



November 2020

Don't Hate the Asset; Hate the Constraint

Bonds Today | Part 1

Series Summary

This first note in a series of three discusses how the role of bonds changes depending on the investor's ability to employ leverage, whether directly or through leveraged strategies. The second note will consider an important question to answer when formulating expectations for bond market returns - is there a lower bound on interest rates? And in the third, we will discuss nominal bonds and other diversifying assets in the context of a leveraged long-only asset allocation.

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The Role of Bonds

With government bond yields near or below zero in many markets, investors are reconsidering the role of bonds in their asset allocation. Here we examine whether bonds can help investors achieve their return objectives, and we come to what may be a surprising conclusion - it's mostly about leverage.

We believe very low risk-free rates have created a significant challenge for a simple reason, which we can see by breaking down total return into its component parts, the risk-free (cash) rate and everything else (i.e., the excess return or risk premium):

Total Return = Risk-Free Rate + Excess Return

In order for a typical institution to hit its total return goal, it needs a high risk-free rate, a high excess return, or some combination of the two. With the cash rate now near zero, investors who have total return objectives that were realistic when rates were higher now may have unrealistically high excess return objectives. This is how the world has changed for investors in a low-rate environment. Total

return expectations could move directly up and down with the cash rate, but in most governance models they don't, so now allocators face unusually high hurdles.

The challenge is that the average excess return on stocks isn't high enough, and for bonds it isn't close. If we want to construct a portfolio with the expectation that we will meet our return goals (or at least get as close as possible), then low cash rates would require us to:

1. own assets that have extraordinarily high expected excess returns; or
2. own more assets.

That is, investors need to further concentrate allocations in high risk, potentially higher reward assets, like equities, or they need to apply leverage to diversifying and relatively lower risk, lower expected return assets, like bonds. These are starkly different choices and hinge on which risk the investor fears more: concentration or notional leverage.

Leverage Constrained Investors Have a Very Uncomfortable Relationship with Bonds Today

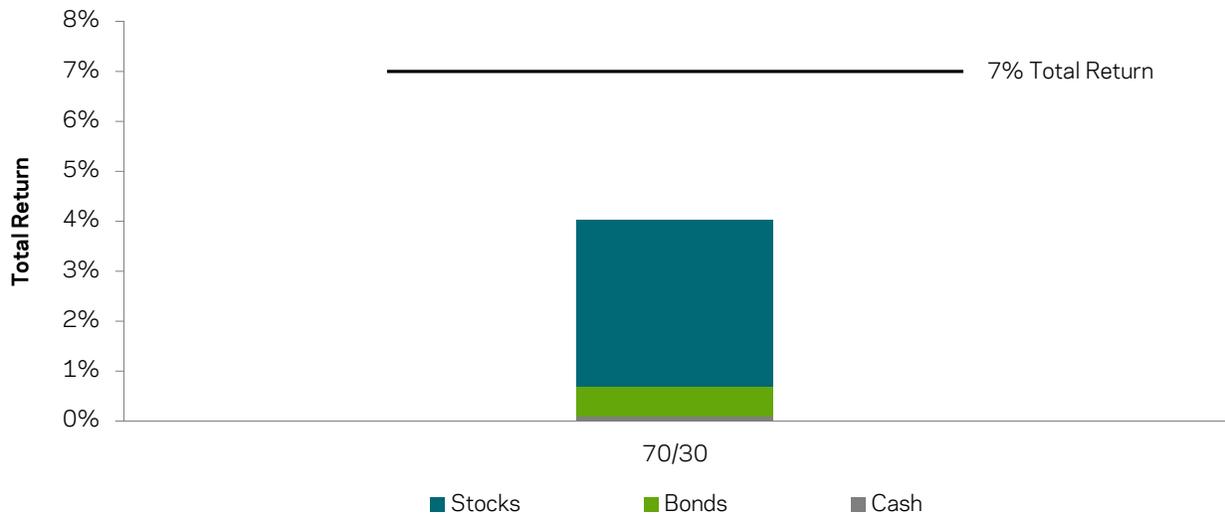
Let's say you have a total return target of 7%. With cash rates close to zero, your excess return target is nearly 7%, too. Unfortunately, the average excess return for global stocks has been only about 4.8% and for the global bond aggregate, only 2.2%.¹ There simply isn't an unleveraged combination of the two that can reasonably be expected to meet your return target.² Even 100% stocks won't get close without aggressive assumptions about private

markets, future cash rates, and potential portfolio alpha.

Exhibit 1 illustrates the challenge for traditional allocations using a simple hypothetical 70/30 stock/bond portfolio. Using long-term assumptions for risk and excess return, and the prevailing stock/bond correlation, this portfolio is expected to provide about 4% excess return with almost 11% volatility.

Exhibit 1: Low cash rates make high return targets hard to reach

Expected return contribution for hypothetical 70/30 portfolio that doesn't employ leverage



Source: AQR, Bloomberg. Expected returns for 70/30 stock/bond portfolio based on full period average of excess returns for stocks and bonds from January 1, 1972 to September 30, 2020. Average excess return for stocks approximated using the MSCI World Index. Average excess returns for bonds approximated using Barclays Global Aggregate Index from January 1990-September 2020, Barclays U.S. Aggregate Index from 1976-1989, Barclays U.S. Government/Credit Index from 1973-1976, and AQR Global Bond Index for 1972. Risk-free returns (cash) is based on ICE BofAML US 3-Month Treasury Bill Index. Expected cash return is the prevailing yield on 3-Month U.S. Treasury Bills. See disclosures for more information.

- 1 See sourcing under Exhibit 1. Since bonds earn excess returns from their carry over the risk-free rate, the rolldown of the yield curve as bonds progress toward maturing, and any gains or losses from yield curve shifts, excess return on a constant maturity bond portfolio is not bound by the level of yields.
- 2 We are ignoring today's debate about whether the high level of stock market prices or the closeness of yields to a possible lower bound might even portend *lower* returns than average. We discuss the possible lower bound in a forthcoming note.

With such a wide gap between total return targets and realistic expected returns, unleveraged investors are forced to construct portfolios that aggressively pursue higher return-on-capital rather than higher risk-adjusted returns. Within their bond allocations, extending duration is one straightforward way to do this (while, for many funds, reducing their asset-liability risk at the same time). Moving out the credit curve is a way to layer on more risk within the bond allocation, albeit more risk that's correlated to equities. And, of course, adding more active risk to the bond allocation is another possibility.³ But switching to potential, and now frequently mentioned "substitutes," such as gold, is dramatic and may expose the portfolio to some new and uncomfortable risks.

Investor excess return targets are now so aggressive that the role of the bond aggregate in an unleveraged portfolio isn't much more than ballast: assets that won't rock the boat much but won't move it far enough forward either. The difference between good expectations and bad expectations for bonds pales in comparison to the magnitude of the badly needed excess returns. One could argue that because of this, unleveraged investors may not need to spend a lot of mental energy bothering to develop a bond market view since it should have little impact on their decisions.

To the extent we don't find enough ways to add return to the bond allocation, leverage-constrained investors' next best alternative may be to buy more equities

(public and private), sell some bonds, and bear the concentration risk. To make this less frightening, low-beta equities have been proposed by some and tail-risk hedges by others. The case is strong for tilting equity portfolios toward low-beta stocks (they do better than they should),⁴ and we think that's true regardless of the rate environment. That said, low-beta stocks are still stocks and shouldn't be confused with bond "substitutes." So instead, some investors will just bite the bullet and increase expected return by adding more equities (low beta or not) while ameliorating some of the risk increase through tail risk hedging strategies. This approach gains expected return, at a cost, and accepts some, but not all, of the increase in risk from stocks.

In a nutshell, for the unleveraged investor, the bond aggregate is an uncomfortable allocation to hold. And what makes it uncomfortable should be less the fear that it doesn't have a good risk-adjusted return and more that it doesn't deliver returns with cash efficiency. That is, the typical unleveraged bond portfolio doesn't have enough juice when excess return requirements are so extraordinarily high.

Of course, as an entirely different approach, investors and boards could lower their expected return targets for this age of very low risk-free rates. This might help unleveraged investors avoid the temptation to shift equity-concentrated portfolios toward yet more equity concentration, but reducing those targets has implications that go well beyond portfolio management.

3 Not surprisingly, we have our program for this - try to add some additional return by seeking diversifying sources of risk like tilting toward value, momentum, carry, and quality.

4 Ironically, they do better than they should because of leverage aversion. See "[Betting Against Beta](#)" Frazzini, A., Pedersen, L.H., 2014. *Journal of Financial Economics* 111, 1-25.

Leveraged Investors Can Still Love Bonds

Investors who can own their bonds cash-efficiently, can own enough for them to meaningfully contribute to reaching expected return goals, a crucial distinction between leveraged and unleveraged investors (or any leveraged investor who won't apply leverage to bonds). Unleveraged investors hold bonds at the expense of owning something else, quite possibly something with a higher expected return. The leveraged investor faces no such problem: no investment is really a substitute for another - there's no need to take anything away in order to add.

Meeting today's high excess return objectives will indeed require more risk taking, but leveraged investors retain all their options. If government bonds can help them build the best portfolio - that is, the one with the highest risk-adjusted return - they may be able to own enough of them to hit those return requirements without blowing past their risk limits.

To the leveraged investor, bonds are what they always have been - risky investments that are expected to earn a premium over the cash financing rate⁵ while at the same time diversifying equity risk. In contrast to unleveraged investors, these investors need to have an opinion on whether the outlook for bonds is good, bad, or unknowable. Their views on the economy, market conditions (like the slope of the yield curve or the level of real

yields), and the diversification potential of the term premium are all relevant because, unlike unleveraged investors, leveraged investors can hold enough bonds for those views to matter.

Leveraged investors can focus on assets and strategies that help build a better portfolio and generate the necessary returns at the lowest level of risk. These investors can consider new investments without simultaneously reducing the fixed income allocation⁶ and can give very strong consideration to increasing it.

Our own view is that while total returns depend on the level of yields, there isn't much evidence that excess returns do⁷ (though *changes* to yields certainly matter to excess returns), nor is there good reason to believe that bonds no longer diversify stocks.⁸ And while you can make the case that expectations for bonds now should be lower,⁹ that case isn't powerful enough to strongly influence a strategic asset allocation: the indicators investors look to aren't predictive enough for that. So, with the typical equity-dominated institutional portfolio already underweight bond risk, the leveraged investor's ability to add more bonds provides an important opportunity to potentially build a better (higher Sharpe ratio) portfolio and scale it to maximize expected return at an acceptable level of risk.

How much better can a leveraged investor do?

5 A simple way to think about this is that low yields don't impair this if explicit or implicit (i.e. futures) financing rates are low, too, which they are.

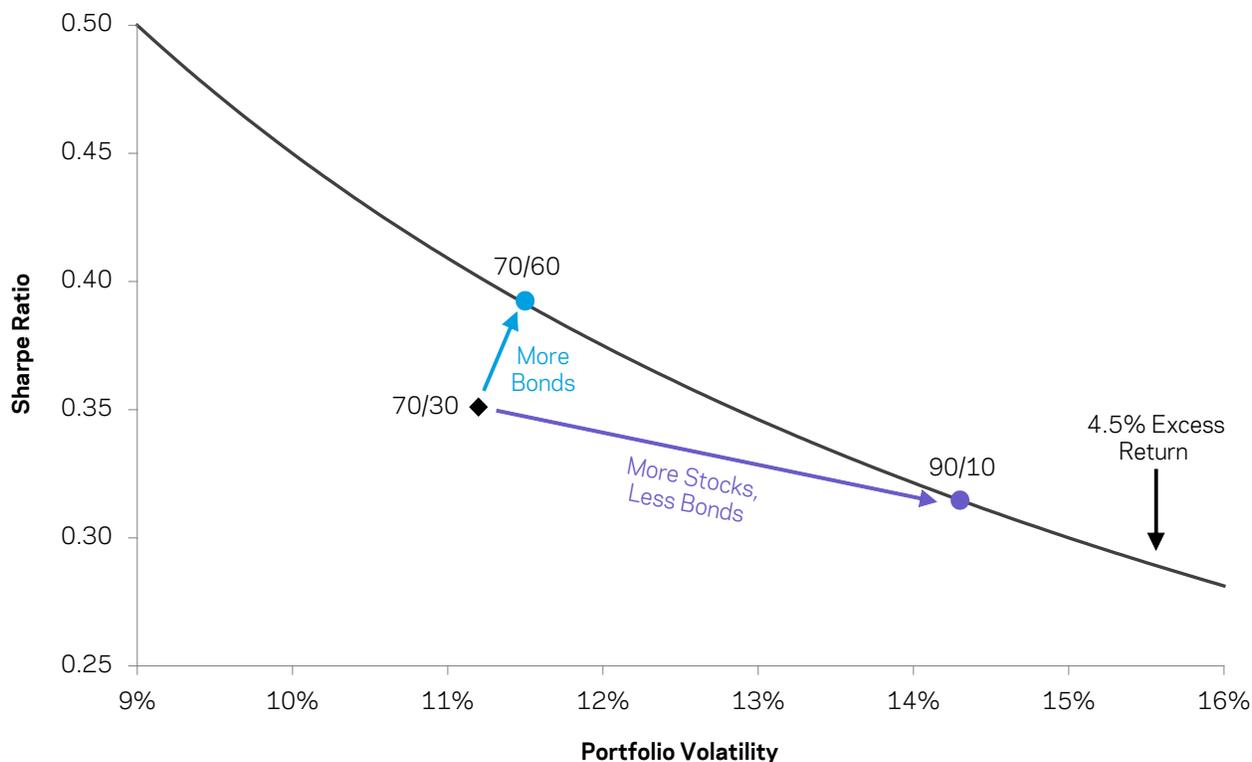
6 Unless the investor's view on bonds is so negative that they aren't viewed as helpful to a portfolio.

7 See Huss, Maloney, Mees, Mendelson (2017), "[Asset Allocation in a Low Yield Environment](#)"

8 We continue to believe that bond prices can move up or down, but see bonds as diversifiers, not hedges. Investors can use the diversification benefit of bonds to build portfolios with better average behavior, but that property isn't specific to a particular market environment (e.g., when stocks fall) where you can count on them to shine. We can't and don't need to count on that to like bonds or to view them as diversifying.

9 Two that are thought to be important are the level of real yields and the slope of the yield curve. Real yields today are negative, and the yield curve is flatter than usual - both useful, but far from prophetic indicators of lower than average risk-adjusted returns for bonds.

Exhibit 2: Comparing “more stocks, less bonds” to just “more bonds”
70/30, 90/10 and 70/60 hypothetical Sharpe ratio vs portfolio volatility



Source: AQR, Bloomberg. Expected returns for 70/30 stock/bond portfolio based on full period average of excess returns for stocks and bonds from January 1, 1972 to September 30, 2020. Stocks approximated using the MSCI World Index. Bonds is approximated using Barclays Global Aggregate Index from January 1990-September 2020, Barclays U.S. Aggregate Index from 1976-1989, Barclays U.S. Government/Credit Index from 1973-1976, and AQR Global Bond Index for 1972. Risk-free returns (cash) is based on ICE BofAML US 3-Month Treasury Bill Index. Expected cash return is the prevailing yield on 3-Month U.S. Treasury Bills. See disclosures for more information. Prevailing stock/bond correlation calculated the last 5 years. Sharpe ratio is the portfolio excess return divided by the portfolio volatility.

In **Exhibit 2** we start with the same hypothetical 70% stock and 30% bond portfolio as before (black diamond), plotting the Sharpe ratio (risk-adjusted excess return) vs. the risk. That portfolio had an expected return of 4.0%. To earn higher excess returns, the unleveraged investor can choose to buy stocks and sell bonds. For example, moving from 70/30 to 90/10 raises the expected excess return to 4.5% while pushing portfolio volatility from 11% to over 14%. On the other hand, an investor who can use leverage can add more bonds without reducing the allocation to stocks. A 70/60 allocation has the same 4.5% expected excess return (moving along the black line) but portfolio risk that

is barely higher than 11%. While this still doesn't get us all the way to the likely return requirement, it's a start.

Investors who can use leverage have a wider array of investment choices available to help them achieve their return goals. They can add more term premium risk (likely adding little overall risk to an equity-dominated portfolio). They can add hedged strategies. They can add exposure to other risks, such as real estate or credit, without having to reduce stock or bond holdings. That is, they can use all the tools available to investors without having to either drive down expected return by selling stocks or drive up risk by selling bonds.

The Dilemma of Portfolio Management: It's Concentration or It's Leverage

Investors are in a tough spot right now and are going to struggle to create portfolios that meet expected return goals. They face a stark choice: load up with more equity (public or private) and equity-like investments or create a better diversified portfolio, albeit one with some leverage. We think it's worth understanding the magnitude of the risks of each approach and believe most investors will find they're already too concentrated, so examining the alternative is well worth the effort - and many have. We've noticed that

a growing number of very traditional large investors have begun using more leverage in their portfolios. While recognizing that leverage has its risks, particularly when applying leverage to already very risky assets, investment boards should recognize that the alternative to it may be much scarier. At the very least, the current difficult environment makes a great case for taking the time to understand how to assess the trade-offs between the two great risks portfolios can face - concentration or leverage.

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