The most important favor that long-term investors can do for themselves is to invest in the right kinds of assets, or asset classes. Examples of asset classes are stocks and bonds. More specific examples are U.S. large-cap value stocks, emerging markets stocks, high-yield bonds and short-term corporate bonds.

Dimensional Fund Advisors studied the returns of 44 institutional pension funds with about $450 billion in assets over various time periods averaging nine years. The study concluded that more than 96 percent of the variation in returns could be attributed to the kinds of assets in the portfolios. Most of the remaining 4 percent was attributable to stock picking and the timing of purchases and sales.

Stated another way, 96 percent of investing is about understanding the job that needs to be done. The other 4 percent is about picking the very best tools to get that job done. Do this right, and you're most of the way there. Do this wrong, and at best your money is not working hard for you; at worst, you're taking too much risk and you could get clobbered by the market.

Ironically, most investors spend most of their time on the decisions that make just 4 percent of the difference and very little time on decisions that make 96 percent of the difference.

That is not to say that the 4 percent is inconsequential. The opposite is true, as we shall see, and this article is about that 4 percent. Once you understand asset allocation and understand what asset classes you need, you should find the most efficient, lowest-cost, least-risky and most productive mutual funds for your money.

There are lots of places you can invest your money and get an adequate return. But if you're investing for a long time, you should hold out for great investments instead of settling for those that are merely good enough.

I'm going to compare and contrast two families of excellent low-cost, no-load mutual funds that do a lot of seemingly small things right: Vanguard and Dimensional Fund Advisors.

You're probably familiar with Vanguard, which is known for its index funds and for cutting its expenses to the bone. Vanguard is our favorite fund family for do-it-yourself investors. We often recommend these funds to investors of all ages and all levels of wealth.

Dimensional Fund Advisors funds have some important advantages over Vanguard, as we shall see. I believe those advantages over time could mean an extra one to two percentage points of annualized return.

LITTLE THINGS ADD UP

How significant is that?

Imagine a working couple who contribute $10,000 to a pair of Roth IRAs every year for 30 years.

If they eliminate commissions, minimize their ongoing expenses and find ways to invest in just the right asset classes, it's not unreasonable to think they could increase their expected long-term return from 8 percent to 10 percent without taking more overall risk.

Over 30 years, this imaginary couple would have invested a total of $300,000. At the end of that time, an 8 percent return would make their IRAs worth about $1.2 million. At 10 percent, the IRAs would be worth about $1.8 million. The difference is about twice as much as the total of all the money they put into the accounts.

That is a very big difference.

At the investment advisory company I founded in 1983, the best way we have ever found to build a buy-and-hold portfolio is using the asset class funds offered by Dimensional, also known as DFA.

Dimensional's success is built on doing many small things very well. I'd like to walk you through some of those things, one at a time, comparing Dimensional funds with the comparable funds offered by Vanguard. In addition, we show how both sets of funds compare with their category averages as compiled by Morningstar Inc.

THE FUNDS

Table 1 lists the specific funds I'll be discussing, along with their ticker symbols to let you look them up and find more information on them whenever you like.

Table 1: Recommended DFA and Vanguard funds			
Fund	*Ticker*	*Fund*	*Ticker*
DFA U.S. Large Company	DFLCX	Vanguard 500 Index	VFINX
DFA U.S. Large Cap Value	DFLVX	Vanguard Value Index	VIVAX
DFA U.S. Micro Cap	DFSCX	Vanguard Small Cap Index	NAESX
DFA U.S. Small Cap Value	DFSVX	Vanguard Small Cap Value Index	VISVX
DFA U.S. REITs	DFREX	Vanguard REIT Index	VGSIX
DFA International Large Cap	DFALX	Vanguard Developed Markets	VDMIX
DFA International Large Cap Value	DFIVX	Vanguard International Value	VTRIX
DFA International Small Cap	DFISX	Vanguard International Explorer	VINEX
DFA International Small Cap Value	DISVX	(none)	
DFA Emerging Markets Core Equity	DFCEX	Vanguard Emerging Markets	VEIEX

One thing you may notice is that Vanguard has no international small-cap value fund. This is an important asset class that bolstered many diversified portfolios during the bear market of 2000-2002, when most U.S. stock funds were languishing or worse. But Vanguard doesn't offer this asset class, and that's a weakness of the Vanguard portfolio in this comparison.

(In our recommendations to investors, we have replaced Vanguard International Explorer Fund with Vanguard FTSE All World ex-U.S. Small Cap Index Fund. But that fund has no track record, and for purposes of this discussion we are using International Explorer.)

I said earlier that Dimensional funds pinpoint the most productive asset classes. That might be an understatement. Dimensional is the only fund family I know of that offers every equity asset class that we regard as important.

EXPENSES

After asset allocation, the most reliable predictor of investment success is reducing expenses. Savvy investors know that every dollar they pay in expenses is a dollar they won't ever see again, a dollar that will never earn more money for them. But if that dollar remains in your portfolio, it's working for you instead of fattening somebody else's wallet.

Obviously, expenses are inevitable in investing. No company will create and manage portfolios for you, keep records of your account, provide statements and customer service for free. But some companies charge much less for this than others.

Table 2 shows the annual expense ratios for the Dimensional funds and the Vanguard funds that are listed in Table 1. You'll see that both fund families charge expenses far below the Morningstar category averages.

Dimensional funds are excellent in this respect when compared to category averages, but Vanguard's funds are even cheaper.

Annual expense ratios: DFA vs. Vanguard vs. Morningstar category averages
(lower number is desirable)

Asset class	*Dimensional*	*Vanguard*	*Category average*
U.S. large-cap	0.15%	0.15%	1.09%
U.S. large-cap value	0.27%	0.20%	1.27%
U.S. micro-cap	0.52%	0.22%	1.36%
U.S. small-cap value	0.52%	0.22%	1.51%
U.S. Reits	0.33%	0.20%	1.42%
International large-cap	0.29%	0.22%	1.40%
International large-cap value	0.44%	0.42%	1.39%
International small-cap	0.55%	0.36%	1.55%
International small-cap value	0.69%	none	1.53%
Emerging markets	0.65%	0.37%	1.78%
Average	**0.44%**	**0.26%**	**1.43%**

Despite their slightly higher expenses, I believe that Dimensional funds are the best in the world. Their superiority is not the result of having better managers picking better stocks. DFA's edge comes not from stock selection but from precise asset allocation that gives investors more of what they need and less of what they don't need.

What investors need in the long run is diversification in addition to the ever-popular large-cap growth stocks. For reasons detailed at length in "The ultimate buy-and-hold strategy," investors need to add stocks of smaller companies and of value companies. Over long periods of time, small companies have outperformed large ones, and value companies have outperformed growth companies.

I'm not saying you should exclude large companies from the portfolio, and I don't advocate excluding growth companies. To gain the diversification that investors need, we include small-stock funds and value funds.

To get this diversification, we look for value funds that have a stronger the orientation to value and for small-cap funds that hold smaller companies. Dimensional funds, in each case, deliver the goods.

SIZE MATTERS

To truly evaluate a mutual fund properly; you need to study what's in its portfolio.

Size is very important, and it's very easy to measure. Every public company has a total market capitalization, the theoretical value that investors collectively assign to the whole company. This is calculated by multiplying the share price times the total number of shares.

Large-cap companies like General Electric have market capitalizations over $110 billion. Many companies you have never heard of have total market capitalizations of less than $100 million.

Table 3 shows the average market capitalization of the portfolios of the 19 Dimensional and Vanguard funds. Remembering that smaller is better in a small-cap value fund, consider the two funds in that category. Dimensional fund's portfolio has an average market capitalization of $676 million. The Vanguard fund's comparable figure is more than $1.2 billion – and it's above the industry average.

Average market capitalizations: DFA vs. Vanguard vs. Morningstar category averages (lower number is desirable) In millions

Asset class	*Dimensional*	*Vanguard*	*Category average*
U.S. large-cap	48,285	45,305	31,112
U.S. large-cap value	23,114	43,564	33,273
U.S. micro-cap	404	1,269	1,003
U.S. small-cap value	676	1,253	876
U.S. Reits	4,910	4,888	4,573
International large-cap	26,664	35,000	23,782
International large-cap value	25,834	38,209	24,342
International small-cap	869	1,447	2,281
International small-cap value	675	none	1,865
Emerging markets	5,438	14,140	12,046
Average	**$13,687**	**$20,564**	**$13,515**

You will see there's not much difference between Dimensional and Vanguard in the average market capitalizations of their U.S. and international large-cap blend and real estate funds. But in every other category, the difference is striking, and the averages reflect that.

Vanguard has an excellent emerging markets fund. But large and giant companies (as defined by Morningstar) make up about 80 percent of that portfolio. Large and giant companies make up about 57 percent of the Dimensional core emerging markets fund. Dimensional's fund leaves 43 percent of its portfolio for mid-cap and small-cap companies; Vanguard leaves only about 20 percent.

This is an example of the easily-overlooked details that can add up to meaningful differences in performance.

VALUE MATTERS

Over the long run, investors have earned higher returns from value companies than from growth companies.

Value is trickier to quantify than size. Many investors regard value companies as those that are out of favor and perhaps ripe for turnarounds. That's the sort of value definition that Wall Street likes, because it emphasizes the role of smart stock-picking and implies a need to pay for experts who can identify which companies have the most future potential.

Academic experts, on the other hand, demand a more objective approach. The generally accepted measure of a value company is its price-to-book ratio, often abbreviated as price/book. This is the current price of the stock divided by the book value per share. Book value is the total of all assets minus all liabilities on the company's books divided by the number of shares.

Book value emphasizes corporate assets. Manufacturing companies with huge investments in plants and equipment will often have relatively high book values.

At the opposite end of the scale, growth companies may rely more on the brains of their employees. Those brains are very real assets, but they don't have price tags, they don't technically belong to the companies and as some analysts love to say, those assets "walk out the door every night."

Growth companies tend to have lower book values and thus higher price/book ratios. Investors in Microsoft aren't relying on manufacturing plants and office buildings; they're relying on brainpower and patents and creativity.

To use a couple of examples in our own back yard, Microsoft's price/book ratio was recently 4.4. Weyerhaeuser, which owns vast blocks of timberland, had a price/book ratio of 1.0. For reference, the price/book ratio of the Standard & Poor's 500 Index was 1.6.

I'm not saying that one of these companies is a better investment than the other. They are very, very different companies. While Microsoft's greatest assets go home at night, Weyerhaeuser's greatest assets stay put, growing patiently in North American forests.

I don't advocate investing in value companies one by one. That's much too risky for anybody but a professional investor. I believe in owning them by the hundreds. That's easy to do by investing in value funds.

Average price/book ratios: DFA vs. Vanguard vs. Morningstar category averages (lower number is desirable)

Asset class	*Dimensional*	*Vanguard*	*Category average*
U.S. large-cap	2.4	2.2	2.0
U.S. large-cap value	1.3	1.7	1.7
U.S. micro-cap	1.7	1.7	1.5
U.S. small-cap value	1.1	1.3	1.2
U.S. Reits	2.1	2.1	1.9
International large-cap	1.9	2.3	1.9
International large-cap value	1.5	1.9	1.5
International small-cap	1.6	1.8	1.8
International small-cap value	0.8	none	1.4
Emerging markets	1.7	2.1	2.1
Average	**1.6**	**1.9**	**1.7**

It stands to reason then that a value fund should have an average price/book ratio that's lower than most other funds. The lower the ratio, the stronger the value orientation.

Table 4 shows the average price/book ratios of portfolios in Dimensional and Vanguard funds.

I believe those numbers are important in understanding why most Dimensional funds had better performance than the corresponding Vanguard funds in the most recent 10-year period, when value stocks and small stocks were thriving. There will of course be times when growth stocks do better and when large stocks do better, and some Dimensional funds will lag their Vanguard counterparts during those times.

If you're looking for funds that always do better than average, you are on your own. Perhaps all the children can be above average in Lake Wobegone, but not in the real world. However, if you want to diversify a portfolio with value and small-cap exposure, I believe that Dimensional has the best funds for the job.

PORTFOLIO TURNOVER

When I look "under the hood" at a portfolio I always like to peek at portfolio turnover. You may be a buy-and-hold investor, but your fund manager could be a trader, driving up transaction costs that eat away at returns in addition to the expense ratios we looked at earlier.

Table 5 shows the annual percentage turnover in the funds we're comparing. Note that both Vanguard and Dimensional have much lower average turnover than the category averages. The two international large-cap funds turned over less than 10 percent of their portfolios in a year, compared with 84 percent in the average fund in the category.

Turnover Ratio: DFA vs. Vanguard vs. Morningstar category averages
(lower number is desirable)

Asset class	*Dimensional*	*Vanguard*	*Category average*
U.S. large-cap	13.0%	5.0%	73.0%
U.S. large-cap value	9.0%	20.0%	63.0%
U.S. micro-cap	24.0%	16.0%	100.0%
U.S. small-cap value	27.0%	34.0%	84.0%
U.S. Reits	17.0%	13.0%	110.0%
International large-cap	5.0%	7.0%	84.0%
International large-cap value	15.0%	59.0%	50.0%
International small-cap	17.0%	29.0%	76.5%
International small-cap value	18.0%	none	70.0%
Emerging markets	2.0%	9.0%	88.0%
Average	**14.7%**	**21.3%**	**79.9%**

REDUCING RISK THROUGH DIVERSIFICATION

For a final peek into the details of what these funds own, I call your attention to Table 6, showing portfolio diversification. I believe that over the long term, investors will continue to get premium returns for taking carefully controlled risks. Investing in many companies is less risky than investing in a few companies.

Stocks held in portfolios: DFA vs. Vanguard vs. Morningstar category averages (higher number is desirable)

Asset class	*Dimensional*	*Vanguard*	*Category average*
U.S. large-cap	500	513	232
U.S. large-cap value	220	411	111
U.S. micro-cap	2,537	1,739	418
U.S. small-cap value	1,463	986	248
U.S. Reits	110	98	66
International large-cap	1,409	432	259
International large-cap value	549	226	155
International small-cap	4,533	207	340
International small-cap value	2,371	none	504
Emerging markets	2,581	837	222
Average	**1,627**	**605**	**256**

Table 6 shows that Dimensional funds hold far more companies in their portfolios than the comparable Vanguard funds, especially in U.S. and international funds that invest in small-cap, small-cap value and emerging markets stocks. This is desirable.

THE PROOF OF THE PUDDING

The proof, of course, is in the results, which you'll see in Table 7, which shows returns for the 10 years ended December 31, 2008.

Ten-year fund returns: DFA vs. Vanguard vs. Morningstar category averages			
Asset class	*Dimensional*	*Vanguard*	*Category average*
U.S. large-cap	-1.5%	-1.5%	-0.8%
U.S. large-cap value	2.2%	0.6%	0.9%
U.S. micro-cap	6.4%	3.3%	4.4%
U.S. small-cap value	7.3%	5.2%	5.5%
U.S. Reits	7.6%	7.1%	6.8%
International large-cap	1.3%	1.4%	0.9%
International large-cap value	4.8%	3.5%	3.3%
International small-cap	7.0%	8.5%	5.8%
International small-cap value	9.5%	none	6.1%
Emerging markets	9.0%	8.9%	8.7%
Average	**5.4%**	**4.1%**	**4.1%**

I'm not alone in being a fan of Dimensional funds. In his book "Index Funds, The 12 Steps for Active Fund Investors," Mark Hebner describes Dimensional funds as "hands down the best, most efficient index mutual funds available." (Technically these are not index funds; more about that shortly.)

Dimensional was founded in 1981 to bring the benefits of academic research to insurance companies, pension funds and other institutions. The company's funds pinpoint the most productive asset classes and make them available not only to institutions but to some individual investors.

Notice the word “some” in that last sentence. Dimensional funds are available through selected investment advisors that have been approved by Dimensional. Most such advisors charge management fees, typically one percent per year, and minimum size requirements for opening accounts. If you can get past those hurdles, we believe that over time Dimensional funds will provide the extra edge that will make a great portfolio, not merely a good one.

SAYING NO TO HOT MONEY

I’m often asked why these funds aren’t available to everybody who wants to invest in them. Dimensional funds are based on academic research that assumes long-term holding periods and a strict buy-and-hold approach. That is contrary to typical investor behavior.

Many investors buy and sell based on their emotions and swings in the market. This can create massive inflows and outflows for mutual funds, whose managers can be forced to sell stocks in order to meet redemptions. Typically that occurs when stock prices have been falling; this in turn forces fund managers to sell when prices are relatively weak.

Likewise, large cash inflows can force funds either to risk paying too much for stocks as their buying drives up prices or to leave new money in cash, where it is relatively unproductive. Either scenario is likely to reduce returns for all shareholders, and Dimensional simply isn’t interested in doing that.

One other point is worth noting: There is no financial arrangement between Dimensional Fund Advisors and any of the advisors who use the company’s funds. We and other Dimensional advisors are free to recommend any funds we want to our clients. We receive no income from Dimensional or any other fund family.

NOT INDEX FUNDS

Dimensional funds are not index funds. They do not try to exactly match any index, and that’s to the shareholders’ advantage. A fund that’s modeled after the Standard & Poor’s 500 Index, for example, is obligated to sell each stock that drops off the index and buy each one that’s added to the index – and to do this on the same day that every other S&P 500 Index fund is doing the same thing.

On that one day, the stocks being sold by all the index funds can be expected to sell for weak prices, since supply will suddenly be greater than demand. At the same time, the stocks being added to all those index funds can be expected to go up in price, reacting to a surge in demand.

Dimensional’s U.S. large-cap fund follows the S&P 500 Index closely. But the fund’s managers are free to buy and sell when they find more favorable prices. This and other trading strategies allow Dimensional funds to outperform their benchmarks.

WHAT TO DO WITH THIS INFORMATION

If you use a financial advisor, I recommend that you choose one who uses Dimensional funds. I believe that over the long term these funds will have an advantage over the equity funds at Vanguard, even after subtracting a presumed 1 percent annual management fee.

If you're an investor accumulating assets over many years, that advantage may make the difference between retiring when you want to or having to work longer.

If you're retired, that advantage could make the difference between having enough to live comfortably or having to make every penny count. And at the end of your lifetime, that advantage could become the difference between leaving only modest amounts to your heirs or having enough to leave a substantial legacy that will live long after you are gone.

THE BOTTOM LINE

Whenever they can, investors who want to make their money work as hard as possible should use passively managed funds such as those offered by Vanguard and Dimensional. Both families are very good. But for reasons I have outlined above, I believe Dimensional's funds are better than Vanguard's.

The whole idea of our "ultimate buy-and-hold strategy" is to properly load a portfolio with small-cap stocks and value stocks. The better job you do of that, the better your long-term results are likely to be. Unfortunately, you cannot get full diversification using Vanguard funds, though you can come close.

Dimensional funds give you the assets that academic research says you need. If there were an alternative open to the general investing public, we would recommend it. But the only way to truly duplicate what we think is the ultimate strategy is to use Dimensional funds.

What's at stake is your money and your future. It's your choice, and now you have the information you need to make that choice.

http://www.fundadvice.com/articles/buy-hold/the-best-mutual-funds-dfa-or-vanguard-.html