# Bond Ladders & Bond Barbells

Investment portfolio strategies

**Individual bonds can play an important role at the core of an investment portfolio focused on principal protection.** By investing in bonds, you can expect to receive defined cash flows[1] and a return of principal at maturity, absent issuer defaults.

Such cash flows can help support future planning or savings goals, fund living or retirement expenses, add to college saving plans, or even generate income that can be given to charitable causes.

Using the maturity strategies of a **bond ladder** or **bond barbell** may help further customize your portfolio to meet your goals.

1 Defined cash flows, as outlined in the offering documents, are subject to the credit risk of the bond issuer. If an issuer defaults, some or all of your payments, including principal and interest, could be at risk.

# Bond Ladders

**A bond ladder is a portfolio of individual bonds that mature on different dates.** A bond ladder can help you secure the predictable income[1] from individual bonds and position you to re-invest if rates go up.

To create a ladder, you can simply purchase multiple bonds with different maturity dates, staggering your bonds like steps on a ladder. When the first bond matures, the proceeds can be reinvested in a bond with a maturity date matching the longest step of the original ladder. In that way, the average maturity of your portfolio stays roughly constant over time. You can select bonds with different coupon payment months in order to generate predictable income[1] on a regular schedule.

Laddering is a common and effective way to construct bond portfolios and to provide exposure to many maturities. This strategy helps mitigate the risk of rising interest rates by reinvesting maturing proceeds at potentially higher interest rates and provides multiple opportunities to reassess the credit risk in your portfolio or redeploy funds for other purposes. **If interest rates rise,** you'll be able to take advantage of higher yields relatively quickly. And **if interest rates fall,** you'll still have higher-yielding bonds in your ladder. This can help smooth out the portfolio effects of market volatility.

**Reasons to consider a bond ladder**

- Management of interest rate risk
- Opportunity to reassess credit risk of your portfolio
- Smoothing the effects of market volatility
- Customizable cash flow
- Increased diversification
- Periodic liquidity
- Potential for higher average yield

**Illustration A**[2] shows the initial investment of $100,000 that is split, or laddered, into five bond issues with varying maturities – 2, 3, 5, 7, and 10 years. When the 2-year bond (Bond A) matures, the principal amount is reinvested into a new bond at the longest point of the original ladder. In this example, the principal was reinvested in a new 10-year bond (Bond F). The laddering strategy is to revinvest shorter maturities as they come due into longer maturities, thereby creating a continuous cycle to replenish the ladder.

**Illustration B**[2] shows how the portfolio would be structured at the end of year 2. The goal is to give investors the flexibility to adapt to changing interest rate and/or credit market environments, or to redeploy funds for other purposes.

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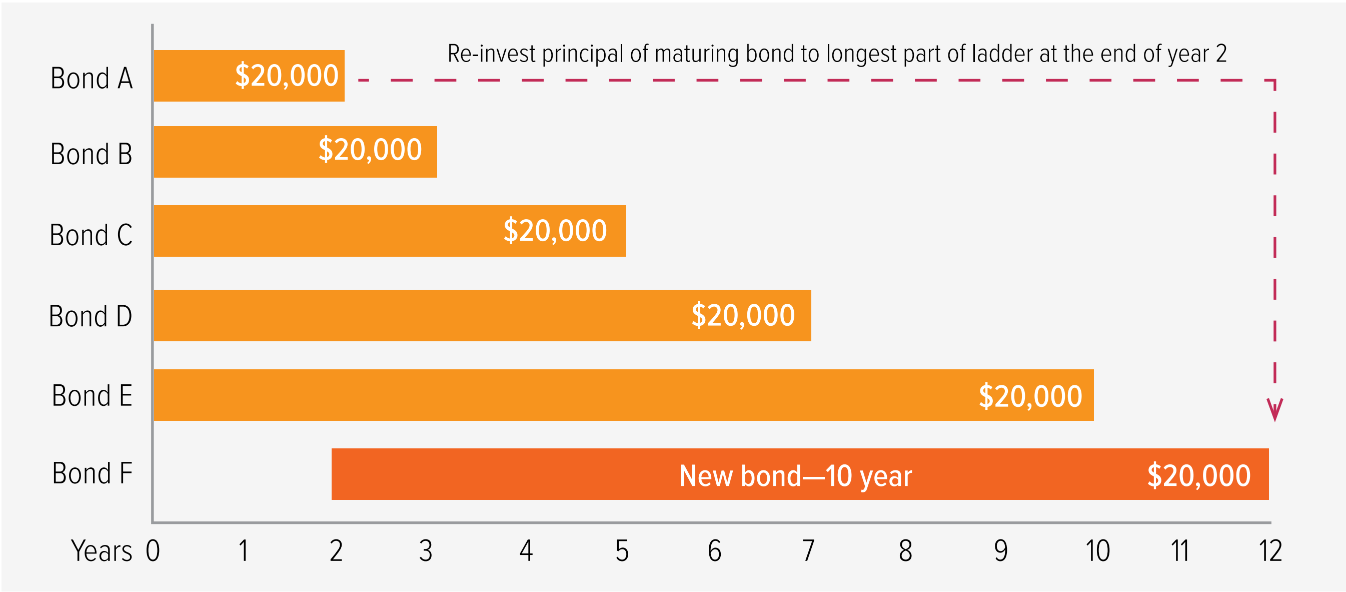
2 These charts are for illustrative purposes only and are not indicative of any investment. If held to maturity, bonds provide a predictable rate of return and a fixed par value, subject to the credit risk of the issuer. Bonds carry the risk of default, meaning the issuer at any time may be unable or unwilling to make scheduled interest and/or principal payments. Diversification of bond issuers and maturities does not guarantee a profit or protect against a loss. Investing in individual bonds carries additional risks that include, but are not limited to, interest rate risk, liquidity risk, and call risk. The longer the duration of a bond, the more sensitive its price is to changes in interest rates. Interest rate risk is not a concern if bonds are held to maturity. Different environments, economic periods, and market conditions will produce different results. Please refer to the information detailed in the relevant prospectus/offering documentation for a complete discussion of the terms and conditions of an offering.

Illustration A

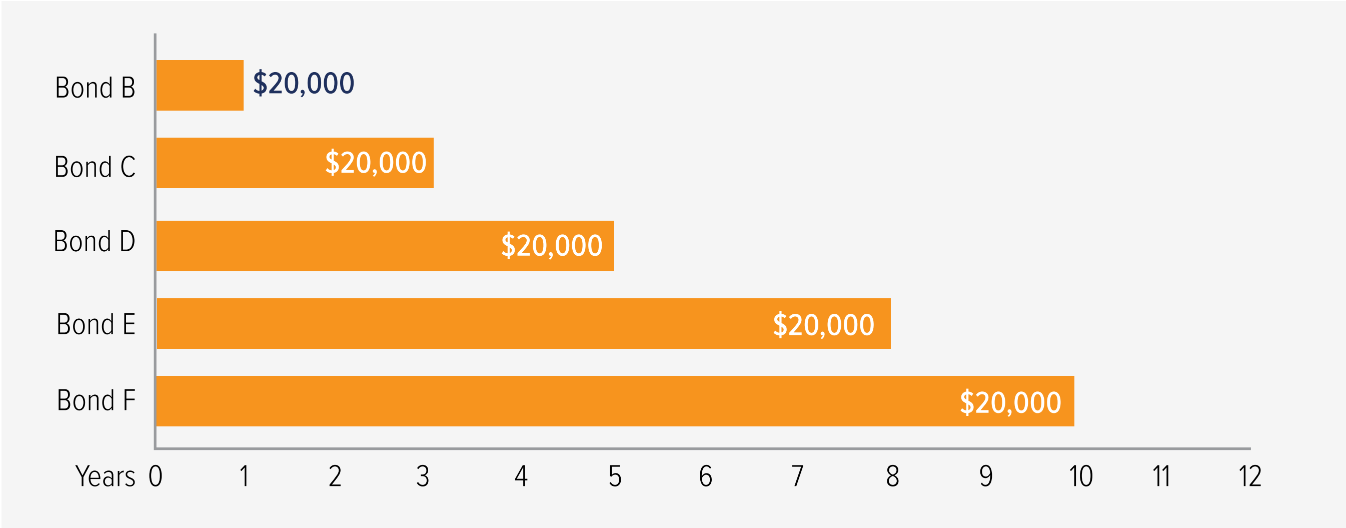
## Diversified portfolio with bond laddering




Staggered maturity dates at different intervals allow for reinvestment at longest point of ladder as bonds mature.

Illustration B

## New portfolio at the end of year 2

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# Bond Barbells

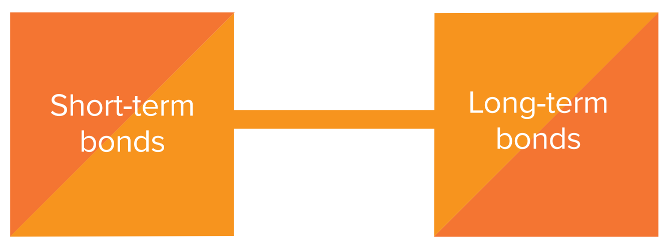
**A bond barbell is a portfolio of individual bonds with two different types of maturities—short and long.** A barbell strategy can help you capture the higher yields typical of longer-dated bonds, while maintaining portfolio flexibility.

To create a barbell, you can invest half of your assets in short-duration bonds (typically 3 years or less to maturity) and the other half in longer-term bonds (generally 10 years or more to maturity). By concentrating on shorter- and longer-term bonds with nothing in between, the maturity allocation of this portfolio resembles a barbell. The proceeds of maturing bonds can be reinvested in bonds with any duration within their weighting (1 to 3 years or 10+ years).

The shorter-term bonds in your barbell portfolio allow you to adjust your investments every few months or years. **In a rising rate environment,** maturing short duration bond proceeds can be reinvested at a higher rate. **In the case of falling interest rates,** longer-term bonds in your barbell portfolio can provide higher coupon rates that are locked in for a period of time.

This strategy helps reduce interest rate risk and provides multiple opportunities to reinvest based on market conditions.

**Barbell strategy**




**Reasons to consider a bond barbell**

- Mitigation of interest rate risk
- Provision of liquidity options
- Locking in yields
- Risk diversification
- Potential to increase average return

Illustration C

## Initial investment in a bond barbell

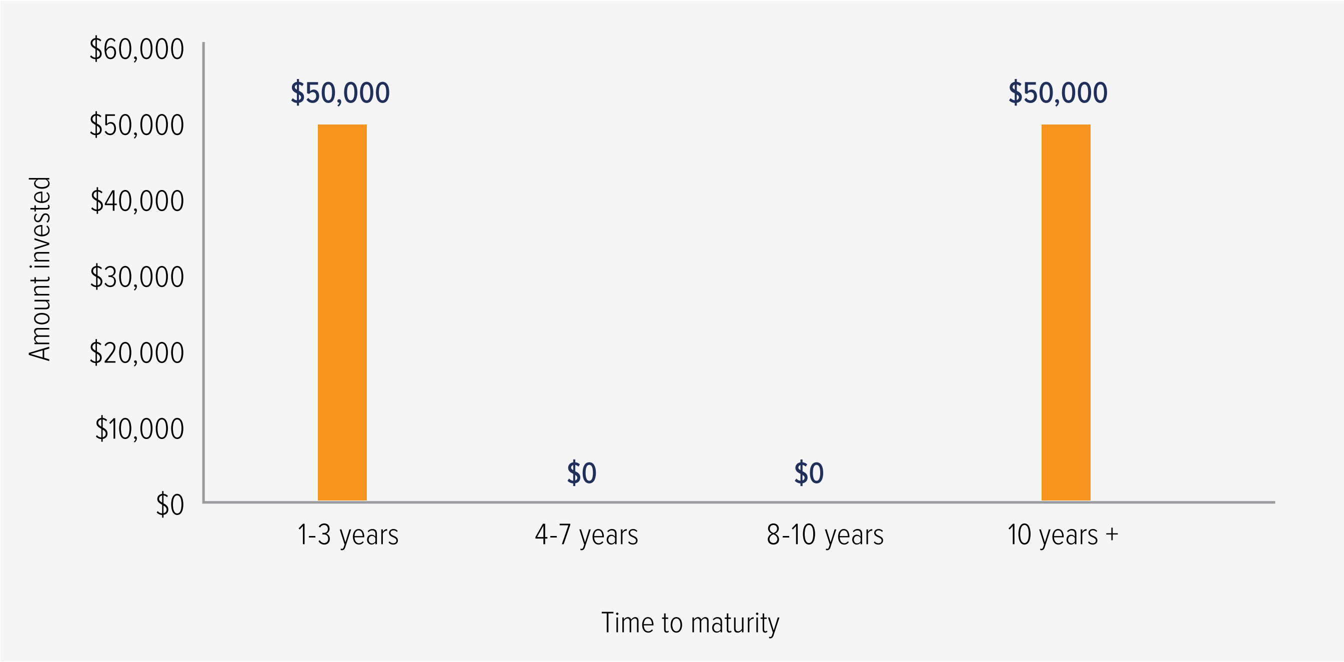



**Illustration C**[2] shows the initial investment of $100,000 that is split into short-duration bonds with less than three years to maturity and longer-term bonds with maturities of ten years or more.

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**Speak with your financial advisor** about the risks and suitability of bond ladder and barbell strategies in your portfolio.

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