GREENLINE
PARTNERS

July 2016

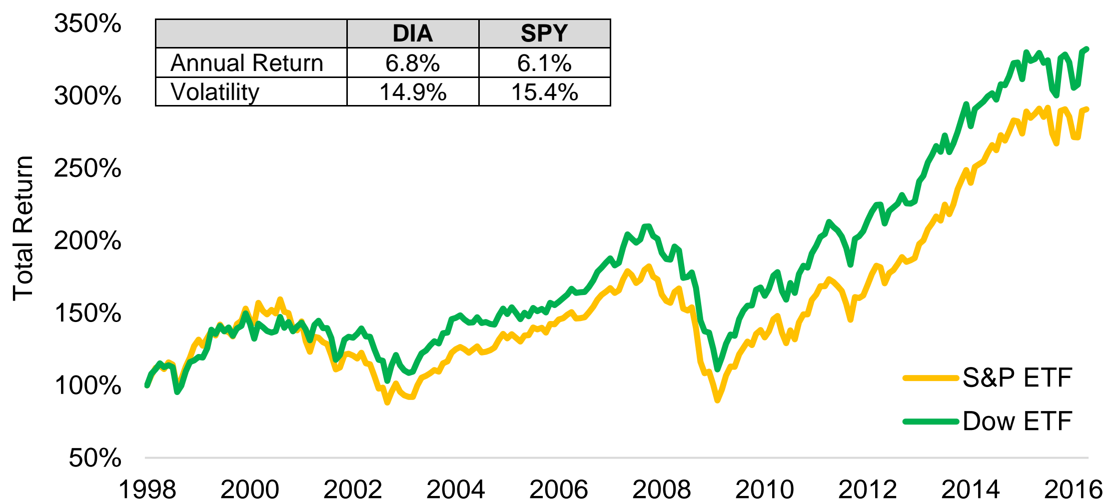
**More holdings does not equal more diversification,
and index funds are not the lowest cost option**

The increased pace of hedge fund closures and outflows has continued in 2016. While this is making headlines across investment publications and trade journals, the only surprise to us is why this did not happen sooner. Eternal are the two reasons for active management failure - high fees and hyperactive trading.[1] Over the years, innumerable studies of the mutual fund industry have documented this dynamic, and its harmful impact on the wealth of investors. Nevertheless, hedge fund investors, ignoring the facts and undeniable logic, have repeated their mistakes. Unfortunately, rather than learning from the experience of others, too often people learn their lessons only after their losses.

Passive index funds are the beneficiaries of money flowing out of active managers, but we see this as another potential mistake. Costs matter and should be reduced where possible, this is fundamental to compound returns. However, the allocation of global assets suggests that investors believe that the only way to make money in markets is to either treat them like a casino (a shrinking though still large group) or blindly own thousands of securities through multiple index funds. What these investors are missing is a superior middle ground of buying and holding a small number of high quality securities, with selection informed by long term diversification, not smoothing out market wiggles.

As one example, since the creation of the Dow Jones ETF (ticker: DIA) in January 1998 it has outperformed the S&P 500 ETF (ticker: SPY) by almost 0.8% per year, or a cumulative 42%, net of fees, over 18 years. Both of these are low cost index funds providing exposure to US large cap equities, yet almost 20x more money is invested in SPY[2]. We attribute this to a large segment of investors who believe that more holdings equates to more diversification, and who blindly solve for the lowest fees without any consideration for whether they are getting a good portfolio. The chart below compares the performance of these two ETF's. Later in this letter we will return to why this comparison is important and how we think it should inform a sound investing strategy.

Dow Jones ETF Outperformed Lower Cost S&P 500 ETF



Source: Bloomberg. Data from Jan 31, 1998 to Jun 30, 2016

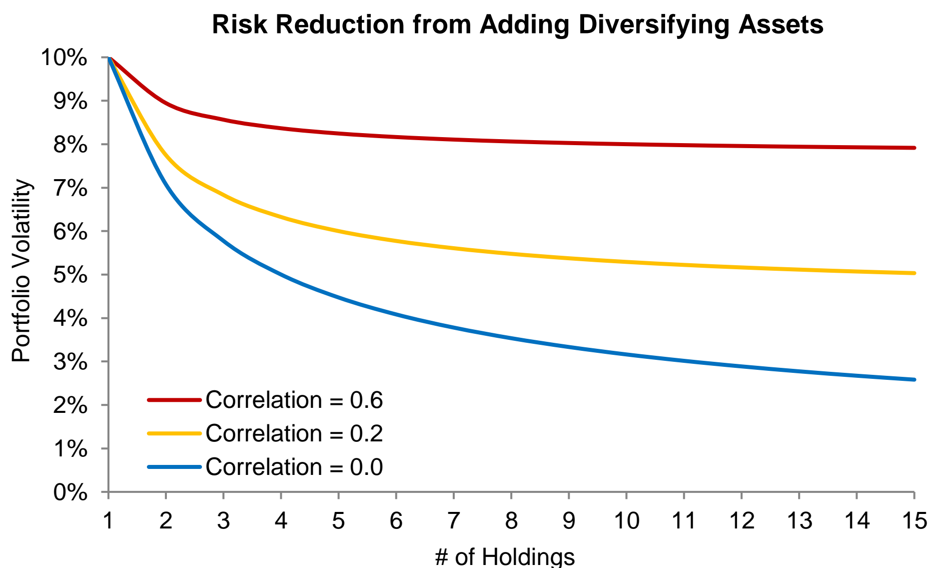
[1] http://www.marottaonmoney.com/what-is-the-relationship-between-turnover-rate-and-returns/
[2] As of June 15, 2016, SPY had $184bln in assets while DIA had only $11bln.

Dow index of 30 stocks is more diversified than the S&P 500

Back to the Dow vs S&P. When investors mention low fees it is almost always synonymous with the use of passive index funds. What they miss is that the truly lowest cost option of all is holding a small handful of individual stocks and bonds - often fewer than even the number of ETFs many investors hold. From what we have seen, ***most who believe themselves to have a low cost approach, are overdiversified into too many ETFs resulting in unnecessary risks in addition to HIGHER fees.***

Comparing the Dow Jones Industrial Average to the S&P 500 allows us to illustrate how we think about diversification. The most commonly used equity index fund, the S&P 500, invests in 500 of the largest companies in the US and weights them based on their market value. Those companies with the higher valuations get larger weights. The Dow is an index of only 30 large companies. They are weighted by their share price, instead of total business value. This method was developed out of a desire to minimize trading and results in an almost random weighting. Finance theory suggests the S&P should earn higher returns with lower volatility because it includes more companies and holds some smaller companies which should earn higher returns. But historically, the Dow has actually earned higher returns with less volatility. The Dow's random weighting scheme leads it to be more consistently diversified and higher performing than weighting by market value.

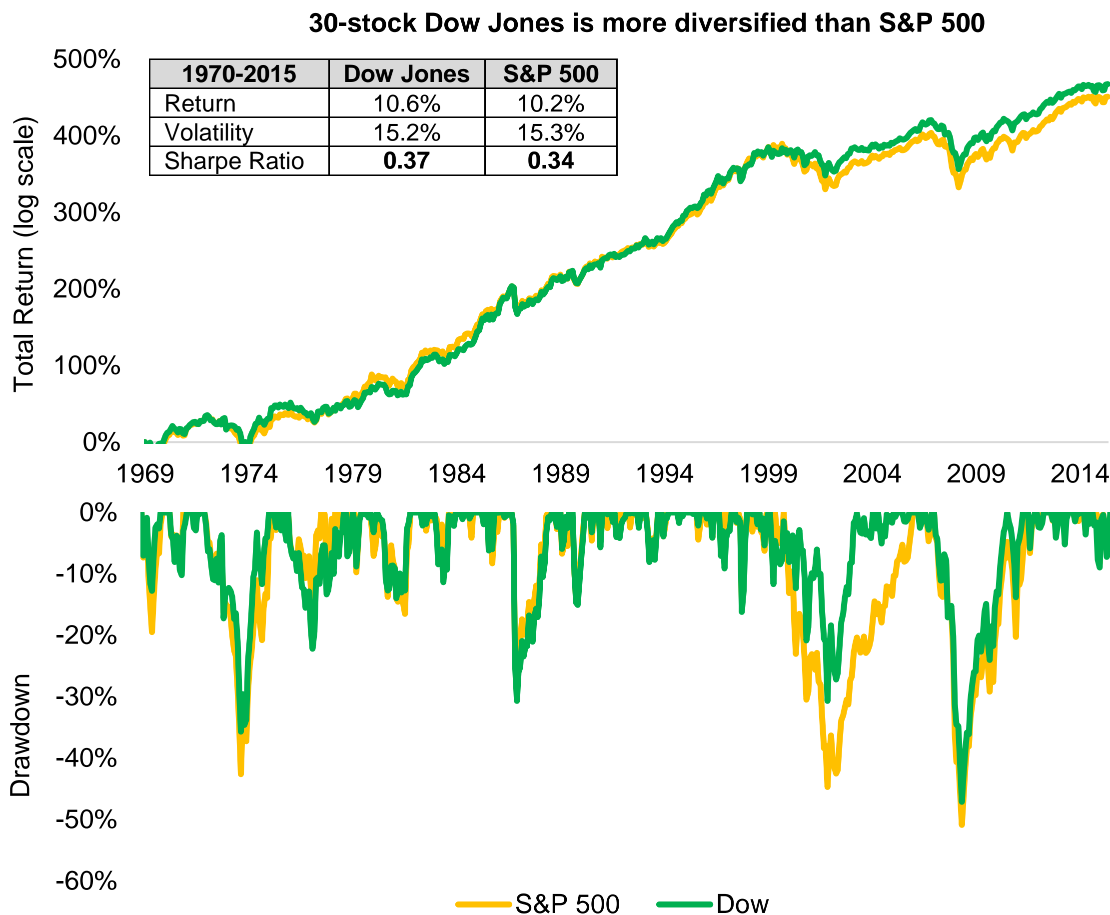
Modern portfolio theory suggests that risk is proportional to the volatility of an asset. While we do not fully agree with this definition of risk, it can serve as a reasonable short term measure. Equally weighting as few as 10 stocks leads to a portfolio with nearly the same volatility as a broad market index like the S&P 500. The chart below graphically displays the mathematics of this diversification effect. The benefit of lower volatility from adding more holdings diminishes quickly. If assets are 0.6 correlated to each other, as with the red line, the benefits of diversification level off after only the third holding! The yellow line, showing assets that are 0.2 correlated to each other, levels off after about 10 holdings. Said another way, ***the overwhelming majority of the diversification benefit in the Dow Jones Industrial Average and the S&P 500 comes from its largest 10 holdings.*** Holding 10 stocks has no costs while even index funds charge management fees.



Note: Assumption underlying this chart is that each asset has 10% annual volatility with a Sharpe ratio of 0.25. Each holding is equal weighted.

In order to achieve this benefit, the portfolio must maintain diversification over time and not let any single holding or exposure come to dominate the portfolio. To help illustrate, we start with a long term comparison of the Dow versus the S&P 500. The charts below show the returns and drawdowns of these two indices since 1970. It would likely surprise many investors to see that ***the Dow has slightly outpaced the S&P and with lower volatility.*** This is due to a flaw in the S&P index construction, not anything special about the Dow.

This chart also helps explain what we mean by "overdiversification". It is common for investors to think that more is always better; however, by continuing to add holdings we can actually increase risk and costs, reducing risk-adjusted returns, thereby overdiversifying. In a sense, less is more.



1970-2015	Dow Jones	S&P 500
Return	10.6%	10.2%
Volatility	15.2%	15.3%
Sharpe Ratio	**0.37**	**0.34**

Source: Bloomberg, Federal Reserve. Sharpe Ratio is calculated as the excess return over the 3mo US T-Bill over excess volatility.

The S&P 500 is value, or market capitalization, weighted which means when a few companies or a sector of the economy rises to bubble-like valuations, the S&P 500 weights them even more heavily and further underweights those companies or sectors whose valuations have declined. The Dow is somewhat exposed to this dynamic as well due to its price-based weighting scheme, but this almost random weighting also forces more consistent diversification. Most of the Dow's outperformance came during the tech wreck of 2000-2002 from simply being less exposed to Tech & Telecom stocks. ***Even just partially side-stepping the carnage of only one bubble period per decade like the dot-com crash is enough to outdistance***

a poorly constructed index by a lasting margin. One could create an index of a small number of stocks and force diversification through equal weighting or broader sector diversification and perform even better.

These periods of markets not behaving "efficiently" have tended to arise roughly once per decade. In the 1960's it was the Tronics and Conglomerate booms/busts, in the 1970's it was the Nifty-Fifty crash, oil embargo and breakup of the Bretton Woods system. In the 1980's there was the S&L crisis and the crash of Oct 1987. The 1990's had a real estate crash, the Asian Tiger Crisis, the collapse of hedge fund Long-term Capital Management and finally the dot-com boom. Owning fewer holdings but in a more fundamentally diversified construction should improve results while reducing risk, further aided by the benefits of transparency.

In the world of equities, weighting by market value has the flaws we have described and puts popular indices like the S&P 500 at a disadvantage versus other constructions. In the universe of bonds, this weighting scheme is simply nonsensical where weighting by value means giving the most weight to the highest debtors. ***Portfolios combining lots of value-weighted index funds, across different asset classes, compound these flaws.*** The lesson to be taken from the success of index funds is the importance of lowering costs, not that there is value in owning everything.

We are of course advocates of low costs for the simple reason that we understand the power of compounding. A 1% cost savings, or a bump in returns from 5% to 6% compounds into a 55% advantage after 20 years. This is no small amount and it is the most dependable way to raise your returns. Knowing what you own through individual securities is often the lowest risk portfolio while also being the truly lowest cost option.

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