

## Why Avoiding Big Losses Matters

#### The Math Behind Investment Returns

Math Matters Series



## The Math Behind Investment Losses

#### Gains Needed to Recover from Losses





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## **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?



		<b>Option A</b>	Ac	count Balance	Optior	ו B	Ac	count Balance		
	Years	Return	\$	1,000,000	Return	1	\$	1,000,000		
Option A	1	19%	\$	1,190,000	9%	( 1	\$	1,090,000	<u>Option B</u>	
big gains	2	9%	\$	1,297,100	4%	( 1	\$	1,133,600	smaller gains	
and	3	-16%	\$	1,089,564	-3%	( 1	\$	1,099,592	and	
big losses.	4	23%	\$	1,340,164	11%	( 1	\$	1,220,547	smaller losses.	
	5	13%	\$	1,514,385	6%	( 1	\$	1,293,780		
	6	15%	\$	1,741,543	7%	( 1	\$	1,384,345		
	7	19%	\$	2,072,436	10%	( 1	\$	1,522,779		
	8	-17%	\$	1,720,122	-3%	(	\$	1,477,096		
	9	-37%	\$	1,083,677	-5%	( 1	\$	1,403,241		
	10	13%	\$	1,224,555	5%	( 1	\$	1,473,403		
	11	19%	\$	1,457,220	9%	( 1	\$	1,606,009		
	12	9%	\$	1,588,370	4%	(	\$	1,670,250		
	13	-16%	\$	1,334,231	-3%	( 1	\$	1,620,142		
	14	23%	\$	1,641,104	11%	(	\$	1,798,358		
	15	13%	\$	1,854,447	6%	(	\$	1,906,259		
	16	15%	\$	2,132,614	7%	C T	\$	2,039,697		
Sum of Returns	17	19%	\$	2,537,811	10%	C T	\$	2,243,667	The final account	
are the same: 82%	18	-17%	\$	2,106,383	-3%	(	\$	2,176,357	halances are	
	19	-37%	\$	1,327,021	-5%	( 1	\$	2,067,539		
	20	13%	\$	1,499,534	5%		\$	2,170,916	dițțerent.	
		82%			82%					

Source: Swan Global Investments. NOTE – this chart is for illustration purposes only and does not represent any particular investment. This hypothetical presentation should not serve as the sole determining factor for making investment decisions.



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### Withdrawal Phase

Primary Objective: Sustain the Account

For those near or in retirement, the goal broadens beyond growth to include <u>ensuring the money lasts</u> 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 Withdrawal Phase

Option A Accou

Account Change

Option B Account Change

years	Return	\$ 1,000,000	withdrawai	Balance	Keturn	Ş 1,000,000	withdrawai	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 <i>,</i> 779) \$	959,853	6%	\$ 1,034,269	(\$52,779) \$	981,489
16	15%	\$ 1,103,830	(\$53 <i>,</i> 835) \$	1,049,996	7%	\$ 1,050,194	(\$53 <i>,</i> 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) <u>\$</u>	532,232	-5%	\$ 906,149	(\$57,130) <u>\$</u>	849,019
20	13%	\$ 601,422	(\$58,272) <mark>\$</mark>	543,149	5%	\$ 891,470	(\$58,272) \$	833,198
	82%		(\$971,895)		82%		(\$971,895)	

Assumes: one-time, annual withdrawal of \$40,000, adjusted 2% per year for inflation.

Source: Swan Global Investments. NOTE – this chart is for illustration purposes only and does not represent any particular investment. This hypothetical presentation should not serve as the sole determining factor for making investment decisions.



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# "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





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