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Risks to Consider Before Investing in Bonds

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For most investors, the best investment opportunity to gain practical experience with the capital markets is fixed income. There are many types of fixed income securities to choose from, including sovereign debt, corporate debt, mortgage-backed securities, and asset-backed securities, to name a few. Given the breadth of fixed income securities that are available to purchase, it is important to have a general understanding of their risks before making an investment decision.

Types of Fixed Income Risk

In most cases, the risks associated with fixed income securities can be classified as default risk, downgrade risk, credit-spread risk, and interest-rate risk. Technically speaking, default risk is the most important type of risk that investors should be concerned with, because a technical default would mean that the issuer has failed to make a periodic coupon payment over the term of the loan, or that the issuer did not return the principal investment to the investor when the bond matured. Fortunately, this type of risk is easy for most investors to understand, albeit it is more difficult for them to analyze. Downgrade risk is also a type of risk that is relatively straight forward to understand, because it simply represents the potential for a reduction in the value of a bond that would result if a credit rating agency lowered the credit rating on the company that issued the bond. Credit-spread risk is a little more complex to understand, but can be conceptualized as a change in the price of a bond that would result if the spread between the interest rate for the risky bond and the interest rate for a risk-free bond changed after the risky bond was purchased. Fortunately, the magnitude of downgrade risk and credit-spread risk is typically not as great as the potential impact of default risk or interest-rate risk. Nevertheless, investors should understand these types of risk before investing in bonds. With these types of risk in mind, let us now examine one of the most talked about types of fixed income risk, which is interest-rate risk.

Mathematical Explanation for Interest-Rate Risk

From a mathematical standpoint, interest-rate risk refers to the inverse relationship between the price of a bond and market interest rates. To explain, if an investor purchased a 5% coupon, 10-year corporate bond that is selling at par value, the present value of the $1,000 par value bond would be $614. This amount represents the amount of money that is needed today to be invested at an annual rate of 5% per year over a 10-year period in order to have $1,000 when the bond reaches maturity. Now, if interest rates increase to 6%, the present value of the bond would be $558, because it would only take $558 invested today at an annual rate of 6% for 10 years to accumulate $1,000. In contrast, if interest rates decreased to 4%, the present value of the bond would be $676. As you can see from the difference in the present value of these bond prices, there truly is an inverse relationship between the price of a bond and market interest rates, at least from a mathematical standpoint.

Supply and Demand Explanation for Interest-Rate Risk

From the standpoint of supply and demand, the concept of interest-rate risk is also straightforward to understand. For example, if an investor purchased a 5% coupon, 10-year corporate bond that is selling at par value, the investor would expect to receive $50 dollars per year, plus the repayment of the $1,000 principal investment when the bond reaches maturity. Now, let's determine what would happen if market interest rates increased by one percentage point. Under this scenario, a newly issued bond with similar characteristics as the originally issued bond would pay a coupon amount of 6%, assuming that it is offered at par value. Therefore, under a rising interest rate environment, the issuer of the original bond would find it difficult to find a buyer willing to pay par value for their bond, because a buyer could purchase a newly issued bond in the market that is paying a higher coupon amount. As a result, the issuer would have to sell their bond at a discount from par value in order to attract a buyer. As you can probably surmise, the discount on the price of the bond would be the amount that would make a buyer indifferent in terms of purchasing the original bond with a 5% coupon amount, or the newly issued bond with a more favorable coupon rate.

The inverse relationship between market interest rates and bond prices holds true under a falling interest-rate environment as well. However, now the originally issued bond would be selling at a premium above par value, because the coupon payments associated with this bond would be greater than the coupon payments offered on newly issued bonds.

As you may now be able to infer, the relationship between the price of a bond and market interest rates is simply explained by the supply and demand for a bond in a changing interest-rate environment.

The Real-World Implication of interest-Rate Risk

Now that we understand the relationship between the price of a bond and market interest rates, as typically explained by most fixed income pundits, it is important to bring to light the third leg of the relationship that is often ignored, forgotten, or misunderstood. While it is true that there is an inverse relationship between the price of a bond and market interest rates, the issue becomes irrelevant if the bond investor expects to hold the security until maturity. To explain, consider the payment stream of a fixed rate security, which we know pays a periodic coupon amount and the return of principal at maturity. If interest rates change, the bond holder still receives the same coupon amount, and still receives the return of principal when the bond matures. Therefore, for buy-and-hold investors, interest- rate risk is immaterial in nominal dollar terms.

The Bottom Line

So what are the implications of investing in fixed income securities in a fluctuating interest-rate environment? First, if you plan on buying a bond and holding it until maturity, you should not worry about interest-rate risk, but instead focus on default risk. Second, if you plan on buying a bond and trading it before it matures, you should buy a bond with a higher coupon rate and shorter term-to-maturity. The reason for this recommendation is that a bond with these types of features will not be as adversely affected by a rising interest rate environment. Of course you should keep in mind that a bond that offers a higher coupon rate will likely have more default risk than a bond with a lower coupon rate. Third, you can purchase a floating rate bond in order to minimize or eliminate the impact of interest-rate risk. Finally, as a bond investor, you need to determine beforehand if your goal for buying a bond is to generate income via periodic coupon payments, or if you are purchasing the bond with the expectation of receiving periodic coupon payments, as well as a material capital gain associated with the fluctuating price of the bond. If periodic income is your focus, you should concentrate on purchasing high coupon paying bonds that have a lower probability of default risk. If on the other hand capital gains are your primary focus of interest, it is recommended that you greatly enhance your knowledge of fixed income and the global capital markets before trying to engage in such investment strategies.