Navigating Interest-Rate Cycles with the Laddered Bond Portfolio

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Laddering is a time-tested approach to fixed income investing that allows portfolio managers to focus on fundamental credit research while managing interest rate risk, not trying to predict turns in the rate cycle.

Executive Summary

- Highly accommodative monetary policy continues to weigh down fixed income yields, without juicing economic growth nearly as much as anticipated. The persistence of low bond yields has undercut conservative savers and fixed income investors.

- In pursuit of more yield, some investors employ a "barbell" strategy combining low-yielding, short-term bonds to hedge interest rate risk and higher-yielding long-term paper, which subjects them to more market price risk. Others target a particular segment of the yield curve as part of a duration-focused "bullet" strategy, but such interest rate bets often don't pan out as benchmark rates are difficult to predict.

- "Unconstrained" bond funds also try to time benchmark interest rate hikes in using interest rate futures to short U.S. Treasuries. But in addition to the difficulty in accurately predicting key interest rate hikes, these strategies must also contend with covering the costs of carry and opportunity costs of not investing in more income-generating instruments.

- Laddered bond funds offer a time-tested approach that allows managers to focus on fundamental credit research while reinvesting proceeds from maturing issues in the long end of a portfolio comprising staggered maturities. This strategy mitigates reinvestment risk throughout the interest rate cycle as it captures price appreciation as bonds age to maturity.

The purpose of fixed income for most investors is to generate income and serve as ballast in their broader portfolios. It's not meant to be the fastest boat in the water, but rather the most seaworthy.

Following the global financial crisis, major central banks slashed interest rates to rock-bottom levels and provided abundant liquidity through asset purchase programs more commonly known as quantitative easing. Time and again over the ensuing years, policy makers and investors alike expected the monetary exertions to resuscitate flagging economic growth. But they were repeatedly forced to push further out on the horizon the anticipated end to ultra-easy money when the rebound didn't materialize.

If growth is finally picking up in the U.S. and Europe, low or sea-level interest rates remain. As a result, low fixed income yields across the developed world have persisted, as have the volatility and dispersion in total returns among the many sub-classes of bonds within the bond market.

Investors have tried a variety of strategies to hedge interest-rate risk and generate some income in this challenging environment. The "barbell" approach focuses on a combination of short-term bonds to hedge interest-rate risk and long-term bonds to produce income with their higher yields. But short-term bonds yield little, while long-term bonds are more subject to market-price risk and so are much more volatile.

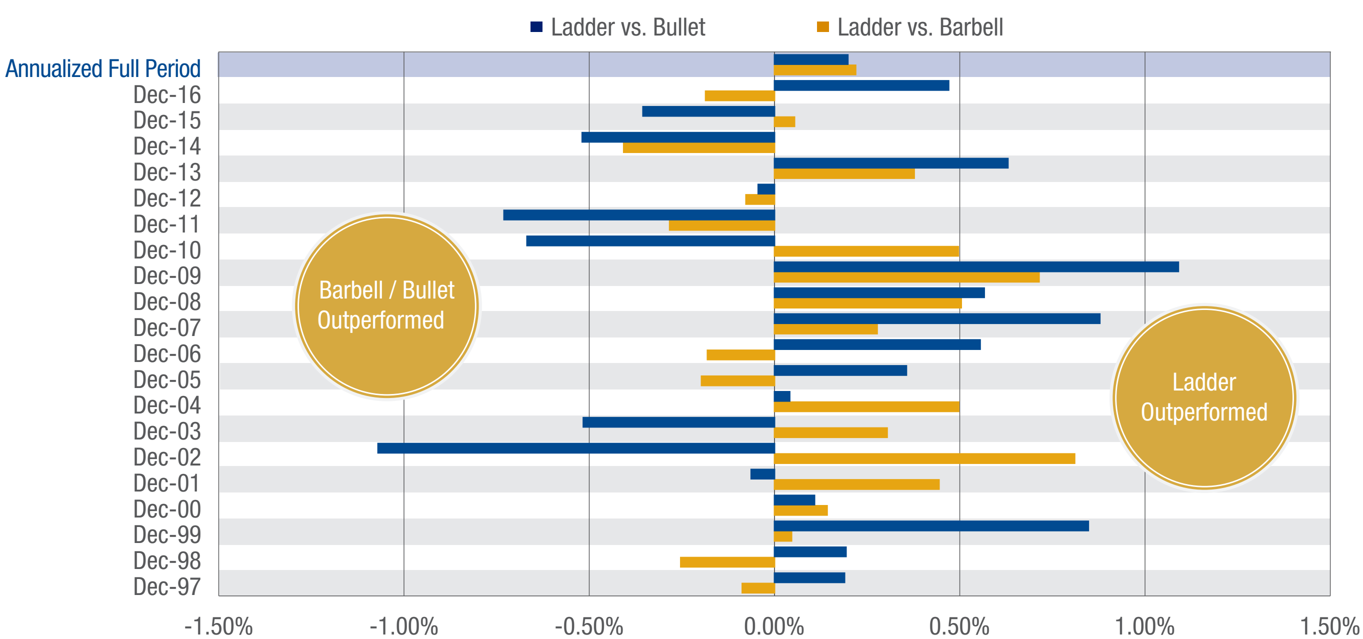
The "bullet" strategy concentrates in bonds of a specific duration or maturity, which in recent times effectively meant very low-yielding, short-term bonds, given widespread expectations for continued, albeit gradual, U.S. interest rate rises. They may take on more credit risk to compensate for the lower yields of short-term paper. A somewhat more recent strategy—"unconstrained" bond funds—seeks to time rising interest rates by shorting U.S. Treasuries using interest-rate futures. They must accurately time rate increases for their bets to cover both the costs of carry and the opportunity costs of not investing in more income-generating instruments.

These three approaches have generally faced a major headwind to performance in recent times: for seven years following the 2008 Global Financial Crisis, benchmark U.S. interest rates remained near zero, as expected post-crisis economic recoveries didn't prove durable. The economy stumbled along, growing on average 1.6% annually since the beginning of 2009 through the third quarter of 2017. Nonetheless, the U.S. Federal Reserve began to slowly raise rates by quarter-point increments in late 2015, based on expectations of accelerating growth and inflation. But at 1.5% at the end of 2017, its policy rate remains quite accommodative, with the Fed's preferred inflation metric running well below its target level.

Laddering is a time-tested approach to fixed income investing that allows portfolio managers to focus on fundamental credit research while managing interest-rate risk. It doesn't involve predictions of turns in the rate cycle. Rather, a laddered portfolio comprises bonds of staggered maturities, with only a portion of its holdings maturing each year. The proceeds from maturing bonds are reinvested in longer-dated, higher-yielding bonds at the top end of the ladder, helping to mitigate the reinvestment risk throughout interest-rate cycles. So it both captures the price appreciation as bonds in the portfolio age to maturity, and, in a rising interest-rate environment, benefits from the higher rates at which new longer-term bonds are issued.

If rates don't rise for a sustained time—as seen in the wake of the financial

Chart 1 | Laddered Structure Outperformed Barbell and Bullet Structures

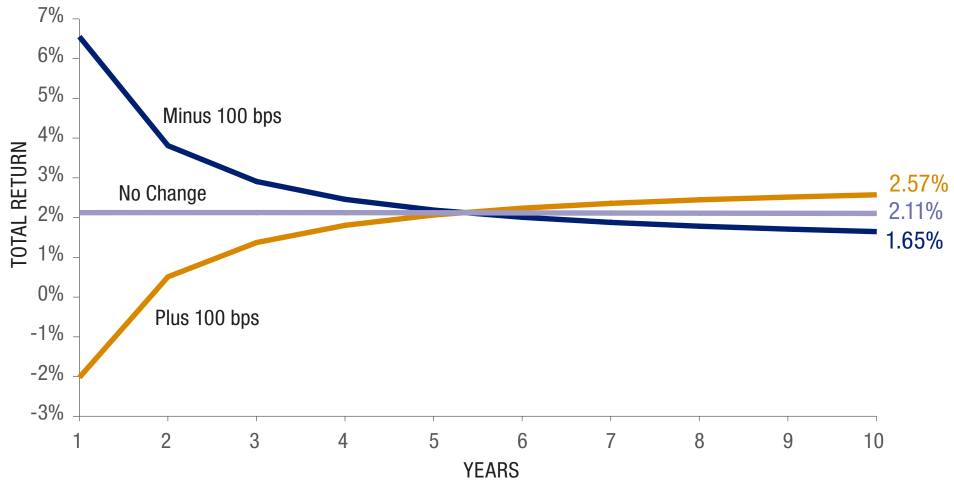


Source: Bloomberg and Thornburg Investment Management. Portfolios are based on ICE Bank of America Merrill Lynch Municipal Indices. Past performance does not guarantee future results. For the complete study, visit https://www.thornburg.com/pdf/TH1858_LadderVsBarbell.pdf crisis—the portfolio still generates a steady annual return that is fairly close to the higher-yielding bonds in the portfolio. And when the rate cycle tops and lower rates are on the way, the portfolio's return gains as bond prices are marked up. As these bonds mature and are reinvested in lower-yielding bonds, the portfolio's long-term return is lower than in rising or stagnant rate periods. But the income stream only gradually decreases as the longer-term, higher-yielding bonds remain in the portfolio. Meanwhile, the portfolio volatility is moderated thanks to the greater price stability of the limited- and intermediate-term portions of the portfolio.

Laddered portfolios focus primarily on non-callable bonds, so that the rungs of the ladder are built from bonds with certain repayment dates, without risk of early redemption. With callable bonds, issuers can repay the bonds early and sell new bonds if the prevailing rate environment becomes more favorable for them. Laddered portfolios tend to buy bonds that they intend to hold to maturity. Hence, fundamental bottom-up credit research is critical for laddered strategies, which typically have rigorous criteria for assessing a bond's price as well as the creditworthiness and willingness of its issuer to service the bond. Laddering, then, facilitates the focus on active credit research and monitoring of holdings, rather than trying to structure a portfolio around what interest rates might do down the road. As portfolio holdings are all high conviction, many aren't sold before they mature, reducing trading costs. To be sure, some may be sold if there's fundamental deterioration in the issuers' finances, or perhaps a more attractive opportunity comes along that needs to be financed with a less attractive current holding. But such sales aren't done for tactical reasons, so they don't drive turnover in the laddered portfolio, which takes a more strategic approach.

A laddered portfolio has the potential to provide steady, attractive returns thanks to its consistent reinvestment of proceeds from maturing bonds in new, longer-dated issues. It can do so with less volatility thanks to the portions of the portfolio stocked with limited- and intermediate-term holdings. In addition to mitigating interest-rate risk, laddered portfolios can boost portfolio returns by focusing primarily on fundamental credit research and monitoring, helping ensure that only the most attractively priced bonds from solid issuers make it into the portfolio. Holding more bonds to maturity keeps trading costs in check. Among fixed income vessels, laddered portfolios may not be the flashiest boats on the water, but laddered strategies have for decades provided investors relatively smooth, buoyant returns, stabilizing their broader portfolios.

Chart 3 | Effect of Interest Rate Changes on a Hypothetical Laddered Bond Portfolio



This chart depicts the AAA U.S. Composite BVAL Yield Curve.
Source: Bloomberg.

Chart 2 | Difference in Total Returns

TOTAL RETURNS

Year	Ladder	Barbell	Bullet	Diff. v. Barbell	Diff. v. Bullet
Annualized Full Period	4.48%	4.26%	4.28%	0.22%	0.20%
2016	0.02%	0.20%	-0.45%	-0.19%	0.47%
2015	2.34%	2.28%	2.69%	0.05%	-0.35%
2014	4.27%	4.68%	4.79%	-0.41%	-0.52%
2013	-0.12%	-0.49%	-0.75%	0.38%	0.63%
2012	3.40%	3.48%	3.45%	-0.08%	-0.05%
2011	7.58%	7.87%	8.31%	-0.28%	-0.73%
2010	3.04%	2.54%	3.70%	0.50%	-0.67%
2009	7.19%	6.47%	6.09%	0.71%	1.10%
2008	4.61%	4.11%	4.05%	0.50%	0.57%
2007	4.98%	4.70%	4.10%	0.28%	0.88%
2006	3.77%	3.95%	3.21%	-0.18%	0.56%
2005	1.87%	2.06%	1.51%	-0.21%	0.36%
2004	3.44%	2.95%	3.40%	0.50%	0.04%
2003	4.82%	4.51%	5.33%	0.30%	-0.52%
2002	10.48%	9.67%	11.55%	0.81%	-1.07%
2001	5.15%	4.70%	5.21%	0.44%	-0.06%
2000	9.64%	9.50%	9.53%	0.14%	0.11%
1999	-0.01%	-0.04%	-0.86%	0.03%	0.85%
1998	6.27%	6.52%	6.08%	-0.25%	0.19%
1997	7.69%	7.78%	7.50%	-0.09%	0.19%

Ladder outperformed

Source: Bloomberg and Thornburg Investment Management.
Past performance does not guarantee future results.

Important Information

Unless otherwise noted, the source of all data, charts, tables and graphs is Thornburg Investment Management, Inc.

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The ICE BofA Merrill Lynch Municipal Master Index tracks the performance of the investment-grade U.S. tax-exempt bond market. Qualifying bonds must have at least one year remaining term to maturity, a fixed coupon schedule, and an investment grade rating (based on average of Moody's, S&P, and Fitch).

The performance of any index is not indicative of the performance of any particular investment. Unless otherwise noted, index returns reflect the reinvestment of income dividends and capital gains, if any, but do not reflect fees, brokerage commissions or other expenses of investing. Investors may not make direct investments into any index.

Gross Domestic Product (GDP) is a country's income minus foreign investments: the total value of all goods and services produced within a country in a year, minus net income from investments in other countries.

Quantitative Easing (QE) is the Federal Reserve's monetary policy used to stimulate the U.S. economy following the recession that began in 2007/08.

Yield Curve – A line that plots the interest rates, at a set point in time, of bonds having equal credit quality, but differing maturity dates.

Barbell Structure – A bond investment strategy that concentrates holdings in shorter-term and longer-term maturities, forming a structure that resembles a barbell.

Bullet Structure – A bond investment strategy that concentrates holdings in intermediate-term maturities and avoids shorter-term or longer-term maturities.

The laddering strategy does not assure or guarantee better performance than a non-laddered portfolio and cannot eliminate the risk of investment losses.

Investments carry risks, including possible loss of principal. Portfolios investing in bonds have the same interest rate, inflation, and credit risks that are associated with the underlying bonds. The value of bonds will fluctuate relative to changes in interest rates, decreasing when interest rates rise. Unlike bonds, bond funds have ongoing fees and expenses. Investments in mortgage backed securities (MBS) may bear additional risk. Investments in the Funds are not FDIC insured, nor are they bank deposits or guaranteed by a bank or any other entity.

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