PORTFOLIO STRATEGIES: LADDERS VS BARBELLS VS BULLETS

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The old adage of “don’t put all your eggs in one basket” holds true time and again for investment decisions. Portfolio construction is an important aspect of portfolio diversification, with ladders, barbells, and bullets being three of the main shapes a maturity schedule can take. Below we provide basic information on and examples of each structure.

Diversification

Portfolio diversification can take many forms, and all of these forms are useful in minimizing various types of risk in uncertain environments: interest rate risk, reinvestment risk, credit risk, event risk, and maturity risk, among others. Diversification via deliberate maturity schedules is one way to address interest rate and reinvestment risks. An investor who strategically structures bond maturities can better position the portfolio in an uncertain rate environment. Thoughtful portfolio construction can appropriately address an investor’s risk/return profile, as well as cash flow needs and market expectations about interest rates. There are three common portfolio strategies which form the foundations of a stable fixed income portfolio: ladders, barbells, and bullets.

Ladders versus Barbells versus Bullets

**Ladders:** A bond ladder is a portfolio structure that has roughly equal amount investments maturing in sequential years out to the longest desired bond maturity. For example, an investor’s ladder might consist of 9 bonds of $100K face value spanning from two to ten years, as in the graph to the right. Once the 2-year bond (i.e. the 2019 bond) of $100K par value matures, the investor reinvests the proceeds in a bond maturing one year after the longest maturity (i.e. in 2028). Each position represents a “rung” of a ladder, and the reinvestment an investor’s ability to climb further up the possibly infinite ladder. Of course, the investor can also look at the regular maturities as an opportunity to make a choice about withdrawing funds from the ladder and reinvesting in other strategies.

Because some of the portfolio is maturing each year, a ladder allows an investor to participate in changing rate environments and limits exposure to any particular portion of the yield curve. Ladders, therefore, decrease both interest rate and reinvestment risks.

**Barbells:** A barbell is a portfolio structure that provides diversity of maturities like a ladder, though is structured differently. Whereas a bond ladder has a bond maturing each year, a barbell has concentrated maturities on the short and long end. Compared to the example of the bond ladder above, if an investor has $900K to invest and is trying to achieve an average maturity of 6 years, the investor could employ a barbell structure instead of the ladder example above. In the most extreme example of a barbell, the investor could put $450K in a bond maturing in 2 years and the remaining $450K in a bond maturing in 10 years with no bond maturing in between.

Because half the investment in the barbell example is in the 10-year portion of the curve, any volatility that may be concentrated to the 10-year portion of the curve will be more acute in this portfolio versus a ladder. The investor also will have half of the portfolio to reinvest two years after the portfolio is constructed. The variability return is greater than in a laddered portfolio due to greater interest rate risk, however.
**Investable Themes**

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<table>
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<tr>
<th>Strategy</th>
<th>Highlights</th>
<th>Considerations</th>
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<tr>
<td>Ladder</td>
<td>• Reduces interest rate and reinvestment risks</td>
<td>• Not easily implemented with small investment amounts to achieve diversity</td>
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<tr>
<td></td>
<td>• Investor is able to reinvest a portion regularly</td>
<td>• Assumes buy-and-hold investors</td>
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<tr>
<td></td>
<td>• Not overexposed to any one segment of yield curve</td>
<td></td>
</tr>
<tr>
<td>Barbell</td>
<td>• Some hedge against interest rate risk, with a potential for greater yield over the life of the portfolio vs a ladder</td>
<td>• Not easily implemented with small investment amounts to achieve diversity</td>
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<tr>
<td></td>
<td>• Investor is able to reinvest shorter-term portion when bonds mature</td>
<td>• A riskier strategy than a ladder, as it embeds an investor’s assumptions about</td>
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<td></td>
<td>• Can put more weight to short or long portions of barbell</td>
<td>the yield curve</td>
</tr>
<tr>
<td>Bullet</td>
<td>• Investor is able to invest for a specific maturity date</td>
<td>• Disregards current market in favor of investors’ personal needs</td>
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<td></td>
<td>• Embedded in strategy is natural expansion of amount invested</td>
<td>• Not diversified at the start and is overexposed to one part of the yield curve</td>
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**Bullet:** In a bullet structure, all the bond positions in the portfolio share the same maturity date. In such a case, the investor typically is planning for a cash need on a set date, such as college tuition payments. The investor, therefore, is targeting a specific segment of the yield curve. Instead of the investor creating a bond portfolio all at once, the investor purchases bonds over time, with each bond having the same maturity date. Staggering bond purchases over time allows the investor to mitigate some interest rate risk: in a rising rate environment, the investor has cash to invest at the higher rates, and in falling rate environments, the investor has the initial investment that offers a higher yield. This strategy assumes the investor does not have cash sitting on the sidelines, but rather is gradually investing as more funds are available to invest versus a ladder and barbell, which assume the amount available is invested all at once.

**Additional Thoughts About Portfolio Construction**

These structures are common ways to construct a portfolio. The specific design depends on the investor’s needs and should incorporate:

- Cash flow needs, which will determine the amount invested and in what maturities;
- Income needs, which will determine the appropriate average coupon given the risk tolerance; and
- Market conditions, such as the shape of the yield curve, which will define the benefits from purchasing shorter or longer securities.

For additional commentary on portfolio diversification, please see our note, *Preparing for Changes in Interest Rates*, from November 2016.

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