

## Unit-3

### **LEVEL – ADVANCED: AGE 50 AND ABOVE**

## Unit-3



CONTENTS	PAGE NO.
3.18 Scenario Modeling-why it is so powerful for Retirement Planning	153
3.19 2 Critical Retirement Concepts to take Note of	158
3.20 Take charge of Your Retirement	164
3.21 Why Losing Money in Early Retirement Stage is Disastrous	167
3.22 The 3 Pillars of Spending during Retirement	170
3.23 Why the 4 Percent Withdrawal Rule is useless in modern-day Retirement	177
3.24 The 345 Rule: Build a Confidence Interval in Outliving your Retirement Fund	183
3.25 The What's, Whys and How's of Annuitization for Retirement Management	189
3.26 Understanding Income Flooring & IRR	196
3.27 How to construct your own Retirement Scenarios Modeling System	205
3.28 Case Study: How to use the Retirement Scenarios Modeling System	209
3.29 Case study: How a 6% CAGR \$ 950k Outlast a 3% CAGR \$1.5 million for 25 years	216

## Chapter 18

# SCENARIO MODELING-WHY IT IS SO POWERFUL FOR RETIREMENT PLANNING

# 18 SCENARIO MODELING-WHY IT IS SO POWERFUL FOR RETIREMENT PLANNING

## Retirement Planning using Scenario Modeling

The beauty of scenario modeling advocating this course is that you can adjust the outlook of your retirement landscape any time that you want.

		Age	Year	nth year	Opening Balance	Withdrawal	Closing Balance
Balance at 55 years of age	\$10,00,000.00						
Inflation Rate	3.20%	55	2013	0	10,00,000.00	28,800.00	9,71,200.00
Annual Withdrawal (with spouse)	\$ 28,800.00	56	2014	1	9,71,200.00	29,721.60	9,41,478.40
Annual Withdrawal (surviving spouse) Present Value	\$ 20,400.00	57	2015	2	9,41,478.40	30,672.69	9,10,805.71
Annual Withdrawal (surviving spouse)		58	2016	3	9,10,805.71	31,654.22	8,79,151.49
Future Value on 20th year with 3.2% Inflation	\$ 38,302.23						
	\$ 2,400.00	59	2017	4	8,79,151.49	32,667.15	8,46,484.34
	\$ 1,700.00	60	2018	5	8,46,484.34	33,712.50	8,12,771.84
		61	2019	6	8,12,771.84	34,791.30	7,77,980.54
		62	2020	7	7,77,980.54	35,904.62	7,42,075.91
		63	2021	8	7,42,075.91	37,053.57	7,05,022.34
		64	2022	9	7,05,022.34	38,239.29	6,66,783.06
		65	2023	10	6,66,783.06	39,462.94	6,27,320.12
		66	2024	11	6,27,320.12	40,725.76	5,86,594.36
		67	2025	12	5,86,594.36	42,028.98	5,44,565.38
		68	2026	13	5,44,565.38	43,373.91	5,01,191.47
		69	2027	14	5,01,191.47	44,761.87	4,56,429.60
		70	2028	15	4,56,429.60	46,194.25	4,10,235.35
		71	2029	16	4,10,235.35	47,672.47	3,62,562.88
		72	2030	17	3,62,562.88	49,197.99	3,13,364.89
		73	2031	18	3,13,364.89	50,772.32	2,62,592.57
		74	2032	19	2,62,592.57	52,397.04	2,10,195.53
		75	2033	20	2,10,195.53	38,302.23	1,71,893.29
		76	2034	21	1,71,893.29	39,527.91	1,32,365.39
		77	2035	22	1,32,365.39	40,792.80	91,572.59

For example, this is something that is in continuation of an appearance really of the fact that if you have one million and you have Rs 2,400 money for expenses or 22 years or the day you pass away this is how you turn out but if you do not have one million and you only have maybe eight hundred thousand.

		Age	Year	nth year	Opening Balance	Withdrawal	Closing Balance
Balance at 55 years of age	\$ 8,00,000.00						
Inflation Rate	3.20%	55	2013	0	8,00,000.00	24,000.00	7,76,000.00
Annual Withdrawal (with spouse)	\$ 24,000.00	56	2014	1	7,76,000.00	24,768.00	7,51,232.00
Annual Withdrawal (surviving spouse) Present Value	\$ 20,400.00	57	2015	2	7,51,232.00	25,560.58	7,25,671.42
Annual Withdrawal (surviving spouse)		58	2016	3	7,25,671.42	26,378.51	6,99,292.91
Future Value on 20th year with 3.2% inflation	\$ 38,302.23	59	2017	4	6,99,292.91	27,222.63	6,72,070.28
	\$ 2,000.00	60	2018	5	6,72,070.28	28,093.75	6,43,976.53
	\$ 1,700.00	61	2019	6	6,43,976.53	28,992.75	6,14,983.78
		62	2020	7	6,14,983.78	29,920.52	5,85,063.26
		63	2021	8	5,85,063.26	30,877.98	5,54,185.29
		64	2022	9	5,54,185.29	31,866.07	5,22,319.22
		65	2023	10	5,22,319.22	32,885.79	4,89,433.43
		66	2024	11	4,89,433.43	33,938.13	4,55,495.30
		67	2025	12	4,55,495.30	35,024.15	4,20,471.15
		68	2026	13	4,20,471.15	36,144.92	3,84,326.23
		69	2027	14	3,84,326.23	37,301.56	3,47,024.67
		70	2028	15	3,47,024.67	38,495.21	3,08,529.45
		71	2029	16	3,08,529.45	39,727.06	2,68,802.40
		72	2030	17	2,68,802.40	40,998.32	2,27,804.07
		73	2031	18	2,27,804.07	42,310.27	1,85,493.80
		74	2032	19	1,85,493.80	43,664.20	1,41,829.61
		75	2033	20	1,41,829.61	45,057.23	1,03,527.37
		76	2034	21	1,03,527.37	46,492.91	63,999.47
		77	2035	22	63,999.47	47,972.80	23,206.67
		78	2036	23	23,206.67	49,498.17	(18,891.50)
		79	2037	24	(18,891.50)	43,445.31	(62,336.81)

So it turns out that when you pass away it cannot last to survive your spouse expenses like when she is seventy-eight.

		Age	Year	nth year	Opening Balance	Withdrawal	Closing Balance
Balance at 55 years of age	\$ 8,00,000.00						
Inflation Rate	3.20%	55	2013	0	8,00,000.00	21,600.00	7,78,400.00
Annual Withdrawal (with spouse)	\$ 21,600.00	56	2014	1	7,78,400.00	22,291.20	7,56,108.80
Annual Withdrawal (surviving spouse) Present Value	\$ 20,400.00	57	2015	2	7,56,108.80	23,004.52	7,33,104.28
Annual Withdrawal (surviving spouse)		58	2016	3	7,33,104.28	23,740.66	7,09,363.62
Future Value on 20th year with 3.2% inflation	\$ 38,302.23	59	2017	4	7,09,363.62	24,500.36	6,84,863.25
	\$ 1,800.00	60	2018	5	6,84,863.25	25,284.38	6,59,578.88
	\$ 1,700.00	61	2019	6	6,59,578.88	26,093.48	6,33,485.40
		62	2020	7	6,33,485.40	26,928.47	6,06,556.94
		63	2021	8	6,06,556.94	27,790.18	5,78,766.76
		64	2022	9	5,78,766.76	28,679.46	5,50,087.29
		65	2023	10	5,50,087.29	29,597.21	5,20,490.09
		66	2024	11	5,20,490.09	30,544.32	4,89,945.77
		67	2025	12	4,89,945.77	31,521.74	4,58,424.03
		68	2026	13	4,58,424.03	32,530.43	4,25,893.60
		69	2027	14	4,25,893.60	33,571.40	3,92,322.20
		70	2028	15	3,92,322.20	34,645.69	3,57,676.51
		71	2029	16	3,57,676.51	35,754.35	3,21,922.16
		72	2030	17	3,21,922.16	36,898.49	2,85,023.67
		73	2031	18	2,85,023.67	38,079.24	2,46,944.42
		74	2032	19	2,46,944.42	39,297.78	2,07,646.65
		75	2033	20	2,07,646.65	40,557.23	1,69,344.41
		76	2034	21	1,69,344.41	41,862.91	1,29,816.50
		77	2035	22	1,29,816.50	43,212.80	89,023.71
		78	2036	23	89,023.71	44,608.17	46,925.54
		79	2037	24	46,925.54	43,445.31	3,480.23

A lot of people think there is a way to find the extra 200 thousand savings to be put into your retirement fund. It's not easy we're talking about a huge lump sum of amount here. You're going to get the most important takeaway in this chapter is that if you only have an eight hundred thousand instead of one million and you realize that to sustain your retirement lifestyle, it is not enough for your spouse at the age of seventy-nine. So you can adjust here say if you reduce your expenses by 400 at the onset of your retirement and see how this turns out.

		Age	Year	nth year	Opening Balance	Withdrawal	Closing Balance
Balance at 55 years of age	\$ 8,00,000.00						
Inflation Rate	3.20%	55	2013	0	8,00,000.00	21,600.00	7,78,400.00
Annual Withdrawal (with spouse)	\$ 21,600.00	56	2014	1	7,78,400.00	22,291.20	7,56,108.80
Annual Withdrawal (surviving spouse) Present Value	\$ 20,400.00	57	2015	2	7,56,108.80	23,004.52	7,33,104.28
Annual Withdrawal (surviving spouse)		58	2016	3	7,33,104.28	23,740.66	7,09,363.62
Future Value on 20th year with 3.2% inflation	\$ 38,302.23	59	2017	4	7,09,363.62	24,500.36	6,84,863.25
	\$ 1,800.00	60	2018	5	6,84,863.25	25,284.38	6,59,578.88
	\$ 1,700.00	61	2019	6	6,59,578.88	26,093.48	6,33,485.40
		62	2020	7	6,33,485.40	26,928.47	6,06,556.94
		63	2021	8	6,06,556.94	27,790.18	5,78,766.76
		64	2022	9	5,78,766.76	28,679.46	5,50,087.29
		65	2023	10	5,50,087.29	29,597.21	5,20,490.09
		66	2024	11	5,20,490.09	30,544.32	4,89,945.77
		67	2025	12	4,89,945.77	31,521.74	4,58,424.03
		68	2026	13	4,58,424.03	32,530.43	4,25,893.60
		69	2027	14	4,25,893.60	33,571.40	3,92,322.20
		70	2028	15	3,92,322.20	34,645.69	3,57,676.51
		71	2029	16	3,57,676.51	35,754.35	3,21,922.16
		72	2030	17	3,21,922.16	36,898.49	2,85,023.67
		73	2031	18	2,85,023.67	38,079.24	2,46,944.42
		74	2032	19	2,46,944.42	39,297.78	2,07,646.65
		75	2033	20	2,07,646.65	38,302.23	1,69,344.41
		76	2034	21	1,69,344.41	39,527.91	1,29,816.50
		77	2035	22	1,29,816.50	40,792.80	89,023.71
		78	2036	23	89,023.71	42,098.17	46,925.54
		79	2037	24	46,925.54	43,445.31	3,480.23

How about if you adjust it to one thousand eight hundred and see how this turns out. It is just enough for you to last for you and your spouse before you both pass away. It is easier to save to get two hundred thousand into a retirement fund or do you find it easier to reduce your monthly expenses from 2400 to 1800 per month at the onset of your retirement. So most people will find it easier to reduce the expenses rather than find how to save or get the extra two hundred thousand retirement funds. So this is the most important thing of this module and this scenario modeling analysis gives you a very good way to look at this and do it for yourself and whether you want to do it for the next step.

		Age	Year	nth year	Opening Balance	Withdrawal	Closing Balance
Balance at 55 years of age	\$ 8,00,000.00						
Inflation Rate	3.20%	55	2013	0	8,00,000.00	21,600.00	7,78,400.00
Annual Withdrawal (with spouse)	\$ 21,600.00	56	2014	1	7,78,400.00	22,291.20	7,56,108.80
Annual Withdrawal (surviving spouse) Present Value	\$ 20,400.00	57	2015	2	7,56,108.80	23,004.52	7,33,104.28
Annual Withdrawal (surviving spouse)		58	2016	3	7,33,104.28	23,740.66	7,09,363.62
Future Value on 20th year with 3.2% inflation	\$ 38,302.23	59	2017	4	7,09,363.62	24,500.36	6,84,863.25
	\$ 1,800.00	60	2018	5	6,84,863.25	25,284.38	6,59,578.88
	\$ 1,700.00	61	2019	6	6,59,578.88	26,093.48	6,33,485.40
		62	2020	7	6,33,485.40	26,928.47	6,06,556.94
		63	2021	8	6,06,556.94	27,790.18	5,78,766.76
		64	2022	9	5,78,766.76	28,679.46	5,50,087.29
		65	2023	10	5,50,087.29	29,597.21	5,20,490.09
		66	2024	11	5,20,490.09	30,544.32	4,89,945.77
		67	2025	12	4,89,945.77	31,521.74	4,58,424.03
		68	2026	13	4,58,424.03	32,530.43	4,25,893.60
		69	2027	14	4,25,893.60	33,571.40	3,92,322.20
		70	2028	15	3,92,322.20	34,645.69	3,57,676.51
		71	2029	16	3,57,676.51	35,754.35	3,21,922.16
		72	2030	17	3,21,922.16	36,898.49	2,85,023.67
		73	2031	18	2,85,023.67	38,079.24	2,46,944.42
		74	2032	19	2,46,944.42	39,297.78	2,07,646.65
		75	2033	20	2,07,646.65	38,302.23	1,69,344.41
		76	2034	21	1,69,344.41	39,527.91	1,29,816.50
		77	2035	22	1,29,816.50	40,792.80	89,023.71
		78	2036	23	89,023.71	42,098.17	46,925.54
		79	2037	24	46,925.54	43,445.31	3,480.23

For this example, if you were given a choice whether you want to reduce expenses, so it can last you to the next twenty-four years. All you want to think of ways to get 200 thousand more into the retirement fund and you will find it a lot more to reduce expenses to find that extra amount of money to be in the retirement fund.