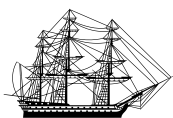
Learn about bond investing

Investor education



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The dual roles bonds can play in your portfolio

Bonds can play an important role in a well-diversified investment portfolio, helping to offset the volatility of stocks. In addition, the regular interest payments that bonds generate can be an ideal way to produce a steady source of income.

This guide will help you understand what bonds are, how they work, and why your financial advisor may recommend them as part of your investment plan.

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What is a bond?

A bond is simply a promise to repay money, with interest, on a certain date in the future. While stocks represent ownership shares in a corporation, a bond is an IOU that obligates the borrower to pay the lender a specified sum of money at regular intervals and to repay the principal amount of the loan at the maturity date. The holder of a bond does not have the ownership privileges that a stockholder does.

Types of bonds

A variety of institutions issue bonds, including the U.S. Treasury, U.S. government agencies, state and local governments, and corporations.

Key bond issuers

U.S. government. Treasury securities and securities issued by the Government National Mortgage Association (Ginnie Maes) offer the lowest risk of default. These bonds are backed by the full faith and credit of the U.S. government.

State and local governments. Municipal bonds are typically issued by state, county, or city governments. They are usually issued to finance public-improvement projects. Often, the interest they pay is exempt from federal income tax and, in some cases, from state and local income taxes. The credit ratings of municipal bonds can vary widely. However, municipal bonds have historically experienced very low default rates.

Corporations. Corporate bonds represent loans by investors to corporations. Companies issue bonds to finance a variety of operations as an alternative to issuing shares of stock. Most major corporations issue some type of bonds. Corporate bonds can be very safe when issued by strong, reputable companies, or they can be very risky when issued by weak companies.

Types of bond funds

Just like stock mutual funds, bond mutual funds come in several forms. Consult with your financial advisor for the type of fund that best meets your investment style and objectives.

Actively managed bond funds. These funds are managed by individual investment managers or by investment committees, both of which pick bonds with the intention of outperforming a fund's benchmark. Actively managed bond funds offer investors the opportunity for higher returns than bond index funds, though usually at relatively higher costs.

Bond index funds. These funds are collections of bonds that are intended to mirror the performance of a particular market benchmark or index. The primary advantage of bond index funds is their low costs.

Bond exchange-traded funds (ETFs). Bond ETFs are similar to conventional bond index funds. However, since ETFs are traded throughout the day like individual securities, bond ETFs offer additional trading flexibility not available from conventional bond index funds.

Key characteristics of bonds

Average quality. Independent bond-rating agencies, such as Standard & Poor's and Moody's Investors Service, evaluate the ability of taxable bond issuers to repay loans. These agencies assign credit ratings ranging from Aaa or AAA (highest quality) to C or D (lowest quality). See the table on page 9 for a complete list of Standard & Poor's and Moody's bond credit ratings.

Average effective maturity. The average length of time before bonds in a fund reach maturity and are repaid is known as the fund's average maturity. The average effective maturity affects a fund's yield as well as the level of risk to investors' principal. In general, the longer the average effective maturity, the more a fund's share price will fluctuate in response to changes in interest rates.

A fund with an average effective maturity of 1–5 years is considered a short-term bond fund; one with a maturity of 5–10 years, an intermediate-term bond fund; and one with a maturity of more than 10 years, a long-term bond fund.

Average duration. This measurement can be used to estimate how much a bond fund's share price may rise or fall in response to a change in interest rates.

Bond credit ratings

A bond's credit rating reflects the independent rating agency's opinion of the issuer's ability to pay interest on the bond and, ultimately, to repay the principal at maturity. If payments aren't made in full and on time, the issuer has defaulted on the bond.

Bond ratings are important because they suggest how much an issuer must pay to borrow money and compensate investors for assuming credit risk (the chance that a bond issuer will fail to pay interest and principal in a timely manner or that negative perceptions of the issuer's ability to make such payments will cause the price of a bond to decline).

The lower a bond's credit rating, the higher the interest rate the borrower must pay to entice investors to purchase the bond.

Moody's and Standard & Poor's are the major bond credit-rating agencies, and though their rating systems are similar, they are not identical.

Moody's and Standard & Poor's bond-rating codes			
	Moody's	S&P	Rating
Investment-grade bonds	Aaa	AAA	Highest quality with lowest risk; issuers are exceptionally stable and dependable.
	Aa	AA	High quality, slightly higher degree of long-term risk.
	A	A	High-medium quality, many strong attributes but somewhat vulnerable to changing economic conditions.
	Baa	BBB	Medium quality, adequate but less reliable over the long term.
Below-investment-grade bonds	Ba	BB	Somewhat speculative, moderate security but not well safeguarded.
	B	B	Low quality, future default risk.
	Caa	CCC	Poor quality, clear danger of default.
	Ca	CC	Highly speculative, often in default.
	C	C	Lowest rating, poor prospects of repayment.
		D	In default.

How interest rates affect bond prices

One of the most important things to know about investing in bonds is that bond prices and interest rates tend to move in opposite directions. When interest rates rise, bond prices fall; when interest rates fall, bond prices rise.

Consider this example: Let's say a person invests $1,000 in a 20-year Treasury bond with a 5.5% yield. Interest payments will total $55 a year. If the interest rate for the 20-year Treasury rises to 6.5%, an investor can buy a newly issued $1,000 bond that pays $65 a year, so it's unlikely that the investor would pay $1,000 for the older bond. In fact, the older bond's price would have to drop to $889 for it to provide the same yield as the 6.5% bond. On the other hand, if the interest rate for the 20-year Treasury falls, with a new issue offering a 4.5% yield, the price of the 5.5% bond would rise to $1,131.

The significance of the yield curve

Interest rates are not all created equal. The longer it takes a bond to reach maturity, the greater the likelihood that the bond's price will fluctuate and that investors will want to be rewarded for assuming that extra risk.

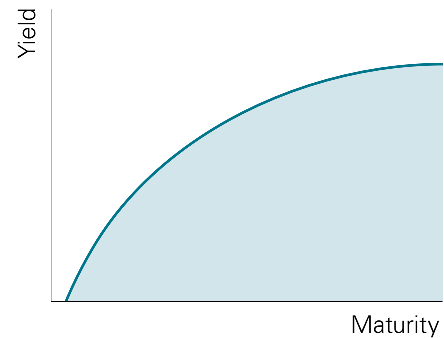
The yield curve captures the overall movement of interest rates, giving investors a sense of how rates might change and how bond prices might be affected. The yield curve tracks interest rates of bonds with different maturities at a set point in time.

There are three basic types of yield curve: normal, inverted, and flat. As the first graph shows, bonds with long maturities usually have a steeper yield curve than shorter-term bonds because of the risks that occur over time.

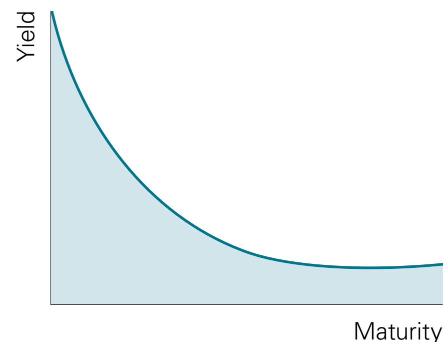
The second graph shows an inverted yield curve, with yields of shorter-term securities higher than those of longer-term securities. This can suggest an approaching recession since it is usually caused by the Federal Reserve Board's raising its target for short-term interest rates to a high level.

The third graph shows a flat yield curve, with yields of shorter- and longer-term securities very close to each other. A flat yield curve is usually an indicator of economic transition. The steeper the slope of the yield curve, the greater the gap between short- and long-term interest rates.

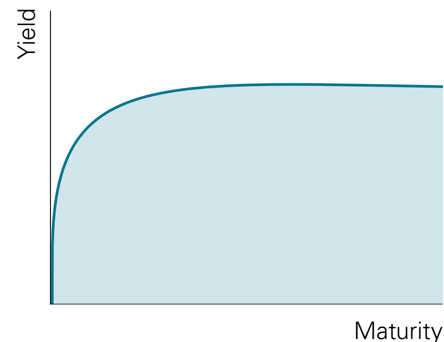
Normal yield curve



Inverted yield curve



Flat yield curve



Understand these important terms

Bonds typically pay interest in fixed dollar amounts. Investors often confuse the coupon rate with the bond's yield or its yield to maturity. Here are some useful definitions.

Coupon rate. The coupon rate is the interest rate stated on a bond when it is issued. The coupon is usually paid semiannually. For instance, a $1,000 bond with a 6% coupon will pay $30 in interest twice a year, or a total of $60 a year.

Yield. A snapshot of a fund's interest income. The yield, expressed as a percentage of the fund's net asset value, is based on income earned over the past 30 days and is annualized, or projected forward, for the coming year.

Yield to maturity. The rate of return an investor would receive if the security is held by the investor to its maturity date. A bond's yield to maturity can be complicated to calculate, but it is the best measure of the bond's true yield. Periodically, ask your financial advisor to perform yield-to-maturity calculations.

Individual bonds, bond mutual funds, and bond ETFs: The basics

Whether you and your financial advisor choose bonds to generate income, achieve more diversification, or reduce portfolio volatility, your fixed income choices are individual bonds, bond mutual funds, or bond ETFs.

Individual bonds

One of the primary advantages of investing in individual bonds is the ability to control cash flow by matching a bond's maturity date with a specific income need. Bond funds do not provide this capability.

If you have a specific savings need, such as a child's education, individual bonds may be appropriate. However, you generally need a significant amount of money to purchase enough bonds to ensure a reasonable level of diversification. Your financial advisor can help you determine whether individual bonds are right for you.

How to read a bond table

The illustration at right represents a typical bond table.

1. Company, state, or country issuing the bond.
2. The interest rate that the issuer agrees to pay.
3. The maturity date is the date on which the borrower will repay investors their principal.
4. The bid price is the price at which an investor can sell a bond. The offer price, or the price at which an investor can buy a bond, is higher than the bid price.
5. The yield shows the average annual return until the bond matures.

Symbol	Coupon	Mat. date	Bid$	Yld%
1 Aab	2 8.800	3 Sep 05/15	4 100.46	5 8.75
Abb	6.753	Feb 02/17	94.00	9.09
Bab	4.895	Dec 01/18	100.25	5.36
Brt	7.622	Jan 28/17	88.50	6.32
Cax	1.022	Mar 30/16	106.25	8.25
Cba	4.889	Apr 01/17	93.95	5.86
Cbc	7.658	Jun 01/17	100.52	6.89
[illegible]	6.264	Feb 05/16	112.25	4.33
[illegible]	[illegible]	[illegible]	97.62	[illegible]

Bond laddering: A brief overview

Bond laddering is a strategy for generating consistent income while maintaining diversification by investing in a series of individual bonds that mature at regular intervals.

Here's an example of how bond laddering works. An investor buys equal amounts of bonds due to mature in 1, 2, 3, 4, and 5 years, which results in a portfolio with an average maturity of 3 years (1 + 2 + 3 + 4 + 5, divided by 5 = 3). When the bonds with the shortest maturities come due, the investor either takes the proceeds or reinvests the principal in 5-year bonds. A laddered bond portfolio is essentially a simplified bond fund.

Your financial advisor can provide more information about a laddering strategy and whether such a strategy is appropriate for your situation.

Bond mutual funds and bond ETFs

Bond mutual funds and bond ETFs pool money so investors can get exposure to a diversified selection of bonds.

There are several ways to categorize bond funds and bond ETFs. They may invest in taxable bonds (issued by the U.S. government or corporations) or tax-exempt bonds (known as municipal bonds).

Bond funds and bond ETFs may invest in short-, intermediate-, or long-term bonds. Typically, short-term bonds mature in 1 to 5 years; intermediate-term bonds mature in 5 to 10 years; and long-term bonds mature in 10 to 30 years. Finally, there are actively managed bond funds and bond ETFs, as well as index bond funds and bond ETFs (which seek to track the performance of particular market benchmarks). Your financial advisor can help you decide which bond funds or bond ETFs may be appropriate for your investment plan.

Choices for bond fund and bond ETF investors	
Type of holdings	**Taxable bonds** *(U.S. Treasury, U.S. government agency, corporate)* Investment-grade High-yield (junk) **Tax-exempt bonds** *(municipal bonds)* Investment-grade High-yield (junk)
Average maturity	Short-term Intermediate-term Long-term
Style of fund management	Actively managed Index

The risks and rewards of bond investing

Bond fund advantages

For the majority of investors, bond funds offer a number of advantages over individual bonds, including regular monthly income, greater diversification, greater liquidity and convenience, and professional management.

Regular monthly income. Bond funds typically distribute all their interest income in the form of dividends each month. This income may either be paid in cash or reinvested to purchase additional fund shares. Individual bonds, however, generally pay interest every six months, and that interest cannot be reinvested automatically.

Diversification. A bond fund may hold hundreds, or even thousands, of bonds from a few or many issuers. This diversification means that the failure of one issuer to pay interest or to repay principal should only slightly affect your investment.

Liquidity and convenience. Bond funds offer daily liquidity. You can buy or sell shares whenever you like.

Professional management. Bond funds offer investors the benefit of research and management teams that can provide sophisticated risk and credit analysis in an effort to deliver higher returns.

Some risks of bond investing

Bonds are generally considered less risky than stocks, but as with any investment, some risk is always involved. Here are some risks that you can discuss with your financial advisor.

Interest rate risk. A bond's price generally decreases when interest rates rise and increases when interest rates fall. The longer a bond's maturity, the higher the risk of significant fluctuations in its price caused by changes in market interest rates.

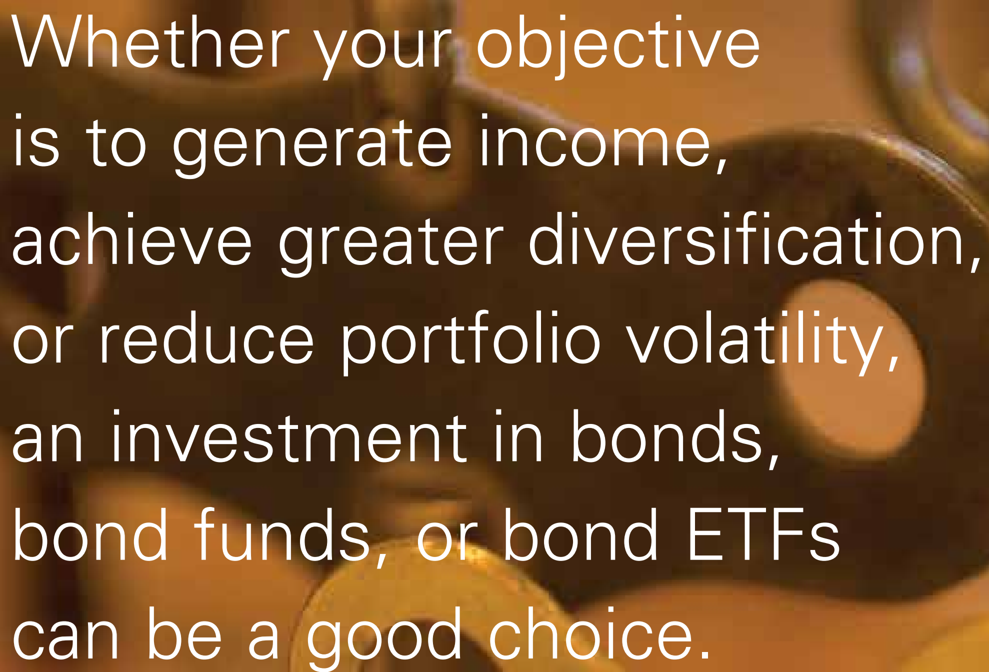
Credit risk. Bonds can lose value if the issuer fails to make interest or principal payments in a timely manner or if negative perceptions of the issuer's ability to make such payments cause the price of that bond to decline. Since a bond fund invests in many bonds, the impact of a downgrade of, or default by, any one issuer should be significantly reduced.

Income risk. Income from bond funds may fall because of declining interest rates. If you need income to pay for living expenses, you should expect it to fluctuate because of changes in the funds' yields. Income risk is higher for short-term bond funds and lower for long-term bond funds. Of course, both types of investments are subject to inflation risk.

Call risk. Some bonds can be called or redeemed by the issuer before they mature—whenever the issuer decides that doing so is an advantage. When a bond is called, investors must reinvest their money, often at a lower yield. A similar risk—prepayment risk—affects mortgage-backed securities, such as Ginnie Maes. When interest rates fall, many homeowners may refinance their mortgage loans and the securities backing these loans are paid off.

While U.S. Treasury or government agency securities provide substantial protection against credit risk, they do not protect investors against price changes due to changing interest rates. While the market values of government securities are not guaranteed and may fluctuate, these securities are guaranteed as to the timely payment of principal and interest. High-yield bonds generally have medium- and lower-range credit-quality ratings and are therefore subject to a higher level of credit risk than bonds with higher credit-quality ratings.

Comparing three bond investment options			
	Bond mutual funds	**Bond ETFs**	**Bond ladder**
Costs	Low, ongoing costs	Brokerage commissions, very low, ongoing costs	Controlled costs with selling groups, auctions, brokers
Cash-flow certainty	Generally certain	Generally certain	Certain
Diversification	Yes	Yes	Low
Taxes	Capital/interest	Possible capital/ interest	Interest/controlled capital
Credit risk	Yes	Yes	Yes
Interest rate risk	Yes, net asset value falls below initial cost	Yes, ETF price falls below initial price	Yes, opportunity cost from rising rates
Loss of invested capital	Possible from credit event and widespread sell-off of shares	Possible from credit event and widespread sell-off of shares	Possible from credit event



Whether your objective is to generate income, achieve greater diversification, or reduce portfolio volatility, an investment in bonds, bond funds, or bond ETFs can be a good choice.

Talk to your financial advisor to determine the best approach for your situation.

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For more information about index mutual funds and other investment products, contact your financial advisor to obtain a prospectus or, if available, a summary prospectus. Investment objectives, risks, charges, expenses, and other important information are contained in the prospectus; read and consider it carefully before investing.

All investing is subject to risk, including the possible loss of the money you invest. Investments in bonds and bond funds are subject to interest rate, credit, and inflation risk. U.S. government backing of Treasury or agency securities applies only to the underlying securities and does not prevent share-price fluctuations. Unlike stocks and bonds, U.S. Treasury bills are guaranteed as to the timely payment of principal and interest. Although the income from a municipal bond fund is exempt from federal tax, you may owe taxes on any capital gains realized through the fund's trading or through your own redemption of shares. For some investors, a portion of the fund's income may be subject to state and local taxes, as well as to the federal Alternative Minimum Tax. High-yield bonds generally have medium- and lower-range credit-quality ratings and are therefore subject to a higher level of credit risk than bonds with higher credit-quality ratings. Diversification does not ensure a profit or protect against a loss.

ETFs are not redeemable with the issuing Fund other than in very large aggregations worth millions of dollars. Instead, investors must buy and sell ETF shares in the secondary market and hold those shares in a brokerage account. In doing so, the investor will incur brokerage commissions and may pay more than net asset value when buying and receive less than net asset value when selling.

Financial advisors: Visit advisors.vanguard.com or call 800-997-2798.

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