The DFA Philosophy – Applying Financial Science

by **James Lange**, CPA/Attorney and **Nevin Harris**, MBA

Until you understand the "dimensions" of **Dimensional Fund Advisors' (DFA)** passively managed index funds, it isn't possible to appreciate how DFA consistently beats the market.

DFA translates financial science into real-world investment solutions. Drawing on the knowledge of their illustrious board members, scientists, and economists, they see markets as allies, not adversaries. Rather than trying to take advantage of the ways markets are mistaken, they take advantage of the ways markets are right. In their words: "The firm designs portfolios to help investors capture what the market offers in all its dimensions."

The four primary tenets of DFA philosophy of investing are: **markets work**, **dimensions**, **diversification** and **structure**. Let's take a look at how those beliefs affect their investment strategies.

The Key Point

DFA has a unique philosophy that allows them to beat the index by building a better index. Money invested in a DFA* all stock portfolio has almost doubled over the last 10 years (2002-2011) growing at 6.84% a year (after fees and fund expenses) while the S&P 500 only grew at 2.92% over the same time.

To put that statistic into perspective, consider the following:

> **If you had invested $1,000,000 ten years ago in the S&P 500 index with no fees, you would have $1,333,519 today. If you had invested that same amount in an all stock Dimensional Funds index portfolio, you would have $1,937,226 after fees today.**

* IFA 90 portfolio – www.ifa.com

Markets Work

One of the Dimensional's central tenets is that markets work. At the foundation of this model is **Eugene Fama's** *efficient market hypothesis* (EMH) which says that market prices are fair. This implies that the price of a share of stock fully reflects all available information or news, including economic uncertainty, new information concerning the investment, and predictions of what impact future information will have.

Efficient markets move with the news, which is random, and therefore, price changes have no exploitable trends. So, speculation, using trading systems or active investment strategies, such as stock, time, manager, or style selection, will only detract from market returns. In other words, the increase in expected return gained from speculation starts at zero and becomes negative when you include expenses, taxes and mistakes. In our last article, we showed how few active money managers or mutual funds beat the passive indexes. In short, we determined that a low cost indexed approach to investing is generally superior to an active management style.

Even when actively picked stocks and mutual funds end up with decent performance, the average investor does not end up benefiting from those gains. One common mistake is to chase a hot fund or hot stock, but get in too late. Another common mistake is to sell too quickly missing a big upward move. In P.J.'s words, most investors come to the party too late and leave the party too early. This does not mean that prices are perfect: some prices may be too high and some too low, but there is no reliable way to know at any point in time. Under such conditions, investors should consider the current price the best estimate of the right price, considering the risk of the investment and the information available. The DFA philosophy is instead of trying to "beat the market" by outsmarting the market, profit from taking advantage of long-term known trends to plan your finances that is not dependent on "beating the market." In short, the efficient market hypothesis shows that using forecasting or another active investing methodology, will not lead to consistent market beating performance.

A better solution, which is rapidly gaining traction, is to capture the benefits of the market but to do so in an intelligent way.

Dimensions

Dimensional's second central tenet is based on their research which has shown that three factors on average explain about 96% of the variation in equity returns among fully diversified professional investment plans. This three-factor model offers an elegant framework for portfolio design, analysis, and investment discipline. It brings order and clarity to the investment process, isolating and explaining the forces that drive returns in a portfolio.

These three factors are: .....

Market:
Stocks have higher expected returns than fixed income.

Size:
Small company stocks have higher expected returns than large company stocks.

Price:
Lower-priced "value" stocks have higher expected returns than higher-priced "growth" stocks.

Investing, therefore, largely consists of deciding the extent to which your portfolio will participate in each of the equity market dimensions: small/large and value/growth. The greater the exposure, the greater the expected return. Because the model is so robust and explains so much about performance, it serves multiple functions:

Strategy Design:

The model suggests that portfolios should be sorted along size and price dimensions to control risk and best capture expected return. The model helps set the criteria for the weighting stocks in a portfolio.

Asset Allocation:

The model precisely defines the risk involved in a portfolio and provides the framework to help structure portfolios that accurately capture the expected returns of each asset class.

Analysis:

The model is indispensable for measuring portfolio "style" and past performance. It also produces expected return calculations that, though not predictive, help manage assets with scientific rigor.

Discipline:

The model helps bring purpose and focus to an otherwise chaotic investment process. It offers a frame of reference that helps navigate tough market conditions, sets and maintains expectations, applies logic, and maintains discipline. The multifactor model helps separate investing from speculating.

Diversification

Active investors picking individual stocks and mutual funds, on the whole, can not expect to earn above-average returns without assuming above-average risk. A better way to increase returns without increasing your risk is through superior and broad diversification.

There are two types of risk: systematic (market) and unsystematic (unique). **Investopedia** defines unsystematic risk as “company or industry specific risk that is inherent in each investment.” This is the risk inherent in owning a single company. An example of this would be the risk that a company could face a product recall which would cause their share price to drop. Systematic risk is associated with the market as a whole — inflation is a systematic risk. Through effective diversification, unsystematic risk can be greatly reduced. This makes diversification the most essential tool available to investors. It enables them to capture market returns while reducing the excess risk associated with individual stocks.

Successful investing is not simply about generating returns, it is also about reducing exposure to risks that undermine returns. Avoidable risks include holding too few securities, betting on countries or industries, following market predictions, and speculating on "information" from rating services. To

all these, diversification is the antidote. It washes away the random fortunes of individual stocks and positions your portfolio to capture the returns of broad economic forces.

DFA diversifies on a grand scale. They diversify over asset class, industry, sector, size, style, and international investments. As a consequence, their diversification strategy:

- **decreases huge swings in the value of your portfolio, as has happened so frequently of late.**
- **has historically increased the efficiency of the portfolio.**
- **has historically increased the compound rate of return.**

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Structure

Structure, or asset mix, determines most of the performance in a diversified portfolio. One should choose asset classes to play different roles in a portfolio, and one's appetite for risk and return should guide the asset allocation. A group of securities with shared economic traits is commonly referred to as an asset class. A full range of asset classes includes small and large stocks, domestic and international stocks, value and growth stocks, emerging market countries, global bonds, real estate, and even municipal bonds. Because asset classes play different roles in a portfolio, the whole is often greater than the sum of its parts. Investors have the ability to achieve greater expected returns with less price fluctuation and more consistency than they would with a less comprehensive approach.

In a famous 1986 paper, *Determinants of Portfolio Performance*, **Gary Brinson**, **Randolph Hood** and **Gilbert Beebower** found that asset allocation/portfolio structure was responsible for 93.6% of the variation in a portfolio's quarterly returns. Not stock picking, not timing, not taxes, but asset allocation. However, because no two investors are alike, there is no single optimal asset allocation. Each investor has his or her own risk tolerances, goals, and life circumstances that should dictate the weightings of asset classes in their own portfolios. This is where a good DFA advisor (coach) plays a key role: helping the investor scientifically determine his/her risk tolerance. With this knowledge, the advisor can adapt the DFA philosophy to build a portfolio that will generate the return the investor needs with a comfortable level of volatility/risk.

This is why DFA is particular about accepting which advisors are approved to offer DFA funds. It is not like a normal fund family where the advisor picks and chooses the funds he likes. Each fund is designed to give exposure to a certain part of the market and is meant to be used in conjunction with

the other DFA equity and fixed income funds. In other words, the funds are cogs in the DFA machine that in the hands of the right advisor, effectively allows him/her to apply the DFA philosophy.

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DiNuzzo Index Advisors take asset allocation and diversification to a new level. In reality, most clients have different uses or "buckets" for money. They have a short-term bucket, perhaps the cash needed to pay expenses for the next year. They have a mid-range bucket for the next five years which is still conservatively invested with a high percentage of cash and bonds. Then, they have a longer-range bucket. Finally, they may have a "legacy bucket," which after our office is done with our analysis, often includes a Roth IRA. **DiNuzzo Index Advisors** goes the extra mile and separates those different buckets into separate portfolios. It is harder work for them, but better for you and an easier way for you to understand your assets and your asset allocation. The alternative is to have all of these buckets contained in one account with an all encompassing asset allocation rather than what I prefer that P.J. does is separate asset allocation and separate accounts for separate needs.

Conclusion

Warren Buffet, arguably the greatest active investor of all time, said: "Most investors, both institutional and individual, will find that the best way to own common stocks is through an index fund that charges minimal fees." DFA is an index fund family that charges minimal fees but they also use financial science to improve on this already sound practice.

Dimensional investing, which we can now offer our asset management clients through our affiliation with **DiNuzzo Index Advisors**, is a sound investment strategy. DFA has a respected and time-tested reputation for providing investors with superior long-term growth. They apply their financial science to beat the standard indexes by building better indexes.

Combining DFA's funds with **P.J. DiNuzzo** as the money manager and using our firm for strategic and tax advice is a powerful combination. As a testimonial for my book, ***Retire Secure!*** (Wiley, 2006 and 2009), **Burton Malkiel**, Professor of Economics at Princeton and author of 11 editions of ***A Random Walk Down Wall Street*** wrote: "Keeping your investment expenses low and following Jim Lange's tax savings strategies are the surest routes to a comfortable retirement."

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> "Keeping your investment expenses low and following **Jim Lange's** tax savings strategies are the surest routes to a comfortable retirement." — **Burton Malkiel**

The Next Step:

A Free Second Opinion from Lange Financial Group, LLC

If what we have said herein has peaked your interest, we recommend you call Alice Davis at **412-521-2732** and schedule a complimentary **Second Opinion** meeting, which would be one, or potentially two, meetings with **Jim Lange**, without charge to you.

This comprehensive service will:

- Review your existing investments
- Look for hidden risks in your portfolio
- Determine if you are a good candidate for Roth IRA conversions
- Review your Will and Trust to ensure your money flows in accordance to your wishes with minimal taxes
- Review your tax return and look for ways to reduce your taxes
- Decide whether our strategic investment advisory service and Dimensional Funds are appropriate for you

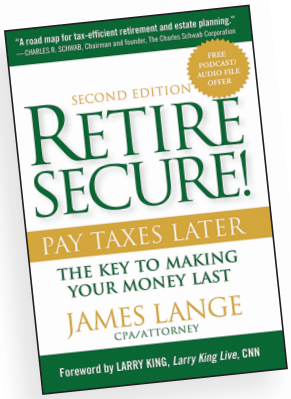
LANGE FINANCIAL GROUP LLC

Financial Security. For Life.

James Lange, CPA/Attorney

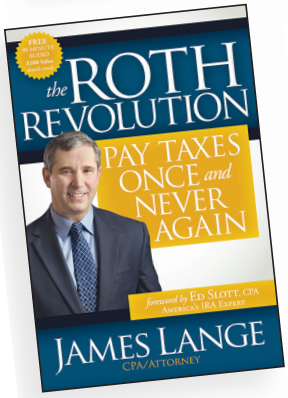
Jim Lange, CPA/Attorney, and his team help IRA and retirement plan owners and their families get the most out of what they've got; their proven strategies are personalized to the needs, wants, and financial situation of each client.

Jim is the President of three interrelated companies: a CPA firm that does tax planning and preparation; a law firm that limits its practice to estate planning, the drafting of Wills and trusts and beneficiary designations of IRAs and retirement plans; and a Registered Investment Advisory firm that works alongside third party money managers, including DiNuzzo Investment Advisors, to provide money management services. Investment clients receive annual advice on such issues as how to spend and save to maintain their lifestyle in retirement, Roth IRA conversion strategies, estate planning strategies, and other strategic counseling at no additional cost.



The three companies operate under one roof, with the team members collaborating among their areas of expertise to offer a truly comprehensive array of integrated services. All three companies are located in the Squirrel Hill neighborhood of Pittsburgh, where Jim has had his CPA firm since 1979 and the law practice since 1984.

As a thought leader and innovator in the financial service industry, Jim is the creator of the **Cascading Beneficiary Estate Plan** and was the first to present the true math behind Roth IRA conversions to the accounting community. The latter led to the founding of The Roth IRA Institute which trains other financial professionals on IRA issues. He has become a nationally recognized IRA, 401(k) and retirement plan distribution expert who commands $10,000/day as a speaker.



He is the author of two editions of the best-seller, ***Retire Secure! Pay Taxes Later*** (Wiley, 2006 and 2009). The book is distinguished with a foreword by Larry King of CNN, and an introduction by Ed Slott, CPA. It enjoys glowing testimonials from the industry's best: Charles Schwab, Roger Ibbotson, Jane Bryant Quinn and 40 other financial professionals. Charles Schwab calls ***Retire Secure!*** "a road map for tax-efficient retirement and estate planning." Jim is also the author of the best-seller, **The Roth Revolution: Pay Taxes Once and Never Again** (Morgan James, 2011). In addition, he has written feature articles for ***Kiplinger's***, ***Forbes***, ***The Tax Adviser***, ***Financial Planning*** and many other trade journals. Jim has been quoted over 30 times in ***The Wall Street Journal*** and 26 times in the ***Pittsburgh Post-Gazette***.

Jim lives in Squirrel Hill with his wife of 17 years, Cindy, and their daughter, Erica. He enjoys hiking, biking, chess, bridge and playing the mandolin for the Pittsburgh Mandolin Orchestra.

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P.J. DiNuzzo, CPA/PFS, RFC, MBA, MSTx
President/Founder and Chief Investment Officer

P.J. DiNuzzo founded **DiNuzzo Index Advisors** in 1989, with a very clear vision of the kind of firm he wanted to create. His commitment was two-fold. First and foremost, the firm would offer its services on a fee-only basis, without the inherent conflicts of interest related to commission-based selling. Second, but equally important, it would be committed to the premise that each client is unique and special — and that each would receive the same level of attention and service excellence.

P.J. has always loved the numbers side of the business, and knew from an early age that he wanted to help people plan for their financial futures. His strong educational credentials and years of experience enable him to provide objective advice and serve his clients as their trusted advisor.

His investment philosophy has been based on years of research emanating primarily from the University of Chicago Graduate School and DFA-Dimensional Fund Advisors and the study of the technical underpinnings of financial models — Efficient-Market Theory, Modern Portfolio Theory, Capital Asset Pricing Model, Cost of Capital, Five-Factor Model Theory and Indexes/Passive Asset Classes. P.J.'s unique skill is his ability to marry his understanding of highly complex market theories with a passionate and sincere concern for the individuals and families he serves.

In October, 2006, P.J. was admitted as a 5-Star Advisor to the **Paladin Registry**, a Web-based service that helps investors find, evaluate and select financial advisors. While admittance to the Registry is limited to the top 10% of U.S. financial advisors based on their competency, integrity and various risk factors, the 5-Star rating is reserved for the top 3%.

P.J. attended Indiana University (Indiana) and received his BS in Business Administration from Geneva College. His graduate studies culminated in an MBA from the Katz Graduate School of Business at the University of Pittsburgh and an MS in Tax Law from Robert Morris University. Additionally, P.J. received his CPA (Certified Public Accountant) designation from the State of Delaware.

A lifelong resident of Western Pennsylvania, P.J. is active in his church and is a volunteer with Habitat for Humanity. He devotes his free time to the youth of his community — coaching soccer, baseball and basketball — and to his own three sons.

Practice Focus

Investment Management
Consultative Financial Planning
Retirement Planning
Pre-retirement Planning
Comprehensive Financial Analysis

Education/Certification

MSTx., Robert Morris University
MBA, Katz Graduate School, University of Pittsburgh
BS, Business Administration, Geneva College
Registered Financial Advisor
CPA/PFS

Affiliations

National Association of Registered Financial Consultants (IARFC)
Financial Planning Association (FPA)
Estate Planning Council of Pittsburgh
American and Pennsylvania Institutes
For CPAs (AICPA and PICPA)

Recognition

Wealth Manager Magazine 6th Annual "Wealth Masters" List

DiNuzzo Index Advisors, Inc.
FEE-ONLY WEALTH MANAGERS

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