Conserving Client Portfolios During Retirement, Part IV

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The author presents new findings in his ongoing research into asset allocation and withdrawal rates during retirement. The goal, as in earlier articles in this journal, is determining how much a client can extract from his or her portfolio annually without running out of money during lifetime. This article explores alternative withdrawal strategies: (1) a "Prosperous Retirement" model—larger withdrawals early in retirement—and (2) a performance-based model—relating withdrawals to portfolio performance.

This article presents new facets in the continuing research I have been conducting since 1993. Earlier articles on the topic appeared in the October 1994, August 1996 and December 1997 issues of the *Journal of Financial Planning*. This research mines data for various asset classes and inflation from Ibbotson Associates' *Stocks, Bonds, Bills and Inflation: 2000 Yearbook*. Based on this data, the article reconstructs the investment experience of 55 retirees, each retiring on January 1 of the years 1926 through 1980. The reader is referred to earlier articles in the series for an explanation of methodology.

Alternative Withdrawal Strategy 1: 'Prosperous Retirement'

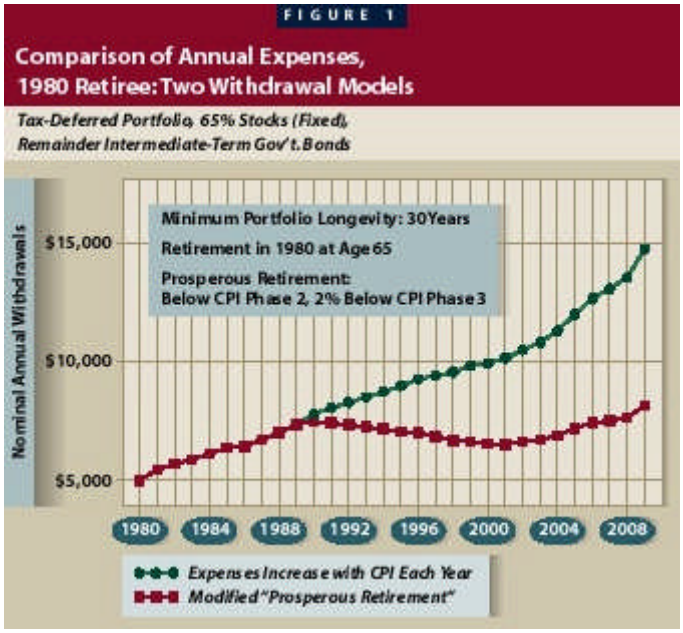
In my earlier work, I assumed that clients increase withdrawals for inflation every year during retirement. As retirement authority Michael K. Stein, CFP, has pointed out, this is not the only strategy by which clients can withdraw money; in fact, it may not even be the best one. In his book, *The Prosperous Retirement*, Stein proposes that retirement is divided into three phases, and that a different mode of expenditure characterizes each phase:

1. **Active budget phase (through age 75).** These are the peak spending years during retirement. Retirees are at their most physically active and have a considerable amount of discretionary expenses in their budget. Expenses increase with personal inflation rate and may be further increased by periodic "special plan" expenses.
2. **Transition budget phase (age 75 through age 85).** Retirees gradually become less active as health declines and interest in travel wanes. Expenses decline, or grow more slowly, as certain discretionary expenses are eliminated. Because during this phase expenses must gradually approach those of the smaller "passive" budget, nominal expenses grow more slowly during this phase than during either of the other two phases.
3. **Passive budget phase (beyond age 85).** Retirees may have many years ahead, but their expenses are now dictated by a much lower passive, or minimum sustenance, budget. The passive budget equals the active budget, minus discretionary expenditures. The passive budget also grows with inflation, but because it contains a higher percentage of fixed expenses, it does so at a lower inflation rate than the budget during the active phase.

This seems to me a realistic approach to retirement spending, and reflects the desires of many of my retirement clients to "spend more now, spend less later" so as to fully enjoy their physically most vigorous years. However, it is not possible to exactly reconcile Michael Stein's three-phase approach with that of my research, because he uses average rates of inflation for his forecasts, and I use actual, historical rates of inflation. To adopt his ideas, I modified his three-phase model as follows:

1. **Active phase.** Withdrawals increase annually by the actual inflation rate.
2. **Transition phase.** Withdrawals increase (or possibly decline) annually by an arbitrary rate, which is less than the actual inflation rate.
3. **Passive phase.** Withdrawals increase annually by an arbitrary rate, which is less than the actual inflation rate.

Figure 1 compares the new withdrawal model with the old withdrawal model, for a client who retired in 1980. For years after 1999, returns for stocks, bonds, and inflation are represented by the returns for the years 1964–1999, recycled over and over.

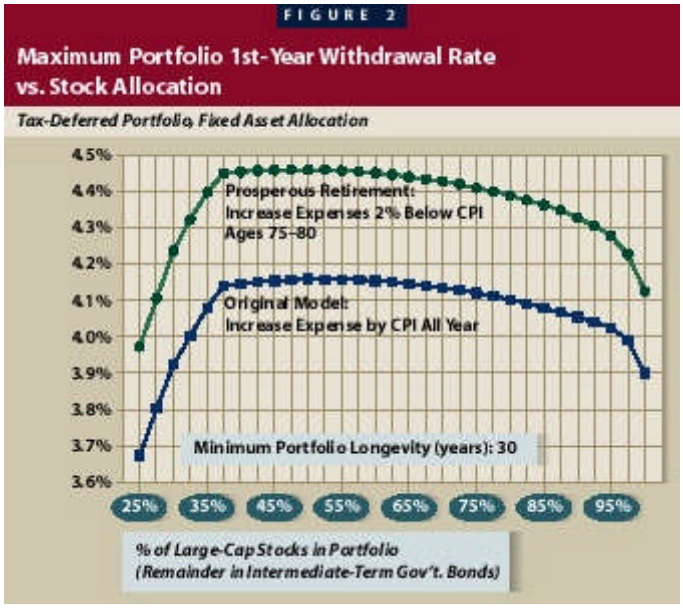


During the first ten years of retirement (Phase 1), the withdrawal models are identical, by design. During this period, withdrawals are increased each year by the inflation index. During the second ten years, or Phase 2, the models begin to diverge. The modified "Prosperous Retirement" model assumes that withdrawals will grow with inflation less four percent a year (I chose the four percent arbitrarily to make a close approximation to the example in Stein's book). Since inflation during the 1990–1999 period was frequently less than four percent a year, nominal withdrawals actually decline during this phase.

During the final period, Phase 3, the modified Prosperous Retirement model assumes that withdrawals will grow with inflation less two percent a year (the two percent was another arbitrary choice). As a result, nominal withdrawals for both models grow during this period, but the Prosperous Retirement withdrawals grow at a much slower rate.

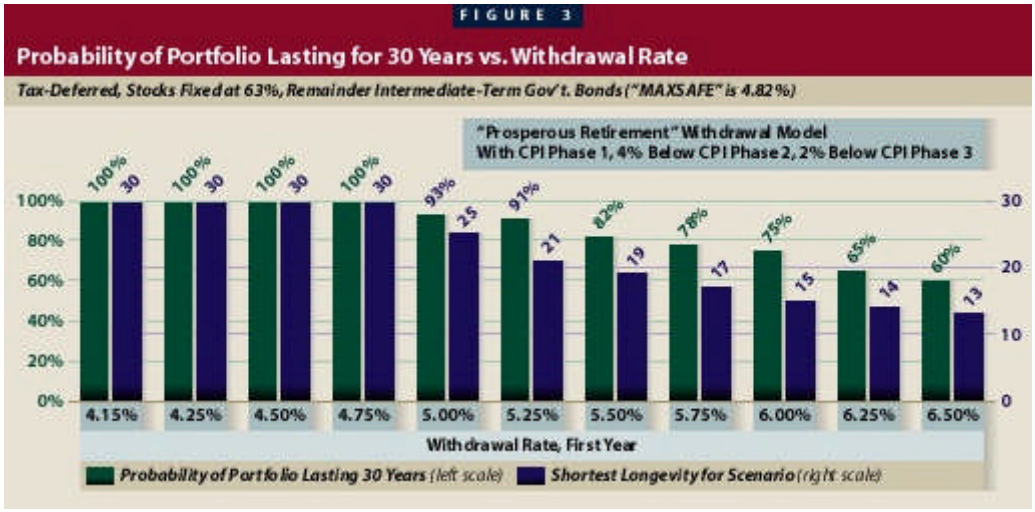
The bottom line is that at the end of retirement, although having begun with the same dollar withdrawal, the Prosperous Retirement client is withdrawing about 45 percent less than the "Original Model" client. This suggests that the Prosperous Retirement client can withdraw at a higher initial rate and still not outlive his or her investment portfolio. Let's examine that conclusion more closely.

Figure 2 depicts the maximum safe initial withdrawal rate (MAXSAFE) that assures 30 years of portfolio longevity, across a range of stock allocations. The bottom line of the chart is the MAXSAFE for the original withdrawal model (increasing withdrawals by the consumer price index, or CPI, each year). As we have seen in the past, it peaks out at about 4.14 percent, and remains near that peak over a broad range of stock allocations.



The top line of the chart is the MAXSAFE for the modified Prosperous Retirement withdrawal model. This model assumes, as in Figure 1, that withdrawals will grow at four percent below CPI during Phase 2, and two percent below CPI during Phase 3. It is apparent that this line has a much higher peak, at about 4.8 percent. This means that if a client adheres to the Prosperous Retirement withdrawal scheme depicted in Figure 1, he or she can initially withdraw 15 percent more than the client who increases withdrawals with the CPI every year. This is certainly a significant difference. It is imperative, of course, to convince your clients to cut back on their withdrawals when they are supposed to!

Higher withdrawal rates. Of course, as we have discussed in the past, some clients will want to withdraw even more than the "safe" amount. Figure 3 depicts the probability of running out of money before the 30 years expires, at a variety of withdrawal rates, for the Prosperous Retirement client. As always, the left-hand set of bars represent the probability of 30 years of portfolio longevity, and the right-hand set of bars depict the "worst case" longevity historically. The left-most set of bars corresponds to the MAXSAFE.



As you can see, Prosperous Retirement clients have a 75 percent chance of enjoying their money for 30 years at a six percent initial withdrawal rate. This may be an attractive trade-off for some clients. They can risk having to cut back on withdrawals in the event of a big stock market decline, in return for a significantly better lifestyle. Even at a seven percent initial withdrawal rate, these clients have a 50-50 chance of not outliving their investments.

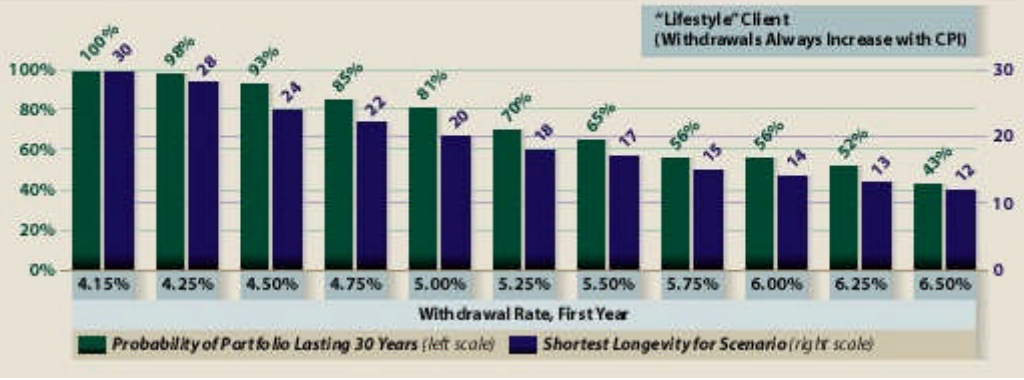
Compare this chart with Figure 4, which presents the same information for the "Lifestyle" client, whose withdrawals are always increased by inflation. At a 6 percent initial withdrawal rate, the Lifestyle client has only a 56 percent chance of getting through the 30 years without borrowing from his or her in-laws. A 7 percent initial withdrawal rate is not even

depicted for this client, as its probability of success is very low (less than 40 percent).

FIGURE 4

Probability of Portfolio Lasting for 30 Years vs. Withdrawal Rate

Tax-Deferred, Stocks Fixed at 63%, Remainder Intermediate-Term Gov't. Bonds



Of course, we have so far only considered one possible variation of the Prosperous Retirement withdrawal model. Table 1 provides the MAXSAFE for 25 different combinations of Phase 2 and Phase 3 withdrawal rates (at 63 percent large-cap stocks).

TABLE 1

"MAXSAFE" Rates

	Phase 3: Withdrawal % Below CPI				
Phase 2: Withdrawal % Below CPI	1%	2%	3%	4%	5%
1%	4.33%	4.36%	4.39%	4.42%	4.45%
2%	4.48%	4.51%	4.53%	4.56%	4.59%
3%	4.62%	4.65%	4.68%	4.71%	4.73%
4%	4.77%	4.80%	4.82%	4.85%	4.87%
5%	4.91%	4.94%	4.97%	4.99%	5.01%

Table 1, in conjunction with Figure 3, also can be used to determine the probability of "success" of withdrawal rates greater than the MAXSAFE, for various combinations of Phase 2 and Phase 3 withdrawal adjustments. It would seem that for each desired portfolio longevity, an additional chart would be required. However, the progression of "probability" bars in each chart is so similar, when viewed across charts for different portfolio longevities, that some simple rules of thumb can be developed, as reflected in Table 2.

TABLE 2

Adjustments to Probabilities of "Success" for Withdrawal Rates Higher Than "MAXSAFE"

% Desired Above "MAXSAFE"	Probability of Portfolio Lasting Desired Period
0%	100%
10%	91%
15%	85%
20%	81%
25%	72%
30%	66%
35%	61%
40%	56%
50%	53%

Let's consider an example of how this works. Assume you have a client who would like to make withdrawals for 30 years without exhausting her portfolio. She specifies that withdrawals will grow at three percent below the CPI during Phase 2, and four percent below the CPI during Phase 3. From Table 1 you learn that the MAXSAFE for the first year is about 4.7 percent. So, if the client has a $1 million portfolio and wants to be "safe," she should

withdraw no more than $47,000 the first year.

However, let's say your client is more aggressive, and wants to withdraw seven percent, or $70,000, the first year. That's almost 50 percent more than the MAXSAFE of 4.7 percent. Table 2 tells you that a 50 percent increase over the MAXSAFE is accompanied by only a 53 percent chance of success—that is, the probability of her exhausting her portfolio before 30 years is about 50-50. She can then determine her comfort level with those odds.

Using Table 1 and Table 2 in tandem this way, you don't even need the probability charts to determine the odds of success of a particular withdrawal strategy. However, the probability charts contain another vital piece of information—the worst-case longevity for a particular withdrawal rate. For example, in Figure 3 you can see that a retiree withdrawing five percent the first year and increasing the withdrawal amount for inflation each year could run out of money in only 21 years—quite a bit less than the planned 30 years.

Note that the worst-case bars are the same on all probability charts, for any given withdrawal rate. Thus, you need only one probability chart to demonstrate the worst-case longevity possibilities.

I conclude that if a client is disciplined enough to follow through with his or her intentions to reduce withdrawals after the first ten years of retirement, they can enjoy a significantly better lifestyle during the first ten years of retirement.

Alternative Withdrawal Strategy 2: 'Performance-Adjusted Withdrawals'

When a Lifestyle client retires in the early stages of a protracted bull market, such as the one we have enjoyed since 1982, the client's annual withdrawals under my original method (increase withdrawals by the CPI each year) can gradually become a smaller and smaller fraction of the portfolio value. Eventually, that fraction may become ludicrously small, perhaps one percent or less, suggesting the client can or could have taken larger withdrawals in the past.

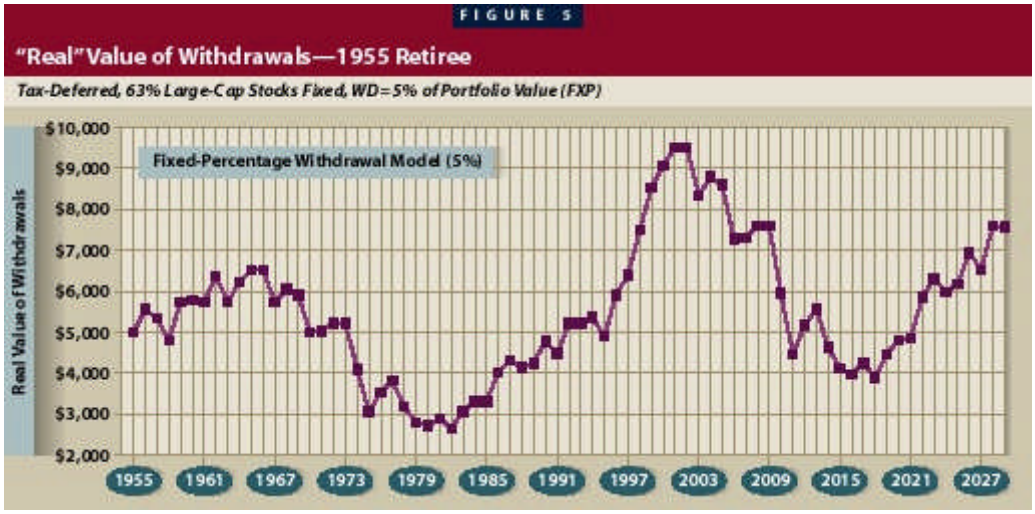
For example, a client retires in 1980 and takes the recommended maximum safe withdrawal of 4.15 percent for a tax-deferred account, increasing the dollar amount of the first withdrawal by the CPI each year. In 1989, her tenth year of retirement, her withdrawal represents only 2.2 percent of the portfolio value at the end of that year. In 1999, her withdrawal represents only 0.9 percent of the portfolio value. Strong returns and tame inflation have conspired to grow her real wealth far more rapidly than her withdrawals.

Can we develop a withdrawal scheme that relates to portfolio performance, so that withdrawals are adjusted upward automatically during a long bull market?

FXP (fixed-percentage withdrawals). A first attempt might be to specify that the client's withdrawals be established as a fixed percentage of the portfolio value at the beginning of each year. This approach has an undeniable virtue: technically, the client never runs out of money! That is because, by definition, the client can never withdraw the full value of the portfolio during any given year, only some percentage of that value. That means there is always money left in the portfolio at the end of each year, although it may be vanishingly small.

However, there is a downside to this approach, as illustrated in Figure 5. This chart depicts the "real," or inflation-adjusted value of withdrawals taken by a 1955 retiree over a 75-year period. I am using the "1964–1999 recycled asset rate-of-return (ROR)" model so that I can illustrate concepts over an extended period. In this ROR model, actual investment returns for each class, and for inflation, for the years 1964–1999, are repeated ad infinitum, beginning with the year 2000. Note that the graph for the "real" value of withdrawals under the original, increase-with-CPI model, would be a straight line on the chart, beginning at the same start point.

FIGURE 5



As you can see, the client begins by withdrawing an arbitrary $5,000 the first year. Withdrawals grow nicely through the bull market of the late '50s and '60s, but then start to skid during the ensuing inflationary/recessional spiral of the 1970s. By the time withdrawals bottom out in the early 1980's, the client is withdrawing (in real terms) only slightly more than half the amount he began with, or about $2,700. Even worse, her real income has declined almost 60 percent from its peak value. That's a very large adjustment to ask any client to make in their spending.

However, like the phoenix rising from the ashes, during the great bull market which began in 1982, withdrawals skyrocket to an inflation-adjusted $9,500, more than three times their lowest value, and almost twice their initial value. The client is living high on the hog! (The bad news is that the client is now 105 years old). After 2000, the ROR model recycles the 1964–1999 rates of return and CPI statistics, so the client's withdrawals again drop precipitously by more than 50 percent, only to recover in the new bull market which begins, hypothetically, in 2019. Easy come, easy go.

Obviously, if the client retired in 1982, at the start of an extended bull market, this approach works exceedingly well, as withdrawals increase almost without interruption for many years. However, the approach would be disastrous for a client such as the 1955 retiree, who faces a long period of declining real income, perhaps early in retirement.

For this reason, I would not recommend the FXP method to any but the most aggressive clients. I believe that most people can reduce their spending modestly from year to year without difficulty, but it is too much to ask for clients to accommodate 50 percent (or worse) declines in income. I prefer to recommend a withdrawal model that provides for more stable income during retirement. That is one reason why, as my first choice, I selected the original model of CPI-increased withdrawals for my basic research.

An exception to the above concerns might be a client who has substantial income from other sources, and who relies on his or her portfolio only for supplemental income. In that case, large fluctuations in annual withdrawals might be acceptable.

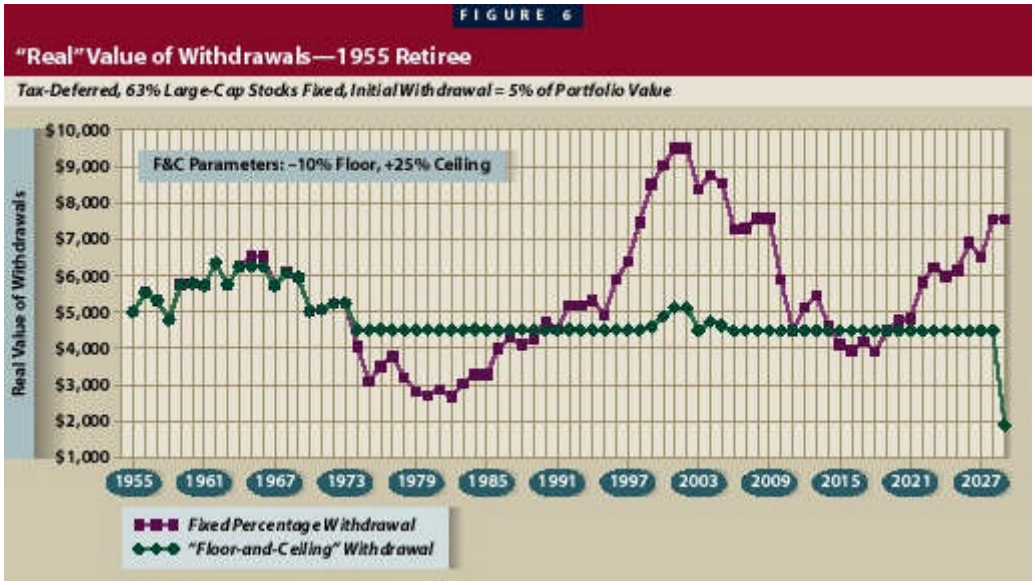
"Floor-and-ceiling" (F&C) withdrawals. Despite the deficiencies of the FXP approach, I was not ready to give up on the idea of increasing withdrawals during extended bull markets. Instead, I tested the following variation of the idea:

1. Allow withdrawals to increase during a bull market, but to not more than 25 percent above the real value of the first year's withdrawal
2. Allow withdrawals to decline during a bear market, but not more than ten percent below the real value of the first year's withdrawal.

The rationale behind this approach is to permit a client to enjoy a significant upside in lifestyle during a bull market, but limit the potential downside during a bear market. The +25 percent and –10 percent limits are somewhat arbitrary; other values could have been chosen. The –10 percent "floor" reflects my gut feeling that clients would prefer not to make

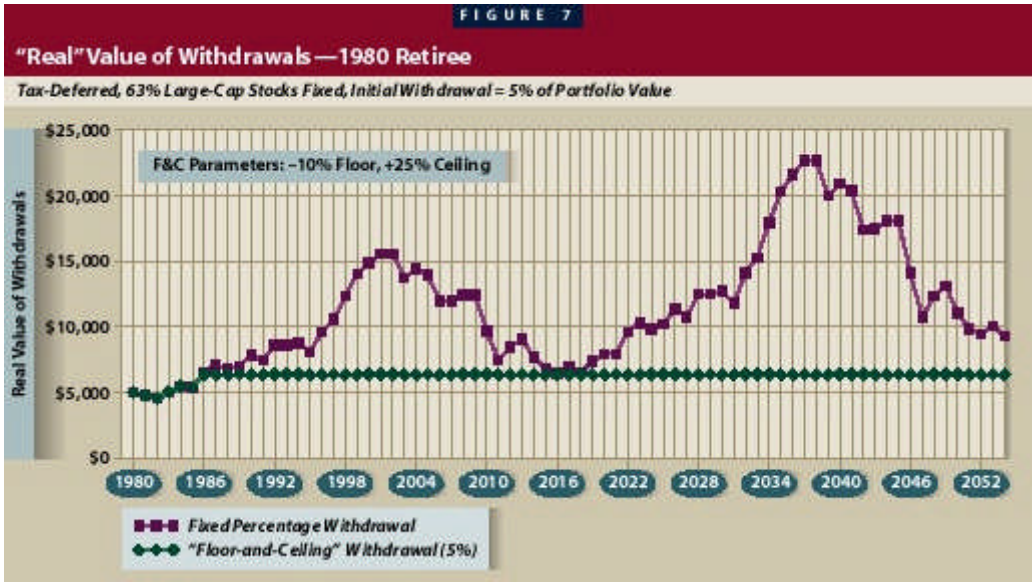
deeper reductions in their expenses. The +25 percent figure "ceiling" would, in theory, permit the portfolio to accumulate more funds to accommodate an ensuing downturn in the stock market, thereby permitting the viability of a "floor" on withdrawals. Let's see how that works out.

Figure 6 compares the real (inflation-adjusted) withdrawals for the F&C approach with the FXP approach, for the 1955 retiree. As you can see, the F&C client's withdrawals are restricted to a much narrower channel than those of the FXP client. Despite that, for the first 15 years of retirement, during the bull market of the late '50s and '60s, the F&C client enjoys almost as much income as the FXP client. Furthermore, in the ensuing bear market years of 1969–1974, he suffers a much smaller decline in income—a 30 percent loss versus a 60 percent loss for the FXP client.

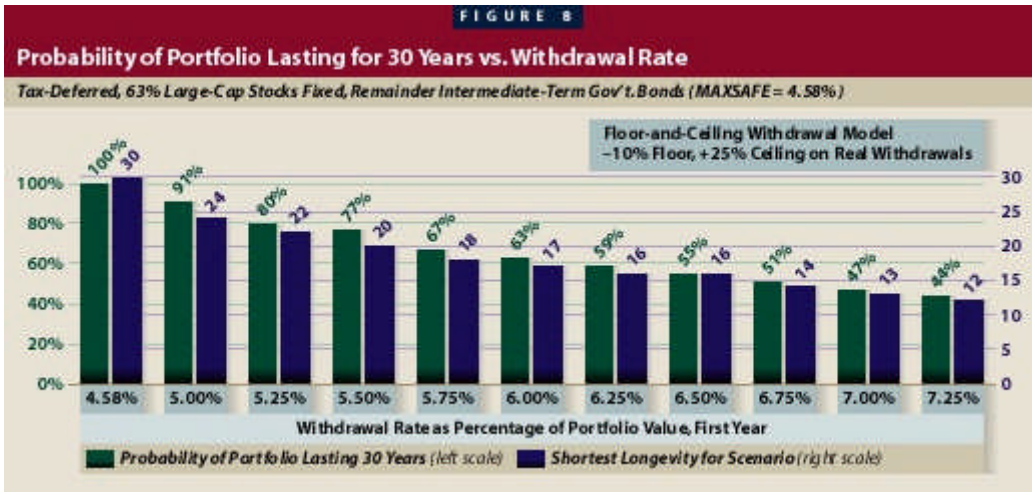


The F&C client maintains the income advantage for another 13 years, until 1987, when the rising tide of the great bull market that began in 1982 finally lifts the FXP client's income past that of the F&C client. After that, the FXP client has a decided advantage in withdrawals for many years. However, her delight in this situation may be mitigated by the fact that she is nearly 100 years old!

The F&C client had the upper hand in the preceding example. But what of a client who retires just as a long bull market is beginning? Figure 7 depicts the experience of 1980 retirees who used the FXP and F&C methods described above. As you can see, it is now the FXP client who has the advantage. Her real income zooms during the first 13 years of retirement, far above the "ceiling" income of the F&C client. During the following 13 years, the FXP client experiences a considerable decline in income, but it never drops below the level of the income for the F&C client. And when the next bull market starts, she is off to the races again.



As usual, we also want to know what is the MAXSAFE for the F&C model, and what the client's chances are if he exceeds the "safe" withdrawal rate. Figure 8 shows the success rate for various withdrawals under the –10 percent/+25 percent F&C model. As you can see, the MAXSAFE, at the far left of the chart, is 4.58 percent. That is about ten percent higher than the MAXSAFE rate achieved under the original CPI withdrawal model with which I began my research.



Of course, the client pays a price for this higher safe withdrawal rate. He or she must live with the possibility that in the event of a major bear market, their withdrawals may have to be cut substantially. This was not a concern with the CPI method, in which the real value of withdrawals always remained the same.

In my opinion, the floor-and-ceiling withdrawal method is promising, and should seriously be considered by many clients. It recognizes a natural human urge to spend more when times are good, and conversely to "pull in one's ears" when storm clouds build overhead. There is admittedly an element of risk compared with the CPI method, in that a client may have to accept a cut in "real" withdrawals at some point in retirement (although conceivably the nominal dollar amount of withdrawals could remain the same). However, this is one more choice to offer clients, and I believe that financial planning is all about offering clients intelligent choices.

Note that the F&C model can be made more conservative or aggressive merely by playing with the floor and ceiling percentages. I have looked at many variations of those percentages, and concluded that the –10 percent/+25 percent option is probably best for all but the most aggressive clients. In my judgment, it represents the best trade-off between potential for higher income and protection from downside risk.

Of course, in practice, a client may begin retirement using one withdrawal model, and after a period of years may decide to switch to another. The 1980 retiree who used the F&C method would have found himself awash in unexpected wealth after 15 years, with no bear market yet in sight. His withdrawals, which began at five percent of portfolio value, would have shrunk to only three percent of portfolio value, even though the dollar value of those withdrawals had grown significantly. An early retiree in that position might decide to switch to the CPI method of withdrawals, which would allow him to increase his withdrawals to at least 4.1 percent of portfolio value, and assure real income at that level for another 30 years.

I would like to point out that the three methods of withdrawals we have discussed so far—the original CPI method, the FXP and F&C methods—are all variations of the F&C method, which is the most general form of this type of withdrawal scheme. To obtain the CPI chart in the F&C method, set the floor and ceiling percentages both to zero. This will generate a straight horizontal line of constant real value on charts like Figure 6. To generate the FXP chart, set the floor and ceiling percentages both to infinity (or some very large number).

Finally, as an interesting side note, the 1955 retiree who choose the –10 percent/25 percent F&C withdrawal plan illustrated in Figure 6 actually ran out of money in the 76th year, just past the time horizon of the chart! The bill for the 1969– 1974 bear market finally came due. Of course, unless the client retired just after kindergarten, or is a super-long-lived client, that is not much likely to matter. However, it underlines how important it is to be conservative with one's resources during retirement; one bear market can have devastating effects for many years.

Conclusions

The Prosperous Retirement withdrawal scheme, proposed by Michael Stein in his book of the same title, appears to be an interesting and useful alternative to the CPI model I used in my earlier research. Withdrawals in the early years of retirement can be significantly increased with the use of this withdrawal method. However, clients must have the discipline to reduce withdrawals as planned, or disaster could result in later years.

Performance-based withdrawals, which relate each year's withdrawal to the value of the portfolio, are another interesting alternative withdrawal strategy. The author favors a variation that places a ceiling and a floor on the real value of future withdrawals. This permits the client to withdraw more than the original CPI method. However, the client must be prepared to suffer cuts in real withdrawals during bad market conditions.

Clients are not married to any one withdrawal model for their whole retirement. They can adjust their approach based on their experience early in retirement.

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