Six Deadly Sins for Distribution Portfolios

By Jim Otar, CFP®

Those who specialize in retirement planning have an additional, special burden: They must distinguish between the math of accumulation and the math of decumulation. Much of the research done with accumulation in mind has little or no applicability to decumulation. Classical approaches such as “asset allocation contributes to more than 90 percent of portfolio success,” “equities beat inflation over the long term,” and “rebalancing often is good for your portfolio” actually can hurt decumulation portfolios.

This article reviews some of the well-known concepts that work for accumulation portfolios—but not for decumulation portfolios.

Betting on Asset Allocation

Adherence to the following two popular assertions about asset allocation can be disastrous for decumulation portfolios:

“Asset Allocation Contributes to More than 90 Percent of Portfolio Success”

We all try to educate our clients by narrating from Brinson, Hood, and Beebower (1986) and Brinson, Singer, and Beebower (1991), two classic studies that analyzed large pension plans and concluded that the components of the difference in success of a portfolio are the following: asset allocation—93.6 percent; security selection—2.5 percent; other—2.2 percent; market timing—1.7 percent.

Here is the problem. The findings of the two Brinson et al. studies cannot be applied to individual retirement portfolios, for the following reasons:

• The dynamics of cash flow in a pension fund are entirely different from the dynamics of cash flow in an individual retirement account. A pension fund has a continuous inflow of money over time. In an individual retirement account, inflow of money occurs mainly during working years. Mathematically, a pension fund is an open–perpetual system; an individual retirement account is a closed–finite system.
• When a pension fund has a shortfall, contributions can be increased to meet the shortfall. An individual retirement fund usually has no such opportunity.
• Once withdrawals start from an individual retirement account, the adverse effect of “reverse dollar cost averaging” becomes important. In a pension fund, because contributions continue to come in, this effect is insignificant.
• Inflation is important for individual retirement account holders. Many pension funds have limits and constraints on how retirement payments are indexed. Individual retirees holding their own saving accounts do not have that choice; their expenses must be met.
• The Brinson studies exclude two of the most important components of the success or failure of distribution portfolios: withdrawal rate and sequence of returns. If you do not include all the important factors in the analysis, then less important factors—such as asset allocation—become most important.

Classical approaches such as “asset allocation contributes to more than 90 percent of portfolio success,” “equities beat inflation over the long term,” and “rebalancing often is good for your portfolio” actually can hurt decumulation portfolios.
The time span of the Brinson studies is 20 years. In the historical context, this is too short, and it happens to cover one single secular bullish trend that arguably was the luckiest 20-year span of the entire 20th century. Indeed, the data used in the Brinson studies missed significant adverse events from secular bear or secular sideways market trends (see figure 1).

“Lowering a Portfolio’s Volatility Increases Its Longevity”

Traditionally, asset allocation manages portfolio volatility (i.e., the fluctuations of its value) to within a client’s risk tolerance, which is represented on the vertical axis in figure 2. However, asset allocation has little to no effect on portfolio longevity, which is the horizontal axis.

Three of the most important factors that affect portfolio longevity are withdrawal rate, sequence of returns, and inflation. Until each one of these three factors is dealt with, asset allocation does not help increase longevity by much.

Here is a reality check: Take a 65-year old investor, retiring this year. He wants to plan until age 95. His retirement savings are valued at $1 million. He needs to withdraw $60,000 each year, indexed to actual inflation. On the equity side, he expects an average 2-percent dividend yield, and he pays 0.5-percent in management fees.

Let’s look at how his portfolio would have performed if he were to start his retirement in any of the years between 1900 and 2000. To do this, we afcast six different asset mixes, as shown in table 1.

Table 1 shows that regardless of asset allocation, the median portfolio depleted at age 86 or 87. If you want asset allocation to be an effective tool, find ways of reducing the withdrawal rate to below sustainable by delaying retirement, saving more, spending less, finding a part-time job, downsizing, renting out the basement, etc.

The truth about asset allocation is that it is an effective tool to manage volatility. However, if the withdrawal rate is larger than 4 percent, don’t bet on asset allocation for converting a red-zone client (a client who is likely to run out of money during retirement) into a green-zone client (a client who likely will have a life-long income).

Equities and Inflation

Here is a popular assertion about equities and inflation that can doom a decumulation portfolio.

“Over the Long Term, Equities Always Beat Inflation”

Sometimes they do, sometimes they don’t. It depends on what type of long-term (secular) trend the market is in.

During past secular bullish trends, inflation was low and equity markets overcame inflation readily, as depicted in figure 3.
During past secular bearish and sideways trends, inflation peaked toward the end of these trends, forcing retirees to withdraw more and more from their portfolios for the rest of their lives. Equity indexes lagged inflation miserably during these trends, as depicted in figure 4.

The truth about equities and inflation is that equities do not always beat inflation.

Making Assumptions on Future Average Growth, Inflation, and Life Expectancy

Averages are nothing more than statistical constructs that apply to the big picture. They lack real meaning for real people and their real portfolios. That’s why you should never make decisions based on the averages.

“Assuming a 5-percent Annual Growth Rate and 3-percent Inflation over the Next 20 Years”

In the financial media, you will invariably see articles that report something like this: “If his average portfolio grows by 5 percent annually and the inflation rate is 3 percent per year, assuming he lives until age 85 (his life expectancy), he should be able to withdraw $30,000/year from his $500,000 portfolio.” Figure 5 depicts the forecast based on these average assumptions.

But these average assumptions have the following flaws:

Average life expectancy: This is the age at which half of the cohort is dead and the other half survives. If you design for the average life expectancy, you are—in effect—planning only for half your clients. A better way of managing the longevity risk is using the age of death beyond which the survival rate is 10 percent. That means using 95 as the age of death for male clients and age 97 for female clients or couples as a minimum.

Average portfolio growth: In real life, there is no such a thing as average growth rate; it exists only in statistics. One bad sequence of returns can turn an otherwise great track record to a dismal one. Also,

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Figure 4: Inflation and DJIA in Secular Bearish and Sideways Trends (1900–1921, 1929–1949, 1966–1982)

Figure 5: Forecast Based on Average 5-Percent Growth Rate, 3-Percent Inflation, 6-Percent Initial Withdrawal Rate

Figure 6: Aftcast with Sustainable Withdrawals
studies about investor behavior show consistently that an average investor lags average market performance by a factor of several percentage points. A better way of managing this risk is to ignore average growth rates totally. Instead, make sure that the probability of depletion does not exceed 10 percent at the age of death using actual historical numbers, i.e., the aftcast.

**Average inflation:** Similarly, average inflation is meaningless. Historically, inflation has been higher than average slightly more than 50 percent of the time. Using the average exposes the retiree to a significant inflation risk. A better way of planning for inflation is to plan for the loss of purchasing power to not exceed 10 percent for essential expenses throughout retirement.

To correct for these flaws, we change the age of death to 95 and we keep the probability of depletion to less than 10 percent. But then the sustainable withdrawal becomes $18,000/year, 40 percent lower than the $30,000 calculated using averages (see figure 6).

The truth about using averages is that averages apply only to large groups and they should never be used for individuals.

**Frequent Rebalancing**

Not much has the potential for more destruction in a portfolio than wanton rebalancing. That’s why if someone poses to you the following question, you should run, not walk, away.

“**Do You Want Us to Automatically Rebalance Your Portfolio Weekly?**”

Rebalancing supposedly reduces portfolio volatility. Does frequent rebalancing really decrease volatility? How does it affect portfolio longevity?

Let’s look at an example: Steve, 65, just retired. He has put aside $1 million for his retirement, $400,000 in equities and $600,000 in fixed income. He needs $50,000 in income each year, indexed to inflation.

Figure 7 shows the portfolio value if Steve were to retire in 1921, the beginning of the first secular bull market of the past century. The green line shows the portfolio value if rebalanced every four years, at the end of the U.S. presidential election year. The red line shows the portfolio value if rebalanced annually. At the end of 30 years, Steve was $1 million richer if he rebalanced every four years than if he rebalanced annually. The volatility was about the same for either. Imagine this: Your client makes more money, and you make more trailer fees for less rebalancing work.

Figure 8 shows Steve’s portfolio value if he were to retire in early 1929, the beginning of a secular bear market. At the market bottom of 1932, Steve’s portfolio experienced a smaller loss if it were rebalanced every four years than if it were rebalanced every year. The portfolio that was rebalanced every four years provided Steve with 30 years of income. The portfolio that was rebalanced annually ran out of money after 21.5 years. Rebalancing every four years after the presidential election increased the portfolio longevity by a respectable 40 percent.

The truth about rebalancing is that it too often can hurt portfolio longevity. If the withdrawal rate is below 4 percent, then rebalancing once every four years (at the end of the U.S. presidential election year) can provide a better outcome in retirement portfolios.
The Value of Geographical Diversification

Similarly, beware of the following blanket statement about diversification.

“Diversification Prevents Losses”
This is often not true. Geographic diversification is a good thing. It helps the investor to take advantage of trends in different parts of the world. However, in many cases it does not pay off.

Let’s look at an example: A 65-year old retiree has $1 million; $400,000 in equities and $600,000 in fixed income. He needs $60,000 indexed income each year. If he is unlucky, when does his portfolio deplete?

Let’s look at four different equity indexes in the United States, Canada, England, and Japan (see figures 9a–d).

We observe that, regardless of which equity index was used, the unluckiest retiree would have run out of money at age 79. When it comes to geographical diversification, black-swan events usually occur in unison. You will not see a market meltdown in one developed economy while another one is thriving.

Taking this further, if you were to diversify equally into these four geographies, the unluckiest person would run out of money at age 80 (see figure 10). In this case, diversification would have added only one year to the life of the portfolio.

The truth about geographical diversification is that it adds value during normal trends. However, when the withdrawal rate is larger than 4 percent, diversification does not prevent losses, nor does it add much to a portfolio’s life. Don’t tell your clients that diversification can prevent losses.

The Promise of Leveraging
Leveraged investing carries myriad risks all by itself, and it multiplies the individual investor’s exposure to low-probability, extremely high-risk black-swan events. Therefore, beware the following assertion:

“Investing with Borrowed Money Can Only Boost Your Portfolio”
Some investors borrow money to invest because they either believe that the odds are on their side or someone convinces them to do so. What they fail to see is that leveraging can make a bad sequence of returns appear more often and more destructively than it would otherwise.
When you borrow money to invest, you are declaring in effect that you are smarter than the market over the long term. You also are declaring that you are smarter and/or luckier than those who lend you the money.

What does history tell us? Let’s work through an example to demonstrate the effects of leveraging.

**Example**: Bob is 30 years old. He has $100,000 in his portfolio. His portfolio is aggressive, 100-percent S&P 500. For his portfolio growth, use the historical index return plus dividends less his portfolio costs, which are 0.5 percent.

Bob decides to borrow $100,000 to enhance the return of his investments. He pays only the interest, which is paid out of his portfolio. The interest rate is equal to the six-month certificate of deposit yield plus 3 percent. At the end of 10 years, he is planning to pay back the principal from the portfolio as well. To keep things simple, we assume that there are no margin calls.

**Scenario 1**: The starting year is 1990. If Bob were to invest only his own money without borrowing, his investment would have grown to $491,811 over 10 years. With leveraging, it would have grown to $647,550, after paying the interest and the principal back to the lender (see figure 11).

**Scenario 2**: Now, we use 1973 as the starting year. With leveraging, Bob’s net assets shrunk from $100,000 in the beginning of 1973, to $53,588 in the beginning of the year 1983, a decrease of $46,312 (see figure 12).

The total cost attributable to leveraging is $129,369, calculated as the lost profit of $82,957 if he had not borrowed to invest, plus the loss of $46,312 due to leveraging. This is not a good outcome.

Similar scenario analysis for each year since 1900 is depicted in figure 13.

The truth about leveraging is that borrowing to invest is generally a bad idea for...
individuals. The odds are usually against the investor because black-swan events happen more often than we think for the borrower. Sequence of returns and onset of higher interest rates can devastate even the best-laid leveraging strategies. This is why it’s wise to start eliminating all debt when you are within 10 years of retirement. I repeat: Do not go into retirement owing money.

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Endnotes
1. Aftcasting—as opposed to forecasting—displays the outcome of all historical asset values of all portfolios on the same chart, and it gives a bird’s-eye view of all outcomes for a given scenario. It provides the success and failure statistics with exact historical accuracy.

References