

Moneyball Investing

By F. Sean Bonner

October 4, 2011

Advisor Perspectives welcomes guest contributions. The views presented here do not necessarily represent those of Advisor Perspectives.

In capital markets, emotions often rule the day, to the benefit of those who best remain well grounded in theory and math. The same holds true in baseball, as the new movie *Moneyball* reminds us.

Some recent research has underscored the benefits of basic investing principles: Reducing volatility and increasing return, albeit modestly, improves performance over the long term. Meanwhile, the movie, based on the work of journalist and author Michael Lewis, reviews how similar analysis was done in the context of America's pastime.

In Lewis' book, *Moneyball*, members of the front office of the Oakland A's baseball team are credited with coming up with two fundamental theses for winning baseball games: Don't get out, and get on base so you can keep scoring runs. As simple as they sound, the traditional metrics in baseball fail to properly quantify these powerful measures of a player's offensive ability. Contrary to what the backs of thousands of baseball cards led generations of fans to believe, batting average is not the best indicator of a player's enduring offensive ability.

In the investing world the simple idea of beating the market by a small amount and reducing the variance of your annual returns has also been challenged by academics and investors. Many pundits make broad statements to investors such as "have the risk on trade," "buy the dips," "diversification is good for those who don't know what they are doing," and (asset class flavor of the month, gold, oil, and alternatives) "is the only path to long term investing success." I would argue that reducing portfolio volatility is similar to not getting an out in baseball and having consistent positive relative returns is similar to getting on base by any means available. These investing ideas are similar to on-base percentage (OBP) and on-base-plus-slugging percentage (OPS), much more useful metrics than looking solely at a player's batting average or measuring a player's physical traits off of the baseball diamond.

With all of the storms here in the northeast during the last weeks of summer, to escape the rain I was forced to watch a lot of baseball and had time for three other indoor activities outside of normal business.





1. Continuously running to the basement of my house at all hours to check the sump pumps and use the Shop-Vac to try to keep my home from having an in-ground swimming pool.
2. Re-reading *Moneyball*. (Because the Phillies are doing so well and I want to pose as a baseball aficionado.)
3. Working on some basic big-picture research on portfolio returns and how lowering the volatility of those returns would impact longer term growth.

Fortunately, the waters have receded, but I still flinch whenever I hear a mechanical noise in the basement. Was that the dryer or the sump pump filling up?

But with the perplexity and sleep deprivation of trying to bail out the leaky ship that once was our home; I am not sure which came first. Did I pick up *Moneyball* because it is a great story about using hard data to confront a major assumption? Or did I listen to the words of Billy Beane and believe I needed to get some data to back up a major assumption? After the better part of two decades spent trading and managing equities at firms large and small, and given the current market volatility, I wanted to verify some basic assumptions.

Lower volatility is, at a minimum, a good “sleep at night” factor for investors. The behavioral effect of higher volatility for investors has been studied, and it is certainly the grim reaper for those investors using too much leverage for their portfolios. While these statements seem obvious, at least one financial titan has tried to refute them. This iconic investor has recently been sharing his opinions with the media on taxes in the U.S. Warren Buffett says they are too low; he pays less than his secretary as percentage and he should pay more (NY Times, [August 14, 2011](#)). This contrary-to-popular-belief opinion got me to thinking about another one of Warren Buffett’s opinions, specifically his belief, as expressed in his October 16, 2008 New York Times Op-Ed titled [Buy American. I Am](#), that (to paraphrase) “Mr. Market is irrational, and, therefore, the more volatile he becomes the more opportunity I have as an investor.”

I challenge Mr. Buffet’s contention that volatility leads to increased investor wealth. If you are Warren Buffett – you have an infinite time horizon because you already have more money than you’ll spend in a lifetime, ample cash on hand to pursue any opportunity that arises, and you intend on leaving your fortune to a large non-profit institution – then this may be true. If you have a large free cash flow to put to work, then you can make some bad investments in a volatile market and those poor investments will not be as easy to see. I do believe that Mr. Market is irrational and that reasonably priced, skilled active managers can deliver superior net returns for investors while not swinging for the fences to justify high management fees.

It can also be beneficial to more than an investor’s stress level to do some management of Mr. Market’s bipolar extremes of frenzy and complacency. The treatment for this manic behavior can be seen in one of the two things on which the Oracle of Omaha and I agree.



Mr. Buffett and I do still love at least two of the same things: Cherry Coke and the power of compounding rates of return.

With the portion of a portfolio that generates cash flows, the effect of lower volatility can be illustrated mathematically. It can be shown that two portfolios that generate similar average cash flows, where one is more volatile than the other, will have sharply divergent internal rates-of-returns, with the less volatile stream compounding at a higher rate. I could not, however, locate research showing this with generic portfolios.

Buffett's view about volatility in the markets is similar to that of the old-time baseball scouts described in *Moneyball*. Those scouts believed that batting average mattered the most and there was no problem with swinging for the fences on the first pitch if the batter looks good or – in the world of investing – can get away with charging 2%-and-20% for a levered strategy. (Levered beta does not equal alpha.) Buffett is a great investor with a long-term horizon, so bring on the volatility. Perhaps what Buffett has said about equity volatility *is* true; in the same way that most of those in Major League Baseball believed that batting average – a statistic created in the 1860s – and physical stature were the best measures of an offensive player. Or at least until Bill James, Billy Beane, Paul DePodesta (Beane's assistant GM) and other Sabermetricians used statistics and math to prove otherwise.

The [August 2011 Bienville Capital Management Monthly Thoughts & Insights](#) put the role of volatility in perspective. Surprisingly for something that seems intuitive, the best way to prove that portfolio volatility impedes performance is quantitatively. As in baseball, investors should place value on portfolio volatility, just as the A's highly valued walks by their batters, which batting average ignores. I will paraphrase the words of DePodesta: "The worst thing you can do in baseball is get an out. If you pick players that don't ever get out then you just keep scoring. Score enough runs and you win the game." In *Moneyball* the first statistic used by the A's to reflect the importance of not making an out and to help them find undervalued baseball players was on-base percentage.

This is just as true in investing. Let's take a look at some obvious numbers. A 20% decline requires a 25% gain to be even, a 50% decline requires a 100% gain to be even, an 80% decline requires a 400% gain to be even and a 100% decline is reserved for Congress. A 10% decline only requires an 11% return to be even.

So, keep getting on base and try to avoid making three outs, or having declines in excess of 30 percent.

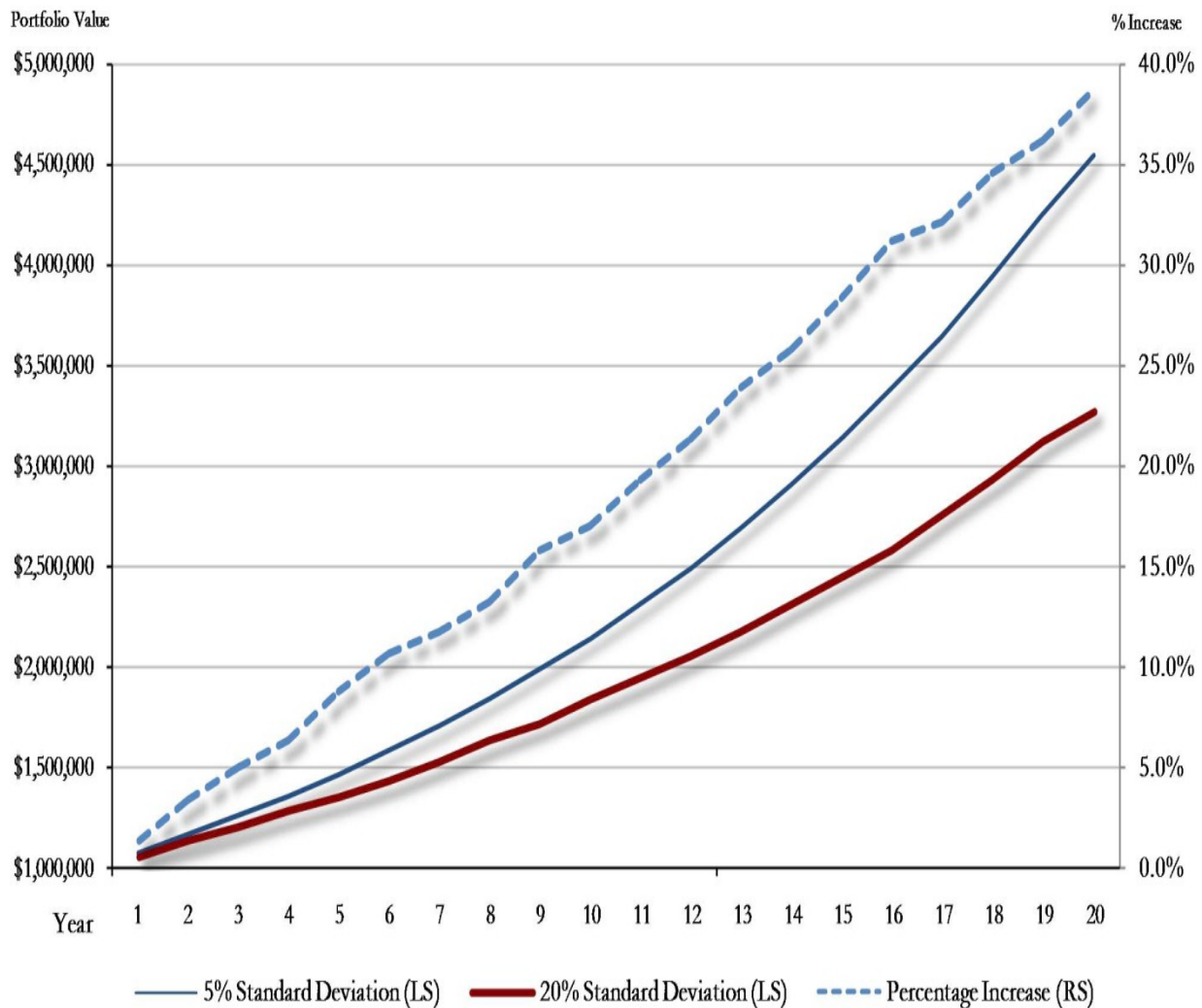
A portfolio with higher average return and the same volatility as a portfolio with a lower average return will lead to greater wealth. What is not as easily understood is that if average returns are kept constant then the lower-volatility portfolio will also produce greater wealth. This is demonstrated in chart 1 below from Bienville's piece. Portfolios with identical average returns but dramatically different standard deviations around the



returns, one with high volatility and one with low, generate divergent IRRs in a Monte Carlo simulation:

Chart 1 – *By reducing volatility, capital compounds more quickly, leading to greater amounts of cumulative wealth. The volatility, or standard deviation, of global equity markets averages approximately 20%. Assuming similar rates of returns, diversified portfolios with a volatility of 5% will lead to greater wealth...*

Monte Carlo Simulation - Cumulative Net Worth & Percentage Increase
(at different levels of volatility)



Source: Zephyr; Bienville Capital Management, LLC. Note: This is a hypothetical example

Another investing insight parallels the Oakland A's favorite baseball sabermetric: OPS, which combines on-base percentage with slugging percentage, a measure of how frequently a player hits for extra bases. The A's employed OPS to further invest in an



inefficient baseball players' market. Beane and DePodesta loved OPS for valuing players' contributions.

So Is OPS the best way to find alpha in baseball? This metric follows Podesta's thesis that you cannot lose if you don't get out, but a team must be able to drive in all of those players who get on base to score runs. OPS is similar to lowering your portfolio volatility while increasing your average return. Modest improvements that increase average yearly portfolio returns and lower portfolio volatility significantly increase the long-term cumulative growth of your portfolio. More importantly, despite Buffett's claims, outperforming the benchmark with a higher net return but lower volatility is a statistically significant path to investment alpha.

So, I took the annualized total returns and average 90-day volatility since inception of a hypothetical large-cap equity fund that had incrementally better average returns (12.94%) and lower volatility (12.25%) than the S&P 500. I then compared it to the S&P 500's annualized total returns (11.16%) and its average 90-day volatility (13.51%) over that same time period, as seen in chart 2.

The nearly 40% extra wealth over a 20-year period for such small positive changes in average returns and volatility is very compelling. Much better-than-average returns are good and much lower volatilities are also good. That is not hard to see or grasp but harder to find. Some teams or investors can afford an Alex Rodriguez, but to win at investing you shouldn't overpay to swing for the fences like A-Rod.

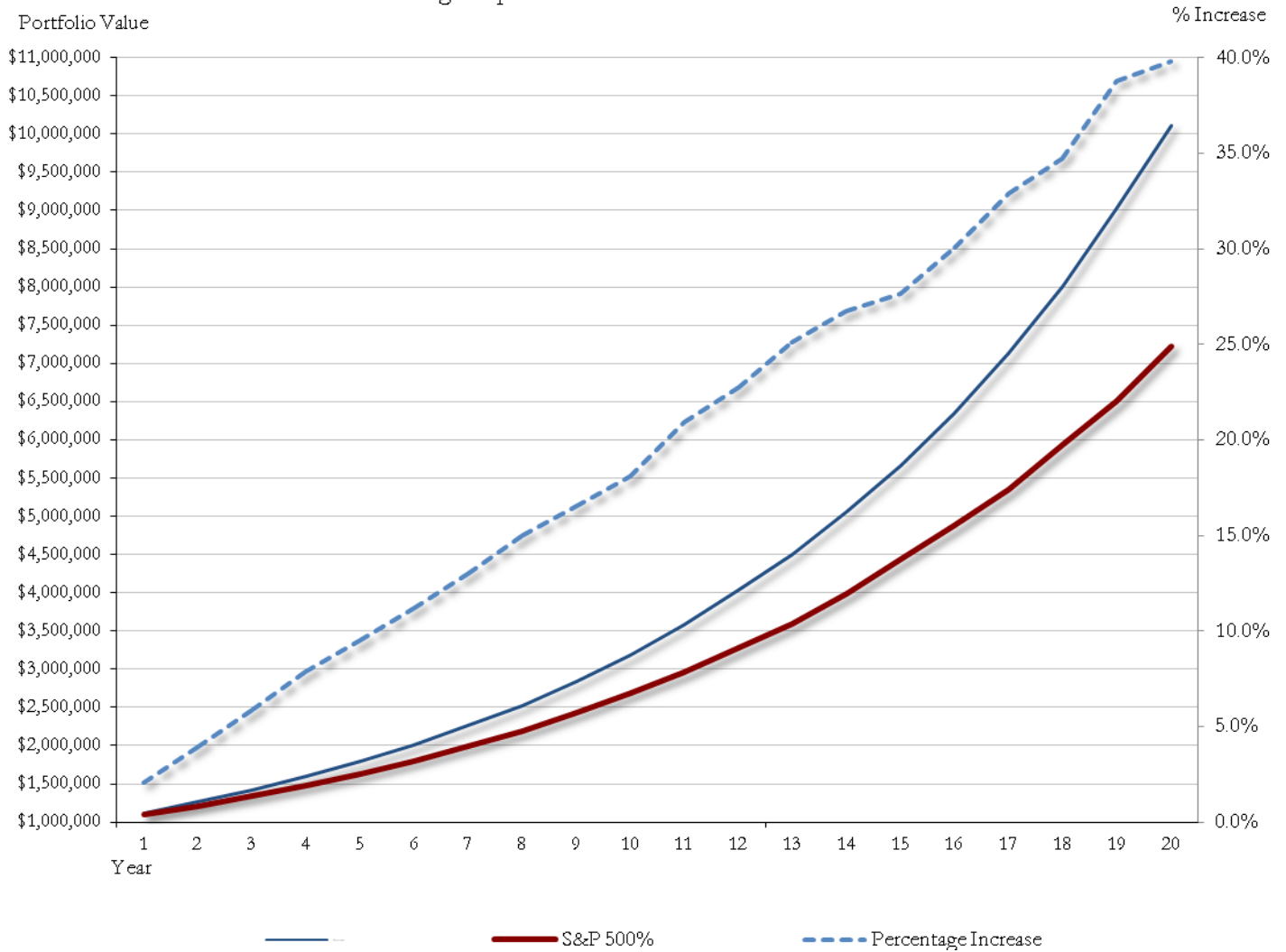
When these beneficial portfolio effects are combined incrementally, you have a dramatic positive wealth effect over the longer term. In baseball, getting a lot for a little means scoring more runs with a smaller payroll, for which the best indicator is OPS. In investing, getting a lot for a little means combining lower volatility and increased return LVIR. That's *Moneyball* Investing!

There are already good measures in use that quantify LVIR, such as the Sharpe Ratio and the Sortino Ratio. They both look at returns against the variance of those returns. The problem is that they are mostly thought of as only measures of risk. If you approach your portfolio with a Sabermetric and LVIR mindset, you cannot and should not separate risk and return. If you never get three outs, then you can keep scoring in baseball as your players move around the bases. If you never seriously damage your portfolio, then you can continue to score with compounding rates of return.

Things are unsettled, with sovereign defaults, the possibility of another recession, and investors who ignore or disregard LVIR. When the market is this frantic, it pays to talk a little baseball and to prove the obvious, if for no other reason than to have conviction in your investing thesis.

Chart 2- Monte Carlo Simulation - Cumulative Growth & Percentage Increase

Average rolling 90 day historical volatility and annualized returns since inception to 8/31/11 for SPX vs Generic Large Cap Fund





F. Sean Bonner is the chief investment officer at [Carne Capital, LLC](#), a Radnor, PA-based asset manager. He is also a lifelong Phillies fan.

www.advisorperspectives.com

For a free subscription to the Advisor Perspectives newsletter, visit:
<http://www.advisorperspectives.com/subscribers/subscribe.php>