RETIREMENT INCOME INDUSTRY ASSOCIATION

May 3, 2010

Office of Regulations and Interpretations
Employee Benefits Security Administration
U.S. Department of Labor
Room N-5655
200 Constitution Avenue, N.W.
Washington, D.C. 20210
Attention: Lifetime Income RFI (RIN 12210-AB33)

Ladies and Gentlemen:

This is a comment submitted by the Retirement Income Industry Association (RIIA). We appreciate the opportunity to comment on this important retirement income initiative and we commend the Department of Labor and Department of Treasury on the work performed in preparing the "Request for Information (RFI) regarding Lifetime Income Options for Participants and Beneficiaries in Retirement Plans." Set forth below is a description of RIIA, as well as a discussion of why a lifetime income option makes good sense for American workers, a legal safe harbor and possible default options. This comment letter was a collaborative effort of a RIIA committee chaired by Steve Saxon of Groom Law Group and co-chaired by Fred Reish of Reish and Reicher.

RIIA recognizes that the RFI is in one sense merely a first step in a process of collecting, evaluating and deciding upon what steps should be taken by the federal government to facilitate access to lifetime income options in the defined contribution plan and IRA marketplace. That said, it is an important step and RIIA has pulled together the observations and analyses of numerous experts in the employee benefits community to address the issues raised in the Departments' RFI. RIIA would welcome the opportunity to discuss these issues with Department representatives at your convenience.

As discussed below, RIIA has reviewed the questions in the RFI and offers several recommendations for the Departments' consideration. First, RIIA recommends that lifetime income options become mandated options for defined contribution plans. Importantly, RIIA is not advocating that such lifetime income options become mandated elections for all participants, but only that participants be given the opportunity to select a lifetime income option. Secondly, RIIA suggests that, at a minimum, the Department of Labor ("DOL") create a safe harbor detailing the circumstances under which information and assistance can be given to participants without the risk of fiduciary liability for plan sponsors. As set forth in the attached "The Body Of Knowledge of RIIA Retirement Management Analyst Designation: How to benefit from the View Across the Silos", DOL should promote the dissemination of education

materials to participants that focuses on the process of retirement income planning (flooring and upside) and retirement income distribution (investment vehicle and product selection), including the consideration of their human, social and financial sources of capital. Thirdly and recognizing the difference between lifetime income products and secure products, RIIA suggests that the Department of Labor consider the following lifetime income options within the context of a decumulation QDIA:

- One or more annuities, providing income for life or to a covered life and survivor on a joint and survivor basis.

- One or more stable value funds where the fund is an investment option available to participants within the plan. Such stable value fund options should be extended to IRA accounts.

- One or more products that combine lifetime income and risk premium applicable to insuring certain catastrophic risks (e.g. long term care) that serve to deplete accumulated assets.

- One or more products or funds that are principal protected (e.g. laddered maturities), issued or managed by the U.S. Government or an instrumentality thereof or by a state or federal regulated creditworthy financial institution.

- One of more products or funds that combine (i) items 1 through 4 above and (ii) a money market fund.

Again, RIIA recognizes that the RFI and the responses to it are just a first step, but we hope that this initiative will set the stage for real progress in helping American workers build for a secure retirement.

The Retirement Income Industry Association (RIIA)

RIIA was started in February of 2006 at the request of about 30 Founding Members. These Founding Members came together to create a new retirement-focused association that would function as “Switzerland” by welcoming members from all business silos in the industry. Based in Boston and drawing members from all segments of the financial services industry, RIIA (www.riia-usa.org) provides “the View Across the Silos”. The association serves both as a think tank to analyze retirement income issues and as an incubator to facilitate the exchange of new ideas, concepts and knowledge between institutions interested in building retirement income businesses.

RIIA's mission as a national, not-for-profit organization is to define the future of retirement income in America. RIIA does this by bringing the retirement income industry together with a "View Across the Silos" to develop the products, processes and advisory services Americans need to create a secure retirement. RIIA members span the entire industry, including: banks, insurers, mutual fund companies, brokerage houses, financial advisors, distributors, record keepers, transaction settlers, plan sponsors, researchers, technology companies, marketers, authors, academics, media and regulators. This unique view provides RIIA members, investors and financial advisors with unbiased perspectives on key retirement income issues. Interestingly, this “View Across the Silos” naturally extends to the individual households, the clients of the financial industry. This broad household perspective helps RIIA analyze and document the fundamental shifts happening at the household level and their impact on the business models of financial institutions.

The following comments reflect RIIA's "View Across the Silos" as applied to the RFI:

1- RIIA prefers the promotion of a large and even playing field rather than a narrow and tilted playing field. RIIA has an evolutionary view of business and favors broad and diverse financial ecosystems so that all investor needs can be serviced, not just the average investor needs.

2- RIIA also prefers a wide range of private solutions rather than a narrow set of mandated solutions. RIIA's evolutionary view favors a large number of solutions that can be tested with room for affordable experiments or successful adaptation to changing circumstances as any action begets unexpected reactions by the other participants in the economy.

3- As a non-profit organization, RIIA can add value to the investment industry at the level of process – as contrasted to the level of products - through its *Retirement Management Analyst (RMA) Industry Designation. (See attachment: "The Body Of Knowledge of RIIA Retirement Management Analyst Designation: How to benefit from the* View Across the Silos"*).*

4- Facilitating a response to the recently issued RFI, RIIA acts as an independent, objective, educational partner to help inform this industry and public dialogue on Lifetime Income Solutions. This "View Across the Silos" response was shared with all RIIA members to help them prepare their own response and detailed examination of specific questions that may pertain to their specific business/industry silo.

RIIA's many Committees provide information, education, research and benchmarks to its institutional, financial advisor and other members.

As an example of its bottom-up, Committee-driven organization and in order to facilitate the industry dialogue and response for the recent Request for Information issued by the U.S. Departments of Labor and Treasury on February 2, 2010, RIIA has established a separate standing committee: **The Institutional Lifetime Income Committee.**

The purpose of the Committee is to encourage and support the provision of lifetime income for retirees from Retirement Plans and IRAs. It will support that purpose primarily by educating the investment industry and the public sector (including specifically the Department of Treasury, the Department of Labor and the United States Congress) about the need for lifetime income to ensure that retired American workers can preserve their life style and live in comfort and dignity.

The Committee has made the following preliminary observations:

1- The marketplace for Lifetime Income is diverse and one-size-fits-all product solutions are likely to create unintended and negative second-order consequences. RIIA would ask the industry to take a view across the traditional industry silos. In particular and in order to properly solve the diverse needs of retirees, the industry may want to emphasize the importance of the retirement income advisory process over the practice of stand-alone product sales.

2- Retirement Plans and IRAs have historically been managed and invested as asset accumulation vehicles rather than retirement income distribution vehicles.

3- While a Lifetime Income option is not the panacea for all of the problems facing the U.S. retirement system it is more than "yet another feature in Retirement Plan and IRA features race". Propelled by fundamental changes at the individual household level, it represents a fundamental shift in the business model for many industry participants (from "collecting assets under management" to "paying a monthly check").

4- Encouraging funded, private and freely elected Lifetime Income options is preferable to enforcing mandatory conversion/enrollment in government programs or generational transfer programs. Such freely elected Life Income Options at the participant level could certainly be mandatory options for inclusion at the Plan level.

5- Encouraging both institutional and retail options are preferable to enforcing a mandate of one vs. the other.

6- Encouraging plan sponsors and participants to think about Retirement Plans as lifetime income generators will help the industry begin to develop tools to translate accumulation values into lifetime income values.

7- Plan sponsors will need workable and reliable safe harbor provisions in the law in order to make the decisions necessary to adapt to the on-going retail paradigm shift from investment accumulation to retirement income..

8- Helping plan sponsors and participants understand the trade-offs will lay the foundation for informed decisions.

9- Making it easy to acquire lifetime income on a timed purchase basis will encourage participants to start thinking about lifetime income sooner rather than later.

10- Rules and regulations should be written in ways that keep the burden of cost and compliance to a level that ensures optimum results for all.

Lifetime Income Options

American workers have seen that, during epic market downturns, equity sub-classes tend to march to the same dismal drumbeat. How do we protect American workers against these infrequent but highly destructive events similar, but not exclusively, to those that occurred in 2000 and 2008?

Diversification alone is not enough. Diversification among *risk management techniques* must accompany the traditional diversification among risky assets. The American worker has two objectives: (1) first *to build" an income" floor* and (2) then *to create "accumulation" upside* from financial capital

A retirement plan participant's definition of "building an income floor" or "flooring" will depend on many factors and the objective will range from meeting basic necessities to maintaining a certain subjective level of comfort. All American worker want to achieve the latter, but many will be constrained and only be able to meet their basic needs and a modest cushion.

The most reliable type of floor in a Defined Contribution Plan is a funded floor as opposed to an intergenerational promise.

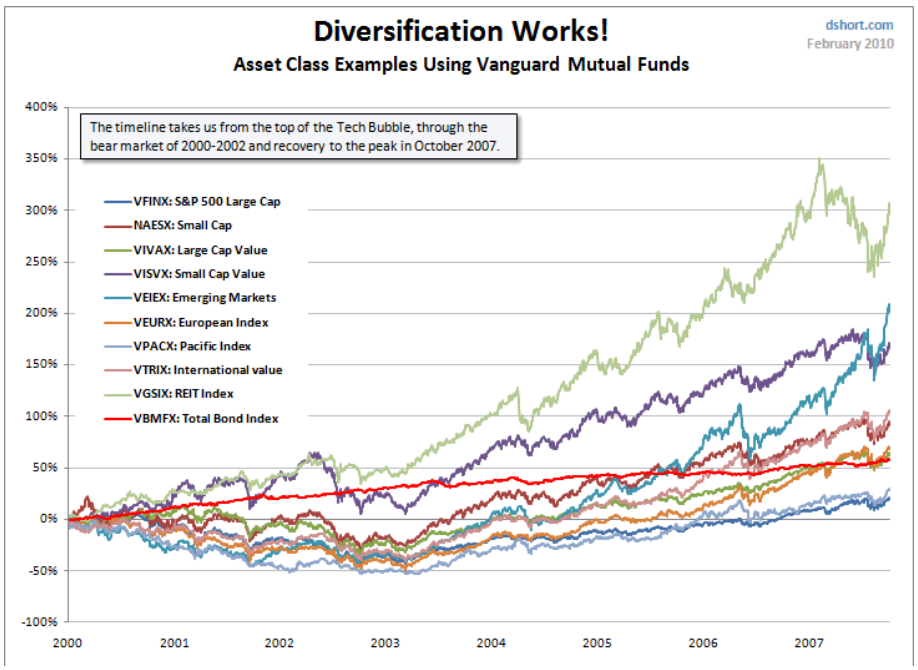
The "floor" provides security. It has to "be there" when needed—without exception. When building the floor, although it is acceptable to take judicious and measured amounts of the diversifiable type of credit risk associated with insurance contracts or corporate bonds, it is not acceptable to take unprotected market risk as this would entail the possibility of breaking through the floor. Flooring must be resilient and even redundant.

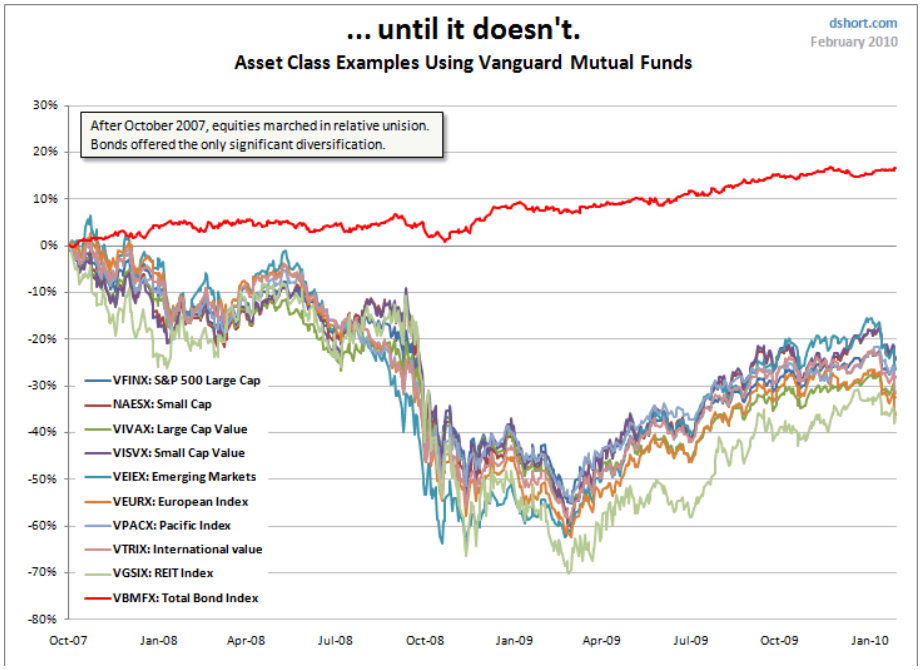
It is in this context of "building a floor" that *a lifetime income option* becomes critically important. The traditional financial framework is about creating expectations. The retirement framework is about creating outcomes. A *lifetime income option* during the saving phase as well at retirement in Defined Contribution plans can help create this much needed outcome.

For decades and as the industry focused mostly on accumulation, diversification among risky assets seemed to be a reasonable investment strategy for anyone with a long enough investment horizon. It is, after all, the essence of the most common industry understanding of Modern Portfolio Theory (MPT). Followers of MPT will naturally seek to balance risky assets with an appropriate, age-adjusted ratio of fixed-income assets in their portfolios. Or they would reduce equity holdings whenever the market appears significantly overvalued or trends downward.

However, in March 2000 and again after September 2008, many historical "truths" about diversification have been contradicted, raising questions about over-reliance on its broad validity for investors, particularly those with finite horizons. Diversification, by itself, is not sufficient to protect investors. As evidence of that, consider the two Charts below, created by Doug Short (www.dshort.com) a Special Advisor to the Board of RIIA, track the performance of the components of a diversified stock/bond portfolio during strong bull and strong bear markets, respectively. But, while bonds and rebalancing will help mitigate market risk, they won't mitigate all of the risks to income that retirees can expect to encounter.

Charts 1 and 2





A lifetime income option will allow American workers to protect a portion of their retirement assets from both the possible sequence-of-return erosion based on expected market volatility and from the prospect of another *"Black Swan"* event. In the long run, a ***lifetime income option*** will create a better more secure outcome for American workers and their families.

The marketplace for ***lifetime income options*** is diverse and one-size-fits-all product solutions are likely to create unintended risks and consequences. We would urge the Departments to take a view across the traditional investment industry silos and to recognize that multiple ***lifetime income*** solutions for funded floors are available. While a ***lifetime income option*** is not the panacea for all of the problems facing American workers and the U.S. retirement system, it is much more than "yet another feature in Retirement Plan and IRA features race". It represents a fundamental shift in retirement income protection.

RIIA's "View Across the Silos" suggests that such lifetime income options become mandated options for all Defined Contribution plans, but, as noted above, RIIA is not advocating that such lifetime options become mandated elections for all participants.

Legal Safe Harbor

The Departments are well aware that the 401(k) plan has become the predominant retirement savings vehicle for American workers. As more Americans rely upon 401(k) and other defined contribution plans for their retirement income security, the ability to manage limited assets to provide adequate income throughout their retirement is increasingly important. Hence, the need for a lifetime income option.

ERISA initially required that defined contribution plans offer an annuity option, which would provide participants with a monthly payment similar to a defined benefit plan's monthly payment. Following changes to the tax code in the early 1980s and subsequent regulatory changes, most defined contribution plans were changed to offer only one distribution option at retirement: a lump sum payment.

Plan sponsors made this move for several reasons, including:

- Lump sumps were most popular with participants
- Where annuity options had been offered, they had little take up by participants

However, times are changing again and increasingly, the retirement industry, including plan sponsors and fiduciaries as well as financial and investment services companies, have recognized the value of offering participants a distribution option which provides them with income payments.

The primary legal obstacles to inclusion of a lifetime income option in a defined contribution plan are threefold: (1) plan sponsor fear of fiduciary status, particularly regarding uncertainty as to when a plan sponsor will be acting as a fiduciary; (2) the expenditure of time and resources needed to satisfy regulatory and other legal requirements; and (3) the risk of fiduciary liability for the failure of meeting participant expectations.

Fiduciary Liability

Faced with the risk of fiduciary liability or litigation, the safest path for a plan sponsor or fiduciary is to do nothing, and force participants to take a lump-sum as their sole distribution option. In the long run, this hurts participants, particularly those retirees for whom periodic retirement benefits would be preferable. These risks arise in several contexts, and the Labor Department can reduce the risk faced by plan sponsors and other fiduciaries in each of these contexts as RIIA discusses below.

Deciding to Provide a Lifetime Income Option

Like all decisions regarding creation, amendment and termination of an employee benefit plan, the decision to include a lifetime income option is a plan sponsor decision not subject to ERISA's fiduciary standards. Written guidance confirming that adding a lifetime income option to a plan does not implicate fiduciary duties and would reassure plan sponsors and encourage them to consider the value of a lifetime income option.

Selection/Monitoring of the Provider

The Department of Labor has long held that the selection of an investment manager (or other plan service provider for that matter) is a fiduciary act, and further that the fiduciary is obligated to periodically monitor the performance of that provider. Presumably, the Department would make the same finding for a provider of lifetime income benefits.

In 1995, the Department of Labor issued Interpretive Bulletin 95-1, instructing plan fiduciaries to select the safest available annuity. The presence of IB 95-1 created a great deal of uncertainty and confusion in conjunction with the selection of annuity distribution options for defined contribution plans. In responding to this problem, Congress clarified in section 625 of the Pension Protection Act that the safest available standard applied only to the selection of an annuity provider for terminal annuities for a defined benefit plan, and instructed the Department to issue regulations clarifying that the selection of an annuity contract as an optional form of distribution from an individual account plan to a participant or beneficiary is not subject to IB 95-1, but is subject to all otherwise applicable fiduciary standards.

In September, 2007, the Department issued a proposed regulation for the selection of a provider for an annuity distribution option in a defined contribution plan. Prop. 29 CFR § 2550.404a-4 72 Fed. Reg. 52021, (Sept. 12, 2007). The regulation as proposed mandated 14, separate items a fiduciary must consider to make a prudent selection of an annuity provider within the meaning of ERISA section 404. At that time, many RIIA members and others argued strenuously that the selection of an annuity provider should be no more burdensome than the selection of any other investment or plan service provider. If it is, fiduciaries will be discouraged from ever considering an annuity distribution option. RIIA members think of it in terms of a level playing field. If plan sponsors are advised by their attorneys that the selection of an annuity provider is a fiduciary act and that, because of the myriad of conditions that must be satisfied, they could be subject to an increased risk of fiduciary liability, plan sponsors will look elsewhere.

Fortunately, the Department of Labor made significant changes to the final regulation streamlining the proposal in issuing the final regulation. The final regulation is a significant improvement over the version proposed last year. 29 CFR § 2550.404a-4, 73 Fed. Reg. 5847 (Oct. 7, 2008) (Annuity Provider Regulation). As finalized, the Annuity Provider Regulation provides a safe harbor for fiduciaries, providing that they will have fulfilled the prudence requirements of ERISA section 404(a)(1)(B) if they meet certain requirements. The Regulation also expressly states that the regulation does not constitute the exclusive means to satisfy those fiduciary responsibilities. This is an improvement over the proposed regulation, which did not explicitly provide safe harbor relief but rather suggested that it prescribed the only method of fulfilling a fiduciary's duties with respect to the selection of an annuity provider.

The annuity provider regulation identifies a number of steps a fiduciary must take to gain the safe harbor's protection:

- the fiduciary must engage in an objective, thorough and analytical search for the purpose of identifying and selecting providers from which to purchase annuities;

- the fiduciary must appropriately consider information sufficient to assess the ability of the annuity provider to make all future payments under the annuity contract;

- the fiduciary must appropriately consider the cost of the contract in relation to the benefits and administrative services provided (the final regulations add a parenthetical describing costs as "including fees and commissions;" the preamble states the addition was to "emphasize their importance to the fiduciary's decision making process"); and

- the fiduciary appropriately concludes that, at the time of the selection, the annuity provider is financially able to make all future payments under the annuity contract and the cost of the contract is reasonable in relation to the benefits and administrative services to be provided under the contract.

In addition, the Regulation states that the fiduciary must "if necessary, consult with an appropriate expert for purposes of compliance with the safe harbor." This is a significant improvement over the proposed regulation, which, like IB 95-1, required a fiduciary to either determine that he had the appropriate expertise to evaluate the selection or that the advice of a "qualified, independent expert was necessary. RIIA strongly urges the Department to adopt a similar regulatory safe harbor for the selection of a lifetime income option protection consistent with the protection under section 404(c) of ERISA or, at a minimum, clarify that the safe harbor in the Annuity Provider Regulation applies the selection of a provider of lifetime income benefits.

Investment Advice to Participants

It is well established that plan sponsors have long been nervous about providing fiduciary advice to participants. Frankly, the issuance of the section 404(c) regulations and Interpretive Bulletin 96-1 has not done a whole lot to change this problem. It is the view of RIIA that once a plan includes a lifetime income option, participants will demand assistance in deciding what type of distribution option will benefit them. Plan fiduciaries will understandably be concerned about their potential fiduciary liability in this context. The Department should provide appropriate guidance to permit plan fiduciaries to provide the information and advice participants need without undue fiduciary risk.

For example, Interpretive Bulletin (IB) 96-1 clarified the information that fiduciaries could provide to plan participants about their investment options without facing fiduciary liability for providing "investment advice" within the meaning of ERISA section 3(21). Under the interpretive bulletin, permitted information includes information about: general financial and investment concepts, such as risk and return, diversification, dollar cost averaging, compounded return, and tax deferred investments; historic differences in rates of return between the different asset classes; effects of inflation; estimating future retirement income needs; determining investment time horizons; and assessing risk tolerance. Even asset allocation modeling is permitted.

The Department should clarify and extend Interpretive Bulletin 96-1 to permit plan fiduciaries to provide participants with information on issues relating to the decumulation stage of retirement, including estimating the amount of money needed for a secure retirement, and calculating the best method to ensure that retirement savings provide income throughout retirement. More specifically, DOL should provide guidance clarifying that advice to participants regarding the possible use of a lifetime income distribution option is non-fiduciary. RIIA's "View Across the Silos" suggests that at a minimum, DOL needs to create a safe harbor detailing the circumstances under which information and assistance can be given to participants without the risk of fiduciary liability to plan sponsors.

Further and as set forth in the attached "*The Body Of Knowledge of RIIA Retirement Management Analyst Designation: How to benefit from the* View Across the Silos", DOL may want to promote the dissemination of education materials, to participants, that focus on the process of retirement income planning (flooring and upside)

and retirement income distribution (investment vehicle and product selection), including the consideration of their human, social and financial sources of capital.

Default Options

The need to provide American workers with lifetime income options is becoming acute. Coinciding with the demographic driven shift from capital accumulation to decumulation, is the erosion of the lifetime income scheme in place for the post World War II generation. Please consider the following data compiled by The Profit Sharing/401k Council of America:

The System: The Money				
Retirement Assets (Federal Reserve, PSCA)				
	1994	2007	2008	2009
Private DC	$1.16T	$3.73T	$2.67T	$3.34T
403(b), 457	$0.24T	$0.81T	$0.72T	$0.78T
IRA/KEO	$1.06T	$4.78T	$3.58T	$4.28T
Private DB	$1.28T	$2.67T	$1.93T	$2.12T
State & Local	$1.11T	$3.30T	$2.33T	$2.67T
Federal	$0.51T	$1.20T	$1.22T	$1.32T
Annuities	$0.52T	$1.60T	$1.40T	$1.53T
Total	$5.91T	$18.09T	$13.85T	$16.04T

While the data demonstrates a significant growth in retirement assets during the past 15 years, it also confirms a risk related shift from participant income protection to investment risk that has occurred within the United States retirement system (excluding Social Security) since 1994:

1. The percentage retirement system assets attributable to plans that provide lifetime income (e.g. defined benefit plans) decreased from 58% to 48%. Conversely, the percentage of assets attributable to accumulation based plans (e.g. 401(k), 403(b), IRA) increased from 42% to 52%.

2. Assets in the retirement system attributable to accumulation based plans increased from $2.46 trillion to $8.40 trillion (341%), while assets attributable to lifetime income plans increased at a significantly slower pace, from $3.42 trillion to $7.64 trillion (223%).

The shift away from lifetime income places the "baby boom" generation at financial risk as its members exit the labor market.

RIIA has commented above on the value of providing a legal safe harbor to plan sponsors in the context of the sponsor providing a lifetime income option for participants. RIIA believes that the Department of Labor should also make provision for a plan sponsor to include one or more lifetime income default options within the plan. Plan sponsors should have a choice of lifetime income options.

Today nearly half of accumulation plan sponsors provide for automatic enrollment for workers in order to increase plan participation. Many, if not most, accumulation plans also include a default investment option.

The increase by plan sponsors in the design and use of a plan default investment option followed the Department of Labor's publication of the final regulation addressing default investment alternatives under participant directed individual account plans ("QDIA"). Default Investment Alternatives Under Participant Directed Individual Account Plans, 72 Fed. Reg. 60452 (Oct. 24, 2007) (to be codified at 29 C.F.R. pt. 2550).

The regulation provides a fiduciary safe harbor so long as a plan default investment option is provided by the plan from among the QDIA options set forth in the regulation. The three primary types of QDIAs are set forth in the regulation are:

1. A product with a mix of investments that takes into account the individual's age or retirement date (an example of such a product could be a life-cycle or targeted-retirement-date fund),

2. An investment service that allocates contributions among existing plan options to provide an asset mix that takes into account the individual's age or retirement date (an example of such a service could be a professionally-managed account), or

3. A product with a mix of investment that takes into account the characteristics of the group of employees as a whole, rather than each individual (an example of such a product could be a balanced fund).

Each of the primary QDIAs set forth in the regulation were identified by the Department of Labor as an appropriate investment for long-term retirement savings – an accumulation objective. RIIA recommends the provision of a fiduciary safe harbor for appropriate decumulation default investment options, as a natural extension of the QDIA accumulation based investment options set forth in the regulation.

For the decumulation phase of the retirement system, plan sponsors should be incentivized to provide lifetime income options and participants who do not elect away from these options, should have the protection afforded by lifetime income.

RIIA's "View Across the Silos", recognizing the difference between lifetime income products and secure products, suggests that the Department of Labor consider the following options within the context of a decumulation QDIA:

1. One or more annuities, providing income for life or to a covered life and survivor on a joint and survivor basis.

2. One or more stable value funds where the fund is an investment option available to participants within the plan. Such stable value fund options should be extended to IRA accounts, subject to the development of sophisticated criteria applicable to the trustee or custodian.

3. One or more products that combine lifetime income and risk premium applicable to insuring certain catastrophic risks (e.g. long term care) that serve to deplete accumulated assets.

4. One or more products or funds that are principal protected (e.g. laddered maturities), issued or managed by the U.S. Government or an instrumentality thereof or by a state or federal regulated

creditworthy financial institution.

5. One of more products or funds that combine (i) items 1 through 4 above and (ii) a money market fund.

* * * *

RIIA appreciates the opportunity to comment on the RFI and would welcome the opportunity to continue our dialogue with Department representatives in the near future. In the meantime, please feel free to contact us if you have any questions on the information and recommendations provided by RIIA.

Sincerely,

François Gadenne
Executive Director

Body of Knowledge for RIIA's Retirement Management Analyst (RMA) Designation

How To Benefit From "The View Across the Silos":

From Investment Management to Retirement Income and Retirement Management

François Gadenne and Michael Zwecher

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Preface

The RIIA Advisory Process

We who come from the world of investment management sometimes need a reminder that we do not create financial portfolios for their own sake. Our clients save a portion of their income for a purpose other than to let us grow the money under management. As clients age, their purpose is increasingly to provide retirement income.

This book is designed to provide a *classification system* for retirement management in general and for specific topics, products, processes and solutions related to retirement income. Based on the ongoing work of RIIA's Education Committee, the book's primary goal is to clarify the role that financial advisors and their clients play in the creation of retirement income.

In the accumulation framework, the advisor's role is to place bets and create *expectations* that the market may or may not fulfill. In the retirement framework that we propose, the advisor pursues *outcomes*—an income floor, for example—while placing bets to achieve growth and to reduce the client's longevity risk, market risk, inflation risk, health risk, interest rate risk and so forth.

An advisor once told us, "My inventory is my time." We have developed this curriculum, matching software programs, classes and examinations with his comment in mind. Also, if you study this curriculum and practice with the customized software programs, we hope that you will agree with us that this advisory process should help you increase wallet share, close new business and save you time by helping fix "sick" clients.

Who This Book Is For

Financial professionals, including asset managers, licensed agents and representatives of broker/dealers, registered investment advisors and certified financial advisors of all kinds (see Appendices B and C for a complete list of practitioners) can expect this book to help them:

- Organize their thoughts about their clients' financial situations.
- Reach conclusions about their clients' retirement income needs.
- Recommend appropriate retirement income plans.
- Explain why the plans make sense.
- Implement the plans by changing the clients' asset allocations or enabling them to purchase new products.
- Seek to take the examination for RIIA's Retirement Management Analyst designation.

The Retirement Management Analyst

Thousands of conversations with RIIA members have enriched the information in this book. Our members come from virtually every "silo" in the financial industry, including the insurance, investment, advisory, public policy, and academic worlds. The diversity of their perspectives enables RIIA to create a "View Across the Silos" that benefits all.

Those conversations have led to the conception of a new professional designation, the Retirement Management Analyst (RMA). RIIA plans to develop additional designations over time. The unique skills required for this designation are rooted in RIIA's Body of Knowledge, a systematized compilation of existing and evolving retirement planning practices.

This book and future editions of this book will provide an overview of the Body of Knowledge covered by the RMA Examination and its annual updates. RIIA's exam workbooks use the Spoke/Section/Learning Objective structure to organize the examination questions and answers. Study programs, provided by approved institutions, help candidates better prepare for the exam.

Candidates for the RMA must:

- Have, at a minimum, a Basic Individual Membership with RIIA.
- Pay the Application Fee to cover the registration costs and the required texts that RIIA provides to candidates.
- Pay the Examination fee to cover the costs of administering the exam.
- Upgrade, for those who pass the exam, to Full Individual Membership level.

A number of RIIA members are developing their Institutional Training Programs to match this body of knowledge so that their trainees may receive partial credits towards the RMA designation.

A number of RIIA's Affiliated Associations are sharing the content of their investment-focused curriculum/designations so that their charter holders may qualify for partial credits towards the RIIA designations.

In contrast to an investment management professional, a Retirement Management Professional demonstrates competence and serves clients by:

- Understanding and helping plan their Human Capital.
- Understanding and helping plan their Social Capital.
- Understanding and helping plan their Financial Capital using Life-Cycle management and risk management techniques, not just asset allocation and other investment management techniques.
- Having a clearly stated guiding principle and goal of "First Build a Floor, Then Expose to Upside."

Candidates for the Examination are accepted on the basis of prior education, experience and ethics requirements. RIIA considers both the education and the experience of a candidate so that

the college degree requirement can be traded off against three or more years of relevant experience.

What You Need To Know In Advance To Read This Book

The authors assume that readers of this book already understand:

- The concepts of present value, future value, compound interest and valuation of assets by discounting future cash flows.
- The risky asset classes, including stocks and bonds.
- The principles (but not necessarily the mathematics) of Markowitz Optimization, the Efficient Frontier and Modern Portfolio Theory.
- The major types of investment and retirement accounts (e.g., defined benefit, defined contribution, IRAs, taxable accounts, etc.), products (e.g., mutual funds, annuities, CDs, etc.), and the regulations or laws that govern them.

We do not assume that all readers will be familiar with:

- The Consumption to Financial Capital ratio.
- Household asset/liability matching.
- Risk aversion as opposed to risk tolerance.
- Consumption Smoothing.
- Selecting the appropriate mix between flooring and upside portfolios.
- Risk pooling techniques, including mortality credits.
- Risk transference techniques.
- Selecting the appropriate mix or risk management techniques for both the flooring and the upside portfolios.
- Building client specific Flooring Portfolios.

How To Read This Book

Interested clients and practitioners can read this book from front to back or dip into the text at any point. The **One-Minute Summary** is a good place to start. Readers can also skip to the chapter that matches the stage that they're at with their clients.

RMA Candidates must also read the book *Retirement Portfolios: Theory, Construction and Management*, by Michael Zwecher. We wrote both books concurrently and in coordination. Mike's book focuses on the "Engineering Approach" to building retirement portfolios as introduced in Chapter 5/Spoke 4 of this book.

As part of this content coordination, Chapter 13 of Mike's book, **Case Studies**, follows the customer segmentation mapping presented in Chapter 1 of this book and Chapter 12 of Mike's book. This gives the reader a single, consistent set of real-world examples of retirement income problems and solutions.

****

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The 'One-Minute' Summary of the Book

Build a Floor and Create Upside Potential

Most investment professionals specialize in managing client assets, with an eye toward maximizing accumulation during the clients' working lives. The duties of *retirement income professionals,* however, are broader. These advisors need to manage their clients' assets, liabilities and cash flows, with an eye toward minimizing risk during their clients' retirements.

We developed a hub-and-spoke framework to present retirement income approaches. The framework has seven aspects—a hub, five spokes and an integrative process. The client is the hub, and the spokes are the steps in a process of integration and monitoring. We call them "spokes" rather than "steps" for two reasons. First, they represent a cyclical process of interaction with the client that has no specific beginning or end. Secondly, each one strengthens the relationship between advisor and client.

The objective: *To build a floor and create upside potential*. We assume that, during retirement, clients need a sufficient level of income ("a floor") from guaranteed or low-risk sources, as well as the potential for growth through exposure to risky assets (the "upside").

Building a portfolio for retirement income isn't necessarily harder than building a portfolio for asset accumulation, but it does require a deeper assessment of the client's needs. The investment of more time at the beginning of the relationship can pay off, however, in the creation of satisfied clients whose assets will be "stickier" and who will bring additional advisory opportunities.

The Hub and Spoke Model

The Hub at the Center of the Advisory Process: The Client

Intuitively enough, the client stands at the center or "hub" of the process. However, the retirement client segmentation is not based on Assets Under Management (AUMs) only but on a ratio of the client's annual consumption in retirement to their Financial Capital.

The primary quantitative objective of Chapter 1 is to calculate a "first-order" estimate of the client's consumption /portfolio yield. Inputs for this calculation include an estimate of the client's current Financial Capital and his or her expected annual consumption level in retirement. Outputs from this calculation categorize the client as underfunded, constrained or overfunded. This first-order estimate will be revised as we move through the spokes. This core level of analysis focuses on averages and can be also refined with an advanced level analysis including a specific year-by-year simulation.

Spoke 1: "The Household Balance Sheet" Is the Start of a "Life-Cycle" Plan

Focusing first on the household's balance sheet, analyze the client's *income statement* (current income versus current expenses), *balance sheet* (assets versus liabilities), and *cash flow statement* (a snapshot of cash inflows and outflows). This is the first step towards creating a *Life-Cycle Plan*. This can take place before, at or after retirement, but the earlier, the better.

The primary quantitative objective of Chapter 2/Spoke 1 is to calculate a "first-order" estimate of the client's household balance sheet. Inputs for this calculation include asset balances (e.g., financial assets and bank balances) as well as expected cash flows (e.g., social security and pensions). Inputs also include liabilities, such as mortgage balances, expected annual consumption in retirement, desire for a bequest, etc. Finally inputs for this calculation include discount rates/expected returns. Outputs from this calculation are shown as a household balance sheet with projected and discounted values as of the client's retirement date.

Spoke 2: "Cash Flows" and the Completion of the Life-Cycle Plan

Match the client's anticipated *social capital* (e.g., Social Security, pension income), *human capital* (e.g., income from work in retirement) and *financial capital* (investments) with his or her income statement, balance sheet and cash flows. The advisor determines the portion of the client's minimum income or "floor" that social and human capital can provide, and how much will need to come from financial capital. This step completes the creation of a Life-Cycle Plan.

The primary quantitative objective of Chapter 3/Spoke 2 is to refine the cash flow inputs that go into the client's household balance sheet. Inputs include personal income/earnings as well as taxes, fixed expenses and discretionary expenses. Outputs are shown on both the client's household Income Statement and Balance Sheet.

Spoke 3: "The Retirement Risk Profile" and the Retirement Income Plan

Turn the Life-Cycle Plan into a *retirement income plan* that matches the income from the client's three sources of capital to the potential costs associated with the client's identifiable *retirement income risk factors* (e.g., health risk, inflation risk, longevity risk, etc.).

The primary quantitative objectives of Chapter 4/Spoke 3 are to determine the client's risk tolerance (e.g., Conservative, Moderate, Aggressive) and to calculate the portion (percent and dollar) of his or her financial portfolio that should be dedicated to flooring. In addition to the risk profile questionnaire, inputs include the client's current age, desired retirement age, life expectancy and various inflation and discount factors. Outputs are the client's risk tolerance and the portion of his or her financial portfolio that should be dedicated to flooring.

Spoke 4: Risk Management Allocations to Design "A Floor with Upside"

Using the client's financial capital, create an income floor through the *allocation of risk management techniques* that are compatible with the client's risk profile. Then, with any remaining assets, create an upside. In making the allocation, advisors will choose a mix of risk management techniques including *risky assets* (stocks, bonds, mutual funds, ETFs), *insured products* (annuities), *hedged* or *financially engineered products* (e.g., structured notes), and *risk-free assets* (government securities).

Chapter 5/Spoke 4 describes various risk management approaches (Engineering Practices, Economic Models and RIIA's Empirical Validation Framework) that make it possible to determine if the client is best served with primarily capital markets products portfolios, insurance portfolios or hybrid portfolios. The primary quantitative objectives of Chapter 5/Spoke 4 are to

determine the portions of the flooring portfolio and the upside portfolio that should go to investments, hedging, insurance and risk-free assets. Inputs were developed in prior spokes. Outputs are the percent and dollar portions of the flooring and upside portfolios that should go in some or all of the risk management techniques.

Spoke Five: Specific Products to Implement the Plan and Allocations

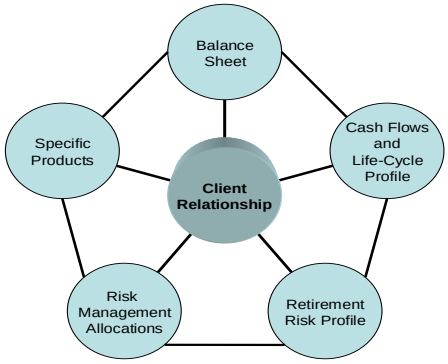
Chapter 6/Spoke 5 provides a high-level, asset-class like mapping of available products for each of the four risk management techniques. This provides guidance to the financial advisor who – within the constraints of his or her chosen risk management approach - can then exercise his or her best professional judgment to implement and manage the flooring and upside portfolios.

Putting It Together: Presenting and Monitoring the Plan

Using a variety of software platforms, the advisor can integrate findings and recommendations into a plan that can easily be presented to and understood by the client. The software can be used during the annual review to monitor results against plan and to create a new plan as client circumstances warrant.

Chapter 1: The Hub At The Center Of The Advisory Process – The Client

RIIA's Retirement Management and Retirement Income Advisory Process



1.1 The Hub of the Advisory Process: The Client

Learning Objectives

LO 1.1.1. List client objectives in the period prior to October 2008.
LO 1.1.2. List client objectives in the period after October 2008.
LO 1.1.3. Describe what clients want advisors to deliver in the period after October 2008.
LO 1.1.4. Describe why knowing your client's emotions is important in the period after October 2008.

The Bernie Madoff episode of 2008-2009 highlighted both the importance and the fragility of trustworthiness in advisor-client relations. Clearly, Madoff's victims trusted him. But consider how few people expressed disbelief that such a betrayal could happen. Instead, their disbelief focused on the scale of the crime and on Madoff's apparent callousness in defrauding so many charities and friends. Trust is hard to build, easy to destroy.

But even skeptical clients want and need to trust their advisors. They want advisors to invest their money safely and wisely, to design an appropriate portfolio and to execute the right trades. Clients become loyal to advisors who earn their trust and confidence under all market conditions.

Security is not merely a synonym for a financial asset. The client-advisor relationship is based as much on emotions—peace of mind, trust, fear, greed, friendship, etc.—as it is on gains or losses. Firms may try to stake a claim on clients, but the client's most important relationship is with the advisor.

Each client invests a different set of emotions in the relationship. And he or she expects the advisor to deliver a satisfactory emotional outcome in addition to a satisfactory financial one. An advisor addresses human needs that are more fundamental than the mere need for wealth.

In what we will call the "old normal"—the period before October 2008—many clients were driven by the search for control, novelty, status and attention. In the "new normal" that lies ahead, we think clients will seek security, validation, belonging, meaning and warmth.

As an advisor, are your emotions tuned to the emotional frequency of the clients you want to serve? What are their unspoken pains and fears? Can you name your clients' emotions? Instead of choosing investments for your clients, can you create desired outcomes? Can you answer the question: "What do aging clients want?" This question is raised in Howard Bloom's book, *The Genius of the Beast* (Prometheus Books, 2009).

1.2 Core Topic: The Accumulation Perspective

Learning Objectives

LO 1.2.1. Describe the typical client types in the accumulation model.
LO 1.2.2. Describe why many firms cater to the High-Net-Worth (HNW) and ultra-HNW client segments.
LO 1.2.3. List the major client wealth categories in the accumulation model.
LO 1.2.4. List the major risk tolerance categories in the accumulation model.

Every client's needs are unique. But turning your clients' limitless individual differences into a scalable business model requires a method for classifying them into a manageable number of types. Retirement management clients shouldn't be classified the way accumulation-phase clients are, however.

The typical accumulation-phase model identifies clients by wealth and risk tolerance levels using five risk tolerance categories and four wealth categories. In such an approach, a matrix such as the one shown in Table 1.2.1 is often used to categorize or "to grade" a client and suggest an "off the shelf" portfolio for him or her. Opinions will vary on the grading as shown in the table below.

Table 1.2.1: The Traditional Investment Client Segmentation Model

Wealth level/ Risk tolerance	Mass Market	Mass Affluent	High Net Worth (HNW)	Ultra HNW (UHNW)
Conservative	D- level Value Potential for Accumulation FAs	B- level Value Potential for Accumulation FAs	A- level Value Potential for Accumulation FAs	AAA level Value Potential for Accumulation FAs
Moderately Conservative	D- level Value Potential for Accumulation FAs	B- level Value Potential for Accumulation FAs	A-level Value Potential for Accumulation FAs	AAA level Value Potential for Accumulation FAs
Moderate	D level Value Potential for Accumulation FAs	B level Value Potential for Accumulation FAs	A level Value Potential for Accumulation FAs	AAA level Value Potential for Accumulation FAs
Moderately Aggressive	D+ level Value Potential for Accumulation FAs	B+ level Value Potential for Accumulation FAs	A+ level Value Potential for Accumulation FAs	AAA level Value Potential for Accumulation FAs
Aggressive	D+ level Value Potential for Accumulation FAs	B+ level Value Potential for Accumulation FAs	A+ level Value Potential for Accumulation FAs	AAA level Value Potential for Accumulation FAs

*Financial advisors.

Since product offerings for the wealthy are generally more profitable or bring more assets under management, many firms cater to the HNW and UNHW segments. As shown in Appendix G: Typology of Financial Professionals, the field has become highly segmented. Advice business models have differentiated over time to match the distinctive characteristics of these accumulation client types.

The "follow the money" approach may make sense for investment management, but it doesn't necessarily make sense in retirement management, where clients face more or less similar hazards and harbor similar fears.

1.3 Core Topic: The Retirement Perspective

Learning Objectives

LO 1.3.1. Describe how planning for retirement income is different from planning for accumulation.
LO 1.3.2. Discuss the difference between the volatility of annualized returns and the volatility of compounded returns.
LO 1.3.3. Define the minimum amount of income that a client will need.
LO 1.3.4. Explain why the shift in emphasis from wealth to Consumption demands a shift in approaches to clients and market segmentation.
LO 1.3.5. Describe how risk tolerance is relevant to the accumulation model (risk profile) and risk aversion is relevant to the retirement income decumulation model.

Planning for *income* is fundamentally different from planning for *accumulation*. In the typical model of accumulation, future investment returns follow a normal distribution. For any time horizon, their volatility increases at roughly the square root of time.

When trying to measure portfolio risk, accumulation-oriented financial advisors tend to focus on the volatility of annualized returns, which decreases over time. In doing so, they often neglect the volatility of *cumulative* returns, which increases over time. For a retirement-minded advisor, cumulative returns—what a retiree can use to put bread on the table and pay his condo fees—matter by far the most.

This is a crucial distinction. The market as a whole may or may not tend to revert to its long-term average returns. But for any single retirement savings portfolio, planning based on an expectation of average performance is unwise. The distribution of possible endpoints for any particular portfolio of diversified risky assets will *expand* over time. As advisors, we always hope we can overcome short-term disappointments in the long run. But it is a hope, not a certainty. The odds of beating a cumulative, risk-free return are still odds and not certainties, regardless of the time horizon.

When clients have a defined financial objective, such as a predictable retirement income, advisors don't have the luxury of waiting indefinitely for portfolios to recover. As our client's emphasis shifts from maximizing wealth on some far-off date to ensuring income (i.e., consumption) on a specific date, achieving out-performance becomes much less urgent than avoiding under-performance.

We call the minimum amount of income that the client will need on each date, the *consumption floor*.

This shift in emphasis demands a shift in our approach to client and market segmentation. For instance, traditional measures of client risk aversion are based on levels of assets under management (AUMs). But those measures lose their relevance when we move to a discussion of the client's income expectations. It is no longer enough to consider AUM in isolation. AUM must be seen in terms of its ability to generate income.

Open-ended and speculative strategies will feel more appropriate and comfortable to advisors as long as they orient their planning toward growth. But with practice, advisors can become just as comfortable with strategies aimed at creating income floors and risk-resilient portfolios.

1.4 Core Topic: Three Kinds of Retirement Clients

Learning Objectives

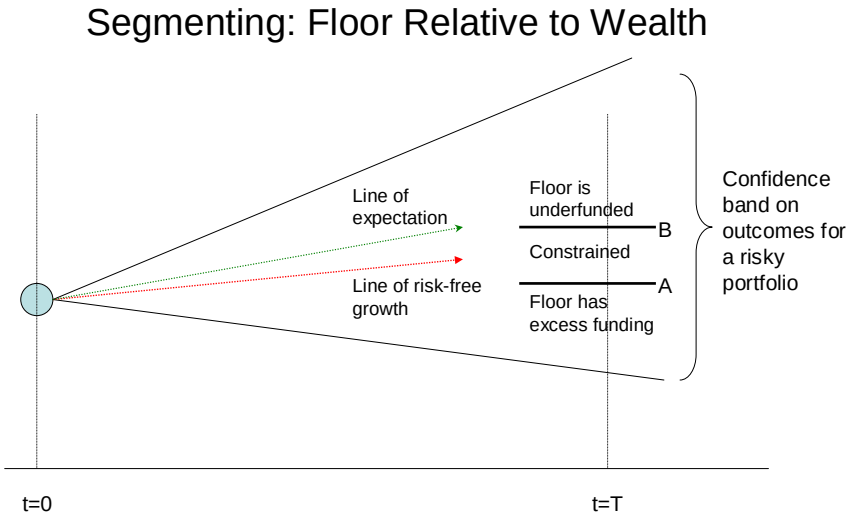
LO 1.4.1 List the three basic types of retirement income clients.
LO 1.4.2 Describe the dimensions of risk aversion vs. risk tolerance.
LO 1.4.3 List the benchmark distribution draw rates for the three basic types of retirement clients.
LO 1.4.4 Learn to elicit a "first-order approximation" of the consumption yield ratio.

Charles Dickens famously wrote, "Annual income £20, annual expenditure £19, six shillings, result: Happiness. Annual income £20, annual expenditure £20, 6 shillings, result: Misery." We

can assume Dickens knew a third kind of bloke, not happy or miserable but constantly worried, whose income exactly equaled his expenses.

At the time of retirement, retirees fall into three analogous categories: those whose floor or minimum income is sufficiently funded by their risk-free assets, those whose floor is likely to be underfunded by their risk-free assets, and those in the middle, who feel "constrained" in their spending choices (see Chart 1.4.1).

Chart 1.4.1



Flooring needs below line A have excess funding. Flooring needs above line B are Under Funded. Between lines A and B choices are constrained.

Note that the client's risk aversion is not yet part of our formal considerations. The primary issue at this point is whether the client has enough money to fund the floor amounts. Only after the flooring is secure does the client's risk aversion become relevant. This sentence is worth repeating because it is an important distinction between traditional investing for accumulation and our proposed method of investing for retirement income. Only after the income floor is secure does the client's risk aversion become relevant. Risk aversion only matters when you're managing the part of the portfolio that's devoted to creating upside potential above the floor.

Many advisors will find it easier to frame retirement planning in terms of the portfolio yield (or consumption yield ratio) that's required to maintain an expected lifestyle or consumption rate. For them, the different segments in Chart 1.4.1 might translate into the following distribution or draw rates. (Note that higher assets or a lower floor require a lower draw rate, and vice-versa.)

- Excess funding ≈ draw rate ≤ 3.5%
- Constraint ≈ 3.5% < draw rate ≤ 7%
- Under funding ≈ draw rate >7%

Table 1.4.2, below, brings these concepts together to present a simple segmentation of retirement income clients. It applies the three floor-related segments to the four wealth segments to produce 12 segments instead of the 20 in Table 1.1. This categorization method clarifies the targeting of product sets that make up the solutions to the client's retirement income portfolios. Again, using a grading method, we show one – of many – opinions about the value of each segment for financial advisors (FAs).

Table 1.4.2: The Retirement Income Market Segmentation

	Mass Market	Mass Affluent	High Net Worth	Ultra High Net Worth
Under-funded	D- level Value Potential for Retirement FAs	B level Value Potential for Retirement FAs	B level Value Potential for Retirement FAs	Retirement income considerations may not be relevant
Constrained	D level Value Potential for Retirement FAs	A level Value Potential for Retirement FAs	A level Value Potential for Retirement FAs	Retirement income considerations may not be relevant
Excess Funding	D+ level Value Potential for Retirement FAs	A+ Level Value Potential for Retirement FAs	A+ level Value Potential for Retirement FAs	Retirement income considerations may not be relevant

In this approach, greater wealth doesn't necessarily mean greater income adequacy. HNW clients with lifestyles that require distribution rates higher than 5% or 7% belong to the *underfunded floor* category as much as a Mass Market (MM) client in the same relative situation. Nor does financial capital alone determine draw rates in retirement. Human and social capital are also important considerations before we calculate the actionable consumption yield /portfolio yield ratio.

1.5 Core Topic: Consider the Client's Entire Household

Learning Objectives

LO 1.5.1 Discuss why retirement advisors must consider the household view as opposed to the account view of the client, which is sufficient for investment advisors.

A consideration of the entire household is critical for comprehensive retirement planning and management. An advisor may usually meet "across the table" with an individual or a couple during the accumulation phase, but their wealth will most likely have to meet the long-term needs of a constellation of family members.

As financial entities, households may be simple or complex. The family unit may encompass one or several generations and one or more earners. The advisor who understands the entire household is less likely to waste time on solutions that later prove unworkable. It's useful to know, for instance, that households with multiple earners in different age brackets are not likely purchasers of life annuities.

1.6 Advanced Topic: Helping Clients Leave Their "Comfort Zones"

Learning Objectives

LO 1.6.1 Describe the characteristics of clients making basic financial decisions.
LO 1.6.2 Explain why investing takes clients outside of their comfort zone.
LO 1.6.3 Explain why advisors can help clients make better decisions outside of their comfort zone.
LO 1.6.4 Understand the role of the advisor in managing clients' emotions and fears.

Most people are rational, capable and effective when making minor financial decisions within the "comfort zone" of their daily lives, as economist Tim Harford and others have pointed out. Most adults can easily juggle budgets, determine fair prices, and negotiate financial trade offs.

In this comfort zone, people show sensible preferences (i.e., motive), recognize their level of negotiating power (i.e., ability) and match their behavior to the available market supply (i.e., opportunity). They understand the consequences of their actions (i.e., budget impact) in light of their own view of the world.

Investing takes most people outside of their comfort zones, however, where they often behave less rationally. Few people possess the successful investor's instinct to "zig when others zag," to buy low and sell high. Investing is a complex business with its own vocabulary. This is why a trusted relationship with a good advisor is so important.

Advisors can help clients make better decisions outside of their comfort zone. As we will see in the following chapters, this does not always mean that advisors need to create permanent, comprehensive, multi-year plans. For many clients, having a general strategy and making frequent course corrections will bring more comfort—and more success—than fixed long-term plans.

1.7 Recapitulating Where We Are In the Process

RIIA's Retirement Management and Retirement Income Advisory Process has two goals:

- Goal 1: Build a Floor
- Goal 2: Create Upside

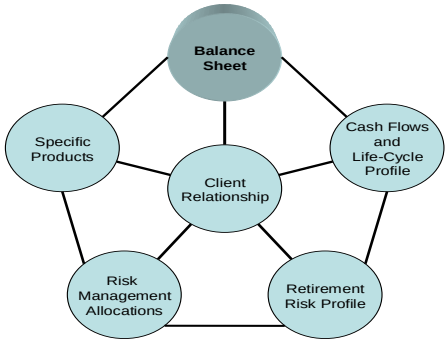
The primary quantitative objective of Chapter 1 is to calculate a "first-order" estimate of the client's consumption /portfolio yield. Inputs for this calculation include an estimate of the client's current Financial Capital and his or her expected annual consumption level in retirement. Outputs from this calculation categorize the client as underfunded, constrained or overfunded. This first-order estimate will be revised as we move through the spokes. This core level of

analysis focuses on averages and can be also refined with an advanced level analysis including a specific year-by-year simulation.

The remaining chapters will present the remaining five spokes.

Chapter 2: "The Household Balance Sheet" Is the Start of the "Life-Cycle" Plan

RIIA's Retirement Management and Retirement Income Advisory Process – 1st Spoke



2.1 Spoke One: Life-Cycle Plan, Part I–The Balance Sheet

Learning Objectives

LO 2.1.1 Describe why retirement advisors should start with the client household's balance sheet.
LO 2.1.2 Describe the theoretical importance of starting with the balance sheet.

Like a player in a game of Texas hold'em, a client may have a couple of financial "hole cards" that he or she chooses not to reveal to an advisor at the beginning of their relationship. But eventually there must come a "showdown" where the client flips over all the cards.

In Spoke One of our process, we'll review all of the cards in what we call the "household balance sheet."

A household balance sheet is distinct from an individual account or balance sheet. Accumulation-oriented advisors can afford to take an individual view, but retirement-oriented advisors must consider the finances of the entire family or household. It's no accident that retirement vehicles typically require beneficiary designations.

2.2 Core Topic: Benefits of Focusing on the Household

Learning Objectives

LO 2.2.1 Explain the two major benefits of looking at the household level rather than the individual level to create a retirement plan.

When you invest for growth, you tend to focus on the client's financial wealth. When you plan for retirement income, you focus on the link between the client's current wealth and his or her household's expected future consumption. In a later Spoke, we'll show readers how to tie household balance sheet items to the cash flows in the household income statement.

Two major benefits accrue from focusing on the income and expense needs as well as the wealth on the balance sheet:

The client's portfolio is more than simply a pool of money. It is tethered to the client's life plan. He or she created it to finance consumption. As retirement approaches, the advisor and client should frequently discuss the goals of the portfolio in order to clarify the range of opportunities and strengthen the relationship.

The sooner the advisor can encourage clients to think about how their existing assets will support their future consumption, the easier it will be to make sure their expectations are reasonable. No advisor should wait until clients retire to tell them that they expect too much and that their dreams are bigger than their means.

2.3 Core Topic: Assets Minus Liabilities Equals Owner's Equity

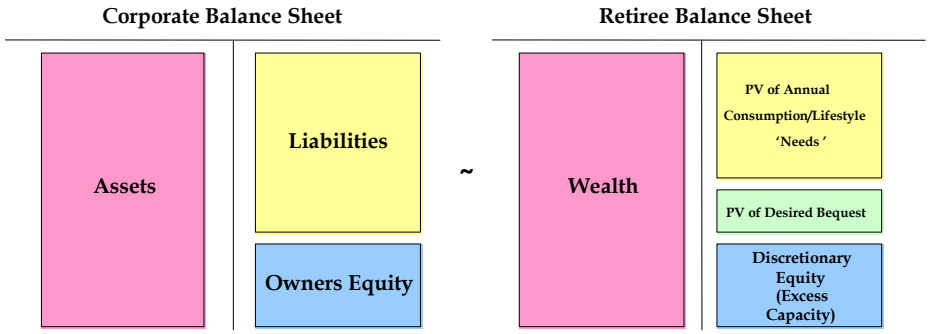
Learning Objectives:

LO 2.3.1 List the components of the household balance sheet.
LO 2.3.2 Describe the difference between a household's balance sheet and a corporate balance sheet.
LO 2.3.3 Discuss why a client's consumption plans are summarized in the form of a present value on the balance sheet.
LO 2.3.4 Explain why the present value of a client's consumption plans is shown as a liability on the balance sheet.
LO 2.3.5 Contrast how an accumulation-minded advisor focuses on a client's balance sheet vs. a retirement-minded advisor.
LO 2.3.6 List five key questions a retirement-minded advisor would ask clients about their assets.
LO 2.3.7 List five key questions a retirement-minded advisor would ask clients about their liabilities.
LO 2.3.8 Calculate the present value of consumption cash flows as well as the present value of income and gains.

Like a corporate balance sheet and as shown on Figure 2.3.1 below, a household balance sheet displays assets on the left and liabilities (consumption needs, bequest desires) plus owners' equity (discretionary wealth) on the right.

Figure 2.3.1

Retirement Balance Sheets



The difference between a corporate and a household balance sheet is most apparent on the liabilities side. The clients' consumption needs, derived from their budget/income statements, can be expressed in the form of a Present Value (PV). That PV becomes a liability that the advisor can match against existing assets.

Similarly, the advisor can calculate the PV of a future bequest or charitable gift and post it as a liability. When the sum of the present values is smaller than total assets, the difference represents the equivalent of owner's equity.

To emphasize what we said earlier, accumulation-focused advisors focus on enhancing the left side of the balance sheet. Retirement management and retirement income advisors focus on matching the assets on the left side of the balance sheet with the client's liabilities (including the present value of future consumption) on the right.

2.4 Core Topic: A Household's Three Sources of Capital

Learning Objectives

LO 2.4.1 List the household's three sources for cash flows.
LO 2.4.2 Define the key components of a client's Human Capital.
LO 2.4.3 Define the key components of a client's Social Capital.
LO 2.4.4 Define the key components of a client's Financial Capital.
LO 2.4.5 Describe the importance of the Consumption to Financial Capital ratio.
LO 2.4.6 Understand the importance of netting Human Capital and Social Capital income out of Consumption before calculating the ratio to Financial Capital.

Households have three major capital sources of cash flows, including:

- Human capital
- Social capital
- Financial capital

Each of these three sources of capital creates cash flows that we can measure and track through the household budget/ income statement and balance sheet.

The client's *human capital* represents his or her earning power. Some clients will have multiple income streams. The amount they earn will vary, depending on their education levels, experience and entrepreneurial abilities.

The client's *social capital* represents claims on the human capital of others. Rich uncles, Social Security payments, and various kinds of support from religious or civic organizations all qualify as social capital. Defined benefit plans can also be included in social capital although some analysts and software providers categorize defined benefit plans as human capital, calling them deferred compensation or a personal annuity.

The client's *financial capital*, or investable assets, is the portion of wealth that advisors are most familiar with. But a retirement advisor is more interested in the ratio of those assets to the client's annual consumption needs than in the value of those assets alone, expressed as account balances or AUM.

A high financial-capital-to-consumption ratio (say, 30:1) tells the advisor that the client may be able to live on income from financial capital alone. A low ratio means that the client may have to rely on social or human capital or tap illiquid assets such as real estate in order to meet consumption needs.*

*Home equity will be an important component of net worth for some clients. It tends to be more important for the lower quintiles of wealth (see Chapter Six). Depending upon your type of clients, reverse mortgages and other housing strategies may or may not be relevant.

2.5 Core Topic: Helping Clients Understand Household Finance

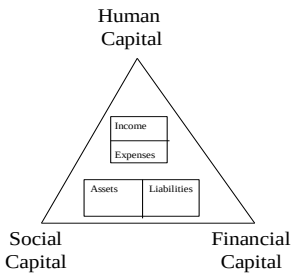
Learning Objectives

LO 2.5.1 Explain the effects of financial illiteracy on clients.
LO 2.5.2 List the components of a client household's balance sheet.
LO 2.5.3 List the components of a client household's budget/income statement.
LO 2.5.4 Identify the flows between the household's balance sheet and budget/income statement.

As researchers such as Annamaria Lusardi and others have shown, financial illiteracy is prevalent in America. Many people can't grasp the arithmetic of household income and expense budgeting, let alone the higher math of annuity fair value and bond duration. Ignorance leads people—rich and poor alike—to spend more than they earn, to borrow more than they can pay back and to put money in instruments they don't understand. Yawning gaps in basic knowledge often hide behind apparent sophistication.

Advisors can use the client's household income statement, balance sheet and cash flow statement as a primer for teaching financial literacy. The two main components of cash flow, income and expenses, are fairly self-evident. Similarly, the two main components, assets (which generate positive cash flows) and liabilities (which generate negative cash flows), can easily be explained. Figure 2.5.1, for instance, shows that the household budget/income statement lies in the context of the investor's three capital sources of positive cash flows.

Figure 2.5.1
Current Income Statement and Balance Sheet



2.6 Core Topic: Types of Financial Capital

Learning Objectives

LO 2.6.1 List the three goal categories of Financial Capital.
LO 2.6.2 Explain how the categories correspond to building a floor and creating upside.

Some practitioners divide financial capital into three goal categories:

- Assets for necessities
- Assets for emergencies
- Assets for discretionary use

These classifications correspond to building a floor (assets for necessities), bracing the floor (assets for emergencies), and creating upside (assets for discretionary use). In the way that pilots use a pre-flight safety checklist before take off, advisors can use this type of functions-based classification system when preparing to interview clients.

2.7 Core Topic: Data-Gathering Methodologies for Household Statements

Learning Objectives

LO 2.7.1 List the three goal categories for client income/positive cash flow.
LO 2.7.2 Describe the process of building a household balance sheet.
LO 2.7.3 Describe the two approaches to estimating cash flows.
LO 2.7.4 List five key questions to ask clients about Human Capital.
LO 2.7.5 List five key questions to ask clients about Social Capital.
LO 2.7.6 List five key questions to ask clients about Financial Capital.

We saw earlier (Figure 2.5.1) that the household income statement and balance sheet can be placed in the context of the investor's three capital sources of cash flows. Table 2.7.1, below, provides general questions to elicit the necessary data from the client.

We've also seen that the cash flow statement and the balance sheet each have a positive and a negative component. The advisor can classify the investor's income or positive cash flows as:

- Income expensed for current consumption, such as paying for groceries.
- Income partially-expensed for financing future income or consumption, such as putting money aside in a Christmas club account or a 529 Education account.
- Income expensed for assets that can generate future positive cash flows, such as investments in a business.

To build a household balance sheet, you can start with the financial capital. It represents current stocks of wealth. You don't necessarily have to consider human and social capital yet. In most client situations, those values would equal the present value of the cash flows over an expected time horizon. The next question is: How do we estimate the cash flows? There are two approaches: *bottom up* and *top-down* estimation. For either, the level of detail may be finer or grainier depending on the client and the relationship. If done properly, either approach should bring you to roughly the same place.

Table 2.7.1

Questions to Ask the Client about Sources of Capital

About social capital:

- Can you provide a copy of a recent Social Security statement?
- Are you a veteran and/or entitled to VA benefits?
- Any you entitled to benefits from any other governmental programs?
- Are you covered by any defined benefit plans?
- Will you receive employee insurance benefits in retirement?

About human capital:

- Are you self-employed or an employee?
- Do you ever earn money outside of your regular employment?
- Do you have outside interests that can be turned into an employment opportunity?
- Have you considered starting your own business?

About financial capital:

- What is the value of your retirement accounts, if any (401(k), 403(b), IRA, Keogh, etc.)?
- What other financial assets do you own?
- Do you own any real assets?
- Do you own any other assets that could be monetized?

2.8 Core Topic: Top-Down Estimates

Learning Objectives

LO 2.8.1 Explain how to create a top-down estimate of a client household's income and expense cash flows.
LO 2.8.2. List the documents used to create a top-down estimate of a client household's income and expense cash flows.

For top-down estimates of cash flows, current lifestyle is a good place to start. The client's income can be found on his or her Form 1040. The extent of the client's savings can usually be found on the monthly statements of his or her 401(k), IRA or savings accounts. Top-down estimates allow you to create a big picture view of consumption needs using easily accessible information.

Using the equation, "consumption = income - saving," you can calculate the client's current consumption by subtracting annual savings from annual income. This level of consumption provides a basis for predicting consumption in retirement. You can adjust it by subtracting expenditures that may vanish (e.g., college tuition, mortgage payments, commuting costs) and adding ones that may crop up in retirement (e.g., health care expenses, a new car, weddings).

2.9 Core Topic: Bottom-Up Estimates

Learning Objectives

LO 2.9.1 Describe the process to build a client household's bottom–up estimate of income and expense cash flows.

For bottom-up estimates of cash flows, start with a blank sheet of paper (or a budgeting software package, if you're technologically advanced) and build the expected cash in-flows and out-flows from scratch. These cash flows can be turned into present values in order to build the bottom-up estimate of the client's balance sheet.

2.10 Core Topic: Detailed Household Balance Sheets

Learning Objectives

LO 2.10.1 List the categories and sub-categories of assets in the client household balance sheet.
LO 2.10.2 List the categories and sub-categories of liabilities in the client household balance sheet.

As shown on Table 2.10.1 below, more comprehensive categories of assets and liabilities could include:

Table 2.10.1
The Personal Balance Sheet

Assets	Liabilities
- Human Capital - Social Capital - Financial Capital -- Tax-Deferred -- Taxable -- Liability Matched -- Marketable Non-Financial Assets	- Financial Debt -- Mortgage -- Education -- Auto Loans - Future Consumption Needs - Future Bequest Desires - Discretionary Equity (Uncommitted funds allowing for liability expansion)

These analyses are maps of the client's underlying lifestyle and financial reality. Such maps represent much-simplified views of the clients' situations. It is up to advisors to decide how much detail they need before they can make confident recommendations to their clients. In trying to prepare for the future, the advisor will have to balance precision and accuracy. As economist John Maynard Keynes put it long ago, "I'd rather be approximately correct than precisely wrong."

Some clients' personal balance sheets will be more complex than others. For instance, the value of closely held businesses and executive deferred compensation packages constitutes a major portion of the assets of the wealthiest five percent of Americans. The advisor will want to ask about this source of wealth in order to add it to the client's balance sheet where applicable.

2.11 Advanced Topic: The Life-Cycle View of the Household Balance Sheet

Learning Objectives

LO 2.11.1 Understand the difference between a static view and a Life-Cycle view of the client household financial statements.

In Spoke One, our analysis was necessarily static because the household balance sheet reflects only a single point in time. In Spoke Two, we'll expand from this static balance sheet view to include an analysis of the investor's dynamic spending patterns and cash flows. That will enable us to create the investor's *Life-Cycle Profile*. Later, we will see that income flows from human capital and social capital will be critical for clients whose financial capital-to-consumption ratio is too low to finance their retirement.

2.12 Advanced Topic: Dynamic Stochastic Optimization or Present Values on the Balance Sheet?

Learning Objectives

LO 2.12.1 Describe the distinction between the dynamic stochastic optimization method and the asset/liability matching method.

Planning for retirement might be compared to filling and emptying a balloon. We accumulate assets and later decumulate them. However, planning the draw-down segment of the process is subject to the problems of path dependency. What methods are available to us and how do we know when one method is better than another for our clients?

Many financial tools are forward-looking tools. They project income and expenses forward into the future. This method complicates the retirement income problem by approaching it as an exercise in dynamic stochastic programming. It works best when we know our objective and understand all the possible factors that could send us off course. If we choose the wrong objective, or if the objective changes, then the solutions that we've created will be aimed widely off of the mark.

But is it truly useful to guess the value of the client's portfolio at some distant point and try to align it with the client's needs at that point? Does that add information or does it just add noise to your decision-making process? Clients and advisors like projecting anticipated returns because the assumption of risk creates an impression of rising wealth. But favorable outcomes may represent just a handful of the ever-widening range of possible outcomes.

Are there planning methods that introduce less noise in the process? Yes. Consider a method that compares the present values (PV) of assets and liabilities. Annual matching of the PVs of assets

and liabilities makes it possible to lock in a "floor." The disposition of the remaining upside, if any, can be handled flexibly each year.

Academics will point out that under the PV method, if we know the objective and the states of the economy before we start planning, failure to produce a complete plan over the entire planning horizon may impose a cost. The PV method is flexible because it is incremental. It builds the plan one year at a time. We would point out that under real life assumptions (e.g., where objectives may change and we have imperfect information about the current and future states of the economy) the potential cost of this flexibility must be compared with the real cost of getting a complete plan wrong.

Again, as an academic note, if there is no investment alpha in the projection of the assets then projecting assets and liabilities forward should not create new information (except money illusion) that the current, present-valued balance sheet does not already show.

Under the stochastic method, the key question is: Will my assets grow enough to meet my future needs? Under the second method, the key question becomes: Do my assets match the PV of my future needs? By discounting on the basis of observed prices, present values can be quite precisely measured and compared to observed wealth. If a client's assets are insufficient, the advisor can posit the "what ifs" and recommend actions using human, social and financial capital. The PV process benefits from iteration since observed prices will change.

Starting with the client's balance sheet, the advisor can calculate the present values of various future consumption needs. The advisor can then compare and allocate assets against these present values of liabilities. If necessary, the advisor can also project the balance sheet forward and match the present values of liabilities against the projected assets.

2.13 Advanced Topic: Pensions: Social Capital or Financial Capital?

Learning Objectives

LO 2.13.1 Explain why income from defined benefit (DB) plans can be classified as either Social Capital or Financial Capital.

For most retirees, the largest constituent of social capital will be Social Security. This "pay-as-you-go" program uses payroll taxes from active workers to provide benefits to those over 62 and to the disabled and their dependents. Veteran benefits and a variety of grant programs also provide social capital. Private sources of social capital include civic groups, religious organizations, and family members who provide cash and non-cash support.

Should income from public and private DB plans be classified as social capital or financial capital? Table 2.13.1 below uses overlapping boxes to represent the different ways of

categorizing DB plans. Advisors can choose either, depending on personal preferences and the technical tools they use.

Table 2.13.1

Three Sources of Income: Age 65 to 69

Income from human capital

Wages: $15,000

Income from social capital

Social Security: $10,399

Public defined benefit plans: $15,600

Private defined benefit plans: $6,720

Income from financial capital

Annual income: $952

November 7, 2005, Table 1, page CRS-4, Topics in Aging: Income and Poverty Among Older Americans in 2004, Debra Whitman and Patrick Purcell

2.14 Recapitulating Where We Are in the Process

The Goals
Remember what we are trying to do:
RIIA's Retirement Management and Retirement Income Advisory Process has two goals:

- Goal 1: Build a Floor
- Goal 2: Create Upside

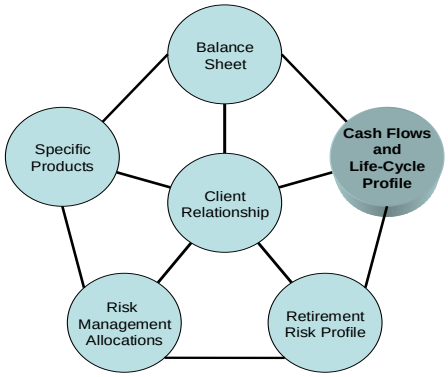
The primary quantitative objective of Chapter 1 is to calculate a "first-order" estimate of the client's consumption /portfolio yield. Inputs for this calculation include an estimate of the client's current Financial Capital and his or her expected annual consumption level in retirement. Outputs from this calculation categorize the client as under-funded, constrained or over-funded. This first-order estimate will be revised as we move through the spokes. This core level of analysis focuses on averages and can be also refined with an advanced level analysis including a specific year-by-year simulation. The remaining chapters will present the remaining 5 spokes.

Spoke #1
The Advisor starts the creation of a Life-Cycle plan based on an understanding of the client's Balance Sheet as illustrated below.

The primary quantitative objective of Chapter 2/Spoke 1 is to calculate a "first-order" estimate of the client's household balance sheet. Inputs for this calculation include asset balances (e.g., financial assets and bank balances) as well as expected cash flows (e.g., social security and pensions). Inputs also include liabilities including mortgage balances, expected annual consumption in retirement, desire for a bequest, etc. Finally, inputs for this calculation include discount rates/expected returns. Outputs from this calculation are shown as a household balance sheet with projected and discounted values as of the client's retirement date.

Chapter 3: The Second Spoke – Cash Flows and the Completion of the Life-Cycle Profile

RIIA's Retirement Management and Retirement Income Advisory Process – 2nd Spoke



3.1 Spoke Two: Life-Cycle Plan, Part II–Cash Flows

Learning Objectives

LO 3.1.1 Describe the differences between the Boomer blended retirement life plan and the traditional retirement plan.
LO 3.1.2 Describe the differences between the old normal and the new normal.

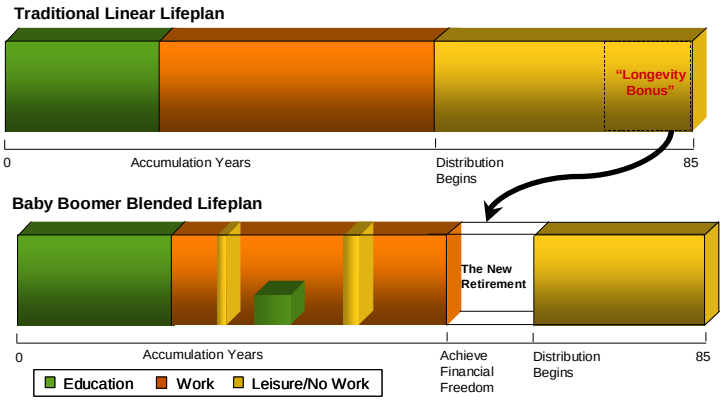
By today's standards, the traditional retirement party, where a white-haired, 65-year-old employee receives a gold pocket watch after a lifetime with "the firm," seems like the quaint ritual of a bygone era. And that's exactly what it is: a cultural memory of the days when our transitions from school to career to retirement were predictable, formal and few.

We call that the *old normal*. Serial employment and flexible or reversible retirement dates characterize the new normal. Many people's careers are now punctuated by extended breaks (voluntary or otherwise) for education, re-training or some other kind of mental refresher. We call that the *new normal.*

RIIA chief operating officer Steve Mitchell, a senior-level executive in the retirement planning industry for more than 30 years, has described the new retirement as a "boomer blended life plan." To illustrate the new paradigm, Steve uses the following chart (Figure 3.1.1) from a 2005 Merrill Lynch study. It depicts some of the differences in expectations between yesterday's workers and today's. The key idea is that retirement is a process, not an event.

Figure 3.1.1

Comparing the Traditional Investor Lifeplan to the Boomer Blended Lifeplan



Source: The 2005 Merrill Lynch New Retirement Study: A Perspective From The Baby Boomer Generation

In light of this revolution in the way many clients will perceive their lives, the advisor may sometimes need to create a portfolio that allows the client with the option of a mid-life career change or "time out."

Post-2008, the bursting of the housing bubble and the collapse of the bull market will probably delay many clients' plans for self-actualization (e.g., summers in Tuscany) and bring more prosaic worries and needs (the cost of re-shingling the roof) to the fore. Some clients will have lost enough money in the crash to warrant a wholesale reorientation of their priorities. Frugality will become a bigger component of retirement plans under the New Normal.

3.2 Core Topic: What Portion of Annual Consumption Must Come from Financial Capital?

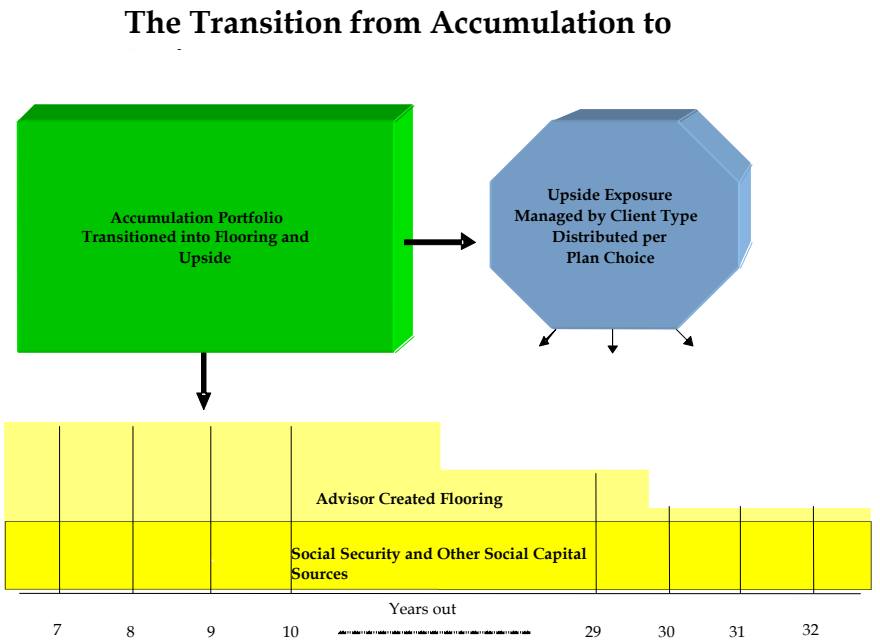
Learning Objectives

LO 3.2.1 Describe the practice of finding a flooring level by matching the estimates of a client household's consumption cash flows to the estimates of its income and gains cash flows from Human Capital, Social Capital and Financial Capital.
LO 3.2.2 Describe the importance of calculating the Consumption to Financial Capital ratio.

LO 3.2.3 Describe the importance of calculating the ration net of the estimated and projected impact of income from Human and Social Capital.

Accumulation-focused advisors dwell on the asset side of the client's household balance sheet. Retirement income-focused advisors watch both sides of the balance sheet and pay equal attention to the household budget/income statement. The twin goal of "building a floor" and "creating upside" for the client demands this broader, more inclusive view. Figure 3.2.1 illustrates the dual objective.

Figure 3.2.1



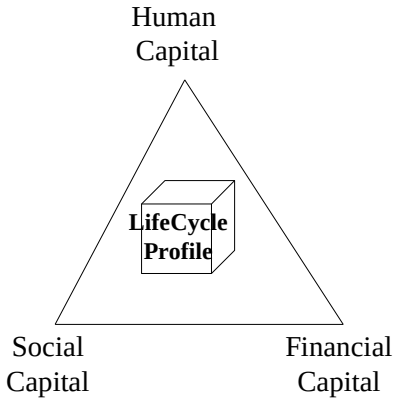
The advisor can start this more dynamic analysis by examining the investor's sources of social capital, which by definition accrues from the work of others. Social capital, or the lack of it, often plays an important role in a retirement plan. A retired couple with supportive adult children obviously wouldn't need the same plan that a single investor with no close family members would.

Using the asset side of the household balance sheet, the advisor can identify the client's other sources of capital and determine which of them can create the various income flows that appear on the household income statement. From the household income statements, the advisor can estimate future expenses, calculate their present value, and add that amount to the liability side of the household balance sheet.

With repeated efforts, the advisor and the client can start to match future consumption with income flows. The exact method is up to you. Depending on the size and complexity of the client's portfolio, you can perform this exercise on the back of an envelope or with specialized financial planning software.

As shown in Figure 3.2.2 below, the discussion and collection of the investor's three capital sources of income forms the basis of the investor's Life-Cycle profile.

Figure 3.2.2
Create a Life-Cycle Profile, the Basis for a Retirement Management Plan



The income flows from the client's social and human capital appear in the Household Income Statement and Household Balance Sheet. Ideally, they should provide a minimum level of income that doesn't depend on Financial Capital. This non-financial income floor can be expressed as a range and may vary over time.

The Life-Cycle profile presents the balance – over the time horizon - between the investor's capital sources of income, namely social capital, human capital and financial capital.

Chapter 1 introduced and showed the importance of the concept of the client's annual consumption to Financial Capital ratio. This introduction allowed the advisor and the client to create a "first-order" estimate of the ratio to start the conversation in the right direction. This section introduces the idea that we can increase the precision of the estimates that went into the initial calculation.

If the Annual Consumption to Wealth ratio is high (above 7%), the investor can't expect to consume at that level for very long. If the ratio is low (below 3.5%), the investor is less likely to run out of money over the long run.

Note that the Annual Consumption to Financial Capital ratio (a form of yield) can also be expressed as a Financial Capital to Annual Consumption ratio (a capitalization multiple). Since

advisors and clients discuss yield and returns in many of their conversations, we prefer to use the yield ratio rather than the capitalization ratio.

We can increase the precision and actionable relevance of the ratio by evaluating the impact of Human Capital and Social Capital on the variables that go into the ratio. Some clients will also have employment—participation on corporate boards, consulting or even hobbies—that can generate human capital during retirement. This will cover some of the Annual Consumption needs instead of relying 100% on income from Financial Capital. Likewise, all retired clients who are eligible for Social Security benefits will have social capital (a source of income based on the efforts of others) that will provide a consumption floor.

However, many clients will rely primarily on their financial capital—savings, investments, assets that they can converted to income—as the workhorse that will generate their income above the minimum that social capital provides. For constrained clients (those with a ratio between 3.5% and 7%), the solution won't be as cut-and-dried as saying, "If you want to spend $80,000 in retirement, you'll need $2 million in assets." Creativity will be called for. The client may have to tap non-investment sources of above-average returns, such as the "survivorship credits" that arise from mortality risk pooling, and/or distribution of principal. In Spoke Three and Spoke Four, we'll take a closer look at this issue.

3.3 Core Topic: The Basic Household Budget

Learning Objectives

LO 3.3.1 Describe the key elements of a client household's budget/income statement.

As shown in Table 3.3.1 below, the client budget/income statement can be mapped top/down, with income on top and expenses below, to distinguish it visually from the side-by-side mapping of the balance sheet.

Table 3.3.1
The Basic Household Budget/Income Statement

Income
Earnings
Expenses
Taxes Household Expenses

There are two kinds of people in the world: those who like to plan ahead by creating a budget—and the rest of us. There may once have been a national passion to budget (see "When Private Budgets Were A Public Matter," below) but it has clearly fallen out of favor.

Why? Perhaps because Baby Boomers are uncomfortable with any suggestion of rationing, of "making do" or accepting limits. It's also possible that budgeting was abandoned because

circumstances can change fast, making new budgets obsolete overnight. But retirement planning is hard to do without some kind of spending analysis.

Table 3.3.2
When Private Budgets Were A Public Matter

For the sake of historical perspective, here's a quote from "An Overview of Recent Work on Standard Budgets in the United States and Other Anglophone Countries," Gordon M. Fisher, U.S. Department of Health and Human Services, 2007.

"In the U.S., a 33-item standard budget was published as early as 1891, and dozens of standard budgets at various standards of living were developed between about 1902 and 1920, during the Progressive Era. These budgets were generally for individual cities and were generally developed by social workers or other private investigators, although a few isolated budgets were developed by employees of federal government agencies. The developers of these budgets were generally working to improve the living conditions of urban industrial workers and their families.

"Standard budgets continued to be developed during the 1920s and 1930s, but on a somewhat more routine basis. After World War II, the U.S. Bureau of Labor Statistics developed and updated standard budgets—all at standards of living higher than poverty—between the late 1940s and the early 1980s; these included the City Worker's Family Budget at a "modest but adequate" standard of living, published in 1948 and updated until the early 1950s, and three budgets at "lower," "moderate" or "intermediate," and "higher" standards of living, published in 1969 and updated until the early 1980s.

"In general, however, the standard budget methodology fell into disfavor in the United States during the 1960s, 1970s, and 1980s. It is not entirely clear why this methodology fell into disfavor, but two contributing factors appear to have been a turnover of generations among analysts and a change in intellectual trends or paradigms."

The advisor will also need to map the expense items on the standard budget to the income cash flows from human, social and financial capital. Differentiating expense items between fixed and discretionary will help with the mapping.

3.4 Core Topic: Expenses: Fixed vs. Discretionary

Learning Objectives

LO 3.4.1 List two major types of expenses.
LO 3.4.2 Explain the differences between fixed and discretionary expense types.
LO 3.4.3 Explain retirement advisors' map expenses against assets.
LO 3.4.4 Describe best practices for mapping expenses against assets.

On the income statement, expenses are either *fixed* or *discretionary*. The precise difference between the two will be different for each client. Clients who aim for austere seclusion will probably have different needs and wants from those who aspire to live life "to the fullest." But most people probably define fixed and discretionary in the same general way.

Table 3.4.1

Fixed vs. Discretionary Expenses

After the advisor and the client agree on the specifics of the budget/income statement, they can map the expenses against the assets in the balance sheet. Ideally, the client's risky assets will cover his discretionary expenses and his fixed income (e.g., bonds) and guaranteed assets (e.g., annuities) will match up with his fixed expenses. If not, you might look for ways to close a shortfall in one area with a surplus from another.

3.5 Core Topic: Detailed Household Income Statement/Budget

Learning Objectives

LO 3.5.1 Explain when and why a comprehensive analysis of a client household's finances may be needed.
LO 3.5.2 Describe the key components of a comprehensive budget/income statement.
LO 3.5.3 Practice building the client household's budget/income statement starting with your own.

When the clients' tastes or ambitions clearly don't match the standard budget, a more comprehensive analysis of household finances might be needed. This can be done with paper and pencil, a homegrown spreadsheet or the type of specialized process-compliant software that RIIA encourages vendors to create for advisors.

Income and expenses can take many forms. As Table 3.5.1 shows, earned income, passive income from real estate, interest, dividends and capital gains are some of the most common kinds of income. General household expenses, education expenses for children and taxes are common expenses.

Table 3.5.1

The Household Income Statement

Income -Earned Income -Passive Income -Active Portfolio Income -Gifts
Expenses -Household Expenses -Education Expenses -Taxes -Business Expenses

Knowing how to create a budget, explicitly or implicitly, is an important element of financial literacy. Budgeting involves more than controlling expenditures. It also means:

- Employing all sources of income
- Managing current expenses
- Creating practical spending limits
- Curbing excess spending
- Anticipating emergencies
- Using debt wisely

Advisors should avoid the shortcut of using average expenditures instead of collecting specific spending data from each client. Just as the average of several coin tosses won't help you predict the next toss, "average behavior" won't necessarily describe any particular client's future needs. The use of rules-of-thumb like "replacement ratios" has therefore been replaced by more individualized expense-forecasting methods.

Taxes, either as an expense or a reduction of income, must also be accounted for. Because of their high marginal tax rate, taxes from all sources are a large, if not the largest, expense for high net worth clients.

At this point in the process, we can recognize two essential concepts. First, clients possess stored wealth (financial capital), potential wealth (human capital) and wealth derived from membership in a social compact (social capital). Second, retirement advisors need to match these sources of wealth against the clients' current and planned expenditures.

3.6 Advanced Topic: The Life-Cycle View of Distribution Curves and Life Events

Learning Objectives

LO 3.6.1 List five key aspirations that clients may have for retirement
LO 3.6.1 List five discretionary milestones that may exist in a client's Life-Cycle plan
LO 3.6.2 List the regulatory milestones that may apply in a client's Life-Cycle plan

It's easier to understand clients when you see them through the lens of their aspirations rather than their account balances. To paraphrase from a training program based on Mitch Anthony's "The New Retirementality" and presented by Greg Heffington from Van Kampen Consulting, clients may have set their hearts on a retirement that includes:

- A longer career
- A second career
- Play (golf, fishing, sailing, flying, etc.)
- Pursuit of unfulfilled dreams
- Spiritual growth
- Home improvement

- Landscaping and gardening
- New challenges, such as competing in a marathon
- Travel
- Volunteer work, charity or philanthropy

In addition to the traits or circumstances that make each client unique, many clients will experience similar milestones. Again, paraphrasing from Van Kampen Consulting's brochure on "The New Retirementality" these may include:

- Graduation from school or university
- Marriage
- Employment
- Parenthood
- Children's graduations
- Children's weddings
- Children's careers
- Grandparent-hood
- Retirement

In addition to these milestones that derive from personal lifestyle choices, members of American society share regulatory Life-Cycle markers including:

- The earliest age of eligibility for Social Security benefits (62)
- The earliest age of eligibility for Medicare (65)
- The ages when we are eligible for penalty-free distributions from certain tax-deferred retirement savings vehicles (59½, with exceptions)
- The final year before distributions from certain tax-deferred retirement vehicles must begin (the year after the year the participant reaches 70½)

3.7 Recapitulating Where We Are in the Process

The Goals
Remember what we are trying to do:
RIIA's Retirement Management and Retirement Income Advisory Process has two goals:

- Goal 1: Build a Floor
- Goal 2: Create Upside

The primary quantitative objective of Chapter 1 is to calculate a "first-order" estimate of the client's consumption /portfolio yield. Inputs for this calculation include an estimate of the client's current Financial Capital and his or her expected annual consumption level in retirement. Outputs from this calculation categorize the client as under-funded, constrained or over-funded. This first-order estimate will be revised as we move through the spokes. This core level of

analysis focuses on averages and can be also refined with an advanced level analysis, including a specific year-by-year simulation. The remaining chapters will present the remaining 5 spokes.

Spoke #1
The Advisor starts the creation of a Life-Cycle plan based on an understanding of the client's Balance Sheet as illustrated below.

The primary quantitative objective of Chapter 2/Spoke 1 is to calculate a "first-order" estimate of the client's household balance sheet. Inputs for this calculation include asset balances (e.g., financial assets and bank balances) as well as expected cash flows (e.g., social security and pensions). Inputs also include liabilities including mortgage balances, expected annual consumption in retirement, desire for a bequest, etc. Finally, inputs for this calculation include discount rates/expected returns. Outputs from this calculation are shown as a household balance sheet with projected and discounted values as of the client's retirement date.

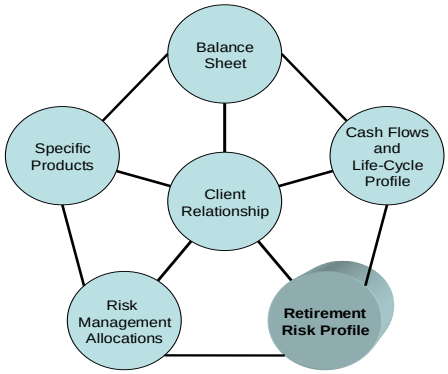
Spoke #2
The Advisor completes the creation of a Life-Cycle plan by matching the client's Social Capital, Human Capital and Financial Capital sources of income with the Income Statement, Balance Sheet and matching Cash Flows.

The goal of this Life-Cycle plan is to understand how much of the client's retirement income floor can come either from Social or Human Capital and how much needs to come from Financial Capital.

The primary quantitative objective of Chapter 3/Spoke 2 is to refine the cash flow inputs that go into the client's household balance sheet. Inputs include personal income/earnings as well as taxes, fixed and discretionary expenses. Outputs are shown on both the client's household Income Statement and Balance Sheet.

Chapter 4: The Third Spoke – The Retirement Risk Profile and the Retirement Income Plan

RIIA's Retirement Management and Retirement Income Advisory Process – 3rd Spoke



4.1 Spoke Three: Assessing Retirement Risks

Learning Objectives

LO 4.1.1 Understand the limits of Modern Portfolio Theory (MPT) in the context of retirement income planning.
LO 4.1.2. Understand that MPT is a special case of a broader class of investment models because it assumes away the Consumption variable.
LO 4.1.3 Understand the difference between risk aversion and risk tolerance.

In a 2007 article in *Research* magazine, York University's Moshe Milevsky warned that traditional approaches to the management of investment risk, such as Harry Markowitz's Modern Portfolio Theory, may not adequately apply to the management of longevity risk—the risk of running out of money during retirement.

That shouldn't be surprising. Conventional finance uses a static, utility-based model of human behavior. In the Markowitz model, life doesn't evolve or end. Instead, an investor's needs, risks and uncertainties are fixed, and today merely repeats itself, as in the 1993 Bill Murray movie, "Groundhog Day."

Markowitz planned it that way. In his famous 1952 paper in the *Journal of Finance*, he assumed that investors would put a conceptual firewall between their at-risk assets and the funds they needed for current consumption. While this assumption allowed him to focus on the value of diversification and the risk/return tradeoff, it ignored the eventual need to use the portfolio to fund future consumption.

This framework in which most investment advisors operate treats the client portfolio as separable from desired future consumption. This assumption is understandable when the client's wealth vastly exceeds his or her annual consumption. However, HNW and ultra-HNW clients are a minority of clients. Most clients facing retirement face constrained or under-funded situations, and the traditional framework assumptions create more problems than they solve.

The traditional framework's assumptions make mean-variance optimization a special case in a larger class of financial models that we will explore in greater detail. When the client has an interest in lifestyle maintenance, portfolio construction separates between lifestyle flooring and investing for potential upside. A floor is a statement by the client that there are outcomes where fear overwhelms the desire for upside gains.

As you most likely know, MPT posits that a risk-averse investor will want the highest expected return for a given level of portfolio risk and, conversely, will prefer the least risky portfolio for an anticipated level of return. Since efficient markets offer few low risk/high return investments, investors almost always face a tradeoff between risk and return. But how much expected returns will your client forego for a given unit of risk reduction? And how much added risk would your client assume for additional return? The answer depends on the investor's degree of risk aversion. Risk-prone investors will sacrifice very little return. Risk-averse investors will give up a lot. A good retirement advisor helps each client assemble a mix of risk-free and risky assets that matches the client's appetite for risk.

In the traditional framework as practiced by many advisors, it would appear that risk aversion has been simplified into risk tolerance. Risk aversion includes several dimensions, including the client's:

- Habit for a certain lifestyle
- Preference for a level of flooring
- Level of impatience as reflected by a discount factor
- Time horizon.

Risk tolerance for the purpose of sorting clients into conservative/moderate/aggressive categories focuses primarily on time horizon, assuming into near or total irrelevance most of the other dimensions.

Assembling the right portfolio mix for retirement income will not be a once-and-done exercise. As the client and their advisor progress from investment management to retirement management, they will need to abandon the narrow approaches associated with long-term optimization among risky assets. Instead, they will have to allow for more dimensions and accommodate repeated mid-course adjustments. For instance, introducing risk aversion and lifestyle flooring creates a need for portfolios with asymmetric payoffs. While very rich clients may buy mean/variance optimal portfolios, most retirement income clients will seek portfolios that have less downside than if normally distributed. Retirement portfolios must create outcomes, not just expectations.

Outcome-focused risk profiling is performed in two steps that will be detailed in this chapter:

- First, identify the Life-Cycle risk factors that drive the portion of the portfolio that will be allocated to flooring.
- Second, identify the shape of risk aversion curve to determine if the client is a conservative, moderate or aggressive investor for the upside portfolio.

4.2 Core Topic: Managing A Wider Range of Risks to Establish the Floor

Learning Objectives

LO 4.2.1 Understand the wider set of risks that the client faces during retirement.
LO 4.2.2 List the three categories of risks as identified by RIIA.
LO4.2.3 Understand how these categories of risk map against the client's Human, Social and Financial sources of capital.

Retirement income-focused risk profiles are, by definition, more comprehensive than accumulation-focused risk profiles. Both are sensitive to inflation risk, market risk and longevity risk. But income-focused profiles also address issuer risk, spending risk, health care expense risk and tax policy risk. Given the dramatic changes in American governance and financial markets in 2008, those last two risks should be increasingly relevant to retirees.

As shown on Figure 4.2.1 below, Spoke Three in the retirement income advisory process matches the corners of the client's Life-Cycle profile to the corresponding corners of the client's retirement risk factors. This process retains some aspects of accumulation-focused investor risk profiling while introducing new features.

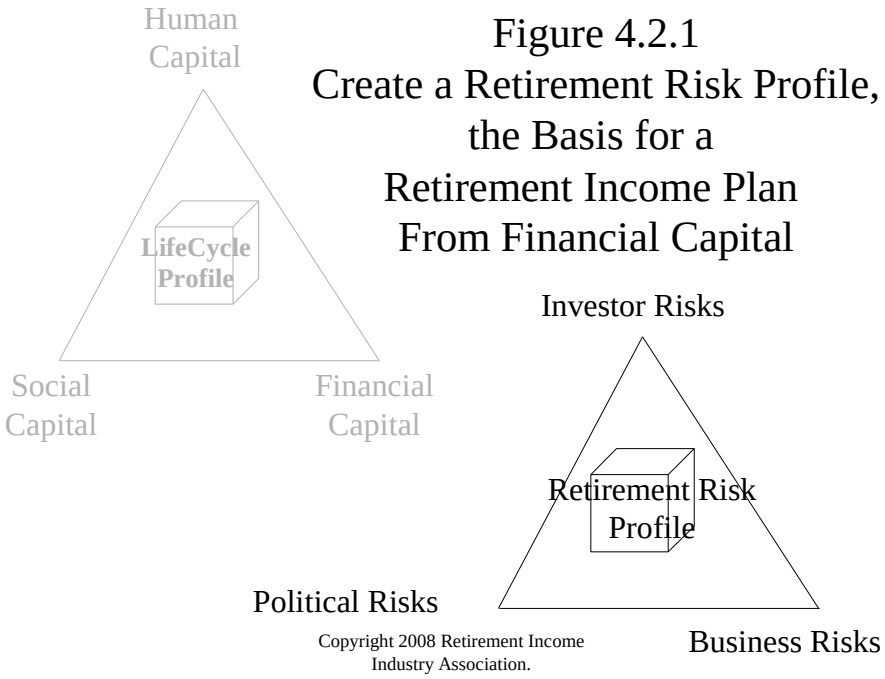


Figure 4.2.1
Create a Retirement Risk Profile,
the Basis for a
Retirement Income Plan
From Financial Capital

4.3 Core Topic: The Retirement Risk Profile

Learning Objectives

LO 4.3.1 List the specific risks faced by retirement income clients.
LO 4.3.2 Map the specific risks into the three risk categories (Political, Business and Investor Risks).
LO 4.3.3 Understand the various risk mappings that are possible and choose one that you prefer given the nature of your practice.

In order to find actionable clarity about the investors' income potential from their financial capital, Spoke 3 starts with a list of the major retirement risks. This list of retirement risks builds on and extends the traditional lists of accumulation-focused investment risks, including:

Market risk. The client's portfolio experiences downside fluctuations in market prices and asset values that are larger than expected or downside moves that persist longer than anticipated.

Issuer and credit risk. The client's portfolio is negatively affected by unexpected changes in credit conditions of the issuers of the assets, including liquidation, bankruptcy, default, changes in terms, changes in control or unexpected downgrades in credit rating.

Inflation and deflation risk. Inflation: The purchasing power of the client's assets is negatively impacted over time. Deflation: The real value of levered assets may decrease. Correspondingly, the real value of liabilities may increase, adversely affecting the client's balance sheet.

Household shock risk. The client experiences unfortunate events (e.g., death of a spouse, divorce, unemployment, etc.) with the potential to force unexpected changes in portfolio composition. This includes the potential need to unwind hard-to-reverse decisions.

Spending risk. The client spends more than the planned income and may have to trade the future for the present by invading his or her capital.

Income risk. The client's investments experience unexpected or un-manageable reductions in income generation either because of changes in market conditions, issuer default or changes in public policies.

Health care expense risk. The client experiences unexpected and expensive changes in the cost of maintaining his or her health, requiring spending above budget and the need to dip into capital. Ironically, it is those who are healthiest at the time of retirement that tend to live long enough to require a care facility.

Longevity risk. The client lives longer than planned or expected, increasing the likelihood of not maintaining the desired standard of living.

Public policy risk. Government legislation and regulation changes affect retirement and income planning leading to earlier-than-expected portfolio depletion or the invalidation of previously sound recommendations.

By rearranging these risks into generic types and putting them in a table format as shown on Table 4.3.1 below, we can see the beginning of a risk matrix with nine risks arrayed across three categories of risk.

Table 4.3.1

Political risks	**Business risks**	**Investor risks**
• Public policy risk • Inflation risk	• Market risk • Issuer risk • Income risk	• Spending risk • Household Shock risk • Health Care risk • Longevity risk

Doug Short, a special advisor to RIIA's Board of Directors and former professor of North Carolina State University, suggested an alternate view of the risk matrix. He takes a broader view of Income Risk, as shown in table 4.3.2 below, seeing it as the fundamental risk to which the other eight contribute. He further subdivides the eight contributory risks into two categories:

systematic risks that have broad impact on all households and unsystematic risks that can vary widely across households.

Table 4.3.2

INCOME RISK			
Systematic Risks		**Unsystematic Risks**	
Political risks	**Business risks**	**Behavioral**	**Chance**
• Public Policy • Inflation	• Market • Issuer	• Spending	• Household Shock • Health Care • Longevity

Risk metrics in accumulation have been researched for many years if not many decades. Risk metrics in retirement need considerable more research attention. We expect risk classifications to evolve over time.

4.4 Core Topic: A Stressful Transition Due to Changing Priorities

Learning Objectives

LO 4.4.1 Describe the effect of stress on a client's ability to plan for retirement.
LO 4.4.2 Describe the psychology of change and how to present recommendations to clients, especially when the reality is much lower than the previous expectations.
LO 4.4.3 Describe the importance of mapping and prioritizing risks in each of the three risk categories.
LO 4.4.4 Describe the process of mapping and prioritizing risk for the clients.

At this point, the client may have to make an emotional or psychological adjustment. Planning for retirement income can dash a person's hopes. If they don't have enough wealth to retire as planned or to maintain a certain lifestyle in retirement, the discovery of it may be painful.

A retirement plan might fail simply because it doesn't help the client adapt to the sudden appreciation of new risks and the stress that goes it. In *Why Most Things Fail: Evolution, Extinction & Economics* (Pantheon, 2006), Paul Ormerod describes a stress threshold above which a person or system fails. When the external stress is below the investor's stress tolerance level, the investor does well. But if the external stress level surpasses that threshold, even by a little, failure occurs. The transition from doing well to failing can be quite abrupt. A retirement advisor needs to be aware of this danger. Creating a floor goes a long way towards avoiding systemic failure.

To construct an investment portfolio with the client's financial capital, it's important to prioritize risks by their importance to the client. This will help the advisor determine the level of flooring that should apply to the client. Advisors will find it useful to rank sub-risks within the major risk

categories. For instance, a traditional mapping of client risk—inflation risk, market risk and longevity risk—is illustrated in Figure 4.4.1 below.

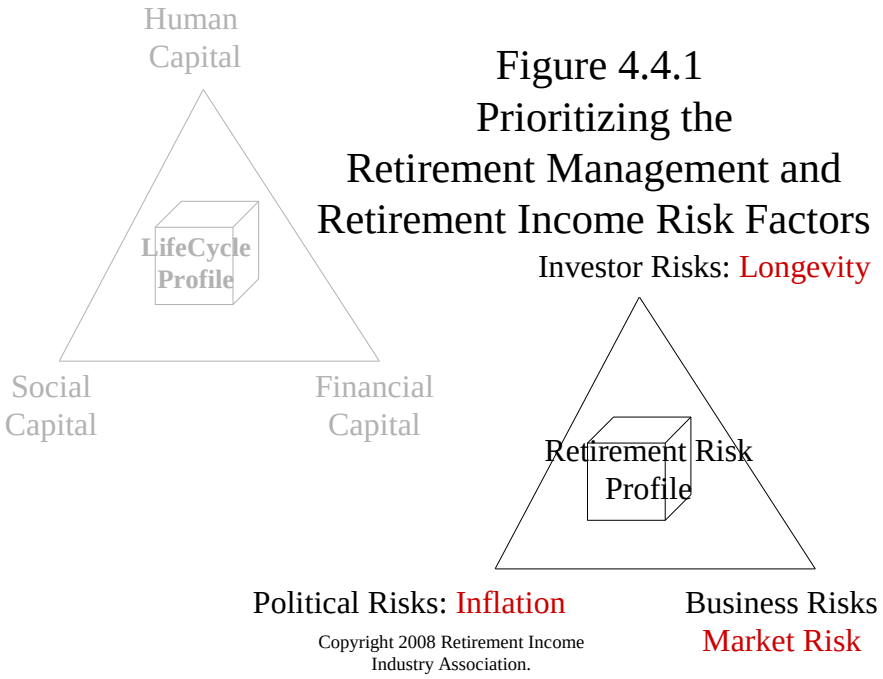


Figure 4.4.1
Prioritizing the Retirement Management and Retirement Income Risk Factors

Although future changes may lie ahead, the financial and political reversals of 2008 may have elevated the priority of tax risk above inflation risk, credit risk above market risk, and health care expense risk over longevity risk.

This mapping of risk will help the advisor move from measuring risk tolerance and towards measuring risk aversion.

4.5 Core Topic: Taxes Are A Major Retirement Risk

Learning Objectives

LO 4.5.1 Describe the importance of taxes as a retirement income risk.
LO 4.5.2 Describe the broad strategies that clients can use to mitigate the impact of taxes in retirement.
LO 4.5.3 Describe the state and local geographical variation of taxes in the client household's retirement budget.
LO 4.5.4 Understand the risk that clients who live on fixed incomes face because of the unfunded liabilities at the Federal, State and Local levels.
LO 4.5.5 Explain the importance of building retirement plans for changing tax rates.

LO 4.5.6 Describe the impact of future tax changes on your retirement portfolio recommendations.
LO 4.5.7 Describe the importance of revisiting retirement income plans on an annual basis.
LO 4.5.8 Describe the risk that tax uncertainty brings to over-optimized or long-term optimized retirement plans.

In the future, taxes may become a bigger expense for wage earners in general and retirement investors in particular. Many analysts still seem to suffer from "tax myopia" and underestimate the impact of taxes. On the contrary, taxes are the "elephant in the room."

Taxes come in a wider variety of forms than ever, including but not limited to income taxes, Social Security taxes, Medicare taxes, state income and sales taxes, real estate and property taxes, city wage taxes and excise taxes. Taxes are levied on realized capital gains as well as unrealized capital gains (e.g., certain real estate taxes). Income taxes have even been levied retroactively.

The impact of taxes on income and investment returns is likely to be felt more painfully by retirees who have less ability to adjust sources of income than by those still working and saving. Older investors generally don't tolerate stress as well as young investors. Retirees are more likely to live on fixed incomes and have less capacity to recover from losses. They can hedge their inflation risk with TIPS or products that contain COLA provisions, but tax risk is hard to hedge.

A recent report, "Tax Rates and Tax Burdens in the District of Columbia: A Nationwide Comparison", showed that total tax burden can vary from state to state by a factor as great as six. In 2005, the average annual state tax burden for a household earning $150,000 ranged from as little as $4,000 in Alaska to as much as $24,000 in Connecticut.

Ben Williams, co-founder of Rational Investors and Retirement Engineering, points out that the tax departments of local governments and municipalities may represent an even larger retirement planning risk than the federal government. Municipalities have limited flexibility in managing budget shortfalls and debt. A tax hike becomes the default action.

The cost of unfunded liabilities, such as pension and health benefits for public employees, may eventually have even greater impact on individuals than the cost of federal entitlements, Social Security and Medicare. Local tax increases can affect discretionary income and home values.

Every election cycle ushers in a new tax regime. Along with death and taxes a third certainty is that future tax rates and regulations will differ from the rates and regulations prevailing today. One's views of political climates may influence optimism or pessimism with regard to future tax rates and regulations, but the tax regime will certainly be different.

The actions that are appropriate for tax rates that are rising differ from the actions that are appropriate for falling future tax rates. Understanding how to position a portfolio for a view on

future tax rates and against adverse changes is of added importance for retirees relying on their portfolios as the primary source of funding.

The risk that tax rates may go up can bring great uncertainty to retirement planning. Planning in the face of a fixed tax regime is much simpler. Comprehensive retirement plans that cannot anticipate the true behavior of tax rates, and tax payments over the planning horizon are likely to cause stress for the retiree.

To prevent problems, the advisor should revisit each client's plan at least once a year. Together, they should make sure that the plan's use of risk management approaches (i.e., diversified risky assets, insurance guarantees, exposure transforming options and hedges), account types (taxable, tax-deferred, tax-free), and asset types (human and social capital) are still appropriate. If the plan is flexible, it will be relatively easy to adjust.

4.6 Core Topic: Credit Risk Is A Major Retirement Risk

Learning Objectives

LO 4.6.1 Explain the importance of credit risk in building retirement income portfolios.

The possibility that bond issuers or borrowers will not repay their debts—credit risk—can seriously disrupt a retirement plan. Retirement income that's based on debt instruments other than government securities will entail credit risk.

While institutions can manage and diversify their credit risk and require collateral, credit risk is harder to manage for individual clients. Bonds can be laddered using different issuers, but it requires great resources to be able to diversify at each point in time. Annuities can be diversified, but that also requires resources and many separate contractual arrangements. The notion of a client receiving collateral is unrealistic and even humorous to contemplate.

Many contractual arrangements can mitigate market risk. Some products offer guaranteed returns. Guarantees such as options embedded into contracts, if they are not properly hedged by the issuer, may simply transform what was market risk into issuer credit risk. At that point, things can get especially complicated.

Ratings are snapshots in time. They don't predict the ultimate soundness of a particular debt. As we've all seen, ratings can remain stable for years before a fast plummet to oblivion. Enron, Worldcom, and Lehman Brothers maintained high ratings right up until their bankruptcy filings.

It boggles the mind to recall that between 2003 and 2007 the debt ratings of established financial firms remained stable while their leverage ratios rocketed to the high 30s from the low teens. To be sure, an examination of the actual credit spreads of issuers can be useful for short-term horizons. But for the long-term horizon of retirement income planning, prudent diversification may prove to be more reliable than the letters and symbols provided by the ratings agencies.

4.7 Core Topic: Health Care Cost Uncertainty Is a Major Retirement Risk

Learning Objectives

LO 4.7.1 Explain the importance of health care risk for retirement income clients.
LO 4.7.2 Describe the importance of matching potential health care liabilities with Human, Social or Financial Capital sources of income.
LO 4.7.3 Describe methods to mitigate, insure or transfer healthcare risk.

Illness hits retirees in a lottery-like fashion. Some people "square the curve" and remain healthy until the end, while others require expensive care along the way. The probabilities can be estimated and the risk can be reduced through insurance. Long-term care insurance and primary care options that supplement Medicare are widely available.

Ironically, those who are healthiest at retirement often face the greatest risk. The longer one expects to live, the more likely one will need assistance at some point. Moreover the healthy often forego insurance, discounting the consequences of super-longevity. Harvard's Amy Finkelstein and others have documented this somewhat counterintuitive result.

Many clients seem to worry a lot about health insurance but, oddly, don't take advantage of options for long-term care soon enough. They may base their predictions for future health on current health, or discount the future at a high rate, or retain the option of a self-directed exit.

RIIA's teaching software platform for the RMA includes a health cost calculator. This calculator, developed by HealthView Services (HVS), helps clients and their advisors estimate their customized cost of health care in retirement. More information on the RMA teaching software platform and HVS's relationship to RIIA can be found in Chapter 7, Section 10.

4.8 Core Topic: Moving from Risk Profiling to Setting Flooring / Upside

Learning Objectives

LO 4.8.1 Create a first-order estimate of the flooring portfolio as a percent of the total portfolio.
LO 4.8.2 Modify the first-order estimate of the flooring portfolio with the client's risk profile.

Using the following formula,

$$A\% = \left(\frac{Consumption}{Financial\ Capital}\right)\left(\frac{1 + interest}{interest - inflation}\right)\left[1 - \left(\left(\frac{1 + inflation}{1 + interest}\right)^{\substack{years \\ in \\ retirement}}\right)\right]\left(\frac{1 + inflation}{1 + interest}\right)^{\substack{years \\ before \\ Retirement}}$$

with client data that we have gathered earlier, including current age, desired retirement age and expected longevity, we can create a first-order estimate of the level of flooring as a percent of the total portfolio.

Note that the Consumption number is the revised consumption level net of what will be supported by Human Capital and Social Capital. This number is the consumption that will be provided from Financial Capital only.

Financial Advisors can also adjust this first-order estimate with their standard risk profiling processes and questionnaires to categorize the clients by risk levels, most commonly labeled "Conservative," "Moderate" and "Aggressive."

Our illustrative guidelines, as shown and used in the teaching software platform, are to add 10% to the flooring estimate of Conservative clients and 5% to the flooring estimate of Moderate clients.

4.9 Advanced Topic: RIIA's Retirement Income Risk Framework

Learning Objectives

LO 4.9.1 Describe why and when risk becomes relevant to clients.
LO 4.9.2 List the four dimensions of risk that determine the relevance of a specific risk to a specific client.

Risks are often expressed in the form of probabilities. But for the investor, probabilities are less important than consequences. For instance, how does one's perception of an acceptable level of probability change if the possible outcomes include losing one's life?

From our investor's point of view, a risk is relevant:

- If the risk involves an *identifiable* hazard
- If the investor has *exposure* to the hazard
- If the *consequences* are too severe for investor to ignore
- If the *probability* of negative consequences is high enough to make the combination relevant[1]

Adding these dimensions to our previous list of risks produces RIIA's Retirement Management and Retirement Income Risk Matrix as shown in Table 4.9.1 below:

[1] Based on personal reading notes from Ropeik/Gray (2002) Harvard Center for Risk Analysis – Harvard School of Public Health.

Table 4.9.1
RIIA's Retirement Income Risk Matrix

	Political		Business			Client			
Retirement Income Risk Matrix	Public Policy Risk	Inflation Risk	Market Risk	Issuer Risk	Income Risk	Spending Risk	Household Shock Risk	Health Care Risk	Longevity Risk
Hazard									
Exposure									
Consequences									
Probabilities									

Note that it is the level of exposure that creates the positive or negative consequences, not the probability. No exposure, no consequences. This is a good thing because we do not observe probabilities directly. We observe events, and we fit these event observations with the probability distributions that we know or that seem to work best. Many probability distributions can fit the observed events. This should create a healthy level of skepticism with regard to probabilities. It is best to develop a strong understanding of exposure and its consequences before playing the odds.

Retirement income-focused advisors can take the risk profile analysis one level deeper by looking at the risk dimensions on the y-axis of RIIA's Retirement Management and Retirement Income Risk Matrix and asking:

- Do I see new threats to retirement income that weren't present in the accumulation phase?
- Am I, or are my clients, exposed to these new hazards?
- Have the negative consequences of any hazards increased or decreased?
- Has the likelihood of these negative consequences increased or decreased?

These retirement risk profiles help the advisor translate the household balance sheet and income statement needs into appropriate risk management allocations in Spoke Four.

Many clients in their 50s realize that market risk, which was perhaps the biggest hazard of the accumulation stage, is now just one of several equally dangerous risks. It's not that the new risks

didn't exist before. But only at a certain age does the investor become meaningfully exposed to them and unable to ignore them.

4.10 Advanced Topic: Risk Aversion Profiles Affect the Shape of the Distribution Curve

Learning Objectives

LO 4.10.1 Understand the concept of risk tolerance.
LO 4.10.2 Understand the concept of risk aversion.
LO 4.10.3 Describe the two basis curves of risk aversion.
LO 4.10.4 Describe the Constant Relative Risk Aversion (CRRA) model.
LO 4.10.5 Describe the Decreasing Relative Risk Aversion (DRRA) economic model.

In the traditional framework as practiced by many advisors, it would appear that risk aversion has been simplified into risk tolerance. Risk aversion includes several dimensions including:

- The client's habit for a certain lifestyle
- The client's preference for a level of flooring
- The client's level of impatience as reflected by a discount factor
- The client's time horizon

To delve a little deeper into the notion of risk aversion, how it evolves for different client types and the fundamental link to diminishing returns, we'll use the concepts of walking up a linear ramp, walking up a round-top hill and the effect of walking up slippery slope versions of each.

When walking up a linear ramp each step forward also brings you further up the ramp. If it's a linear ramp then each step forward also brings you to a higher altitude. Assuming that your steps are all of the same length, each step raises your altitude by the same amount as the previous step. If the ramp metaphor describes a utility function, then each additional unit of consumption provides the same increment to happiness as the previous additional unit of consumption. If the ramp were slippery such that the next step has an equal chance of ending up as one step forward or one step back, since the ramp is linear the expected up/down movement of the next step would be zero and the expected gain or loss to utility of the next step would also be zero. A risk-neutral individual would be indifferent to the risk.

If walking up a rounded-top hill the story is a little different. On this hill, the hill is steepest at the bottom and each step forward raises our altitude by less than the previous step. Reverting to utility, our utility functions would be said to exhibit diminishing marginal utility; each incremental unit of consumption brings less additional happiness than the previous incremental unit. If the hill is slippery so that the next step has equal likelihood of ending up as one step forward or one step back then although the expected forward movement is zero, the expected vertical movement is negative. A step forward is likely to lead to a net loss in height. The risk isn't worth it.

So, using the concept of a ramp versus a hill, we can distinguish between risk aversion and risk neutrality. For a risk-neutral client, the increase in happiness from a step forward is unchanging. For a risk-averse client, a step forward brings greater happiness but at a slowing rate; utility is increasing at a decreasing rate with each increment to consumption. Exactly how risk averse a risk-averse client will be depends on how quickly marginal utility slows.

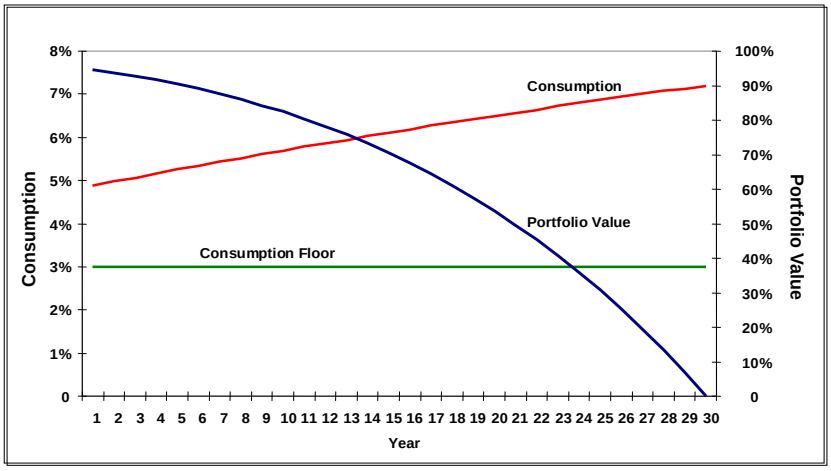
At the risk of switching metaphors, it might be easier for a moment to think of distance vs. speed vs. deceleration. In this metaphor, distance is the equivalent to the utility function, speed (change in distance per unit of time) is equivalent to marginal utility (change in utility per unit added consumption) and deceleration (the change in speed per unit time) is the equivalent to change in marginal utility (per unit added consumption). Formally, to the economist, the absolute level of risk aversion is measured by the ratio of deceleration to speed, i.e., the rate at which marginal utility is decreasing divided by the level of marginal utility at that point. Relative risk aversion can be found by multiplying the absolute number by the level of wealth. For those of you comfortable with the jargon of calculus, absolute risk aversion is measured by taking the negative of the second derivative divided by the first derivative.

There is an intimate link between risk aversion and the type of smoothing that will be optimal for a particular client. To see this, we consider two clients. The first client faces risk the same way no matter what their wealth level. We call this Constant Relative Risk Aversion – CRRA. The second client becomes more fearful of sliding back the closer they are to the bottom of the hill and more willing to risk near the top. We call this Decreasing Relative risk Aversion – DRRA.

For a person with CRRA preferences, retirement's risks are faced with no greater or lesser fear as assets are depleted. For this type of client, the portfolio's profile will remain steady and *planned* consumption will only differ through time based on the rate of impatience which determines whether planned consumption is exactly equal across periods (no impatience) or whether putting off consumption today needs to be bought off with the expectation of slightly more tomorrow.

Chart 4.10.1

Wealth Drawdown and Consumption For Individual
Exhibiting Constant Relative Risk Aversion

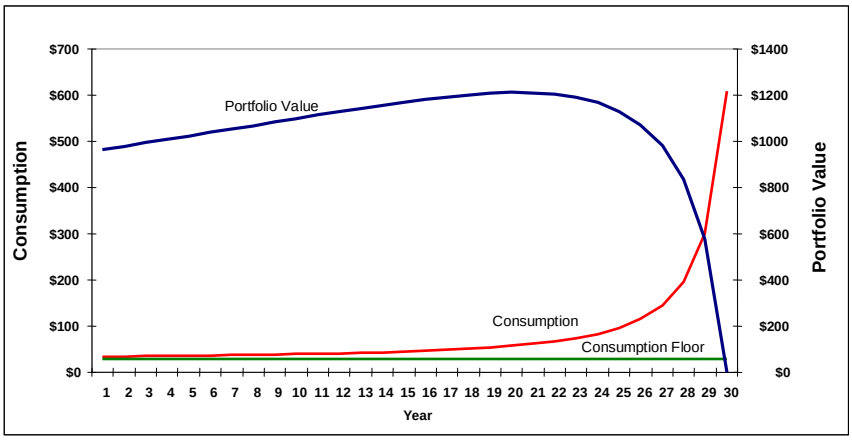


This individual remains equally tolerant of risk regardless of wealth. Consumption is planned to rise only because the individual wants to get as much incremental happiness from consuming tomorrow as today. Since the planned consumption tomorrow is worth less than today (impatience) constant incremental happiness requires planning for more consumption tomorrow.

For a person with DRRA preferences, the realization that assets will be depleted leads to a plan that will initially eat into wealth more slowly and conservatively than the CRRA example. In addition, the desired risk level of the "upside" portfolio will decrease as wealth depletes. For this type of client, planned consumption will hold back more of seed corn until it is clear that the goal can be obtained. This type of client may also be impatient, but impatience will be held at bay by fear until near the end of life.

Chart 4.10.2

Wealth Drawdown and Consumption For Individual
Exhibiting Decreasing Relative Risk Aversion



This individual is less tolerant of risk as wealth declines. Consumption is deferred and the portfolio husbanded as impatience gives way to fear - until very late in life. Near the end of life as there is a shorter future to worry about, fear recedes, and impatience roars back.

Most firms have established a set of questions for establishing a client's risk aversion or tolerance of risk as it relates to where the client stands on the hill today. What kind of hill the client is on is usually ignored. However, for Life-Cycle portfolios, it is important to know whether the client's preferences are shaped more like the ramp, the rounded hill or something else entirely.

Quantifying how the client's attitudes will change through time requires more subtle questions:

- Which planning path looks most appealing to you?
- Suppose that your wealth rises and your portfolio scales proportionately. As your wealth rises, would you be willing take more, less or equal risk than today?
- Do you worry more about losing out on happiness today or about your money running out too soon?
- Over the last 20 years, have you desired to increase, decrease or keep the risk of your portfolio about the same?

For the engineering approach, we know that we will never know what makes a particular client tick, but we can create choices and portfolios for the client among paths that appear preferable. We can also design enough flexibility into the solution so that as more information about the

client becomes available we can adapt the portfolio. We can also seek to retain flexibility in order to adapt to events that will surprise, for good or ill, the client.

Risk and uncertainty are not the same, and the distinction is important for anyone who hopes to optimize investment portfolios. Risks can be measured. Uncertainties are too diffuse or unforeseeable to allow for the assignment of meaningful probabilities.

4.11 Transitioning From Risk Profiles To Allocations Among Risk Management Techniques

Learning Objectives

LO 4.11.1 Explain the difference between risk and uncertainty.
LO 4.11.2 Explain the difference between severity and frequency when it comes to risk.
LO 4.11.3 Understand how the severity/frequency matrix leads to generic risk avoidance strategies including: risk retention, risk pooling, risk avoidance, and risk control.
LO 4.11.4 Describe the technique to manage risks with high severity and low frequency (risk pooling).
LO 4.11.5 Describe the technique to manage risks with high severity and high frequency (risk avoidance).
LO 4.11.6 Describe the technique to manage risks with low severity and high frequency (risk control).
LO 4.11.7 Describe the technique to manage risks with low severity and low frequency (risk retention).

When their probabilities are measurable, risks can be pooled, hedged or insured against using widely available financial products. Uncertainties, on the other hand, are random events. Often, the only defense against them is to hold excess assets—precautionary assets.

Conventional wisdom says that one should insure oneself against risks with high severity and low frequency, avoid risks with high severity and high frequency, self-insure (risk retention) for risk with low severity and low frequency, and establish prevention (risk control) programs for risks with low severity and high frequency.

The insurance industry has a traditional framework that corresponds to these beliefs and maps the severity of the risk by its frequency. This creates four blocks where one can show that risk (hazards) to which one has exposure can have high or low severity (i.e., consequences) as well as high or low frequency (i.e., probabilities). This matrix logically links us to the next chapter, where we'll talk about using risk pooling (insurance), hedging (risk avoidance), diversification, (risk retention) and reserves (risk control).

This framework helps us make the transition from the traditional approach to asset allocation to RIIA's approach to risk management technique allocation. This will be explored in detailed in the next chapter.

4.12 Recapitulating Where We Are in the Process

The Goals
Remember what we are trying to do:
RIIA's Retirement Management and Retirement Income Advisory Process has two goals:

- Goal 1: Build a Floor
- Goal 2: Create Upside

The primary quantitative objective of Chapter 1 is to calculate a "first-order" estimate of the client's consumption /portfolio yield. Inputs for this calculation include an estimate of the client's current Financial Capital and their expected annual consumption level in retirement. Outputs from this calculation categorize the client as under-funded, constrained or over-funded. This first-order estimate will be revised as we move through the spokes. This core level of analysis focuses on averages and can be also refined with an advanced level analysis including a specific year-by-year simulation. The remaining chapters will present the remaining 5 spokes.

Spoke #1
The Advisor starts the creation of a Life-Cycle plan based on an understanding of the client's Balance Sheet.

The primary quantitative objective of Chapter 2/Spoke 1 is to calculate a "first-order" estimate of the client's household balance sheet. Inputs for this calculation include asset balances (e.g., financial assets and bank balances) as well as expected cash flows (e.g., social security and pensions). Inputs also include liabilities including mortgage balances, expected annual consumption in retirement, desire for a bequest, etc. Finally, inputs for this calculation include discount rates/expected returns. Outputs from this calculation are shown as a household balance sheet with projected and discounted values as of the client's retirement date.

Spoke #2
The Advisor completes the creation of a Life-Cycle plan by matching the client's Social Capital, Human Capital and Financial Capital sources of income with the Income Statement, Balance Sheet and matching Cash Flows.

The goal of this Life-Cycle plan is to understand how much of the client's retirement income floor can come either from Social or Human Capital, and how much needs to come from Financial Capital.

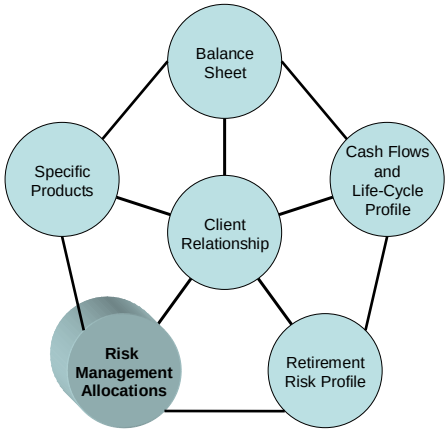
The primary quantitative objective of Chapter 3/Spoke 2 is to refine the cash-flow inputs that go into the client's household balance sheet. Inputs include personal income/earnings as well as taxes, fixed and discretionary expenses. Outputs are shown on both the client's household Income Statement and Balance Sheet.

Spoke #3
The Advisor translates this Life-Cycle plan into a Retirement Income plan by matching the Investor's Capital Sources of Income to his or her prioritized Retirement Income Risk Factors.

The primary quantitative objectives of Chapter 4/Spoke 3 are to determine the client's risk tolerance (e.g., Conservative, Moderate, Aggressive) and to calculate the portion (percent and dollar) of his or her financial portfolio that should be dedicated to flooring. In addition to the risk profile questionnaire, inputs include the client's current age, desired retirement age, life expectancy and various inflation and discount factors. Outputs are the client's risk tolerance and the portion of his or her financial portfolio that should be dedicated to flooring.

Chapter 5: The Fourth Spoke – Risk Management Allocations to Design "A Floor with Upside"

RIIA's Retirement Management and Retirement Income Advisory Process – 4th Spoke



5.1 Spoke Four: Managing Retirement Risks

Learning Objectives

LO 5.1.1 Describe the limits of asset allocation among risky assets for retirement income portfolios.
LO 5.1.2 Explain why retirement portfolios must diversify among risk management techniques before they diversify among risky assets.

For decades, diversification among risky assets seemed to be a reasonable investment strategy for anyone with a long enough investment horizon. It is, after all, the essence of the time-honored and widely followed Modern Portfolio Theory.

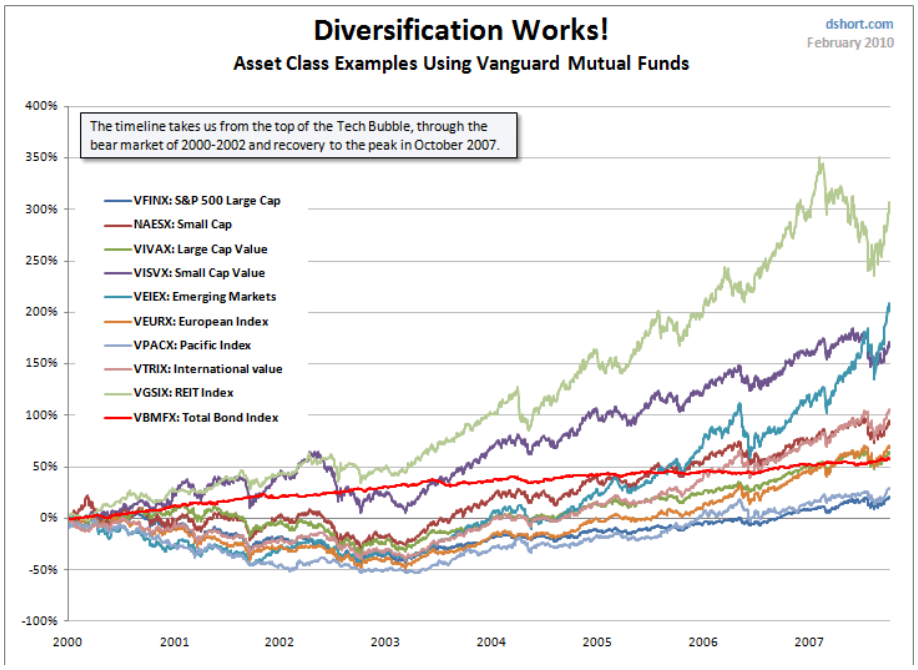
Followers of MPT will naturally seek to balance risky assets with an appropriate, age-adjusted ratio of fixed-income assets in their portfolios. Or they would reduce equity holdings whenever the market appears significantly overvalued or trends downward.

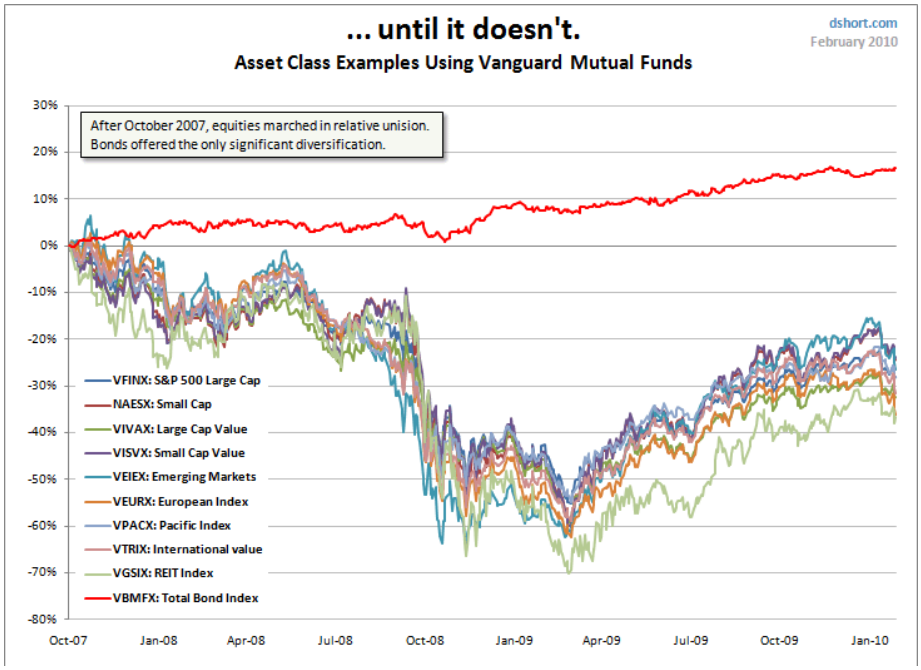
Since March 2000 and again after September 2008, many historical "truths" about diversification have been contradicted, raising questions about over-reliance on its broad validity for investors, particularly those with finite horizons. Diversification, by itself, is not sufficient to protect investors.

As evidence of that, consider Charts 5.1.1 and 5.1.2 below, created by Doug Short. The two charts track the performance of the components of a diversified stock/bond portfolio during strong bull and strong bear markets, respectively.

But, while bonds and rebalancing will help mitigate market risk, they won't mitigate all of the risks to income that retirees can expect to encounter.

Charts 5.1.1 and 5.1.2





You can see that, during epic market downturns, equity sub-classes tend to march to the same dismal drumbeat. How do we protect against these infrequent but destructive events? First we need to accept the fact that they do happen — as they did in 2000 and 2008.

In retirement planning, diversification among *risk management techniques* must accompany diversification among risky assets. To *build a floor* and *create upside* from financial capital (using the client's Life-Cycle profile and their retirement risk profile as a guide) the advisor needs to know how to allocate among these risk management techniques:

- Diversification (Investments in partially uncorrelated risky assets, i.e., risk retention)
- Transference (Hedging strategies, i.e., risk avoidance)
- Pooling (Health and longevity insurance, i.e., risk pooling)
- Reserves (Risk-free precautionary balances, i.e., risk control)

In fact, the retirement advisor needs to know how to allocate among these techniques two ways: one when building floors and another when creating upside.

Remember that a client's definition of "building a floor" or "flooring" will depend on the results of the analysis performed in Spokes 1, 2 and 3. On the liabilities side, the definitions will range from meeting basic necessities to maintaining a certain subjective level of comfort. All clients want to achieve the latter, but many will only be able to meet their basic needs and a modest cushion. On the asset side, the matching mix of human, social and financial capital will vary widely from client to client.

The floor provides security. It has to "be there" when needed—without exception. When building the floor, it's acceptable to take judicious and measured amounts of the diversifiable type of credit risk associated with insurance contracts or corporate bonds, but not unhedged market risk. Flooring must be resilient and even redundant.

"Creating Upside" means using the remaining financial capital to enhance the standard of living above the floor. Upside is closer to traditional optimization of risky assets.

The traditional financial framework is about creating expectations. The retirement framework is about creating outcomes. You'll find that outcomes resonate better with retirement clients. Outcomes are the theme around which retirement management professionals need to build portfolios.

5.2 Core Topic: RIIA's "First Build a Floor, then Expose to Upside" Goal is Compatible with MPT

Learning Objectives

LO 5.2.1 Describe the characteristics of Life-Cycle portfolio selection models.

LO 5.2.2 Describe the advisor's task in building a floor and exposing the rest of the portfolio to upside.
LO 5.2.3 Understand how diversification among risk management techniques is compatible with MPT.
LO 5.2.4 Understand how MPT is a special case of diversification among risk management techniques.

The phrase "First Build a Floor, then Expose to Upside" may sound unfamiliar, especially to advisors who have only studied conventional finance "laws" such as "risk and return," "diversify and rebalance," and "reversion to the mean."

However, "First Build a Floor, then Expose to Upside" is related to MPT. Indeed, the Markowitz model is only a special case of a wider class of the lifetime-portfolio selection models pioneered by Franco Modigliani, Paul Samuelson and Robert Merton[2].

Most of the lifetime-portfolio selection models imply the notion of a minimum level of consumption required for each period. They express the optimal level of consumption in two parts: a minimum requirement (the floor) and a fraction of the excess (upside) that remains after locking in future floors:

$$C_{optimal} = C_{Floor} + x\% \text{ (Wealth} - PV_{future\ floors})$$

Where $C_{optimal}$ denotes the optimal level of consumption derived from an economic model, C_{Floor} denotes the minimum consumption level that the client subjectively feels is necessary, x% is the fraction of discretionary equity that the client wishes to consume in a particular time period and (Wealth - $PV_{future\ floors}$) is the measure of discretionary equity.

In other words, all of these models decompose into a floor plus upside. They differ mainly in the fraction of discretionary equity (x%) that can optimally be consumed in a given period. In other words, all the models share the concept of building a floor. They differ only in the way that the "upside" is drawn down.

In still other words, your client's portfolio contains two sub-portfolios, one for flooring and the other for upside. The upside portfolio is familiar; the flooring portfolio is the wrinkle that Markowitz ignored while he focused on demonstrating the value of diversification.

In Spokes 1 to 3, the advisor seeks to establish the client's optimal consumption level and the client's risk profile as well as the residual level of flooring that must come from Financial Assets. To the extent the essence of this consumption and risk behavior is captured by the above equation, the advisor's task in building a floor and creating upside becomes clearer. He or she needs to gauge:

[2] All have received Nobel prizes, with Samuelson being the first American recipient and clearly one of the greatest economists of the twentieth century.

- The right amount of floor
- The risks to which the floor is exposed
- The right technique or portfolio for creating upside

5.3 Core Topic: Three Basic Approaches to Creating Optimal Floor and Upside Portfolios

Learning Objectives

LO 5.3.1 List the three basic approaches to creating retirement portfolios with flooring and upside.

RIIA has identified three generic approaches to building retirement portfolios. There are called the Engineering, the Economic and the Empirical Approaches. The following sound-bites summarize the key differences between these approaches:

- "Here's what *I* can do for you" (Engineering Approach)
- "Here's what you *ought* to do" (Economic Approach)
- "Here's the *professional consensus* on what to do" (Empirical Approach)

5.4 Core Topic: The "Engineering Approach"

Learning Objectives

LO 5.4.1 Describe the Engineering Approach.
LO 5.4.2 Describe Mike Zwecher's approach as a specific Engineering Approach.

Advisors who use the Engineering Approach create alternative solutions that are feasible, given current asset prices and each client's preferences. This approach relies heavily on the advisor's creativity and imagination, and there's no limit to the number of potential solutions. In essence, engineering is a "Here's what *I* can do for you" approach, with an emphasis on the advisor's skills.

For example, using Mike Zwecher's Engineering Approach, the client's funding status (the ratio of the expected annual consumption to be funded from financial assets divided by total financial assets) determines the generic type of portfolio that would apply: capital market solutions for funded clients, hybrid solutions for constrained clients and mortality monetization solutions for under-funded clients.

There are other ways to engineer portfolios for retirement income including "time segmentation," "buckets and ladders," etc. Working with its Financial Advisor members in

general and the Education Committee in particular, RIIA is actively documenting and classifying engineering approaches so that we can present them in this curriculum.

5.5 Core Topic: The Economic Approach

Learning Objectives

LO 5.5.1 Describe the Economic Approach.

The Economic Approach starts with a particular economic model and then plugs in the client-specific values to find the optimal allocations for that client. Consider someone who wants the same floor income as the client described above. In the Economic Approach, the client's optimal allocations would depend on his or her risk tolerance, age and life expectancy.

Earlier in this chapter we presented a simplified exposition of economic models of Life-Cycle behavior:

$$C_{optimal} = C_{Floor} + x\%(Wealth - PV_{future\ floors})$$

> Where $C_{optimal}$ denotes the optimal level of consumption derived from an economic model, C_{Floor} denotes the minimum consumption level that the client subjectively feels is necessary, x% is the fraction of discretionary equity that the client wishes to consume in a particular time period and (Wealth - $PV_{future\ floors}$) is the measure of discretionary equity.

The Economic Approach uses advanced mathematics, particularly dynamic programming, to internally find spending targets for clients - both pre-retirement and post-retirement - that lead to smooth living standards per household member. Software programs and simulations based on this approach can help households raise their living standards and estimate the living standard impact of early retirement, downsizing one's home, living to a different state, etc.

For example, Section 5.8 presents Consumption Smoothing, the Economic Approach developed by Laurence J. Kotlikoff of Boston University.

There are other Economic Approaches for retirement income. Working with its Academic Special Advisors to the Board in general and the Peer Review Selection Committee in particular, RIIA is actively documenting and classifying Economic Approaches so that we can present them in this curriculum.

5.6 Core Topic: The Empirical Approach

Learning Objectives

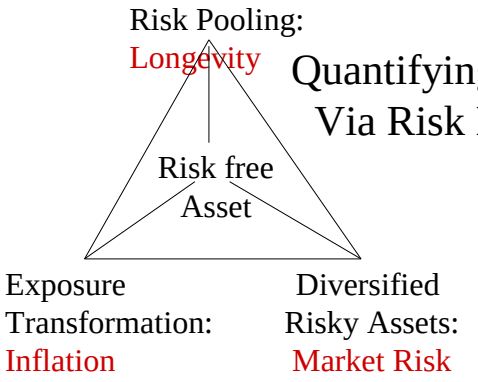
LO 5.6.1 Describe the nature of RIIA's Empirical Valuation Framework (EVF) program.
LO 5.6.2 Describe the basic elements of RIIA's Empirical Approach.
LO 5.6.3 Understand the limit of simulation and optimization.

The Empirical Approach is the ultimate stage in the quest for *best practices*. The empirical approach is more descriptive than prescriptive; it describes what professionals engaged in providing solutions are actually implementing on their client's behalf. Best practices may change over time but they are important windows on the underlying framework.

RIIA is currently researching and developing an "empirical validation framework" (EVF) for retirement income portfolios. Analogous to the "60/30/10" ratio that has come to define a prudent mix of stocks, bonds and cash in an MPT-driven accumulation portfolio, EVF will help guide advisors in dividing retirement assets among various risk management techniques.

It is too early for RIIA to endorse benchmark EVF allocations (there may be one for flooring and another for upside), but they will likely include the four risk management techniques shown in Figure 5.6.1.

Figure 5.6.1
Quantifying the Strategic Allocations
Via Risk Management Techniques



Allocation of Financial Capital to Risk Management Techniques

Inv.	Hed	Ins.	Rf.
?%	?%	?%	?%

RIIA's Research Committee and other standing committees are currently managing and funding research programs to develop and promote an EVF. These research programs, which address the EVF's academic, commercial, and regulatory implications, seek to refine:

- The definitions of the necessary risk management techniques
- The applications of those techniques to various investor types
- The guidelines for making investor-specific adjustments in the techniques

Fortunately, advisors won't have to wait for RIIA to finish its empirical research before they can start building portfolios that will "First Create a Floor" and "Then Expose to Upside." Existing engineering approaches and economic models will suffice until then.

To highlight the importance of building an empirical approach, advisors should remember that over-reliance on optimizations and simulations can bring brittleness in the face of unexpected shocks. The incidence of life shocks is higher than commonly believed. According to the Health and Retirement Study (HRS) conducted by the University of Michigan and sponsored by the National Institute on Aging (1992-2002), incidence rates of shocks for individuals in the age 51–age 61 cohort were:

- Major medical condition 41.3%
- Medical work limitation 33.7%
- Laid-off from work 18.7%
- Widowed 7.3%
- Severe disability 6.9%
- Nursing home 3.4%
- Divorce 2.3%

5.7 Core Topic: Deciding When to Focus on Flooring with Mike Zwecher's Engineering Approach

Learning Objectives

LO 5.7.1 Explain why the cost of the floor rises with the client's age during the accumulation period.
LO 5.7.2 Describe when advisors should have the flooring discussion with clients.

Richard Fullmer, a RIIA member with Russell Investments, points out that Financial Advisors must remember that the present value of flooring rises with age during the accumulation phase. The later you start, the higher the present value, the greater the change in the client's portfolio and the more resistance that the required change will engender. The essence of a seamless transition from accumulation to retirement income is to pitch the switch in focus when the flooring allocation of a retirement income portfolio approximately equals the fixed income allocation of an accumulation portfolio.

The engineering approach that Mike Zwecher uses is a program of techniques and tools that have the following features:

- The look and feel of the portfolio retains familiarity with accumulation portfolios.
- The products and approaches are scalable across a wide variety of client types.
- The client chooses the desired lifestyle and the advisor delivers, or explains why the delivery is probable but risky, or explains that the delivery is improbable.
- The mechanics of both static and dynamic management approaches are designed to allow the advisor to diffuse suitability risk.

In this section, we'll start with the cost of flooring and develop the engineered flooring concept. We'll see how, for any desired lifestyle, the longer the transition is deferred, the higher the cost of flooring and the required flooring allocation will be. Flooring represents lifestyle security. It provides a base from which we can build a full portfolio with allocations that are intuitive and explainable because they serve the needs for lifestyle security, longevity protection, precautionary measures and potential for upside.

To illustrate the rise in present values with the clients' age during the accumulation phase, we provide the following example. Table 5.7.1 shows the cost of securing $10,000 per year in floor income when purchased at the ages that are shown in the far left column (30 through 65). In every case, the client receives the floor income from age 65 until age 100.

Three columns labeled 5%, 6%, and 7% are presented. For each age-at-purchase, they roughly estimate the initial cost of the floor income when Treasury Strips (appreciating at 5% per year), corporate bonds (6% per year) and insurance-based annuities (7% per year) are purchased.

One can read these as the cost of risk-free flooring (Treasury bonds), the cost of flooring with issuer credit-risk (corporate bonds), and the cost of flooring with issuer credit risk + purchaser mortality risk (annuity).

Table 5.7.1: Cost of Flooring by Age of Client at Purchase

Cost per $10 K annual payment; stream from age 65 – 100
Nominal Values 0% Anticipated Inflation

Age at Purchase	5%	6%	7%
30	$ 31,169	$ 19,995	$ 12,976
35	$ 39,781	$ 26,757	$ 18,200
40	$ 50,771	$ 35,808	$ 25,526
45	$ 64,798	$ 47,919	$ 35,801
50	$ 82,701	$ 64,126	$ 50,213
55	$ 105,550	$ 85,815	$ 70,427
60	$ 134,711	$ 114,840	$ 98,777
65	$ 171,929	$ 153,681	$ 138,540

So, exactly when and how should advisors re-direct their clients' focus from accumulation to retirement income?

To the client, the change should feel like a natural transition in the portfolio management process—no more than a gradual reshaping of the portfolio. Advisors should avoid abrupt, significant changes in the portfolio.

Here's how an advisor using this approach might handle it. Suppose that his or her client is concerned only with flooring, longevity risk, and the need to keep some cash as a precaution. Suppose also that the yield curve is flat at 5% and the client has a 40% chance of reaching age 85 and a 20% chance of living to age 90. The client retires at age 65.

Key Step: Our advisor will build a floor portfolio of cash, bond strips, and longevity insurance (in the form of a deferred annuity).

The remainder can be invested at risk to generate potential upside. On the green half of Table 5.7.2, allocations are designed to support an annual draw of five percent of current wealth from age 65 to age 85. On the purple half of Table 5.7.2, the allocations are designed to support a four percent annual draw from current wealth from age 65 to age 90.

As Table 5.7.2 shows, the nominal flooring allocations for a 50-year-old client are either 31% or 28%, depending on whether they want a 5% or 4% draw rate. For this example, let's assume the client's allocation is 30%. Note that scaling the allocations to higher or lower draw rates is possible with the caveat that the At Risk column (upside) will need to be adjusted to keep the property that each of the rows add up to one.

For an advisor using a 60/30/10 allocation for accumulation, age 50 would be a natural point to begin re-allocating the client's fixed income assets from a typical constant-duration bond fund to a planned maturity schedule. In this way, the 30% fixed income allocation becomes flooring. The earlier that the transition is begun in the 30 year window before retirement, or the pre-positioning of assets for the transition, the less strain on the overall portfolio and the more the transition will feel like a natural progression rather than a change in course.

Table 5.7.2 Two Examples of Allocation Tables with Allocations differing by draw rates (4% and 5%) and time horizon (age 85 and age 90)

Allocations For Flooring to 85
Nominal Values, 0% Anticipated Inflation

Age	Flooring	Longevity	Cash	At Risk
30	12%	1%	10%	77%
35	15%	1%	10%	74%
40	19%	2%	10%	69%
45	25%	2%	10%	63%
50	31%	3%	10%	56%
55	40%	3%	10%	47%
60	51%	4%	10%	35%
65	65%	5%	5%	25%
70	73%	7%	5%	15%
75	*81%*	*9%*	*10%*	*0%*

Allocations For Flooring to 90
Nominal Values, 0% Anticipated Inflation

Age	Flooring	Longevity	Cash	At Risk
30	11%	0%	10%	79%
35	14%	0%	10%	76%
40	17%	1%	10%	72%
45	22%	1%	10%	67%
50	28%	1%	10%	61%
55	36%	1%	10%	53%
60	46%	2%	10%	42%
65	59%	2%	5%	34%
70	65%	3%	5%	27%
75	73%	3%	5%	19%

This table shows the allocations required for each category by age of the client under the assumption that the client will retire at 65, the yield curve is a flat 5% and there is a 40% chance of survival to 85, 20% chance of surviving until 90 and no chance of living past 110. Entries highlighted in red are cases where capital-markets solutions are infeasible and monetizing mortality via an annuity goes from being an option to being a necessity. Table is produced in greater detail in Zwecher (2009)[3].

Note on column headings in Table 5.7.1: Flooring + Longevity = Flooring Portfolio as defined in Spoke 3. Cash + At Risk = Upside Portfolio as defined in Spoke 3.

Note on Longevity: This is not exclusively the province of insurance products. It can also be achieved, generally at a higher cost than insurance, with capital markets products.

As a rule, *the point of smoothest transition will be the age (or date) when the proposed flooring allocation for securing retirement income is closest to the fixed-income allocation for accumulation.*

Different allocation schedules can be easily constructed to accommodate changing prices, expectations of inflation, and coverage windows. As the allocation schedules change, the point of smoothest transition will naturally change.

These important issues and more are discussed in detail in Mike Zwecher's book, *Retirement Portfolios*.

5.8 Advanced Topic: What Does Consumption Smoothing Add To Creating Optimal Portfolios?

Learning Objectives

LO 5.8.1 Understand the concept of consumption smoothing.
LO 5.8.2 Understand the limits of the replacement ratio approach.
LO 5.8.3 Learn how to calculate a "certainty equivalent," smoothed consumption level.
LO 5.8.4 Understand the generalized formula that ties Consumption to Wealth.
LO 5.8.5 Understand the limits of optimization and how to integrate it in daily practice.

Economists generally accept the proposition that, all else being equal, most people will try to assure themselves a consistent living standard—a "smooth consumption path"—that avoids downside surprises. Many economic models take consumption smoothing as a primary motivator for an individual's foregoing of consumption today, saving the money and having it available to fund future consumption. But as we've discussed the risks to retirement lifestyles in this section, we can see that creating a portfolio that helps clients smooth consumption is not an easy task. As an example, focus on longevity risk and inflation risk.

[3] Retirement Portfolios: Theory, Construction and Management, John Wiley & Sons, 2010.

In a perfect world without credit risk, asymmetric information or other "frictions and imperfections," an actuarially fair, real annuity would be able to provide smooth consumption and it would also be an attractive alternative to taking portfolio risk. Since actuarially fair, real annuities are hard to find, the question becomes one of finding a smooth path for clients that best meets their desires for a sustainable lifestyle using the products and tools available.

To get there, we need to review a few theoretical highlights, including widely adopted formalizations of the problem as provided by the late Paul Samuelson (1969) and Robert Merton (1969). Economists are using collations of the theories seen in texts like that of Ingersoll (1987) that have sections based largely on the results of the 1969 papers mentioned above and a paper Robert Merton wrote in 1971. Ingersoll shows that if we put aside the fact that the optimal draw-down percentage out of excess wealth (see "x" in the formula below) can be a complex function of such things as impatience, risk aversion and remaining life, we can simplify the optimal smooth path as the following:

$$C[optimal] = C[floor] + x\% \, (Wealth - PV[future\ floors])$$

> $C_{optimal}$ denotes the optimal level of consumption derived from an economic model, C_{Floor} denotes the minimum consumption level that the client subjectively feels is necessary, x% is the fraction of discretionary equity that the client wishes to consume in a particular time period and (Wealth - $PV_{future\ floors}$) is the measure of discretionary equity.

The solution shows that optimal consumption for each period equals the minimum consumption needed plus a fraction of the discretionary wealth in excess of future and planned lifestyle needs. The fraction "x" may be gauged by understanding the client's potential time horizon, the client's attitudes towards risk today, the client's likely attitude towards risk as wealth is drawn down and the appropriate risk-free rates.

The economic models that derive from this generalized formula focus on:

- The importance of wealth rather than annual income in determining Life-Cycle consumption
- The importance of consumption smoothing (x is a smooth function across time)
- The fact that risk averse clients will be willing to pay to ensure a reliable and smooth consumption plan
- How dissimilar clients can be when it comes to setting up their unique Life-Cycle goals

Finally, more elaborate versions of the models, such as those presented by Constantinides (1990) and Lax (2002), endogenize the consumption floors and provide the following insight:

- The importance of habit formation and the matching minimum lifestyle preferences

To summarize theory back to the practical, economists believe that the desire for a smooth/stable living standard over one's Life-Cycle motivates people to:

- Save for retirement
- Buy insurance products

- Save for uninsurable events, such as losing your job (i.e., to save for the proverbial rainy day)
- Diversify one's economic resources

Laurence Kotlikoff, the Boston University economist mentioned earlier, and Scott Burns, a nationally syndicated financial columnist, discuss this "consumption smoothing" in *Spend 'til the End* (Simon & Schuster, 2008). Zvi Bodie, a Boston University economist, also focuses on clients' desire to achieve a stable living standard over time in *Worry-Free Investing* (Prentice-Hall, 2003, co-authored with Michael Clowes).

"Consumption," in this context, refers to total spending. Consumption smoothing refers to establishing a stable living standard. The theory of consumption smoothing, whose more recent formalizations were discussed above, dates back to seminal work in the 1920s by Irving Fisher. The assumption that people want a smooth ride is grounded in human physiology. In economists' terminology, our marginal utility from consuming more at a given point in time declines the more we consume. This *diminishing returns* feature of our happiness leads us to want to spread our spending power over time and forms the basis of the theory of saving. This same desire to smooth consumption underlies economists' recommendations concerning insurance and portfolio diversification. The goal is to smooth consumption not just over time, but also over *times* – good times and bad times.

For instance, property insurance permits us to stabilize (smooth) our consumption across times when we experience accidental losses. If our house burns down and we are insured, then we experience no losses. Buying insurance (paying insurance premiums) transfers spending power from situations of no loss (when we have less to spend because of the premium payments) to situations of loss (when we collect on the insurance policy we purchased).

On the other hand, the act of saving transfers spending power from the present to the future.

Investment diversification also redistributes spending power from good to bad times. If we only invest financial assets in a specific stock and it does poorly, we are disrupting, not smoothing, our living standard compared to the alternative, i.e., carefully diversifying our assets. By diversifying, we end up with less spending power in good states (when some of the assets boom), but more spending power in the bad states (when these same assets tank).

Let's start thinking about consumption smoothing with a model in which clients live for two periods – they are young and then they are old, and there is no uncertainty of any kind. This simplification will keep the math approachable with pen and paper.

Let's call their consumption when young C_y, and their consumption when old, C_o. Let's also use S_y to reference the saving the young clients do. For simplicity, we assume no saving when clients are old. Finally, let's call E_y the amount the client earns when young and E_o the amount the person earns when old. Finally, to keep making the model simple, assume that all these variables (C_y, C_o, S_y, E_y, and E_o) are measured in today's dollars.

Note: Remember that we are looking at discretionary spending only. If there are taxes, E_y and E_o can be viewed as net of these payments. If there are Social Security or other government benefits, E_o and E_o should be viewed as net of these payments. Let's also do the same with other items that can be viewed as non-discretionary spending. For some clients, this could include college expenses, mortgage payments, or alimony. In all such cases, then E_y and E_o will be smaller as we net out the non-discretionary spending.

When young, E_y is either spent or saved, so:

$$C_y + S_y = E_y$$

When old, consumption is financed (paid for) by E_o as well as the principal of one's saving S_y plus the income earned on one's saving:

$$C_o = S_y (1+r) + E_o,$$

Note: "r" stands for the return on one's saving.

These two equations can be combined into one equation by substituting out for S_y. The result is what economists call the *lifetime budget constraint*.

$$C_y + C_o /(1+r) = E_y + E_o /(1+r)$$

The equation says that the present value of lifetime consumption has to equal the present value of lifetime, spendable resources. Or in simple terms, you can't spend more than you make over your lifetime.

If the person wants to make consumption when young equal to consumption when old, i.e., if she wants C_y to equal C_o, the person just sets $C_y = C_o$ and replaces C_o in the above equation by C_y and then solves for C_y.

$$C_y = C_o = [E_y + E_o /(1+r)] (1+r)/(2+r)$$

This is the consumption-smoothing solution if the person wants consumption in both periods to be exactly equal. In general, stable preferences coupled with the diminishing returns property of their preferences will lead them to try to smooth consumption over adjacent periods. There may be a preference for consumption to evolve, but the economic theory of consumption smoothing suggests that people would want to plan for consumption to evolve smoothly.

There is, even in this simple model in which there is no uncertainty, one major potential impediment to consumption smoothing that needs to be considered. There are conditions when the client is unlikely to be able to borrow (to make S_y negative) in order to smooth consumption. Some young clients with a large mortgage to pay and a growing salary may not be able to borrow against future income. If E_y is small compared with E_o, the client may want to make C_y bigger

than E_y, in order to make C_y equal to C_o. This borrowing when young to increase consumption beyond earnings may not be possible.

With people living not for two periods, but many years, such *borrowing constraints* (also called *cash constraints* or *liquidity constraints*) make solving the consumption smoothing equations very difficult. Formal solution of consumption smoothing optimization problems may be difficult, if not impossible, without the aid of computers and efficient computer algorithms.

A popular algorithm that is both exhaustive in considering all possibilities and computationally efficient is called *dynamic programming.* Dynamic programming was developed in the early 1950s by a mathematician named Richard Bellman. Dynamic programming is a tool to optimize a goal subject to constraints.

Given the lifetime budget constraint and the borrowing limitations discussed earlier, the client household will try to make its "lifetime happiness meter" as big as possible. This is what economists call the lifetime *utility function*. In this two-period model, economists would express the utility function, *U*, as:

$$U = U(C_y, C_o)$$

This equation indicates that lifetime happiness depends both on the client's consumption when young, C_y, and consumption when old, C_o. This utility function captures the diminishing returns arising from satiation. Mathematically, this translates into saying that for a given value of C_y (C_o), raising C_o (C_y) by more and more will add less and less to the person's happiness (U) if the amount of C_y (C_o) is held constant.

Intuitively, if you have just eaten a meal, eating a second meal does not double your total pleasure, and eating a third is even less additional fun than eating the second. If you can preserve that third meal for tomorrow or some other future date when you'd otherwise not have any food to eat, you'll seek to do so. Thus, consumption smoothing is simply an economic aspect of human nature. Mathematically speaking, the name of the game is choosing the consumption plan that makes *U* as large a possible without violating the lifetime budget or borrowing constraints. Specifically, the model maker tries to find values of C_y and C_o that maximize *U* subject to these two restrictions.

It is at this point that theory gives way to assumptions about functional form for implementation from which an "optimal" plan can be derived. With uncertainty about the value of E_o that one will experience or the "r" that one will earn, one is forced to choose C_y without knowing precisely what this choice will mean for the value of C_o, which one will experience when one is old. In this setting, economists assume that the person will try to maximize her *expected or average utility* – the level of *U* that will arise, on average, once the value not just of C_y but also of C_o is determined.

Note: Go back to the example of steady consumption and the equation for $C_y = C_o$, which shows that the value of C_o will depend on S_y set when young as well as what E_o and "r" turn out to be.

The diminishing returns imbedded in an individual's utility function, which naturally leads clients to want to save, also influences their concern about risk – their risk aversion. Indeed, the standard mathematical formula used by economists to quantify the degree of risk aversion, called the degree of relative risk aversion, is determined by how fast diminishing returns set in and how quickly the diminishment is changing. So diminishing returns and risk aversion are not two sides of the same coin. They are the same side.

The more risk-averse clients (the more diminishing returns affects their happiness) will be concerned about making E_o and "r" safer. Buying homeowners insurance, auto insurance, taking a safer job, taking out a fixed rate mortgage – these are ways or ensuring that E_o, which again is labor income net of taxes, net of "off-the-top" expenses, but including Social Security and other government benefits, is less variable. Investing in a diversified manner is a way to ensure that "r" is safer.

To help people understand the living standard risks they are facing and their ability to limit these risks, it's important to show them as precisely as possible the range of C_o outcomes they might experience for different choices of C_y and decisions about insurance and diversification.

To economists, financial planning comes down to one thing—your living standard, because it is these values of C_y and C_o that enter into your happiness meter, i.e., your utility function.

In addition to smoothing and protecting your living standard through time (trying to make sure that C_o doesn't end up very low relative to C_y), economics is focused on making the household's living standard (the combined values of C_y and C_o) as high as possible. There is a range of decisions that don't involve taking on more risk that can raise our lifetime resources (the right-hand-side of the lifetime budget constraint). For example, taking Social Security benefits at age 70, rather than age 62, may make E_o larger, without making it riskier. A second example is taking an equally safe job in another city, where the housing costs are lower, and the job pays more. This will raise E_y and E_o and, therefore, lifetime resources.

The final focus of economics-based financial planning, beyond smoothing, protecting, and raising your living standard, is pricing your living standard. This refers to knowing how much certain lifestyle decisions, such as retiring early and thus lowering E_o, will cost in terms of its impact on C_y and C_o. Another example is buying a larger home. Since this raises your non-discretionary spending (including the down-payment, higher mortgage payments, higher property taxes, and higher homeowners' insurance), it comes at the price of less discretionary spending – lower values of C_y and C_o. To decide if retiring early or buying the larger house is worth it, economists believe you need to understand precisely what it may mean for your C_y and C_o.

There are several extensions to this standard framework. These extensions focus on a number of issues that can be understood within our simple two-period framework. Some economists posit that people become habituated to their living standard and don't like to see it decline. This comes down to a statement of the precise form of the utility function U. With such *habit formation*, the mathematical expression of U is such that diminishing returns to having more and more C_o, for a given amount of C_y, sets in very powerfully and asymmetrically the closer C_o is to C_y. At the

extreme, the person would get no extra utility from consuming more when old than C_y and be completely miserable (have infinitely negative utility) if consumption when old falls below C_y. People with such preferences tend to be very concerned with the downside to their future living standard and will seek to set a floor on their future living standard.

Consumption Smoothing boils down to the simple notion that people prefer smooth rather than jumpy patterns of consumption. It also accommodates the fact that households will revise their spending plans each year in light of their market gains, their wages, and other unexpected changes to their remaining lifetime resources.

This approach argues against workers putting their saving on autopilot. Doing so would smooth their savings but disrupt their living standards. It also argues against retirees spending a fixed amount of assets each year without regard to earnings. This doesn't imply an absolute preference for a completely flat level of discretionary spending consumption, only that optimal plans will tend to be smooth. This approach also makes it clear that the optimal planning horizon is your maximum age of life, not your expected age of life. The reason is simple: You can't count on dying on schedule. You need to plan on having the capacity to spend until your 100^{th} year or more, because you might see it.

5.9 Advanced Topic: What Does Behavioral Finance Add To Creating Optimal Portfolios?

Learning Objectives

LO 5.9.1 Understand the relationship between Consumption Smoothing and Behavioral Finance.

In 1966 an economist named Kelvin Lancaster demonstrated that it is not goods per se but the characteristics of goods that provide utility. We near the limits of monetary smoothing when we ask: What are the characteristics of a smooth living standard? For people who are contemplating their latter life, smoothing may mean maintaining a sense of independence. This can help determine the composition of assets that they will use to finance their lifestyles. As they see their world shrinking, home ownership may be the last redoubt of independence. Do not be surprised if a client would rather own a modest home than sell it and rent a luxury apartment.

The simple models that we use in economic analyses often ignore facts that a non-economist would take for granted. Most models enforce a clean split between financial assets and consumption. Wealth becomes a fungible commodity, and consumption decisions split from portfolio decisions. This ignores the fact that some assets like art, gold, stamps and coins may be purchased for their aesthetic pleasures as well as for the potential for price appreciation. In the housing boom of the last decade, people didn't necessarily buy more houses, but they tended to buy bigger houses, as the asset was sold to them as not just a place to live but an "investment." For assets that provide both consumption and investment returns, the models will be silent. But if you ignore their dual nature, your clients may be quite vocal.

Related aspects of economics-based planning go under the heading of *behavioral finance*. One area of research in behavioral finance concerns changes in preferences over time. Such changes are often referred to as *dynamic time inconsistency.* In a setting with more than two periods, a person who knows that her preference for utility (*U*) may change—indeed, change in ways she doesn't want—has, in effect, a current self that contends with a range of future selves. Each self has its own *U* function and will try to allocate its remaining consumption the way it sees fit. Since the current self doesn't share the future self's preferences, the current self will try to lock in the future self into certain behaviors. For instance, a person might put money into a retirement account to keep future selves from spending it before retirement and incurring a tax penalty.

Another strand of the economics literature on behavioral finance questions whether people understand either their preferences or their lifetime budget constraints. Research in the emerging field of neurological economics shows, for example, that savings and spending decisions are processed in different parts of the brain. In reality, these questions are two sides of the same coin. But if you pose a saving question using language about spending, you'll get a different answer than if you pose the economically equivalent question using the word saving.

Going back to our discussion of risk aversion in Spoke 4, we can now show how the "x" in the formula ($C_{optimal} = C_{Floor} + x\%$ (Wealth – $PV_{future\ floors}$)) will differ for clients with different types of risk aversion. If a person's willingness to risk a given percentage of wealth is independent of their level of wealth, it is called Constant Relative Risk Aversion (CRRA). The optimal draw-down behavior for that person will be nearly linear.

For an individual with CRRA preferences, consumption will be set at a fraction that depends primarily on the number of years remaining. The degree of impatience provides the upward tilt in the consumption path shown here and yields positive interest rates as a corollary. By valuing consumption now over consumption later, the point of indifference is reached only when deferred consumption is high enough to compensate for foregoing higher consumption today. In the example above, wealth is consumed and consumption rises at a constant rate.

However, most people exhibit Decreasing Relative Risk Aversion (DRRA). When their wealth is growing, they can tolerate more risk. During retirement, if their wealth is shrinking, they tolerate less risk. This restraint persists until late in life, when the discipline of "saving for a rainy day" finally yields to acceptance that "You can't take it with you." Anecdotally, it's not unusual for the very elderly to reverse years of frugality and decide to redecorate the house or go on a cruise. This isn't a health-related phenomenon or an attempt to avoid estate taxes; it occurs regardless of health or wealth status. It's impatience, and it eventually overtakes frugality. Since their risk aversion rises as their wealth declines, their fear of running short of funds suppresses their consumption rate until very late in life. In other words, risk aversion holds impatience at bay.

In addition to suggesting optimal draw-down paths, these models can be used to create optimal portfolios. The difficulty with this approach lies not with finding ideal solutions, but with finding solutions for specific people. To put it another way, the models don't yet account for the richness of human behavior.

5.10 Advanced Topic: What Do Monte Carlo Simulations Add to Creating Optimal Portfolios and Why Is "60/30/10" Too Risky for Retirement?

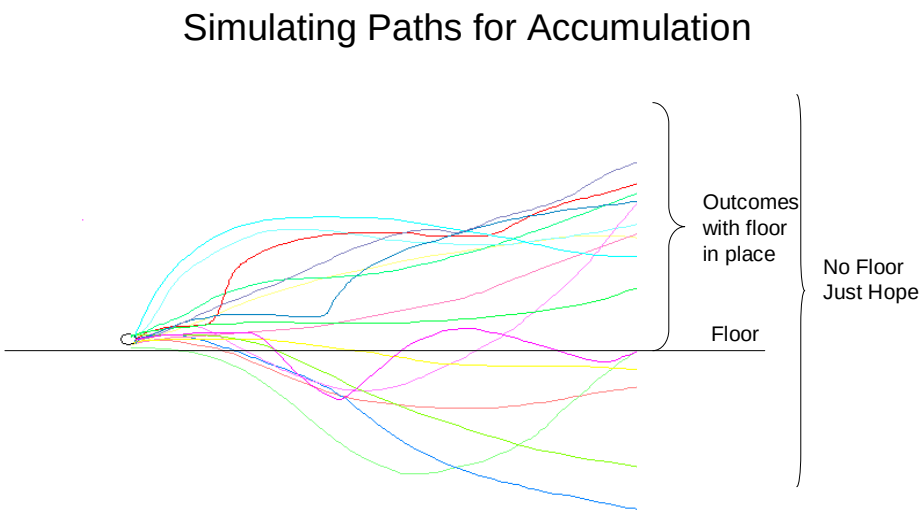
Learning Objectives

LO 5.10.1 Describe the limits of the 60/30/10 approach for retirement portfolios.
LO 5.10.2 Describe the use and the limits of Monte Carlo analysis.

In *Why Most Things Fail*, Ormerod observed something relevant to those who think about retirement planning. "To have the intention of securing a particular outcome is usually no guarantee at all that it will be achieved," he wrote. "Intent is not the same as outcome."

Planning for retirement is about creating outcomes rather than hopeful expectations. It should first focus on creating a floor under the investor's income risk. The change in focus from expectations to outcomes helps us deal with the structural fragility of planning. As shown on Monte-Carlo simulation based Chart 5.10.1, the use of targets, floors and guarantees can make financial plans less brittle—that is, less vulnerable to failure.

Chart 5.10.1



Planning is more definitive when outcomes are bounded. Unbounded outcomes make planning more difficult.

Monte Carlo simulation is a tool that is frequently used to study complex processes that are not amenable to direct methods. A large sampling of paths through a difficult-to-disentangle process can be simulated to create a picture of and evaluate the outcome of the process. In financial applications, for instance, it can simulate the array of outcomes arising from the use of exotic

options, structured products and whole portfolios. For our purposes, it is useful for understanding differences between portfolios that may behave similarly in most cases but deviate substantially in the tails. Where one portfolio may be prone to frequent but mild failures, the other may tend toward rare but severe failures. It should always be remembered that Monte Carlo techniques provide a tool for analysis that mechanically renders results for a previously designed parameterized process. It's an estimation tool whose simulations are based on preconceived models. It provides deductive results that can rule out models, but it does not validate models in a scientific sense.

Accumulation planning focuses on the investor's exposure to risky assets and modifies it according to the investor's risk tolerance. Its approach to asset allocation, summarized as 60/30/10, dictates that average investors with a sufficiently long time horizon should put 60% in investable assets in stocks, 30% in bonds and 10% in cash.

While 60/30/10 has long served as an empirical validation of the asset allocation practices of investment management professionals, can it also function as a dominant empirical valuation framework, or EVF, of the retirement management industry during the distribution era? No, because it leaves out the need for reducing downside risk and creating an income floor.

A retirement plan—as well as the economic science of retirement and the matching retirement education—should act like a good map that helps us navigate unfamiliar terrain. In contrast to accumulation planning, retirement income planning involves more than allocating an investor's financial capital among risky assets. It should also include such risk management techniques as:

- Creating income guarantees
- Creating exposure transformations for asymmetric outcomes
- Protecting real values

This suggests that 60/30/10 is not likely to provide the complete EVF for retirement income planning. One can see that while asset allocation is part of the picture, it is only one of at least four useful risk management techniques.

For retirement income planning to blossom, it may need an EVF summary all of its own. Instead of 60/30/10, a retirement planning EVF may have different components that further differ by age. These four components would include allocations of the investor's financial capital to include:

- Diversification of risky assets
- Mitigation of personal risks via insurance
- Mitigation of market risks via hedges
- Creation of reserves of risk-free assets

5.11 Advanced Topic: Beware the Black Swans (and the Dragon-Kings!)

Learning Objectives

LO 5.11.1 Understand Power Curves and their relationship to Black Swans and Dragon-Kings.

Nassim Taleb, in his books, *Fooled by Randomness* (Random House, 2005) and *The Black Swan* (Random House, 2007), demonstrated that life confronts us with larger and more frequent catastrophes than our preconceived notions of risk usually lead us to expect. Taleb calls these large events "Black Swans." Didier Sornette, in his paper, *Dragon-Kings, Black Swans and the Prediction of Crises* (International Journal of Terraspace Science and Engineering, 2009), makes the point that we can identify even larger catastrophes than Black Swans. He calls them "Dragon-Kings."

Taleb and others make the point that natural, self-organizing systems, including social and business systems, are, more often than commonly perceived, punctuated by large and rare events. Mathematically, a power law probability distribution of outcomes as a variable of event or artifact size (in contrast to a normal distribution for instance) is often seen as a statistical signature of such natural, self-organizing systems.

When a market remains stable for a while, for instance, we become complacent. The crisis that began in 2007 when a global bank, HSBC, suddenly wrote-down its mortgage book, spreading collateralized debt obligations (CDOs), Asset Backed Commercial Paper, and leading eventually to a full-blown panic, is one reminder of the age-old error of mistaking models, which describe probabilities, for descriptions of reality.

Wall Street, for instance, treated CDOs and other credit instruments as fully hedgeable securities. Why? Because it's easier to mark to a pricing model and hedge to the factors that drive that model, recognizing P&L along the way, than to value the inherent (and very real) non-hedgeable risk. But the Street acquired a false sense of control. Imbibing its own Kool-Aid, it believed that it could successfully model the market's behavior. Then—wham! The market reminded us that we are its playthings and not the reverse.

Sornette makes the point that Black Swans cannot be predicted with the common statistical tools since nothing in the mathematics distinguishes them, a priori, from their smaller siblings. On the others the even larger events are akin to phase-transitions (a physical example would be the change from ice to water) in order to become true catastrophes. The mathematics of phase transitions, unlike the mathematics of Black Swans, allow for predictions if one learns how to recognize the warning signs of a Dragon-King.

Dragon-Kings are revolutions with a clear before and after. They emerge from the existence of positive feedback loops that amplify the power of certain events or certain persons. They are the result of amplification. While we tend not to see Dragon-Kings in the distribution of most investment returns (depending upon the data and time frames, we tend to see normal

distributions, log-normal distributions and power laws), the presence of amplifying mechanisms, such as portfolio insurance, option hedging and momentum trading, does create the emergence of Dragon-Kings (e.g., the crash of the tech bubble in April 2000 or the stock market crash of October 1987.) These events are not standard statistical events, they are true phase transitions: ruptures, bifurcations, tipping points, catastrophes, and revolutions. They happen because the market is based on imitation herding, self-organized cooperation and positive feedback loops, leading to internally generated instabilities. Some of those instabilities, the larger ones, may be more predictable than we know.

5.12 Recapitulating Where We Are in the Process

The Goals
Remember what we are trying to do:
RIIA's Retirement Management and Retirement Income Advisory Process has two goals:

- Goal 1: Build a Floor
- Goal 2: Create Upside

The primary quantitative objective of Chapter 1 is to calculate a "first-order" estimate of the client's consumption /portfolio yield. Inputs for this calculation include an estimate of the client's current Financial Capital and their expected annual consumption level in retirement. Outputs from this calculation categorize the client as under-funded, constrained or over-funded. This first-order estimate will be revised as we move through the spokes. This core level of analysis focuses on averages and can be also refined with an advanced level analysis including a specific year-by-year simulation. The remaining chapters will present the remaining 5 spokes.

Spoke #1
The Advisor starts the creation of a Life-Cycle plan based on an understanding of the client's Balance Sheet.

The primary quantitative objective of Chapter 2/Spoke 1 is to calculate a "first-order" estimate of the client's household balance sheet. Inputs for this calculation include asset balances (e.g., financial assets and bank balances) as well as expected cash flows (e.g., social security and pensions). Inputs also include liabilities including mortgage balances, expected annual consumption in retirement, desire for a bequest, etc. Finally, inputs for this calculation include discount rates/expected returns. Outputs from this calculation are shown as a household balance sheet with projected and discounted values as of the client's retirement date.

Spoke #2
The Advisor completes the creation of a Life-Cycle plan by matching the client's Social Capital, Human Capital and Financial Capital sources of income with the Income Statement, Balance Sheet and matching Cash Flows.

The goal of this Life-Cycle plan is to understand how much of the client's retirement income floor can come either from Social or Human Capital, and how much needs to come from Financial Capital.

The primary quantitative objective of Chapter 3/Spoke 2 is to refine the cash-flow inputs that go into the client's household balance sheet. Inputs include personal income/earnings as well as taxes, fixed and discretionary expenses. Outputs are shown on both the client's household Income Statement and Balance Sheet.

Spoke #3
The Advisor translates this Life-Cycle plan into a Retirement Income plan by matching the Investor's Capital Sources of Income to his or her prioritized Retirement Income Risk Factors.

The primary quantitative objectives of Chapter 4/Spoke 3 are to determine the client's risk tolerance (e.g., Conservative, Moderate, Aggressive) and to calculate the portion (percent and dollar) of their financial portfolio that should be dedicated to flooring. In addition to the risk profile questionnaire, inputs include the client's current age, desired retirement age, life expectancy and various inflation and discount factors. Outputs are the client's risk tolerance and the portion of their financial portfolio that should be dedicated to flooring.

Spoke #4

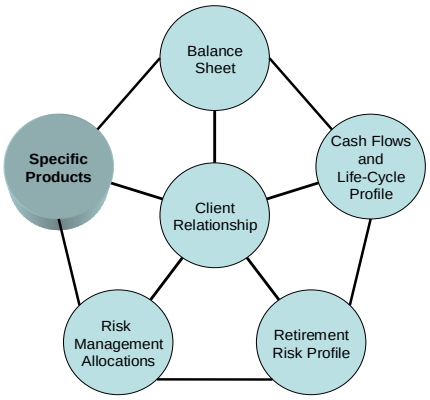
To build a floor and to create upside from Financial Capital according to the client's retirement risk profile, advisors must know how to allocate among four risk management techniques:

- **Diversification among risky assets – Investments**
- **Risk Transference – Hedging**
- **Pooling Risks for health and mortality – Insurance**
- **Advice/Reserve – Risk-free precautionary balances**

Chapter 5/Spoke 4 describes various risk management approaches (Engineering Practices, Economic Models and RIIA's Empirical Validation Framework) that make it possible to determine if the client is best served with primarily capital markets products portfolios, insurance portfolios or hybrid portfolios. The primary quantitative objectives of Chapter 5/Spoke 4 are to determine the portions of the flooring portfolio and the upside portfolio that should go to investments, hedging, insurance and risk-free assets. Inputs were developed in prior spokes. Outputs are the percent and dollar portions of the flooring and upside portfolios that should go in some or all of the risk management techniques.

Chapter 6: The Fifth Spoke – Specific Products to Implement the Plan and Allocations

RIIA's Retirement Management and Retirement Income Advisory Process – 5th Spoke



6.1 Spoke Five: Choosing The Right Products

Learning Objectives

6.1.1 Describe the importance of choosing specific products to build a floor and to expose to upside.

To complete the process of building a floor and creating upside potential, we need to buy specific financial tools. In this chapter, we'll look at flooring and upside-generating products. Some products create only upside, some create flooring or upside and some try to create both at once. We'll also match products with the client profiles that we developed in Spokes 1, 2, 3, and 4.

Appendix A provides a definition of each of the most commonly used products. Here we focus on the products and their role in the management of risk in a retirement income portfolio.

6.2 Core Topic: Key Characteristics of Flooring Products

Learning Objectives

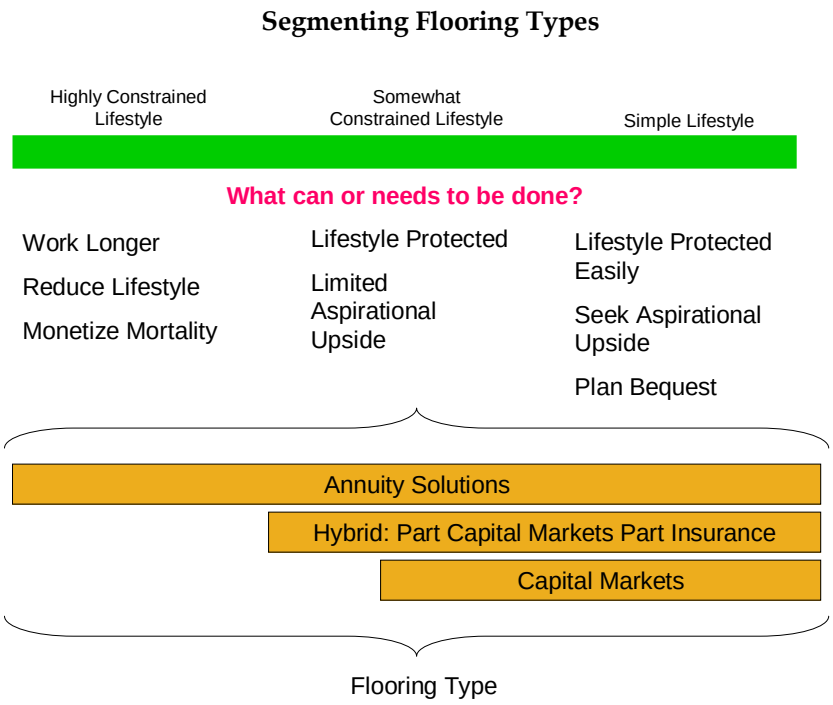
LO 6.2.1 Describe the characteristics of products for flooring.

Figure 6.2.1 illustrates the flooring choices that match up with the lifestyles we first talked about back in Chapter 1. (We're disregarding the client's age here.) The sooner clients are transitioned to retirement income, the more flooring options they'll have, regardless of lifestyle.

For a product to qualify as flooring it has to pay out a lower-bounded amount over a lower-bounded timeframe. To put it more succinctly: "It has to pay at least this much for at least that long." Some advisors may prefer to build flooring products in a modular fashion; others might prefer bundled products.

Products used primarily for flooring (e.g., Treasury Strips) sometimes have secondary roles in creating upside. But we'll try to categorize products by their primary uses. Flooring products should meet needs, mitigate risks and contain uncertainties. In contrast, the upside process deals with goals and aspirations above the currently defined floor.

Figure 6.2.1



6.3 Core Topic: Thematic View of Flooring and Upside Products

Learning Objectives

LO 6.3.1 List the types of products associated with flooring.
LO 6.3.2 List they types of products associated with upside.

Table 6.3.1 identifies the types of products that we feel are most useful for flooring and upside. Some products are bundled to provide both flooring and upside attributes (e.g., variable annuities with GMIB riders) and could fit in both groups.

Table 6.3.1 – The Thematic View

Motive	Diversification/Investments Risk Retention	Transference/Hedges/ Risk Avoidance	Pooling/Insurance	Reserves/Precautionary Balances/Risk Control
Flooring	Non-Callable Corporate Debt	Securities that use derivatives to protect otherwise unprotected flooring	Life-contingent annuities, survivor products P&C, health, or business insurance	Government- issued debt and Federally- insured funds "Near cash"
Upside	Assets without principal protection or call protection	Structured securities that lock in upside or limit downside.	Actuarial upside	Stabilizers for upside portfolio

The advisor's first task is to identify the product sets useful for flooring and to determine their roles in a risk management framework. Annuities (insurance contracts) and certain capital markets products can furnish basic flooring.

Some products (variable deferred annuities with living benefit riders) address both flooring and upside needs. We should emphasize that *no* product is universally applicable or appropriate. The client's own desired outcomes should drive the choice of solutions, not the reverse[4,5].

[4] One could argue about the best level of detail for classification (e.g., whether an annuity bundles corporate debt and mortality credits), but we take the common approach of describing an annuity as a type of insurance product.

[5] It would certainly be possible to build floors in a mixed module format: e.g., floor out a few years with S&P SPDRs hedged with options, lengthen the floor with Treasury strips and finally lay on longevity and other insurance products to mitigate personal risks. However, such a detailed approach would be beyond the scope of this book.

6.4 Advanced Topic: The Universe of Flooring and Upside Products

Learning Objectives

LO 6.4.1 List the basic flooring products using Capital Markets products.
LO 6.4.2 List the basic products to secure the flooring using Insurance products.
LO 6.4.3 List the basic products that bundle flooring and upside features together.
LO 6.4.4 List the basic products that provide precautionary reserves.
LO 6.4.5 List the basic products used for upside.

Four product menus can be found below. These menus can help advisors choose the building blocks with which to construct their clients' retirement income portfolios. For convenience and flexibility, they feature both "a la carte" and "prix fixe" options.

- Table 6.4.1 shows basic flooring products using Capital Markets products.
- Table 6.4.2 shows products to secure the flooring using Insurance products.
- Table 6.4.3 shows products that bundle flooring and upside features together.
- Table 6.4.4 shows products that provide precautionary reserves.
- Table 6.4.5 shows the products used for upside.

Table 6.4.1 - Product Type View – Flooring with Capital Markets Products

RM Classification	**Basic Flooring Products**	Risks and Benefits
Investments	Non-callable corporate debt (corporate bonds and corporate zero-coupon bonds)	Corporate bonds contain credit risk, less costly than government issues
	Municipal debt	Municipal securities contain credit risk
	Principal-protected structured products	Risky asset + derivative have no basis risk
	Risky-asset +derivative	Structures may be used for flooring, but are generally short dated
Hedges	TIPS Risky-asset +derivative	TIPS are real risk-free flooring
Insurance	See Table 6.3	Contain credit risk and utilize mortality credits that reduce flooring cost
Risk-free	TIPS Savings bonds Treasuries Treasury Principal Strips	Savings bonds are sold retail, not traded Strips are the most solid but expensive nominal flooring

Table 6.4.2 - Product Type View – Flooring with Insurance Products

RM Classification	Flooring Protection	Description
Investments	Deferred annuities Income annuities	Longevity insurance that may be combined with capital markets floors
Hedges		
Insurance	Deferred annuities Income annuities Life insurance Health insurance Health-related insurance Homeowners/renters insurance Vehicle insurance Credit insurance Business insurance Longevity insurance	
Risk-free		

Table 6.4.3 - Product Type View – Bundle Products for Flooring and Upside

RM Classification	Combined Flooring/Upside Products
Investments	Variable annuities (with GMAB, GMIB, or GMWB riders) Insurance-wrapped portfolios
Hedges	
Insurance	
Risk-free	

Table 6.4.4 - Product Type View – Flooring with Precautionary Savings

RM Classification	**Precautionary Assets**
Investments	
Hedges	
Insurance	
Risk-free	Treasury Bills Insured Bank Deposits Insured Money Market Deposit Accounts

Table 6.4.5 - Product Type View – Products for Creating Upside

RM Classification	**Upside Assets**	
Investments	Stock and bond mutual funds UITs, ETFs Target Date Funds Managed Payout Funds Closed end funds Corporate Bonds Listed and Exempt Securities Options** Futures** Commodities Unregistered securities	REITs CMOs Limited partnerships Precious metals Equity in real estate Vehicles Business ownership Numismatic & Philatelic items Marketable art Gems Antiques
Hedges	Structured products and notes Insurance wrapped capital markets products Options Futures	
Insurance	Tontine types	
Risk-free	Money market mutual funds	

* Appropriateness for flooring depends upon content and obligation to pay minimum amounts on set dates.

As we see above, some of the products serve single purposes and some serve multiple purposes.

6.5 Advanced Topic: The Universe of Account and Regulatory Vehicles

Learning Objectives

LO 6.5.1 List the specific account/regulatory vehicles.

Location, location, location may be the traditional mantra of real estate agents. But the ability to determine the best location for retirement assets is also a crucial competency for the advisor and the key to effective management of retirement portfolios.

Table 6.5.1 – Account Vehicles

Account Types	Definition
Asset management accounts	**Asset management account**, sometimes called an investment management account, is an account that combines money market funds, stocks, bonds, mutual funds and other investments, check writing privileges, a credit card or debit card, and pre-authorized borrowing against a margin account or line of credit. There is usually a minimum deposit of cash and/or securities for these accounts. If there are any assets with investment risks in the account, the total amount in that account is included under this category.
Packaged account	**Packaged accounts**, sometimes called **relationship banking accounts**, are accounts that combine a household's checking, savings, certificates of deposit, and/or money market deposit accounts, usually at a bank, into a single package of services for which the household receives one consolidated statement each month. If there are any assets with investment risks in the account, the total amount in that account is included under this category.
Wrap accounts	**Wrap accounts** are accounts for which a financial professional is authorized to manage the assets in the household's account in one of two ways: 1) the professional buys or sells securities with the household's approval; or 2) the professional buys or sells securities without the household's approval. For both these types of management, the household pays in one of two ways: 1) a fee based on a percentage of the assets under management; or 2) a commission based on the number of trades.

Custodial accounts	**Custodial accounts** are accounts set up for, and managed on behalf of, minors. They contain securities, cash, and other property given to a minor under the Uniform Gift to Minors Act (UGMA) or the Uniform Transfers to Minors Act (UTMA).
Education savings accounts	**Education savings accounts** (also called **Education IRAs** or **Coverdell Education Savings Accounts**) are accounts that can be set up and contributed to on behalf of a child under the age of 18. Contributions are not tax deductible but withdrawals are not taxed if the funds are used to pay eligible education expenses (including elementary and secondary school expenses and tuition at private and parochial schools).
529 plans	**529 Plans** (**state-sponsored college savings plans**) are investment plans designed to encourage saving for future college costs while providing special tax benefits to the individual who established the plan. Upon withdrawal, the earnings are tax-free if used for qualified education expenses and they have much higher contribution limits than Education Savings Accounts.
Personal trusts	**Personal trusts** (**living trusts or testamentary trusts**) are established to provide income to someone. This income comes from assets administered and managed by a trustee. With a living trust, a person transfers ownership of assets to the trust during that person's lifetime. With a testamentary trust, the terms of a person's will place assets in trust when that person dies.
Private banking	**Private banking** is a special service offered by many banks for selected customers. Usually, the private banking office is in a different location from all other bank offices (e.g., on a different floor). There are usually requirements, such as a minimum balance in an account and assets or a minimum income, to be eligible for these services. If there are any assets with investment risks in the account, the total amount in that account is included under this category.

IRAs/SEPs	An **IRA/SEP** is an investment vehicle established by the taxpayer that allows individuals to contribute, transfer and grow their investments and earnings on a tax-deferred basis. If there are any assets with investment risks in the account, the total amount in that account is included under this category.
401k, 403b, 457	**Salary-reduction plans**, which include **401(k), 403(b), or 457** plans, allow employees of sponsoring companies to shelter part of their salary from current taxes. 401(k)s apply to employees of publicly- and privately-owned for-profit businesses; 403(b)s apply to employees of non-profit organizations such as educational or research institutions; 457s apply to employees of municipal or other government agencies. These are not defined benefit pension plans. Limits on the amount of salary an employee can shelter vary by type of plan and other factors such as employee income. Taxes on both contributions and earnings are deferred until withdrawal–usually after retirement or when an employee leaves the employer. In some cases, employers also contribute to the plan. If there are any assets with investment risks in the account, the total amount in that account is included under this category.
Keoghs	**Keoghs** are tax-deferred retirement plans for self-employed individuals.

6.6 Recapitulating Where We Are in the Process

The Goals
Remember what we are trying to do:
RIIA's Retirement Management and Retirement Income Advisory Process has two goals:

- Goal 1: Build a Floor
- Goal 2: Create Upside

The primary quantitative objective of Chapter 1 is to calculate a "first-order" estimate of the client's consumption yield/portfolio yield. Inputs for this calculation include an estimate of the client's current Financial Capital and their annual consumption level in retirement. Outputs from this calculation categorize the client as under-funded, constrained or over-funded. This first-order estimate will be revised as we move through the spokes. The remaining chapters will present the remaining 5 spokes.

Spoke #1
The Advisor starts the creation of a Life-Cycle plan based on an understanding of the client's Balance Sheet as illustrated below.

The primary quantitative objective of Chapter 2/Spoke 1 is to calculate a "first-order" estimate of the client's household balance sheet. Inputs for this calculation include asset balances (e.g., financial assets and bank balances) as well as expected cash flows (e.g., social security and pensions). Inputs also include liabilities including mortgage balances, expected annual consumption in retirement, desire for a bequest, etc. Finally, inputs for this calculation include discount rates/expected returns. Outputs from this calculation are shown as a household balance sheet with projected and discounted values as of the client's retirement date.

Spoke #2
The Advisor completes the creation of a Life-Cycle plan by matching the client's Social Capital, Human Capital and Financial Capital sources of income with the Income Statement, Balance Sheet and matching Cash Flows.

The goal of this Life-Cycle plan is to understand how much of the client's retirement income floor can come either from Social or Human Capital, and how much needs to come from Financial Capital.

The primary quantitative objective of Chapter 3/Spoke 2 is to refine the cash-flow inputs that go into the client's household balance sheet. Inputs include personal income/earnings as well as taxes, fixed and discretionary expenses. Outputs are shown on both the client's household Income Statement and Balance Sheet.

Spoke #3
The Advisor translates this Life-Cycle plan into a Retirement Income plan by matching the Investor's Capital Sources of Income to his or her prioritized Retirement Income Risk Factors.

The primary quantitative objectives of Chapter 4/Spoke 3 are to determine the client's risk tolerance (e.g., Conservative, Moderate, Aggressive) and to calculate the portion (percent and dollar) of their financial portfolio that should be dedicated to flooring. In addition to the risk profile questionnaire, inputs include the client's current age, desired retirement age, life expectancy and various inflation and discount factors. Outputs are the client's risk tolerance and the portion of their financial portfolio that should be dedicated to flooring.

Spoke #4
To build a floor and to create upside from Financial Capital according to the client's retirement risk profile, advisors must know how to allocate among four risk management techniques:

- Diversification among risky assets – Investments
- Risk Transference – Hedging
- Pooling Risks for health and mortality – Insurance
- Advice/Reserve – Risk-free precautionary balances

Chapter 5/Spoke 4 describes various risk management approaches (Engineering Practices, Economic Models and RIIA's Empirical Validation Framework) that make it possible to determine if the client is best served with primarily capital markets products portfolios, insurance

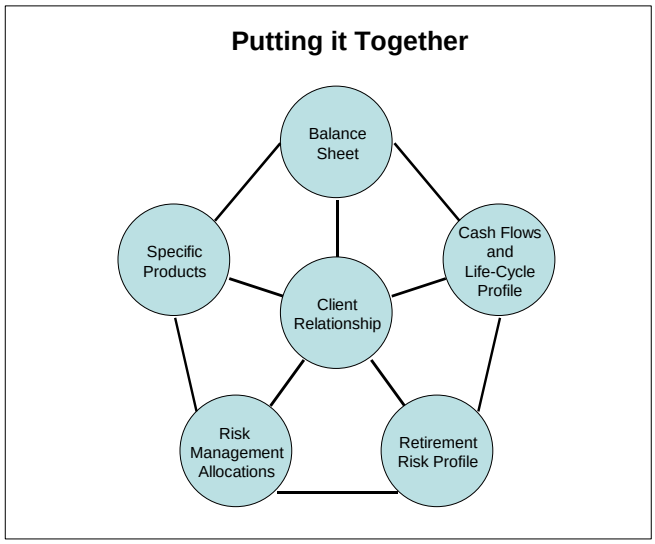
portfolios or hybrid portfolios. The primary quantitative objectives of Chapter 5/Spoke 4 are to determine the portions of the flooring portfolio and the upside portfolio that should go to investments, hedging, insurance and risk-free assets. Inputs were developed in prior spokes. Outputs are the percent and dollar portions of the flooring and upside portfolios that should go in some or all of the risk management techniques.

Spoke #5

The 5th spoke provides a high-level, asset-class like mapping of available products for each of the four risk management techniques. This provides guidance to the financial advisor who—within the constraints of his or her chosen risk management approach—can then exercise his or her best professional judgment to implement and manage the flooring and upside portfolios.

Chapter 7: Putting It Together

RIIA's Retirement Management and Retirement Income Advisory Process



7.1 Bringing The Process To Closure

Learning Objectives

LO 7.1.1 Summarize the key Spokes, Charts and Tables that illustrate the process.

The process starts with the client relationship that we show at the center of the chart.

The first spoke is about the household balance sheet; namely, understanding the assets and the liabilities of the client.

The second spoke ties the household balance sheet to the household income statement in the context of the client's Life-Cycle expectations.

The third spoke explores the hazards, exposures, consequences and probabilities that the client may have.

The fourth spoke maps the household balance sheet, income statement, Life-Cycle expectations and risk profile into risk management techniques allocations.

The fifth spoke implements the risk management technique allocation with the available products, account and regulatory vehicles.

Finally, putting the process together means that the advisor manages and monitors the client's needs across the five spoke process with the ethics of the retirement income professional, including knowledge of the rules and regulations that apply.

7.2 Core Topic: Ethics

Learning Objectives

LO 7.2.1 Understand the importance of the Ethics of the Retirement Management Professional (RMP),

"Trust, but *verify*." This phrase, which has been attributed to Ronald Reagan, was a watchword of Cold War arms control policy. But it's just as applicable to the relationship between advisors and retirement clients.

When an advisor helps a client build a retirement income floor out of low-risk assets, and when the floor's construction is transparent and its safety is verifiable, then the advisor will have demonstrated good ethics and gone a long way toward gaining the client's trust.

A client's trust should never be taken for granted. Just one in four Americans believe bankers are honest and trustworthy, according to a June 2009 Harris Poll. Even fewer (13%) trust financial planning firms, and a mere four percent trust "Wall Street" or credit card companies.

7.3 Core Topic: What Is Trust?

Learning Objectives

LO 7.3.1 Understand the importance of trust as a key component of the Ethics of the RMP.
LO 7.3.2 List the three key elements of trust.

Trust is an abstract concept. Webster's Encyclopedic Unabridged Dictionary of the English Language defines "trust" primarily as:

1. Reliance on the integrity, strength, ability, surety, etc. of a person or thing; confidence.
2. Confident expectation of something, hope.

The Random House dictionary also includes these elements:

- A measure of honest and good intentions
- A measure of technical competence

- An expectation of specific outcomes

Trust is a mental state—perhaps a moral choice—that no one can observe or measure directly. Trustworthiness can only be measured after it is given and depends on whether expected outcomes materialize or not. It takes time to grant trust. It takes even more time to verify it.

Synonyms for trust include:

- Certainty
- Belief
- Faith
- Assurance
- Confidence
- Commitment
- Commission
- Credit

These synonyms—weighted heavily in the direction of personal honor—show why breaches of trust are easier to forgive if they stem from errors and not dishonesty. Because of the asymmetry of knowledge in many advisory relationships, only trust can provide the glue. Peers are usually bound by mutual respect. But where one person holds power or knowledge over another, trust is essential.

A structured and orderly environment fosters trust. Francis Fukuyama has written extensively about "High Trust" cultures and "Low Trust" cultures. France, for instance, is considered a "Low Trust" country while the U.S.A. is a regarded as a "High Trust" country. Trust grows best when the rules apply equally to all, when the playing field is reliably level. Within any group, any form of favoritism destroys trust.

7.4 Core Topic: The Saliency of Trust in The Current Crisis

Learning Objectives

LO 7.4.1 Explain the importance of creating "confident expectations" with clients.
LO 7.4.2 Understand the importance of creating portfolios that deliver reliable outcomes rather than creating high expectations in order to create confident expectations.

After spending money and credit for many years in ever-rising amounts, we are learning the hard way that the two are not the same. When you spend money, time is like a wind at your back. When you spend credit, time is like a wind in your face. According to one rule of thumb, it generally takes two dollars of future income to repay one dollar of credit.

Taxes only make the situation worse. According to another rule of thumb, taxes cut spending power in half. Combining taxes and the adverse impact of time on debtors, the case can be made that a person has to earn four dollars in the future to pay back every dollar of credit spent today.

Clients are increasingly aware that they may not have enough financial capital to fund their expected consumption in retirement. Reverse mortgages aside, they won't be able to borrow to fund consumption in retirement. Inter-generational transfers, such as Social Security, won't be able to close the gap. Household debt has grown beyond the ability of borrowers to pay it all back.

Under such conditions, trust—defined as "confident expectation"—is increasingly difficult to cultivate or sustain.

7.5 Core Topic: The Importance of Process Transparency

Learning Objectives

LO 7.5.1 Understand the value of process transparency in creating and maintaining trust with clients.
LO 7.5.2 Understand how the RMA Advisory Process can help with "sick" clients.

Anyone who uses an ATM machine, or who has transacted business with an investment company via a website or a telephone voice-recognition system, knows that most interactions with the financial industry don't require establishing a personal relationship.

Even when we work with accounting, tax, banking, lending, insurance and investment specialists, we don't necessarily need a trust relationship. These relationships are based on the technical competence of the specialist, and don't necessarily entail the emotional depth and personal knowledge of a trust relationship.

But if we want to establish trust with clients, what can we do?

Do we provide specific advice from a variety of disciplines including accounting, tax, legal, financial planning, investment management, insurance, etc.? Or do we provide an integration of all disciplines?

Do we focus on profitable practices aimed at the clients who can afford them? Or do we assume an obligation to reach beyond the most profitable clients?

Do we project complete emotional confidence and psychological tranquility? Or do we reveal the limits of our abilities and point out the client's own responsibilities?

When an advisor works from the accumulation mindset, the answers to these questions are always driven by the need to increase assets under management and to allocate assets among

risky investment vehicles. But, as clients eventually learn, they can find this type of service in many places.

But when an advisor works from the retirement income mindset, the answers are driven by the same clear goal that RIIA teaches to professionals who train for the Retirement Management Analyst (RMA) designation: "First Build a Floor, Then Expose to Upside." RIIA believes that if we want to establish trust with clients, this is what we have to do.

Note that this process is not only useful to create trust with clients starting to focus on retirement income but also with "sick" clients—clients who have experienced the downside of the accumulation approach and who may no longer be advisable in the traditional ways.

7.6 Core Topic: Integrating Education, Experience and Ethics with Examples

Learning Objectives

LO 7.6.1 Understand the use of the retirement income client segmentation matrix.
LO 7.6.2 Understand the cases in Chapter 13 of Mike Zwecher's book "Retirement Portfolios."

Most advisors are familiar with the traditional four-bucket typology of clients: Mass Market, Mass Affluent, High Net Worth, and Ultra-High Net Worth. In retirement income planning, we also need to consider the ratio between consumption expenses and financial wealth.

In short, it's all relative. Retirees with simple needs don't necessarily have to be rich to feel secure. We would argue that if retirees can live on three percent of their wealth, the world is their oyster—regardless of their account balances. Their needs can be easily met by any number of available capital markets products and insurance products. We call them "unconstrained."

But many clients will need to tap seven percent or more of their wealth each year to meet expenses. Capital-market solutions alone can't solve their problem. They may need to buy life-contingent annuities, whose payouts combine a fixed-income return with the "mortality credit" (also known as "survivorship credit," in Jeffrey Dellinger's formulation) that comes from mortality-risk pooling.

As you may remember, we introduced these distinctions in Chapter One, Chart 1.1. Specifically, in Chart 1.1, we identify three consumption-to-financial wealth (C/FW) types:

- Unconstrained - Consumption / Financial Wealth < 3.5%
- Somewhat Constrained - Consumption / Financial Wealth 3.5% < C/FW < 7%
- Constrained - Consumption / Financial Wealth > 7%

Suppose that you have a long-time client who wants to get serious and specific about preparing for retirement. You can begin the process at any Spoke that you choose. To follow the pattern

we've established so far, we'll run through the Spokes as if they were consecutive steps. But they are not. You may start at any Spoke that feels appropriate and refer to the others only when necessary.

As we said in Chapter One, you first need to understand your client. If you're already envisioning specific products that we don't mention until Spoke Five, that's fine. But to be a true retirement income professional you have to be able to do much more than merely sell product.

7.7 Core Topic: Case Studies

Learning Objectives

LO 7.7.1 Practice the lessons learned with cases covering all the cells in the retirement client matrix.
LO 7.7.2 Practice the lessons learned with cases focused on capital market solutions.
LO 7.7.3 Practice the lessons learned with cased focused on insurance solutions.

The cases in the required reading (Chapter 13 of Zwecher (2010)) are organized as shown in table 1.4.2 in the first chapter of this book and reproduced below.

Table 1.4.2: The Retirement Income Market Segmentation

	Mass Market	Mass Affluent	High Net Worth	Ultra High Net Worth
Under-funded	D- level Value Potential for Retirement FAs	B level Value Potential for Retirement FAs	B level Value Potential for Retirement FAs	Retirement income considerations may not be relevant
Constrained	D level Value Potential for Retirement FAs	A level Value Potential for Retirement FAs	A level Value Potential for Retirement FAs	Retirement income considerations may not be relevant
Excess Funding	D+ level Value Potential for Retirement FAs	A+ Level Value Potential for Retirement FAs	A+ level Value Potential for Retirement FAs	Retirement income considerations may not be relevant

The cases distinguish with separate examples of capital markets and insurance-based portfolios for those who are at the point of retirement from those who are still in the process of accumulating while planning for retirement.

To get the most out of these examples you will be best served if you read the neighbor cases rather than simply the exact match for the wealth and lifestyle of any particular client. Secondly, the goal in presenting these examples is to focus on the retirement income part of construction that differs from accumulation.

The reader should consider each case looking for the issue or issues that require discussion and the method/tool template to articulate and to document their conclusions, their reasons for these conclusions and finally their evidence. In other words, these cases are meant to provoke thought rather than provide a specific "optimal" portfolio solution.

7.8 Core Topic: Comparing the Accumulation and the Retirement Income Tool Boxes

Learning Objectives

LO 7.8.1 Provide candidates with the "tool box" checklist to implement RIIA's Advisory Process.

Many advisors ask: Why it is so hard to do retirement income with what we have and what we know? The answer is: You are bringing the wrong tool box to the job. It is a bit like bringing an electrician's tool box to a carpenter's job.

As RIIA develops its Body of Knowledge for Retirement Management and Retirement Income, it is helpful to use the analogy of a tool box to highlight the key differences with the investment management/accumulation body of knowledge. Table 7.8.1 below summarizes the differences between the tool boxes.

Table 7.8.1 Comparing the Accumulation and Retirement Income Tool Boxes

Accumulation Tool Box	**Retirement Income Tool Box**
Usually with a Client Focus	Always with a Household Focus
AUMs as key metric	Ratio of Consumption / Financial Capital as key metric
Work primarily with Financial Assets	Always work with Human Capital, Social Capital and Financial Capital
Traditional range of Public Policy and Business Risks	Larger range of Public, Policy and Client Risks
Goal is to Expose Assets to Upside subject to Client's Risk Profile	Goals are: First Build a Floor, Then Expose to Upside
Implement with Asset Allocation among risky assets (Diversification)	Implement with allocations among risk management techniques: Diversification, Risk Pooling, Risk Transfer and retirement-focused Risk Free Assets
Justified by Modern Portfolio Theory	Justified by theories that encompass and extend MPT
Performance metric is primarily investment returns	Performance metric is primarily smooth monthly income

7.9 Advanced Topic: Software Platforms for RMA Candidates and RMA Charter Holders

Learning Objectives

LO 7.9.1 Introduce candidate to the software platforms available to teach RIIA's Advisory process in general and the RMA designation in particular.
LO 7.9.2 Introduce candidates to the RIIA Advisory Process compliant software platforms that are available to advisors following graduation.

RIIA's members span the "View Across the Silos" including software vendors. Several of these members have developed or are developing software platforms to teach the RMA designation.

The same and/or other RIIA members are also developing software platforms to support the daily practice of RIIA's Advisory Process in general and the RMA Designation in particular.

7.10 Advanced Topic: Using HealthView/RIIA's Teaching Software Platform

Learning Objectives

LO 7.10.1 Introduce candidate to HealthView/RIIA software platform.

Ron Mastrogiovanni is the founder and President of HealthView Services (HVS). He is also a Board member of RIIA. HVS has developed an RMA teaching software platform with RIIA. HVS's business plans include the building of commercial software platforms that are based on this teaching software platform.

Key features include:

- Archive and present the current version of the RMA Body of Knowledge.
- Save and store the client cases from Chapter 13 in Mike Zwecher's book.
- Save and store the client cases that RMA candidates enter themselves.
- Provide the "Core Topic" calculations that implement the RMA process and Body of Knowledge.

The current version of the software platform covers all "Core Topics." The next version will include the "Advanced Topics."

The RMA teaching software platform complements the books. Registered RMA candidates can use it as a self-study guide. RMA faculty can use it instead of PowerPoint slides.

7.11 Advanced Topic: Using ESPlanner to Understand Consumption Smoothing

Learning Objectives

LO 4.10.1 Learn how ESPlanner can help to create a smooth consumption plan.
LO 4.10.2 Apply ESPlanner to solve curriculum cases.
LO 4.10.3 Contrast Consumption Smoothing case solutions to traditional solutions.
LO 4.10.4 Describe the dangers of over-optimization.

If people have trouble choosing what to order on a restaurant menu, imagine the greater complexity of doing consumption smoothing through your maximum age of life, taking into account all the complex interrelated tax and Social Security issues, not to mention borrowing constraints.

Fortunately, the well-known Boston University professor, author, academic advisor to RIIA, and recipient of the 2009 RIIA Lifetime Achievement Award, Larry Kotlikoff, has built and championed the use of a financial planning software program called ESPlanner, which stands for Economic Security Planner.

ESPlanner takes, as inputs, the regular and retirement account assets, labor income, and all other current and future resources of the household as well as its off-the-top (non-discretionary) spending obligations. It then uses an implicit default model of preferences and explicit model of returns to calculate how much the household should spend each year, on a discretionary basis, to achieve a living standard that is a stable as possible without going further into debt. In producing its discretionary spending recommendations, ESPlanner, in effect, finds the household's appropriate spending targets. In contrast, traditional retirement planning software requires the client or the planner to specify future spending targets to determine how achievable the targets are. These targets tend to be much higher than those generated by ESPlanner.

Note: Many of the traditional planning programs tout their ability to determine the risk of the client outliving their assets. A five percent chance of success may seem fine—unless you happen to be the 20^{th} client. Furthermore, that five percent chance is misleading because it means that every client's program will fail in one out of every 20 years.

ESPlanner lets users specify the shape of their future living standard path, so if, for example, they want it to gradually fall after retirement, they are free to do so and the program will generate spending recommendations that are consistent with this preference.

Finally, ESPlanner is able to show the level and variability of a household's future living standards based on how it decides to allocate its portfolio of regular and retirement account assets through time. These Monte Carlo simulations take into account that households will adjust their spending each year in light of the high or low returns they receive on the market each year. In running the ESPlanner in Monte Carlo mode, you can also specify whether the household will be spending aggressively, cautiously, or conservatively.

ESPlanner does not explicitly specify the form of the utility function, *U*, per se. But by specifying the desired age, living standard shape and, in the case of Monte Carlo analysis, whether the spending is to be aggressive, cautious, or conservative, users can, in effect, get the program to adopt a variety of preferences. This helps the client simulate when to allocate spending power through time and how much risk to take in spending when future investment returns are uncertain.

Professor Kotlikoff is working with RIIA to make ESPlannerPRO (ESPlanner for Professionals) available to RMA students so that it can be used to teach the classes and solve the client cases. This is one of several software packages that can be used to study the RMA and later on implement what was learned in one's own daily practice.

Rules of thumb for retirement tend to be inapplicable except for the client who lives on that particular razor's edge. Draw-down plans have been shown to be unreliable. The tools underpinning planning based on draw-down plans generally ignore borrowing constraints and other real world constraints. Targeting spending without a link to current lifestyle is of dubious value. The Consumption Smoothing approach focuses on ensuring that disaster is averted and consumption does not suffer an undesirable drop. ESPlanner is a tool that takes smooth consumption as an objective throughout life.

Of course, no planning tool is perfect and ESPlannerPRO has its limitations. Any optimum is only an optimum with respect to the specifics of the modeled objective and the specifics of the modeled dynamics; what may be optimal for one client may not be optimal for an otherwise identical client. Like all models, the output is subject to the limitations of the features and the accuracy of the input data. Yet, since the program uses information that you are already trying to collect from the client, it can be used to explore different assumptions about future earnings, inflation, healthcare costs, etc. It can be used to provide a *could* even if not used for a *should.*

This curriculum seeks to have you understand the technical aspects of the available tools as well as the practical constraints that daily client practice will impose on the trade off between precision and accuracy.

Finally, as new information, i.e., information that was unanticipated at the time of the original optimization, becomes available, then an optimized solution will need to be recalculated and the previously optimized portfolio will need to be flexible enough to accommodate updating. No matter what the optimized solutions are supposed to be, it is a good idea to keep a margin of flexibility in the portfolio, at a certain cost of inefficiency, just in case things change or our understanding of them changes.

Appendix A: Sources and Resources

This section provides, for each Chapter/Spoke, a list of materials for further study as follows:

Required Reading
Knowledge of these books, articles and presentations is essential for passing the RMA exam.

Suggested Reading
These books, articles and presentations are quoted in the curriculum but have not (yet) been developed or customized to support it. Though useful, they are not required for the RMA exam.

Optional Material
These are books, articles, presentations, videos and software products that have broad relevance for the well-rounded retirement advisor.

Chapter 1 - The Hub of the Advisory Process: The Client

Required Reading

Besides this book, there are no required readings for this Spoke at this time.

In addition to the material in this book, RIIA is working with its Academic Special Advisors to the Board and Committees to evaluate and/or develop material that may become required readings as the curriculum develops.

Suggested Reading

For identifying and naming the emotions that retirement income clients experience:

Bloom, Howard.
The Genius of the Beast (Prometheus Books, 2009).

Optional Material

For information on middle market resources and segments:

Abkemeier, Noel and Brent Hamann. 2009. Segmenting the Middle Market: Retirement Risks and Solutions Phase I Report, Society of Actuaries, Schaumburg, Il.

For information on issues affecting women:

Hounsell, Cindy. 2008. The Female Factor, WISER, Washington, D.C.

Rappaport, Anna M. 2008, "Living to 100, A Woman's Issue", 2008 Living to 100 Monograph, Society of Actuaries, Schaumburg, Il.

For insights on what the public knows about retirement security:

Mitchell, Olivia S, and Stephen P. Utkus. 2004., Pension Design and Structure: New Lessons from Behavioral Finance, Oxford University Press, Oxford, United Kingdom

Rappaport, Anna M and Steven Siegel. 2009. "Financial Literacy and the Challenges of the Post-Retirement Period", Employee Benefits Quarterly, International Foundation of Employee Benefit Plans, Brookfield, Wisconsin

Sondergeld, Eric T. and Mathew Greenwald. 2005. Public Misperceptions about Retirement Security. LIMRA, International, the Society of Actuaries, and Mathew Greenwald & Associates, Hartford, Ct., Schaumburg, Il and Washington, D.C.

For more information about authors mentioned in the text:

Bloom, Howard.

The Lucifer Principle: A Scientific Expedition Into the Forces of History (Atlantic Monthly Press, 1997).

Global Brain: The Evolution of Mass Mind from the Big Bang to the 21st Century (Wiley, 2001).

Harford, Tim.

The Logic of Life (Random House, 2008).

The Undercover Economist (Random House, 2007).

Chapter 2 – Spoke One: The Household Balance Sheet

Required Reading

Besides this book, there are no required readings for this Spoke at this time.

In addition to the material in this book, RIIA is working with its Academic Special Advisors to the Board and Committees to evaluate and/or develop material that may become required readings as the curriculum develops.

Suggested Reading

There are no suggested readings for this Spoke at this time.

Optional Material

For information on decisions throughout life:

Actuarial Foundation and WISER. 2004. *Seven Life Defining Decisions,* Actuarial Foundation, Schaumburg, Il and WISER, Washington, D.C.

For information on phased retirement and work during retirement:

Rappaport, Anna M. 2009. "Signals, Retirement Options, Phased Retirement and Retirement Decisions", *Retirement 2020 Monograph.* Society of Actuaries, Schaumburg, Il.

Rappaport, Anna M. and Mary B. Young. 2007. *Phased Retirement after The Pension Protection Act*, The Conference Board, New York, NY

For help in data gathering and identifying issues:

U.S. Department of Labor. *Taking the Mystery Out of Retirement Planning*, Department of Labor, Washington, DC

Chapter 3 - Spoke Two: Creating a Life-Cycle Profile

Required Reading

Besides this book, there are no required readings for this Spoke at this time.

In addition to the material in this book, RIIA is working with its Academic Special Advisors to the Board and Committees to evaluate and/or develop material that may become required readings as the curriculum develops.

Suggested Reading

For more information about authors mentioned in the text:

Milevsky, Moshe A. *Are You a Stock or a Bond? Create Your Own Pension Plan for a Secure Financial Future* (FT Press, 2009).

Ibbotson, Roger G., Moshe A. Milevsky, Peng Chen, and Kevin X. Zhu. *Lifetime Financial Advice: Human Capital, Asset Allocation and Insurance* (CFA Institute, 2007).

Optional Material

For views on the future of retirement:

Evensky, Harold and Deena B. Katz, eds. *Retirement Income Redesigned, Master Plans for Distribution: An Adviser's Guide for Funding Boomer's Best Years* (Bloomberg, 2006).

Rappaport, Anna M. 2008. "The Future of Retirement: An Exploration and Comparison of Different Scenarios", *Benefits Quarterly*, International Foundation of Employee Benefit Plans, Brookfield, Wisconsin

Chapter 4 - Spoke Three: Assessing Retirement Risks

Required Reading

Besides this book, there are no required readings for this Spoke at this time.

In addition to the material in this book, RIIA is working with its Academic Special Advisors to the Board and Committees to evaluate and/or develop material that may become required readings as the curriculum develops.

Suggested Reading

There are no suggested readings for this Spoke at this time.

Optional Material

For more information about authors mentioned in the text:

Ropeik, David, and George M. Gray. *Risk: A Practical Guide for Deciding What's Really Safe and What's Dangerous in the World Around You* (Houghton Mifflin Harcourt, 2002).

For general perspectives on retirement risk:

Blitzstein, David, Mitchell, Olivia S., and Utkus, Stephen P. 2006. *Restructuring Retirement Risks,* Oxford University Press, Oxford, United Kingdom

Society of Actuaries. 2008. *Managing Post-Retirement Risks: A Guide to Retirement Planning.* Society of Actuaries, Schaumburg, Il.

Surveys and focus groups on use of assets during retirement:

Bryck, Sally A., Betty Meredith, Anna Rappaport, and Stephen Siegel. 2009. *What A Difference a Year Makes,* Society of Actuaries, Schaumburg, Il and LIMRA, Hartford, Ct.

Greenwald, Mathew, Sally A. Bryck, and Eric T. Sondergeld. 2006. *Spending and Investing in Retirement: Is there a strategy?* LIMRA, International and the Society of Actuaries, Hartford, Ct. and Schaumburg, Il.

Society of Actuaries, LIMRA, and InFRE. 2009. *Will Retirement Assets Last a Lifetime?* Society of Actuaries, Schaumburg, Il. and LIMRA, Hartford, Ct.

Surveys on public knowledge and perceptions about post-retirement risk:

Cowell, Michael and Anna M. Rappaport. 2006. *Longevity: The Underlying Driver of Retirement Risk: 2005 Risks and Process of Retirement Survey Report,* Society of Actuaries, Schaumburg, Il.

Society of Actuaries. 2008. *Health and Long-term Care Risks in Retirement.* Society of Actuaries, Schaumburg, Il.

Society of Actuaries. 2008. *Understanding and Managing the Risks of Retirement: 2007 Risks and Process of Retirement Survey Report.* Society of Actuaries, Schaumburg, Il.

Report focusing on what changes during retirement, building on survey data:

Society of Actuaries. 2008. *Managing Post-Retirement Risks: The Phases of Retirement and Planning for the Unexpected*, Schaumburg, Il.

Distribution of benefits issues in defined contribution plans including communication issues:

Rappaport, Anna M. 2008. Testimony delivered to ERISA Advisory Council Working Group on Spend Down of Defined Contribution Assets in Retirement. Department of Labor, Washington, D.C.

Rappaport, Anna M. 2009(forthcoming). "Defaults for Distribution of Retirement Assets: What Are the Issues?", *Retirement 2020 Monograph.* Society of Actuaries, Schaumburg, Il.

Rappaport, Anna M. 2009 (forthcoming). "The Role of Information and Expectations in Retirement Planning: Communicating Income vs. Lump Sums", *Retirement 2020 Monograph.* Society of Actuaries, Schaumburg, Il.

Studies of how retirement planning software treats post-retirement risks:

Sondergeld, Eric T., Robert S. Chamerda, Matthew Drinkwater and Daniel G. Landsberg. 2002. *Retirement Planning Software.* LIMRA, International and the Society of Actuaries, Hartford, Ct. and Schaumburg, Il.

Turner, John A. and Hazel A. Witte. 2009. "Retirement Planning Software and Post-Retirement Risks." The Society of Actuaries and The Actuarial Foundation.

Chapter 5 - Spoke Four: Risk Management Allocations

Required Reading

Zwecher, Michael. *Retirement Portfolios: Theory, Construction and Management* (John Wiley & Sons, 2009)

Suggested Reading

For more information about the economics approach:

Bodie, Zvi, Robert Merton and David Cleeton. *Financial Economics 2/E* (Prentice Hall, 2009).

Optional Material

For more information about authors mentioned in the text:

Fullmer. Richard K.
Modern Portfolio Decumulation: A new strategy for managing retirement income Journal of Financial Planning, vol. 20 no. 8 (August): 40-51. 2007.

The Fundamental Differences in Accumulation and Decumulation. Journal of Investment Consulting, vol. 9 no. 1 (fall): 36-40. 2008.

A Framework for Portfolio Decumulation. Journal of Investment Consulting, vol. 9 no. 2 (Summer).

Kotlikoff, Laurence J., and Scott Burns. *Spend 'Til The End* (Simon & Schuster, 2008).

Sornette, Didier. *Dragon-Kings, Black Swans and the Prediction of Crises (International Journal of Terraspace Science and Engineering, 2009).*

Chapter 6 - Spoke Five: Choosing The Right Products

Required Reading

Besides this book, there are no required readings for this Spoke at this time.

In addition to the material in this book, RIIA is working with its Academic Special Advisors to the Board and Committees to evaluate and/or develop material that may become required readings as the curriculum develops.

Suggested Reading

There are no suggested readings for this Spoke at this time.

Optional Material

For more information about authors mentioned in the text:

Pechter, Kerry H. *Annuities for Dummies* (Wiley, 2008).

Chapter 7: Putting It Together

Required Readings

Besides this book, there are no required readings for this Spoke at this time.

In addition to the material in this book, RIIA is working with its Academic Special Advisors to the Board and Committees to evaluate and/or develop material that may become required readings as the curriculum develops.

Suggested Reading

There are no suggested readings for this Spoke at this time.

Optional Material

For more information on authors mentioned in the text:

Retirement Resource Guide: Essential ERISA Education & Best Practices for Financial Advisors (Retirement Learning Center, Brainerd, MN, 2009).

Appendix B: Client Segmentation

The Boomer Wealth Landscape

In the fall of 2008, the investments of millions of Americans lost up to a third of their value. Many Boomers, ages 45 to 62, had counted on those investments to finance their old age. Many of them still don't know exactly what to do next. Some will double their saving rate. Others will double-down into riskier assets like global equities or junk bonds. But should retirement-bound Boomers assume more risk—or off-load it?

That depends on their finances. In this chapter we'll look at America's balance sheet and see that:

- Financial wealth in 2001 was concentrated among only five percent of Americans.
- Debt was concentrated among the poorest 90% of Americans.
- Most Americans won't be able to replace their pre-retirement income merely by drawing down savings at a sustainable, inflation-adjusted rate.
- The market crash of 2008 worsened the household balance sheets of millions of Americans.
- Older investors shouldn't try to recover lost paper wealth by re-allocating to riskier assets.

By the end of the chapter, you'll have a better understanding of the market for retirement income planning. You'll be ready for the Case Studies of Chapter 7, where we'll look at practical responses to the challenges facing several hypothetical Boomers on the verge of retirement.

The Retail Investors' Balance Sheet

America's wealth is concentrated among a relatively few households. Data from the Federal Reserve Board's triennial Survey of Consumer Finance (SCF) bears this out. Although the latest data is from 2001, it has been analyzed in depth[6].

The survey uses wealth ownership (not income) to identify five demographic groups. As Table 7.1 shows, the bottom 50% class represents about 53 million American families, who hold about 2.5% of the nation's financial assets. The next 40% represents about 43 million families who own about 25% of the assets. These groups represent what are sometimes called the "mass" and "mass affluent" markets.

[6] "A Rolling Tide: Changes in the Distribution of Wealth in the U.S., 1989-2001," by Arthur B. Kennickell. Federal Reserve Board, September 2003.

The top 10% (divided among the wealthiest one percent, the next wealthiest four percent, and the next five percent) own almost 60% of the financial assets. Representing the ultra high net worth Americans, the top one percent owns about 32% of the assets, and the next four percent owns about 27% of the assets. Representing high net worth investors, the next five percent owns about 7% of the assets.

Average Assets

Table 7.1 displays the assets in the balance sheet with these percentile classes as columns:

Survey of Consumer Finances, 2001, U.S. Balance Sheet, Assets ($ billions)

Asset (2001 $ billion)	Bottom 50%	Next 40%	Next 5%	Next 4%	Top 1%	Total
Financial Assets	$512.1	$5,160.0	$2,860.5	$5,410.3	$6,401.8	
Cash Accounts	$142.6	$778.6	$316.1	$520.5	$622.9	$2,380.7
CDs, Saving Bonds, Bonds	$34.6	$434.2	$203.4	$356.6	$659.7	$1,688.5
Stocks, Ret. Accts.	$22.1	$498.4	$434.7	$1,106.0	$2,317.9	$4,379.1
Mutual Funds	$23.1	$507.4	$444.2	$807.6	$695.4	$2,477.7
Retirement Accounts	$187.4	$2,081.4	$1,005.5	$1,667.4	$778.6	$5,720.3
Cash Value of Life Ins.	$78.0	$501.5	$167.7	$193.7	$136.8	$1,077.7
Annuities, Trust, Mgd.Accts.	$7.3	$287.8	$267.1	$622.0	$1,024.0	$2,208.2
Other Fin. Accts.	$17.0	$70.7	$21.8	$136.5	$166.5	$412.5
Non Financial Assets	$2,170.7	$9,231.7	$2,780.8	$5,877.9	$7,799.5	
Vehicles	$462.6	$799.6	$156.9	$153.2	$83.9	$1,656.2
House	$1,602.6	$6,612.9	$1,587.8	$2,087.0	$1,173.2	$13,063.5
Other Residential Real Estate	$42.2	$605.5	$264.1	$689.1	$655.7	$2,256.6
Real Estate Investments	$13.2	$329.5	$206.4	$801.9	$929.3	$2,280.3
Closely Held Bus.	$29.2	$803.4	$534.8	$2,029.8	$4,751.2	$8,148.4
Antiques, Collectibles, etc.	$20.9	$80.8	$30.8	$116.9	$206.2	$455.6
Total Assets	$2,682.8	$14,391.7	$5,641.3	$11,288.2	$14,201.3	$48,205.3

Although the data is somewhat dated, it clearly indicates the disparity in asset levels across investor classes. While homeownership is common across the board, just 10% of families have stock and retirement account investments that exceed the value of their house.

Clearly, home ownership is the biggest source of wealth for all but the wealthiest 10% of Americans. Sellers of reverse mortgages may want to target the 40% members of the mass-affluent group. In contrast, investments (non-qualified and non-qualified) are the primary assets of the next 9% of families. Registered representatives of broker-dealers will lay claim to many of them. For the top 1%, the primary assets are closely held businesses, following by stock ownership. With their complex needs, the ultra high net worth individuals often require sophisticated financial planning services.

One could say that an American acquires wealth by getting a job, buying a house, opening a retirement account, investing in financial assets, and starting a successful business.

Average Liabilities

Turning our attention towards liabilities, Table 7.2 shows that the bottom 50% of families has the highest debt burden, with a 56% debt-to-asset ratio in 2001. Their collective debt outweighs their financial assets by about three-to-one. The wealthy have relatively little debt. As you go up the wealth ladder, the debt ratio falls rapidly until, for the top 1% of families, it almost disappears (2% ratio).

Table 7.2: CSF 2001 Data, U.S. Balance Sheet, Liabilities (2001 $ billion)

Liabilities (2001 $ billion)	Bottom 50%	Next 40%	Next 5%	Next 4%	Top 1%	Total
Debt	$1,507.1	$2,788.4	$501.4	$673.1	$346.0	$5,816.0
Net Worth	$1,175.7	$11,603.3	$5,139.9	$10,615.1	$13,855.3	$42,389.3
Total Liabilities	$2,682.8	$14,391.7	$5,641.3	$11,288.2	$14,201.3	$48,205.3

The data is not adjusted for age, however, as Ben Williams, chief technology officer at Retirement Engineering, has pointed out. Wealth tends to increase as clients approach retirement age, which is when net worth matters most. We would expect the debt-to-asset ratios to decrease over time as families pay down education loans, mortgages and similar forms of debt.

Note that company-level liabilities arising from ownership of closely held or public stock businesses are not included here. This is a form of indirect leverage for the higher brackets.

Average Net Worth

Dividing the net worth of each group by the number of households in the group, we can arrive at the average net worth of American families.

Table 7.3: CSF 2001 Data, U.S. Balance Sheet, Net Worth ($ billion)

Net Worth	Bottom 50%	Next 40%	Next 5%	Next 4%	Top 1%
Average Net Worth ($000)	$22	$272	$970	$2,469	$12,596
Families (mm)	53.2	42.6	5.3	4.3	1.1

Average Potential Retirement Income

Assuming that the table accurately reflects what families will have as net worth at retirement, and assuming a withdrawal rate of 4%, these numbers can be used to provide a rough estimate of retirement income. Although net worth includes homes and other non-financial or illiquid assets, it's still a useful gauge for estimating the amount of retirement income achievable from all sources, including reverse mortgages.

Comparing these results to the 2001 average income of these five percentile classes, Table 7.4 shows the following results:

Table 7.4: Retirement Income Estimates, 2001

Estimates	Bottom 50%	Next 40%	Next 5%	Next 4%	Top 1%
Average Annual Pre-retirement Income ($)	$31,868	$66,115	$128,377	$263,767	$976,636
4% of Net Worth ($)	$884	$10,895	$38,792	$98,745	$503,829
Replacement Ratio	3%	16%	30%	37%	52%

These numbers are startling, at least from the nation's perspective. All percentile classes, on average, would experience a drop in income if they tried to live on four percent of their assets per year, according to the data in Table 7.4. In every group, the replacement ratio is less than the 70-80% used in traditional financial planning.

Even if we assume that younger families are disproportionately represented in the lower wealth and income categories, the chart shows that only the high net worth group could obtain an adequate income in retirement by liquidating their net worth at the so-called sustainable rate.

Q4 2008: The Impact of a Crater

Wealth levels improved in the mid-2000s for many Americans. But Boomers saw their net worth fall by large percentages in the fall of 2008, according to a February 2009 report from the Center for Economic and Policy Research (CEPR) titled, "The Wealth of the Baby Boom Cohorts After the Collapse of the Housing Bubble."

Boomers are hurting more than most realize, according to the report. Because of the decline of housing and equity values, especially in the once-hottest real estate markets, some Boomers saw their net worth decline by as much as 50%. Homeowners, not surprisingly, tended to lose more wealth than renters.

The CEPR paper (not yet peer reviewed) makes separate projections for the losses of early Boomers (ages 55 to 64) and late Boomers (ages 45 to 54), using the 2004 Survey of Consumer Finance. The estimated net worth of the wealthiest 20% of the late Boomers was expected to decline from about $2.5 million in 2004 to $1.5 million for 2009.

The estimated average net worth of the wealthiest quintile of "early Boomers" was expected to drop from about $4 million to about $2.5 million. As a percent of net wealth, the losses were

expected to be even greater for the lower 80% of Boomers because housing represented a larger share of their wealth and was more likely to be leveraged than stock investments.

Declines in housing wealth probably won't hurt those who bought their homes to live in as much as those who bought homes as speculative investments. Capital market losses may therefore be a better predictor than home equity losses of the financial difficulties that retired Boomers will face.

Some boomers may even benefit from the drop in housing prices, which was concentrated in the sun-belt states that are the traditional destinations for retirees. In economist-speak, Boomers who retire from snow-belt to sun-belt states may be able to "monetize a location differential."

Most Boomers won't have enough time before normal retirement age to make up their losses in the capital and housing markets, the paper's authors, David Rosnick and Dean Baker point out. As a result, they may have to rely more heavily on social insurance programs during retirement.

How Not To Dig Out of the Hole

If investors lack enough assets to meet their retirement income expectations, should they take bigger risks with their investments in order to catch up? Our answer is an unambiguous *no*.

Since not all advisors may agree with that position, let us explain. If Boomers switch to riskier assets with higher expected values, the discount rate for those assets will increase and their balance sheet will remain unchanged. There is no free lunch.

True: if you win you are better off. But other than "alpha," there are no economic rents for taking on more risk. As the balance sheet depicted in Chart 7.1 shows, exposing one's financial capital to more risk (higher discount rates) increases the volatility of the assets but does not reduce the discounted value of the liabilities.

Chart 7.1 – Exposure to Risky Assets vs. Discounting Liabilities

Assets	**Liabilities**
Exposing assets to more financial risks… … and may lead to a decrease in assets from adverse market conditions.	Does not reduce the Net Present Value of Liabilities…

It's widely known that when a corporation undertakes riskier ventures, its creditworthiness may decline and the market value of its liabilities may fall. The cash flows of the liabilities won't change, but the firm's probability of meeting them may be reduced.

But retirement-bound investors seldom understand this important concept, as Boston University's Zvi Bodie has noted. That's unfortunate, because for them the matter becomes much more personal. The present value of food won't change for the person who takes on more risk, but his or her ability to buy it will be less certain.

Looking at Chart 7.1 above, another question comes to mind: Would it be prudent for a retail investor to use the expected rate of return of their financial asset allocation to discount the liability? The answer is no.

Taking Added Risk Isn't A Viable "Catch-Up" Strategy

Who pays if the return expectations are not met? If a make-up payment is required when expectations aren't met, then there is an implied put. Is this a suitability put unknowingly written by the advisor, wherein investors who prevail in suitability suits can claw back some of their losses? We think so.

Professor Bodie has argued that when a liability, such as the need for retirement income, is perfectly matched with risk-free assets, no additional capital is needed to protect it from contingencies. But when liabilities and assets are not perfectly matched, additional capital is required.

Consider two cases:

An over-funded client with assets greater than his or her liabilities (i.e., discretionary equity as illustrated in Chapter 2 - Figure 2.1 is greater than zero) can put all of the assets at risk as long as there is either a hedge or a dynamic strategy to ensure that the assets can't fall below the present value—at the risk-free rate—of the flooring needs.

But an under-funded client with assets lower than his or her liabilities (i.e., negative discretionary equity) is technically insolvent. The client is, as they say, in a hole. It may be possible for such clients to gamble their way out of the hole. But gambling doesn't increase their chances of getting out. It will merely bring that chance into the realm of possibility.

Don't Sell an "Implied Put"

If an investor moves from a perfect match between assets and liabilities by placing, say, 50% of the assets in risky investments, then more capital—reserves—would be needed to match the liability. Such increased capital requirements are a function of the percentage risk of the shortfall from risky investments and the potential dollar consequences of the shortfall.

Insurance against such shortfall risk is effectively a put option. The put insures against earning less than the risk-free rate of interest. The cost of such an option *increases* with the time horizon—which contradicts the nostrum that stocks are good "for the long run" and that a reliable "equity premium" exists.

Professor Bodie first explained this in a paper called "On the Risk of Stocks in the Long Run" (*Financial Analysts Journal*, May-June 1995). He showed that if equity investments really become less risky over time, then the cost of insuring them against the risk of earning less than the risk-free rate of interest should decline as the investment horizon lengthens. Of course, it doesn't.

Appendix C: Product Definitions

Investment Vehicles

Asset	**Definition**
Treasuries	Treasury securities are debt obligations of the Federal government (or its agencies), which are traded on the open market and subject to credit risk. These include TIPS.
Treasury strips	Treasury securities that have been stripped by firms into principal and coupon. Strips are accorded unique CUSIPS, allowing them to be treated as treasury obligations. Strips allow construction of flexible floors.
Corporate bonds	A traded security, representing a debt obligation of a corporation.
Municipal securities	A traded security, exempt from all but the antifraud provisions of the Securities Exchange Act of 1934, representing a debt obligation of a public entity such as a city or town.
Zero coupon bonds	Zero coupon bonds are debt obligations that investors buy at a deep price discount, receiving back the full value of the bond plus imputed interest. Such obligations do not pay interest during the life of the bonds.
Fixed income annuities	A level stream of payments over a defined (capital markets, insurance) or open-ended (insurance) interval. Both capital markets and insurance firms issue these typically as level-payment bonds but only the insurance products utilize mortality credits.
Variable deferred annuities	Tax-deferred annuities with exposure to market risk via link to stock, bond or balanced fund investments held in separate accounts.
GMIBs, GMWBs, etc	Variable deferred annuity contract riders that provide downside protection through accumulation or income guarantees. These products attempt to bundle flooring and upside.
Unregistered debt	Unregistered debt obligations; direct lending agreements that are not in securitized form.
Stock and bond mutual funds	Mutual funds (stock or bond) are managed portfolios of stocks, bonds, or other securities. Shares are usually offered continuously and can be redeemed at any time based on the market value of the securities portfolio.
Limited partnerships	A limited partnership investment is a legal arrangement that entitles the household to have an ownership interest in a profit-making venture. The limited partnership structure is a very common way to own real estate, for example.

Precious metals	Investments in bullion, certificates, accounts, derivatives or shares of funds that directly own precious metals such as gold, silver or platinum.
Marketable art	Investments in paintings or other art that can be sold to others.
Gems	Investments in precious stones that have marketable value.
Numismatic & philatelic items	Investments in U.S. and other country's coinage or postage stamps, where such items have marketable value to collectors. These differ from other collectibles by the nature of their government issuance and the correspondingly stricter legal implications for counterfeiting vs. mere fakery.
Antiques	Investments in furniture and other old or rare articles that have marketable value.
Equity in real estate: primary home or other	Primary home is the place where household members live at least six months of the year. Other real estate may include second or third homes. Equity is the value of the real estate minus any mortgage obligations.
Vehicles	Automobiles, boats and other movable transportation equipment of the household. This may include transportation items that are held for reasons other than transportation, e.g., classic cars.
Listed and exempt securities	A security, representing a unit of ownership in a corporation, which is listed and traded on an exchange and subject minimally to the antifraud provisions of the SEC.
Unregistered securities	A security, representing ownership stake, debt obligation or derivative contract that is not listed and traded on an exchange. This would include hedge fund and private-equity shares, unregistered debt obligations trading or without a CUSIP, and OTC derivative contracts.
REITs	A traded security that represents ownership in a real estate investment trust.
UITs	**Unit investment trust** is a group of predetermined stocks or bonds that are packaged together and sold as a single security. Investors own shares (units) of the trust.
CMOs	Collateralized Mortgage Obligations are bonds that entitle holders to receive specific cash flows from large pools of home mortgages. Due to prepayment risk, we don’t count these in flooring.
ETFs	**Exchange Traded Fund (ETF)** is a single security that represents a portfolio of stocks designed to track one specific index.

Closed end funds	**Closed-end funds** are mutual funds with a limited number of shares, usually listed on a major stock exchange.
Business ownership	Value of investment that household has in a business venture.
Options	An option to buy or sell a specific capital-market risk for speculative or hedging purposes. Options are useful for hedging the traditional market risks associated with most portfolios: equity, interest rate and currency.
Commodities, Futures	Commodities futures, or futures contracts, are agreements to buy or sell a specific commodity at a specific date in the future at a specific price. As with options, these may be used for speculative purposes.
Group life insurance	**Group life insurance** is obtained through your employer or through membership in organizations and associations rather than directly from a life insurance company or a life insurance sales person, agent, or broker.
Individual life insurance	**Individual life insurance** is obtained directly from a life insurance company or from a life insurance sales person, agent, or broker rather than through your employer or other organization. **Whole (straight) life insurance** provides fixed coverage for the life of the insured; cash value which is a "savings" portion that is guaranteed in advance; and premiums that usually do not increase. **Term life insurance** provides coverage for a specific term and is usually guaranteed renewable until age 60, 65, or 70; no cash value; and premiums that increase or coverage that decreases with age. **Universal, variable, and interest-sensitive life insurance** have coverage that can fluctuate based on the performance of underlying investments; cash value that fluctuates depending on current interest rates or the performance of underlying investments; and premiums that may be fixed or flexible.

Health insurance	**Comprehensive medical insurance** usually pays 75% - 80% of both routine medical expenses and expenses for a major illness or injury. It usually has a small deductible and a large maximum benefit level. **Major medical insurance** usually pays 75% - 80% of expenses for major illness or injury but nothing for routine medical expenses. It has a deductible. **Basic medical insurance** only covers expenses of routine medical services and minor hospitalization costs. It generally has no deductible and will pay up to a specified maximum amount or for a limited number of days for an illness. **Individual health insurance** is purchased directly from a health insurance company or a health insurance sales person, agent, or broker. **Group health insurance** is obtained through employment or through membership in other organizations.
Health-related insurance	**Disability insurance** is insurance that pays persons who become disabled due to an accident or illness (other than job-related injuries) an amount that is a percentage of their previous income. **Long-term care insurance** is insurance that is available to provide medical and other services to patients who need constant care in their own home or in an assisted living facility or nursing home. **Optional life or disability insurance** is coverage that pays off a household's primary home mortgage if the borrower dies or becomes disabled (mortgage life insurance). **Accidental death and dismemberment insurance** covers accidental loss of life or limb. **Dental insurance** pays part of the expenses of both routine dental care and the treatment of dental disease or injury. **Eye care insurance** pays part of the expenses of routine vision examinations and usually one pair of glasses every two years.
Homeowners and renters insurance	Insurance covering homes or other facilities where the purchaser of the insurance has either owns or rents the property.

Vehicle insurance	Insurance covering cars, trucks and other vehicles.
Credit insurance	**Credit life or credit disability insurance** pays off a loan, credit line, or lease in the event of death or disability.
Business insurance	**Professional and regular liability insurance** is insurance that covers the policyholder's legal liability resulting from injuries to other persons or damage to their property. **Travel and accident insurance** is insurance that covers only accidents that occur while an insured person is traveling, usually on a commercial carrier.
Longevity insurance	A pure play as a hedge against outliving one's assets.
Checking accounts	**Checking accounts** may or may not pay interest. Checking accounts that pay interest usually have minimum balance requirements and may earn interest at a rate similar to passbook savings accounts.
Savings accounts	**Regular or passbook savings accounts** pay a rate of interest and have no penalties for early withdrawal.
Money market deposit accounts	**Money market deposit accounts (MMDAs)** have an interest rate that changes according to money market trends; each month a limited number of checks can be written and a limited number of withdrawals can be made.
Money market mutual funds	**Money market mutual funds (MMMFs)** are usually offered by stockbrokerage firms, mutual fund companies, and insurance companies. The funds are invested in short-term, highly rated instruments such as U.S. Treasury notes or bank certificates (but not in stock). They usually have initial deposit requirements of at least $1,000 and usually offer check-writing privileges.
CDs	**Certificates of deposit** (also called **CDs, savings certificates**, or **time deposit accounts**) require that funds remain on deposit for specific terms. Minimum deposits and interest rates vary by institution.
Savings bonds	**U.S. Savings Bonds** are bonds issued by the U.S. government in face-value denominations ranging from $50 to $10,000. The most common types are Series EE and Series I bonds. Both accrue interest immediately and continue to accrue interest for up to 30 years. The Series EE bonds pay 90% of the average 5-year Treasury market yields for the preceding 6 months; Series I bonds pay an inflation-adjusted rate tied to the Consumer Price Index.

Appendix D: Account Vehicle Definitions

Account Types	Definition
Asset management accounts	**Asset management account**, sometimes called an investment management account, combines money market funds, stocks, bonds, mutual funds and other investments, check writing privileges, a credit card or debit card, and pre-authorized borrowing against a margin account or line of credit. There is usually a minimum deposit of cash and/or securities for these accounts. If there are any assets with investment risks in the account, the total amount in that account is included under this category.
Packaged account	**Packaged accounts**, sometimes called **relationship banking accounts**, combine a household's checking, savings, certificates of deposit, and/or money market deposit accounts, usually at a bank, into a single package of services for which the household receives one consolidated statement each month. If there are any assets with investment risks in the account, the total amount in that account is included under this category.
Wrap accounts	**Wrap accounts** are accounts for which a financial professional is authorized to manage the assets in the household's account in one of two ways: 1) the professional buys or sells securities with the household's approval, or 2) the professional buys or sells securities without the household's approval. For both these types of management, the household pays in one of two ways: 1) a fee based on a percentage of the assets under management; or 2) a commission based on the number of trades.
Custodial accounts	**Custodial accounts** are accounts set up for, and managed on behalf of, minors. They contain securities, cash, and other property given to a minor under the Uniform Gift to Minors Act (UGMA) or the Uniform Transfers to Minors Act (UTMA).

Education savings accounts	**Education savings accounts** (also called **Education IRAs** or **Coverdell Education Savings Accounts**) are accounts that can be set up and contributed to on behalf of a child under the age of 18. Contributions are not tax deductible but withdrawals are not taxed if the funds are used to pay eligible education expenses (including elementary and secondary school expenses and tuition at private and parochial schools).
529 plans	**529 Plans** (**state-sponsored college savings plans**) are investment plans designed to encourage saving for future college costs while providing special tax benefits to the individual who established the plan. Upon withdrawal, the earnings are tax-free if used for qualified education expenses and they have much higher contribution limits than Education Savings Accounts.
Personal trusts	**Personal trusts** (**living trusts or testamentary trusts**) are established to provide income to someone. This income comes from assets administered and managed by a trustee. With a living trust, a person transfers ownership of assets to the trust during that person's lifetime. With a testamentary trust, the terms of a person's will place assets in trust when that person dies.
Private Banking	**Private banking** is a special service offered by many banks for selected customers. Usually, the private banking office is in a different location from all other bank offices (e.g., on a different floor). There are usually requirements, such as a minimum balance in an account and assets or a minimum income, to be eligible for these services. If there are any assets with investment risks in the account, the total amount in that account is included under this category.

IRAs/SEPs	An investment vehicle established by the taxpayer that allow individuals to contribute, transfer and grow their investments and earnings on a tax-deferred basis. If there are any assets with investment risks in the account, the total amount in that account is included under this category.
401k, 403b, 457	**Salary-reduction plans**, which include **401(k), 403(b), or 457** plans, allow employees of sponsoring companies to shelter part of their salary from current taxes. 401(k)s apply to employees of publicly- and privately-owned for-profit businesses; 403(b)s apply to employees of non-profit organizations such as educational or research institutions; 457s apply to employees of municipal or other government agencies. These are not defined benefit pension plans. Limits on the amount of salary an employee can shelter vary by type of plan and other factors such as employee income. Taxes on both contributions and earnings are deferred until withdrawal—usually after retirement or when an employee leaves the employer. In some cases, employers also contribute to the plan. If there are any assets with investment risks in the account, the total amount in that account is included under this category.
Keoghs	**Keoghs** are tax-deferred retirement plans for self-employed individuals.

Appendix E: The Retirement Management Professional (RPM) Job Description

RMPs are Professionals

The value of RIIA's "View Across The Silos" is often reflected in the difficulty of the questions that members ask. During a conference call, the following question came up: Is retirement planning a profession? The question startled me because I wanted to answer, yes, but I could not articulate clearly why I felt that way. My first reaction was to ask: Compared to what? What is the name of the other category if one is not a professional? As you will see in the rest of this article, the name of this other category is: technician.

This startling question lead me to looking again at sources that I had not read since the mid-1980s, including academic memos from David Maister who was then an Assistant Professor of Business Administration at the Harvard Business School. He was then, and he is still now, the "go-to" source when it comes to the topic of professional services firms. In particular, I wanted to look again at memo No. 8, titled "Brains, Grey Hair and Procedure."

In this memo, David breaks the world of service work into three categories:

- Brains – where people operate at the creative edge of their practice, dealing with unique projects that require fundamentally different customization from client to client.
- Grey Hair – where people deal with issues that are not dissimilar to what they have seen before and in fact consciously work to leverage and to scale up their past experience.
- Procedural – where people work with well-defined and well-specified tasks and seek to deliver services in the most timely and most cost-efficient manner.

Where does retirement planning fall on this spectrum? The question is important because the nature of the work drives the organizational structure of the services firm. For instance, organizational structures for:

- "Brains" services are very narrow with few entry-level people supporting top-level people who do the professional work. Strategy consulting services are the typical example.
- "Grey hair" services are broader organizations with more entry-level people supporting the top-level people. Engineering services provide a good example.
- "Procedural" services are very broad with many entry-level people managed by mid-level people who support the top-level people. Examples include accounting and tax preparation services.

David also presents a useful tool to differentiate professional work from technical work: How much of the services work performed is in "diagnostic" vs. "execution" tasks? The

more diagnostic work, the more professional the job becomes. The more execution work, the more technical the job really is. Likewise, the more diagnostic work performed, the more the job falls in the brains category. The more execution, the more the job falls in the procedural category. So, is retirement income planning a professional job or is it a technical job?

Let's compare investment planning to retirement planning in light of these categories and distinctions. Investment planning is about creating and managing expectations that the markets may deliver. How much of investment planning is in diagnostic work rather than execution work? Each one of us may have a different percent estimate. Similar to establishing liability in car accidents, at a minimum, which is 51%, which is 49%? What is your answer based on your own experience?

Retirement planning is different from investment planning because it is not as much about managing probabilistic expectation as it is about delivering specific outcomes. Retirement planning also means that the professional needs to learn about the client's human and social capital in addition to the client's financial capital. We can also expect that retirement planning will not be an exercise in presenting utopian perfection but instead an annual effort in discovering the most tolerable imperfections. How much of retirement planning is in diagnostic work rather than execution work? Again, each of us may have a different percent estimate. Would we not agree that everything else being equal, retirement planning is likely to involve more diagnostic work than investment planning?

Clearly, we will not resolve this question in this column. General answers are likely to be misleading. Specific answers require more analysis. Further analysis to determine the professional vs. technical nature of specific investment or retirement planning work would benefit from answers to the following questions:

- Who is the client?
- How long does the engagement last?
- What are the professional tasks involved?
- What are the deliverables?
- How much does each engagement cost?
- How do we bill and how often?
- Etc.

These are potentially uncomfortable ideas to contemplate. However, they are important ideas because another aspect of David's work is the creation of a mathematical formula to manage the professional or technical services firm.

Practice Management Guidelines for RMPs

Should we see retirement planning develop as a profession or a technique, we will also see the development of companies that focus on the management of both the professional

(or technical) talent and the client relationships. Either way, successful retirement planning institutions will emerge because of their mastery of two key competences: the management of the talent and the management of client relationships.

This observation should be placed in the context of our prior column about financial business models. The core business model of investment management is "collection" (of AUMs). On the other hand, retirement management's core business model is "payment" of monthly checks. Developing customized, high-diagnostic retirement plans to create monthly payments will lead to new forms of professional services firms. On the other hand, if the nature of the work is low diagnostic and low customization, the winning firms will follow a technical services model rather than a professional services model.

Having the right ideas about the nature of retirement planning work can mean the difference between staying in business and going out of business. To continue this discussion, let's take a look at some of the key assumptions behind David's formula for the management of the professional (or technical) services firm, including:

- Services firms sell time.
- The conceptual nature of the work determines the structure of the firm.
- People are the real assets of services firms.
- Key indicators used to monitor financial performance are different from key indicators used in product driven businesses. (In particular, gross margin is not an indicator of performance in a services firm.)
- Financial success is measured by net income per partner (owner).

There are six key indicators of success that are necessary to make the formula work:

- Available Hours: This is the capacity of the firm. It is expressed as the total number of available hours.
- Leverage: This reflects the nature of the services rendered by tracking the number of entry-level people that are necessary to support the top-level people. It is expressed as a ratio of the number of entry-level people to the number of top-level people.
- Average Billing rate: This reflects both the nature of the services rendered and the weighted average of the prices paid to the top and entry-level people. It is expressed in dollars.
- Average Utilization rate of the talent: This reflects how much of the people's time is billable. It is expressed as a percent of billed hours to available hours.
- Realization Rate: This reflects what invoices are actually collected. It is expressed as a percent of collected revenues to billed revenues.
- Net Margin: This reflects how much cash is available for distribution to the top-level people (partners or owners) after all the operating costs have been paid. It is expressed as a percent of net income (before partner/owner distributions) to total revenues.

It is now time to look at the formula. It is expressed as an equation with net income available for distribution per partner/owner on the left and the six key indicators on the left. These key indicators are multiplied, one after the other.

Net income per partner = Available Hours x (1 + Leverage) x Average Billing Rate x Average Utilization x Realization Rate x Net Margin

In other words:

Net Income per top-level people (partners or owners) = Capacity of the firm x Structure of the Firm x Price Level for the talent x Workload of the talent x Market Pricing Factor x Efficiency of Operations

The formula is interesting to contemplate. Let's look at the two extremes of brains vs. procedural work.

If the nature of the work is high diagnostic and high customization, there will be few entry-level people to support the top-level people. Therefore, available hours will be low and leverage will be low. Average billing rates will be high because of the high relative proportion of top-level people but the market will drive average utilization and realization. Net margin will reflect the frugality or profligacy of the top-level people.

On the other hand, if the nature of the work is high execution and low customization, there can be more entry and mid-level people to support the top-level people. Therefore, available hours will be high and leverage will be high. Average billing will be low because of the high relative proportion of entry-level people. The market will drive average utilization and realization. Net margin will reflect the budgeting and management skills of the firm.

Retirement planning practices are likely to fall in between these two extremes. Some practices may provide services that are heavy on diagnostic and highly customized. These would look like brains practices with the economics of professional services firms.

Other retirement planning practices may provide services that are heavy on execution and mass-production. These would look like procedural practices with the economics of technical services firms.

RMPs Require a Professional Designation

So, the question remains: Is a retirement planner a professional or a technician? If we frame this question in light of what we have just learned, we can see that the answer must address the question on both the individual financial advisor level and the level of the financial institution. This is the case because teams and not just individuals will be required to solve the range and complexity of retirement planning. At the individual level, some members of the team will focus on the diagnostic aspects of the work, while others will focus on the execution aspects. At the institutional level, retirement planning

firms may have more of a professional feel and than less of a technical feel because retirement planning requires a large amount of diagnostic work and client customization.

As delivered outcomes become more important than managed expectations, clients will seek thriving retirement planning institutions that are successful in managing the professional and technical talent as well as the client relationships. These firms will have a reputation for being able to customize the right retirement plans and to deliver reliable monthly checks.

What Is The Retirement Management Professional (RMP) Job Description?

Mission

A Retirement Management Analyst is responsible for helping investors plan, implement and manage every phase of their pre- and post-retirement life in a more holistic fashion to achieve and maintain their desired standard of living.

Responsibilities

Develop customized plans at the appropriate level of detail including:

Human Capital – Life-Cycle plans, longevity, personal lifestyle and extended family expectations

Social Capital – Existing corporate and governmental retirement benefit realities and trends, macroeconomic/inflation realities and expectations

Financial Capital – Collars around financial expectations, with potential for upside appreciation

Diversified Investments among risky assets – Risky Assets

Pooling Risks for health and mortality – Insurance

Risk Transference – Hedges

Advice/Reserve – Risk-free precautionary balances

Implement, monitor and adjust the financial capital plan as necessary during pre- and post-retirement phases, and assist the investor in a realistic self-assessment of all aspects of their plan during implementation.

Assist the investor in the managing toward the human capital lifestyle adjustments necessary to implement every phase of the plan, particularly given the realities of emerging social and financial capital environment during the life of the plan.

Qualifications

Achieve and maintain financial proficiency at least on par with the Certified Financial Planner.

Achieve and maintain proficiency in insurance product management and underwriting equivalent to the Chartered Life Underwriter.

Possess proficiency in demographic and psychographic theory through psychology and psychometric testing methodologies to facilitate client guidance on human capital decision making.

Possess proficiency in macroeconomic and capital markets theory in order to facilitate the use of sophisticated quantitative predictive investing decision theory in asset allocation processes and derivative driven structured products in risk management.

Have a minimum of three years career experience in the field implementing plans on behalf of clients in the field of retirement counseling.

Meet the highest ethical standards as both a financial fiduciary and life counselor.

Appendix F: RIIA's Body of Knowledge

RIIA's Body of Knowledge is organized as a database to capture the past, current and future knowledge that Retirement Management Professionals (RMPs) will need to know in order to serve their client well.

This database architecture makes it possible to:

- Articulate where prior knowledge from other designations fit
- Differentiate the unique value and contribution of the Retirement Management Analyst (RMA) curriculum
- Integrate future developments

The following slides describe the high-level structure of RIIA's Retirement Management and Retirement Income Body of Knowledge.

The Professional Skills of the Retirement Management Professional

The Body of Knowledge starts with the skill set identified in the RMP Job Description.

Professional Skills of the RMP

- **Professional and Practice Management Skills, Technical Knowledge, Ethics**
  - **(1) Form an Opinion:** Markets, Trends, Investors, Products, Processes
  - **(2) Build a Floor:** Create a Retirement Management Plan based on the Investor's LifeCycle Profile
  - **(3) Exposure to Upside:** Based on the Investor's Retirement Risk Profile, Create a Retirement Income Plan for the Investor's Financial Capital and Implement the Risk Management Approach Allocations for the Investor's Financial Capital
  - **(4) Understand the Relevant Regulations** in order to Implement the Retirement Management and the Retirement Income Plans
  - **(5) Know Specific Products and Processes** in order to Implement the Retirement Management and the Retirement Income Plans
  - **(6) Practice the Ethics of the Retirement Management Professional** and Understand the Range and Types of Business Models

The Spokes of RIIA's Advisory Process

In order to classify the Learning Objectives, the skill set of the RMP is sub-divided by Lesson and Topics and matrixed by the Spokes in the RIIA Advisory Process.

RIIA's Body of Knowledge

- **Learning Objectives Matrixed by:**
  - Rows of Professional Skills (6)
    - From RMP Job Description
      - » Form an Opinion, Build a Floor, Expose to Upside, Understand Regulations, Know Products and Processes, Practice Ethics of RMP
    - by Lesson and Topic
      - » Title, Summary, Key Terms, Sources, Detailed Content, Exam Questions & Answers
  - Columns of Curriculum Category (8)
    - » Shared Foundations, Client Relationship, Household Balance Sheet, Cash-Flows and Life-Cycle Profile, Retirement Risk Profile, Risk Management Allocations, Product Implementation, Advanced Content

The Top Level View of the Body of Knowledge

Adding a “Shared Foundation” column and an “Advanced Content” column to the Spokes in RIIA’s Advisory Process completes the matrix.

Body of Knowledge

Professional and Practice Management Skills, Technical Knowledge, Ethics	Lesson	Topic	Category 1 - Shared Foundations	Category 2 - Client Relationship	Category 3 - Household Balance Sheet	Category 4 - Cash-Flows & Life-Cycle Profile	Category 5 - Retirement Risk Profile	Category 6 - Risk Management Allocations	Category 7 - Specific Product Implementation	Category 8 - Advanced Content
(1) Form an Opinion: Markets, Trends, Investors, Products, Processes										
(2) Build a Floor: Create a Retirement Management Plan based on the Investor's LifeCycle Profile										
(3) Exposure to Upside: Based on the Investor's Retirement Risk Profile, Create a Retirement Income Plan for the Investor's Financial Capital and Implement the Risk Management Approach Allocations for the Investor's Financial Capital										
(4) Understand the Relevant Regulations in order to Implement the Retirement Management and the Retirement Income Plans										
(5) Know Specific Products and Processes in order to Implement the Retirement Management and the Retirement Income Plans										
(6) Practice the Ethics of the Retirement Management Professional and Understand the Range and Types of Business Models										

Appendix G: Typology Of Financial Professionals

During the February 2007 "Managing Retirement Income" conference, David McClellan presented the following segmentation[7] of financial professionals:

Brokers
Asset gatherers
Investment managers
Insurance planners
Financial planners
Wealth managers

Details including the behavioral "skews" of these financial advisor segments included the following descriptions:

Brokers

Brokers are transactional sales representatives. Their primary investment vehicles tend towards mutual funds, variable annuities, and individual equities. These vehicles are mostly Series 7 and Series 6 registered as well as insurance licensed. Their primary channels include banks, insurance broker/dealers and wirehouses. There are about 175,000 such product sellers and their average assets-under-management (AUMs) per investor client range from $50,000 to $200,000.

Asset Gatherers

Asset gatherers are relationship-driven salespersons who outsource the investment management function. The primary investment vehicles include mutual funds and separately managed accounts (SMAs). They tend to be Series 6 and 7 registered. Their primary channels include wirehouses and independent broker/dealers (IBDs). There are about 95,000 asset gatherers and their average AUMs per client range from $200,000 to $10 million.

Investment Managers

Investment managers are analytical portfolio managers who do not focus their practice on having high client skills. The primary investment vehicles they use include mutual funds, exchange traded funds (ETFs), SMAs, and individual equities. They often are Series 6, 65 and 7 registered. They also favor the "Chartered Financial Analyst" (CFA) designation. Their primary channels include IBDs, registered investment advisors (RIAs), and wirehouses. There are about 50,000 investment managers and their average AUMs per clients range from $200,000 to $10 million.

Insurance Planners

Insurance planners are sophisticated insurance salesmen who sell life insurance solutions. The primary investment vehicles they favor include life insurance and variable annuities. They often hold specialized insurance designations. Their primary channels include

[7] **Source:** www.riia-usa.org**, 2007 Annual Managing Retirement Income Conference February 2007**

IBDs, Insurance broker/dealers and wirehouses. There are about 37,000 insurance planners and their average AUMs per client range from $50,000 to $3 million.

Financial Planners

Financial planners offer comprehensive financial planning processes and are often fee-only. The primary investment vehicles they prefer include fee-based planning processes and software, mutual funds, ETFs and SMAs. Many are series 6 registered and they favor the CFP designation. Their primary channels include IBDs, RIAs, and wirehouses. There are about 18,000 financial planners and their average AUMs per client range from $50,000 to $3 million.

Wealth Managers

Wealth managers are members of high net-worth (HNW) teams who act as the investor's chief financial officer. The primary investment vehicles they use include SMAs, hedge funds and trusts. They hold various registrations, licenses and certifications. Their primary channels include wirehouses, IBDs, and bank broker/dealer or trust departments. There are about 24,000 wealth managers and their average AUMs per client are greater than $3million.

Glossary

Accumulation Portfolio: An accumulation portfolio is a portfolio that takes the portfolio objective as maximizing expected return for a given level of risk. This approach works best for those whose use of the portfolio for funding consumption is sufficiently far in the future that it is sensible to act as if the investor never expects to need to liquidate assets to fund consumption.

Annuity (nominal): A level stream of payments over either a fixed term or indefinite period of time. Most of the traditional annuities pay for the lifetime of the holder. In that regard, indefinite annuities combine mortality credits with a perpetual bond. The probabilities of your survival over future dates make annuities less costly than perpetual debt.

Annuity (real): An annuity where the stream of payments over either a fixed term or indefinite period of time rises or falls with some measure of prices. The annuity's flows adjust in order to provide cash flows that have the same purchasing power in all periods.

Balance Sheet (corporate): A corporate balance sheet is a double-entry design for displaying assets on one side and the sum of liabilities and owners equity on the other. Owner's equity plays the role of the balancing amount. When assets meet or exceed liabilities the firm is said to be solvent. There are strict accounting rules that govern construction of corporate balance sheets. Some of these rules are useful for standardizing the content. However, the accounting rules can obscure the true value of the entity.

Balance Sheet (economic): An economic balance sheet is a double-entry design for displaying assets on one side and the sum of liabilities and owners equity on the other. When trying to find a market value for an entity, an economic balance sheet is a valuable tool. This type of balance sheet attempts to value the entity as a portfolio of assets, some of which are not tangible or otherwise ineligible for corporate accounting. For example a physician's practice would show corporate assets of the historical cost of the building, examination table and the various examination doohickeys. In contrast, the economic balance sheet would display current market values of the same assets plus the discounted value of the patients expected to continue after a change in ownership. The economic balance sheet would show a different value of the firm than a corporate balance sheet.

Balance Sheet (retiree): The retiree balance sheet is an economic balance sheet that is designed to value assets and liabilities that are both tangible and intangible at proper market values.

Bottom-Up Estimates: A process of estimating amounts by beginning at the level of greatest detail; an attempt to estimate using a precise list of the items and amounts required (see Top-down).

Certainty Equivalence: The amount where the utility function provides the same result as the expected utility of the risky prospect. $U(X_{CE}) = E\left[U\left(\tilde{X}\right)\right]$

Constant Proportion Portfolio Insurance: Constant Proportion Portfolio Insurance (CPPI) is a risk management method for dynamically rebalancing a portfolio to keep constant the proportionate risk of falling below a minimum amount. CPPI is a useful method for dynamically allocating assets that allows for enhancing expected yield by coupling with enhanced vigilance to ensure that some specified minimum level portfolio value is preserved.

CPPI Notes: CPPI notes are structured notes based on CPPI methodology that provide principal protection and upside exposure.

Consumption Floor: The minimum amount of funding needed per period to satisfy the client's subjective minimum consumption needs. The amount needed depends on the lifestyle that the client minimally feels it necessary to maintain.

Credit Risk: The risk that a counterparty will renege or be unable to pay a contractually obligated amount owed to you.

Decreasing Relative Risk Aversion: Decreasing Relative Risk Aversion (DRRA) is the type of risk-averse behavior that most people exhibit. Client's exhibiting DRRA behavior will be more willing to risk a proportion of their wealth as their wealth rises. Conversely, during retirement, when wealth is being consumed, DRRA behavior is consistent with increased risk aversion.

Diversification: Diversification is the act moving one's eggs into multiple baskets. Diversification spreads the risk around in attempt to reduce the influence of any element of a particular risk. Diversification may reduce risk, but it is only under special circumstances that diversification eliminates risk. As many have recently rediscovered, diversified portfolios reduce the specific risk of a particular asset but still contain risk related to the overall condition of financial markets.

Dynamic Allocations: An allocation of funds to investments where the proportions are changed by design is known as a dynamic allocation. The two main types of dynamic allocations are discretionary and formulaic. Discretionary allocations are changed based on a flexible but defined standard. Formulaic allocations change based on rules that are preset (see Static Allocation).

Floor: (see Consumption Floor)

Income Statement: Display of income from all sources and expenses paid out.

Market Risk: The probability that the market value of assets held in a client's portfolio could change in a way that adversely affects the portfolio. For a long position, the risk is a reduction in price.

Onboarding: An admittedly awful bit of jargon referring to the process of bringing in a new client and integrating the client relationship into the business practices of the advisor.

Point of Smoothest Transition: The point in time or age of the client when the allocation to fixed-income securities is closet to that client's proposed allocation to flooring in a retirement-income portfolio is known as the point of smoothest transition.

Present Value: The value as of today for something that will not occur until a future date. For example, it is the value that would be placed on receiving $100 one year from today. At the personal level the present value that you would place on receiving $100 a year from today depends on your rate of impatience and the risk of the prospect. In aggregate the market value of receiving $100 one year from today is observable by reference to the one-year rate of interest.

Risk Pooling: Related to insurance. For well-behaved risks, pooling allows risk to be spread across a spectrum of individuals.

Risk Sharing: (see Risk Pooling)

Risk Transference: Risk transference allows the risk of an event to be completely transferred to another party. Typical risk-transference instruments include option instruments such as puts and calls.

Static Allocations: An allocation of funds to investments where the proportions remain fixed from inception to maturity is known as a static allocation. This includes allocations that are rebalanced periodically to remain on a static target (see Dynamic Allocation).

Top-Down Estimates: A process of estimating amounts by beginning at a very high level; an attempt to estimate starting with an approximation of where you think you might end up before adding detail (see Bottom Up).

RIIA's Advisory Process
How To Benefit From "The View Across The Silos": From Investment Management to Retirement Income and Retirement Management

François is co-founder, Chairman and Executive Director of the Retirement Income Industry Association, (RIIA). Based in Boston and drawing members from all segments of the financial services industry, RIIA (www.riia-usa.org) provides "the View Across the Silos." The association serves both as a think tank to analyze retirement income issues and as an incubator to facilitate the exchange of new ideas, concepts and knowledge among institutions interested in building retirement income businesses.

For more than 20 years, François has led teams that build successful technology solutions for the financial industry. His background combines a history of entrepreneurship, line experience at financial service organizations, and corporate strategy consulting.

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Mike worked at Merrill Lynch for over 10 years. On the Wealth Management side, Mike worked in the Financial Products Group (FPG), where he ran the Strategic Solutions team and developed a platform for retirement income. Mike was recruited into the FPG after spending a number of years as a senior-level Risk Manager. He previously held positions as the Global Head of Commodities Risk and as the Global Head of Quantitative Risk Management. Prior to joining Merrill, Mike had been a consultant at Deloitte, an assistant professor at the Graduate School of Business Administration at Fordham University and a Visiting Associate Professor at the University of Wisconsin - Madison. Mike holds a Ph.D. in Finance from the University of Wisconsin - Madison and has published influential articles in both the areas of derivatives pricing and investment analysis.

Retail Price: $150