

Investment Risk

Vs.

Investment Return

White Paper

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Investment Risk vs. Investment Return White Paper

Preface

My initial Investment Risk vs. Investment Return White Paper was published back in 2013. I wrote the white paper because it became clear to me that most advisors I talked with not only didn't have a full understanding of investment risk, but many didn't have much of an understanding at all.

Since I first published my white paper, the world of investment risk has changed dramatically. In 2013 no one could imagine that the Department of Labor (DOL) would come out with fiduciary regulations that would send shock waves through the industry.

The DOL regulations made both Series 7 licensed advisors and insurance-only licensed agents fiduciaries when it comes to advice given and recommendations made to clients about money in qualified plans or IRAs (individual retirement accounts).

The fiduciary standard thrown upon tens of thousands of advisors who never had the burden before meant that they now needed to figure out how to give (and document) "suitable" advice to clients. In order to give "suitable" advice, advisors MUST properly assess their client's risk tolerance before making insurance, annuity, or investment recommendations.

Also back in 2013, the idea of using software to help not only determine a client's investment risk tolerance but also to help pick suitable products or investments was virtually non-existent.

Today there are a number of risk tolerance software programs in the marketplace. In fact, because I believe so strongly in understanding investment risk and because I believe the right software can be an invaluable tool, in early 2016 I started developing what I believe is the best and most real world risk tolerance software in the industry (OnPointe Risk Analyzer) (click here to learn more).

As we were building the OnPointe Risk Analyzer, I determined that my 2013 investment risk white paper needed an update. I thought I knew investment risk well, but after spending a fortune on experts to put together the software, it furthered my opinion that my paper needed a re-write.

What you will read in the upcoming pages is the re-write/updated version of the white paper. The paper will better explain investment risk than the 2013 version and it will illustrate how using software can really help make suitable recommendations to clients.

Introduction

It's not enough to offer a white paper on investment risk that covers the A, B, Cs of the terms and formulas in the investment industry defining and quantifying risk.

For a paper to be truly useful it has to be practical and that's the goal of this paper. I will not only provide and explain the terms and risk analytics used, but I'll point out in a practical sense the usefulness of each risk analytic and the pros and cons of each when using them to help pick suitable investments for clients.

Additionally, and as I indicated in my 2013 white paper, covering only investment risk is only part of the equation when trying to provide advice to clients. Investment risk is only part of the equation when picking products or investments to use. The other part of the equation includes a discussion about an investment's expected rate of return (ROR). Until recently, expected ROR over time was the primary, and sometimes the sole metric, used by most advisors when making investment recommendations to clients.

It is only when advisors use a combination of expected ROR and investment risk metrics can a full disclosure decision be had about the viability of a particular investment or product. This combination of information is at the core of the [OnPointe Risk Analyzer](#) software which provides advisors with information on both investment risk as well as expected rate of return over time (with stress testing (see page 21)).

My research indicates that the vast majority of investors are taking far too much risk when trying to reach their investment goals. My hope with this white paper is that it will help change the way advisors see risk in the investments they recommend to their clients.

My belief is that "**clients should never take more investment risk than is necessary to reach their investing goals.**"

The ultimate goal of this paper is very simple—help advisors provide better advice.

Why am I a crusader when it comes to understanding investment risk?

Most people don't know that I avoided giving advice on securities for the first 13 years of my career. Why? Because I could never find an investment platform that didn't crash when the stock market crashed. Therefore, I stuck to products like FIAs (fixed indexed annuities) and IULs (indexed universal life insurance). For clients who wanted advice on what to do with money in the stock market, I had to tell them that I wasn't the person to give them that advice.

Then, in the summer of 2012, I ran into an old friend of mine who I hadn't seen in a while. He wanted to tell me how he had turned his RIA from one that was focused on clients to one that was focused on educating advisors to use their unique money management platform. That platform can be found at www.pomplanning.net.

He said I should review his platform to see if the advisors who receive my newsletters could benefit by learning about it.

I told him that I've been pitched every platform known to man/woman over the last several years and that I wasn't really interested. He said that he's been reading my newsletters and understands that I don't like the idea of the stock market tanking like it has twice in recent history and that he was sure I would like his platform.

So my friend gave me all the information on his platform. I took that information and gave it to two experts in the investment field and had them give it a look. To make a long story short, the experts were blown away with the model and were somewhat shocked at the money managers my friend had on his platform.

The platform is based on offering clients low drawdown risk/low Beta** tactically managed strategies.

-The top three "conservative" strategies have an average Beta of .28* with an average annual return going back ten years of 10.14%* net of fees.

-The top three "moderate-risk" strategies have a Beta of .46* with an average annual return going back ten years of 19.24%* net of fees.

*Numbers year-ending 2016. [Click here](#) to download a summary of the returns and risk metrics of this platform.

**See page 8 where I explain Beta.

After I was done with a review of my friend's platform, I told him I, too, was blown away and that I not only thought the advisors who receive my e-newsletters would like to learn about his platform but that it was really my duty to get it out to them.

Therefore, I started doing newsletters in the summer of 2012 to let advisors know about the POM Planning platform. It wasn't so much that advisors had to use my friend's platform; it was about knowing that there are other alternatives out there that advisors need to know about so they can choose to learn about them and, potentially, bring them to their clients.

To my surprise, since the summer of 2012, over 200 advisors have become licensed with or moved their license to use the www.pomplanning.net platform and have gathered over \$750 million in AUM (Assets Under Management).

To conclude this introduction, it is because of my belief that clients are taking more risk than they should to reach their financial goals and because far too many financial professionals and insurance agents don't fully understand risk like they should in order to give suitable recommendations to client that I put together this White Paper.

I hope you find this White Paper helpful; and if you are interested in using a shorter client piece that covers similar material, feel free to e-mail me at roccy@thewpi.org to learn how you can get your hands on it.

Quantifying Measures of Risk (in investments)

The following material is not for the faint of heart. Some of it will be a little overly technical, but I hope it will be fully understandable. I will do the best I can to explain things in plain English vs. industry speak.

To me, investing really boils down to whether you and your clients agree with the following statement:

**Investors should take the *least* amount of risk
to reach their investment goals**

If you do not agree with that statement, then you really have no business reading or caring about what's in this White Paper.

Put another way in a question form: Why would someone invest in something more risky if the potential return is the same as a lower-risk investment? The logical answer from any sane person would be they wouldn't.

Working on the assumption that it is always better to invest in something less risky than more risky if the potential return is the same, what needs to be done next is figure out how to measure the risk of an investment.

It sounds like a simple enough task, right? It should be easy to measure the risk of an investment. Sadly, that is not the case. There are more ways to measure the risk of an investment than you can imagine.

If I tried to cover them all in this White Paper, it would be 300+ pages long. Therefore, I have chosen to discuss a few of the main ways the investment industry measures risk and a few that should be new to most readers.

The following are the risk-measuring formulas and/or styles that I'll be covering:, Standard Deviation, Downside Deviation, Sortino Ratio, Sharpe Ratio, Value at Risk (VaR), Calmar Ratio, and R-Squared.

Terms

Before I get into the number of ways to quantify risk, I wanted to start by explaining a few other terms. Let's start with Risk Tolerance.

Risk Tolerance—risk tolerance is someone's personal attitude about investment risk, e.g., how comfortable is someone with dramatic losses in their investment portfolio when the stock market goes negative.

For example, a person who doesn't like to lose more than 10% of their money at any given time in the stock market has a fairly low risk tolerance. On the other hand, someone who doesn't mind losing 35%+ at any given time in the stock market has a fairly high risk tolerance.

Risk tolerance is somewhat of an emotional indicator that is driven by someone's aversion to losing money in the stock market.

Risk Capacity—risk capacity is defined differently than risk tolerance. A classic definition of risk capacity is the amount of risk you need to take in order to reach your investment goals (either asset accumulation, income in retirement, or both).

Risk capacity is supposed to be more of a facts and circumstance determination that takes emotion out of the equation.

The definition sounds simple enough, but when applying it, the definition seems incongruent (not compatible) to what happens in the real world.

Risk tolerance and risk capacity do not always align.

An investor might have a high risk tolerance (doesn't mind big losses in the stock market), but because of a limited amount of funds available to generate needed retirement income, there is a low risk capacity. In this circumstance, it would be wise to err on the side of caution and use more conservative investments.

Conversely, an investor might have a low risk tolerance (wants to avoid big losses in the stock market) but a high risk capacity due to an excess of assets needed to generate the needed retirement income. In this circumstance, you could argue that it would make sense to invest a little more aggressively.

	Risk Capacity		
	High	Low	
Risk Tolerance	High	No Action Required*	Consider Reallocating to More Conservative
	Low	Consider Reallocating to More Aggressive	No Action Required*

*The no action required boxes are only accurate if investors have an investment mix that matches their risk tolerance and risk capacity.

The previous box is something that can be used as a guide (preferably along with risk tolerance software) to determine whether clients have their money in the right types of investments to match both their risk tolerance and risk capacity.

Unfortunately, the vast majority of investors do not have investments that match their risk tolerance/risk capacity which is why investment risk software is needed.

Software (like the [OnPointe Risk Analyzer](#)) can be helpful in determining/fine tuning someone's risk tolerance/capacity and can be used to help match up investments that are in line with the investor's personal risk score that was determined by the software.

Correlation—correlation is a statistic that measures the degree to which two securities move in relation to each other. Correlation is computed into what is known as the correlation coefficient, which has value that must fall between -1 and 1.

A perfect positive correlation means that the correlation coefficient is exactly 1. This implies that as one security moves, either up or down, the other security moves in lockstep, in the same direction. A perfect negative correlation means that two assets move in opposite directions, while a zero correlation implies no relationship at all.

For example, large-cap mutual funds generally have a high positive correlation to the market as a whole (represented by most using the S&P 500 stock index), very close to 1. Small-cap stocks have a positive correlation to that same index, but it is not as high, generally a correlation of around 0.8.

Beta—many people think Beta is a risk measuring tool. Technically, Beta is a volatility indicator, not a risk indicator.

As it relates to investments and finance, the Beta of an investment is a number describing the correlated volatility of an asset in relation to the volatility of the benchmark that said asset is being compared to.

Just as correlation typically uses the S&P 500 for comparison, most use the S&P as the benchmark to measure the volatility of other investments against. By definition, the benchmark itself has a Beta of 1.0. Investments you compare to the benchmark are ranked according to how much they deviate (vary) from the benchmark.

If an investment has a Beta of 0.5, it's 50% less volatile than the S&P 500. If an investment has a Beta of say 1.3, it's 30% more volatile than the S&P.

As stated, while volatility doesn't exactly equate risk, many in the industry will use Beta as a risk indicator (and it makes some sense as long as you are not using Beta as the sole indicator of risk).

Let's look at an example of both Beta and correlation to help with their understanding.

The S&P has a Beta of 1 and is 100% correlated to the market as a whole.

A typical 60/40 mix of stocks to bonds has a correlation of .99 (going back 10 years) but a Beta of only .62.

What does that mean? It means the a 60/40 mix goes up and down (is correlated) with the market as a whole, but it's less volatile (meaning when it goes up and down it doesn't go up and down as severely as the market as a whole).

Rate of Return (average ROR) vs. **Compound Annual Growth Rate** (CAGR)

While this seems elementary, there is a big difference between calculating the average ROR vs. the compound annual growth rate (CAGR). The ROR is the gain or loss on an investment over a specified time period, expressed as a percentage of the investment's cost.

The compound annual growth rate (CAGR) is the mean annual growth rate of an investment over a specified period of time longer than one year.

The best way to explain the difference is to use an example.

If you have \$100,000 and in year one you generate a 25% return, you have \$125,000.

If you lose 25% in year two, what do you have? \$100,000? Nope.

$\$125,000 \times .25 = \$31,250$. $\$125,000 - \$31,250 = \underline{\$93,750}$

If you averaged the ROR you'd get zero (25% - 25% = 0%). However, in real life, you only realize the CAGR, not the average annual return many brokers and fund managers claim. The CAGR for each of the two years is -3.125%.

Risk Metrics

Standard Deviation (SD)—SD seems to be one of, if not, the most used measures of investment risk. SD is a formula-driven volatility index; and while I'm not going to go over the formula in this material, I did want to include a formal definition of SD along with the formula.

SD is a statistical measure of the distance a quantity is likely to lie from its average value. In finance, standard deviation is applied to the annual rate of return of an investment to measure the investment's volatility or "risk."

The definition is: $\text{StdDev}(r) = [1/n * (r_i - r_{ave})^2]^{1/2}$

Where the terms r_i are actual values of the investment's annual rate of return taken over several years, n is the number of values of r_i used; and r_{ave} is the average value of the r_i .

Makes sense right?

I will do my best below to explain SD, but there are a few YouTube videos that do a good job of explaining it. If you want to view them, please [click here](#) to view [video one](#) for a more detailed explanation including how to use the above formula and/or [click here](#) to view [video two](#) (a more lay person's explanation using investments as an example in the video).

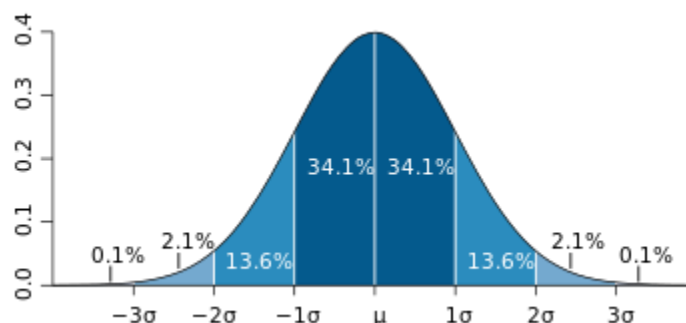
SD essentially is trying to figure out the likelihood of an outcome and assigning it a mathematical probability that the outcome will fall within a specified area. When you run the numbers and plot them on a graph, you'd end up with a bell curve like you used to see in school. Most of the students would get Cs, fewer would get Bs and Ds, and fewer yet would get As and Fs.

As you read this, keep in mind that you are not going to have to calculate the SD of an investment. The SD (the number) will be provided to you or you'll have access to software like the [OnPointe Risk Software](#) that will calculate it for you.

Let me try to apply this bell curve idea to SD. Let's assume the SD of the S&P 500 is **15** (which is about average for the S&P 500 going back 10+ years).

Let's assume the "expected" rate of return of the S&P 500 is 8% (which is about the 20-year average return).

Let me digress for a moment and talk about the 67–95–99.7 rule, also known as the three-sigma rule or empirical rule. This rule states that nearly all values lie within three "standard deviations" of the mean in a normal distribution (your bell curve).



What this rule means and what the bell curve shows is that there is a 67% chance that the return (getting back to the investment example) of the S&P 500 will be within "one deviation."

Applying this to the S&P 500 index using an expected rate of return of 8% with an SD of 15, there is a 67% chance that the return in any given year of the S&P 500 will be within 15% higher or 15% lower than the expected rate of return. When I use 15%, I don't mean 15% of 8%.

The return of the S&P 500 using one deviation should have a 67% chance to return between **23%** (8%+15%) and **-7%** (8%-15%) (with the average (mean) over time being an 8% return).

What you will find ironic after reading this material is that the general public has accepted this risk as acceptable seemingly without question. If John Bogel, the founder of Vanguard, says that 80% of the mutual funds don't beat the indexes, then it makes sense that the average investor should grow their wealth in an S&P 500 index fund. I disagree, and I think you will too after reading this White Paper.

What about the second and third deviations? SD has traditionally had three (3) deviations.

The second deviation has a 95% probability of happening. That means there is a 95% chance that the S&P 500 will generate a return in any given year of between 38% (8%+15%+15%) and -22% (8%-15%-15%).

The third deviation has a 99.7% probability of happening. That means there is a 99.7% chance that the S&P 500 will generate a return in any given year of between 53% (8%+15%+15%+15%) and -37% (8%-15%-15%-15%).

Put another way, an investor in the S&P 500 has a 33% chance that the return will NOT be within one deviation (-7% to +23%). Or in other words, there is a 33% chance that it could be more than a -7% return or +23% in any given year. Does that sound like a low-risk way to grow money?

Now, when has that happened recently in the stock market (more than one deviation)?
1) 2000-2002 when the S&P 500 dropped -46% in less than two years, 2) Again from the highs of 2007 to the lows of 2009 when the S&P 500 dropped -59%.

Do you see a problem with strictly adhering to the use of SD as “the” indicator for risk? What SD doesn’t take into account is a unique event that may happen in any given year—an event like the tech bubble, the mortgage meltdown, or, potentially, a third-world country with nuclear weapons doing something really stupid.

Many experts list the following as problems with SD.

-It includes variation both above the mean and below the mean. This means that returns that spike heavily above the mean are considered bad. This behavior does not, however, model the risk preferences of most investors. Most investors only consider variation below an acceptable return as “bad” risk.

-It assumes that the returns are symmetric. This is not valid for exotic investment techniques like options or short selling.

-It assumes that all investors, from retirees to hedge fund managers, have the same definition of risk (which is not the case).

It is because of these limitations with SD that I don’t think it should be used as “the” primary indicator of risk/volatility.

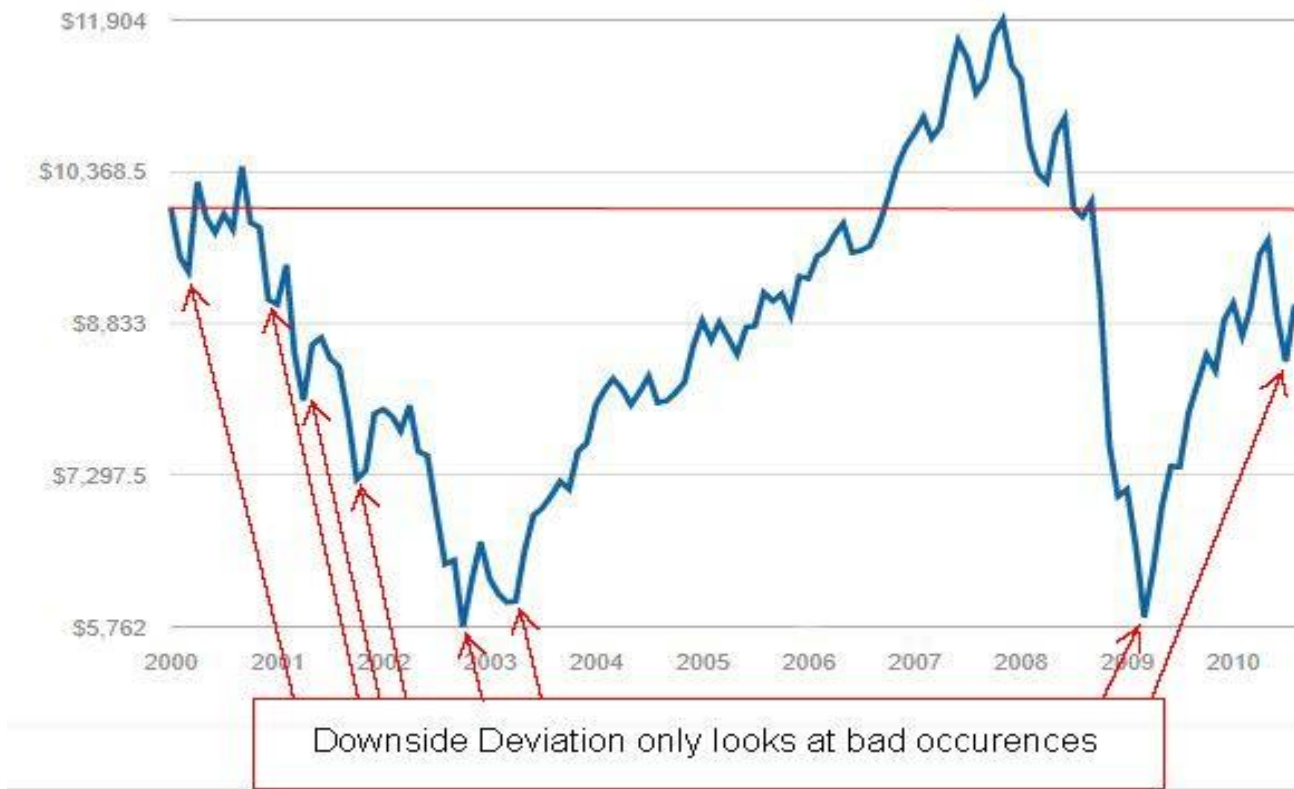
The bottom line is that the higher the SD, the more volatile/risky an investment is.

Downside Deviation (DD)—DD measures the price volatility of a security; but unlike standard deviation, downside deviation isolates the downside movement by *only* calculating the times when the price falls below a defined Minimum Acceptable Return (MAR). DD, unlike standard deviation, doesn’t punish a fund manager for having rapid positive returns (which to me makes logical sense and is the reason I like DD much better than standard deviation).

One deviation encompasses 67% of the downside return occurrences; two deviations encompass 95% of the downside return occurrences; and three deviations encompass 99% of the downside return occurrences.

EXAMPLE: Using a 10% MAR, the annual DD of the SPY from 2000-2010 is -13.8%. This means that when the returns fall below 10%:

1. 67% (1 DD) of the time the returns would range between -3.8% and 10%;
2. 95% (2 DDs) of the time the returns would range between -17.6% and 10%; and
3. 99% (3 DDs) of the time the returns would range between -31.4% and 10%.



*The above chart is from the [OnPointe Risk Software](#).

What are the pros and cons of using DD?

Pros:

-DD *isolates* the negative portion of the volatility (*below the red line in the chart example*) to ensure that volatility to the upside does not penalize the manager/security.

-DD uses historical data to provide a glimpse at the likelihood and possible ranges of return when an investment underperforms.

-DD allows flexibility: You can change the MAR depending on the desired risk parameters. For example, you could set the MAR at “0” if you only want to measure the times when the returns fall below 0 or have the MAR change to match a “risk-free” asset (i.e., 3-month T-bills) that moves over time.

Cons:

-The calculation and understanding of the calculated numbers are more complex.

Sortino Ratio—the Sortino Ratio is another popular method for calculating the risk of an investment.

The Sortino Ratio *combines* MAR (Minimum Acceptable Return) and downside deviation (DD) to provide a risk-return metric relevant to investors. The numerator of the ratio has average returns on the portfolio for a given period minus the MAR; the denominator contains risk, defined as the DD on the portfolio. Clear? Clear as mud?

Let's look at an example. Suppose the average yearly return on a portfolio is 40% and the MAR is 27% (returns you can find with hedge funds). The excess return is therefore 13%. If the DD is 8.7%, the Sortino Ratio is 1.5 (13/8.7).

The ratio answers the question: How much has the portfolio generated in excess of MAR *per unit of downside risk*?

The higher the excess returns above MAR, after controlling for DD, the better it is for the investor. The excess returns will help the portfolio cushion returns lower than MAR and yet achieve the desired value over an investment time frame.

How can you use the ratio? Like several of these formula-driven indicators, the ratio can be initially used for fund selection (like picking a fund with a ratio that has generated acceptable average returns over time).

Suppose an investor decides to buy active mid-cap funds. He/she can rank mid-cap funds based on the Sortino Ratio and, preferably, pick the one that has the highest ratio. If the fund's risk-return characteristics do not change significantly in the future, the chances of achieving the desired portfolio value would be high.

For many, the Sortino Ratio is more appealing than the seemingly more popular standard deviation because it relates the portfolio's excess returns to the downside risk only. The experts say the ratio is especially useful in measuring risk-adjusted returns for portfolios that have negatively skewed strategies (strategies that carry frequent small gains and infrequent large losses).

Investors should, however, realize that the Sortino Ratio is highly sensitive to data used to calculate DD. If an investor takes data for a period when the markets were trending up, the DD would be low; and the Sortino Ratio would be consequently higher. This problem can be mitigated by simulating returns based on past experience. Investors can instead use data for periods that match with their investment horizon, such as a five-year investment horizon requiring data set for the past five years. The ratio should then be more useful.

Sharpe Ratio—the Sharpe Ratio was created to answer the question: “Given the same amount of risk,” which investment provides me with the highest reward?

To do this, the Sharpe Ratio balances the *returns in excess of a risk-free benchmark* with the SD of the return set. The risk-free benchmark is traditionally called the Risk Free Rate (RFR) of return. Generally, the RFR will be the average yield of a risk-free investment (such as a TBill) over the same time span as the investment. While the rate of return on treasuries is low today, if you surf the web, you’ll find most examples of calculating the Sharpe Ratio use a 5% number for the RFR of return.

Also, as part of the formula to calculate the Sharpe Ratio is the SD. It’s interesting how SD is used in several of the other theories to calculate risk.

Let’s go ahead and look at an example of how to calculate the Sharpe Ratio.

The Sharpe Ratio = Expected Return – Risk Free Rate / Standard Deviation

Let’s assume that you expect your stock portfolio to return 12% next year. If returns on risk-free treasury notes are, say, 5%, and your portfolio carries a 0.06 SD, then from the formula above we can calculate that the Sharpe Ratio for your portfolio is:

$$(0.12 - 0.05)/0.06 = 1.17$$

This means that for every point of return, you are shouldering 1.17 "units" of risk.

Put another way, if portfolio X generates a 10% return with a 1.25 Sharpe Ratio and portfolio Y also generates a 10% return with a 1.00 Sharpe Ratio, then X is the better portfolio because it achieves the same return with less risk.

The higher the Sharpe Ratio is, the more return the investor is getting *per unit of risk*.

The lower the Sharpe Ratio, is the more risk the investor is shouldering to earn additional returns. Thus, the Sharpe Ratio ultimately "levels the playing field" among portfolios by indicating which are shouldering excessive risk.

I like what Sharpe is trying to do. Unfortunately, Sharpe is penalizing managers for upside volatility (gains), which we want all of our managers to have. Just because many of the average advisors use this does not mean it is accurate. Focusing more on DD and Sortino ratio are an advisor’s best bet to isolate downside volatility and will create a more accurate picture of times of downside pressure.

Problems with the Sharpe Ratio

In addition to relying only on historical returns, one problem with the Sharpe Ratio is that illiquid investments lower a portfolio’s SD (because those investments appear to be less volatile). The ratio is also distorted if the investments don’t have a normal distribution of returns.

The bigger problem is that the Sharpe Ratio fails to distinguish between upside and downside fluctuations. The Sharpe Ratio is a measure of volatility, not risk (drawdown). The two are not necessarily synonymous. In terms of the risk calculation employed in the Sharpe Ratio (i.e., the SD of return), upside and downside fluctuations are considered equally bad. Thus, the Sharpe Ratio would penalize an investment which exhibited sporadic sharp increases in equity, even if losses were small.

The experts say that the Sharpe Ratio works better for an investment that is liquid and has normally distributed returns, such as the S&P 500 Spiders.

Comparing Sortino Ratio to the Sharpe Ratio

I found the following comparison on the Internet that I thought would be helpful to readers.

The Sortino Ratio is similar to the Sharpe Ratio; but its denominator focuses solely on the downside volatility, which is the *volatility that concerns most investors*. Market-neutral funds claim to be able to give their investors all the upside but limited downside. If that is the case, the Sortino Ratio would help them validate that claim. Unfortunately, while Sortino Ratio provides for a more accurate description volatility (isolation of downside), volatility and drawdowns are different.

Value at Risk (VaR or sometimes VAR)

VaR has been called the "new science of risk management" (as compared to the oldies but goodies that were just discussed).

When investors think about risk, they think about the odds of losing money, and VaR is based on that common sense fact. By assuming investors care about the odds of a really big loss, VaR answers the question, "What is my worst-case scenario?" or "How much could I lose in a really bad month?"

A VaR statistic has three components: a time period, a confidence level, and a loss amount (or loss percentage). VaR answers the following questions:

- What is the most I can - with a 95% or 99% level of confidence - expect to lose in dollars over the next month?
- What is the maximum percentage I can - with 95% or 99% confidence - expect to lose over the next year?

You can see that the "VaR question" has three elements: a relatively high level of confidence (typically either 95% or 99%), a time period (a day, a month or a year), and an estimate of investment loss (expressed either in dollars or percentage terms).

There are three methods of calculating VAR:

- Historical method
- Variance-covariance method
- Monte Carlo simulation

The historical method simply re-organizes “actual” historical returns, putting them in order from worst to best. It then assumes that history will repeat itself, from a risk perspective.

This variance-covariance method assumes that stock returns are normally distributed. In other words, it requires that we estimate only two factors - an expected (or average) return and a standard deviation - which allow us to plot a normal distribution curve.

The Monte Carlo simulation method involves developing a model for future stock price returns and running multiple hypothetical trials through the model. A Monte Carlo simulation refers to any method that randomly generates trials, but by itself does not tell us anything about the underlying methodology.

Which one is the most real world? We use the historical method in the [OnPointe Risk Analyzer](#) because it at least uses “actual” returns as its basis for measurement and doesn’t assume history will repeat itself. Stock market returns, as we know are not normally distributed, and using Monte Carlo will surely generate some patterns that are on the edge of reality.

Calmar Ratio—the Calmar Ratio is an important statistic used to measure investment return vs. drawdown risk. It enables an investor to see the potential opportunity gain vs. opportunity loss of investing with a particular manager.

The Calmar Ratio is calculated by taking an investment’s CAGR (typically over the last 3 years) divided by the investment’s maximum drawdown.

The lower the Calmar Ratio, the worse the investment performed on a risk-adjusted basis over the specified time period. The higher the Calmar Ratio, the better it performed.

Let’s look at an example that will show the usefulness of this ratio. Assume you have a client who is investing \$1,000,000. The question is between investment A and B.

A has the following metrics: CAGR = 30%; maximum drawdown = 5%, Calmar Ratio = 6

B has the following metrics: CAGR = 50%; maximum drawdown = 25%, Calmar Ratio = 2

If the investor used investment A, the upside gain could be \$300,000 (30%) and the downside could be a loss of \$50,000 (5%).

If the investor used investment B, the upside gain could be \$500,000 (50%) but the downside could be a loss of \$250,000 (25%).

So, investment A doesn’t have quite the same upside, but the downside is much, much less. Therefore, the Calmar Ratio is much higher for investment one (A is a more sensible risk-adjusted investment).

When helping an investor choose appropriate investments, with an appropriate risk-reward profile that meets your investment objective, the Calmar Ratio should be analyzed in conjunction with other risk measurements, such as Sharpe Ratio, Sortino Ratio, Downside Deviation, etc.

R-Squared—R-squared is a statistical analysis of the practical use and trustworthiness of Beta (and by extension alpha) correlations of securities.

Put another way, R-squared is a statistical measure that represents the percentage of a fund or security's movements that can be explained by movements in a benchmark index.

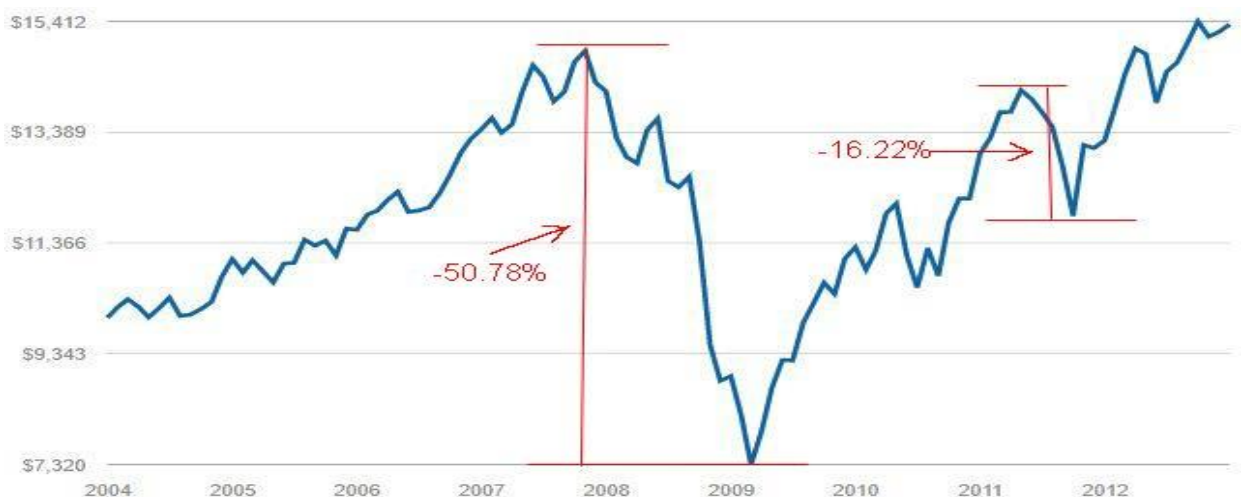
Whereas correlation measures the link between any two securities, R-squared measures one security against a set benchmark or index, such as comparing a bond to an aggregate bond index versus comparing it to the S&P 500.

R-squared defines the practical value of correlations on a percent scale from 0 to 100. A high R-squared (from 85 to 100) indicates that the performance pattern of the security is closely linked to the chosen index. A low R-squared (anything below 70) indicates that there is very little connection between the performance pattern of the security and the index.

While both correlation and R-squared seem similar in concept, the measuring outcome can be quite different. You could have a stock or mutual fund that has a correlation of 0.50 with the S&P 500 but has an R-squared of say 25%.

Beta and R-squared are related but different measures. A mutual fund with a high R-squared correlates highly with a benchmark. If the Beta is also high, it may produce higher returns than the benchmark, particularly in bull markets. R-squared measures how closely each change in the price of an asset is correlated to a benchmark. Beta measures how large those price changes are, in relation to a benchmark. Used together, R-squared and Beta can give investors a good indication of the performance of asset managers.

Defining “Maximum Drawdown”— maximum drawdown of a period of time is defined as the maximum percentage loss from a peak to a trough after the peak. The following chart of SPY (SPDR S&P 500 ETF) between 2005 to the end of 2012 shows the maximum drawdown of this period (-50.78% (monthly average number)) as well as the secondary large drawdown (-16.22% (monthly average number)) in 2011. The drawdown valuations are monthly valued (which is what most software uses for valuation purposes. If daily valued, the drawdowns would be -55.2% and -18.6% respectively).



In English please...ok, so, from 2005 to 2012, the S&P 500 generated an average rate of return of 4.9%. To generate that ROR, the client had to risk a 51% loss over that time frame. If you said to your clients that you could help them achieve an average rate of return of 4.9% and that they only had to risk 51% of their money to do so, would they take that investment? NO WAY!

Also, the problem with losses is that it's not good enough to earn the same rate of return in a positive direction the year following a loss. That will not get the investor back to even. Look at the returns an investor would need to earn after a loss to get back to the same value before the loss (and this does not include fees).

Amount of Loss	% Gain Needed to Recover the Following Year
20%	25%
30%	42.9%
40%	66.7%
50%	100%

For example, if an investor started with \$100,000 and had losses of 50%, what would the investor need to earn the next year to get back to the starting balance? 100%. Many people think the percentage is 50% (it sort of logically makes sense, but it's not correct).

$\$100,000 \times -50\% = \$50,000$ (new account value after loss).

$\$50,000 \times +50\% = \$25,000$ (leaving an account balance of \$75,000, or \$25,000 short of the starting balance). As the chart indicates, the investor would need a return of 100% on their money to get back to the starting balance.

It is this key point that drives me to seek out wealth-building tools designed not to go backwards (but still offering good upside gain when the market is moving in a positive direction).

Here is an interesting chart of a few of the more popular mutual funds. The chart shows their maximum drawdown numbers and the required rate of return to break even.

Fund Name	Maximum Drawdown	Return Required To Break Even
Fidelity Contrafund	-46.34%	86%
American Funds Growth Fund of America	-48.80%	95%
Franklin Income Fund	-39.07%	64%

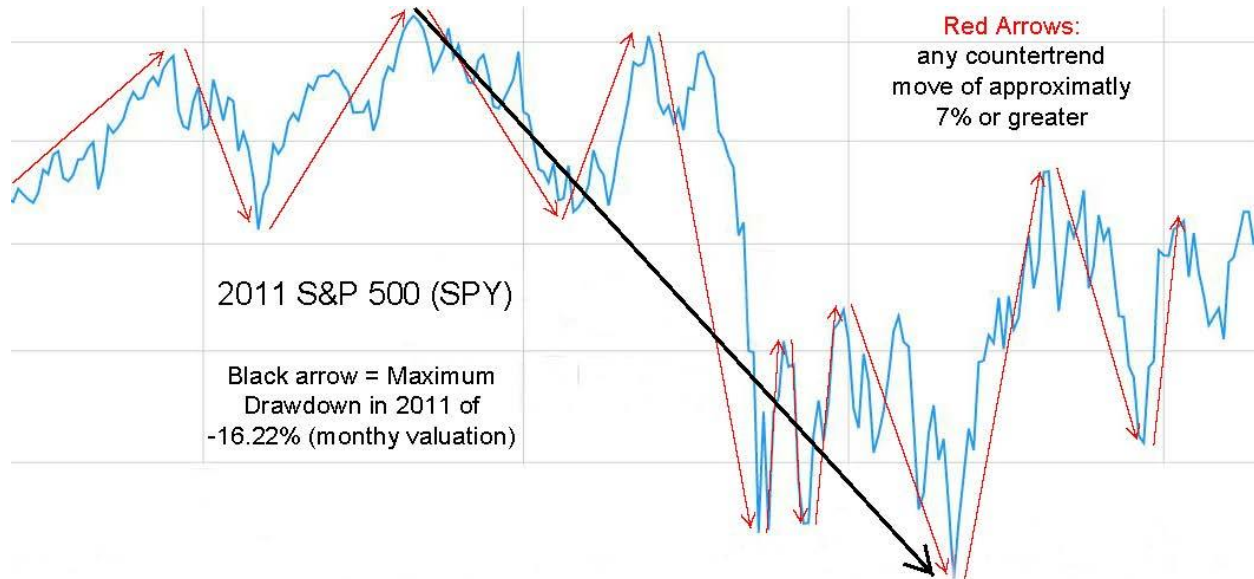
This is what really upsets me about the mutual fund industry. They do not provide these easy-to-calculate statistics that investors and their advisors should have before determining if a mutual fund's risk is worth its potential/expected rate of return.

In 2011, the S&P 500 was up only 2.11%. However, the maximum drawdown was -16.22%. So, again, I ask you, if you explained the maximum drawdown risk in 2011, would your clients have risked 16.22% of their money to generate a 2.11% rate of return? NO WAY!

Did you know that 2011 was the **most volatile year** in decades?

As I just stated, the S&P 500 was up 2.11% for 2011. That doesn't seem volatile. If an investor only looked at his/her investment statement on January 1, 2011, and then again on January 1, 2012, he/she would see that 2.11% return. As such, the investor might think it could have been a better year but that it was nice to have some amount of positive returns over the year.

But I just asserted that 2011 was a hugely volatile year. Let's look at a chart that will illustrate the volatility.



Overall, the S&P had approximately 13 countertrend moves of approximately 7% or greater. There were six instances where the S&P 500 index had a drawdown of -7% or more during 2011.

If six 7%+ drops don't get an investor's attention, maybe a -16.22% drop will? I think so, and that's exactly what happened in 2011.

What does a -16.22% drop look like on paper?

If you had \$100,000 at the peak in 2011 right before the drop, you'd have \$83,780 after the drop—a drop that took place in approximately 30 days.

Even for investors who think they don't mind risk, a -16.22% drop in asset values in approximately 30 days will test anyone's resolve. Even a buy-and-hold investor who doesn't normally watch the markets on a daily, weekly, or even monthly basis is forced to sit up and take notice of a -16.22% drop in such a short period of time.

What percentage of investors sold some or a good portion of the equities near the bottom of the -16.22% drop in 2011? If you've read the DALBAR Report, you'd probably say most investors.

When would the investors who sold near the bottom get back in? Again, the DALBAR Report would suggest that they would come back into the market nowhere near the bottom.

When coupling selling at or near the bottom with getting back into the market well after the upswing has occurred, investors end up losing much of their asset values.

We have very specific data going back 50+ years. When you analyze that data, what becomes clear is that it can be very risky to invest in the stock market. To get a better feel for how risky, let's look at the drawdown percentages of the S&P 500 from 2000 to 2012 (data covering the last two stock market crashes).

The following data about "Maximum Drawdown Risk" (MDR) was obtained from Fasttrack. It's fascinating.

Most investors and even most advisors don't have any idea that the maximum drawdown risk of the S&P 500 on average from 2000-2012 (a period of time during which we had our two last major market crashes) was **-13.5%** (computed over a 12-month window) and **-19%** (when computed daily).

Do you think this is good information for clients/investors to have so they can make informed decisions about investing in the S&P 500 or other investments (mutual funds, bonds, REITs, etc.)? Of course, which, again, is why I decided to write this White Paper.

I believe IF clients understood the amount of risk they were actually taking to achieve the investment results they are receiving in most, if not all, of their investments, they would seek other alternatives.

	S&P 500 12-Month Moving Windows	S&P 500
	Computed Yearly	Daily Computed
2000	-13.12%	-17.20%
2001	-23.12%	-29.70%
2002	-28.36%	-33.75%
2003	-4.08%	-14.05%
2004	-3.31%	-8.16%
2005	-4.00%	-7.17%
2006	-2.88%	-7.70%
2007	-4.85%	-10.09%
2008	-37.66%	-48.76%
2009	-18.18%	-27.62%
2010	-12.80%	-15.99%
2011	-16.26%	-18.60%
2012	-6.60%	-9.94%
Average	-13.48%	-19.13%

If the previous chart doesn't get your attention about how much risk the average investor is taking when in equities, nothing will. The chart covers the time frames for our stock market's two big crashes and it should be quite the eye opener.

What do you think the average client would think if they knew that their average drawdown risk on a daily computed basis in the S&P 500 is -19.13% and -13.48% on an annual basis?

When it comes to risk, what does the average consumer think about the S&P 500? Many would tell you that it's the least risky way to invest in the stock market. As every S&P 500 investor found out during the last two stock market crashes, there is nothing low risk about being invested in the index.

I don't want to sound too redundant, but this is a major problem with the financial services industry. Many financial planners are brainwashed by their broker dealer or RIA firm to think that, to achieve market rates of return, you have to be in the stock market. This leads to a reliance on the outdated modern portfolio theory (asset allocation investing) which had led just about all investors to take on more risk than is necessary to achieve their wealth-building/retirement goals.

Let me conclude this section of the White Paper by showing you two last charts (broken up into two pieces). These charts should make most advisors question the way they give advice to clients.

Stress Testing

What most people don't know is that stress testing is a simulation technique widely used in the banking industry. Stress testing has also been widely used most commonly by financial professionals for regulatory reporting.

Stress tests are usually computer-generated simulation models that test hypothetical scenarios.

Stress Testing for Risk Management

In investment portfolio management, stress testing is used to determine portfolio risk so advisors can take action, if needed, to reallocate a portfolio to better mitigate losses. In the past, portfolio managers used internal proprietary stress testing programs to manage and test their portfolios against market occurrences and potential events. Now any advisor can get access to software to stress test a client's portfolio (as you'll see in some upcoming examples of stress testing using the [OnPointe Risk Analyzer](#)).

The use of Monte Carlo simulation (discussed in detail on page 28) is one of the most widely known methods of stress testing. This type of stress testing can be used for modeling probabilities of various outcomes given specific variables.

Tactical vs. Passive Investments

One primary flaw of most stress testing software is that they don't differentiate or don't differentiate correctly the difference between an active vs. passive investment.

It's easy to stress test a passive buy-and-hold investment like a mutual fund, index fund, stock, etc. (or combination thereof). You just use a Monte Carlo engine with certain parameters and test what the assets would do in a certain type of stressful environment (up or down).

What's more difficult is to stress test tactical strategies. Why is it difficult to stress test tactical strategies? Because tactical managers may invest in passive investments but then through their proprietary investment models they can make decisions to go to all cash or even going inverse (invest in assets that go up when the market goes down).

Typically stress testing software looks at the underlying assets of the tactical manager and stresses those assets as though they will be held through a stress test period. This is a critical flaw of such software.

What's the best way to stress test a tactical strategy? The only good or real world way to stress a tactical strategy is to have actual historical data on that strategy through one or more stock market crashes to see how the manager performed.

While not perfect, using actual historical data to drive the stress test numbers for tactical managers is the only way to do it and that's how [OnPointe Risk Analyzer](#) stresses tactical strategies.

Typical stress test periods

- If the Financial Crisis happened again (10/15/2007 -03/02/2009)
- If a 2008-like bear market happened again (01/01/2008 -12/31/2008)
- If a 2013-like bull market happened again (01/01/2013 -12/31/2013)
- If an Interest Rate Spike happened again...134bps Rate Increase (05/01/2013 -09/05/2013)

We are lucky or unlucky enough to have been through a major crash in recent years and a bull market recovery. So, they give us good data to use when trying to stress "current" portfolios to see what they would do if these stress periods happened again.

Let's look at a stress testing example. I'm going to take the most popular index (the SPY), a 60/40 allocation of stocks to bonds, and I'm going to use a moderate risk tactical sleeve of managers (12 of them) for comparison. I figure this is a good comparison because many people are passively in the market in EFTs and far too many are in an asset allocated portfolio recommended by their local financial professional.

STRESS SCENARIOS

S&P 500 Riskscore : 72

60/40 Moderate Aggressive (\$100k min)

60/40 Mix

AGG Riskscore : 12

Riskscore : 15

Riskscore : 43

SCENARIO	INDEX RETURN	STRESS PERFORMANCE	STRESS PERFORMANCE
If the Financial Crisis happened again...			
Financial Crisis SPY (10/15/2007 -03/02/2009)	-50.78%	9.18%	-30.47%
If a 2008-like bear market happened again...			
2008 Bear Market SPY (01/01/2008 -12/31/2008)	-37.41%	6.66%	-22.45%
If a 2013-like bull market happened again...			
2013 Bull Market SPY (01/01/2013 -12/31/2013)	35.73%	20.16%	21.44%
If an Interest Rate Spike happened again...			
134bps Interest Rate Increase AGG (05/01/2013 -09/05/2013)	-5.5%	-1.86%	-1.43%

The previous chart is from the [OnPointe Risk Analyzer](#) software.

- The index return in the first set of numbers is the S&P 500.
- The center set of numbers is the sleeve of tactically managed strategies.
- The right column is a 60/40 mix of stocks/bonds.

Pretty interesting data isn't it? Being able to stress test what a "current" portfolio would do in the future in a similar circumstance to the listed stress situations is helpful both from a sales point of view (it's usually eye opening to show a potential client that their current asset mix would be a disaster in stress time frames) and useful when trying to put together an asset mix that should withstand the same stress events.

Stress testing with FIAs (fixed indexed annuities)

If you've read my books, you know I'm a fan of FIAs. Look what happens to the S&P 500 portfolio when you move 30% of the money into an FIA.

STRESS SCENARIOS

S&P 500 Riskscore : 72

SPY with 30% FIA

AGG Riskscore : 12

Riskscore : 52

SCENARIO	INDEX RETURN	STRESS PERFORMANCE
If the Financial Crisis happened again... Financial Crisis SPY (10/15/2007 -03/02/2009)	-50.78%	-35.55%
If a 2008-like bear market happened again... 2008 Bear Market SPY (01/01/2008 -12/31/2008)	-37.41%	-26.19%
If a 2013-like bull market happened again... 2013 Bull Market SPY (01/01/2013 -12/31/2013)	35.73%	27.01%
If an Interest Rate Spike happened again... 134bps Interest Rate Increase AGG (05/01/2013 -09/05/2013)	-5.5%	0.72%

The client's 70% allocated to the S&P 500 still would go down significantly in the top two stress situations, but the client's overall wealth didn't stress out as badly when adding in the FIAs (because the money in the FIA can't go backwards). Also, if you didn't notice, the risk score of the S&P 500 is 72 in the OnPointe software but when you layer in 30% annuities, the overall portfolio drops to a risk score of 52 (illustrating how FIAs can be used to hedge risk).

The bottom line with stress testing is that it's not an end all be all tool, but it sure is a vital tool that can be used with other risk metrics to help determine if clients are in an appropriate asset mix and, if not, if the one you are recommending instead is appropriate.

Summary on Risk Formulas/Indicators

It is my hope with this section of the White Paper that you were able to get to learn about (or more about) some of the risk indicators that "professional" money managers/financial planners are supposed to use when helping clients pick investments.

You may choose to do more research on one or more of these indicators and choose to use the indicator you like best over another when determining the most suitable investments for your clients.

Ideally, the "experts" would recommend that you use multiple indicators to help you choose suitable investments for clients.

Determining the “Best” Money Management Platform

For years firms have been after me to promote their money management platform to my e-newsletter list. They all said their platforms were the “best.” The problem with the platforms I reviewed is that they all tanked when the stock market crashed in 2000-2002 and again from the highs of 2007 to the lows of 2009 (and there were also many mini-crashes in between).

I will list in the coming pages only a few of the typical money management platforms used by broker dealers, RIAs, and “fee-only” planners. The list is certainly nowhere near exhaustive considering there are dozens of platforms and variations of certain platforms that are used. For example, I will not be covering the Capital Asset Pricing Model (CAPM) and Efficient Market Hypothesis (EMH).

Different platforms can be designed for different types of investors. Short- or long-term investment horizons can use dramatically different platforms. Clients can be very conservative or want maximum growth regardless of risk; and depending on either, as well as the time frames, clients may use one platform over another.

Again, my goal is not to cover every platform for every type of investor. My goal is to discuss some of the more widely used platforms and to point out the pros and cons of each platform from a risk perspective. Doing so will lay the foundation for a discussion about the best overall platform for the majority of most clients based on a risk vs. reward point of view.

Absolute Return vs. Relative Return

Before I list and discuss what I see are the most common investment platforms, it’s important to make a distinction between absolute return and relative return.

Absolute return measures the return that an asset achieves over a certain period of time. This measure looks at the appreciation or depreciation (expressed as a percentage) that an asset—usually a stock or a mutual fund—achieves over a given period of time.

Relative return is different than absolute return because, instead of being concerned with trying to generate return rates within a certain tolerance that the strategy is designed to achieve (which doesn’t mean maximum returns most of the time and are within its risk tolerance), the concern revolves around comparing its returns to other similar investments or a benchmark.

In general, a mutual fund seeks to produce returns that are better than its mutual fund peers in its category and/or the market as a whole. This type of fund management is referred to as a relative return approach to fund investing. As an investment vehicle, an absolute return fund seeks to make positive returns by employing investment management techniques that differ from traditional mutual funds.

Put another way, it’s not that a mutual fund doesn’t care if it has a positive or negative return; but the main concern is beating other similar mutual funds in its category or sector or beating the seemingly elusive benchmark such as the S&P 500. This is relative return.

An absolute return investment is always reaching for positive growth or, in the alternative, avoiding negative years as its mandate and doesn't concern itself with peers or benchmarks.

Most clients don't know that most mutual funds by their own prospectus are forced to be invested in the stock market with 80% of their money. As such, the investments it picks are important when comparing it to other similar mutual funds which also have to be invested with 80% of their money. Unfortunately, even when the stock market is crashing, these funds have to stay invested with 80% of their money (which is why mutual funds crash right along with the stock market in general and their corresponding index).

As a relative return investment, a mutual fund that lost 50% from the highs of 2007 to the lows of 2009 still could be a highly rated fund with a good reputation because the S&P 500 index was down 59% over the same time frame.

Using that same example with an absolute return fund, if it went negative at all, the chances are that the fund manager would not be happy because the tactical design which many times would allow the flexibility to go to all cash or safer alternate investments may have failed.

It's sort of ironic that a mutual fund seen as a relative return vehicle could be seen as a success with a 50% loss, and an absolute return fund with a loss of say 5% over the same time horizon could be seen as a failure.

These are important issues to discuss with clients as you help them pick the right investment funds to help them grow their wealth.

Active vs. Passive Investing

Another important concept to briefly discuss is that of active vs. passive investing.

A simple explanation of active investing is that an investor or fund manager believes they can pick the best stocks in the market that will have the best returns. This also means that the investor or manager believes they know when to get rid of or buy an investment at the right time so as to minimize loss and maximize gain.

Passive investing, on the other hand, is a strategy where the investor or fund manager invests in accordance with a pre-determined strategy that doesn't entail any forecasting or decision making when it comes to the right time to buy or sell.

A good example of passive investing is when someone invests in the S&P 500 stock index. A passive investor thinks that the market as a whole over time will outperform an actively traded platform that tries to "beat the market." This has proven to be the case between 80-85% of the time if you believe the Motley Fool statistics.

Hybrid Investing—you can be a passive investor and buy actively traded funds. For example, you have a buy-and-hold mentality (one of the platforms discussed in upcoming pages). However, instead of buying and holding the S&P 500 index, you choose to buy and hold a tactically managed (actively traded) fund. The manager of that fund is going to actively trade

the fund, but the passive investor simply holds the fund (vs. trying to time when it's best to buy and sell the fund over a short-term basis to minimize losses and maximize gains).

New DALBAR Active vs. Passive Study

Recently there has been a huge shift in the industry from active management to passive money management. The following are all getting a lot of play these days and they are all passive investment strategies:

1) John Bogle from Vanguard talking about how great index funds have done over time.

2) Robo platforms that are mostly passive investment models.

3) Target retirement funds (like the 2025 fund firms offer).

4) Asset allocation strategies (a passive buy/hold/reallocation strategy that has been around forever and is still used by most of the industry).

The new DALBAR study indicates that historically active investments generally generate lower returns than passive investments. However, passive investments are more vulnerable to behavioral influences that are costly to investor returns.

The question addressed by the NEW DALBAR study is the extent to which the historical performance advantage of passive investments is eroded by behavioral influences.

The study does NOT deal with what some unrealistic investor who has no emotions does over time, but what the real world "average investor" does when the market crashes (and how does that affect what they do with their active vs. passive investments).

In other words, do investors with passive investments have more of a tendency to sell at the wrong times vs. those who use active investments (because the active manager is supposed to be doing the buying and selling, not the investors)?

While the new DALBAR study is seven pages filled with information comparing and contrasting the pros and cons of both passive and active investing, the following chart has their summary numbers:

Period Ending 12/31/2016	Annualized Investor Returns		Active Advantage
	Actively Managed	Passive Funds	
15 Year	4.04%	2.85%	1.19
10 Year	4.37%	4.37%	0.0
5 Year	8.51%	8.12%	0.39
3 Year	3.66%	5.40%	(1.74)
1 Year	6.73%	9.38%	(2.65)

I found the study fascinating and think it's an item all advisors should read. To [download](#) the new Active vs. Passive DALBAR study, [click here](#).

Monte Carlo Simulations

Earlier in the paper I alluded to Monte Carlo (MC) simulations. Because I couldn't find any other logical place to explain MC simulations and the pros and cons, I'm putting it here, just prior to going over the type of money management platforms.

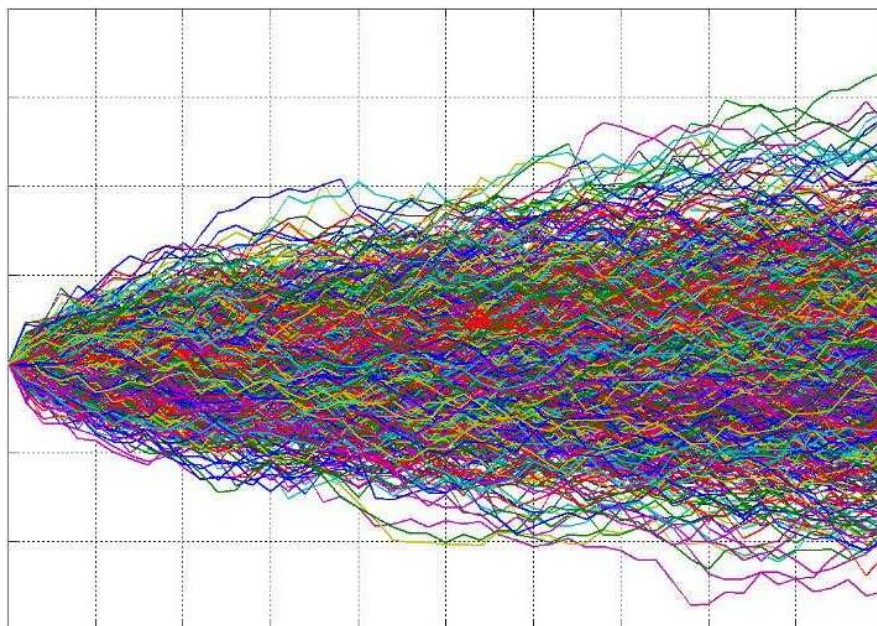
MC simulations are used to model the probability of different outcomes in a process that cannot easily be predicted due to the intervention of random variables.

MC simulations are named after the gambling hot spot in Monaco, since chance and random outcomes are central to the modeling technique, much as they are to games like roulette, dice, and slot machines.

There are two components to an asset's price movements: drift, which is a constant directional movement, and a random input, representing market volatility. By analyzing historical price data, you can determine the drift, standard deviation, variance and average price movement for a security. These are the building blocks of a MC simulation.

In the financial services industry there is a standard way to run MC simulations. Computer programs run the numbers and most advisors don't fully understand how they are calculated. I will attempt to explain in plain English how the numbers are generated as best I can.

What is MC simulating? MC simulates the future investment return of the asset that is being tested (stock, mutual fund, EFT, etc.). The user chooses the number of times the simulation will run. Most programs run at least 5,000 simulations. If you plotted them on a chart it might look something like the following.



After the simulations are completed and after the numbers are created, a software program would create one smooth looking line to illustrate what the most likely outcome would be for an investor based on the data from the 5,000 simulations (or whatever number of simulations is picked).

In my 5,000 MC simulation example, there are truly 5,000 unique outcomes. Clients could be any one of the 5,000 but, again, the MC simulation plots the most likely outcome.

If you recall the discussion about Standard Deviation and one, two, and three deviations, this can be applied to MC simulations where a 95% probability is typically the smooth line that is created by MC simulation software.

Why I don't like MC simulations

Advisors love to use MC simulations when selling the asset mix they propose the client use to grow their wealth. Advisors love to show the smooth upward trending line and saying that the line is the 95% probability line.

What the smooth line ignores is that many of the 5,000 simulations had bad outcomes. The smooth line doesn't illustrate that there will be another market crash and how that would affect the client's money.

When we put together the [OnPointe Risk Software](#), we use MC simulations in their traditional manner, but we also selectively pick out a positive and negative (above and below the smooth line) simulation out of the 5,000 run to show the advisor that the client could, in the real world, get a much better, or what's more interesting, a much worse outcome than what the smooth line indicates.

Let's look at an example from the [OnPointe Risk Software](#).

Assume the following-

Age:	40
Initial amount to invest:	\$10,000
Annual contributions to investment account:	\$10,000
Age to begin withdrawals:	65
Amount to withdraw annually:	\$75,000

I am not going to take into account taxes (income or capital gain), money management fees, or just about any other variable you can think of. This is just a simple example to illustrate why I don't like the smooth line of a MC simulation.

The investments I'm going to run the comparison on are a 60/40 mix of stocks and bonds and the S&P 500. The MC simulation will simulate the rate of return on investment.

Let's first look at the classic smooth lines. I say lines because we put three lines on the OnPointe charts.

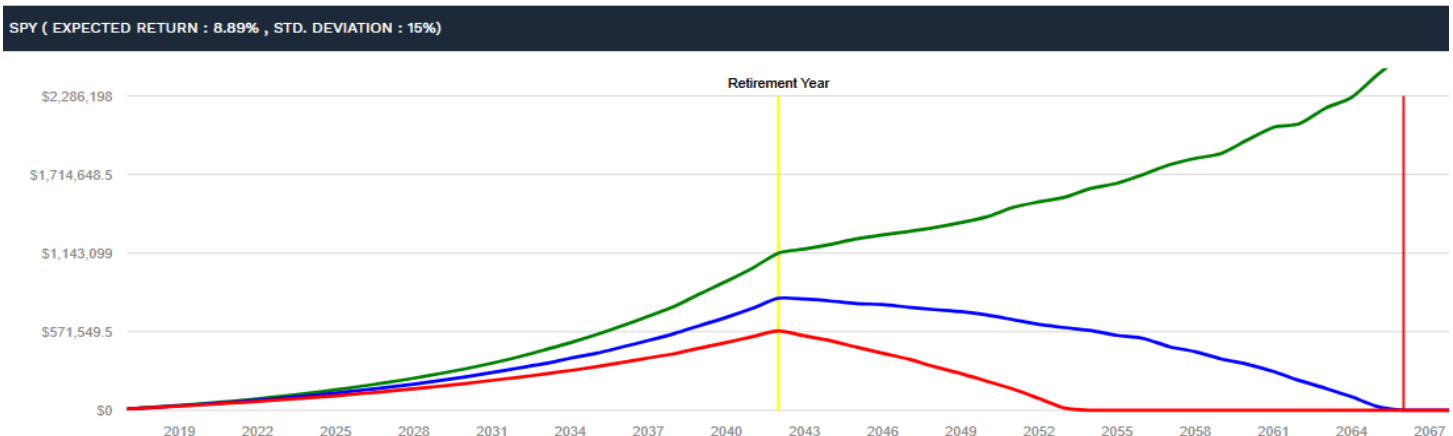
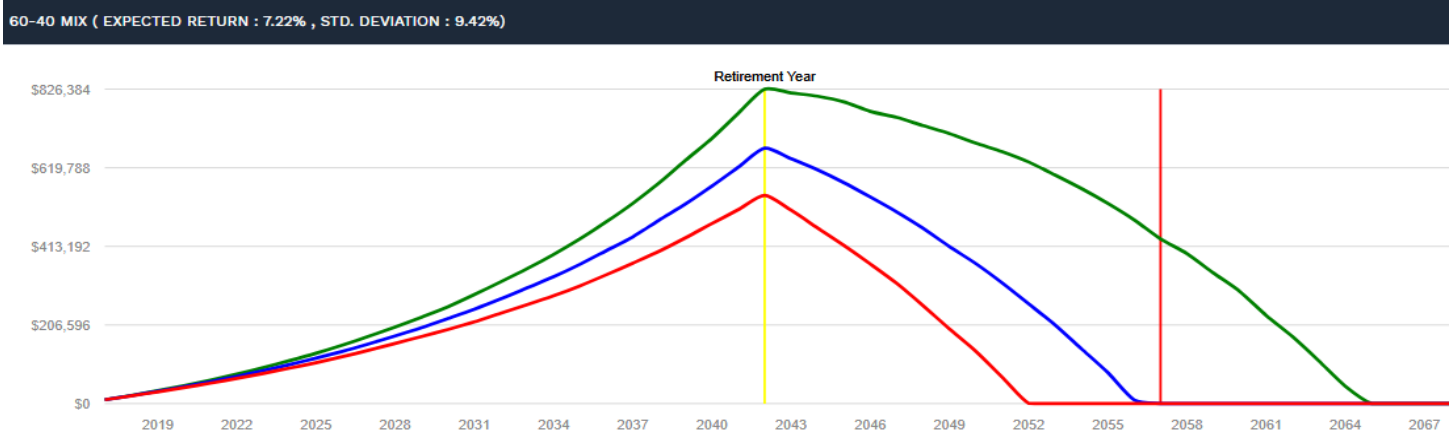
The blue line illustrates the 50th percentile value. In other words, it's the 2,500th best simulation of 5,000 ending results.

The green line is the 75th percentile value. In other words, it's the 3,750th best simulation of 5,000 ending results. You would only beat this in 25% of the simulations.

The red line is the 25th percentile value. In other words, it's the 1,250th best simulation of 5,000 ending results. You would generate returns of at least this amount in 75% of the simulations and your returns would be similarly dismal to the red line 25% of the time.

While most of the industry only shows clients the blue line, we wanted to remind advisors and their clients that they could get the green line which would make them happy, or they could get the red line which would make them sad (and most likely upset).

The lines are smooth on the following chart because they represent the median value for each interval of the simulation. See the following side note for a discussion about calculating the median value.



Side note—Median value—Horizontal vs. Vertical testing: When I first tried to understand MC and different simulations, I thought each simulation was let's say calculated using horizontal numbers. By that I mean, you run a simulation (1 of 5,000 let's say) from the beginning of a term to the end (like from January 2007 to December 2017). Then you use that data string and its monthly returns as a singular string to compare to other entire strings of monthly data (the other 4,999 in my 5,000 MC simulation). My thinking was really that of averaging; take all the lines each as a stand-alone string and then average each string's data to get smooth lines on the chart.

That's NOT how it works. Think of charting lines vertically at each interval instead of charting entire horizontal lines of individual data. The interval tested is usually monthly. So, you are charting monthly returns of the investment being tested. If you run 5,000 simulations, you will look at the 5,000 dots that represent the returns of the simulations for that month. You then identify a spot on the graph for that month where 2,500 simulations would have returns above the spot and 2,500 have returns below the spot. That's where you would drop a dot to mark what the median return would be for that month.

For every month you find that median spot on the graph and drop a dot. Then you drop 12 dots for every month and do that for the time frame tested. Then you'd connect the dots to get your smooth line. But again, the smooth line is not an averaging line. It's a line made up of the median return for each month tested.

Keep in mind that most MC simulations calculate monthly data but plot only annual dots on a graph.

Getting back to the paper....actually the red line in the OnPointe chart should do more than make people sad. It should be a real wake-up call when they discuss retirement planning with their advisor. I really like the red line because it protects advisors when it comes to full disclosure of what might happen and it should really help facilitate a much better retirement discussion so clients can make better choices about how to hedge risk (or whether they should save more or be prepared to spend less in retirement).

While we think the OnPointe software with the three smooth lines is already doing more than any other program in the market to show what can happen in the real world, it's the next set of charts that I really like.

The next set of charts not only have three different lines, you'll instantly notice that they are not smooth.

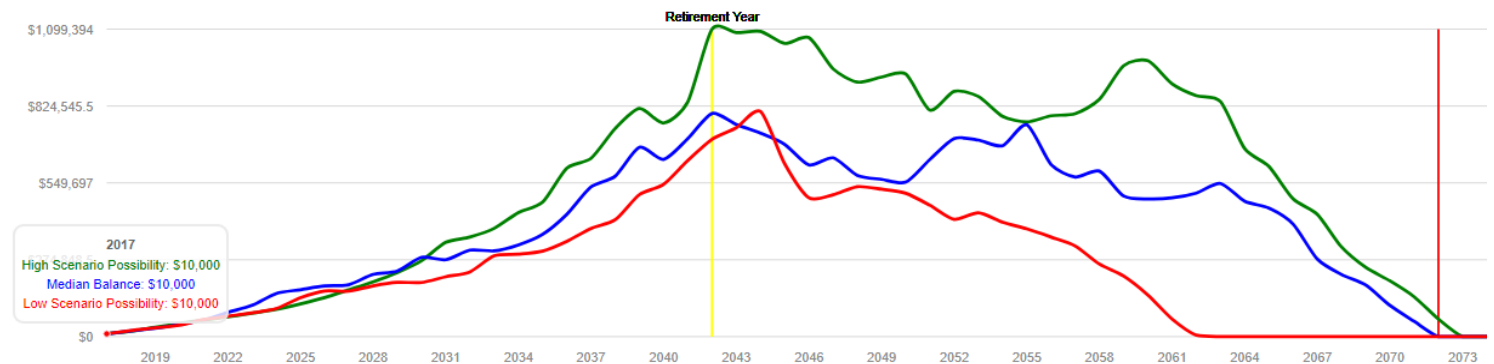
Why not smooth? Because money does not grow or decline in smooth lines. Most investments don't grow or decline at a linear rate of return. They go up and down in very unpredictable ways.

Every time you run the MC simulator using the OnPointe software, it will randomly illustrate three different lines. Sometimes the green line will turn out best (which is what you would expect), but sometimes not. Sometimes the red line turns out the best, which on its face doesn't make sense until you understand just how random returns really are.

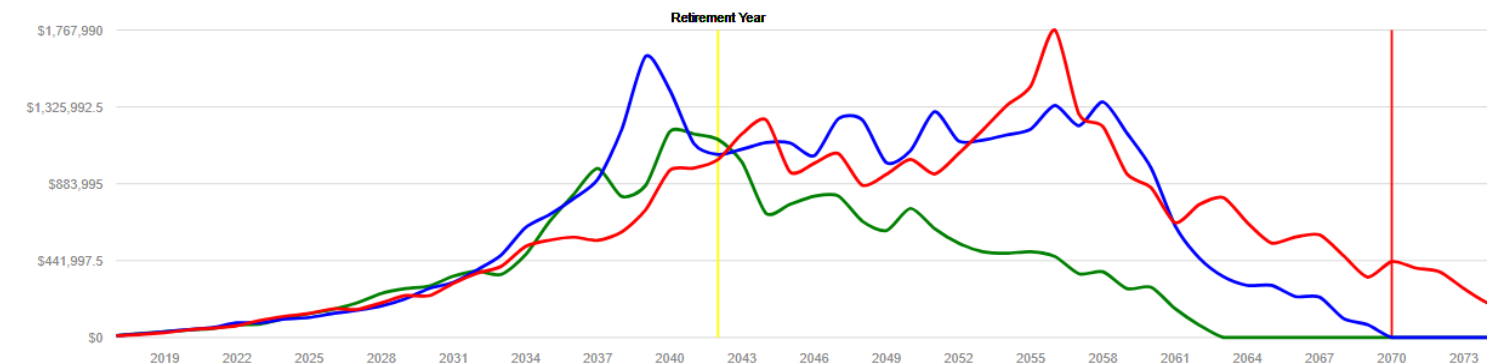
Remember when you run 5,000 simulations some are really good, and some are really bad. Most are somewhere in the middle but almost none of them would be illustrated with a smooth line.

Why show the squiggly lines in outputs that will be given to client? To illustrate that no advisor can predict what will happen and that the client not only needs to understand this, but they need to plan for randomness (especially negative randomness like the 2000-2002 crash or the 2007-2009 crash).

60-40 MIX (EXPECTED RETURN : 7.22% , STD. DEVIATION : 9.42%)



SPY (EXPECTED RETURN : 8.89% , STD. DEVIATION : 15%)



Summary on Monte Carlo

Monte Carlo is a useful tool in the financial services industry. The problem is that the result may not always be used correctly by advisors. Selling off one smooth 95% probability line may be the easiest way to make a sale, but it's setting the advisor up for issues when and if the market doesn't perform similar to the line.

When you use a software program that has not only the 95% probability line but also at least a lower line showing the likelihood that things might not turn out as well as planned, it's helpful to temper the client's expectations. Additionally, when you use software that also shows a squiggly line showing a few individual Monte Carlo simulations, you are furthering the point that money doesn't grow in a straight line (and that the client may want to plan for a less than 95% probability return over time).

Investment Platforms

As I indicated in the beginning of this paper, in order to fully understand investment risk you also need to look at investment returns. Advisors should be seeking out investments that have the best risk adjusted rate of return that also fits in with the client's risk score. So far I have talked about quantifying risk. The other side of the coin that needs to be discussed are the platforms advisors use to generate investment returns.

The first four investment platforms I'll discuss in the upcoming pages are what I consider passive investment strategies; and, as such, let's start out with the granddaddy of them all—the Modern Portfolio Theory.

Modern Portfolio Theory (MPT)

This is the oldie but goodie that many large brokerage firms use. All I had to do was go to Google and type in the words and all sorts of information came up.

One prominent financial planning website stated the following with respect to the MPT:

According to MPT, a portfolio of non-correlated assets — distributed across the risk spectrum — can lower the overall risk of a portfolio.

TD Ameritrade also came up and had pages of information about this investment platform. To read the full summary, please [click here](#).

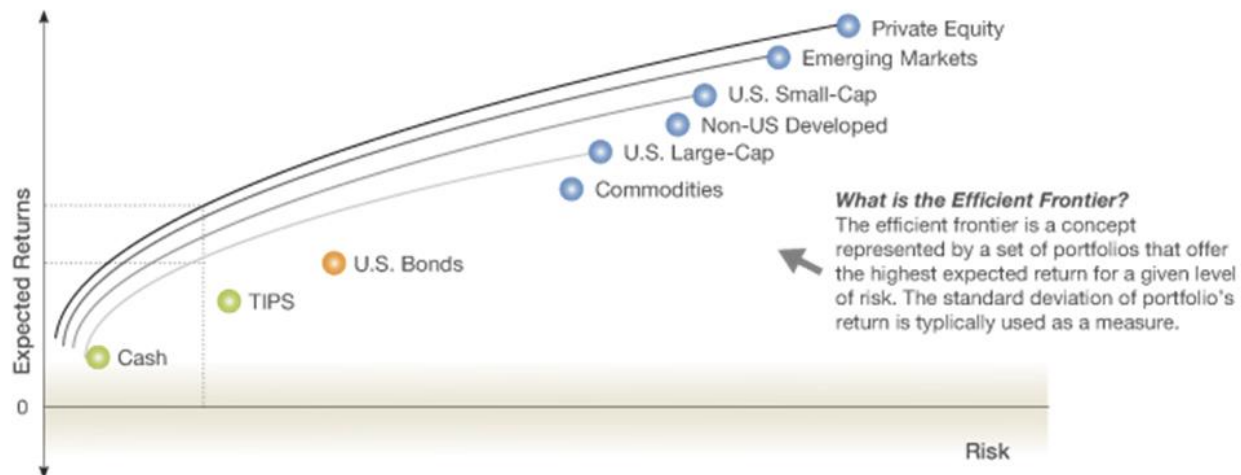
The TD Ameritrade site stated the following as it pertains to the MPT:

If you decide to invest your hard-earned money, you naturally want to minimize your risks and maximize your potential returns. This is the basis of Modern Portfolio Theory (MPT). Developed by Nobel Laureate Harry Markowitz and refined by other noted economists over the years, MPT suggests that you can limit the volatility in your portfolio while improving its performance by spreading the risk among different types of securities that don't always behave the same way.

I've underlined and italicized parts of the above I think are interesting.

So, the MPT is designed to minimize risk and maximize returns by “spreading the risk.”

The TD Ameritrade site goes on to show the following chart as an example of spreading the risk.



In “theory” and to some extent in practice, the above model will work. The client, if following the above chart, will have U.S. Large- and Small-Cap stocks, Emerging Market stocks, U.S. Bonds, Cash, etc.

The “theory” is that when one sector of the economy tanks hopefully the other will not, and the investor will be partially protected against that loss. Also, when one sector of the economy booms while the others do not, at least the investor will have X amount of the money in the boom investment.

Then the risk is spread between no-risk investments like cash/CDs and more risky international or private equity investments.

The advisor helping clients grow wealth with the MPT will use certain data to choose the investments in each sector. TD Ameritrade states that the standard deviation of a portfolio's return is typically used as a measure to pick investments (I discuss standard deviation on page 33).

What's wrong with the MPT?

It depends on whom you ask. There are many critics of the MPT.

The following are some of the reasons certain “experts” do not like the MPT:

-It's outdated. It's a theory from the 1950s; and while the market conditions from approximately 1982-1999 made the MPT look like the best way to invest money, if you followed the MPT since then, your returns would not be as promised.

-It's too rigid. The MPT is too focused on diversity for the sake of diversity. There may be times that it is prudent for clients to be so diversified in a portfolio, but the real question is whether it's necessary at all to be this diversified.

Then there is the question about reallocating the portfolio. Who is responsible for that, and how do they know when to reallocate and more heavily weight one sector over another?

In other words, how does the MPT deal with the unexpected (like the stock market crashes in 2000-2002 and 2007-2009 as well as the most volatile year in many years (2011 when there were six mini-crashes within the year))?

-It depresses gains. Because the MPT forces clients to put X amount of their money into fixed- or low-return investments, the overall performance of an MPT portfolio will underperform other investment platforms.

-Drawdown risk of individual investments is all but ignored. For me, this is the biggest problem with the MPT. It is not set up to limit drawdown risk in the manner that I would like to see drawdown risk mitigated. When the platform calls for Small Cap funds, options, international equities, etc., the drawdown risk of such investments is significant. The MPT seems to offset this by having X amount in fixed return investments, but this is not my idea of mitigating risk in a manner that truly protects a client and helps them achieve their wealth-building goals.

Standard Deviation (SD) (for a detailed discussion of SD go to page 9).

As I stated, the MPT uses standard deviation to model the risk of a portfolio. I found a two-paragraph summary on www.wealthmanagement.com that discusses the issue with how MPT uses SD:

The debate between believers in the two different approaches to portfolio construction centers around how they define risk, and how that risk influences returns. MPT models risk using standard deviation above and below expected returns (also called mean variance). PMPT (Post Modern Portfolio Theory) models risk using only standard deviation below expected returns (semivariance). In other words, MPT assumes that there is such a thing as upside "risk," whereas PMPT proponents believe that only downside risk matters to investors. PMPT tends to use non-normal distributions to create their asset allocation models.

This difference seems to give PMPT modeling greater power to predict disasters. In fact, applying MPT's concept of standard deviation to the monthly returns of the S&P 500 indicates a monthly loss greater than 12.8 percent has nearly no chance of happening. But it actually has occurred 12 times since 1926.

Let me leave you with this thought about the MPT. Do you remember what happened in 2008? There was panic selling that led to widespread liquidation of asset holdings. As a result, equities, bonds, and commodities were ALL pushed down at the same time.

Spreading risk as the MPT suggests left millions of investors crying in their soup. The MPT failed them at the time when a risk-adverse platform was needed most.

In my opinion, portfolios need to be nimble and be able to react quickly to an ever-changing environment; and the MPT simply is not capable of doing so. The MPT forces clients to stay in the market (vs. being able to move into all or mostly cash) and, as so, it is an investment platform incapable of truly protecting clients from market risk.

Buy-and-Hold

If you are in the financial services field, it's tough to really call this an investment platform. If clients want to buy and hold, it's hard for a financial planner to justify an annual fee for services rendered (and, therefore, a strict buy-and-hold strategy is not one usually recommended by a financial professional).

This is more of an investment philosophy of a consumer who doesn't know what to do but has read something in *Money Magazine* or a book telling the reader that the market usually will correct itself; and if you stay the course, you will earn long-term growth.

History has sort of proven this to be true. If you read the 2017 version of the [DALBAR Report](#), you'd know that the S&P 500 stock index averaged 7.68% going back 20 years ending in 2016 and 6.95% going back 10 years ending in 2016. To download the DALBAR Report, please [click here](#).

Similarly, mutual funds that were bought and held over time did on average slightly worse than the S&P 500.

If you read the entire DALBAR Report, you'll find out that the "average" equity investor (mutual funds) earned 20-year returns of 4.79% and 10-year returns of 3.64%.

The statistics support the concept that buy-and-hold works. If that's the case, why does the average investor earn returns that are significantly less than what a buy- and-hold philosophy would generate?

It's simple. The average investor doesn't buy and hold (even though they think this is their strategy). They "panic" sell when the market tanks (statistical data backed up in the DALBAR Report). In fact, investors have proven to be terrible market timers and usually get out near the bottom of bear markets.

Even if we give the benefit of the doubt to a buy-and-hold investor, why still does buy-and-hold not work for most investors?

Let me ask this question: When should a retired person or someone nearing retirement get out of the market (this assumes that a senior/retired person shouldn't be in equities forever)?

For example, say someone was thinking of retiring in 2008 or 2009. When should that person have removed his/her money from a buy-and-hold equity position? The day he/she retires? A year early? Two years early? A year after retirement? At a specific age like age 65?

What if the person did what many people do which is to go conservative right at retirement? If my example person retired in 2009, how did that work out? He/she would have gone through a market crash from the high to the low of -59%.

How did buy-and-hold work in my example? Just terrible. This example person better go back to work to make up for the lost money from being in the market during a market crash.

Indexing

What is an index fund? An index fund describes a type of mutual fund whose investment objective typically is to achieve approximately the same return as a particular market index, such as the S&P 500 Composite Stock Price Index, the Russell 2000 Index, or the Wilshire 5000 Total Market Index.

In layman's terms, an index fund is invested in the companies listed in the index. So the S&P 500 has 500 stocks, and the index would invest in those stocks to achieve its return.

Ever since Vanguard rolled out and started heavily marketing index funds, many clients and, surprisingly many so called experts like John Bogel, the founder of Vanguard, think this is the only way to grow wealth in the stock market.

Why grow wealth with index funds? There are three main reasons.

1) They are cheap. Like many clients, index funds are cheap. The cost of an index fund is a fraction of what it costs to invest in a mutual fund and much less than that of tactically managed funds.

Many index funds (ETFs) have an asset management fee of less than .15%. The average mutual fund expense is north of 1.25%.

2) Most mutual funds don't beat their corresponding indexes. We've all seen the Motley Fool data that indicates that 80% of the mutual funds (now closer to 85%) don't beat their corresponding indexes. Given that fact, why wouldn't a client want to use mutual funds vs. index funds?

3) Risk mitigation. Because an index fund invests in a large number of stocks, if one or a handful of the companies in the index don't do well, their poor returns do not significantly affect the returns of the overall index.

It sounds great, right? Low fees, beating mutual fund returns, low risk, etc. But what's the problem with indexing?

Indexing can be seen as a buy-and-hold strategy or can be seen as a market-timing strategy. Either way you categorize it, using index funds to grow wealth has the same problem as outlined in the buy-and-hold strategy. When do you get in and when do you get out of the fund? The average consumer has no idea; and as the DABLAR Report indicates, the average investor is terrible at market-timing (we are professionals at buying high and selling low).

Additionally, the primary index that is used is the S&P 500 stock index. As you've already read, the maximum drawdown risk (daily valuation) of the S&P 500 from 2000-2012 was -19%.

That means the S&P 500 is a very risky investment option for clients. Therefore, one of the primary reasons investors use the index (to mitigate risk) is, in fact, not a valid reason to use indexing to grow wealth.

Fund of Funds

Not surprisingly, I found a blog called buy and hold that had some nice succinct information on the concept of investing using the fund-of-funds approach.

A fund-of-funds investing approach is nothing but a mutual fund that invests in other mutual funds. Just as a mutual fund invests in a number of different securities, a fund of funds holds shares of many different mutual funds.

Fund of funds provide greater diversification than traditional mutual funds because you are purchasing multiple underlying funds when you buy a single fund of funds. So, it is a great way to diversify your investments. Another way to think of fund of funds is a broadly diversified portfolio wrapped in one fund.

On the downside, expense fees on fund of funds are typically higher than those on regular funds because the investor pays a fund expense to the fund manager of the fund of funds; and then there are the fund expenses on all the mutual funds purchased inside the fund of funds.

Again, like indexing, fund of funds makes a lot of sense, right?

You get great diversification by investing not in one mutual fund but multiple mutual funds within the same fund, and you have a manager of the fund of funds who is supposed to know what he/she is doing to pick the funds to be in the fund (and, theoretically, when to drop funds that are underperforming or have a change in style).

But like indexing, the fund of funds approach is a buy-and-hold strategy in form and practice. Most mutual funds by their own guidelines have to stay invested usually up to 80% in the market at all times (they can't go to cash even if they think the stock market is going to crash).

As a buy-and-hold strategy, the burden again is on the investor to know when the market is going to crash or correct and when to protect from such an event by selling the funds and going to cash. As we know from the DALBAR Report, the average investor does a terrible job at market timing.

Therefore, a fund-of-funds investment approach is not a platform that will help a client mitigate risk and is not one I believe should be used (that is for a client's money where the goal is risk mitigation).

Side Bar

This White Paper is meant to be a discussion about risk and what are the best ways to avoid risk and still generate acceptable rates of return over time.

Question: Is there anything wrong with “risky” investments? The answer is, it depends. It depends on how much an investor can afford to lose (risk capacity). If someone knows the risks and can afford the loss, there is nothing per se wrong with taking the risk.

Also, we might not think it is ok for someone who can't afford to lose money in a “risky” investment; but the reality is that is still up to the client to choose where to invest his/her money and that could be in a “risky” investment.

For me, it's all about the person's choice and making “informed” decisions; and that's really the rub and why I wrote this White Paper. Full disclosure is a huge issue with me. I don't think most advisors are armed with the best information available so they can fully understand “all” of the viable ways to help a client mitigate risk in the stock market while at the same time picking investments that can help them achieve an acceptable rate of return.

My point with this side bar is to remind or point out to readers that, when I'm discussing these various investment platforms and say that I don't like them because they don't mitigate risk in a manner that's acceptable to me, you might have a different opinion. Informed clients who understand the risk may still choose to use anyone of these platforms to grow their wealth (although, if an advisor uses software like the [OnPointe Risk Analyzer](#), the chances are high that clients will demand more than just asset allocation or indexing to make sure they have suitable investments that meet their risk score while still having a high probability of generating the needed ROR over time to reach their goals). The key is to make sure clients understand the risks and the alternatives so they can make an informed decision.

Tactical Money Management

Tactical money management is simply another term used for active management (vs. passive management).

As indicated in the new DALBAR Active vs. Passive Study, most of the time, passive investing has done better than active investing if the client buys and holds.

However, those who buy and hold and who do NOT sell at the right time will get slaughtered eventually like the -46% downturn in 2000-2002 and -59% from the highs of 2007 to the lows of 2009. As the DALBAR Study indicates, most passive investors will panic sell at the wrong time thereby depressing their returns below what a true buy and hold investor would generate as a return.

As most people have found out, “mutual funds” have significant constraints (like being forced to be 80% invested in the market at all times which prevents what I would consider real tactical money management that would allow a manager to go to all cash if necessary).

Tactical money managers do NOT have the same constraints as most mutual funds. Tactical managers can go to all cash if they think the market is due for or in a correction or crash period. Some tactical managers can invest in an inverse manner when the stock market is going down in an attempt to generate returns in the down market.

Generally speaking, tactical money managers do well when the stock market has direction (such as when the market is in a significant down turn or has a large upswing). Tactical managers typically do not try to beat benchmarks like the S&P 500. Most have a particular style that they strictly adhere to with their most important goal, which is to avoid large drawdowns in the stock market.

There are a number of different styles of tactical managers (too many to cover in this paper). Some use indexes to drive returns. Some have rotating high yield bond portfolios. Some go in and out of the government bond market. Others invest, for example in the top 10 dividend paying stocks in each sector of the market.

No matter the strategy, tactical means active and active means that the managers use their proprietary models to mitigate large drawdowns in the stock market.

Comparing Tactical to Asset Allocation and the S&P 500

While I just stated that tactical managers do not try to beat the indexes or any particular asset allocation model, the fact of the matter is that when offering tactical strategies to clients, they will want to see a comparison.










For this comparison, I'm going to use a grouping of tactical managers offered by www.pomplanning.net. The numbers in the examples come from actual returns the managers have generated over the years.

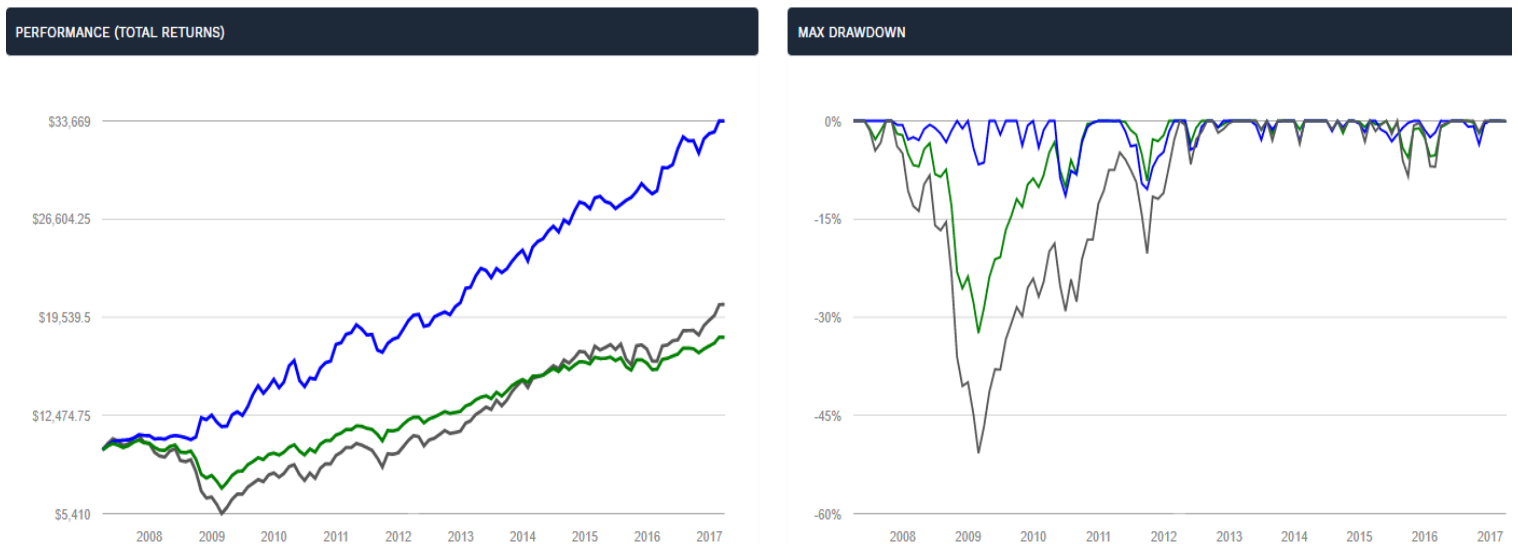
The following chart is from the [OnPointe Risk Analyzer](#) program. The comparison is between the S&P 500, a 60/40 mix of stocks to bonds, and a group of tactical managers (a sleeve of managers) made up of five tactically managed strategies. The time frame for the comparison is March 2007 to March 2017.

What you'll notice is the following:

- Risk score of the S&P 500 is 72 (scale to 100).
- Risk score of the sleeve of tactical managers is 28.
- Risk score of the 60/40 blend is 43.
- The compound annual growth rate (CAGR) for the S&P is 7.43%.
- The CAGR for the sleeve of tactical managers is 12.9%.
- The CAGR for the 60/40 blend is 6.11%.

It's interesting to note that the CAGR for the tactical manager is "net of fees." I did NOT take a money management fee or wrap fee out of the returns of the S&P 500 or the 60/40 blend. If I did, the returns would be less.

S&P 500	 72 RISK SCORE	 -50.78% MAX DRAWDOWN	 7.43% AVG RETURN (CAGR)
100% Moderate Risk Sleeve B (\$30k min)	 28 RISK SCORE	 -11.45% MAX DRAWDOWN	 12.9% AVG RETURN (CAGR)
Stocks/Bonds (60/40)	 43 RISK SCORE	 -32.42% MAX DRAWDOWN	 6.11% AVG RETURN (CAGR)



The left graph above is the CAGR chart (how money actually grows).

The chart on the right is the drawdown chart. That's the chart that really gets a client's attention when you look at the historical drawdown of the S&P 500 and a typical 60/40 blend of stocks and bonds. To most clients (and to many advisors), this is a real eye opener.

If we go back to the baseline question I think every client should be asked (should you be taking more risk than you need to in order to reach your retirement planning goals), it's tough to make an argument for why high quality tactical money managers shouldn't be used as part of a client's portfolio.

For complete information on the sleeve of tactical managers used in this example, [click here](#).

Performance and Risk Metrics

One of the nice things about the [OnPointe Risk Analyzer](#) program is that it lists performance and risk metrics in the same output as the chart from the previous page.

It's nice at the end of this White Paper that I can have an example with many of the risk metrics listed in an output from the risk software (because you read and learned the material from earlier in the paper, the following should be very useful).

	S&P 500	100% Moderate Risk Sleeve B	Stocks/Bonds (60/40)
Avg Return (CAGR)	7.43%	12.90%	6.11%
Max Drawdown	-50.78%	-11.45%	-32.42%
Calmar Ratio	0.15	1.13	0.19
Historical VaR	7.95%	3.78%	4.45%
Std. Deviation	15.14%	9.87%	9.49%
Downside Deviation	10.56%	5.11%	6.51%
Mean Return (Monthly)	0.70%	1.06%	0.53%
Mean Return (Annualized)	8.69%	13.44%	6.60%
Sharpe Ratio	0.48%	1.17%	0.56%
Beta	1	0.33	0.62
Correlation	1	0.51	0.99
R-Squared	100%	25.97%	97.52%

What's interesting from the above numbers?

The S&P 500 has a 100% correlation to the market (this make sense since it is the market) and has a Beta of 1 (the S&P 500 is the benchmark for the market).

The 60/40 mix has a .99 correlation to the market but only a Beta of .62 (meaning it moves with the market but the swings are not as high or low).

Two of my favorite risk metrics are Calmar and VaR.

The Calmar for the tactical sleeve of managers is significantly higher than the S&P and the 60/40 blend. Remember, Calmar is a metric that measures returns in comparison to the risk taken. The reason the tactical sleeve has such a high Calmar is because it has low maximum drawdown over the period in question and a high rate of return.

As for VaR, remember it answers two important questions: "What is my worst-case scenario?" or "How much could I lose in a really bad month?" The S&P has the highest (by far) VaR, then the 60/40 blend, and then the tactical sleeve of managers.

Summary on Tactical Money Management

The point with the section of this material on tactical money management isn't to make anyone an expert in the many different tactical strategies and how they work.

The point is to let advisors know these investment strategies are out there and that the good ones can be extremely helpful when trying to put together a “suitable” mix of investments to help clients reach their investment goals with the minimum amount of risk.

Summary on Investment Platform/Philosophies

I’m not a big fan of the way business has always been done in the financial services field.

Asset allocation (MPT) is not my idea of a way to both avoid risk and generate the expected returns the client is looking for.

Buy-and-hold sounds good in theory; but as the DABLAR Report indicated, the average investor is incapable of buying and holding (they instead panic sell near the bottom which costs them significant returns in the short and long term).

Buy-and-hold is still a market-timing platform where either the client (who is definitely not qualified to decide when to sell) or some local money manager/financial planner is deciding when to sell. No offense to the local money manager; but if he/she were that good, he/she would be running a hedge fund.

I’d prefer to leave the buy-and-sell decisions to a tactical money manager and, preferably, one who has an actual track record of successfully being able to do so. Ideally, I’d prefer to see clients use tactically managed funds that have a low maximum drawdown risk coupled with a successful track record of sustained positive growth.

Topics not Fully Covered in this White Paper

Taxes

I have not discussed how taxes can reduce the net return of the funds discussed in this White Paper. Most of this White Paper focuses on traditional mutual funds (which have fairly high annual taxes as the funds buy and sell stocks), tactically managed funds (which will also have high taxes on the growth due to the ability to sell quickly when indicators point towards a market downturn), and the S&P 500 index (which have lower taxes if the investor doesn’t “panic” sell often when the market goes through what are ever increasing mini-crashes in the market).

My point is that taxes need to be taken into consideration when determining the expected rate of return of an investment (needed when using RUDR to help pick suitable investments).

You’ll be happy to know that the tactically managed fund I discussed in this White Paper and a few others offered by www.pomplanning.net can be purchased by investors in a no-load variable annuity. The only additional fee for using the VA is \$20 a month (and there is no surrender charge). To learn more about tactically managed no-load annuities, go to www.pomplanning.net/noloadvasignup.

Fixed Products

This White Paper deals with securities, not fixed products. Having said that, fixed products are near and dear to my heart; and I believe they can fulfill the conservative portion of a client's portfolio better than the alternatives in the marketplace.

Fixed Indexed Annuities (FIAs)

FIAs are embraced by the insurance community and shunned by much of the securities industry. FIAs can play a vital role when dealing with money clients want to protect from downturns in the market (money in FIAs never goes backwards and gains are typically locked in annually).

FIAs also have the best [guaranteed income riders](#) in the industry (better than variable annuities). What kind of guaranteed income is available in FIAs today? The products are constantly changing as the 10-year treasury goes up and down, but today, depending on the product purchased, the guaranteed return (on an accumulation value) ranges from 5%-7% annually coupled with a guaranteed income for life of 5% at age 65 (higher if older/less if younger).

You may be thinking to yourself that, if an investor can receive a roll-up rate of 5-7% (non-walk away amount) coupled with a 5% income at 65, why wouldn't the investor want to allocate money to an FIA? The answer is that many clients do which is why it's [important for advisors to know the products](#) in the marketplace.

FIAs, however, are not a substitute for money an investor has earmarked for growth. Growth over time in FIAs should range between 4%-6% with an annual point-to-point credit strategy. Some FIAs have more exotic crediting methods that could generate higher returns (they also could generate lower returns depending on how the market generates gains over time).

While FIAs can be very appealing, there is a lack of liquidity with these products that needs to be discussed with clients when evaluating their use.

Cash Value Life (CVL) Insurance

If you've ever run into a Northwestern Mutual, Guardian, NY Life, etc., type of agent, undoubtedly, you have ended up having a discussion about using Whole Life (WL) as a wealth-building tool.

In general, and as it applies to all cash value life insurance, the benefits are pretty simple. Cash in a CVL insurance policy is allowed to [grow tax-free](#) and be [removed tax-free](#) via policy loans in retirement (or earlier if needed).

Taxes can take a huge chunk out of an investor's return, and so to have a tool where money can grow tax-free and be removed tax-free is very appealing.

The problem with WL is that that gains credited to the policy every year will be fairly modest by design. WL policies have guarantees which sound great, but they come at the expense of depressed returns.

My preference, if a client is going to build wealth using CVL, is to use an Indexed Universal Life (IUL) insurance policy. It has the following characteristics:

1) Investment gains are tied to a measuring stock index (typically, the S&P 500). Without going into detail, EIUL policies have caps on the returns. The caps range from 10%-14% annually.

Therefore, if the measuring stock index has a return in any given year of 20%, if the IUL policy had a cap of 14%, the return credited to the cash in the policy would be 14%.

2) No risk of loss. The cash inside a policy can never go backwards due to stock market declines. In a negative- or zero-return year, the cash in the policy will still go backwards slightly as costs of insurance and administrative costs are taken out of the policy.

3) Tax-free growth and tax-free policy loans. Like any CVL policy, money is allowed to grow without taxes and be removed without taxes.

4) Free long-term care, chronic-, and critical-illness riders. If the owner of an IUL policy ends up in a nursing home, they will receive money tax-free from their life insurance policy to pay for some of their care (it's essentially the payment of the death benefit early to pay for LTC).

What is a realistic return on cash inside an IUL? The following are the stats from my favorite IUL.

Years	Worst Historical Returns	Historical Return 75% of the time	Historical Return 50% of the time
5 Years	3.04%	6.27%	8.15%
10 Years	4.33%	6.90%	8.95%
20 Years	7.38%	8.29%	8.66%

How many investors would have been happy with a 7.38-8.66% rate of return over the last 20 years? If you read the DALBAR Report, the answer is most investors would have very much liked the above-listed rates of return.

Keep in mind that with CVL, when \$1 in premium is paid, \$1 does not end up as the cash value in the policy from day one. There are costs of insurance, administrative costs, etc., in the policy. You can use a high cash value rider in an IUL (and there are pros and cons to doing so), but the average policy in year one will have a cash account growing that equates 85-92% of the premium paid.

The costs in any life policy are significant; but when you factor in tax savings on growth and the ability to take money out of the policy tax-free, CVL stacks up very nicely against the average rate of return of traditional mutual funds when taking into consideration what can be

withdrawn from a mutual fund in retirement after-tax vs. what can be removed tax-free from an IUL policy.

Summary on Fixed Products

I very much like some of the fixed products in the market place—like mutual funds, stock indexes, tactically managed funds, etc., an investor has to figure out what tools are the best ones to help them grow wealth in what in my opinion should be the least risky manner possible to reach their financial objectives.

Because there is no investment risk with fixed products, they can and probably should make up a portion of most clients' portfolio of assets.

The [OnPointe Risk Software](#) does a great job of incorporating fixed products into a client's overall asset mix that both meets their personal risk score and also achieves the desired rate of return on investments over time.

Summary on White Paper

When I sat down to write this White Paper, I figured it would be 10-15 pages long. After doing my research, I think it could easily be another 20-30 pages long.

As my parents have aged and as I've heard countless stories about investors losing 50% or more of their retirement nest eggs in the stock market because of bad advice from some local financial planner, CFP, money manager, etc., I am determined to help change the discussion about how to look at risk vs. investment return.

It's not enough to look at 5-, 10-, 20-year track records of an investment. Looking at year-end numbers isn't enough. In today's wickedly unpredictable stock market, it is more important than ever to use investments that can identify market troubles and avoid mini and major crashes in the stock market.

The old days of buy-and-hold are over (or they are over for anyone who wants to invest in the stock market and mitigate risk).

This is a new era that requires new and better models to help quantify risk so a full-disclosure discussion about risk can be undertaken.

I believe advisors must use indicators such as maximum drawdown risk, Calmar, VaR, etc. when helping clients pick their investments.

If there is a new golden rule of investing, it should be the following:

***Thou shall take no more risk than is necessary
to meet your investment objectives***

Advisors who understand this will truly help their clients build a suitable investment platform and will help them reach their financial planning goals (and such advisors will position themselves to avoid lawsuits for breach of fiduciary duty or simple negligence lawsuits).

If you have any comments or questions about this White Paper, feel free to e-mail me at roccy@thewpi.org or call 269-216-9978.

Disclaimers

Ironically, the main disclaimer for this White Paper is that I am not securities licensed (and this is a White Paper on investment risk).

My research for this White Paper consisted of intensive research reading information provided by some of the top experts in the securities industry, help from the [OnPointe Risk Analyzer](#) software team, as well as having help from a handful of tactical money managers.

While my research felt like I was taking a drink through a fire hose, the bi-product of having a non-securities licensed person write this White Paper is that it should be much more understandable than if an industry insider wrote it.

Like most specific fields of interest, when experts write explanatory material, it's usually at a level that's so high that the average reader would throw his/her hands up in the air when trying to figure out what's being said. Hopefully, that is not the case after you read through this White Paper.

About the Author

The following is an abbreviated summary of my background. I'm a commercial pilot who doesn't fly for a living. When I graduated undergrad, I couldn't find a job so I went to law school. I graduated from Valparaiso University School of Law in 1996 and I'm licensed to practice law in Michigan.

In 1998, I obtained my property, casualty, life, and health insurance licenses; and I decided to specialize in giving advice to affluent doctors who lived in various parts of the country.

In 2005, I decided to give up my company where I had personal clients and started The Wealth Preservation Institute (WPI). The WPI is the only educational company in the industry that teaches advisors how to give the "best" advice to "affluent" clients (asset protection, income tax reduction, income tax planning, corporate setup, international planning, etc.) and to clients in need of Medicaid Planning (help with Medicaid spenddown and recovery avoidance).

In 2008, I found that it wasn't enough just to educate advisors (I know a lot of very bright advisors who are starving); so I created a [marketing company](#), Strategic Marketing Partners, LLC (www.strategicmp.net). The marketing company has some of the best (and certainly the most unique) [marketing tools](#) in the industry for those who want to educate and motivate their clients (including the ability to write the foreword for several of my books, the best templated website in the industry, mortgage acceleration software (with mobile app), the ability to give CPE seminars to CPAs, the OnPointe marketing software, and the list goes on).

Along the way, I've written seven books: [21st Century Advisor](#), [The Doctor's Wealth Preservation Guide](#); [The Home Equity Management Guidebook](#); [The Home Equity Acceleration Plan](#); [Retiring Without Risk](#); [Bad Advisors: How to Identify Them; How to Avoid Them](#); and [Peace of Mind Planning: Losing Money is No Longer an Option](#) (you can click on each of them to learn more).

Starting in the summer of 2012, I decided to start educating advisors on investment risk and tactical money management platforms that are not well known but are ones that every advisor should know about. After a year of telling the very powerful story that can be found at www.pomplanning.net, I decided to write this White Paper (updated in 2017) in an attempt to help advisors learn the idea of maximum drawdown risk as a key indicator, if not the main key indicator, in helping clients pick investments.

In early 2016 I decided that the industry needed better investment risk software. Software is an ever evolving process, but I'm very pleased with how the [OnPointe Risk Software](#) has evolved and is, in my opinion, already the best software of its kind in the industry.

I hope you find the White Paper helpful; and if you have any questions or comments about this White Paper, feel free to e-mail me at roccy@thewpi.org.