The Profession's Faulty Assumptions: A Top Ten List

By Bob Veres
August 21, 2012

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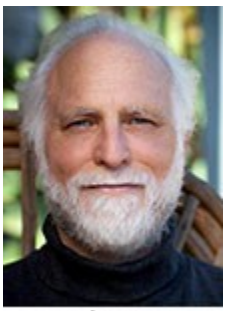
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One of the few great additions to our English language is the phrase "garbage-in, garbage out," a shorthand way of saying that our fancy computer systems are only as accurate as the data they are given to work with. In the financial planning profession, we have to make a lot of assumptions about the world in order to run spreadsheet models, retirement projections, retirement sufficiency analyses and generally determine how much a client should save and invest for the future.

But I have come to believe that many of the industry-standard inputs into our models are (how can I say this delicately?) garbage.

Here are my top ten garbage inputs, with, where possible, an explanation of how we might possibly improve on them.

10. **Benefits of a Roth Conversion.** Theoretically, any analysis of a Roth conversion should hinge on the tax rate in the future vs. the client's current tax rate. If the two are equal, then the math says that the conversion is a revenue-neutral transaction; you are exchanging current tax payments for exactly the same future tax savings.

    Of course, there are other issues to consider--and they tend to weigh on the side of the conversion. Income from the Roth allows you to reduce taxable income such that you might avoid taxation of Social Security benefits and the new 3.8% Medicare tax on unearned income. Beyond that, Roth accounts can grow tax-deferred without having to pay out required minimum distributions.

    So where's the garbage? Baylor University professor Bill Reichenstein points out that a tax-aware retirement income strategy can dramatically lower the actual rate at which IRA distributions are taxed.

    "Suppose you have a simple case where the client has two portfolios, one is taxable, the other is an IRA," he suggests. "A lot of articles say that the optimal strategy is to deplete the taxable account and let the IRA grow as long as possible. But the most tax-aware strategy is to fill up that first 15% bracket with an IRA

distribution, and then use money from the taxable portfolio for the rest of the client's income." You can be more aggressive and fill up to the 25% rate--and here's what you get:

$16,000 at a 10% rate = $1,600 in taxes
$51,199 at a 15% rate = $7,680 in taxes
$69,800 at a 25% rate = $17,287 in taxes

The IRA is depleted by $137,000 and pays an aggregate 19.5% tax rate. Let's say you do this for five years before the client starts taking mandatory distributions. The mandatory distributions are reduced accordingly, and there is still money in the taxable account. You can still use those mandatory distributions to fill up the client's lower brackets--meaning it is plausible that the actual IRA tax rate will be, by the end of the client's life, somewhere in the low 20s, rather than 35% or whatever tax hike rate the advisor predicted in the original analysis.

Meanwhile, the conversion today is adding to the client's taxable income, which means the money is taxed at the client's highest marginal tax rate--probably 35% for most clients.

If you project 35% vs., say, 23% future tax rates, even if you add in all the other benefits of a Roth, do the numbers favor a big conversion? My guess is that for most clients, a closer look at the numbers will lead you to make small opportunistic conversions when the tax bite can be offset by losses in the portfolio.

9. **Expected future tax rates.** I know that most of you are assuming that taxes will go up in the future, especially for your wealthier clients, and I can't disagree. Today's default software options assume that Uncle Sam will take 35% of client income, plus another X% bite by the state, and now, looking at the expiring tax rates at the end of the year and noticing that our national deficit hasn't gone away, you may override the default and project 40% plus something higher than X in your retirement worksheets. If you're feeling conservative, those numbers may be higher.

   Where's the garbage in that? Kent Noard, a former staffer at the IRS, now with KLN Financial Group in San Jose, CA, says flatly that the marginal rate is not an appropriate estimate of actual future tax payments. Instead, he uses the effective tax rate, which takes into account the fact that the first $16,750 is taxed at a 10% rate, and the next $51,249 is taxed at a 15% rate, and so forth. Beyond that, clients have all the exemptions and deductible expenses, some portion of their total receipts are taxed at (lower) dividend or capital gains rates, muni bond payments are not taxed by the federal government at all (unless you're in the AMT), losses are harvested out of the investment portfolio, and many advisory clients have a host of other lines filled out on their tax forms that blunt Uncle Sam's fingers in your client's wallet.

When you take all this into account, the marginal tax rate looks like a very sloppy estimate indeed.

How do you calculate the effective tax rate? It's not hard. Step one: Take the total income from all sources on the Form 1040, including interest, capital gains and dividends, and add to this number things like federal tax-exempt muni bond income and any other amounts that the client received which are not required to be reported to the IRS.

Step Two: compare that dollar amount to the dollar amount of taxes that were paid in that year.

Noard offers a quick calculation for one of his clients, where the effective rate comes to 22%, even though this person brought in more than $500,000 in annual income (and, therefore, was in the 35% marginal rate). He uses that 22% number (modified based on future projections of lower income in retirement) for goal planning, but he also will show it to clients, which helps them understand the value of his services.

When the client is retired, the marginal rate suddenly becomes subject to careful planning, and can go down accordingly. Jack McCord, who practices in La Jolla, CA, offers a detailed analysis of a real-world client who had an effective 8.8% tax rate in retirement--at most. A $1 million taxable portfolio generates dividends of $20,000, much of which is not taxable because after various exemptions and itemized deductions, that money falls into the client's lowest tax bracket. For additional income, the advisor sells investments held at a loss, followed by investments at zero or minimal gains. After that, you are paying at capital gains rates.

In all, this particular client received $90,000 in living expenses out of the portfolio and paid an effective tax rate of 8.8%. Does that rate show up in any of your retirement calculations?

8. **Asset allocations.** I think we've all seen advisors who set very precise allocations into different asset classes in client portfolios, and they may set tight rebalancing criteria to keep the client right there on the efficient frontier. A pie chart accompanying the quarterly reports shows that 7.3% (no more, no less) of the client's portfolio is in emerging market equities, 4.2% has been invested in emerging market bonds, and equally-precise allocations have been made to large cap, midcap and small cap equities, corporate and government bonds of various maturities.

The precision looks very impressive until you realize that there is a garbage element built into the model.

Come again? Once again we turn to Bill Reichenstein, who points out that the real asset allocation should be measured in terms of what the client actually owns, taking into account Uncle Sam's considerable investment in the client's portfolio. To take a very simple example: suppose a client has $1 million in an IRA and $1 million in a taxable account, and you intend for that client to have a 50/50 stock/bond allocation. You decide to put the bonds in the IRA so the ordinary income they throw off can grow tax-deferred and you put the stocks in the taxable account, where they will grow without any hindrance from taxes so long as you aren't selling them and realizing the gains.

That's fine, except that the actual value of the IRA is not $1 million; it is, in fact, $1 million minus the taxes that the client would have to pay to get that money out of the portfolio so he/she can spend it. If the client's effective tax rate is (to use a round number) 25%, then $750,000 of the IRA account actually belongs to the client, and $250,000 belongs to the government. Your after-tax bond allocation is $750,000, compared with $1 million for your stocks.

Instead of a 50/50 allocation, you actually have a 57%/43% allocation--MUCH riskier than you intended, and perhaps very far from the efficient frontier you so carefully calculated.

Chances are, if you aren't taking taxes into account, your own allocations are functionally very different from what you intend. At the very least, all of that precision goes right out the window.

7. **The efficient frontier, Part I.** While we're on the subject of those precise allocations, let's look a little more closely at how advisors are adding value by placing their clients right on the cutting edge of that optimal mix of return vs. risk.

   The only way to get on the efficient frontier is to use an optimizer, and the optimizer, unconstrained, inevitably gives you an allocation mix that you're uncomfortable with. So you constrain it; instead of 80% of the money going into emerging markets bonds, you decide that no more than 5% will go into this risky asset class. When the optimizer throws 75% of the remaining portfolio into Venezuelan small caps, you tell it to shut up and lock it out of the Venezuelan market altogether. Gradually, piece by piece, you override the optimizer's every enthusiasm until you finally have roughly the asset allocation you wanted in the first place.

   I happen to think this is wise. But I also think that an awful lot of advisors talk about how they put clients on the efficient frontier when, in actual fact, they simply created a prudent portfolio.

6. **The efficient frontier, Part II**. That optimizer has another garbage element to it: it uses, as its inputs, either historical returns and correlations of all the potential investments or estimated future returns and correlations. When you compare the estimates with the actual results over 10-year time periods, you get comical results.

   Several advisors have charted the actual efficient frontier, using real after-the-fact numbers, for the 1960s, 1970s, 1980s, 1990s and 2000s--and of course they all look wildly different from each other and the 80-year efficient frontier. You would have put your client on what you expected to be the efficient frontier, and the following ten years would have totally confounded the expectations built into your optimizer. The point on the graph that is your client portfolio would be far removed from the efficient frontier line that investors actually experienced.

   When there is such a big discrepancy between what you expect or intend and what you get, that's a great indicator that there was garbage in the system. Alas, I'm not sure what you can do about that except be humble about your ability to achieve portfolio efficiency. Either that or find a working crystal ball.

5. **Client lifespans.** One of the key inputs into every retirement projection is: how long will the client live? Interestingly, clients seem to consistently underestimate their longevity, while many of the financial planning calculators use, as the default assumption, the standard mortality tables. (Notable exception: MoneyGuidePro now uses the mortality tables plus ten years, which, as you'll see below, may be a step in the right direction.)

   Why is this garbage? Because most financial planning clients are wealthier and have better access to health care than the average person. Wealthier people tend to be smarter about living a healthy lifestyle, they are seldom engaged in hard physical labor on the job, and they have more leisure time to engage in a fitness routine. They probably eat better, and are far less likely to smoke.

   Add all this up, and you should expect your clients, on average, to live 5-10 years, at least, longer than whatever average you see on the mortality tables. If your client has trouble believing this, there are now a host of websites that calculate life expectancy using detailed health and lifestyle inputs.

   Beyond this, if you read the scientific literature, they constantly refer to promising research into ways to extend the human lifespan--everything from progress in repairing telomeres at the end of chromosomes (which governs how often and accurately your cells can replicate themselves) to regenerating organs all the way to artificial body parts and robotic nanocells that will someday monitor and promote health at the cellular level. I don't think we can rule out a breakthrough or two in the

next 10-15 years that would at least be comparable to the advent of antibiotics and vaccines in the 20th century.

How will your retirement projections work if you estimated that a client would live to age 90 and she eventually celebrates her 120th birthday? This makes those new deferred annuities (buy now and lock in a fixed income for life starting at, say, age 90) suddenly start to look awfully attractive.

4. **Future living expenses.** I routinely see advisors do a great job of evaluating a client's current lifestyle expenditures, and adding the estimated costs of leisure activities in retirement, and create what looks like a workable budget for his/her Golden Years. Then, to estimate how much the client needs to save, the advisor will project this expense into the future, growing by an estimated inflation rate.

   Where's the garbage? One of the better analyses of actual retirement expenses vs. predictions was published in *Advisor Perspectives*, written by Wade Pfau. (You can find it here) Pfau starts by citing a bit of research by Ty Bernicke, an advisor in Wisconsin, who looked at data from the annual Consumer Expenditure Survey.

   By Bernicke's reckoning--produced in a neat little table--the spending needs of retirees at age 75 are, on average, 33% less than they were when the client was 65, and 53% less than age 55. Using more recent CES figures, Pfau revised these estimates: he believes that people over age 75 tend to spend 26% less than those who are 65-74, and 40% less than those aged 55-64.

   This data suggests that advisors may be overestimating how much people need to save in order to afford retirement. If you plug these reduced spending numbers into your Monte Carlo engine, rather than assume constant spending in constant (inflation-adjusted) dollars from age 65 to age 100, the safe maximum withdrawal rate jumps from 4.15% to 5.55%. Put another way, a client would be able to save 25% fewer dollars to enjoy essentially the same retirement you were originally projecting.

   Yes, every client is different, and you still need to do individualized projections. For guidance on how to apply this to each client's circumstances, Pfau turned to a different model, created by California Lutheran University professor Somnath Basu. Basu breaks down spending in retirement into two components. He first estimates ways in which clients spend more or less over the course of their retirement on taxes, basic living expenses, health care and leisure activities. Then Basu applies differential levels of inflation to those different expenditures.

   So, for example, we know health care prices rise more rapidly than the inflation rate, and we also know that people tend to consume more health care at age 75 than

they do at age 55. Ergo, health care costs rapidly become a larger budget item as people age.

Leisure costs also rise at a higher inflation rate than the CPI, but Bathu assumes that the 75-year-old will spend much less than a comparable 55-year-old on travel and dining out and other leisure activities. Therefore, in the model, overall spending on leisure declines at older ages. The result is a more precise estimate of each component of spending--assuming you believe the assumptions.

The conclusion of Pfau's article is that advisors may be overprojecting how much their clients will be spending in their retirement years, particularly the later years. I would add that you may be assuming a constant budget when in fact the mix of expenditures (and now much they cost) will be a moving target that is somewhat predictable. After reading this study, the fixed inflation-indexed budget starts to look like garbage.

3. **Future medical expenses.** Kathryn Votava, of Goodcare.com, routinely counsels advisors on how to navigate their retiring clients through the Medicare system and select the plan that is most beneficial to their specific health profile. She is amazed at how many advisors are projecting that their clients' health care costs will be paid for by the government program.

   To put it mildly, this assumption is garbage. "Medicare only covers 80% of typical medical costs, so 20% gets offloaded to the client," she says. Meanwhile, Medicare costs are means-tested; the premiums can go up to more than $300 a month for people in the higher tax brackets, and today those wealthier clients are also paying more for Part D coverage.

   Medigap coverage can reduce some of the risk of a catastrophic copay, but of course that comes at a cost too. The same is true of long-term care insurance.

   Meanwhile, I'm sure you've read reports about the insolvency of the Medicare system, when current expenditures are projected forward under reasonable assumptions. And you may be familiar with proposals to replace the whole Medicare edifice with a voucher system that would be unlikely to match future cost increases. Add this to the possibility of extended lifespans (possibly GREATLY extended lifespans) and suddenly future medical costs look like the biggest hidden liability on a client's retirement balance sheet. And we haven't even talked about how medical costs rise with inflation.

   How big is this liability? Instead of the default $0 cost, Alan Moskowitz of Progressive Wealth Management in San Pablo, CA sets aside $250,000 in future health expenses, which is kept in a separate account and drawn down as needed. This is a guess, but it is almost certainly a better guess than $0.

If you're an empiricist and want real numbers, the Boston University Center for Retirement Research estimates that from age 65-69, total health care costs range, on average, from $6,509 to $7,989 in constant dollars, rising to between $6,000 and $7,416 for 70-74-year-olds. From age 75-79, the average cost is $6,701 to $8,295 a year, rising to $7,271 to $8,295 for those age 80-84. People over 85 can expect to pay between $7,223 to $8,453 out of pocket each year. (You can find the research here)

Add up the median of each of those costs over a retirement from age 65 through age 100 and you get $224,565 in constant dollars--surprisingly close to Moskowitz's estimate.

2. **Downside volatility.** What are the odds that the market will lose 7% of its value in one day? Every day, we make decisions based on the standard deviation of a stock or mutual fund, or we see the standard bell curve of expected returns, which is basically the same calculation. We know the math; 68.27% of all returns will occur within one standard deviation, 95.45% within two, 99.73% within three, and anything beyond three standard deviations out is probably too remote to think about.

   The math is garbage. Bryce James, of Smart Portfolios, Inc. in Seattle, WA, has performed a very simple calculation using these very simple mathematics. Based on the widely published median return and standard deviation of the S&P 500, the 4.1% one-day drop in value that occurred on August 27, 1998--associated with the collapse of Long-Term Capital Management--should happen only once in 100,000 years of daily trading.

   The 7.18% drop on October 27, 1997, associated with the Asian Contagion panic, can be reliably estimated to occur only once in 50 billion trading days--roughly 200 million years of trading days.

   On Black Monday, October 19, 1987, the market lost 22.6%. Based on our mean/variance mathematics by which we calculate and compare the volatility of markets, mutual funds and stocks, that shouldn't have happened in the history of the universe.

   In actual fact, these four, five and six sigma events are not nearly as uncommon as the standard deviation calculation would have you believe. James points out that mathematically impossible downside events seem to happen roughly once every 214 trading days. The tails are far fatter than our mathematics seem to allow for.

   Why does this matter? Clients may not be prepared for the level of downside volatility that they're routinely experiencing in the equities markets, and there is nothing in the popular literature, and very little in the professional literature, that

would show them how inadequate the standard deviation is for measuring the actual odds of a big market drop. If you address client risk tolerances, and show them how much their portfolio might go down, you might want to make them aware that the roller coaster is a lot scarier on a daily basis than it is when you look at years or decades.

1. **U.S. equity returns**. Margie Carpenter, who offers investment analysis and consulting to advisors in addition to her planning work in Chagrin Falls, OH, makes a terrific point about the historical returns we see in the Ibbotson charts. Jeremy ("Stocks for the Long Run") Siegel projects 7% real returns into the indefinite future. But if you go back to the 1870s, as Siegel does, you notice that the first five decades of his return sequence were achieved by an emerging market economy. During this time, America was comparable to, say, China or India today.

   After the U.S. became a developed nation, it rapidly grew into the dominant global economic superpower. Under both those regimes--emerging market to developed nation, developed nation to globally dominant economy--you would expect to see unusually high growth in the underlying stocks that make up the economy. And, of course, that is exactly what you see. Carpenter notes that between 1900 and the mid-1970s, the U.S. share of the world's market cap expanded from 15% to over 70%. From 1900 to the end of last year, U.S. equity returns (the best data I could find, from the Credit Suisse Global Investment Returns Yearbook 2012), gained 6.2% a year, easily besting France (2.9%), Germany (2.9%), Spain (3.4%), the UK (5.2%) and even Canada (5.7%).

   Why is this important? Are you comfortable projecting that the U.S. will generate the same above-international-average returns going forward? The U.S. is no longer a hot emerging market. It is no longer in ascendance toward the top of the global economy, but is, in fact, gradually losing its dominance. Carpenter points out that the U.S. share of global GDP peaked in 1985 at 32.74%. It currently accounts for roughly 23%. Translating that into stocks, Siegel himself has projected that by 2050, the U.S. share of global market capitalization will have fallen to 17%--down from a peak of 70% in the mid-1970s.

   It's possible that we can already detect this economic decline in U.S. stock market returns. Gary Miller, of Frontier Asset Management in Sheridan, WY, took a hard look at Siegel's 7% assumption and found something interesting: from 1871 through 1952, U.S. stocks returned very nearly 7% after inflation, and had an average earnings yield of about 7%. He says that soon after this, there was a brief mania in stocks with the advent of Modern Portfolio Theory and the idea among institutional investors that diversification could make stocks dramatically less risky.

Between the start of 1960 through 2011, right about from the time that the U.S. was peaking as the global economic superpower to today, the S&P 500 has returned very close to 5% real returns, with an average earnings yield of about 5%.

"Maybe," Miller says, "a better estimate of future returns would be 5% real, rather than 7%. Isn't 50 years a long enough time to establish a trend?"

Suppose U.S. equity returns become more like those of other developed nations? What is the implication for client portfolios? Wade Pfau actually did the best work here, illustrating that the U.S. safe withdrawal rate calculations would have been very different for other developed nations. The safe minimum withdrawals from Canada (4.42%), Sweden (4.23%) and Denmark (4.08%) would actually have been higher than the U.S. (4.02%); that is, the worst sequence of 30 year returns would have allowed clients to take out a higher percentage of the initial portfolio, inflation-adjusted, for a 30-year retirement than the worst sequence of returns for U.S. stocks.

After that, it's all downhill: South Africa (3.84%), the UK (3.77%), Australia (3.68%), Switzerland (3.59%), the Netherlands (3.36%), Ireland (3.28%), Norway (3.13%), Spain (2.56%), Italy (1.56%), Belgium (1.46%), France (1.25%), Germany (1.14%) and Japan (0.47%) all recorded lower sustainable portfolio percentages that I think most of us would cringe at. Is there any guarantee that the future experience of U.S. stocks will be dramatically different from what Switzerland, the UK or (gulp) Italy or Germany have experienced?