

DFA: A BETTER WAY TO INVEST

Research shows that 80% of all active fund managers underperform their benchmarks.¹ Index funds virtually eliminate this risk of underperformance. Dimensional Fund Advisors, however, has engineered an even better mutual fund. This paper aims to explain key tenets of DFA's approach, and why they have resulted in a sizeable return advantage over both active and index mutual funds.

UNCONVENTIONAL SUCCESS

For thirty years, Dimensional Fund Advisors (DFA) has consistently bucked the investment industry's conventional wisdom. The firm maintains no Wall Street office, dedicates zero resources to economic forecasting, and doesn't allow individual investors direct access to its funds. This unconventional approach has been critical to fueling the firm's growth—DFA now manages over \$300 billion in assets.

Why the success? Performance. Returns in DFA's mutual funds have trumped not only a majority of "active" fund managers, but comparable index benchmarks, as well.² The firm's flagship U.S. Small Cap Value Fund has returned 13% annualized per year back to its early 1993 inception.³ That beats the Russell 2000 Index of small cap stocks by 3.4% per year. DFA's other funds show similar results.

Remarkably, this performance comes not from DFA's superior skill at forecasting the economic future or picking better stocks. In fact, the folks at DFA spend zero time or energy on these typical Wall Street strategies. Traditional stock picking and market timing efforts, DFA says, are a waste of both time and money.

If they're not feverishly trying to outguess markets, what is DFA's secret? The firm embraces a so-called "passive" approach based on decades of academic research (University of Chicago's Eugene Fama and Yale's Roger Ibbotson are board members; Dartmouth's Ken French is the firm's Head of Investment Policy). The idea is that markets are correct more often than they are wrong. The sheer existence of so many diverse investors ensures prices reflect most, if not all, available information. No one can

reasonably expect to know more than the market as a whole knows. Market prices are fair, and when prices are fair, stock picking and market timing become exercises in futility.

If this line of reasoning sounds familiar, it should. The largest fund company on the planet, Vanguard, has popularized passive investing and enabled the masses to invest in index funds, those well-diversified baskets of stocks which mirror indexes such as the S&P 500. But don't confuse DFA's funds with traditional index funds.

NOT YOUR TYPICAL INDEX FUND

For starters, anyone can buy index funds. DFA offers its funds exclusively through investment advisors. The firm figures a good advisor will help protect clients from cutting and running during bad times (or plowing into funds after a good run of performance). These active in-and-out moves increase trading and tax costs, dragging down returns for all fund shareholders.

Not just any advisor can offer DFA funds; only "authorized" advisors who've met the firm's strict criteria can gain access to the funds. To become approved, an advisor must attend two days of lectures from PhD's and other academics at company headquarters (advisors pay their own way). Whereas many fund companies might bring in motivational sales gurus to speak at meetings, DFA turns to its brain trust of rocket scientists and Nobel laureates to dive into the finer points of multiple regression analysis, risk factor exposure and book-to-market ratios (1997 laureate Robert Merton is DFA's "Resident Scientist").

DFA funds differ from index funds in a few other important ways, and these differences often lead to significant long-term performance advantages.

ASSET CLASS vs. INDEX

Rather than follow a commercial index such as the S&P 500, DFA managers target entire “asset classes,” or groups of stocks. And they have a particular expertise in targeting certain types of stocks—namely small company and distressed “value” stocks—which history has shown to be riskier. This makes those stocks more rewarding over the long haul. DFA deliberately targets these risks across many asset classes, some of which index funds miss—microcap, international small cap, and emerging market small cap stocks. DFA’s goal, it says, is not to mimic a retail index but to harness the returns of the asset class.

SMALLER SMALL-CAPS

Relative to most mutual funds—both active and index—DFA funds favor smaller and more value-oriented stocks. As an example, the average stock held in the DFA International Small Cap Fund has a market capitalization (company size) of \$389 million. That’s just half the size of the typical company in the international small cap index. DFA’s commitment to smaller stocks provides significant benefits for fund shareholders.

INCLUDING STOCKS OTHERS DON’T

Dimensional funds are broadly diversified, holding most, if not all, securities within their respective asset class. By contrast, most index funds select only a representative sample of stocks in the index, rather than own every single stock. Using such a sampling technique helps index funds keep an important lid on trading costs. Research shows, however, that a small handful of stocks typically deliver the bulk of an asset class’ return each period. For example, of the roughly

5,000 stocks composing the U.S. market, the top-performing 10% accounted for more than one-third of the market’s total return. Investors who failed to hold these stocks earned just 6.3% per year, while fully-diversified investors earned 9.6% per year⁴. By diversifying thoroughly—its International Small Cap Fund, for example, owns nearly twice as many stocks as the comparable index—DFA ensures its funds fully capture an asset class’ return. Over time, this has made an enormous difference.

STYLE CONSISTENCY

Dimensional funds also maintain more consistent exposure over time to small cap and value stocks. As an index fund’s goal is to mimic the benchmark index, it is rebalanced only when the index is redefined. (Consider when Google was added to the S&P 500 Index, replacing Burlington Resources. Every S&P 500 Index Fund, in order to mirror the index itself, was forced to buy Google and sell Burlington at roughly the same time). Such index changes are infrequent, meaning most index funds adjust their holdings just once a year, regardless of what happens to the stocks in the index throughout the year.

Infrequent rebalancing is less than ideal. Over time, securities within an index migrate from one asset class to another (such as from small cap to large cap). This migration alters an index’s characteristics significantly, so that an index fund may look quite different 11 months after the last batch of stocks were added/subtracted from the index. DFA frequently monitors the holdings of its funds—and rebalances as necessary—to ensure it is providing consistent exposure to the underlying asset class.

Compare	Index Funds	Asset Class Funds (DFA)
Target Return	Performance of commercial index benchmarks	Performance of entire asset class, including smallest stocks
Diversification	Broad. “Sampling” may result in fewer securities in retail index	Broad. Often hold more securities than included in retail index
Rebalancing	Infrequent. Fund characteristics may shift over time	Frequent. Fund characteristics remain consistent over time
Trading	Mandatory tracking increases turnover and trading costs	Patient approach minimizes transaction costs
Securities Lending	Returns most of net revenue to investors	Returns 100% of net lending revenue to investors

Taken together, these portfolio design efforts—smaller small caps, thoughtful diversification, and more consistent exposure to small and value stocks—results in asset class mutual funds that have a higher expected return than traditional index funds. And that’s just the beginning.

TRADING: PATIENCE MATTERS

In the asset classes in which DFA invests most heavily—small cap and value stocks—trading costs are huge as more limited share volume results in wide spreads between what stock sellers will accept and buyers will offer. In some instances, buying or selling an illiquid small company stock can move its price by 10% or more. Minimizing these costs is critical.

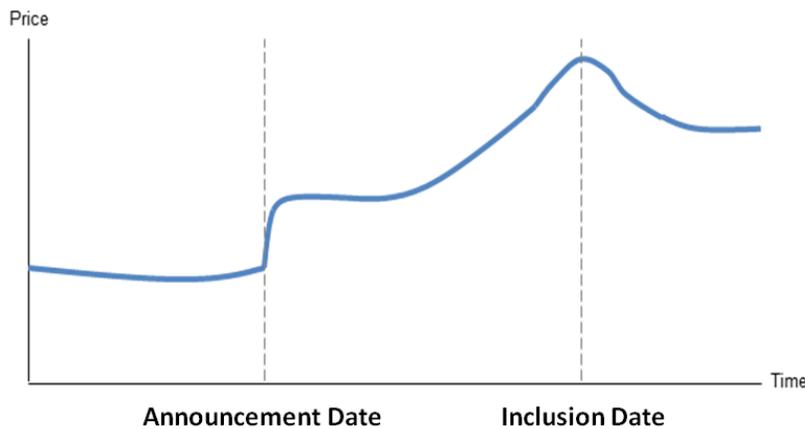
Consider an index fund, the goal of which is to track its benchmark as closely as possible. When index changes occur (think: Google replacing Burlington Resources), the index fund must buy

and sell the affected stocks regardless of price. The cost of buying the new stocks and selling the old stocks, at the same time as every other index fund, can increase significantly. Higher trading costs can eat dramatically into performance.

The graph below helps explain this phenomenon. In order to minimize tracking error, index funds buy on the exact date the stock is added to the index. This bids up the price temporarily; once this “artificial” demand is satisfied, the price of the stock ebbs back to what the market deems fair.

Since DFA never buys stock to track a commercial index, its traders can drive harder bargains on purchases and sales of securities. This freedom allows DFA to be patient, to avoid buying/selling at unfavorable prices, and enhance investor returns. In an investment world in which every penny counts, even one percent—compounded over time—can be a powerful advantage.

COST OF TRACKING AN INDEX
STOCKS RISE ON ANNOUNCEMENT; FALL AFTER INCLUSION



	<i>S&P 500 Index⁵</i>	<i>MSCI EAFE Index⁶</i>
One-Day Return after Announcement (%)	3.2	3.4
Price Increase to Inclusion Date (%)	3.8	4.5
Price Decline after Inclusion Date (%)	-2.1	-2.6

EARNING BACK THEIR FEES

For a fee, mutual funds will temporarily lend securities in their portfolios to other investors seeking to borrow them. This practice of “securities lending” has become more common with the growth of hedge funds and other investors who bet on prices to fall.

As a dollar of lending revenue has the same positive impact on performance as a dollar of capital appreciation, lending securities can be quite profitable for a mutual fund. Here’s how it works:

A large fund manager like DFA might agree to transfer stock to a hedge fund interested in borrowing it. By borrowing the stock instead of purchasing it, the hedge fund can cover a temporary short position—a bet the value of the stock will fall—without impacting its price on the market. As compensation for borrowing the fund’s stock, the hedge fund transfers 105% of the

stock’s value in cash as collateral. The fund manager—DFA in this example—has access to the cash for overnight investment and is able to eke out a very small positive return. Multiplied over time, and across thousands of stocks, these small incremental returns can make a meaningful impact, as shown in the table below.

DFA appears to have a leg up on index funds in the securities lending arena, having engaged in the practice for over a decade. The firm is now one of the largest fund managers of the smallest, most illiquid stocks on the market. As these illiquid stocks are more difficult to borrow, they command higher lending fees. As a result, securities lending is a particularly appealing enhancement to DFA’s small cap funds.

While many fund companies take a portion of securities lending revenue for themselves (as opposed to crediting it into the fund), 100% of DFA’s securities lending revenue goes back into the fund to benefit investors.

SELECTED DFA FUND SECURITIES LENDING PROFITS⁷

FISCAL YEAR ENDING OCTOBER 31, 2012

Fund	Securities Lending Net Revenue	Percentage of Net Assets
DFA Emerging Markets Small Cap (DEMSX)	\$8,037,000	0.35%
DFA International Small Cap Value (DISVX)	\$22,475,000	0.29%
DFA International Small Company (DFISX)	\$17,286,000	0.29%
DFA International Core Equity (DFIEX)	\$12,660,000	0.22%
DFA Emerging Markets Core Equity (DFCEX)	\$4,784,000	0.19%
DFA Micro Cap (DFSCX)	\$6,267,000	0.18%
DFA Vector Equity (DFVEX)	\$2,448,000	0.13%
DFA Small Cap Value (DFSVX)	\$7,642,000	0.11%
DFA Targeted Value (DFFVX)	\$2,926,000	0.09%

IMPRESSIVE LONG-TERM RESULTS

Conceptually, the unconventional strategies DFA employs to build better mutual funds should deliver superior results relative to both traditional index and actively-managed funds. But what about actual performance?

Does all the time and energy required to develop and implement these more sophisticated passive strategies really result in better returns for investors?

The answer, quite simply, is yes.

By departing from the rules and rigidity of traditional indexing while avoiding the costly distractions of stock picking and market timing, DFA is able to focus on what really matters. It identifies the sources of return which truly reward investors and delivers them as intelligently and effectively as possible.

Table 1 below shows ten years of performance for select DFA mutual funds versus their comparable retail index benchmarks. In nearly every instance, DFA has delivered an impressive long-term performance advantage over the index.

TABLE 1: SELECTED DFA FUND PERFORMANCE VS. RETAIL INDICES⁸
 10 YEARS OF PERFORMANCE
 PERIOD ENDING DECEMBER 31, 2013

Asset Class	Fund/Index	10 Year Annualized Return (%)	DFA Performance Advantage (%)
U.S. Small Cap	DFA Micro Cap (DFSCX)	9.29	+0.22
	Russell 2000 Index	9.07	
U.S. Small Cap Value	DFA Small Cap Value (DFSVX)	10.02	+1.41
	DFA Targeted Value (DFVX)	10.42	+1.81
	Russell 2000 Value Index	8.61	
U.S. Mid Cap Value	DFA Vector Equity (DFVEX)*	8.22	-0.17
	Russell Midcap Value Index	8.39	
International	DFA International Core Equity (DFIEX)*	5.89	+0.48
	MSCI EAFE Index	5.41	
International Small Cap	DFA International Small Company (DFISX)	10.31	+0.45
	DFA International Small Cap Value (DISVX)	10.92	+1.06
	MSCI EAFE Small Cap Index	9.85	
Emerging Markets	DFA Emerging Markets Core Equity (DFCEX)*	10.67	+0.14
	MSCI Emerging Markets Index	10.53	
Emerging Mkts Small Cap	DFA Emerging Markets Small Cap (DEMSX)	13.18	+0.71
	MSCI Emerging Markets Small Cap Index	12.47	

*DFA Vector Equity, DFA International Core Equity, and DFA Emerging Markets Core Equity do not have ten years of performance history, having launched in January 2006, October 2005, and May 2005, respectively. Return data shown, both for the fund and relative index, is from the respective inception date through December 31, 2013.

Table 2 below shows ten years of performance for selected DFA funds compared to the universe of actively managed funds. In each case, DFA’s performance looks impressive.

Whether compared to traditional index benchmarks or actively managed funds, DFA delivers. The bright minds at DFA have clearly engineered a better way to invest. And an ever-growing number of investors—working with

authorized, fee-only advisors—are reaping the rewards.

Vista Capital Partners, Inc. is a fee-only investment advisor based in Portland, Oregon. We specialize in managing globally-diversified portfolios that minimize costs and taxes for individual clients with more than \$2 million to invest. Call us at 503-772-9500 or visit www.vistacp.com.

TABLE 2: SELECTED DFA FUND PERFORMANCE VS. ACTIVELY MANAGED FUNDS⁹
 10 YEARS OF PERFORMANCE
 PERIOD ENDING DECEMBER 31, 2013

Asset Class	Fund/Index	10 Year Annualized Return (%)	DFA Performance Advantage (%)
U.S. Small Cap	DFA Micro Cap (DFSCX)	9.29	+0.08
	Morningstar Small Cap Universe—Active Funds	9.21	
U.S. Small Cap Value	DFA Small Cap Value (DFS VX)	10.02	+0.69
	DFA Targeted Value (DFF VX)	10.42	+1.09
	Morningstar Small Cap Value Universe—Active Funds	9.33	
U.S. Mid Cap Value	DFA Vector Equity (DFVEX)	20.81	+0.40
	Morningstar Small Cap Value Universe—Active Funds	20.41	
International	DFA International Core Equity (DFIEX)*	14.57	+2.08
	Morningstar Int’l Large Cap Universe—Active Funds	12.49	
International Small Cap	DFA International Small Company (DFISX)	10.31	+1.03
	DFA International Small Cap Value (DIS VX)	10.92	+1.64
	Morningstar Int’l Mid/Small Value Universe—Active Funds	9.28	
Emerging Markets	DFA Emerging Markets Core Equity (DFCEX)*	11.63	+0.89
	Morningstar Emerging Markets Universe—Active Funds	10.74	
Emerging Mkts Small Cap	DFA Emerging Markets Small Cap (DEMSX)	13.18	+2.44
	Morningstar Emerging Markets Universe—Active Funds	10.74	

*DFA Vector Equity, DFA International Core Equity and DFA Emerging Markets Core Equity do not have ten years of performance history, having launched in January 2006, October 2005, and May 2005, respectively. Return data shown, both for the fund and relative index, is for the 5 year period from December 31, 2008 through December 31, 2013.

REFERENCES

¹ Morningstar and Lipper. Through January 2008, the Vanguard S&P 500 Index Fund outperformed 78% of all U.S. Large Cap Stock mutual funds over the prior 15 years. Over the same period, 80% of Intermediate-term U.S. Bond mutual funds underperformed the Barclays Capital U.S. Aggregate Bond Index. Of the top 20-performing stock U.S. stock mutual funds from 1983 to 1993, 16 (80%) failed to match the market return in the subsequent decade.

² See Tables 1 and 2 on pages 5 and 6, respectively, of this paper.

³ Dimensional Fund Advisors. Annualized returns of the DFA US Small Cap Value Fund, S&P 500 Index and Russell 2000 Index from April 1, 1993 through December 31, 2013. Past performance is not a guarantee of future results.

⁴ Dimensional Fund Advisors. Historical annualized return of the Center for Research into Securities Prices (CRSP) 1-10 Index from 1926 through 2012. The CRSP 1-10 index is widely used in academic research as a proxy for the U.S. market of all publicly-listed stocks. Eliminating the top 10% (in terms of performance) of the CRSP 1-10 each year reduced the historical annualized return from 9.6% to 6.3%.

⁵ S&P 500 data source: Anthony Lynch and Richard Mendenhall, "New Evidence on Stock Price Effects Associated with Changes in the S&P 500 Index," *Journal of Business* 70, no. 3 (July 1997): 351-83. For illustrative purposes only. Past performance is not a guarantee of future results.

⁶ MSCI EAFE Index data source: Rajesh Chakrabarti, Wei Huang, Narayanan Jayaraman, and Jinsoo Lee, "Price and Volume Effects of Changes in MSCI Indices: Nature and Causes," *Journal of Banking and Finance* 29, no. 5 (May 2005): 1237-64. For illustrative purposes only. Past performance is not a guarantee of future results.

⁷ DFA Investment Dimensions Group Inc. Prospectus, dated February 28, 2013. Securities Lending Revenue for fiscal year ended October 31, 2012. Figures are net revenues.

⁸ Dimensional Fund Advisors. For illustrative purposes only. Past performance is not a guarantee of future results.

⁹ Morningstar and Dimensional Fund Advisors. For illustrative purposes only. Past performance is not a guarantee of future results.