

# Revisiting the Debate Over the DFA Research

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*Advisor Perspectives* published an article by Michael Edesess last month that raised a number of issues about research done by Dimensional Fund Advisors. DFA's research led that firm to introduce a "profitability" screen into its investment process. The Edesess article prompted a storm of responses, which were published in *Advisor Perspectives* Sept. 17. Much of the response took issue with the facts and conclusions contained in that article. The blogosphere also lit up with commentary generally supporting DFA's approach to investing.

The nature and intensity of the negative response to the Edesess article was of such a character that it bears some comment. First, it is hard to escape the sense that the DFA supporters have elevated that firm's investment philosophy to the level of religious doctrine. The pitch and fervor of some of the responses suggest that Edesess sinned mightily by questioning the faith. However, an examination of DFA's approach to investing suggests a more measured reaction: The firm's approach is sound, but it falls short of the magic that its disciples impart to it.

Passive investing is now a well-established feature on the investment landscape and comes in many different forms. According to the company's web site, the DFA approach is based on the "science of capital markets." This "science" appears to be comprised primarily of:

1. The Nobel Prize winning work of Harry Markowitz in the area of portfolio diversification (Modern Portfolio Theory).
2. Eugene Fama's research in the area of efficient markets (for which Fama was awarded the Nobel Prize in economics this month).
3. Research done by Rolf Banz (published in 1981) and by Fama and Ken French (published in 1992) on the relative performance benefits of small-cap over large-cap stocks and value stocks over growth stocks.

That's quite a bit of science. But it is not magic.

Markowitz's initial work on MPT was published in 1952. Although the utility of his work has been much maligned (wrongly, I think) since the 2008 financial meltdown, his ideas have been widely adopted by both passive and active managers. If you know the future returns, volatilities and correlations of a group of securities or asset classes, you can build a better portfolio. But that's a big if. The hard parts are determining which securities or asset classes to use in your portfolio and estimating today how they will perform tomorrow. Markowitz, for all his important contributions, did not help us much in this area.

Fama's initial work on efficient markets was published in 1965. Like MPT, the efficient-market hypothesis has been digested and debated for decades by both passive and active managers. Almost everyone would agree that markets are highly efficient, especially in the relative short term. But almost no one believes they are totally efficient.

Our own experience and the work of the behaviorists, such as Nobel Prize winner Daniel Kahneman, suggest that there are times when the prices of individual securities and markets in general can be driven, to some extent, by behavioral factors. In fact, Robert Shiller received a Nobel at the same time as Fama for his work showing that, contrary to the findings in Fama's work, the direction of markets may be predictable over the longer term and behavioral forces may be involved.

There is "science" on both sides of this question.

Gary Miller, CFA, and I wrote an article for *Financial Advisor* in 2011 that explored the so-called small-cap premium and revisited the research of Banz, Fama and French in this area. (Edesess reviewed the article and largely agreed with our findings.) We found that, contrary to Banz's findings, small-cap stocks did not outperform large-cap stocks on a risk-adjusted basis. On a risk-adjusted basis, large-cap stocks outperformed small-cap stocks by a narrow margin.

Overall, our findings appear to be consistent with those Fama and French that, on an absolute basis, small-cap stocks have outperformed large-cap stocks on a historical basis. That is, if you look at their relative performance over a long enough time period, small-cap stocks win the race. But that outperformance comes with noticeably more volatility. No real surprise there – if you take more risk, in general, you should be rewarded by higher returns.

It is also not surprising that looking at long-term historical returns for small-cap stocks masks information that is important to investors. For example, from 1928 through 2012, small-cap stocks outperformed large-cap stocks on a calendar-year basis only about 52% of the time. Moreover, not all small-cap stocks are created equal – historically, small-cap growth stocks dramatically underperform small-cap value stocks. This fact was documented in an article by Larry Swedroe, *The Black Hole of Investing*, which appeared earlier this month in *Index Universe*. These facts matter to investors.

Miller has also done research on the persistence of the "value premium" identified in the work of Fama and French. He found that there have been significant changes in the relative advantage of value over growth over time. During periods of low inflation, the value premium shrinks significantly. During periods of extreme financial crisis, like the Great Depression and the more recent 2008 financial meltdown, value stocks perform poorly relative to growth stocks. He discovered that since 1992, the year when the Fama/French study was published, large-growth stocks have outperformed large-value stocks on a risk-adjusted basis.

This brings us back to the Edesess article and the research done by DFA on the "profitability" overlay. One critic of the Edesess article cited research done by Robert Novy-Marx, who is not affiliated with DFA, in support of the profitability overlay. It is interesting that a supporter of the DFA research would cite the Novy-Marx paper. Novy-Marx points out a number of major areas where his research is

inconsistent with the findings of Fama and French.

Novy-Marx found in his research that using a profitability overlay improves the return characteristics of a value-tilted portfolio. But he states that the profitability overlay is really a "growth strategy," not a value strategy. Perhaps the reason that value and profitability do so well together is they produce a portfolio that has growth and value characteristics? A portfolio always tilted toward value would get periods of bad performance, but a tilt toward growth would smooth those out.

Novy-Marx also suggests that his research is inconsistent with Fama and French's explanation that the "value premium" derives from the fact that these stocks are more risky. Instead, as I read it, he implies that profitable value companies may simply be out of favor or mispriced, not necessarily riskier.

Looking at all of this together, I must conclude that the "science of capital markets" isn't quite as settled as DFA would have us believe. Edesess contributes to our understanding of this "science" by asking the questions he did in his article. Anomalies come and anomalies go. It is worth revisiting them and asking whether they really existed in the first place.

It also appears that DFA's approach to passive investing isn't all that passive after all. Increasing the risk of a portfolio by overweighting exposure to small stocks and value stocks and emphasizing the stocks of more profitable companies is what many active managers do. Maybe DFA is discovering that the world is a more complicated place than it thought based on the short 27-year time period covered by the Fama/French research. The world is always changing and DFA, like most active managers, appears to be changing with it.

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