BEHAVIORAL INSIGHTS

Risk Tolerance and Decision Making

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An assessment of risk tolerance may help an advisor to gauge an investor's level of comfort with investment risk: What is the investor's willingness to accept the possibility of loss in exchange for potential gain? But willingness to take risk may not tell the whole story. Further contextualizing risk in terms of needs, concerns, and goals can provide insight into the particular risks that will help an investor reach desired outcomes.

Discussions between advisors and clients that go beyond risk tolerance can help investors in the following ways:

Identify factors that shape an investor's willingness to take investment-related risk. Comfort with risk can be determined by a diverse set of elements, including the dollar amounts at risk, an investor's goals, the investment time horizon, and more.

Distinguish between an investor's risk capacity and risk tolerance. It can be important to distinguish between the ability to take risk to meet an investment-related objective (i.e., risk capacity) and an investor's willingness to take risk (i.e., risk tolerance).

Build an investment approach one goal at a time. When an investor articulates goals, a strategy can be built that takes the right level of risk to meet the investor's objectives, which can give the investor confidence in the strategy even when risk feels difficult to tolerate.

Contextualizing Risk Tolerance

Are you a conservative or aggressive investor? Not sure? Consider the following choice between Options A and B:

- **Option A:** If you choose this option, you will receive $20 for sure.
- **Option B:** If you choose this option, there is a 50-percent chance that you will receive nothing and a 50-percent chance that you will receive $100.

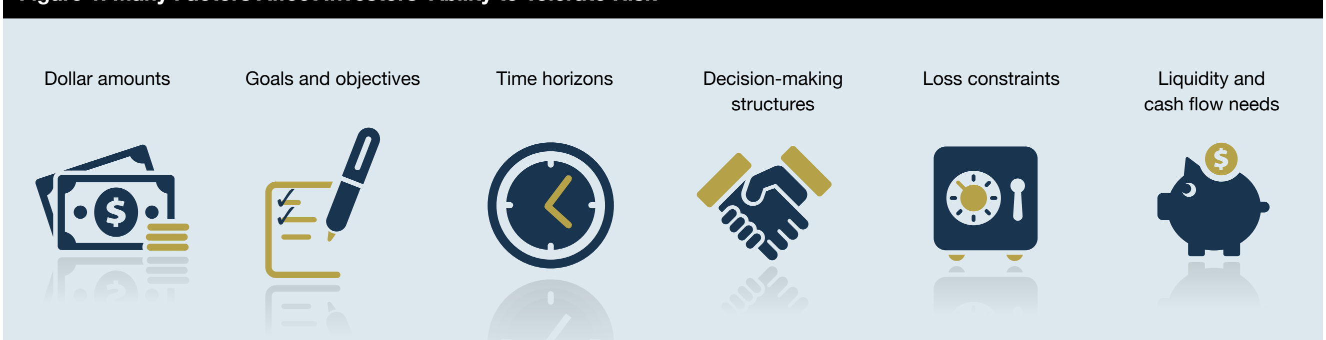
Many investors have the sense that if they go with Option A, they are relatively conservative and if they go with Option B, they are relatively aggressive. However, nothing could be further from the truth. To demonstrate why, consider the following choice between Options X and Y:

- **Option X:** If you choose this option, you will receive $2 million for sure.
- **Option Y:** If you choose this option, there is a 50-percent chance that you will receive nothing and a 50-percent chance that you will receive $10 million.

Many formerly aggressive investors would now avoid the risky option (Option Y), and instead choose the sure thing (Option X). Why? It almost goes without saying: The increase in dollar amounts may highlight investors' aversion to the possibility of a negative outcome. In particular, taking the 50-percent chance of a $0 outcome when one could have a $2 million outcome with complete certainty may feel less attractive.

If you are confused as to whether you are conservative or aggressive, you are not

Figure 1: Many Factors Affect Investors' Ability to Tolerate Risk



alone. Many elements go into the assessment of an investor's tolerance for risk, and dollar amounts are just one piece of the puzzle. Below are six key considerations for investors as they think about their own willingness to take risk (see figure 1).

Dollar amounts: As described above, the dollar amounts invested—especially relative to the total assets available to the investor—can make a big difference with respect to the risks that the investor is comfortable taking.[1] For example, if an investor has $1 million and is investing $100,000, the risk tolerance may be higher than it would be if the investor is investing $900,000. Assessing the dollar values that will shift an investor's feelings toward risk can be critical to staying the course with an investment strategy.

Goals and objectives: The overarching purpose for the investment dollars can be critical to determining the level of portfolio risk that the investor can tolerate. In other words, what job does the money have to do? If it's an ambitious college-education goal, the investor may be willing to take a more aggressive position than with a retirement goal to meet essential income needs. Working with a financial advisor to articulate explicit goals and the desired range of outcomes around those goals can help identify an investor's true risk tolerance (Merrill Lynch Wealth Management Institute 2013).

Time horizons: A common rule of thumb is to invest more aggressively for longer-term goals. As a consequence, investors with an aggressive risk tolerance may assume they can handle the riskiest of investments for goals with long time horizons. However, consider a portfolio that needs to generate a consistent stream of essential income (e.g., annually) for 30 years. Sequence of returns matter: If the income portfolio is invested too aggressively and sustains a large draw down for a long period of time, the portfolio's value can erode quickly. In this situation, aggressive investors can suddenly become extremely conservative, possibly even selling all of their investments at a low point to avoid further decline, thereby locking in losses. To lessen the likelihood of this scenario, it may be useful for aggressive investors to proactively decrease portfolio risk for goals where sequence of returns matter. Alternatively, temporarily adjusting needs from the portfolio downward during times of investment stress can minimize the negative impact on a portfolio's value.[2]

> *"To that end, if the investor decided to ignore risk capacity and instead invest according to risk tolerance, an extreme approach would be to hold cash "under the mattress" to cover the essential expenses."*

Liquidity needs and cash flows: Many investors have essential expenses to maintain assets (e.g., home repairs, contractual commitments) and life needs (e.g., insurance premiums, mortgage payments). Understanding what is fixed and what is variable can be useful, particularly in the short run. For example, setting aside one, two, or even three years of lifestyle needs in cash-like investments can provide assurance that financial needs can be met, even in the event of a negative life or market occurrence. Without a feeling of confidence, investors may be more likely to sell some or all of the investment portfolio during challenging times because they fear that they may not be able to cover short-term essential expenses. By selling investments when markets are down, they may lock in losses before a recovery hits. Similarly, if the investor is in or near retirement, dedicating some assets to a more conservative portfolio designed to meet essential income needs can give the investor confidence to invest more aggressively (if desired) outside of that core portfolio and stay with the portfolio regardless of market cycles (Das et al. 2010).

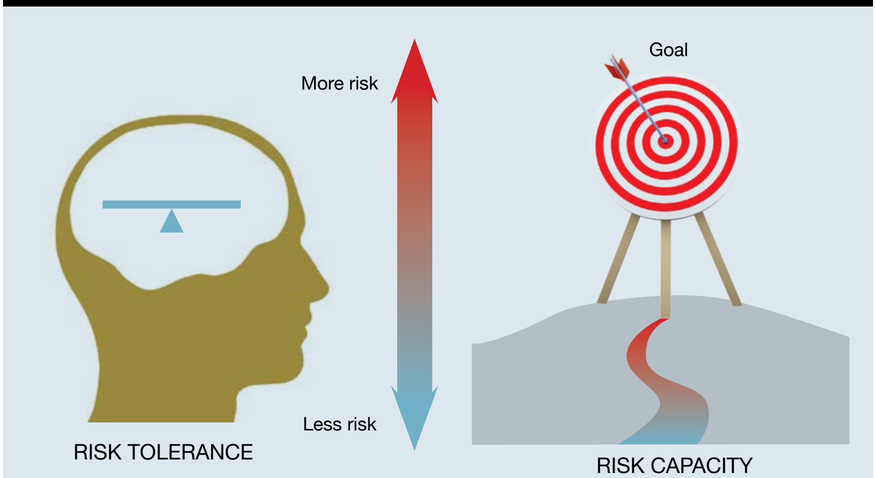
Loss constraints: Some investors feel strongly about having a minimum level of wealth or cannot tolerate a loss below a certain dollar amount. Identifying constraints related to maximum acceptable loss can go a long way toward understanding whether investors can remain invested when the going gets rough. It can be important to tie loss constraints, which are based in how investors think and feel about investing, to liquidity needs and cash flows (or other critical financial priorities). For example, an investor may have little to no psychological aversion to loss, thereby investing in an extremely aggressive and illiquid portfolio. However, the aggressive investor may objectively need to consider minimum liquidity and cash flow needs in order to remain solvent during challenging markets. Conversely, an investor may be hyper loss averse, investing in a cash-like or overly conservative way. Such a conservative approach may risk an investor's financial future because the portfolio may not grow at the pace of inflation, diminishing spending power over time.[3]

Decision-making structures: Perhaps the most widely overlooked aspect of assessing risk preferences is addressing how investment decision making will be organized. For example, who is driving the investment decisions: an individual, a couple, or a family—and if it is a couple or family, is willingness to take risk aligned across individuals? Does the decision making have a fiduciary aspect, so as a consequence is the decision-maker's own risk tolerance less relevant? Is the investor interested in working with financial professionals that actively manage investment risk? Ultimately, generating a dialogue around different perspectives on risk can help build an effective, predefined decision-making structure and avoid potential conflict (Liersch and Suri 2012a,b).

The Interplay of Risk Tolerance and Risk Capacity

Investors may have heard financial professionals contrast the idea of risk capacity with risk tolerance (see figure 2).[4] In essence, risk

Figure 2: Risk Tolerance vs. Risk Capacity



capacity is an investor's ability to expose him- or herself to risk to reach a particular goal, regardless of that investor's willingness to tolerate investment-related risk.

To illustrate this concept, consider an investor who is extremely conservative, i.e., comfortable investing in only the least risky products and solutions. Now assume that this investor has $10 million and no other goal but to generate 30 years of essential retirement income at $100,000 annually. Although the investor is conservative, they may have the ability, or capacity, to take aggressive risks: The investor could accommodate a relatively large loss and still meet the desired outcome. In this case, if investing according to risk capacity, the portfolio solutions dedicated to this 30-year income goal may be relatively aggressive despite the fact that the investor is conservative.

However, it is important to note that the investor is actually required to take very little investment-related risk to meet the income need (which is in line with the investor's risk tolerance). To that end, if the investor decided to ignore risk capacity and instead invest according to risk tolerance, an extreme approach would be to hold cash "under the mattress" to cover the essential expenses. The investor would need to set aside about $4.5 million today assuming a 2.5-percent inflation rate (inflation erodes the value of dollars over time, which is why the cash held would equate to more than $100,000 multiplied by 30 years, or $3 million). Of course, because of the portfolio's extremely conservative nature, the income goal is expensive to reach because the money is not invested, and therefore it does not provide any potential return. But the benefit is that the investor can depend on the annual income of $100,000 (in today's dollars) with almost complete certainty, which appears important because the goal is essential. Understanding the investment amount needed to comfortably fund the essential income goal, and setting that amount aside in a separate portfolio, has another benefit: It may make the investor more comfortable choosing to invest the remaining $5.5 million ($10 million – $4.5 million) more aggressively, according to the investor's risk capacity.

Now consider the same extremely conservative investor but with only $2 million available to fund the same essential need: $100,000 annually in retirement for 30 years. Even though the investor now has a lower capacity to take risk—because any negative shocks to the portfolio might jeopardize the desired outcome—the investor may be exposed to more risk than is comfortable to pursue investment goals. Why? The amount needed to fund the goal at a risk-free rate may exceed the resources available (i.e., recall that generating $100,000 annually for 30 years would require $4.5 million, and the investor has only $2 million), which may lead the investor to ratchet up risk. However, because the investor is conservative and may be less able to tolerate increased risk, other tradeoffs could be considered. For example, the investor may be able to lower the essential income need or shorten the time horizon (by postponing retirement and continuing to work) so that less risk is required to meet the goal. Ultimately, risk capacity suggests that the risk an investor can take based on goals is distinct from the investor's ability to tolerate risk (Bodie and Taqqu 2012).

Final Thoughts

There are myriad considerations when an investor evaluates the level of investment-related risk that makes most sense. Reminding the investor that two primary principles of risky choice describe many human beings can help.[5]

Principle 1: Losses tend to hurt more than gains feel good. Otherwise put, many investors would not engage in an investment with a 50-percent chance of gaining $2,000 and a 50-percent chance of losing $1,000, even though, on average, they would earn a return of $500. This often means that mitigating potential loss is important to many investors.

Principle 2: Investors tend to be risk-averse for gains and risk-seeking for losses. One commonly used example of this concept is the disposition effect, where investors tend to sell winning—and hold losing—stocks. In other words, investors tend to want to harvest equity gains but not losses. The effect disappears in December when investors try to evaluate positions objectively to maximize tax efficiency, suggesting that structured pre-defined parameters can help investors maintain a level of risk best suited to their true objectives.[6]

Once these two principles are taken into account, investors can challenge their perspectives when making investment-related decisions in the following ways:

Think beyond risk tolerance. Many investors consider themselves conservative, moderate, or aggressive. However, the risk level that is truly right for an investor may depend on a variety of factors that go beyond the investor's willingness to take risk.

Articulate and define concrete goals. Assigning concrete dollar amounts, priorities, and time horizons to each of an investor's goals can help identify the risk level needed to attain the full set of objectives (independent of the investor's risk tolerance).[7]

Identify and revisit risk allocation. Working with a financial advisor to differentiate investments that address essential lifestyle needs from those that are more aspirational in nature can be useful, especially when determining whether an investor is overallocated to particular risks. Revisiting risk allocation can be important to accommodate changes in circumstances, objectives, or risk tolerance.[8]

Ultimately, risk can be a multi-dimensional concept that should be contextualized in terms of what an investor is trying to accomplish and how the investor is comfortable accomplishing it.

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Endnotes

1. Under particular conditions, willingness to take risk at large dollar amounts may be surprising; see Post et al. (2008).
2. For a discussion of key risks in retirement, including risks related to sequence of returns, see Suri et al. (2013).
3. Evidence suggests that younger investors are uniquely anchored in conservative (and traditional) approaches to investing. For more information, see Liersch (2013).
4. For a heated discussion that even questions the value of assessing risk tolerance, see Zweig (2013).
5. For a behavioral theory of risk aversion, see Kahneman and Tversky (1979).
6. For seminal research on the disposition effect, see Shefrin and Statman (1985). For evidence that the effect disappears in December, see Odean (1998).
7. Goal articulation and definition may help resolve key misperceptions that investors hold to be true about goal attainment. For an example, see Liersch and Allred (2014).
8. The Wealth Allocation Framework (WAF) can help investors identify how their risk is allocated, which can motivate appropriate adjustments in risk now and over time; see Chhabra (2005).

References

Bodie, Zvi, and Rachelle Taqqu. 2012. *Risk Less and Prosper: Your Guide to Safer Investing*. Hoboken, New Jersey: John Wiley and Sons, Inc.

Chhabra, Ashvin B. 2005. Beyond Markowitz: A Comprehensive Wealth Allocation Framework for Individual Investors. *Journal of Wealth Management* 7, no. 4 (spring): 8–34.

Das, Sanjiv R., Harry Markowitz, Jonathan Scheid, and Meir Statman. 2010. Portfolio Optimization with Mental Accounts. *Journal of Financial and Quantitative Analysis* 45, no. 2 (April): 311–334.

Kahneman, Daniel, and Amos Tversky. 1979. Prospect Theory: An Analysis of Decision under Risk. *Econometrica* 47, no. 2 (March): 263–291.

Liersch, Michael. 2013. Millennials and Money. Merrill Lynch Wealth Management. http://www.pbig.ml.com/Publish/Content/application/pdf/GWMOL/PBIG_ARM3BSQ5.pdf.

Liersch, Michael, and Stacy Allred. 2014. Can you make the money last? The Road to Sustainable Wealth. *The Meaning of Sustainable Wealth Survey*. http://www.pbig.ml.com/Publish/Content/application/pdf/GWMOL/ARKG5URF-050514.pdf.

Liersch, Michael, and Anil Suri. 2012a. Making Group Decisions the Behavioral Finance Way. Merrill Lynch Wealth Management Institute (fall). PDF upon request.

——. 2012b. Innovations in Behavioral Finance: How to Assess Your Investment Personality. Merrill Lynch Wealth Management Institute (spring). http://wealth-management.ml.com/Publish/Content/application/pdf/GWMOL/Innovations-in-Behavioral-Finance.pdf.

Merrill Lynch Wealth Management Institute. 2013. Goals-Based Wealth Management: Helping You Pursue Personally Meaningful Goals (spring). http://www.wealthmanagement.ml.com/publish/content/application/pdf/GWMOL/470599PM.pdf.

Odean, Terrance. 1998. Are Investors Reluctant to Realize their Losses? *Journal of Finance* 53, no. 5 (October): 1,775–1,798.

Post, Thierry, Martijn J. van den Assem, Guido Baltussen, and Richard Thaler. 2008. Deal or No Deal? Decision Making under Risk in a Large Payoff Game Show. *American Economic Review* 98, no. 1 (March): 38–71.

Shefrin, Hersh, and Meir Statman. 1985. The Disposition to Sell Winners Too Early and Ride Losers Too Long: Theory and Evidence. *Journal of Finance* 40, no. 3 (July): 777–790.

Suri, Anil, David Laster, Michael Liersch, and Nevenka Vrdoljak. 2013. A Path to Retirement Success. Merrill Lynch Wealth Management Institute (winter). http://www.ml.com/Publish/Content/application/pdf/GWMOL/MLWM_RO-A-Path-to-Retirement-Success.pdf.

Zweig, Jason. 2013. Risky Business: The Quiz That Could Steer You Wrong. *Wall Street Journal* (May 3).

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