

# When falling bond prices are a blessing in disguise

Special report



Wealth Management  
Dominion Securities

Changes in bond prices can be a counterintuitive phenomenon to understand. Most investors have an innate understanding of what it means when the price of equities change: as the prospects for any given business improve, investors should be willing to pay more to own a piece of that business. However, bond investors are not purchasing a share of the company's business, they are purchasing a series of cash flows over a certain time period. This means that the performance of bond portfolios should be considered through an entirely different lens. We want to help investors view bond performance through that new lens, and to show that falling prices can be a blessing in disguise that improves the long-term return prospects of a portfolio. With this in mind, we will explore a few key themes:

- The relationship between yields and bond prices
- The temporary nature of changing bond prices
- How to think about bond performance with the entire investment horizon in mind

## Why do bond prices fall when yields are rising?

Perhaps the most fundamental feature of fixed income investing is also one of the most counterintuitive: bond prices fall when yields rise. More yield is clearly desirable, so it can seem confusing at first that more of it would lead to lower bond prices. In order to understand why this is the case, we must first delineate the subtle but important difference between “coupon” and “yield-to-maturity”.

The majority of bonds make fixed cash payments twice a year, which are called coupons. When an investor buys a bond, what they're really buying is a series of coupon payments over the term of the bond. Those coupons remain fixed, irrespective of any changes to central bank interest rates, the creditworthiness of the issuer, or prevailing market yields. While those changes do not alter the actual cash payments the bondholder receives, they certainly affect what another investor would be willing to pay to purchase those coupon payments.

Consider a hypothetical bond that is priced at par (\$100) and pays a \$2 coupon each year for every \$100 worth of par, corresponding to a yield of 2%. If the prevailing market yield for a bond of similar risk were to rise, other investors would no longer be willing to purchase that series of \$2 coupon payments for \$100, since they could receive a yield higher than 2% elsewhere. In order to find a willing buyer for those \$2 annual coupons, the bondholder will have to sell the bond for less than the \$100 they purchased it at.

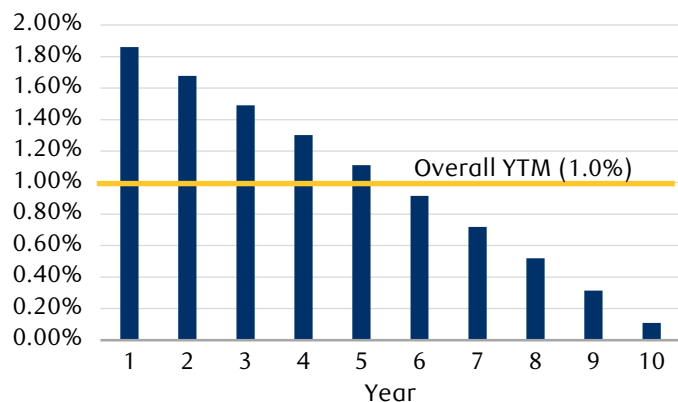
In this way, yield and price are two sides of the same coin: if the market for any reason demands a higher yield for a given bond, the price of that bond must decline so that the buyer can realize a higher yield, even while the coupon payments remain fixed. However, even though that bond is priced below par because yields have risen, it will still return \$100 of principal when it matures. For this reason, the investor's return comes from two places: the fixed coupon cash payments each year, and the gradual pull of the bond's price towards par, since it must reach \$100 at maturity (excluding default). Yield-to-maturity is the measure that combines both of these sources of return into a single representation of yield, and is usually the metric being referred to when speaking to a bond's “yield”.

## Changing yields alter the path of returns, but not the final destination

The reason yield-to-maturity is the most commonly used measure of return is because it represents a return that is guaranteed to be realized if the investor holds the bond until maturity (and the issuer does not default on its debt). Bond yields can rise (and prices fall) for a variety of reasons: it could be that the creditworthiness of the issuer declined, or that the central bank has raised interest rates, or simply that demand for bonds is too low. However, those factors do not change the cash flows (the coupons and principal) of bonds that have already been issued. For this reason, changing market yields can pull return forward (when yields fall) or push it back (when

### Changing yields can pull returns forward ...

Annual return on 10-year bond when yield falls 0.1%/year

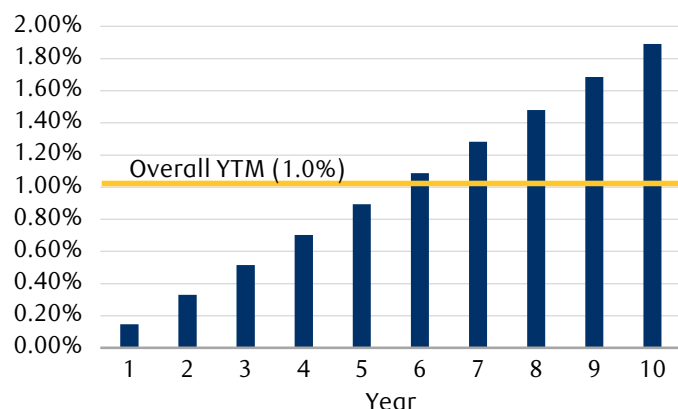


■ Annual return of hypothetical 10-year bond 1.0% YTM

Source - RBC Wealth Management

### ... or push them back ...

Annual return on 10-year bond when yield rises 0.1%/year

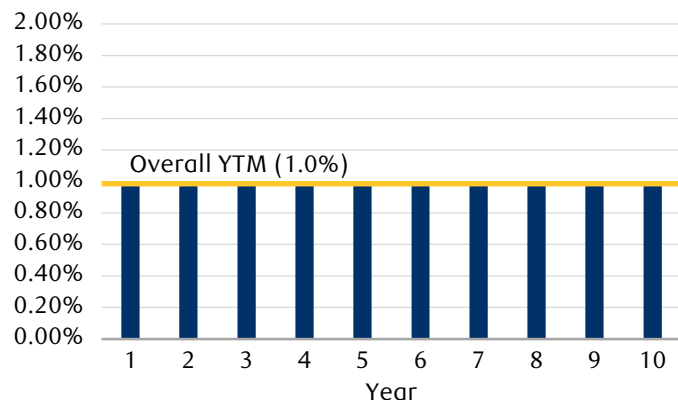


■ Annual return of hypothetical 10-year bond 1.0% YTM

Source - RBC Wealth Management

### ... but do not alter the YTM if held to maturity

Annual return on 10-year bond when yield remains stable



■ Annual return of hypothetical 10-year bond 1.0% YTM

Source - RBC Wealth Management

yields rise), but ultimately they will not alter overall return when held to maturity.

Another way to represent this is with the chart at below right, which shows the total return of a hypothetical 10-year bond that pays \$2.50 annually per \$100 par value. The yellow line is the path that the bond's total returns would take if yields fell by 0.25% per year, while the dark blue line is the path taken if yields rise by 0.25% per year. The annual coupon does not change throughout the term, but the increase in yields (for the dark blue line) does temporarily decrease the price of the bond. However, it must mature at the par value of \$100, so it ultimately ends up realizing the same return over the life of the bond, which works out to be the 2.50% yield-to-maturity that was locked in when the bond was purchased. Regardless of the path taken, the total cash flows received by the bondholder when held to maturity are 10 years of \$2.50 coupons, plus the \$100 principal returned at maturity.

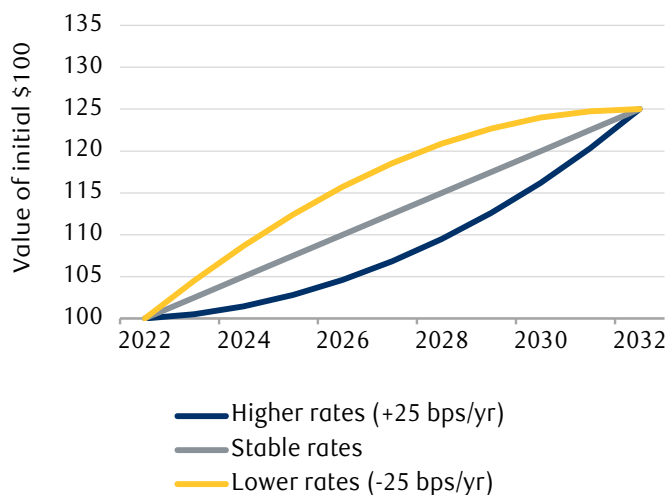
### Higher yields bring temporary losses that lead to better long-term returns

The temptation when it comes to looking at the performance of bonds is to consider positive price performance as an unequivocally good thing for the portfolio, as investors do when it comes to equities. However, as shown in the charts, changes in the price of bonds are always temporary (except in the case of default/restructuring), since they must eventually return to \$100 par value; the same is not true for equities, where it's possible for the price of a stock to increase without ever dropping back to previous levels.

This presents bond investors with a strange dichotomy: falling yields increase the price that bonds can be sold at currently and subsequently improve current-year performance, but they do so at the expense of longer-term returns, as new or reinvested funds must now be deployed

### Different paths lead to the same total return

10-year bond return path: Price & coupon return



Source - RBC Wealth Management, Bloomberg

into bonds that offer lower yields. The key question investors must consider in this scenario is whether their investment horizon is longer than the average term of their bond portfolio. If the investment horizon is longer, the investor will see their bond prices decline temporarily, but will benefit more from higher rates in the long run. An investor who has a shorter time horizon than the average term of their bonds, however, will not have enough time to realize the “back-loaded” returns that occur when bond yields rise, and will not benefit from higher rates in the same way.

### The effects of rising yields on a bond ladder

Consider the following hypothetical scenario, which ignores the temporary changes in bond prices and focuses on the actual cash income received each year. In this scenario, an investor is investing funds to pay for some spending obligation in 10 years’ time. They do so by purchasing a 5-year bond at the beginning of each of the first five years, starting at 1.30% for the first year. After one year passes, that initial 5-year bond has four years remaining until maturity, and the investor sells a portion to purchase another 5-year bond at the new market rate. This continues until the investor holds a 5-year ladder by the fifth year. The process then reverses for years six through 10, where maturities are reinvested into bonds of shorter duration as the end of the investment horizon approaches. While this example is not indicative of how bond ladders are purchased in reality (where all five bonds would be purchased at the outset), it is simplified to more clearly show the positive effect of rising yields on cash flows over time.

### Rising rates improve bond returns in the long run

5-year ladder when rates rise 15 bps/year

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
1-year bond					1.30%	1.45%	1.60%	1.75%	1.90%	2.05%	
2-year bond				1.30%	1.45%	1.60%	1.75%	1.90%	2.05%		
3-year bond			1.30%	1.45%	1.60%	1.75%	1.90%	2.05%			
4-year bond		1.30%	1.45%	1.60%	1.75%	1.90%	2.05%				
5-year bond	1.30%	1.45%	1.60%	1.75%	1.90%	2.05%					
Return on \$100k	\$1,300	\$1,375	\$1,450	\$1,525	\$1,600	\$1,750	\$1,825	\$1,900	\$1,975	\$2,050	Total return
											\$16,750

5-year ladder when rates fall 15 bps/year

	Year 1	Year 2	Year 3	Year 4	Year 5	Year 6	Year 7	Year 8	Year 9	Year 10	
1-year bond					1.30%	1.15%	1.00%	0.85%	0.70%	0.55%	
2-year bond				1.30%	1.15%	1.00%	0.85%	0.70%	0.55%		
3-year bond			1.30%	1.15%	1.00%	0.85%	0.70%	0.55%			
4-year bond		1.30%	1.15%	1.00%	0.85%	0.70%	0.55%				
5-year bond	1.30%	1.15%	1.00%	0.85%	0.70%	0.55%					
Return on \$100k	\$1,300	\$1,225	\$1,150	\$1,075	\$1,000	\$850	\$775	\$700	\$625	\$550	Total return
											\$9,250

Source - RBC Wealth Management, Bloomberg

As the tables show, if the 5-year rate increased by 15 basis points (bps) each year, the total return after 10 years on an initial \$100,000 investment would be \$16,750. Conversely, if the 5-year rate decreased by 15 bps each year, the total return would be just \$9,250.

Counterintuitively, it is the second scenario with falling rates where the investor would see the price of the bonds initially *increase* on their performance statement. However, when held to maturity, this simply means taking the “yellow path” shown in the chart on page 2—the final destination is the same regardless of which path is taken. If an investor’s time horizon is longer than the duration of their portfolio (as is the case in the tables below), the total return over the course of the investment horizon would improve when rates rise, even though it would result in a temporary decline in the prices of existing bond positions. By ignoring changes in overall bond prices and focusing instead on cash flows, it becomes clear that the short-term drawdowns from falling bond prices can lead to better long-term returns, as long as the investor’s time horizon is long enough (i.e., longer than the average term to maturity of the portfolio) to take advantage of those higher rates.

### Think like a pension fund when yields are rising

To conclude, let’s look at a practical example of how lower bond prices benefit those with longer investment horizons than the average term to maturity of their portfolio. Consider defined benefit pension plans, which invest heavily in long-term bonds. Even though rising yields can result in significantly negative performance for those long-term bonds, the even longer investment horizon of

these funds means that the benefit of higher rates over the long term is greater than the temporary decline in the market value of the bond positions. In February 2021, yields in North American markets rose significantly, and this was particularly true for long-term bonds. Despite the negative price performance these higher yields had on the long-term bonds held by pensions, the ultimate effect was that it improved the funded status of the 100 largest corporate defined benefit pension plans by 320 bps in that month alone.

We believe individual investors who have an investment horizon longer than the duration of their portfolio should look at bond prices in a similar fashion. Rising yields help to improve the “funded status” of future spending obligations, and this should hold just as true for individual investors as it does for pension funds.

# Disclosures and disclaimers

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