



SEC

OFFICE of INVESTOR
EDUCATION and ADVOCACY

INVESTOR BULLETIN

Interest Rate Risk — When Interest Rates Go Up, Prices of Fixed-Rate Bonds Fall

The SEC's Office of Investor Education and Advocacy is issuing this Investor Bulletin to make investors aware that market interest rates and bond prices move in opposite directions—for example, when market interest rates go up, prices of fixed-rate bonds fall.

You may have noticed articles in the media about investors “chasing yield,” the so-called “bond bubble,” or predictions about declines in bond prices. Some of these warnings about a drop in bond prices relate to the potential for a rise in interest rates. Interest rate risk is common to all bonds, particularly bonds with a fixed rate coupon, even U.S. Treasury bonds. (Many bonds pay a fixed rate of interest throughout their term; interest payments are called coupon payments, and the interest rate is called the coupon rate.)

The purpose of this Investor Bulletin is to provide investors with a better understanding of the relationship among market interest rates, bond prices, and yield to maturity of Treasury bonds, in particular, although many of the concepts discussed below generally apply to other types of bonds as well. This Investor Bulletin is a companion piece to our Investor Bulletins on [Corporate Bonds](#), [High-Yield Bonds](#), and [Municipal Bonds](#). For a basic explanation of how bonds operate and their terminology, please see our Investor Bulletin on [Corporate Bonds](#).

The Effect of Market Interest Rates on Bond Prices and Yield

A fundamental principle of bond investing is that market interest rates and bond prices generally move in opposite directions. When market interest rates rise, prices of fixed-rate bonds fall. This phenomenon is known as ***interest rate risk***.

A seesaw, such as the one pictured below, can help you visualize the relationship between market interest rates and bond prices. Imagine that one end of the seesaw represents the market interest rate and the other end represents the price of a fixed-rate bond.



Higher market interest rates → lower fixed-rate bond prices

Lower market interest rates → higher fixed-rate bond prices

A bond's yield to maturity shows how much an investor's money will earn if the bond is held until it matures. For example, as the table below illustrates, let's say a Treasury bond offers a 3% coupon rate, and a year later market interest rates fall to 2%. The bond will still pay a 3% coupon rate, making it more valuable than new bonds paying just a 2% coupon rate. If you sell the 3% bond before it matures, you will probably find that its price is higher than it was a year ago. ***Along with the rise in price, however, the yield to maturity of the bond will go down for anyone who buys the bond at the new higher price.***

EXAMPLE 1: If Market Interest Rates Decrease by One Percent

Financial Term	Today	One Year Later ↓
Market Interest Rate	3%	2%
Coupon Rate (semi-annual payments)	3%	3%
Face Value	\$1,000	\$1,000
Maturity	10 years	9 years remaining
Price	\$1,000	\$1,082
Yield to Maturity	3%	2%

Lower market interest rates → higher fixed-rate bond prices → lower fixed-rate bond yields

Now suppose market interest rates rise from 3% to 4%, as the table below illustrates. If you sell the 3% bond, it will be competing with new Treasury bonds that offer a 4% coupon rate. The price of the 3% bond may be more likely to fall. *The yield to maturity, however, will rise as the price falls.*

EXAMPLE 2: If Market Interest Rates Increase by One Percent

Financial Term	Today	One Year Later ↑
Market Interest Rate	3%	4%
Coupon Rate (semi-annual payments)	3%	3%
Face Value	\$1,000	\$1,000
Maturity	10 years	9 years remaining
Price	\$1,000	\$925
Yield to Maturity	3%	4%

Higher market interest rates → lower fixed-rate bond prices → higher fixed-rate bond yields

For a more detailed explanation of yield to maturity, including additional examples, please see our Investor Bulletin on [Corporate Bonds](#).

The Effect of Coupon Rates on Interest Rate Risk

Interest rate risk is common to all bonds, even U.S. Treasury bonds. A bond's maturity and coupon rate generally affect how much its price will change as a result of changes in market interest rates.

If two bonds offer different coupon rates while all of their other characteristics (*e.g.*, maturity and credit quality) are the same, the bond with the lower coupon rate generally will experience a greater decrease in value as market interest rates rise. Bonds offering lower coupon rates generally will have higher interest rate risk than similar bonds that offer higher coupon rates.

Lower fixed-rate bond coupon rates → higher interest rate risk

Higher fixed-rate bond coupon rates → lower interest rate risk

For example, imagine one bond that has a coupon rate of 2% while another bond has a coupon rate of 4%. All other features of the two bonds—when they mature, their level of credit risk, and so on—are the same. If market interest rates rise, then the price of the bond with the 2% coupon rate will fall more than that of the bond with the 4% coupon rate.

Remember:

*Lower market interest rates → higher fixed-rate bond prices → lower fixed-rate bond yields
→ higher interest rate risk to rising market interest rates*

Because of this relationship, it is particularly important for investors to consider interest rate risk when they purchase bonds in a low-interest rate environment.

The Effect of Maturity on Interest Rate Risk and Coupon Rates

A bond's maturity is the specific date in the future at which the face value of the bond will be repaid to the investor. A bond may mature in a few months or in a few years. Maturity can also affect interest rate risk. The longer the bond's maturity, the greater the risk that the bond's value could be impacted by changing interest rates prior to maturity, which may have a negative effect on the price of the bond. Therefore, bonds with longer maturities generally have higher interest rate risk than similar bonds with shorter maturities.

Longer maturity → higher interest rate risk

Shorter maturity → lower interest rate risk

To compensate investors for this interest rate risk, long-term bonds generally offer higher coupon rates than short-term bonds of the same credit quality.

Longer maturity → higher interest rate risk → higher coupon rate

Shorter maturity → lower interest rate risk → lower coupon rate

If you intend to hold a bond to maturity, the day-to-day fluctuations in the bond's price may not be as important to you. The bond's price may change, but you will be paid the stated interest rate, as well as the face value of the bond, upon maturity. On the other hand, instead of holding the bond to maturity, you might be able to sell the bond and reinvest the proceeds into another bond that pays a higher coupon rate.

All Bonds are Subject to Interest Rate Risk—Even If the Bonds Are Insured or Government Guaranteed

The seesaw effect between interest rates and bond prices applies to all bonds, even to those that are insured or guaranteed by the U.S. government. When the U.S. government guarantees a bond, it guarantees that it will make interest payments on the bond on time and that it will pay the principal in full when the bond matures. There is a misconception that, if a bond is insured or is a U.S. government obligation, the bond will not lose value. ***In fact, the U.S. government does not guarantee the market price or value of the bond if you sell the bond before it matures.*** This is because the market price or value of the bond can change over time based on several factors, including market interest rates.

Additional Information

- [FINRA Investor Alert: Duration—What an Interest Rate Hike Could Do to Your Bond Portfolio](#)
- [SEC Investor Bulletin: What Are Corporate Bonds?](#)
- [SEC Investor Bulletin: What Are High-Yield Corporate Bonds?](#)
- [SEC Investor Bulletin: Municipal Bonds](#)
- [SEC Investor Bulletin: Municipal Bonds: Understanding Credit Risk](#)

The Office of Investor Education and Advocacy has provided this information as a service to investors. It is neither a legal interpretation nor a statement of SEC policy. If you have questions concerning the meaning or application of a particular law or rule, please consult with an attorney who specializes in securities law.

