Beware of the Great Oz

A money manager I know who manages billions of dollars benchmarks all his clients against the MSCI World index. His rationale is that because it is the biggest and most broadly diversified index it has the least amount of risk. He states that all properly constructed indexes earn nearly identical returns over 30 year periods so return is secondary to risk control. Find the least risky equity index and select that as an appropriate equity benchmark. He fancies himself the Great Oz.

The MSCI World Index is a market capitalization weighted index constructed of developed countries' stocks. The U.S. makes up slightly over half of the index currently which is up considerably from earlier years. Several clients questioned the wisdom of having such a large weighting in foreign investments. Because of this, I decided to test his thesis. In order to confirm the use of this index as a benchmark, risk must be measured and compared to other indexes. In the table below I took the returns of the MSCI World and compared them with the S&P 500 and the corresponding risk levels for the years 1970[1] through 2002.

	S&P 500	MSCI World
Return (geometrically linked)[2]	10.80%	9.29%
Risk (standard deviation)[3]	17.53%	17.43%

The historical risk of each index is nearly identical with the MSCI World lower by 0.1%. But what stands out is the difference in returns. The S&P 500 returned 1.51% more per year for 33 years. While that might not sound like a dramatic difference it becomes one with the magic of compounding. An investment of $1 in the S&P 500 turned into $29.49 while an investment of $1 in the MSCI World became $18.91. The S&P 500 earned 56% more during that time period for virtually the same risk. Apparently minimizing risk might not be the only way to determine which benchmark to select. We need to factor in return per unit of risk.

A Stanford professor named William Sharpe won the Nobel Prize in economics for calculating a measurement of return for risk. This number is calculated as the average return in excess of the risk-free rate[4] divided by its standard deviation. This calculation is called the Sharpe ratio. The Great Oz went to great lengths to discredit academics. As we uncover more it seems apparent why he dislikes the educated investor.

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[1] The MSCI World Index began in 1970.

[2] Geometric returns are the nth root of the product of the annual holding period returns for n years minus 1. Geometrically linked returns more accurately calculates returns than arithmetic returns which overstate actual returns when any number included in the series is negative.

[3] Risk is defined as the uncertainty that an investment will earn its expected rate of return. Standard deviation is a measure of variability equal to the square root of the variance.

[4] The return an investor can receive without taking any risk. A common proxy is the treasury bill which is guaranteed by the full faith and credit of the U.S. government.

	S&P 500	MSCI World
Sharpe Ratio	0.249	0.164

Over the last 33 years, the S&P 500 has been 52% more efficient than the MSCI World index. Further investigation seems warranted if we want to find our yellow brick road.

Harry Markowitz won the 1990 Nobel Prize in economics for developing Modern Portfolio Theory which calculates efficient portfolios. He taught us that there is an optimal level of asset allocation when determining portfolios. This efficient frontier factors in risk and return. But risk has to be adjusted for how closely assets move together. For example Intel and Microsoft are both U.S. technology stocks which are affected by many of the same macroeconomic factors. Because of their high correlation, a portfolio of Microsoft and Intel would likely be riskier than a portfolio consisting of Proctor & Gamble and Ford. These two stocks act very differently. Ford is considered a cyclical company and likely to do well when the economy does well. Proctor & Gamble is a consumer staples company that is barely affected by the business cycle. Together, due to their low correlations to each other, they make a more diversified portfolio.

It seems clear that we should investigate this theory so that we can better determine a proper allocation of U.S. and foreign stocks. The S&P 500 is very good representative of domestic stocks. The MSCI EAFE is a foreign developed market index which is considered the bell weather foreign index.

	S&P 500	MSCI EAFE
Return (geometrically linked)	10.80%	9.90%
Risk (standard deviation of return)	17.53%	22.63%
Sharpe Ratio	0.249	0.153

Clearly, for a U.S. investor, foreign stocks carry more risk and have underperformed the domestic stock market. But we must determine the correlation to see if a blend of U.S. and foreign stocks would allow us to minimize risk. The chart below optimizes the S&P 500 and the MSCI EAFE so as to select the correct asset allocation to produce the portfolio with the least amount of risk.

	S&P 500	MSCI EAFE
Weight	78.00%	22.00%
Portfolio Standard Deviation		17.02%
Blended Sharpe Ratio		0.245

As mentioned previously, the most efficient portfolio will have the highest return per unit of risk or the highest Sharpe ratio. The chart below shows the optimized asset allocation to achieve this objective is 95.16% S&P 500 with only 4.84% foreign holdings.

	SP 500	MSCI EAFE
Weight	95.16%	4.84%
Portfolio Standard Deviation		17.34%
Blended Sharpe Ratio		0.2493

Clearly, a U.S. investor should focus on domestic stocks and hold foreign stocks as opportunities arise but only sparingly so. But the question remains, why would a professional money manager select the MSCI World as a benchmark? Recent returns have dramatically favored the domestic markets. The results below encompass the period between 1989 and 2002 and show the U.S. markets averaging 6% more per year during this 14 year period.

	S&P 500	MSCI World
Return (geometrically linked)	11.1%	5.07%

Money managers try to produce Alpha which is an excess return over a benchmark. If a manager is beating his benchmark by 3% per year his portfolio would have an Alpha of 3%. Institutional managers have narrowly defined objectives and focus on beating a specific benchmark. This makes sense because institutions hire a number of managers to create an overall asset allocation. Institutional managers are often judged by the Alpha their portfolios produce.

Private client money management is very different. When hiring one manager to build a portfolio, clients can be poorly served by focusing on an inappropriate benchmark. But managers market to prospective clients by touting their historical performance. Managers that compare themselves to a low hurdle benchmark like the MSCI World appear to be strong managers. This is similar to a short man wanting to look tall by surrounding himself with people not as tall. Beware of the manager who lives in Munchkin village. Things can look very different when the curtains get opened and the gadgetry gets exposed.