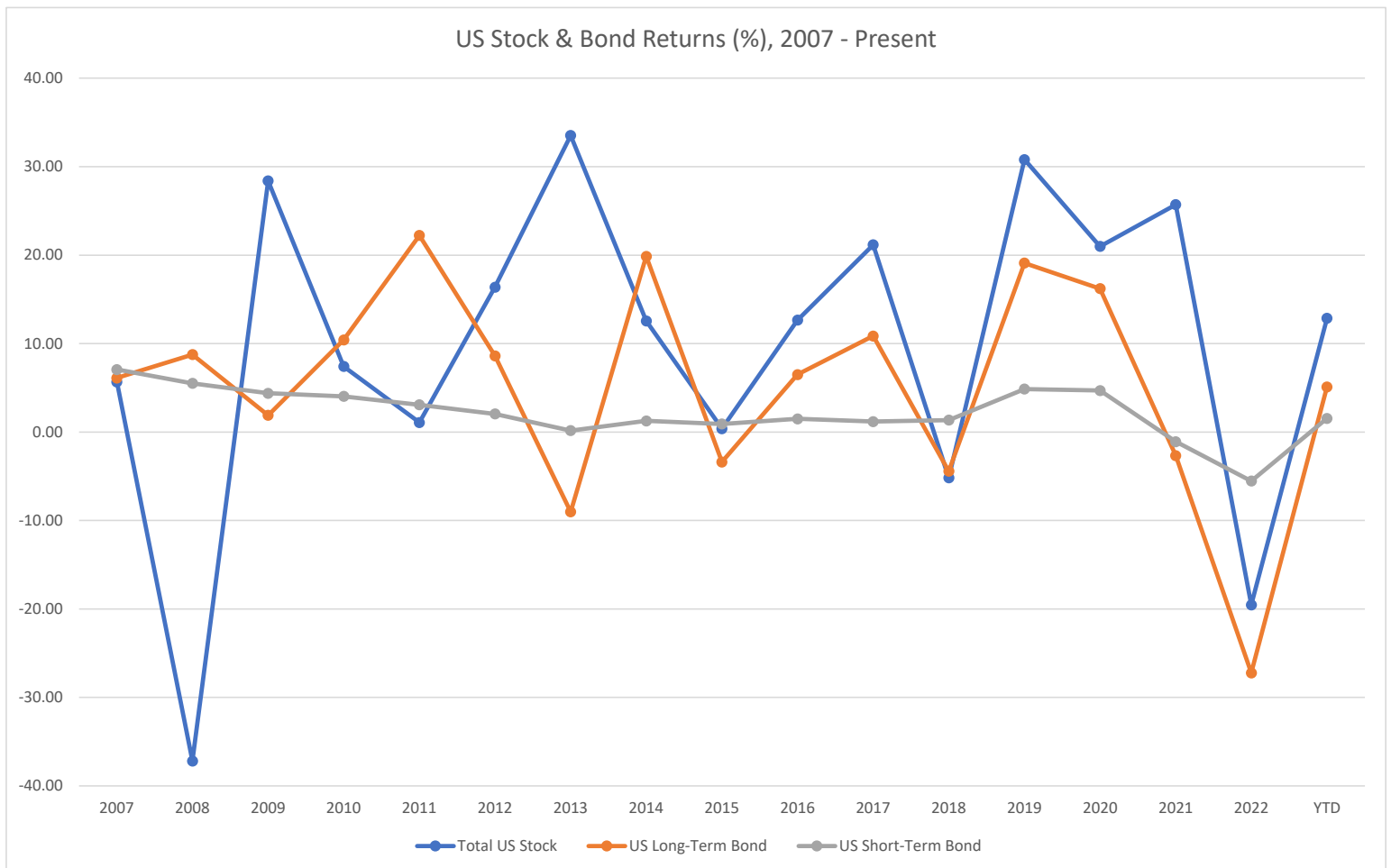


## The Hidden Danger Lurking Even in AAA Long-Term Bond Funds

2022 was a major wake-up call for the investment community. Not only did growth stocks and related funds suffer a 30% or greater loss, long-term investment grade and above rated bond funds took a bath and fell nearly as much. For decades the bond market has provided investors a safe haven from stock volatility and crashes and gave predictable income streams through regular interest payments. That all came to an abrupt end last year, especially for funds that hold a large percentage of fixed income securities with many years to go before maturing.

For decades, bond funds have served as a ballast for millions of investors. The 60/40 stock to bond ratio has been used as a template to build portfolios for the last 50 years, providing investors with a reasonable level of stock exposure for growth, but also a comfortable margin of safety to protect their overall holdings during the worst of times. Not surprisingly, short-term bond funds also took a hit, but at levels far below their long-term cousins.

Chart #1 – Annual US Stock & Bond Returns (%) - 2007-Present<sup>1</sup>



<sup>1</sup> Historical data is publicly available and compiled from Morningstar.com and other common financial websites

Chart #1 illustrates several key points:

- Both short and long-term bonds performed well during the 2008-2009 financial crisis when compared to stocks
- The year-to-year volatility of long-term bonds is similar to stocks
- Long-term bonds failed to provide any ballast in 2022
- Short-term bonds outperformed both stocks and long-term bonds in 2022 by a wide margin

Average Annual Returns (2007 – Present):

- US Stocks 8.52%
- US Long-term Bonds 4.69%
- US Short-term Bonds 2.22%

As the Federal Reserve rapidly raised interest rates in 2022 at a pace not seen since the early 1980's, bond values dropped proportionately to the number of years the note had until maturity, regardless of credit worthiness. The drop in value is predictable and easily calculated as new bond issues require higher interest payments to attract investors, making current ones far less valuable as their lower interest payments are fixed until maturity.

Bonds resemble fixed interest rate home loans in many respects. In early 2022, lenders were offering 30-year fixed home loans with interest rates around 3.2% for qualified buyers. Only 18 months later, a 30-year fixed home loan rate was closer to 7%. Similar to a bond, if a bank were to make two loans of the same amount, but at different interest rates, the loan with a higher rate of interest is more valuable to the bank, as its monthly payments are greater for the same principal borrowed.

Let's consider a \$500,000.00, 30-year fixed home loan at 3.2% and 7% as an example:

<u>Loan Amount</u>	<u>Rate</u>	<u>Mo. Payment</u>	<u>Total Interest – 30 Years</u>
\$500,000.00	3.2%	\$2,162.33	\$278,440.36
\$500,000.00	7.0%	\$3,326.51	\$697,544.49

The loan at 7% provides far more income for the lender and similar to bonds, are regularly bought and sold to other entities. The sale price is directly related to the interest rate and length of the loan. The homeowner is unaffected provided they continue making regular payments. Rates offered by 30-year conventional loans is a good way to gauge what coupon rates long-term bonds should offer to attract investors.

As 2022 progressed and it became evident the Federal Reserve would continue to rapidly raise the Federal Funds Rate (the rate paid to member banks to park their money with the federal reserve), and it was predictable that bond values would drop, especially long-term bonds and related bond funds in direct proportion to the number of years for the notes they held to mature.

In other words, a bondholder that recently purchased a one-year note, would only have to wait around 12 months to receive all of the fixed interest payments and the final face value payment (typically \$1000.00).

A bondholder that purchased a 20-year bond, five years ago, would have to wait a full 15 years for the remaining interest payments that are fixed, and the final face value payment.

In a little over a year, banks and other lending institutions suddenly were making close to 5% with zero risk by parking their money with the Federal Reserve. Naturally, this environment led to much higher interest rates for loans to home buyers and other potential borrowers that may at some point fail to make their loan payments. Traditional home loan interest rates more than doubled over an 18-month period. The same principle holds with bonds.

The longer the bond's maturity, the higher the coupon rate that must be offered to attract potential investors, as the buyer's money is locked in for a greater period. Given the Federal Reserve's actions, bond issuers followed suit and offered higher coupon rates for new bond offerings. A 5% coupon, 30-year investment grade corporate bond issued two years ago, would have to offer a coupon rate similar to that of a 30-year fixed home, or well over 7% if issued today.

As time progressed and interest rates continued their steep ascent, investors understandably moved from long-term fixed income holdings to shorter terms ones that offered relatively high yields with little risk. Only 18 months ago, short-term, fixed income securities offered interest rates close to 0%, now money market funds are offering close to 5%.

The Federal Reserve's rapid rate increases have scrambled the risk landscape of fixed income securities. As Silicon Valley Bank discovered, owning AAA, long-term US treasury bills to earn higher yields at the very same time interest rates are rapidly rising is a losing proposition and a good way to run out of capital that ultimately led to the bank's collapse. As borrowing costs continue to rise, investor's naturally ask themselves if the volatility of long-term notes is worth it, given short-term ones are now offering rates well above inflation. But there is another danger lurking.

The rapid fall of high credit, long-term bonds was a tragic and brutal blow to the many retirees that rely on regulator interest payments for their living expenses. After so many years of super-low interest rates, the most vulnerable could only watch while their principal savings shrivel in value in response to the Fed's actions. Adding salt to the wound, at the very same time bond values were dropping, inflation was raging from the Fed's late response and all of the recent stimulus programs. This created a perfect storm putting many elderly folks in a tough financial bind. Increases in social security payments have certainly helped, but the relative safety of long-term, fixed income investments has been shattered.

A second, less obvious risk is certain to expose itself in the coming years. Mutual funds and ETFs offering high quality, long-term fixed income securities, have given older investors a relatively safe haven for their holdings that pay interest above the average rate of inflation, when CD's offered rates less than 1%. However, the rapid interest rate increase has created a paradigm shift in long-term debt assets and funds that hold them.

Mutual funds and ETFs that are designed to cater to long-term bond investors are particularly vulnerable to rapid rate increases, as it can take many years for the funds to flush out their current holdings of low coupon long-term notes either by selling them at a significant loss or letting them mature. Investors have become accustomed and too comfortable with low rates, as they have been held down for so long, blinding the investment community to the hidden dangers.

To illustrate let's examine the coupon rates and years to maturity of bonds held by a low fee, **long-term** index bond fund as of the end of July, 2023.

Table #1 – Long-Term Fund Coupon Values

Coupon Range (%)	Fund (%)
0% or Paid In Kind	0.07
0-2	12.11
2-4	48.35
4-6	32.33
6-8	6.53
8-10	0.25
>10	0.01

Table#2 – Long-Term Fund Maturity Schedule

Maturity (Years)	Fund (%)
1-3	0
3-5	0
5-7	0.01
7-10	0.26
10-15	9.09
15-20	27.91
20-30	57.62
>30	4.76

Nearly half of the bonds held by this fund have a coupon rate between 2-4% and about a 1/3 have rates between 4-6%. 90% of the bonds do not mature for at least 15 years, and the average maturity is closer to 22 years. Like Silicon Valley Bank, this fund holds a high percentage of US long-term Treasury Bonds and other high-quality notes. The risk has nothing to do with

the credit quality of the notes held, but rather what do to with low-rate notes that have on average 20+ years to mature, when new long-term bond issues offer significantly higher rates for the same credit quality. A short-term fund typically has a portfolio that matures in just a few years and is quickly replenished with new, higher rate notes. The long-term fund however is stuck with a large percentage of low-rate issues and must wait until the bonds mature to replace them or sell them at a major loss. This is especially acute if the FED enters an extended period of higher rates for longer after rapidly raising rates.

Put simply, why would investors choose to put their hard-earned dollars into long-term bond funds that are paying interest at about the same rate of similar quality short-term ones? We can see this if we directly compare the original long-term bond fund to a short-term one in the same mutual fund family:

Table #1 – Long-Term Fund Coupon Values

Coupon Range (%)	Fund (%)
0% or Paid In Kind	0.07
0-2	12.11
2-4	48.35
4-6	32.33
6-8	6.53
8-10	0.25
>10	0.01

Table #2 – Long-Term Fund Maturity Schedule

Maturity (Years)	Fund (%)
1-3	0
3-5	0
5-7	0.01
7-10	0.26
10-15	9.09
15-20	27.91
20-30	57.62
>30	4.76

Table #3 – Short-Term Fund Coupon Values

Coupon Range (%)	Fund (%)
0% or Paid In Kind	0
0-2	40.22
2-4	39.97
4-6	18.28
6-8	0.96
8-10	0.04
>10	0.03

Table #4 – Short-Term Fund Maturity Schedule

Maturity (Years)	Fund (%)
1-3	55.73
3-5	40.53
5-7	3.03
7-10	0.03
10-15	0
15-20	0
20-30	0.08
>30	0.04

If we do a little math and compare the weighted averages by choosing the midpoint of the coupon range (we'll use 5%, for a coupon range between 4%-6% and multiply that value by the percentage held, we get the following):

Long-term:  $(12\% \times 1 + 48\% \times 3 + 32\% \times 5 + 7\% \times 7) \sim 3.65\%$  Average Weighted Coupon Rate

Short-term:  $(40\% \times 1 + 40\% \times 3 + 18\% \times 5 + 1\% \times 7) \sim 2.57\%$  Average Weighted Coupon Rate

What this is telling us is that on average, the coupon rate of the long-term bond fund is approximately 1% greater than the short-term one after rate hikes. In this case we used two Vanguard funds with the same credit quality and within the same family that only differed by their bond maturity levels. When we consider that the long-term fund lost a whopping 27.22% in 2022, while the short-term fund lost only 5.54%, a 1% average coupon rate difference hardly seems worth the risk!

Therein lies the danger. Although both funds carry bonds of the same credit quality, it will take many years for the long-term version to be replenished with higher coupon notes. At this moment, new long-term bonds (similar to a 30-year fixed home loan), are paying coupon rates well above 7% to attract new buyers, but the fund can only replace a limited amount with new, higher paying notes, since only a small portion mature annually due to their long maturities (or the fund must sell existing ones at a major loss to purchase new ones). This lag effect built into long-term fixed income funds puts them at a great disadvantage after the FED's recent actions.

The short-term fund on the other hand will refresh a majority of its holdings within the first two to three years, and the interest rate paid by the fund will quickly reflect the rapid rate hikes pursued by the FED. Thus, it makes little sense for investors to consider long-term fixed income funds for quite some time, as short-term ones pay higher rates quickly and without the principal risk of their long-term cousins as we witnessed during 2022. There may even be a period where the average coupon rates of short-term funds exceed those of long-term ones due to this lag effect.

In summary, the Fed's recent rate hikes over the last 18 months has not only reminded investors how vulnerable long-term fixed income notes are to rate increases, but how long it may take for related long-term funds to become attractive to investors again.

### **About the Author**

Dan Goldberg is General Manager of Simi Valley Investment Services and a Registered Investment Advisor. He can be reached at:

1445 E. Los Angeles Ave., Ste 301-M  
Simi Valley, CA 93065  
Office (805) 210-2997 | Mobile (805) 914-8715  
Email: [dan@simi-investments.com](mailto:dan@simi-investments.com)