The Not-So-Secret Sauce in Equal Weighting

by Michael Rawson, CFA | 05-23-12

Of all of the non-market-cap-weighted investment strategies, the simplest by far is equal weighting. Here, each stock has the same weighting in the portfolio. In the equal-weighted version of the S&P 500 Index, giant caps like Apple AAPL carry the same heft as mid-caps like AutoNation AN despite the fact that Apple has a market cap more than 100 times larger.

While the equal-weighted strategy might be marketed as a better way to achieve beta, it is best used as a satellite or tactical position rather than a core holding.

Market-cap-weighted indexes skew toward the largest companies in the index leading to a concentration in giant-cap names. A full 20% of the S&P 500 is held in just 10 names.

That concentration gets muted in an equal-weighted fund such as Guggenheim S&P 500 Equal Weight RSP, so that just 2% of the equal-weighted S&P 500 resides in the top 10 names.

In essence, the equal-weighted index takes large underweightings in a few mega-cap stocks and takes small overweightings in many large- and mid-cap stocks. While some might argue that this lowers concentration risk, those mega-cap names tend to have very low volatility, while the volatility of mid-caps is generally much higher. The volatility of the 10 largest stocks in the S&P 500 was just 17% over the past year, but the average volatility of the remaining 490 stocks was 29%

The potential for concentration in just a handful of stocks is much more pronounced in sector funds as highlighted by my colleague, Gregg Wolper, in this article. The 10 largest stocks comprise 63% of Energy Select Sector SPDR XLE, and 33% of the fund is in just two stocks--ExxonMobil XOM and Chevron CVX. That seems like an awful lot of **idiosyncratic or firm specific risk**. Exchange-traded funds are often used to make short term, tactical bets on certain sectors. In this case, you want exposure to an entire industry, not just to a handful of mega-cap stocks. **Equal-weighted sector funds, such as Guggenheim S&P 500 Equal Weight Energy RYE may make more sense when seeking industry exposure.** It holds the same stocks as XLE, but equal weights them, resulting in the top 10 holdings making up just 26% of the fund.

Risk and Reward

A good way to evaluate the risks in the equal-weighted strategy is to look at the MPT statistics by typing in RSP in the Morningstar.com Quote page and clicking on the Ratings and Risk tab. Under a holdings-based analysis, the fund is categorized as large blend, or LB, since most of its holdings fall into that category. The standard benchmark for the large-blend category is the S&P 500. Compared to the S&P 500, **RSP had an alpha of 0.32, which is outstanding performance**.

However, RSP had an R-squared of only 96.76% against the S&P 500 based on the past three years of monthly returns. But it had a higher R-squared to the Morningstar Mid-Cap Index. The positive alpha against the S&P 500 disappears when comparing the fund to a mid-cap index. Under Volatility Measures, we see that while the S&P 500 had a volatility of 15.63%, RSP had a volatility of 17.93%, which is closer to that of a mid-cap fund. So, we see that the excess performance of the equal-weighted strategy is not without risk. In fact, both RSP and the S&P 500 had the same Sharpe ratio, a measure of risk-adjusted return.

A Deeper Dive

There are **three potential sources of excess return** for an equal-weighted strategy.

1. Small size tilt (style exposure)	vs big cap/medium cap
2. Value tilt (style exposure)	vs growth
3. Contrarian rebalancing (sell high, buy low)	vs momentum

One is the small size tilt that results from underweighting mega-cap stocks and overweighting smaller stocks. The second is a value tilt that results from underweighting overpriced glamour stocks. The third potential source of excess return is from the contrarian rebalancing. In order to maintain equal weightings, the index must sell stocks that have recently appreciated and buy stocks that have recently declined. We have back-tested performance on the S&P 500 Equal Weight Index going back to 1991. Of the 70 basis-point average monthly return in the equal-weighted index, 55 basis points came from pure market exposure. The equal- weighted index did beat the market-cap-weighted index by about 19 basis points per month over the past 20 years. To examine the source of this outperformance requires a deeper dive into the numbers.

Compared to the market-cap-weighted S&P 500**, equal weighting has a greater exposure (beta) to small-cap stocks and value stocks but a much lower exposure to momentum.** The lower exposure to momentum is a result of the forced rebalance strategy where past winners are sold off in favor of past losers--the exact opposite of a momentum strategy. Of the 19 basis points of outperformance, we found that the tilt toward small size contributed 6 basis points, the value tilt contributed 9 basis points, while the bet against momentum actually detracted 7 basis points. This leaves about 11 basis points of alpha. **A paper by Yuliya Plyakha, Raman Uppal, and Grigory Vilkov demonstrates that the source of the alpha in an equal-weighted strategy is the rebalance.**

A monthly alpha of 11 basis points would be great if it could be obtained in practice. Conducting the same analysis on RSP since its inception in mid-2003 shows an alpha of 7 basis points per month. What happened to the 11 basis points we found in backtest? Most of it was likely eaten by trading costs and RSP's 0.40% expense ratio. While the modest outperformance of RSP is nice, it is important to remember that **most of RSP's return can be attributed to beta exposures.**

Conclusion:

While the equal-weighted strategy might be marketed as a better way to achieve beta, it is best used as a satellite or tactical position rather than a core holding. Especially seeking sector exposure, equal-weighted sector ETF's make sense to use in a tactical framework. (Example: Compare XLE with RYE)

It always depends on what kind of exposures you are looking for. You have to know your target style exposures while implementing and maintaining your benchmark (strategy) during the economic cycle.

www.sautterinvest.ch email: sautterlas65@bluewin.ch +41 79 514 17 96