



Education: Drawdowns

Drawdowns & Withdrawals

In the scenarios below, the portfolios all have the same average annual return: the difference is ending portfolio value is due to withdrawals, the sequence of returns, and drawdown protection.

Without Withdrawals, the Order of Returns Does Not Matter

Withdrawals = \$0 / year

Year	Investor #1		Investor #2	
	Returns	Account	Returns	Account
		\$1,000,000		\$1,000,000
1	-50%	\$500,000	20%	\$1,200,000
2	20%	\$600,000	20%	\$1,440,000
3	20%	\$720,000	20%	\$1,728,000
4	20%	\$864,000	20%	\$2,073,600
5	20%	\$1,036,800	-50%	\$1,036,800
Withdrawals		\$0		\$0
Average Return	6.0%		6.0%	

No withdrawals: same ending value

With Withdrawals, the Order of Returns Dictates Long-Term Performance

Withdrawals = \$40,000 / year

Year	Investor #1		Investor #2	
	Returns	Account	Returns	Account
		\$1,000,000		\$1,000,000
1	-50%	\$460,000	20%	\$1,160,000
2	20%	\$512,000	20%	\$1,352,000
3	20%	\$574,400	20%	\$1,582,400
4	20%	\$649,280	20%	\$1,858,880
5	20%	\$739,136	-50%	\$889,440
Withdrawals		\$250,000		\$250,000
Average Return	6.0%		6.0%	

With withdrawals: different ending value

A withdrawal taken when the portfolio is in drawdown forces the realization of losses and can eat into the capital base leading to long-term performance erosion

Reducing drawdowns reduces the impact of withdrawals upon a portfolio

Portfolio is in Drawdown



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