Ignorance Is Bliss
It is, none-the-less, ignorant…

DAVID B. LOEPER, CIMA
CHAIRMAN/CEO

We have been discussing the need to model the unpredictable nature of markets for over three years. We have challenged whether it is rational to identify a client's tolerance for risk and then proceed to design a portfolio that positions him to experience it. We have changed the way advisors measure and monitor success from relative returns to meeting clients' goals. We have reminded advisors of what their job is supposed to be, that is, helping clients achieve their financial goals.

Still there are many advisors that have a hard time conceptualizing why probability analysis is important. This paper will not address the overall conceptual flaws in what so much of the industry is about, but instead will focus on the most basic concept of probability analysis and expose an inconsistency that hopefully will get the message through to advisors who continue to ignore the contradiction in their methods[1]. (For those advisors that have adopted these improved Modern Portfolio Realities©, this paper might be an ideal hand-out to give to potential clients. Ask them to hand it over to the advisors with whom you are competing. Perhaps their current advisors will not "get it" but your potential clients will.)

Particularly of late, risk has re-entered investors' minds. The recent bear market has reminded investors that the market is not unidirectional, and fear has overtaken greed. This is not meant to imply that financial advisors had not been reminding investors about investment risk long before the bear market began. To the contrary, for the last fifteen years the industry has been working toward profiling clients better, probing their psyches for risk tolerance and creating new measures of risk that investors could better grasp. While we still believe that positioning clients to experience their maximum tolerance for risk is irrational and believe that risk is something investors prefer to avoid rather than endeavor to experience, what continues to perplex me is that even though we identify this irrational risk tolerance, the majority of the industry pretends risk stops when planning their financial future begins.

IS RISK MODELED IN YOUR FINANCIAL PLAN?

Most advisors have mastered "risk control" and portfolio efficiency at least in theoretical terms. Most advisors also have some means of attempting to identify the investor's tolerance for risk. Together, identifying a client's risk tolerance and positioning him in the most efficient portfolio for that risk tolerance is the foundation on which most of what the financial services industry is based.

A more efficient portfolio is definitely a good thing. This is particularly true if you happen to be clairvoyant and know what return, risk and correlations among all of the various asset classes will be in advance. If you are not, hopefully our guesses about these future relationships between classes will be better than not guessing at all.

Getting the most return out of a portfolio for the risk being taken is extremely helpful. The way we measure this risk really is not all that material to most statisticians. Whether it is standard deviation, maximum loss or some other risk measure is not really all that important. A good mathematician can conceptualize these into his or her realm.

The generally accepted measure is standard deviation. This is not a particularly difficult concept to grasp, as what it measures is the *extent* and *frequency* that individual returns will vary from the average of the returns.

For example, T-bills have a very low standard deviation, since their returns are almost certainly always positive, and rarely are very high. Common stocks and bonds, both subject to various economic risks like recessions, interest rate risk and the like, have far less consistent returns. Bonds of moderate to long maturities will produce negative returns in periods of rising interest rates, and exceptionally high total returns when rates are falling. As we have all seen over the last few years, returns on common stocks can be exceptionally high or can experience severe losses depending on multiple factors.

---

[1]If you want to read more about these other issues, we suggest our papers entitled, "Rethinking Risk" and "Modern Portfolio Reality."

The extent (how extreme the range of returns are from their average) and frequency (how often returns vary from their average) is what measuring risk is about. Since most investors like the positive deviation (performing exceptionally well versus the average return) many advisors choose to focus on investment risk from only the negative side with risk measures like downside risk or return below mean (various forms of semi-variance). We can see this effect in patterns of returns as those below in *Exhibit 1*.

Exhibit 1 – Patterns of returns for various levels of risk

	Theoretical No Risk		Low Risk		Moderate Risk		High Risk		50% High 50% Moderate	
	VALUE OF $1.00		VALUE OF $1.00		VALUE OF $1.00		VALUE OF $1.00		VALUE OF $1.00	
YEAR 1	4.00%	$1.04	1.00%	$1.01	2.00%	$1.02	22.00%	$1.22	12.00%	$1.12
YEAR 2	4.00%	$1.08	4.00%	$1.05	8.55%	$1.11	14.00%	$1.39	11.28%	$1.25
YEAR 3	4.00%	$1.12	2.00%	$1.07	14.50%	$1.27	-12.00%	$1.22	1.25%	$1.26
YEAR 4	4.00%	$1.17	8.00%	$1.16	-2.50%	$1.24	35.50%	$1.66	16.50%	$1.47
YEAR 5	4.00%	$1.22	5.00%	$1.21	6.00%	$1.31	1.30%	$1.68	3.65%	$1.52
AVERAGE	4.00%		4.00%		5.71%		12.16%		8.94%	
COMPOUND	4.00%		3.97%		5.55%		10.93%		8.79%	
STANDARD DEVIATION	0.00%		2.74%		6.45%		18.35%		6.31%	
WORST RETURN	4.00%		1.00%		-2.50%		-12.00%		1.25%	

Looking at all these numbers though can make your eyes glaze over so we use statistics to summarize all of these numbers into a simpler form. The mean return (average) can be calculated from these numbers by simply adding them up and dividing by the number of periods. To get the dollar effect we use compound return, which is less than the simple average based on how volatile the returns are. We can measure the risk simply by looking at the lowest return or by statistically calculating the standard deviation.

By calculating these statistics, we can make it far easier to see how the pattern of returns relates across multiple portfolios without having to look at each year of each portfolio. This is usually plotted on an XY graph showing the risk versus return as in *Exhibit 2*.

Exhibit 2 – The "Efficient Frontier"
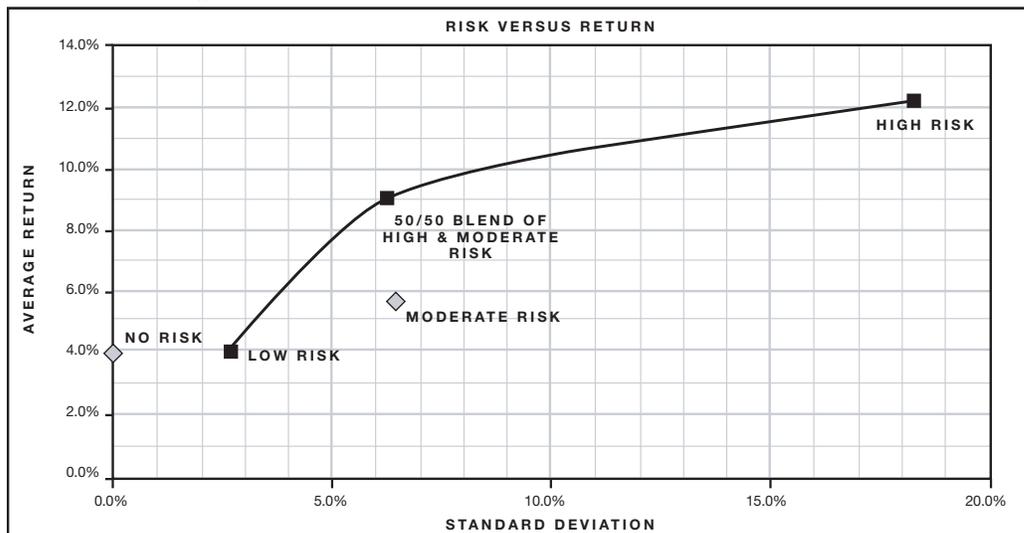
This chart makes it easy to compare the risk and return relationship of these theoretical portfolios. Rather than looking at 25 individual returns, the relationship of the risk and return of those 25 numbers are plotted as five simple points that summarize their relationship.

One other statistic, correlation, summarizes another interesting relationship between these investments. Notice the returns for the moderate risk and high-risk portfolios in years 3 and 4. When the moderate risk portfolio had a high return, the high-risk portfolio had a low return and vice versa. Because these portfolios do not move in "lock step," one can create a more efficient portfolio by blending these two portfolios together, also known as diversifying. Some simple quadratic equations can be used to calculate this "utility" by optimizing combinations of these assets into the most efficient portfolios for each level of risk as shown in *Exhibit 2*.

Of course, there is no such thing as a "no-risk" portfolio. Even a 5-Year CD will have returns that vary if you cash in early and pay penalties. And so it goes…we have "cracked the code." We help investors that have portfolios like the moderate risk portfolio and position them to have more return or less risk by diversifying and getting them somewhere on the efficient portfolio "frontier." The only thing we need to know is their risk tolerance and what numbers to plug into the equation. (By the way, this is not particularly easy, so for more information about this topic read our paper "Asset Allocation Math, Methods & Mistakes.") Of course, most investors have some purpose for their money. They are not merely interested in achieving the highest return for the maximum pain (risk) they can bear. They want to achieve financial goals. Here is where financial planners come into play.

The financial planner also will normally identify his client's risk tolerance. But instead of just running a beauty pageant of the most beautiful "dots" on a chart, he helps the investor determine whether the portfolio, combined with planned savings amounts and the timing of goals, will achieve those things the investor wishes to accomplish. These are things like putting their kids through school, retiring with a comfortable lifestyle or even meeting charitable goals.

Let us take a very simple goal for a client. Assume a client has $100,000 and his goal is to have $600,000 in twenty years. The planner is there to determine whether the client will need to save any money in addition to his current portfolio holdings to meet this objective. Of course this is dependent on how the portfolio is invested, so the planner identifies the investor's tolerance for risk and therefore, what the return will be of his or her most efficient portfolio.

Using scientific profiling methods designed to probe the investor's psyche to determine his definitive tolerance for risk, the advisor determines that the investor can tolerate a standard deviation of 14.89%. *Exhibit 3* shows that the advisor has "discovered" the optimal portfolio for this risk tolerance and where it falls on the efficient frontier.

Exhibit 3- Optimal portfolio for an investor with a 14.89% risk tolerance
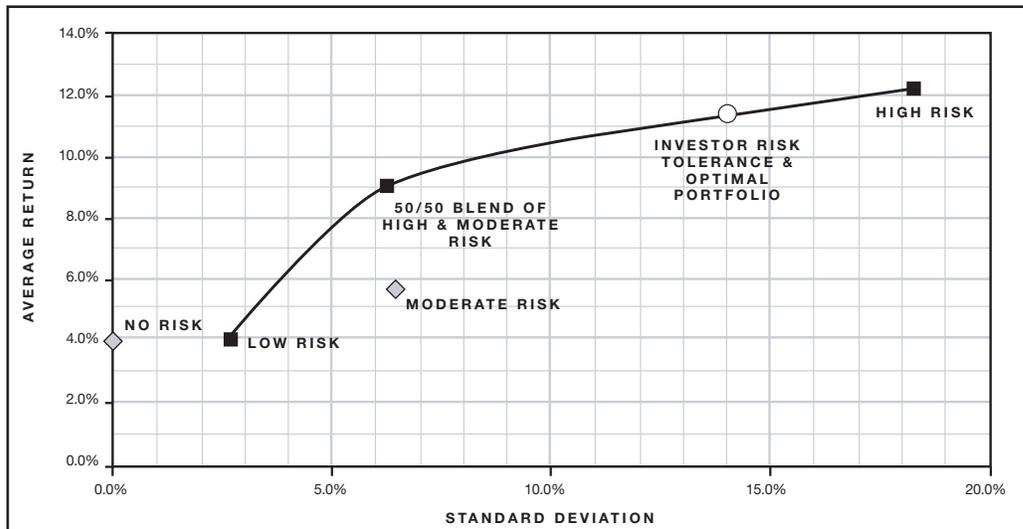
So far, so good. Now all that is left is to see whether the $100,000 will grow into the investor's goal of $600,000, and if not, how much the investor might need to save. What does the planner know at this point? He knows the client has $100,000. He knows the investor wants $600,000 in twenty years. He knows the investor has a risk tolerance of 14.89%. He knows what portfolio is most efficient and that this portfolio has a standard deviation of 14.89% and produces a 10.90% return.

The obvious next step is to figure out what this portfolio will be worth in twenty years and if the investor needs to save any more money to meet his goal. Here is a simple question: What should I plug into my calculator to figure out if the investor meets his goal? *Should I assume that the portfolio would have no risk, even though I know it has a standard deviation of 14.89%, or should I use the risk and return of his portfolio?*

After all, I went to the trouble of scientifically determining the client's risk tolerance and determining the optimal portfolio for that level of risk. Should I just forget this fact and assume that by some magical alignment of the stars that because now I am talking about real goals and real money, that risk can be totally ignored? If I assume a 10.9% return on his portfolio, every year, as most financial planning tools do, am I not also assuming that risk does not matter? *Exhibit 4* shows the assumption made by most financial planning goal calculators—that is the return is all that matters and the no-risk portfolio, that does not exist except in theory, will suddenly appear for a portfolio I know has risk.

Exhibit 4- Portfolio input into the client's financial plan versus its real risk
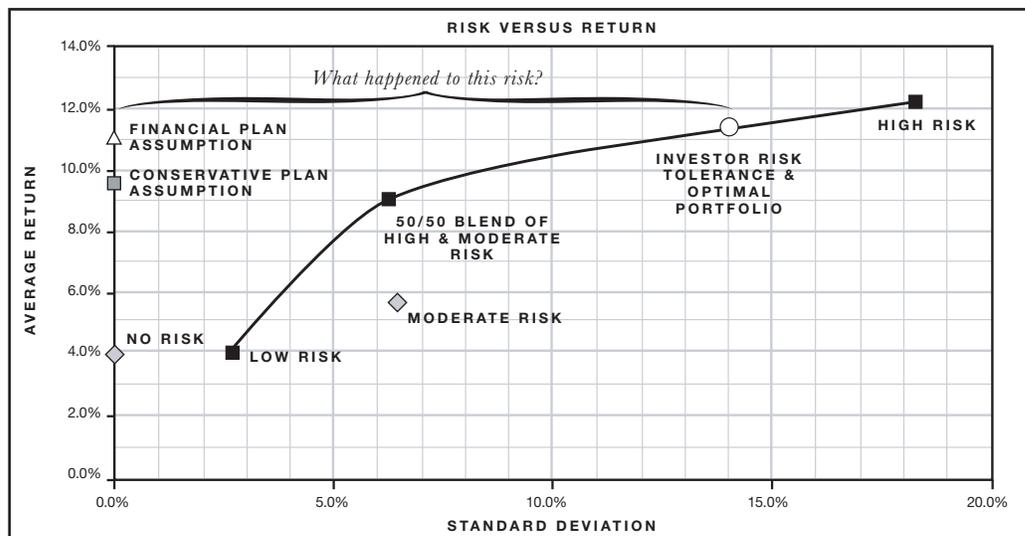
Is there a compliance officer in the room? Please tell me the standard deviation of a portfolio that produces the exact same rate of return every year? (Hint, refer to *Exhibit 1* and look at the theoretical "no risk" portfolio.) I know the returns for this investor's portfolio will vary. I know that risk control improves efficiency. Investors even know this. *If my planning tool assumes the exact same return each year, I am assuming that NO MATTER HOW MUCH RETURN I INPUT, THE PORTFOLIO WILL HAVE NO RISK!*

Do you think this is a reasonable assumption? How on earth could any advisor that identifies risk and optimizes return make the leap to assume that when it comes to planning goals and real dollars we can suddenly ignore risk? Some advisors intuitively know that all the science that determined the risk tolerance and return may be off, so they attempt to compensate for this by lowering the return to a more conservative assumption. This is normally a number that is plucked out of thin air but still assumes the portfolio will achieve the unobtainable no risk status.

If we examine the results, comparing completely ignoring risk, compensating for it by lowering the assumed return (in this case from 10.9% to 9.5%), and comparing it to reality, we uncover why we looked at risk in the first place.

The planner that chooses to ignore risk for our client with the twenty-year goal of turning $100,000 into $600,000 and a risk tolerance of 14.89% will tell his client everything will be all right. So will the advisor that assumes a "more conservative" 9.5% return. The advisor that chooses to INCLUDE risk, instead of IGNORE it will expose to the client his odds as shown in *Exhibit 5*.

Exhibit 5 – Ignorance is bliss, ignoring risk versus including risk

		Ignore Risk @10.9%	Ignore Risk @9.5%	Include Risk
Retirement Age				
	Client	66	66	66
Target End Value		$600,000	$600,000	$600,000
Avg. Annual Savings				
	Pre-Retirement	$9,000	$9,000	$9,000
Default Inflation Rate		3%	3%	3%
Median Return		10.90%	9.50%	9.55%
Risk				
	Std. Deviation	0.00%	0.00%	14.85%
	Downside (95%-tile)	10.90%	9.50%	-12.00%

	Plan Name	End Value	Success	< Target	Failure
B	Ignore Risk @10.9%	$600,000	🟩 100%	🟨 0%	🟥 0%

We evaluated 1000 simulations generating random returns. Your portfolio met your goals and had a targeted ending value of at least $600,000 at age 72 in ALL of these periods. This is a 100% rate of success.

Your plan never ran out of money.

	Plan Name	End Value	Success	< Target	Failure
1	Ignore Risk @9.5%	$600,000	🟩 100%	🟨 0%	🟥 0%

We evaluated 1000 simulations generating random returns. Your portfolio met your goals and had a targeted ending value of at least $600,000 at age 72 in ALL of these periods. This is a 100% rate of success.

Your plan never ran out of money.

	Plan Name	End Value	Success	< Target	Failure
2	Include Risk	$600,000	🟩 58%	🟨 42%	🟥 0%

We evaluated 1000 simulations generating random returns. Your portfolio met your goals and had a targeted ending value of at least $600,000 at age 72 in 576 of these periods. This is a 58% rate of success.

Your plan never ran out of money.

It sure is a lot easier to meet financial goals if we assume the portfolio has no risk. Most clients do not sign up for a two-in-five chance of falling short of their wealth goal, yet many plans choose to ignore this risk.

Clients hire advisors to help them meet their financial goals. Implicit in this relationship is a fiduciary duty that the advisor will create the best plan possible using the best tools available. Clients may be

unknowingly making a bet they cannot afford to lose. Financeware has developed tools to help prevent this. Please make sure you understand the risks your clients are taking. They trust you because you are the expert.

If we identify risk, model it and optimize around it, should we not also PLAN ON IT? Ignorance may be bliss…but it is still, none-the-less, ignorant.