# Research on a Levered 60/40 Approach vs. 100% Equities

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Following the launch of the WisdomTree 90/60 U.S. Balanced Fund (NTSX), Cliff Asness, co-founder of AQR Capital Management, commented on Twitter that although he had a "22-year head start" from a research perspective (linking to a piece he wrote in December of 1996 serving as Goldman Sachs Asset Management's director of quantitative research), WisdomTree managed to "beat him" in launching this type of levered 60/40 idea in an exchange-traded fund.

In Asness's 1996 piece, titled "Why Not 100% Equities: A Diversified Portfolio Provides More Expected Return per Unit of Risk," one of his core arguments was that an "investor willing to bear the risk of 100% equities can do even better with a diversified portfolio."

Asness showed how the use of leverage, which we discuss below, when applied to a traditional 60/40 strategy, could achieve a similar volatility of the 100% equity exposure but could help improve the return. Asness's paper, based on data from 1926 through 1993, applied a 155% leverage rate to a 60/40 portfolio (applied monthly), where the borrowing rate used for leveraging his 60/40 portfolio was done at a cost of financing by the one-month t-bill rate. This is a table from his paper:

**Figure 1: Return and Volatility Table from Asness's "Why Not 100% Equities" Paper**

**EXHIBIT 3**
Effect of Leverage (%)

| Portfolio | Compound Return | Standard Deviation |
|---|---|---|
| 100% Stocks | 10.3 | 20.0 |
| 100% Bonds | 5.6 | 6.8 |
| 60% Stocks, 40% Bonds | 8.9 | 12.9 |
| Levered 60/40 | 11.1 | 20.0 |

**Stocks are represented by the S&P 500. Bonds are represented by the Ibbotson total return series for long-term corporates. The 60/40 portfolio is a combination of 60% the S&P 500 and 40% long-term corporates, rebalanced back to 60/40 every month. The levered 60/40 portfolio invests 155% each month in the 60/40 portfolio, and −55% each month in the one-month T-bill.**

Source: Cliff Asness, "Why Not 100% Equities," The Journal of Portfolio Management, 1996. Research conducted with data from 1/31/1926 through 12/31/1993. Past performance is not indicative of future results. Index performance does not represent actual fund or portfolio performance. A fund or portfolio may differ significantly from the securities included in the index. Index performance assumes reinvestment of dividends but does not reflect any management fees, transaction costs or other expenses that would be incurred by a portfolio or fund, or brokerage commissions on transactions in fund shares. Such fees, expenses and commissions could reduce returns. WisdomTree, its affiliates and their independent providers are not liable for any informational errors, incompleteness or delays or for any actions taken in reliance on information contained herein. Bond total returns are represented by a time series of long-term corporate bonds, aggregated and calculated by Ibbotson.

*For definitions of terms in the chart, please visit our glossary.*

**The Asness Research vs. the WisdomTree 90/60 approach**

While aspects of the two are similar, there are, of course, some very important differences between the approach of the WisdomTree 90/60 U.S. Balanced Fund and its targeted exposures from the research that Asness published.

The similarities between the two strategies come from the equity exposures. The large-cap 'equity beta' exposure in the WisdomTree Fund targets S&P 500-like returns, are as such, overlaps what we see in Asness' piece. However, there are more distinct differences on the bond exposure side of the equation.

Asness showed returns for bonds using the long-term corporate series from Ibbotson, funding these bond returns by borrowing at the one-month t-bill rate, so an investor could earn both credit and duration premiums over the t-bill rate.

**Bond Futures vs. Corporates**

WisdomTree is implementing bond exposure in the WisdomTree 90/60 U.S. Balanced Fund through laddered Treasury bond futures. No one earns "credit risk" premiums through this Treasury bond futures exposure, so there is less additional income to be earned from that perspective.

Although there are very important differences between our strategy implementation and the Asness study, we think that study is very useful in understanding the market dynamics at work in a levered 60/40

approach. Thus, we wanted to replicate and update the results of Asness's paper for the next 25 years to see how his research would have worked after the article was published.

Our calculations use the same Ibbotson data series and methodology: borrowing -55% at the one-month t-bill rate that finances the 155% exposure every month in the 60/40 mix of S&P 500 and the Ibbotson corporate bond series. Our independent calculation of Asness's test showed the same compound return figures.

**Figure 2: WisdomTree's Replication of Asness's Results (1/31/1926–12/31/1993)**

*Asness Replication, 1/31/1926-12/31/1993*

| Portfolio | Annualized Total Return | Annualized Volatility |
|---|---|---|
| 100% Stocks | 10.3% | 20.1% |
| 100% Bonds | 5.6% | 6.8% |
| 100% Cash | 3.7% | 0.9% |
| 60% Stocks, 40% Bonds | 8.9% | 12.9% |
| Levered 60/40 | 11.1% | 20.1% |

*Extended, 1/31/1926–7/31/2018*

| Portfolio | Annualized Total Return | Annualized Volatility |
|---|---|---|
| 100% Stocks | 10.1% | 18.7% |
| 100% Bonds | 5.9% | 7.5% |
| 100% Cash | 3.3% | 0.9% |
| 60% Stocks, 40% Bonds | 8.9% | 12.1% |
| Levered 60/40 | 11.4% | 18.8% |

*Extension, 1/1/1994–7/31/2018*

| Portfolio | Annualized Total Return | Annualized Volatility |
|---|---|---|
| 100% Stocks | 9.6% | 14.3% |
| 100% Bonds | 7.0% | 9.1% |
| 100% Cash | 2.4% | 0.6% |
| 60% Stocks, 40% Bonds | 8.9% | 9.6% |
| Levered 60/40 | 12.2% | 14.9% |

Sources: WisdomTree, Ibbotson, Morningstar Direct, as of 7/31/18. Past performance is not indicative of future results. You cannot invest directly in an index. Index performance does not represent actual fund or portfolio performance. A fund or portfolio may differ significantly from the securities included in the index. Index performance assumes reinvestment of dividends but does not reflect any management fees, transaction costs or other expenses that would be incurred by a portfolio or fund, or brokerage commissions on transactions in fund shares. Such fees, expenses and commissions could reduce returns. WisdomTree, its affiliates and their independent providers are not liable for any informational errors, incompleteness or delays or for any actions taken in reliance on information contained herein. The research shown is not a back test or hypothetical representation of NTSX.

*For definitions of terms in the chart, please visit our glossary.*

When we updated the figures for the next 25 years, we saw that stocks returned a bit lower over that time, dragging down the full-period returns for equities but also lowering equity volatility. While the compounded S&P 500 returns ticked down 20 basis points (bps) from 10.3% to 10.1% when updated through 2018, the bonds compounded returns ticked 30 bps higher, from 5.6% to 5.9%, so a 60/40 portfolio had unchanged returns at 8.9%.

Because cash rates generally also ticked down over the 25-year period after Asness published the paper, the levered 60/40 returns using Asness's assumptions/calculations ticked up 30 basis points from 11.1% to 11.4% when updated to 2018, and the spread between 100% equities and the levered 60/40 widened out from 80 bps at the time of his original study to 130 bps over the full 1926–2018 period. When people publish research, often the research itself gets a reputation of "failing to replicate out of sample." Asness's study, and the levered 60/40 portfolio utilizing the same approach he outlined in the paper, actually saw portfolio returns outperform in the following 25-year period compared to its historical back test. The levered 60/40 portfolio returned 12.2% for the 1994–2018 period, 260 bps ahead of the 100% equity line, compared with only 80 bps during his original test.

**Current Equity vs. Bond Debates**

Right now, one of the core asset allocation conundrums remain: interest rates generally are still near their lowest levels, and, as such, one doesn't earn as much from bonds as in the past. Similarly, equity valuations are extended from historical levels, so forward-looking equity returns are also lower than normal.

The conundrum for traditional asset allocators, however, is that equity premiums (how much compensation stocks are offering over safe assets like bonds) are likely still favoring stocks in asset allocation models.

Professor Jeremy Siegel, under whom I have studied extensively, believes the current equity premium over bonds is around 4.5%, whereas his work historically over the last 200 years shows the real equity premium was closer to 3%.

Shifting bond exposures to equities, which have higher volatilities, when they are at high valuations is not easy to do. Substituting some of the traditional equities with a package of equities that also increases bond exposure could perhaps help solve one of these key asset allocation debates facing investors: stocks or bonds? Why not both for the same dollar invested?

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