

Del Mar Times

How interest rates affect your bonds



Financial Thoughts

by John Schooler

Most clients know that a bond's maturity is the amount of time left until the entirety of the security's principal is repaid. The longer the maturity, the more volatile the bond price moves with interest rate changes. Maturity, however, falls short as a true measure of a bond's volatility.

For one thing, maturity doesn't account for differences in bond coupons. Bondholders can tell you that a 10-year bond with a 5 percent coupon is more sensitive to interest rate changes than one paying 8 percent on par. They can tell you, too, that the value of a five-year zero-coupon note fluctuates more than that of seven-year interest-bearing paper.

A bond's maturity, its coupon and its yield-to-maturity affect its price changes in reaction to prevailing interest rates.

For example, holding a security's maturity and starting price constant, a higher coupon usually involves lower volatility, while a lower coupon creates more fluctuation. Also, longer-term notes are more volatile than shorter maturities.

And, when bonds with identical coupons and terms are compared, the security with the lower yield-to-maturity tends to be more volatile. That's because credit ratings also figure into bond yields. Basically, a higher credit rating attracts more buyers and sellers, increasing the number of transactions. These transactions take place at a price which gets printed, which incites more changes and higher volatility. By the same token, lower-rated bonds exhibiting the highest percentage returns are securities with poorer credit ratings; these will typically display the lowest price volatility.

October 8 - October 14, 2004 issue

Keeping all this in mind, risk-averse and income-oriented investors tend to gravitate to bonds with higher coupons, shorter maturities and, to some degree, lower credit ratings. Buying low coupon securities with longer maturities, and those with higher S&P, Moody's or Fitch ratings, then, is more a speculator's game for those hardy souls expecting an interest rate decline.

Each bond offers its own unique risk profile. A longer-term bond's maturity, for example, might tend to counteract the risk impact of a high coupon. Bond volatility can then be said to represent an average of the security's opposing risk effects.

In summary, duration represents a quantifiable measurement of a bond's volatility based upon the interplay of its coupon, maturity and yield. The important points to remember are:

Duration is a risk measure that calculates how many years it takes for the price of a bond to be repaid by its internal cash flows. It's the present value of the bond's future interest and principal payments.

Duration is commonly used to explain the change in the value of a security resulting from each 1 percent change in interest rates. Multiplying a bond's duration by the shift in interest rate provides a rough approximation of the expected change in the bond's value.

Longer maturities and small coupons increase duration, while shorter maturities and higher coupons decrease duration.

Convexity is a better predictor than duration of how a bond's price will react to large shifts in interest rates. If two bonds offer the same duration and yield but exhibit different convexities, the more convex bond will be less affected.

Bonds with greater convexity will typically command higher prices than less convex bonds. This is true whether interest rates rise or fall.

Understanding duration and the convexity derivative helps you determine a strategy for capitalizing upon interest rate movements as well as providing a roadmap for immunizing portfolios against interest rate risk.

For questions, call or e-mail John Schooler, CFP®, ChFC, CFS at (858) 677-0477 or john@wfpsecurities.com. John Schooler is the President of Western Financial Advisors and WFP Securities. WFP Securities Member NASD, MSRB and SIPC.