

Should You Maintain an Allocation to Bonds When Current Rates Are Low?

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Article Highlights

- This article answers the question of whether an investor should avoid bonds as part of a diversified portfolio.
- Even during the rising rate period of 1977 to 1981, many bond indexes still delivered positive returns.
- As a portfolio is more diversified, the impact of any one asset class is reduced.

The performance of bonds is related to movement in interest rates. Those two phenomena are related—that much we know. How tightly they are related is a pertinent question at this point in time.

This article reviews how interest rate movement and bond returns have been related to each other since 1948. In addition, bond performance is considered in the context of an overall, multi-asset portfolio and not simply as a stand-alone asset. Finally, the performance of various portfolios in the “distribution phase” is examined, the phase when money is being systematically withdrawn from a portfolio. Bonds are typically included in distribution portfolios.



rate began its descent in 1982—not falling every year, but generally in decline. At the end of 2012, the rate was 0.75%. During the last 31 years (1982–2012) the average annualized return of U.S. intermediate bonds has been 8.82%.

Clearly, the last 31 years have been a wonderful environment for bonds to perform well as the Federal Reserve’s discount rate steadily descended. Interestingly, U.S. stocks (as represented by the S&P 500 index) performed essentially the same during both periods. From 1948 to 1981, when interest rates were rising, the S&P 500 index had an annualized return of 11.00%. During the recent 31-year period of declining interest rates, the S&P 500 index generated an 11.14% annualized return.

Whereas bond returns are markedly impacted by interest rate movement, stocks are largely immune—indeed, stocks march to a variety of different drummers. Furthermore, cash (as represented by the three-month T-bill) averaged 4.49% during the 34-year period of rising interest rates, and 4.72% during the 31-year period of declining interest rates.

With this review of interest rates and aggregate bond performance now in mind, a pertinent question at the present time is this: If I expect interest rates to rise, should I avoid bonds going forward? This question is addressed in two ways:

- Examining the performance of the various bond indexes (short, intermediate, long) in relation to historical changes in interest rates, and
- Examining the impact of bonds as an ingredient within increasingly diversified portfolios.

Before moving on, let’s resolve an assumption. In terms of utilizing bonds in an investment portfolio, are we talking

The Road Behind

Over the past 65 years (1948–2012) interest rates have risen, and then fallen. During the 34-year period 1948–1981, the Federal Reserve’s discount rate increased—not every year, but as a general trend. In 1948, the Federal Reserve’s discount rate was 1.34% and by 1981 it was 13.42% (see Figure 1). During this time frame of rising interest rates, the 34-year average annualized return for U.S. bonds was 3.83%. The year-to-year performance of U.S. bonds is represented by the vertical bars. U.S. bond performance is represented by intermediate-term U.S. government bond returns from 1948 to 1975 and the Barclay’s Capital Aggregate Bond Index returns from 1976 to 2012.

As shown in Figure 1, the Federal Reserve’s discount

about avoiding bonds as our only investment asset, or are we talking about avoiding bonds as one of the asset classes in our overall asset allocation model? This article assumes that we are addressing the latter question—that is, should an investor avoid bonds as an ingredient in a diversified portfolio? To those who invest all their money in one asset class—such as a 100% stock portfolio or a 100% bond portfolio—this article is not for you.

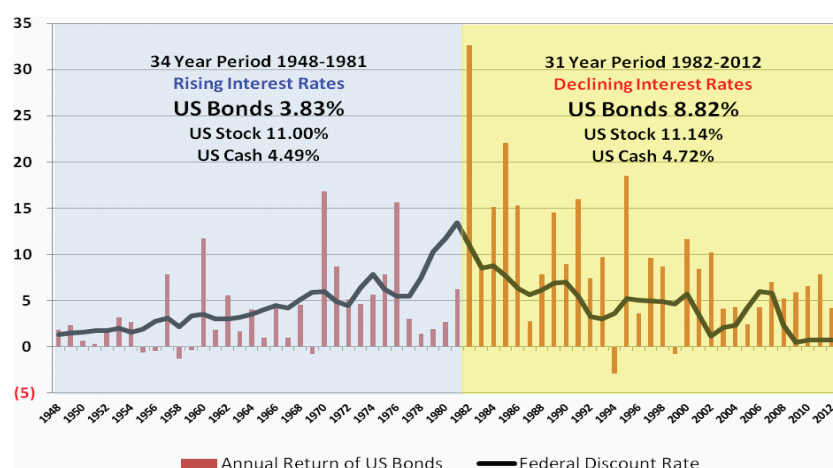
Performance Across Maturities

We have reviewed interest rate movement and aggregate U.S. bond performance over the past 65 years. Let's now consider bonds (i.e., bond indexes) of varying maturity/duration and their respective sensitivity to changes in interest rates in the economy since 1970. The online version of this article at AAIL.com includes a table that shows the annual total returns of several well-known bond (and T-bill) indexes ranging in maturity from short to intermediate to long for each year from 1970 to 2012 (not run here for space considerations). Also shown in this table are the Federal Reserve's discount rates from 1970 to 2012 and the performance of the Barclays U.S. Aggregate Bond Index.

During the five-year period from 1977 to 1981, the Federal Reserve discount rate rose from 5.46% to 13.42%. The five-year annualized return of the one-year T-bill was 9.84%, the short-term government/credit bond index had an annualized return of 6.61%, the intermediate-term bond index returned 5.63% and the long-term bond index returned -0.77%. The aggregate bond index produced a five-year return of 3.05%. During this particular five-year period of rising interest rates, the performance of these particular bond (and Treasury bill) indexes varied significantly based on average maturity—with shorter-maturity indexes posting impressive returns while the long-maturity index experienced a negative annualized return.

The subsequent five-year period from 1982 to 1986 was a period in which interest rates began to fall. By

Figure 1. Interest Rate Movement and U.S. Bond Performance



Sources: Ibbotson, Lipper, Morningstar and the Economic Report of the President. Intermediate-term U.S. government bond returns from 1948 to 1975; Barclay's Capital Aggregate Bond Index return from 1976 to 2012. Calculations by the author.

1986, the Federal Reserve's discount rate was 6.33%. The performance of the fixed-income indexes responded very positively, and the longer the average maturity, the better the performance. Whereas the long-term bond index had a -0.77% five-year return during the period of rising rates, it had a 22.85% five-year annualized return during a period of falling rates.

In more recent years, interest rates rose from 1.17% in 2002 to 5.96% in 2006—only to be followed by a period of declining rates from 2007 to 2012. Over the 11-year time frame 2002–2012, the performance of these particular fixed-income indexes was surprisingly similar between the two periods (when rates were rising and when rates were falling). It is worth noting that at its peak in 2006, interest rates were still under 6%. In contrast, interest rates peaked at over 13% in 1981. This would suggest that bond performance has not simply been related to changes in the interest rate, but also to the absolute level of the interest rate. Said differently, the rise and fall of interest rates in the most recent past has not produced nearly the difference in bond index performance as during the late 1970s and early 1980s.

One clear take-away is that during periods of rising interest rates, there

can be dramatic performance variation among fixed-income indexes. As would be expected, longer-maturity indexes will suffer more when interest rates rise. That said, in recent years this particular relationship has been less dramatic. (Another table published on AAIL.com, but not included here for space reasons, shows how different the various intermediate-term and long-term bond indexes have behaved on any given year. The year 2009 is particularly interesting.)

Performance in a Portfolio

A one-asset portfolio that held only U.S. bonds (U.S. intermediate-term government bonds from 1948 to 1975 and the aggregate bond index from 1976 to 2012) was clearly impacted by the interest rate movements during that particular period of time.

During the 34-year period of rising interest rates from 1948 to 1981, a non-diversified all-bond portfolio averaged 3.83% per year, whereas during the last 31 years it produced an average annualized return of 8.82% (see Table 1). The difference in return for an all-bond portfolio during these two distinct time frames was a staggering 499 basis points.

How about a two-asset portfolio? Let's assume the classic "balanced"

Table 1. Asset Allocation Across Time

	Period of Rising Interest Rates 1948–1981	Period of Declining Interest Rates 1982–2012
1-Asset Portfolio (100% U.S. bonds)		
Annualized Return (%)	3.83	8.82
Standard Deviation (%)	4.32	6.99
2-Asset Portfolio (60% large U.S. stocks/40% bonds)		
Annualized Return (%)	8.52	10.56
Standard Deviation (%)	10.49	11.33
4-Asset Portfolio (40% large U.S. stocks/20% small U.S. stocks/30% bonds/10% cash)		
Annualized Return (%)	9.52	9.99
Standard Deviation (%)	11.80	10.98

design with a 60% allocation to stocks (S&P 500 index) and a 40% allocation to bonds (rebalanced annually). The difference in performance between the two time periods (1948–1981 and 1982–2012) is much less dramatic for the two-asset portfolio, though bond performance was clearly favored in the more recent 31-year time period. The performance difference of 499 basis points in the all-bond portfolio shrinks to a 204-basis-point difference in a 60% stock/40% bond two-asset portfolio (10.56% vs. 8.52%).

A four-asset portfolio that allocated

40% to U.S. large-cap stocks, 20% to U.S. small-cap stocks, 30% to bonds, and 10% to cash (with annual rebalancing) generated an annualized return of 9.52% during the 34-year period when interest rates were rising and a 9.99% annualized return during the last 31 years in which rates were falling. The performance differential shrinks to a modest 47 basis points.

Clearly, as a portfolio is more diversified, the impact of the performance of one asset class on the overall portfolio (assuming the allocations are not heavily skewed toward only one asset)

is dramatically reduced. This is precisely why portfolios should be diversified: By doing so, we lower risk by not allowing the bad performance of one particular asset class to sink the portfolio's overall returns.

Let's now examine how the performance of bonds (actual, worst case and best case) impacted a broadly diversified 12-asset portfolio, using a portfolio I have designed known as the 7Twelve portfolio.

The 7Twelve portfolio includes 12 asset classes that are equally weighted at 8.33% of the portfolio. The asset classes are large U.S. stocks, mid-cap U.S. stocks, small-cap value U.S. stocks, non-U.S. developed stocks, emerging non-U.S. stocks, real estate, natural resources, commodities, U.S. bonds, TIPS (Treasury Inflation-Protected Securities), non-U.S. bonds and cash. Each asset class is rebalanced annually.

During the 10-year period from January 1, 2003, to December 31, 2012, the performance of the investable 7Twelve portfolio (using the performance of 12 underlying exchange-traded funds) was 9.79% (see Table 2). The performance of U.S. bonds in isolation during this 10-year period (using the Barclay's Capital Aggregate Bond Index) was 5.16%. Recall, U.S. bonds represent 1/12 of the 7Twelve portfolio.

Next, I inserted the worst 10-year performance for U.S. bonds since 1948 and measured the impact within a broadly diversified, 12-asset portfolio. As shown, the worst 10-year period for U.S. bonds between 1948 and 2012 was 1950–1959, when the 10-year annualized return was 1.34%. The overall return of the 12-asset portfolio dropped from 9.79% to 9.44%, a modest decline of 35 basis points.

Finally, I inserted the returns of the best 10-year period for U.S. bonds, which happened to be the period 1982–1991. During this 10-year period, U.S. bonds generated a 10-year annualized return of 14.09%. The impact of superior bond returns on the portfolio was beneficial, of course. The 10-year return of the 12-asset 7Twelve portfolio increased to 10.48%.

Table 2. Three Bond Scenarios

	10-Year Annualized Return (%)		Growth of \$10,000 in a Diversified Portfolio (\$)
	U.S. Bonds	12-Asset Portfolio*	
Actual performance: 2003–2012	5.16	9.79	25,455
Worst-case performance: 2003–2012 using U.S. bond returns from 1950–1959	1.34	9.44	24,654
Best-case performance: 2003–2012 using U.S. bond returns from 1982–1991	14.09	10.48	27,099
Difference between worst-case & best-case bond performance	1,275 basis points	104 basis points	2,455

*U.S. bonds has an 8.33% allocation (or 1/12th) in the 7Twelve portfolio. All 12 assets were rebalanced annually over the 10-year period. Performance of the 7Twelve portfolio using performance of 12 underlying ETFs (www.7TwelvePortfolio.com).

Table 3. 15-Year Retirement Portfolio Survival Test (1998–2012)

\$500,000 starting balance on January 1, 1998; 5% initial withdrawal; 3% COLA (annual cost of living adjustment)						
Retirement Portfolio	1-Asset Portfolio	2-Asset Portfolio*	2-Asset Portfolio*	4-Asset Portfolio*	12-Asset Portfolio*	1-Asset Portfolio
Asset Allocation Model	Very Conservative	Conservative	Traditional	Moderate	Moderately Aggressive	Very Aggressive
Portfolio Components	100% cash	cash and bonds (50% in each)	U.S. stocks and bonds (60% stocks, 40% bonds)	large stocks, non-U.S. stocks, bonds, cash (25% each)	12-asset 7Twelve Model (8.33% each)	100% large U.S. stocks
Internal rate of return(% IRR)	2.65	4.15	5.07	4.57	7.73	3.93

*The multi-asset portfolios were rebalanced at the start of each year.

Consider the Context

For an investor who places all of his investments in one asset, such as bonds or stocks or real estate, timing is everything. As it pertains to bond performance, the difference between the worst-case 10-year time period and best-case 10-year time period for a 100% U.S. bond portfolio was nearly 1,300 basis points.

For an investor who utilized bonds within a diversified portfolio (in this analysis, a 12-asset model), the performance differential between the worst-case bond period and the best-case bond period was 104 basis points. For a \$10,000 portfolio, that's a difference of \$2,455 in ending account value. Completely avoiding any asset class in a diversified portfolio amounts to a guess that it will underperform and that another asset class will outperform. Building prudent portfolios is NOT about guessing and timing, it's about broad diversification.

By design, a diversified investment portfolio is insulated—not completely, but largely—from the normal swings in performance among its various components. The underperformance of one or several of its ingredients will not sink the performance of the overall portfolio. Moreover, and also by design,

a strategically built, diversified portfolio will always include asset classes that have underperformed over the most recent time frame. This is unavoidable in a diversified, multi-asset portfolio. If a portfolio includes 12 (for example) asset classes, they will not all have the same return. Some assets will outperform and some will underperform. It's the overall performance of the entire portfolio—as a team—that matters.

Obviously we can't predict with accuracy the future returns of various asset classes, but based on the past it is clear that building diversified portfolios liberates us from needing to make such predictions.

The Retirement Phase

Six different asset allocation models were tested in “distribution mode” to simulate the experience of an investor in retirement when money is being withdrawn from their portfolio (in this analysis, at the end of each year).

As shown in Table 3, the six models consisted of: 100% cash; 50% cash/50% aggregate bonds; 60% U.S. large-cap stocks/40% bonds, which is the classic “balanced” model; 25% each in U.S. large-cap stocks, non-U.S. stocks, bonds and cash; the 12-asset 7Twelve model;

and 100% large U.S. stocks.

As can be seen, the broadly diversified 12-asset model outperformed all the other models (one of which, 100% U.S. stocks, is admittedly not a traditional retirement account model) by a significant margin in this “distribution portfolio” analysis.

The results reported in Table 3 clearly demonstrate that diversification is a valuable portfolio construction guideline for distribution portfolios during the post-retirement years. Said differently, if diversification makes sense during the pre-retirement accumulation years, it should still make sense during the post-retirement distribution period. Simply relying upon cash and bonds as the bulk of a retirement portfolio appears to be an unwise bet as we peer into the future.

If the last 15 years are any sort of indicator of the future, building a broadly diversified retirement portfolio is both prudent and logical—and beneficial. In short, the era of simply diversifying among two asset classes (stocks and bonds) is over. The good news is this: With an ever-expanding array of mutual funds and exchange-traded funds (ETFs) that represent all manner of asset classes, it's never been easier to build diversified portfolios. ▲

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