



Index Fund Strategies

ASSET CLASS

A monthly update of asset class performance, trends, & topics for long-term investors

Index Returns

	% Return			3/17
	1995	1996	1997	1998
Bonds				
Short-term	8.0	5.8	6.0	1.3
Intermediate	19.1	2.4	9.2	2.1
Long-term	30.1	-1.3	14.3	1.9
Global	16.0	10.8	8.3	2.1
U.S. stocks				
Large Market	37.5	22.9	33.2	11.7
Large Value	38.4	20.2	28.1	15.8
Small Market	30.2	17.7	24.2	8.4
Small Value	29.3	22.3	30.7	8.9
Real estate	12.1	33.8	19.3	-3.8
Int'l stocks				
Large Market	13.1	6.4	5.5	11.8
Large Value	11.5	7.8	-3.1	17.2
Small Market	0.5	2.6	-23.7	20.9
Small Value	1.2	1.0	-22.7	20.9
Emerg. Mkts.	2.2	11.4	-18.9	9.6

Short-term bonds = DFA One-Year Fixed Income fund; Intermediate bonds = DFA Intermediate Government Bond fund; Long-term bonds = Vanguard Bond Index Long-term; Global bonds = DFA Global Fixed Income fund; U.S. Large Market = Vanguard Index 500 fund; U.S. Large Value = DFA Large Cap Value fund; U.S. Small Market = DFA 6-10 Small Company fund; U.S. Small Value = DFA Small Cap Value fund; Real Estate = DFA Real Estate Securities fund; Int'l Large Market = DFA International Large Cap fund; Int'l Large Value = DFA International Large Cap Value fund; Int'l Small Market = DFA International Small Company fund; Int'l Small Value = DFA International Small Cap Value fund; and Emerging Markets = DFA Emerging Markets fund.

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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The first two and a half months of the year have been good for almost all of the world's stock markets. Of particular note is the strong performance of Japanese stocks. After a long slumber, Japanese small company stocks, as measured by DFA's index fund, are up almost 40% already this year. (I can't help pointing out every chance I get that Fidelity's *actively*-managed Japan Small Company fund is up only 6% for the year.)

The U.S. market seems to be gaining momentum as the weeks go by and was boosted even further by recent positive comments by Warren Buffett. Low interest rates and positive earnings announcements appear to be the main catalyst for higher prices.

The Road to the Final Three

Higher Cost of Capital = Higher Investor Return

"March Madness" is in full bloom. Indiana's out, but Purdue and Valpo are still alive. Hoosier Hysteria lives on. Now if I can just get this newsletter out by Thursday night...

The "Final Three" I'm referring to in the title are not Purdue, Valparaiso, and UCLA (for the benefit of my West Coast clients), but the three dimensions of your portfolio returns: the overall stock exposure, the exposure to small company stocks, and the exposure to "value" stocks. These three factors explain almost all of the extra return you will receive on your portfolio over and above a short-term bond yield.

Why do these dimensions add extra return? Because a basic principle of Modern Portfolio Theory is that extra return can only be realized as a result of taking extra risk and all of these factors involve greater risk. It's *almost* that simple.

Corporations have three basic sources of capital to fund their operations: internal cash flow (profits), debt (bonds and bank loans), and equity (stock). All of these forms of capital have a cost that in varying degrees of complexity can be computed mathematically.

The providers of capital (investors) receive a *return on capital* approximately equal to the corporation's *cost of capital*. The expected return or cost of capital depends on the amount of risk associated with the investment.

Therefore, if investors wish to receive a higher return on their capital, they must be willing to accept higher risk. And if corporations wish to receive capital to expand their operations, they must be willing to pay whatever price the market puts on the risk of the company. Analyzing and pricing risk, then, becomes the critical task for investors and/or their advisors and should be the driving force behind selecting and staying with an investment strategy.

But how does one go about the job of analyzing and pricing risks of individual stocks? Let's look at the much less complex measurement of bond risk first. A large, financially strong company might issue a 10-year bond today at a cost of 6.5%. A small company or one with a weak balance sheet would have to pay

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maybe 10% or more for the debt capital. On the other end of the transaction, of course, are investors who demand a certain yield (return) on those bonds commensurate with the amount of their perceived risk.

With bonds, the higher the yield, the higher the risk.

Measuring the risk of equity investment is much more difficult. The expected return is equal to the equity cost of capital. Expected return includes dividends *plus* any capital gains or losses. It's this forecasted *capital gain or loss* that gets a little tricky to measure on a stock-by-stock basis, but apparently the market does a pretty efficient job of it.

People like Nobel Prize winners Merton Miller and William Sharpe and future prize hopefuls Eugene Fama and Ken French have made it easier for us to measure the risks and expected returns of equities. The only price we pay for this knowledge is diversification.

Simply put, stocks are riskier than bonds and, therefore, pay a higher return to investors over time. This makes sense, right? Bonds pay fixed rates of interest for fixed periods of time. Stocks may pay a dividend (that can change any time), but the capital gain or loss component depends on the unknown and often volatile string of future earnings.

Now consider small companies. Banks will only supply a certain amount of fixed rate loans to a new company. At some point, usually sooner than later, these companies must issue stock to "outsiders." Initially the money might come from "angels" (known in Silicon Valley as "3F money"—for family, friends, and fools) and later from public offerings. In both cases, a significant portion of the company must be sold to attract the equity capital.

Investors who buy shares of small companies on the stock exchanges measure risk and return in a similar way to bankers and early stock investors. They may not crunch the numbers to the same extent (some analysts allegedly do), but they are not foolish enough, in the aggregate and over time anyway, to pay as much for a smaller, less proven company as they would for a larger, proven one. Would a banker charge the same interest rate to both? Of course not.

Investors in "distressed" companies—large or small—demand a risk premium also. These "value" companies have had their stock price adjusted downward for the additional risk of their earnings uncer-

tainty. These companies may be mismanaged, have outdated products, etc.. Would bankers charge *these* companies the same rate of interest as they would strong growth companies? Of course not. Why would providers of *equity* capital disregard this higher risk? They wouldn't.

With stocks, the lower the price (relative to book value, earnings, etc.), the higher the risk.

Where investors and advisors get into trouble is in trying to decide on a case-by-case basis whether the "market" has correctly priced the risk of a stock. If they would accept the fact* that it does, then they would benefit from the three dimensions of portfolio returns. Remember the "higher risk, higher return" principle? I said it was *almost* that simple. ***You can only count on this relationship if a portfolio is held for the long-term, is properly diversified, and is not "actively" managed.***

Scattered along "The Road to the Final Three" are investors and portfolio managers who have bought and sold much too often, put too few eggs in their basket, and chased one hot investment strategy after another. They would have been better off understanding the concept of cost of capital and watching more college basketball.

Go Valpo!

Jeff Troutner, TAM Asset Management, Inc.

*The S&P 500 Index, which consists of large growth *and* value stocks, has outperformed 89% of actively-managed funds over the past 15 years. The Fama/French U.S. Large Cap Value Index has produced higher returns than the S&P 500, reflecting the higher cost of capital of value stocks. And finally, the Fama/French U.S. Small Cap Value Index has produced even higher returns in line with the higher risk of small company stocks. All of these indexes are highly diversified. All outperform over time (but can underperform in the short-term). And all avoid active management like the plague.

An Example of Equity Cost of Capital

It's 1993 and XYZ is a distressed company in need of \$100 million in new equity capital. The company has 25 million shares of stock outstanding, trading at \$40 per share and paying a \$2.00 per share dividend. In order to raise the \$100 million, the company must issue 2.5 million new shares. These shares and the \$5 million in new annual dividends make up the *cost* of this capital to the company. Investors in the new stock receive the dividends and a large share in future earnings as their *return* on investment.

Now it's 1998 and XYZ has made a dramatic turnaround. It's stock is selling for \$100 per share and it wants to raise another \$100 million to build a new plant. The cost of capital today for the company is only 1 million shares and dividends of \$2 million per year. Obviously, investors perceive less risk with the company today and are willing to accept less return as a result.

\$100 million of capital needed Cost of Capital (company) or Return on Capital (investor)

1993: Company is distressed	2.5 mil. shares (9.1% of company) + \$5 million/yr. in dividends
1998: Company is growing	1.0 mil. shares (3.5% of company) + \$2 million/yr. in dividends

This scenario basically describes the market pricing of IBM's stock. In the short-run, a similar scenario is developing with Apple Computer. At the height of the doom and gloom forecasts for the company last December, the stock was trading at around \$12 per share. Arguably, the stock reflected a "liquidation" risk, not unlike what Chrysler faced in the early 80's. Today, the stock, while still very risky, has appreciated over 100%. Over the same period, Microsoft has risen 26%.

Of course, buyers of Apple stock today might be surprised by more bad news in the future that could push the stock down once again. Risk works both ways. That's why an unemotional, highly diversified value *index* fund is a better way to capture the value risk factor than picking individual stocks or active funds.