ASPEN MANAGED FUTURES BETA INDEX QUARTERLY COMMENTARY THIRD QUARTER 2017

The third quarter of 2017 had no shortage of economic and geopolitical events. Tensions with North Korea grew to new levels. The Federal Reserve announced the beginning of balance sheet reduction. Multiple hurricanes ravaged the Caribbean and several southeastern US states. Obamacare rollbacks failed again and an outline for tax reform was introduced. Yet the effect on the markets was extraordinarily minimal, as a historically low-volatility backdrop continued for another quarter. A few equity-focused indicators:

- Through quarter-end, the VIX volatility index had closed below 10 twenty-five times. In the previous 27 years of VIX's existence, it had closed at single-digit levels only nine times. The long-run average VIX level is above 19, more than 70% higher than the 2017 average.[1]
- The S&P 500 has not suffered a 5% correction in 66 weeks, a 10% correction in 85 weeks, or a 20% correction (i.e., a bear market) in 424 weeks. The historic averages for those figures are 10, 33, and 127 weeks, respectively.[2]
- On a total return basis, the S&P 500 has been up eleven consecutive months, the longest such streak in at least the last 30 years.[3]

As noted before, other markets (international, fixed income, currency, commodity) are also experiencing abnormally low levels of volatility. The impact of this backdrop on Aspen Managed Futures Beta Index ("AMFBI" or "Index") returns is investigated in the "Performance Overview" section below. We follow that with an extended "Informational Spotlight" section investigating the potential long-run benefits of a trend following allocation in a retirement portfolio. This commentary will conclude with a brief look at what is ahead.

Performance Overview

As we've mentioned in previous commentaries, while a low-volatility backdrop often benefits equities and other risk assets, it is typically not an auspicious backdrop for a trend following strategy. However, we've also noted that low-vol market activity does not usually produce significantly poor results either. In fact, the best *and* worst performance periods for trend following tend to occur in high volatility backdrops—which is essentially the definition of high volatility anyway—though over time those high-vol periodic returns tend to produce meaningfully positive end-to-end performance, particularly for a non-volatility targeted trend program like AMFBI. Low-vol backdrops typically produce smaller up and down moves, averaging out over time to relatively small gains or losses overall—i.e., low volatility markets tend to produce "boring" returns for trend following more often than outright poor returns. This tendency made the worst-quartile Index returns in the first and second quarters rather unusual, which is why the commentaries for those quarters focused in great detail on the idiosyncratic, event-driven causes of those losses.

[1] Source: Bloomberg/CSI data and Aspen calculations.
[2] Source: Ned Davis Research through 7/10/2017, Aspen calculations thereafter.
[3] Source: Bloomberg data and Aspen calculations.

In the third quarter, the Index returned to historic form given the extremely low levels of market volatility. One moderate up month (+1.71% in July) and two moderate down months (-1.68% in August and -0.72% in September) resulted in just a -0.72% quarterly return for AMFBI. In fact, the high and low for the Index over the entire quarter were separated by just 2.6%. In more volatile backdrops, AMFBI can occasionally move up or down by more than that amount in a single day. On an excess return attribution basis, the Trend sub-model contributed -0.27% to Index returns, and the Counter-Trend sub-model contributed -0.35%.

Fixed Income Downtrends

The analysis of second quarter performance in the previous commentary concluded with a discussion of the European "taper tantrum" at the end of June, including speculation that the markets' knee-jerk reaction to Mario Draghi's unexpectedly hawkish comments might not yet have fully played itself out as the quarter turned over. Short fixed income futures positioning, which AMFBI had already adopted prior to the Draghi speech, was deeply entrenched entering June, due to the rising rates of the mini-tantrum. The tantrum itself actually petered out quickly, with European equities hitting a local bottom on June 30. But short global sovereign bond futures positions continued to be profitable for the month of July.

Those July gains and more were given back in August as interest rates moved back downwards. The August movement, though gradual, was strong enough over the course of the month to overcome even the signals from the June tantrum, so that Index positioning was actually back to net long fixed income by the end of that month. However, long positioning was also short-lived, as another, relatively minor, uptick in rates moved the model back to net short in September. Renewed short positioning was able to post a small profit in September, but for the full quarter the Trend model was mildly unprofitable in fixed income overall.

Choppiness in fixed income is likely the primary contributor to AMFBI's mild underperformance of CTA category averages in Q3 (e.g., the BTOP50 Index, which returned +0.46% for the quarter). Long fixed income "tilts" are among the methods employed by trend following CTAs whose mandate is more focused on stand-alone return and less focused on diversification characteristics. Managers with such models are much more likely to have remained on the long side—or reverted to the long side much more quickly—in the third quarter, thus potentially avoiding some of the whipsaw action sustained by AMFBI. Our confidence in this explanation is strengthened by the fact that AMFBI actually outperformed trend following industry averages in July and September (when short fixed income positioning was somewhat profitable) but underperformed by a greater amount in August (when short fixed income positioning was unprofitable).

Currency Uptrends

A sustained drop in the US dollar relative to global currencies was a bright spot in Q3, enabling long FX futures trend positioning in AUD, CAD, and EUR to post profits. The decline in the dollar generally coincided with growing optimism for the prospects of global economic growth. Other indicators of relative strength include the fact that international equities are performing even better than their US counterparts. For example, the MSCI World ex US Index is outperforming the S&P 500 by about 500 basis points year-to-date through September. Notably, that outperformance is most pronounced since mid-March, which is approximately the same time that the dollar's retreat began in earnest. For the full quarter, AMFBI gained 0.86% from currency trends.

Unfortunately, currency uptrends met with reversals in the last two weeks of the quarter, partly due to hawkish signaling from the Federal Reserve (including the beginnings of balance sheet reduction) and possible renewed market optimism about the prospects for US tax reform legislation. The jump in the dollar in those last two weeks occurred across the board, but was most pronounced among higher-yielding currencies, such that what had been small September and Q3 gains for both the Trend and Counter-Trend sub-models reversed into small monthly and quarterly losses for both sub-models instead.

Miscellaneous Additional Performance Notes

In a relatively unexciting market backdrop, a few additional scattershot performance highlights stand out:

- The most profitable market in AMFBI year-to-date is the S&P 500, which has been on the long side all year long. Through quarter-end, the Trend model has been on the long side in the S&P market for 65 consecutive weeks, and 79 of the last 80 weeks.
- While other equity markets have occasionally been short for brief periods of time, equities have been net long for most of the year, and that positioning has generally been profitable. Equities remain the only profitable asset class in the Index this year.
- A strong, sustained uptrend allowed copper to surpass sugar as the most successful commodity trade year-to-date. At one point, the long copper trade was profitable for nine consecutive rebalance weeks.
- Beyond sugar and copper, commodity trend trading remains deeply problematic, with 2017 losses in commodities exceeding those in fixed income and currencies combined. The abysmal performance of a number of commodity-heavy CTA programs tends to confirm the conclusion that 2017 is an outlier to the downside for trend following in physical commodity futures.

Whitepaper Preview: Trend Following Benefits in Retirement

A difficult backdrop for trend following in a strong return environment for traditional portfolios has been a recurring theme in the post-crisis years. To help keep in perspective the complementary roles of uncorrelated return streams, it's valuable to look back over a longer history that includes full market cycles for all asset classes. Toward that end, at the suggestion of one of our clients, we built a presentation modeling the benefits of trend following for a sustainable annual withdrawal path in retirement. The presentation, which is available on request, is designed to provide advisors and investors with a quick, at-a-glance, yet self-explanatory overview of the potential benefits of including trend following as part of a traditional stock/bond portfolio in the withdrawal stage of the investment lifecycle. Below we present a sneak peak at a more detailed whitepaper on the subject, which will be forthcoming in the near future.

Introduction: Goal and Assumptions

In the broadest sense, we assume that an investor's goal in the "decumulation" phase is to ***maintain a consistent annual income, adjusted for cost of living increases, throughout retirement***.

For this analysis, we will assume that the investor has $1,000,000 of investments at retirement, and plans to withdraw $40,000 (4%) in the first year. From there, for simplicity, we will assume 2.5%/year inflation in the cost of living, to be offset by a 2.5%/year increase in the amount to be withdrawn.

As a final goal, the investor ideally would prefer that invested capital (i.e., investment net worth, the key annual metric we will analyze below) never falls below $500,000 (half of initial investment) over the course of a full 30-year retirement. This last requirement provides a measure of comfort as retirement progresses, a margin of safety for unforeseen extraordinary expenses, and—barring such unforeseen expenses—enables a significant bequest. (Notably, if extraordinary expenses are not a concern and if leaving a bequest is not one of a retiree's goals, an annuity with a cost-of-living adjustment could be a viable alternative to an investment portfolio. Pros and cons to this approach will be discussed in the upcoming whitepaper.)

Note that the dollar amounts that we've selected for analysis aren't as important as the percentages. For example, a retiree with $10MM wishing to withdraw an inflation-adjusted $400,000/year, with a preferred net worth floor of $5MM, would be facing the exact same set of decisions.

A couple other housekeeping items before we proceed: Outside of invested assets, other sources of retirement income (e.g., Social Security), are assumed to be the same under all investment scenarios, and so are ignored for this analysis. Also ignored for simplicity are tax considerations. You can think of this exercise as though the invested assets are in a Roth-style retirement account, or alternatively you can consider the figures as after-tax equivalents on a traditional-style tax-deferred investment vehicle. In a taxable account, tax treatment would render this analysis significantly more complex, but would not likely substantively alter the broad conclusions.

Investment Portfolios to be Examined

We will consider the retirement withdrawal performance on investment portfolios with varying combinations of stocks, bonds, and trend following. For stocks we use the S&P 500 Index of U.S. large-cap equities. For bonds we use the Bloomberg Barclays U.S. Aggregate Bond Index. For trend following we will use the Aspen Managed Futures Beta Index, as available from 2003 forward. However, as we wish to examine data stretching back to 1987, we will use the BarclayHedge BTOP50 Index—a managed futures benchmark—as the trend following return stream prior to 2003.

It is of course possible to run this analysis with other benchmarks, such as world stocks and bonds, or including other asset classes. While the precise outcomes obviously differ with different benchmark selections, the qualitative conclusions are likely to be the same relative to any portfolio that generally conforms to the historic return patterns of a traditional stock/bond portfolio.

We will investigate retirement outcomes with stock-only and stock/bond portfolios, with or without an allocation to trend following. Specifically, we consider the following portfolios, delineated by the indicated light/dark blue/red markers.

- **"Stocks":** 100% stock investments
- **"Stocks & Trend Following":** 80% stocks and 20% trend following
- **"Stocks & Bonds":** 60% stocks investments and 40% bond investments
- **"Stocks & Bonds & Trend Following":** 80% "Stocks & Bonds" portfolio and 20% trend following (equivalent to 48% stocks, 32% bonds, and 20% trend following)

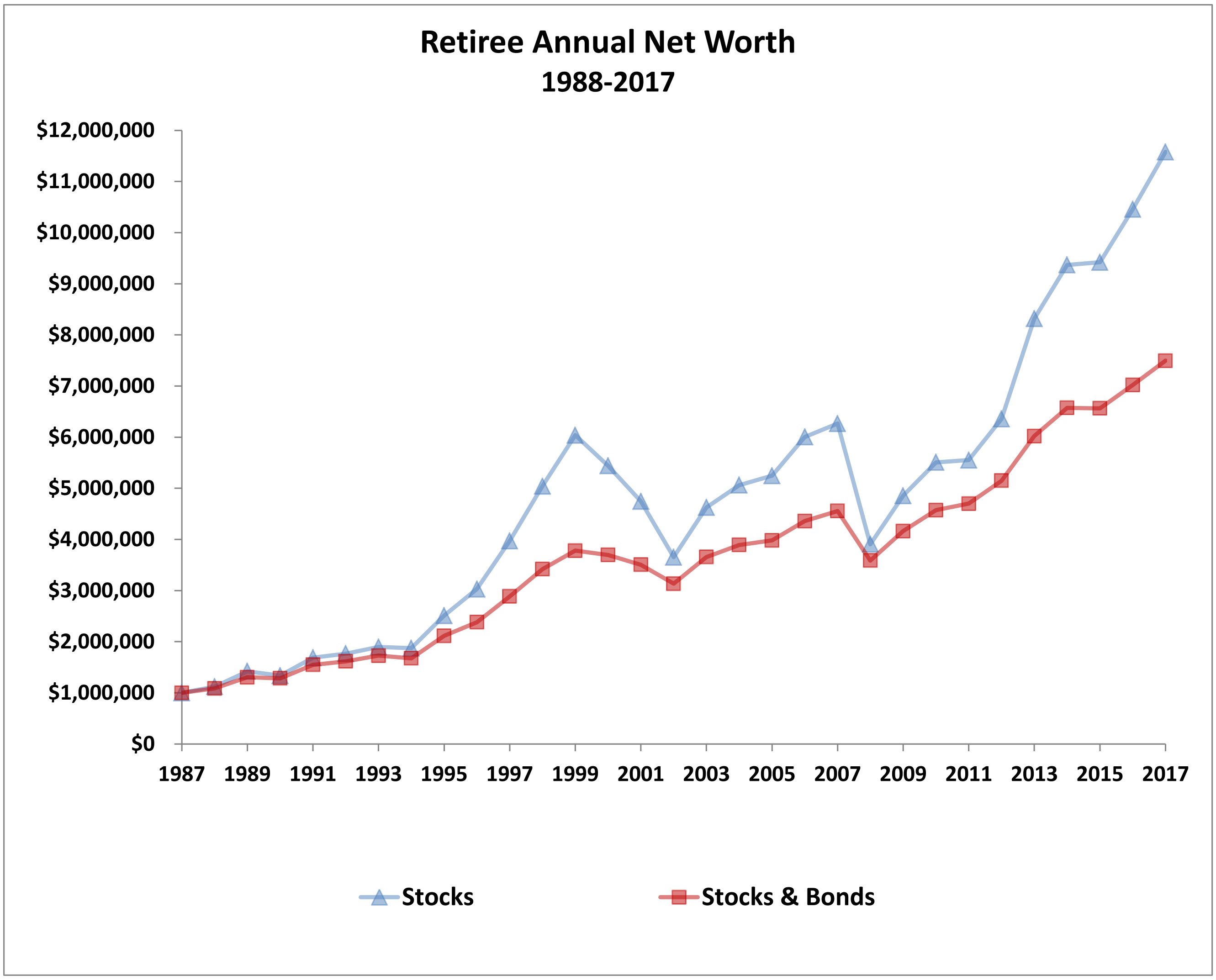
As with the selection of benchmarks, the choice of weightings is somewhat arbitrary. Qualitatively, the results to be investigated below would be similar under a wide range of allocations, though it is an obvious truism that a larger (smaller) trend following allocation will have a more (less) significant impact on retirement outcomes.

Several scenarios are investigated below. The principles to be illustrated include the following:

- When stock/bond returns are good, particularly in the early years of retirement, success is virtually inevitable. Trend following adds little in this case, but it also does not detract significantly from the positive outcome—at any rate, not in a manner that would put income goals at risk.
- When stock/bond returns are poor, particularly in the early years of retirement, sustainable income goals may be in danger. In this scenario, trend following can be a highly beneficial aid toward maintaining a sustainable retirement income.

Illustration #1: Strong Stock/Bond Backdrop (1988-2017)

To illustrate the first bullet point above, consider someone who retired on 12/31/1987 (so the full year 1988 was the first year of retirement), such that a 30-year retirement ends in 2017.[4]

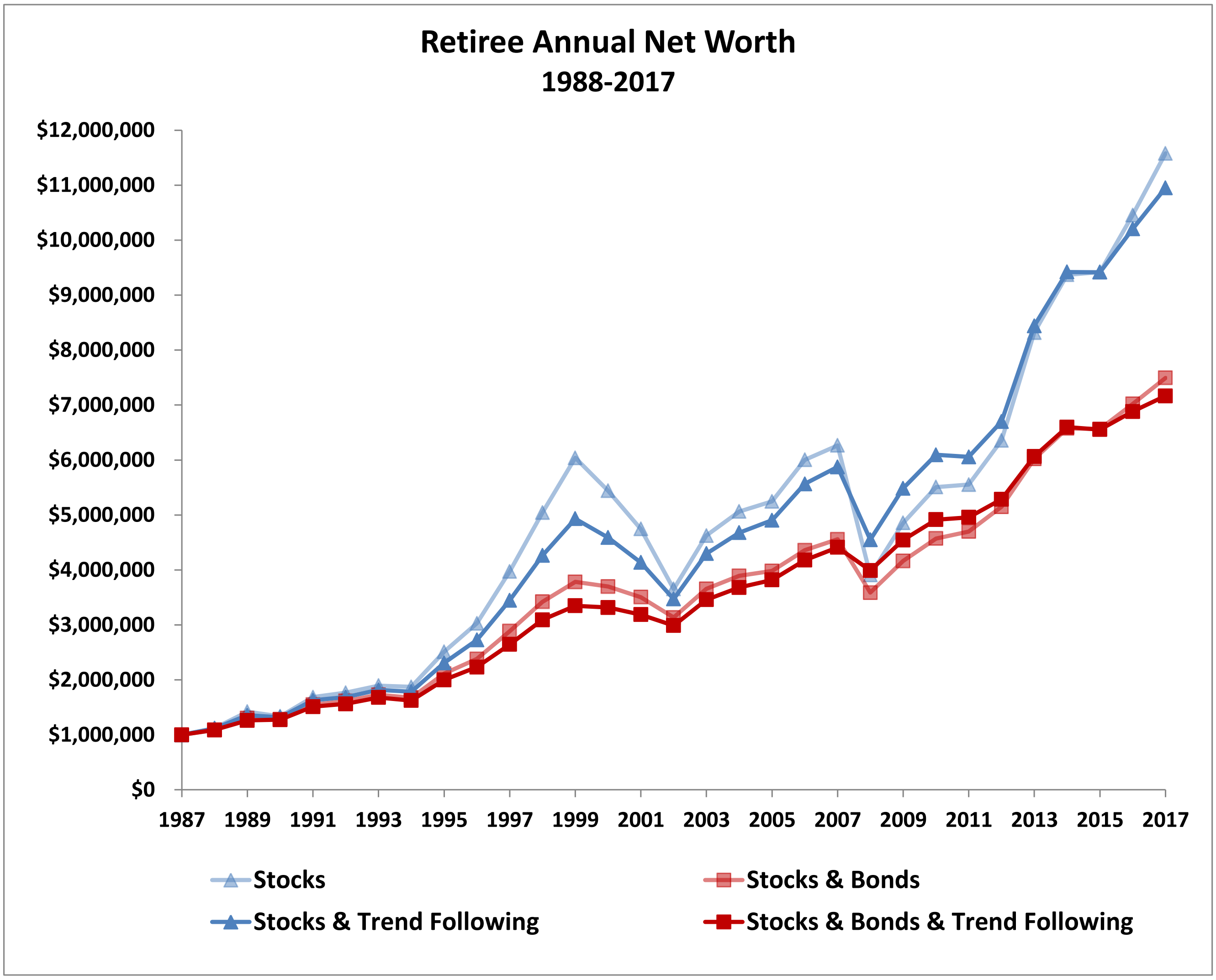


[4] 2017 returns are considered through the month of August.

The early years of this investor's retirement witness a string of strong performance from traditional assets, such that either the stock-only or the stock/bond investor achieve a sort of "escape velocity" with net worth growing several-fold over the course of the retirement years, withdrawals notwithstanding. The stock-only investor begins with $1 million in investments, completes all scheduled cost-of-living-adjusted annual withdrawals, and still winds up with over $11 million in terminal net worth. For the stock and bond investor, the final net worth figure is over $7 million.

Of course, both portfolios do endure the drawdown years of the Tech Wreck (2000-2002) and Great Financial Crisis (2008), but by then the tailwind of a decade-plus of strong investment performance has virtually eliminated the possibility of late-year asset depletion, even in the event of major bear markets.

The next figure illustrates what occurs if the stock or stock/bond investor employs trend following as well. The simple answer is that not much changes. By the final year, a traditional-only investor would have a slightly higher net worth, though at various times—including just a few years earlier—the portfolio with trend following is mildly ahead. Thus end-to-end performance, and even intermediate performance, is largely unchanged.

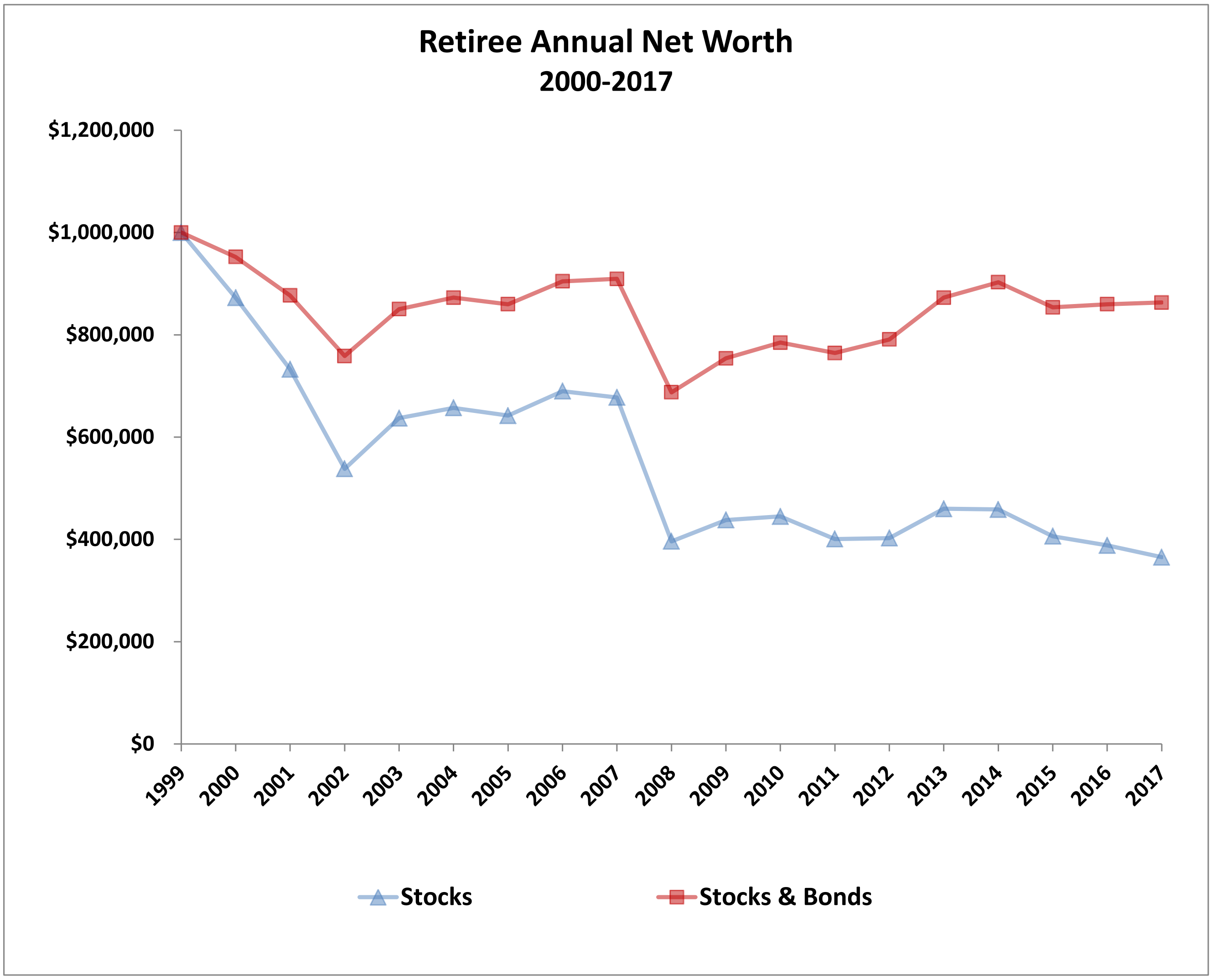


The investment strategy presented is not appropriate for every investor and you should review with your financial advisor(s) the terms and conditions and risk involved with specific products or services.

In other words, in a backdrop where traditional investments provide ample performance to support retirement goals, trend following may not enhance performance; however, because trend drawdowns and negative performance periods tend to be relatively minor in magnitude, the inclusion of trend following historically also would not substantially detract from performance, and certainly wouldn't put otherwise stable retirement goals at risk. Moreover, the inclusion of trend following performance as an uncorrelated return stream does decrease the year-to-year volatility of the retiree's asset base, so it could still be viewed as a good diversifier even when it is not required, such as in the 1988-2017 scenario.

Illustration #2a: Weaker Stock/Bond Backdrop (2000-2017)

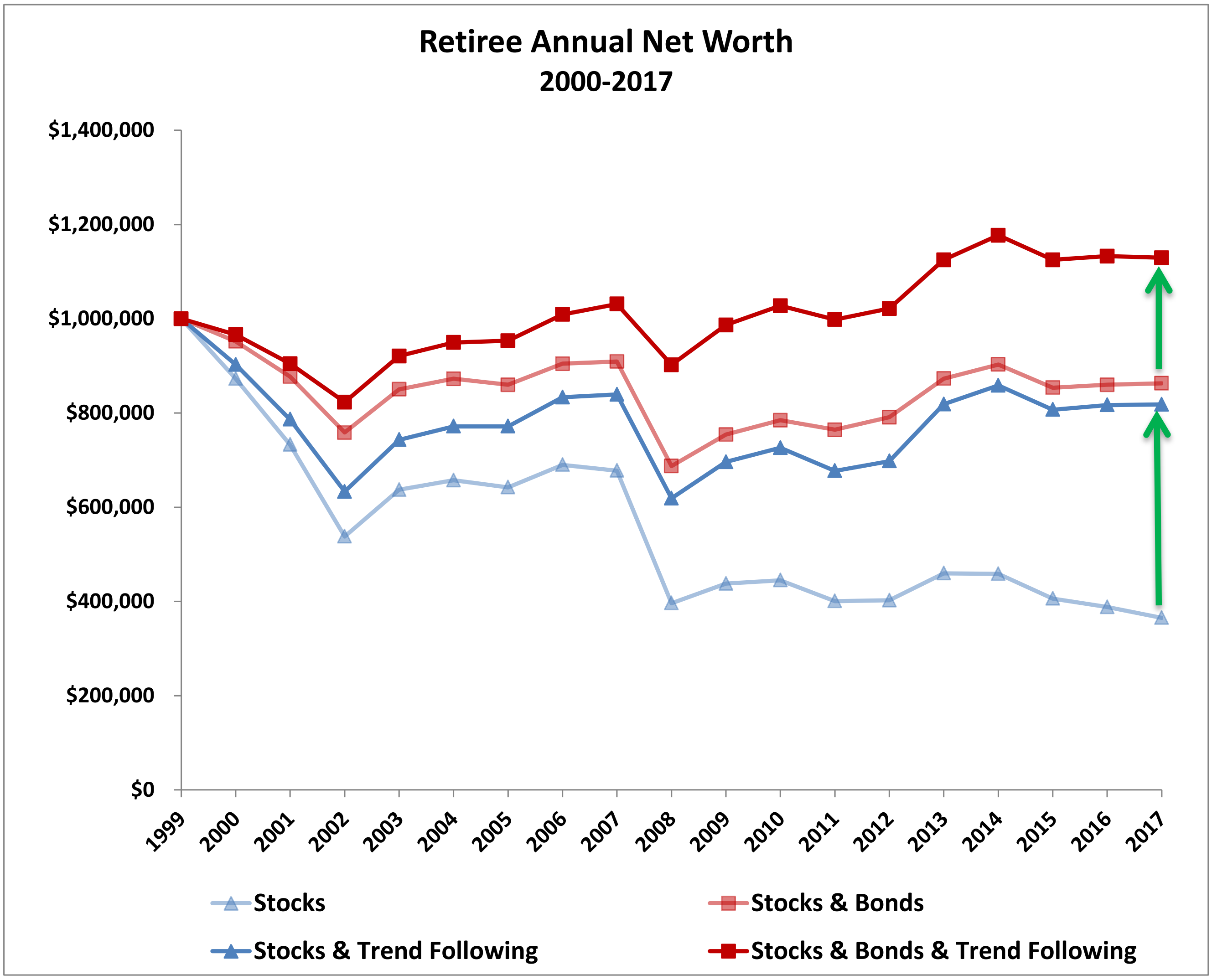
The 1988-2017 example illustrates that traditional investments can provide an abundant cushion for retiree income needs when performance is strong in the early years of retirement. But what about the flipside? How do retirees with traditional investments fare when early-year investment performance is weak? To illustrate this sort of backdrop, consider someone who retired on 12/31/1999 (so the full year 2000 was the first year of retirement). That retiree's portfolio was hit immediately with the bursting of the tech bubble, managed a few years of recovery, and then faced the even more severe financial crisis, all in the first decade of retirement. The consequences are not encouraging.



Recall that the all-stock investor's net worth performed incredibly well in the 1988-2017 scenarios. This is because the greater volatility of a stock-only portfolio happened to fall almost entirely to the upside throughout the early years of retirement. The above chart illustrates the downsides of concentrated equity risk. If that greater volatility happens to fall to the downside in the early years of retirement, the portfolio can wind up in a very tenuous place. In this example, the all-stock investor's asset base had already fallen below the $500,000 comfort level by the ninth year of retirement. It has also fallen further in the years since, despite positive post-crisis equity performance, for the simple reason that the withdrawal required to support the retiree's annual consumption represents a significantly higher percentage of a depleted asset base.

The stock/bond retiree has done significantly better up to this point, thanks to the volatility buffer provided by the 40% bond allocation. But even that investor's net worth is below the initial investment level (on a nominal dollar basis), which is a potentially alarming situation with twelve years left to go in the initially planned 30-year retirement period.

The next chart illustrates the benefits of including an allocation to trend following alongside traditional investments when traditionals go through a period of choppy performance.



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Non-correlation and "crisis alpha" mitigate drawdown depth, which reduces the percentage draw demanded by retirees' income needs following a down year for traditionals. This in turn enables the portfolio to participate more fully in the subsequent recoveries. The result is a significantly stronger asset base by 2017. In particular, the portfolio with stocks, bonds, and trend following is above the initial $1 million allocation at the end of 2017.

Illustration #2b: Examining Extended Weak Performance (2000-2029, Simulated)

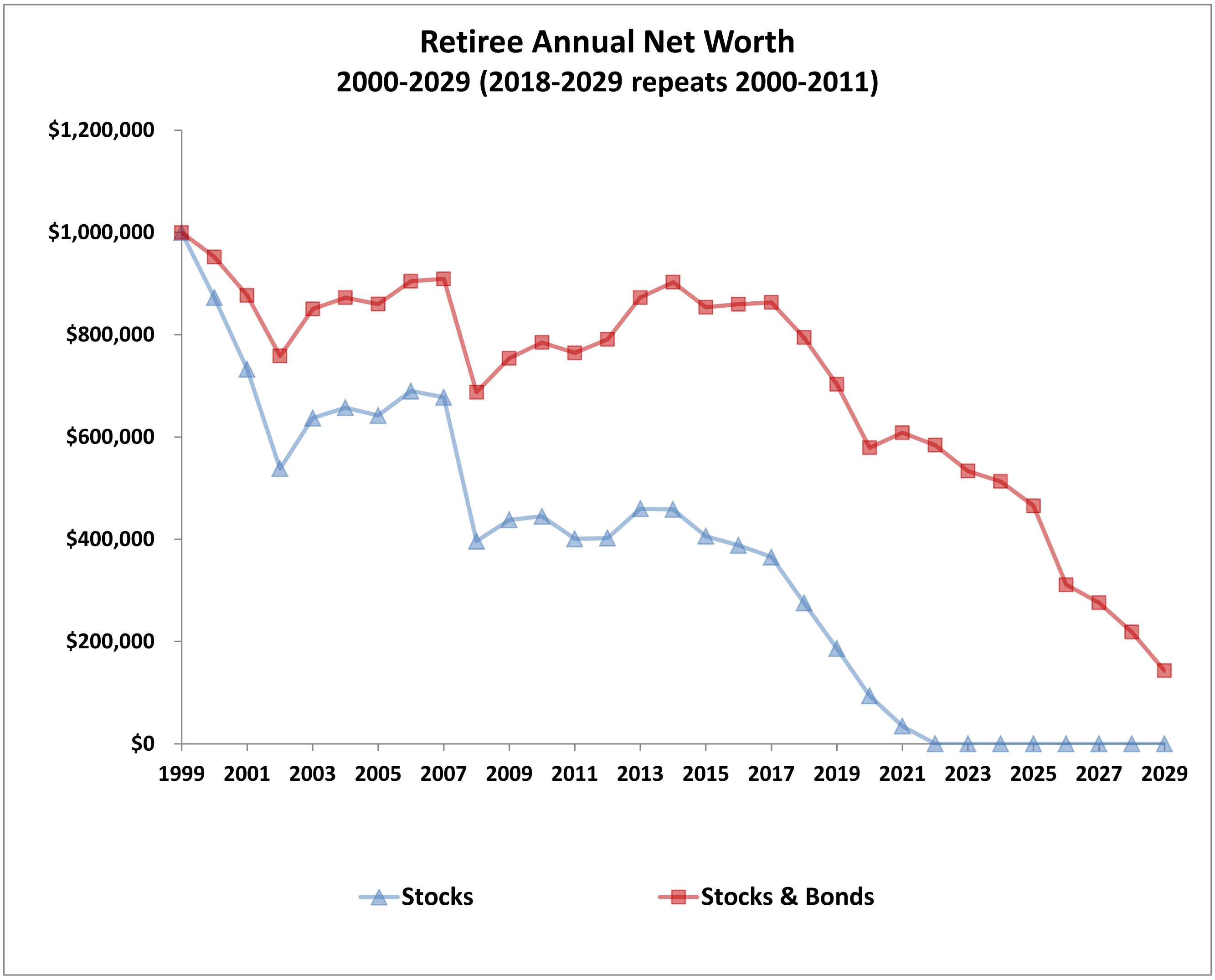
The above example covers the first 18 years of a 2000 retiree's journey, but what will happen over the full 30 year retirement period? Obviously, there are a number of plausible paths, but let's bifurcate them into the same two general categories considered so far:

One possibility is that stocks and bonds continue to have the kind of strong performance they have demonstrated thus far in the post-crisis era. While even that may not be enough to ease the financial distress for the hapless stock-only investor (note again the inability of the stock-only curve to rise back above the $500k pain threshold since 2008), the stock/bond investor should be able to ride strong traditional investment performance to a successful conclusion in retirement. Given the sanguine conclusion, we won't bother simulating this scenario, but recall that a trend following allocation is unlikely to interfere with the happy outcome.

Another possibility is that traditional investment performance goes through another period of weakness, leading to the possibility that even the stock/bond investor may face the risk of failure to meet income and/or asset cushion goals. Here is where trend following can potentially provide a needed boost. To simulate this scenario below, we repeat the 2000+ returns starting in 2018; i.e., we set the 2018 return equal to the 2000 return, the 2019 return equal to the 2001 return, etc., for each asset class.

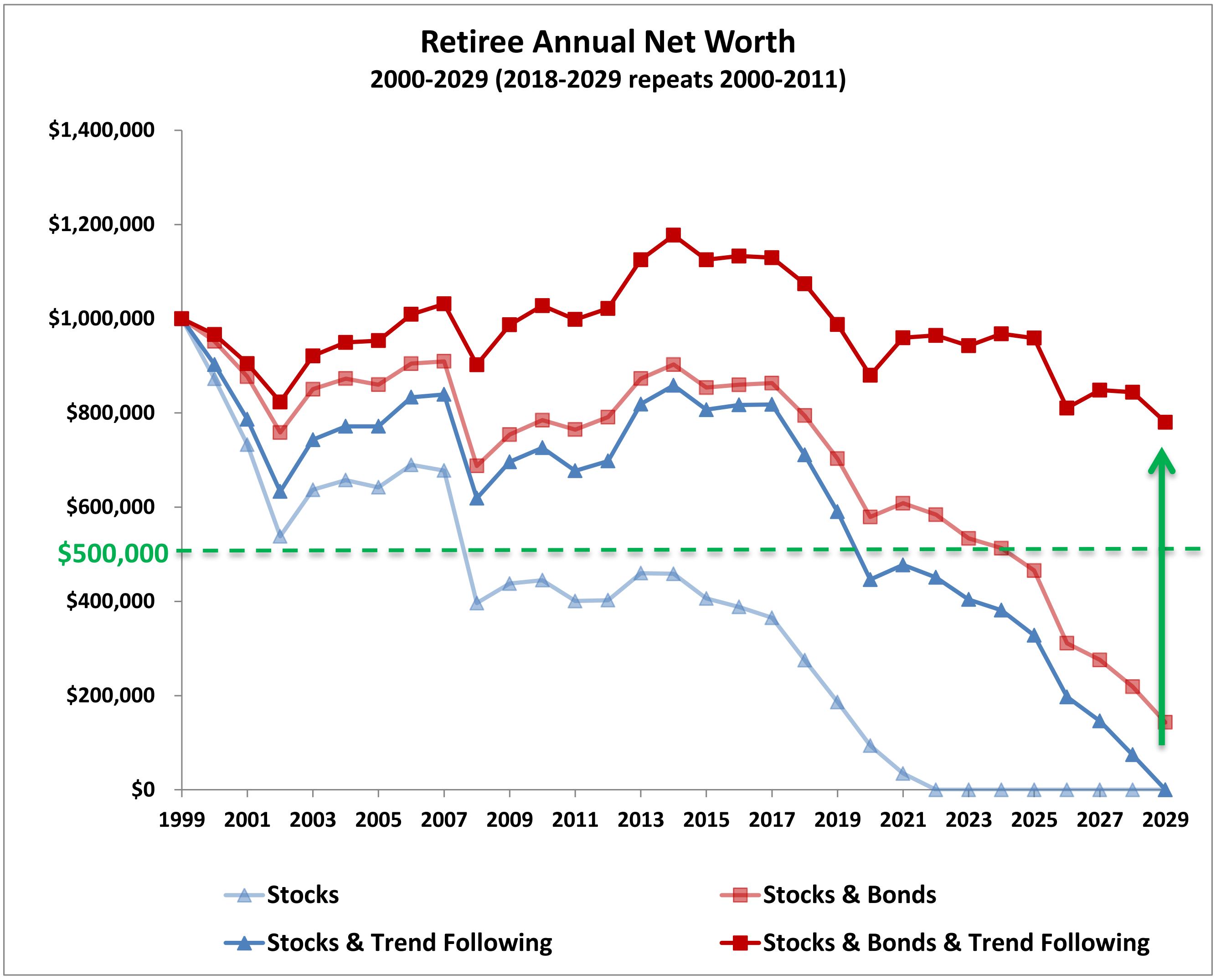
The stock/bond investor managed to muddle through the first 18 years with only a moderate impairment of net worth. But reduced reserves plus larger (nominal dollar) late-year withdrawal requirements combine to produce financial distress toward the end of retirement, as the stock and bond investor limps across the finish line with no margin for error. Slightly worse investment performance or virtually any unforeseen expenditures—or a year or two more of retirement (i.e., extra longevity)—could reduce the asset base to $0.

The ill-fated all-stock investor *does* see retirement assets reduced to zero—with nine years of planned retirement left, no less. If nothing else, hopefully this exercise illustrates why a 100% risk-asset portfolio is a dangerous proposition in retirement, despite the possibility of the impressively successful outcome in the 1988-2017 example.



The chart below shows the results of including trend following in this semi-simulated 30-year example. While the inclusion of a 20% trend position improves the results for the stock-only investor, that retiree's asset base still falls below $500,000 in year 21, and is depleted to $0 in the last year of retirement. On the other hand, the portfolio with stocks, bonds, and trend following fares immensely better than any of the less-diversified portfolios. The fully diversified investor finishes out retirement with a net worth of over $750,000.

The biggest benefit of diversification with bonds and trend-following comes from loss reduction when the biggest crises occur in stocks. In the equity crises that occurred in the 2000s (recurring in the late 2010s and early 2020s in the simulation above), the loss mitigation from bonds and trend following combined is sufficient to overcome the otherwise devastating nest egg depletion that a stock-heavy investor experiences—without overly hampering the strong recoveries that occur in the other years.



What Will the Future Actually Look Like?

The retirement draw models investigated above use actual, recent market return data, but obviously the specific time periods were chosen to illustrate nearly polar opposite backdrops for traditional risk assets. The question for near-term retirees, of course, is what future market returns will actually look like.

The reality is that the future could resemble either of those extremes, or be somewhere in between, and a wise portfolio allocation plan will consider all possibilities. One option is to lock in future income with an annuity or something like a TIPS ladder. But if the retiree requires more flexibility or more return than can be obtained by such methods, then an intelligently designed portfolio must at least consider the extremes:

On one side, perhaps the future will more closely resemble the strong early-year returns of the 1988-2017 example. Certainly, both equities and bonds have proven resilient for decades, and even if the total return of fixed income is less than was experienced in that era, similar equity returns alone would be sufficient to guarantee a successful financial picture in retirement. Importantly, historical evidence indicates that the inclusion of trend following will not derail that security, so while trend following might prove to be unnecessary in this sort of future, it would be unlikely to be significantly detrimental either.

But that is not the only possible future. If future returns look more like the (partly repeating) 2000-2029 example, trend following may be among the best ways to mitigate early-year equity drawdowns, preserving wealth for future income needs. And there are reasons to believe this could be a risk. First, with interest rates near historic lows, there is reason to doubt whether fixed income can provide quite the same cushion in a pullback that it has offered in the past. Low rates also imply lower bond returns going forward; with rates near historic lows, it is improbable that the next ten years of fixed income returns will be as strong as they were over any of the three decades in the 1988-2017 example. Equities don't have capped upside the way bonds do, but there is a historic relationship between equity valuations and long-run future returns, and present valuations are on the high side by historic standards. Admittedly, this does not necessarily imply that large equity drawdowns are in the near-to-mid-term future, and it is such drawdowns—i.e., sequence of returns risk—that pose the greatest threat to retirement income security, rather than lower end-to-end returns *per se*. However, it does imply that if drawdowns do occur, they could be quite severe without driving valuations to anomalously low levels.

The future of a portfolio is best represented not as a best-guess single outcome but as a spectrum of possibilities. The value of trend following is that its historic relationship with traditional assets is such that it can potentially raise the low end of the spectrum without causing significant damage to the high end. An uncorrelated diversifier that grows increasingly negatively correlated when equities suffer their worst drawdowns—characteristics that trend following has historically achieved, for reasons that we would argue have a high probability of repeating—is an asset that can shrink the variance of potential future outcomes, thus increasing the percentage odds of a successfully funded retirement income.

Looking Ahead

Heading into the fourth quarter, AMFBI is positioned in what could generally be described as a "risk on" orientation. Equities are net long and fixed income is net short. The Broad Risk Indicator is at 0% (as it has been for much of the year), resulting in a maximum allocation to Counter-Trend. Commodities are mixed. Currency trends are still long, reflecting the dollar downtrend discussed above, but net positioning has moderated.

Historically, markets have tended to see an uptick in volatility in the fourth quarter of the year, and it's certainly easy to imagine that the next directional move in volatility would have to be to the upside. But it would be unwise to assume that that automatically implies greatly improved fortunes for trend following, for a couple of reasons. First, measured and implied financial market volatilities could increase quite a bit from their current levels yet still remain well below long-term averages; and importantly, trend following historically tends to perform well when volatility is *high*, not necessarily when it is *rising* (e.g., from a very low level to fairly low level). Second, if a vol spike manifests as a retreat in risk asset pricing, the Trend model, with its current risk-on orientation, may not profit initially. For example, at present a retreat of nearly 4% would be required for the Index's S&P 500 positioning to flip short. Other markets are not as deeply entrenched, but a brief, moderate pullback would not necessarily be profitable for AMFBI.

On the other hand, prolonged low volatility is by no means guaranteed to produce losses for trend following. It is possible for vol to remain low and AMFBI to produce profits, if typically relatively small profits. And of course, if markets staged a large, bear market pullback off the current highs, then trend following would be among the few strategies capable of providing a strong offset to those losses. The odds of such a pullback occurring in, say, the fourth quarter are low; but then again the odds of such a pullback occurring in any definite period are always low—while the odds of one occurring eventually are virtually 100%. As the above retirement income analysis demonstrates, the ability of trend following to mute drawdowns in those uncommon but high impact scenarios is one of the primary reasons for supplementing a traditional investment portfolio with an allocation to a managed futures trend following program like the Aspen Managed Futures Beta Index.

Important Disclosures

Past performance is no guarantee of future results.

All AMFBI monthly returns shown do not include transaction cost, but are net of 1.50% for estimated fees and other expenses. An investor cannot invest directly in an index.

This document does not constitute an offer to sell or solicitation of an offer to buy any security. The information contained herein is provided for educational purposes only and is not intended to solicit interest in any investment opportunity.

Data has been obtained from reliable sources. Aspen Partners believes the information herein to be reliable; yet no warranty or guarantee is made as to its accuracy or completeness.

Benchmarks & Indices

AMFBI is constructed using a quantitative, rules-based model designed to replicate the trend-following and counter-trend exposure of futures markets by allocating assets to liquid futures contracts of certain financial and commodities futures markets. The index therefore seeks to reflect the performance of strategies and exposures common to a broad universe of futures markets, i.e., managed futures beta.

"Barclays AGG" represents The Bloomberg Barclays U.S. Aggregate Bond Index is a market capitalization-weighted index, meaning the securities in the index are weighted according to the market size of each bond type.

"BTOP50 Index" represents the Barclay BTOP50 Index, an index of the largest investable CTA programs, as measured by assets under management.

"Euro Stoxx 50" represents a stock index of Eurozone stocks designed by STOXX, an index provider owned by Deutsche Börse Group and SIX Group. It is made up of fifty of the largest and most liquid stocks.

"Goldman Sachs Commodity Index," also known as the S&P GSCI, is a long-only index of commodity returns.

"S&P 500" represents the S&P 500 Total Return Index, a widely recognized, unmanaged index of common stock prices.

"SG CTA Index (formerly, the Newedge CTA Index)" provides the market with daily performance benchmarks of major commodity trading advisors (CTAs).

The Barclays AGG, BTOP50 Index, Euro Stoxx 50, S&P GSCI, SG CTA Index, and S&P 500 are unmanaged and do not represent the attempt of any manager to generate returns on an investment. These benchmark indices do not include transaction costs and other expenses.

Definitions

Broad Risk Indicator (BRI): A proprietary, broad market risk analysis system.

Compound Annual Growth Rate: The year-over-year growth rate of an investment over a specified period of time.

Forex: A commonly used abbreviation for "foreign exchange," it is typically used to describe trading in the foreign exchange market by investors and speculators.

Maximum Drawdown: The greatest peak-to-trough decline during a specific period of an investment.

Sharpe Ratio: A measurement of risk-adjusted performance which subtracts the "risk-free" rate of return from an investment's performance.

Standard Deviation: A measurement of the annual rate of return's dispersion from its mean, indicating an investment's volatility.

TIPs: Treasury Inflation-Protected Securities provide protection against inflation. The principal of a TIPS increases with inflation and decreases with deflation, as measured by the Consumer Price Index.

VIX: The ticker symbol for the Chicago Board Options Exchange (CBOE) Volatility Index, which shows the market's expectation of 30-day volatility. It is constructed using the implied volatilities of a wide range of S&P 500 index options.