

How Does Mix of Stocks affect future Portfolio Value
in 19th years of the worst sequence of stock and bond returns in history?

Lower mix of stocks lowers future portfolio value.

BASE CASE of 75% Stocks: 4.7318% SSR% results in 20 years of full withdrawals for spending (\$60 at the end of the 19th year).

Inputs	
Initial portfolio value	1,000
Constant dollar (C\$)	47.318 "4.40% withdrawal rate"
withdrawal for spending	
Initial Stock Mix	75%
Total investing cost	0.10%
Sell only bonds for spending in years when stocks are -10% or worse real return	

Spending Year	Withdrawal for spending in the next year	Portfolio at start of year after withdrawal	Portfolio Composition at start of year			Portfolio Value at end of year, net of investing cost			Percent decline from prior year initial value	Real Return*		
			Stocks	Bonds	Stock Mix	Stocks	Bonds	Total		Year	Stocks	Bonds
			1	47.3	952.7	714.5	238.2	75%		615.5	217.7	833.2
2	47.3	785.9	615.5	170.4	78%	605.4	184.7	790.1	-5.2%	1970	-1.6%	8.5%
3	47.3	742.8	581.7	161.1	78%	642.7	172.7	815.4	3.2%	1971	10.6%	7.4%
4	47.3	768.1	601.6	166.5	78%	691.5	169.6	861.2	5.6%	1972	15.1%	1.9%
5	47.3	813.8	637.4	176.5	78%	499.3	164.9	664.1	-22.9%	1973	-21.6%	-6.5%
6	47.3	616.8	499.3	117.6	81%	326.9	109.9	436.8	-34.2%	1974	-34.5%	-6.4%
7	47.3	389.5	326.9	62.6	84%	418.8	63.4	482.2	10.4%	1975	28.2%	1.4%
8	47.3	434.9	365.0	69.9	84%	431.1	76.5	507.6	5.3%	1976	18.2%	9.5%
9	47.3	460.3	386.3	74.0	84%	335.6	69.5	405.1	-20.2%	1977	-13.0%	-6.0%
10	47.3	357.7	335.6	22.2	94%	327.7	20.5	348.2	-14.0%	1978	-2.3%	-7.2%
11	47.3	300.9	300.9	0.0	100%	314.7	0.0	314.7	-9.6%	1979	4.7%	-10.5%
12	47.3	267.4	267.4	0.0	100%	314.9	0.0	314.9	0.1%	1980	17.9%	-11.0%
13	47.3	267.6	267.6	0.0	100%	233.3	0.0	233.3	-25.9%	1981	-12.7%	-3.0%
14	47.3	186.0	186.0	0.0	100%	217.4	0.0	217.4	-6.8%	1982	17.0%	-5.4%
15	47.3	170.1	170.1	0.0	100%	200.6	0.0	200.6	-7.7%	1983	18.1%	0.2%
16	47.3	153.3	153.3	0.0	100%	156.5	0.0	156.5	-22.0%	1984	2.2%	10.4%
17	47.3	109.2	109.2	0.0	100%	138.5	0.0	138.5	-11.5%	1985	26.9%	21.1%
18	47.3	91.2	91.2	0.0	100%	106.9	0.0	106.9	-22.8%	1986	17.3%	18.5%
19	47.3	59.6	59.6	0.0	100%	60.0	0.0	60.0	-43.9%	1987	0.8%	-4.1%
20	47.3	12.7	12.7	0.0	100%	14.2	0.0	14.2		1988	11.7%	3.3%

Downward spiral to depletion.

CASE of 70% stocks. Change mix of stocks to 70%. Portfolio value at the end of the 19th year declines from \$60 to \$39, which is not enough for a full withdrawal for spending in the 20th year.

Spending Year	Withdrawal for spending in the next year	Portfolio at start of year after withdrawal	Portfolio Composition at start of year			Portfolio Value at end of year, net of investing cost			Percent decline from prior year initial value	Real Return*		
			Stocks	Bonds	Stock Mix	Stocks	Bonds	Total		Year	Stocks	Bonds
			1	47.3	952.7	666.9	285.8	70%		574.5	261.3	835.7
2	47.3	788.4	574.5	213.9	73%	565.0	232.0	797.0	-4.6%	1970	-1.6%	8.5%
3	47.3	749.6	546.2	203.4	73%	603.5	218.2	821.7	3.1%	1971	10.6%	7.4%
4	47.3	774.3	564.2	210.1	73%	648.6	214.0	862.6	5.0%	1972	15.1%	1.9%
5	47.3	815.3	594.0	221.2	73%	465.3	206.7	672.0	-22.1%	1973	-21.6%	-6.5%
6	47.3	624.7	465.3	159.4	74%	304.7	149.0	453.7	-32.5%	1974	-34.5%	-6.4%
7	47.3	406.4	304.7	101.7	75%	390.3	103.0	493.3	8.7%	1975	28.2%	1.4%
8	47.3	446.0	334.4	111.6	75%	395.0	122.2	517.1	4.8%	1976	18.2%	9.5%
9	47.3	469.8	352.2	117.6	75%	306.0	110.4	416.4	-19.5%	1977	-13.0%	-6.0%
10	47.3	369.1	306.0	63.1	83%	298.8	58.5	357.3	-14.2%	1978	-2.3%	-7.2%
11	47.3	310.0	257.0	53.0	83%	268.7	47.4	316.1	-11.5%	1979	4.7%	-10.5%
12	47.3	268.8	222.8	46.0	83%	262.5	40.8	303.3	-4.1%	1980	17.9%	-11.0%
13	47.3	256.0	256.0	0.0	100%	223.2	0.0	223.2	-26.4%	1981	-12.7%	-3.0%
14	47.3	175.9	175.9	0.0	100%	205.6	0.0	205.6	-7.9%	1982	17.0%	-5.4%
15	47.3	158.3	158.3	0.0	100%	186.7	0.0	186.7	-9.2%	1983	18.1%	0.2%
16	47.3	139.3	139.3	0.0	100%	142.3	0.0	142.3	-23.8%	1984	2.2%	10.4%
17	47.3	95.0	95.0	0.0	100%	120.5	0.0	120.5	-15.4%	1985	26.9%	21.1%
18	47.3	73.1	73.1	0.0	100%	85.7	0.0	85.7	-28.8%	1986	17.3%	18.5%
19	47.3	38.4	38.4	0.0	100%	38.7	0.0	38.7	-54.9%	1987	0.8%	-4.1%
20	47.3	NOT ENUF								1988	11.7%	3.3%

Downward spiral to