Efficient Frontier

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What's Expected? What's Cheap?

If one characteristic separates the investment professional from the dilettante, it is the presence or absence of a cogent investment *strategy* and the type of information that informs this strategy. Even if you reject the Markowitz mean-variance analysis as the primary determinant of allocation policy (and we most emphatically do), you still need sensible estimates of the expected returns, volatilities, and correlations of a portfolio's component assets.

Of the three estimates, returns are the most difficult and critical. After all, one can be reasonably certain that over the next decade emerging markets equity will be more volatile than domestic equity, that equity in general will be more volatile than intermediate bonds and they in turn, more volatile than short bonds. One can also be fairly sure that the correlation between domestic large and small stocks will be greater than the correlation between foreign bonds and REITs. These statements are based on the fact that historical asset-class volatility and correlation are at least somewhat predictive of *relative* future values.

But no such qualitative statements can be made about asset-class returns. The fact that one asset class had returns far higher than another over many decades in no way implies that this will be true, or even have the same sign, going forward. My favorite example is the zero real return of long bonds for the 50 years ending 1984. In fact, simply looking at coupons in 1984 suggested that returns going forward were going to be much higher, as indeed was the case.

The best prediction of asset-class returns probably comes from simply adding the coupon or dividend rate to the dividend- or earnings-growth rate. (This is referred to, somewhat grandiosely, as the "Gordon equation" and falls out of the discounted dividend model.) John Bogle calls this simple sum the fundamental return. Unfortunately, in the short term this estimate often gets thrown for a loop by changes in asset-class multiple (or in Bogle's lexicon, by the speculative return). For example, if an asset valuation doubles in the space of a year, then that asset's return will be about 100%, since this will dwarf the contribution of the dividend and growth sum. But over long periods of time, the speculative return washes out, leaving only the fundamental return.

This article, then, is a *tour d'horizon* of our best estimates of the fundamental returns for the asset-class universe. Please, please, **do not take these estimates as short-term predictions**. (And by "short term" we mean anything less than 20 years.) As Newton famously said, "I can predict the motion of heavenly planets, but not the madness of human beings." Translated into Bogelese, all we can do is discuss expected *fundamental* returns. We'll leave speculative returns to Wall Street Week, CNBC, and the rest of the investment pornography industry.

The Big Picture

The traditional Chicago-New Haven-Santa Monica dogma is that one earns layers of risk premia on top of the return of the riskless asset, generally defined as Treasury bills. But in the past several years, things have gone seriously awry and it's worth looking at the scene through a wide lens. Over the past seven decades, the equity risk premium (the return difference between T-bills and stocks) has been 8%. Along the way, stocks have been a wild ride—with losses in real capital value greatly exceeding 50% on at least two occasions. But, consistent with classical theory, investors have been more than adequately compensated for bearing this risk.

As we start the new millennium, things look "just a little" different. Stocks yield about 1.2%, and most serious observers would consider 5.5% to be a more-than-generous estimate of long-term earnings growth. Using the dividend discount model, that adds up to a fundamental return of 6.7% versus a 4.8% yield for short-term Treasuries: a risk premium of less than 2%. But it's even worse than it looks: with the burgeoning drought in the Treasury market, the "price of safety" has dramatically increased. One has only to climb a few short steps on the credit risk or duration ladders to get very near a 6.7% yield, equaling the expected stock return. So in 2001, any intelligent equity purchaser has to pretend that he's from Missouri: "Show me." In other words, "show me a reasonable argument for expected returns at least a few percent higher than my money market fund."

Class By Class

First, REITs. By law, real estate investment trusts must distribute almost all of their earnings as dividends, and thus have traditionally sported high yields. Currently, payouts average about 7%. Since REITs cannot accumulate substantial earnings, their growth tends to be at best sluggish, and they also tend to be at least moderately leveraged. What sort of growth can we expect? The NAREIT database shows that over the past 29 years, dividend growth has averaged about 3%. Unfortunately, this was about 2% *less* than inflation. So we can expect about a 5% real return. If inflation stays at about the historic 3% clip, we're looking at an 8% nominal return. This is only a tad higher than industrial stocks, and comes at the cost of higher risk. Further, it's worth noting that as recently as 18 months ago, yields were pushing 9%, following which REITs had the highest return of any asset class in 2000. So the "easy money" has already been made.

Next, junk. With B-rated bonds yielding about 12.2% and loss rates estimated at about 4.2%, we're also looking at about 8% nominal returns. (For more details about junk bonds, take a look at the "Credit Risk: How Much? When?" piece, in the Spring 2001 issue.)

For those who are risk-averse, it's tough to beat TIPS, which provide a 3.5% real yield. You can dial in the amount of inflation-protection you want by balancing maturities: the maximum comes with the 3.875s of April 2029, the cost of which is 28 years of "real interest rate risk." This is not the same thing (and certainly much less scary) than the inflation-driven bond horizon risk. After all, inflation is what you're protecting against. But if you prefer, maturities as short as nine months can now be purchased in the secondary market.

Last, and most definitely least, are garden-variety industrial stocks. Courtesy of Morningstar, I've listed below the price-to-earnings, price-to-cash flow, and price-to-book ratios of the various national and regional indexes by way of the appropriate Vanguard, iShares, and DFA funds.

	P/E Ratio	P/C Ratio	P/B Ratio
Domestic Indexes			
S&P 500	31.2	24.3	7.9
Wilshire 4500	30.5	26.5	6.4
Russell 2000	22.2	18.0	4.2
DFA U.S. 9-10 Small Company	21.2	15.2	3.4
Foreign Regional Indexes			
MSCI Emerging Markets	22.2	12.3	4.5
MSCI Europe	25.6	14.6	5.8
MSCI Pacific	33.1	14.0	2.8
Foreign Small Company			
Continental Small Company	17.7	9.9	2.7
Japanese Small Company	27.7	10.7	1.3
Pacific Rim Small Company	16.8	11.3	2.1
United Kingdom Small Company	19.9	13.7	4.5

Foreign Single Country			
MSCI Australia Index	22.8	13.8	3.4
MSCI Austria Index	17.4	6.2	2.0
MSCI Belgium Index	19.0	18.2	2.5
MSCI Brazil (Free) Index	14.9	N/A	3.1
MSCI Canada Index	24.3	20.2	3.4
MSCI France Index	28.1	14.5	5.4
MSCI Germany Index	23.3	7.5	3.4
MSCI Hong Kong Index	13.2	13.9	2.1
MSCI Italy Index	31.7	13.4	7.0
MSCI Japan Index	36.7	13.9	2.9
MSCI Malaysia (Free) Index	24.1	11.1	3.3
MSCI Mexico (Free) Index	15.4	9.6	2.0
MSCI Netherlands Index	22.8	13.9	5.2
MSCI Singapore (Free) Index	18.7	12.4	2.9
MSCI South Korea Index	23.2	5.7	2.0
MSCI Spain Index	20.5	8.6	3.6
MSCI Sweden Index	32.7	24.8	8.0

MSCI Switzerland Index	20.4	16.8	4.7
MSCI Taiwan Index	40.3	11.5	4.6
MSCI United Kingdom Index	23.5	15.5	5.1

Please remember that accounting methods in most foreign countries do not conform to GAAP (generally accepted accounting practices), so one should not conclude that the difference in ratios among individual nations and regions is reliably indicative of relative valuations.

Still, a few generalizations are possible. First, large-cap stocks are quite expensive in most of the developing world, with P/Es in the 25 to 30 range. The earnings yield of a market is a fair predictor of its future long-term real return: both the discounted dividend model and P/E predict a real return of about 3% for U.S. stocks. So at best, expect a 4% real return from large-cap foreign stocks.

Second, small stocks are somewhat cheaper than large stocks in most of the world, with P/Es in the 20 range. So expect perhaps a 5% real long-term return from them. The return of emerging markets stocks may be even more: With dividend yields averaging 3% and earnings growth exceeding that of the developed world, real returns may reach 6% to 7%. But political and economic risks are high in this playground, and the notion of shareholder rights in most developing nations is a tenuous legal concept.

Finally, there's the value premium. This is almost impossible to estimate using the traditional methods discussed above, because most, if not all, of it arises from the slow improvement in valuations that occurs as doggy stocks become less doggy over time. This is a process impossible to model, but a general observation or two are in order. As recently as five years ago, if one had sorted the S&P 500 by P/E, one would have found that the top 20% of stocks typically sold at about twice the multiple of the bottom 80%—usually at about 20 and 10 times trailing earnings, respectively. As 2001 begins, the top 20% and bottom 80% of companies sell at 86 and 19 times trailing earnings—a more than fourfold difference between top and bottom. This is not nearly as bad as the sevenfold difference at the Nasdaq peak in the spring of 2000, but enormous nevertheless. So, absent a permanent New Paradigm, the historical 2% value premium seems a good bet, yielding large-value real expected returns of about 5% and small-value real expected returns of about 7%.

Finally, precious metals equity. Frankly, your guess is as good as mine. Long-term real returns seem to be in the 2% to 3% range, with current P/Es in the 25 range. But ultimately, the long-term return of this asset class depends largely on the market price of the shiny yellow metal. Lotsa luck.

Pulling it all together then, here are our estimates of asset-class returns going forward.

Asset Class	Expected Real Return
Large U.S. Stocks	3%
Large Foreign Stocks	4%
Large Value Stocks (foreign and domestic)	5%
Small Value Stocks (foreign and domestic)	7%
REITs	5%
Junk	5%
Investment-Grade Corporates; TIPS	3.5%
Treasury Bills and Notes	2%
Precious Metals Equity	3%

Understand that "expected" returns are just that. In finance, as in life, there is often a huge chasm between what is expected and what actually happens. Some of you may be tempted to take the above values and toss them straight into an optimizer, along with historical standard deviations and correlations. **Please resist this temptation.** (But if you do, I can tell you what will come out—a portfolio consisting almost entirely of foreign and domestic value stocks, particularly small ones.) Since the breakdown of Bretton Woods and the advent of increasingly active foreign-denominated derivatives, the currency markets have grown more and more volatile; this means that the gap between expected-versus-realized returns for foreign stocks is liable to be especially large.

In light of the above considerations, the prudent allocator might hold a bit more foreign and small stocks than normal, while still owning some of all the above asset classes. More importantly, the above estimates suggest that a higher than normal exposure to bonds, particularly TIPS, is advisable; if you're normally the 60/40 type, then perhaps 50/50 might not be a bad idea.

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