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PIMCO EDUCATION

The What, Why and How of Investing in Bonds

A company of Allianz

What is a bond?
Why invest in bonds?
How many types of bonds are there?

Asking questions is the best way to gain knowledge, but investors aren't always sure where to find answers.

This small book offers simple, practical responses to some of the most commonly asked questions about bonds. It will introduce you, in a user-friendly way, to the key concepts that you need to know to make investment decisions that work for you.

We hope that you find this booklet useful and a first step toward improving your financial knowledge.

What?

What are bonds?

Bonds are basically loans. A company, state or government issues bonds to raise money to fund expansion programs or build schools and hospitals. The bond issuer agrees to pay its investors periodic “fixed” interest payments (hence, the name “fixed income”), while the loan is outstanding, and to pay back the full loan at the end of the bond’s life (called maturity).

What is the history of bonds?

Governments have been using bonds to raise funds for centuries. While it's not entirely clear when the first bond was issued and by whom, historians believe Venice was an early innovator. To defend itself against war in the 1100s, Venice "taxed" its citizens to build a fleet of ships, but unlike a regular tax, the government promised to pay it back with interest. And so the bond – or prestiti – was created.

Source: Goetzmann, William (2016). *Money Changes Everything: How Finance Made Civilization Possible*. Princeton University Press.

What?

What are the main fixed income asset classes?

- **Government/Sovereign:** They tend to have less risk than other asset classes as governments have the ability to print more money – albeit at a very high social and economic cost.
- **Government-related:** These quasi-government institutions include agencies and local authorities.
- **Corporate:** Credit issued by companies, generally offering investors a premium because lending to a company is usually riskier than lending to a government.
- **Securitized:** These securities are backed by assets, such as mortgages, auto loans and credit card debt.

What?

What is a bond's coupon?

A coupon is the yield, or annual interest payment, that the bondholder receives from the bond from its issue date until it matures. Coupons are normally described as the "coupon rate," which is calculated by adding the sum of coupons paid per year and dividing it by the bond's face value. For example, if a bond has a face value of $1,000 and a coupon rate of 5%, then it pays total coupons, or interest, of $50 per year.

What is a bond yield?

It is a bond's income return. Setting aside time and interest rates, a bond yield equals the bond's coupon. But since money today is not worth the same as an IOU in the future, yields tend to be higher for longer-maturity bonds. This is because investors generally demand a higher return for the higher risk taken and for the effect of inflation, which will eat into the principal's value over time: A million dollars or euros may buy you a dream home today – but probably not in 20 years' time.

What?

What is a negative bond yield?

When economies face low growth and low inflation, investors tend to favor bonds as they are usually seen as lower risk assets. But increased demand raises bond prices and pushes yields downward. At times, bond prices may rise so much that their yields turn negative. When this happens, creditors (investors) do actually *pay* borrowers (some governments) for lending them money. This has been a feature of bond markets over the past decade: Central banks have spent billions to refloat economies through the purchase of bonds, which has pushed bond yields in countries such as Germany and Japan into negative levels.

What determines the price of a bond?

A bond's market price is typically based on its features, such as quality, coupon size and maturity. Like most products, high-quality bonds are usually more expensive* than lower-quality bonds. After a new bond starts trading in the market, investors will soon notice that bond prices move in the opposite direction from interest rates: When rates rise, bond prices fall. All else held constant, bonds sold in a lower interest rate environment will have lower coupons – making the security less attractive relative to new bonds sold in a higher-rate environment. The opposite happens when rates fall: The price of a bond issued in a higher-rate enviroment will rise because it typically has a higher coupon.

*Since most bonds are issued at a par value of $1000, "expensive" may refer to the coupon of the bond, which tends to be lower for bonds issued by higher credit quality issuers.

What?

PLAYGROUND PRINCIPLES: THE PRICE/ INTEREST RATE SEESAW

For Illustrative purposes only.

What?

What is a spread?

A spread is the risk premium that investors demand, typically measured over a base government bond yield, to compensate for the risk taken. During volatile times, the spread of high yield corporate bonds over the base government yield may be significant. But, while this return may seem very attractive, investors should understand that higher-yielding bonds often have considerably higher risk.

What?

What is duration?

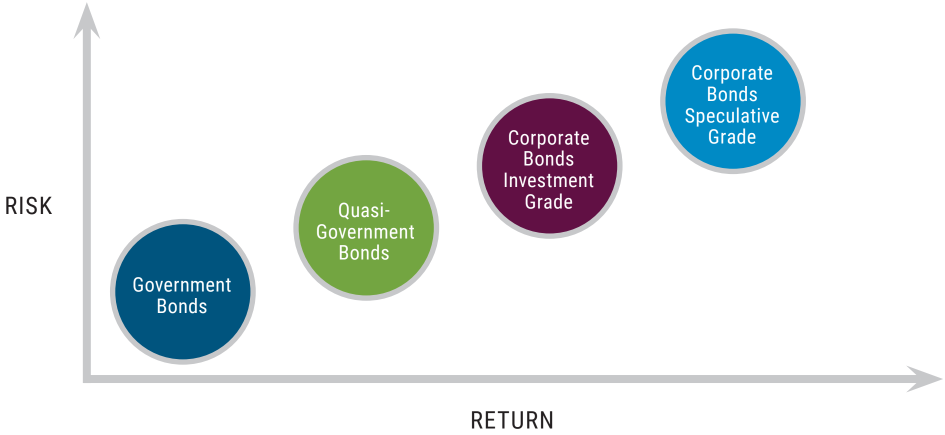
Duration is a measure that helps us calculate how much a bond price is expected to rise or fall given a change in interest rates or in the bond's yield. Duration is expressed in years and tends to be linked to the maturity of a bond: Generally, longer-dated bonds have longer duration, while shorter-dated bonds have shorter durations. When interest rates are expected to fall, investors tend to favor long-duration bonds because the effect of the yield drop, and subsequent price increase, will likely be much higher. The opposite happens when rates are expected to rise: Investors may favor bonds with shorter durations to help mitigate the negative effect of rising rates on bond prices.

What is credit quality?

Credit quality is the assessment of how trustworthy a bond issuer is. The more likely it is that investors will receive their money back, the higher a issuer’s credit quality. On the other hand, companies whose perceived credit quality are usually in the “speculative/high yield,” or bottom buckets of the credit quality spectrum. These higher-risk companies will often pay higher coupons to compensate investors for the risk they are taking. Government bonds, on the contrary, usually pay lower coupons because they are viewed as lower credit risks.

What?

THE RISK AND RETURN OF DIFFERENT TYPES OF BONDS



Source: PIMCO

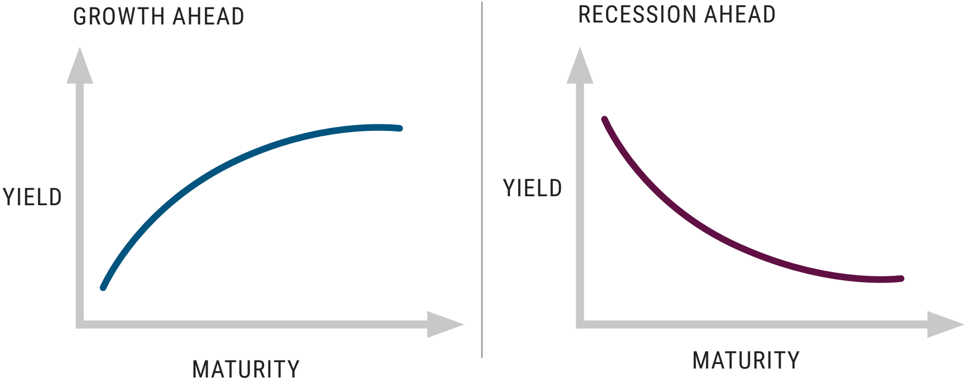
Hypothetical example for illustrative purposes only.

What is a yield curve?

Yield curves plot the yields of bonds with the same credit quality but with different maturities. A healthy yield curve is usually upward-sloping, as investors forecast economic growth ahead and demand higher yields for longer-maturity bonds – they want to be compensated for time and potential inflation (which usually comes with higher growth). On the other side of the spectrum, an inverted yield curve can sometimes signal a recession ahead, as investors may believe the future is less attractive or uncertain.

What?

SHAPES AND SIZES: NORMAL AND INVERTED YIELD CURVES



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What can go wrong with a bond investment?

Issuers that cannot meet interest payments may default on the bond – the worst outcome for a bond investor. In bankruptcy, bondholders have a higher claim on assets than stockholders, however, struggling companies may not be able to pay bondholders any or all of their principal back. This is why risk-averse investors tend to prefer the higher-quality bonds – to reduce the risk of default. Historically, the global corporate default rates tend to rise in weak economic times and drop during expansionary phases. The default rate level, though, has remained low over the past decade as low interest rates have reduced corporate borrowing costs.

What is a ideal outcome for bond investors?

Investors with bond portfolios should have an objective, so meeting it and delivering on investors’ expectations is optimal. Unlike stocks, from which investors typically expect capital appreciation and dividends, bond portfolios may be designed to meet other goals, such as capital preservation and steady income generation.

What is active bond management?

Active management is an investment strategy where the portfolio manager invests with the goal of outperforming a specific benchmark. In contrast, a passive manager will seek to buy and hold a portfolio that represents a benchmark with the goal of offering the same returns as that benchmark. Because of the nature of bonds markets, as opposed to stock markets, managers often say that they offer more opportunity to find inefficiencies, potentially making bonds more suitable for an active approach.

What?


Why?

Why invest in bonds?

- **Capital preservation:** Like any loan, the borrower/issuer promises to pay back the principal amount.
- **Income:** The regular cash flows received in the form of periodic coupons may help to plan future spending needs and liabilities.
- **Diversification:** A diversified portfolio may help reduce risk because if any single asset class performs poorly, others may perform well.
- **Inflation-protection:** Certain bonds are linked to the expected inflation rate which may provide a hedge against rising prices.
- **Capital appreciation:** Depending on the economic and interest rate environment, different types of bonds may offer the potential for capital appreciation at different times, in the form of increasing bond prices.

Why?

Why not keep my money in cash?

Individuals are sometimes tempted to keep the bulk of their savings in cash or cash-equivalent investments (such as Certificates of Deposit (CDs), money market accounts and bank accounts) to reduce the risk losing their money. However, the purchasing power of cash diminishes with rising inflation. Also, cash and cash equivalents usually offer a low return.

Why?

Why do bonds traditionally offer lower returns than stocks?

Bonds are in principle safer than stocks because the borrower has committed to return the principal. With stocks, investors may put $100 of equity into a company, but they may lose it all if the company goes bankrupt, but bondholders, by law, will be paid first and may get everything that the company has left. Investors therefore demand higher return to hold stocks, often making them more profitable. This, of course, doesn't always hold: In recessionary environments bonds tend to outperform equities.

Why?

Why might bonds be considered more complex?

Bonds have multiple sources of return, including their coupon, duration and spread moves, whereas stocks' returns are usually driven by a company's growth and earnings outlook. Some companies, for instance, may only have one class of common stock outstanding, but can have many different issuances of different types of bonds, all with different maturities, coupons. This may make their analysis more difficult because more factors, other than the company's outlook, may have to be considered.

Why?

Why do I see less media coverage about bond?

You may feel as if you hear and see more about stocks than bonds in the news. This may be due to the inherent complexity of the bond market, and also because most bonds trade over the counter (directly between investors or brokers), as opposed to equities, which mostly trade on organized exchanges – making them easier to track. Also, the price moves of bonds tends to be less dramatic, which may make them less "newsworthy."

Why?

How are bonds linked to interest rates?

Interest rates are the price of money – the result of the supply of capital offered by lenders and the demand of capital put forward by borrowers. The resulting base interest rate sets the tone throughout financial markets, making companies adjust the coupons they pay to be in line with the ongoing interest rate level, more or less. Since coupons can be one of the biggest components of a bond's return, the level of interest rates is crucial. Large interest rate moves can have a big effect on a bond price if the duration of the bond is not the optimal.

Why?

Why has it been said that “bonds see it first”?

Historically, bond markets have signaled an approaching recession months before equity markets. This happens because bonds tend to reflect the present health of an issuer, mostly through a company’s balance sheet, while stock prices are representative of *future* cash flows. This may make bonds quicker to react if the present situation is less than positive. As lenders, bond investors function like a bank, and as such, may anticipate if a company is struggling financially.

Why?

Is the bond market bigger than the stock market?

In the U.S, the stock market has a total market capitalization of over $30 trillion, less than the $40 trillion of total debt owed through bonds. This is due to the fact that governments issue bonds, not stocks, and also because bond financing tends to be cheaper than equity issuance, so more companies may choose to raise funds in the bond market.

Why?

Why does the bond market tend to be less liquid than the stock market?

The bond market has always been less liquid because of the difficulty of matching bonds with the exact same characteristics, since bonds can vary so much in terms of maturity, coupon, duration and credit quality. Also, following the global financial crisis, new regulations have made it more difficult for financial institutions to trade risky assets. While the move, aimed at preventing another banking crisis, has indeed improved banks' buffers, it has also led to a reduction of some banks' bond trading desks, reducing overall market liquidity.

Why?

How?

How do I invest in bonds?

Bond investors can choose from many different investment strategies, depending on the role or roles that bonds will play in their investment portfolios. Investors may buy individual bonds and hold them until they mature. Or, they may also consider bond funds. These are mutual funds or exchange-traded funds that usually invest in a variety of bonds, such as corporate, Treasury, or high yield bonds. For a low investment minimum ranging from a few hundred to a few thousand dollars, bond funds allow individuals to invest in a whole range of bonds, managed by professional investment managers.

How?

How do I decide which bond funds to invest in?

Each investor must determine how much risk they are comfortable with – their risk tolerance level. It is generally advised to match one's investment goals with bonds that can help meet those goals. For example, if an investor's main goal is to fund their immediate living expenses, an allocation to liquid, cash and cash-like strategies may be appropriate. For more mid-term or long-term goals, such as children's education and retirement, government and corporate bonds may provide the income needed. Finally, for goals and objectives that are more aspirational, a higher-risk strategy may be suitable as long as the investor is comfortable with that risk.

How?

How do professional managers run their portfolios?

A top-down and a bottom-up focus are two of the best-known investment approaches. A top-down approach offers a big-picture, macroeconomic view that helps bond managers see the general direction of macro trends such as interest rates and inflation. Top-down is usually combined with a bottom-up approach, which typically takes a deep dive into the financial health of the individual companies issuing the bonds to assess if they are positioned to handle the macro forces that may be coming their way.

How?

How do I assess overall risk and opportunity in different types of bonds?

All investments carry some degree of risk. These risks include the possibility that an investor will lose the money they invested if a bond defaults. Investors generally require more return potential to take on more risk, although the correlation of risk and return is not always perfect – sometimes significant levels of risk deliver dismal returns. One of the measures that investors use to assess the relationship between risk and return is the Sharpe ratio, which quantifies the return earned per unit of risk taken. Investors may favor bonds with high Sharpe ratios.

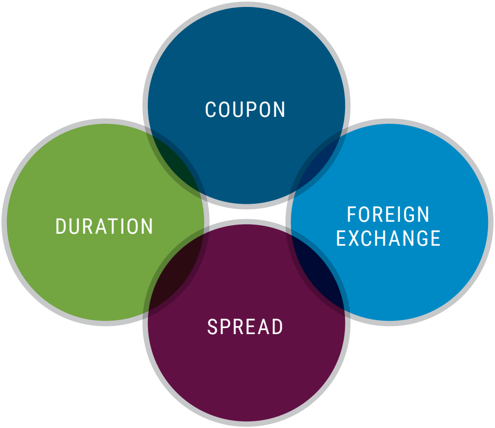
How?

How do I make or lose money in bonds?

- **Coupon:** The coupon is the periodic interest payment investors receive.
- **Duration:** Duration can enhance gains (if you have long duration when rates fall) or exacerbate losses (if you have long duration when rates rise).
- **Spread:** If the corporate, asset-backed or emerging market bonds improve their credit quality, the spread that investors demand to compensate for risk will fall – since the spread is part of a bond's total yield, falling yields will lift bond prices. The opposite will also happen: Rising spreads will lead to losses as bond prices fall.
- **Foreign exchange:** When investing abroad, investors are exposed to the rise or fall of foreign currencies.

How?

FOUR FACTORS THAT AFFECT BOND RETURNS



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How?

How can I assess and balance credit risk in my portfolio?

Independent credit rating services assess the credit quality, or credit risk, of bond issuers and publish credit ratings that not only help investors evaluate risk, but also help determine how much investors should be paid as compensation. An issuer with a high credit rating may issue bonds with a lower coupon than one with a low credit rating. Again, investors who purchase bonds from issuers low credit ratings can potentially earn higher returns, but they must bear a higher degree of risk.

How?

How can I preserve my money?

Investors interested in capital preservation – or in maintaining the value of an investment – may consider lower risk investments, such as CDs, money market accounts and bank accounts, at the expense of a low return potential. Certain types of bonds have historically been relatively stable investments likely more capable of preserving investors' money. However, there are no guarantees that bonds will deliver a positive return or that they will not lose money.

How?

How can I generate income?

Most bonds provide the investor with “fixed” income. On a set schedule, whether quarterly, twice a year or annually, the bond issuer sends the bondholder an interest payment, which can be spent or reinvested in other bonds. Stocks may also provide income through dividend payments, but companies make dividend payments at their discretion, while bond issuers are obligated to make coupon payments.

How?

How can I achieve capital gains?

Bond prices don't tend to move as much as equity prices, but some higher-risk bonds have some equity-like features. For instance, high yield bonds have a higher correlation to equities because their prices depend more on the unique business fundamentals of the underlying issuer and their spread (the premium investors demand to compensate for the security's specific risk) than on underlying economic fundamentals. In this sense, significant spread compression can lead to hefty gains – as much as spread widening can lead to losses. Sovereign debt can also rally in risk-off environments when rates drop, and provide substantial gains for investors with long-duration positions.

How?

How do I balance a bond portfolio?

Diversification is one of the main techniques to reduce risk. However, some investors favor a "barbell" approach, owning securities in almost two opposite poles of the risk spectrum: lower risk government debt combined with higher-risk corporate credit. While the strategy provides certain balance, the loss of the higher risk credit securities may not be entirely offset by the government bonds in a sharp sell-off. Some investors prefer to balance portfolios by spreading maturities and risk more evenly across the spectrum. Having a mixture of credit quality, industry and geographic exposure may also enhance diversification.

How?

How can bonds help me when markets are volatile?

Because of their low correlations to stocks, bonds, particularly core bonds, have been less volatile than stocks, This diversification benefit can help lessen the impact of volatility on an overall portfolio. Importantly, some types of bonds have more risk than other types, which make them more volatile. High yield bonds, for example, are issued by entities with lower credit ratings, making them riskier than higher-quality bonds.

How?

How often should I check and/or change my investments?

Scrutinizing every fluctuation in the market or in the value of an investment can create anxiety. Instead, investors may consider reviewing performance and making any adjustments regularly, such as annually or quarterly. It is important to keep in mind, however, that a disciplined approach to a long-term investment strategy may yield the best results.

How?

How can I learn more about the bond market?

There is no end of available information on investing, from educational content to current analysis. The challenge is finding reliable, relatable sources. Individuals who would like to continue their education journey with PIMCO can visit **pimco.com/marketintelligence** – an educational platform designed to help investors better understand the financial world. PIMCO also regularly publishes the views of portfolio managers on our website. Investors can also follow leading institutions such as the U.S. Federal Reserve and the International Monetary Fund.

How?

All investments contain risk and may lose value. Investing in the **bond market** is subject to risks, including market, interest rate, issuer, credit, inflation risk, and liquidity risk. The value of most bonds and bond strategies are impacted by changes in interest rates. Bonds and bond strategies with longer durations tend to be more sensitive and volatile than those with shorter durations; bond prices generally fall as interest rates rise, and low interest rate environments increase this risk. Reductions in bond counterparty capacity may contribute to decreased market liquidity and increased price volatility. Bond investments may be worth more or less than the original cost when redeemed. **Currency rates** may fluctuate significantly over short periods of time and may reduce the returns of a portfolio. Investing in **foreign-denominated and/or -domiciled securities** may involve heightened risk due to currency fluctuations, and economic and political risks, which may be enhanced in emerging markets. **Sovereign securities** are generally backed by the issuing government. Obligations of U.S. government agencies and authorities are supported by varying degrees, but are generally not backed by the full faith of the U.S. government. Portfolios that invest in such securities are not guaranteed and will fluctuate in value. **High yield, lower-rated securities** involve greater risk than higher-rated securities; portfolios that invest in them may be subject to greater levels of credit and liquidity risk than portfolios that do not. **Inflation-linked bonds (ILBs)** issued by a government are fixed income securities whose principal value is periodically adjusted according to the rate of inflation; ILBs decline in value when real interest rates rise. Treasury Inflation-Protected Securities (TIPS) are ILBs issued by the U.S. government. Certain **U.S. government securities** are backed by the full faith of the government. Obligations of U.S. government agencies and authorities are supported by varying degrees but are generally not backed by the full faith of the U.S. government. Portfolios that invest in such securities are not guaranteed and will fluctuate in value. **Equities** may decline in value due to both real and perceived general market, economic and industry conditions. **Diversification** does not ensure against loss.

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

CMR2023-0424-2864746

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