

# PERSPECTIVES

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Financial planning

## Return Assumptions for Financial Plans, Part 2: When 7% is not 7%

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**In part two of our series on return assumptions for financial plans, let's look at how – even if the average return is the same – the path, or order, of returns can make a big difference in financial projections. By path of returns, we mean when the up and down years occur, especially relative to when we are adding or withdrawing money.**

Previously, in part one, we discussed how we determine a future rate assumption. As you'll recall, we base it on the returns over the past 100 years, to capture all the ups and downs and the long-term trends. The average return for stocks over the past 100 years is 10.8%. To be conservative, we use around 7% for our financial plans, that is, 4% to 5% above inflation.

However, this is where things start to get complicated, as 7% doesn't always *mean* 7%. Many financial plans will just determine a long-term return assumption and then apply it for the life of your plan. But if there are cash flows to consider – deposits and withdrawals to your plan – then things aren't that simple.

Here's a brief example about the path, or order, of returns. Let's say that for the past three years, stocks were down 10%, then up 10%, and then up *another* 10%. The average return for the three years is 2.9%. What if the sequence was backwards: first up 10%, then up another 10%, then *down* 10%? The average is still 2.9%! So, what's the big deal? It seems like the path of returns doesn't matter. Again, the problem occurs when we introduce cash flows: deposits and withdrawals.

Using average returns can sometimes not be what it seems. In fact, it can actually be dangerous, especially over the long term. Consider the following three scenarios, shown in the chart, for a retired investor who has regular withdrawals of \$35,000 at the end of each year. Note that all three scenarios have average returns of 9% and take place over 10 years. In scenario one, called *negative returns first*, we have a shaky start, with a few negative return years in a row, then a few average years, followed by a few good years. In scenario two, average returns, we have *average returns* throughout all 10 years. Scenario three, *positive returns first*, is the opposite of scenario one: We start with a few good years, then a few average years, followed by a few bad years.

A typical gut reaction is that all three of these scenarios produce the same end result, since the average returns are the same. However, as you can see at the bottom of the chart, the final values are in fact very different from each other. Scenario three has a much higher final value, almost double compared to scenario one – even though the average returns are the same.

Age	Year	Scenario 1: Negative returns 1st		Scenario 2: Average returns		Scenario 3: Positive returns 1st	
		Returns	Value	Returns	Value	Returns	Value
60			\$500,000		\$500,000		\$500,000
61	1	-7.0%	\$430,000	7.0%	\$500,000	23.1%	\$580,500
62	2	-7.0%	\$364,900	7.0%	\$500,000	23.1%	\$679,596
63	3	-7.0%	\$304,357	7.0%	\$500,000	23.1%	\$801,582
64	4	-7.0%	\$290,662	7.0%	\$500,000	7.0%	\$822,693
65	5	-7.0%	\$276,008	7.0%	\$500,000	7.0%	\$845,281
66	6	-7.0%	\$260,329	7.0%	\$500,000	7.0%	\$869,451
67	7	-7.0%	\$243,552	7.0%	\$500,000	7.0%	\$895,313
68	8	23.1%	\$264,812	7.0%	\$500,000	-7.0%	\$797,641
69	9	23.1%	\$290,984	7.0%	\$500,000	-7.0%	\$706,806
70	10	23.1%	\$323,201	7.0%	\$500,000	-7.0%	\$622,329
Average return		<b>7.0%</b>		<b>7.0%</b>		<b>7.0%</b>	
Value after 10 years			<b>\$323,201</b>		<b>\$500,000</b>		<b>\$622,329</b>

Source: Stan Clark Financial Team

If you are going to be withdrawing money, a strong start will make a big difference in the end. The reason for this is that the withdrawals happen regardless of whether the market is up or down. If our retiree initially has a few bad years in the market (scenario one), during which he must still take out money, then that will have an *extra* downward impact on the portfolio, since there are fewer re-investable dollars left after each of the bad years. Then, when the market recovers, there are actually fewer assets to recover with! So, 10 years later, there will be less money.

In scenario three, a *cushion* (greater re-investable dollars) is built up because of strong initial performance, even after the withdrawals. Then the cushion softens the blow of the down years that occur. In the end, this leaves a higher final value.

Now you can see how the path, or order, of returns can have a significant effect on financial projections. So, a good financial plan needs to be deeper than a simple return assumption. No one knows when the good, average or bad return years are going to occur. How do we adjust for that in our plans? We'll talk about our solution in part three. ■



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