



The Risk Of Ruin For Retirees

by **Andy Mayo** ([Contact Author](#) | [Biography](#))

Risk of ruin in finance can mean the probability of bankruptcy or, in the case of a retiree, outliving one's assets. A retiree who can generate all the annual income he needs from a cash/[fixed income](#) portfolio doesn't have to worry about risk of ruin. But even a bond portfolio faces [reinvestment risk](#) if a higher interest-paying bond matures when interest rates are lower. At that point, buying a new bond won't generate the same income. That may pinch the retiree, but it won't ruin him.

However, a retiree's real risk of ruin comes from stock market volatility and the retiree's need to liquidate assets periodically for income. Withdrawals taken during down or flat market cycles create a risk of ruin just like a string of losing trades for an active trader.

The way to avoid risk of ruin is the same for the retiree and the trader: start with enough capital to withstand a string of losses. To do so, you have to estimate the probability of future returns and the rate of [inflation](#). Read on to find how.

The Sequence Of Returns

The greatest danger for someone in or planning on retirement is the rosy scenario - using one period of market performance as a guide. For anyone liquidating assets periodically, what's important isn't just the [rate of return](#), it's the sequence of returns. (For more insight, see [Common Concerns For Retirees](#).)

For 17 years, beginning in 1966, the market was flat and had the highest inflation on record. Few if any financial advisors or stockbrokers use that period for their illustrations. According to William Bernstein's book "Four Pillars of Investing" (2002) the reason is simple: No [asset allocation](#) avoids bankruptcy when a 4% withdrawal rate is applied to a \$1 million portfolio using returns from that time period. (For more insight, read [Asset Allocation Within Fixed Income](#).)

The 4% withdrawal rate used by many financial advisors is no guarantee. Illustrations using an average annual return, even for a long period of time, are especially dangerous. Actual annual returns are hardly ever average. In 54 of the 82 years between 1926 and 2007, the [Standard & Poor's 500 Index](#) (S&P 500) performance was either a loss or a gain of more than 20%. In other words, almost 66% of the time, the index returned better or worse than a return of between 0% and 20%. Only one-third of the time did the index performance fall within the range of an "average" 10% return (0% to 20%). (To learn more, read [All Returns Are Not Created Equal](#).)

An average annual return is irrelevant. It's the sequence of returns that's important.

For example, over the 17-year period (1987-2003), the S&P 500's average return was 13.47%. It doesn't make any difference if we look at the returns from 1987 to 2003 or from 2003 to 1987.

But when taking withdrawals, the sequence of returns makes all the difference. The same initial capital, the same withdrawal amount, the same returns - but a different sequence produces dramatically different results.

For a \$100,000 portfolio taking \$10,000 a year adjusted for 4% inflation over those 17 years, the difference is a remaining balance of \$76,629 to a deficit of \$187,606. The following table illustrates the dramatic difference in return that occurs by inverting the rates and putting 2003's performance first and 1987's last. (For more insight, see [Achieving Better Returns In Your Portfolio](#).)

Year	Portfolio Value - Beginning of Year	Value After \$10,000 Inflation-Adjusted Withdrawal	Rate of Return	Portfolio Value -Year End
1987	100,000	90,000	5.25%	94,725
1988	94,725	84,325	16.61%	98,331
1989	98,331	87,515	31.69%	115,249
1990	115,249	104,000	-3.11%	100,766
1991	100,766	89,067	30.47%	116,206
1992	116,206	104,040	7.62%	111,967
1993	111,967	99,314	10.08%	109,325
1994	109,325	96,166	1.32%	97,435
1995	97,435	83,750	37.58%	115,223
1996	115,223	100,990	22.96%	124,177
1997	124,177	109,374	33.36%	145,862
1998	145,862	130,467	28.58%	167,754
1999	167,754	151,744	21.04%	183,671
2000	183,671	167,020	-9.11%	151,805
2001	151,805	134,488	-11.89%	118,497
2002	118,497	100,488	-22.10%	78,280
2003	78,280	59,550	28.68%	76,629
	Average Annual Return:		13.47%	
Year	Portfolio Value - Beginning of Year	Value After \$10,000 Inflation Adjusted Withdrawal	Rate of Return	Portfolio Value -Year End
2003	100,000	90,000	28.68%	115,812
2002	115,812	105,412	-22.10%	82,116
2001	82,116	71,300	-11.89%	62,822
2000	62,822	51,574	-9.11%	46,875
1999	46,875	35,177	21.04%	42,578
1998	42,578	30,411	28.58%	39,103
1997	39,103	26,450	33.36%	35,274
1996	35,274	22,114	22.96%	27,192

1995	27,192	13,506	37.58%	18,581
1994	18,581	4,348	1.32%	4,406
1993	4,406	0	10.08%	0
	Average Annual Return:		13.47%	

What's striking about this result is that three years of negative returns at the beginning of the withdrawal sequence completely negate the positive returns of the best bull market anyone in retirement is likely to experience in the future: Performance for 1995-1999 was +37.6%, +23.0%, +33.4%, +28.6% and +21.0% respectively. It is unlikely that we will see that kind of winning streak again for quite some time.

Regardless of those four consecutive years of great returns, the portfolio drops to \$4,348 after the tenth year's withdrawal – the point of ruin.

Outliving Your Savings

Clearly, a key issue for a retiree is the condition of the market at or very early in retirement. If it happens prior to retirement, a delay of a year or two may dramatically reduce the risk of ruin. If it happens in retirement, some action is required, such as part-time employment or reducing one's cost of living.

Risk of ruin brings to the forefront the following concepts that every investor should be thinking about before making any decisions about retirement.

- *Accumulated capital is critical* - Beware of financial product illustrations that front-load good performance years.
- *An investor's focus has to be on periodic, cumulative returns* - Average returns are to be ignored in favor of cumulative returns. What's critical is the amount of money an investor has at the end of each year from which he or she must raise spending money for the coming year.
- *Avoid fixed costs* - Spending flexibility is perhaps the most important thing a person can do to avoid outliving assets. Work to keep income needs flexible during periods of adverse market conditions. Flexibility depends on fixed costs. Carrying a mortgage or other debt into retirement imposes a fixed cost that can be deadly when the market turns down. Flexibility demands a no-credit, cash budget.
- *Tactical asset allocation* - Is desirable in order to avoid significant losses in any given year. [Strategic](#) (or static) asset allocation through periods of adverse market conditions and persistent portfolio withdrawals will increase the chance of ruin. Investors have to think "loss avoidance" and that means overcoming the "[sunk cost](#)" obstacle. Take the small loss before it turns into a big one. It takes only an 11% gain to get back to even after a 10% loss. It takes a 33% gain to recover from a 25% loss. Time is not on the side of an investor taking withdrawals. (For more on this, read [Asset Allocation Strategies](#).)

Conclusion

Risk of ruin can be an antidote for the rules that guide investors during the wealth accumulation phase. For a long-term investor, market risk is accepted as a given, because the long-term positive performance of the market takes care of that problem. But an investor liquidating principal can't depend on the long term. As such, the retiree has to know, for any given year, the maximum market loss that can be absorbed to still have money to live on in the coming year.

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