



## The Slope of Enhancement: “Rolling Down the Yield Curve”

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Low interest rates and the fear of a potential spike in bond yields lures many investors to hold greater amounts of cash, as opposed to investing in longer maturity instruments. The investor thought process is methodical -- the goal is to preserve principal should interest rates rise (prices decline). If their market call is correct, current funds will then be available to put to work at higher market yields. However, if the “call” is incorrect, and yields either decline or remain relatively stable instead of rising, investors can become trapped, or “frozen”. In essence, if investors weren’t willing to commit funds at yesterday’s elevated yields, then they are usually less willing to invest at today’s lower level of market rates.

This timing strategy is utilized by many individual investors, often with mixed results. It seems that this tactic is often employed without fully considering the risk of waiting to invest, and may serve as an impediment for investors to achieve their long-term goals. More sophisticated investors attempt to quantify the potential risk of “sitting on the sidelines”. To this end, they calculate the income sacrificed by sitting in short-maturity money market funds, versus the additional income that might have been earned through the acquisition of longer-maturity bonds.

Nevertheless, the investor’s analysis is often incomplete since the “passage of time”, which is a key component of the opportunity cost, is regularly missing from their decision process. We all know that as time passes, the bond’s maturity date draws nearer. However, what is frequently overlooked is the fact that the very aging of the bonds can enhance their value for a portion of the bond’s holding period.

**How does this happen?** When longer-maturity bonds are purchased at higher yields compared to short-term securities (often referred to a positively sloped yield curve) the bonds’ value will appreciate over time assuming a stable, declining, or modestly rising interest rate environment. Specifically, if an individual invests at the higher end of the “upward sloping” portion of the yield curve, then as time passes that investment will age and reach a lower-yielding segment of the curve. This means that the steeper the slope of the yield curve, the more the security will “roll down the curve”, thereby appreciating in price.

To examine the benefit of this “silent contributor” (“roll”), we offer several scenarios, with each one based on a two year time horizon or holding period: **Interest rates are held constant (unchanged), market yields rise by 75 basis points (+0.75%), and also by 150 basis points (+1.50%).**



**Details:** Suppose an investor purchases \$100,000 par value of a 12 year bond with a stated coupon of 5% that can be called by the issuer ahead of the scheduled final maturity date in 6 years at a yield to call of 2.10%. Let's also assume that the investor still owns the bonds two years after the initial purchase date. In other words, two years later the final maturity date has shortened to 10 years, and the bond can now be called in 4 years by the issuer. If 10 year bonds are valued at 1.71% in the marketplace at that time, then the investor owns a 5% stated coupon in a market that only requires a 1.71% yield.

Please see the analysis below which displays the results for this example.

	<b>Hypothetical Interest Rate Changes (\$100,000 Par Value)</b>		
	<b>UNCHANGED</b>	<b>+ 75 BPS</b>	<b>+ 150 BPS</b>
	<b>0.00%</b>	<b>0.75%</b>	<b>1.50%</b>
Beginning Market Value	\$116,348.67	\$116,348.67	\$116,348.67
Ending Market Value	\$122,887.47	\$119,885.67	\$116,988.59
Yield Return (%)	4.27%	4.27%	4.27%
Roll Down Return (%)	1.35%	1.30%	1.26%
Unrealized Gain (Loss) Due to Change in Interest Rates (%)	-	(-2.53%)	(-4.98%)
Cumulative 2-Year Total Rate of Return (%)	<b>5.62%</b>	<b>3.04%</b>	<b>0.55%</b>

As you will note, all of the sources (yield, roll, and price depreciation/appreciation due to changes in interest rates) of return are calculated utilizing a two year holding period. To summarize, should interest rates rise by 150 basis points or 1.50% (column at right) the investor would experience a +0.55%, or 55 basis point increase in market value (total rate of return). In other words, a 150 basis point increase in market yields can be viewed as the break even whereby the investor is indifferent holding bonds or "cash". Of significance, is the appreciation that was generated from the "roll down the yield curve" which amounted to 126 basis points (1.26%). This contribution served to lessen the depreciation that the investor would have experienced due to the rise in interest rates.



**Conclusions:**

- Investors have the opportunity to enhance their yield (income) by positioning their portfolios in longer maturity bonds.
- Longer maturity bonds (at RSW we prefer the 10-to-15 year maturity range) offer the potential for price appreciation, due to the steeper slope of the yield curve.
- As the final maturity of the bond draws nearer the bond will enjoy the “ride down the yield curve.”
- The potential to capture price appreciation from the roll should be considered by investors even if they are forecasting a higher interest rate environment.
- The timing of the interest rate call is key, as assets “parked” in cash not only detract from the investor’s earnings stream, but the potential for price appreciation due to the roll.
- The combination of the yield and the roll affords investors the opportunity to maximize their total rate of return (yield +/- price appreciation) even if interest rates experience a modest increase.
- An active bond manager can enhance the value of client accounts by employing a strategy that capitalizes on the “roll”. A passive or buy and hold approach will miss the bond appreciation generated by the “roll” as the bond won’t be sold but instead held to maturity. Under this scenario, the “premium” from the “roll” will evaporate as the bond will inevitably mature at par (\$100).

We believe that it is important for investors to understand the powerful force of the “roll down” the yield curve as a critical variable that must be considered when attempting to calculate the “cost of waiting” and total return targets. By purchasing longer maturity bonds, interest income can be increased while the benefits that accrue from the “roll” serve to dampen price declines should interest rates rise. Likewise, enhanced returns can also be realized if interest rates remain static or decline. Having said that, the intent and purpose of this commentary is not to say that timing of an investment is irrelevant and unimportant, but instead to educate and inform. As always, each client has their own unique risk and return profiles that must be considered before deploying assets in to any investment vehicle.

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*The hypothetical returns shown above were calculated using the InvestorTools Perform system. The analysis assumes a static, +75, and +150 basis point shock (rising interest rates) to the Municipal yield over a 24-month time period. In addition to the price and yield components of total return, "roll down" the yield curve is also considered as bonds become one year closer to maturity during the one-year time period the analysis considers. The security was priced as of 2/15/12.*