Develop Business/Financial Planning

The Zone System for Choosing Retirement Income Products, Part 1

By Jim Otar, CMT, CFP
May 14, 2007

How do you decide which product to use when your client needs lifelong income—especially if his retirement savings aren't what they should be? One advisor classifies his clients into zones to decide whether to go with an investment portfolio or buy a life or variable annuity. Here is his system for making these crucial product decisions. Part 1 of 2.

One of the difficult decisions that must be made at the start of retirement is how to create lifelong income for your client. There are many choices. You can generate income from an investment portfolio; you can buy life annuities; or you can try variable annuities with guaranteed pay.

But how do you decide which product to use? What makes sense for one client may be disastrous for another. You need to evaluate two critical factors that affect lifelong income: your client's emotional capacity and, especially, his financial capacity. Then you can decide which product—or combination of products—makes sense given his assets and temperament.

Evaluating capacity

If a client's emotional capacity is high enough, she can invest in fluctuating investment portfolios. However, the degree to which your client can tolerate fluctuations in asset value can be one of the limiting factors in financing her retirement.

More importantly, you need to evaluate her financial capacity. Before you can talk about your client's dreams or the wisdom of asset allocation or whether to buy large or small caps in the United States or China, you must first determine if your client has the means to finance retirement. If she does not have the financial capacity, no amount of emotional capacity or risk tolerance will improve the outcome.

Determining financial capacity can be easy, as long as you convey to your client what retirement planning really is and provide your client with realistic solutions and strategies so that her capital lasts a lifetime. It is not plugging some average numbers into a retirement calculator and saying, "On the average, Ms. Client, you should be OK." The averages don't cut it. There is only one place for averages—estate planning. For proper retirement planning, you must base your retirement solutions and strategies on adverse outcomes—not average outcomes. You need to emphasize the importance of the time value of fluctuations in your projections. Using Monte Carlo simulators is a step in the right direction, but most fall short of reflecting historic market realities.

Calculating the sustainable withdrawal rate

Having the financial capacity requires not only financing the retirement, but also financing the time value of fluctuations in the portfolio. The sustainable withdrawal rate incorporates both of these factors. Assuming the age of death is 95, Table 1, below, provides the sustainable withdrawal rates from an investment portfolio (optimum asset mix) based on actual market history since 1900.

Table 1: Sustainable Withdrawal Rate (Until Age 95)	
Retirement age	Sustainable withdrawal rate
55	3.0%
65	3.6%
75	5.1%

Source: Otar & Associates

Using the sustainable withdrawal rate, you can calculate how much in assets you would need to finance one dollar of income from an investment portfolio. This is called the "asset multiplier." It is calculated as 100 divided by the sustainable withdrawal rate.

For example, for each $1 annual withdrawal—indexed to inflation for life—starting at age 65 and lasting until age 95, you need about $27.80 of capital at the beginning of retirement, calculated as 100 divided by 3.6%. Table 2, below, shows the capital requirement at the start of retirement for each dollar of indexed withdrawal:

Table 2: Asset Multiplier	
Retirement age	Capital required at the start of retirement for each dollar of annual withdrawal (indexed to CPI)
55	33.30
65	$27.80
75	$19.60

Source: Otar & Associates

The Green Zone: Abundant Retirement Savings

If the client's savings at the start of retirement are equal to or larger than the capital required as indicated in Table 2, then his optimized portfolio will provide a lifelong income. Your client has abundant retirement savings—he is in the "green" zone. He does not need to worry about annuities or variable annuities because his investment portfolio can finance retirement as well as the time value of fluctuations.

To make things easier, we can plot the asset multiplier, as shown in Figure 1 below. This chart provides you with a quick way of determining if a client has abundant retirement savings at the time of retirement. The horizontal scale indicates the retirement age. Divide the client's total retirement savings by his annual income required at the beginning of retirement and mark that on the vertical scale. Then observe where the point falls into the green (abundant) zone.

Example

Bob, 65, is just retiring. He wants his money to last until he is 95. His savings for retirement are $1 million. Because he has other indexed pensions already, he needs only $20,000 from his portfolio. Does Bob have abundant retirement savings?

- **Method 1:** From Table 2 you see that the capital required for a 30-year time horizon is $27.80 for each dollar of income. The minimum capital he must have in his investment portfolio is $556,000, calculated as $20,000 x $27.80. He already has $1 million, therefore he has abundant retirement savings.

- **Method 2:** From Figure 1 you see the capital available for each dollar of annual income is $50, calculated as $1,000,000 divided by $20,000. Plot that against age 65. The intercept—where the two arrows meet—is deep in the green zone. Therefore, Bob has abundant retirement savings. He can keep all his money in an investment portfolio and have a lifelong, indexed income.
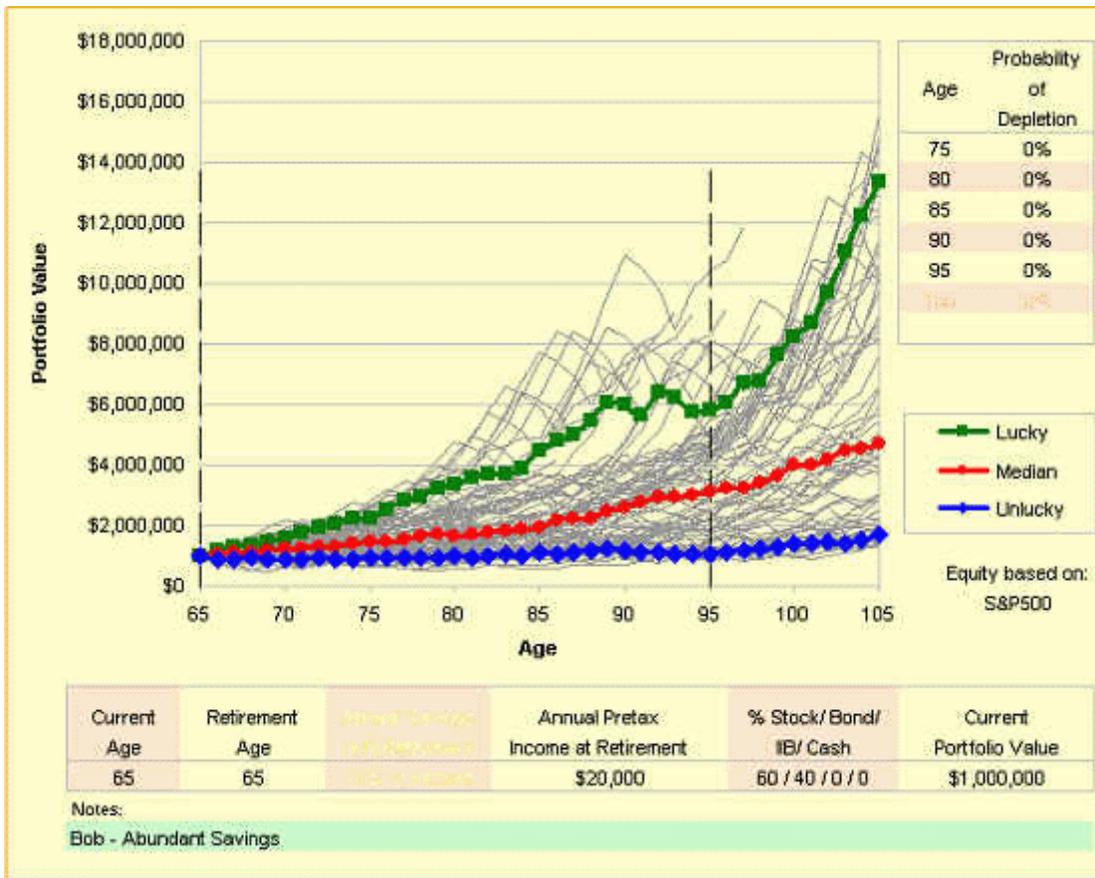
Figure 1: The Green Zone—Abundant Retirement Savings=Investment Portfolio
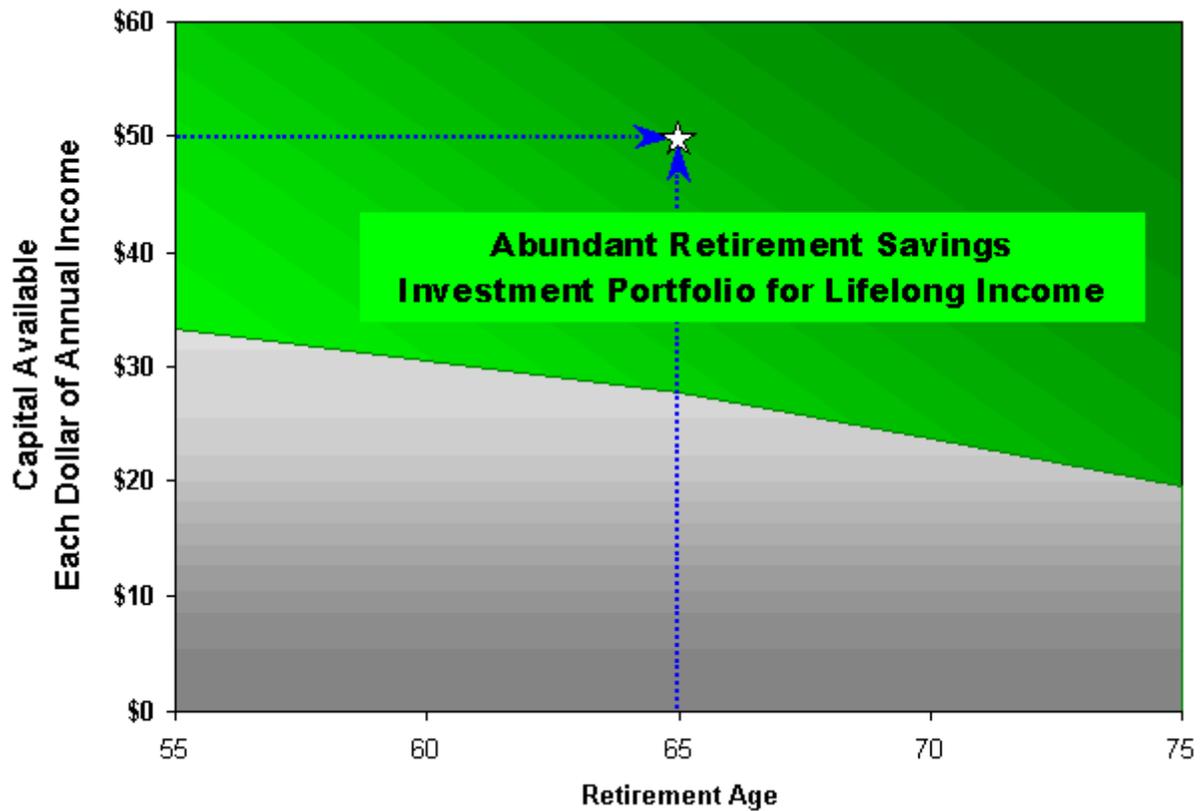
Source: Otar & Associates

Bob's asset mix is 60% equity (S&P 500 as the equity proxy) and 40% fixed income. His portfolio value during retirement is calculated using actual market history as if he were to start his retirement in any year since 1900. Plotting all these outcomes on the same chart gives us a bird's eye view of the envelope of all probabilities as depicted in Figure 2:

Figure 2: Abundant Retirement Savings

$18,000,000						Age	Probability of Depletion
						75	0%
						80	0%
						85	0%
						90	0%
						95	0%

Legend: Lucky, Median, Unlucky

Equity based on: S&P500

Current Age	Retirement Age		Annual Pretax Income at Retirement	% Stock/ Bond/ IB/ Cash	Current Portfolio Value
65	65		$20,000	60 / 40 / 0 / 0	$1,000,000

Notes:
Bob - Abundant Savings

Source: Otar & Associates

The Red Zone: Insufficient Retirement Savings

Not all clients have abundant savings. Many will have to manage with less money. If your client has insufficient retirement savings then the most effective way of eliminating the risk of longevity and the risk of time value of fluctuations is to buy a life annuity. A life annuity pays more than the sustainable withdrawal rate from an investment portfolio for the same age of retirement. That is because both the capital and the longevity are pooled with an annuity. For this discussion, we'll be referring to two types of life annuities: an indexed life annuity, which is a single premium immediate annuity (SPIA) where payments are indexed to the CPI or a fixed percentage annually, and a non-indexed or straight life annuity, which is an SPIA where payments remain constant over the life of the retiree.

The following table indicates the capital required at the start of the retirement for each dollar of life annuity income (indexed to the CPI) required:

Table 3: Cost of Indexed Life Annuity (Indexed to CPI)	
Retirement age	Cost of annuity required at the start of retirement for each dollar of annual income

	(indexed to CPI)	
	Female	Male
55	$27.60	$25.40
65	$21.20	$19.20
75	$15.20	$14.00

Source: Otar & Associates

If finding a life annuity indexed to CPI is difficult in your area, you can use a life annuity with 3% indexation. The capital requirement is then as follows:

Table 4: Cost of Indexed Life Annuity (3% Indexation)	
Retirement age	Cost of annuity required at the start of retirement for each dollar of income (3% annual indexation)
	Female	Male
55	$27.10	$24.90
65	$20.70	$18.80
75	$14.90	$13.80

Source: Otar & Associates

If the client's retirement savings at the start of his retirement is equal to or less than the capital required as indicated in Tables 3 and 4, then she has insufficient retirement savings and she is in the red zone (take the chart in Figure 1 and add the red zone to it by plotting the numbers from Table 4—see Figure 2 below).

In the red zone, your client has one feasible choice—an indexed life annuity. It will pay your client less than what she needs, but she will have lifelong income. She does not need to worry about running out of money, and she won't be checking her portfolio every minute and driving you crazy in the process.

Example

Bobbi, 65, is just retiring. She wants her money to last until 95. Her savings for retirement are $1 million. She needs $60,000 from her portfolio.

- **Method 1:** Is Bobbi's retirement savings abundant? Capital required for a 30-year time horizon is $27.80 (see Table 2) for each dollar of income. She needs $60,000 income. Therefore, the minimum capital she must have in her investment portfolio is $1,668,000, calculated as $60,000 x $27.80. She has only $1 million, falling well short of the green zone. Since she does not have abundant retirement savings, her only choice is exporting her risk to an insurance company in one form or another.

  Are Bobbi's retirement savings insufficient? Cost of a life annuity that is indexed annually by 3% is $20.70 for each dollar of income (see Table 4). She needs $60,000.

Therefore, the minimum capital she must have to buy a life annuity with 3% indexation is $1,242,000, calculated as $60,000 x $20.70. She has $1 million, and therefore insufficient retirement savings.

- **Method 2:** The capital available for each dollar of annual income is $16.67, calculated as $1,000,000 divided by $60,000. Plot that against age 65. The intercept—where the two arrows meet—is in the red zone in Figure 3 below. Bobbi has insufficient savings.

Figure 3: The Red Zone—Insufficient Retirement Savings=Life Annuity
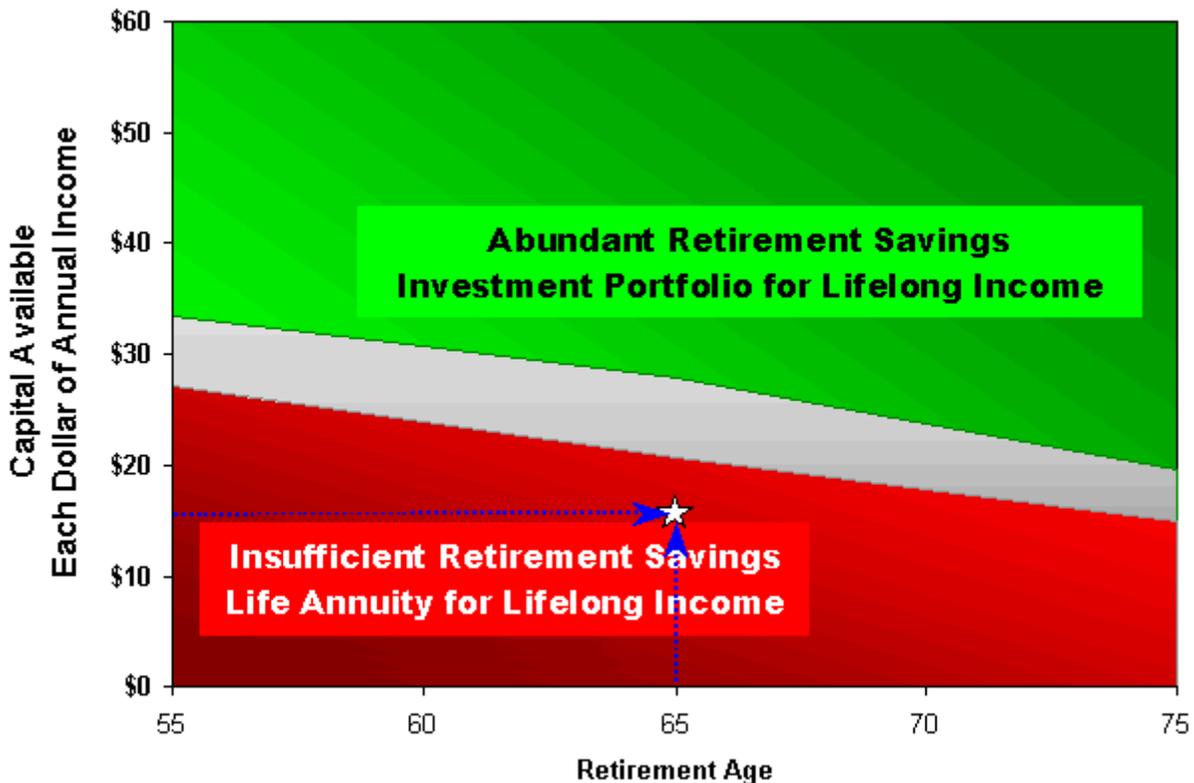
Source: Otar & Associates

Bobbi has only one choice—buy a single premium immediate life annuity. The life annuity would pay her at age 65 an annual income of $48,309, indexed by 3% each year until Bobbi dies, calculated as $60,000 x $1,000,000 / $1,242,000. She will need to adjust her lifestyle expenses, but nevertheless, she will have a guaranteed lifelong income, a much better outcome than holding the investment portfolio with an extreme high probability of running out of money. Bobbi might think, "Well, if I am cutting back my expenses to $48,309 per year, why not keep the money in the investment portfolio and take income from there?" Figure 4 below depicts what happens if she does so. The probability of running out of money by age 95 is 63%—very high. Buying the life annuity eliminates the risk of time value of fluctuations that the investment portfolio is exposed to.

Figure 4: Probability of Depletion With Insufficient Investment Portfolio
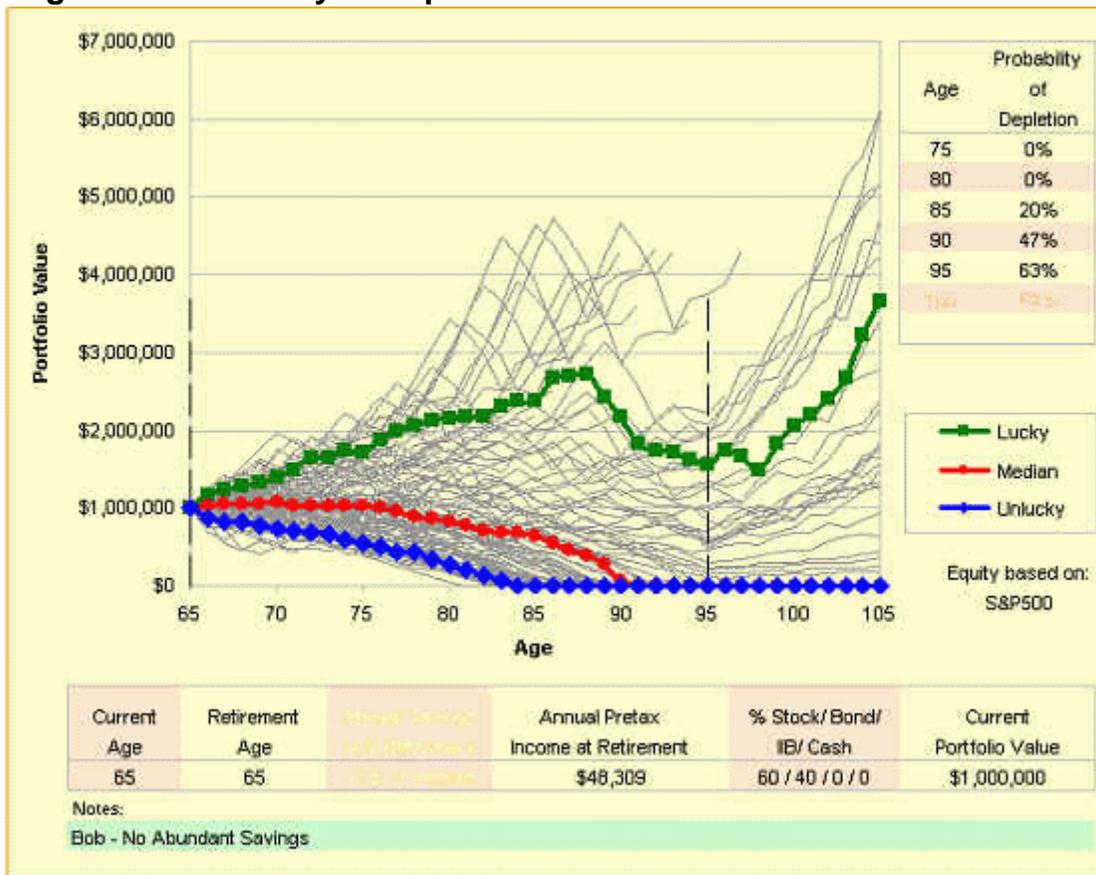
Source: Otar & Associates

After this discussion, Bobbi says that she does not want to "give" her money to an insurance company for a life annuity. Instead, she wants to buy a variable annuity with guaranteed withdrawals. This would pay her $50,000 income annually (5% of her contract value) until she dies. This way, she has access to her money at anytime.

In addition, if the market does well, then her portfolio value resets higher—up to a certain age. Each time it resets higher, the guaranteed payout is also proportionately higher for the rest of her life.

Variable annuities are attractive to many clients enticed by the thought of a guaranteed minimum withdrawal benefit for a certain term or for life. More clients prefer them over the SPIA since variable annuities may potentially grow and create some estate value. (The classic SPIA doesn't provide any estate value other than what is available with the minimum guarantee period.) Variable annuities also offer several other benefits, such as a 5 or 6% bonus prior to the start of withdrawals, death benefits, and potential resets.

Many advisors, too, get blinded by guaranteed payouts and assume that the payments will increase sufficiently to offset the inflation. This is not true. Unless the client has abundant savings to start with, the resets almost never offset the inflation factor for the entire

retirement time horizon except during prolonged deflation or a multi-year, rip-roaring bullish trend.

Jim Otar is a financial planner, a professional engineer, a market technician, a financial writer, and the founder of retirementoptimizer.com. *His past articles on retirement planning won the CFP Board Article Awards in 2001 and 2002. He lives and works in Thornhill, Canada, and can be reached at (905) 889-5744 or* jim@otar.com.

The following chart (Figure 5) shows what happens to the real purchasing power (after inflation) of the income stream, for a 5% guaranteed withdrawal rate 20 and 30 years after retirement, if Bob were to have retired in any one of the years since 1900, including all resets.

Figure 5: Variable Annuity Payouts in Real Dollars 20 and 30 Years After Retirement (Since 1900)
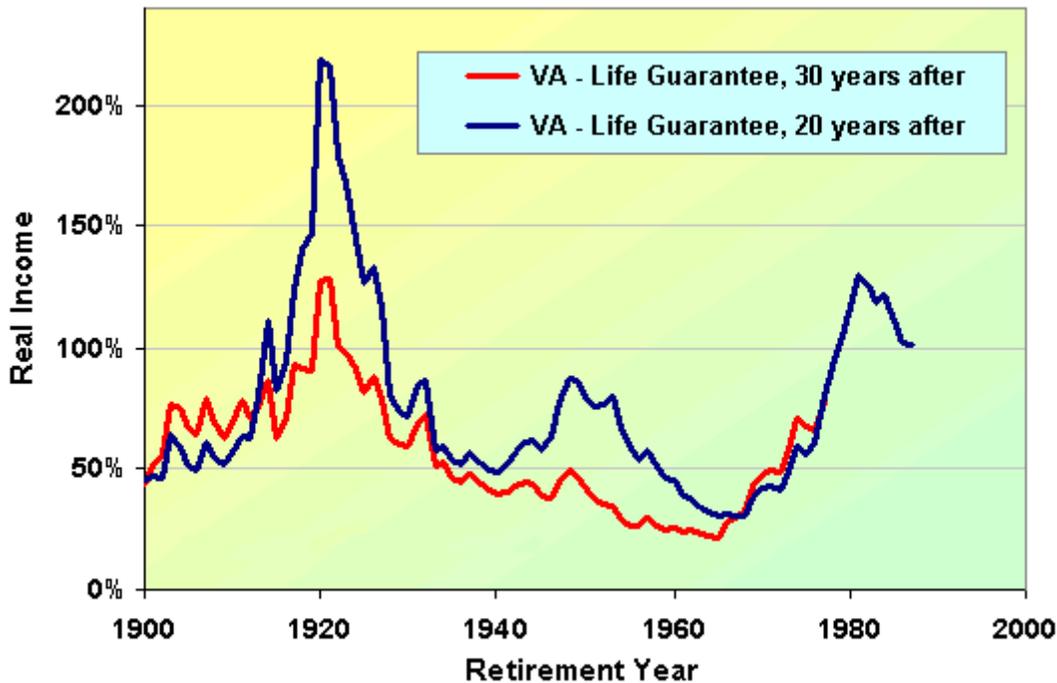
Source: Otar & Associates

The lesson here is if retirement savings are insufficient (red zone), only a single premium indexed life annuity can provide guaranteed lifelong income. A variable annuity or investment portfolio will most probably fall short of providing income for the 30 years between age 65 and 95. The SPIA, on the other hand, will help clients avoid taking undue risks for short-term gains that would most likely bring long-term pain to their investment portfolios.

Of course, many of your clients won't be so easy to categorize. They will fall into the gray zone (see Figure 3) where their retirement savings are merely sufficient—not quite enough to run solely with the investment portfolio, but enough to think about some type of annuity/portfolio combination. In Part 2 we will look at the process of evaluating clients in the gray zone and what combination of products works best for them.