



Concentrated Equity Triple Play

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Higher returns, lower risk, lower correlations

Concentrating a portfolio on a few choice assets dramatically increases an investor's chance of superior performance. Nonetheless, most advisors and investors shun portfolio concentration as unacceptably risky. To a great extent, this is driven by the myth that adequate diversification is impossible unless one holds many stocks – a myth I will debunk below.

Most institutional and mutual fund equity managers hold more than 100 stocks, simultaneously reflecting and reinforcing the conventional wisdom that such fragmentation is necessary. But some highly prominent and successful managers have taken a different approach:

- In January 2006, Gabelli & Co. began publishing its quarterly Focus Five™ to highlight the most compelling investment ideas from its institutional research team. The fund selects five companies based on current valuation and the potential for a near-term catalyst; no stock is held for more than two quarters. Over the five years and nine months that Gabelli has been publishing this report, the Focus Five has delivered a 22.1% annual compound return, vs. 0.8% for the S&P 500.
- Dennis Bryan is co-portfolio manager of the \$1.2 billion FPA Capital Fund (FPPTX), the top-performing diversified U.S. stock fund over the past 25 years according to Morningstar. Despite the fund's considerable assets, it holds only 21 stocks.

These are but two examples of concentrated equity portfolios that have generated superior returns. While it appears that the Gabelli researchers as well as Bryan are talented stock pickers, an equally important – if not more important – reason for their success is that each portfolio is concentrated in best-idea stocks.

A best-idea stock is one that a portfolio manager believes, based on research conducted by the manager and their buy-side analysts, has the best opportunity to generate a superior return. A growing body of research that shows active equity managers are superior stock pickers supports the existence of best-idea stocks.

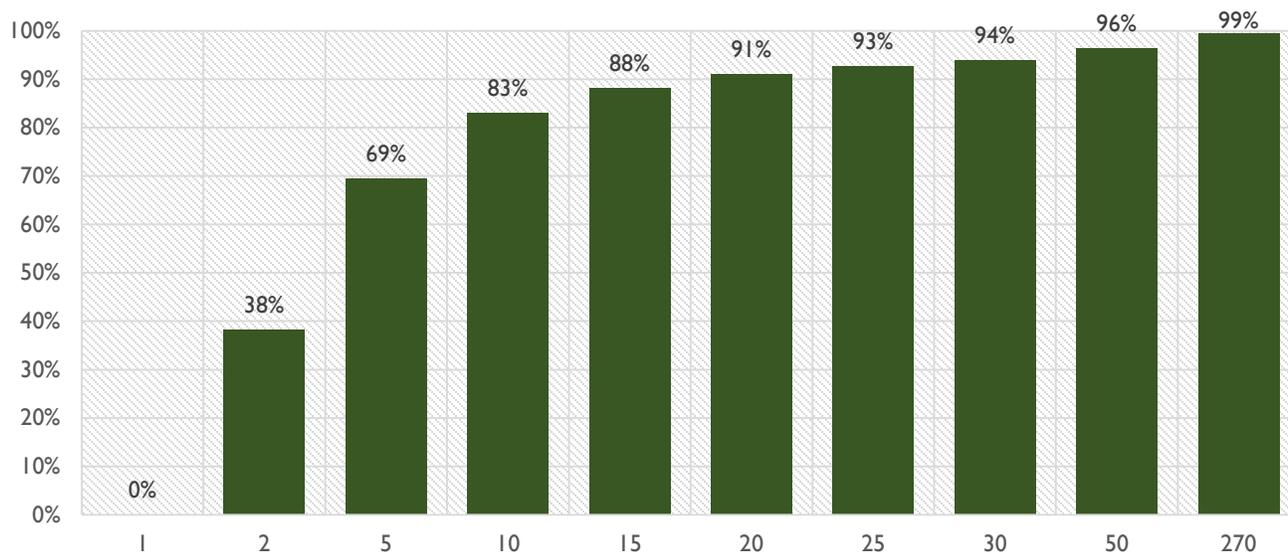
Investors who avoid concentrated equity miss out on the triple benefits of excess returns, lower risk, and lower correlations. A portfolio concentrated in best-idea stocks has an excellent chance of generating excess returns. In turn, the cumulative excess return to investors lowers the risk of underperformance over time. Finally, a portfolio comprised of a small number of stocks is characterized by a low stock-market correlation. Thus the concentrated equity triple play: higher returns, lower risk, and lower correlations.

I will discuss each of these benefits separately. But first, let me address the widespread misconception that an investor can only properly diversify a portfolio by including a large number of stocks.

The diversification-volatility myth

Many believe that concentrated portfolios are much more volatile than are broadly diversified index portfolios. It turns out the diversification benefit of adding additional stocks to a one-stock portfolio is largely captured within the first few additions, as shown in Figure 1 below.

Figure 1 PORTFOLIO STANDARD DEVIATION REDUCTION BY NUMBER OF STOCKS



Based on methodology described in a 1968 paper by John Evans and Stephen Archer, *Diversification and the Reduction of Dispersion: an Empirical Analysis*; uses an average individual-stock standard deviation of 45%, an inter-stock correlation of 0.11 and equal weighting.

In this example, the typical stock has an annual standard deviation of 45%. Few would recommend a single-stock portfolio given the wide range of possible returns this implies – if the expected return for that stock were 10%, an investor might only expect with 95% confidence that his return would fall somewhere between 100% to -80%. In such a portfolio there is a substantial risk of losing everything!

Adding an equally weighted second stock provides 38% of the total potential diversification benefit (i.e., reduction in portfolio volatility as measured by standard deviation), as compared with a fully diversified market portfolio, which in this example would have a standard deviation of 15%. By the time a fifth stock is added, 70% of the potential benefit has been captured, and by the tenth stock 83% has been captured. The returns diminish quickly from there. Adding 10 more stocks captures another 8% of the benefit, and the maximum benefit is realized only when 270 stocks are included in the portfolio – the final 9% of the diversification benefit can only be had by adding 250 more stocks to the 20 you already hold.

This rapidly diminishing diversification value from the second stock to the 270th is a consequence of the mathematics of the portfolio standard deviation calculation itself, primarily driven by low correlations between individual stocks. How the portfolio is actually managed has little effect.

A 10-stock portfolio is, for all practical purposes, adequately diversified. An investor in such a portfolio will be subject to market volatility, but so are all equity investors.

Critics of this line of reasoning point out that individual stock volatility has increased over time, while inter-stock correlations have decreased, meaning that portfolio volatility declines less steeply today than Figure 1, which is based on a 1968 study, suggests. That may be the case, but the general conclusion remains the same: a relatively small number of stocks will provide most of the diversification an investor may seek.

Concentrated portfolios leave unaltered the recommendation that equities should not be used to fund short-term needs; whether you buy an index or just a few stocks, volatility makes an equity investment unattractive for meeting near-term needs.

Stocks are commonly used as a long-term growth engine for a portfolio, with their short-term market volatility viewed as an unfortunate side effect of their wealth-building potential. Since equity concentration adds to volatility only marginally, the decision of how much to invest in equities can be made largely independent of the degree of portfolio concentration. When it comes to returns, however, there are strong arguments for concentrated portfolios, a topic to which I now turn.

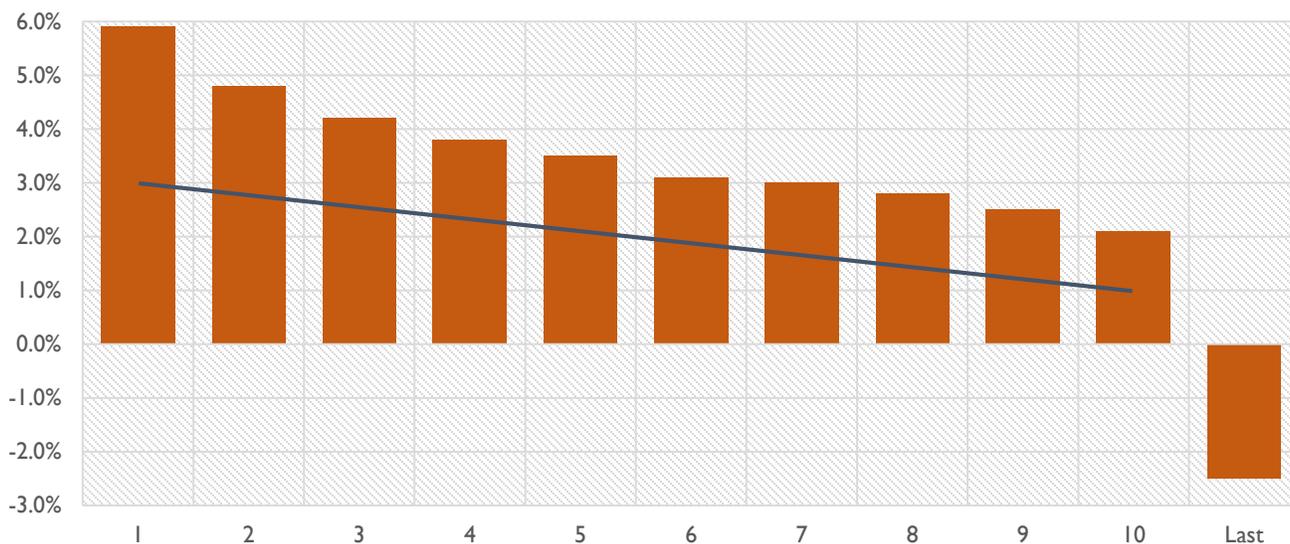
Concentrated equity: a vehicle for higher returns

While there is little further-reduced volatility to be gained by holding more than 10 stocks, these additional stocks may have a dramatic impact on portfolio return.

A growing body of academic research shows that active equity investors, both individual and institutional, are good stock pickers who can construct concentrated equity portfolios that subsequently outperform. (These articles are too numerous to name here, but I've listed some of them in an appendix to this article).

For our purposes, the most interesting study is [Best Ideas](#), by Randolph Cohen of Harvard Business School, Christopher Polk of the London School of Economics, and Bernhard Silli of Goldman Sachs. These authors show that not only are active equity mutual fund managers superior stock pickers, but they are also able to rank order their best stock picks. Figure 2 reports the average best ideas of active equity managers, ranked after the fact by annual excess returns against a six-factor benchmark. The best idea, as measured by the largest holding relative to the corresponding index weighting, earned a subsequent excess return of 6% annually. The next best idea's excess return was around 5%, and so forth down the ranks.

Figure 2 ANNUAL EXCESS RETURNS EARNED BY ACTIVE EQUITY FUND MANAGERS



Source: Figure 3 in "Best Ideas" (2010) by Cohen, et. al..

This clearly shows that active equity managers are skilled stock pickers. In addition, Cohen, Polk and Silli find that such skill is common. The grey line in Figure 2 shows that 95% of the thousands of managers included in this 15-year study earn an excess return on their best idea that exceeded 3% annually. It's not just the "best" managers that earn excess returns – almost all managers do.

Figures 1 and 2 make it clear that concentrated equity is best for generating superior returns. Volatility reduction benefits are largely captured with as few as 10 stocks and, for the typical manager, each additional stock lowers the portfolio's excess return. Consequently, one of the worst things you can add to a stock portfolio is another stock!

How mutual fund distribution kills performance

Some might be wondering: if mutual fund managers are so skilled, why do their funds underperform on average? It is because funds in general do not hold concentrated portfolios. Instead of limiting themselves to their 10 or so best ideas, the typical active equity mutual fund manager holds 100 stocks. As shown in Figure 2, the "last"-ranked stock earns a negative excess return of between -2% and -3%. In fact, excess returns go negative somewhere around 30th-best stock. Thus, the typical portfolio is comprised of 30 positive excess-return stocks and 70 negative excess-return stocks. Not exactly a recipe for success!

So why don't funds limit themselves to their best ideas? There are powerful institutional incentives to over diversify and destroy performance.

The primary incentive is that mutual funds earn fees based on assets under management (AUM) — the bigger, the better. But getting big makes it increasingly difficult to focus strictly on best ideas; thus the resulting purchase of many more stocks in order to "round out" the portfolio. The need to fit a particular

style box and closely track a “style index” can also force advisors to water down their portfolios, as can the need to soothe investor fears by keeping volatility low.

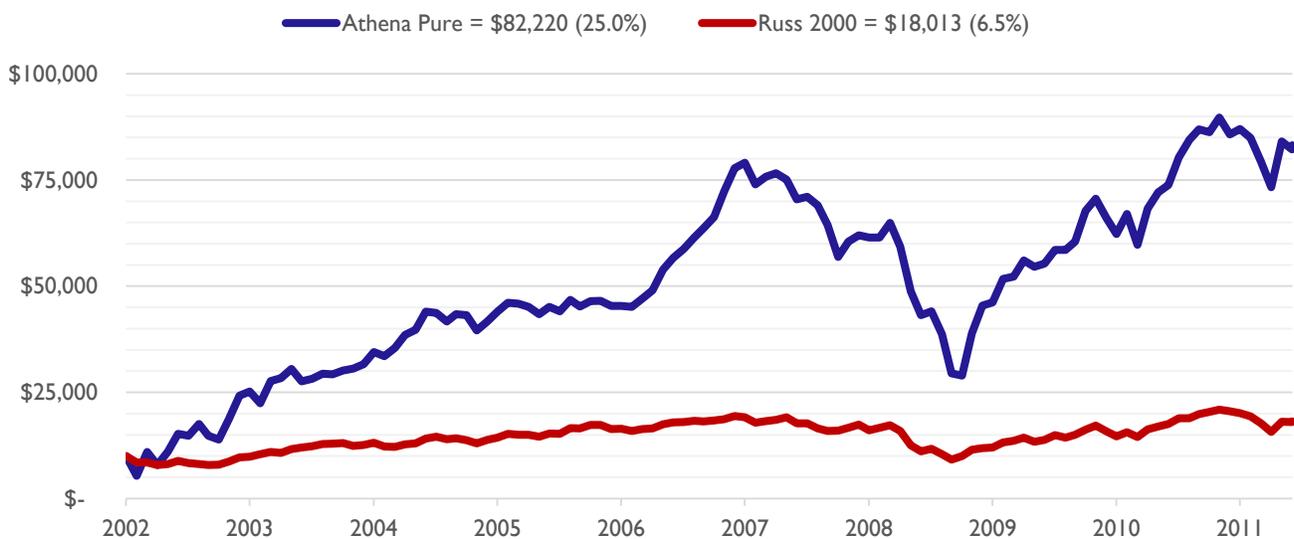
Collectively, these incentives encourage a fund manager to move away from a concentrated portfolio; all too often, he or she may essentially become a closeted indexer.

A vehicle for reducing risk

Earlier, I presented the argument that concentrated equity is somewhat more volatile than the index portfolio. So doesn't that mean such a portfolio is riskier? In meeting short-term needs, the answer is clearly yes. But for long-term needs the answer is no. This is because the excess-return potential of concentrated equity provides a cushion that grows larger over time. The chance of underperforming the benchmark may be high in the short run, but it drops over longer time periods, approaching zero with a long enough time horizon.

The risk-reduction benefit of concentrated equity is demonstrated in Figure 3 below. The Athena Pure Valuation | Profitability portfolio, which I have managed since July 2002, has held 10 or fewer stocks throughout its history. It generated an annual compound return of 25.0% (based on GIPS compliant gross returns) from July 2002 through December 2011, versus 6.5% for the Russell 2000, its benchmark. Even though the portfolio experienced somewhat higher volatility than did the Russell 2000, it dropped below the Russell 2000 only briefly, early on. It has not dropped below the Russell 2000 since, even when it dropped 10% more than did the Russell 2000 from May 2007 to March 2009. It's the excess return that provided an ever-growing cushion against underperformance that even the extreme volatility of the financial crisis could not entirely undo.

Figure 3 **ATHENA PURE VALUATION | PROFITABILITY STOCK PORTFOLIO**
JULY 2002 - DECEMBER 2011



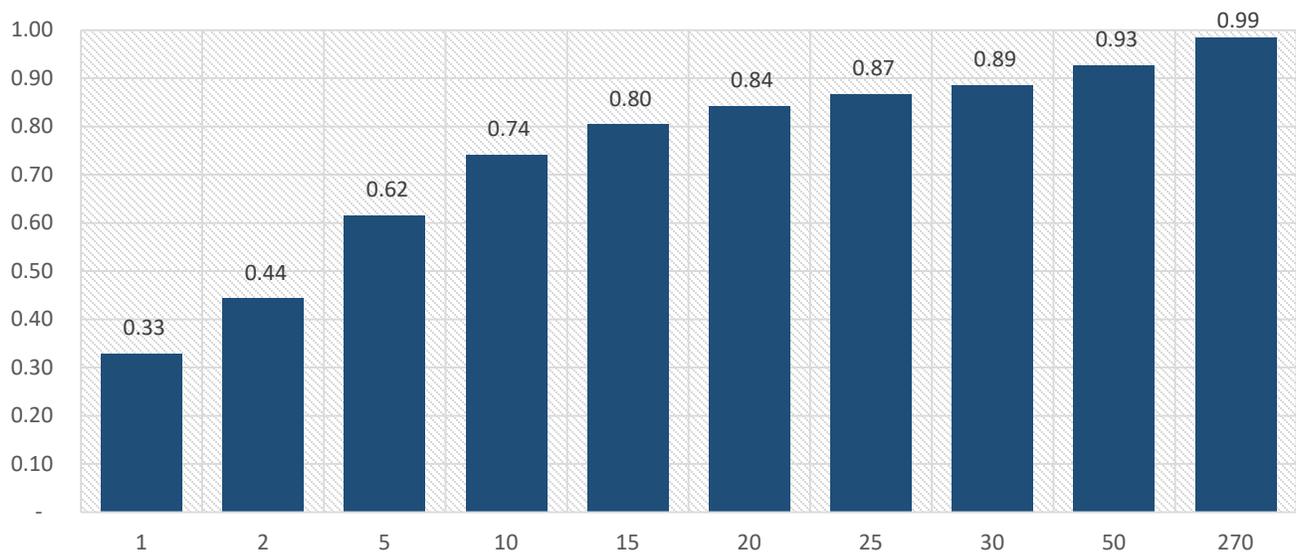
Based on performance of Athena Pure Valuation | Profitability from inception through 2011.

Concentrated equity combines the potential benefits of higher returns with lower risk of not meeting long-term goals. This represents a win-win relationship, where higher returns make for lower risk.

A vehicle for lower correlations

Concentrating an equity portfolio on a few choice stocks can also help reduce a portfolio's correlation to overall market returns. Figure 4, below, shows a portfolio's correlation to the market as a function of the number of stocks it holds, making the same assumptions as in Figure 1. A single-stock portfolio has a correlation of 0.33, a two-stock, equally weighted portfolio has a correlation of 0.44, and so forth. The 10-stock portfolio's correlation is 0.74, still less than the 0.80 threshold that many use to distinguish low-correlation portfolios.

Figure 4 PORTFOLIO MARKET CORRELATION BY NUMBER OF STOCKS



Source: AthenaInvest, Inc.

Consider a 10-stock portfolio, based on the results reported in Figures 1 through 4. Such a portfolio would have an annual excess return of around 4%, a correlation with the market of 0.74, and a standard deviation of 20% (vs. 15% for a market index), resulting in a beta of 1.0. Based on these statistics, the chance of underperforming the market, an important measure of risk, would be 42% after one year, decreasing to 21% for a 10-year time horizon, and 5% for a 30-year horizon.

Figure 5 below compares two portfolios over a 30-year horizon, each with a starting value of \$10,000. The first is a 4%-excess-return concentrated-equity portfolio, and the second is a 10% compound-return market portfolio. The concentrated-equity portfolio has an expected value after 30 years of roughly \$500,000, as compared to the roughly \$175,000 produced by the market.

Figure 5 EXPECTED VALUE OF MARKET AND A 4% EXCESS RETURN EQUITY PORTFOLIO



Source: AthenaInvest, Inc.

Concentrated equity provides the triple advantage of higher returns, lower risk of underperformance, and lower correlation to the market, as Figure 6 neatly summarizes below. For the 10 years from 2002 through 2011, annual return was 3.6% for the average active US equity mutual fund versus 23% for Athena Pure, the fund I manage, while Athena Pure also exhibited significantly less risk of underperformance and much less correlation with the S&P 500.

Figure 6 TEN YEAR PERFORMANCE SUMMARY BY EQUITY CONCENTRATION
JULY 2002 - DECEMBER 2011

Portfolio	Annual Compound Return	10 Year Chance of Underperformance	10 Year Correlation to Stock Market
S&P 500 Index	2.9%	0%	1.00
Average US Equity Mutual Fund	3.6%	35%	0.96
10 Stock Portfolio	6.9%	21%	0.74
Athena Pure Valuation Profitability	23.0%	1%	0.55

Based on performance of Athena Pure Valuation | Profitability from inception through 2011.

The math and the research don't lie; managers can pick great stocks, and the stocks they favor most strongly are the ones most worth holding. Letting a manager concentrate on these best ideas means the risk of falling behind declines as the cushion of excess returns builds. And concentrated equity displays lower correlations with other assets. The result is a superior investment portfolio along the three key dimensions of return, risk, and correlation – an enticing triple play if there ever was one.

Appendix: Recent research on stock picking skill

- In [Are Mutual Fund Shareholders Compensated for Active Management Bets?](#) (2003) Wermers found that those fund managers who take larger active stock bets have **better stock picking skills**.
- In [Portfolio Concentration and Investment Manager Performance](#) (2004) Brands et al. documented a **positive relationship between fund performance and portfolio concentration**. The relationship was stronger for stocks in which active managers hold overweight positions.
- In [Can Individual Investors Beat the Market?](#) (2005) Coval et al. suggested that **skillful individual investors exploit market inefficiencies to earn abnormal profits**, above and beyond any profits available from well-known strategies based upon size, value, or momentum.
- In [On the Industry Concentration of Actively Managed Equity Mutual Funds](#) (2005) Kacperczyk et al. results indicated that, on average, **concentrated mutual funds outperform** after controlling for risk and style differences. Their findings suggested that investment ability is more evident among **managers who hold portfolios concentrated in a few industries**.
- In [Can Mutual Fund Managers Pick Stocks?](#) (2007) Baker et al. found that, on average, **stocks that funds bought earned significantly higher returns** at subsequent earnings announcements than stocks that they sold.
- In [Mutual Fund's R2 as Predictor of Performance](#) (2008) Amihud and Goyenko found that selecting funds with previous year's lowest quintile R2 and highest quintile alpha or Information Ratio produced **significantly positive performance in the following year**.
- In [Portfolio Concentration and the Performance of Individual Investors](#) (2008) Ivkovic et al. found stock investments made by households that choose to **concentrate their brokerage accounts in a few stocks outperformed** those made by households with more diversified accounts (especially among those with large portfolios).
- In [Acting on the Most Valuable Information: "Best Idea" Trades of Mutual Fund Managers](#) (2009) Pomorski finds that common trades of managers from the same management company, likely generated by centralized fund research, accounted for about 30% of fund volume and **outperformed benchmarks and other trades by as much as 47 basis points per month**.

- In [Best Ideas](#) (2010) Cohen et al. found that the stock in which active managers displayed the most conviction, ex-ante, **outperformed the market, as well as the other stocks in those manager's portfolio, by approximately one to four percent per quarter** depending on the benchmark employed.
- In [The Influence of Buy-side Analysts on Mutual Fund Trading](#) (2011) Frey and Herbst found that **positive abnormal returns to buy-side analysts' revisions** were reflected in the performance of mutual fund trades and the trades triggered by buy-side recommendations had higher returns than other trades.
- In [An Efficient Aggregation of the Information Content in Mutual Fund Portfolio Holdings](#) (2011) Wermers et al. showed that publicly disclosed **mutual fund portfolio holdings contained valuable information about stock fundamentals and future returns**. Notably, the return-forecasting power of their holdings aggregation model was not subsumed by publicly-available quantitative predictors such as momentum, value, and earnings quality, nor was it subsumed by methods shown in past research to forecast stock returns using fund holdings or trades.

Important notes

Past performance does not guarantee future performance. These views represent the opinions of AthenaInvest, Inc. as of the publication of this article and are subject to change depending on subsequent developments. Nothing contained herein is a solicitation to buy or sell securities and should be used for informational purposes only.