# Interest rate risk: Why duration matters

During times of interest rate uncertainty, investors are often left to wonder what will happen to the price of their bond holdings if interest rates rise or fall.

The answer may lie in a measurement called **duration**.

## What is duration?

Duration, which measures the price sensitivity of a bond to interest rate changes, is the number of years it will take a bond's cash flow to repay an investor the bond's purchase price. This is considered to be the bond's true cost. The longer the repayment period, or duration, the greater the chances that the bond will be exposed to interest rate risk.

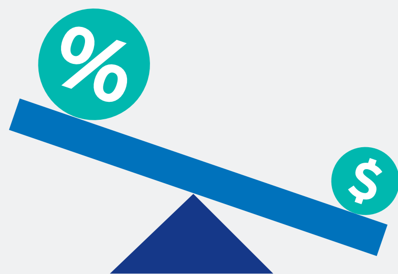
Knowing your bonds' exposure to interest rate risk is critical because bond prices generally fall when interest rates rise, and rise when interest rates fall.

## What does duration tell you?

Although stated in years, duration is not just a measure of time. Instead, duration indicates how much the price of your bond investment is likely to fluctuate when there is an up or down movement in interest rates. Generally, a 1% rise in interest rates would cause about a 1% fall in a bond's price for every year of duration, and vice versa.

For example, if a 10-year Treasury bond has a duration of nine years, and the interest rate increases by 1%, its price would be expected to fall by about 9%. Conversely, if the rate fell by 1%, the bond's price would be expected to increase by approximately 9%.

**Duration measures the price sensitivity of a bond to interest rate changes**
The relationship between interest rates and bond prices




If interest rates rise, the price of the bond decreases.

If interest rates remain unchanged, so does the bond price.

If interest rates decline, the price of the bond increases.

For illustrative purposes only

## What affects a bond's duration?

- **Time to maturity.** The amount of time, in years, before a bond matures. The bond that matures in one year would repay its true cost sooner than a bond that matures in 10 years. Therefore, all else being equal, bonds with shorter maturities would have lower duration and lower interest rate risk.
- **Coupon rate.** The interest rate that a bond pays to the bond holder. If two identical bonds pay different coupons, the bond with the higher coupon will pay back its principal quicker than the lower-yielding bond. So, all else being equal, the higher the coupon, the lower the duration.

## Why should investors care about duration?

By being aware of a bond's duration, you can:

- **Prepare for interest rate changes.** Based on your view of interest rates, you may choose to increase or decrease the average duration in your bond portfolio. For instance, if you expect the US Federal Reserve to raise interest rates, you might talk to your financial advisor about lowering your bond portfolio's average duration.
- **Measure risk.** Duration allows you to determine which bonds are more sensitive to interest rate changes, enabling you to align the holdings in your bond portfolio to your risk tolerance.

## Talk to your financial professional

While no one knows for sure when and how much interest rates will fluctuate, it's good to be prepared by knowing all the risks.

When and if interest rates begin to rise, being knowledgeable about duration will become all the more important. Talk to your financial professional about the duration of your bond portfolio, and discuss creating a diversified portfolio of short-term, intermediate-term and long-term bonds that may help in mitigating rising interest rate risk.

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