The Tax-Efficient Frontier: Improving the Efficient Frontier with the Power of Tax Deferral
by David Lau
<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Executive Summary</td>
<td>1</td>
</tr>
<tr>
<td>Overview: Tax Strategy is Increasingly Important</td>
<td>2</td>
</tr>
<tr>
<td>The Tax-Efficient Frontier</td>
<td>3</td>
</tr>
<tr>
<td>Tax-Efficiency of Asset Classes</td>
<td>4</td>
</tr>
<tr>
<td>Using Asset Location to Create the Tax-Efficient Frontier</td>
<td>5</td>
</tr>
<tr>
<td>Drill Down: Which Asset Classes Work Best with an Asset Location Strategy</td>
<td>6</td>
</tr>
<tr>
<td>Creating the Tax-Efficient Frontier: Prescriptive Guidelines</td>
<td>8</td>
</tr>
<tr>
<td>How Variable Annuities Can Help Increase Tax-Efficiency</td>
<td>8</td>
</tr>
<tr>
<td>Low-Cost VAs and the Tax-Efficient Frontier: How the Math Works</td>
<td>9</td>
</tr>
<tr>
<td>Conclusion</td>
<td>11</td>
</tr>
<tr>
<td>Appendix:</td>
<td></td>
</tr>
<tr>
<td>Technical Review: Key Assumptions, Model Data, Calculation Methodology</td>
<td>12</td>
</tr>
<tr>
<td>Analysis: PIMCO Funds: Comparing Taxable Returns to Tax-Deferred Returns</td>
<td>13</td>
</tr>
<tr>
<td>Other References</td>
<td>14</td>
</tr>
</tbody>
</table>
EXECUTIVE SUMMARY
Every financial advisor is familiar with the concept of the efficient frontier and trying to attain the optimal balance of risk and reward for their clients. Achieving the efficient frontier for clients is a driving force behind the investment choices that every advisor makes. In this paper we introduce the “Tax-Efficient Frontier,” where by using tax deferral, advisors can potentially increase returns for their clients without increasing risk.

To achieve the efficient frontier, financial advisors have extensive experience using asset allocation—the practice of building a portfolio from non-correlated asset classes in order to potentially increase a client’s return and mitigate risk. In this paper, we will demonstrate how adding the practice of “asset location” on top of asset allocation, advisors can move beyond the efficient frontier to achieve the Tax-Efficient Frontier. Asset location adds tax awareness to portfolio construction, ensuring that tax-efficient asset classes are held in taxable accounts and tax-inefficient assets in tax-deferred accounts. Making these distinctions is likely to take on increased importance for advisors in coming years as U.S. tax rates rise.

What are the inputs along this Tax-Efficient Frontier? To start, an advisor must have a clear sense of the tax-efficiency of different asset classes. An advisor should know, for instance, that income-producing assets such as bonds and commodities are tax-inefficient and that equity index funds are tax-efficient. There are many other variables that are important for achieving the Tax-Efficient Frontier, and this paper will analyze them in greater detail.

It also addresses a question that many advisors may have, which is whether asset location and the Tax-Efficient Frontier are really possibilities for most investors given the strict limitations on tax-deferred contributions to qualified accounts such as IRAs and 401(k)s. The answer may lie in a new category of variable annuity, which eliminates unwanted fees and insurance guarantees and provides access to virtually unlimited tax deferral. These new low-cost no-load VAs can give investors, especially the high net worth, a way of increasing their long-term returns, accumulating more money for retirement and leaving more to their heirs.

KEY FINDINGS
→ Different asset classes have different tax characteristics. Locating these assets in the right vehicle—tax-deferred vs. taxable—can increase IRR without increasing risk and add greatly to an investor’s long-term wealth. This is the domain of the Tax-Efficient Frontier.

→ Because U.S. tax rates have been so low in recent years, achieving the Tax-Efficient Frontier has not been a priority for many advisors. This is likely to change now that the Bush tax cuts are ready to sunset and tax rates are moving back up.

→ To optimize the Tax-Efficient Frontier, affluent investors may need access to more tax deferral than allowed by the low contribution limits of 401(k)s or IRAs. However, the only real alternative—the variability annuity—presents numerous challenges, starting with “fee-bloat,” that typically destroy the benefits of tax deferral.

→ Now, there is a new category of low-cost no-load VAs that can be used as wrap products, allowing clients to invest more tax-deferred. An analysis suggests the use of these VAs can increase an investor’s long-term wealth by approximately 100 bps per year without increasing risk.
TAX STRATEGY IS INCREASINGLY IMPORTANT

There have been numerous issues for investors and their advisors to worry about in the last seven years, but taxes haven’t been one of them. The Bush tax cuts that went into effect in 2003 ushered in some of the lowest tax rates in U.S. history, and were particularly favorable to investors. Many advisors became more focused on maximizing returns than on the tax-efficiency of their clients’ portfolio holdings. “It was still important and a good thing to do, but it became less significant as tax rates went down,” says Chris Cordaro, Chief Investment Officer at RegentAtlantic Capital in Morristown, New Jersey.

The pendulum, however, is swinging back. With U.S. federal debt at an all-time high, it seems certain that the Bush tax cuts will sunset this year, with the resultant increases in 2011 pushing the top income tax rates to 39.6% from the current 35%, the tax rate for capital gains to 20% from the current 15% and the tax rate for dividends to 39.6% from 15%. The recently passed healthcare overhaul includes a 3.8% tax on investment income, scheduled for 2013. And to pay for some of its new programs, the Obama administration has already signaled its willingness to raise taxes on families making more than $250,000 a year. Some independent experts believe this won’t be enough to balance the budget, and say that taxes for people below this income threshold will also have to go up.

It isn’t just the federal government that is ready to ask for more. Taxes are also headed higher on the state and local levels, as lawmakers there look to close their own recession-born budget gaps. “I don’t know any reasonable person who thinks tax rates are staying the same or going down,” says John Ritter CFP, CFS, founding partner and lead financial advisor of Cincinnati-based Ritter Daniher Financial Advisory.

No one is yet predicting that taxes will go back to their levels of the 1960s and 1970s, when the top marginal tax rate was 70%, or to the levels of the mid-1940s and 1950s when top earners faced rates of 90% or more. But there is certainly a precedent for higher taxes (see sidebar: “Rising? Sure. But Taxes Are Still Low Historically”). And as tax rates creep back up, investors are going to care a whole lot more about tax deferral and tax-efficiency.

How can advisors help? For moderate-income investors, IRAs and 401(k)s may be as far as the conversation needs to go. But the high-net-worth need more alternatives and greater access to tax deferral. This will create a new imperative, prompting advisors to factor in taxation to a degree they may not have done in the past. It is time to move beyond the efficient

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**RISING? SURE. BUT TAXES ARE STILL LOW HISTORICALLY**

For advisors who started their careers during the administrations of either President Reagan or the first President Bush, the current move toward higher federal tax rates may seem like a big burden. But on an historical basis, federal taxes in the U.S.—currently 35% for top earners—are quite low.

As recently as the 1970s, the top marginal tax rate in the U.S. was 70%. It was more than 90% between 1951 and 1963 after hitting an all-time high of 94% in 1944 and 1945, at the end of World War II.

Income taxes in the U.S. have been levied consistently since 1913. Before then, the federal government collected revenue from a combination of taxes and tariffs.

What constitutes the top federal income bracket, of course, has changed markedly over the years. In 1933, when the U.S. was beginning to emerge from the Great Depression, the top federal tax bracket of 63% applied only to those with more than $1 million in income. Anyone making less than $4,000 that year—the overwhelming majority of Americans—paid just 4% in income taxes.
frontier, to something we call the Tax-Efficient Frontier.

**THE TAX-EFFICIENT FRONTIER**

The idea of the Tax-Efficient Frontier is actually quite simple. It is a variation on the idea of the efficient frontier, which shows the rate of return you should earn for a given level of risk. The Tax-Efficient Frontier takes the conversation to a new level, showing that you can actually earn higher returns—and help your client build considerably more long-term wealth—without taking on any additional risk. To achieve the Tax Efficient Frontier, you can use a discipline called asset location—locating your client’s assets between taxable and tax-deferred vehicles based on the tax treatment of those asset classes.

Like asset allocation—a far more familiar strategy—asset location is a way of maximizing returns while mitigating risk. However, where asset allocation is used to determine a portfolio’s ideal mix between asset classes with non-correlated returns such as equities, bonds, commodities and real estate, asset location adds another factor. It requires that an advisor understand the tax-efficiency of different asset classes—that is, the extent to which the income or gain generated by the asset is free of taxes. A textbook asset location strategy would put all tax-efficient asset classes in taxable accounts, and all tax-inefficient asset classes in tax-deferred accounts. The benefits of tax deferral have been advocated for years and are well known to millions of investors who hold 401(k)s and IRAs. An investment grows tax-free until it is withdrawn, typically in retirement, when an individual is often taxed at a lower level of income. In addition to enjoying the benefits of tax-free compounding, a working person contributing to a 401(k)

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**The Conversation: Talking to Clients About the Tax-Efficient Frontier**

Many investors have at least a general idea about the benefits of tax deferral—the institutionalization of the 401(k) has seen to that. As for the details of tax-efficiency—the idea that you should never hold commodities in a taxable account, and never ever hold municipal bonds in a tax-deferred account—those are not as familiar to most investors.

However, this is likely to change. As taxes rise, advisors will likely find themselves explaining the advantages of asset location and the concept of the Tax-Efficient Frontier to more clients. In recent years, for instance, Ritter Daniher Financial Advisory of Cincinnati has done asset location work with about a quarter of its clients. “It wouldn’t surprise me if that moves up to 50% or even north of 50%,” says John Ritter, co-founder of the firm, which has about 200 clients and $200 million under management.

Of course, an asset location strategy only makes sense with clients who have both taxable and tax-exempt assets. “If you have everything in a tax-deferred account, the location question is moot,” says Chris Cordaro, a wealth manager at RegentAtlantic Capital in Morristown, New Jersey. “Once you start having a relatively good mix—at least 80-20 one way or the other—that’s when you start seeing the benefits of asset location.”

Wealthier clients are the ones who are most likely to have this kind of asset distribution. They are also the ones who expect the most from their advisors in terms of tax advice.

Do clients understand the intricacies of asset location? Not intuitively. But sometimes things happen that can cause them to take an interest. On more than one occasion, Cordaro has encountered new clients whose taxable and tax-deferred accounts were mirror images of each other—not just in their allocations, but in the underlying holdings. The clients in those cases are sacrificing returns, not just by failing to pay attention to where they locate assets, but also by paying separate transaction fees on each account. “When you point this out to them,” Cordaro notes, “they usually say, ‘You’re right, that didn’t make sense to me either’.”

If you have a client who would benefit from re-locating some assets to increase tax-efficiencies, you should start by determining which details are most important and communicate in concrete terms. "We try to talk about it at a high level, not at a tax code level,” says Ritter. “What’s the best way for us to locate these assets so we’re either minimizing your taxes or so that more of the income flows to you?” When you put it in those terms, Ritter adds, “Most people can follow along.”
or IRA is able to shield some of their current income from taxes.

In theory, these tax-deferred qualified accounts are the primary vehicles that investors can use to practice asset location, earning the extra return—without any added risk—that is achieved along the Tax-Efficient Frontier.

In the real world, however, the benefits of tax deferral are usually limited by the tight restrictions that U.S. tax law places on contributions to qualified savings plans. This may not be an issue for those with moderate incomes. But it can be a very big concern for more highly compensated individuals. Such individuals can quickly reach the limit on their 401(k) plans ($16,500 in 2010) and max-out their IRAs ($5,000 in 2010, or $6,000 if 50 or older). With little access to other tax-deferred vehicles, under most circumstances any unspent income must be invested in taxable accounts. “If you’re a high earner, it may be difficult for you to get substantial assets into a qualified account,” says Isaac Braley, president of BTS Asset Management, a Lexington, Massachusetts Tactical Asset Allocation Fund Manager.

There is one important new option for overcoming these contribution limits, which enables more affluent investors to benefit from the Tax-Efficient Frontier. This new option is addressed later in our paper. First, we will show in more depth how the Tax-Efficient Frontier works—starting with the asset-class characteristics that make asset location such a powerful strategy in the first place.

**TAX-EFFICIENCY OF ASSET CLASSES**

Generally the categories of assets that perform better in a tax-deferred account are those that generate ordinary income, such as long-term bonds, commodities and REITS, and those that generate short-term capital gains, such as actively traded funds (Figure 1).

One of the first things to determine when considering an asset location strategy is how much of a fund’s total return your client will keep after taxes; this will influence which assets you want to locate in a taxable vs. tax-deferred account. We use a simple formula for this purpose:

\[
\text{Tax efficiency of an asset class} = \frac{\text{After-tax value of the invested asset}}{\text{Pre-tax value of the invested asset}}
\]

Asset classes with lower ratios are considered tax-inefficient; asset classes with higher ratios are considered tax-efficient. Figure 2 shows the 10-year tax efficiency of five relatively common asset classes. As illustrated, taxable bonds are among the most tax-inefficient, while certain types of equity funds can be highly tax-efficient.
USING ASSET LOCATION TO CREATE THE TAX-EFFICIENT FRONTIER

To demonstrate how asset location can systematically improve returns, without increasing risk, we will first look at the efficient frontier—the expected rate of return at a given level of risk for an investor using a typical asset allocation strategy. This is shown in Figure 3. Along the efficient frontier, the client’s after-tax rate of return, or “end wealth” after withdrawing money and paying taxes on it, increases as a function of his risk (horizontal axis). At the far left hand side of the return slope, the investor is 100% in bonds and his expected after-tax return is 4%. The expected return increases to 6% with a 50-50 bond-equity mix, and to 8% (albeit with a higher standard deviation) if the investor is 100% in equities.

Now look at how the same investor fares using an asset location strategy (Figure 4). The first thing to note is that his after-tax withdrawal return is better by as many as 100 basis points (bps) at most points along the frontier. Over time, this can make a significant difference to the investor. A 100 bps improvement, to 6.5% from 5.5%, represents an increase in return of almost 20%. After 10 years, a return of 6.5% versus 5.5% would boost the value of a client’s $200,000 portfolio to $375,622 versus $341,779. That’s an additional $33,800—enough to cover a year’s tuition at Harvard for the investor’s grandchild. The more important point to understand is that these gains are achieved without changing the underlying assets in any way—and without adding any additional risk. Instead, by locating the tax-inefficient assets in a tax-deferred account, the investor can move the efficient frontier—and create the Tax-Efficient Frontier.

Figure 3:
TWO FUND 10-YEAR EFFICIENT FRONTIER
U.S. Stock Index Fund and Taxable Bond Index Fund

Source: Vanguard Total Stock Market Index and Vanguard Total Bond Index. Based on return data from the CRSP Mutual Fund database, calculated for the highest Federal tax bracket. Average state taxes are also included. The 10-year returns are calculated for each 10-year period starting since the fund’s inception in 1993 through 1998.

Figure 4:
TWO FUND 10-YEAR "TAX-EFFICIENT FRONTIER"
U.S. Stock Index Fund and Taxable Bond Index Fund

Source: Vanguard Total Stock Market Index and Vanguard Total Bond Index. Based on return data from the CRSP Mutual Fund database, calculated for the highest Federal tax bracket. Average state taxes are also included. The 10-year returns are calculated for each 10-year period starting since the fund’s inception in 1993 through 1998.
DRILL-DOWN: WHICH ASSET CLASSES WORK BEST WITH AN ASSET LOCATION STRATEGY

As we have already shown, certain asset classes benefit considerably from tax deferral; others don’t. To demonstrate the differences, we analyzed the long-term performance (through June 30 of 2008) of four prominent funds with distinct asset classes, two from Vanguard and one each from PIMCO and Janus. Our assumptions were the same in each case: An initial investment of $200,000, with all distributions reinvested; an investor in the highest federal tax bracket (currently 35%); state taxes of 5.4% (the U.S. average, used for simplicity). Our goal was simple: to determine whether an investor with $200,000 in these four funds would have done better, from the point of view of “end wealth” or after-tax rate of return, if those funds were located in a taxable or tax-deferred account, and at what point the strategy of using a tax-deferred wrapper would become advantageous.

The first fund we analyzed, the Vanguard Total Bond Market Fund, is a taxable bond index fund. This type of fund generates ordinary income and therefore does better immediately in a tax-deferred account. Over the course of 20 years, it will outperform the taxable account by roughly 94 bps (Figure 5). It is, therefore, an example of an asset that should always be located in a tax-deferred account.

The second fund we analyzed, PIMCO’s Total Return Fund, is another bond fund that generates both ordinary income as well as some short-term capital gains. This type of fund also does better immediately in a tax-deferred account. Moreover, its relative advantage improves with time; after 20 years, it outperforms the taxable account by 112 bps. This too is an example of an asset that should always be located in a tax-deferred account (Figure 6).

Source: Based on return data from the CRSP Mutual Fund database, calculated for the highest Federal tax bracket. Average state taxes are also included. The fund represented is a retail fund. The actual fees and performance of the equivalent VIT fund may differ from the retail fund presented. For more details, see Appendix: Technical Review.
The outcomes were different with two equity-oriented funds. It was 22 years before the Janus Fund (a U.S. stock fund) did better in a tax-deferred account than in a taxable account—and even after 38 years, there was only a 46 bps improvement in return. This suggests that this asset class, in most cases, should be held in a taxable account (Figure 7).

With Vanguard’s Total Stock Market Fund, the prescription is even clearer. Vanguard’s Total Stock Market Fund is an index fund, designed to be very low cost, low turnover and highly tax-efficient. It immediately performs better in a taxable account. And over time, the taxable account increases its margin of advantage. This is an example of an asset that should always be held in a taxable account (Figure 8).

The tax increases that are likely in the next few years may alter some of these calculations—likely shortening the breakeven points. That will make the idea of the Tax-Efficient Frontier, and the discipline of asset location, all the more important.
CREATING THE TAX-EFFICIENT FRONTIER: PRESCRIPTIVE GUIDELINES

The preceding analysis shows that it isn’t just an asset’s tax characteristics that should determine where the asset is located. Because the advantages of tax-free compounding may take time to materialize, the client’s time horizon—how long he or she will hold the asset or portfolio—is a second critical factor. It rarely makes sense to put a client into a qualified account if he does not plan to hold the asset long enough to get the advantage of tax deferral. This is the break-even point, and while it can kick in immediately for certain asset classes, it may not come for decades, or ever, for equity investments. In Figure 9, we calculated the break-even points for a number of widely used funds representing different asset classes such as bonds, commodities, REITS and equities. The height of the columns show the number of years it would take before each asset class would break even and then perform better in a tax-deferred account.

Broadly speaking, these three factors—tax efficiency, time horizon, and break-even points—determine when you can use an asset location strategy to help a client achieve the Tax-Efficient Frontier. The rules of thumb are straightforward and easy to apply. Investors should locate tax-efficient assets with long break-even periods, such as low-turnover stock funds, in taxable accounts, especially if they plan on holding the portfolio for only a few years. The impact of tax-free compounding will be small, and the client will be better off getting a lower long term capital gains tax rate on withdrawals from the taxable account.

On the other hand, when investors locate tax-inefficient assets, which generate ordinary income or short-term capital gains, in tax-deferred accounts, with the benefits of tax-free compounding over years or decades they have the potential to accumulate substantially more and this will generally outweigh the cost of paying higher ordinary income taxes on withdrawals. Likewise, tax-inefficient assets with short break-even points, such as the Vanguard Total Bond Market Fund and PIMCO Total Return Fund discussed above, should almost always be located in tax-deferred accounts.

Some firms keep a grid to guide the asset location decision. RegentAtlantic Capital is one of them. “We basically have all of our asset classes ordered by tax efficiency and return,” says wealth manager Cordaro. Figure 10, which illustrates where an asset class should be located based on an investor’s time horizon, may be a good starting point for advisors whose firms haven’t created such guidelines.

HOW VARIABLE ANNUITIES CAN HELP INCREASE TAX-EFFICIENCIES

We mentioned earlier that the Tax-Efficient Frontier has an Achilles heel—the strict limitations on the amount of money individuals can invest
in tax-deferred qualified accounts. This is especially challenging for wealthy investors who could benefit the most from asset location.

There is one simple way to overcome this limitation—through the purchase of a variable annuity (VA). VAs can accept virtually unlimited contributions and allow this money to grow tax-deferred. Unfortunately, most traditional VAs come with significant drawbacks: complexity, limited investment options, and high cost. The 135 bps mortality and risk expense of the average VA would add years—or decades—to the breakeven point of nearly every asset class, in a way that effectively destroys the benefit of an asset location strategy (Figure 11).

“All the riders and income and death benefits that are attached to typical VAs—we don’t always see those as useful,” says Braley of investment management company BTS, which has $2 billion under management, some of it within IRA or VA wrappers.

BTS, and many other fee-based advisors, have responded with interest to the introduction of a new category of simple low-cost VAs that eliminates these costly—and often unnecessary—features. These newer VAs have no commission, no complex insurance guarantees and strip out the typical asset-based fees that make traditional VAs so expensive. They have far lower-than-average fees, and some may only charge a flat monthly fee regardless of the amount invested. An efficient vehicle for tax-deferred investing, combining a simple low-cost structure with an expanded supermarket of underlying investment options, this new category of VA is emerging as a very effective tool, especially for affluent investors looking to locate more of their tax-inefficient assets in the tax-deferred vehicles where they can maximize performance.

Braley and his firm have a keen appreciation of this benefit. BTS uses a tax-inefficient strategy (active trading) to invest in a tax-inefficient asset (bonds)—a double whammy. In the past, if BTS recommended a VA to help improve the tax-efficiency of their tactical bond strategy, it meant the client had to be comfortable not just with the fees for the investment options and the firm’s investment management fee, but with the added cost of fees related to the VA as well.

“You had this extreme compounding of costs that a client had to get over,” Braley says. “Some clients would say, ‘Hey, I see the value, but I think it’s going to take me too long to climb that wall.’ Versus today, where you have more and more of these low-cost variable annuities, and it’s easier for clients to overcome the fee hurdle.”

LOW-COST VAS AND THE TAX-EFFICIENT FRONTIER: HOW THE MATH WORKS

How this new category of VAs could benefit a well-to-do investor can be shown by example. Let’s take a 45-year-old business owner, earning enough to be in the top federal tax bracket (at least $373,650 in 2010). She has a total of $1 million to invest, $300,000 of which is already in a qualified account. She anticipates retiring in 20 years, at which point she will need $180,000 in annual income, with a 2.7% annual increase for inflation. She is comfortable with a moderate level of risk—enough to get her an expected investment return of 8%.

For a client like this, with 20 years to retirement, an advisor might construct a portfolio of 60% equities ($600,000) and 40% bonds ($400,000). Using a typical asset allocation strategy, that same 60-40 ratio would exist in both the client’s taxable account and her qualified account (Figure 12).
On the other hand, by using an asset location strategy, assets would instead be located between taxable and tax-deferred accounts based upon their tax-efficiency—$600,000 in equities in the taxable account and $400,000 in bonds in the tax-deferred account.

The challenge lies in the low contribution limits of the client’s qualified account. If she can invest only $300,000 in her qualified accounts, but she has $400,000 in bonds, how does this client maintain a 60-40 ratio and fully implement an asset location strategy at the same time? The solution is to invest in a low-cost VA, giving her an additional $100,000 in tax deferral—and effectively locating her entire $400,000 bond portfolio in tax-deferred vehicles, where the ordinary income that it generates would receive favorable tax treatment to help increase her portfolio’s returns (Figure 13).

The benefits of the tax-efficient frontier are further evident in the following analysis. The client, at a retirement age of 65, will accumulate a total of $3.41 million after taxes by implementing an asset location strategy versus $3.16 million with a typical asset allocation strategy—an additional 8% in after-tax returns simply by improving the tax-efficiency of her overall portfolio (Figure 14). And while her money will run out at age 86 with a typical asset allocation strategy, it will last four years longer—to age 90—if she uses an asset location strategy instead. Moreover, should she pass away before 90, the asset location strategy allows her to leave a larger legacy to her heirs. These different outcomes, comparing the benefits of asset location versus asset allocation, are illustrated in (Figure 15).
In recent years, as tax rates in the U.S. fell to some of the lowest levels in history, investors and those who advised them have been more focused on building wealth than on shielding gains from taxes. No one knows where tax rates will be in five years, or 10, but the pendulum has certainly swung with the healthcare surcharge on investment income scheduled for 2013, and the sunset of the Bush tax cuts in 2011 bringing a likely rise to federal, state and local income taxes, as well as increases on capital gains, dividends and estate taxes. Experts agree that the impact will be felt most profoundly by your high net worth clients.

In this challenging environment of rising taxes and volatile markets, there will be less tolerance for the product-by-product investing that has prevailed in recent years and a greater demand for a more holistic approach to financial advice. Tax deferral strategies will rise in importance and tax-efficiency will emerge as a significant new imperative.

One simple and highly effective solution is to help clients achieve the Tax-Efficient Frontier. As we have demonstrated, by adding the principle of asset location on top of asset allocation, advisors can move beyond the familiar territory of the efficient frontier to achieve the Tax-Efficient Frontier, helping clients earn higher returns—and build considerably more long-term wealth—without taking on any additional risk. A new category of VA can help, allowing clients of any size, but especially the high net worth, to maximize the benefits of tax deferral, surmount the low-contribution limits on qualified accounts, and increase after-tax returns by as much as 100 bps. In an environment where every single basis point of performance counts, the value of the Tax-Efficient Frontier is clear and should be a priority for every advisor and client.
APPENDIX I: Technical Review: Overview, Model Data, Calculation Methodology

Overview
To perform this analysis, we did primary research on the tax characteristics of traditional mutual funds, using data from the University of Chicago’s Center for Research in Security Prices1 as well as Ibbotson Associates. Our research examined over a 35-year period a number of different funds, representing various asset classes, dividing the total return for each asset class into different buckets based on tax treatment.

We then developed a detailed analytical model that generates cash flows, break even periods and IRRs based on a variety of inputs, including tax bracket and investment horizon, for an investor holding the portfolios in a taxable account that has no fee and in a flat-fee VA that charges $240 per year.

Model Data
Distribution Characteristics
Underlying return characteristics data was gathered from a database from the Center for Research in Security Prices (CRSP) at the University of Chicago’s Graduate School of Business. For each asset class, distribution data reflects the average of all mutual funds available during the 35 year period ending in 2008, adjusted for splits. This time period was chosen because prior to this period, there were not enough bond funds to provide a reasonable sample. Our sample contained 101 large cap equity funds, 29 small/mid cap equity funds and 7 bond funds. To validate our results, we compared the pattern of distribution characteristics generated by our sample to the distribution characteristics reported by two other papers covering similar topics and found them to be comparable2,3.

Total Return
Total return data for is from Ibbotson’s “Stocks, Bonds, Bills, and Inflation” for the 80 year period ending in 2008. This time period was chosen because it is the longest time period available from Ibbotson. Returns are reduced to reflect the average cost of the mutual funds in the distribution data set. The average costs of the mutual funds were 99 bps for the large cap equity asset class, 123 bps for the small/mid cap equity asset class and 119 bps for the long term bond asset class. We scaled the distribution characteristics we derived from the CRSP database so that each asset class’ total return was equal to the total return derived from Ibbotson.

Calculation Methodology
We then built a model that generates cash flows for an investor holding the portfolios in a taxable account and a flat-fee VA. It makes a number of assumptions, which we believe to be reasonable reflections of investor behavior, including the following:

• The investor is assumed to be in the maximum federal tax bracket and to pay the average state income tax of 5.4%, applied to both capital gains and ordinary income. Local taxes are not included. The investor is assumed to be in the same tax bracket during both the accumulation phase and the income phase.

• The investor rebalances the account annually, but has no other portfolio turnover.

• In the taxable account, when shares are sold, basis is reduced according to the average-cost method.

• In the taxable account, capital losses on sales are netted against capital gains; excess losses are netted against ordinary income received, reducing income taxes on distributions, up to the $3,000 limit. If capital losses remain after this treatment, they are carried forward to the next year.

• The flat-fee VA costs $240 per year. Taxable accounts have no additional costs.

• Although there may be differences between the underlying expenses of the funds in the taxable account and the VAs, fund expenses are assumed to be identical.

• The model uses linear growth projections.

• The investment is assumed to be made at the beginning of 2010, and federal tax rates are assumed to increase in 2011, when many of the provisions of the JGTRRA Act of 2003 are scheduled to sunset. (Figure 10)

• The investor reinvests all distributions during the accumulation phase and uses distributions and share sales, as necessary, to generate income in the income phase. (Figure 10)

1 Calculated (or Derived) based on data from CUSIP database © 2007 Center for Research in Security Prices (CRSP ©), Graduate School of Business, The University of Chicago
3 Annuity vs. Systematic Withdrawal after the 2003 Tax Act, National Association for Variable Annuities, 2003
APPENDIX II: Analysis: PIMCO Funds: Comparing Taxable Returns to Tax-Deferred Returns

Methodology:
In this analysis, we compare the after-tax implications of holding a $200,000 investment in two PIMCO funds, in a taxable account versus holding the same PIMCO funds in a tax-deferred account that costs $240/year. For each fund, the following information is presented:

→ Withdrawal value: The withdrawal value is the after-tax value received by an investor who liquidates the fund holding.

→ Difference between tax-deferred return and taxable return: This metric, expressed in percentage points, is equal to the annualized after-tax withdrawal value return of the tax-deferred investment, less the annualized after-tax withdrawal value return of the taxable investment. A positive withdrawal value spread indicates that the tax-deferred investment has performed better than the taxable investment.

→ Break-even period: The break-even period indicates the year at which the tax-deferred investment outperforms the taxable investment. The break-even period is rounded up to the nearest year, and the actual break-even occurs during that year. For example, a break-even period of two years indicates that the tax-deferred investment began outperforming the taxable investment during the second year. Note that if the tax-deferred investment would have outperformed the taxable investment were it withdrawn during year 2, but would have underperformed the taxable investment were it withdrawn during year 3, the break-even will not be at year 2, but rather at the point where the tax-deferred investment outperforms the taxable investment indefinitely through the end of 2008, the end period of the analysis.

In the taxable account, the investor reinvests all distributions on an after-tax basis. To calculate the withdrawal value, all shares are sold and long-term capital gains taxes are applied to gains. In the tax-deferred account, the investor reinvests all distributions on a pre-tax basis. To calculate the withdrawal value, all shares are sold and ordinary income taxes are applied to gains. In the tax-deferred account all withdrawals are assumed to be taken after age 59 1/2 to prevent any tax penalty for early withdrawal.

The investor is assumed to be in the maximum federal tax bracket, which in 2010 is 35% for interest income and short-term capital gains and 15% for long-term capital gains and qualified dividends. Additionally, the investor is assumed to pay the average state income tax of 5.4%, applied to both capital gains and interest income. The results are summarized in the following chart:

<table>
<thead>
<tr>
<th>PIMCO Fund</th>
<th>Fund Information</th>
<th>After-Tax Withdrawal Value Return</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Ticker</td>
<td>Inception Date</td>
</tr>
<tr>
<td>PIMCO Total Return</td>
<td>PTTRX</td>
<td>5/11/1987</td>
</tr>
<tr>
<td>PIMCO Commodity Real Return Strategy</td>
<td>PCRIX</td>
<td>6/28/2002</td>
</tr>
</tbody>
</table>

*Fund has not reached the break-even point yet. It is expected that it will break even after several more years.

The entire PIMCO analysis can be downloaded at http://www.jeffnat.com/articles/pimcocomparison.pdf.

The funds selected are the retail equivalents of PIMCO VIT funds. Please see the prospectus of the relevant VIT fund for differences in fees, objectives, performance, etc. On average, the actual fees charged by the VIT funds are 23 basis points higher than their retail equivalents. Data is presented from inception of each retail fund. The institutional share class was selected because it is the oldest share class available for the funds. The performance of the tax-deferred account in this analysis is different from the actual performance of the relevant PIMCO VIT fund.
APPENDIX III:

Other References:
Location, Location, Location, David Harrell, Morningstar Advisor, November 3, 2008.
The Importance of Tax-Efficient Investing, Rande Spiegelman, CPA, CFP®, Schwab Center for Investment Research, 2007.
The Beauty of Asset Location, Sue Stevens, CFA, CPA, CFP®, Morningstar Advisor, January 19, 2006.

Additional Case Studies:
Brendan Conry, Conry Asset Management: The Real Power of “Flat is Beautiful.”
Brian Schreiner, Schreiner Capital Management: A Better Way to Invest: Improve Tax-Efficiency with Flat-Insurance Fee VA and 4x More Funds
Lou Stanasolovich, Legend Financial: New Way to Work Smart
John Ritter, CFP, Ritter Daniher Financial Advisory: Winning the Retirement Income Challenge
Isaac Braley, BTS Asset Management: Right Fit for a Tough Market
Ted Kerr, Touchstone Capital: Breaking the Investment Barrier
Todd Much, CTS Financial Planning: The “Client Value Advocate’s” VA
http://www.jeffnat.com/articles/casestudy_toddmuch.pdf
ABOUT THE AUTHOR:

David Lau

David Lau is Chief Operating Officer of Jefferson National, a leading innovator of retirement products for fee-based advisors and their clients. He has more than twenty years professional experience in the financial services industry. Prior to Jefferson National, he was principal and co-founder of The Oysterhouse Group, LLC, a management consulting firm whose internationally recognized clients included Shinsei Bank, Merrill Lynch and Ace Insurance Group. Mr. Lau served as Senior VP of Operations at E*Trade Bank, and Senior VP of Marketing at its predecessor TeleBank, where deposits more than doubled during his tenure. He holds a B.A. in Economics from William and Mary.

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