

Spreadsheet Tracks
Year-by-Year Portfolio Value

I use this spreadsheet to find the Pile of Money (portfolio value) in a future year using a better sequence of return than most horrible (starting in 1969). All \$values are in constant dollars or spending power.

Inputs to this sheet give 19 years of zero chance of depletion when one uses a most horrible sequence of returns. It uses the Mix and Investing Cost decisions that Patti and I decided in December 2014 for our spending in 2015

This sequence starts with 1984, which is my attempt to find an average 30-year return sequence. The sheet calculates portfolio value year-by-year. With the three key inputs shown, portfolio value at the end of 19 years is over \$3,000 or 3X the initial portfolio value.

Over the 19 years, the sheet shows we start with \$1,000. We would withdraw \$855 in constant spending power (\$45*19). And we have +\$3,000 at the end of the 19th year.

		W/D for		Mix Stock/Bond			End Year	Investing	
	Start	Spending just	Start	Real Return	Return	Bal B4	Invest Cost	Cost	End B4
	Year	prior to Jan 1	of Year	Rate in Yr.	\$	Invest Cost		0.18%	next W/D
		4.50%							
1	1984	1,000.0	45	955.0	3.56%	34.0	989.0	1.8	987.2
2	1985	987.2	45	942.2	26.83%	252.8	1,195.0	2.2	1,192.8
3	1986	1,192.8	45	1,147.8	18.21%	209.0	1,356.9	2.4	1,354.4
4	1987	1,354.4	45	1,309.4	-0.33%	(4.4)	1,305.0	2.3	1,302.7
5	1988	1,302.7	45	1,257.7	10.67%	134.2	1,391.9	2.5	1,389.4
6	1989	1,389.4	45	1,344.4	23.89%	321.2	1,665.7	3.0	1,662.7
7	1990	1,662.7	45	1,617.7	-7.37%	(119.2)	1,498.5	2.7	1,495.8
8	1991	1,495.8	45	1,450.8	24.96%	362.2	1,813.0	3.3	1,809.7
9	1992	1,809.7	45	1,764.7	4.65%	82.1	1,846.8	3.3	1,843.5
10	1993	1,843.5	45	1,798.5	8.32%	149.7	1,948.2	3.5	1,944.7
11	1994	1,944.7	45	1,899.7	-2.65%	(50.3)	1,849.4	3.3	1,846.0
12	1995	1,846.0	45	1,801.0	33.31%	599.9	2,400.9	4.3	2,396.6
13	1996	2,396.6	45	2,351.6	15.54%	365.4	2,717.0	4.9	2,712.1
14	1997	2,712.1	45	2,667.1	28.55%	761.4	3,428.5	6.2	3,422.4
15	1998	3,422.4	45	3,377.4	24.25%	819.0	4,196.3	7.6	4,188.8
16	1999	4,188.8	45	4,143.8	13.50%	559.3	4,703.1	8.5	4,694.6
17	2000	4,694.6	45	4,649.6	-7.64%	(355.4)	4,294.2	7.7	4,286.5
18	2001	4,286.5	45	4,241.5	-10.93%	(463.6)	3,778.0	6.8	3,771.2
19	2002	3,771.2	45	3,726.2	-18.06%	(672.9)	3,053.3	5.5	3,047.8
20	2003	3,047.8	45	3,003	22.30%	670	3,672	6.6	3,666
21	2004	3,665.8	45	3,621	7.05%	255	3,876	7.0	3,869
22	2005	3,868.9	45	3,824	1.87%	72	3,895	7.0	3,888
23	2006	3,888.4	45	3,843	10.79%	415	4,258	7.7	4,251
24	2007	4,250.5	45	4,206	1.99%	84	4,289	7.7	4,282
25	2008	4,281.6	45	4,237	-27.64%	(1,171)	3,066	5.5	3,060
26	2009	3,060.2	45	3,015	17.07%	515	3,530	6.4	3,524
27	2010	3,523.5	45	3,479	12.64%	440	3,918	7.1	3,911
28	2011	3,911.2	45	3,866	2.98%	115	3,981	7.2	3,974
29	2012	3,974.1	45	3,929	12.15%	477	4,406	7.9	4,398
30	2013	4,398.5	45	4,353	23.97%	1,043	5,397	9.7	5,387

Portfolio Value +\$3 million in constant spending power in 19 years.

The column of real returns comes from data published by Ibbotson, SBBI Yearbook, 2014.

The return data provided is for two classes of stocks, three of bonds, and one for short-term bills.

I used Large Company Stocks and US Gov't Bonds for the calculations here.

See August 3, 2018 blog post for discussion.

* Spreadsheet uses 4.50% for 19 years while FIRECalc (used for our plan) would show 4.40% spending rate for 19 years.