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# Redefining Risk

The Revolution  
Coming to  
Financial Services

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## EXECUTIVE SUMMARY

As a goals-based investment manager, we believe investment problems and challenges are best addressed in the context of an investor's goals—the purpose behind their investment programs. By aligning investment solutions with investor goals, investors have a better opportunity to measure the actual “real world” outcomes they seek.

Each investment-related goal consists of three stages—accumulation (or the **Gain stage**), preservation (or the **Protect stage**) and distribution (or the **Spend stage**). Importantly, investors face different primary risks in each of those three stages.

1. A reasonable risk metric for the Gain stage is **volatility**. The mathematical rationale behind why volatility as a measure of risk can be valid under the proper conditions is well-understood by the financial services industry in an efficient frontier or mean-variance framework. However, we suggest an additional behavioral explanation for why volatility is an appropriate definition of risk for the investor in the Gain stage.
2. For the Protect stage, a better metric for risk is **drawdown**—absolute loss. While volatility can accompany investment losses, it is a secondary effect. Defining risk-as-drawdown provides a much more straightforward treatment of the primary risk during Protect stage of the investment journey.
3. The investor in the Spend stage with ongoing expenses (such as paying for expenses in retirement), we designate **longevity** as the primary risk. Thinking in terms of longevity can provide startling insights as to the type of investment management strategy and the type of portfolio construction that can best address this risk.

Ultimately, the fundamental definition of risk must change and adapt over time as investors transition into a new stage of their goals-based program. Likewise, the investment strategies and portfolio construction decisions aimed at mitigating risk must also change and adapt to each new stage. A portfolio in the Gain stage should have different characteristics and attempt to mitigate different risks than should a portfolio in the Protect stage or in the Spend stage, for example.

This approach stands in contrast to traditional methods of portfolio construction and management that treat risk in more static ways. These methods do not, in our opinion, maximize the probability of investment success. That is, we do not believe that they do nearly as good a job as goals-based investment strategies do at seeking to ensure investors will meet or exceed the financial goals that are the fundamental drivers behind their decision to invest in capital markets.



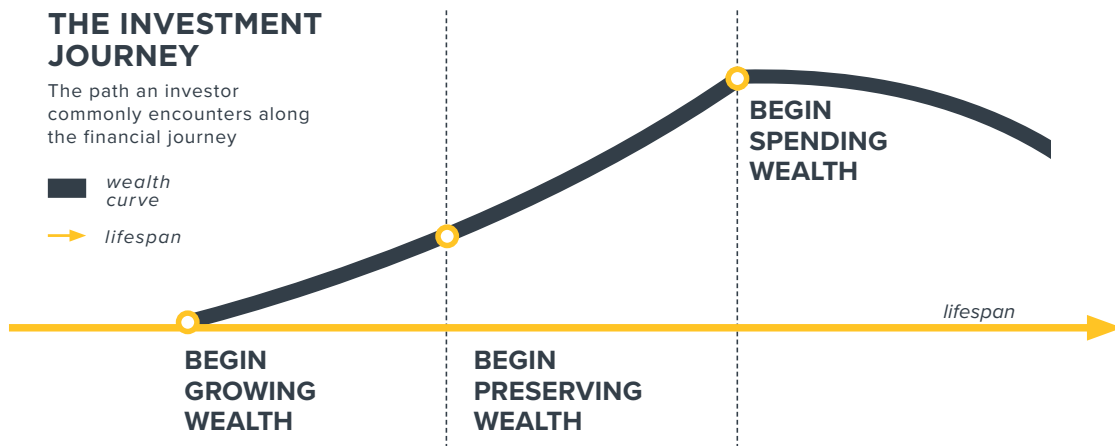
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# Redefining Risk

## The Revolution Coming to Financial Services



### Overview

As a goals-based investment manager, Horizon frames investment challenges in the context of an investor's goals—and the future cash outflows they'll need to achieve those goals.

That means our starting point is always the “why” of investing: What is the purpose of a client's investment program? Are they saving for retirement, to send kids to college, to buy a different house, or perhaps to leave behind legacy assets? Typically, the answer is a combination of these and other goals. All the various “why's” represent a client's series of goals.

**Goals-based investment management** is the “how”—the strategies that will be used to achieve that series of goals.

Using this framework, we break each client goal into three investment stages—each with its own overarching objective:

1. **Accumulation stage.** The period of time when the client is actively investing with the objective of growing assets to fund the goal. At Horizon, we call this the **GAIN** stage.
2. **Protection stage.** The period of time shortly before the actual funding of the goal, when the client's objective is to ensure that potential investment losses don't jeopardize the goal. We call this the **PROTECT** stage.
3. **Distribution stage.** The period of time when the client's objective is to actively use their accumulated assets to fund the goal. This is what we call the **SPEND** stage.



It's vital to understand that investors face very different risks in each of these investment stages. That makes perfect sense given that each stage has its own specific and unique objective. Therefore, each stage should address the investment management question differently—that is, the “how” should follow from the “why.”

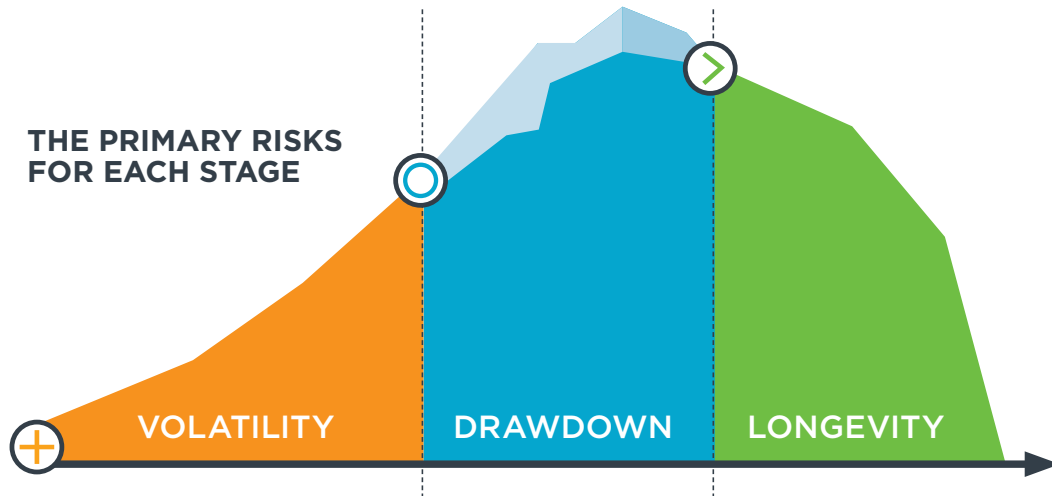


This is not how most investment managers view investing, however. Traditional organizations tend to view investment problems in terms of exposure to various assets—for example, through a style-box approach and a diversification lens. This approach says, essentially: create a certain exposure to U.S. small-value stocks, plus some exposure to real estate and a sprinkling of emerging markets and—voilà!—you’ve got your diversified investment portfolio!

A traditional, exposure-based investment management firm may have difficulty matching their institutionally-focused and exposure-based portfolios to a series of client-centric goals—or even to a single goal, for that matter. (That’s not the portfolio’s fault, of course. This is a job it wasn’t designed to do in the first place.)

This is part of a broader, industry-wide problem: traditional investment approaches and metrics around issues of performance and risk have developed based entirely on institutional investors’ needs—not the objectives of individual investors and families. The investment “language” spoken by institutions is fundamentally different than the language spoken by individuals.

Going forward, then, the individual must be placed at the center of the investment universe—not the institution—so that advisors don’t make the mistake of continually describing an investing experience with language that does not reflect their clients. Advisors must be able to speak to clients in ways so that the investments make sense, measurements actually mean something, and the evaluation criteria reflect their reality.



Horizon believes one way to address the issue of fitting a square peg (the exposure-centric portfolio design) into a round hole (a portfolio managed to achieve clients' actual life goals) is to frame it in terms of the **primary risk** a client faces during each stage of their investment journey. If a portfolio is managed to minimize the most pertinent risk at each of the three stages, clients can gain clarity on why certain exposures or investment techniques are being used at various times. That, in turn, can help them stay the course over time and maximize the probability of reaching their stated goals.

With that in mind, let's examine the specific primary risk that investors must address in each investment stage.



STAGE  
ONE

GAIN

## PRIMARY RISK: VOLATILITY

### Accumulation Stage

The vast majority of the investment world—institutional investors and investment firms, in particular—adhere to the traditional view that **volatility** is the best metric for assessing risk.

While we don't believe that volatility is the accurate proxy for risk in all cases and for all investors—more on that later—we do agree with the broad-based institutional investment community that volatility is the primary risk on which investors in the Accumulation stage of their investment journey should focus.

The assumptions of Modern Portfolio Theory help support the idea that volatility is an appropriate risk gauge for certain individual investors—namely, those Accumulators who are decades away from needing their wealth to fund their goals. Such long-term timeframes are the closest individual investors can get to the infinite, in-perpetuity time horizons used by institutional investors that view risk as volatility (endowment funds, state pension plans, index-based mutual funds and the like).

The second reason volatility should be the main barometer to gauge risk during the Accumulation stage has to do with **investor behavior**.

Whether from Dalbar studies of “investor vs. investment” returns (investor returns are always worse) or from our own experience, we know that clients tend to want to do the “wrong” thing at the wrong time, based on the movements of the markets. In times of intense volatility or declining markets, they often want to sell their portfolio to reduce risk—a decision that often leads them to end up paying a higher price later on when they want to buy back the portfolio. Since higher volatility is more likely to generate bad investor behavior than is lower volatility, it follows that volatility is a good metric for risk among Accumulators.



STAGE  
TWO

**PROTECT**

## PRIMARY RISK: DRAWDOWN

### Protection Stage

Measuring risk as volatility is about as traditional an approach that you can get, of course. And, as shown, it's an approach that can make sense for some investors in the Accumulation stage who are decades away from their goals' starting points.

However, a modern-day discussion of both the Protection and Distribution stages of a goals-based investment management strategy requires a fundamental shift away from the 70-plus-year dogma of risk-as-volatility.

The reason: While volatility certainly can impair a Protection or Distribution strategy, it is not the dominant risk that investors in these two stages must address and mitigate. *One size does not fit all.*

Take the Protection stage of goals-based investment management. It begins at a moment somewhat close to when the Distribution stage is set to begin. Just when, exactly, that moment starts is a bit loose and nebulous by necessity. There are simply too many variables that can be at play to definitively state, "THIS is the moment at which the goal enters the Protection stage." Such variables include:

- How well funded is the goal?
- How much time remains until the Distribution stage is expected to begin?
- How long is the Distribution stage expected to last?
- Where does the goal sit on the client's hierarchy of goals—that is, how important is it relative to other goals?

We can design elegant mathematical approaches to help us answer all of these questions and more, simultaneously. But if we're being honest, the output from those models will be a time range—a continuum.





We know that Protection becomes increasingly important as the Distribution stage nears. But, frankly, pinpointing an exact moment in time when a magical switch flips from Accumulation to Protection isn't nearly as important as understanding the implications of this transformation on goals in the client's portfolio.

The biggest implication: Drawdown—absolute dollar losses in the client's portfolio—replaces volatility as the dominant investment risk in the Protection stage. There are two main reasons why drawdown becomes the major concern at this point, both of which concern timing:

1. The fact that the Protection stage begins reasonably close to the desired start of the Distribution stage means there isn't much time for investors to recover from investment losses they could suffer. For investors approaching the Distribution stage, volatility or losses relative to a benchmark don't matter nearly as much as do absolute dollar losses. Just ask an investor who was hoping to retire in 2010!
2. Likewise, absolute dollar losses are what most directly threaten the client's ability to adequately fund the goal (whether it is a one-off or ongoing expense). Volatility doesn't threaten the goal—losing money at the wrong time does.

The upshot: A goals-based investment management framework must address risk-as-drawdown—actual investment losses in the portfolio—during the Protection stage. There are multiple ways to address this risk, including investing in low volatility stocks, using options-based strategies, or implementing an active de-risking approach.

*Important:* A balance still must be struck between building wealth and protecting wealth during this stage. *First and foremost, step back and acknowledge that investment gains can be a fundamental risk management tool.* Additionally, the Protection-stage investor may not have accumulated quite enough wealth to fund the upcoming goal, and still needs to earn positive investment returns. Therefore, an overly myopic focus on avoiding losses can be harmful to the investor's goal if it greatly diminishes or eliminates the opportunity to continue to earn investment gains.

Defining "risk" as drawdowns during the Protection stage provides the flexibility to design strategies that balance the need for additional investment gains against the specific threat of drawdowns. It also helps communicate to clients about the nature of the tradeoffs being made in order to meet their goals.



STAGE  
THREE  
**SPEND**

PRIMARY RISK:  
**LONGEVITY**

**Distribution Stage**

As a client moves into an ongoing-expense Distribution stage, goals-based investment management once again re-defines and re-assesses the concept of risk.

The objective during the Distribution stage is to spend money to pay for a goal. It follows, then, that the dominant investment risk a client in this stage faces is **longevity: running out of money before the goal is fully met**. In goals-based investment management, longevity means both having the money set aside for that goal and having that money last long enough to fund the goal completely.

*Important:* Although the concept of risk-as-longevity incorporates many other types of risk—including sequence of return, inflation, volatility, liquidity, behavioral, and others—the risk of running out of money is the foundation risk that must be mitigated above all others.

Identifying longevity as the primary Distribution stage risk has important implications for a Distribution-stage investment strategy. The bottom-line question that must be asked is: What investment strategy and what portfolio construction are needed to avoid running out of money before the goal is achieved?

For answers, consider what is undoubtedly the most difficult goals-based investment management problem in existence: retirement.

**1. Addressing Longevity Risk: Retirement Investment Strategy**

The specific investment strategy that will best minimize longevity risk question will be determined largely by the methodology behind how each client *withdraws* money during the Distribution stage.

During the retirement stage, both the timing of withdrawals and the amount of withdrawals are at least as important as generating reasonable returns. This means finding the best withdrawal pattern for cash flows taken from investments, and converting those cash flows into current spending, is critical to maximizing retirement income and minimizing longevity risk.

The withdrawal pattern is inseparable from a retiree's overall asset allocation when viewed through a goals-based investment framework. The typical withdrawal pattern suggested by many advisors



and investment managers seeks to maintain a “constant proportions” solution to the asset mix of the retiree—that is, to withdraw funds in proportion to the portfolio’s overall asset mix.

Example: If a client has a 60% stock/40% bond portfolio, then 60% of a withdrawal would come from the equity allocation and 40% would come from the bond allocation.

Such a solution may seem reasonable at first glance, as it maintains a mean-variance solution for the overall asset allocation – and mean-variance strategies are widely accepted as the “solution” to a problem where risk = volatility.

But to see if this strategy is actually effective, consider if the requirements for a mean-variance solution are met. For example, we know empirically that retirees overwhelmingly prefer the option of having assets left over when they die to the option of running out of money several years before death. That preference strongly suggests that retirees do not face a symmetric cost structure—and that a mean-variance (constant proportions) solution may not be optimal.

Horizon’s extensive research into withdrawal methodologies designed to minimize longevity risk cause us to favor an investment strategy that segregates assets between a “current income” portfolio and a “future income” portfolio, along with a set of rules designed to balance the trade-offs between the two. The exact methods and full research summary are beyond the scope of this paper, but our research shows that this type of investment strategy can be effective to reduce investors’ longevity risk.

## **2. Addressing Longevity Risk: Retirement Portfolio Construction**

Using longevity as the main risk metric during the Distribution stage has another important—possibly surprising—implication for a client’s portfolio.

With a traditional risk = volatility framework, equity exposure during retirement is reduced as the client ages. This makes some sense if you believe that the client’s risk is primarily volatility-related. It makes much less sense, however, if your goal is to avoid running out of money (or, similarly, to maximize legacy wealth).

A portfolio that is heavily tilted toward fixed income, which becomes even more tilted over time, may help to minimize volatility. But is not likely to be the most effective approach to minimizing longevity risk and, in turn, maximizing the amount of time that portfolio can produce cash flows.

To achieve that latter goal, the portfolio must grow at a rapid enough rate to help offset the cash flows coming out of it. This growth is best achieved by tilting the portfolio toward equities throughout retirement. Likewise, there is ample research to show an equity tilt increases the probability of ensuring and preserving legacy wealth for heirs.

Of course, on the surface it may appear “risky” to construct an equity-heavy portfolio for a retiree. But once again, it comes down to the definition of risk in the retirement (Distribution) stage. Risk defined as longevity requires that withdrawal patterns and target legacy wealth be considered.



When considering these additional goals and risks, a portfolio with a larger-than-traditional equity allocation may actually be *less risky* than a bond-heavy portfolio that may not generate adequate growth of capital over time.

### **Conclusion**

Goals-based investment management seeks to link investment management and portfolio design decisions directly with clients' desired outcomes in order to maximize clients' ability to achieve those outcomes.

One way goals-based investment management pursues this objective is to address the evolving types of risk that clients encounter as they move through the three main stages of the investment journey.

By understanding the primary risk that must be mitigated in each of these stages—volatility in the Accumulation stage, drawdowns in the Protection stage and longevity in the Distribution stage—investors (and advisors who serve them) can make more informed decisions around ongoing investment strategy, portfolio construction and performance benchmarking.

## AUTHOR



### **Scott Ladner, Head of Investments**

Mr. Ladner serves as Head of Investment Management and is the Chair of the Investment Committee for Horizon. In these capacities, he oversees all aspects of the Investment Management division for the firm. He also provides the Investment Management division with Macro analysis and interpretation of global derivatives, credit, foreign exchange, equity, and funding markets. His previous roles at Horizon included Head of Risk and Director of Quantitative & Alternative Strategies.

Prior to Horizon, Mr. Ladner was a founder of Charlotte Global Advisors and Principal Guard, LLC. Mr. Ladner helped to launch an equity index volatility and dispersion trading unit at PEAK6 Investments in Chicago, a proprietary listed option and volatility trading firm. Previously at First Union/Wachovia, Mr. Ladner founded and ran the equity swap and forwards portfolio while also managing equity option and volatility portfolios. He also co-founded and managed the Risk Arbitrage and Special Situations portfolio. Mr. Ladner then managed the swaption and cap/floor portion of the bank's interest rate derivatives portfolio. Mr. Ladner received his BA in Economics and Russian Language & Literature from the University of North Carolina at Chapel Hill.



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