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## Introduction

The first thing that comes to most people's minds when they think of investing is the [stock market](#). After all, stocks are exciting. The swings in the market are scrutinized in the newspapers and even covered by local evening newscasts. Stories of [investors](#) gaining great wealth in the [stock market](#) are common.

[Bonds](#), on the other hand, don't have the same sex appeal. The lingo seems arcane and confusing to the average person. Plus, bonds are much more boring - especially during raging [bull markets](#), when they seem to offer an insignificant return compared to stocks.

However, all it takes is a [bear market](#) to remind investors of the virtues of a bond's safety and stability. In fact, for many investors it makes sense to have at least part of their portfolio invested in bonds.

This tutorial will hopefully help you determine whether or not bonds are right for you. We'll introduce you to the fundamentals of what bonds are, the different types of bonds and their important characteristics, how they behave, how to purchase them, and more.

(Before proceeding, it would be helpful for you to know a little about stocks. If you need a refresher, see our [Stock Basics](#) tutorial.)

## What Are Bonds?

Have you ever borrowed [money](#)? Of course you have! Whether we hit our parents up for a few bucks to buy candy as children or asked the bank for a [mortgage](#), most of us have borrowed money at some point in our lives.

Just as people need money, so do companies and governments. A company needs funds to expand into new markets, while governments need money for everything from infrastructure to social programs. The problem large organizations run into is that they typically need far more money than the average bank can provide. The solution is to [raise money](#) by issuing bonds (or other debt instruments) to a [public market](#). Thousands of investors then each lend a portion of the capital needed. Really, a bond is nothing more than a loan for which you are the lender. The organization that sells a bond is known as the issuer. You can think of a bond as an IOU given by a borrower (the issuer) to a lender (the investor).

Of course, nobody would loan his or her hard-earned money for nothing. The issuer of a bond must pay the investor something extra for the privilege of using his or her money. This "extra" comes in the form of [interest](#) payments, which are made at a predetermined rate and schedule. The [interest rate](#) is often referred to as the [coupon](#). The date on which the issuer has to repay the amount borrowed (known as [face value](#)) is called the [maturity date](#). Bonds are known as [fixed-income](#) securities because you know the exact amount of cash you'll get back if you hold the security until maturity.

For example, say you buy a bond with a face value of \$1,000, a coupon of 8%, and a maturity of 10 years. This means you'll receive a total of \$80 ( $\$1,000 \times 8\%$ ) of interest per year for the next 10 years. Actually, because most bonds pay interest semi-annually, you'll receive two payments of \$40 a year for 10 years. When the bond matures after a decade, you'll get your \$1,000 back.

### Debt Versus Equity

Bonds are [debt](#), whereas stocks are [equity](#). This is the important distinction between the two [securities](#). By purchasing equity (stock) an investor becomes an owner in a corporation. Ownership comes with [voting rights](#) and the right to share in any future profits. By purchasing debt (bonds) an investor becomes a [creditor](#) to the corporation (or government). The primary advantage of being a creditor is that you have a higher claim on assets than shareholders do: that is, in the case of [bankruptcy](#), a bondholder will get paid before a shareholder. However, the bondholder does not share in the profits if a company does well - he or she is entitled only to the [principal](#) plus interest.

To sum up, there is generally less risk in owning bonds than in owning stocks, but this comes at the cost of a lower return.

### Why Bother With Bonds?

It's an investing axiom that stocks return more than bonds. In the past, this has generally been true for time periods of at least 10 years or more. However, this doesn't mean you shouldn't invest in bonds. Bonds are appropriate any time you cannot tolerate the short-term volatility of the stock market. Take two situations where this may be true:

- 1) Retirement - The easiest example to think of is an individual living off a fixed income. A retiree simply cannot afford to lose his/her principal as income for it is required to pay the bills.
- 2) Shorter time horizons - Say a young executive is planning to go back for an MBA in three years. It's true that the stock market provides the opportunity for higher growth, which is why his/her retirement fund is mostly in stocks, but the executive cannot afford to take the chance of losing the money going towards his/her education. Because money is needed for a specific purpose in the relatively near future, fixed-income securities are likely the best investment.

These two examples are clear cut, and they don't represent all investors. Most personal financial advisors advocate maintaining a [diversified portfolio](#) and changing the weightings of asset classes throughout your life. For example, in your 20s and 30s a majority of wealth should be in equities. In your 40s and 50s the percentages shift out of stocks into bonds until retirement, when

a majority of your investments should be in the form of fixed income.

## Characteristics

Bonds have a number of characteristics of which you need to be aware. All of these factors play a role in determining the value of a bond and the extent to which it fits in your portfolio.

### Face Value/Par Value

The face value (also known as the [par value](#) or principal) is the amount of [money](#) a holder will get back once a bond matures. A newly issued bond usually sells at the par value. Corporate bonds normally have a par value of \$1,000, but this amount can be much greater for government bonds.

What confuses many people is that the par value is not the price of the bond. A bond's price fluctuates throughout its life in response to a number of variables (more on this later). When a bond trades at a price above the face value, it is said to be selling at a [premium](#). When a bond sells below face value, it is said to be selling at a [discount](#).

### Coupon (The Interest Rate)

The coupon is the amount the bondholder will receive as interest payments. It's called a "coupon" because sometimes there are physical coupons on the bond that you tear off and redeem for interest. However, this was more common in the past. Nowadays, records are more likely to be kept electronically.

As previously mentioned, most bonds pay interest every six months, but it's possible for them to pay monthly, quarterly or annually. The coupon is expressed as a percentage of the par value. If a bond pays a coupon of 10% and its par value is \$1,000, then it'll pay \$100 of interest a year. A rate that stays as a fixed percentage of the par value like this is a fixed-rate bond. Another possibility is an adjustable interest payment, known as a floating-rate bond. In this case the [interest rate](#) is tied to market rates through an index, such as the rate on Treasury bills.

You might think investors will pay more for a high coupon than for a low coupon. All things being equal, a lower coupon means that the price of the bond will fluctuate more.

### Maturity

The maturity date is the date in the future on which the investor's principal will be repaid. Maturities can range from as little as one day to as long as 30 years (though terms of 100 years have been issued).

A bond that matures in one year is much more predictable and thus less risky than a bond that matures in 20 years. Therefore, in general, the longer the time to maturity, the higher the interest rate. Also, all things being equal, a longer term bond will fluctuate more than a shorter term bond.

### Issuer

The issuer of a bond is a crucial factor to consider, as the issuer's stability is your main assurance of getting paid back. For example, the U.S. government is far more secure than any corporation. Its [default risk](#) (the chance of the debt not being paid back) is extremely small - so small that U.S. government securities are known as [risk-free assets](#). The reason behind this is that a government will always be able to bring in future revenue through taxation. A company, on the other hand, must continue to make profits, which is far from guaranteed. This added risk means corporate bonds must offer a higher [yield](#) in order to entice investors - this is the [risk/return tradeoff](#) in action.

The [bond rating](#) system helps investors determine a company's credit risk. Think of a bond rating as the report card for a company's credit rating. [Blue-chip](#) firms, which are safer investments, have a high rating, while risky companies have a low rating. The chart below illustrates the different bond rating scales from the major rating agencies in the U.S.: Moody's, Standard and Poor's and Fitch Ratings.

Bond Rating		Grade	Risk
Moody's	S&P/ Fitch		
Aaa	AAA	Investment	Highest Quality
Aa	AA	Investment	High Quality
A	A	Investment	Strong
Baa	BBB	Investment	Medium Grade
Ba, B	BB, B	<a href="#">Junk</a>	Speculative
Caa/Ca/C	CCC/CC/C	Junk	Highly Speculative
C	D	Junk	<a href="#">In Default</a>

Notice that if the company falls below a certain credit rating, its grade changes from investment quality to junk status. Junk bonds are aptly named: they are the debt of companies in some sort of financial difficulty. Because they are so risky, they have to offer much higher yields than any other debt. This brings up an important point: not all bonds are inherently safer than stocks. Certain types of bonds can be just as risky, if not riskier, than stocks.

## Yield, Price And Other Confusion

Understanding the price fluctuation of [bonds](#) is probably the most confusing part of this lesson. In fact, many new investors are surprised to learn that a [bond's](#) price changes on a daily basis, just like that of any other publicly-traded security. Up to this point, we've talked about bonds as if every investor holds them to maturity. It's true that if you do this you're guaranteed to get your principal back; however, a bond does not have to be held to maturity. At any time, a bond can be sold in the open market, where the price can fluctuate - sometimes dramatically. We'll get to how price changes in a bit. First, we need to introduce the concept of yield.

### Measuring Return With Yield

Yield is a figure that shows the return you get on a bond. The simplest version of yield is calculated using the following formula:  $\text{yield} = \text{coupon amount}/\text{price}$ . When you buy a bond at par, yield is equal to the [interest rate](#). When the price changes, so does the yield.

Let's demonstrate this with an example. If you buy a bond with a 10% coupon at its \$1,000 par value, the yield is 10% ( $\$100/\$1,000$ ). Pretty simple stuff. But if the price goes down to \$800, then the yield goes up to 12.5%. This happens because you are getting the same guaranteed \$100 on an asset that is worth \$800 ( $\$100/\$800$ ). Conversely, if the bond goes up in price to \$1,200, the yield shrinks to 8.33% ( $\$100/\$1,200$ ).

### Yield To Maturity

Of course, these matters are always more complicated in real life. When bond investors refer to yield, they are usually referring to [yield to maturity \(YTM\)](#). YTM is a more advanced yield calculation that shows the total return you will receive if you hold the bond to maturity. It equals all the interest payments you will receive (and assumes that you will reinvest the interest payment at the same rate as the current yield on the bond) plus any gain (if you purchased at a discount) or

loss (if you purchased at a premium).

Knowing how to calculate YTM isn't important right now. In fact, the calculation is rather sophisticated and beyond the scope of this tutorial. The key point here is that YTM is more accurate and enables you to compare bonds with different maturities and coupons.

### **Putting It All Together: The Link Between Price And Yield**

The relationship of yield to price can be summarized as follows: when price goes up, yield goes down and vice versa. Technically, you'd say the bond's price and its yield are inversely related.

Here's a commonly asked question: How can high yields and high prices both be good when they can't happen at the same time? The answer depends on your point of view. If you are a bond buyer, you want high yields. A buyer wants to pay \$800 for the \$1,000 bond, which gives the bond a high yield of 12.5%. On the other hand, if you already own a bond, you've locked in your interest rate, so you hope the price of the bond goes up. This way you can cash out by selling your bond in the future.

### **Price In The Market**

So far we've discussed the factors of face value, coupon, maturity, issuers and yield. All of these characteristics of a bond play a role in its price. However, the factor that influences a bond more than any other is the level of prevailing [interest rates](#) in the economy. When interest rates rise, the prices of bonds in the market fall, thereby raising the yield of the older bonds and bringing them into line with newer bonds being issued with higher coupons. When interest rates fall, the prices of bonds in the market rise, thereby lowering the yield of the older bonds and bringing them into line with newer bonds being issued with lower coupons.

## **Different Types Of Bonds**

### **Government Bonds**

In general, [fixed-income securities](#) are classified according to the length of time before maturity. These are the three main categories:

**Bills** - debt securities maturing in less than one year.

**Notes** - debt securities maturing in one to 10 years.

**Bonds** - debt securities maturing in more than 10 years.

Marketable securities from the U.S. government - known collectively as Treasuries - follow this guideline and are issued as [Treasury bonds](#), [Treasury notes](#) and [Treasury bills \(T-bills\)](#). Technically speaking, T-bills aren't bonds because of their short maturity. (You can read more about T-bills in our [Money Market](#) tutorial.) All debt issued by Uncle Sam is regarded as extremely safe, as is the debt of any stable country. The debt of many developing countries, however, does carry substantial risk. Like companies, countries can [default](#) on payments.

### **[Municipal Bonds](#)**

[Municipal bonds](#), known as "munis", are the next progression in terms of risk. Cities don't go bankrupt that often, but it can happen. The major advantage to munis is that the returns are free from [federal tax](#). Furthermore, local governments will sometimes make their debt non-taxable for residents, thus making some municipal bonds completely tax free. Because of these tax savings, the yield on a muni is usually lower than that of a taxable bond. Depending on your personal situation, a muni can be a great investment on an after-tax basis.

### **[Corporate Bonds](#)**

A company can issue bonds just as it can issue stock. Large corporations have a lot of flexibility as to how much debt they can issue: the limit is whatever the market will bear. Generally, a short-term corporate bond is less than five years; intermediate is five to 12 years, and long term is over 12 years.

Corporate bonds are characterized by higher yields because there is a higher risk of a company defaulting than a government. The upside is that they can also be the most rewarding fixed-income investments because of the risk the investor must take on. The company's credit quality is very important: the higher the quality, the lower the interest rate the investor receives.

Other variations on corporate bonds include convertible bonds, which the holder can convert into stock, and callable bonds, which allow the company to redeem an issue prior to maturity.

### Zero-Coupon Bonds

This is a type of bond that makes no coupon payments but instead is issued at a considerable discount to par value. For example, let's say a zero-coupon bond with a \$1,000 par value and 10 years to maturity is trading at \$600; you'd be paying \$600 today for a bond that will be worth \$1,000 in 10 years.

## How To Read A Bond Table

	Coupon	Mat. date	Bid \$	Yld%
<b>Corporate</b>				
AGT Lt	8.800	Sep 22/25	100.46	8.75
Air Ca	6.750	Feb 02/04	94.00	9.09
AssCap	5.400	Sep 04/01	100.01	5.38
Avco	5.750	Jun 02/03	100.25	5.63
Bell	6.250	Dec 01/03	101.59	5.63
Bell	6.500	May 09/05	102.01	5.95
BMO	7.000	Jan 28/10	106.55	6.04
BNS	5.400	Apr 01/03	100.31	5.24
BNS	6.250	Jul 16/07	101.56	5.95
CardTr	5.510	Jun 21/03	100.52	5.27
Cdn Pa	5.850	Mar 30/09	93.93	6.83
Clearn	0.000	May 15/08	88.50	8.61
CnCrTr	5.625	Mar 24/05	99.78	5.68
Coke	5.650	Mar 17/04	99.59	5.80

Column 1      Column 2      Column 3      Column 4      Column 5

**Column 1: Issuer** - This is the company, state (or province), or country that is issuing the bond.

**Column 2: Coupon** - The coupon refers to the fixed interest rate that the issuer pays to the lender.

**Column 3: Maturity Date** - This is the date on which the borrower will repay the investors their principal. Typically, only the last two digits of the year are quoted: 25 means 2025, 04 is 2004, etc.

**Column 4: Bid Price** - This is the price someone is willing to pay for the bond. It is quoted in relation to 100, no matter what the par value is. Think of the bid price as a percentage: a bond

with a bid of 93 is trading at 93% of its par value.

**Column 5: Yield** - The yield indicates [annual return](#) until the bond matures. Usually, this is the yield to maturity, not current yield. If the [bond is callable](#) it will have a "c--" where the "--" is the year the bond can be called. For example, c10 means the bond can be called as early as 2010.

## How Do I Buy Bonds?

Most bond transactions can be completed through a [full service](#) or [discount brokerage](#). You can also open an account with a bond broker, but be warned that most [bond brokers](#) require a minimum initial [deposit](#) of \$5,000. If you cannot afford this amount, we suggest looking at a [mutual fund](#) that specializes in bonds (a [bond fund](#)).

Some [financial](#) institutions will provide their clients with the service of transacting government securities. However, if your bank doesn't provide this service and you do not have a brokerage account, you can purchase government bonds through a government agency (this is true in most countries). In the U.S. you can buy bonds directly from the government through TreasuryDirect at <http://www.treasurydirect.gov>. The Bureau of the Public Debt started TreasuryDirect so that individuals could buy bonds directly from the Treasury, thereby bypassing a broker. All transactions and interest payments are done electronically.

If you do decide to purchase a bond through your broker, he or she may tell you that the trade is commission free. Don't be fooled. What typically happens is that the broker will mark up the price slightly; this markup is really the same as a commission. To make sure that you are not being taken advantage of, simply look up the latest quote for the bond and determine whether the markup is acceptable.

Remember, you should research bonds just as you would stocks. We've gone over several factors you need to consider before loaning money to a government or company, so do your homework!

## Conclusion

Now you know the basics of [bonds](#). Not too complicated, is it? Here is a recap of what we discussed:

- Bonds are just like IOUs. Buying a bond means you are lending out your money.
- Bonds are also called [fixed-income securities](#) because the cash flow from them is fixed.
- Stocks are equity; bonds are debt.
- The key reason to purchase bonds is to [diversify your portfolio](#).
- The issuers of bonds are governments and corporations.
- A bond is characterized by its face value, coupon rate, maturity and issuer.
- Yield is the rate of return you get on a bond.
- When price goes up, yield goes down, and vice versa.
- When [interest rates](#) rise, the price of bonds in the market falls, and vice versa.
- Bills, notes and bonds are all fixed-income securities classified by maturity.
- Government bonds are the safest bonds, followed by municipal bonds, and then corporate bonds.
- Bonds are not risk free. It's always possible - especially in the case of corporate bonds - for the borrower to default on the debt payments.

- High-risk/high-yield bonds are known as junk bonds.
- You can purchase most bonds through a brokerage or bank. If you are a U.S. citizen, you can buy government bonds through TreasuryDirect.
- Often, brokers will not charge a commission to buy bonds but will mark up the price instead.

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