Typically, investors accumulate mutual fund investments—and now also exchange-traded fund (ETF) investments—in brokerage accounts, 401(k) plans, IRAs and other retirement plans.

These funds, and other investments, form the basis of our financial plans and are the vehicles that drive our financial goals.

In order to make sure we are on track to achieve these goals and to assess our investment decisions, we have to measure:

• How well our funds have done individually, and
• How well our fund portfolio has performed as a whole.

That’s where benchmarking comes in, and all benchmarking is relative.

**Benchmarking Basics**

There are two basic ways to benchmark your funds and your portfolio:

1) Comparison to an index fund, or
2) Comparison to the average performance of funds with the same investment approach.

The charm of index funds as benchmarks is that they have extremely low expenses, always remain fully invested and are broadly diversified within their investment category. And they are also an alternative investment to an actively managed, non-index fund investment.

The other benchmark, an average of actively managed funds in the same investment category, is a peer group comparison. But even within a peer category there are significant differences in investment style and risk, requiring a careful look at the fund and how it stacks up, in terms of portfolio composition, to the category peer group.

The ultimate goal is to minimize benchmark error by selecting appropriate benchmarks that will give a true relative performance reading.

**How It Works**

To illustrate benchmarking approaches, an example mutual fund portfolio is detailed in Table 1.

The portfolio weights (the percentage of the total portfolio) for each mutual fund are based upon market values at the beginning of the period that will be used in the comparison. Weightings based on the ending period would distort the comparison by double-counting the investment performance of the portfolio because portfolio weights change over time and reflect portfolio performance during the period.

The returns reported in Table 1 are total returns for the period, and include reinvestment of all distributions of income and capital gains. The returns for the portfolio, peer category averages, and benchmark index funds are all before taxes and net of all fund expenses, but do not reflect any front-end or back-end loads, redemptions or individual investor incurred brokerage fees.

The example portfolio in Table 1 is well diversified,
without any forays into more exotic fund investments. It includes only actively managed funds, rather than index funds, to highlight the benchmarking process for an individual investor. Similarly, the funds used in the example have been chosen with a specific growth or value approach within a stock-capitalization size category, mid-cap value for instance, to further explain the details of benchmarking. However, keep in mind that many fund choices are actually a blend of both growth and value approaches. Lastly, although none of the funds in our example is an exchange-traded fund, the comparison benchmarking process would be exactly the same if those kinds of funds had been included.

Given the fund portfolio, the next step is to match up an appropriate index fund benchmark to each fund. For our index benchmarks, all Vanguard index funds are used for simplicity and due to the broad offering of index funds by Vanguard, a fund family that pioneered indexing. [For sources of information on index funds and index fund returns, see the box on page 14].

### Appropriate Benchmarks

Finding an appropriate benchmark index fund match for a diversified domestic stock fund requires you to determine the investment approach and cap size of the fund. This classification can be determined by reading the fund prospectus, consulting a source such as Morningstar, or using AAII materials such as the Individual Investor’s Guide to the Top Mutual Funds, the Quarterly Low-Load Mutual Fund Update or the on-line Top Mutual Funds Guide—Plus, which gives investment category and a full page of data on all the no-load and low-load funds we track (available at AAII.com). For non-diversified stock sector funds, an index fund equivalent is usually not available and the benchmark alternative is the category average.

For diversified international stock funds and for diversified emerging markets funds, there are broad-based index funds in those categories that can be used as benchmarks. With single-country funds or regional stock funds, the benchmark comparison most often would have to be made against a category average peer group. However, European and Pacific stock index funds exist and can be used if they match up to the portfolio holdings of your regional fund.

For bond funds, the three key variables for benchmarking are issuer, quality and maturity. Benchmark bond index funds are only easy to find in the general bond category.

For U.S. government bond funds, the nature of U.S. government bonds makes an index fund rare. Municipal bond funds, whether national or state specific, also do not have readily available benchmark index funds due to the fragmented nature of the municipal bond market and inactive trading. For these funds, along with mortgage-backed, corporate, and high-yield bond funds, you would turn to category averages for use as benchmarks.

Maturity matching for benchmarking bond funds is crucial and the maturity designations for bond funds of short term, intermediate term and long term should determine the appropriate bond index fund benchmark. Unfortunately, mortgage-backed, municipal, corporate and U.S. government bonds all behave differently even if the maturities of the bonds are similar, so you really can’t cross-index among these categories. An intermediate-term corporate bond fund will act differently than an intermediate-term U.S. government bond fund.

### A Benchmarked Portfolio

In Table 1, the example portfolio of funds is matched one-on-one with
Table 1. Benchmarking a Mutual Fund Portfolio

<table>
<thead>
<tr>
<th>% of Portfolio*</th>
<th>3-Year Annual Total Return (%)</th>
<th>Total Risk Index</th>
<th>Expense Ratio (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Fund Category Average Index Benchmark</td>
<td>Fund Category Average Index Benchmark</td>
<td>Fund Category Average Index Benchmark</td>
</tr>
<tr>
<td>20</td>
<td>12.6</td>
<td>13.4</td>
<td>13.0</td>
</tr>
<tr>
<td>10</td>
<td>14.5</td>
<td>16.2</td>
<td>17.7</td>
</tr>
<tr>
<td>10</td>
<td>15.4</td>
<td>16.2</td>
<td>17.7</td>
</tr>
<tr>
<td>10</td>
<td>16.9</td>
<td>14.2</td>
<td>16.5</td>
</tr>
<tr>
<td>10</td>
<td>13.4</td>
<td>14.2</td>
<td>12.5</td>
</tr>
<tr>
<td>10</td>
<td>35.3</td>
<td>18.6</td>
<td>18.5</td>
</tr>
<tr>
<td>10</td>
<td>25.6</td>
<td>25.0</td>
<td>23.2</td>
</tr>
<tr>
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<td>45.8</td>
<td>41.2</td>
<td>39.8</td>
</tr>
<tr>
<td>10</td>
<td>3.7</td>
<td>3.4</td>
<td>3.5</td>
</tr>
<tr>
<td>100</td>
<td>19.6</td>
<td>17.6</td>
<td>17.5</td>
</tr>
</tbody>
</table>

index funds. For example, the American Century Income and Growth fund, a large-cap growth-value blend fund, is matched up with the Vanguard Index 500 fund, based on a large-cap growth-value blend index. The Dreyfus Small Company Value fund is matched with the Vanguard Small Cap Value Index fund and so on.

This example portfolio is just that, an example, and is not suitable for all investors, with its aggressive 90% stock, 10% bond mix. By design, it does not have any index funds and it has 10% in a REIT fund (a real estate fund) and 10% in emerging markets, a volatile international holding. But it is well diversified.

And what about the performance? The first return listed in Table 1 is simply the actual annual return the fund earned over the period with all distributions, income and capital gains reinvested when distributed.

The category average return is the simple average of all funds classified in the category over the period, and the index benchmark returns are actual returns, with all costs of running the index funds included. The returns for the example fund, the category average and the index benchmark portfolios are all weighted averages based upon the portfolio weights at the beginning of the period and listed in Table 1. The actual return calculation for the fund portfolio is shown at the bottom of Table 1. The portfolio returns for the category average and index benchmark are calculated in the same way.

A total risk index is given for each fund, fund category and index benchmark. The higher the total risk index, the greater the variability of return over the last three years and the greater the total risk. The average mutual fund risk index for all funds in all categories is 1.00. Funds with a risk index higher than the risk index for the fund’s category should be expected to have higher returns than the category average. If not, the fund has underperformed on a relative risk basis.

Expense ratios are also reported in Table 1 for each fund, an average for each category and for each index fund. While the returns reported for the funds include expenses, breaking out the expense ratio separately highlights any significant differences. The weighted average expense ratio, using beginning of period market values as weights, is given for the fund, category average and index benchmark.

Even small differences in expense ratios can have large impacts on returns over long periods and going forward. Returns are always difficult to forecast but expense ratios tend not to change. Index funds set the standard for low expense ratios and serve as an expense benchmark for your portfolio.

A Three-Year Comparison

Now, let’s take a look at the numbers for the portfolio over the last three years and how they compare to the category averages and the index benchmarks.

Over the last three years, the portfolio of mutual funds returned a compounded weighted average of 19.6% a year. The category average portfolio and the benchmark index portfolio had returns that were almost identical, 17.6% and 17.5%, respectively.

You can see that, overall the fund portfolio did quite well in comparison, even though four of the funds within the portfolio underperformed their category averages. However, a closer look shows that the difference in portfolio performance was almost entirely due to the CGM Realty fund outperforming both the category average and the index benchmark fund (Vanguard REIT Index fund) significantly, by 16.8 percentage points in the latter case.

A look at the total risk index mea-
SURE WILL HELP TO CLARIFY SOME OF THESE PERFORMANCE DIFFERENCES. THE CGM REALTY FUND HAS A TOTAL RISK INDEX OF 1.91, ALMOST TWICE THE RISK OF THE AVERAGE MUTUAL FUND; THE CATEGORY RISK IS ALSO HIGHER AT 1.67 BUT STILL LESS THAN THE FUND. SOME OF THE RETURN DIFFERENCE IS SIMPLY DUE TO A HIGHER-RISK PORTFOLIO BUT THE RETURN DIFFERENCE IS ALMOST DOUBLE THE CATEGORY, SO SOME CREDIT MUST BE GIVEN, BEYOND RISK DIFFERENCES, TO THE MANAGEMENT OF THE FUND’S PORTFOLIO AND ITS INVESTMENT COMPOSITION.

THE DREYFUS SMALL COMPANY VALUE FUND HAS A RISK INDEX OF 1.89 COMPARED TO THE CATEGORY AVERAGE OF 1.43, BUT STILL UNDERPERFORMED THE CATEGORY AVERAGE (13.4% TO 14.2%), ALTHOUGH IT OUTPERFORMED THE INDEX BENCHMARK (12.5%). BUT—HOLD ON—THE BENCHMARK TOTAL RISK INDEX WAS ONLY 1.28, QUITE A BIT LOWER THAN THE 1.89 RISK INDEX OF THE FUND.

NAVELLIER MID CAP GROWTH UNDERPERFORMED THE CATEGORY AVERAGE AND THE INDEX BENCHMARK, WHILE HAVING A HIGHER RISK INDEX THAN BOTH—RELATIVELY POOR PERFORMANCE ON A RETURN AND RISK BASIS.

AT THE OTHER END, USAA INTERMEDIATE-TERM BOND FUND HAD A HIGHER RETURN THAN THE CATEGORY AVERAGE AND THE INDEX BENCHMARK, WHILE DISPLAYING A LOWER TOTAL RISK INDEX THAN EITHER ONE.

THE EXPENSE RATIOS FOR THE INDIVIDUAL FUNDS AND FOR THE WEIGHTED FUND, CATEGORY AVERAGE AND INDEX BENCHMARK PORTFOLIO TELL AN INTERESTING TALE. THE FUND PORTFOLIO AVERAGE AND CATEGORY WEIGHTED AVERAGE EXPENSE RATIOS ARE ABOUT EQUAL, 1.02 COMPARED TO 1.07, RESPECTIVELY. THE WEIGHTED AVERAGE EXPENSE RATIO FOR THE INDEX BENCHMARK PORTFOLIO IS IN ANOTHER GALAXY, AT ONLY 0.23%.

CONCLUSION

PERIODICALLY BENCHMARKING THE PERFORMANCE OF YOUR FUND PORTFOLIO IS A VALUABLE EXERCISE. IT WILL INDICATE HOW WELL YOUR PORTFOLIO HAS DONE AND WILL PINPOINT WEAKNESSES OR STRENGTHS IN YOUR INDIVIDUAL FUND SELECTIONS, WHILE OFFERING AN ALTERNATIVE INDEXING STRATEGY.

COMPARING THE TOTAL RISK INDEX OF EACH FUND TO AN APPROPRIATE CATEGORY AVERAGE AND AN INDEX BENCHMARK WILL GIVE YOU A GLIMPSE OF THE RELATIVE RISKS OF YOUR FUND SELECTIONS. AND KEEPING AN EYE ON EXPENSES NEVER HURTS.

TAKE THE TIME ALONG THE WAY TO MAKE SURE YOU ARE ON THE RIGHT FINANCIAL PATH BY BENCHMARKING YOUR PORTFOLIO PROGRESS. IF YOU DO, YOU WILL BE MUCH MORE LIKELY TO REACH YOUR ULTIMATE FINANCIAL GOALS.

John Markese is president of AAII.