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Do the math: Diversity is critical

Jonathan Chevreau, Financial Post

Diversification, with the promise of solid but safe returns, seems the closest thing to a free lunch investors can get. Strangely, the investment industry has never defined what diversification is, says Paris-based mathematician and money manager Yves Choueifaty.

Choueifaty has patents pending in four countries on his precise mathematical definition of diversification. In an interview in Toronto while visiting Canadian pension funds last week, the chief executive of Tobam, which stands for Think Out of the Box Asset Management, discussed his out-of-the-box approach to diversification.

Most investors believe index funds or exchange-traded funds are adequately diversified. They're not, Choueifaty insists. The first generation of index funds and ETFs are mostly "market-cap" weighted, so large liquid stocks like General Electric or Exxon are overrepresented in the broad indexes tracked by such funds.

That introduces a "size bias" that increasingly overweights sectors that are already overvalued and getting more so. That occurred in 1999-2000, when TMT -- telecom, media and technology--stocks inflated, drawing in investors at the worst possible time, then burst.

This also happened in Canada, as investors pushed Nortel Networks' market cap to a third of the S&P/TSX composite index before it too flamed out, burning latecomers.

Fundamental indexing is a slightly better aproach. That means choosing stocks not by market cap, but by earnings, revenue and other factors. Also superior is equal weighting -- an equal-weighted portfolio with 100 stocks would each have a 1% weight no matter how large or small the company was.

Throwing darts at the stock pages is another version of an equally weighted strategy. Throw enough of them and you'll eventually have an equally weighted portfolio of stocks, avoiding the market-cap trap.

That explains stories about mutual fund managers hard pressed to beat a monkey throwing darts at the stock pages. Traditionally, fund managers who believe in stock picking try to beat the indexes by which they are "benchmarked" or measured. Thus, managers of Canadian equity funds are evaluated by how much they outperform the TSX.

Choueifaty aims for super diversification through his AntiBenchmark strategy. The theory was explored in a paper he coauthored in 2008, published in The Journal of Portfolio Management. "Toward Maximum Diversification" offered a mathematical definition of true diversification. It makes for heavy reading if you've not cracked a calculus text since university, but the theory led to real-world money-making.

After an academic career in mathematics in Paris, Choueifaty entered the French investment industry, rising rapidly. When he met with two U.S. investment giants on a European tour, he joined one, Lehman Brothers, as head of quantitative asset management.

The firm incubated a fund using his formula and Tobam was born. After Lehman's bankruptcy in 2008, Tobam was spun off with ownership reverting to Choueifaty (61%) and employees.

Tobam now manages $1.2-billion. In 2009, it launched the Maximum Diversification Index Series, long-only equity indexes that give investors a convenient way to access the AntiBenchmark strategy.

For Choueifaty, true diversification does not mean investing in the whole stock market, an approach used in the Vanguard Total Stock Market ETF, which still suffers from market-cap bias. He puts his emphasis not on the quantity of stocks held, but on finding stocks not correlated with each other.

Thus, his U.S. portfolio holds maybe 60 stocks -- versus 600 for the MSCI US benchmark --but he insists those 60 stocks are more diversified than the 600. The resulting portfolio is 1.5 times as diversified as the index and less volatile.

How can that be? Say you're building a portfolio of 62 French stocks. The first pick is carmaker Renault. If you had to choose a second stock from either Peugot or financial stock BNP, most agree BNP is a more diversified decision. Renault and Peugot are highly correlated, often rising and falling in concert. If you pick just those two stocks, you have a risky portfolio "concentrated" 100% in autos. But with Renault and BNP, you'd be only 50% autos and 50% in financials. There's less risk since one stock may rise when the other falls.

Each time he adds a stock, he considers which sectors are already represented, using the proprietary optimization formula he patented. Each addition has the lowest correlation to the other 61 stocks in the portfolio.

In short, Choueifaty believes in active management, not passive indexing. In 20 years of managing money, he's met many gifted portfolio managers. "What they all have in common is they are benchmark agnostic. They don't care about the benchmark."

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