

BOND LADDERS IN A RISING RATE ENVIRONMENT

With a glut of information from the financial media, many investors have heard the drumbeat of rising interest rates. Market pundits are predicting higher rates due to rising inflation expectations coupled with an economy that is slowly picking up steam. The Federal Reserve has given more credence to the pundits by increasing the Federal Funds Target Rate twice in its past three meetings, causing investors to ask, “Will my bond ladder protect me in a rising rate environment?”

Before we get into the math, let’s revisit bond ladders and explain why we recommend using them. A bond ladder is a portfolio of individual bonds that have different maturities. For example, a ladder could be constructed with equal numbers of bonds with maturities across 1–10 years, or it could consist of bonds that mature in 2–7 years.

A bond ladder is a highly effective tool to help minimize risk. At least three types of risk are related to fixed income investing: 1) price risk, 2) reinvestment risk and 3) credit risk. While credit risk can be easily hedged by purchasing high-quality bonds, price risk and reinvestment risk are harder to mitigate. That is where a bond ladder comes in. The longer the maturity of an instrument (and the greater its duration), the greater the price risk will be. On the flip side, reinvestment risk is the risk that a bond will mature when interest rates are lower than when it was purchased. Thus, when an investor reinvests the proceeds from the maturing bond, he or she could receive a lower rate of return. Unfortunately, minimizing price risk comes at the cost of accepting greater reinvestment risk, and vice versa. A bond ladder serves to balance these two risks. The shorter rungs of the ladder minimize the price risk of the longer rungs; the longer rungs minimize the reinvestment risk of the shorter rungs.

Now, let’s look at how a hypothetical bond ladder would fair in an environment with rising rates. Because higher interest rates mean lower prices for bonds, most investors assume their portfolios will experience negative returns in such an environment. To test this theory, we have constructed a bond ladder with a duration of four years, which is right in the middle of a recommended duration band. The test will assume a 50 basis point, or 0.50 percent, increase in rates until the Federal Funds Target Rate attains 5.00 percent. Based on today’s rates, we will use a beginning yield of 2.46 percent on the bond ladder and a 1.00 percent Fed Funds Target Rate.

Fed Funds Target Rate	Year	Rate Increase	Value Impact	Beginning of Year Yield	End of Year Expected Yield	Expected Return	Yearly Return	Cumulative Total Return	Annualized Total Return
1.50%	1	0.50%	2.00%	2.46%	2.96%	2.46%	1.96%	1.96%	1.96%
2.00%	2	0.50%	2.00%	2.96%	3.46%	2.96%	2.46%	4.47%	2.21%
2.50%	3	0.50%	2.00%	3.46%	3.96%	3.46%	2.96%	7.56%	2.46%
3.00%	4	0.50%	2.00%	3.96%	4.46%	3.96%	3.46%	11.28%	2.71%
3.50%	5	0.50%	2.00%	4.46%	4.96%	4.46%	3.96%	15.69%	2.96%
4.00%	6	0.50%	2.00%	4.96%	5.46%	4.96%	4.46%	20.85%	3.21%
4.50%	7	0.50%	2.00%	5.46%	5.96%	5.46%	4.96%	26.84%	3.46%
5.00%	8	0.50%	2.00%	5.96%	6.46%	5.96%	5.46%	33.77%	3.70%
5.00%	9	0.00%	0.00%	6.46%	6.46%	6.46%	7.96%	44.42%	4.17%

Unlike what many investors would expect, the table clearly shows that even when rates increase, a consistent bond ladder is still expected to produce positive annual returns — and it continues to be an effective tool in such an environment.

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