LESSON 5:

Spending Buckets and Financial Placebos

In an earlier lesson I argued that a bear market early in retirement — i.e., when you start withdrawing money from a portfolio — can have a devastating impact on the sustainability of your income stream. This irrefutable mathematical fact has been demonstrated by a number of authors including myself and has led many advisors to consider *FinSurance* products, such as guaranteed minimum accumulation, withdrawal and income benefits to guard against this risk.

Yet, some commentators have expressed the view that placing a few years worth of retirement spending needs into safe investments — and then planning on not touching the remaining funds in the event of a bear market — can somehow avoid the ruinous impact of a poor sequence of investments returns. A fringe element of this sect believes that if markets decline retirees should simply be counseled to take only income from their bond allocation and then "wait for the stock allocation to recover" and thus avoid selling at a loss.

I believe these strategies are an optical illusion at best and create a potential for grave disappointment at worst. If you are unlucky enough to earn a poor sequence of initial returns, so-called bucketing of your retirement income is *not* a guaranteed bailout. In this lesson I will try to convince you of this fact using what logicians call a counterexample.

As in any discussion (or debate), one's assumptions are critical and my current argument is no exception. To make this a fair apples-to-apples comparison I will arrange my story so that all else is equal, or as economists say *ceteris paribus*. Thus, I start with two hypothetical retirees: Ms. Stephanie Swip and Mr. Brett Bucket. They both begin their retirement with exactly $100,000 in liquid assets from which they would like to receive or generate $750 per month, which is $9,000 per annum, for as long as possible. Forget about inflation for the moment. Note that under a fixed 7 percent investment return per year the funds would only last for about 21 years. Granted, this is a (very) high and therefore unsustainable spending rate and I would never counsel either of them to withdraw this much. My point for this lesson is not to suggest a prudent spending rate but to examine the impact of two strategic alternatives.

Now, Stephanie chooses to invest her entire $100,000 in *one* balanced mutual fund that internally has 30 percent of its assets allocated to cash instruments and the remaining 70 percent allocated to diversified equities. This allocation is periodically rebalanced by the fund manager so that Stephanie has a 70/30 equity/cash mix on an ongoing basis at all points in time. I will also assume that this balanced portfolio is expected to earn an arithmetic average of 7 percent per annum net of all fees. Remember that each month Stephanie liquidates as many units as necessary (more during a bear, less during a bull) to create the desired income of $750. This is known as a systematic withdrawal plan (a.k.a., SWiP).

In contrast to Stephanie, Brett decides to implement a so-called "buckets" approach to retirement income generation. He places $25,400 of his $100,000 nest egg in cash instruments to cover the next 3 years (36 months) of $750 per month expenses. The remaining $74,600 is invested in a pure equity portfolio that — I am assuming — is expected to earn an arithmetic average of 8 percent per annum. This bucket will not be touched or tapped for three whole years.

I have picked these numbers carefully. Brett has set aside precisely $25,400 because I have assumed cash is yielding a constant and predictable 4.0 percent per annum. The present value of 36 monthly cash flows of $750 at 4.0 percent / 12 = 0.333 percent per month is exactly $25,400. This bucket of cash will generate the desired payments and Brett will not have to liquidate any stocks (at a loss) if the market takes a tumble during the first three years of withdrawals, a.k.a. the retirement risk zone.

Notice that if we focus on the total portfolio held by either Stephanie or Brett at the time of retirement, they both are expecting their total investment portfolio to earn 7 percent per annum. Stephanie selected a mutual fund that is projected to earn 7 percent, while Brett has 25.4 percent (=$25,400 / $100,000) allocated to cash earning 4.0 percent and 74.6 percent (=$74,600 / $100,000) allocated to equities earning 8 percent. This also works out to an average of 7 percent.

It is very important to keep track of the total asset allocation since it will have a direct impact on my subsequent arguments. In fact, all of the above return assumptions — i.e., 4 percent for cash and 8 percent for equity and 7 percent for the balanced fund — were not arbitrary. They were selected so that at the point of retirement Stephanie and Brett have the same initial asset allocation but different dynamic strategies. Otherwise, any comparison is meaningless.

One final assumption that I will now make for the sake of my counterexample — and this one *is* a bit artificial — is that equities as an asset class will earn one of only three possible investment returns with equal probability. Some of you may have seen this handy triangle before. Namely, equities will either earn 8 percent (the average) or earn 35 percent or they will lose 19 percent in any given year. The arithmetic average of these three numbers is exactly 8 percent. The standard deviation of this variable consisting of three possible investment returns is the square root of the expression: *(1/3)(0)+(1/3)(0.27)^2 +(1/3)(0.27)^2*, which is approximately 21.9 percent.

Stay with me here. By virtue of the fact that Stephanie has invested in a fund that has 70 percent in "triangular equities" and 30 percent in cash, and to be consistent with our previous assumptions, Stephanie's fund will also earn one of three possible investment returns. She will either earn 27 percent (the good) or she will lose 13 percent (the bad) or she will earn 7 percent (the average). All are equally probable. Note that the standard deviation for her fund's random return is the square root of *(1/3)(0)+(1/3)(0 .20)^2+(1/3)(0.20)^2*, which is 16.3 percent. And, just to convince yourself that the math works out, notice that ($74,600/$100,000) times 21.9 percent is also 16.3 percent. In other words, at the point of retirement both of them have an equivalent total asset allocation but a very different strategic plan for how to generate an income during the next three years. Figure 1 illustrates the possible returns that Stephanie and Brett will encounter.

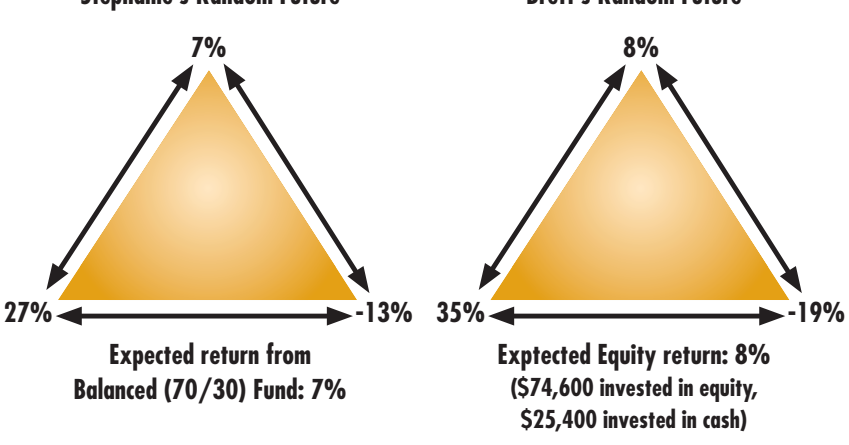
We now get to the interesting part. The way I have set up the counterexample, during the next three years there are 27 distinct economic scenarios that can take place. The 27 comes from 3 possibilities in the first year, times three in the second year, times three in the third year. Table No. 1 at the end of this article illustrates the 27 scenarios and the value of Stephanie's and Brett's portfolios at the end of those three years based on each of those scenarios.

For example, suppose that during the first three years of retirement the stock market goes down for three years in a row. In this case Brett's equity investment of $74,600 loses 19 percent (A.P.R.) for three years — mathematically this is a factor of *(1 - 0.19/12)^36* — which is a total 43 percent destruction in value. As you can see from Table No. 1, after three years of retirement his $74,500 has shrunk to $41,996. And, of course, his cash allocation has been completely spent. In contrast, Stephanie has experienced the same 3-year bear market while spending the same $9,000 per year. Her diversified (70/30) fund has lost 13 percent each year, but she emerges from her 3-year SWiP with $45,105, which is not very pretty, but it is better than Brett's situation.

This, of course, is just one of the 27 possible scenarios; but it is a most revealing case. Although Stephanie and Brett start off with the exact same asset allocation, this is not the case at the end of the three years. Because Brett has spent his cash, he is now 100 percent invested in equities while Stephanie is still holding a balanced 70/30 portfolio. A 100 percent exposure to equity is good when markets are going up, but horrible when they are going down. Ergo, you have not protected yourself against a poor sequence of returns.

Table No. 1 also offers some optimistic news for Brett. If markets increase strongly (35 percent) for three years in a

Figure 1:



row, he will end up with $210,002 while Stephanie will only have $181,854. This gap of almost $30,000 is quite impressive and to some might seem to vindicate the buckets approach. But remember, the reason this happens is because Brett implicitly has a more aggressive (equity) asset allocation as he progresses through retirement. All his spending comes from cash. This creates a natural and lopsided rebalancing towards equity.

Of the 27 scenarios in Table No. 1, a total of 16 of them favor Brett and 11 of them favor Stephanie. Yes, there is a 60 percent chance Brett will be better off and a 40 percent chance Stephanie will be better off. Indeed, the odds might favor Brett, but this is not a guaranteed way to avoid a poor sequence of returns. Most importantly, notice that in just about all scenarios for which the market lost money in the first two or three years, Stephanie is better off than Brett. In other words, Brett is not protected from a prolonged bear market.

OK, what could change our results in the real world as opposed to this hypothetical and stylized example? Of course if both Stephanie and Brett decide to spend less — all else being equal — then they have obviously reduced their exposure to sequence-of-returns risk. In the extreme, if neither of them withdraws any money whenever markets are down they will have immunized themselves against sequence-of-returns risk.

In sum, my only point for this lesson is as follows. Don't confuse your cash-flow-generation strategy with your asset-allocation policy. If you decide to adopt the so-called buckets approach to retirement income planning, then beware that *your total asset allocation and implicit exposure to equity will fluctuate unpredictably over time.* Moreover, if indeed you experience a poor initial sequence of investment returns — so that you have been forced to liquidate all your cash investments — you might find yourself with a 100 percent equity exposure well into retirement and possibly deep into a bear market. (This is in contrast to the non-bucketer who is maintaining the same exact asset mix and hence the same financial risk profile over time.) Sure, the market may recover by the time you have to tap into the equity portion — or it may not. Either way, you have neither reduced nor mitigated financial risk but simply taken a bet on economic scenarios you believe will not happen. Safety is just a mirage.

Table 1: Brett "Buckets" and Stephanie "SWiPs"

There are 27 Scenarios: Who Is Better off in Three Years?

Scenario	Stephanie's Wealth		Wealth	
Avg, Avg,Avg	{7%,7%,7%}	$93,345	{8%,8%,8%}	$ 94,760
Bad, Bad,Bad	{-13%,-13%,-13%}	$45,105	{-19%,-19%,-19}	$ 41,996
Good,Good,Good	{27%,27%,27%}	$181,854	{35%,35%,35%}	$ 210,002
Avg,Avg,Bad	{7%,7%,-13%}	$75,509	{8%,8%,-19%}	$ 72,247
Avg,Bad,Avg	{7%,-13%,7%}	$73,757	{8%,-19%,8%}	$ 72,247
Bad,Avg,Avg	{-13%,7%,7%}	$71,878	{-19%,8%,8%}	$ 72,247
Bad,Bad,Avg	{-13%,-13%,7%}	$56,190	{-19%,-19%,8%}	$ 55,083
Bad,Avg,Bad	{-13%,7%,-13%}	$57,942	{-19%,8%,-19%}	$ 55,083
Avg,Bad,Bad	{7%,-13%,-13%}	$59,480	{8%,-19%,-19%}	$ 55,083
Avg,Avg,Good	{7%,7%,27%}	$114,813	{8%,8%,35%}	$ 123,545
Avg,Good,Avg	{7%,27%,7%}	$116,920	{8%,35%,8%}	$ 123,545
Good,Avg,Avg	{27%,7%,7%}	$119,180	{35%,8%,8%}	$ 123,545
Good,Good,Avg	{27%,27%,7%}	$148,387	{35%,35%,8%}	$ 161,074
Good,Avg,Good	{27%,7%,27%}	$146,280	{35%,8%,35%}	$ 161,074
Avg,Good,Good	{7%,27%,27%}	$143,528	{8%,35%,35%}	$ 161,074
Bad,Bad,Good	{-13%,-13%,27%}	$69,559	{-19%,-19%,35%}	$ 71,815
Bad,Good,Bad	{-13%,27%,-13}	$73,405	{-19%,35%,-19%}	$ 71,815
Good,Bad,Bad	{27%,-13%,-13%}	$76,780	{35%,-19%,-19%}	$ 71,815
Good,Good,Bad	{27%,27%,-13%}	$120,551	{35%,35%,-19%}	$ 122,806
Good,Bad,Good	{27%,-13%,27%	$116,705	{35%,-19%,35%}	$ 122,806
Bad,Good,Good	{-13%,27%,27%}	$111,681	{-19%,35%,35%}	$ 122,806
Avg,Bad,Good	{7%,-13%,27%}	$90,955	{8%,-19%,35%]	$ 94,193
Avg,Good,Bad	{7%,27%,-13%}	$94,801	{8%,35%,-19%}	$ 94,193
Bad,Avg,Good	{-13%,7%,27%}	$88,667	{-19%,8%,35%}	$ 94,193
Bad,Good,Avg	{-13%,27%,7%}	$90,774	{-19%,35%,8%}	$ 94,193
Good,Avg,Bad	{27%,7%,-13%}	$96,650	{35%,8%,-19%}	$ 94,193
Good,Bad,Avg	{27%,-13%,7%}	$94,898	{35%,-19%,8%}	$ 94,193