Laddering A Bond Portfolio

Many financial advisors recommend bonds and bond funds as a part of their clients' comprehensive investment portfolios for the perceived safety and high yields. But not all bonds and bond funds are the same. Investors are often lured by high yields into high-risk bond strategies, only to subsequently lose their principal.

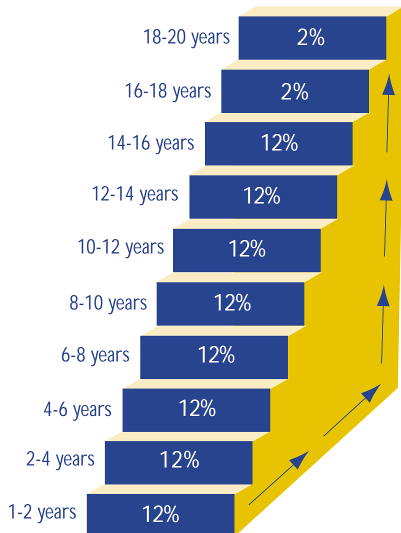
LADDERING THE PORTFOLIO

How do fixed income investors achieve a respectable rate-of-return without experiencing the higher risk associated with the fluctuation of interest rates? What is an adequate tradeoff of higher risk for higher return? Laddering!

Laddering involves building a portfolio of bonds with staggered maturities so that a portion of the portfolio will mature each year. To maintain the ladder, money that comes in from currently maturing bonds is typically invested in bonds with longer maturities within the range of the bond ladder. *(chart 1)*

1-20 YEAR LADDER

Chart 1 Maturities are "laddered"



Charts are for Illustration Purposes Only

Laddering tends to outperform other bond strategies because it simultaneously accomplishes two goals:

- Captures price appreciation as the bonds age and their remaining life shortens; and,
- Reinvests principal from maturing short term bonds (low yielding bonds) into new longer-term bonds (high yielding bonds).

Chart 2

Length of Bond	Initial Duration	Duration After Five Years	Change in Duration	% Change in Duration
30-year	13.8	12.9	0.9	6%
20-year	11.6	9.8	1.8	15
10-year	7.4	4.3	3.1	42

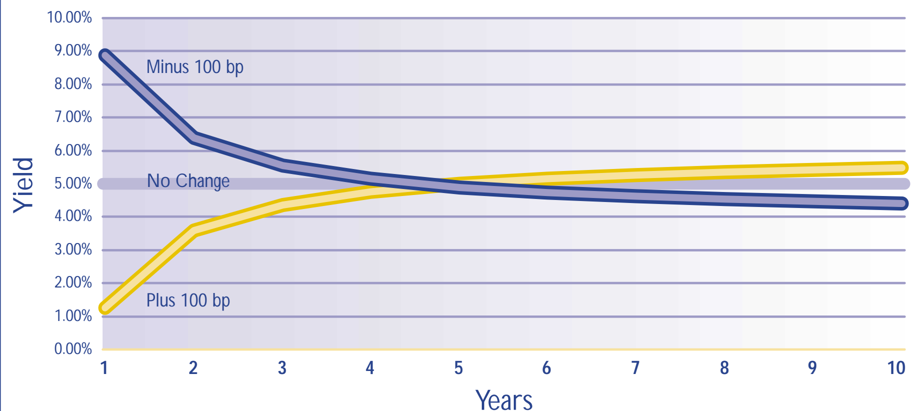
Compare three identical bonds with six percent coupons. *(chart 2, above)* The first bond has 30 years to maturity, the second has 20 years, and the third has 10 years. Watch what happens to duration (the bond's sensitivity to interest rates) after five years of aging.

The bond with the shorter duration carries less risk, which means a potential buyer will demand less yield. If interest rates are constant and the yield curve is positively sloped, the bond will rise in value over most of its life as its duration shortens. If interest rates rise, the bond will recover much, if not all, of its lost value as its duration shortens and is priced to the lower yield of a shortened bond.

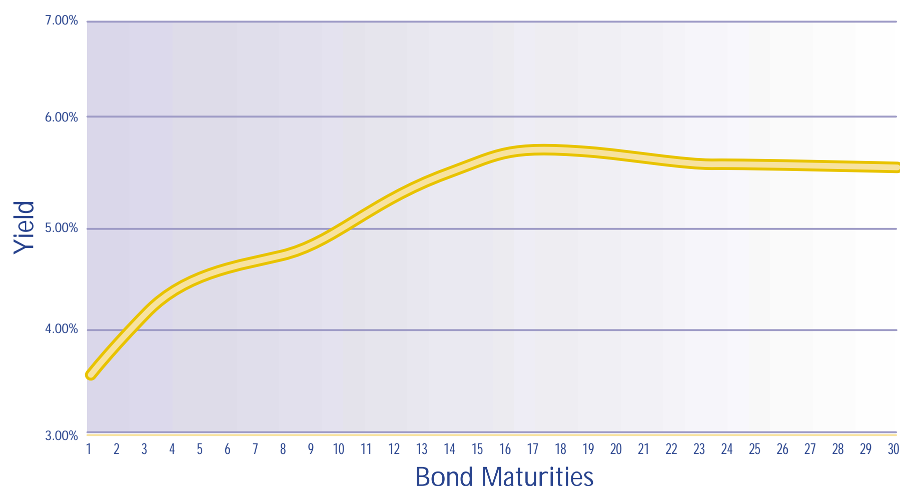
The built-in reinvestment feature works to offset some of the price depreciation that occurred throughout the ladder when interest rates rose. It also results in a rising income stream. As can be seen, after a few years, the portfolio's total return first equals its original return – then surpasses it.

TOTAL RETURN PERFORMANCE SUMMARY

Chart 3



MUNICIPAL YIELD CURVE CHART



Source: Municipal Market Data, Inc.

WHAT IF INTEREST RATES FALL?

Initially the portfolios return rises in value as bond prices get marked up. *(chart 3)* Ultimately, as those bonds mature and proceeds are reinvested in lower-yielding bonds, the portfolio's long-term return is lower than it would have been under the first two scenarios. The income stream also decreases, but only gradually because the longer-term higher yielding bonds continue to be held in the portfolio and the income generated continues to be the average of all the bonds.

WHY DOES THIS TACTIC WORK?

Let's look at what happens to an average yield curve over the last five years in the municipal bond market. *(chart 4)* The municipal bond market has always experienced a positive sloped yield curve.

The horizontal axis represents years-to-maturity. The vertical axis represents the yield that can be expected to be earned on that bond. A normal (positively sloped) yield curve means that very short-term investments generate the lowest yields. As the years-to-maturity are increased yield levels rise. In the municipal market, for the first five or six years of that yield curve, yields go up substantially for each year.

As can be seen, the first five to ten years of the yield curve is the steepest part. Steep is good in bond investing because that means the yields increase rapidly over a shorter time frame. Once past 10 years, and even more noticeably after 15 years, the yield curve is virtually flat and there is little or no increase in yield even as maturities are extended and more risk is taken.

As maturing proceeds are reinvested at the end of the ladder the yield of the portfolio is greater than what would be expected by the average maturity of the bonds because of the positive slope of the yield curve. As a result, over time, a laddered portfolio of bonds over only 15 years tends to produce a portfolio with the income of the longer maturity bonds but with the price stability of the middle maturity bonds in the ladder.

As a result of all these events: laddering the portfolio, focusing on short and intermediate bonds, reinvesting proceeds at the end of the ladder rather than the front, and allowing bonds to naturally age down the yield curve, both price volatility and reinvestment rates are managed. This practice of laddering the portfolio throughout all market environments provides the most attractive compromise to controlling both market price and reinvestment risk.

THINGS YOU SHOULD KNOW

Most bonds have what is called a call provision, which means that the issuer of that bond can repay the bond early. Advisors frequently don't understand this issue of callability and how it can affect their clients' portfolios. A goal of a properly structured laddered bond portfolio should be to buy primarily non-callable bonds, or bonds that are only callable within a few years of maturity, as opposed to having 10, 15 or 20 years between the call date and the maturity of the bond.

For example, consider a New York City bond that has a call provision, and New York City decides to pay off that bond early prior to actual maturity. In this case the city will call the bond and issue new bonds at a lower interest rate. Obviously, if the new bonds were issued with a five percent coupon it would be more desirable to retain the old bonds that are paying seven percent, but, if the City has a call provision, the higher rate bonds are surrendered.

More than 90 percent of the municipal bonds that are issued have a 10-year call provision. Therefore a 20- or 30-year bond paying an above market yield will probably be called away within 10 years. As such, it would not pay to assume the higher risk since the higher yield would have been taken away early. Even worse, if interest rates rise and the bond's yield is below market, the issuer is not likely to call the bonds. Within a laddering strategy, which uses only short- or intermediate-range bonds, the call risk factor is reduced. This is yet another reason to avoid the use of long-term bonds, especially in the municipal market.

SUMMARY

The laddering strategy can reduce interest rate risk because it shortens the average maturity of a portfolio resulting in less price sensitivity to changing interest rates. The strategy also smoothes out reinvestment risk since money is being reinvested continuously throughout a full interest rate cycle. The end result is a portfolio with returns close to those of long term bonds but with substantially less risk. As demonstrated, it really doesn't matter which way interest rates move; with a laddering strategy, it's possible to get above-market returns. This gives you a competitive advantage, knowing any time is a good time to build or buy into a laddered portfolio. It's the smart way to increase the portfolio's return while minimizing both market risk and reinvestment risk.