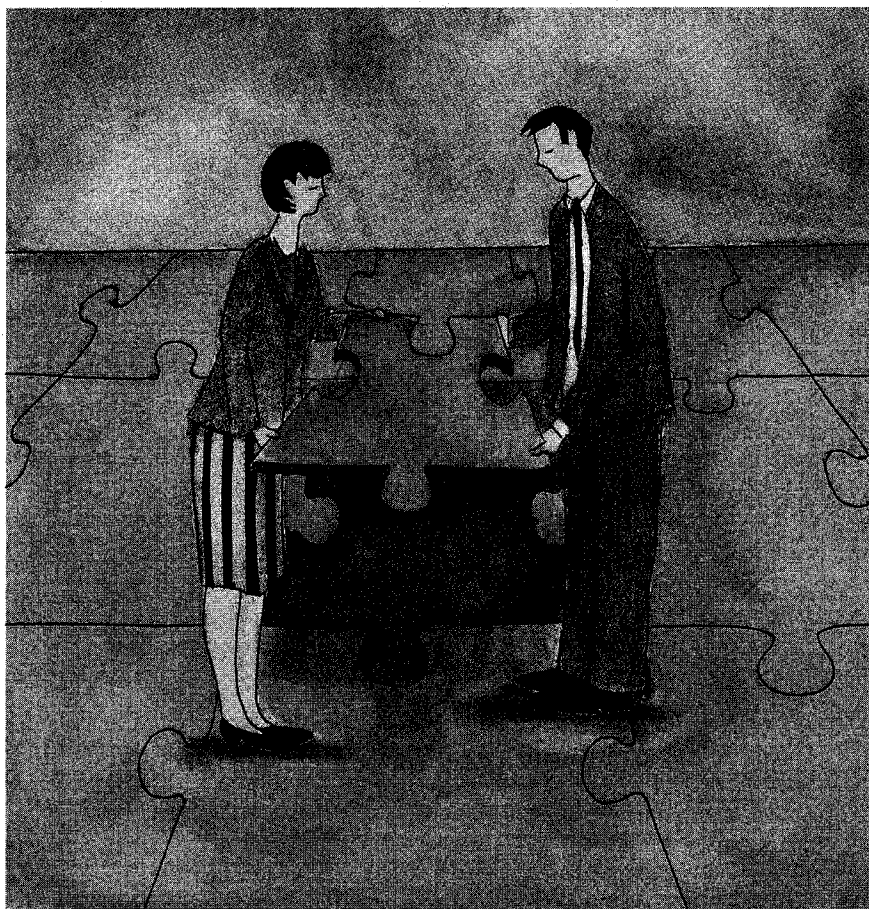


A More Perfect Mix

Here's a plug-and-play solution for mixing variable annuities with other investments to keep client returns where they should be. **By Jim Otar**



A MUCH-DISCUSSED SOLUTION FOR retirement dollars is immediate variable annuities, also known as variable pay annuities (VPAs). It's true many consider them to be expensive and risky. But when you consider the real costs of a mutual fund portfolio, including trading and hurdle costs (the increased cost of trades due to larger spreads) and the risk of depleting the investment portfolio prematurely, then VPAs start looking better.

Your clients will never outlive their assets, will be able to link annuities to different investment options (money market funds, equities, bonds), and will also reap the advantages of pooling—as others die early, their remaining assets are pooled. In short, market-linked VPAs can play a solid role in many clients' portfolios, but the right mix is essential.

Consider that after the first year, the VPA payout will vary based on market

performance. The first year's income is based on what is called an assumed interest rate, or anticipated investment return (AIR), such as 0, 3%, 5%, and 6%. The lower the AIR you choose, the lower your first year's income will be. If you start with a lower AIR, however, it is more likely that your income will rise faster than if you start with a higher AIR.

One insurance company presented some striking examples in its sales materials, highlighting a single 65-year-old male with single premium of \$100,000. It showed how with an AIR of 0, the monthly income increased from about \$300 in June 1982 to about \$2,625 in June 2002. With an AIR of 6%, the monthly income went from \$593 to \$1,619 during the same 20-year time period.

Both cases beat inflation handily. There is only one problem: The time period between 1982 and 2000 was the best megabull market of the last century. What happens to your income in a bear market? What happens during a period of high inflation?

You need a model, as outlined below, that tracks annuity income as a percentage of the first year's income for all 20-year periods between 1900 and 2002. The model, which uses the Dow Jones Industrial Average (DJIA) as a market index, is adjusted for the actual historic inflation rate. The payout from the annuity varies each year approximately by the amount of difference between the benchmark DJIA growth and the AIR.

For example, if the DJIA went up by 7% and the AIR was 3%, the payout would increase by about 4%. By the same token, if the DJIA dropped 10% and the AIR was 3%, the payout would decrease by about 13%.

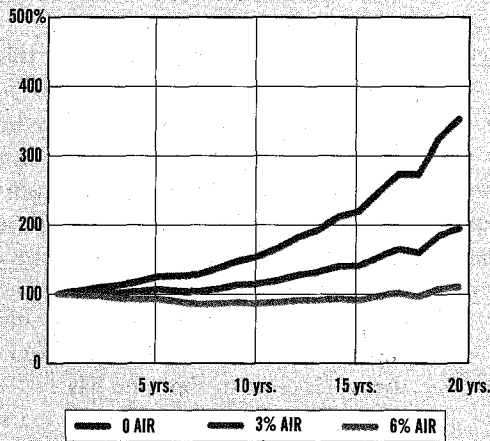
The model calculates the payout for each year after retirement. Lines plotted on a chart show what would happen to an income stream from a VPA at any time during the last 103 years, if

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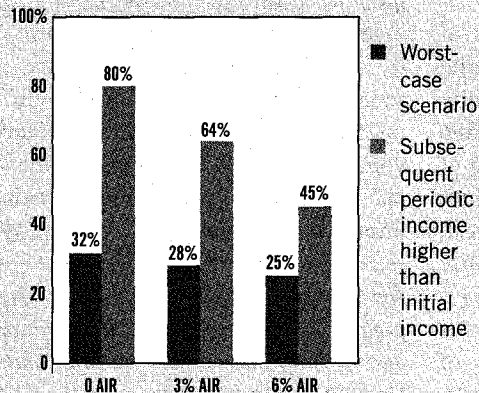
Less Is More

Variable annuity investors with a lower anticipated investment return (AIR) will see their incomes rise faster than if they began with a higher AIR.

At the end of 20 years, the median was 352% of the first year's income for 0 AIR. For 6% AIR, it was about 110%, a non-normal distribution of outcomes.



In the worst-case situation for 0 AIR, the payout was 31.6% of the initial payment. But subsequent periodic income was higher than initial income 80% of the time. For 6% AIR, these figures drop to 25.1% and 45%, respectively.



one bought this variable annuity at the beginning of each one of these years.

The chart above shows the median outcome for 0, 3%, and 6% AIR. At the end of 20 years, for 0 AIR, the median was 352% of the first year's income. For 3% AIR, the median fell to 195%. For 6% AIR, it was about 110%, indicating a non-normal distribution of outcomes.

In the worst-case situation for 0 AIR, the payout was 31.6% of the initial payment. For 3% AIR, it was 28.1%, and for 6% AIR, 25.1%. So with an AIR of 6%, if investors were receiving \$1,000 per month at the start of their annuities, their income may have dropped to as low as \$251 per month, adjusted for inflation. Unfortunately, these worst-case situations are not the exception to the rule; they do happen frequently.

Investors who bought a VPA with 0 AIR would have subsequent periodic income higher than their initial income 80% of the time. For 3% AIR, the percentage falls to 64%. For 6% AIR, the number drops again to 45%.

These statistics show that choosing a VPA is not necessarily a black-and-white decision. "The Perfect Mix" (*Financial Planning*, February 2003) demonstrated how investors could best combine an investment portfolio with a fixed life annuity for the longest portfolio life and maximum estate value. You can also calculate a "perfect mix" for your clients with the best combination of a fixed life annuity, a VPA, and an investment portfolio. Follow these steps:

1. Determine how much periodic income your client needs from all savings. A client may specify two levels: "I'd like to receive \$25,000 per year, but not less than \$20,000 per year in adverse conditions." If the client specifies two levels, then your "perfect mix" will include a VPA as part of the solution. The VPA will provide the fluctuating part of the income stream, and the fixed life annuity and the investment portfolio will

provide the steady part. If your client specifies only one level of income ("I want \$25,000 per year regardless of what the market does") then the "perfect mix" includes only an investment portfolio and a fixed life annuity, as demonstrated in the February article.

2. Calculate your client's initial sustainable withdrawal rate (IWR) for his or her age. For plans ending at age 95, the IWR is as follows:

Retirement Age	IWR
55	3.5%
60	3.8%
65	4.0%
70	4.5%
75	5.1%

3. Use a low AIR, preferably 0. Your client's initial income will be smaller, but as time goes on, it has more opportunity to grow.

4. Get quotes for a fixed life annuity and a VPA for your client. Shop around among insurance companies for the best deal.

Let's calculate the perfect mix for Jack Smith, a 65-year-old client who has saved \$500,000 for retirement. Smith wants \$25,000 per year from his portfolio and a minimum of \$20,000 in a bad year. In an investment portfolio his IWR is 4%, but you decide to limit the rate to 3% to preserve it.

For a single premium of \$100,000, an insurance company quotes a fixed life annuity paying \$7,000 per year and a VPA for AIR 3% paying \$5,235 in the first year. Based on the historic observations outlined previously, in the worst case scenario the payout from the VPA would be 28.1% of the first year's pay, or \$1,471.

You are now ready to calculate the dollar amounts allocated to the VPA, then to the fixed life annuity, and finally to the investment portfolio. Here's a summary—with symbols—of where you are:

Total Savings: TS=\$500,000

Desired Income: DI=\$25,000/year

Minimum Income: MI=\$20,000/year

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Fixed Annuity Payout:

$$FA = \$7,000/\$100,000 = 0.07$$

VPA Payout:

$$VP = \$5,235/\$100,000 = 0.05235$$

Worst-Case VPA Payout:

$$WP = \$1,471/\$100,000 = 0.01471$$

IWR from the investment portfolio:

$$IR = 3\% = 0.03$$

Use "Otar's First Equation" to calculate the dollars allocated to the VPA:

$$VPA\$ = \frac{DI - MI}{VP - WP}$$

$$VPA\$ = \frac{25,000 - 20,000}{0.05235 - 0.01471} = \$132,837$$

Next, use "Otar's Second Equation" to calculate the dollars allocated to a fixed life annuity:

$$FA\$ = \frac{DI - (IR * TS) + (VPA\$ * (IR - VP))}{FA - IR}$$

$$FA\$ = \frac{25,000 - (0.03 * 500,000) + (132,837 * (0.03 - 0.05235))}{0.07 - 0.03} = \$175,777$$

Last, calculate what is left is for the investment portfolio:

$$IP\$ = TS - FA\$ - VPA\$$$

$$IP\$ = \$500,000 - \$175,777 - \$132,837 = \$191,386$$

Smith's "perfect mix" consists of \$132,837 of VPA (26.5% of total assets), \$175,777 in a fixed life annuity (35.2% of total assets), and \$191,386 in an investment portfolio (38.3% of total assets). The laddering techniques described in "The Perfect Mix" can be used to optimize the fixed life annuity portion of the assets.

Do we meet Smith's income need? The VPA pays \$6,954 (5.235% of \$132,837), the fixed life annuity pays \$12,304 (7% of \$175,777), and the investment portfolio provides \$5,742 (3% of \$191,386) in the first year. They add up to exactly \$25,000, which is his desired income.

What happens in the worst-case situation? The VPA pays \$1,954 (1.471% of \$132,837) and the other income sources stay the same. The total for the worst case is exactly

\$20,000 (\$1,954 + \$12,304 + \$5,742), which is his minimum required income.

If Smith had retired in any of the years between 1900 and 1999, his portfolio would never have run out of money during any 30-year time period, assuming he optimized using the above technique. Also, his portfolio would have formed a sizable estate averaging \$366,332 after 30 years.

Of course, Smith could ignore this optimization and keep all his assets in an investment portfolio. This way, he *thinks* he stays in control of all his money, avoids "enriching" the insurance company, and hopes to build a larger estate. His entire income comes from his investment portfolio. If he does this, however, his portfolio would run out of money in about 16.2 years in the worst case. In short, he has a 61% chance of being broke after 30 years. The average estate value of the surviving portfolios (remember, only 39% survived) was \$144,801. So much for being in control.

The "perfect mix" model allows you to give your clients a complete income portfolio consisting of an investment portfolio, a fixed life annuity, and a variable pay life annuity. It seems that just a little portfolio optimization can go a long way to protect your clients from a premature financial demise and your practice from unnecessary liability. FP

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