"Living Life on the Flip of a Coin… Will Americans Achieve Their Financial Goals?"

The Value of Probability Analysis and Professional Advice

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INTRODUCTION

Much research is conducted on our economic well-being. Studies on savings rates, income levels, Social Security, unemployment, investment returns, and many other economic indicators of our society are regularly monitored and compared to those of other nations. All of this research is valuable since, in broad economic terms, it can help us have a better understanding of where we stand as a nation.

Of course, broad economic data doesn't mean much to each of the individual families that make up the total economic data. Each family has its own goals, problems, and uncertainties. Some families can weather overall economic weakness better than others. In many cases, this has more to do with personal choices the family makes. For example, the discipline to save and adjust the lifestyle of the family when facing personal adversity can have a profound influence on a family's ability to weather a broader economic storm.

Likewise, the old accounting principle of "conservatism" can be helpful when making assumptions about the future. Just think of all the dot-comers whose "conservative assumptions" about their future wealth evaporated last year along with the value of their stocks.

To our knowledge, this study is the first of its kind. We uncover data that simply has not been available before. By taking a bottom up approach and aggregating data one investor at a time, we have uncovered some fascinating and sometimes disturbing information. From this research, we conclude that in the absence of probability analysis, investors have a significant risk of failing to meet their goals. We also conclude that professional advisors materially improve the likelihood their clients will achieve their goals.

PURPOSE OF STUDY — THE QUESTIONS WE ANSWER

Will a person or their neighbor live the financial lifestyle they hoped? How confident can one be that they will achieve their goals, or how fearful are they of financial failure? We are not speaking here of wild dreams; instead, we are merely measuring the odds of achieving pragmatic financial lifestyle goals (however one personally defines it).

Some readers of this research may be unfamiliar with the methods that can be used to measure the odds of achieving one's goals. In recent years an old method of measuring uncertainties has found new life in financial analysis and has gained popularity known in general terms as "probability analysis," or Monte Carlo simulation.

If one is at all familiar with financial or retirement planning, they have probably seen tables and graphs generated from traditional planning tools. The projections are based on assumptions they input, such as current investment assets, planned savings and expenditures, and assumptions about investment return. In theory, the resulting projections show the investor what their wealth would be under the assumption that they save and spend according to plan (their goals) and, most importantly, achieve their assumed rate of return each year.

Of course, in reality, markets don't produce the average return assumed with this approach each and every year. The average is just simply that...an average of higher and lower returns. In any one year, the investor may have a lower or higher return, and in reality both bull and bear markets will occur. If an investor has low or negative returns when they have a lot of money and high returns when they have very little wealth, they will obviously end up with a lot less money than if the reverse occurred. Think about the last ten years. For investors that have been accumulating wealth, the market declines of 2000 probably affected them much more than it would have ten years earlier. For investors that

have just started saving, the relative dollar impact of 2000's declines on their lifetime plan is less material…better now than when they have a lot of money accumulated.

The simple fact is that an average return applied to any plan of savings and withdrawals is an unrealistic projection. Even for investors of moderate wealth, projections based on assumed average returns can be off by millions from how markets might actually produce these results. Of course, it is also uncertain whether they will actually achieve their return assumption.

Recently, however, probability analysis has given investors the ability to estimate the odds of achieving their financial goals. Like traditional tools, investors can model their current investments, annual savings, and/or planned withdrawals. But instead of the erroneous assumption that the investor will achieve the exact same rate of return each year, many patterns of returns and various market environments can be tested. This provides the investor with a range of potential results that then can be ranked in terms of their likelihood (or probability) of occurrence.

There are several different methods of probability analysis. They range from using the natural historical randomness of actual market returns to Monte Carlo methods which can estimate the probabilities of various results not only based on the uncertainty of investment returns, but also on the uncertainty of our life span.

The data supporting this report uses all of these methods and is based on the results of real investors analyzing their "wealth care" plan on the financeware.com system. Investors start by inputting their current investments, asset allocation, planned savings, and spending needs. Then by selecting one of the calculation methods, they estimate the probability of achieving their goals.

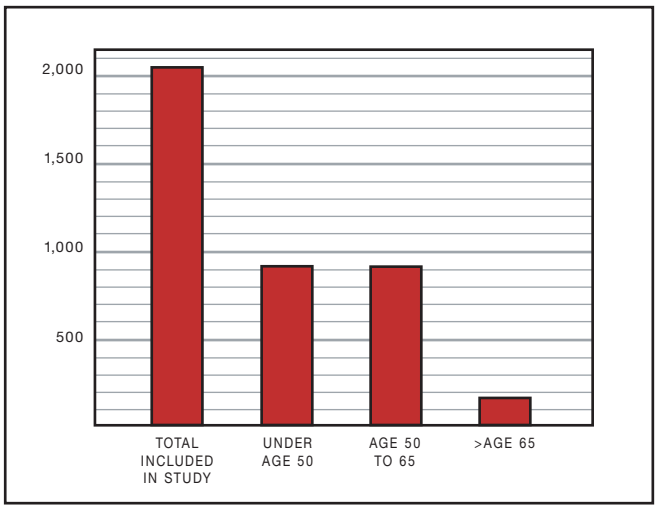
INVESTOR DEMOGRAPHICS INCLUDED IN THE STUDY

This study is based on the odds of success as measured on our system for over 2,000 investors based on over 20,000 different scenarios. The data was accumulated over the last six months of the year 2000. It includes only registered users in an attempt to filter out inaccuracies that might have skewed the data, such as data from trial users who may not have completely entered their data or their goals.

This study should not be viewed as representative of the population as a whole since our user base is highly skewed toward wealthy investors. Current investment assets of these investors represent nearly $3 billion of assets and the average investor on our system has over $1.3 million in investment assets.

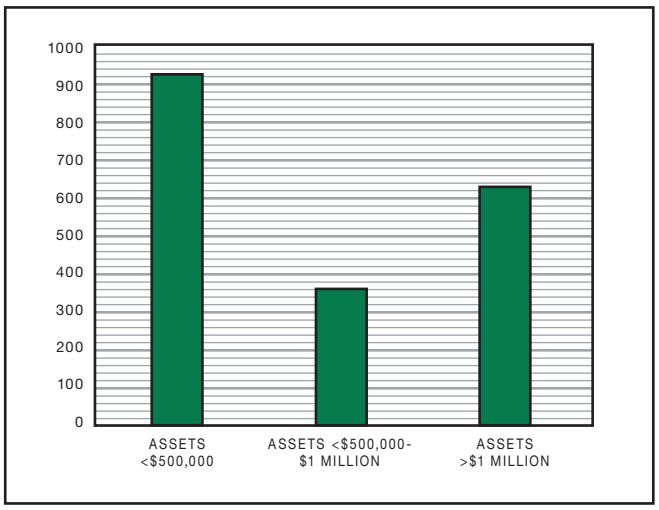
There are several ways we segment the data. In the first section of this report, we have broken the results into various demographic groups. Later in the report, we will revisit these demographic groups to learn about the value of professional advice by segmenting the groups into "orphans" (investors that register on our site of their own accord, theoretically without an advisor) and "clients" (investors brought to our site by their financial advisor). For now, however, as shown in Exhibit 1, there were approximately equal numbers of investors under age 50 and between the ages of 50-65. The universe in the over age 65 group was relatively small but as we will demonstrate later, the conclusions drawn from the data would still be compelling even if there was significant estimation error.

Exhibit 1 – Number of Investors Included in Study by Age



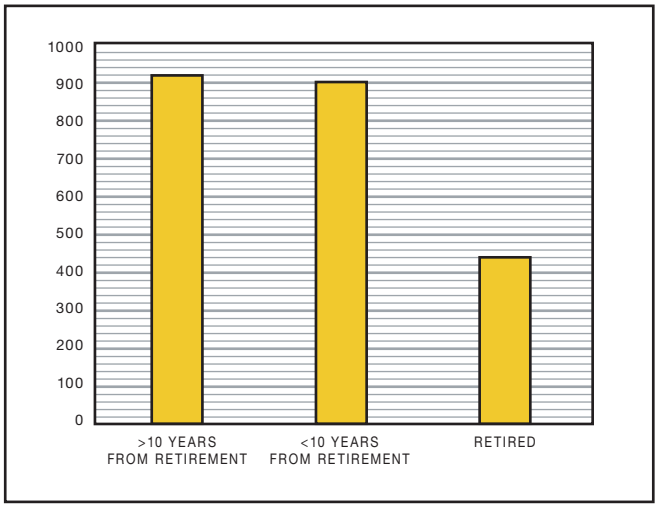
Although the average net worth of our users is over $1.3 million (median would be closer to $500,000), the study included a fair cross section of investors by total amount of investment assets. This study breaks them into the following groups:

Exhibit 2- Number of Investors Included in Study by Current Investment Asset



Based on the high level of assets by our users, one might expect that many of them have already retired. Since we know the birthday and planned retirement age of the users, we can also break the users into their proximity to their planned retirement age. The user counts for this demographic group were fairly well balanced.

Exhibit 3- Number of Investors Included in Study by Proximity to Planned Retirement Age



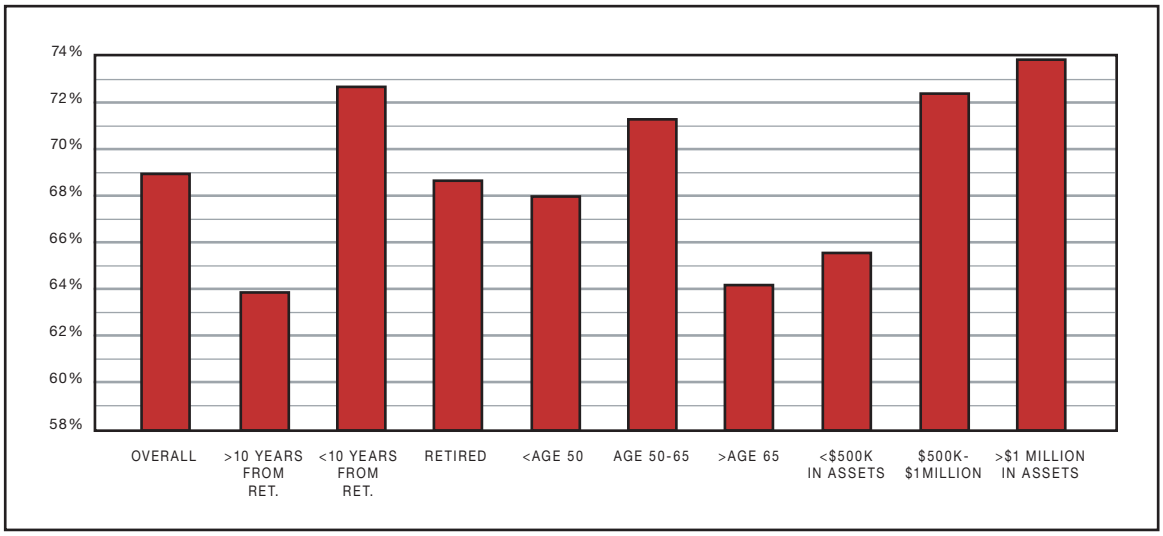
As might be expected, there are a much larger number of those investors that are already retired than the age segmentation might infer. In this study, over 21% of the investors were already retired although only 7.6% were age 65 or older. As shown in Exhibits 1, 2 & 3, there is a fairly broad distribution of demographics and investor types included in the study.

WILL INVESTORS MEET THEIR GOALS? WHAT ARE THE ODDS?

Our research tracks the odds of success each time an investor runs our system. Because the system is designed to allow the user to easily model "what-ifs," most users run the system many times, which is why we average so many scenarios for each investor.

To answer the question, "What are the odds of Americans achieving their financial goals?" one might think we could simply look at the average success rates across the different demographic groups.

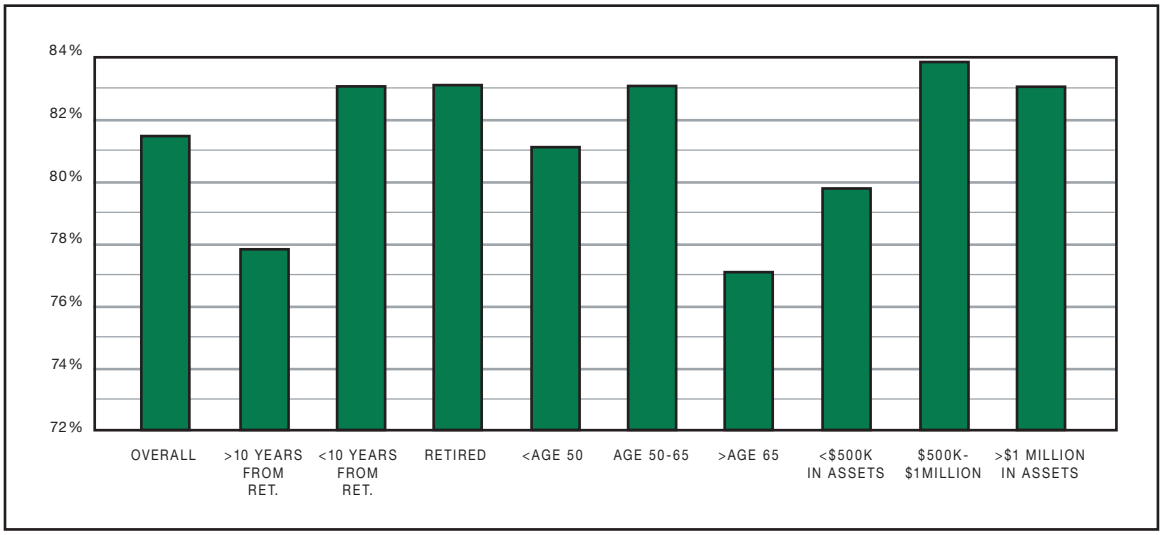
*Exhibit 4- Average Odds of Success In Meeting Lifetime Financial Goals — All Scenarios**



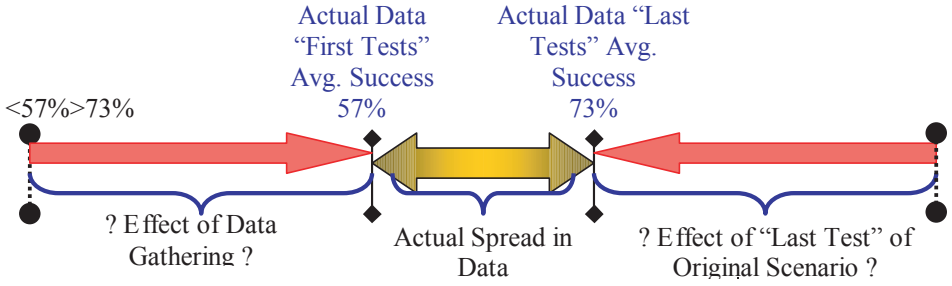
*Note that these results are the average of ALL scenarios tested. Only one test (generally the first) represented their current plan while the "last" was more likely what they accepted after testing several scenarios. Over ten scenarios are tested on average for each investor.

As shown in Exhibit 4, the average probability of success for each demographic group falls within +/- 5% of the overall average of 68.5%. However, if a person thinks about this average, they may come to the conclusion that this really doesn't represent decisions the user has accepted. It includes all the scenarios run by the user. The first time a user comes to our site and inputs their goals is likely the best reflection of what their "current plan" might be. Likewise, the last time a user has calculated their results is more likely to be the plan they accepted based on the information provided by our tools. All the other tests that are run are really "what-ifs" to learn what might be done to improve their odds. In reality only one of them is what the user has really "accepted" as their plan. The average success rate for any investor could be based on 10 or more scenarios. The inputs to the system across these scenarios include both the user's originally entered goals and all the attempts to improve their odds…many of which represented neither their current plan nor their "adopted" plan after using our tools. Using the median rate of success for each category makes little difference.

Exhibit 5- Median Odds of Success of Meeting Lifetime Financial Goals — All Scenarios



In fact, using the median success rate of scenarios actually contracts the range to less than +/- 4 %. To really learn something meaningful from this data, we filtered the results of the scenarios to look at the average success rate based on the first time the user tested their plan vs. the last time the user tested their plan. Certainly, this isn't a pure cleansing of the data. For example, the first time we started tracking the success rate (our "first test") likely included many plans that had already been "improved," thereby skewing the average success rate of "First Tests" upward. Likewise, since sometimes a user will go back and look at their original scenario at some future date, the average success rate of "Last Tests" are likely to be skewed downward.



By understanding the general flow of how investors and advisors use the system, however, we can get what we believe to be more meaningful data. Generally users will flow through various scenarios on our system in the following way:

1) Input current goals or plan inputs from current plan (generally the "First Test").

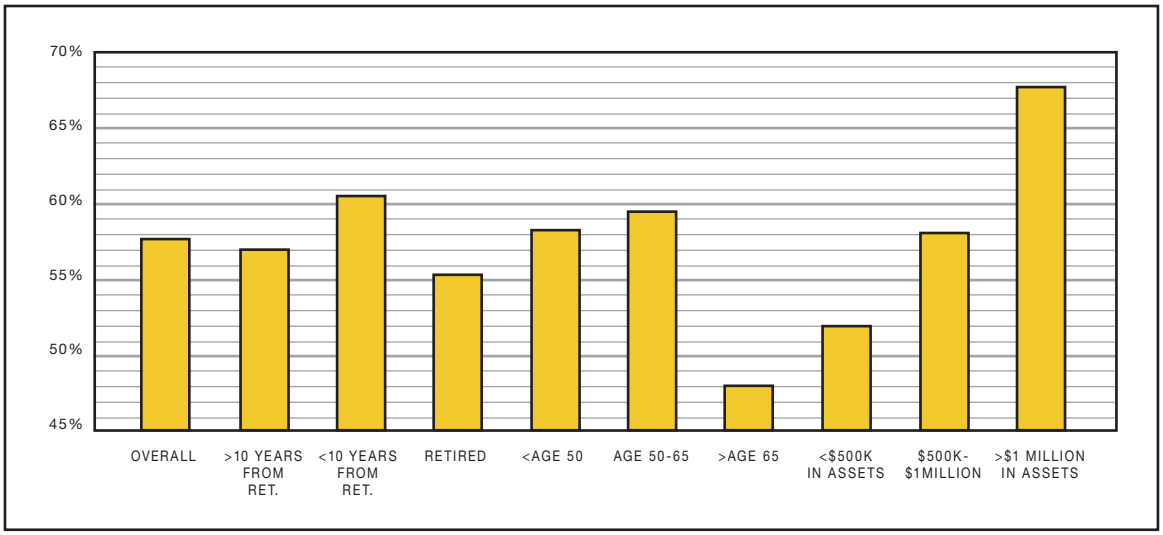
2) "Fiddle" with various inputs like retirement age and income, asset allocation, savings, target estate goal, etc., until the plan has acceptable odds of success relative to the choices being made for all of the other variables.

3) When acceptable, this scenario generally represents the "Last Test" and is updated for market values and minor changes to the overall plan at future dates.

As described above, the average odds of the "First Test" are likely somewhat overstated since many of the existing (and therefore already improved) plans in our system were likely reviewed and logged as a "First Test" through our data capture process. In the coming years the quality of this data will improve as we continue to log new users.

Regardless of this effect, we can start to see some meaningful trends. Notice that the results for the various demographic groups are +/- 10% from the overall average of 58%.

Exhibit 6 – Average Odds of Success in Meeting Lifetime Finacial Goals — "First Tests"



We believe this data supports (at least in directionally sound terms) the following conclusions about the odds of Americans achieving their financial goals.

1) In the absence of probability analysis, investors have between a 48%- 68% chance of meeting their financial goals.

2) The biggest risk is posed to seniors that on average have only a 48 % chance of meeting their financial goals.

3) Investors that have less than $500,000 in assets have only 52% chance of meeting their goals.

4) Millionaires, as might be expected, have the best odds with a 68 % chance of meeting their goals.

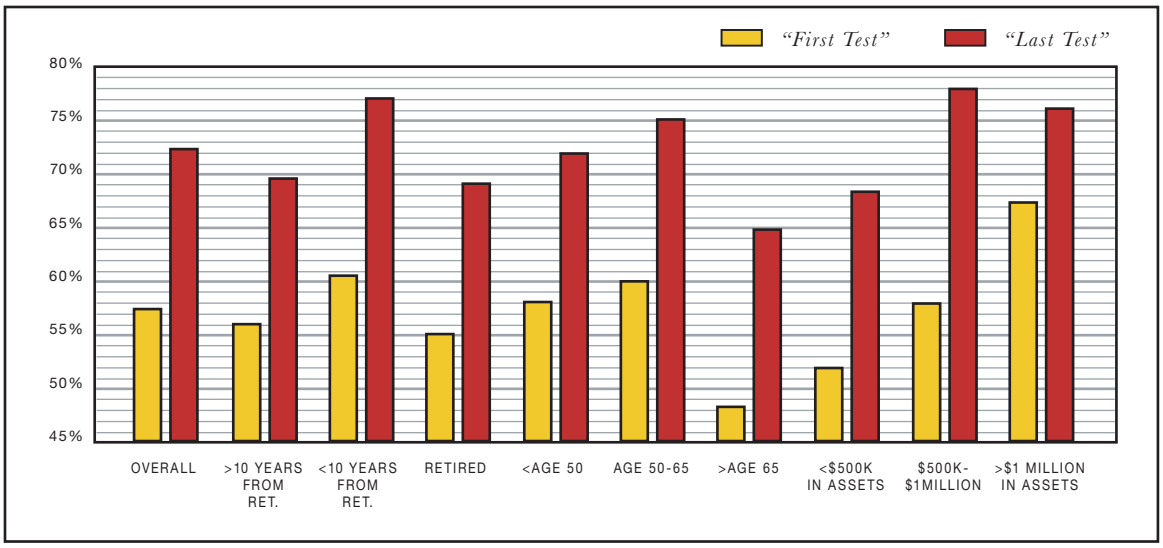
We believe this research exposes a near crisis for many investors. Fortunately, probability analysis is helping to cure investors of at least some of these ills. To think a society such as ours has investors poised for a 32%-52% chance of failing to live their life not as they have hoped, but instead as they have planned, is disappointing to say the least.

It should be noted that we also looked at the average minimum and maximum success rates of scenarios. In reviewing that data, we could not determine any meaningful conclusions.

PROBABILITY ANALYSIS IS MATERIALLY HELPING INVESTORS AND ADVISORS MAKE BETTER DECISIONS.

By looking at the average success of users' "Last Tests," we can get a sense of how much investors are improving their odds by using probability analysis. In every demographic group, the average success rate of the "Last Tests" was higher than the average of "First Tests." This was substantially the case, even though we know that the average of "Last Tests" is likely skewed downward by investors who have gone back and reviewed their original scenarios and that the average of "First Tests" tests are likely to be skewed upward by our data gathering methods.

Exhibit 7 – Average Odds of Success in Meeting Lifetime Finacial Goals — "First Tests" vs. "Last Tests"



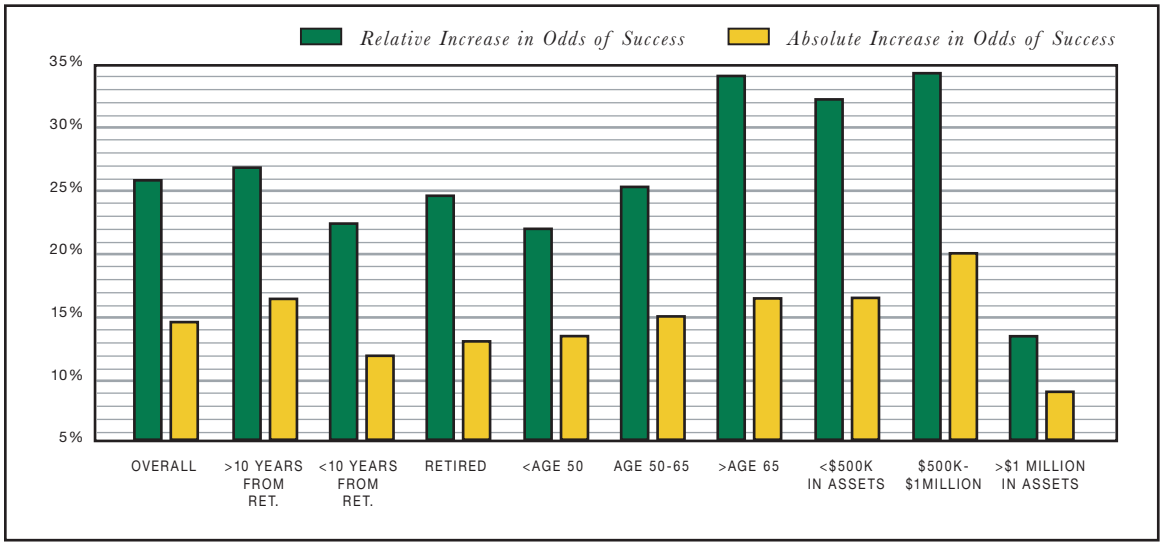
These improvements to investors' financial plans are material and meaningful. Even while accounting for skewed data likely to be moderating the gap, Exhibits 7 and 8 clearly demonstrate significant improvement once investors and their advisors have access to the information exposed by probability analysis.

One question that one could consider is, "What are investors doing to improve their odds having been exposed to the unsatisfactory odds of success in their current plan?" We currently have not assembled a means of assessing this information and the complexity of analyzing it is significant. One thing that is unique about probability analysis is that each investor is different. We sometimes hear questions from users like, "Why doesn't your system tell me how much more I should save?" or other single solution type questions. While the tool makes it easy to estimate a person's odds based on their financial lifestyle

plan, if the tool is being used properly, it is very difficult to see what users do to improve their odds. We hope that most are moderately adjusting multiple variables as opposed to just one plan input like savings or return.

One means of measuring this is to look at the improvement in the odds of success while making it relative by computing the percentage increase in the odds. For example, a 10% improvement in odds is far more significant to a plan that has only a 20% chance of success; here, it represents a 50% improvement in the odds of success. However, a 10% improvement to a plan that already has a 50% chance of success is only a 20% improvement. By measuring these improvements, we can see the overall impact of the value added to investors and their advisors who apply probability analysis.

Exhibit 8 – Relative Value of Probability Analysis
(Increase in Odds of Success and % Improvement between "First Tests" and "Last Tests")



We conclude from this data that probability analysis is materially contributing to investors' odds of living the lifestyle they plan for as they use these methods to make investment and planning choices.

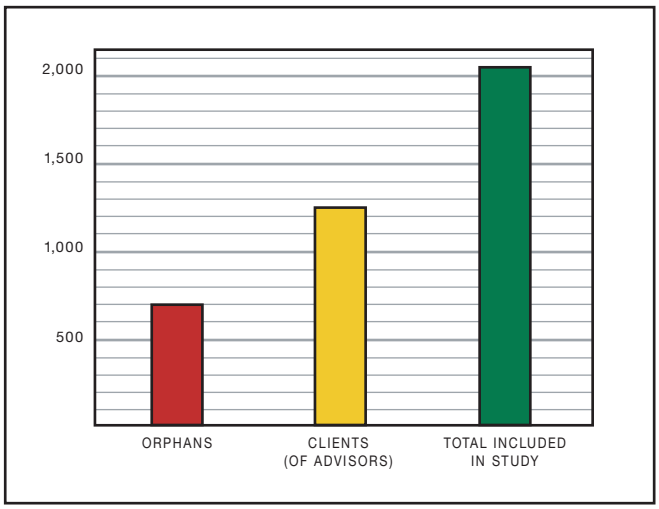
On average, the mere use of probability analysis improves the odds of success by 15 points for a 26% increase in the likelihood of being able to live the lifestyle the investor has planned.

THE IMPACT OF PROFESSIONAL ADVICE

For years the debate about whether financial advisors add value has been waged. We believe that our study provides the first empirical data that would cause one to conclude that investors with professional advisors generally have better odds of meeting their goals than investors that try to invest and plan on their own.

A deeper understanding of the data is helpful in learning how we come to this conclusion. As in all statistics, the data gathered needs to be sufficient to draw a conclusion. Although our study includes over 2,000 investors (761 of which are "orphans"), as we segment the data into smaller demographic groups and then split the data into orphans and clients of advisors, the implied accuracy is likely to decrease.

Exhibit 9 – Number of Investord Included In Study "Orphans" and Clients of Advisors



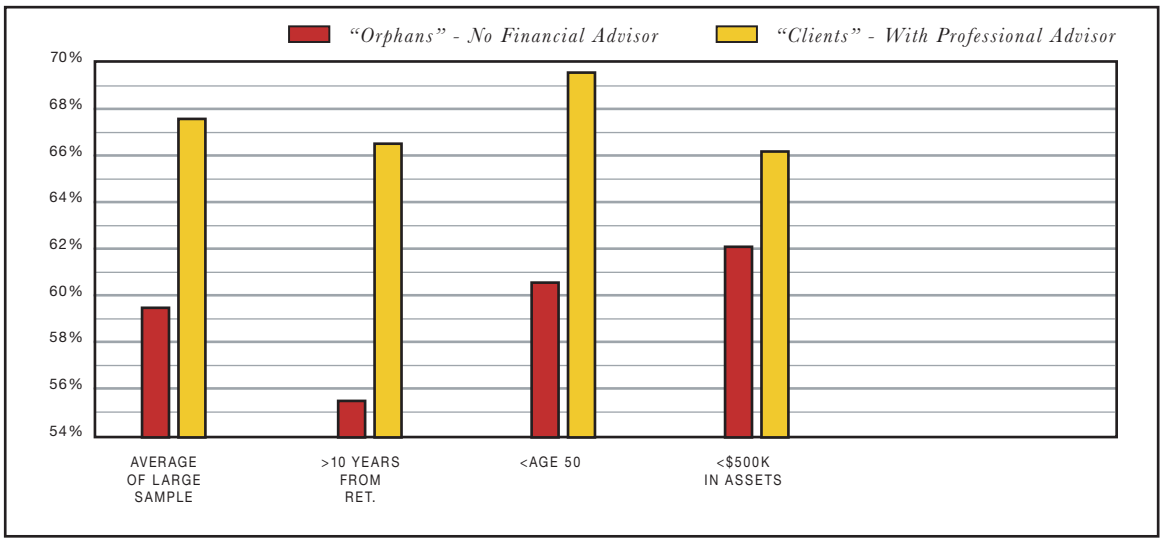
Also, some overall national demographics should not be ignored. It is generally accepted that as investors' wealth increases, so does the likelihood that they will use a professional advisor. Therefore, one should not assume that, because an investor registered to use our system on their own (an orphan) instead of using our site with their advisor, the data from our orphans is by any means a "pure" indication of do-it-yourself investors. To the contrary, many investors register on, and use our system, to check their current advisor's advice. Our user agreement also requires them to review the results with a professional. Quite simply, we know that our demographics are too highly skewed toward investor groups that are more likely to use a professional advisor than the number of registered orphan users data would infer. We estimate that this fact is likely skewing the odds of success upward for orphans potentially significantly.

Another data assumption that might be made is that the success rates for clients of professional advisors may be significantly understated due to the nature of how advisors use our system. Understand that the financial services business is highly competitive and that financial advisors adopt tools like ours first and foremost as a competitive weapon. In doing so, rarely do advisors find a new tool and instantly apply it to all of their clients. To the contrary, often tools like ours are first used in competitive situations for winning potential clients. In those instances, advisors are likely using the tool to demonstrate that the investors' current situation is troublesome. Our usage data absolutely supports this suspicion just by the fact that a miniscule percentage of advisors using our system have anywhere near the number of clients registered on our system that would support even the smallest advisory practices (less that 5%).

Even though our data is likely to be significantly overestimating orphan success rates and underestimating the success rates of clients of advisors, demographic groups with a large sampling (more than 300 of both) clearly demonstrate a statistically significant advantage to investors that use professional advisors.

# of Orphans & Clients	*Small Samples (< 300)*	*Large Samples (> 300)*
DEMOGRAPHIC GROUPS:	RETIRED AGE 50 - 65 > AGE 65 $500 - $ 1 MILLION IN ASSETS $1 MILLION IN ASSETS	> 10 YEARS FROM RETIREMENT < $500,000 IN ASSETS < AGE 50

Exhibit 10 – Average Odds of Success by "Large Sample"



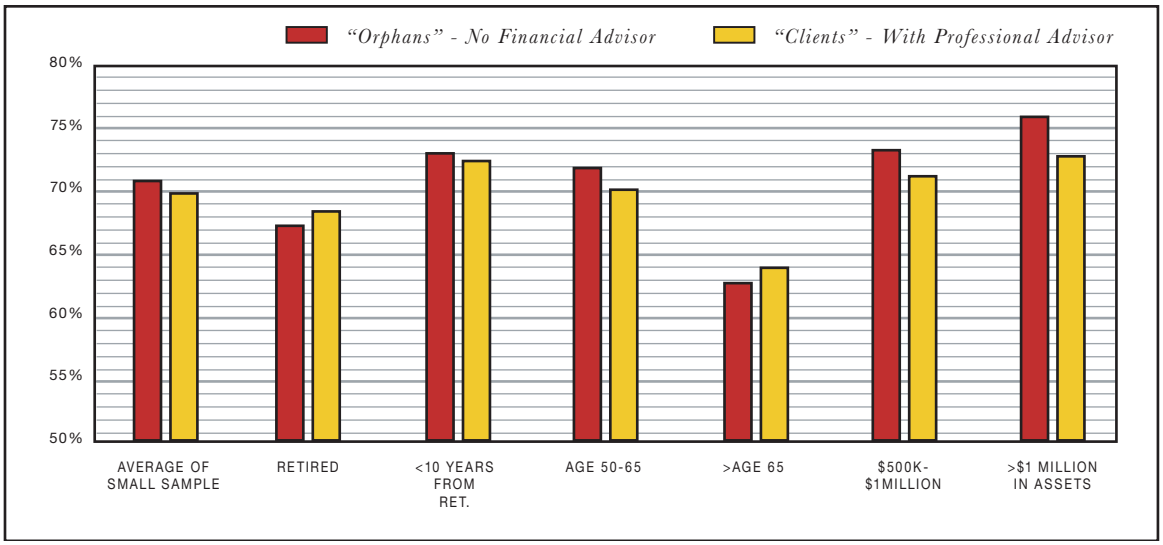
For demographic groups with smaller data samples, the data is less conclusive and may not be statistically significant at this point. What is interesting about this data is the average odds of success in these groups are more extreme than the averages of the demographic groups. Unlike the +/- 5% spread in the average success rates found across all demographic groups, when separated into these large sample demographic groups the average rates of success are more than +/- 7%.

The other issue that we believe to be highly significant is that these material spreads are only found in demographic groups that are likely to include a significant number of true "do-it-yourself" investors. It is generally accepted that the do-it-yourself market is made up of younger and less wealthy investors.

We believe this data clearly demonstrates the value of professional advice is significant.

For demographic groups with smaller data samples, the data shows less materiality in the spreads and could not be concluded as being statistically significant.

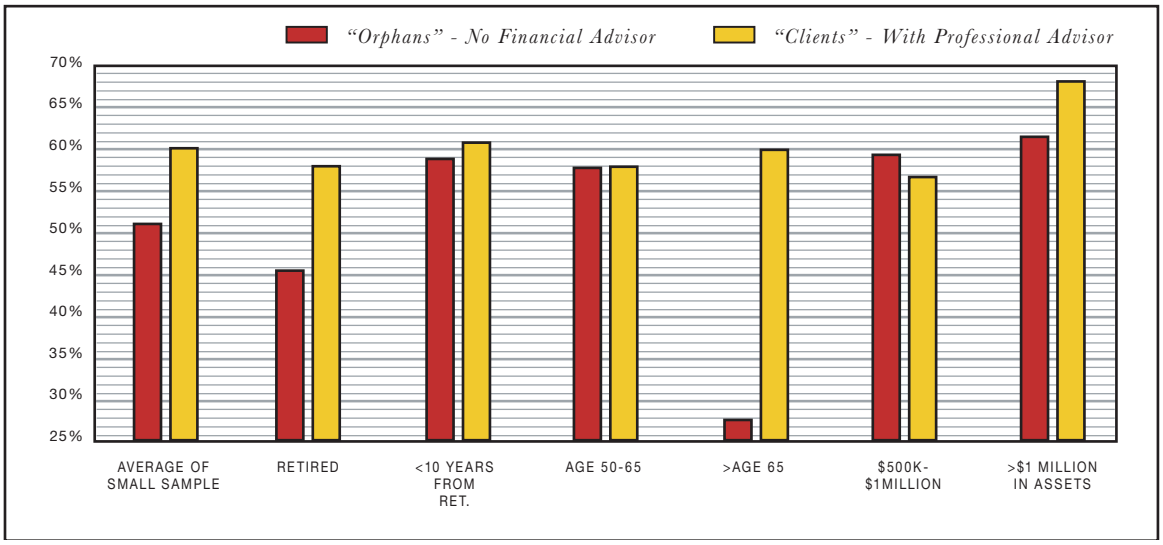
Exhibit 11 – Average Success Rates By Small Sample Demographic Group



Even though the sampling size of this data is small, we believe that there may be some evidence under these smaller groups to support our conclusion that advisors do indeed add significant value. This is especially true when one considers that the only conclusive data in any of the averages of success we have found lies with demographic groups more likely to include some true do-it-yourself investors.

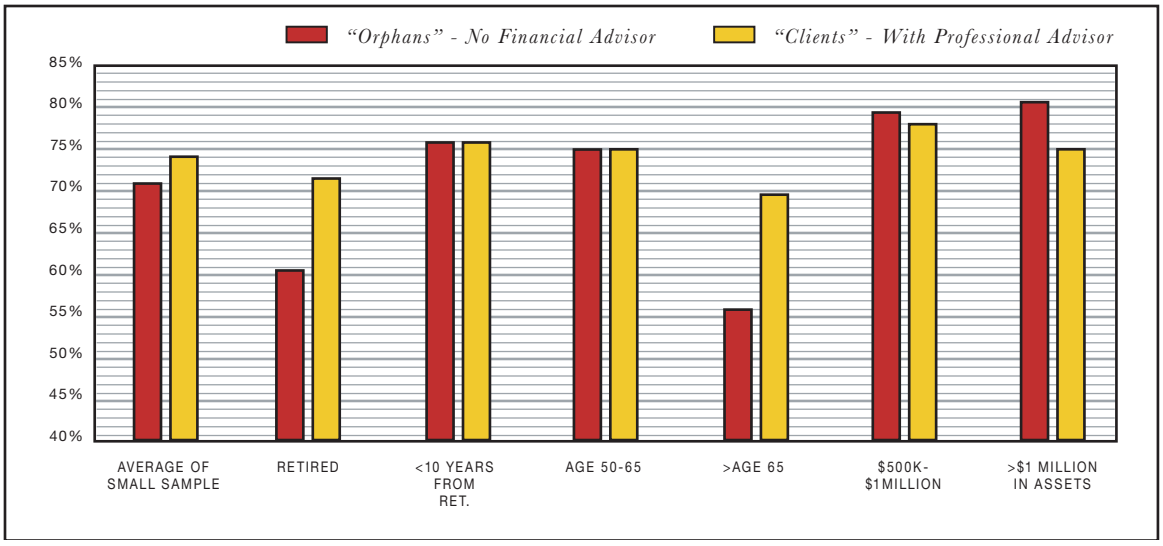
Like the information we garnered by measuring the overall data not segmented by "orphans" and "clients," we thought we might find more information by exploring "First Tests" vs. "Last Tests" In looking at the small sample groups, we find that a comparison of "First Tests" leans toward the conclusion that investors with advisors are better off even though the average odds of success in these groups (Exhibit 10) do not clearly show information that is statistically significant.

Exhibit 12 – Average "First Test" Odds of Success by Small Demographic Group



Similar evidence is shown in these small sampling groups when looking at the "Last Test" results.

Exhibit 13 – Average "Last Test" Success Rates by Small Sample Demographic Group



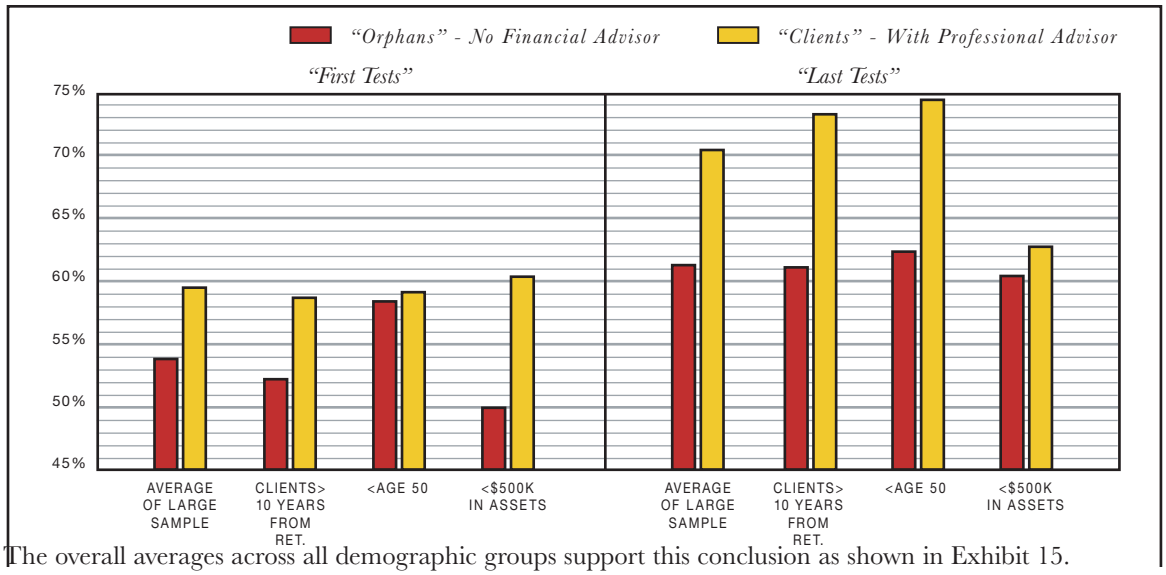
While the data does not show that there is consistently a statistically significant advantage across all demographic groups, we feel it is appropriate to accept that the only significant data identified demonstrates that professional advisors add value.

If one has any doubts of this conclusion, reviewing the "large" demographic groups should dispel them. The evidence supporting this conclusion is very clear in the large samples.

In every large sample demographic group, investors with professional advisors have a greater chance of success.

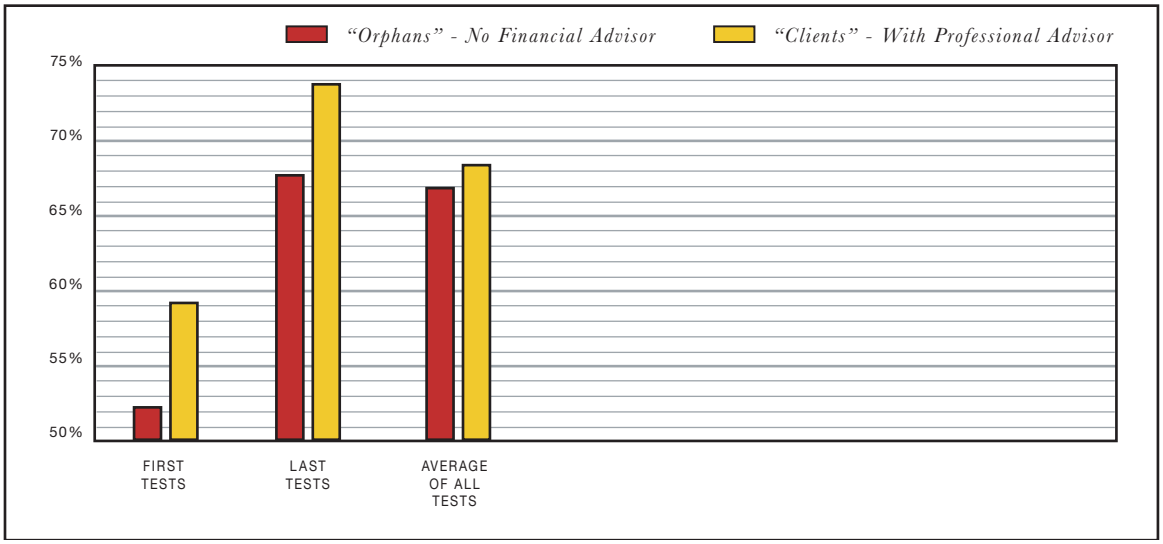
While sometimes the differences are too small to be statistically significant, in each large sample demographic there is a significant advantage to the odds of success in either "First Tests" or "Last Tests."

Exhibit 14 – Average Odds of Success — Large Sample "First" & "Last" Tests



The overall averages across all demographic groups support this conclusion as shown in Exhibit 15.

Exhibit 15 – Average Odds of Success — All Demographic Groups



SUMMARY

While our data is not irrefutably conclusive on the value of professional advice relative to do-it-yourself investors, we believe enough evidence exists to support our conclusion that advisors add significant value.

As we continue to accumulate more data, especially as more advisors begin using our tools for their clients instead of as a competitive weapon, we believe that the statistics will more strongly support our conclusions.

We believe this report exposes the first empirical data of its kind. There is significant evidence that investors have a very high likelihood of failing to meet their goals. We believe that our data also demonstrates that probability analysis and professional advice can have a profound impact in reducing these risks.

Financeware was founded on the belief that the financial services business exists to help investors meet their financial lifestyle goals. This is the fundamental value that professional advisors can bring to their clients. Financeware was designed to support this goal, and we remain focused on our mission toward enabling advisors to deliver this highly valued service.

