

## Everything You Need to Know About Bonds: What is a Bond?

The bond market is by far the largest securities market in the world, providing investors with virtually limitless investment options. Many investors are familiar with aspects of the market, but as the number of new products grows, even a bond expert is challenged to keep pace. Once viewed as a means of earning interest while preserving capital, bonds have evolved into a \$90 trillion global marketplace that can offer many potential benefits to investment portfolios, including attractive returns.

Before tackling the complexities of this huge and diverse market, it is important to understand the basics: What is a bond and how can bonds help meet your investment goals?

---

### What Makes a Bond a Bond?

A bond is a loan that the bond purchaser, or bondholder, makes to the bond issuer. Governments, corporations and municipalities issue bonds when they need capital. An investor who buys a government bond is lending the government money. If an investor buys a corporate bond, the investor is lending the corporation money. Like a loan, a bond pays interest periodically and repays the principal at a stated time, known as maturity.

Suppose a corporation wants to build a new manufacturing plant for \$1 million and decides to issue a bond to help pay for the plant. The corporation might decide to sell 1,000 bonds to investors for \$1,000 each. In this case, the “face value” of each bond is \$1,000. The corporation – now referred to as the bond issuer – determines an annual interest rate, known as the coupon, and a timeframe within which it will repay the principal, or the \$1 million. To set the coupon, the issuer takes into account the prevailing interest-rate environment to ensure that the coupon is competitive with those on comparable bonds and attractive to investors. The issuer may decide to sell five-year bonds with an annual coupon of 5%. At the end of five years, the bond reaches maturity and the corporation repays the \$1,000 face value to each bondholder.

How long it takes for a bond to reach maturity can play an important role in the amount of risk as well as the potential return an investor can expect. A \$1 million bond repaid in five years is typically regarded as less risky than the same bond repaid over 30 years because many factors can have a negative impact on the issuer's ability to pay bondholders over a 30-year period. The additional risk incurred by a longer maturity bond has a direct relation to the interest rate, or coupon, the issuer must pay on the bond. In other words, an issuer will pay a higher interest rate for a long-term bond. An investor therefore will potentially earn greater returns on longer-term bonds, but in exchange for that return, the investor incurs additional risk.

Every bond also carries some risk that the issuer will "default," or fail to fully repay the loan. Independent credit rating services assess the default risk, or credit risk, of most bond issuers and publish credit ratings that not only help investors evaluate risk but also help determine the interest rates on individual bonds. An issuer with a high credit rating will pay a lower interest rate than one with a low credit rating. Again, investors who purchase bonds with low credit ratings can potentially earn higher returns, but they must bear the additional risk of default by the bond issuer.

### What Determines the Price of a Bond in the Open Market?

Bonds can be bought and sold in the "secondary market" after they are issued. While some bonds are traded publicly through exchanges, most trade over the counter between large broker-dealers acting on their clients' or their own behalf.



A bond's price and yield determine its value in the secondary market. Obviously, a bond must have a price at which it can be bought and sold (see "Understanding Bond Market Prices" below for more), and a bond's yield is the actual annual return an investor can expect if the bond is held to maturity. Yield is therefore based on the purchase price of the bond as well as the coupon. A bond's price always moves in the opposite direction of its yield, as illustrated above. The key to understanding this critical feature of the bond

market is to recognize that a bond's price reflects the value of the income that it provides through its regular coupon interest payments. When prevailing interest rates fall – notably rates on government bonds – older bonds of all types become more valuable because they were sold in a higher interest-rate environment and therefore have higher coupons. Investors holding older bonds can charge a "premium" to sell them in the secondary market. On the other hand, if interest rates rise, older bonds may become less valuable because their coupons are relatively low, and older bonds therefore trade at a "discount."

### Understanding Bond Market Prices

In the market, bond prices are quoted as a percent of the bond's face value. The easiest way to understand bond prices is to add a zero to the price quoted in the market. For example, if a bond is quoted at '99' in the market, the price is \$990 for every \$1,000 of face value and the bond is said to be trading at a discount. If the bond is trading at '101,' it costs \$1,010 for every \$1,000 of face value and the bond is said to be trading at a premium. If the bond is trading at 100, it costs \$1,000 for every \$1,000 of face value and is said to be trading at par. Another common term is 'par value,' which is simply another way of saying face value. Most bonds are issued slightly below par and can then trade in the secondary market above or below par, depending on interest rate, credit or other factors.

| Face Value: | Price Quoted As: | Market Price: | The Bond is Trading at: |
|-------------|------------------|---------------|-------------------------|
| \$1,000     | 100              | \$1,000       | Par                     |
| \$1,000     | 102              | \$1,020       | A premium to par        |
| \$1,000     | 97               | \$970         | A discount to par       |
| \$5,000     | 99               | \$4,950       | A discount to par       |

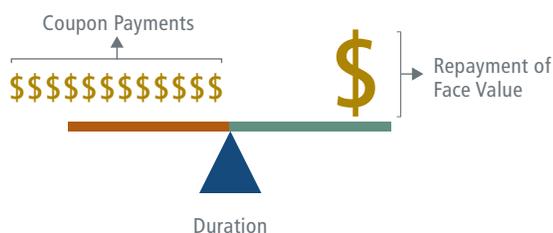
Put simply, when interest rates are rising, new bonds will pay investors higher interest rates than old ones, so old bonds tend to drop in price. Falling interest rates, however, mean that older bonds are paying higher interest rates than new bonds, and therefore older bonds tend to sell at premiums in the market.

On a short-term basis, falling interest rates can boost the value of bonds in a portfolio and rising rates may hurt their value. However, over the long term, rising interest rates can actually increase a bond portfolio's return as the money from maturing bonds is reinvested in bonds with higher yields. Conversely, in a falling interest rate environment, money from maturing bonds may need to be reinvested in new bonds that pay lower rates, potentially lowering longer-term returns.

## Measuring Bond Risk: What Is Duration?

The inverse relationship between price and yield is crucial to understanding value in bonds. Another key is knowing how much a bond's price will move when interest rates change.

To estimate how sensitive a particular bond's price is to interest rate movements, the bond market uses a measure known as duration. Duration is a weighted average of the present value of a bond's cash flows, which include a series of regular coupon payments followed by a much larger payment at the end when the bond matures and the face value is repaid, as illustrated below.



Duration, like the maturity of the bond, is expressed in years, but as the illustration shows, it is typically less than the maturity. Duration will be affected by the size of the regular coupon payments and the bond's face value. For a zero coupon bond, maturity and duration are equal since there are no regular coupon payments and all cash flows occur at maturity. Because of this feature, zero coupon bonds tend to provide the most price movement for a given change in interest rates, which can make zero coupon bonds attractive to investors expecting a decline in rates.

The end result of the duration calculation, which is unique to each bond, is a risk measure that allows investors to compare bonds with different maturities, coupons and face values on an apples-to-apples basis. Duration provides the approximate change in price that any given bond will experience in the event of a 100 basis point (one percentage point) change in interest rates. For example, suppose that interest rates fall by 1%, causing yields on every bond in the market to fall by the same amount. In that event, the price of a bond with a duration of two years will rise 2% and the price of a five-year duration bond will rise 5%.

The weighted average duration can also be calculated for an entire bond portfolio, based on the durations of the individual bonds in the portfolio.

## The Role of Bonds in a Portfolio

Since governments began to issue bonds more frequently in the early twentieth century and gave rise to the modern bond market, investors have purchased bonds for several reasons: capital preservation, income, diversification and as a potential hedge against economic weakness or deflation. When the bond market became larger and more diverse in the 1970s and 1980s, bonds began to undergo greater and more frequent price changes and many investors began to trade bonds, taking advantage of another potential benefit: price, or capital, appreciation. Today, investors may choose to buy bonds for any or all of these reasons.

**Capital preservation:** Unlike equities, bonds should repay principal at a specified date, or maturity. This makes bonds appealing to investors who do not want to risk losing capital and to those who must meet a liability at a particular time in the future. Bonds have the added benefit of offering interest at a set rate that is often higher than short-term savings rates.

**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 can also provide income through dividend payments, but dividends tend to be smaller than bond coupon payments, and companies make dividend payments at their discretion, while bond issuers are obligated to make coupon payments.

**Capital appreciation:** Bond prices can rise for several reasons, including a drop in interest rates and an improvement in the credit standing of the issuer. If a bond is held to maturity, any price gains over the life of the bond are not realized; instead, the bond's price typically reverts to par (100) as it nears maturity and repayment of the principal. However, by selling bonds after they have risen in price – and before maturity – investors can realize price appreciation, also known as capital appreciation, on bonds. Capturing the capital appreciation on bonds increases their total return, which is the combination of income and capital appreciation. Investing for total return has become one of the most widely used bond strategies over the past 40 years. (For more, see *Bond Investment Strategies*.)

**Diversification:** Including bonds in an investment portfolio can help diversify the portfolio. Many investors diversify among a wide variety of assets, from equities and bonds to commodities and alternative investments, in an effort to reduce the risk of low, or even negative, returns on their portfolios.

**Potential hedge against economic slowdown or deflation:** Bonds can help protect investors against an economic slowdown for several reasons. The price of a bond depends on how much investors value the income the bond provides. Most bonds pay a fixed income that doesn't change. When the prices of goods and services are rising, an economic condition known as inflation, a bond's fixed income becomes less attractive because that income buys fewer goods and services. Inflation usually coincides with faster economic growth, which increases demand for goods and services. On the other hand, slower economic growth usually leads to lower inflation, which makes bond income more attractive. An economic slowdown is also typically bad for corporate profits and stock returns, adding to the attractiveness of bond income as a source of return.

If the slowdown becomes bad enough that consumers stop buying things and prices in the economy begin to fall – a dire economic condition known as deflation – then bond income becomes even more attractive because bondholders can buy more goods and services (due to their deflated prices) with the same bond income. As demand for bonds increases, so do bond prices and bondholder returns.

**A word about risk:** Past performance is not a guarantee or a reliable indicator of future results. Investing in the bond market is subject to certain risks including market, interest-rate, issuer, credit, and inflation risk; investments may be worth more or less than the original cost when redeemed. 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. Mortgage and asset-backed securities may be sensitive to changes in interest rates, subject to early repayment risk, and their value may fluctuate in response to the market's perception of issuer creditworthiness; while generally supported by some form of government or private guarantee there is no assurance that private guarantors will meet their obligations. High-yield, lower-rated, securities involve greater risk than higher-rated securities; portfolios that invest in them may be subject to greater levels of credit and liquidity risk than portfolios that do not. Diversification does not ensure against loss.

This material has been distributed for informational purposes only and should not be considered as investment advice or a recommendation of any particular security, strategy or investment product. No part of this material may be reproduced in any form, or referred to in any other publication, without express written permission. ©2011, PIMCO.

PIMCO advised funds are distributed by PIMCO Investments LLC.

BAS080-103111

---

Newport Beach Headquarters  
840 Newport Center Drive  
Newport Beach, CA 92660  
+1 949.720.6000

---

Amsterdam

---

Hong Kong

---

London

---

Munich

---

New York

---

Singapore

---

Sydney

---

Tokyo

---

Toronto

---

Zurich

[pimcoetfs.com](http://pimcoetfs.com)

P I M C O