The Use of Monte Carlo in Modern Portfolio Reality©

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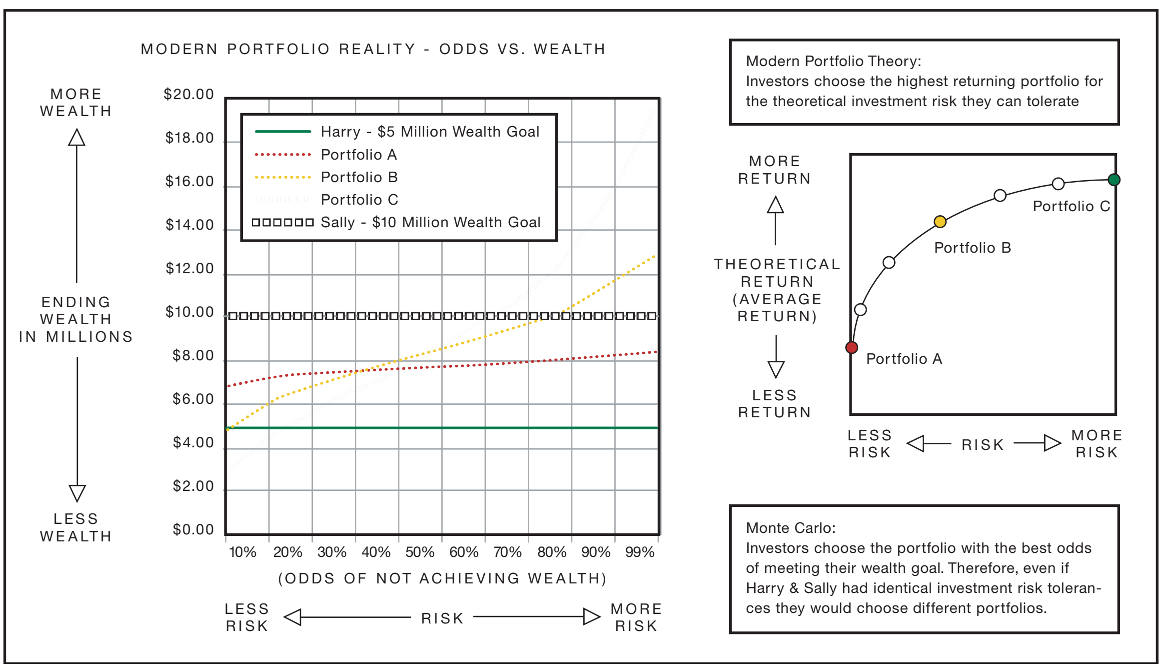
In our paper "Modern Portfolio Reality (MPR) – The Failures of Modern Portfolio Theory (MPT)," we addressed many of the practical problems investors face in trying to implement MPT and how the MPR process solves these issues. Since the release of that paper, we have heard from many financial advisors wanting more information about Modern Portfolio Reality and how to apply it.

While MPR uses the odds of achieving goals as a more understandable measure of investors' risk tolerance (thereby separating the traditional investment risk measures of MPT as a matter of choice) many of our users have erroneously assumed that Monte Carlo simulation and Modern Portfolio Reality are one and the same. Our competitors would also like to have you believe that our "product" is the calculation method of Monte Carlo (instead of the process of Modern Portfolio Reality) so they can compete with us. Saying that Monte Carlo (or probability analysis) is the same as MPR is like saying that all devices that have at least one wheel are wheelbarrows just because wheelbarrows have one wheel.

Modern Portfolio Reality uses Monte Carlo (or other methods of probability analysis) to support the MPR process. The calculation method itself is not the "process," as is evidenced by the plethora of "cyber advisors" that have mistakenly assumed calculation methods could replace the value of competent advice. There is no question that measuring risk in terms of odds of success is a powerful improvement over the theoretical risk measures of MPT. Monte Carlo exposes the oversimplified risk/return chart and "efficient portfolios" of Modern Portfolio Theory as theoretically "optimal" portfolios for investors that have no goals for their wealth (see *Exhibit 1* below).

Exhibit 1 – Theoretical "Risk/Return" vs. Monte Carlo



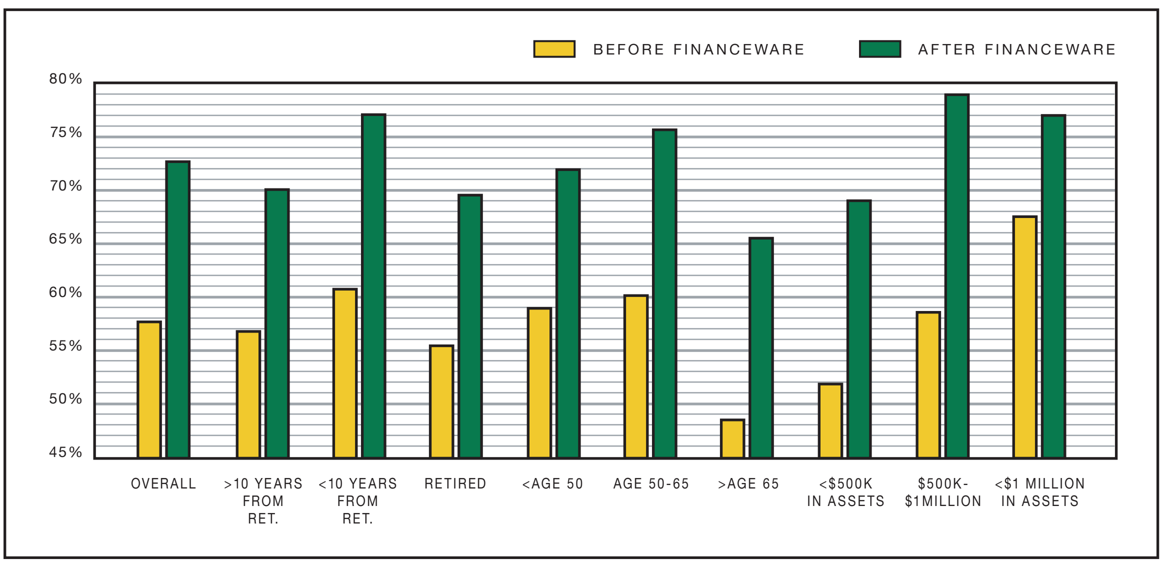
Many investors are familiar with the traditional "efficient frontier" chart that is the corner stone of Modern Portfolio Theory. Monte Carlo and other probability analysis methods have rapidly gained popularity because like an X-Ray, they expose what is below the surface of the Modern Portfolio Theory "dot."

Monte Carlo is extremely useful for making a better asset allocation to achieve a particular wealth goal. Therefore, if selecting asset allocation is the only decision an investor needs to make, any Monte Carlo system should help in this process.

Modern Portfolio Reality, though, assumes that there are other choices the investor would consider. Asset allocation is just one of the many choices an investor faces in their wealth management plan. Asset allocation has gained popularity based on the numerous studies that show how much of investment return (the Y Axis on the MPT risk/return chart) is "due" to asset allocation. If an advisor takes the single choice of asset allocation as his primary job, he is ignoring potentially far less painful choices the investor has if his advisor would just expose them. That is what Modern Portfolio Reality is all about, and tools that use Monte Carlo may not necessarily support this high value advice offered through the process of Modern Portfolio Reality.

When a financial advisor registers on our site, he or she is given a sample client with multiple scenarios. One is that the client's original plan has a very low chance of meeting his or her goals. This "original plan," with its low odds of success, is often found when a user first inputs a plan on the Financeware wealthcare system. In fact, we've actually conducted a study of this effect, and it shows that the average investor has only a 58 percent chance of meeting investment goals prior to applying what he or she learns from our system. The study was based on over two thousand investors. The complete white paper is available at *www.financeware.com/ruminations/coinflip.pdf*. In *Exhibit 2* below, we see that these dismal results more or less run across all demographic groups. We also see how dramatically their odds of success improved once they or their advisor used the Financeware system.

Exhibit 2- Odds of achieving lifetime goals



The first question that comes to mind when viewing such compelling improvement is "What was done to improve the odds so dramatically?" Unfortunately, we have yet to assemble the data to draw conclusions about this. We hope to find this information and release it in later studies.

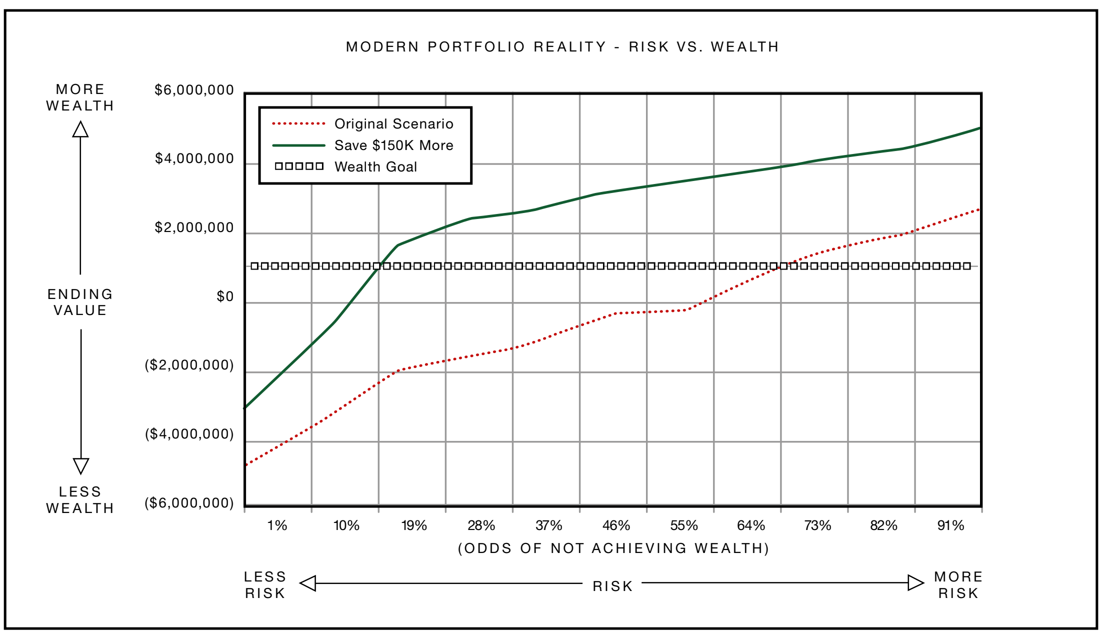
Asset allocation was likely one of the contributing factors to this improvement. This would support the use of Monte Carlo (not necessarily Modern Portfolio Reality) for choosing asset allocation. But, we are hopeful that many of the advisors using our system have grown beyond basing their value on this single solution. Many of the advisors that use our system come from the financial planning industry, so they are trained to identify the amount of money an investor needs to save to achieve their goals, which is a common solution applied by advisors.

These two choices, asset allocation and the amount of savings, are the two pillars of financial advice. They are the primary value propositions delivered by many investment consultants and financial planners. The sample client (or any client of an advisor for that matter) may not have desires that match these two alternatives to problem solving. So, while it may be helpful to learn how to achieve the highest theoretical return for the investment risk the investor can tolerate, or how much the investor would need to save to meet other goals, the investor may prefer other choices that don't fit nicely into these advice alternatives.

These two "advice" alternatives are helpful for the less sophisticated advisor (more focused on selling) who wants to create an opportunity to make a sale. Both create such an opportunity by either moving investments to comply with the "better" asset allocation or by making more money available to invest (savings). More sophisticated advisors know that helping their clients meet the goals that are most important to them instead of solving every client's problems in one of two ways is important. These are the quality advisors that are learning how to apply Modern Portfolio Reality.

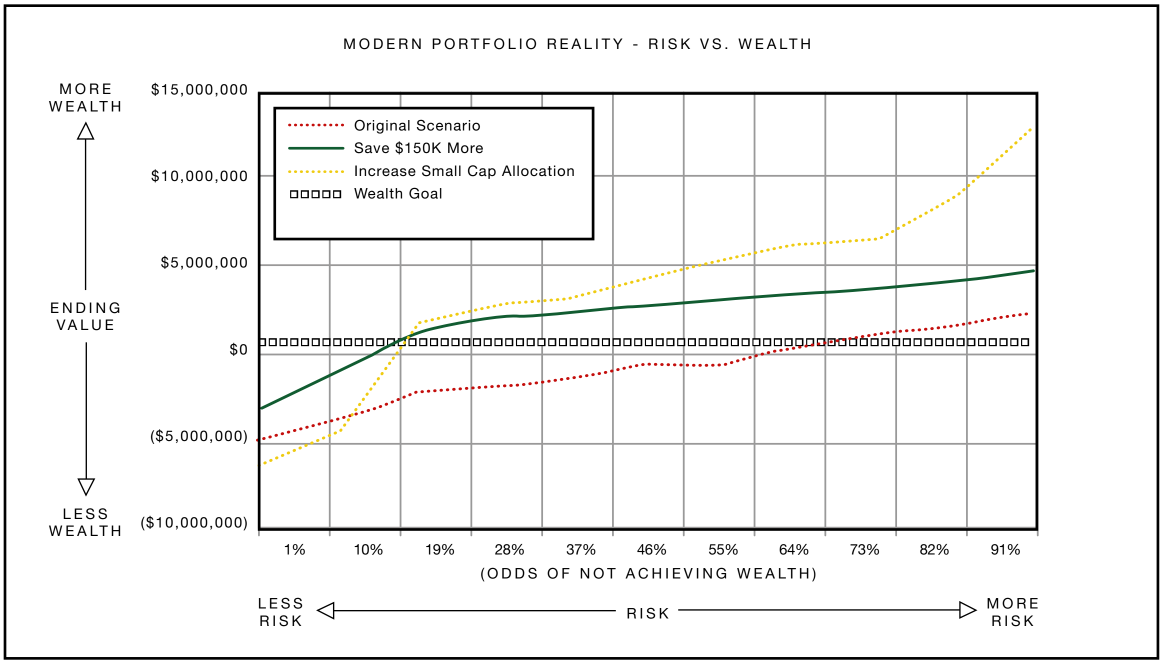
In the sample family we create for advisors, we show several scenarios of how the advisor could improve the "unacceptable odds" in the original plan to a much higher confidence level. It is important to understand what was important to this family in order to do the best job of helping them meet their goals. In this particular scenario, saving more money (a.k.a. alter current lifestyle) was their least desirable alternative. Both were busy executives that loved the challenges of their careers. They worked hard and played hard and saved "less than the recommended amount" for their income level. They didn't spend extravagantly but they did spend and use all of their vacation time on "power relaxation" in exotic destinations. They had no intention of altering this lifestyle…their primary goal. We know one way of helping them improve their odds is saving more money. In this family's case the amount they would need to save not only conflicts with their goals, but also is nearly equivalent to all of their take home pay!

Exhibit 3-Saving $150,000 more a year until retirement



This problem is why financial planning has moved toward asset allocation over the last twenty years. A more aggressive asset allocation may help improve their odds. Note that their portfolio was already practically efficient (maybe not theoretically), so it was really a matter of moving up the risk scale on the efficient frontier. How far would they have to go to achieve a similar confidence level? It turns out that with somewhere between 50 percent and 70 percent of their money in small cap stocks (or doubling to nearly tripling their current small cap allocation), they would achieve nearly the same odds of success as if they were saving an additional $150,000 a year. So much for advice being expensive. If this were acceptable investment risk to the clients, the advisor delivered the equivalent of saving $150,000 a year!

Exhibit 4 – Increasing Small Cap Allocation to 50%-70%



In Modern Portfolio Reality, though, it is recognized that there are more than two ways to solve investors' problems. Advisors that apply the process of MPR go beyond the automatic two answers for each investor's problems and balance all of the choices available. By counseling the client and truly helping them prioritize the plethora of choices they have in *reality*, the advisor can help the investor meet their most important goals.

Included in all of these scenarios were multiple other assumptions like:

Taxes: What is the state tax rate where you plan to retire? Is it important you stay in California?

Retirement age: With you enjoying your career and current lifestyle so much, is it really that important to retire at age 63? How about age 65?

Retirement income: You said you needed $170,000 a year for a spending budget in retirement. That's just over $14,000 a month. Would you feel your retirement lifestyle would be materially affected if your spending budget were $12,500 a month?

Tax efficiency: Based on your current trading activity, about half of your capital gains each year are taxed at short term rates…would you consider a change in investment strategy that would cause more of your gains to be taxed at long term rates?

Estate goal: You wanted to leave a $1 million estate for your children…is that critical?

Of course, any wealthcare plan will have multitudes of other variables, including things like vacation homes, boats, travel budgets, charitable goals, gifting plans, allocation to tax deferred assets, life insurance, investment expenses, deferred compensation, etc. Just as the oversimplified rules of thumb of saving more or increasing assumed returns will impact each plan differently, so will all of these variables. Modern Portfolio Reality is about how skilled financial advisors can creatively find which of these solutions produces the biggest bang for the choice, in balance for each unique client's desires.

There is no formula for accomplishing each client's unique desires. It is based on the skill and ability to counsel each investor about their preferences (choices) for what are the best trade-offs for their particular goals. Monte Carlo is an effective tool. Tools, however, need skilled operators. Putting Monte Carlo in the hands of an unskilled operator is like giving Tim Allen a hammer. In both cases the operator can "make it work." Monte Carlo, regardless of the operator's skill, will show the odds of success just as when Tim Allen swings a hammer a nail will occasionally be driven. The results achieved from the work can be nothing short of disastrous in the absence of a skilled operator. This is what Modern Portfolio Reality is about. It isn't about the discovery that Monte Carlo can help you pick a better asset allocation to meet a particular investor's goals. It is about advisors turning investment chances into investment choices.

Going back to our sample client, we also show financial advisors what we call the "Custom Advice" solution. The goal of not saving more money was met. Asset allocation was "tweaked" by increasing the small cap allocation by 8% instead of doubling or tripling it.

The advisor asked these questions and got the following answers from the client:

Taxes: What is the state tax rate where you plan to retire? Is it important you stay in California?

Answer: Absolutely…I want to spend time with my grandchildren.

Retirement age: With you enjoying your career and current lifestyle so much, is it really that important to retire at age 63? How about age 65?

Answer: I just put 63 because that's when I qualify for early retirement…65 is fine.

Retirement income: You said you needed $170,000 a year for a spending budget in retirement. That's just over $14,000 a month. Would you feel your retirement lifestyle would be materially affected if your spending budget were $12,500 a month?

Answer: More is obviously better, but I don't think that would materially affect us.

Tax efficiency: Based on your current trading activity, about half of your capital gains each year are taxed at short term rates…would you consider a change in investment strategy that would cause more of your gains to be taxed at long term rates?

Answer: No…I told you when we met that I will not change my money manager.

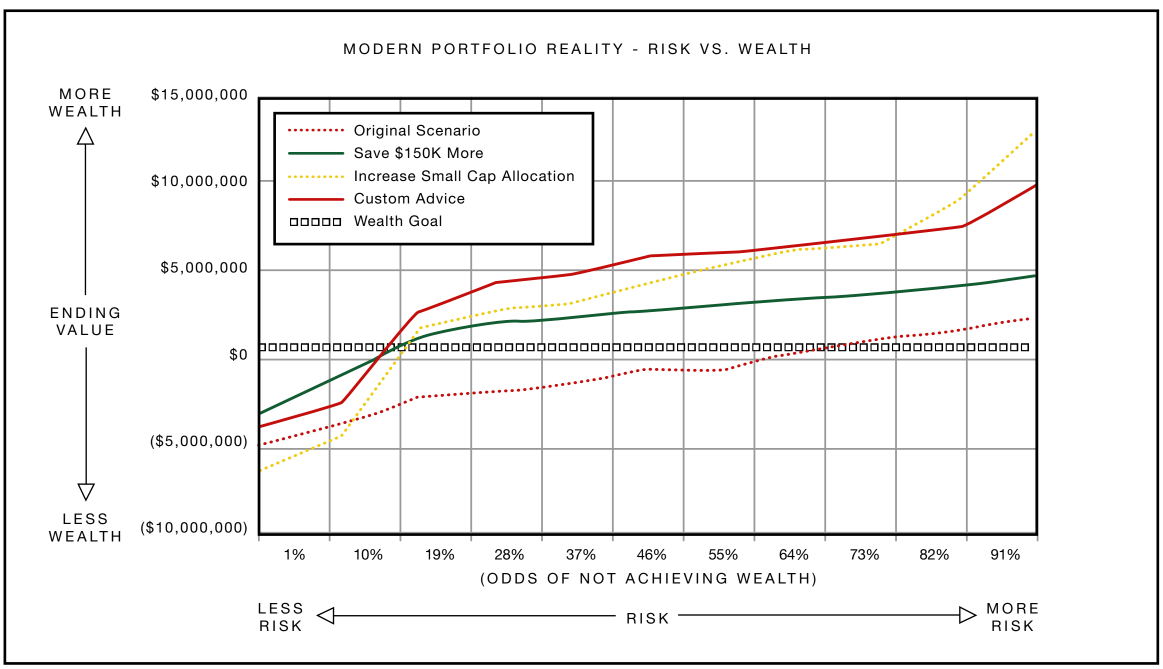
Estate goal: You wanted to leave a $1 million estate for your children…is that critical?

Answer: Yes…for two reasons. One as a safety net and the other is I want to pass on at least what we inherited from our parents.

The skilled advisor that digs deeper into their clients' goals asks these kinds of questions (and many others) and carefully listens to what his client says. Fortunately for Financeware, there are thousands of professional advisors that have already been advising their clients about their goals at this level. Unfortunately for investors, there are many advisors that do not and turn what looks like sophisticated charts and graphs "based on Nobel Prize winning work" into a sales pitch. Monte Carlo hasn't been what's missing for the sophisticated advisors that are focused on achieving their clients' goals. What has been missing for these high caliber advisors was the process of exposing "what's behind the MPT dot"—a means of efficiently and effectively communicating all of the available choices so they can be prioritized for the investor's preferences and finally a means of monitoring the progress toward meeting the goals. They recognize this and are flocking to Financeware to use our tools that help them communicate their advice.

So what about the "Custom Advice" solution for our sample client? How did it compare to saving $150,000 more a year or moving the majority of the client's assets into risky small cap stocks? *Exhibit 5* shows how the odds of success compare.

Exhibit 5 – Custom Advice Solution



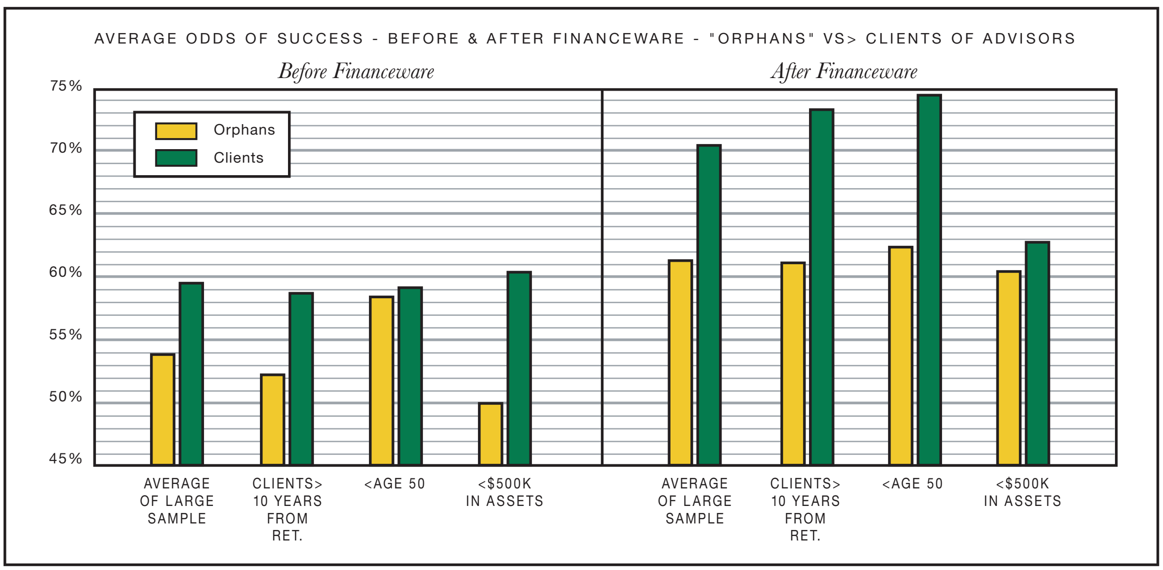
You may have different goals than this sample investor, but for them, the skilled advisor that applied Modern Portfolio Reality by listening to his client and using his skills (instead of counting on a tool to do the work) found a far better solution.

Each scenario had the same odds of success (measured at the intersection of the wealth goal), but different investors may make different choices. Some may not be willing to change the retirement age by two years. Others might remain steadfast on a higher retirement income. Still others may tolerate the risk of the high allocation to small cap stocks. Modern Portfolio Reality is about combining investment realities with goals. We believe that in the future this is the only way financial advisors will continue to deserve their significant but unappreciated compensation.

Going back to an earlier question of "What was done for the investors on Financeware that improved their odds so dramatically?" our suspicion is that many of the advisors that are using our system are indeed applying Modern Portfolio Reality.

In our study, "Living Life on the Flip of a Coin," we further dissected the before and after results into clients of advisors and what we call "orphans." Orphans are investors that come to our site and try to use our tools without a professional advisor. As we broke the data down into even smaller data samples, the estimation error obviously increased. However, by looking at groups that had at least 300 clients or "orphans" we found that financial advisors are materially improving investors' odds of meeting their lifetime goals as shown in Exhibit 7.

Exhibit 6 – Financial Advisors Add Significant Value



It is clear to us that advisors are truly helping their clients meet their goals and that having a tool is not the same as knowing how to use it.

It has been two years since we founded the company and wrote our mission statement (available on our site), which still holds true today. It has been a great challenge and an enormous amount of work. We have been fortunate to have strong investors backing us and an unbelievably talented and dedicated group of associates that have helped us turn our vision into a reality.

For all the things we've accomplished, though, what is most gratifying is to see that there are an enormous number of professional financial advisors that are committed to objectively helping their clients meet their financial goals. That is what the financial services industry is supposed to be about. It is what Financeware is committed to. We are honored to be associated with some of the best financial advisors in the country. It is their advice and dedication that helps investors live the financial life they have planned.