

SESSION 203

Retirement Planning Models Meet Holistic Financial Wellness: How to Incorporate Non-Traditional RIGs

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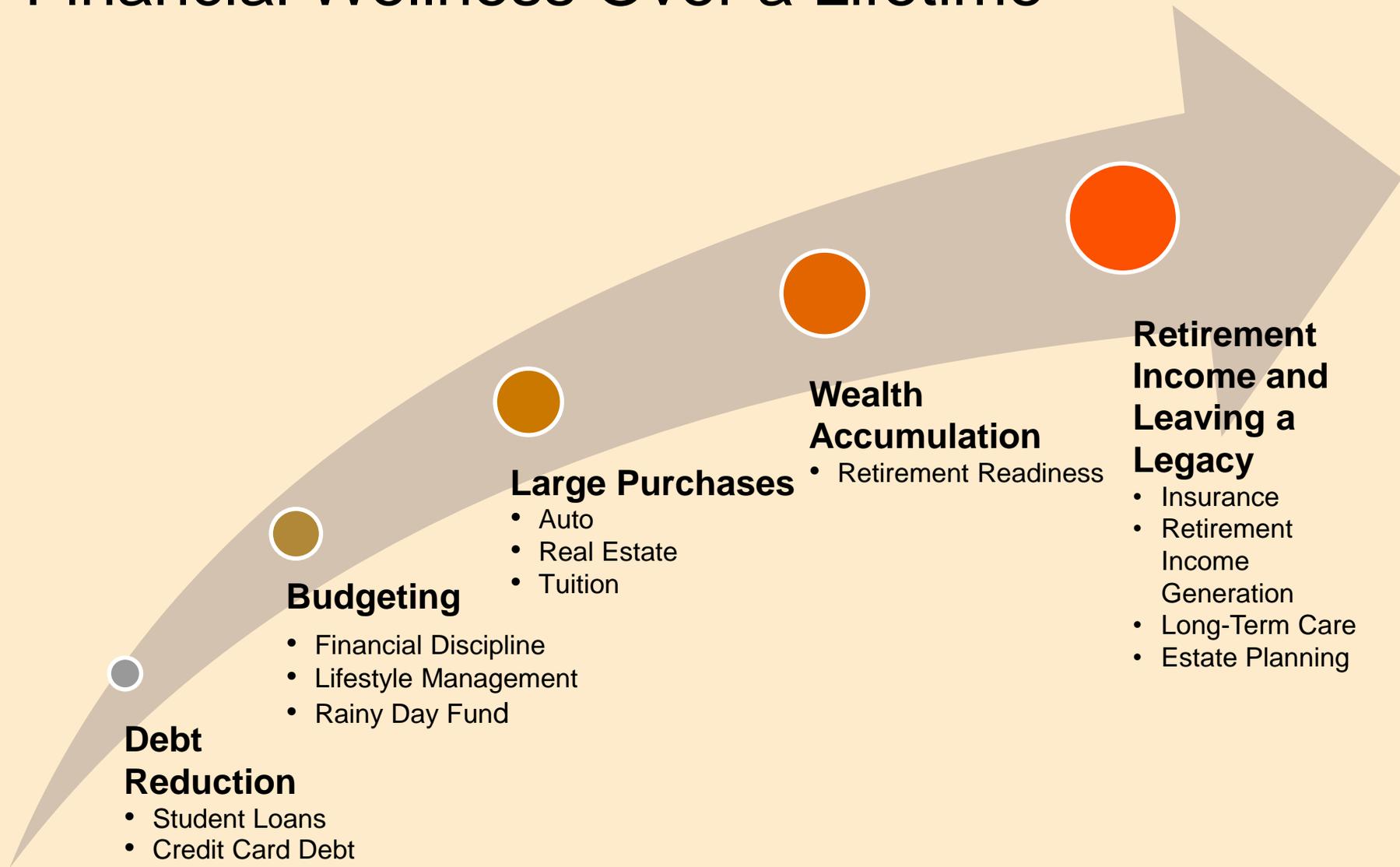
Retirement Planning Models and Holistic Financial Wellness

- What is Holistic Financial Wellness?
- Retirement Income Generators (RIG) and Retirement Planning Models
- Alternative RIG's and Why They are Important
- Challenges for Modeling Holistic Financial Wellness
- A Deeper Dive on Home Equity
- Concluding Thoughts

Financial Wellness – Actuarial Implications of a Holistic View

- Financial Wellness has become a very big issue; with both employers and their employees. Unfortunately, most advisors approach the issue in “piecemeal” fashion
- Even the actuarial profession has, in our opinion, been overly narrow, focusing on Financial Wellness only from a “retirement readiness” perspective
- Specifically, actuaries and benefit consultants have historically focused their analysis on projected retirement income benefits (DB and SS), “replacement ratios”, the accumulation of adequate retirement savings, and strategies for managing the “decumulation phase” of an individual’s post retirement life
- Holistic Financial Wellness includes much more and in our view should consider financial issues over an individual’s entire lifetime (and beyond)

Financial Wellness Over a Lifetime



Financial Wellness – Actuarial Implications of a Holistic View

- Even when it comes to planning for retirement itself, holistic financial wellness entails considering factors that go beyond traditional retirement planning including the fact that most employees
 - Have significant equity in their homes and many still have a mortgage when they retire
 - Often have Life Insurance policies, sometimes with significant cash value
 - Have significant legacy objectives either with respect to children or causes
 - Have a “personal rate of discount” significantly different than what an actuary might think is “reasonable”

Financial Wellness – Actuarial Implications of a Holistic View

- In addition to the objectives/circumstances outlined on the prior slide, it is our view that retirement planning should include a great deal of flexibility to make “mid course corrections”. This is necessary because:
 - The financial market, geo political, or macro economic environment may change dramatically at some point during the retirement period
 - The individual’s socio-economic or personal circumstances may change in unforeseen and dramatic ways while retired
 - The individual’s objectives or desires (e.g., personal rate of discount) may change dramatically during retirement

Traditional Retirement Planning Tools

Tools available from Plan Sponsors, TPA's and over the web cover the spectrum of retirement and financial planning, from basic retirement needs to robust financial planning.

1

Deterministic
Retirement
Modeling

2

Stochastic
Retirement
Modeling

3

Transactional
or Automated
Retirement
Planning

4

Financial
Well-Being



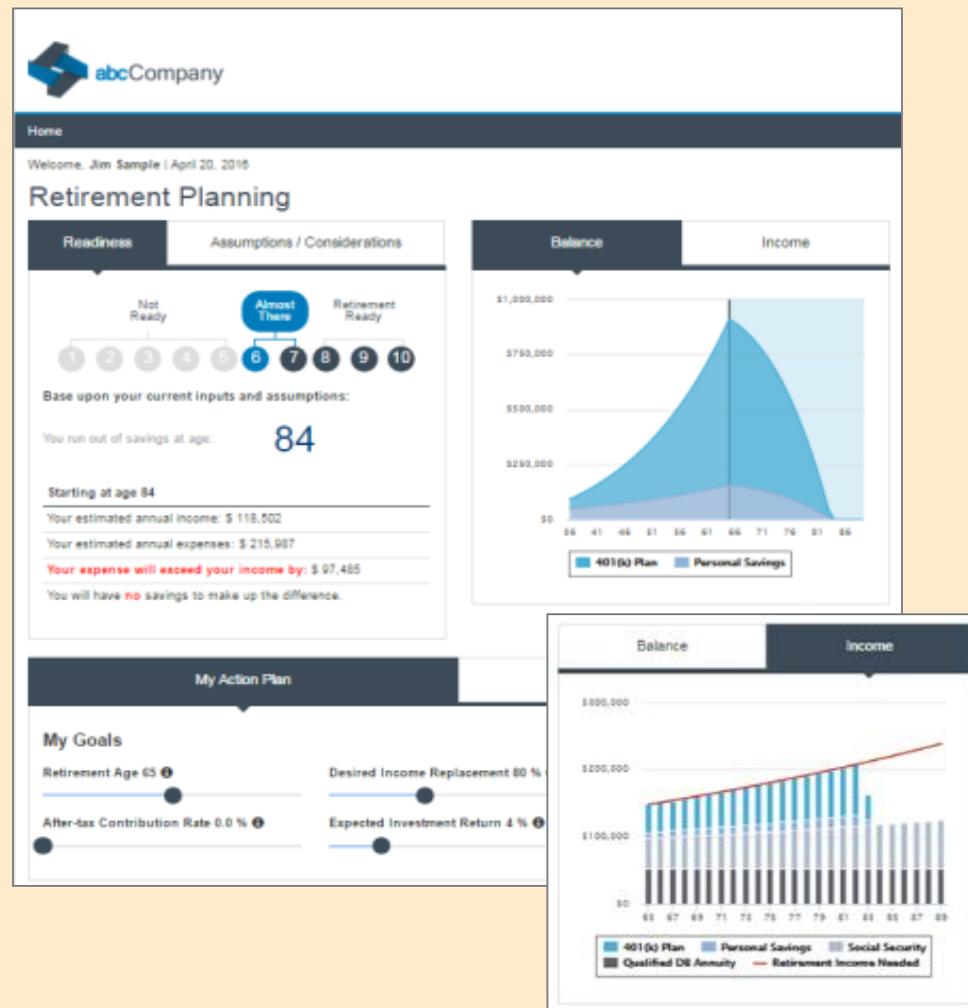
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1) Deterministic Planning Tools

Comprehensive modeling solutions that allows users to include all relevant retirement data, and project asset accumulation. Users perform iterative “what if” scenarios to find out how future economic changes affect their projected retirement scenarios.

Results focus on:

- Asset accumulation: Modeling the growth of your retirement savings including pension annuities
- Post-retirement expenses: Taking into account expenses anticipated by the user in retirement
- Post-retirement income: what are the sources of income and how are they utilized in retirement
- Longevity: Instead of looking solely at retirement event, projects retirement into the future



2) Stochastic Modeling Tools

Generally employees set their retirement goals and these modelers evaluate the likelihood of meeting their goals:

- **Stochastic modeling** – no asset return assumption entry required, 1,000's of scenarios based upon the participants actual investments are run to determine confidence intervals for achieving retirement goals

Results Focus on:

- Ability to meet goal
- Duration of retirement
- Asset allocation appropriateness
- Makeup of your RIG's

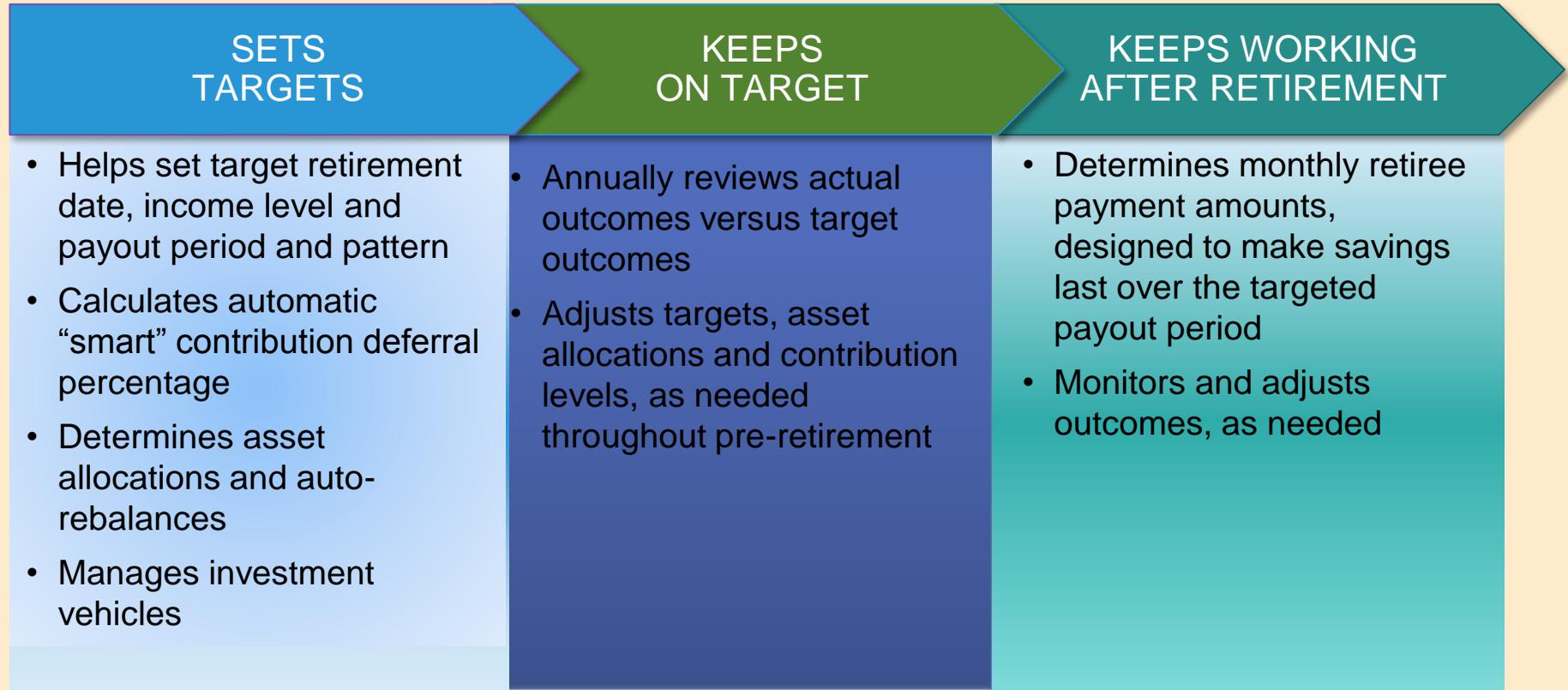
Note that while deterministic modelers rely on the users to make assumptions about the future, stochastic modelers take this out of their hands leaving predictions to the experts

The screenshot displays the 'Model Your Retirement' web application. At the top, there's a navigation bar with 'Model Your Retirement', 'Personal Information', and 'Resources'. Below the navigation bar, a welcome message 'Welcome, Jim | Email' is shown. The main content area is divided into several sections:

- Are you correctly preparing for retirement?**: A text block explaining the importance of understanding retirement needs and the tool's traffic light system.
- Simple Steps**: A video player showing a 'Use the Retirement Scorecard' video.
- Your Retirement Scorecard**: A summary card showing a 28% probability of making the retirement goal, with a red light icon.
- Contributing Factors**: A table listing factors and their status:

Factor	Value	Status
How long your assets will last after you retire (on average)?	13 years	Red (Critical)
Is your current contribution level appropriate?		Red (Critical)
Is your asset allocation age-appropriate?		Yellow (Warning)
Percent of assets you have today compared to what you should have?	0%	Red (Critical)
Percent of future income from annuities and Social Security?	23%	Yellow (Warning)
- Retirement Account Balance Accumulation And Draw-down Probability**: A chart showing the probability of meeting retirement goals over time, with three scenarios: Optimistic (teal), Average Expectation (yellow), and Pessimistic (red).
- Steps you can take:** A list of actionable items:
 - Can you afford to save more? Try increasing your savings rate.
 - Can you achieve a greater return on your assets? Try changing your asset allocation.
 - Can you retire later in life or perhaps early? Try increasing or decreasing your retirement age.
 - Are there other retirement assets you have not included? Input your other assets in the Savings tab.
 - Are you able to change your lifestyle in retirement to lower your income replacement goal? Decrease your Income Replacement Percentage (IRP) and/or use the IRP estimator.

3) Transactional or Automated Planning Tools



4) Financial Well-Being Tools

Spend

Save

Invest

Protect

A comprehensive financial well-being solutions :

- Incorporate total financial needs, not based solely on retirement
- Allow data aggregation
- Optimization of financial data and decision-making support across all financial needs
- Allow users to execute transactions

Retirement Income Generators

- In “**Optimizing Retirement Income Solutions in Defined Contribution Retirement Plans**” a white paper recently published by the Society of Actuaries, authors Steve Vernon, Wade Pfau and Joe Tomlinson have done an extraordinary job in analyzing the effectiveness, separately and in combination, of a number of important Retirement Income Generators (“RIG’s”) that most 401(k) participants will have access to when they retire. Such RIG’s
 - Systematic withdrawals from retirement savings accounts
 - Fixed guaranteed annuities
 - Variable Annuities with Guaranteed Withdrawal Benefits
 - Social Security
 - “QLAC’s”
- For individuals, advisors and Plan sponsors focused on retirement savings, the above is a great start but, as the authors point out, Financial Wellness includes far more than just managing Qualified DC Plan and IRA balances.

Alternative Retirement Income Generators

- Due to its focus on Qualified Savings Plans, the SOA paper only addresses the RIG's that can be “fueled” by assets accumulated in those plans. However, there are several other alternative or “hybrid” RIG's to consider. In particular there are RIG's that:
 - Combine legacy objectives and retirement income generation
 - Integrate the effective use of existing Life Insurance policies with retirement strategies
 - Make effective use of home equity post retirement

Alternative RIG's – CGA's

- Charitable Gift Annuities (“CGA’s”)
 - Sold by almost every large Charity, University and Not-for-Profit Healthcare System
 - Are no different than commercially available annuities except that NFP issues the contract, has the obligation to make payments and collects the “residuum” when the annuitant dies AND the annuitant receives a tax deduction for the PV of expected amount reverting to the NFP
 - Basis for tax deductions governed by IRS regulations
 - Immediate and Deferred fixed annuities available on both a single and joint life basis
 - Price of a CGA is usually materially higher than that provided by Insurance Carriers, but tax deduction (as well as value of providing a legacy) offsets cost differential

Alternative RIG's – CRT's

- Charitable Remainder Trust (“CRT's”)
 - Essentially operates like a CGA except that funds are held in Trust by NFP and there is no contractual obligation to continue payments to donor if funds are exhausted.
 - Financial, legacy and tax considerations are the same except no longevity insurance is provided
 - Somewhat more flexible than CGA's in that different payout patterns can be developed (% , fixed dollar, level vs increasing etc.)
 - More complicated to set up and administer (NFP may require donor's attorney involvement) but also can be more tax effective (e.g. CRT can receive appreciated property and avoid capital gains tax)

Alternative RIG's – Life Insurance

- Many people approaching retirement age own significant amounts of Life Insurance. Often these policies have significant cash values and/or paid up death benefits that might be integrated into a retirement income strategy;
 - Cash Values can be turned directly into an RIG through basis withdrawal and/or loans. Such income is usually received tax free
 - Death benefits can be used as spousal protection to enable use of single life annuity option (vs J&S option)
 - Death benefits can be used as a hedge against long term care insurance (life settlements etc.)
 - If individual's health status is impaired, death benefits (and ability to increase them through dividend redeployment or additional premiums) can be an extremely financially efficient way of obtaining otherwise needed coverage

Alternative RIG's – Home Equity

- The value of an individual's home and the debt associated with the mortgage has been the “elephant in the room” when Financial Wellness is typically discussed
- Average net home equity is \$150,000 and in total is over \$7 trillion, almost double the amount of assets in all 401(k) Plans
- In addition about 30% of all retirees still have a mortgage
- Home Equity can be used as an RIG in a variety of ways. We will address that in more detail in much of the rest of this presentation
- The above notwithstanding, most retirement planning models do not adequately address home equity

Challenges for Modeling Holistic Financial Wellness

- **Basic Challenges**
 - The more inputs the less usage
 - Communication of complex, or unfamiliar, concepts to the users
 - Basic to Advanced
- **Specific Challenges**
 - Alternative RIG's complexity
 - **Example: Using Home Equity**
 - Assumptions for projecting amount of Home Equity
 - Interest environment at point of accessing Equity
 - Form of payment to choose, if not an annuity how are the other choices used to create Retirement Income
 - Empty Nesters

A Deeper Dive– Home Equity

- Three Aspects of Home Equity:
 - 1. HOW to access home equity? By means of a “reverse mortgage.”
Next slide will spell out the basic features of reverse mortgages
 - 2. WHY access home equity? To enhance three major financial objectives of retirees. Slide after next will reiterate those objectives.
 - 3. USE of home equity to REDUCE “Sequence of Returns Risk.”
Subsequent slides examine some strategies to use home equity to reduce the Sequence of Returns Risk.

Aspect No. 1: Basic Features of Reverse Mortgages

- 1. Loan. Secured by home, with no requirement to repay until borrower permanently leaves the home. The loan is non-recourse.
- 2. Age of Borrower. Youngest borrower must be at least 62.
- 3. Amount Available. Based on value of home (capped at \$625,500), it is a percentage of that value dependent upon age of borrower and “expected interest rate” (10-year LIBOR). Generally the percentage is in the range of 45% to 65%.
- 4. Interest. Generally variable (based on 1-year LIBOR), accrues and adds to debt.
- 5. Loan Proceeds. Can be taken as lump sum, lifetime payment, or line of credit, or any combination of the three.
- 6. Odd Feature of Credit Line: Available amount grows over time.

Aspect No. 2: Major Financial Objectives of Retirees

- Major financial objectives of retirees are:
 - 1. Retirement Income Generation. The income should be structured to provide the maximum amount consistent with cash flow survival throughout retirement (at constant purchasing power).
 - 2. Cash Available for emergency (or other unanticipated needs).
 - 3. Legacy. For family members and/or charitable beneficiaries.
- We will show 2 examples to illustrate how all three of these objectives are better achieved by the use of reverse mortgages.

Aspect No. 3: Reducing “Sequence of Returns Risk”

- For many retirees, home equity is generally not, for retirement income purposes, treated as a source of retirement income. Yet it is often of the same magnitude as the retiree’s invested assets. We demonstrate a strategy, using a reverse mortgage credit line, to draw upon some of that home equity to reduce the sequence of returns risk.

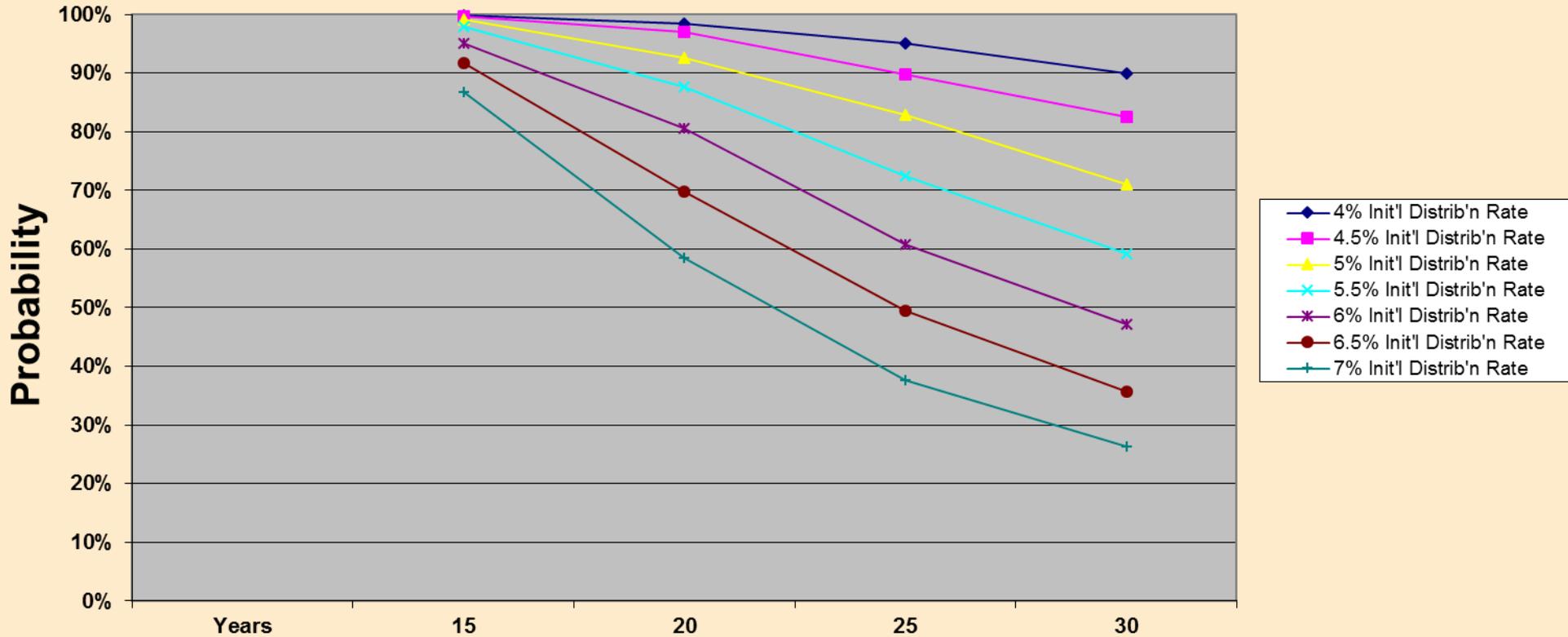
Aspect No. 3 (Cont'd): Reducing “Sequence of Returns Risk”

- The particular point is that, unlike other approaches to stabilizing retirement income (i.e., to buffering the effect of sequence of returns risk), the reverse mortgage has three unique advantages:
 - 1. It does not itself use any of the invested assets. In other words, it is not a different deployment of some or all of the invested assets; instead, it is a separate asset, used as an adjunct to the invested assets;
 - 2. The strategy we will demonstrate is specifically and directly targeted (even “pinpointed”) at the sequence of returns, by being used only when the investment returns are adverse; and
 - 3. The use of a reverse mortgage does not consume (during retirement) any of the home. In other words, using a reverse mortgage does not at all diminish the retiree’s benefits or enjoyment of living in his/her/their own home.

Aspect No. 3 (Cont'd): Offsetting Sequence of Returns Risk

- The next slide shows how the probability of cash flow survival (which is the complement of the probability of cash flow exhaustion) depends upon the draw rate when only the securities portfolio is drawn upon. (Recall that cash flow survival is one of the retirees' three financial objectives, mentioned in the previous slide.) As the slide shows, the higher the draw rate, the greater the probability of cash flow exhaustion, which is the ultimate result of the adverse sequence of returns.

Cash flow survival probability (withdrawals from account only)



How to Minimize the Sequence of Returns Risk

- Two Ways:
 1. Draw from a different source in time periods following periods of negative or weak investment returns. For example, from a reverse mortgage credit line.
 2. Draw the same amount from a larger portfolio of securities.
- The following two examples will illustrate these two ways of minimizing the risk of cash flow exhaustion.

Both Examples are based on Retiree #3 in the SOA Report

- Retiree #3 is a married couple, both age 65, with invested assets of value \$1 million.
- The SOA report doesn't tell us about their home. The two examples will have different home situations.
- In this presentation we examine only one of the three retirees mentioned in the SOA report, but similar considerations apply to the other two retirees, and indeed to a wide range of retirees.

Example 1: Home is owned outright

- In Example 1, we assume:

- (1) That the home is worth more than \$625,500 and that it has no mortgage against it; and
- (2) That the couple need, for living expenses, \$55,000 per year (adjusted for inflation) plus Social Security (which is automatically adjusted for inflation). As shown in the previous slide, if this couple only draws the \$55,000 from the securities portfolio, which is a 5.5% draw rate, they have less than a 70% probability of cash flow survival, which means a greater than 30% probability of cash flow exhaustion in a 30-year retirement.

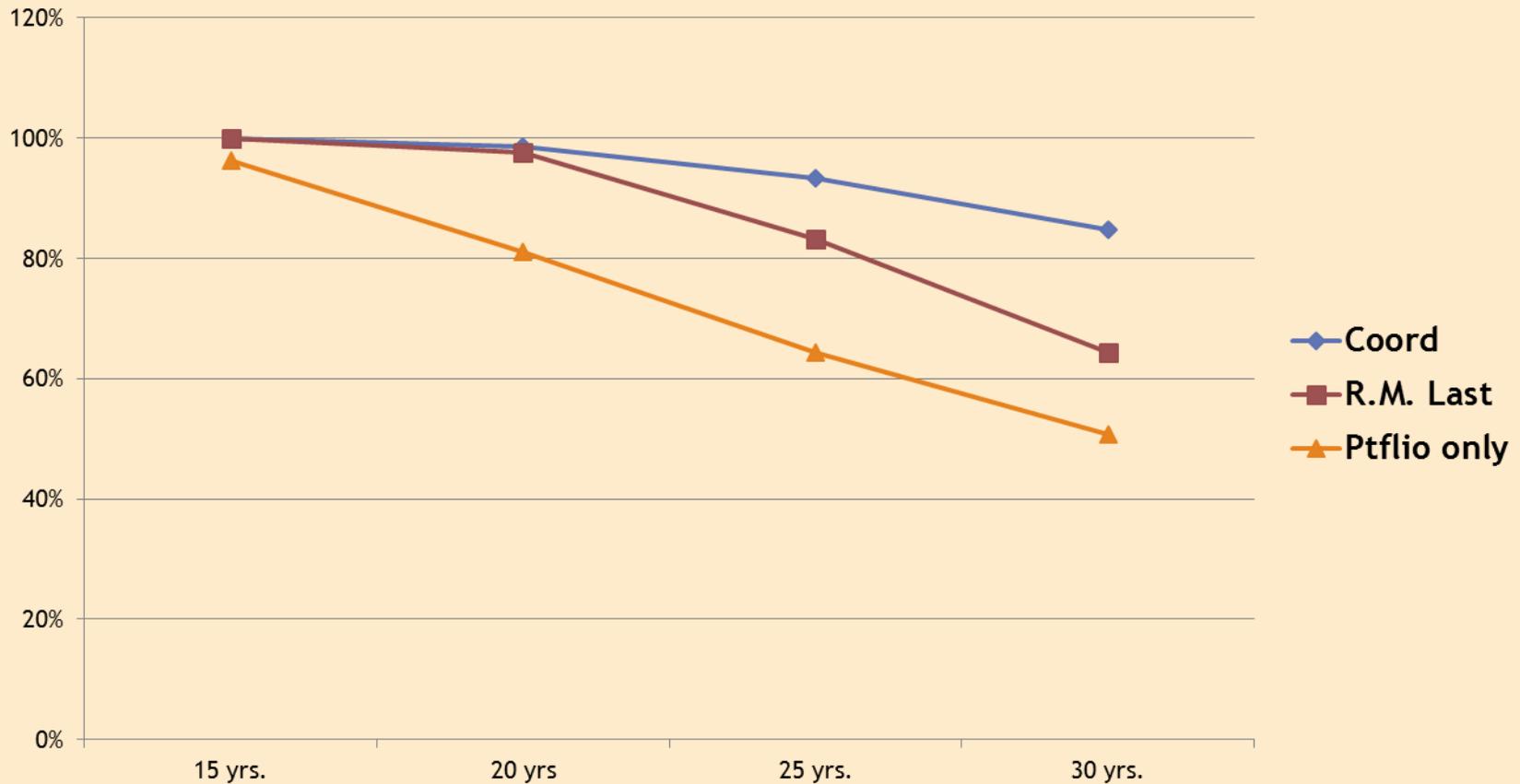
Example 1, (Cont'd):

- Two Strategies to Reduce Sequence of Returns Risk by Drawing on a Reverse Mortgage Credit Line:
 1. The Last Resort Strategy: A passive strategy, “Wait and See.” If the securities portfolio doesn’t run out of money by the end of retirement, do nothing. In other words, draw on the home equity only if and when the portfolio is exhausted.
 2. Coordinated Strategy: An active strategy, “Coordinated” with the investment returns. The algorithm is simple: After any year in which the investment returns have been negative or weak, the retirement income is drawn from another source. The other source, the one on which we focus, is the reverse mortgage credit line.
- Let’s test these strategies, using Monte Carlo simulation.

Results of the tests using Monte Carlo Simulation:

- The next slide, showing probability of cash flow survival as a function of number of years in retirement, shows the results of using the two strategies, and of neither strategy.
- Coordinated Strategy. The top line shows the results of using the Coordinated Strategy, in which the reverse mortgage credit line is drawn upon in years following years of negative or weak investment returns.
- Last Resort Strategy. The middle line shows the results of using the “Last Resort Strategy,” in which the reverse mortgage credit line is drawn upon only if and when the portfolio is exhausted.
- Portfolio Only. The bottom line shows the results of drawing on the portfolio only.

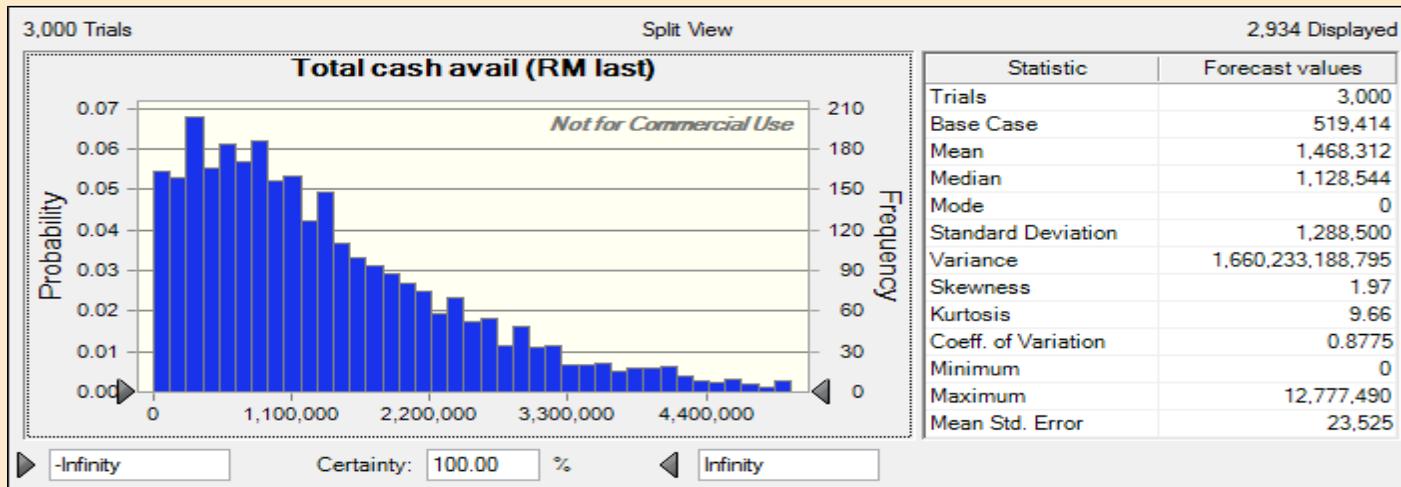
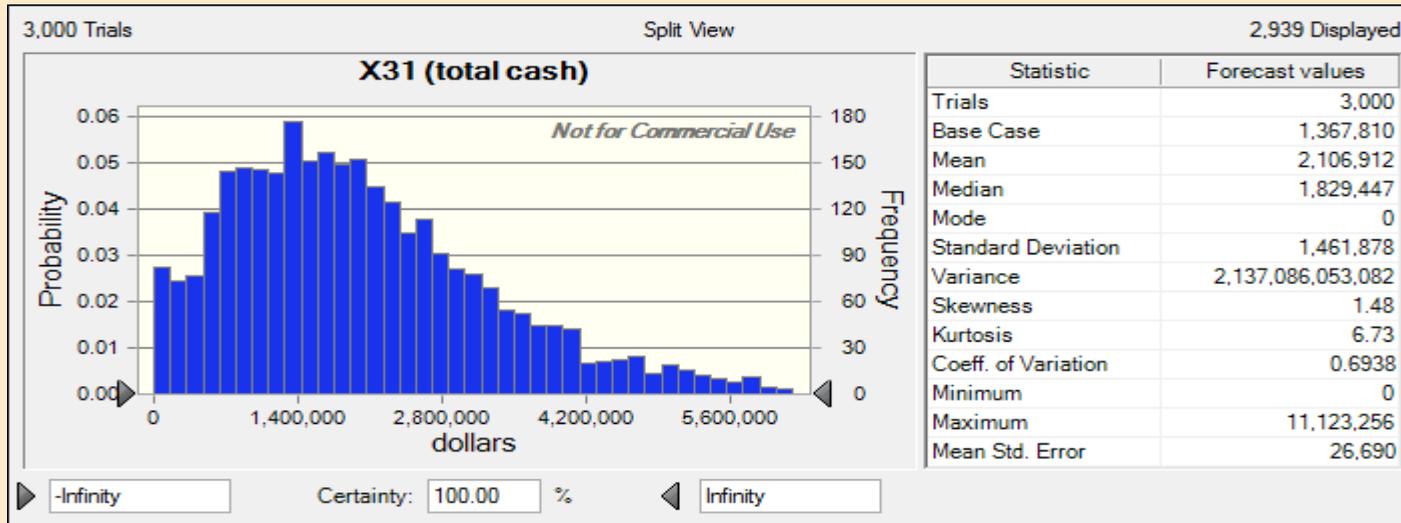
Probability of Cash Flow Survival



The “Available Cash” Objective

- As noted on an earlier slide, the retirees’ second financial objective is to have cash available in the event of an emergency, or for any unanticipated need. On the next slide we show a couple of histograms illustrating the “**Total Cash Available**” after a 20-year time period for each of the two strategies used.
- The term “**Total Cash Available**” means the sum of the total amount remaining in the securities portfolio plus the amount still available from the reverse mortgage credit line.
- Twenty years is a long time, so the results show substantial dispersion.

Histograms Illustrating Monte Carlo Simulation of **Total Cash Available** after 20 years: Upper chart shows results of Coordinated Strategy, lower chart the Last Resort Strategy. Clearly, there's **more cash available** when the Coordinated Strategy is used.



Extension to Other Time Periods

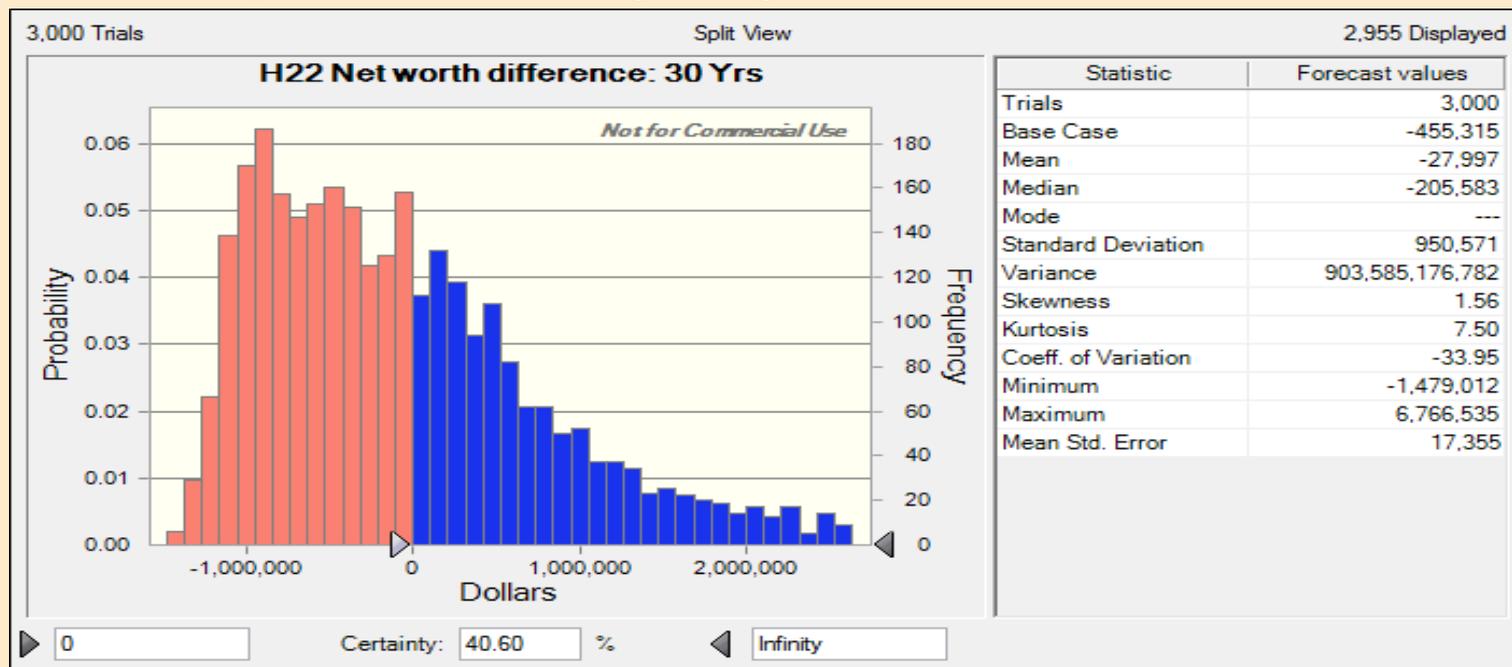
- Time constraints prevent our showing similar histograms for other time periods. It turns out, however, that despite greater dispersion for longer time periods, the results are similar. That is, for any time period, the mean and median and any other dollar amount of cash available will show a greater number of occurrences when the Coordinated Strategy is used than when the Conventional Wisdom (Reverse Mortgage as Last Resort) is used.
- These results flow from the fact that the Coordinated Strategy offsets the effects of negative sequences of returns in the early years of retirement.

The Legacy Objective

- The Legacy, in our example, consists primarily of the home and the securities portfolio. We don't know the value of the home, but it is the same home under each of the two strategies we are comparing. So the gross value of the home subtracts out when we examine the difference of the Legacies under the two strategies.
- So, we calculate, for each of the two strategies, at any given time, the value of the securities portfolio minus the cumulative debt against the home, and then subtract the value for the Last Resort Strategy from the value for the Coordinated Strategy. If the result is a positive number, the Coordinated Strategy “wins,” and the result is a negative number, the Last Resort Strategy “wins.”

Example 1, (Cont'd): Monte Carlo Simulation Histogram showing the difference of the two Legacy calculations

Since we are considering “Legacy,” we’ll look at the results that are 30 years from the beginning of retirement.



So, the “downside” of using the Coordinated Strategy in this example is that the **probability** is that it is more likely than not that the **legacy amount** would be greater if the Last Resort Strategy were used. This is a result of the **investment return assumptions** we are using. See the Comments about investment return assumption, just before “Conclusions.”

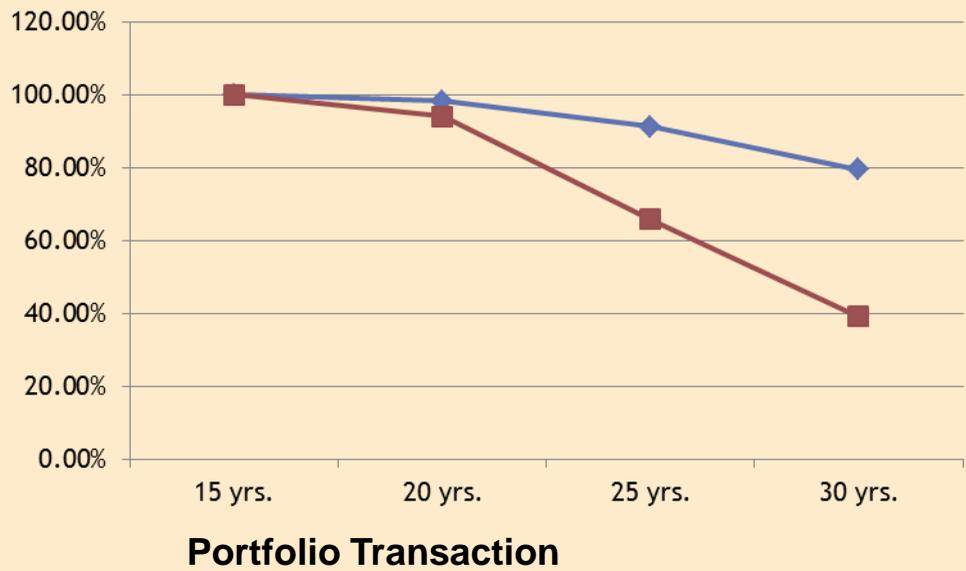
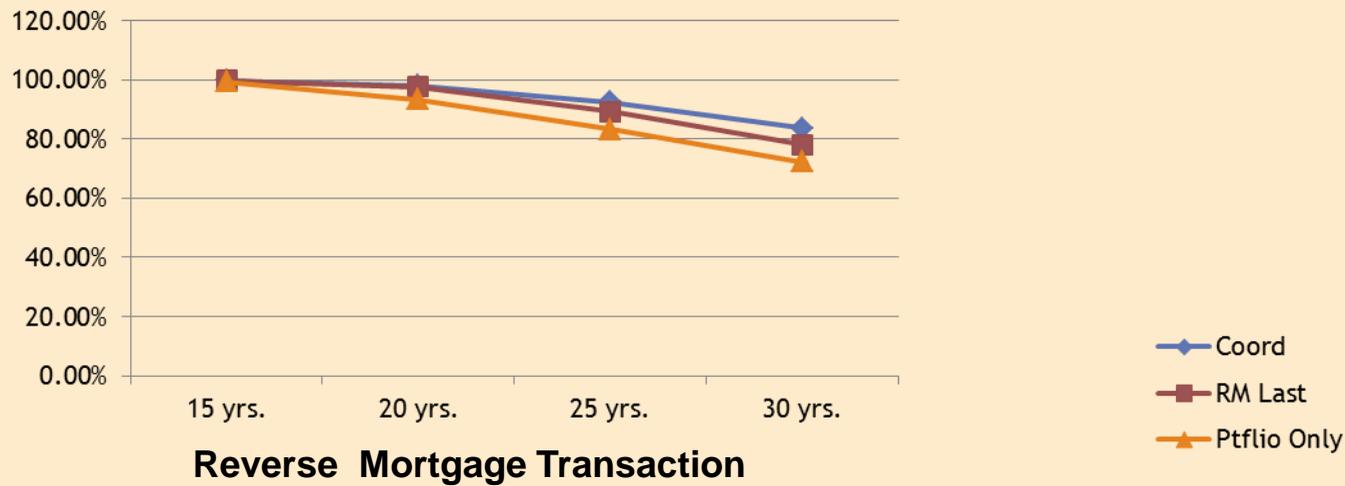
Example 2, with the Same Couple (Retiree #3)

- In this Second Example, we consider the same couple, Retiree #3, as in the previous example. But in this example, we consider more closely the couple's home. We assume, as in the previous example, that the couple has \$1 million in invested assets. We assume, further, that they have a home worth \$1.13 million, with an ordinary mortgage secured by the home, with a \$500,000 outstanding balance (thus with equity of \$630,000)
- The couple want to sell the current home and downsize to a new home that will cost \$850,000. But they will have only \$600,000 from the sale of the current home, after commission and closing costs. They will need another \$250,000 to purchase the new home.
- With a smaller home, we look at an annual need, for living expenses, of \$45,000 (adjusted for inflation) plus Social Security, with no mortgage payments to make.

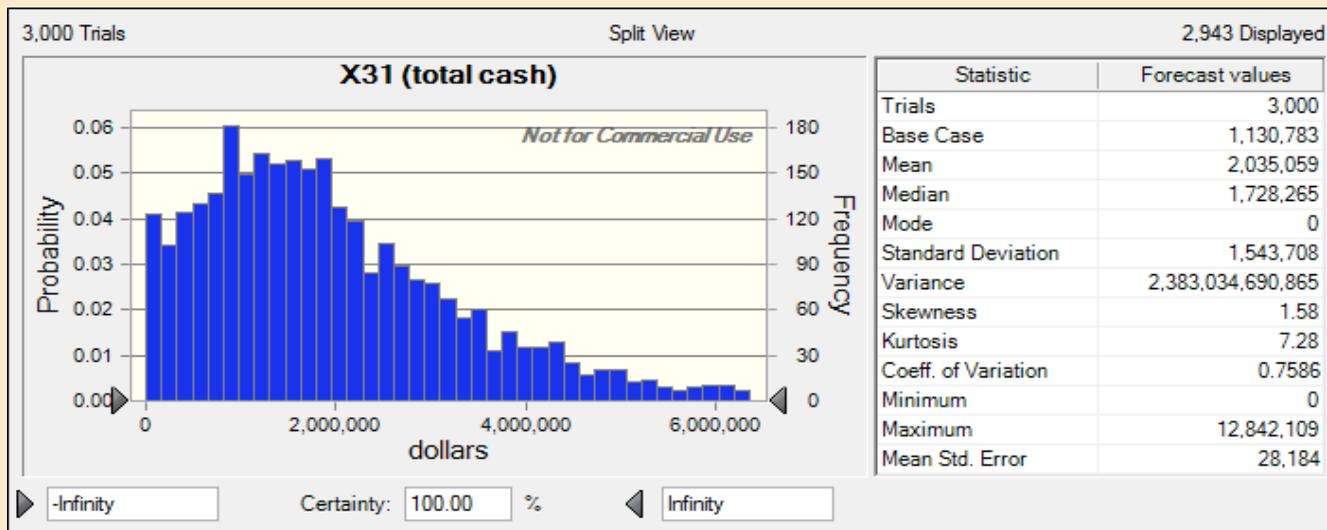
Example 2, (Cont'd):

- There are two ways to obtain the needed \$250,000, i.e., two potential sources for that money.
 1. One source would be the securities portfolio. Assuming that the portfolio is in a 401(k) account or a rollover IRA, they will have to withdraw about \$360,000 to have, after-tax, \$250,000 for the purchase of the home.
 2. The other source would be a reverse mortgage, a so-called HECM-for-purchase.
- Each of these ways will be called a “transaction,” and the first will be the “Portfolio Transaction” and the second will be called the “Reverse Mortgage Transaction.”

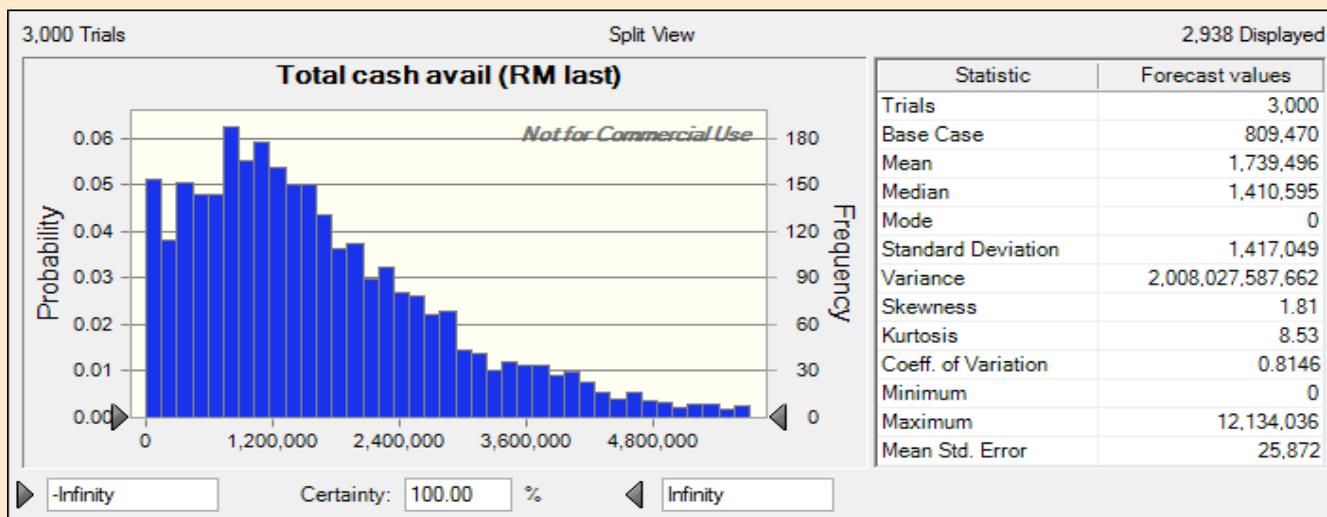
Compare Cash Flow Survival Probability between the “Reverse Mortgage Transaction” and the “Portfolio Transaction”



Example 2, (Cont'd), Comparing Total Cash Available at 20 yrs. (Reverse Mortgage Transaction)

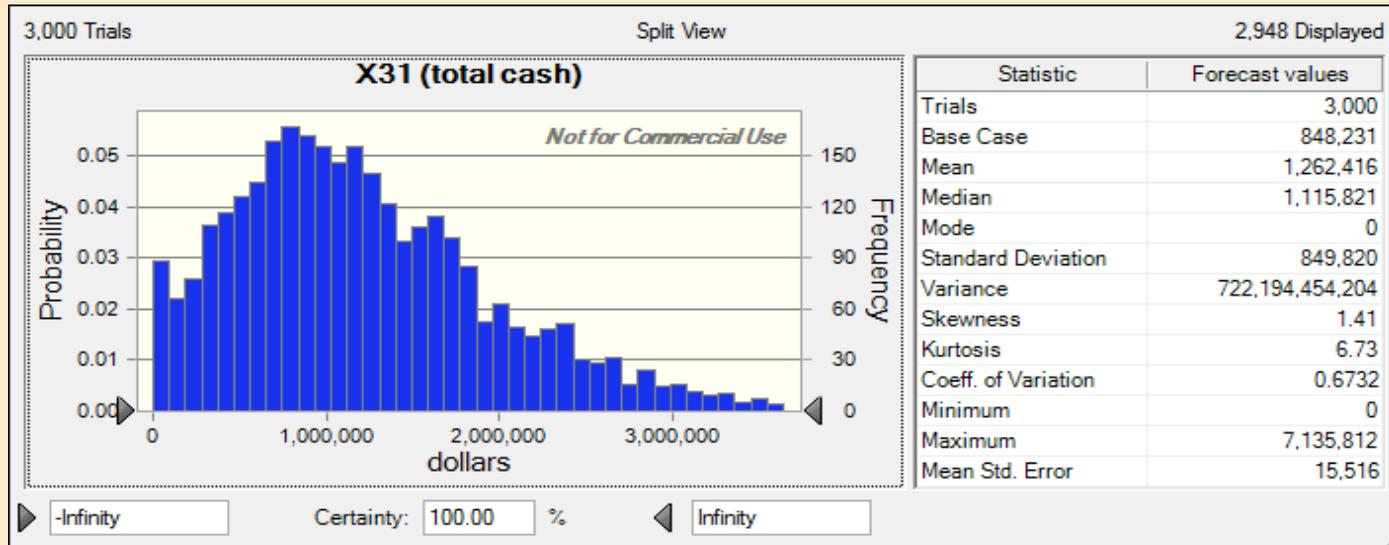


Coordinated Strategy

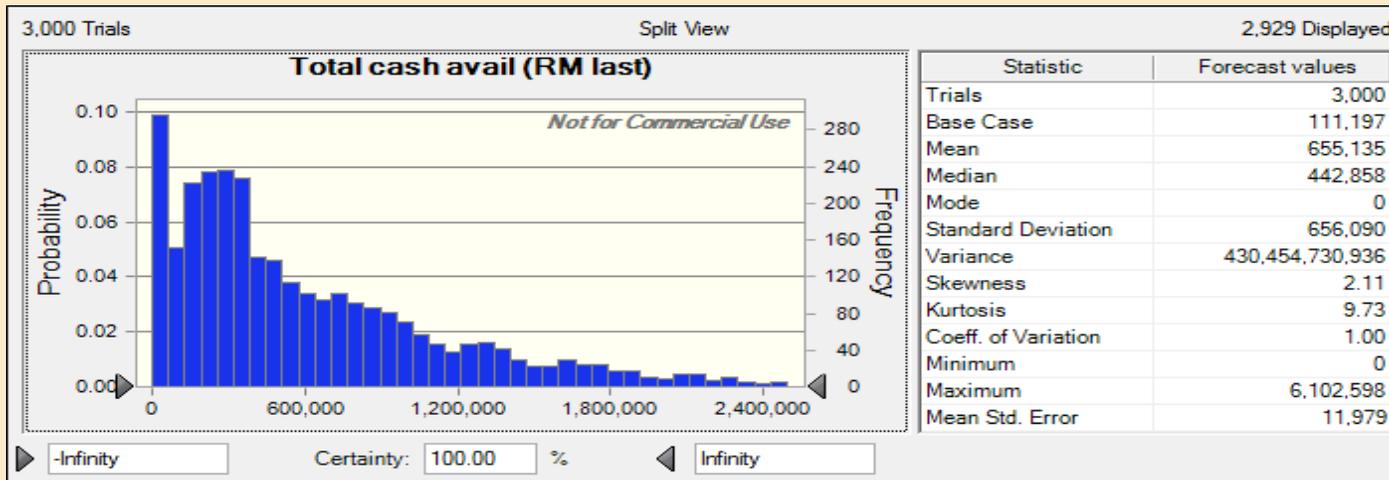


Last Resort Strategy

Example 2, (Cont'd), Comparing Total Cash Available at 20 yrs. (Portfolio Transaction)



Coordinated Strategy

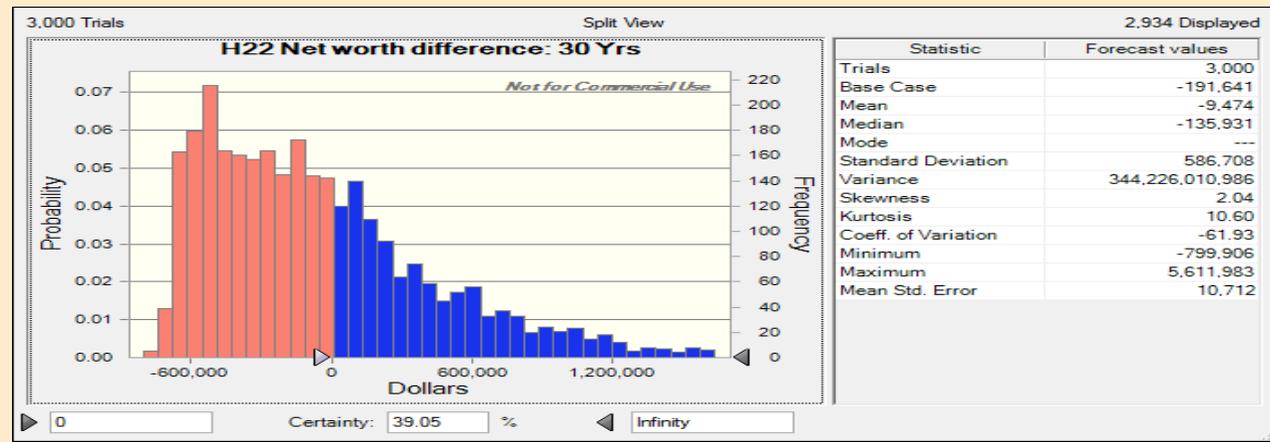


Last Resort Strategy

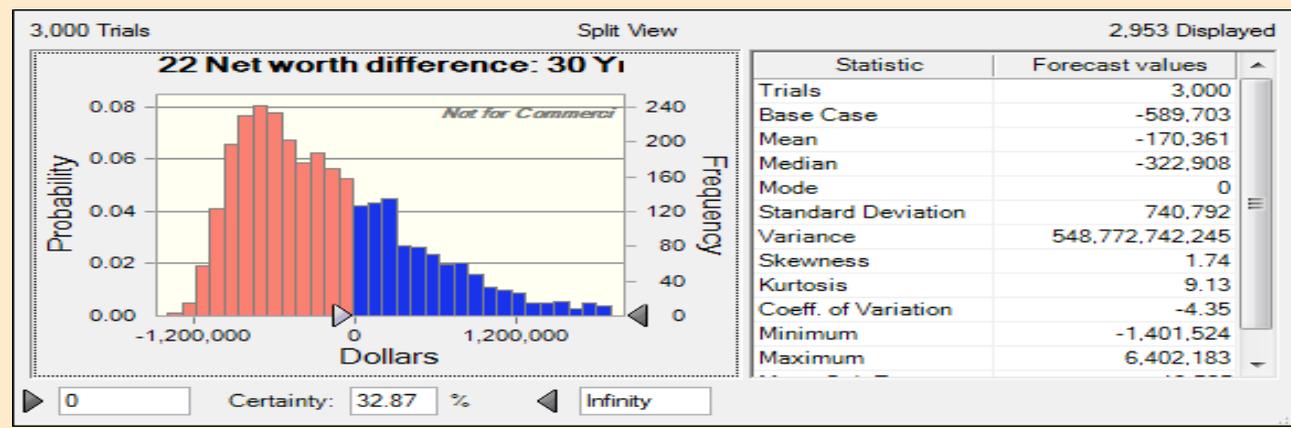
Financial Wellness – “Mid Course Corrections”

- While the SOA report addresses this issue by explicitly considering “accessible wealth throughout retirement” in the strategies it focuses on, much of their analysis (as well as that of most financial planners) looks at the “decumulation” problem at one point in time – at retirement
- But retirement can last as long as 35 years and as such, unless the ability to modify direction and adjust to changing circumstances/objectives is allowed, many payout strategies run a serious risk of becoming mooted by events
- 35 years ago the Internet did not exist and US 10-year Treasury rates were at 13.68%. What will the world look like in 2051?
- As individuals, consider what was important to you 35 years ago and consider whether you could have anticipated your current set of circumstances then, and even if you could, how much value would you have placed on your benefits back then
- There may not be a good solution, but our view is that all strategies should be evaluated in terms of how “reversible” they might be and what is an individual’s true personal rate of discount

Example 2, (Cont'd) – Examination of Legacy Issue



Reverse Mortgage Transaction



Portfolio Transaction

Again we see that the Coordinated Strategy has a somewhat smaller probability of providing a greater Legacy than the Last Resort Strategy. BUT the Reverse Mortgage Transaction is somewhat better than the Portfolio Transaction. Again, this results from the investment return assumptions we are using.

Some Comments about Investment Return Assumptions

- All of the Monte Carlo simulations we have used are based on assumed investment returns projected by the financial planning software maker “MoneyGuide Pro.” These are significantly more “modest” than the historical returns from 1973 through 2009 (which include several periods of bear markets and several periods of bull markets).
- When the historical returns are used, all three of the retirees’ financial objectives (including the Legacy objective) are better met when the Coordinated Strategy is used than when the Last Resort Strategy is used.

Conclusions

- Home Equity (aka Housing Wealth) is, in many cases, an extremely important factor in providing retirement income.
- For Cash Flow survival throughout retirement, the use of the Coordinated Strategy for drawing on housing wealth generally gives better results than the Last Resort Strategy.
- For Total Cash Availability throughout retirement, the use of the Coordinated Strategy generally gives better results than the Last Resort Strategy.
- For the Legacy, the use of the Coordinated Strategy gives a probable legacy amount that is smaller than the probable legacy amount given by the Last Resort Strategy. With more “generous” (historical) investment returns, that result is reversed, i.e., the Coordinated Strategy gives a better result.

Final Thoughts

- Employers who are concerned about their employees' Financial Wellness need to be educated on the full range of RIG's that are available to their workforce, including those (e.g. Reverse Mortgages) that are typically not considered in evaluating "retirement readiness".
- FW modeling tools typically cannot generally accommodate all the RIG's that might be appropriate for a given employee, and therefore education vs modeling per se should be the focus of employer efforts
- Until modelling tools evolve further, different approaches to addressing financial wellness will need to be used for different segments of the workforce especially those with and without significant home equity and/or legacy objectives.