

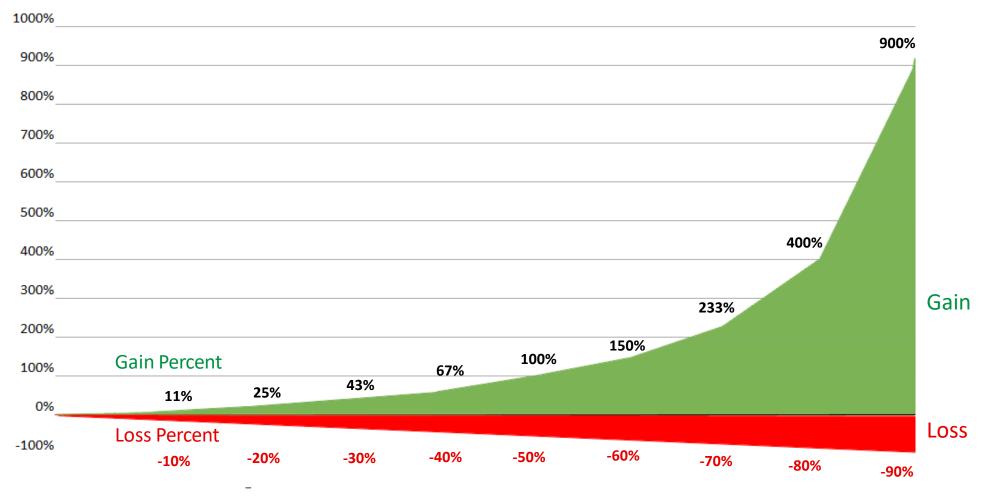
Why Avoiding Big Losses Matters

Practical Investor Insights – Math Behind Investing Success

Math Matters Series

The Math Behind Investment Losses

Gains Needed to Recover from Losses



Source: Swan Global Investments 2

Wealth Accumulation Phase

Primary Objective: Grow the Account

Goals: retirement, children's education, care for parents, etc.

Many believe seeking big returns is the best way to achieve big goals.

Big returns often come with big risks.

Am I better off forgoing some big gains in order to avoid big losses?



Avoiding Big Losses Matters in the Wealth Accumulation Phase

This hypothetical presentation should not serve as the sole determining factor for making investment decisions.

		Option A	١	Account Balance	Option B	Account Balance	
	Years	Return	\$	10,000	Return	\$ 10,000	
Option A	1	19%	\$	11,900	9%	\$ 10,900	Option B
big gains	2	9%	\$	12,971	4%	\$ 11,336	smaller gains
and	3	-16%	\$	10,896	-3%	\$ 10,996	and
big losses.	4	23%	\$	13,402	11%	\$ 12,205	smaller losses.
	5	13%	\$	15,144	6%	\$ 12,938	
	6	15%	\$	17,415	7%	\$ 13,843	
	7	19%	\$	20,724	10%	\$ 15,228	
	8	-17%	\$	17,201	-3%	\$ 14,771	
	9	-37%	\$	10,837	-5%	\$ 14,032	
	10	13%	\$	12,246	5%	\$ 14,734	
	11	19%	\$	14,572	9%	\$ 16,060	
	12	9%	\$	15,884	4%	\$ 16,702	
	13	-16%	\$	13,342	-3%	\$ 16,201	
	14	23%	\$	16,411	11%	\$ 17,984	
	15	13%	\$	18,544	6%	\$ 19,063	
6 6 6 7	16	15%	\$	21,326	7%	\$ 20,397	C
Sum of Returns	17	19%	\$	25,378	10%	\$ 22,437	The final account
are the same:	18	-17%	\$	21,064	-3%	\$ 21,764	balances are
	19	-37%	\$	13,270	-5%	\$ 20,675	d:ffat
82%	20	13%	\$	14,995	5%	\$ 21,709	different.
		82%			82 %		

Withdrawal Phase

Primary Objective: Sustain the Account

For those near or in retirement, the goal broadens beyond growth to include ensuring the money lasts through retirement. (20-30+ years)

Avoiding big losses now becomes critical.

Don't run out of money.

How does forgoing some big gains in order to avoid big losses help later in life?



Avoiding Big Losses Really Matters in the Withdrawal Phase

This hypothetical presentation should not serve as the sole determining factor for making investment decisions.

Opt	tion A	Account Change			Option B	Account Change	
Years	Return	\$ 1,000,000	Withdrawal*	Balance	Return	\$ 1,000,000	Withdrawal* Balance
1	19%	\$ 1,190,000	(\$40,000) \$	1,150,000	9%	\$ 1,090,000	(\$40,000) \$ 1,050,000
2	9%	\$ 1,253,500	(\$40,800) \$	1,212,700	4%	\$ 1,092,000	(\$40,800) \$ 1,051,200
3	-16%	\$ 1,018,668	(\$41,616) \$	977,052	-3%	\$ 1,019,664	(\$41,616) \$ 978,048
4	23%	\$ 1,201,774	(\$42,448) \$	1,159,326	11%	\$ 1,085,633	(\$42,448) \$ 1,043,185
5	13%	\$ 1,310,038	(\$43,297) \$	1,266,741	6%	\$ 1,105,776	(\$43,297) \$ 1,062,479
6	15%	\$ 1,456,752	(\$44,163) \$	1,412,589	7%	\$ 1,136,852	(\$44,163) \$ 1,092,689
7	19%	\$ 1,680,980	(\$45,046) \$	1,635,934	10%	\$ 1,201,958	(\$45,046) \$ 1,156,911
8	-17%	\$ 1,357,825	(\$45,947) \$	1,311,878	-3%	\$ 1,122,204	(\$45,947) \$ 1,076,257
9	-37%	\$ 826,483	(\$46,866) \$	779,617	-5%	\$ 1,022,444	(\$46,866) \$ 975,577
10	13%	\$ 880,967	(\$47,804) \$	833,163	5%	\$ 1,024,356	(\$47,804) \$ 976,553
11	19%	\$ 991,464	(\$48,760) \$	942,704	9%	\$ 1,064,442	(\$48,760) \$ 1,015,683
12	9%	\$ 1,027,548	(\$49,735) \$	977,813	4%	\$ 1,056,310	(\$49,735) \$ 1,006,575
13	-16%	\$ 821,363	(\$50,730) \$	770,633	-3%	\$ 976,378	(\$50,730) \$ 925,648
14	23%	\$ 947,879	(\$51,744) \$	896,134	11%	\$ 1,027,469	(\$51,744) \$ 975,725
15	13%	\$ 1,012,632	(\$52,779) \$	959,853	6%	\$ 1,034,269	(\$52,779) \$ 981,489
16	15%	\$ 1,103,830	(\$53,835) \$	1,049,996	7%	\$ 1,050,194	(\$53,835) \$ 996,359
17	19%	\$ 1,249,495	(\$54,911) \$	1,194,583	10%	\$ 1,095,995	(\$54,911) \$ 1,041,083
18	-17%	\$ 991,504	(\$56,010) \$	935,495	-3%	\$ 1,009,851	(\$56,010) \$ 953,841
19	-37%	\$ 589,362	(\$57,130) \$	532,232	-5%	\$ 906,149	(\$57,130) \$ 849,019
20	13%	\$ 601,422	(\$58,272) \$	543,149	5%	\$ 891,470	(\$58,272) \$ 833,198
	82 %		(\$971,895)		82%		(\$971 <i>,</i> 895)

^{*} Assumes a recurring annual withdrawal, starting at \$40,000, then adjusted yearly thereafter by 2% per year for inflation.



"By actively seeking to not lose big, we believe that investors will be better off in the long run."

- Randy Swan, CEO and Lead Portfolio Manager

A Quarter Century in Risk Management



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