Why Is Sequence of Returns Risk So Important in Retirement?

One of the key risks in retirement is commonly known as sequence of returns risk. This is the risk of receiving lower or negative returns early in a period when withdrawals are made from an investment portfolio. Early negative market returns can adversely impact how long retirement savings will last.

ACCUMULATION PHASE

Before we explain sequence of returns within the distribution phase, we first want to create a full picture of the savings that took place until retirement. Listed below are three return scenarios during the pre-retirement or commonly referred to as the accumulation phase, which we will illustrate and discuss.

Let's look at a few examples of 20 year periods and the returns of the S&P 500 index on a hypothetical $1,000,000 portfolio. In hypothetical scenario #1, we use the returns in the order they happened, from 1999 to 2018. In hypothetical scenario #2, the order of returns is flipped so that we start with the returns in 2018 and work backward to 1999. Finally, in scenario #3, an average compound growth rate over that period is used, which calculates to be 3.626%.

Note: the average annual growth rate of the S&P 500 index from 1999 to 2018 was 5.40% during that period, but the average annual growth rate is a linear measure and does not account for compounding effects.

Hypothetical Scenario #1

Year	Beginning Value	Withdrawal	Index Return	Ending Value
1999	$ 1,000,000	$ -	19.53%	$ 1,195,300
2000	$ 1,195,300	$ -	-10.14%	$ 1,074,097
2001	$ 1,074,097	$ -	-13.04%	$ 934,034
2002	$ 934,034	$ -	-23.37%	$ 715,751
2003	$ 715,751	$ -	26.38%	$ 904,566
2004	$ 904,566	$ -	8.99%	$ 985,886
2005	$ 985,886	$ -	3.00%	$ 1,015,463
2006	$ 1,015,463	$ -	13.62%	$ 1,153,769
2007	$ 1,153,769	$ -	3.52%	$ 1,194,381
2008	$ 1,194,381	$ -	-38.49%	$ 734,664
2009	$ 734,664	$ -	23.45%	$ 906,943
2010	$ 906,943	$ -	12.78%	$ 1,022,850
2011	$ 1,022,850	$ -	0.00%	$ 1,022,850
2012	$ 1,022,850	$ -	13.41%	$ 1,160,014
2013	$ 1,160,014	$ -	29.60%	$ 1,503,378
2014	$ 1,503,378	$ -	11.39%	$ 1,674,613
2015	$ 1,674,613	$ -	-0.73%	$ 1,662,388
2016	$ 1,662,388	$ -	9.54%	$ 1,820,980
2017	$ 1,820,980	$ -	19.42%	$ 2,174,614
2018	$ 2,174,614	$ -	-6.24%	$ 2,038,918
Total Withdrawals	$ -			

Hypothetical Scenario #2

Year	Beginning Value	Withdrawal	Index Return	Ending Value
2018	$ 1,000,000	$ -	-6.24%	$ 937,600
2017	$ 937,600	$ -	19.42%	$ 1,119,682
2016	$ 1,119,682	$ -	9.54%	$ 1,226,500
2015	$ 1,226,500	$ -	-0.73%	$ 1,217,546
2014	$ 1,217,546	$ -	11.39%	$ 1,356,225
2013	$ 1,356,225	$ -	29.60%	$ 1,757,667
2012	$ 1,757,667	$ -	13.41%	$ 1,993,370
2011	$ 1,993,370	$ -	0.00%	$ 1,993,370
2010	$ 1,993,370	$ -	12.78%	$ 2,248,123
2009	$ 2,248,123	$ -	23.45%	$ 2,775,308
2008	$ 2,775,308	$ -	-38.49%	$ 1,707,092
2007	$ 1,707,092	$ -	3.52%	$ 1,767,181
2006	$ 1,767,181	$ -	13.62%	$ 2,007,872
2005	$ 2,007,872	$ -	3.00%	$ 2,068,108
2004	$ 2,068,108	$ -	8.99%	$ 2,254,031
2003	$ 2,254,031	$ -	26.38%	$ 2,848,644
2002	$ 2,848,644	$ -	-23.37%	$ 2,182,916
2001	$ 2,182,916	$ -	-13.04%	$ 1,898,264
2000	$ 1,898,264	$ -	-10.14%	$ 1,705,780
1999	$ 1,705,780	$ -	19.53%	$ 2,038,918
Total Withdrawals	$ -			

Hypothetical Scenario #3

Year	Beginning Value	Withdrawal	Compound Return	Ending Value
1999	$ 1,000,000	$ -	3.626%	$ 1,036,263
2000	$ 1,036,263	$ -	3.626%	$ 1,073,841
2001	$ 1,073,841	$ -	3.626%	$ 1,112,782
2002	$ 1,112,782	$ -	3.626%	$ 1,153,135
2003	$ 1,153,135	$ -	3.626%	$ 1,194,951
2004	$ 1,194,951	$ -	3.626%	$ 1,238,283
2005	$ 1,238,283	$ -	3.626%	$ 1,283,187
2006	$ 1,283,187	$ -	3.626%	$ 1,329,719
2007	$ 1,329,719	$ -	3.626%	$ 1,377,939
2008	$ 1,377,939	$ -	3.626%	$ 1,427,907
2009	$ 1,427,907	$ -	3.626%	$ 1,479,687
2010	$ 1,479,687	$ -	3.626%	$ 1,533,345
2011	$ 1,533,345	$ -	3.626%	$ 1,588,949
2012	$ 1,588,949	$ -	3.626%	$ 1,646,569
2013	$ 1,646,569	$ -	3.626%	$ 1,706,278
2014	$ 1,706,278	$ -	3.626%	$ 1,768,153
2015	$ 1,768,153	$ -	3.626%	$ 1,832,272
2016	$ 1,832,272	$ -	3.626%	$ 1,898,715
2017	$ 1,898,715	$ -	3.626%	$ 1,967,568
2018	$ 1,967,568	$ -	3.626%	$ 2,038,918
Total Withdrawals	$ -			

This example is for illustrative purposes only, and should not be used to predict or project future results.

As you can see, **all three scenarios end with the same balance of $2,038,918**. Regardless of the order of the returns, the values are the same at the end of 20 years. This is because no withdrawals were taken from these accounts and they all had equal opportunity for the values to compound. After the accumulation phase is complete, it's time to focus on scenarios in which withdrawals will take place, or the distribution phase.

DISTRIBUTION PHASE

Instead of having 20 years to allow the $1,000,000 to grow, for the scenarios below, we are going to fast forward to retirement and start taking withdrawals immediately on that same $1,000,000.

For these examples, we follow the same market return scenarios as before. #1 1999 to 2018, #2 2018 to 1999, and #3 uses the compounded growth rate year after year.

The withdrawals start at 4% of the portfolio value and increase by 3% per year for inflation. The "4% rule" is a common rule of thumb introduced to the investing world in the early 1990s. This rule has been heavily debated by industry experts, but for illustrative purposes, we will use this number.

Let's begin illustrating scenario #3, which shows the same level consistent returns each year while introducing the effects of withdrawals.

SCENARIO #3 – EXPERIENCING CONSISTENT RETURNS WHILE TAKING WITHDRAWALS

	Hypothetical Scenario #3			
Year	Beginning Value	Withdrawal	Average Return	Ending Value
1999	$ 1,000,000	$ 40,000	5.40%	$ 1,014,000
2000	$ 1,014,000	$ 41,200	5.40%	$ 1,027,556
2001	$ 1,027,556	$ 42,436	5.40%	$ 1,040,608
2002	$ 1,040,608	$ 43,709	5.40%	$ 1,053,092
2003	$ 1,053,092	$ 45,020	5.40%	$ 1,064,938
2004	$ 1,064,938	$ 46,371	5.40%	$ 1,076,074
2005	$ 1,076,074	$ 47,762	5.40%	$ 1,086,420
2006	$ 1,086,420	$ 49,195	5.40%	$ 1,095,892
2007	$ 1,095,892	$ 50,671	5.40%	$ 1,104,399
2008	$ 1,104,399	$ 52,191	5.40%	$ 1,111,846
2009	$ 1,111,846	$ 53,757	5.40%	$ 1,118,129
2010	$ 1,118,129	$ 55,369	5.40%	$ 1,123,138
2011	$ 1,123,138	$ 57,030	5.40%	$ 1,126,757
2012	$ 1,126,757	$ 58,741	5.40%	$ 1,128,861
2013	$ 1,128,861	$ 60,504	5.40%	$ 1,129,316
2014	$ 1,129,316	$ 62,319	5.40%	$ 1,127,980
2015	$ 1,127,980	$ 64,188	5.40%	$ 1,124,703
2016	$ 1,124,703	$ 66,114	5.40%	$ 1,119,323
2017	$ 1,119,323	$ 68,097	5.40%	$ 1,111,669
2018	$ 1,111,669	$ 70,140	5.40%	$ 1,101,559
Total Withdrawals		**$ 1,074,814**		

As you can see in this example, by taking $40,000 at the end of year 1 (1999) coupled with the average return exceeding the amount withdrawn, the portfolio value still increased at the end of year 1. The amount withdrawn increases each year due to 3% inflation. As you see, the values remain steady throughout this timeframe.

After 20 years, a total of $1,074,814 has been taken out in withdrawals during retirement, and the portfolio value is still above $1.1 million. If your retirement were to last another 10 years or longer, hypothetically, there is a good chance you will still have enough of a portfolio balance to sustain your withdrawals.

This scenario shows that consistent positive returns while taking withdrawals could potentially sustain the portfolio, depending on the amount of the return.

SCENARIO #2 – EXPERIENCING LARGE LOSSES AT THE END WHILE TAKING WITHDRAWALS

In the second scenario, the illustration shows the S&P 500 index returns in 2018 working backward to 1999. The year 2018 experienced a market return of -6.24%, which is quite a bit below average for the period; however, the returns over the next nine years help significantly increase the value after taking the initial $40,000 for income.

Hypothetical Scenario #2

Year	Beginning Value	Withdrawal	Index Return	Ending Value
2018	$ 1,000,000	$ 40,000	-6.24%	$ 897,600
2017	$ 897,600	$ 41,200	19.42%	$ 1,030,714
2016	$ 1,030,714	$ 42,436	9.54%	$ 1,086,608
2015	$ 1,086,608	$ 43,709	-0.73%	$ 1,034,967
2014	$ 1,034,967	$ 45,020	11.39%	$ 1,107,829
2013	$ 1,107,829	$ 46,371	29.60%	$ 1,389,376
2012	$ 1,389,376	$ 47,762	13.41%	$ 1,527,929
2011	$ 1,527,929	$ 49,195	0.00%	$ 1,478,734
2010	$ 1,478,734	$ 50,671	12.78%	$ 1,617,045
2009	$ 1,617,045	$ 52,191	23.45%	$ 1,944,051
2008	$ 1,944,051	$ 53,757	-38.49%	$ 1,142,029
2007	$ 1,142,029	$ 55,369	3.52%	$ 1,126,859
2006	$ 1,126,859	$ 57,030	13.62%	$ 1,223,307
2005	$ 1,223,307	$ 58,741	3.00%	$ 1,201,265
2004	$ 1,201,265	$ 60,504	8.99%	$ 1,248,755
2003	$ 1,248,755	$ 62,319	26.38%	$ 1,515,858
2002	$ 1,515,858	$ 64,188	-23.37%	$ 1,097,414
2001	$ 1,097,414	$ 66,114	-13.04%	$ 888,197
2000	$ 888,197	$ 68,097	-10.14%	$ 730,037
1999	$ 730,037	$ 70,140	19.53%	$ 802,472
Total Withdrawals		**$ 1,074,814**		

Even though year 1 was a negative return, the strong returns in the subsequent years set the stage for a portfolio account balance over the 20 years that remains stable while taking withdrawals out of the portfolio. During the final three of four years of this scenario, when the index is -23.37%, -13.04%, and -10.14% back to back to back, *the portfolio still has over $800,000 in it after 20 years and after taking over $1 million in withdrawals*. This is due to the strong returns that start early in the retirement phase.

The total withdrawals in this scenario are equal to scenario #3 in that $1,074,814 has been withdrawn; however, this chart shows an ending value that differs based on the returns. This demonstrates that when withdrawals are introduced with the sequence of returns to a portfolio, you can have varying outcomes, unlike during accumulation or without withdrawals coming out.

If you retired and were fortunate enough to experience scenario #2's sequence of returns and continue to live 10 more years or longer in retirement, your portfolio looks to be potentially well-positioned to continue to provide the income needed in retirement. This sequence still has the same average rate of return as it did in accumulation, 5.40%.

SCENARIO #1 – EXPERIENCING LARGE LOSSES AT THE BEGINNING WHILE TAKING WITHDRAWALS

In scenario #2, we witnessed early on positive returns have a significant effect on the outcome of our ending value. Even though year 1 was a negative return, the subsequent positive years significantly impacted the portfolio values. What if the return experience at the start of retirement begins with a downturn in the market?

Hypothetical Scenario #1

Year	Beginning Value	Withdrawal	Index Return	Ending Value
1999	$ 1,000,000	$ 40,000	19.53%	$ 1,155,300
2000	$ 1,155,300	$ 41,200	-10.14%	$ 996,953
2001	$ 996,953	$ 42,436	-13.04%	$ 824,514
2002	$ 824,514	$ 43,709	-23.37%	$ 588,116
2003	$ 588,116	$ 45,020	26.38%	$ 698,241
2004	$ 698,241	$ 46,371	8.99%	$ 714,641
2005	$ 714,641	$ 47,762	3.00%	$ 688,319
2006	$ 688,319	$ 49,195	13.62%	$ 732,873
2007	$ 732,873	$ 50,671	3.52%	$ 707,999
2008	$ 707,999	$ 52,191	-38.49%	$ 383,299
2009	$ 383,299	$ 53,757	23.45%	$ 419,426
2010	$ 419,426	$ 55,369	12.78%	$ 417,660
2011	$ 417,660	$ 57,030	0.00%	$ 360,629
2012	$ 360,629	$ 58,741	13.41%	$ 350,248
2013	$ 350,248	$ 60,504	29.60%	$ 393,418
2014	$ 393,418	$ 62,319	11.39%	$ 375,910
2015	$ 375,910	$ 64,188	-0.73%	$ 308,977
2016	$ 308,977	$ 66,114	9.54%	$ 272,340
2017	$ 272,340	$ 68,097	19.42%	$ 257,131
2018	$ 257,131	$ 70,140	-6.24%	$ 170,946
	Total Withdrawals	**$ 1,074,814**		

As you can see in this scenario, retirement is off to a great start with an index return of 19.53%. However, we see a significant downturn in years 2, 3 and 4, coupled with taking four years of withdrawals. *The portfolio value has been almost cut in half, to $588,116 after only four years*. And because of this, even with double-digit positive returns in numerous years, the portfolio cannot overcome the losses to recover and grow the portfolio value back to a level that allows it to sustain over time.

Because of the sequence of returns, this portfolio has the potential to run out of money by continuing to use the 4% withdrawal rate. With a value of $170,946 at the end of year 20 (2018), this client may have to adjust their withdrawal rate or change their lifestyle to lower the risk that the portfolio will eventually run out of money. Keep in mind that the average index return is still 5.40%, no different than the accumulation phase over these same years and no different than scenario #2, which had a portfolio value over $802,000 after 20 years. This illustrates that a negative return experience early on can have a significant impact on your retirement portfolio.

These are actual returns from 1999 to 2018 of the S&P 500 index.

HOW DO I SOLVE FOR SEQUENCE OF RETURNS RISK?

Based on these scenarios, it is apparent that relying solely on the order of which your returns come in while taking withdrawals could be potentially problematic during retirement.

One potential solution could be implementing a fixed index annuity for a portion of your portfolio. This strategy will guarantee your principal, help decrease your overall risk in the market, provide a floor where the worst-case scenario is a 0% return in a year, and also with an income benefit rider, either built in or for an additional cost[†], provide a guaranteed[*] lifetime income that cannot be outlived.

Allocating a portion of your portfolio to an annuity solution with a living benefit rider or a SPIA (single premium immediate annuity) allows for growth on your other investments giving you more stability within your entire retirement portfolio.

Hypothetical Scenario #1				
Year	Beginning Value	Withdrawal	Index Return	Ending Value
1999	$ 500,000	$ -	19.53%	$ 597,650
2000	$ 597,650	$ -	-10.14%	$ 537,048
2001	$ 537,048	$ -	-13.04%	$ 467,017
2002	$ 467,017	$ -	-23.37%	$ 357,875
2003	$ 357,875	$ -	26.38%	$ 452,282
2004	$ 452,282	$ -	8.99%	$ 492,942
2005	$ 492,942	$ -	3.00%	$ 507,730
2006	$ 507,730	$ -	13.62%	$ 576,883
2007	$ 576,883	$ -	3.52%	$ 597,189
2008	$ 597,189	$ -	-38.49%	$ 367,331
2009	$ 367,331	$ -	23.45%	$ 453,470
2010	$ 453,470	$ -	12.78%	$ 511,423
2011	$ 511,423	$ -	0.00%	$ 511,423
2012	$ 511,423	$ -	13.41%	$ 580,005
2013	$ 580,005	$ -	29.60%	$ 751,686
2014	$ 751,686	$ -	11.39%	$ 837,303
2015	$ 837,303	$ -	-0.73%	$ 831,191
2016	$ 831,191	$ -	9.54%	$ 910,487
2017	$ 910,487	$ -	19.42%	$ 1,087,304
2018	$ 1,087,304	$ -	-6.24%	$ 1,019,456
	Total Withdrawals	$ -		

One approach worth considering is dividing the $1 million hypothetical portfolio into two buckets. The first bucket could allocate $500,000 to an annuity to generate the necessary income. The second bucket could remain in the portfolio. As you can see, between 1999 and 2018, the $500,000 in the S&P 500 index would have grown to just over $1 million by the end of 2018. This portion of the portfolio could be accessed for discretionary income needs or be left as a potential legacy.

Why take unnecessary risks, especially when it comes to sequence of returns in retirement? An annuity can effectively address many concerns when it comes to sequence risk. It can help reduce your overall risk, allow you to take advantage of guaranteed income with a portion of your portfolio, and provide the opportunity to still have some market growth potential with a portion of your portfolio.

†With the purchase of any additional-cost riders, the contract's values will be reduced by the cost of the rider. This may result in a loss of principal and interest in any year in which the contract does not earn interest or earns interest in an amount less than the rider charge.

*Guarantees are backed by the financial strength and claims-paying ability of the issuing insurance company.

Fixed index annuities are designed to meet long-term needs for retirement income. Early withdrawals may result in loss of principal and credited interest due to surrender charges. Withdrawals are subject to ordinary income tax and, if taken prior to 59½, a 10% federal tax penalty.

TA200934-1221 | For financial professional use only - not for use with the general public.