. Conversely, in periods of strong growth and abundant liquidity, such as 2017–2018, investment-grade spreads compressed to multi-year lows of around 100 basis points, signalling benign credit conditions.

In portfolio management, changes in credit spreads can materially affect returns. For a bond with a given duration, spread tightening generates capital gains, while widening produces losses. As such, spread analysis is essential both for tactical trading and for managing long-term credit exposure.

4.5 Real Yields and Inflation-Linked Bonds

Real yields measure the return on a bond after adjusting for the effects of inflation. They reflect the investor's gain in terms of purchasing power rather than nominal currency units. Real yields are a crucial concept because even if nominal returns are positive, high inflation can erode the actual value of those returns.

For a nominal yield $y_{nominal}$ and an inflation rate π , the real yield can be approximated as:

$$y_{real} \approx y_{nominal} - \pi$$

A more precise relationship is:

$$(1 + \pi) * (1 + y_{real}) = (1 + y_{nominal})$$

Solving for y_{real} gives:

$$y_{real} = \frac{1 + y_{nominal}}{1 + \pi} - 1$$

Inflation-Linked Bonds

Inflation-linked bonds are designed to protect investors from inflation risk by linking coupon payments and principal repayment to a consumer price index (CPI). Examples include US Treasury Inflation-Protected Securities (TIPS), UK Index-Linked Gilts, and French OATi bonds.

- **Coupon payments:** Calculated on an inflation-adjusted principal, meaning the cash flow increases as the reference index rises.
- **Principal repayment:** Adjusted for cumulative inflation over the life of the bond. In many structures, the principal is protected against deflation, ensuring that it does not fall below the original par value.

Real yields provide insight into the underlying cost of capital and the stance of monetary policy. For example:

- **Negative real yields** indicate that the nominal return on bonds is lower than inflation, which can stimulate economic activity by encouraging borrowing and discouraging saving in cash.
- **Positive real yields** signal that bond returns are outpacing inflation, which can tighten financial conditions and slow credit demand.

Market-implied real yields, derived from the difference between nominal yields and inflation breakevens (the spread between nominal bonds and inflation-linked bonds of the same maturity), are closely monitored by investors and policymakers. They reflect expectations for long-term inflation and growth and can be a forward-looking indicator of the economic environment.

5 Why Investors Hold Fixed Income

Fixed income plays a distinct role in investment portfolios due to its combination of contractual cash flows, defined maturity profiles, and risk characteristics that differ from other asset classes. While equity investments rely on the performance and profitability of companies, fixed income offers returns based on legally binding obligations from issuers. This difference makes it a core holding for a wide range of investors, from conservative savers to sophisticated institutional portfolios.

The motivations for holding fixed income are varied. For some investors, the primary attraction is the stability and predictability of income. For others, it is the diversification benefits, as fixed income returns often have a low or negative correlation with equities during periods of market stress. In liability-driven strategies, bonds are selected to match the timing and amount of future obligations. In addition, certain segments of the fixed income market provide specific protections, such as inflation-linked securities, or access to tactical opportunities in interest rate movements, credit spreads, or relative value trades.

Understanding these motivations is critical not only for portfolio construction but also for anticipating demand patterns in different market environments. For example, in periods of economic uncertainty, the demand for high-quality government bonds often increases sharply, pushing yields lower. Conversely, in periods of strong growth and stable inflation, investors may rotate toward higher-yielding credit instruments.

5.1 *Income Generation and Predictable Cash Flows*

One of the primary reasons investors allocate to fixed income is the reliable income stream it provides. Coupon payments are typically fixed at issuance (unless the instrument is floating rate), allowing investors to plan and forecast cash flows with a high degree of certainty. This predictability is especially valuable for those who require regular income to meet ongoing expenses, such as retirees, endowments, or income-focused funds.

The appeal of predictable cash flows extends beyond individual investors. Institutional investors such as pension funds and insurance companies structure their portfolios to ensure that incoming cash flows from bond holdings align with outgoing payments to beneficiaries or policyholders. By matching the maturity and cash flow profile of assets to liabilities, these institutions can reduce reinvestment risk and ensure stability in funding.

From a portfolio management perspective, predictable income contributes to stability in total returns. Even in periods when market prices of bonds fluctuate due to changes in interest rates or credit spreads, coupon payments provide a consistent return component that can offset capital volatility. For example, in a rising rate environment, while bond prices may decline, the regular coupon income can partially mitigate the negative impact on total return, especially for shorter-duration instruments.

In addition, fixed income income streams can be reinvested, creating a compounding effect over time. This reinvestment can be an important driver of long-term returns, particularly in stable

or declining interest rate environments where reinvested coupons earn competitive yields relative to risk.

5.2 *Capital Preservation and Seniority in Claims*

Fixed income securities are often favoured for their ability to preserve invested capital, particularly when issued by highly rated sovereigns or corporations with strong balance sheets. While no investment is entirely risk-free, the contractual obligation to repay principal at maturity provides a degree of certainty not typically available in equities, where returns depend on company performance and are not guaranteed. This capital preservation characteristic is one of the reasons fixed income is a core allocation in conservative and risk-managed portfolios.

Another structural advantage is seniority in the capital structure. In the event of an issuer's liquidation or restructuring, debt holders have priority over equity holders in claims on the issuer's assets. Within the debt category, senior secured bonds are first in line, followed by senior unsecured, subordinated debt, and finally equity. This priority means that even in default situations, bondholders are more likely to recover part of their investment, although recovery rates vary depending on the asset base and legal framework.

Capital preservation does not mean immunity from risk. Credit risk, interest rate risk, and inflation can all erode the real value of capital over time. However, for investors who select high-quality issuers and manage duration appropriately, fixed income can provide a relatively stable store of value. This is particularly relevant for investors with defined liabilities, such as pensions or insurance companies, where meeting obligations is paramount and capital losses can have significant implications for solvency.

In practice, the capital preservation role of fixed income often makes it the “anchor” in multi-asset portfolios. Even when market conditions pressure prices, the expectation of principal repayment at maturity provides a stabilising effect. This role is especially valuable during periods of equity market volatility, when investors may reallocate towards high-quality bonds in search of safety, a behaviour often referred to as a “flight to quality.”

5.3 *Diversification and Ballast in Portfolios*

One of the most important strategic roles of fixed income is its ability to diversify portfolio risk. Diversification arises because the drivers of fixed income returns often differ from those of equities and other risk assets. While equity performance is primarily tied to corporate earnings growth and investor sentiment, fixed income returns are influenced more directly by interest rate movements, credit spreads, and macroeconomic conditions.

Historically, high-quality government bonds have shown low or even negative correlations with equities during periods of market stress. This behaviour is partly due to the “flight to quality” phenomenon, where investors reallocate capital from risk assets into safe, liquid instruments

such as US Treasuries or German Bunds when uncertainty rises. In such periods, falling yields can lead to capital gains in bond holdings, offsetting losses elsewhere in the portfolio.

Diversification benefits are not limited to government bonds. Investment-grade corporate bonds, inflation-linked securities, and certain structured products can also provide complementary risk–return profiles, although their correlation with equities tends to be higher than that of sovereign debt. The key is that fixed income exposure, when selected and weighted appropriately, can reduce overall portfolio volatility without necessarily sacrificing return objectives.

This “ballast” function is particularly valuable in strategic asset allocation. It allows investors to maintain exposure to higher-risk, higher-return assets such as equities while limiting drawdowns during adverse market conditions. The stabilising effect of fixed income is one of the reasons why balanced portfolios, such as the traditional 60/40 equity–bond mix, have been a cornerstone of institutional and private wealth management for decades.

It is important to note, however, that the diversification properties of fixed income are not static. In environments of very low yields or when inflation risk dominates, bonds may offer less protection against equity drawdowns. This dynamic requires active monitoring of correlations and adjustments to the composition and duration of fixed income holdings to ensure they continue to serve their intended purpose.

5.4 *Liability Matching and Regulatory Requirements*

For many institutional investors, particularly pension funds and insurance companies, the primary role of fixed income is to align asset cash flows with future liabilities. This approach, known as liability-driven investing (LDI), seeks to minimise the risk that assets will be insufficient to meet obligations when they fall due. Fixed income securities are uniquely suited to this purpose because their maturity dates, coupon schedules, and credit qualities can be selected to closely mirror the timing, size, and certainty of expected cash outflows.

In liability matching, the objective is not to maximise return but to ensure that the present value and duration of assets match those of liabilities. By doing so, the institution reduces interest rate risk and reinvestment risk, two factors that can cause mismatches between asset performance and liability costs. For example, if a pension scheme has a large payment due in 15 years, purchasing a long-dated bond maturing in the same timeframe ensures the funds will be available without relying on reinvestment at uncertain future rates.

Regulatory frameworks reinforce the role of fixed income in such strategies. In many jurisdictions, solvency rules and capital adequacy requirements encourage or mandate holdings of high-quality bonds. For example:

- **Solvency II** in the European Union requires insurers to hold sufficient eligible assets, often favouring investment-grade sovereign or corporate bonds, to match their liabilities.

- **Basel III** standards for banks include the Liquidity Coverage Ratio (LCR), which mandates holding a buffer of highly liquid assets such as government securities to withstand short-term funding stress.
- Pension fund regulations in various countries require or incentivise the use of fixed income to secure benefit payments.

The combination of predictable cash flows, credit quality, and regulatory recognition makes fixed income an indispensable tool for liability matching. However, challenges arise when yields are low, as meeting return targets without taking on additional risk becomes difficult. In such cases, institutions may extend duration, reduce credit quality, or use derivatives to achieve the necessary asset–liability alignment, all of which require careful risk management.

6 Risks in Fixed Income

Although fixed income securities are often perceived as safer and less volatile than equities, they are not without risk. The nature and magnitude of these risks depend on the type of instrument, the issuer's credit quality, market conditions, and the investor's time horizon. Unlike equities, where the main uncertainty is the variability of corporate earnings, fixed income risks are often linked to changes in interest rates, shifts in credit quality, liquidity constraints, inflation dynamics, and currency fluctuations.

Understanding these risks is essential for accurate valuation, effective portfolio construction, and prudent risk management. The fact that a bond offers fixed contractual payments does not mean those payments will retain their value in real terms, nor that the security's market price will remain stable before maturity. Even default-free securities, such as government bonds, can experience significant price swings if market yields change substantially.

Risk analysis in fixed income therefore requires not only measuring the potential impact of different risk factors but also understanding how they interact. For example, rising interest rates can simultaneously reduce bond prices and widen credit spreads, compounding losses. Similarly, inflation can erode the real value of fixed payments, even when nominal cash flows are secure. The following sections examine the key risks in detail, starting with the most fundamental: interest rate risk.

6.1 Interest Rate Risk

Interest rate risk is the potential for bond prices to decline as market interest rates rise. This relationship is driven by the fixed nature of most bond cash flows: when new bonds are issued at higher yields, existing bonds must trade at lower prices to offer a competitive return. The sensitivity of a bond's price to interest rate changes is measured primarily by duration and refined by convexity.

Mathematically, for a small change in yield (Δy):

Where:

$$\frac{\Delta P}{P} \approx -D_{Mod} * \Delta y$$

- $\frac{\Delta P}{P}$ is the percentage change in price
- D_{mod} is the modified duration
- Δy is the change in yield (in decimal form)

For larger yield changes, convexity adjusts the estimate:

$$\frac{\Delta P}{P} \approx -D_{Mod} * \Delta y + \frac{1}{2} * Convexity * (\Delta y)^2$$

Factors Influencing Interest Rate Risk

- **Maturity:** Longer maturities have higher duration, making them more sensitive to rate changes.
- **Coupon rate:** Lower coupons increase duration, heightening interest rate sensitivity.
- **Yield level:** At lower yield levels, duration is higher for a given maturity.

Interest rate risk is particularly relevant in environments where central banks are adjusting policy rates, or where inflation expectations are shifting. For example, during the 2022–2023 global rate hiking cycle, government bonds across developed markets experienced some of the largest drawdowns in decades, despite having no credit risk, because yields rose sharply from historically low levels.

6.2 Credit Risk

Credit risk is the potential for a bond issuer to fail to meet its contractual obligations, either by missing interest payments, delaying repayment of principal, or defaulting entirely. Even before default occurs, deterioration in an issuer's perceived creditworthiness can cause its bond prices to fall, as investors demand higher yields to compensate for increased risk.

Credit risk can be broken down into three main components:

1. **Default risk** – The probability that the issuer will be unable to make the promised payments in full and on time.
2. **Credit migration risk** – The risk of a downgrade in the issuer's credit rating, which can raise borrowing costs and reduce the bond's market value.
3. **Recovery risk** – The uncertainty regarding how much investors can recover in the event of default, often expressed as a recovery rate (percentage of par value recouped).

Credit ratings assigned by agencies such as Moody's, S&P, and Fitch provide a shorthand assessment of credit quality, ranging from investment grade (lower risk) to high yield (higher risk). While ratings are widely used in portfolio mandates and regulatory frameworks, they are not infallible, they can lag market perceptions and fail to capture rapid changes in fundamentals.

Market-based measures such as credit spreads and credit default swap (CDS) premiums can provide real-time signals of changing credit risk. For example, a widening CDS spread indicates rising default probability as assessed by market participants.

From a pricing perspective, credit risk can be incorporated into valuation models through a credit spread over the risk-free rate:

$$P = \sum_{t=1}^N \frac{C}{(1 + y_{rf} + s)^t} + \frac{F}{(1 + y_{rf} + s)^N}$$

Where:

- y_{rf} = risk-free yield
- s = credit spread

Credit risk is influenced by:

- **Macroeconomic conditions** – Slowing growth, tighter financial conditions, or recessions tend to increase default probabilities.
- **Sector-specific trends** – Industries facing structural decline or high cyclicalities carry elevated risk.
- **Issuer fundamentals** – Leverage, cash flow stability, liquidity reserves, and management quality directly affect creditworthiness.

Credit risk affects both absolute return and relative performance in fixed income portfolios. Active managers may overweight or underweight sectors or issuers based on credit analysis, while risk-averse investors may prefer higher-rated securities or government bonds.

Key risk management techniques include:

- Diversification across issuers, sectors, and geographies.
- Ongoing monitoring of credit metrics and news flow.
- Hedging via CDS or short positions in correlated securities.
- Limiting exposure to issuers or ratings categories according to mandate.

While credit risk can be a source of loss, it is also a source of opportunity. Investors willing to assume higher credit risk can earn higher yields through high-yield bonds, distressed debt, or emerging market sovereigns, provided they are compensated adequately for the risk.

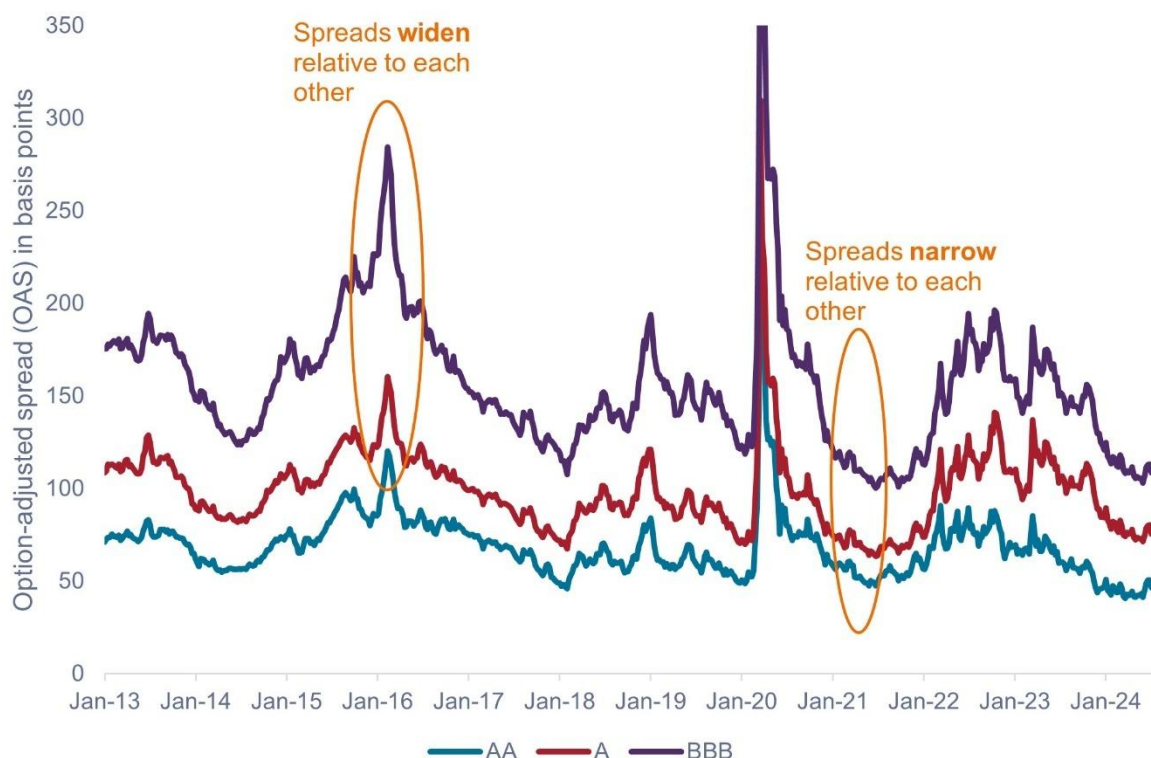


Figure 4: Options Adjusted Spread (OAS) in basis points for AA, A, and BBB rates

This chart illustrates how option-adjusted spreads (OAS) vary across credit ratings and through market cycles, with BBB-rated bonds consistently offering higher spreads than A or AA counterparts due to greater credit risk. Periods of market stress, such as early 2016 and the onset of COVID-19 in 2020, saw spreads widen sharply reflecting a flight to quality as investors demanded more compensation for risk. Conversely, the post-pandemic recovery in 2021 brought a pronounced narrowing, especially in BBBs, as liquidity conditions improved and risk appetite returned. This cyclical behaviour highlights how credit spreads both signal and respond to changing macroeconomic and market conditions.

6.3 Liquidity Risk

Liquidity risk in fixed income refers to the possibility that an investor will be unable to buy or sell a security quickly, in the desired size, and at a fair price without significantly affecting the market price. It is not solely about the ability to trade, but about the cost of executing a trade in terms of the bid–ask spread and potential market impact.

In fixed income markets, liquidity risk is particularly relevant because trading is often conducted over-the-counter (OTC) rather than on centralised exchanges. Many bonds, especially smaller corporate issues or structured products, trade infrequently, meaning that reliable market prices may not be available and executing large trades can require significant concessions.

Sources of Liquidity Risk

- **Market structure:** The decentralised nature of bond trading means there is no single transparent order book, and dealers act as liquidity providers.
- **Issue size and age:** Larger, more recent benchmark issues tend to be more liquid, while smaller or older issues often become “off the run” and see reduced trading activity.
- **Market stress:** In periods of volatility or uncertainty, dealers may reduce balance sheet commitments, widening spreads and reducing market depth.
- **Regulation:** Post-crisis capital and liquidity requirements (e.g., Basel III) have limited dealers’ ability to warehouse inventory, reducing their capacity to make markets.

There is no single metric for liquidity, but common measures include:

- **Bid–ask spreads:** Wider spreads indicate higher transaction costs and lower liquidity.
- **Market depth:** The size of an order that can be executed without moving the price significantly.
- **Turnover ratios:** Trading volume relative to the size of the outstanding issue.
- **Price impact measures:** How much prices move in response to a given trade size.

Liquidity risk can cause sudden and significant losses, even in the absence of credit or interest rate changes. For example, during the March 2020 COVID-19 shock, even US Treasuries, normally the most liquid securities in the world, experienced unusual dislocations as market-making capacity was overwhelmed by selling pressure.

Illiquidity can also lead to valuation challenges for portfolios, especially for funds that must offer daily liquidity to investors. In such cases, asset managers may need to sell liquid holdings first, creating portfolio imbalances and potential “liquidity spirals,” where selling pressure further reduces market liquidity.

6.4 *Inflation Risk*

Inflation risk is the possibility that rising prices will erode the purchasing power of a bond’s future cash flows. Since most fixed income securities pay fixed nominal coupons and principal, higher inflation reduces the real value of these payments. Even if nominal returns are positive, investors can experience a decline in real terms if inflation exceeds the bond’s yield.

Inflation risk is particularly relevant for long-dated bonds, where the time horizon amplifies the cumulative effect of inflation. For example, at a 3% annual inflation rate, the real value of a fixed \$100 coupon paid 20 years from now is reduced to roughly \$55 in today’s terms.

Markets gauge inflation expectations using:

- **Breakeven inflation rates:** The yield difference between nominal bonds and inflation-linked bonds of the same maturity.
- **Survey-based measures:** Forecasts from economists or central banks.

- **Market-based derivatives:** Prices of inflation swaps and options.

Breakeven rates are widely used because they provide a real-time, market-implied measure of expected inflation. For instance, if a 10-year nominal government bond yields 3% and the equivalent 10-year inflation-linked bond yields 1%, the implied 10-year breakeven inflation rate is 2%.

Drivers of Inflation Risk

- **Monetary policy:** Excessively accommodative policies can push inflation higher if demand exceeds supply capacity.
- **Supply shocks:** Disruptions in energy, food, or raw materials can drive sudden price spikes.
- **Currency depreciation:** For countries reliant on imports, a weaker currency can increase the cost of foreign goods.
- **Structural factors:** Demographics, wage dynamics, and productivity trends can influence long-term inflation levels.

Inflation risk is not uniform across the credit spectrum. High-yield bonds, for example, may be less sensitive to moderate inflation because their larger coupon payments dominate total returns, and their shorter maturities limit exposure. Conversely, low-yield, long-duration sovereign bonds are highly vulnerable, as small changes in inflation expectations can significantly alter real returns.

In portfolio construction, assessing inflation risk involves balancing nominal and real yield exposures, monitoring breakeven trends, and considering macroeconomic scenarios. For liability-driven investors, inflation protection is especially important if liabilities are linked to cost-of-living adjustments.

6.5 *Currency Risk*

Currency risk, or exchange rate risk, arises when a fixed income investment is denominated in a currency different from the investor's base currency. Changes in the exchange rate between the two currencies can increase or decrease the investment's total return once converted back to the base currency. This means that even if the bond's price and coupons are stable in local terms, the realised return can fluctuate significantly due to foreign exchange movements.

For example, a euro-based investor holding a US Treasury bond benefits if the US dollar appreciates against the euro, as coupons and principal payments will convert into more euros. Conversely, a weakening dollar would reduce the investor's return in euro terms.

Sources of Currency Risk

- **Macroeconomic factors:** Interest rate differentials, growth prospects, and inflation expectations between countries influence currency values.

- **Capital flows:** Cross-border investment flows into or out of fixed income markets can move exchange rates.
- **Political and geopolitical events:** Policy uncertainty, elections, or geopolitical tensions can drive sharp currency movements.
- **Central bank interventions:** Currency markets can be influenced by foreign exchange market operations or policy shifts by monetary authorities.

Currency risk can dominate total return, especially in low-yield environments. For example, in 2022, many non-US investors in US Treasuries saw their local-currency losses compounded by a strengthening US dollar, while others benefitted from currency hedges that offset part of the impact.

For emerging market debt, currency risk can be even more significant. Local-currency bonds offer higher nominal yields, but exchange rate volatility can quickly erode returns, especially during risk-off episodes when investors withdraw capital from emerging markets.

Management and Hedging Strategies

- **Passive hedging:** Using forward contracts or currency swaps to lock in the exchange rate for future cash flows.
- **Active currency management:** Taking tactical positions based on currency forecasts, often used by global bond funds.
- **Natural hedging:** Matching the currency of liabilities and assets to eliminate currency mismatch.
- **Diversification:** Spreading exposure across multiple currencies to reduce the impact of a single exchange rate movement.

Hedging can reduce return volatility but comes at a cost, often linked to the interest rate differential between the two currencies. When the investor's base currency has lower interest rates than the bond's currency, hedging can reduce returns materially; when the opposite is true, it can boost returns. This cost-benefit analysis is an integral part of global fixed income management.

7 Central Banks & Policy

Central banks play a defining role in fixed income markets, both as active participants and as policymakers whose decisions set the framework for market pricing. Fixed income securities are the primary channel through which monetary policy is transmitted to the broader economy. Policy rate adjustments influence short-term yields directly, while expectations about future policy paths affect the entire yield curve. In addition, central banks' open market operations, asset purchase programmes, and collateral frameworks influence liquidity conditions, credit availability, and market functioning.

The relationship is reciprocal. Fixed income markets also shape central bank policy decisions by providing real-time information on inflation expectations, growth prospects, and risk sentiment. Government bond yields, term premia, and credit spreads serve as key indicators in policy deliberations. During times of stress, market dysfunction can itself become a catalyst for central bank intervention, as seen during the global financial crisis and the COVID-19 market dislocations.

Understanding this interplay is essential for investors. Central banks influence not only the level of yields but also the shape of the yield curve, term premia, and liquidity in funding markets, all of which affect fixed income valuation, risk management, and strategic positioning.

7.1 *How Monetary Policy Works Through Fixed Income*

The fixed income market is the primary conduit for monetary policy transmission. Policy decisions typically follow this sequence:

1. **Policy rate changes** – Adjustments to the overnight or short-term policy rate (e.g., the federal funds rate, ECB deposit facility rate) influence short-term government yields directly.
2. **Expectations channel** – Market participants adjust their expectations for future rates, affecting medium- and long-term yields via the yield curve.
3. **Portfolio rebalancing** – Changes in government yields cascade through credit markets, influencing corporate bond pricing, mortgage rates, and other lending terms.
4. **Wealth and confidence effects** – Lower yields can boost asset prices and encourage borrowing, while higher yields can tighten financial conditions.

Policy Stance and Market Impact

- **Easing cycle:** Rate cuts typically lower yields across the curve, increase bond prices, and compress credit spreads, supporting risk asset valuations.
- **Tightening cycle:** Rate hikes push short-term yields higher, can flatten or invert the yield curve, and often widen credit spreads as funding costs rise.

Fixed income markets continuously price in expected policy moves using instruments such as government bond futures, overnight index swaps (OIS), and forward rate agreements (FRAs). Discrepancies between central bank guidance and market pricing can create volatility, especially around policy announcements.

In 2022, aggressive policy tightening by major central banks to combat inflation led to one of the sharpest increases in global government bond yields in decades. This re-pricing affected not only sovereign markets but also rippled into corporate and mortgage markets, raising borrowing costs and dampening credit growth.

Understanding the policy cycle is fundamental for fixed income strategy. Duration positioning, curve trades, and sector allocation all hinge on anticipating how central bank actions will translate into yield movements and relative value shifts across markets.

7.2 *Government Bonds as Monetary Tools*

Government bonds are not only a benchmark for pricing and a safe-haven asset; they are also a primary operational tool for central banks to implement monetary policy. By buying or selling government securities in the open market, central banks can influence interest rates, liquidity conditions, and, in some cases, specific points on the yield curve.

The scale and scope of these operations vary by policy objective and market context. In normal conditions, open market operations focus on short-term liquidity management to keep the policy rate close to the target. In times of economic stress or disinflation, central banks may use large-scale bond purchases to lower long-term yields and stimulate economic activity. Conversely, in an environment of excess liquidity or inflationary pressure, they may reduce holdings to tighten financial conditions.

Quantitative Easing (QE) & Quantitative Tightening (QT)

Quantitative Easing (QE) refers to large-scale purchases of government (and sometimes other high-quality) bonds by the central bank, aimed at:

- Lowering long-term interest rates by reducing the term premium.
- Increasing liquidity in the financial system.
- Encouraging lending and investment by compressing yields across maturities and asset classes.

The mechanism works through both direct demand for bonds, pushing up prices and lowering yields, and a portfolio rebalancing effect, where investors shift into riskier assets to seek higher returns.

Quantitative Tightening (QT) is the reverse process, in which central banks shrink their bond holdings either by selling them outright or by allowing them to mature without reinvestment. QT can raise term premia, reduce liquidity, and tighten financial conditions, even without changes to the policy rate.

QE was used extensively after the 2008 financial crisis and during the COVID-19 pandemic, contributing to historically low long-term yields. QT phases, such as the Federal Reserve's balance sheet reduction from 2017 to 2019 and from 2022 onwards, have generally coincided with higher yields and, in some cases, more volatile market conditions.

Yield Curve Control (YCC)

Yield Curve Control is a more targeted approach, where the central bank commits to maintaining specific yields at certain maturities, typically through unlimited bond purchases or sales.

Objectives and Mechanism

- Anchoring borrowing costs for the government and private sector.
- Reinforcing forward guidance by directly linking policy to a yield target rather than a policy rate.
- Providing stability in the pricing of loans and securities tied to those maturities.

The Bank of Japan (BoJ) has maintained a YCC policy since 2016, targeting the 10-year Japanese Government Bond yield around zero percent. This has involved large-scale interventions to cap yields when upward pressure arises, influencing not only domestic bond pricing but also global capital flows as Japanese investors adjust overseas allocations.

While YCC can provide stability, it can also lead to market distortions, reduce price discovery, and require significant balance sheet expansion. Exiting such a policy can be challenging, as markets may react sharply to any sign of reduced support.

7.3 Repo Markets, Collateral, and Financial Plumbing

The repurchase agreement (repo) market is a critical component of the fixed income ecosystem and the broader financial system. In a repo transaction, one party sells a security, typically a government bond, with an agreement to repurchase it at a specified date and price. The difference between the sale and repurchase prices reflects the repo rate, effectively an interest rate for secured borrowing.

Repos serve two essential purposes:

1. **Funding** – Allowing market participants to borrow cash against high-quality collateral at relatively low rates.
2. **Collateral transformation** – Enabling holders of less liquid or less desirable securities to obtain more liquid collateral, often to meet regulatory or margin requirements.

Central banks use repo and reverse repo operations to manage short-term interest rates and liquidity in the banking system:

- **Injecting liquidity:** Conducting repos to provide cash to banks in exchange for securities.
- **Absorbing liquidity:** Conducting reverse repos, lending securities in exchange for cash, to withdraw excess liquidity from the system.

The repo rate is closely linked to the policy rate in most economies, forming a core part of the monetary policy transmission mechanism.

Collateral and Market Functioning

In fixed income markets, the quality and availability of collateral are key determinants of repo market rates. High-demand securities, such as benchmark government bonds, can trade “special” in the repo market, meaning their repo rate is lower than the general collateral rate because borrowers are willing to accept cheaper cash funding to obtain them. This often occurs when a specific security is scarce due to high demand for hedging, delivery into futures contracts, or regulatory needs.

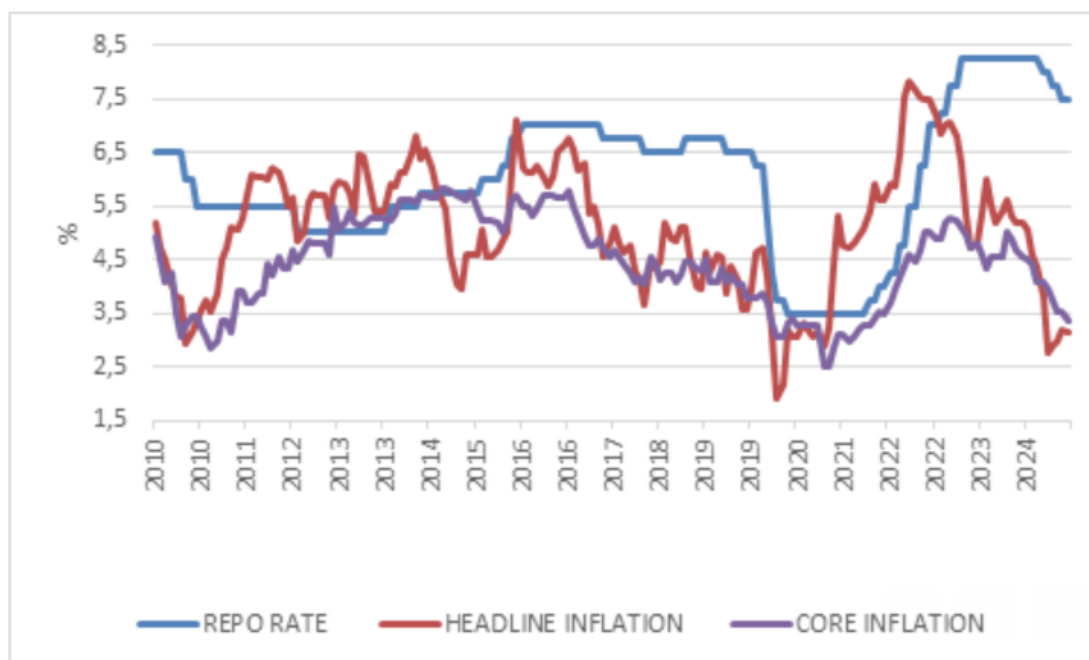
Collateral standards are also central to financial stability. Post-2008 regulatory reforms, including Basel III and central clearing mandates, have increased demand for high-quality liquid assets (HQLA), putting more focus on the functioning of the government bond and repo markets.

Risks and Stress Episodes

The repo market is highly sensitive to disruptions in collateral flows and counterparty confidence. For example, in September 2019, the US repo market experienced a sudden spike in overnight rates due to a confluence of corporate tax payments, Treasury settlement flows, and reduced dealer capacity. The Federal Reserve intervened with large-scale repo operations to restore stability.

Similarly, during the COVID-19 shock in March 2020, liquidity strains led to severe volatility in repo rates and government bond yields, prompting emergency measures from central banks to ensure market functioning.

For fixed income investors, repo markets are more than a funding tool, they provide real-time signals about collateral scarcity, funding costs, and potential stresses in market plumbing. Monitoring repo rates and collateral conditions can inform trading decisions, especially in relative value strategies, and help anticipate central bank interventions.



Source: LSEG Datastream

8 Market Structure & Trading

The structure of fixed income markets determines how prices are formed, how liquidity is provided, and how efficiently risk can be transferred between participants. Unlike equities, which trade predominantly on centralised exchanges, fixed income markets are largely decentralised, with most transactions occurring over-the-counter (OTC) through a network of dealers, electronic trading platforms, and bilateral negotiations.

This decentralised architecture has advantages, such as flexibility in structuring trades and accommodating bespoke instruments, but it also introduces challenges, including reduced price transparency and uneven liquidity across instruments. Market conventions, settlement systems, and the evolution of trading technology all play a role in shaping how efficiently fixed income securities are traded.

The trading environment also varies significantly by instrument type. Government bonds often benefit from deep, liquid markets with standardised benchmarks, while corporate bonds, structured products, and emerging market debt can be fragmented, with fewer active market-makers and less frequent trading. The increasing use of derivatives allows participants to manage exposures more efficiently, but it also creates a complex web of interconnected markets where disruptions in one segment can quickly spill over into others.

8.1 *Cash Bonds vs Derivatives*

Cash bonds and derivatives are complementary instruments in fixed income markets, serving different purposes but often linked through pricing and hedging relationships.

Cash Bonds

- Represent direct ownership of debt instruments issued by governments, corporations, or other entities.
- Provide fixed or floating coupon payments and return of principal at maturity.
- Suit investors seeking income, capital preservation, and direct exposure to credit risk.
- Trading involves settlement of the actual security, which can make large trades in less liquid bonds costly or slow to execute.

Derivatives

- Include futures, swaps, and options that derive their value from underlying fixed income instruments or interest rates.
- Often require no transfer of the actual bond, allowing for greater leverage and faster execution.
- Used for hedging interest rate or credit exposure, speculating on rate movements, or implementing relative value strategies.

- Provide access to exposures that may be illiquid or costly to replicate in the cash market. Cash and derivative markets are tightly linked through arbitrage relationships. For example, mispricing between a government bond future and the deliverable cash bonds can be exploited through “basis trades,” where traders simultaneously buy one and sell the other. Similarly, interest rate swaps and government bonds often move together, with deviations providing signals for relative value opportunities.

The choice between using cash bonds or derivatives depends on objectives, liquidity, cost, and regulatory considerations. In practice, many institutional portfolios use a combination, holding cash bonds for income and credit exposure while using derivatives to adjust duration, curve positioning, or hedge unwanted risks.

8.2 *Benchmarks & Conventions*

Benchmarks play a central role in fixed income markets, acting as reference points for pricing, performance measurement, and portfolio construction. In government bond markets, certain issues, such as US Treasuries, German Bunds, or Japanese Government Bonds (JGBs), serve as the most liquid and widely traded securities in their respective markets, providing a foundation for yield curve construction and relative value analysis.

Role of Benchmarks

1. **Pricing Anchor** – Many fixed income instruments are quoted and traded at a spread over a benchmark yield. For example, corporate bonds are typically priced as a spread over the yield of a government bond of similar maturity.
2. **Performance Measurement** – Asset managers are often evaluated against benchmark indices (e.g., Bloomberg Global Aggregate, ICE BofA US Treasury Index), which define the investable universe and provide a standard for risk and return comparisons.
3. **Policy Reference** – Central banks and policymakers monitor benchmark yields as indicators of financial conditions, inflation expectations, and market sentiment.

On-the-Run vs Off-the-Run

In government bond markets, the most recently issued security of a given maturity is referred to as on-the-run, while older issues are off-the-run. On-the-run securities are typically more liquid, trade at lower yields (higher prices) due to their liquidity premium and are the preferred collateral in repo transactions. Off-the-run bonds may trade at higher yields but can be less liquid, affecting their suitability for large transactions.

Fixed income markets operate under a range of conventions that vary by geography and instrument type:

- **Day count conventions:** Methods for calculating accrued interest (e.g., Actual/Actual, 30/360, Actual/360).

- **Settlement cycles:** Typically, T+1 for government bonds, T+2 for many corporate bonds, though variations exist by market.
- **Quotation practices:** Some markets quote yields, others quote prices, and some use clean prices (excluding accrued interest) versus dirty prices (including accrued interest).

Understanding these conventions is essential for accurate pricing, yield calculation, and performance attribution.

Benchmark yields influence virtually all aspects of fixed income investment, from primary issuance pricing to derivative valuation. Investors must be aware of benchmark liquidity conditions, upcoming auctions, and index rebalancing events, as these can have significant effects on market dynamics. For example, a large inclusion of sovereign bonds in a global index can prompt significant passive inflows, compressing yields and boosting prices temporarily.

8.3 Trading Platforms & Electronic Evolution

Over the past two decades, fixed income trading has undergone a significant technological transformation, moving from a predominantly voice-brokered, bilateral process to increasingly electronic execution. While the transition has been slower than in equities, due to the OTC nature of fixed income and the vast diversity of instruments, the growth of electronic platforms has reshaped liquidity provision, transparency, and execution strategies.

Historically, most fixed income trades were conducted by phone between buy-side institutions and sell-side dealers. This allowed for customised negotiation but lacked transparency, with price discovery relying heavily on dealer-provided quotes. Today, electronic trading platforms have introduced more standardised and competitive execution methods, including:

- **Request-for-Quote (RFQ):** Investors send pricing requests to multiple dealers simultaneously, improving competition and pricing efficiency.
- **Order book trading:** Central limit order books, common in equities, are emerging in certain liquid government bond markets, enabling continuous two-way pricing.
- **Click-to-trade:** Pre-quoted prices on screen that can be executed instantly.

Prominent electronic trading venues include Tradeweb, MarketAxess, Bloomberg, and MTS in Europe. These platforms offer multi-dealer RFQ, streaming prices, and post-trade reporting, catering to different segments such as government bonds, corporate bonds, and emerging market debt. Some have also expanded into derivatives, ETFs, and portfolio trading capabilities.

Recent developments include portfolio trading, where baskets of bonds are executed in a single trade, and the use of algorithmic execution to break large orders into smaller slices to minimise market impact. Artificial intelligence is also being applied to optimise dealer selection and timing of trades. Over time, the expansion of electronic trading is expected to narrow bid-ask spreads and enhance liquidity in certain segments, although the most bespoke and illiquid securities will likely remain in the voice-traded domain.

9 Fixed Income in Portfolio Construction

Fixed income plays a central role in portfolio construction, both strategically and tactically. Its appeal lies in its ability to generate predictable income, reduce portfolio volatility, and act as a hedge against equity market drawdowns in many macroeconomic environments. At the same time, the asset class offers a wide spectrum of risk–return profiles, from ultra-safe short-term government bills to higher-yielding, higher-volatility emerging market debt and high-yield corporate bonds.

The role of fixed income within a portfolio is not static. It depends on the investor's objectives, constraints, and market conditions. Strategic allocations often reflect long-term goals, such as liability matching or capital preservation, while tactical adjustments respond to changes in interest rates, credit spreads, inflation expectations, and macroeconomic cycles.

A well-constructed fixed income allocation requires balancing return generation through yield and capital gains with risk control via diversification, duration management, and credit selection. The following sections examine how fixed income interacts with other asset classes, how it contributes to risk-adjusted returns, and how investors can tailor its role to specific investment mandates.

9.1 *The Fixed Income–Equity Mix: Risk & Return*

The most common strategic allocation framework for diversified portfolios is the balanced portfolio, often expressed as a 60/40 split between equities and bonds. In this structure, equities provide long-term growth potential, while fixed income offers stability, income, and diversification benefits.

Risk Characteristics

- **Equities:** Higher volatility returns driven by earnings growth, and greater sensitivity to economic cycles.
- **Fixed Income:** Lower volatility in nominal terms, returns driven by yield and duration exposure, and generally lower correlation with equities, though correlations can vary over time.

Historically, high-quality government bonds have exhibited negative correlation with equities during periods of market stress. This relationship has underpinned their role as a defensive anchor in multi-asset portfolios. However, in inflationary shocks, both asset classes can decline simultaneously, as seen in 2022.

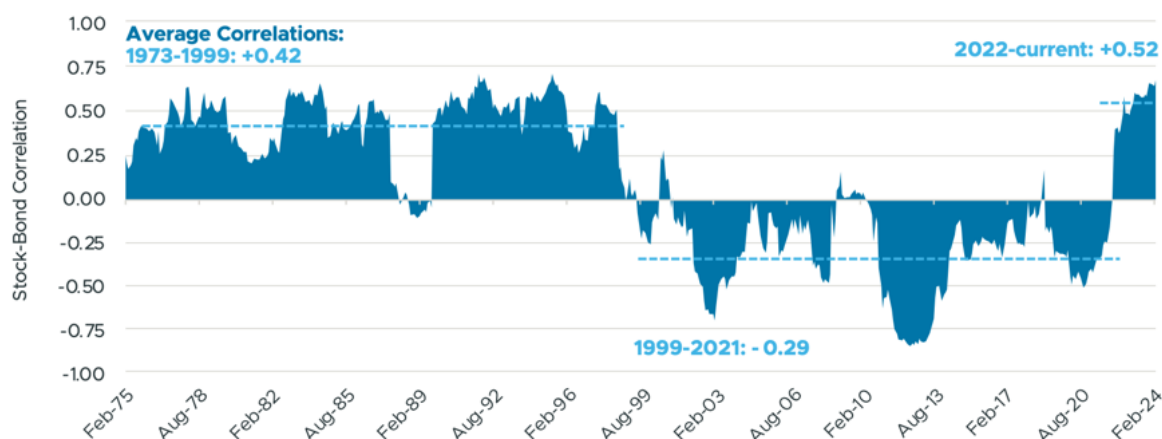
Allocating more to fixed income typically lowers expected portfolio returns but also reduces volatility. The optimal mix depends on the investor's risk tolerance, return objectives, and investment horizon. Institutional investors, such as pension funds and insurers, may lean towards higher fixed income allocations to meet liabilities with greater certainty, while growth-oriented investors may allocate more heavily to equities.

The fixed income–equity balance is not static and can be adjusted tactically:

- **Increasing bond allocation** when interest rates are high and likely to decline, providing potential capital gains.
- **Reducing bond allocation** when yields are low and duration risk is elevated, shifting towards equities or alternative assets.

Exhibit 1: A Traditional 60/40 Portfolio is Not Offering “Natural” Diversification

Trailing 24-month correlation between the S&P 500 and the Bloomberg U.S. Long Treasury Index



Source: Bloomberg, as of April 2024. For illustrative purposes only. Past performance is not indicative of future results. Future results are not guaranteed.

Historically, the correlation between equities and long-term Treasuries has alternated between positive and negative regimes, with significant implications for portfolio diversification. From 1973 to 1999, the average correlation was moderately positive (+0.42), meaning bonds did not consistently offset equity drawdowns. The period from 1999 to 2021 marked a structural shift, with an average correlation of -0.29 , driven largely by disinflationary trends and accommodative monetary policy, allowing Treasuries to act as an effective hedge against equity risk. Since 2022, however, correlations have turned sharply positive (+0.52), reflecting the inflation shock and simultaneous repricing of both asset classes as yields rose. This regime shift challenges the traditional 60/40 portfolio model, underscoring the need for more dynamic fixed income allocation and risk management in an environment where bonds may no longer serve as a reliable equity diversifier.

9.2 Risk-Adjusted Returns & the Sharpe Ratio

Evaluating fixed income’s role in a portfolio requires looking beyond absolute returns to assess how much return is being generated per unit of risk. The **Sharpe ratio** is one of the most widely used metrics for this purpose:

$$\text{Sharpe Ratio} = \frac{R_p - R_f}{\sigma_p}$$

Where:

- R_p = portfolio return
- R_f = risk-free rate
- σ_p = standard deviation of portfolio returns

A higher Sharpe ratio indicates more efficient risk-taking, delivering greater excess return for each unit of volatility.

Fixed income securities often have lower volatility than equities, meaning they can significantly improve a portfolio's Sharpe ratio even if their expected returns are lower. By reducing overall portfolio volatility, they allow investors to take more risk elsewhere or to achieve the same return with less total risk.

For example:

- A 100% equity portfolio may have an expected return of 8% and volatility of 15%, producing a Sharpe ratio (assuming a 2% risk-free rate) of 0.40.
- Adding 40% bonds might reduce volatility to 10% with only a slight reduction in return to 6.5%, raising the Sharpe ratio to 0.45, an improvement in efficiency.

Nuances in Measurement

- **Non-normal returns:** Fixed income returns can be skewed by rare but extreme events, such as defaults or liquidity crises, which the Sharpe ratio does not fully capture.
- **Interest rate environment:** In a low-yield world, the risk-free rate is closer to bond yields, compressing excess returns and potentially lowering Sharpe ratios for core fixed income.
- **Credit and duration mix:** Higher-yielding segments can boost returns but also raise volatility, affecting the Sharpe ratio in both directions.

9.3 *Liability-Driven Investing (LDI) & Immunisation*

Liability-Driven Investing (LDI) is an investment approach focused on ensuring that a portfolio's assets are aligned with the timing, size, and certainty of its liabilities. It is particularly relevant for institutional investors such as pension funds, insurance companies, and endowments, where meeting future obligations is the primary objective.

The essence of LDI is not to maximise returns, but to control funding risk, the risk that asset values and liability values move differently due to changes in interest rates, inflation, or other factors.

Role of Fixed Income in LDI

Fixed income instruments are the natural backbone of LDI strategies because their cash flows are predictable and can be tailored to match liability schedules. Long-duration bonds, inflation-linked bonds, and customised derivative overlays are often used to replicate the sensitivity of liabilities to interest rate and inflation changes.

A core principle in LDI is immunisation, constructing a portfolio such that its duration and convexity closely match those of the liabilities. When properly immunised, the present value of assets will move in tandem with the present value of liabilities in response to interest rate changes, keeping the funding ratio stable.

Mechanics of Immunisation

The simplest form of immunisation is duration matching, where:

$$D_{assets} \approx D_{liabilities}$$

Where D = duration.

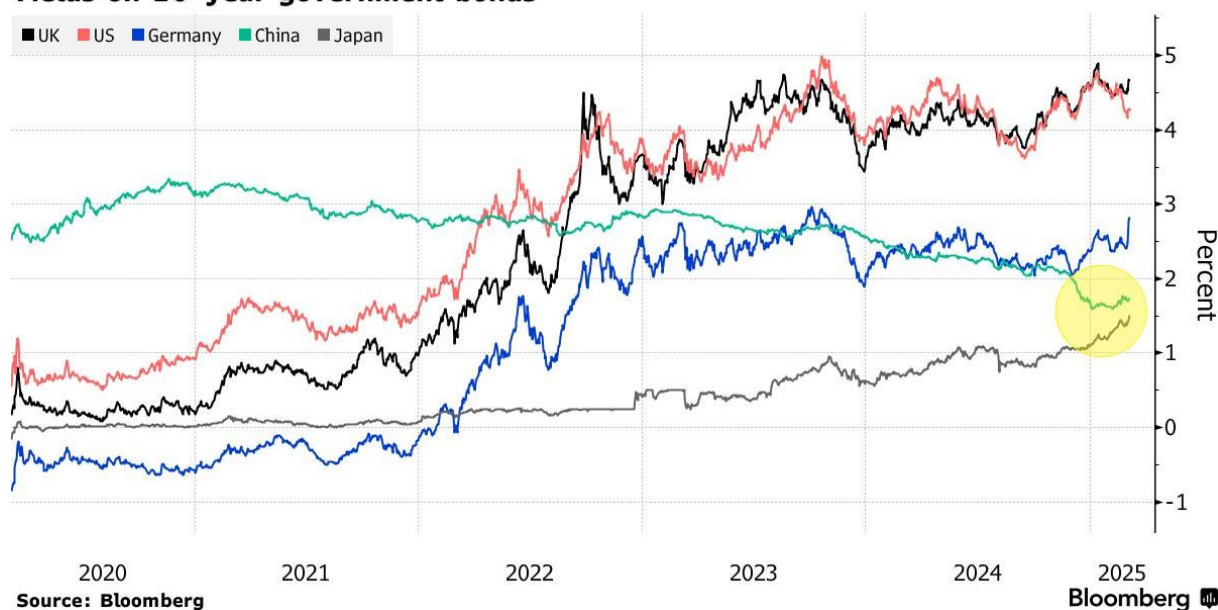
Convexity is also important: mismatches can cause divergences in asset–liability values when rate changes are large or non-parallel across the curve. In practice, immunisation often involves:

- Extending bond maturities to match liability profiles.
- Using interest rate swaps or futures to synthetically adjust duration without altering cash holdings.
- Incorporating inflation-linked instruments if liabilities are indexed to inflation.

10 Trends & Challenges Ahead

The fixed income landscape is entering a period of structural transition shaped by shifting macroeconomic regimes, evolving investor needs, and regulatory changes. The era of persistently low interest rates has ended, replaced by an environment of higher nominal and real yields, greater yield volatility, and more active monetary policy cycles. Debt sustainability is becoming a central concern for both developed and emerging economies as rising borrowing costs interact with elevated public debt levels, increasing the potential for fiscal dominance to influence monetary policy. Investor demand is also being reshaped by structural themes, including the growth of ESG and green bond issuance, the integration of sustainability criteria into investment mandates, and the reallocation of capital towards assets aligned with energy transition objectives. At the same time, the composition of the investor base is evolving, with shifts in central bank participation, foreign reserve management strategies, and the role of institutional versus retail investors. In emerging markets, opportunities remain attractive in local- and hard-currency debt, but risks from currency volatility, political instability, and external funding pressures require careful calibration. Against this backdrop, fixed income investors must adapt to more complex market dynamics, balancing yield opportunities with heightened sensitivity to inflation, liquidity shocks, and global capital flow shifts.

Yields on 10-year government bonds



11 Conclusion

Fixed income markets remain a cornerstone of the global financial system, connecting issuers seeking funding with investors seeking income, capital preservation, and diversification. Their structure, behaviour, and performance are shaped by a complex interplay of macroeconomic forces, policy decisions, and market microstructure. For investors, mastering fixed income is not only about understanding the mechanics of bonds, yields, and duration, but also about recognising the strategic and tactical roles the asset class can play across economic cycles. In today's environment of higher rates, shifting inflation dynamics, and evolving investor priorities, fixed income offers both renewed opportunities and new challenges.

Success in this asset class requires a disciplined approach, one that blends fundamental analysis, macroeconomic insight, and risk management, while remaining adaptive to structural shifts in market structure, regulation, and capital flows. Whether the objective is to generate steady income, hedge against equity volatility, or implement macro strategies, informed decision-making will increasingly be the differentiator between simply participating in fixed income markets and generating consistent, risk-adjusted returns from them.

As we move into a new era for global fixed income, the ability to interpret market signals, anticipate policy shifts, and navigate evolving liquidity conditions will be essential. I invite readers to share their perspectives on how they see the role of fixed income changing in their portfolios, and which strategies they believe will define success in the years ahead.

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