

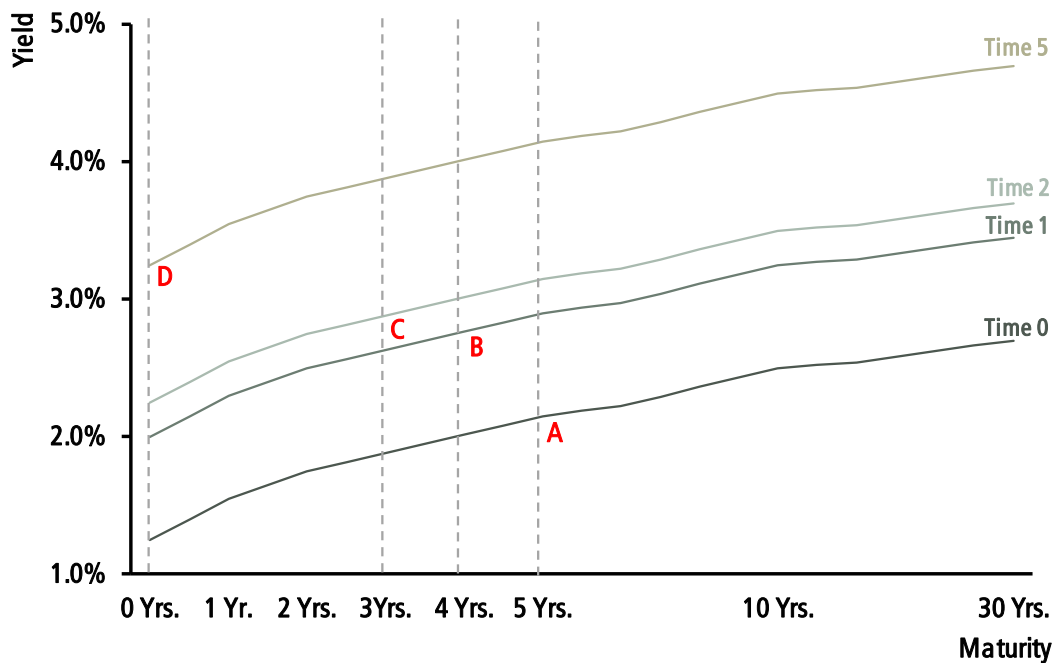
MOVIN' ON UP: WHAT RISING RATES COULD MEAN FOR YOUR FIXED INCOME RETURNS An In-Depth Example

To further explore what a negative return on a bond portfolio means and why it does not mean that investors will experience a *permanent* loss of capital (concepts recently introduced in [a Nexus blog post](#)), here we dig a little deeper into two key fixed income concepts.

- 1) You don't lose money on a bond investment. ⁽¹⁾
- 2) When interest rates (yields) go up, bond prices go down.

How are both statements true, and what does it mean for your bond portfolio?

The best way to explain these concepts is to walk through a hypothetical scenario in which an investor buys a 5-year bond in a rising interest rate environment. We've illustrated this by drawing out several yield curves in the graph below. A yield curve is a graphical representation of yields on bonds of various maturities at a point in time. The graph shows an assumed shift in the yield curve over time. For the purposes of this example, for each point in time, we've assumed all rates on the yield curve have moved higher by the same amount, also known as a parallel yield curve shift. We have done this for four different points in time. For now, let's focus on four points: A, B, C, D. Each of these represents the same bond at various points in time: at issuance (point A); one-year later, when it is a 4-year bond (point B); two-years later, when it is a 3-year bond (point C); and finally, at its maturity date (point D).



Illustrative Yield Curve – Rising Rate Environment

In the table on the following page, we show an investor's return at the various points in time (each row captures the investor's return for the 12 months preceding that point). The table shows the interest (coupon) income that a bond investor would earn, as well as the unrealized capital gain/loss from the change in the price (market value) of the bond.

⁽¹⁾ This statement is made with the assumption that bankruptcy and debt restructuring are not concerns for the bond in question, which is a simplification of the reality of fixed income investing.

			Your Annual Return						
			Price of the Bond	Coupon	Current Yield	1 YR Interest Income	1 YR Capital Gain/Loss	1 YR Return	Annualized Total Return Since Time 0
A	5-Year Bond Time 0	Buy a 2.15% July 31, 2023 Bond for \$100.	\$100.00	2.15%	2.15%				
B	4-Year Bond Time 1	Interest rates increased by 0.75%. Your bond is now a 4-year bond.	\$97.65	2.15%	2.77%	\$2.15	-\$2.35	-0.20%	-0.20%
C	3-Year Bond Time 2	Interest rates increased another 0.25%. Your bond is now a 3-year bond.	\$97.92	2.15%	2.88%	\$2.15	\$0.27	2.48%	1.11%

			Your 5-Year Return						
			Price of the Bond	Coupon	Current Yield	5 YR Total Interest Income	5 YR Total Capital Gain/Loss	5 YR Return	Annualized Total Return Since Time 0
D	At Maturity Time 5	Interest rates are 2% higher than when you purchased your bond. Your bond is maturing.	\$100.00	2.15%	N/A	\$10.75	\$0	10.75%	2.15%

As you can see in the example, the investor earns the same, consistent, interest income every year. This is always the case for a fixed-rate bond. The variable component of their return in each period is the capital gain/loss, or what happens to the price of the bond during the period. In a rising rate environment, any new bond that is issued will have a higher annual interest payment than pre-existing bonds and will therefore be a more attractive investment. As a result, the price of the pre-existing bond will go down. These price changes are temporary as the bond will eventually mature at its “par value” (typically \$100) and the unrealized capital gains and losses will disappear unless the investor sells the bond and “locks in” the capital gain or loss.

So, for both statements to be correct: that “investors do not lose money on a bond investment” and that “as interest rates rise, bond prices fall”, it all comes down to timing.

In the example, an investor who bought the bond represented by point A in the chart and held that bond until its maturity date would earn a 2.15% annualized return. If, however, the investor sold their bond at the point in time represented by point B (1-year later), then the investor would be locking in a negative 1-year return of -0.20%, thanks to the capital loss incurred. The investor still would have earned their 2.15% coupon but, in this case, the capital loss incurred was more than that (2.35%).

If the proceeds from the sale of a bond which is sold after a negative period return are not re-invested in fixed income (i.e. they are needed for personal spending or to invest in another asset class), the investor will have locked in a negative return. On the other hand, if the investor is selling that bond to buy another bond with the same or longer maturity, then they will be increasing the yield on their investment and, over time, will continue to earn a positive return on their fixed income.

“Extending term” and re-investing funds are important parts of fixed income management as, with each passing day, the average time until maturity for a fixed income portfolio is declining. To the extent that a fixed income portfolio maintains relatively consistent characteristics, investors can expect that over time they will earn the yield on the portfolio. What exactly “over time” means can differ significantly for various portfolios with different durations. If we think about a 30-year bond that suffers significant capital losses (or gains as we saw in the period from 1980-2016), it’s very possible that it could take the better part of that bond’s life to “earn back” capital losses via interest income. By focusing on shorter-maturity bonds (i.e. bonds that mature in 10-years or less) the bonds held in the Nexus Income Fund will experience much less volatility than might be seen in longer-dated portfolios (and the index). This does not guarantee that the bonds in the Income Fund would outperform a longer-dated portfolio but, should interest rates continue to move higher, we are not concerned about large swings in performance to the same extent that we would be if we held longer-dated bonds.