INSIGHT FROM POLEN CAPITAL

Could We Have Done Better? The 10,000 Portfolios Project

Executive Summary

Could we have done better? This was the question our Chief Investment Officer Dan Davidowitz found himself pondering last year. A client had asked Dan an interesting question: How do you know if you've created the optimal portfolio?

We know that our long-term risk-adjusted investment performance is among the best in our peer group, according to eVestment Alliance. It's even better when one factors in survivorship bias, which removes from the rankings any funds that were shut down because of poor performance or other reasons. We also know that our commitment to own the equity of a concentrated number of the highest quality businesses with durable competitive advantages, robust returns on capital and healthy balance sheets is the foundation of our long-term investment success. In evaluating stocks, we have five key financial thresholds that we refer to as our "guardrails," which are explored in the right sidebar.

However, the question still remained: Could we have done better? How would our performance stack up against all possible concentrated portfolio combinations? Was our outperformance driven by our guardrails (i.e., fishing in a stocked pond of great businesses) or was it truly skilled stock selection? These are difficult questions to answer.

With some assistance from our friends at financial information and analytics provider FactSet, we launched the "10,000 Portfolios Project" to see what we could uncover. This paper takes a closer look at how we went about constructing this study and the answers it revealed about concentration and quality.

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Research Analyst

OUR GUARDRAILS

1. Strong balance sheets with little debt, and preferably a net cash position
2. Abundant free cash flow that can be reinvested at high rates of return or returned to shareholders through dividends and/or share repurchases
3. Strong return on equity (ROE) of at least 20 percent that can be sustained long-term
4. Stable, or preferably growing profit margins
5. Real, organic revenue growth

Setting the Stage

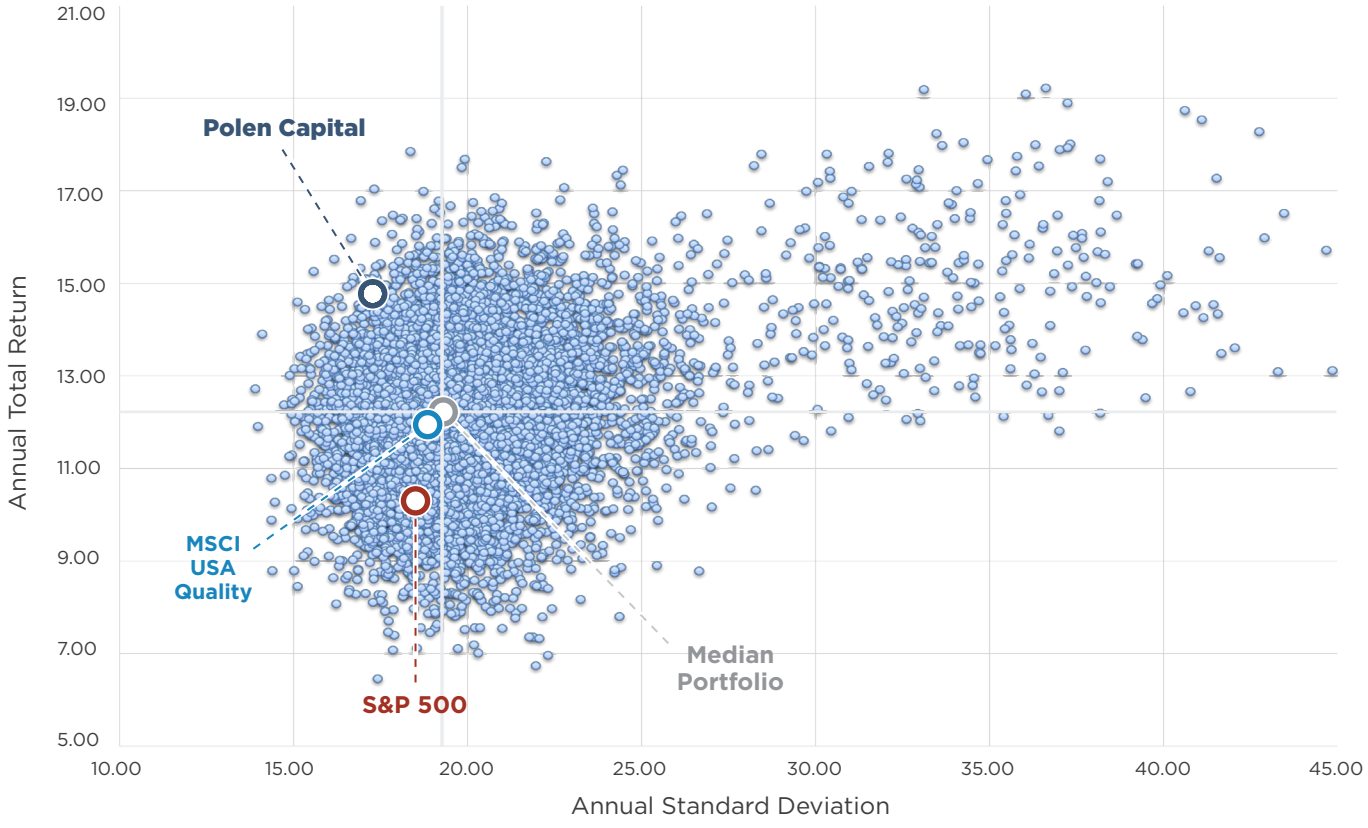
The project was decidedly simple. The full year composite performance for our flagship growth strategy dates back to the beginning of 1989. Historically, our portfolio has held around 20 holdings and has turned over roughly every five years. We also typically screen for U.S.-traded stocks with a minimum market cap of around $4 billion.

We asked FactSet to randomly generate 10,000 unique portfolios of 20 stocks, starting on January 1, 1989. The portfolios would be completely turned over and randomly regenerated every five years until 2014, thus mimicking our current turnover rate, albeit in a more abrupt fashion.[1] For simplicity purposes we equally weighted the holdings. Finally, we began the analysis by screening for stocks traded in the United States with a minimum market cap of $1 billion to account for the fact that market caps were generally lower in 1989 compared to the present day.

To factor in generally rising stock prices over the time period studied, the minimum market cap was gradually raised to $3 billion, a level slightly below our current minimum market cap threshold, which allowed for some added screening flexibility. The market cap increase was done ratably across the entire 1989-2014 period. Any stock with an unadjusted share price of less than $1 was also excluded.

We then had our sample set of 10,000 randomly generated, equally weighted portfolios of 20 U.S.-traded stocks with at least a $1 billion market cap (gradually increased to a minimum of $3 billion). Each portfolio was randomly regenerated every five years and performance was tracked for a total of 26 calendar years.[2] The results of this experiment are shown in the following chart (Exhibit 1).

Exhibit 1: Annual Total Returns vs. Annual Volatility: 1989-2014



Standard deviation calculation based on annual returns.

Source: FactSet

1 We began this project prior to the completion of the 2015 calendar year. It is certainly possible that any given portfolio could, at random, retain the same holding(s) throughout the entire period studied.

2 Any cash received through an M&A transaction was evenly redistributed across the other holdings.

What We Learned

So, could we have done better than our historical performance relative to that of 10,000 randomly generated portfolios? As it turns out, the answer is yes, but probably not by much. Our annualized risk-adjusted returns place Polen Capital in the upper left quadrant, exactly where we would want to be in this type of competitive analysis. Another interesting observation is how the median portfolio performed relative to the S&P 500®, a proxy for the performance of large-cap U.S. equities. The median randomly generated portfolio of 20 stocks produced an annualized return of 12.2 percent with a standard deviation of 19.6 percent, compared to the S&P 500's results of 10.4 percent and 18.3 percent, respectively.

Some simple math tells us that the median concentrated stock portfolio was a better (that is, more efficient) investment than the S&P 500, even when accounting for volatility. In fact, a stunning 87 percent of the simulated portfolios outperformed the S&P 500 and roughly 70 percent had a higher return/volatility ratio than the S&P 500 over the period studied. Also worth noting on this chart is that even the most volatile portfolios (those in the upper right quadrant) outperformed the index, in some instances quite significantly, despite some rather extreme volatility. While we certainly cannot make any definitive conclusions, in our opinion it is reasonable to conclude that the concentrated nature of the simulated portfolios explains this better risk-adjusted overall performance when one considers the other elements at play in the analysis.

Median Portfolio vs. S&P 500

	Annualized Return	Standard Deviation
Polen Capital	**14.5**	**17.0**
Median Portfolio (Randomly Generated)	12.2	19.6
MSCI USA Quality	12.1	19.3
S&P 500	10.4	18.3

Source: FactSet

The Case for Concentration

There are really only four significant variables in this case: turnover, market cap, country of trading and concentration. We have always been advocates of constructing portfolios characterized by long-term holding periods, low turnover and what we like to refer to as "letting your winners run." In this experiment that benefit should have accrued more to the S&P 500, which has extremely low annual turnover and is market cap-weighted. Additionally, our market cap and country restrictions created a very close overlap between the S&P 500 and the universe of stocks used in the analysis. Thus, logic tells us that concentration is a more likely explanation.

Intuitively, the concentration argument makes sense. The big winners in the simulated concentrated portfolios would have benefited from much larger position sizes before rebalancing and therefore would have had a more significant impact on returns relative to the losers, which would have quickly become very small position sizes due to underperformance. Furthermore, the data makes clear that the annual returns of the median concentrated portfolio were only marginally more volatile than the market's returns. This is one of the important observations from the analysis and one that echoes well-known research by Evans and Archer (1968), among the most consistently cited in finance textbooks.[3] This observation seems to fly in the face of the generally held notion that concentrated portfolios are much more volatile than their diversified counterparts.

3 Evans, J.L., and S.H. Archer (1968), Diversification and the reduction of dispersion: an empirical analysis, Journal of Finance, 23, 761-767.

We acknowledge that there are also counterpoints to the concentration argument that can be made. After all, randomly generated portfolios are just as likely to be assigned an underperforming security as they are an outperformer regardless of how concentrated they might be. Also, it is a possibility that equally-weighting the simulated portfolios was a factor, because smaller capitalization stocks that would normally be assigned very low weights in the cap-weighted S&P 500 could be given much higher weights in many of the simulated portfolios.

Generally speaking, small and mid-cap stocks outperformed their large cap brethren during the time period studied, according to FactSet. Thus, it is conceivable that equally weighting the simulated portfolios allowed stocks in lower capitalization ranges, to the extent that they were randomly included, to have a greater impact on overall portfolio performance. However, to know with certainty would require detailed capitalization breakdowns of each of the 10,000 simulated portfolios, data that was outside the scope of this project. Still, even if we acknowledge that the causes of the simulated portfolio outperformance are inconclusive, there is a strong case to be made that the perception of concentrated portfolios being too volatile may be misplaced. Many of these issues are discussed in one of our previous thought leadership pieces on the topic of active share.[4]

Factoring in Quality

To take this a step further, we included the same relevant data for the MSCI USA Quality Index. In its creation methodology, this index includes higher quality stocks overall than the S&P 500 by utilizing guardrails such as high return on equity and low debt/equity that are similar, though perhaps not as stringent, as our own. We preferred to run the analysis with our internal guardrails, but overlaying these metrics to the original universe of stocks reduced the sample size to a non-meaningful number.[5]

What we see in Exhibit 1 is that the annualized return and volatility metrics of the MSCI USA Quality Index are nearly identical to the median portfolio, but still notably better than the S&P 500 on a risk-adjusted basis. Finally, we were quite pleased to see that over the 26-year time period our annualized risk-adjusted returns compare quite favorably to both the MSCI USA Quality Index and the median simulated portfolio.

To what extent was this due to the guardrails we utilize or just superior stock selection? Again, we cannot make any definitive conclusions, but the answer is likely both and the degree to which each factor contributes to our performance may be irrelevant in the end. We know our guardrails provide an internal compass of sorts, acting as extremely high hurdles for companies to meet in order to be considered for inclusion in our portfolio. Concurrently, they provide downside protection by eliminating many of the business risks, such as excessive leverage, that often lead to significant capital losses for investors. The guardrails are what make our investment process consistent and repeatable. Every active investment manager likes to think of themselves as a superior stock picker and we are no exception. Recall that it's the guardrails that place us in the advantageous position of fishing from a pond that is already stocked with the highest-quality fish, or companies in this case. Our job as stock pickers is to reel in the best ones, that is, to distinguish between the very good businesses and the truly great ones. We believe we do this well and future research may provide further clarity on this topic.

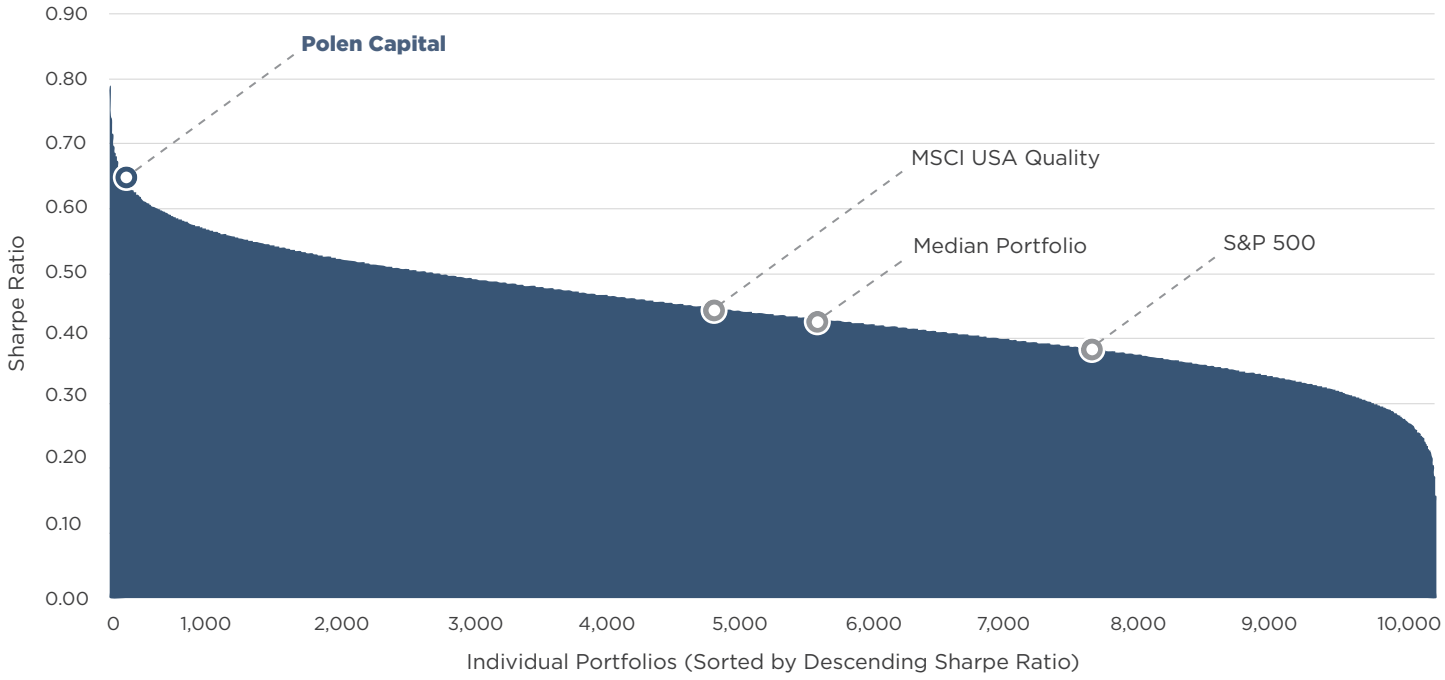
4 "Evaluating Active Share," http://www.polencapital.com/pdf/Insights/Evaluating-Active-Share-Polen-Capital.pdf

5 When appropriate, we make adjustments to company financial statements in order to have a more accurate view of the true "economic" returns of a business. Accounting conventions sometimes mask underlying profitability metrics such as returns on capital. These adjustments increase the number of companies in our investable universe but doing so for this project, with so many years of data, proved impractical.

On a Risk-Adjusted Basis

The second chart (Exhibit 2) displays the Sharpe Ratios of all 10,000 portfolios run in the analysis and places our results in further perspective. This measure for calculating risk-adjusted returns has become the industry standard for such calculations. Over the 26-year period analyzed, our portfolio's Sharpe Ratio ranked in the top 0.9 percent of all 10,000 portfolios that were randomly created. Put another way, only 89 portfolios out of the 10,000 run in the analysis, which likely encompassed nearly every possible combination of U.S. stocks that met the assigned criteria, had higher Sharpe Ratios than our portfolio over the period studied. For us, this data serves as further validation of our investment approach, one in which our guardrails, our focus on persistent EPS growth and long-term time horizons, and our reliance on deep, fundamental research all combine to produce outstanding risk-adjusted returns for our clients.

Exhibit 2: Sharpe Ratio: 1989-2014



The Sharpe Ratio was calculated as (Annual Portfolio Return – Risk Free Rate)/ Standard Deviation of Annual Returns. Risk free rate = 3.43%.
Source: FactSet

Conclusion

While the limits of this analysis prevent us from making any definitive conclusions, it has revealed some interesting insights. First, the data makes clear that concentrated portfolios, even when randomly constructed, can produce very competitive returns relative to the market without a significant increase in volatility. While some of the randomly generated portfolios proved to be quite volatile, many others were much less so and the median portfolio was only marginally more volatile and yielded stronger absolute and risk-adjusted returns than the S&P 500. Second, the research suggests that concentration and quality could offer an even greater benefit by generating competitive investment performance with significantly lower volatility. This inference is supported most convincingly by our own portfolio's risk-adjusted returns. Third, the combination of our internal guardrails and our stock selection has enabled us to generate meaningful outperformance above and beyond any benefit afforded to us by concentration or other quality factors. Lastly, and perhaps most important as it pertains to the original question of this paper, could we have done better? We certainly could have achieved higher returns, but it would have been difficult to have performed much better on a risk-adjusted basis.

About The Author

Stephen Atkins, CFA, Research Analyst, joined Polen Capital in 2012 after a 12-year tenure as a portfolio manager at Northern Trust investments—including eight years as a mutual fund co-portfolio manager. Mr. Atkins also spent two years at Carl Domino Associates, LP. He received his B.S. in Business Administration from Georgetown University and a General Course degree from the London School of Economics. Mr. Atkins is a CFA Charterholder and a member of the CFA Institute and CFA Society of South Florida.

About Polen Capital

Founded in 1979, Polen Capital is a global investment management firm that provides high value-added quality growth investment strategies to sophisticated clients around the world. The Firm is committed to attracting experienced, disciplined investment professionals to add value to client portfolios. Polen Capital's investment team oversees a global equities universe of high-quality growth companies and manages the flagship Focus Growth and Global Growth investment strategies. Polen Capital's strategies are offered through various investment vehicles to accommodate a broad range of client mandates. For more information visit **www.polencapital.com** and connect with us on **LinkedIn.**

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