

# Family Tax Planning Forum

By Robert S. Keebler

## Tax Management of Retirement Savings Vehicles

Historically, investors managing retirement savings vehicles focused solely on pre-tax returns. Taxes were not a consideration in making investment or distribution decisions, but merely an external factor for their accountants or attorneys to deal with later. Although economists have recently stressed the importance of taxes in accumulating wealth, tax planners have been slow to put their findings into effect. After providing background information on the general tax consequences of various types of investments, this column addresses three key elements of the tax management process: (1) tax efficiency maximization, (2) tax-aware asset allocation, and (3) tax-aware asset location.

### Background—Effect of Taxes on Investments

The effect of taxes on investment growth depends on the kind of savings vehicle used, the type of assets invested in and the investor's management style. There are three general categories of savings vehicles, taxable accounts, traditional IRAs and Roth IRAs, and each of these savings vehicles could hold investments in either stocks or bonds. Moreover, stocks could be either actively or passively managed and bonds could be either taxable or tax-exempt.

To explain the tax consequences for each possible combination, it may be helpful to create a simple fact pattern. Assume the following:

- Taxpayer (age 30) invests \$5,000 for 30 years
- Pre-tax growth on stocks = 9.0%
- Pre-tax growth on taxable bonds = 5.0%
- Interest rate on tax-deferred bonds = 3.9%
- Tax rates are as follows:
  - Long-term capital gains = 15%
  - Short-term capital gains = 35%
  - Qualified dividends = 15%



**Robert S. Keebler, CPA, M.S.T.**, is a Partner with Keebler and Associates in Green Bay, Wisconsin.

- Nonqualified dividends = 35%
- Traditional IRA distributions = 35%

Assume further that stocks are either actively managed with the investor selling each year and recognizing gains or that the gains are not recognized until the end of the time horizon. Chart 1 shows the future value for each possible combination.

**Chart 1. Future Wealth**

Roth IRA (Bonds) ( $\$5,000 \times (1.05)^{30}$ )	\$21,610
Roth IRA (Stock) ( $\$5,000 \times (1.09)^{30}$ )	\$66,338
Traditional IRA (bonds) ((( $\$5,000 \times (1.05)^{30}$ ) $\times$ 0.65 + ( $\$1,750 \times (1.05)^{30}$ ))	\$21,609
Traditional IRA (Stock) ((( $\$5,000 \times (1.09)^{30}$ ) $\times$ 0.65 + ( $\$1,750 \times (1.09)^{30}$ ))	\$66,338
Taxable Stocks (STCG) ( $\$5,000 \times (1.0585)^{30}$ )	\$27,523
Taxable Stocks (LTCC) (Active management) ( $\$5,000 \times (1.0765)^{30}$ )	\$45,645
Taxable Stocks (LTCC) (Sell at End of 30 Years) (( $\$5,000 \times (1.09)^{30}$ - 0.15[( $\$5,000 \times (1.09)^{30}$ ) - $\$5,000$ ])	\$57,138
Taxable Bonds ( $\$5,000 \times (1.0325)^{30}$ )	\$13,052
Tax-Exempt Bonds ( $\$5,000 \times (1.039)^{30}$ )	\$15,756

### Explanation of Chart

**Roth IRA.** Because there is no tax, the \$5,000 invested in the Roth IRA simply grows at the applicable pre-tax return (\$5,000 appreciated at five percent for 30 years equals \$21,610, and \$5,000 appreciated at nine percent for 30 years equals \$66,338).

**Traditional IRA.** To make a proper comparison between the traditional IRA and the investments made with after-tax dollars, it is necessary to account for the income tax deduction received by the taxpayer when the \$5,000 contribution is made to the traditional IRA. Assuming a 35-percent marginal income tax rate, this amount would be \$1,750. Thus, the correct future value for the Traditional IRA is the sum of the after-tax amount in the IRA and the after-tax amount from the side fund. Chart 2 assumes that the \$1,750 be invested in a Roth 401(k), making the future value for the Traditional IRAs the same as the future values for the Roth IRAs.

**Chart 2.**

	Roth	Traditional	Side Fund	Traditional + Side Fund
Investment	\$5,000	\$5,000	\$1,750	\$6,750
Value after 30 years	\$66,338	\$66,338	\$23,218	\$89,556
Less tax	0	\$23,218	\$0	\$23,218
A.T. value	\$66,338	\$43,120	\$23,218	\$66,338

If the \$1,750 is invested in a taxable account, however, the future value for the Traditional IRAs will be less than the future values for the Roth IRAs. Assume, for example, that instead of investing the \$1,750 in a Roth 401(k), the taxpayer invests it in stocks producing a nine-percent return that are sold at the end of the 30-year period. The total future value for the traditional IRA under this scenario would now look as reflected in Chart 3.

**Chart 3.**

	Roth	Traditional	Side Fund	Traditional + Side Fund
Investment	\$5,000	\$5,000	\$1,750	\$6,750
Value after 30 years	\$66,338	\$66,338	\$23,218	\$89,556
Less tax	0	\$23,218	\$3,483	\$26,701
A.T. value	\$66,338	\$43,120	\$19,735	\$62,855

The difference between the two future values is the tax payable on the side fund ( $0.15 \times \$23,218$ ). Note that when the value of the deduction must be invested in a taxable account, this creates a substantial advantage for the Roth IRA.

**Taxable Stocks (STCG) (Active Management).**

Because tax is paid each year, its effect is to reduce the after-tax growth rate of the stocks. Given the 35-percent STCG rate, the stocks grow at an after-tax rate of only 5.85 percent ( $0.65 \times 9.0\%$ ).

**Taxable Stocks (LTCC) (Active Management).**

Here is assumed that the stocks are held for one year and one day. Tax is still paid every year, reducing the growth rate of the stocks, but the after-tax growth rate is now creating long-term capital gains instead of short-term capital gains. The after-tax growth rate is now 7.65 percent ( $0.85 \times 9.0\%$ ).

**Taxable Stocks (Sell at End of 30-Year Period).**

Here the taxpayer is using a passive investment, buy-and-hold strategy. Because the tax is paid only once, the annual growth rate is not affected. The stocks continue to grow at nine percent with a 15-percent tax payable on the gain at the end of the 30-year period. Compare the future value of stocks in the active management scenario with the future value of the stocks in the passive investment scenario.

**Taxable Bonds.**

Because the bonds are taxable each year, they grow at their after-tax rate of return of 3.25 percent ( $0.65 \times 5.0\%$ ) for 30 years.

**Tax-Exempt Bonds.**

Issuers of taxable bonds must pay a higher interest rate to compensate investors for the tax payable. Our facts assumed a five-percent yield on taxable bonds and a 3.9-percent yield on

tax-exempt bonds. Whether the excess yield on the taxable bonds is enough to compensate for the tax payable depends on the taxpayer's marginal tax bracket. The higher the tax bracket, the more favorable tax-exempt bonds are relative to taxable bonds. Chart 4 shows the breakeven taxable rates of return necessary to match the tax exempt rates shown for investors in different tax brackets.

**Chart 4.**

Tax-Exempt Yield	Taxable Equivalents by Marginal Tax Bracket*				
	20%	25%	30%	35%	40%
3.4%	4.25	4.53	4.86	5.23	5.67
3.9%	4.88	5.20	5.57	6.00	6.50
4.4%	5.50	5.87	6.29	6.77	7.33

\* Effective federal + state tax rate

Note that for a taxpayer in the 35-percent marginal income tax bracket, a 3.9-percent tax-exempt return is equivalent to a six-percent taxable return. Because the taxpayer in our example was assumed to get only a five-percent taxable return, he would be better off investing in tax-exempt bonds.

## Tax-Efficient Investing

What can we learn from this analysis? First, taxpayers should invest the maximum amount possible in tax-deferred accounts (e.g., IRAs and 401(k) plans) before investing in taxable accounts. As shown in the Chart 1 above, IRAs and qualified plans create far more after-tax wealth over a period of time than any taxable investment. One possible exception is a situation in which (1) the taxpayer expects to withdraw large amounts before reaching age 65, and (2) the assets will be in the IRA for a relatively short period of time before the withdrawal.

As for deciding between the various types of tax-deferred savings vehicles, taxpayers should generally invest in 401(k) plans first to receive the benefit of employer matching contributions, then in IRAs. The decision of whether to invest in a traditional IRA or a Roth IRA is mathematically equivalent to the Roth IRA conversion decision. This is a topic I have covered in previous columns and I will not discuss it in detail here. Suffice it to say that Roth conversions are generally favorable

unless the taxpayer expects to be in a substantially lower marginal tax bracket after retirement than at the time of the conversion.

The second point to note from Chart 1 is that paying tax every year and reducing the effective growth rate of an asset reduces the future value by substantially more than a one-time tax at the end of the period. In our example, the passively managed stocks grew to \$57,138 while the actively managed stocks grew to only \$45,645. We could also compare the effective annual income tax rates for the two investments. Paying a single 15-percent tax at the end of the investment period is equivalent to paying approximately six percent annually under our facts.<sup>1</sup> The difference between active and passive management will be even more important if the top capital gains rates reverts to 20 percent in 2013.<sup>2</sup> Given this higher rate, the passive investment would leave \$54,070 after tax and the active investment only \$40,254. The higher the tax rate, the greater the difference in ending values for the two management styles.

Third, short-term capital gains are taxed at a far higher rate than short-term capital gains (under our assumptions, 35 percent versus 15 percent). This suggests that assets should always be held long term unless the short-term gains can be used to offset short-term capital losses. Finally, taxpayers can gain an additional timing benefit by harvesting losses while deferring gains.<sup>3</sup>

## Tax-Aware Asset Allocation

Tax-aware asset allocation is the same as conventional asset allocation with

one key difference—the allocation is done on an after-tax basis. All assets are first converted to their after-tax values and then asset allocation is performed just as it was before.

To illustrate, suppose that a taxpayer who expects to be in a 30-percent marginal income tax bracket after retirement wishes to have a 50/50 allocation between stocks and bonds. She has a Roth IRA with \$100,000 of bonds and a traditional IRA with \$100,000 of stocks. The after-tax value of the bonds in the Roth IRA is \$100,000, but the after-tax value of the stocks in the traditional IRA is only \$70,000 because it will be subject to a 30-percent tax when distributions are made. Thus, her real allocation is 59-

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percent bonds (\$100,000/\$170,000) and 41-percent stocks (\$70,000/\$170,000) (see Chart 5).

**Chart 5.**

Savings Vehicle	Asset	Pre-Tax Value	After-Tax Value
Roth IRA	\$100,000 Bonds	\$100,000	\$100,000
Traditional IRA	\$100,000 Stock	\$100,000	\$70,000

One way to adjust the percentages to the desired 50/50 split would be to gradually increase the amount invested in stocks in the traditional IRA to \$142,857 to increase the after-tax stock value to \$100,000 (see Chart 6).

**Chart 6.**

Savings Vehicle	Asset	Pre-Tax Value	After-Tax Value
Roth IRA	\$100,000 Bonds	\$100,000	\$100,000
Traditional IRA	\$142,857 Stock	\$142,857	\$100,000

After the asset values are adjusted, asset allocation proceeds in the usual manner.

**Asset Location  
(Taxable vs. Nontaxable Account)**

The basic asset location rule in tax-aware investing is that the higher the tax on an asset, the more desirable it is to have the asset in a tax-deferred account. Assets producing ordinary income should be held in tax-deferred accounts and assets producing capital gains should be held in taxable accounts, particularly if they are passively managed.

A rough ordering of investments from high tax to low tax might look something like this.

- Taxable bonds
- Money market funds
- Real estate investment trusts (REITs)
- Income-producing property
- Tax-exempt bonds
- Actively managed stock
- Tax-inefficient mutual funds

- Tax-efficient mutual funds
  - Index funds
  - Exchange Traded Funds (ETFs)
  - Standard & Poor’s Depository Receipts (SPIDERS)
- Passively invested individual assets
  - Stocks
  - Raw land
  - Precious metals

Further explanation is needed for some of the items on the list. REITs must pay out all their income each year as fully taxable dividends. Moreover, they are not qualified dividends so they are taxable at ordinary income rates.

Although no explicit tax is paid on tax-exempt bonds, they are subject to an implicit tax reflecting the fact that they pay a lower interest rate than taxable bonds. This implicit tax is the difference between the taxable and tax-exempt interest rate for bonds of comparable risk over the rate of return on a taxable bond. For example, if a taxable bond was paying 6.5-percent interest and a comparable tax-exempt bond was paying five-percent interest, the implicit tax on the tax-exempt bond would be  $(6.5 - 5.0)/6.5 = 23.08\%$ . As explained above, in today’s market, tax-exempt bonds generally produce higher after-tax returns than taxable bonds for high tax bracket investors and lower returns for lower tax bracket investors.

Passively managed assets may not only defer payment of tax, but may eliminate tax altogether. If assets like stocks, raw real estate and precious metal are held until death, heirs receive a basis step-up under Code Sec. 1014, and no capital gains tax is ever paid on the pre-death appreciation.

**Conclusion**

There has been a growing realization among economists in recent years that what really matters in investing is not pre-tax returns, but how much is left

after tax. This concept, known as tax-aware investing, has been slow to catch on with most tax planners, however, perhaps because of the quantitative analysis required. This column provides a basic introduction to the topic that may prove helpful.<sup>4</sup>

#### ENDNOTES

<sup>1</sup> \$5,000 appreciated at 8.45889 percent for 30 years is \$57,138. The 8.45889-percent growth rate reflects an effective annual tax rate of 6.01233 percent ( $((9.0 - 8.45889)/9.0)$ ).

<sup>2</sup> For some taxpayers, the rate will be 23.8 percent with the 3.8-percent surtax.

<sup>3</sup> Capital losses can be used not only to offset capital gains but also \$3,000 per year of ordinary income. Over a period of time, this could significantly increase a taxpayer's wealth. Suppose, for example that a taxpayer could realize \$3,000 of short-term capital losses each year for 30 years. Assuming a 35-percent combined federal plus state tax rate, the annual tax savings would be \$1,050. If these amounts were invested and grew at eight percent per year, the taxpayer would have about \$119,000 more wealth after 30 years.

<sup>4</sup> For more detailed analyses of tax-aware investing, see Reichenstein, *Trends and Issues: Tax-Efficient Saving and Investing*, TIAA CREF Institute, Feb. 2006, and Dammon, Poterba, Spatt and Zhang, *Maximizing Long-Term Wealth Accumulation: It's Not Just About What Investments to Make, But Also Where to Make Them*, 85 RESEARCH DIALOGUE, Sept. 2005, TIAA CREF Institute.

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