The Price of Safe Withdrawal Rates

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Safe withdrawal rates (SWRs) are perhaps one of the most extensively studied topics in financial planning. Applying a single SWR-driven methodology to all clients, however, neglects clients’ unique individual values. I contend that a better approach is to consider the following:

1. Assist clients in defining ideal and acceptable goals.
2. Define relative priorities along that range of goals.
3. Create a “currently recommended plan” based on avoidance of over- or underfunding.
4. Monitor, through Monte Carlo simulation, the likelihood of the currently recommended plan becoming over- or underfunded relative to the goals and relative priorities.

SWR methods help advisors by establishing some credible yet simple rules of thumb in an attempt to instill confidence and comfort with clients.

The notion of an SWR is simple. How much can you safely withdraw in assets each year, adjusted for inflation and over the course of your retirement, without leaving you with too high a risk of running out of money?

Bengen (1994) set the stage for this discussion with an article about the historical evaluation of a 4-percent withdrawal rate. Since then, many others have entered the fray with widely varying perspectives.

Embracing Fears, Reason, and Emotion

Think about the emotions of a client who is contemplating retirement. The client has an aspirational vision of pursuing those things one values in life or regrets having neglected, be it golf, travel, fishing, hobbies, or time with children or grandchildren. Yet, the client also fears that income that enables a certain lifestyle will need to be replaced by assets for an unknowable amount of time. Such conflicting emotions are clearly stressful.

Considering how difficult it can be to come out of retirement and re-enter the workforce, most clients view retirement as an irreversible decision. It’s often accompanied by visions of capricious capital markets that might leave one destitute, healthcare costs that could claw away at a portfolio, and the specter of staggering expenses for elder care. These are scary pictures. It is critical that we understand such fears, but it is equally important that we do not overweight their relative risk.

Financial product manufacturers are aware of these emotions and design products to appease them. Many advisors use products such as annuities, long-term care insurance, or supplemental health insurance to calm fears that clients express.

Return-sequence risk (the dollar-weighted result as opposed to time-weighted return for a plan with cash flows) is another risk that advisors and clients fear. The solution many advisors bring to address this fear is a financial plan built through Monte Carlo simulations that provides a high degree of confidence. Some advisors may use the buckets-of-money approach, where short-term spending is funded with cash-like investments and longer-term assets are deployed for growth.

Finally, Treasury inflation-protected securities (TIPS) often are used to quell the fear of inflation, and various asset-allocation approaches use inflation hedges or inflation riders on annuities.

Advisors are entrusted with the profound responsibility of guiding clients through the lifestyle they will have in retirement. The wealth that a client accumulates represents a lifetime of sacrifices. Advisors need to listen to and understand clients’ common fears; our advice must balance their fears and the consequences and costs of insuring the risks they emotionally fear.

The Beginning of Monte Carlo Simulations

When we released the first online probability analysis tool for professionals in 1999, many in the industry were intrigued and surprised by the impact of return-sequence risk. It was common to see results that showed the client running out of money at age 76 with a trial in a simulation that had a 12-percent return, while another trial in the same simulation with only a 9-percent return might provide money lasting through age 95 and a sizeable estate.

Back then, financial plans generally were built around conservative return assumptions with zero variation in the year-to-year returns. This was unrealistic—even Treasury bills have standard deviation. Few advisors were aware of the impact of return-sequence risk without access to such tools. The bear market starting in 2000 demonstrated why we need tools that consider that portfolios can go both up and down. The adoption of such tools increased.

Initially, many simulation tools demonstrated that financial plans would fail, even if the client experienced the assumed return, because of return-sequence risk. The complexity of a thousand simulations was thus simplified and presented as a “success” and “failure” rate, terms that are still commonly used today.
Although we started using those terms in 1999, we quickly realized that they were misleading, and we corrected it more than a decade ago by communicating an over- or underfunded status and too much uncertainty or needless sacrifice. Unfortunately, it stuck with other systems that emulated our original work.

**Taking Flight**

The result of a probability analysis is not a pass/fail grade. Probabilities do not work that way and calling them success/failure is a mathematical and emotional misrepresentation.

It is not odds of success, but odds of excess. When 830 of 1,000 simulations meet all of the client’s life goals and leave an estate value larger than the desired legacy goal, that is not an 83-percent chance of success. It is an 83-percent chance of excess. The problem is that success implies only meeting the goals and assigns no value to the 829 of the 830 successful trials that exceeded the goals.

Consider the choice of words from the client’s perspective. Would you board an airplane that has an 83-percent chance of not crashing? Presenting the plan’s result as a success rate creates the perception that the remaining 17 percent of outcomes is failure—crashing—without even calling it a failure rate.

Targeting too high a confidence rate comes at a price. Our choice of words matters and if the words scare people into comparing the “failure” of their plan to a plane crash, a comfortable journey versus a nosedive, the result will be lifestyle sacrifice. We need to communicate it is not a simple pass/fail grade. Of the 83-percent successful flights, many exceed expectations. They arrive hours early with first-class upgrades, complimentary skycap service, and a limo waiting at baggage claim. Worrying about outliving one’s assets is a valid fear. However, few clients would view a plan as successful if it caused them to sacrifice their only life to die on a deathbed stuffed with money they wish they had spent.

Likewise, characterizing failure overstates the reality of human behavior and common sense. Presume you were living in the Great Depression with its 25-percent unemployment. Neighbors are waiting in soup lines to survive. You built a plan 10 years ago that had 83-percent confidence of exceeding your goals, but you are experiencing some of the 17 percent of the simulations that had you fail. Those failing trials assumed you spent three weeks a year at a luxury resort in Jamaica. In such an environment, might you cut it back by a week or two?

**It’s Not Odds of Crashing; It’s Odds of Needing to Get off the Plane**

Rerouting before an imminent crash is a value proposition you can deliver. Research about retirement spending that generalizes about different types of clients is interesting, but following the rules of such analyses probably won’t meet any one client’s needs. To deliver, we must set expectations in advance for change (course corrections). We need to calculate the points in our future path that would trigger such change, and understand and agree to in advance the range of acceptable goals and priorities among them based on each unique client (passenger).

A failure rate explicitly stated conveys a concept similar to our plane-crash analogy, though financial plans are much different. We fear a failed flight for many reasons, mostly because we have no control over it. You cannot get off a failed flight; you are going down with the plane. That is what clients perceive as the failure rate of a financial plan.

But this is not analogous to what we do. If you are on your life-long financial journey and you are veering off course, you might crash in 17 percent of the trials if you ignored that fact. But plans can be changed to avoid those 17-percent of outcomes. It might be stressful, the way a pilot’s aggressive evasive-maneuver emergency landing is stressful, but it’s better than crashing.

To many investors, the term “failure rate” does not convey that they have the choice of getting off the plane, or rather, the plan.

**The Over/Under Odds**

Monte Carlo simulations encounter some problems based on the words chosen to convey the results. One is the real risk of running out of money if the plan never changed despite the markets. Realistically though, that will never happen. The plan will change regardless of the rules you assumed. Another is the lifestyle price of sacrifice that would be necessary to eliminate scary odds of failure.

Simulations shed an obvious light on the price of living your life planning for some of the worst-conceivable environments, often far worse than we have ever experienced historically. Those simulations show that to have really high confidence, you need to increase your savings so much that you won’t have to worry about the risk of eating cat food in retirement because you will have to get used to the taste of it right now.

Monte Carlo simulation can be much more useful than merely measuring lifelong success and failure rates. In fact, if the highest success rate is all one is targeting, you don’t need Monte Carlo simulation; you can assume the client gets no return or that they lose all of their money. The real value of Monte Carlo isn’t knowing whether you are saving too little and risking failure, or spending too much and not taking enough risk. Monte Carlo’s real value is in allowing advisors to be balanced and to communicate the consequences of underspending, taking needless risks, or oversaving.

Our approach to planning changes to use Monte Carlo as a tool to measure the point in the distribution of uncertain outcomes of becoming either under- or overfunded.

**Rethinking the Approach to Planning**

To make the most of a client’s only life, advisors must become skilled at balancing...
Pensions Can Be Over- or Underfunded—Why Not Financial Plans?

The PBS exposé of 401(k) plans, The Retirement Gamble (2013), provided a nostalgic view of the days when someone would spend an entire career at one company then retire with a gold watch and a lifetime pension.

People naturally like the comfort and “guarantees” of things like pensions or annuities except when they realize they are giving up significant upside that could have improved their life.

Isn’t an ideal retirement plan one where you could have the similar confidence as a pension plan, yet still get the upside should the markets perform well? That is what I propose. The problem is not that we need guaranteed-income products added to 401(k) plans or more defined-benefit plans where the company gets the upside of strong markets instead of the beneficiary. Instead, we need to include over- and underfunding status of 401(k) participant balances relative to their goals. It is possible to deliver that status to every participant, yet few sponsors or advisors have adopted measuring the funded status for 401(k) participant goals.

Pensions have a reasonably high confidence of paying the promised pension, but that does not mean that pension beneficiaries can be certain they will never have to adjust their plans. You have heard of many plans that were frozen or stopped accruing future benefits. Even those taken over and guaranteed by the Pension Benefit Guarantee Corporation (PBGC) only had 80-percent confidence in delivering the promised benefit.1

You can target sufficient confidence with similar comfort in your retirement income. The difference is instead of the company getting the benefit of market upside, you get it to improve your life and potentially reach some of your loftier goals that would otherwise be lost with the guarantee of a pension or annuity.

People Like Choice and Safety—Can They Get Both?

While there is a litany of well-researched approaches on the topic of SWRs, the academic validity and practical value of such methods would be enhanced by incorporating a few rules of communication:

1. Balance context and relativity in communication.
2. Set expectations that the plan will need to change.
3. Calculate future values that would trigger a change.
4. Disclose the odds that the plan will need to change in the near-term, not just the long-term, since that is when we need to deal with clients—it is too late if they are at their mortality age or already broke.
5. Set ideal and acceptable goals and understand in advance the relative priority among those goals so that when uncertainty presents itself we are prepared for what course of action we would take for each specific client. That set of choices will be customized to each client’s priorities, unlike the generic rules of thumb used in much of the academic spending rate approaches.

Let’s look at each of these five imperatives.

Balanced Communication

I already explored what a client might perceive from the use of the terms success and failure rates and how Monte Carlo simulation can be morphed to convey over- and underfunding status, just like a pension.

There are other examples of needing to choose our words carefully. For example, a single-premium immediate annuity (SPIA) guarantees an income for life, but an SPIA may not be an advantageous bet for its buyer.2 In an article about optimizing portfolios using SPIAs, Pfau (2013) uses an example about a couple and a (presumed) joint-life SPIA in portfolio optimization calculations. The SPIA returns were calculated with a joint-life mortality table.3 Table 1 shows the percentage return of the product at a few sample mortality ages, and the percentage of buyers that would do worse than these results based on the joint-life mortality.

In making an informed decision on the SPIA, both the benefits of the life-long income guarantee and the opposite side showing the percentage of buyers doing worse should be presented objectively and fairly. Both should be acknowledged but balanced so that emotional fears do not lose the light of reason.

The SPIA has essentially no chance of doing any better or worse than the returns in table 1 at specific mortality ages. That is the choice, take it or leave it. Presenting the SPIA with both the emotional benefits it delivers yet show-

<table>
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<th>Age</th>
<th>Return</th>
<th>% Doing Worse</th>
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<tbody>
<tr>
<td>89</td>
<td>2.61%</td>
<td>52%</td>
</tr>
<tr>
<td>95</td>
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</tr>
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<td>105</td>
<td>4.95%</td>
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ing the reasoned reality of the returns it would deliver and the odds of how many buyers would do worse at various mortality ages might have the client (or advisor) rethink a decision that otherwise may overweight the emotional fear the annuity is designed to target.

**Setting an Expectation for Change: Showing Future Values That Would Trigger Change**

Figure 1 illustrates how Monte Carlo simulation can be used to convey the future values that would trigger a change in the plan.

This roadway was produced for a sample client who began the journey 14 years ago with a 45-year plan. It makes it easy to understand the future (and past) portfolio values that would avoid being either over- or underfunded. The horizontal axis represents the value of the assets, and the vertical axis shows time, progressing from bottom to top.

The turns in the road can be caused by either extreme cash flow goals in the past or future, or by changes made in response to over- or underfunding due to market movements, changes in goals or priorities, issues discovered in ongoing reviews, or unexpected positive or negative cash flows or market movements. The line with dots tracks past values, the arrow represents where you are today and the Comfort Zone® shows where you need to be with this plan at any given time in the future.

To deal with the near-term for clients who have regular reviews of their plans, advisors can zoom in on the past year or two and the next three or so years to show the range the portfolio values need to be within to stay on course. Table 2 exposes the need for ongoing advice from the advisor by showing the odds that the plan might become over- or underfunded are much higher in the near-term, triggering a course correction.

This application of Monte Carlo simulations bridges many gaps. Remember that most Monte Carlo simulations show results only over the life of the plan, and trials that became over- or underfunded along the way are ignored for veering off course. All that usually matters is the ending outcome in the typical success/failure analysis. Shedding light on the higher near-term odds that the plan will need new advice allows advisors to prevent needed changes from being viewed as surprises.

**Boy Scout Planning: Being Prepared with Ideal and Acceptable Goals and Priorities**

If we are unprepared for course corrections, there is no use in setting the expectation for changes. Without the information from figure 1 and table 2, the excitement of soaring markets can trigger excessive optimism and potentially reckless spending. It may lead clients (or advisors) to increase portfolio risk at a time when the client has won the market lottery and could afford to take less risk. The reverse is also true; devastating bear markets could cause the client to make needless lifestyle sacrifices or reduce portfolio risk when increasing it might be the best choice. This analytical framework encourages advisors to focus more on the goals that clients truly value rather than on clients’ emotions.

Discovery sessions and reviews based on identifying ideal and acceptable goals are easier than asking a client to pick a single value. This exercise also has clients agreeing in advance to the range of boundaries so that the advice the advisor gives can exceed acceptable values instead of the advisor having to negotiate goals downward from a higher single fixed value. Psychologically, it is a far more positive experience to hear your travel budget is $5,000 more than what was acceptable instead of $10,000 less than what you wanted. Understanding the priorities and tradeoffs that clients are willing to make, in time or size for their goals, is
common-sense preparedness for coping with market uncertainty.

Advisors can ask several questions to facilitate this process. What would be the first goal you would adjust if you became overfunded? Would it be moved sooner, increase in size, last longer, or would we add a goal that was previously tabulated? Or, would there be modest adjustments to multiple goals? If you became underfunded, what goals would you compromise, delay, or modify first to make a course correction?

Do Not Forget Risk
Risk exposure should be part of these discussions, choices, and priorities. In practice, it is best to avoid positioning the client at his or her maximum tolerance for risk. (Identifying risk tolerance is identifying the client’s maximum tolerance for pain. Do you really want to proceed by positioning your client in a portfolio designed to experience that risk?) Usually, advisors need to make minimal adjustments in the recommended goals for a plan that is a notch below a client’s risk tolerance. Having room to increase risk is valuable in dealing with market uncertainty.

Conclusion
There are many valid and well-researched strategies for determining safe withdrawal rates. However, the SWR-driven approach masks the need for advice that is customized to the needs and desires of each individual client. Some clients have priorities that differ from the rules used in many SWR strategies, leaving the door open for advisors to adopt an approach using these strategies while applying a consistent, balanced, and objective method of communication to meet all client needs.

Embracing emotion, applying reason, being prepared, setting expectations for the likelihood of change, and communicating a simple path of where you have been and where you are going instills comfort and confidence. Showing the lifestyle prices of various choices demonstrates objectivity and interjects the opportunity to educate clients about the consequences of irrational and emotional decisions, not by squelching emotion, but by embracing emotions that the client values.

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Endnotes
1 PBGC has taken over 4,400 private-sector pension plans and 20 percent of participants (280,000 of 1.4 million) have been forced to accept reduced pensions. This represents a change in plans, and at about the same rate as our targeted confidence levels. Source: http://www.pbgc.gov/res/factsheets/page/guar-facts.html.
2 A single-premium immediate annuity is an annuity contract with an insurance company that agrees to immediately begin regular ongoing annuity payments in exchange for the amount used to purchase the annuity. A number of forms of payment elections can be selected. For example, payments can be based on one person’s life expectancy, joint life expectancy for couples, or either of these with a certain minimum number of years being paid.

References


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