A Quantum of Solace - Replicating Bond-Like Returns

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A more detailed version of this paper is available to Graham's investors and other interested parties on request.

Abstract
Over the last couple of decades, bonds have been a reliable investment, added to portfolios to generate consistent long-term returns and provide crisis protection. Looking ahead and against the backdrop of meager yields that effectively cannot drop much lower, it is far from certain that their return potential and ability to offer protection will carry forward. With this in mind, we explore whether we can achieve a bond-like return profile via a suitable combination of different assets.

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1. Bonds in Trouble?

Bonds have been a reliable asset for portfolio protection purposes for at least 20 years, providing consistent long-term returns and steady performance in times of market crisis. In Figure 1, we reproduce a graph from a previous note (*The Winter's Tail - Protecting Against Equity Selloffs* (June 2020)), showing average crisis returns versus long-term average returns for a range of different assets.[1] All of these assets are commonly chosen to protect a portfolio against drops in equity markets (the S&P 500 is also included for reference). Generally, we find that there is a trade-off between crisis and long-term returns, with investors having to sacrifice one for the other. We see that bonds have not only delivered sizeable average crisis returns, but did so whilst retaining attractive long-term returns. In fact, of the assets that had long-term returns at least as good as bonds, only the Trend Index in Figure 1 did as well in terms of crisis protection. While not shown here, crisis performance for bonds was consistently good across crises, highlighting their historically reliable diversification potential. With yields hitting all-time lows, however, and effective lower bounds on yields resulting in potentially asymmetric return profiles, both their long-term returns and protective character are in jeopardy. The question is then whether we can replicate their typical return profile by suitably combining a range of different assets, allowing an investor to use this combination as a stand-in for bonds in the future.

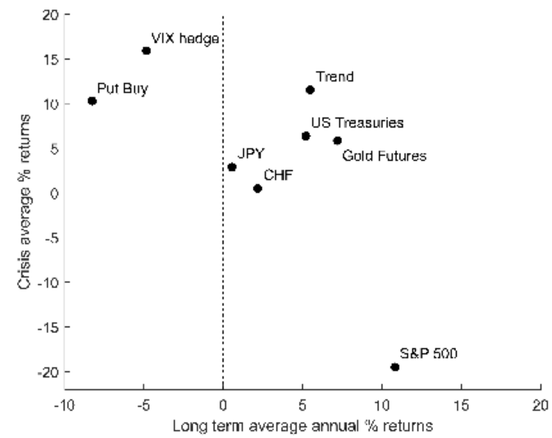

Figure 1. Average crisis returns and long-term average annual returns for a variety of investments.

2. Replicating Bond-Like Returns

To answer this question, we create portfolios of different assets and rule based strategies, where our asset selection and weighting is guided by maximizing crisis performance whilst penalizing portfolios for uncertainty in crisis returns, and example of which is shown in Figure 2. The figure resembles an efficient frontier. Starting from the left, we observe portfolios that perform very well in crisis times but offer little to no long-term return.

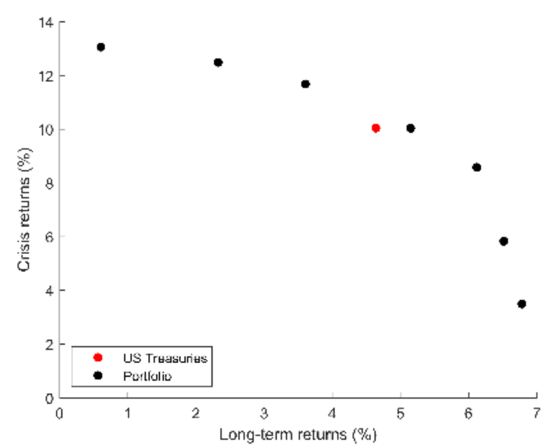

Figure 2. Average crisis returns and long-term average annual returns for a set of potential portfolios. The red dot represents US Treasuries and is included for reference.

[1] We use data going back to 2000, and define crises as DJIA drawdowns of at least 9% in magnitude.

As we scan right, portfolios begin to exhibit greater long-term return, but at the expense of some ability to protect in a crisis. Figure 2 also includes the performance of the US Treasuries in red. Comparing this with our portfolios shows that it is possible to deliver bond-like performance using just these constituent assets (for example with Portfolio 4).

Finally, we look at the performance of Portfolio 4 as the crises unfold in Figure 3. We focus on memorable crisis periods, and show returns for bonds and stocks for reference. Portfolio 4 offers returns comparable to bonds, while equities - by definition - suffer dramatically. (Note that our sample period contains six crises, and in one of them Portfolio 4 finishes down 8%, leading to the aggregate crisis return tabulated. In all other crises, Portfolio 4 is comparable to bonds and dramatically outperforms equities.) Figure 3 is informative because it shows 'how' the portfolios deliver their crisis return, not just the end result. Bonds have been very consistent, and any potential replacement should desirably exhibit similar behavior. We observe that our example portfolio is still reasonably consistent.

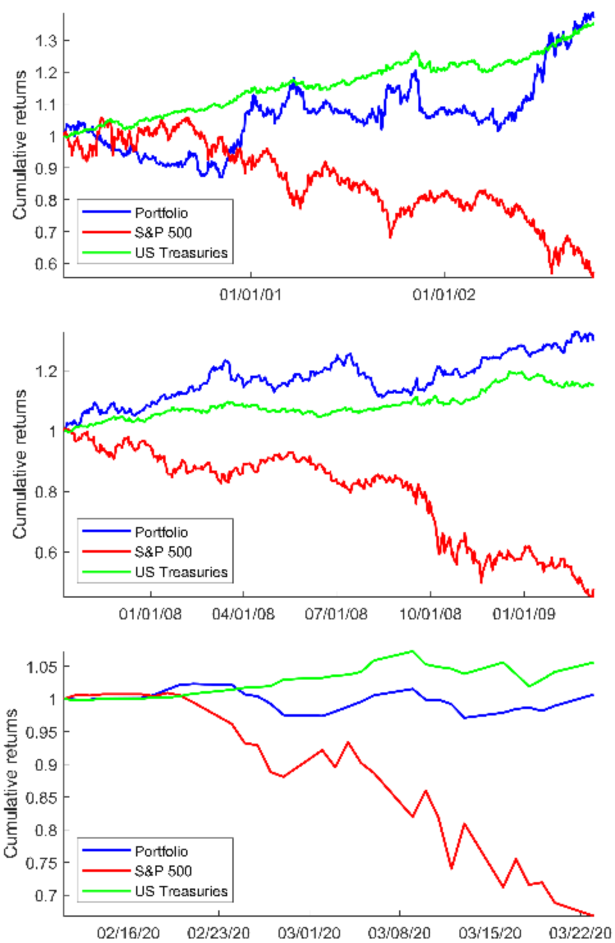

Figure 3. Cumulative crisis returns for sample Portfolio 4, as well as stocks and bonds, across different crises.

The analysis presented so far can be thought of as a proof of concept. Practically, more potential assets could be included in the universe, for example passive investments such as safe haven currencies, or other active strategies beyond the generic Trend Index included here. The latter have the advantage of delivering higher long-term returns than the former, but come at a cost.

In addition, any 'optimal' allocation strategy would of course not be static as shown here, but instead would be updated on a regular basis. Care needs to be taken in how such allocations are calculated, given the limited historical crisis data.

3. Conclusion

Bonds historically have provided an almost unbeatable combination of reliable crisis performance and good long-term returns. With market conditions as they are now, it is unclear if bonds can continue to deliver this performance. We find that by methodically combining other assets, we can replicate bond-like returns in a way that may function as a stand-in for bonds in the future.

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