

Collaborative Allocation

Synopsis: *Gibson Capital is making available a new tool that will let your clients model the consequences of their portfolio design decisions.*

Takeaways: *Start by modeling diversification. Then model different portfolios over different time periods in accumulation and decumulation.*

Last year, I reported that Chris Sidoni, Chief Investment Officer at Gibson Capital Management, was in the process of creating a free online portfolio education tool that would help advisors show clients how the markets work. The idea was to build an alternative to the “diagnose and prescribe” model, as Chris Sidoni, project director and Gibson Capital’s chief investment officer, described it to me. Instead of dictating a portfolio design to clients who probably have no idea of the implications of portfolio design decisions, you can give them a better look at the alternatives and consequences.

The tool would usher in an era, in our profession, of collaborative portfolio design.

The good news is that the tool is now available here: <http://www.gibsoncapital.com/professionals>. The better news is that it’s extremely cool.

Simulating Diversification

Let’s start the tour with the MAC Portfolio Simulator. Many

of you have seen one of Gibson’s presentations, or read one of the editions of his book (“*Asset Allocation: Balancing Financial Risk*,” now in its fifth edition) where he shows the magical power of diversification. Gibson tracks the historical performance of each of four risk-on asset classes (U.S. stocks, International stocks, REITs and Commodities) in risk/return space. The individual asset classes are mapped on the graph as little boxes, while four different combinations of two of these asset classes is denoted as a triangle. Diamonds denote every equally-weighted combination of the three asset classes, and a yellow circle represents the four asset classes, also equally-weighted. In all cases where there are multiple assets, the return calculations assume the portfolios are rebalanced annually back to equal weightings.

What you see in the static reproductions in the book, or in one of Gibson’s presentations, is a map of each portfolio’s performance over some period of time—say, 20 years.

Before he presents the results,

Gibson would ask the audience: Suppose you knew with certainty which of the four asset classes would offer the best performance, over the other four, over the time period in question. Would you choose the asset class with the best performance, or the portfolio that combines, equally-weighted, all four?

The magic lies in the fact that, in pretty much every simulation over any reasonably long time period, the combination of all four assets sits further in the northwest quadrant than any of the individual assets—which means it provides a higher return per unit of risk, and often a higher return period, than any of the individual components—even the best one.

Diversification provides excess return with less risk, even when you’re adding in the laggard of the four asset classes for whatever period of time you’re looking at.

What you also see on this risk/return map is that the combinations of three asset classes fall further north-west than combinations of two, and combinations of two generally situate themselves northwest of individual asset classes. Diversification produces less volatile portfolios, which tend to outperform over time.

But how do you communicate this magic to a client? That’s where the M-A-C Portfolio Simulator comes in. You choose any time period, from January 1, 1972 through the end of 2016, and the screen shows you the single asset squares (blue), two-asset triangles (magenta), three-asset diamonds (green) and the four-asset circle

(yellow). Select your time period, click the start icon, and you get a tour of all these portfolios in risk/return space—which, of course, changes every year. The returns are mapped on the Y axis, the standard deviation on the X, and the risk-adjusted performances jump around on the graph as the software moves forward a year at a time, up and down, right and left, as additional years are added to the overall time track. It’s a brief tour of market performance.

There are several interesting things to note. One is how the entire investment world drops down and to the right during the 2000-2002 tech wreck bubble burst, and again in late 2008/early 2009 bear market. You can almost feel the lurches on the screen.

You also see how the different assets rearrange themselves, some taking the lead and then falling back while others move up, and then fall back. This becomes a VERY interesting exercise as you adjust the time periods, which you might decide to do for clients. You see different assets exchange leadership year-by-year—which becomes a teachable moment for clients. *Why were we investing in that laggard over the previous time period? Because look what it did over the next time period.*

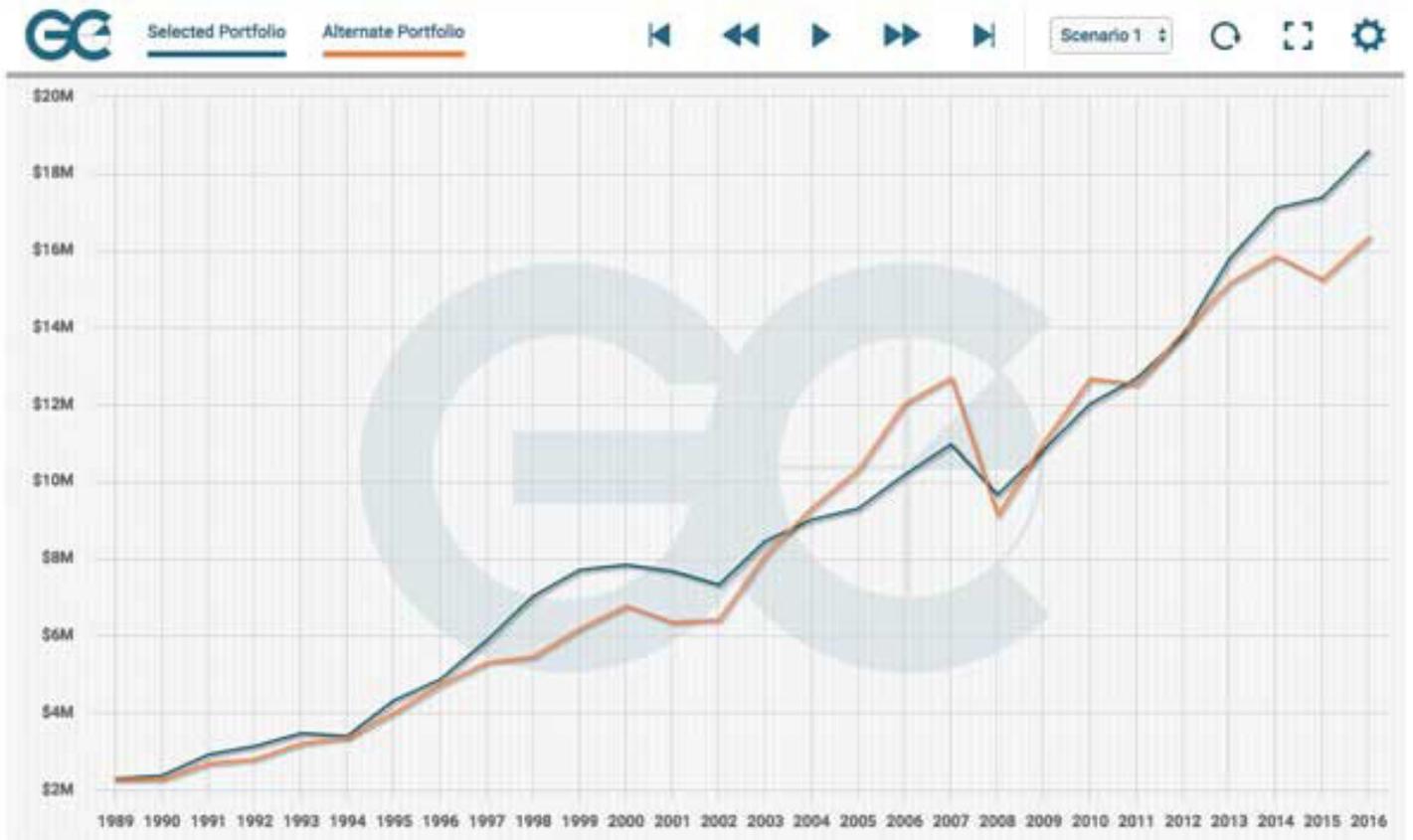
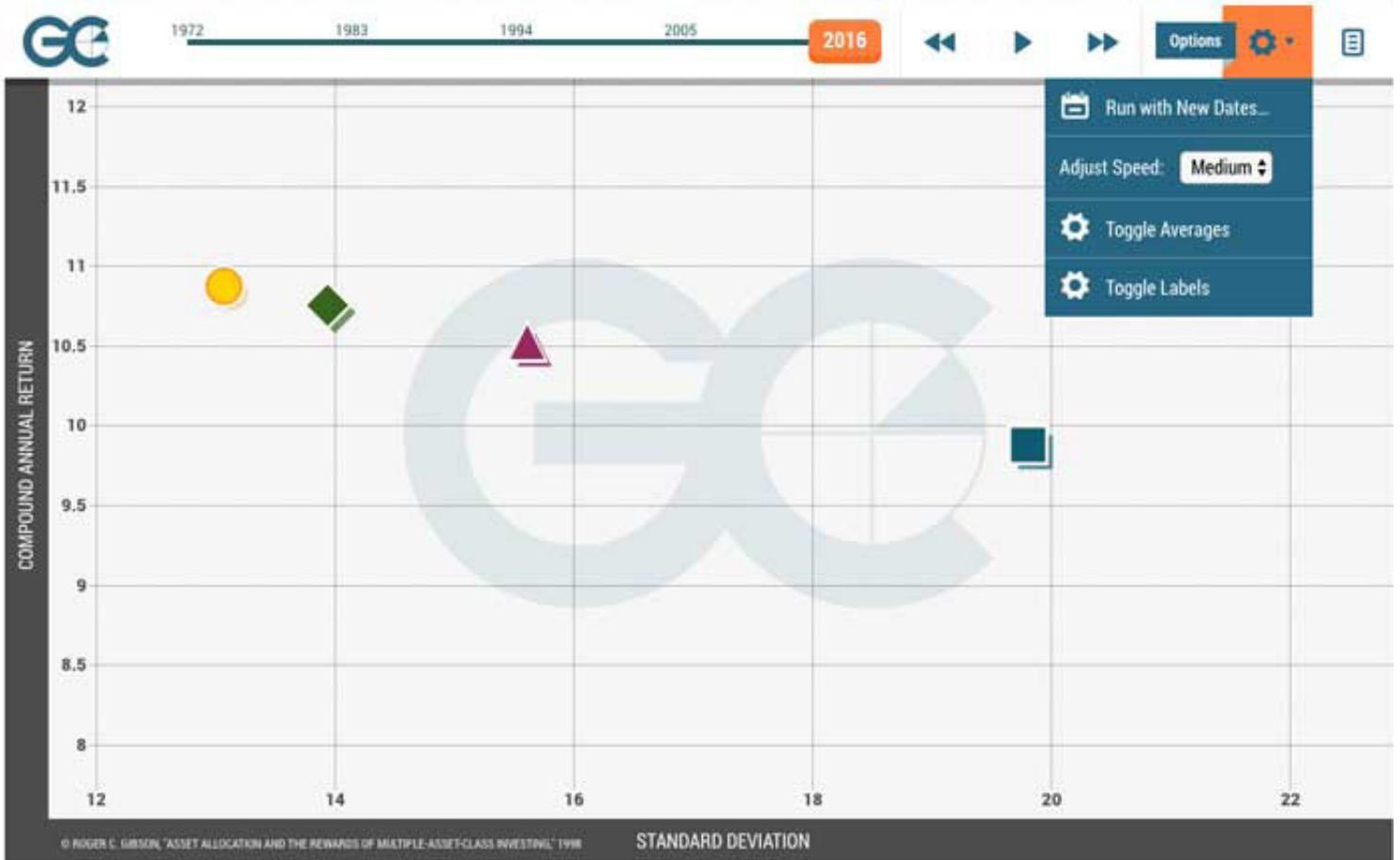
But finally, you notice the larger point of the exercise. Watch the yellow circle migrate through the clutter of the other portfolios, year by year, toward the upper left side of the screen, and in general the diamonds migrate further

northwest than the triangles, which migrate further than the squares.

If you want to see this more dramatically, when the simulation stops, click the little “options” icon and then click “toggle averages,” so you can see the average return for each shape. The squares, triangles and diamonds collapse into their respective averages in the risk-return space, and show you just what you saw in messier format before: the circle provides the best performance, followed by the average of the three-asset diamonds, followed by the two-asset triangles that sit lower and to the right, and the one-asset portfolios are, on average, the laggards. Idiosyncratic risk doesn’t pay over the long term.

That’s the tool for teaching





clients the value of diversification. I'm envisioning advisors calling up the M-A-C Portfolio Simulator the next time a client points a finger at an underperforming asset in the quarterly statement, and asks: *why am I investing in that?*

Modeling portfolios

Next stop on the tour: the Total Portfolio Simulator. Here you get a chance to make up your own asset allocations, drawing from the same assets plus bonds, and compare different portfolios side-by-side over any time period starting in 1926.

Select two different mixes of assets. Let's say one is 50/50, large cap U.S. stocks and bonds. The other one is a mix

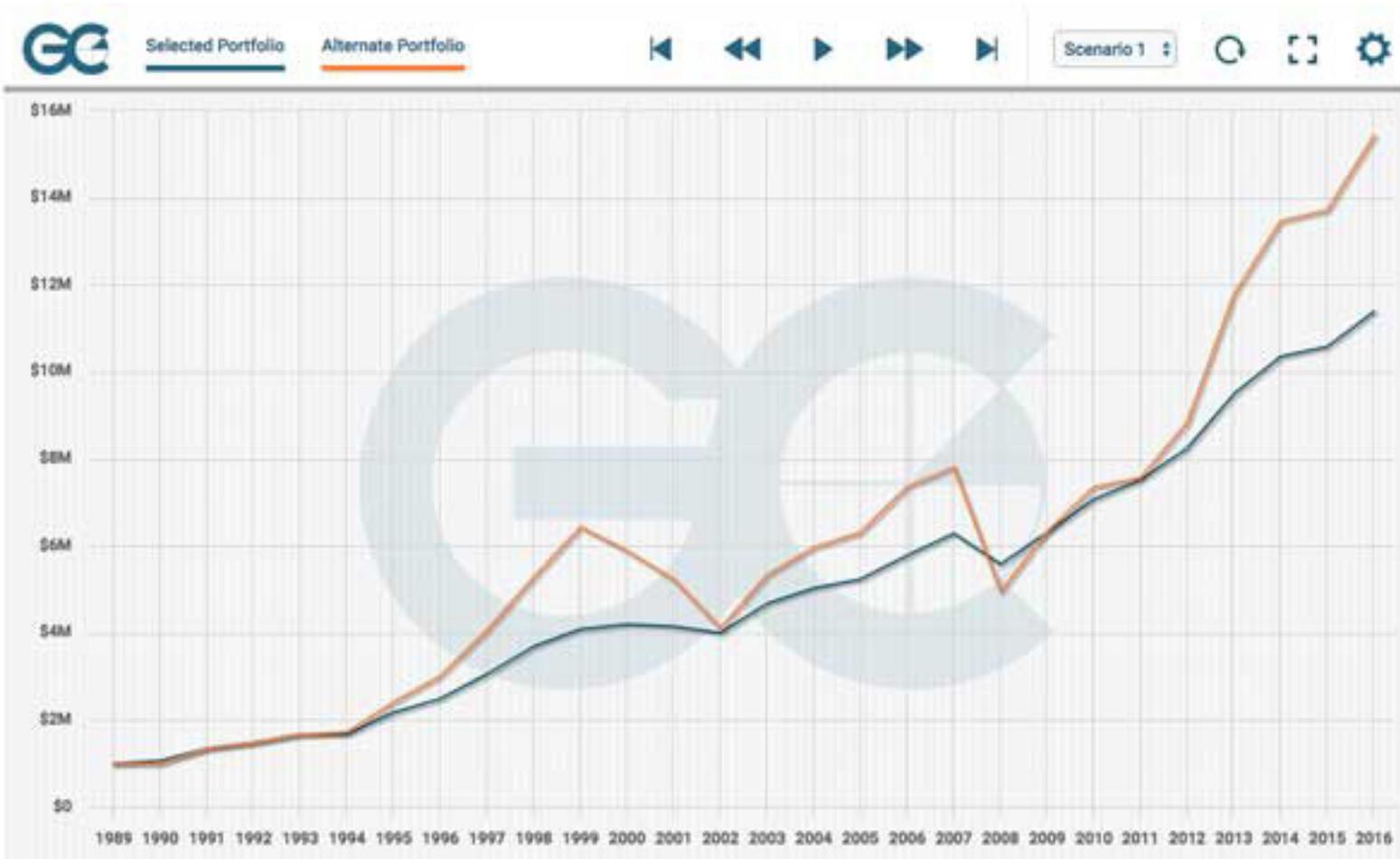
of equally-weighted U.S. stocks, foreign stocks, bonds, REITs and commodities—20% each. They become your "selected portfolio" (two asset classes, graphed in blue) and your "alternate portfolio" (five asset classes) mapped in orange. Pick a time period: say, 1990 to the end of 2016, and compare the trajectories.

The simulator draws the returns, year-by-year, sometimes with one portfolio ahead, sometimes the other. Eventually, at the end, you see the more concentrated portfolio (see graph) beating the more diversified one, with a lower drawdown during the 2008 bear market because it holds significantly more bonds. Change the time period from 1980 to 2016, and the two end in a virtual dead

heat (prev. page, second graph).

Now let's imagine that each of these is a \$1 million portfolio at the start of our test run in 1990, and clients are contributing \$30,000 to each portfolio in the first year, and that amount will be inflated by 3% each year. Here, you can play with different portfolios. If you choose to compare the 50/50 portfolio to a 100% stock portfolio, the 100% stock portfolio comes out ahead by a wide margin. (See below.)

This is a lesson that wasn't easily taught with the M-A-C Portfolio Simulator. The more volatile portfolio had much bigger bear market drops over the 26 year period. But the volatility proved to be an asset as long as significant amounts of money were being contributed annually.



That helps you teach clients about volatility and returns during the accumulation period, but what about retirement, when money is coming out of the portfolio? Here, the Total Portfolio Simulator lets you reproduce the Bengen 4% research over different time periods, using different withdrawals.

To do the withdrawal test, you put a negative sign in front of the “annual cash flow” and pick your amount. I stress-tested a 50/50 against a 20/20/20/20/20 portfolio from 1990 through 2016 at a 10% withdrawal rate (inflated at a 3% inflation rate), and ran out of money in years 15 (the multiple asset class portfolio) and 17 (the 50/50 portfolio). Two major bear markets will do that to you.

What about a 7% withdrawal rate, at the same 3% inflation number? At the end of 2016—26

years into the simulation (see below)—the equally-weighted portfolio had just run out of money and the 50/50 portfolio was down to \$400,000. Scaling down to a 6.5% decumulation rate, again inflated at 3%, would shepherd the client safely home.

You can see the portfolio values year-by-year, and of course they grow dramatically until 2000, and again from 2002 through most of 2007. If you started retirement in 2000, the 6.5% distribution plan doesn’t work; the 50/50 portfolio runs out just 16 years into retirement, and the multiple asset class portfolio has just \$400,000 left in 2016.

Fair warning: the simulators can be addicting. You’ll be tempted to reproduce the Bengen research over different time periods with different portfolio mixes and

distribution rates, and see what you would expect: some charmed time periods will allow significantly higher distribution rates than others. I found it interesting that, despite what I’ve read elsewhere, the two portfolios I selected did NOT survive a full 30 years at a 4% safemax withdrawal rate for a person who retired in January of 1929.

Overall, the instruments will illustrate a variety of things, depending on your imagination and what you want to help your clients recognize about the investment markets. The point here is that you can involve your clients in deciding which of these investment “journeys” they prefer, which makes it more possible to work collaboratively toward designing a customized investment experience for them. ■

