Efficient Frontier

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A Limited Case for Variable Annuities

As most investment professionals know, annuities are sold, not bought. Show me an investor sitting on a large chunk of insurance-company product and I'll show you someone with an insurance salesman or brokerage registered rep in the food chain. If ever there were a case for tax-sheltered annuities, with their high expenses, sales fees, and miserable performance, surely it was nailed shut with the advent of tax-managed index funds. For starters, most investors have more than enough tax-sheltered assets in the form of IRAs, 401(k), 403(b), pension/profit-sharing plans, and other tax-deferred accounts. Not until you have "maxed out" these vehicles should annuities even begin to light up on your financial radar.

Let's assume that you have no tax-sheltered assets and are faced with placing $1,000 to invest in stocks in either: (1) a non-sheltered tax-efficient index fund or (2) a variable-annuity equity fund, each choice with an identical return of 10% annualized. Let's further assume that the tax-efficient fund divides its 10% return between 1.5% of dividends, 0.5% of realized long-term capital gains, and 8% unrealized capital gains, and that the investor is taxed at the 36% rate on ordinary income and 20% on capital gains. (For the sake of simplicity, state taxes are ignored.)

The annuity has the advantage of deferring all taxes as long as the investment stays in the annuity wrapper, but has the disadvantage of the entire return being penalized at the 36% ordinary income rate when money is withdrawn. In contrast, almost all of the taxable fund's return is taxed at just the 20% capital gains rate (when the fund is sold). Thus, the annuity starts out behind the eight ball relative to the tax-efficient unsheltered investment. But the annuity advantage increases with time, slowly catching up as the tax-deferred compounding accumulates. Adjusting for the cost basis of reinvested dividends and capital gains (and, of course, for the original annuity investment coming out tax-free), here's how things stack up on an after-tax basis:

Year	Taxable Tax-Efficient	Annuity
10	$2,199	$2,020
20	$5,134	$4,666
30	$12,314	$11,528
40	$29,883	$29,325
50	$72,867	$75,490

In this theoretical example, it takes fully 43 years for the annuity to overtake the taxable tax-efficient fund—not something that most investors would want to bet on. Even then, at 50 years, the margin is razor-thin. Furthermore, in the real world, annuities incur expenses in addition to normal fund fees. The cheapest indexed variable annuities are offered by TIAA-CREF, with insurance and administrative fees of just 0.08%. These tiny expenses still push the break-even point out another eight years. Vanguard's extra fees amount to 0.37%, at which rate the annuity *never* catches up with the taxable tax-efficient fund.

Tax-efficient funds are now available in most major asset classes. Vanguard offers tax-managed U.S. large-cap, small-cap, and total-market funds as well as a tax-managed foreign fund. In addition, their three regional foreign funds (European, Pacific, and Emerging Markets), and combinations thereof, are quite tax-efficient too. Going further, DFA offers tax-managed *value* funds in the three major areas (U.S. large, U.S. small, and international large). What major asset classes are left out? Four areas, with somewhat different considerations—high-quality bonds, junk bonds, REITs, and foreign small cap stocks.

First, there is no reason why tax-efficient passively managed international small-cap portfolios cannot be designed; there just aren't any offered to date. On the other hand, bonds throw off all their expected return in the form of interest. Likewise for REITs, almost all of their expected return comes as dividends, which are taxed at the high ordinary rate. Both of these asset classes are extremely tax-inefficient.

Vanguard does offer high-quality bonds, junk bonds, and REITs in annuity form, with an extra 37 basis-point expense for insurance and administration, while DFA offers an international small-cap annuity with 60 basis points of extra expense. Are these worthwhile? It all depends on your asset structure, asset-class preferences, and returns assumptions. As we've already noted, if you have enough room in one of your retirement vehicles, there's no need to even consider an annuity.

Let's assume that you have no, or almost no, sheltered assets. Does it pay to establish an annuity? In certain circumstances, yes. Consider REITs, for example. As this is being written, they yield 7.0%. Since 1972 their dividends have grown at about 3% per year (during a period of 5.1% inflation). This parses out to a 4.9% real return. If inflation in the next 30 years is 3%, then we're looking at a nominal expected return of 7.9% for REITs. Junk bonds currently yield about 12.4%. If the single-B loss rate is 4% per year, that leaves an expected return of 8.4%. For industrial stocks, let's be generous and add 6% dividend and earnings growth to a 1.3% yield, for a nominal expected return of 7.3%.

Asset Class	Expected Return
REITs	7.9%
Junk Bonds	8.4%
Stocks	7.3%

Quite obviously, owning REITs in a taxable account is a bad deal, since the 7.0% yield will be taxed at the high marginal rate, reducing the return by 2.5% each year. And junk is even worse, with taxes reducing the yield by 4.5%. But put these assets in an annuity and allow them to compound tax-free until they're withdrawn at the ordinary income rate, and they should blow the doors off stocks held in a taxable, tax-efficient stock fund. In the following calculation, I've assumed that the taxable fund incurs expenses of 0.20%, for an expected return of 7.1% (of which 1.1% are dividends (after the 0.2% expense ratio), 0.5% are realized capital gains, and 5.5% unrealized capital gains). I assume that the REIT and junk-bond annuities incur total expenses of 0.60%, yielding expected returns of 7.3% and 7.8%. The final after-tax wealth is tabulated below.

Year	Taxable Stock 7.1% Return	REIT Annuity 7.3% Return	Junk Annuity 7.8% Return
5	$1,314	$1,270	$1,296
10	$1,746	$1,655	$1,729
20	$3,161	$2,979	$3,288
30	$5,843	$5,659	$6,624
40	$10,927	$11,079	$13,758

The REIT annuity, with its minimal return advantage, takes 38 years to beat the taxable stock fund, and the junk annuity beats it after 13 years.

What about high-quality bonds? Let's examine intermediate-term debt. As of this writing, the Vanguard Intermediate-Term Corporate Bond Fund yields 6.60%; after additional annuity expenses, it yields about 6.23%. On the taxable side, the Intermediate-Term Tax-Exempt Fund yields 4.23%. Here's how things stack up on an after-tax basis.

Year	Intermediate-Term Tax-Exempt Fund 4.23% Return	Intermediate-Term Corporate Annuity 6.23% Return
5	$1,230	$1,226
10	$1,513	$1,531
20	$2,290	$2,504
30	$3,466	$4,283
40	$5,245	$7,539

Again, the annuity beats the comparable taxable investment almost right out of the starting gate, and by a large amount over longer time periods.

Finally, let's look at foreign small stocks, as always, a difficult issue. Recall, DFA offers the only passively managed funds in this area. And they do have a foreign small-cap annuity, but with total management, administrative, and insurance expenses of about 1.5%, it's probably not worth considering this option unless you have absolutely no room for this asset class in a retirement account.

Exactly the same analysis, by the way, applies to the age-old problem of whether to put stocks or bonds in the tax-sheltered portion of a mixed portfolio. As you can see, as long as the stock assets are reasonably tax-efficient, little is gained by sheltering them. On the other hand, the above analysis shows that much is gained by sheltering bonds. (In a nice bit of research for the NBER, James Poterba came to the opposite conclusion. But he was looking mainly at actively-managed stock funds, which are highly tax-inefficient, and historical bond returns, which were much lower than current expected bond returns.)

So, it's clear that an annuity makes sense *only* if all four of the following conditions are met:

- The asset class is highly tax-*in*efficient.
- The asset class's expected return is significantly higher than that of a comparable tax-efficient stock or bond expected return *after reducing it* by the higher expenses incurred in the annuity.
- The asset class is held for a long period of time, say for a child's trust.
- You have run out of retirement vehicles in which to put this investment.

It goes without saying that you have to accurately project security returns for these calculations to be meaningful. *This is a pretty heroic assumption.* But in the current environment, with relatively inexpensive high-yield debt and REITs, annuities deserve a look. If your accounts have no shelter and your time horizon is long enough, making your own deferral with a no-load, low-cost annuity just might make sense.

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