Risk Tolerance Revisited

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WEALTHCARE
financial guidance for life

An Industry Perspective

"They find out how much pain you can take, then position you to experience it."

At a conference where I was presenting a few years ago, Dave Loeper, former CEO and founder of Wealthcare Capital Management LLC (Wealthcare), was speaking at one of the sessions. I had a few spare moments, so I stopped by his session and received the nugget of wisdom above. His message was clear - just because you can tolerate a certain amount of pain doesn't mean that you should. Yet, common practices in the financial advice industry for selecting your level of pain – specifically how much risk you should take – do just that. His perspective stuck with me. Was he right?

The short answer is yes… and no… but whether he was right is not the point. His real point, and a key premise upon which Wealthcare was built, is that **how much risk a client takes should be directly and unambiguously tied to what the client values**, not some fuzzy concept of risk tolerance. Risk is best expressed in a way that gives clients clarity and confidence that they are on the right path to achieving their goals, and most importantly, control of the key decisions that keep them on a confident path to achieving what they value. The risk decision is one key point of control a client has over his future and is best made in the context of other key control decisions such as spending, savings, retirement age, legacy, education and other goals.

I did not have to think long about **common industry practice of asking a client to answer a simple "risk-tolerance" questionnaire, often just 10 questions or less, and then applying a scoring algorithm to recommend a risk allocation. It feels a lot like the quote above.** To be fair, many advisors use such questionnaires as a starting point for a more meaningful conversation with the client. Others simply consider it a necessary compliance evil – just another piece of paperwork required by the firm to manage legal exposure. This questionnaire process is widespread in the industry. By its nature, it operates more effectively as a compliance tool to manage potential litigation risk from unhappy clients than as a tool to manage investment risk for clients. The thing is, clients would be happier if practitioners went beyond the typical questionnaire process (many do) to help clients better relate their investment choices to their goals and values. On industry perspective, Dave was right – the typical risk tolerance process helps identify how much pain clients can take, then positions them to experience it. However, risk tolerance is not about how much pain you can take.

Risk vs. Pain

There is an important, perhaps subtle, difference between pain tolerance and risk tolerance. Your pain tolerance goes to what sort of prescription your doctor gives you to numb the pain of your ailment. **You have no choice about your ailment, and its pain is imposed on you**. **You have a choice with regard to how much risk you are willing to accept, if any.** If you could reach all your goals without bearing any risk, would you? You might not, but you also might raise your ambitions. So now you are faced with the question of how much more risk you are willing to take to achieve higher ambitions. What if the extra risk means you *might* not achieve your lower ambitions? Would you take the extra risk?

From Risk Tolerance to Utility

Risk tolerance is about how much expected reward, or compensation, you require to bear risk. In theory, risk tolerance is used to identify amount of risk that "maximizes" investor utility using the following equation:

Utility = Reward – (Risk Aversion*Risk^2)

Note that risk tolerance is just the inverse of risk aversion: Risk Aversion = 1/Risk Tolerance. If your required compensation for bearing risk is high, your risk aversion is high and your risk tolerance is low, and vice versa.

It's nice when you can reduce a concept to a simple equation, but how do we use it in the real world? I can hear the conversation between the advisor and client now:

Client: That much equity risk makes me uncomfortable.

Advisor: You told me your risk tolerance was 0.5, which means your risk aversion factor is 2.0. So, if we lower your equity exposure by 10%, it will lower your utility by 6 utils.

Client: Well, I don't want to give up those 6 utils. They mean so much to me. Let's do what the equation says.

How is that for "directly and unambiguously tied to what the client values?" **Utility is an abstract concept that is difficult to measure.** Something has utility to the extent that it satisfies your needs or wants. You can think of utility as satisfaction measured in "utils" in the equation above. So, should we start putting utils in our quarterly reports instead of or along with performance? Not.

In the mock conversation above, our client not only had an intuitive understanding of utility and utils, they were also able to articulate their risk tolerance quantitatively. Of course, the real world doesn't work this way. If the real world fit neatly into our utility equation, then identifying the appropriate amount of equity risk for each client would be easy – just plug the inputs into the equation and do the math. Here are some example inputs:

Investment Information		Risk Tolerance (RT) Levels	
Cash Expected Return:	3%	High Risk Tolerance:	0.90
Stock Expected Return:	10%	Moderate Risk Tolerance:	0.60
Stock Risk:	20%	Low Risk Tolerance:	0.30

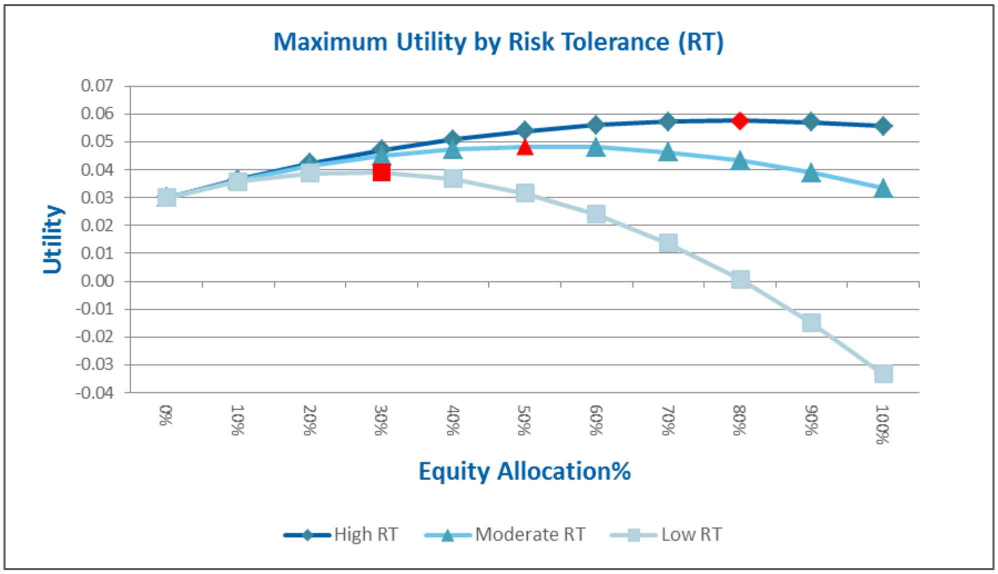
The table below does the math for the utility equation for each equity allocation using increments of 10%.

Investment			Utility		
% Stocks	Return	Risk	High Risk Tolerance	Moderate Risk Tolerance	Low Risk Tolerance
0%	3.00%	0.00%	3.00%	3.00%	3.00%
10%	3.70%	2.00%	3.66%	3.63%	3.57%
20%	4.40%	4.00%	4.22%	4.13%	3.87%
30%	5.10%	6.00%	4.70%	4.50%	**3.90%**
40%	5.80%	8.00%	5.09%	4.73%	3.67%
50%	6.50%	10.00%	5.39%	**4.83%**	3.17%
60%	7.20%	12.00%	5.60%	4.80%	2.40%
70%	7.90%	14.00%	5.72%	4.63%	1.37%
80%	8.60%	16.00%	**5.76%**	4.33%	0.07%
90%	9.30%	18.00%	5.70%	3.90%	-1.50%
100%	10.00%	20.00%	5.56%	3.33%	-3.33%

While it is difficult to assign meaning to the utility numbers in the table, we can find the maximum value for each risk tolerance (shown in red). Utility is maximized for each investor at different allocations to stocks based on risk tolerance as follows:

High Risk Tolerance Investor	80% stocks
Moderate Risk Tolerance Investor	50% stocks
Low Risk Tolerance Investor	30% stocks

The chart below shows the same information visually. The red markers show the highest point on each risk tolerance curve, which is the maximum utility for that risk tolerance and identifies the appropiate equity allocation.



So, the utility equation works great for identifying the appropriate risk level for the client by maximizing client utility. However, it works in the real world IF AND ONLY IF you can quantify the client's risk tolerance. The problem is that clients cannot quantify their risk tolerance for you and the risk tolerance questionnaire can't either. **The risk tolerance questionnaire is at best a heuristic. It may help us learn something about the client's tolerance for risk, but it doesn't quantify risk tolerance in a way that can be used in the utility equation. Therefore, the risk tolerance questionnaire can't be used to maximize utility.** This is why many advisors view the risk tolerance questionnaire only as a conversation starter or as a tool to manage legal risk of the firm rather than a tool to manage the risk level for the client.

The Wealthcare Approach

Clarity, Confidence and Control

Bringing clarity, confidence and control to the risk allocation decision is where the Wealthcare approach shines. **Using Wealthcare's patented Goals Exchange, Ideal-Acceptable Goals Framework and *Comfort Zone®*, we can maximize utility for each client without ever uttering the words "utility" or "utils."**

If you think of utility as the satisfaction you derive from things you enjoy or value - a new car, or house, a college degree, or dinner – then you also recognize that the utility from buying your first car is more than the utility from buying your second or third. The same is true for houses and college degrees. Taking your significant other to a nice dinner on Friday night can bring much satisfaction, but taking your significant other to two dinners on Friday night is unlikely to increase your utility. More likely it will fatten you up and shrink your utility. **This concept is called *diminishing marginal utility* by economists and is captured with the Wealthcare approach.**

The Wealthcare Goals Exchange is a straightforward way for clients to express their utility preferences for each goal relative to the others and, as importantly, relative to the risk required to achieve it. Clients simply identify their relative priorities for each goal using the plain questions in the Goals Exchange matrix as shown below:

Goals Exchange	Take More Risk	Save More	Retire Later	Reduce Estate Size	Reduce Retirement Spending
To reduce portfolio risk, we would be willing to:	N/A			✓	
To save less and live better now, we would be willing to:	✓	N/A	✓	✓	
To retire earlier, we would be willing to:		✓	N/A		
To leave a larger estate, we would be willing to:				N/A	
To increase our spending in retirement, we would be willing to:		✓	✓	✓	N/A
To fund grand kids' college education We would be willing to	✓			✓	

Clients can add as many goals as they want. When the matrix is complete, the rows with the most check marks are most valued and the columns with the most check marks are least valued.

There is a lot more to the Goals Exchange than meets the eye. Most importantly, risk is listed as the first "goal" and prioritized relative to every other goal. Remember, risk tolerance is about required compensation for bearing risk. Dave's genius here is that he allows the client to define their required compensation for bearing risk in terms of what they value, rather than in basis points of return or a quantitative abstraction like "utils." **When clients tell us their priorities through the Goals Exchange, it is a natural and intuitive process that draws out their risk preferences relative to what matters most to them. We, in turn, take their risk preferences to help them employ risk to make the most of their lives** with our patented process.

The Goals Exchange works in conjunction with Wealthcare's Ideal-Acceptable Goals framework to help each client intuitively make personal choices that capture the economic concept of "diminishing marginal utility" previously mentioned. In an academic sense, the Wealthcare framework helps each client uniquely "maximize utility." In a practical sense, **Wealthcare provides clients a framework for making relative choices among competing goals, including how much risk to employ, so that they make the most of their lives with the resources they have.**

The Ideal-Acceptable Goals framework defines bounds of utility for each client goal. The Goals Exchange defines the relative utility of each goal. With these inputs, **the Wealthcare simulation engine recommends alternative plans, each with a similar likelihood of success, or confidence level, but different utility for the client.** The client can then select among the alternatives and make adjustments to maximize their expected utility given their current financial condition. As their situation changes, due to life events or market movement, **clients can make adjustments to their plan and be confident that the resources reflect their values.**

The image below of the Comfort Analysis page of the Wealthcare Quarterly Update illustrates the Ideal-Acceptable range relative to the recommended.

Comfort Analysis

Important: The projections or other information generated by WCM regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results and are not guarantees of future results.

Comfort Analysis

	Name	Simulation Method	Comfort Level	Status
I	*Ideal*	Monte Carlo	5%	Uncertain (underfunded)
R	*Recommended*	Monte Carlo	82%	Comfort
A	*Acceptable*	Monte Carlo	99%	Sacrifice (overfunded)

- Sacrifice (overfunded) . Unnecessary sacrifice to lifestyle or undue investment risk.
- Comfort. Sufficient confidence without undue sacrifice, changes to goals likely to be minor and manageable.
- Uncertain (underfunded) . Confidence is too low, changes to goals may be necessary now and into the future.

	Ideal	Recommended	Acceptable
Retirement Age			
Tom	Retired	62	65
Katie	Retired	62	65
Retirement Spending			
Tom	$175,000	$175,000	$160,000
Other Goals			
Jamaica Trips	$25,000	$25,000	$10,000
Education Goal	Yes	Yes	Some
Target End Value			
Today's Dollars	$2,000,000	$500,000	$100,000
Actual Dollars	$5,970,453	$1,492,613	$298,523
Savings (Current)			
Tom	$7,500	$10,000	$20,000
Katie	$7,500	$10,000	$20,000
Default Inflation Rate	3%	3%	3%
Investment Adjustment	-1.427%	-1.427%	-1.429%
Portfolio			
All Accounts	WCM-Risk Averse 30% equities	WCM-Balanced Income 45% equities	WCM-Growth 90% equities
Median Return	6.17%	7.23%	9.56%
Risk			
Std. Deviation*	6.85%	9.04%	17.20%
Downside (95%-tile)**	-4.51%	-6.63%	-14.93%

*Standard deviation is a risk statistic used to measure the volatility of return observations around the portfolio's average return.

**Downside represents the 1-year 95th percentile return. 95% of all 1-year returns simulated are better than this return and 5% are worse.

Comfort Zone®

The light blue zone in the previous image, which reflects confidence levels between 75% and 90%, is the Wealthcare Comfort Zone. For most people, having a confidence level that is less than a 3 in 4 chance of success is uncomfortable, perhaps anxiety provoking. They want higher confidence that they are on track and that they are able to provide for their loved ones. However, reaching for confidence levels of 90% or higher leads to different kind of discomfort — a life of sacrifice and perhaps an unintended windfall to one's heirs. If you seek a 95% confidence level, this means that in 19 of 20 scenarios, you will achieve all your goals while living and leave *at least* the amount of money you intended to leave to your heirs. You will likely leave much more. Targeting confidence levels of 90% or greater in your plan implies a static process. The Wealthcare process is dynamic, and captures the likelihood of exceeding your goals, not just reaching them as shown below:

Wealthcare Analysis

results shown in Today's Dollars

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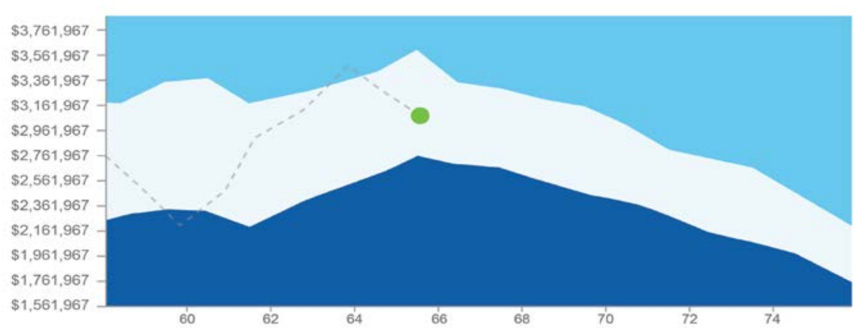
See Common Terms and Definitions in Appendix II at the end of this report for more information about the Wealthcare Analysis.

Comfort Zone® - Current



Chance of Falling Outside Comfort Zone® -

	1 Year	3 Years	5 Years
Sacrifice (Overfunded above)			
Amount	$2,781,675	$2,862,421	$2,789,075
Chance	6.5%	27.8%	37.7%
Uncertain (Underfunded below)			
Amount	$2,251,810	$2,386,056	$2,360,084
Chance	13.1%	26.1%	27.0%
Outside			
Chance	19.6%	53.9%	64.7%

Note that we update, track and report on where the client is in the Comfort Zone at least quarterly. Also note that we calculate the likelihood of falling outside the Comfort Zone over various time frames. In the example above, the client has a 64.7% chance of falling out of the Comfort Zone, with the higher likelihood (37.7%) being that they will exceed their goals and become overfunded. This means they have the opportunity to reach for additional goals – perhaps get closer to the ideal of retiring sooner – or they could choose to take less risk. If they choose not to update their goals, they are in essence saying that the satisfaction they expect from reaching the updated goal does not compensate them for maintaining a higher risk level. So, the extra risk is has no purpose. It is unnecessary. The reverse is true if they become underfunded. Either way, it is a client choice. They have a clear path to their goals and are in control of the decisions that keep them in the Comfort Zone.

Risk Tolerance – The Wealthcare Way

The Comfort Zone brings us back to the start of our discussion of risk tolerance. A risk tolerance questionnaire that identifies how much pain you can take may satisfy the compliance department and the regulators, but it does not help clients maximize utility or make the most of their lives. The questionnaire can be, and often is, used to assign a risk allocation to a client, but it does not quantify risk tolerance – the client's required compensation for bearing risk. Since it does not quantify risk tolerance, there is no reason to believe that the portfolio assigned to the client based on the questionnaire actually offers the compensation for risk required by the client. **Use of a risk tolerance questionnaire to assign clients to portfolios is simply an ordinal process – i.e. clients that score higher get riskier portfolios and vice versa. There is no measure of a client's actual required compensation for bearing risk and there is no connection to the client's goals. Part of Dave Loeper's legacy and contribution to advancing the field of advising is in creating the patented Wealthcare approach that directly connects a client's goals and risk tolerance to a portfolio that helps clients maximize utility and make the most of their lives.**

The Comfort Zone is the focal point of a process by which clients more effectively align their resources with what they value most. The Goals Exchange and the range of Ideal-Acceptable Goals are inputs to the Wealthcare simulation engine and Comfort Zone that capture the economic principles of diminishing marginal utility and utility maximization, all without requiring the client to become a fledgling mathematician or economist. It is done in a way that is intuitive and natural for clients. Through the Comfort Zone, clients are able to monitor and manage their funded status in a straightforward and ongoing way. It is a source of clarity and confidence for clients about their future. Most importantly, it puts the client in control of how that future unfolds.

Key Takeaways

- Risk tolerance is not about how much pain you can take or how much risk you can tolerate in the absence of potential reward. It is about how much potential reward you require to bear risk.
- Your required compensation for bearing risk cannot be captured through a typical risk tolerance questionnaire.
- Reward is best measured in terms of what you value, not just in terms of basis points on a performance report. Attaining what you value is the true reward.
- Your required compensation for bearing risk is not static. It will evolve with your life circumstances and so will that which you value.
- Wealthcare's actionable Comfort Zone process captures a client's risk tolerance in the context of their goals and values, helps the client select a portfolio that offers compensation for bearing risk that is consistent with their risk tolerance, and helps clients keep their resources aligned with what they value most on an ongoing basis.

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