

## THE SHAPES OF RETIREMENT PLANNING

# Are You a Curve, a Triangle, or a Rectangle?

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The popular, professional, and academic literature on investing and retirement planning may confuse the casual as well as the dedicated reader because it reveals contradictory yet prescriptive findings.

The contradictory nature of the literature is especially troubling for advisors whose success is predicated upon offering informed, prudent, and defensible solutions to clients.

The purpose of this article is to sample the historical literature in order to (1) highlight contradictory prescriptions; (2) make observations, organized with geometric metaphors, that help resolve the apparent contradictions; and (3) suggest a new direction for ongoing research and professional practices.

### Introduction

Our geometric metaphor tracks with academic history, which illustrates the following three-stage evolution—or, more precisely, co-development—in financial research:

- risk/return optimization: portfolio performance (curves)
- goals-based planning: sustainability (triangles)
- procedural prudence: feasibility (rectangles)

This progression in portfolio design approaches—from a curve, to a triangle, and then a rectangle—gives rise to the following questions:

1. Can an advisor find a practical and defensible method to help a client make prudent portfolio design and investment management decisions?
2. If yes, what is the shape of prudent financial advice?

It is our belief and experience that a client-focused discovery process creates a context in which the client can accommodate both quantitative portfolio analysis and qualitative, subjectively defined goals through methods that reconcile and transcend apparent contradictions.

Procedural prudence starts with the client and circles back to the client. The advisor helps the client organize facts and priorities in order to translate them into actions and outcomes. The fact patterns originate with client-specific data. The decisions are the client's to make, not the quant's or the psychologist's. Who makes the decision (governance) is as important as what is decided (policy) because a decision becomes successful, in large measure, only when it is willed into existence on a daily basis, by the client.

A careful reading of the research suggests the importance of several dimensions in prudent retirement investment planning, implementation, and monitoring. The proposed rank-ordering of these dimensions starting with first-things-first includes: (1) feasibility, (2) sustainability, and (3) portfolio performance monitoring and evaluation.

Here we assess each element's role in a successful retirement income practice.

### Historical and Conceptual Review

The literature on wealth management over the past half-century roughly unfolds as follows:

- risk/return optimization (modern portfolio theory)
- goals-based planning (behavioral finance)
- procedural prudence (Household Balance Sheet<sup>SM</sup> or HHBS<sup>SM</sup>)<sup>1</sup>

Modern portfolio theory (MPT) draws on the systems operations tools and techniques developed during World War II (i.e., linear programming). Behavioral finance draws on a rich mine of psychological research about goals, motivations, and decision-making. Procedural prudence draws upon observations in the assets/liabilities matching techniques for insurance companies, banks, and defined benefit plans and translates them into methods that develop the HHBS.

Each corresponds to a coherent point of view and an iconic graphical representation:

- the efficient frontier curve,
- the Maslowian triangle, and
- the HHBS rectangle.

A synthesis of the above observations yields the following:

- risk/return optimization: performance curves
- goals-based planning: sustainability triangles
- procedural prudence: feasibility rectangles

Intellectual history is, of course, not as tidy as this conceptual synthesis suggests. We merely use the metaphor of geometry to convey some complex ideas developed by people who have thought deeply on these subjects. Geometric metaphors are a visual tool to organize and present the contradictory, and often contentious, points of view developed by various schools of thought.

The conceptual hierarchy used here is limited to the following three algorithmic steps:

- **Input**—what the practitioner needs to know about client goals, preferences, constraints, and other circumstances;
- **Model**—how the practitioner designs financial options suitable to the client; and,
- **Output**—how the practitioner presents financial choices so that the process serves the client’s best interests.

Input and output are discussed and debated often in the practitioner community. However, our choice of the term “model” over “theory” or “process” may require an explanation.

Knowledge may develop from metaphor, to model, to theory, and finally, to scalable process. Curve, triangle, and rectangle provide the metaphors. As for the conceptual hierarchy, we emphasize “model” rather than “theory” to mirror the current state of knowledge in the financial industry. Theory is a deep description of reality that predicts what will happen given a specific set of inputs. Models are incomplete descriptions of reality, and thus describe what should happen if the model were true (Derman 2012).

A fundamental limitation of financial research, due in part to the impossibility of creating reproducible experiments, is that we cannot really know, let alone prove, the fundamental theories. We cannot isolate the variables with sufficient predictive certainty to move decisively beyond the model stage (Taleb 2014).

Fortunately, what is consequential for the client is not theoretical truth; but rather, the impact of being exposed to or protected from risks. Given this perspective, we do not need to possess a perfect theory

of risk in order to be effective. We can be effective with imperfect understanding because we seek to manage client exposures to the risks.

Further, the existence of contradictory prescriptions in the financial literature supports a “model” view rather than a “theory” view of financial knowledge. Table 1 presents prescriptive elements across two dimensions: schools of thought vs. algorithmic steps.

A detailed review of the selected examples of contradictory prescriptions shown in table 1, based on more than 50 peer-reviewed academic papers, is provided in the supplemental notes, available at [https://www.imca.org/IWM17JulAug\\_ShapesOfRetirementPlanning.pdf](https://www.imca.org/IWM17JulAug_ShapesOfRetirementPlanning.pdf).

Table 1, together with the supplemental material, shows our focus moving from working from a mathematical basis; to integrating quantitative analysis more closely and transparently with client goals and preferences; and, finally, to integrating the process to reflect the client’s assets, liabilities, and risk exposures.

**Table 1: Examples of Prescriptive Debates (and Contradictions) in the Financial Literature**

Examples of Debates (and Contradictory Prescriptions)	Are You a Curve? Modern Portfolio Theory (MPT)	Are You a Triangle? Behavioral Finance (BF)	Are You a Rectangle? The Household Balance Sheet <sup>SM</sup> (HHBS <sup>SM</sup> )
Input [SIGNAL]	<p><b>What do you use as portfolio preference criteria?</b> e.g., risk tolerance questionnaire, client utility, preference-free criteria</p> <p><b>How do you make use of investor utility?</b> e.g., utility (concave/convex), marginal utility, risk aversion (absolute, relative), prudence</p>	<p><b>How do you use psychological aspects of risk and decision-making?</b> e.g., prospect theory, mental account portfolio theory, etc.</p> <p><b>Do you use a behavioral portfolio theory utility curve?</b> e.g., kinked (difference in slope) above/below a reference point</p>	<p><b>Do you use measures of Fundedness<sup>SM</sup>?</b> e.g., a first step before mapping (systematic and un-systematic) client risks, client constraints, and calculating the selected portfolio preference criteria</p>
Model [SYSTEM]	<p><b>Do you model stocks as safe (Siegel 1998) vs. unsafe (Bodie 1995) for the long-run?</b> e.g., average vs. sum of random distributions, expected returns, variance, skew, kurtosis</p>	<p><b>Do you model at-risk only asset allocations; or, do you include insured (floored) solutions?</b> e.g., conservative vs. dissipative distribution policy using annuities and immunized bond positions</p>	<p><b>Do you model (and monitor) risk capacity before short-fall probabilities?</b> e.g., feasibility before sustainability</p>
Output [RESPONSE]	<p><b>What is the role of equity-weightings in asset allocation recommendations?</b> e.g., buy-hold, constant-mix, constant proportion, declining or rising equity weightings</p>	<p><b>Do you recommend behavioral allocations?</b> e.g., implementation as a single portfolio vs. implementation as multiple portfolios (e.g., goal-based asset allocation)</p>	<p><b>Do you recommend procedural allocations?</b> e.g., mapping of risk exposures, risk management techniques allocations before asset allocations</p>

A client-focused approach develops methods to match prescriptive recommendations to specific client circumstances; or, in a behavioral framework, to specific client types.

**Observations**

Prudent decision-making is academically sound, administratively reasonable, and legally defensible. When we place the client, instead of the portfolio, at the center of the process, we resolve many of the prescriptive contradictions.

As we read academic and practitioner papers, keeping in mind the following question helps sort out the field in a way that eliminates most, if not all, of the contradictory prescriptions:

- Can you describe the ideal client for which the author’s specific prescriptive recommendation is appropriate given everything known about the client’s circumstances, goals, preferences, and constraints?<sup>2</sup>

This question prompts us to seek more complete client descriptions. As you read popular, professional, or academic papers with this question in mind, you will see that some prescriptions seem to apply to stick-figure versions of clients, what novelists call “flat characters.” Other prescriptions seem to apply to more real types of clients, what novelists call “round characters.”

Flat vs. round client descriptions are the primary method to resolve prescriptive contradictions in the financial literature because they make it possible to better match specific prescriptions to specific client types. In this case, by client “type,” we do not mean “stereotype.” Rather, the term “type” encompasses psychological type (preferences), economic type (resource constraints), goal type (retirement savings, decumulation goals, etc.), and so forth.

Stick-figure characters can be readily pigeon-holed or stereotyped. On the other hand, round-figure characters think for themselves, react in ways that advisors may find surprising (especially when confronted with risk), and value well-grounded and

on-point discussions concerning financial options.

Flat vs. round characters are a key feature of novels, TV, and movie scripts. Round characters are developed so that you can relate to them as real persons with a recognizable history, understandable goals, plausible motivations, internal contradictions, and the ability to change. The hero and the villain in a story are usually round characters. Think of Captain Kirk in *Star Trek*. Characters that make brief appearances are flat. They function as plot devices. They do not tell the full story. We only need to know a small number of dimensions of their personalities before they are removed from the narrative. Think of the Red Shirt characters in the original *Star Trek*, or Figwit in the *Lord of the Rings* movies. Often, the flat character client is a target for a single-product sales presentation; round characters, however, are better at making informed choices.<sup>3</sup>

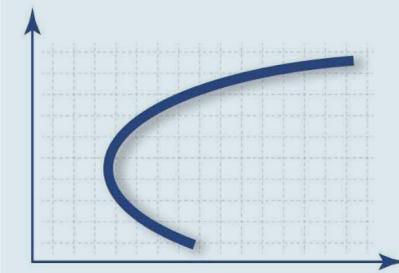
As you can see from financial and literary examples, contradictory prescriptions become more manageable in the presence of round character descriptions. Round client descriptions help you help the client discover the ideal method for organizing and managing lifecycle wealth and liabilities. Descriptions that imply suitability for the average client, or that imply suitability for all clients as an undifferentiated mass, are considered flat descriptions because averages and generalizations are a measure of ignorance. Averages and generalizations are what one uses when the specifics of the client are not known. Round descriptions are about the specifics.

**Forward Looking Statement**

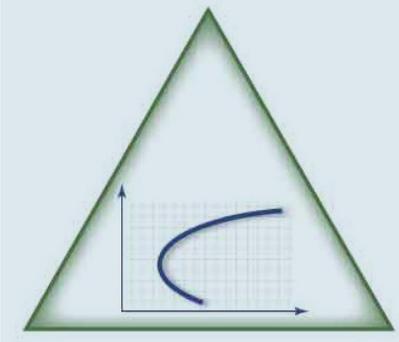
A comprehensive and integrative approach to retirement planning requires, according to common-law standards of prudence, the practitioner’s exercise of reasonable care, skill, and caution as part of an overall investment strategy. Prudence is based upon a set of standards ranging from reasonable recommendations to justifiable processes provided in the best interest of the client.

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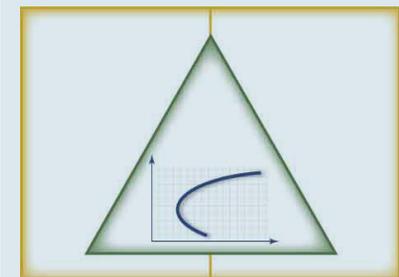
**Figure 1: Are You a Curve?**



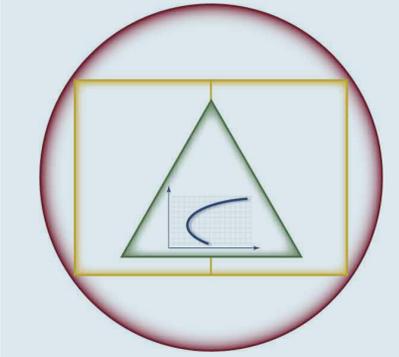
**Figure 2: Are You a Triangle?**



**Figure 3: Are You a Rectangle?**



**Figure 4: The Integration of the Curve, Triangle, and Rectangle Points of View in the Context of the Great Circle of the Client Advisory Process**



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Then we can ask, what is the shape of prudent financial advice? This shape includes the curve, the triangle, and the rectangle in the context of an iterative procedural prudence process focused on the client (see figures 1 through 4)

With this progression from curve to triangle to rectangle, advisors converge toward a round description of the client that encircles the scope of the advisory relationship.

**Conclusion**

The list of relevant dimensions for “roundness” in the development and monitoring of retirement plans includes the following dimensions:

- Feasibility (rectangle)
- Sustainability (triangle)
- (Portfolio) Performance measurement (curve)

The bottom two dimensions have received much attention from researchers in the past. The top dimension (feasibility) should receive more attention from researchers in the future.

What are the implications for financial advisors and consultants?

Helping clients find appropriate solution paths to their retirement needs and goals extends the process beyond investment portfolio design and implementation. The prudent advisor documents the following:

- Client goals that are feasible as opposed to those that fail the feasibility test
- Client goals that may be feasible currently but need to be sustainable throughout the requisite planning horizon
- Portfolio performance that encompasses both an evaluation of past performance and an assessment of the expected performance trajectory in order to provide adequate resources for contingent and/or unexpected expenses

This article is a call to advisors to expand beyond asset allocation pie charts and Sharpe ratio values, to diagnose feasibility of client goals, quantify the sustainability of goal funding, and monitor the plan’s performance by helping clients ask and answer the following questions:

- Do I have enough to do what I’d like?
- How likely is it that my plan will remain sustainable under future economic environments?
- What is my capacity to meet the unknown or the unexpected? ●

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**Endnotes**

1. The household (or client or retiree) balance sheet is an economic balance sheet designed to value assets and liabilities that are both tangible and intangible at proper market values. RIIA has developed best practice templates for advisors, called the Household Balance Sheet™ Views.
2. The development of this question was inspired by the work on business positioning developed by Flint McGlaughlin (MECLABS). <https://meclabs.com/education/speakers>.
3. For an explanation of the Red Shirt character, see [https://en.wikipedia.org/wiki/Redshirt\\_\(character\)](https://en.wikipedia.org/wiki/Redshirt_(character)). For an explanation of the Figwit character, see: <https://en.wikipedia.org/wiki/Figwit>.

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