While asset allocation is the most important decision an investor can make, allocating a given mix among accounts with different tax structures can be a taxing question.

The Investment Implications of Tax-Deferred vs. Taxable Accounts

By William Reichenstein

Most professionals and academicians believe that the choice of asset mix—how much to commit to stocks, bonds and cash, for instance—is the most important decision investors will make. And it is. My articles in the July 1996 and October 1996 issues of the *AAII Journal* should help individuals and families make this decision.

However, other factors will affect how that mix is held and invested. In this article, I will explain how and why tax considerations can affect investment decisions.

The Tax Structures

Most investments are subject to one of three tax structures:

- Taxable accounts, where the individual invests aftertax dollars that grow at the aftertax rate of return. There is no tax deferral.
- Non-deductible IRAs and tax-deferred annuities, where the individual invests aftertax funds, but they grow at the pretax rate of return, and returns are taxed at withdrawal. This allows tax deferral on returns, but not on the original investment amount.
- Deductible IRAs and tax-deferred retirement plans (such as Keoghs, 401(k)s, 403(b)s, etc.), where the individual invests pretax dollars, which grow at the pretax rate of return and taxes are paid on withdrawals. In essence, an individual defers taxes on both the original investment amount and on returns.

Table 1 provides a summary of these structures.

As an example, consider Joe and Jan, an average couple, who decide to forgo $1,000 of spending this year to save for their retirement in 20 years. They invest in a bond fund with a return of 7% a year. They are currently in the 28% tax bracket and expect to be in the same tax bracket in retirement.

If they save in a personal account, they invest $1,000 of aftertax funds today and the funds grow at the 5.04% aftertax rate of return, since each year they must pay taxes on the 7% return; in 20 years, they will have $2,674.

If Joe and Jan save in a non-deductible IRA, they invest $1,000 of aftertax funds and the funds grow at the 7% pretax rate of return for 20 years. In 20 years, they withdraw $3,870, and pay taxes at 28% on the $2,870 of accumulated interest; the $1,000 principal was made with aftertax dollars and can be withdrawn tax-free. So, after taxes, the investment in 20 years is worth $3,066.

If Joe and Jan save in a tax-deferred retirement plan, such as a deductible IRA, they can invest $1,389 of pretax funds, which is the equivalent of $1,000 after income taxes. In other words, the $1,389 deductible IRA contribution reduces taxable income by $1,389, which reduces taxes by $389 (28% of $1,389). By forgoing $1,000 of spending, which requires aftertax dollars, they can invest $1,389 of pretax dollars. Another way of thinking of this is that they are able to invest $1,000 of their own, plus a $389 tax "contribution." The $1,389 invested at 7% will turn into $5,375 after 20 years. If they withdraw this amount, they will owe 28% on the entire amount, for an aftertax amount of $3,870.

Table 1.
The Three Tax Structures: A summary

Tax Structure	Original Investment	Growth Rate
Taxable account	Aftertax dollars	Aftertax rate of return
Non-deductible IRA	Aftertax dollars	Pretax rate of return
Deductible IRA(or similar retirement plan such as 401(k)s	Pretax dollars	Pretax rate of return

Table 2 shows the algebra involved in all three scenarios, based on a 20-year investment horizon, a 28% tax bracket both now and in 20 years, and a 7% pretax rate of return.

Interestingly, the algebra shows that, as long as Joe and

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Jan will be in the same tax bracket today and in retirement, the deductible IRA tax structure allows them to effectively earn the pretax rate of return on an aftertax basis. It is as if the government allows them to invest the $1,000 and *avoid* taxes on the returns. This is in contrast to the non-deductible IRA, in which taxes on the returns are merely deferred. Not surprisingly, the deductible IRA will almost always be the preferred structure in which to make an investment. The exception would be individuals who expect to withdraw funds within a few years and will be in a higher tax bracket when they withdraw. For these exceptions, it is better to pay taxes at today's lower rate than to defer taxes for a few years and pay at a higher rate.

Table 2.
Different Tax Structures:
Aftertax Amounts After 20 Years

Here is the algebra that shows how much Joe and Jan will have after taxes in 20 years under the various tax structures. It assumes: an initial investment of $1,000 of aftertax income ($1,389 before income taxes), a 7% pretax return, and a 28% tax rate both now and in 20 years.

Taxable Account:

$$= \$1{,}000[1 + 0.07(1 - 0.28)]^{20}$$
$$= \$1{,}000(1.0504)^{20}$$
$$= \$2{,}674 \text{ after taxes}$$

Non-Deductible IRA:

$$= \$1{,}000[(1 + 0.07)^{20} - 0.28((1 + 0.07)^{20} - 1)]$$
$$= \$1{,}000[3.87 - 0.28(2.87)]$$
$$= \$3{,}066 \text{ after taxes}$$

[Note that the part after the first minus sign represents taxes paid on the accumulated return.]

Deductible IRA (or similar tax-deferred retirement plan):

$$= \$1{,}000\left[\left(\frac{1}{1 - 0.28}\right)(1 + 0.07)^{20}(1 - 0.28)\right]$$
$$= \$1{,}000(1.07)^{20}$$
$$= \$3{,}870 \text{ after taxes}$$

[*Note that multiplying by* $\left(\frac{1}{1 - 0.28}\right)$ *converts the $1,000 aftertax investment to a pretax equivalent.*]

The next-best tax structure is the one that applies to non-deductible IRAs and tax-deferred annuities. However, tax-deferred annuities, which can only be sold by insurance companies, charge a mortality and expense fee in addition to the expenses of the underlying fund. This tends to substantially reduce the tax advantage of this vehicle, making it worthwhile primarily if: (1) the investor expects to be in a lower tax bracket in retirement or (2) the annual mortality and expense fee is 0.5% or less and the investment horizon is at least 10 years.

Tax Structures Compared

The deductible IRA tax structure has several potential advantages when compared to the taxable account. The most notable advantages are:

- Tax deferral of the investment,
- Tax deferral of investment returns, and
- Tax timing—the ability to withdraw funds at retirement when the investor may be in a lower tax bracket.

It also has two disadvantages. First, withdrawals before age 59½ are generally subject to a 10% early withdrawal penalty tax. Clearly, someone should not invest in a retirement plan if he expects to need the money within a few years.

The second disadvantage is that capital gains may eventually be taxed at a higher tax rate in a deductible IRA than in a taxable account. In a taxable account, taxes are assessed each year on realized gains, but the maximum tax rate is 28%. In a deductible IRA, capital gains are tax deferred until withdrawal in retirement, but they are subject to the ordinary income tax rate that tops out at 39.6%.

This second disadvantage does not exist for anyone who is in a 28% (or lower) bracket today or expects to be in retirement. For example, suppose the Smiths are in a 39.6% bracket today, but expect to retire in the 28% bracket in 10 years. The deductible IRA tax structure is better because it provides tax deferral for 10 years before taxes are assessed at the 28% rate.

Moreover, most investors who are in the 31% tax bracket today and expect to be in the 31% bracket in retirement can ignore this disadvantage; the tax-deferral before retirement in the deductible IRA will most likely more than offset the slightly higher tax rate.

In short, this second disadvantage should concern only the few investors who are in a 36% or 39.6% bracket today and expect to be there also during retirement.

What about non-deductible IRAs versus taxable accounts?

Both require investments of aftertax dollars. The non-deductible IRA defers taxes on returns while the taxable account does not. This advantage is usually small when the investment horizon is less than 10 years, as we shall see in the next section. In addition, the non-deductible IRA suffers the same disadvantages as the deductible IRA concerning the 10% early withdrawal penalty tax and the

fact that capital gains are eventually taxed as ordinary income.

Projected Aftertax Investment Values

What aftertax ending value can most investors expect under these various tax structures?

First, let's go back to Jan and Joe, our average couple in the 28% bracket. Jan and Joe had decided to save by reducing this year's spending by $1,000. They can buy either a bond fund or a stock fund and hold it in one of the three tax structures. The bond fund earns 7% a year; the stock fund earns 12%, including a 3% dividend yield, and it has a 20% annual turnover rate. Jan and Joe are currently in the 28% tax bracket and will remain in this bracket during their retirement years. Table 3 presents the aftertax values of the original investment for selected investment horizons of five through 35 years. These values allow us to answer several questions:

Question 1: Joe and Jan are saving for retirement. Which tax structure provides the largest retirement nest egg?

The deductible IRA tax structure is always best for Jan and Joe. The deductible IRA advantage is sizable for short horizons and huge for long horizons, and the advantage exists for stock funds, bond funds, and individual stocks and bonds, for that matter. For example, Table 3 shows that the bond fund is worth $1,279 after five years if held in a taxable account and $1,403 if held in a deductible IRA, a 44% larger return. After 35 years, the stock fund is worth $21,813 in the taxable account, and $52,780, or almost 2.5 times as much in the deductible IRA.

For this average couple, the non-deductible IRA is always second-best. Its advantage compared to a taxable account is small unless the investment horizon is at least 10 years. The non-deductible IRA provides tax deferral of the investment return, and deferring taxes on returns for less than 10 years provides little benefit.

The ending values in Table 3 assume Jan and Joe will be in the same tax bracket today and in retirement. If they will be in a *lower* bracket during retirement, the advantages of the deductible and non-deductible IRA compared to the taxable account will be even larger. Taxes will not only be deferred, they will also be assessed at a lower tax rate.

Question 2: Joe and Jan have investments in taxable accounts and tax-deferred accounts (e.g., deductible and non-deductible IRAs) and they want to have some stocks and some bonds in their asset mix. Should they place the stocks or the bonds in the tax-deferred accounts?

Assume for simplicity that Jan and Joe have $1,000 of assets in a non-deductible IRA and another $1,000 in a taxable account. If they place bonds in the non-deductible IRA and stocks in the taxable account, they will have $4,072 after 10 years ($1,696 + $2,376, from Table 3). If they place stocks in the non-deductible IRA and bonds in the taxable account, they will have $4,151 ($2,516 + $1,635). The average investor should place stocks in the tax-advantaged account (either a non-deductible IRA or, even preferable, a deductible IRA) and bonds in the taxable account.

The same conclusion prevails for all investment horizons, but the importance of the decision increases dramatically with the length of the horizon. After five years, tax-deferring stocks would be expected to produce a $4 advantage; after 10 years, a $79 advantage; after 20 years, $1,069; and after 35 years, $14,106.

Why should investors defer tax on stocks instead of bonds? The logic boils down to one simple idea: The investor should defer tax on the higher-return asset, and stocks usually produce higher returns than bonds.

Traditional wisdom states that bonds should usually be placed in the tax-deferred account and stocks in the taxable account, arguing that investors are better off deferring annual taxes on the 7% bond interest instead of annual taxes on the 3% stock dividends. However, this assumes the 9% capital gain will remain unrealized until retirement. But few investors buy and hold stocks for 20 or 30 years. In practice, the majority of individual investors and all but a few stock fund managers realize capital gains within a few years. The stock values in Table 3 assume a

Table 3.
Ending Aftertax Values on a $1,000 Investment:
The 28% Tax-Bracket Investor

	Investment Horizon			
Bond Investment*	**5 Years**	**10 Years**	**20 Years**	**35 Years**
Taxable Account	$1,279	$1,635	$2,674	$ 5,590
Non-deductible IRA	$1,290	$1,696	$3,066	$ 7,967
Deductible IRA (or similar retirement plan)	$1,403	$1,967	$3,870	$10,677
Stock Investment**				
Taxable Account	$1,534	$2,376	$5,764	$21,813
Non-deductible IRA	$1,549	$2,516	$7,225	$38,296
Deductible IRA (or similar retirement plan	$1,762	$3,106	$9,646	$52,780

Table assumes marginal tax rates on ordinary income of 28% before and after retirement and a 28% capital gain tax rate.
**Bond investment returns 7% a year, all income.*
***Stock investment returns 12% a year, including a 3% dividend yield; the stock portfolio has a 20% a year turnover rate.*

relatively low portfolio turnover rate of 20%. Yet, a turnover rate of 20% means that capital gains are realized, on average, in five years. The question then becomes: What is the advantage of deferring taxes on capital gains for five years? The answer, as illustrated earlier with the non-deductible IRA example, is that there is little advantage to deferring taxes for only five years.

The exception to this rule of thumb is the investor who plans to buy and hold individual stocks for, say, 20 years, and investors who plan to buy and hold a stock index fund for a similarly long time period, since a stock index fund allows capital gains to accumulate largely unrealized.

Question 3: Joe and Jan have investments in taxable and tax-deferred accounts (deductible and non-deductible IRAs), and investments in high-dividend yielding and low-dividend yielding stock funds with similar total returns. Should they place the higher-dividend or the lower-dividend stock fund in the tax-deferred account?

Suppose stock funds HI and LOW produce dividend yields of 5% and 2%, respectively, and they both have 12% total returns and 20% turnover rates. Which fund should be held in the tax-deferred account and which fund in the taxable account?

Fund HI should be held in the tax-deferred account. Since the total returns are the same and they realize capital gains just as quickly, Jan and Joe should tax defer the higher-yielding stock fund. Recall, however, that the 20% turnover rate means capital gains are realized too quickly to make much difference. In fact, I ran these assumptions through the tax models assuming, as before, initial investments of $1,000. After 10 years, Jan and Joe would have only $30 more by placing stock fund HI in the deferred account and stock fund LOW in the taxable account instead of the other way around. In short, investors should tax defer the stock fund that they believe will produce the higher return. If return expectations are equal, they should defer taxes on the higher-yielding stock fund.

Question 4: Suppose Joe and Jan have $200,000 in investments—$100,000 in taxable and $100,000 in tax-deferred accounts, and they want a 75%/25% stock/bond mix. What should they place in the taxable account?

The asset mix calls for $150,000 in stocks and $50,000 in bonds. While taxes are a consideration, they should *not* override the target asset mix. In this instance, the couple should tax defer the assets with the largest total return. That would mean putting $100,000 of stocks in the deferred account; in the taxable account, they would have $50,000 in bonds and the remaining $50,000 in stocks. Ideal candidates for the $50,000 of stock in the taxable account are individual stocks that can be bought and held for as long as possible, or a stock index fund.

By design, stock index funds buy and hold a list of stocks, such as those in the S&P 500. A few stocks are added to or removed from the index each year and liquidations could force some portfolio turnover. Nevertheless, investors can expect a stock index fund to passively allow capital gains to grow largely unrealized. In contrast, an active stock fund realizes capital gains quickly.

Question 5: A recent proposal calls for Congress to cut the capital gains tax rate in half. Similar proposals crop up frequently. Would such a tax cut make the taxable account preferable to the deductible IRA tax structure?

No. As explained above, if an investor is in the same tax bracket today and in retirement, the deductible IRA effectively allows him to avoid taxes on investment returns—the effective tax rate on returns is zero. In contrast, Congress may lower, but not eliminate taxes on capital gains.

If the capital gains tax rate is cut in half, however, the taxable account will often be preferable to the non-deductible IRA for assets such as stocks whose returns are mainly in the form of capital gains.

High Tax-Bracket Investors

What about investors in the higher tax brackets?

Tables 4 and 5 provide ending values for investors in the 39.6% brackets before retirement.

Table 4 assumes a lower (28%) bracket during retirement. As before, the best tax structure when saving for

Table 4.
Ending Aftertax Values on a $1,000 Investment:
A High Tax-Bracket Now, Lower Tax-Bracket in Retirement

	Investment Horizon			
Bond Investment*	**5 Years**	**10 Years**	**20 Years**	**35 Years**
Taxable Account	$1,230	$1,513	$2,289	$ 4,260
Non-deductible IRA	$1,290	$1,696	$3,066	$10,677
Deductible IRA (or similar retirement plan	$1,672	$2,345	$4,613	$12,727
Stock Investment**				
Taxable Account	$1,509	$2,298	$5,392	$19,406
Non-deductible IRA	$1,549	$2,516	$7,225	$38,296
Deductible IRA (or similar retirement plan	$2,101	$3,702	$11,499	$62,940

Table assumes marginal tax rates on ordinary income of 28% before and after retirement and a 28% capital gain tax rate.
**Bond investment returns 7% a year, all income.*
***Stock investment returns 12% a year, including a 3% dividend yield; the stock portfolio has a 20% a year turnover rate.*

retirement is the deductible IRA. But now its advantage is huge even after five years. The answers to questions 2, 3 and 4 are the same as before: The highest-returning fund should be placed in the tax-deferred accounts; if returns are similar, the higher-yielding fund should be placed in the tax-deferred account; and stock index funds are an excellent choice for someone who needs to hold stocks in a taxable account.

Table 5 assumes the same (39.6%) tax bracket before and during retirement (with a 28% cap on capital gains). Since the deductible IRA allows the investor to effectively avoid taxes on returns, it should not be surprising that the best tax structure when saving for retirement is, once again, the deductible IRA. On the other hand, if the investment horizon is 10 years or less, these investors will probably fare slightly better by putting their stock investments (or any investment that receives a large portion of their return in the form of capital gains) in the taxable account, since the expected benefit from the 28% capital gains tax rate held in the taxable account exceeds the benefits from deferring stocks' higher returns for 10 years or less in the deferred account. The benefits of tax-deferring higher returns start to overwhelm the disadvantage of missing out on the lower capital gains tax rate after 10 years. Investors with longer than 10-year horizons would be best off placing stocks in the deferred account and bonds in the taxable account.

Table 5.
Ending Aftertax Values on $1,000 Investment:
A High Tax-Bracket Now, High Tax-Bracket in Retirement

	Investment Horizon			
Bond Investment*	**5 Years**	**10 Years**	**20 Years**	**35 Years**
Taxable Account	$1,230	$1,513	$2,289	$ 4,260
Non-deductible IRA	$1,243	$1,584	$2,733	$ 6,845
Deductible IRA (or similar retirement plan	$1,403	$1,967	$3,870	$10,677
Stock Investment**				
Taxable Account	$1,509	$2,298	$5,392	$19,406
Non-deductible IRA	$1,460	$2,272	$6,222	$32,287
Deductible IRA (or similar retirement plan	$1,762	$3,106	$9,646	$52,780

Table assumes marginal tax rates on ordinary income of 39.6% before and after retirement, and a 28% capital gain tax rate.
**Bond investment returns 7% a year, all income.*
***Stock investment returns 12% a year, including a 3% dividend yield; the stock portfolio has a 20% a year turnover rate.*

A Look at the Real World

The skeptic may wonder what the tax models, projected ending investment values, and related advice have to do with the real world. This may look good in theory, but does it hold true in the real world?

First, the major features of the tax structures can be expressed algebraically, as shown in Table 2. As long as returns are positive, the rigors of math allow us to state with certainty that the deductible IRA tax structure is best for almost all investors. Similarly, as long as stock returns exceed bond returns, the algebraic models allow us to state that most investors should place stocks in the tax-deferred accounts (deductible and non-deductible IRAs) and bonds in the taxable accounts.

Second, T. Rowe Price, in a recent study of its own funds, reached the same conclusion. The mutual fund family compared the results from investing $10,000 in various types of stock and bond funds (e.g., growth, small capitalization, and so on) over 10- and 20-year periods ending in March 1996. Instead of projecting returns, it set them at the average annual pretax return by fund category for the 20 years ending March 1996 as calculated by Morningstar, Inc. The study showed that, over long-term investment periods, investors in all brackets did better after taxes by holding higher-returning stock funds in a deductible tax-deferred account and bond funds in a taxable account. [This study was reported in the October 1996 *AAII Journal* Investment Research column.]

Investment Implications

Here are the major investment implications of these various tax structures:

- When saving for retirement, the deductible IRA and similar retirement plans (such as 401(k)s, 403(b)s, etc.) offer the best aftertax results for almost all investors (assuming funds are not withdrawn early and do not incur the 10% early withdrawal penalty).
- Most investors have funds in taxable and tax-deferred accounts (both deductible and non-deductible IRAs), and most investors hold both stocks and bonds. In general, they are best off holding lower-returning bond funds in taxable accounts and higher-returning stock funds in tax-deferred accounts. However, this tax play should not violate their desired asset mix.
- If investors have funds in taxable and tax-deferred accounts, and two stock funds that offer similar total returns, they should place the higher-yielding fund in tax-deferred accounts and the lower-yielding fund in taxable accounts. As a reality check, however, the advantage of this strategy will probably be small.
- Finally, even if the capital gains tax rate is cut in half, the deductible IRA and similiar retirement plans will remain the best tax structure for almost all investors who are saving for retirement.