

INTEREST RATES & BOND RISK

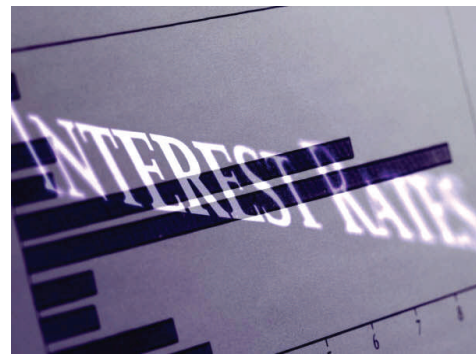
June 2010

One of the dominant themes of the past year and a half has been that with record levels of deficits and debt, inflation, and possibly high inflation, will be coming. This will cause interest rates to rise and result in losses in our bond portfolios. Adding to anxiety about this turn of events is a highly charged political landscape. One thing we've learned over the years is that when the media latches on to the idea that something will cause something else, it either doesn't happen at all or happens for very different reasons.

While many people will offer their predictions of whether inflation will come sooner rather than later and modestly or robustly, no one really knows. We'd like to spend a few moments trying to moderate fears you may be having about the effect of rising rates on your bond holdings. Our clients rely on bonds to be relatively safe, so talk of bad things happening to these holdings can be disturbing. Fear not.

We'll start with the basic structure of a bond. Let's say on June 30, 2010 you pay \$10,000 for a bond with a 2% coupon, a maturity value of \$10,000, and a maturity date of June 30, 2011. On Dec 31st, 2010 you receive \$100 in interest (half of 2% of \$10,000) and on June 30, 2011, you receive another \$100 and \$10,000. At the moment you bought the bond you know that your return will be 2%. This is called yield to maturity (YTM).

The effect of interest rate changes comes on the value of the bond on all days between the purchase and maturity dates. We know the maturity value but do not know what the bond will be worth on August 17th for instance. Interest rates in the market place affect the day to day price. For example, let's say that on July 1, market forces drive rates up to 3% on comparable 1-year bonds. A new buyer will probably only offer you \$9,900 for your \$10,000 bond. Its market value has dropped. At \$9,900, a buyer of your bond would thus get the 2% in interest payments your bond pays plus \$100 in appreciation when the bond matures. His return is the 3% the market requires.



Notice that rates went up but you are still getting *exactly what you thought you would get when you bought the bond*. The drop in value was merely temporary. Any rise in value due to falling rates would be temporary too. It quite literally does not matter whether rates rise or fall, or how quickly or slowly they do, you get your YTM either way as long as the issuer makes its payments.

That caveat "as long as the issuer makes its payments" is exactly why we favor high quality investment grade bonds and avoid junk bonds, aka high yield bonds. The yields are higher with junk bonds precisely because there are doubts about the issuer's ability to pay.

One percent in one day on 1-year bonds is a dramatic jump, yet our illustration shows a mere \$100 decline in market value. This modest drop is a function of the short time until maturity. Longer term bonds have a much more painful drop in price. For example, 30-year US Treasury securities returned MINUS 26% in 2009, the worst result in its 82 year history because market rates on that debt rose from 2.69% to 4.64%.

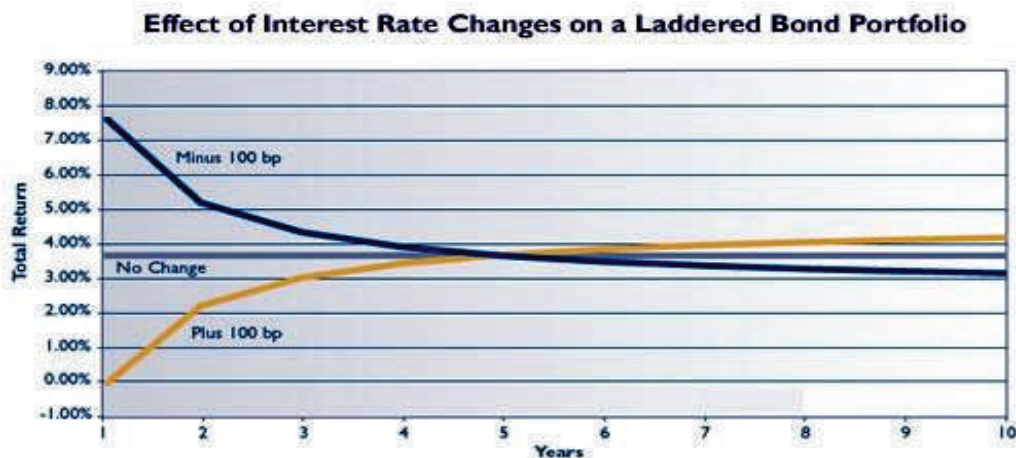
With most of the focus of the media on the Federal Reserve Board and their decisions to hold rates low, you could easily miss that rates have already gone up a little. After all, your bond holdings have generally appreciated - not lost value - during the last 18 months. There are two primary reasons for this.

First, bonds saw an improvement in credit quality. Recall that at the height of the panic, there was more uncertainty about issuers' ability to pay, which drove down prices. So even though rates increased, the downward effect that we would normally have was overtaken by more confidence, brought on by a recovering economy. This scenario didn't help Treasuries in the market because they are considered to be free of the risk of "issuer's ability to pay", so interest rate changes dominate their results. The economy may grow but we do not expect an improvement in credit quality to be anywhere near as much help as it was coming out of the credit crisis.

The second reason your bond holdings fared well was because the typical maturity was short to intermediate in term, so interest rate changes have less effect. This factor will remain a help going forward. A rise in rates will cause relatively less temporary pain and unless an issuer defaults, we get exactly what we expect over the period between purchasing a bond and its maturity.

Some clients have individual bonds while others have various mutual funds that invest in bonds. Several techniques are used to mitigate drops in value by the funds we use. These strategies have the added appeal of *not requiring an accurate interest rate forecast to be successful*. The one method we will highlight here is laddering.

A perfectly symmetrical, 5-year ladder would have one-fifth 1-year maturity bonds, one fifth 2-year maturities, one fifth 3-year maturities, and so forth. In actual portfolios, the ladders are rarely symmetrical. One year from now, the 1-year bonds will mature and any unneeded proceeds will be invested in new 5-year bonds. The goal is to capture the higher yields the longer-term maturity bonds offer while incurring less volatility.



Source: Municipal Market Advisors and Thornburg

The graph above illustrates the price behavior of a bond portfolio when interest rates stay the same, fall or rise. When rates are unchanged, a steady return is achieved that will approach the yield of the highest-yielding bond in the portfolio. When rates fall, the prices of the bonds will rise, but proceeds of maturing bonds will reinvest at the lower rates and income decreases. However, this decrease occurs gradually because of higher yields on the long end of the ladder. When rates rise, the bond price falls. The dividends are reinvested at higher rates, so the income stream gradually increases. Because the maturity dates get closer and closer over time, the market prices will begin to increase.

Will this really work? Yes, and we can calculate bond behavior given various interest rate scenarios. Notice that in the above graph, after 5 years, the return was the same regardless of what happened to interest rates. This is known as "immunization" and can be determined mathematically by calculating "duration." But we don't have to just look at theoretical possibilities; we can look to prior periods when the Federal Reserve raised rates for actual results. As the behavior of Treasury securities show, the Federal Reserve Board does not control market interest rates. They do have great influence, however,

by manipulating very short term rates. The prospect that the Fed will start raising these rates gets the lion's share of media attention and is usually presented as a key point in any doer story about bonds and rates. The Fed will "tighten" (raise rates) at some point. What then?

Let's look at the last three "tightening" periods. The Fed increased its Fed Funds Target rate 7 times for a total increase of 3% between Feb 1994 and Feb 1995, 6 times for a total increase of 1.75% between June 1999 and May 2000, and 17 consecutive ¼ point increases between June 2004 and June of 2006.



We examined the performance of some of the funds we use during these tightening periods. We would be happy to discuss your specific funds with you, but generally we see exactly what we would expect -- downward pressure on bond prices followed by fairly quick recoveries. During the tightening periods, some funds experienced modest declines particularly in the '94 -'95 cycle. In the other two periods, largely because the '99 -'00 increase was modest and the '04 - '06 was gradual, most of the funds still made money despite the Fed rate increases. However, in the case of all three periods, if we extend our look at performance merely one year past the last increase in Fed Funds Target rates, all of the funds that ladder or are designed for stability are positive and all did better than the typical applicable money market funds. This is important because the idea of getting out of bonds to avoid a tightening cycle and going into a money market fund can be tempting. You have heard us warn against market timing many times and we'll warn again.

In order for sitting in a money fund to work, Fed rate increases must come fast and furious AND your timing out of bonds then back in later would have to be excellent. Recall that the inflation and rising rate concern has been with us for well over a year. Consider a 2-year bond bought a year ago with a YTM of 2%. If you have been in the typical money fund waiting for rates to go up, you earned .05% or so. In order to match the bond investor, money funds have to instantly rise to about 3.95%. Every day that passes requires a more dramatic increase to keep up.

To sum up, we look for bond holdings to provide some income but their primary function is relative stability to balance the ups and downs of long term investments. Rates in the market vary greatly and unpredictably. Fed moves are more cyclical, but we do not need an accurate forecast about interest rates to get what we want from bonds. True, some bonds will do very poorly in a rising rate environment and therefore owners of those should worry. However, we are not fearful of great damage to our client's bond portfolios because of the types of bonds we buy and how we have structured those holdings. There is plenty to worry about in the world, but your bonds should not be among those worries.