

Maximize Investment Decision Making at Your Credit Union

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When analyzing potential investments for your credit union, it is important to utilize the most effective analytical tools at your disposal. This statement is particularly relevant in the current market rate environment. With extremely low interest rates, investors are competing for each basis point of value and compressing spreads. In today’s market, a robust risk adjusted analytical framework is more critical than ever. Total rate of return (TRR) forecasting is one such tool, and can greatly benefit the decision-making process at your credit union.

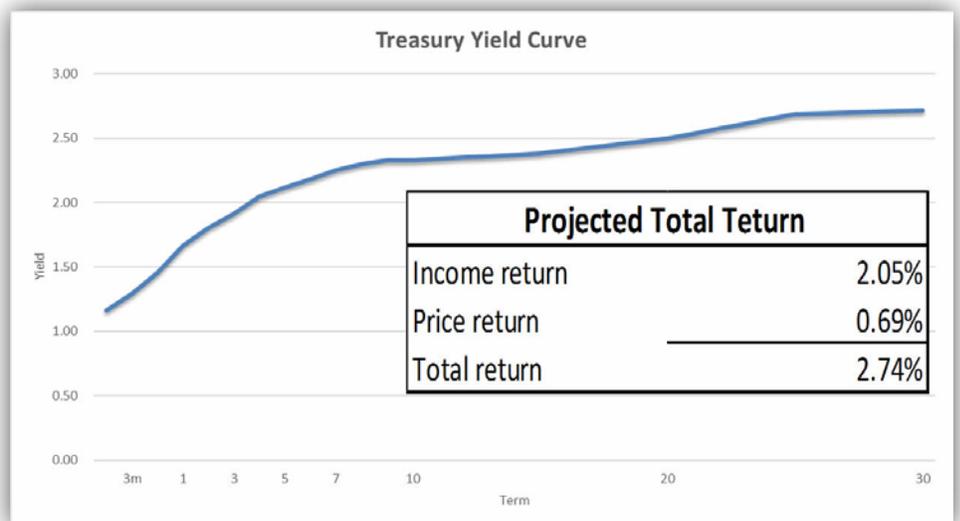
Risk Adjusted Return

One important fact to remember: *Yield is not return*. The yield of a bond does not necessarily represent your total change in wealth over a given time horizon. Expected yield is comprised of the following: 1) Interest payments received; 2) Reinvestment of those interest payments; and 3) Any amortization/accretion of premium/discount. While these income components are an important piece of the puzzle, they do not tell the whole story.

Further, yield is driven by supply/demand and reflects the markets view of the underlying risk factors of the investment. To assume additional risk, an investor will demand a higher yield as compensation for that risk. Stated another way, *the yield of an investment is a function of its risk*. This risk takes the form of higher potential price volatility and cannot be ignored in the analysis. A *risk adjusted return* measure that includes both risk and yield should be considered.

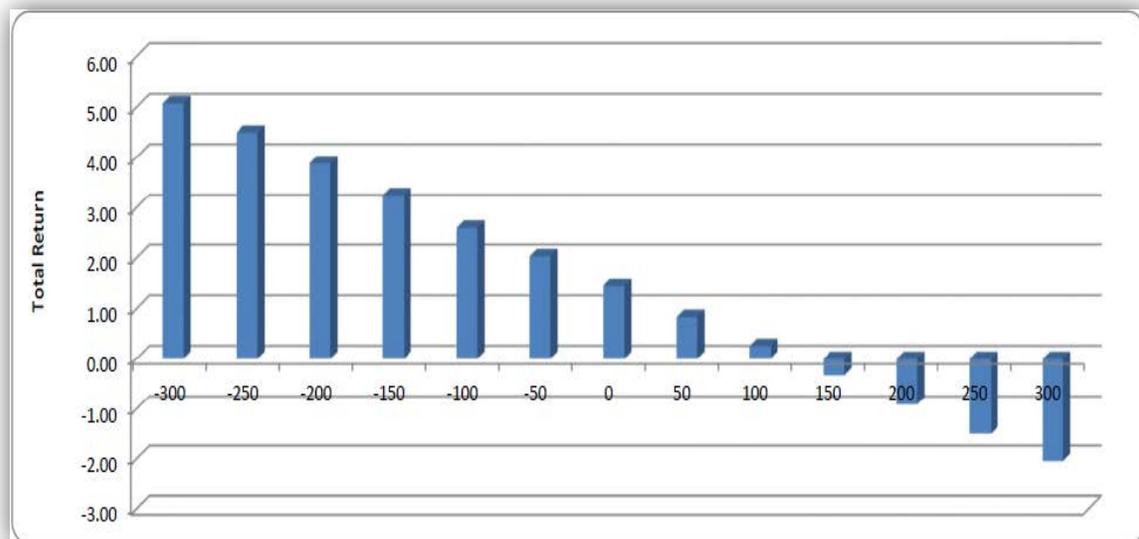
Total Return and “Rolling Down the Curve”

The following simplified example will illustrate TRR analysis. Suppose you decide to purchase a four-year Treasury Bond. Based on the current term structure of interest rates, the expected yield is 2.05%. If the time horizon is 12 months, and interest rates do not change, how does the bond perform?



Consider the following two return components: Yield (which in our example is 2.05%) and price return. At the end of the 12-month time horizon, you will own a bond with a remaining maturity of three years. As a result, the bond will be priced in the market based on the relationship between the coupon (2.05%) and the three-year market rates (1.91%). As such, the market value will have increased 0.69% during that time frame. This phenomenon is referred to as *rolling down the curve*. The change in price combined with yield constitutes the TRR of 2.74%.

Perhaps you do not believe that interest rates will remain unchanged during the 12-month time horizon. Fortunately, TRR projections allow for flexibility in the applied assumptions. Both income and price return can be modeled under a range of scenarios. This fact makes TRR a very powerful tool for the credit union portfolio manager – *both price return and income return can be forecast under a range of interest rate environments relevant to the credit union.*



Conservative Approach

Using TRR is also considered the more conservative approach when compared to a traditional yield only framework as it projects the *risk adjusted return* of an investment. The impact from market price volatility is fully considered in the analysis. As a portfolio manager, you need to consider the risk on your balance sheet from the investment portfolio. This is true even for a credit union that accounts for its investments using only the held to maturity methodology. Market price volatility still impacts the balance sheet and is ultimately captured in your asset-liability management risk metrics. Over a given

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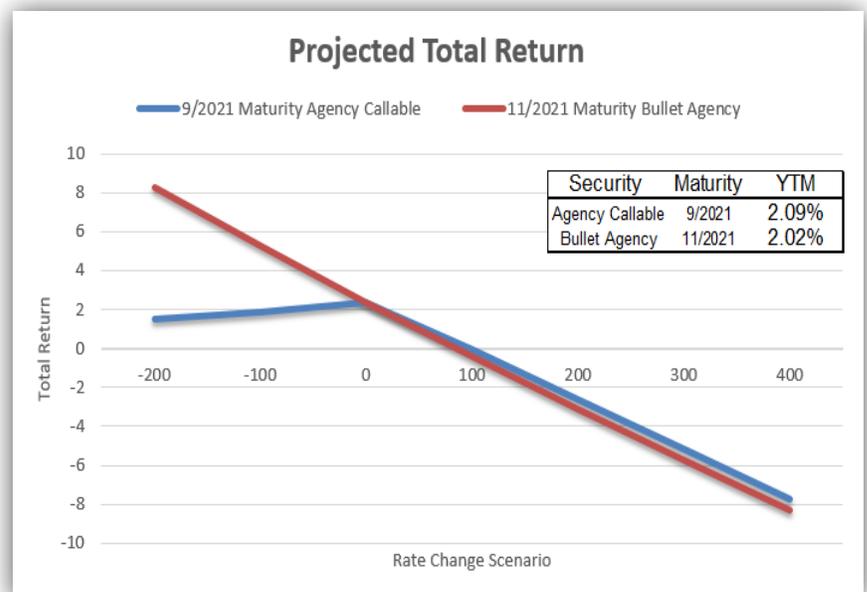
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time horizon, the total return of a bond represents the true change in wealth at your credit union. Utilizing TRR allows you to succinctly measure the impact to your institution's balance sheet.

Comparing Dissimilar Investments

Different investment types exhibit different price volatility characteristics, even under the same changes in market rates. These price volatility differences represent the divergent risk exposures. By forecasting the price risk and combining it with the yield, the decision maker has a much better understanding of the potential performance of the dissimilar bonds.

Consider the example of an Agency bullet and Agency callable with similar maturities to illustrate this point. The yield differential is +0.7% for the Agency callable. However, after forecasting the price change component of total return, the analysis changes. In an unchanged and rising rate environment, these bonds perform remarkably similar. However, the total return becomes dissimilar in the falling rate environment. An investor only comparing these investments on a yield basis will miss this performance divergence. TRR allows you to better analyze dissimilar securities before we invest.



What Are the Drawbacks?

As with any forecasting model, TRR is assumption dependent. As an investor, you need to understand the assumptions and how they impact the output of the model. The primary assumptions to consider with TRR are:

- What is my time horizon?
- What are the prepayment assumptions for amortizing securities?
- What are the relevant rate changes to consider?

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For More Information... and to discover if TRR is right for your credit union, please contact your Balance Sheet Solutions representative or email Ryan at ryan.mccarroll@balancesheetsolutions.org.