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inside information

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Beyond Monte Carlo

Synopsis: ***A new software program offers the opportunity to create much better, more informed conversations about client income in retirement.***

Takeaways: ***Instead of showing the chances of 'success' or 'failure,' you show the chances that clients will have to tighten their belts if certain downside scenarios manifest—and the degree of tightening. The retirement conversation incorporates risk tolerance issues, and creates a guardrail methodology where the essential lifestyle is minimally impacted.***

In the last issue of *Inside Information*, in an interview with David Jacobs of Pathfinder Financial Services in Kailua, Hawai'i, we explored some of the limitations of our profession's off-the-shelf software. Jacobs especially honed in on the Monte Carlo analytics of the Big Three financial planning software solutions: MoneyGuidePro, eMoney and Right Capital.

Running 10,000 retirement portfolio simulations, using historical mean/variance data, is a big improvement over what we had before. (I still remember how the early planning software's projections assumed that every year provided a 7-10 percent return linearly over 30 years.) But Johnny Poulsen, CEO of a new software solution called Income Lab (*https://incomelaboratory.com/*), points out that there are a lot of ways that this improvement can, itself, be improved.

For instance, when the Monte Carlo engine tells us the client's retirement plan has a 13 percent chance of failure, a lot of data has been left on the table—data that is actually more relevant to the would-be retiree than the number of simulations that resulted in "failures."

> ***When clients see a Monte Carlo analysis showing an 87% success rate, they might think they have a 13% chance of living under a bridge eating cat food.***

"The advisor tells the client, 'You have an 87% probability of success,'" says Poulsen, "and the client thinks: '*That means I have a 13% probability of failure. Failure sounds scary to me*.' In his mind, Poulsen continues, "'failure' means living on the street—when, in fact, none of those failures actually means anything like that."

Is there an alternative way to present the data? "What if you could say to the client, based on this analysis, *there is a 13% chance that you would have to cut spending back in retirement from what we've projected, usually temporarily, and in a very small number of the worst case scenarios, you might have to cut overall spending by 7%*," says Poulsen. "*I know that would be inconvenient, but it doesn't mean living on the street*. Wouldn't that," he asks, "be a more productive conversation?"

Until now, having those conversations, in that level of detail, was not possible. But Income Lab co-founders Poulsen and Justin Fitzpatrick have built a way to capture some of that future scenario data that the rather binary Monte Carlo analyses leave on the table. The program is a result of some observations that Poulson and Fitzpatrick made while working at Jackson National; Poulsen was executive VP of sales strategy while Fitzpatrick, formerly a professor at MIT, ran Jackson National's in-house team that did advanced planning and portfolio consulting for advisors. "That experience got us looking at the state of the art research in retirement planning," says Fitzpatrick. "We realized that there was a huge gap between some of the best ideas in academia and what advisors could actually do with their software."

In 2018, after leaving the annuity company independently, Poulsen and Fitzpatrick started tinkering with the Monte Carlo data, with the idea of creating a more informative retirement planning model. They launched Income Lab's beta version in April of 2020.

"Yes, it was hard to get advisors' attention with what was going on at the time," says Fitzpatrick, responding to the obvious question. "But we managed to get a group of early adopters, and their feedback was priceless." The program was formally launched this year.

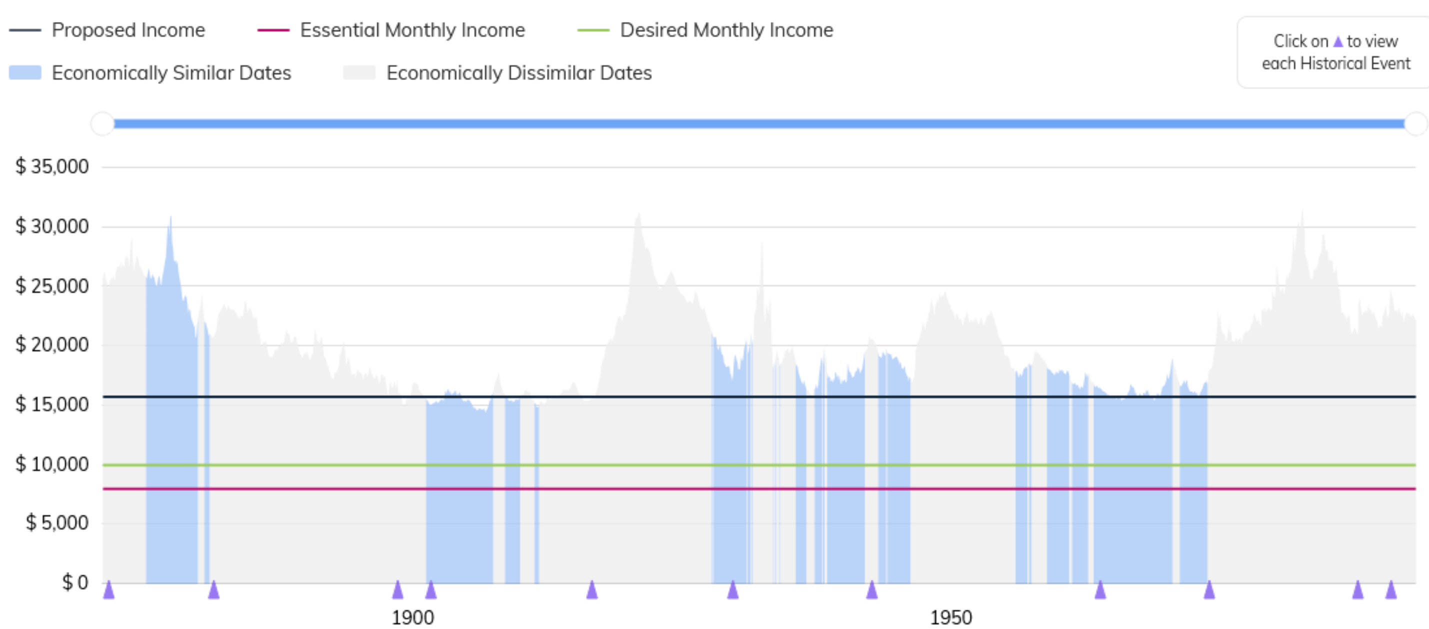
Modeling markets

What does Income Lab do that traditional Monte Carlo analysis cannot? Start with a thorough assessment of all the client's potential income sources—any retirement income from a defined benefit plan, Social Security, income from rental properties, annuity income etc. The platform also assesses the various investment accounts and takes note of their asset locations: brokerage account, traditional and Roth IRAs.

For analytical purposes, the distinction between income sources and portfolio decumulation is important—for a couple of reasons. First, clients who are relying primarily on stable sources of income for their retirement spending are relatively immune from market shocks. If portfolio decumulation makes up just 10% of their income, a 40% market downturn means very little in terms of lifestyle change. Someone who is receiving 90% of her income from the portfolio would experience a much greater shock. "It makes a big difference in what you can tell a client about the consequences of those 'failure' scenarios," says Poulsen. "Some of the income streams are much more uncertain than others."

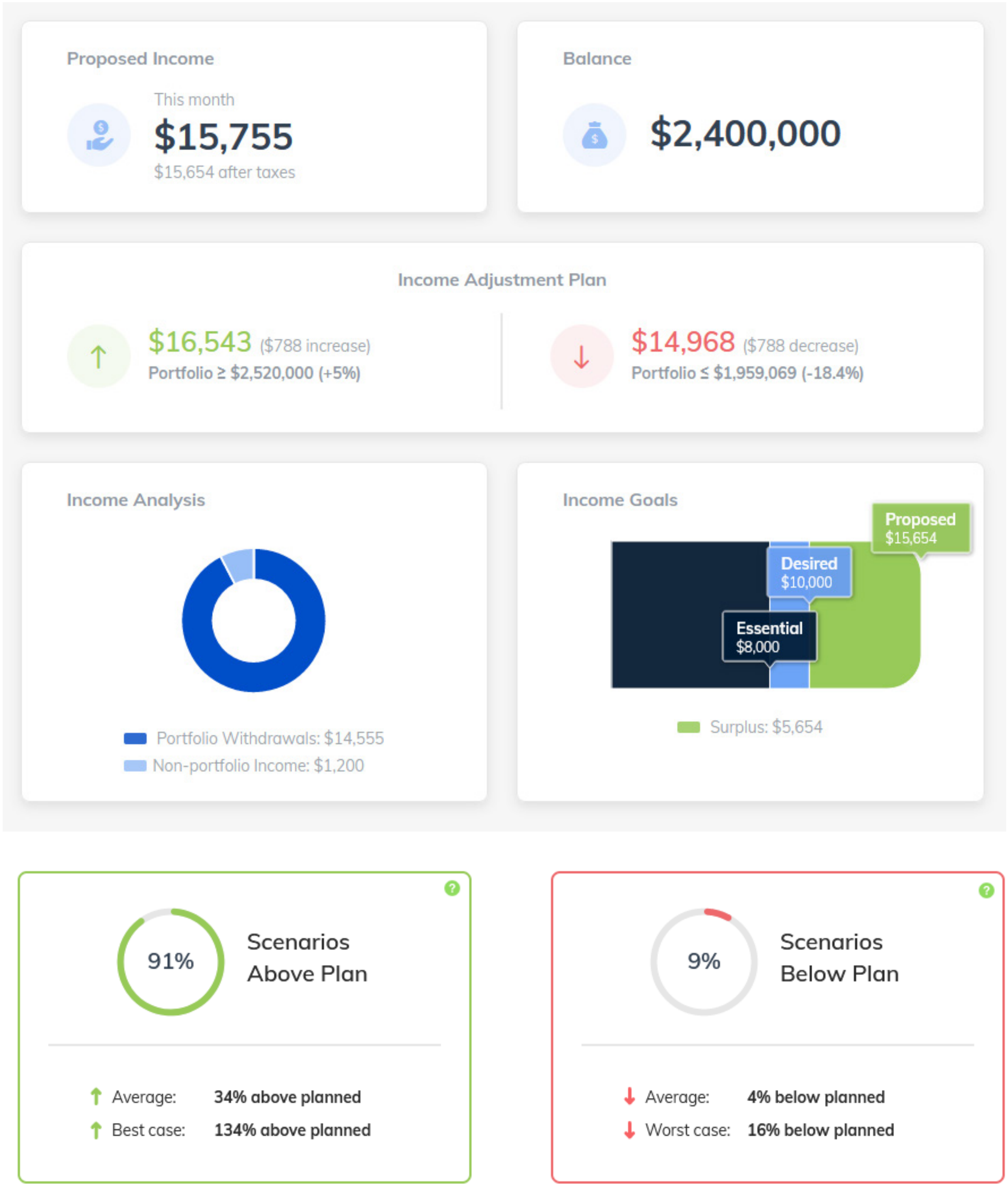
The second distinction is a bit more involved. Poulsen and Fitzpatrick believe that the historical risk/return assumptions built into traditional planning software will seem, to advisors of the future, as naive as the linear return assumptions built into software of old. Today's stock market valuations and bond market returns are anything but common in the historical record.

What's better? With a tip of the hat to research by Wade Pfau, Michael Kitces and Michael Finke of, respectively, the American College, Buckingham Asset Management and the American College, Fitzpatrick has replicated some of their cautionary research on



retirement sufficiency in today's high PE/low bond yield market conditions into something much more comprehensive. Income Lab includes an economic modeling engine that tracks 40 different economic indicators, and does a multidimensional comparative analysis of all of them, year by year.

One result is a graph (see below) which shows what an individual client's retirement income would have been, based on all the income sources available to him today, in any year since 1871. The graph shows the hypothetical trajectory of their retirement income year-by-year thereafter as the economic conditions unfold from the late 1800s through the Great Depression, World War II, the stagflation period of the 1970s, the endless bull market of the 1980s and 1990s, the Tech Wreck, the Great Recession and the endless bull market of current days.



Modeling income

In the graph, time periods most like today are highlighted in blue. Those least like today are shown in gray. A client can see the trajectory from various blue starting points, and get an idea of what to expect in her own future.

"It makes it easier for an advisor to talk to clients about a $15,755 a month projected income," says Fitzpatrick, "and say: *here is what it has looked like over time. The black line is what I am recommending to you, and you can see that most periods, it has been sustainable, but there have been some periods where the graph falls below that line*." It's another way of seeing the Monte Carlo simulations, but with some macroeconomic data built in.

But where did that $15,755 figure come from in the first place? Based on a client's current portfolio mix of income streams and portfolio balances, plus data from the aforementioned macroeconomic timeline, Income Lab will solve for a proposed yearly income number (see above).

Like traditional Monte Carlo, it will then show the client that there is (let's say) an 91% chance that the retirement portfolio will increase in value if that spending level is maintained. But the same page shows a lot more (and more relevant) data. Clients would see that if the equity markets were to go up by 5%, the client would be able to take a monthly income increase of $788. If the market declined 18.4% over time in a worst case Great Depression-like scenario, that would lead to a decrease in monthly income of $788.

"This illustrations something which is really foundational to retirement planning, but is hard to derive on the other platforms," says Poulsen. "Which is: risk in retirement is asymmetric. Retirees are more likely to get an increase than a decrease, and the increase is often higher than the decrease."

So where does the richer conversation come in? Clients can look at a variety of possible income adjustments and decide if they're comfortable with the downside scenarios. If they are, then you have incorporated into the retirement planning conversation the guardrail strategies that Jon Guyton articulated a decade ago, where people agree to adjust their spending, up and down, based on the market sequences they're dealt.

If you are telling clients that retirement could be anywhere from 'I am homeless' to 'I am flying private jets,' that is not particularly helpful.

Income Lab might show them that in 7% of the scenarios, the client will come out with less total lifetime income, and they may have to spend ten percent less in one or two of those years. Is that acceptable? The client might say, *well, that means I would have to skip the vacation trip to Europe in those years. I can do that.* Or the client might decide that this is too much of a decline in income—at which point the conversation turns to making the portfolio less equity-heavy and revisiting the calculations to show that there is less downside risk.

"There are going to be clients who can afford to be conservative, because they have plenty of money or don't spend much, who might never want that call that says, *bad news, you have to tighten your belts a little*," says Fitzpatrick. "They can plan for a 0% chance of reduction," what MoneyGuidePro would call a 100% chance-of-success scenario. "Or they may be a little more like me," Fitzpatrick continues, "and say, *hey, let's be a little more aggressive with the standard of living while I know I'm alive. I'll take a 35% chance of reduction in the future, but that's a reduction from a higher level*."

"What we typically find," says Poulsen, "is that, at least historically, relatively minor adjustments could have saved pretty much any plan. So we are not talking about 'failure.' We're talking about adjusts to lifestyle expenditures, up or down, and few of them are dramatic."

Many of the future scenarios will involve an increase in retirement income—which is not specified in traditional planning software. The closest you find is the 1,000 different paths that are calculated and graphed in MoneyGuidePro, which might show 20% of the future scenario lines taking off toward the moon, and 15% of them crashing scarily into the bottom of the graph at various pre-death ages. "If you are telling clients that retirement could be anywhere from 'I am homeless,' to 'I'm flying private jets,' that is not particularly helpful to me," says Poulsen.

Fitzpatrick points out that the traditional software might even point clients toward the wrong goal. "Ideally, if you were doing nothing but Monte Carlo, you would want to get to 100% 'success,'" he says. "But is that a better plan than a 60% probability of success? Quite frankly, it could be the opposite." The 100% success plan would involve an austere retirement lifestyle, most often making the heirs very happy. The 60% success plan would offer a more expansive retirement lifestyle, with the proviso that in adverse market conditions, the clients would have to agree to adjust their spending downward, most often temporarily, in some cases permanently.

"Your conversation shifts

from, *'let's lower your chances of failure,'*" Fitzpatrick continues, "to: *what is the right tradeoff between current standard of living and the chances that in the future you will have to tighten your belt?* Suddenly you have moved the conversation to the world of risk tolerance. *What is your risk attitude? Do you see these potential belt tightenings as risky or no big deal?*"

Finally, Income Lab's projections model a client's lifespan, based on the Society of Actuaries' retirement plan participant mortality tables and improvement scales. Each client's retirement analytics and projections will be automatically updated as they age. "Let's say I'm 60 and the plan is that I will live to age 85," Fitzpatrick proposes. "By the time I'm 80, would the plan still go to 85? By then, the statistics say I should be planning to 92, pushing the plan out as time goes on."

Additional features

There are a number of features here that advisors might appreciate. Income Lab's Yodlee integration allows planners to pull in client portfolio data, which the software analyzes and fits into its models. During the risk/income adjustment discussion, advisors can switch among an unlimited number of portfolio mixes, including all their model portfolios, so clients can choose the one that feels most comfortable based on current income and potential for belt-tightening. The software automatically calculates Social Security income at various claiming ages. Retirees can specify income from a part-time job or consulting work after they leave their regular job, and see how that would affect the outcomes.

The software also lets clients specify a legacy they want to leave to their heirs—in the demo I looked at, this was $500,000. It allows advisors to input their own return assumptions by asset class, if they choose, and their own inflation assumptions.

Another feature allows advisors to set the income modeling engine to follow research by Morningstar's David Blanchett, which shows that clients will typically spend more in their early retirement years, less in later years, and then, when they encounter end-of-life health care expenditures (and possible long-term care costs), their income needs will kick back up—creating the so-called "retirement smile" income graph.

"The software will calculate an optimized income path," says Poulsen, "or, at the advisor's discretion, it will plan for a flat inflation-adjusted income need path. Or," he adds, "you can customize whenever circumstances change."

Tax-aware decumulation

The newest feature in Income Lab's planning engine is the Tax Center, which helps advisors optimize tax-aware decumulation and make pre-retirement tax planning adjustments, seeing their impact on required minimum distributions.

The Tax Center compares the annual and total after-tax income of many naive decumulation strategies with strategies that fill up the lower tax brackets each year.

In the Tax Center, advisors are presented with a (rather long) list that shows the outcomes of variety of different decumulation scenarios, and the after-tax annual income and total income of each over the life of the retirement. One scenario would be a naive pro rata approach, where, if 50% of the retirement portfolio is in a taxable account, and 50% is in an IRA, the system will take out half of the retirement income from each, calculate the taxes on the distributions based on current tax rates, and provide the after-tax income figures. If there's a Roth account, that provides its proportionate share of the total income.

The system shows each year's ordinary income, capital gains, and the taxable and nontaxable portion of Social Security income based on each year's projected income.

Another tax-naive approach, which is not uncommon among retirees, is to take income from the taxable portfolio in the early retirement years, and allow the tax-deferred accounts to accumulate tax-free until the taxable portfolio is entirely extinguished. Then the money would come out of the Roth IRA, putting the client as close to a 0% tax bracket as long as possible until the client is required to take minimum distributions from the traditional IRA. For many clients, the RMD income throws them into a higher tax bracket, which leads to after-tax inefficiencies (higher ordinary income, lower after-tax income) that show up in the later stages of the projection.

Alongside these, and a dozen other variations on these themes, the Tax Center will model two 'bracket management' decumulation approaches, where the client fills up the 22% bracket each year with IRA distributions, even before RMDs have to be taken out. Another scenario will have the client filling up the 24% bracket as well.

The advantage of having these tax-naive scenarios listed alongside the more sophisticated approaches is that the client can see the hard-dollar differences using each methodology. "The client can see that, using bracket management, they have 6.5% more after-tax income in retirement, leading to a little more than $470,000 additional after-tax income over the life of the retirement," Poulsen explains. "They can either take the additional income or set it aside to increase their net legacy."

This also provides a way to demonstrate the tangible value of the advisor's advice, in dollar terms. "We've all heard a lot of discussion about advisor alpha over the last 10 or 15 years," adds Fitzpatrick. "This is one place where you can put a number on it."

The most sophisticated decumulation strategies involve Roth conversions. Clients retire and their income (and tax rate) drops. Advisors can go into the Tax Center and model how a client's after-tax retirement income would be impacted if the 22% or 24% brackets were filled, pre-RMD age, with partial Roth conversions (see below). The advisor can show clients how these Roth conversion would impact the projected retirement income down the road, year by year, and raise (or not) the total after-tax income that a client could take over the course of her retirement.

The company, still new, is adding integrations as you read this—with Redtail, BlueLeaf, Black Diamond and Riskalyze. Schwab is on the near-term list. "One of the advantages we have," says Poulsen, "is the fact that we're a young platform. Because we don't have a lot of legacy, it's relatively easy for us to create integrations."

Cost? $159 per advisor seat. The Tax Center is currently bundled with the software, and will stay that way for the early adopters. But eventually, for later customers, Income Lab will charge a separate fee for the tax-aware modeling features.

"We feel lucky, quite honestly, that we had this opportunity, to build in these features," says Poulsen. "The retirement smile, why has nobody built that in? It's not even hard. All the other stuff we do, those features have been talked about for years, but nobody has done anything about it.

"The result, in our view," Poulsen adds, "is that many retirees in America are going to be much better off, financially, and have a much better experience around retirement, if their advisor is using Income Lab."■

	Average Tax Rate	Total Taxes	Total Net Income	Net Legacy
	-6.6%	-$441,244	$441,243	$372,271
Strategy 1	5%	$369,694	$5,653,555	$5,809,989
Strategy 2	11.7%	$810,938	$5,212,312	$5,437,718