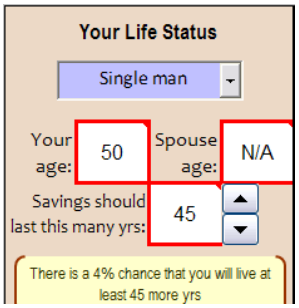
Illustration No. 2
Using TIP$TER to simulate a financial plan for Jack

Jack is a single, 50-year old military veteran receiving a $25,000/year military pension. A disciplined saver all his live, Jack has accumulated $650,000, some of it in a Roth IRA and most of it in a rollover IRA, and wants to retire.

Jack can live on as little as $50,000/year (adjusted for inflation), but he wants to target a $60,000/year retirement budget. He also likes to travel, so he would like to budget an extra $20,000/year for the next 20 years (until he is 70) for travel.

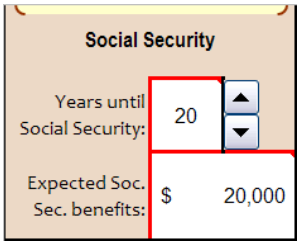
What is the best asset allocation to help Jack meet his goals? He goes to you, a financial planner, and asks for some advice.

Life Status Inputs



Starting with the "Your Life Status" section, you select the "Single man" and enter Jack's age (50). Because he is single and male, he chooses a targeted portfolio duration of 45 years. After all, the yellow note toward the bottom of the section indicates that there is only a 4% chance that he will last past age 95.

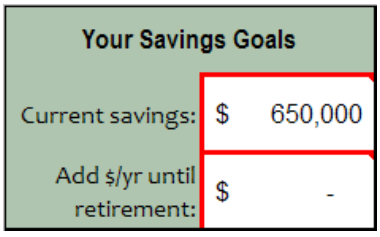
Social Security Inputs



Next, you scroll down to the "Social Security" section. Because waiting until you are 70 to start getting Social Security benefits reduces one's long-term retirement "shortfall risk," TIP$TER by default suggests that Jack wait 20 years, or until he is 70, to start collecting those benefits.

Jack looks at his annual Social Security benefits statements to get an idea of how much Social Security he might get. He conservatively enters $20,000/year in anticipated Social Security benefits.

Your Savings Goals Inputs



This part is easy. Jack has $650,000 in retirement savings, and he is ready to retire *now* (i.e., no more pre-retirement savings). But Jack has a military pension too, and some other special circumstances.

Additional Portfolio Inputs and Outputs

Jack has quite a few additional circumstances that affect his financial plan. He is already receiving a $25,000/year military pension. He also indicated that he wanted to spend a bit more on travel when he was young enough to enjoy it.

He's also his elderly mother's only son. She's the type that never spends more than the interest on her savings. So within the next 10 years, he will probably get a $250,000 inheritance.

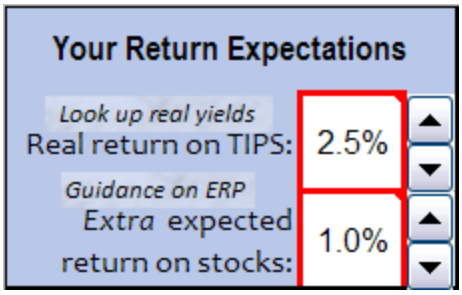
Finally, Jack also has a house which you figure he can reverse mortgage in 25 years, supplementing his income at age 75 by $15,000/year (in today's dollars).

To model these additional circumstances, you check the "Additional Portfolio Inputs and Outputs" box and specify the following:

Description	Amount	Yrs 'till event	Type	# of Years	Increase/Decrease by real % per year
Military pension income PV = $687,596	$ 25,000	0	lump sum annually for n years until retirement until death	45	0.0%
Anticipated inheritance PV = $195,300	$ 250,000	10	lump sum annually for n years until retirement until death	1	
Anticipated reverse mortgage PV = $129,283	$ 15,000	25	lump sum annually for n years until retirement until death	20	0.0%
Spending allowance for travel through age 70 PV = -$319,578	$ (20,000)	0	lump sum annually for n years until retirement until death	20	0.0%

Your Return Expectations Inputs

Now you turn to TIP$TER's "Your Return Expectations" section. There, TIP$TER asks for the "Real return on TIPS," which is short for Treasury Inflation Protected Securities.

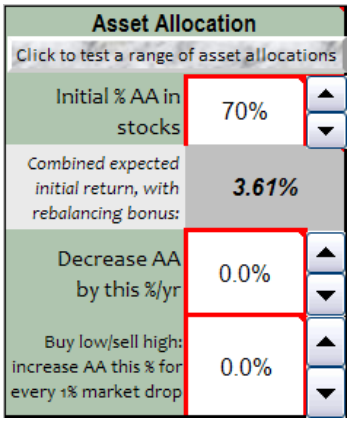


You find some long-dated TIPS yielding a "real return" of 2.5%, so you enter that number.

You understand the concept of the "expected risk premium." After all, you're a financial planner.

You look up the current dividend yield on a total stock market index and make some assumptions about future economic growth. On the basis of those assumptions, you estimate that equities will, in the long run, return about 3.5% above inflation. That's a 1% difference from the TIPS yield you just looked up, so you enter in 1% for this input.

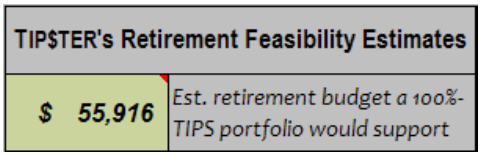
Asset Allocation



Next, you go to TIP$TER's "Asset Allocation" section. Because Jack is already getting a lot of safe, bond-like pension income, you decide, for starters, to simulate the outcome of a portfolio with a 70/30 split between stocks and TIPS. So you adjust the asset allocation spinners to 70%.

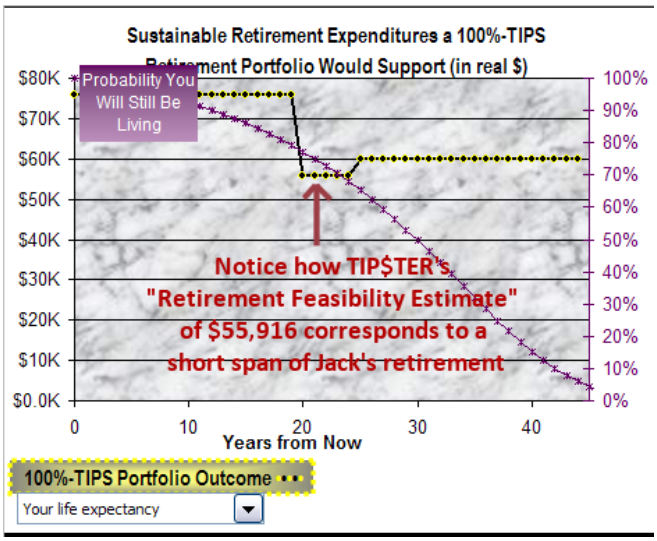
You decide to leave the advanced "Decrease AA by this %/yr" and "Buy low/sell high" inputs at 0%. After all, you can revisit those inputs later and do another simulation.

TIP$TER's Retirement Feasibility Estimates



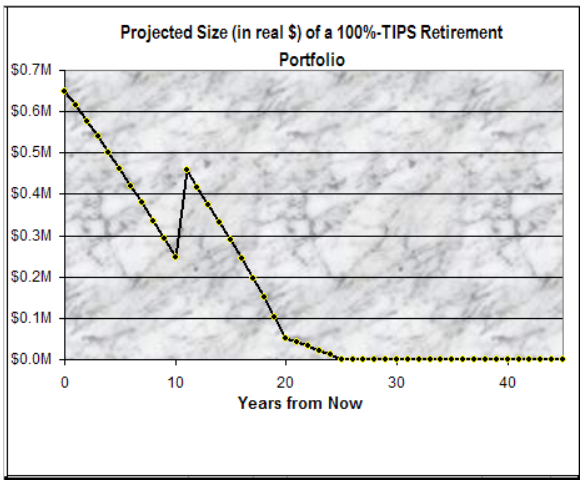
You noticed that as you entered in these various inputs, TIP$TER immediately computed the sustainable retirement budget that a risk-free (i.e., 100% TIPS) portfolio would support.

But that number (**$55,916**) doesn't tell you the whole story. Jack's retirement situation is complicated by the fact that he plans to spend an additional $20,000/year for the first 20 years. So you look at TIP$TER's "sustainable retirement expenditures" chart. You notice how the ~$56K/year estimate corresponds to a relatively short span of Jack's anticipated retirement years. But you are reassured that the graph also illustrates Jack spending almost $76K/year for the first 20 years.



You also notice that in 25 years, Jack's retirement budget suddenly jumps up to $60K/year. This is because Jack already has a $25,000 military pension. 20 years from now, he expects an additional $20,000 from Social Security. And then 25 years from now, you're expecting Jack to get another $15,000/year from a reverse mortgage. The total, by age 75, is $60,000/year.

What this means is that Jack can afford to spend all his retirement savings in just 25 short years. Because after that, Jack will have $60,000/year in mostly guaranteed income.



And sure enough, TIP$TER's portfolio size chart illustrates a risk-free portfolio perfectly calibrated to run out by the time Jack is 75 – and perfectly calibrated to maximize Jack's retirement budgets up until that time.

TIP$TER's Retirement Feasibility Estimates	
$ 55,916	Est. retirement budget a 100%-TIPS portfolio would support
$ 59,353	Est. median budget a 70%-stock portfolio would support
$ 59,001	Est. median budget a 100%-stock portfolio would support

This context helps to explain why TIP$TER's "Retirement Feasibility Estimates" don't project that Jack would benefit that much from an equity portfolio. Investing in equities isn't likely to give Jack's overall retirement budget much of a boost because: (1) at an equity risk premium of only 1%, it would compound slowly, (2) with a portfolio designed to run out in 25 years (because of other incomes sources), it wouldn't compound for very long, and (3) already, almost half of Jack's planned retirement budget is funded by his secure, guaranteed military pension.

Retirement Budget Goals

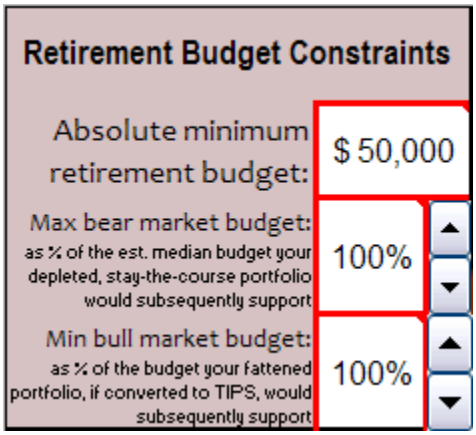
Retirement Budget Goals	
Retire & start draws in this many yrs:	0
Targeted annual retirement budget:	$ 60,000
Leave this much for your kids/heirs:	$ -

Now you turn to the "Retirement Budget Goals" section. Jack wants to retire now, so you enter 0. Jack has no particular goal to enrich anybody when he dies. So you leave that number at zero.

Jack said he wanted to target a long-term retirement budget of $60,000/year (not including the $20K/year added for travel in the first 20 years). Fortunately, this is within sight of the estimated $59,353 median budget that a 70% AA portfolio would support.

Retirement Budget Constraints

There's one last section to fill out: the Retirement Budget Constraints. Jack said he could live on $50,000/year if he had to. So you enter in $60,000 as Jack's "absolute minimum retirement budget."

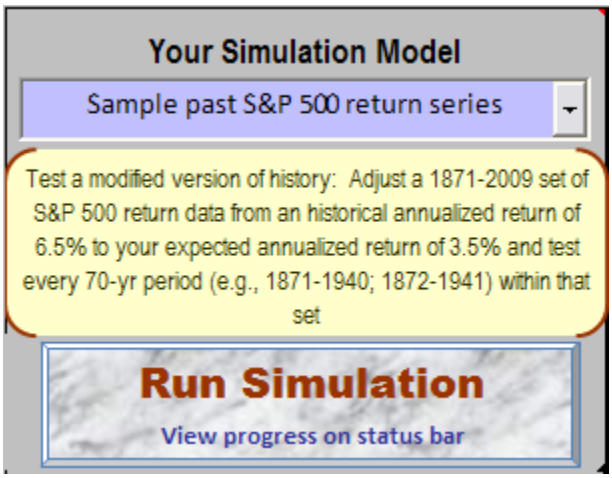


After asking Jack a few questions, you find out that if Jack experienced a bear market during retirement, he would probably respond defensively. He would try to cap his spending at a level that his portfolio would subsequently support if it subsequently delivered the median expected performance for that portfolio. So you keep the "Max bear market budget" value set at 100%.

Jack also indicates that he would take advantage of good times. If he enjoys a bull market, he would probably spend at least as much as their savings – if suddenly exchanged for a risk-free portfolio – would thereafter safely sustain. So you keep the "Min bull market budget" value set at 100%.

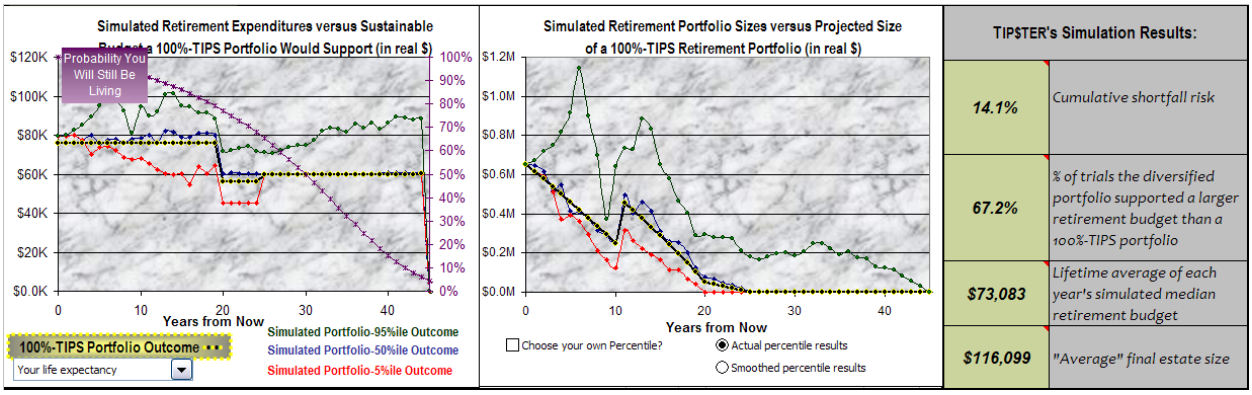
Running the Simulation

Now you are ready to run the simulation. You understand the benefits of using TIP$TER's default exploratory simulation model, so you keep this option set at "Sample past S&P 500 return series."



TIP$TER's simulation outputs:

You take a look at the charts TIP$TER generates:



The summary statistics to the left indicate that this plan would have about a 14% chance of failure (or about an 86% chance of success). In TIP$TER, failure includes *ever* (even for just one year) falling below the "absolute minimum retirement budget."

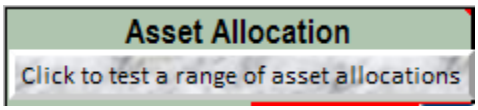
> *Note: Jack's probability of success would go way up If his "absolute minimum retirement budget" were reduced by just $5,000, to $45,000. To understand why, see Appendix.*

You also note that the simulation supported an "expected" median retirement budget of $73,083. The reason this value is so much higher than the $59,353 estimate for the "median budget" given by TIP$TER's "Retirement Feasibility Estimates" is that the $73,083 is a weighted average of the retirement budgets over Jack's entire retirement span – including the first 20 years where he has budgeted more for travel.

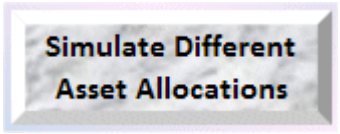
The "Retirement Feasibility Estimates," by contrast, show the estimated retirement budget that the portfolio would support during the *leanest* time of the retirement time period. As illustrated in the graph on page 3, years 21-25 represented the leanest time for Jack's portfolio – after Jack's $20,000 travel allowance ends and before his reverse mortgage is anticipated to kick in. The total estimated sustainable risk-free retirement budget in years 21-25 is about $59,000.

Now it's time to fire up TIP$TER's Asset Allocation Risk/Reward Spectrum Chart.

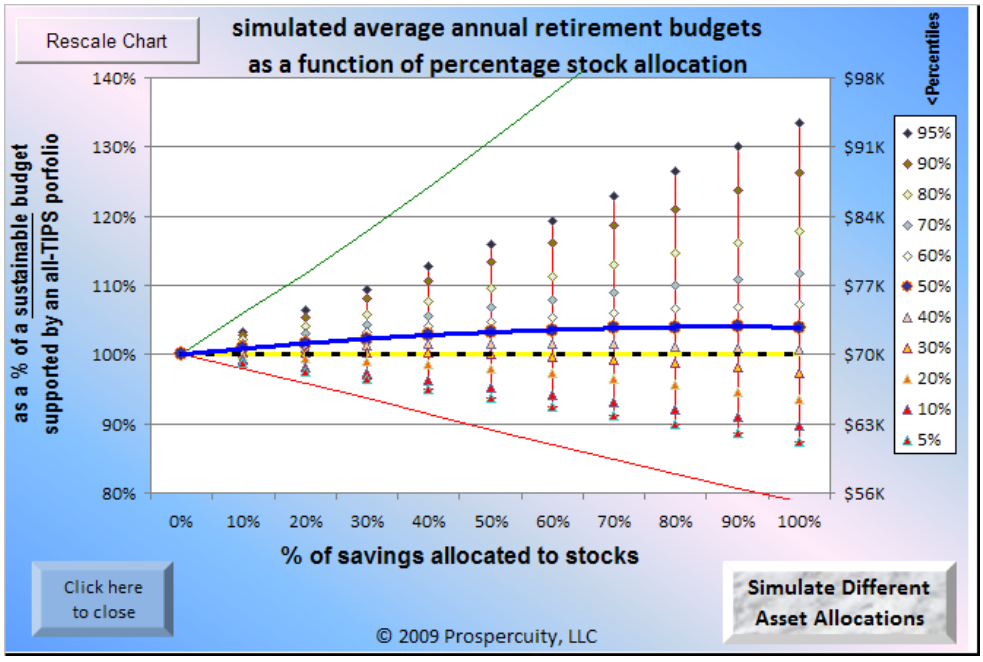
TIP$TER's Asset Allocation Risk/Reward Spectrum Chart™:



Jack needs to see how the distribution of risks and rewards – measured by a *how-would-it-affect-his-retirement-budget* metric – varies with different asset allocations. So you click on the "Click to test a range of asset allocations" button in the "Asset Allocation section.



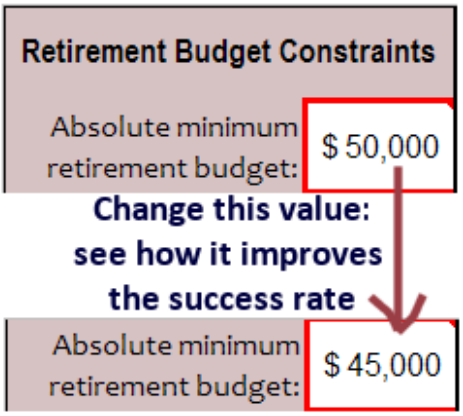
Then, you click on the button, to run the simulation for each of 11 different stock/bond splits ranging between a 0% and a 100% allocation to stocks.



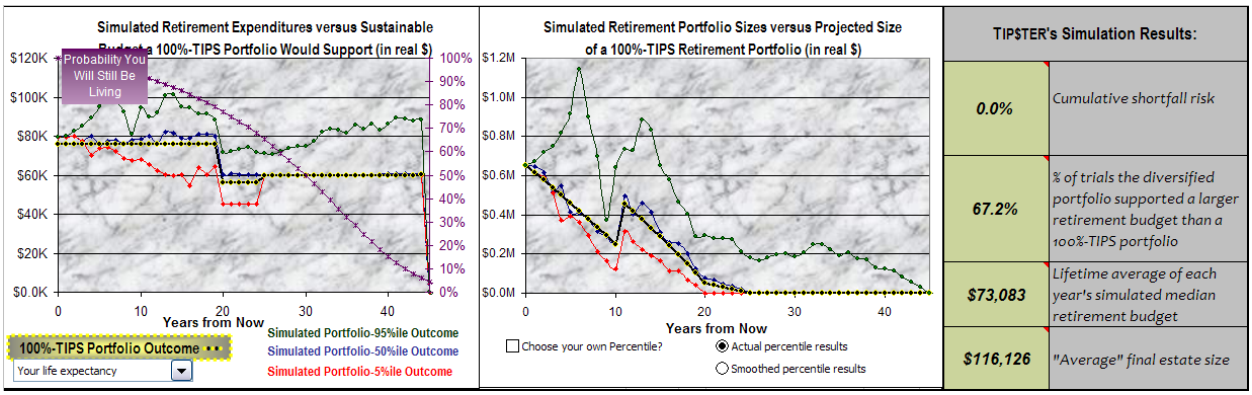
You study the chart. You notice that, based on the median line, there really isn't that much benefit to Jack being in stocks. Is it worth the heartburn he will face? Are the meager potential rewards worth the risk?

Appendix: Changing Jack's Absolute Minimum Retirement Budget

Jack's probability of success would go way up If his "absolute minimum retirement budget" were reduced by just $5,000, to $45,000. After all, 20 years from now, Jack will be getting $45,000 in guaranteed income: the combination of his $25,000 pension and $20,000 in Social Security income.



So we run the simulation again – this time with an absolute minimum retirement budget of $45,000:



Notably, simply reducing the absolute minimum retirement budget by 10% entirely eliminated Jack's simulated shortfall risk.