



TAM ASSET MANAGEMENT, INC. ASSET CLASSSM

An update of performance, trends, research, & topics for long-term investors

Asset Class Returns

	2001	2002	2003	Last 10 yrs.	10/31 2004
Bonds					
Short-term	5.8	3.9	1.6	5.0	0.9
Five-Year	5.9	10.4	3.0	6.8	3.2
Intermediate	8.2	15.0	2.5	6.9	4.6
Long-term	4.3	16.7	2.7	7.7	7.2
U.S. stocks					
Large Market	-12.1	-22.2	28.5	10.9	2.9
Large Value	3.9	-14.9	34.4	12.1	6.7
Small Micro	22.8	-13.3	60.7	14.8	3.9
Small Market	12.7	-19.1	51.5	12.2	4.8
Small Value	22.6	-9.3	59.4	15.6	10.0
Real estate	13.2	4.2	35.6	10.8	20.5
Int'l stocks					
Large Market	-20.8	-14.6	36.7	4.9	6.9
Large Value	-15.3	-8.5	49.4	7.0	14.3
Small Market	-10.5	1.9	58.8	4.8	16.6
Small Value	-4.6	5.8	66.5	6.1	17.9
Emerg. Mkts.	-6.8	-9.4	60.2	2.3	12.3

Descriptions of Indexes

Short-term bonds	DFA One-Year Fixed Income fund
Five-Year bonds	DFA Five-Year Global Fixed
Intermediate bonds	DFA Intermed. Gov't Bond fund
Long-term bonds	Vanguard Long-term U.S.Treas.
U.S. Large Market	DFA US Large Co. fund
U.S. Large Value	DFA Large Cap Value fund
U.S. Small Micro	DFA US Micro Cap fund
U.S. Small Market	DFA US Small Cap fund
U.S. Small Value	DFA US Small Value fund
Real Estate	DFA Real Estate Securities fund
Int'l Large Market	DFA Large Cap Int'l fund
Int'l Large Value	DFA Int'l Value fund
Int'l Small Market	DFA Int'l Small Company fund
Int'l Small Value	DFA Int'l Small Cap Value fund
Emerging Markets	DFA Emerging Markets fund

"Last 10 yrs." returns are ended 12/31/03 and for U.S. Large Value (3/93), U.S. Small Value (3/93), Int'l Large Value (3/93), Int'l Small Market (10/96), Int'l Small Value (1/95), and Emerging Markets (5/94) include simulated data prior to fund inception (in parentheses).

This information is obtained from sources we believe are reliable, but we cannot guarantee its accuracy.

Past performance does not guarantee future returns.

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Plotting Your Course (Part 2)

The Art & Science of Our Investment Relationships

Jeff Troutner, TAM Asset Management, Inc.

The last issue of *Asset Class* outlined the difference between the *consultative* and *transactional* approaches to investment advisory relationships and described the first phase of our consultative approach, the Discovery Stage. In the Discovery Stage it is critical for us to achieve two important outcomes before we move on to Portfolio Engineering:

1. Investment objectives appropriate to the investor's needs & risk tolerance
2. Rational expectations agreed upon by both advisor and client

The Portfolio Engineering Stage: It's All About Risk

A rational investor understands the direct relationship between risk and return, the significant odds against market-beating returns from stock picking and market timing strategies, the importance of broad diversification, the impact of costs on portfolio returns, and the importance of discipline in the investment process. The Portfolio Engineering stage of our relationship process deals with all of these principles except the last, which is an integral part of our Management & Counseling stage.

One of the most important conclusions to come out of the last 50 years of academic research is that systematic differences in return relate to differences in risk. Risk can be defined many ways, but most investors see an increased chance of capital loss, uncertainty, and high volatility as the primary faces of risk. It follows then that investors perceive greater risks in stock than they do bank CD's or U.S. Treasury Bills and they expect higher returns from stocks *over time* as a result. If this weren't true, no one would buy stocks. This same logic applies to small versus large company stocks and growth versus value stocks, as we will discuss in a moment.

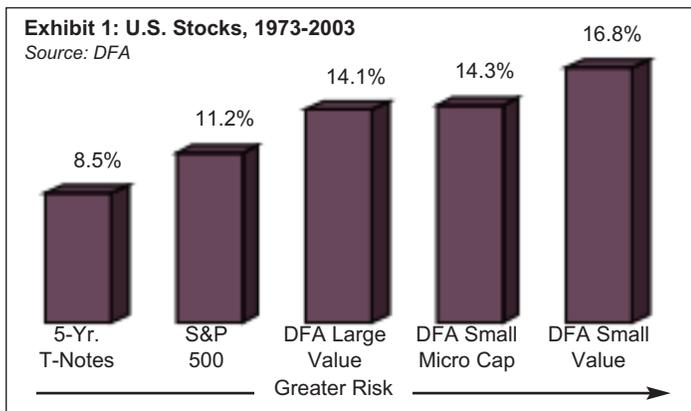
Step 1: Identifying the Asset Classes

In 1992 two academics, Eugene Fama and Ken French, published a paper entitled "The Cross-Section of Expected Returns" in which they argued that three factors—the extra risks of stocks versus bonds (the "market" factor), the risk of small versus large company stocks (the "size" factor), and the risk of value stocks versus growth stocks (the "value" factor)—appear to explain almost all of the differences in portfolio returns.

In reference to the market factor, most investors accept that stocks are riskier than bonds, particularly short-term bonds, and should generate higher returns over time. The other two factors aren't as obvious, especially after the cycle we went through in the late 90's when large growth stocks beat small and value stocks by a wide margin. That trend reversed dramatically after March 2000, however, and investors are more accepting today of the fact that small company stocks are riskier (and therefore have a higher expected return) than large company stocks.¹ If this were not true, investors would be foolish to own small company stocks. The same is true of value stocks. The common trait of value stocks is a low price relative to its earnings or book value. These stocks have low prices because investors

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are not willing to pay higher prices due to greater uncertainties about earnings, management, product market share, debt, etc. relative to growth (or healthier) stocks. In other words, they perceive greater risks with value stocks and expect higher returns over time as a result. Exhibit 1 below shows the asset class risk and return relationships since 1973².



Step 2: The Stock/Bond Mix

Bonds provide steady income to the portfolio that can be paid out to the investor or reinvested in either more bonds or in stocks (in the case of portfolio rebalancing). Bonds can also moderate portfolio volatility. Therefore, the stock/bond mix is based on an investor's income needs, sensitivity to downside risk and volatility, and long-term return goals. We believe that bond maturities should be held to five years or less.³ Current yields on 5- Year U.S. Treasury Notes are about 3.5%.

Step 3: The Stock Mix

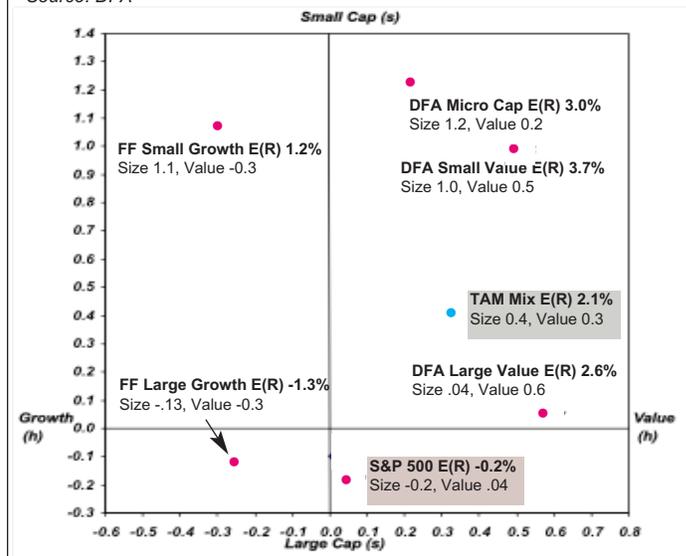
Using the "Three-Factor" regression tool used by Fama & French in their research, we are able to develop portfolios with different exposures to the three risk factors in order to achieve a desired expected return. Exhibit 2 shows the size exposure along the vertical axis and value exposure along the horizontal axis (since all stock portfolios take similar market risk, we don't need a third axis and the crossing point represents the total stock market). The chart is showing the tilt, relative to the market, for various indexes and a TAM Mix.⁴ We can then take the tilts and multiply them by the historical returns of the market, size, and value factors to determine the expected return, E(R).⁵

It is critical that we use *structured asset class funds* rather than actively-managed funds to develop client portfolios. Active fund managers have so much latitude in structuring their portfolios and the portfolios tend to be so under-diversified that using them as proxies for the asset classes would introduce much greater uncertainty and risk to the planning process. In almost every case, we also recommend adding international stocks to the mix. Fama & French have developed a "Five-Factor" model to run regressions on global portfolios.

The Fama & French models provide an advisor with a statistically sound, research-based *framework* on which to base an investment strategy. **The specific expected returns generated from this process will almost certainly vary from actual future returns.** At best, we can use these projections as portfolio targets: preferable, perhaps, to comparing asset class portfolios to simple market indexes such as the S&P 500.

Exhibit 2: Asset Class Tilts, 1973-2003

Source: DFA



Step 4: Asset Class Fund Selection

The final step in the Portfolio Engineering stage is to select the best index and structured asset funds for client portfolios, based on the following process:

1. Consider only passively-managed funds.
2. Consider only pure no-load, low-expense funds.
3. Select institutional-class funds, if possible.
4. Run Three-Factor Analysis to determine small & value tilts.
5. Review past performance, consistency of management, etc.

Since March 2000, the differences between small cap and value index funds and other passively-managed asset class funds have been dramatic. For example, the Vanguard Value index fund has trailed the DFA Large Value fund by over 40% through October of this year. The Vanguard Small Cap Value fund has trailed the DFA Small Cap Value fund by 20%. Since this has been a period marked by a dramatic shift in performance from large growth stocks to small and value stocks, the importance of portfolio construction on the *fund* level has become more obvious to investors. We also consider tax-managed versions of the asset class funds and other alternatives, such as real estate, in analyzing and structuring client portfolios.

In the next issue of *Asset Class*, we will summarize the third stage of our relationship process: Management & Counseling.

¹ See TAM's "The Tortoise & The Hare."

² The S&P 500 Index and DFA Micro Cap Small Index were used as proxies for large and small growth stocks.

³ See TAM's "Fixed Income Strategies" position paper for more details.

⁴ The TAM Mix is 30% S&P 500, 30% DFA Large Value, 20% DFA Micro Cap, and 20% DFA Small Cap Value.

⁵ Fama & French found that the historical return over T-Bills for each risk factor was 8.5% (market), 3.9% (size), and 4.4% (value). We use more conservative estimates of 5.0%, 2.0%, and 4.0% respectively. For example, the E(R) for the TAM Mix is calculated by adding the size tilt times its return estimate ($0.4 * 2.0\% = 0.8\%$) to the value tilt times its return estimate ($0.3 * 4.0\% = 1.2\%$). Adding this total (2.0%) to the market return estimate (5.0%) and the current T-Bill yield (2.0%) results in a total expected return for the portfolio of 9.0%. All indexes used in Exhibit 1 & 2 are courtesy of Dimensional Fund Advisors (DFA). Descriptions of the indexes are available upon request. Past performance does not guarantee future returns. This is especially true of model portfolios, which are not subject to specific market and economic conditions.