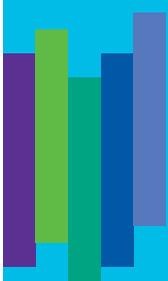


INVESTMENT PRINCIPLES
INFORMATION SHEET FOR CFA PROFESSIONALS

**ISSUES AFFECTING
BENEFITS**

**THE IMPACT
OF INFLATION**



4C

IMPORTANT NOTICE

The term "financial advisor" is used here in a general and generic way to refer to any duly authorized person who works in the field of financial services, including the following:

- Investment brokers
- Mutual fund brokers
- Scholarship plan dealers
- Exempt market dealers
- Portfolio managers
- Investment fund managers
- Life insurance agents
- Financial planners (F.Pl.)



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THE IMPACT OF INFLATION

Investors' returns are reduced by fees and taxes. In addition, inflation reduces their standard of living by depreciating the quantity of goods and services that they can purchase with a given amount of nominal investment income. For example, assuming a 2% annual rate of inflation, \$1,000 of income would purchase \$1,000 of goods and services today; but to acquire the same amount of goods and services one year from now \$1,020 would be required. In two years, it would be \$1,040.40. Therefore, the projection of our final wealth 10, 20, or 30 years from now is best represented by the value of goods and services that this wealth will allow us to purchase in the future.

BASIC IMPLICATIONS OF INFLATION

Let's consider a single fixed-income investment of \$1,000 invested for four years at an annual rate of 3%. Fees are 1.00% annually and the tax rate of interest income is 40%. Let's also assume that inflation is running at an annual rate of 2%. The following table illustrates how the value of the investment increases after each year in a tax-exempt account and in a taxable account. It also illustrates the cost of purchasing a basket of goods and services, now worth \$1,000, as time passes.

| | Value of Invested Capital (Non-Taxable) | Value of Invested Capital (Taxable) | Cost of a Basket of Goods and Services |
|------------|--|--|---|
| Now | \$1,000.00 | \$1,000.00 | \$1,000.00 |
| Year One | \$1,020.00 | \$1,012.00 | \$1,020.00 |
| Year Two | \$1,040.40 | \$1,024.14 | \$1,040.40 |
| Year Three | \$1,061.21 | \$1,036.43 | \$1,061.21 |
| Year Four | \$1,082.43 | \$1,048.87 | \$1,082.43 |

In this example, in the absence of taxes, the investment grows at the same pace as the cost of living but, in the presence of taxes, it grows much more slowly. Simply to maintain the current purchasing power requires a return after fees and taxes equal to that of the inflation rate. Thus the investor's purchasing power goes down over time. In 3b, we explained that the fixed-income yield is compensation for inflation, real return, and liquidity and credit risk. This example illustrates that governments unfortunately tax investment returns indiscriminately, whether the return is compensation for inflation or for credit risk. This illustrates even more the importance of reasonable fees and efficient tax management.

Another implication is the importance of adjusting the level of savings periodically to match the inflation rate. Otherwise, the significance of the saving effort declines over time.

A SIMPLE CASE STUDY INVOLVING FEES,

INFLATION, TAXES, AND TAXABLE AND

NON-TAXABLE ACCOUNTS

Let's assume a similar example as in document 4b. An investor invests \$1,000 annually over 30 years in real-dollar terms. This means that, if inflation is 2.0%, her annual yearly contribution will increase by 2% a year to match the inflation rate. Thus the total nominal amount of all contributions is \$40,568 whereas it is simply \$30,000 in terms of current purchasing power (30 x \$1,000). The investor's portfolio is allocated 40% to domestic equities, 30% to foreign equities, and 30% to fixed income. It is rebalanced annually. The investor is also allowed to place a maximum of 30% of her annual savings in the non-taxable account. The asset returns, fees, and tax rates are identical to those specified in document 4b.

The following table illustrates the final wealth under the four scenarios of asset location: fully allocating to a taxable

account; allocating all three asset classes evenly within both the taxable and non-taxable accounts; allocating fixed-income first to the non-taxable account; and allocating domestic equities first to the non-taxable account. In the first two scenarios, we assume that all capital gains are fully realized yearly whereas, in the last two, we consider two levels of portfolio turnover, 100% and 30%.

The final wealth is expressed in nominal and real terms. For example, under the taxable scenario, final nominal wealth of \$70,474 would be accumulated. But this wealth is the equivalent of \$38,907 in terms of current purchasing power (at current prices of goods and services). In essence, the investment effort has increased the purchasing power of the yearly financial contributions from \$30,000 in real terms to \$38,907, an increase of \$8,907. But appropriate use of the non-taxable account can lead to an increase of as much as \$11,926.

| | Taxable | Allocated Evenly | Fixed Income in Tax Exempt Account First | Equity in Tax Exempt Account First |
|-------------------------------|-----------------|------------------|--|--|
| Final value after tax | \$70,474 | \$74,824 | \$72,806 (\$73,324) | \$75,681 (\$75,944) |
| Purchasing Power | \$38,907 | \$41,308 | \$40,194 (\$40,480) | \$41,781 (\$41,926) |
| Average Nominal Return | 3.66% | 4.03% | 3.86% (3.90%) | 4.10% (4.12%) |

This example unsurprisingly confirms the necessity of making maximum use of the non-taxable account. But it also illustrates the challenge of accumulating sufficient wealth for a comfortable retirement when we consider the impact of inflation. All portfolios have performances ranging from 1.66% (3.66% - 2.00%) to 2.03% (4.03% - 2.00%) above the inflation rate and this difference is what allows our standard of living to improve. But, in the presence of fees and taxes, it is unlikely that the investor can generate a net return greater than the inflation rate in the long run unless her portfolio is exposed to credit and/or equity risk.

Inflation substantially reduces the purchasing power of our savings, and governments are implicitly taxing the portion of portfolio return that is compensation for inflation. Generating a performance after fees and taxes that will reasonably outperform inflation requires careful long-term planning. Thus it is even more important to make efficient use of government programs that allow for the accumulation of tax-free returns.