Climbing a Ladder to Successful Outcomes

The role of bond ladder portfolios in spending down defined contribution assets

Investors have long utilized bond ladders to provide current income and diversify interest rate risk. As the defined contribution (DC) system matures and focus shifts from accumulation to spending down accumulated assets, bond ladder strategies can play a role. In this paper we explore how DC participants can use bond ladders to potentially achieve better retirement outcomes.

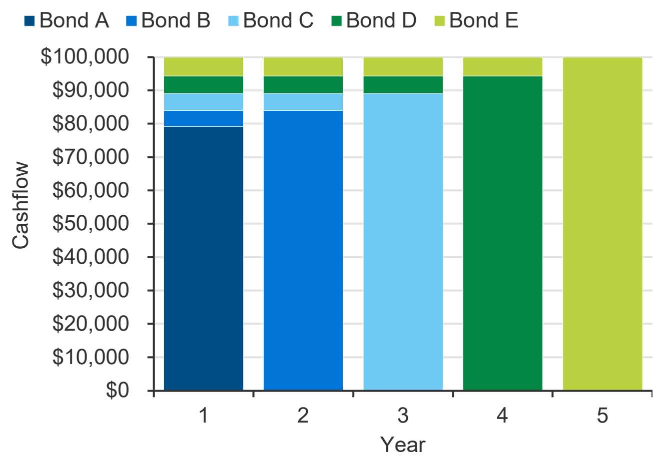
What is a bond ladder?

Quite simply, a bond ladder is a portfolio of bonds each with a different maturity date designed to meet specific cashflow-based objectives. By spreading out the maturity dates over several bonds, an investor diversifies the duration (interest rate risk / sensitivity) of the portfolio. The bond ladder portfolio generates income in the form of an interest payment (i.e., coupon payment) as well as the return of principal from maturing bonds. The goal is to minimize interest rate risk while also increasing liquidity.

Consider a bond ladder portfolio with the objective of providing a level $100,000 in payments annually for a five-year horizon, each paying a 6% rate, as illustrated in in Figure 1. This ladder initially consists of five bonds (A, B, C, D and E), each maturing in a different year, essentially creating a cash flow stream.

In year one, the ladder will receive $75,000 in principal repayments from bond A and $25,000 in coupon payments in total from all five bonds. In year two the ladder will receive $79,000 in principle back from Bond B and $21,000 in coupon payments from Bonds B through E; this repeats each year until year five, when the portfolio will receive payments only from Bond E.

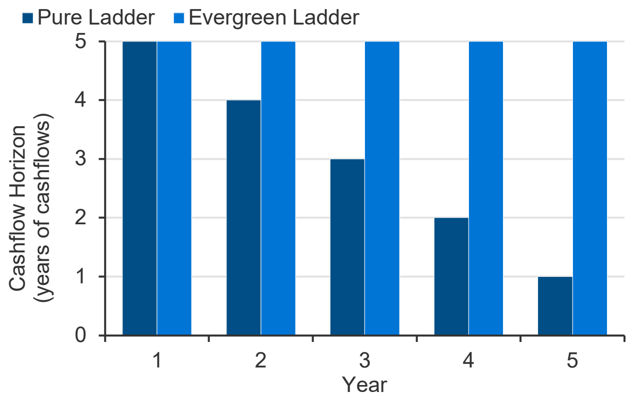
Figure 1: Bond ladder cashflow structure



There are two main types of bond ladder portfolios. The first type is a pure ladder, where the shape of the target cashflows follows its initial path, evolves year over year and “rolls down” its cashflows. Figure 2 on the next page illustrates with blue bars how each year the ladder would reduce by one bond and the bonds cashflow. Year two will only have four years of cashflows, and in years three, four and five, the ladder would have three, two and one year of cash flows, respectively.

The second type is an evergreen ladder where the cashflows extend every year, so that the horizon of the ladder remains constant. Comparatively, Figure 2 illustrates with the green bar’s consistent bars over the five years. Evergreen ladders are suitable as perpetual investments like more traditional market-based funds. Evergreen and pure ladders can serve very different roles for investors, which we will delve into later.

Figure 2: Cashflow evolution



Individual investors, often with the guiding hand of advisors, have historically been among the largest users of bond ladders. Given the income generation we can expect from bond ladder portfolios, we raise the question of whether these strategies can play a role within solutions targeted in the defined contribution market. The attraction of this strategy is that the investor should retain a degree of liquidity while also locking in the predictable cash flow.

As with any strategy, a bond ladder portfolio holds several risks depending on the type of bonds that make up the rungs of the ladder. *Default risk* poses a challenge with the potential of a bond issuer defaulting and no longer make coupon payments or return principal. *Inflation risk* could also pose a potential challenge, as the ladder pays fixed payments that could see their value erode in the presence of a higher cost environment. *Interest rate risk* represents another chief risk: In a rising interest rate environment, there is an opportunity cost of being in bond paying lower relative coupons. Although presumable, the bonds within the ladder could be sold at a lower price due to their relative unattractiveness to other higher yielding bonds resulting in a positive. Finally, *liquidity risk* can come into play when the underlying bonds are not sold in a timely manner or at a reasonable cost.

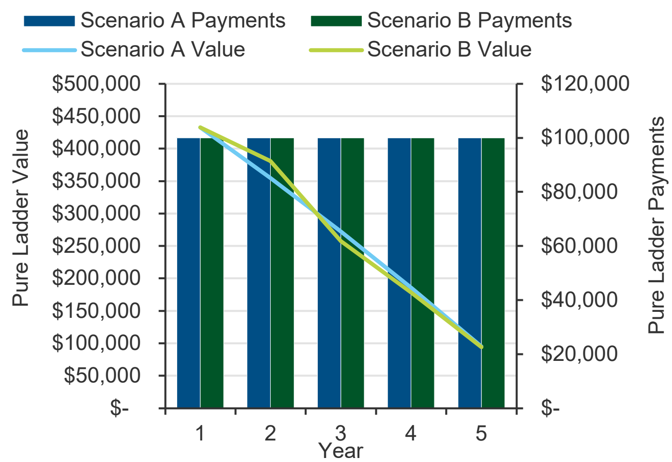
Despite these risks, the benefits present in bond ladder portfolios present advantages for participants with an income objective. Advantages include being a low-risk retirement income solution and bringing value to a portfolio as both components and stand-alone investments.

How do pure ladders and evergreen ladders differ in Retirement Income portfolios?

Perhaps the most obvious use of a pure ladder is as a stand-alone income mechanism. If an investor purchases a pure bond ladder and takes the coupon and principal payments as income than they will have a simple and reliable income vehicle. This helps to insulate the investor's income from market forces, because if the bonds in a ladder make their payments, the investor's income will not be impacted by how the price of those bonds change over time (between the time they buy the ladder and receive their payments).

Consider two different market forces scenarios shown below in Figure 3, both using Pure Bond Ladder Portfolios. In Scenario A, markets stay flat for five years, and in Scenario B, markets are extremely volatile. Nonetheless, the five bonds in the ladder make all their payments. Although the market price of the ladder is different between the two scenarios, the payments are the exact same.

Figure 3: Value vs payments



The above chart is for illustrative and educational purposes only. These results are based on simulated or hypothetical assumptions that have certain inherent limitations. Calculations provide hypothetical values of each bond portfolio given interest rate movements. In scenario A the market is stable with prevailing rates at 5%, in scenario B rates fluctuate based on market movement and range from 3% to 6%.

Default risk dominates the sources of risk to income when using a bond ladder to generate income. As a result, the careful underwriting of the bonds included plays a critical role in protecting participants from losses in income from defaults on payments. This illustration helps highlight that active management can be extremely valuable in pure bond ladder portfolios; commonly called Participant Grade Credit.

Participant Grade Credit is LGIM America's approach to active fixed income management for DC participants. One of its primary pillars is the use of careful underwriting designed to mitigate tail-risk from downgrade and defaults.

These advantages, however, come at the opportunity cost of potential benefits of market growth, however. As a result, pure bond ladders are on the conservative end of retirement income solutions. For this reason, it generally makes sense to only leverage bond ladders to supply income over shorter time horizons (such as three or five years), where it is harder for more aggressive solutions to recover from short-term market drawdowns. This can be both in the form of short-term stand-alone solutions or as the tail end of larger multi-asset retirement solutions.

Conversely, evergreen bond ladders play a very different role and generally are best used as components in multi-asset solutions that contain a mix of bonds and growth assets, such as stocks. In this context, evergreen bond ladders are an alternative to more traditional market-based bond portfolios. Unlike a market-based bond portfolio where the cashflow portfolio will change on a regular basis, an evergreen bond ladder portfolio seeks to provide a stable cashflow portfolio. For some portfolio managers, this can serve as a more useful building block when constructing portfolios. They can also serve as useful stand-alone solutions in a plan lineup. It can also be argued that the mechanics of an evergreen bond ladder more closely align to participant expectations of holding bonds compared to bond funds that can see their value widely fluctuate in the face of changing credit and interest rate dynamics.

In summary

Despite their use in other areas of investment management, including their value as both components and stand-alone investments, we feel bond ladders are generally underutilized in the DC market. In a retirement income context, this underutilization is particularly disadvantageous. Pure ladders are the natural low-risk retirement income solutions, which alone should qualify them for consideration both as components in larger retirement income solutions and as credible stand-alone alternatives. For example, our flagship Retirement Income Strategy considers pure bond ladders in three ways:

1. The Strategy converts to a pure bond ladder in its last five years, where the greater degree of income certainty outweighs to miss opportunity of market growth.
2. The Strategy also recognizes that a pure bond ladder is the natural low risk alterative to our solution.
3. The Strategy uses a pure bond ladder as the basis for building the de-risking component of our solution.

Within the fixed income component of our solution, we rely on an evergreen bond ladder, seeking the stability of its cashflow characteristics.

We want to help

At LGIM America, we understand plan sponsor's concerns around different types of risk. We welcome the opportunity to provide additional insight into our retirement thinking and capabilities. In particular, for bond ladders, only 16% of participants are aware of bond ladders[1] highlighting the need for additional education.

For more information about this thought paper or LGIM America's resources, please contact Jimmy Veneruso at Inquiry.DefinedContribution@lgima.com.

1 "2022 Spending in Retirement Survey: Understanding the Pandemic's Impact" Employee Benefit Research Institute Issue Brief 572, October 2022.

About LGIM America

LGIM America (LGIMA) was founded in 2006 with the purpose of helping people achieve their long-term financial goals. We offer a range of strategies to help our institutional clients (corporations, healthcare agencies, non-profit, education, public plans and Taft-Hartley) manage their investment objectives, which can range from market-based alpha-oriented strategies to those that are designed to be more liability-centric, derivative overlays, or indexed solutions. Encouraging a diverse and inclusive environment coupled with a solutions-focused culture allows us to increase our breadth of knowledge and the likelihood of improved client outcomes and stronger financial performance. We have teams of experienced, innovative professionals committed to helping plan sponsors meet their pension promises, managing investment exposures efficiently to seek enhanced returns while mitigating risks, and working to generate returns while making a positive societal difference. For further information about LGIM America, find us at www.lgima.com.