Assignments

Financial Plan Assignment

Your assignment is to gain an understanding of how mutual funds can give you exposure to the major asset classes. How have mutual funds performed versus the individual securities that mutual funds comprise? What do mutual funds add to a portfolio? What disadvantages do mutual funds have? How can you minimize the disadvantages of mutual funds while at the same time maximizing their advantages?

Mutual funds have their own separate benchmarks, which are noted in the *Wall Street Journal* each week and each month.

Learning Tools

The following Learning Tools may also be helpful as you prepare your Personal Financial Plan.

15. Possible Benchmarks for Investment Plans

   This document suggests possible benchmarks for most of the major asset classes.

26. After-Tax, Equivalent Taxable Yield, and After-Inflation Returns

   This spreadsheet calculates the after-tax returns, equivalent taxable yield, and after-inflation returns on various assets.

Review Materials

Review Questions

1. What are mutual funds? Why are they suitable for the novice investor?
2. What are seven advantages of investing in mutual funds?
3. What are six disadvantages to investing in mutual funds?
4. What are the three major types of mutual funds?
5. What are the three different ways in which you can purchase a mutual fund?

Case Studies

Case Study 1

Data

Bill and Sally invested in five mutual funds. They are in the 25-percent federal and 7-percent state marginal tax brackets. (Remember, in 2013 qualified stock dividends and
long-term capital gains are taxed federally at 15 percent if your marginal tax rate is 25 percent. They are scared to calculate their returns.

Calculations
A. Calculate the before-tax and after-tax returns on each of the funds in their portfolio for 2013.
B. Calculate their overall portfolio before-tax and after-tax returns. Note that the first three funds are all taxable, the municipal bond fund is federal tax-free for interest only, and the Treasury bond fund is state tax-free for interest only.

<table>
<thead>
<tr>
<th>Funds</th>
<th>End NAV</th>
<th>Begin NAV</th>
<th>Short-Term Distrib.</th>
<th>LTCG Distrib.</th>
<th>Qual. Stock Dividends</th>
<th>% of Total Portfolio</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fid. Magellan (FMAGX)</td>
<td>62.98</td>
<td>71.67</td>
<td>0.41</td>
<td>0.02</td>
<td>0.00</td>
<td>50%</td>
</tr>
<tr>
<td>Sch. Small Cap (SWSSX)</td>
<td>19.01</td>
<td>21.11</td>
<td>0.35</td>
<td>1.16</td>
<td>0.00</td>
<td>10%</td>
</tr>
<tr>
<td>Van. ST Bond (VBISX)</td>
<td>10.61</td>
<td>10.55</td>
<td>0.19</td>
<td>0.06</td>
<td>0.00</td>
<td>20%</td>
</tr>
<tr>
<td>WF Muni Bond (SXFIX)</td>
<td>9.80</td>
<td>9.29</td>
<td>0.40</td>
<td>0.00</td>
<td>0.00</td>
<td>10%</td>
</tr>
<tr>
<td>Van. ST Treasury (VFISX)</td>
<td>10.79</td>
<td>10.68</td>
<td>0.07</td>
<td>0.06</td>
<td>0.00</td>
<td>10%</td>
</tr>
</tbody>
</table>

Notes: ST = short-term distributions. For bond funds, these are interest and short-term capital gains; for stock funds, they are non-qualified dividends, interest, and short-term capital gains. LTCG Distr. = Long-term capital gains distributions. Qual. Stock Distr. = qualified stock dividend distributions. % Portfolio is the beginning weight of the assets in your portfolio. Remember, your overall portfolio return is your return of each asset multiplied by your beginning period weight.

To calculate the after-tax return from each asset, determine the amount of taxes you will pay on each type of earning. Since you have not sold the assets, the only taxes you will pay will be on the distributions you have received. Subtract out the taxes on distributions to give you the distributions you get to keep, and calculate your return.

\[
\text{NAV}_{\text{Ending}} - \text{NAV}_{\text{Beginning}} + (\text{Distributions} \times (1 - \text{tax rate})) / \text{NAV}_{\text{Beginning}}
\]

Remember that the tax benefits on municipal and Treasury bonds are only on the interest distributions. You still must pay all taxes on the capital gains distributions.

Case Study 1 Answers
To calculate the after-tax return on each asset, determine the amount of taxes you will pay on each type of earning. Since you have not sold the assets, the only taxes you will pay will be on distributions you have received. Subtract the amount of distribution taxes you must pay to find the amount of distributions you will get to keep, and calculate the amount of return you will get to keep after taxes.
Bill is concerned about turnover. He knows that the turnover rate for financial assets is a measure of the amount of trading activity completed during a year; the turnover rate is expressed as a percentage of the average amount of total assets in the fund. A turnover rate of 10 percent means that 10 percent of the average amount of total assets in the fund were bought and sold during the year. He also knows that a mutual fund investor must pay taxes on any distributions received during the year, including distributions the investor reinvests in additional shares. While high turnover may lead to higher returns, high turnover always leads to higher transaction costs as well as increased taxes if assets are held in taxable accounts. Bill’s marginal tax rate is 35 percent, and he lives in a state that does not have a state income tax, so his short-term distributions will be taxed at 35 percent.

The following information is for two of Bill’s bond mutual funds:

<table>
<thead>
<tr>
<th>Mutual Funds</th>
<th>Fund A</th>
<th>Fund B</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beginning NAV</td>
<td>$100.00</td>
<td>$10.00</td>
</tr>
<tr>
<td>Short-Term Distributions</td>
<td>$1.00</td>
<td>$0.90</td>
</tr>
<tr>
<td>Ending NAV</td>
<td>$109.00</td>
<td>$10.10</td>
</tr>
</tbody>
</table>
Calculations

- Calculate Bill’s before-tax and after-tax returns on Fund A and Fund B.
- What would have changed had the mutual funds been stock mutual funds and the distributions been qualified stock dividend distributions instead of bond distributions?

Case Study 2 Answer

A. Bill’s before tax and after-tax returns are:

<table>
<thead>
<tr>
<th></th>
<th>Fund A</th>
<th>Fund B</th>
</tr>
</thead>
<tbody>
<tr>
<td>YTD Nominal Returns</td>
<td>10% (note 1)</td>
<td>10%</td>
</tr>
<tr>
<td>Estimated Turnover</td>
<td>10%</td>
<td>90%</td>
</tr>
<tr>
<td>Taxes on Short-Term Distributions</td>
<td>35%</td>
<td>35%</td>
</tr>
<tr>
<td>Taxes Paid (on Short-Term Distributions)</td>
<td>$0.035</td>
<td>$0.315</td>
</tr>
<tr>
<td>After-Tax Return</td>
<td>9.65%</td>
<td>6.85%</td>
</tr>
<tr>
<td>Loss from Nominal Return Due to Taxes</td>
<td>0.35%</td>
<td>3.15%</td>
</tr>
</tbody>
</table>

To calculate Bill’s before-tax return, the formula is (ending NAV + distributions – beginning NAV) / beginning NAV.

- Fund A: (109.00 + 1.00 – 100.00) / 100.00 = 10 percent
- Fund B: (10.10 + 0.90 – 10.00) / 10.00 = 10 percent

The formula for finding the after-tax return is:

(ending NAV + [(distributions – taxes paid) – beginning NAV]) / beginning NAV, or:

- Fund A: (109 + [(10 – 3.50) – 100]) / 100 = 9.65%
  - Bill pays $0.10 * .35 in taxes and keeps $0.10 * (1-.35).
- Fund B: (10.10 + [(0.90 – 0.315) – 10.00]) / 10.00 = 6.85%
  - Bill pays .90 * .35 in taxes and keeps .90 * (1-.35).

Regarding Fund A, Bill must pay 35 percent, or $3.50, in taxes on a $10 distribution. Thus, his nominal return is 10 percent, his after-tax return is 9.65 percent, and he loses 0.35 percent to taxes.

Regarding Fund B, Bill must pay 35 percent, or 31.5 cents in taxes on a 90-cent distribution. Thus, his nominal return is 10 percent, but his after-tax return is 6.85 percent, and he loses 3.15 percent to taxes.

Although both funds have the same nominal return and the same tax rate, Fund B’s return is 29-percent lower because of taxes related to higher turnover. Clearly, understanding taxes is very important. Know your tax-rate on each type of earnings.

B. If the distributions would have been qualified stock dividend distributions instead of short-term distributions, instead of paying taxes at 35 percent, which is Bill’s ordinary income rate, he would pay a preferential tax rate of only 15 percent for both Fund A and Fund B.