Murray's Musings

BITCOIN V. BONDS

The bond market thus far in 2022 has produced results that generate questions about the nature of the asset class itself. These questions arise from the year-to-date returns for salient aspects of the asset class. The returns can be visualized using popular exchange traded bond index funds (ETFs), as follows:

Table 1: Returns for Selected Bond ETFs, Dec. 31, 2021- Oct. 21, 2022

		Return
TLT	iShares 20+ Year Treasury Bond ETF	(36.11)%
IEF	iShares 7-10 Year Treasury Bond ETF	(18.08)%
AGG	iShares Core U.S. Aggregate Bond ETF	(16.62)%
HYG	iShares iBoxx $ High Yield Corporate Bond ETF	(14.09)%
TIP	iShares TIPS Bond ETF	(13.42)%

Source: iShares.com

The obvious question to be posed when noting the negative returns experienced this year is whether the long-term return prospects of the bond asset class are sufficiently large to compensate the investor during the inevitable declines in those periods when the Federal Reserve must increase interest rates.

One might begin to answer this question by studying the returns since inception for the aforementioned funds. This data appears in the table below.

Table 2: Annualized Returns, Selected Popular Bond ETFs, Inception through 9/30/22

		Inception Date	Return
TLT	iShares 20+ Year Treasury Bond ETF	July 22, 2002	4.50%
IEF	iShares 7-10 Year Treasury Bond ETF	July 22, 2002	3.52%
AGG	iShares Core U.S. Aggregate Bond ETF	Sept. 22, 2003	2.90%
HYG	iShares iBoxx $ High Yield Corporate Bond ETF	April 4, 2007	4.08%
TIP	iShares TIPS Bond ETF	Dec. 4, 2003	3.42%

Source: iShares.com

It should be pointed out that the inception dates of all these funds to the most recent date coincide with the greatest bond bull market of all time by far. It is an observation to keep in mind as one reflects on these results.

An obvious problem with this type of analysis is the question of subjectivity. One might choose to compare these funds to the prevailing rate of inflation during the relevant time period, in order to understand what the real, inflation-adjusted returns have been. Unfortunately, the calculation of the rate of inflation has itself become controversial and no

agreement on a universal inflation measure appears to exist. Nevertheless, the returns can certainly be compared to one another. Even this approach, however, is not very promising because the returns since inception are for different time periods and the periods may not be sufficiently long to arrive at meaningful conclusions. Also, the returns for the different periods and the different classes of bonds are not radically different.

One can say that the highest return is for long term U.S. Treasury bonds, at least for the time period in question. If duration is a primary measure of risk, then it is reasonable that the highest return category is long term U.S. government bonds. But, we cannot know if the greatest overall risk is to be found in the high-yield bond sector, which in prior eras would have been the natural presumption due to the inherent credit risk. That can no longer be presumed, because the Federal Reserve has pursued an extremely aggressive policy of monetary accommodation for most of the time period in question. The alteration of this stance only commenced in mid-June 2022. Some time must pass until the withdrawal of monetary stimulus results in a more historically normal incidence of credit defaults or near defaults.

Credit spreads will likely widen and higher yields will be available in the sector if defaults once again become a primary risk factor for high-yield bonds. In that case, after a period of low returns or quite possibly negative returns, the best performing bond segment might ultimately become high-yield bonds.

On a year-to-date 2022 basis, high-yield bonds slightly underperformed inflation-protected government bonds. Credit problems have not yet made an appearance.

Another means of viewing these funds is through the prism of after-tax returns, since individual taxpaying investors frequently make use of ETFs.

Table 3: After-Tax Annualized Returns, Selected Bond ETFs, Inception Through 9/20/22

		Inception	Return
TLT	iShares 20+ Year Treasury Bond ETF	July 22, 2002	3.06%
IEF	iShares 7-10 Year Treasury Bond ETF	July 22, 2002	2.36%
AGG	iShares Core U.S. Aggregate Bond ETF	Sept. 22, 2003	1.79%
HYG	iShares iBoxx $ High Yield Corporate Bond ETF	April 4, 2007	2.07%
TIP	iShares TIPS Bond ETF	Dec. 4, 2003	2.20%

Source: iShares.com

The calculations in Table 3 were made by iShares, not Horizon Kinetics. To make it universally applicable to all U.S. residents, only federal taxes are assessed. Residents of various states with state income taxes or even municipalities with local income taxes will have different rates of return. However, the returns are at least standard in that none include state and local taxes. State and local income taxes would not apply any of the three Treasury ETFs. For the iShares Core U.S. Aggregate Bond ETF and iShares iBoxx High Yield Corporate Bond, the yields in the table are shown without the impact of state and local taxes.

If one presumes merely a 2% annual inflation rate, the Core U.S. Aggregate Bond ETF did not provide a positive real rate of return after taxes. This is significant because this particular ETF is designed to represent the entirety of the bond market. The fund itself has $75.64 billion of assets under management. It is the second largest bond ETF and the tenth largest of all ETFs in the United States. The largest bond ETF is the Vanguard Total Bond Market ETF (BND), with $79 billion of AUM and an inception date in 2007. In composition and returns, it is very similar in character to the iShares Aggregate U.S. Bond ETF.

If the after-tax rate of return of the entire bond market is lower than inflation over a long period of time during which inflation was mostly at a low rate and relatively benign – in this case covering periods of 15 to 20 years – one must logically rethink one's approach to bond investing.

The composition of the Aggregate Bond ETF is as follows:

Table 4: Composition, iShares Core U.S. Aggregate Bond ETF

Bond Type	Percentage of AGG
Treasury	41.72%
MBS	27.05%
Industrial	14.41%
Finance	8.16%
Utilities	2.06%
CMBS	1.85%
Agency	1.22%
Supranational org.	0.92%
Local Authorities	0.84%
Cash	0.48%
ABS	0.35%

Source: iShares.com

Segments of the bond market clearly did provide a positive real after-tax rate of return when measured against the conventional CPI inflation statistic. If such is the case, yet the broad index underperformed inflation after taxes, this would constitute the first relatively long-run empirical argument against broad indexation in favor of an actively constructed portfolio.

The market value of all publicly traded fixed income securities outstanding as of year end 2021, is $53.017 trillion.[1] Bear in mind this is not all debt; it is the value of all *publicly traded debt securities*, which is lower than the value of all debt. This is the largest asset class in the U.S. and it is considerably larger than the market capitalization of the S&P 500. In fact, fixed income issuance has continued to be robust in 2022 even though, at the moment, the market for initial public offerings of equity is almost nonexistent.

[1]Security Industry Financial Markets Association (SIFMA)

In principle, the best decision that could have been made over the course of the past two decades within the broad bond asset class to maximize returns would have been a 100% allocation to long-term treasury bonds. The after-tax annualized return is 3.06%. Assuming roughly 2% annual inflation, which, again is subject to some degree of dispute, the real rate of return was 1.06% per annum. In order to earn this rate of return, one had to accept a standard deviation of 14.03, an effective duration of 17.17 years, and a weighted average maturity of 25.58 years.

By way of comparison, the first reliable price quote for bitcoin was $0.0495 on July 17, 2010, a bit less than 5 cents.[2] Bitcoin now sells for $19,189. The current interim bitcoin inflation rate is 1.73% per annum and at the time the notes for this Compendium were prepared, 19,186,625 bitcoin were in existence. By the time this is published, there will be even more. A total of 1,813,375 bitcoin will be issued from the time the notes were prepared for this Compendium until the year 2140. The number yet to be issued will continuously drop. In 556 days, the bitcoin interim inflation rate will decline to 87 basis points per year. With each passing day, of course, there will be one less day until the bitcoin interim inflation rate drops to $0.87%. Moreover, the bitcoin interim inflation rate will decline by 50% every four years in accordance with the bitcoin issuance protocol. The projected 0.87% annual inflation rate will decline to 0.44% after four years.

Profits on bitcoin are taxed at the capital gains rate, not the statutory federal income tax rate that applies to interest on debt. This is because the IRS considers bitcoin to be property. Also, unlike interest on debt, capital gains tax is paid after sale at a profit.

What if a holder of a bond ETF, such as iShares Core U.S. Aggregate Bond ETF (AGG), were to have made the most marginal change possible to the investment allocation plan by investing 10 basis points annually into bitcoin? Structured that way, in the worst instance, the after-tax rate of return would have declined from 1.79% annually to 1.69%. That basically assumes a complete failure of the Bitcoin project, that bitcoin would have gone to zero.

An investment in bitcoin made in July 2010 would have increased 387,797x in value by today. In other words, a $100 investment would now be worth $38,779,797. If the investment had been made with only $100 of a $1 million bond portfolio even once in 2010 – that would be a 1 basis point investment, one-hundredth of 1% – the remaining $999,900 that was invested in bonds compounding at an after-tax 1.79% per annum rate for 12 years would now be worth $1,237,137. If the entire $1 million had been invested for in bonds for the 12 years under discussion, the total capital sum held at this point would be $1,237,261, or $124 greater. That quantifies the risk of investing $100 in bitcoin in a bond portfolio as a loss of about $124. That $124 difference would be the amount of loss in principal value after 12 years if bitcoin had failed completely.

[2]Bitinfo.com

In actuality, those bitcoin returns are somewhat understated since the calculation gives no credit for the distribution value of the various bitcoin forks such as Bitcoin Cash and Bitcoin Gold.

The market capitalization of Bitcoin is now $368.3 billion. Bitcoin is worth less than 7/10^{ths} of 1% of the U.S. publicly traded bond market value. The value of the bond asset class is constantly expanding due to new issuance. If the bond asset class did actually protect investors against debasement caused by inflation, there would be no need for this instrumentality.

The bitcoin return should be genuinely extraordinary if, at some point in the future, the investment community comes to the conclusion that bitcoin will better protect an investor against inflation than the bond asset class which appears to provide no such protection.

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