

Investment Research Brief

Bonds: A Balancing Act

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Bonds (a.k.a Fixed Income), in their simplest form, are "I Owe You" agreements between two parties.

This basic principle has been documented by archaeologists going back to ancient time, where clay tablets with terms related to delivery of grain (at the time, a form of currency) have been uncovered and translated.

Today's bond market looks very different - and has become even more critical to the development of our global financial system.

In this piece, we'll explore the opportunities and risks bonds can offer investors, and their potential fit in a broadly diversified portfolio.

The 21st Century Bond Market

Compared to stocks, bonds often receive less attention from the financial media. While many would consider bonds a sleepier investment, the size of the global bond market is giant. As of year-end 2021, there were \$126.9 trillion dollars of bonds outstanding across the globe, surpassing the \$124.4 trillion total market cap of global stocks (**Figure 1**).

The global bond market can be split into a few main sectors, each with their own unique characteristics:

Sovereign: Bonds issued by central governments to finance government expenditures such as social security, healthcare, and national defense. Sovereign debt (i.e. U.S. Treasury bonds) issued by developed nations are considered to have no credit default risk and are backed by the full faith of the government.

Municipal: Bonds issued by state or local governments. Municipal bonds are often backed by revenues from a specific project (such as tollways), or by the issuer's general ability to repay financial obligations. Interest payments from municipal bonds are typically exempt from federal taxes, presenting an opportunity to potentially enhance after-tax yields for investors in higher marginal tax brackets.

Credit/Corporate: Bonds issued by companies to finance necessary business functions. Corporate bonds vary in credit rating, from investment grade to high yield/junk, depending on the company's perceived ability to pay back their debts.

Securitized: Bonds where interest payments are derived from a pool of underlying assets. Securitized bonds can be backed by a variety of asset types, including mortgages (residential or commercial), aircraft, business loans, car payments, or consumer credit cards, to name a few. Like corporate bonds, yields for securitized bonds will also depend on the quality of expected cash flows (higher risk, higher yield).

Treasury Inflation Protected Securities (TIPS): TIPS are a unique type of U.S. Treasury bond where the principal value of the bond (and therefore the nominal value of coupon payments) adjusts for changes in the Consumer Price Index (CPI).

In Savant's view, an investor's bond allocation should include a diversified allocation of the bond sub-asset classes listed above. Although each sub-asset class may be poised for relative outperformance given certain market environments, timing these trades is challenging in practice. Nobel prize laureate Harry Markowitz once referred to diversification as being the only free lunch in investing, words that we think still ring true in today's bond market.



Figure 1: Global Capital Markets

Source: SIFMA 2022 Capital Markets Fact Book

#1 Rule of Bonds: A Bond's Price and Yield are Inversely Related

Let's imagine an investor is presented with a simple bond investment, an opportunity to receive \$100,000 five years from now with no default risk. The bond will also pay a \$1,000 coupon annually.

How much should an investor pay for this investment? That all depends on the interest rate at

the time. The following example shows the difference an investor should pay (price) given two different interest rates (yields): 10% and 5% (**Figure 2**).

Although this is a barebones example, it highlights the inverse relationship between a bond's price and interest rates. Should market interest rates shift, the 5% bond's value could move toward the 10% bond's value and vice versa.

Year	Net Present Value	1	2	3	4	5
Expected Cashflow		\$1,000	\$1,000	\$1,000	\$1,000	\$101,000
Present Value at 5% Interest Rate	\$82,682	\$952	\$907	\$864	\$823	\$79,136
Present Value at 10% Interest Rate	\$65,883	\$909	\$826	\$751	\$683	\$62,713

Figure 2: Expected Cashflow

Net Present Value is the hypothetical amount an investor should pay for a bond based on the sum of the present value of all cash flows over the life of the bond.

The Forgiving Nature of Bonds: Short-Term Pain, Long-Term Gain

Although bonds are considered less volatile than stocks, they're not immune from experiencing losses. Investors experienced this dramatically in 2022 with the swift rise in U.S. interest rates causing bond prices to decline. Thankfully, losses in bonds tend to come with a silver lining: higher yields. When bond prices fall, bond math requires their yield to increase. Looking at the chart on the next page, starting yields tend to have a strong positive relationship with future returns. Higher starting yields help increase the likelihood of higher forward-looking returns (**Figure 3**).

Similar to how a bond's starting yield has a statistical relationship with forward-looking returns, starting yields can also impact the short-term drawdown risk experienced by bond investors. Higher starting yields tend to provide investors with a larger cushion in the event of rising interest rates. In other words, rates moving from 1.0% to 1.5% will hurt investors more than if rates move from 4.0% to 4.5%, as shown in the exhibit on the next page (**Figure 4**).

Surely, investors would benefit from the prescience of knowing when interest rates will rise or fall and to what magnitude. Unfortunately, even the best bond managers lack this clairvoyance.



Figure 3: Higher Starting Yields Help Increase the Likelihood of Higher Forward-Looking Returns

Data reflects annualized 10 year returns for periods ending 1/31/1936 - 9/30/2022. R2 refers to the predictive power a variable has in a regression. A higher R2 (maximum of 1.0) implies a variable is more significant. Source: Morningstar Direct

Figure 4: 1-Year Returns or	n 10-Year Bond Starting Yi	ields
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10-Year Bond	1-Year Return (%) Assuming Change in Yield of:							
Starting field	-50 bps	-25 bps	No Change	+25 bps	+50 bps			
0.00%	4.6%	2.3%	0.0%	-2.2%	-4.4%			
0.50%	5.0%	2.7%	0.5%	-1.7%	-3.8%			
1.00%	5.4%	3.2%	1.0%	-1.1%	-3.2%			
1.50%	5.8%	3.6%	1.5%	-0.6%	-2.6%			
2.00%	6.2%	4.1%	2.0%	0.0%	-2.0%			
2.50%	6.6%	4.5%	2.5%	0.5%	-1.4%			
3.00%	7.0%	5.0%	3.0%	1.1%	-0.8%			
3.50%	7.4%	5.4%	3.5%	1.6%	-0.2%			
4.00%	7.8%	5.9%	4.0%	2.2%	0.4%			
4.50%	8.2%	6.3%	4.5%	2.7%	0.9%			
5.00%	8.6%	6.8%	5.0%	3.2%	1.5%			

This is a hypothetical example of how 10-year bonds trading at par could perform given changes in interest rates. This illustration does not reflect Savant's view of how bonds will perform in the future.

While starting yields can have an impact on the magnitude of a bond portfolio's short-term drawdowns, long-term investors are typically rewarded by higher movements in rates. The chart below illustrates the value of a bond portfolio over time in the circumstance of a much greater shift in rates (moving from 2% to 5%). Assuming this bond portfolio has a constant duration of 5 years, longterm investors begin to benefit from higher yields in year six, despite seeing a sharp price decline at the onset (**Figure 5**).

Some investors may be left scratching their heads after witnessing a sharp price decline in bonds. However, we believe the disciplined long-term investor should recognize the benefit of a higher yielding portfolio, even if it may take some time to recover from the initial price decline associated with rising interest rates.



The example above is a hypothetical example of two bond portfolios under different interest rate environments. Assumptions made in this example are for educational purposes only and do not reflect Savant's view of how bonds will perform in the future.

Risks Related to Bonds

Although often considered less risky than stocks, bonds present several unique risk factors that can impact an investor's experience. Some of the risk factors associated with bonds are listed below:

Interest Rates: The relationship between a bond's price and interest rates (yields) are inversely related. In other words, when interest rates rise, bond prices fall, and vice versa. The price of a longer duration bond is more sensitive to interest rate movements than that of a shorter duration bond.

Credit Defaults: Bonds (particularly corporate bonds) are subject to default risk should the borrower be unable to make coupon or principal payments to investors. Defaults are common in event of a corporate bankruptcy. Credit defaults occur more frequently for bonds with lower quality credit ratings. Bonds rated BB and below are referred to by many as "junk bonds," which tend to be riskier than investment grade bonds.

Inflation: Unless the bond's coupon and par value are indexed to inflation (like in the case of TIPS), the fixed coupon and principal payments of bonds will lose value in real terms during inflationary environments.

Liquidity: Unlike stocks, which are generally traded on central exchanges, bonds are typically traded through broker-dealer networks, referred to by some as "overthe-counter." Trading through broker-dealer networks is typically less efficient and may present periodic liquidity risk during times of crisis. Different types of bonds have varying degrees of liquidity.

How Bonds Fit in a Portfolio

Income Generation: It is common for bonds to make coupon payments to investors, stated as a percentage of par value. If a bond's par value is \$1,000 paying a 6% coupon, investors can expect to receive \$60 of income per year.

Capital Preservation: Bonds can serve as a crucial source of capital preservation for a portfolio. Compared to stocks (where the future share price is unknown), bonds are designed to return their stated principal value to investors at maturity, assuming no credit defaults.

Defensive: When economic conditions slow, stocks may be subject to significant declines as corporate earnings wane. Bonds, where the future value of an investment is defined by its coupon payments and par value (absent default), can provide ballast to a portfolio. Additionally, if the economic slowdown is great enough, central banks may decide to lower interest rates, providing a tailwind to bond prices in the short term.

Asset/Liability Matching: For investors with predefined liabilities, buying high quality bonds with matching durations of their expected liabilities can be an attractive strategy.

Diversification: Many investors allocate to several different asset classes including stocks, bonds, real assets, and other alternative investments. While there are times when these different asset classes will move in the same direction, building a portfolio of investments with low correlation to each other has the potential to improve risk-adjusted returns.

Today's bond market is much more dynamic than the grain delivery agreements made in ancient times. Yet the basic principle remains the same: lending another party capital (I owe you) for interest in return. Many investors, both institutional and individual, rely on bonds as a core component of their asset allocation for income and stability.

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