

### Report Parameters

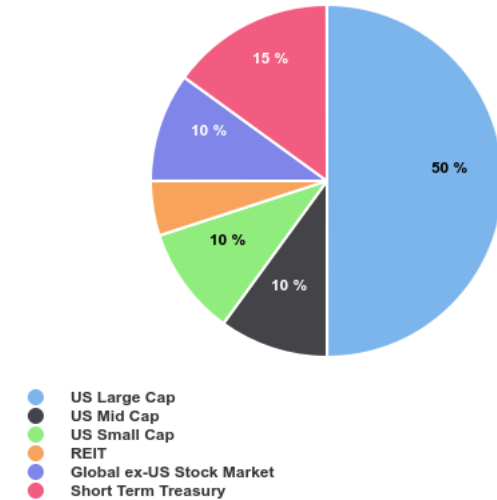
<b>Initial Amount</b>	\$2,000,000
<b>Periodic Adjustment</b>	Withdraw fixed amount periodically
<b>Withdrawal Amount</b>	\$10,000
<b>Frequency</b>	Monthly
<b>Inflation Adjusted</b>	Yes
<b>Simulation Period</b>	30
<b>Simulation Model</b>	Forecasted Returns
<b>Use Full History</b>	Yes
<b>Sequence of Return Risk</b>	No Adjustments
<b>Inflation Model</b>	Historical Inflation

Simulation Description

Monte Carlo simulation results for 5000 portfolios based on entered mean and historical asset correlations and volatility. Returns were modeled as correlated random samples from a multivariate normal distribution. The configured portfolio model had 7.82% annual mean return with 13.21% standard deviation. The simulation results are based on generated nominal returns and specified inflation adjusted withdrawals (\$10,000 per month). The simulated inflation model used historical inflation with 2.21% mean and 1.17% standard deviation based on the Consumer Price Index (CPI-U) data from Jan 1994 to Dec 2019. The generated inflation samples were correlated with simulated asset returns based on historical correlations. The available historical data for the simulation inputs was constrained by REIT [Jan 1994 - Dec 2019].

Portfolio

Asset Class	Allocation	CAGR	Expected Annual Return	Annualized Volatility
US Large Cap	50.00%	7.89%	9.00%	14.41%
US Mid Cap	10.00%	8.11%	9.50%	16.12%
US Small Cap	10.00%	7.67%	9.50%	18.49%
REIT	5.00%	6.11%	8.00%	18.94%
Global ex-US Stock Market	10.00%	6.08%	7.50%	16.43%
Short Term Treasury	15.00%	1.98%	2.00%	1.87%

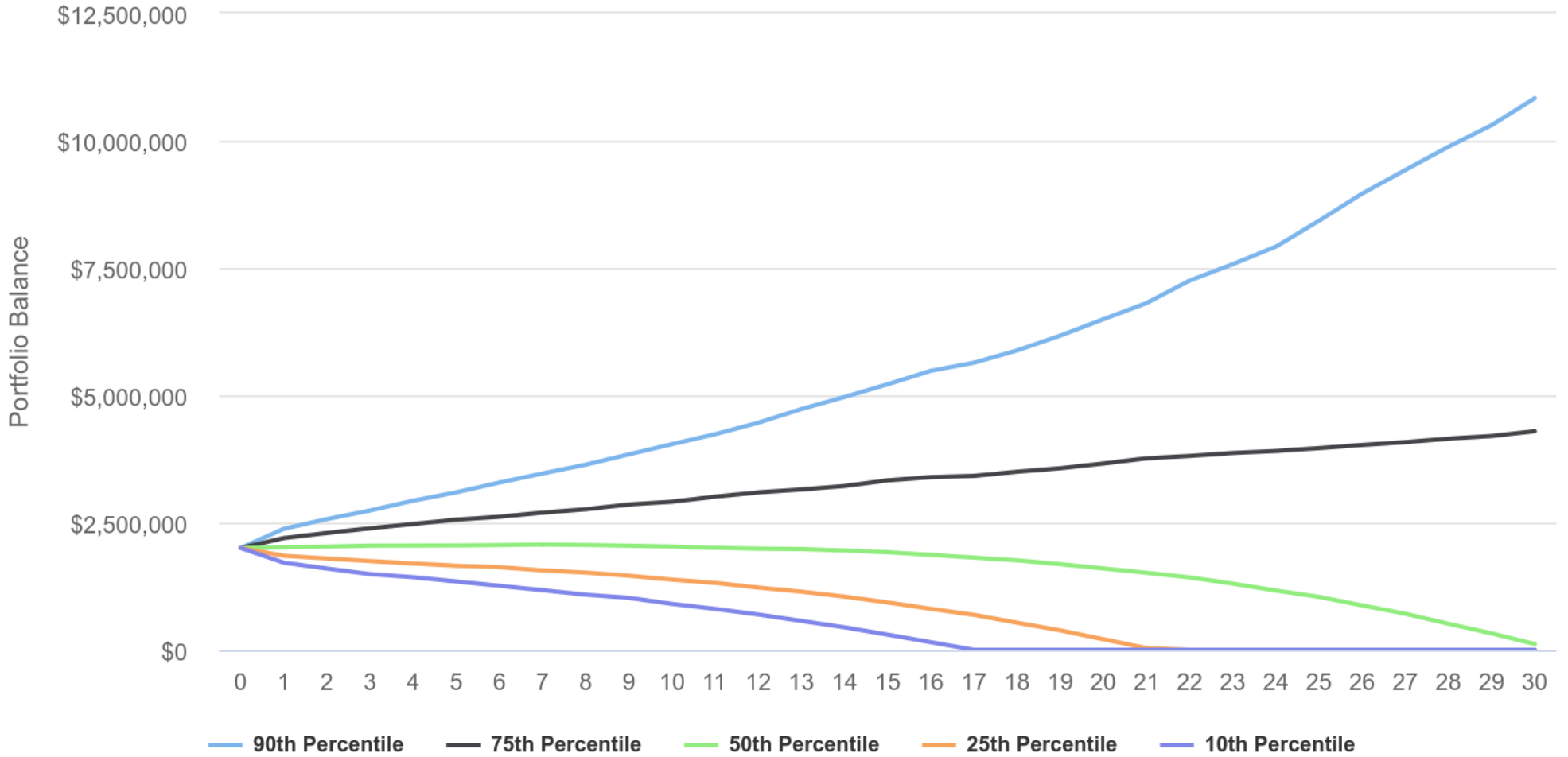


Summary Statistics

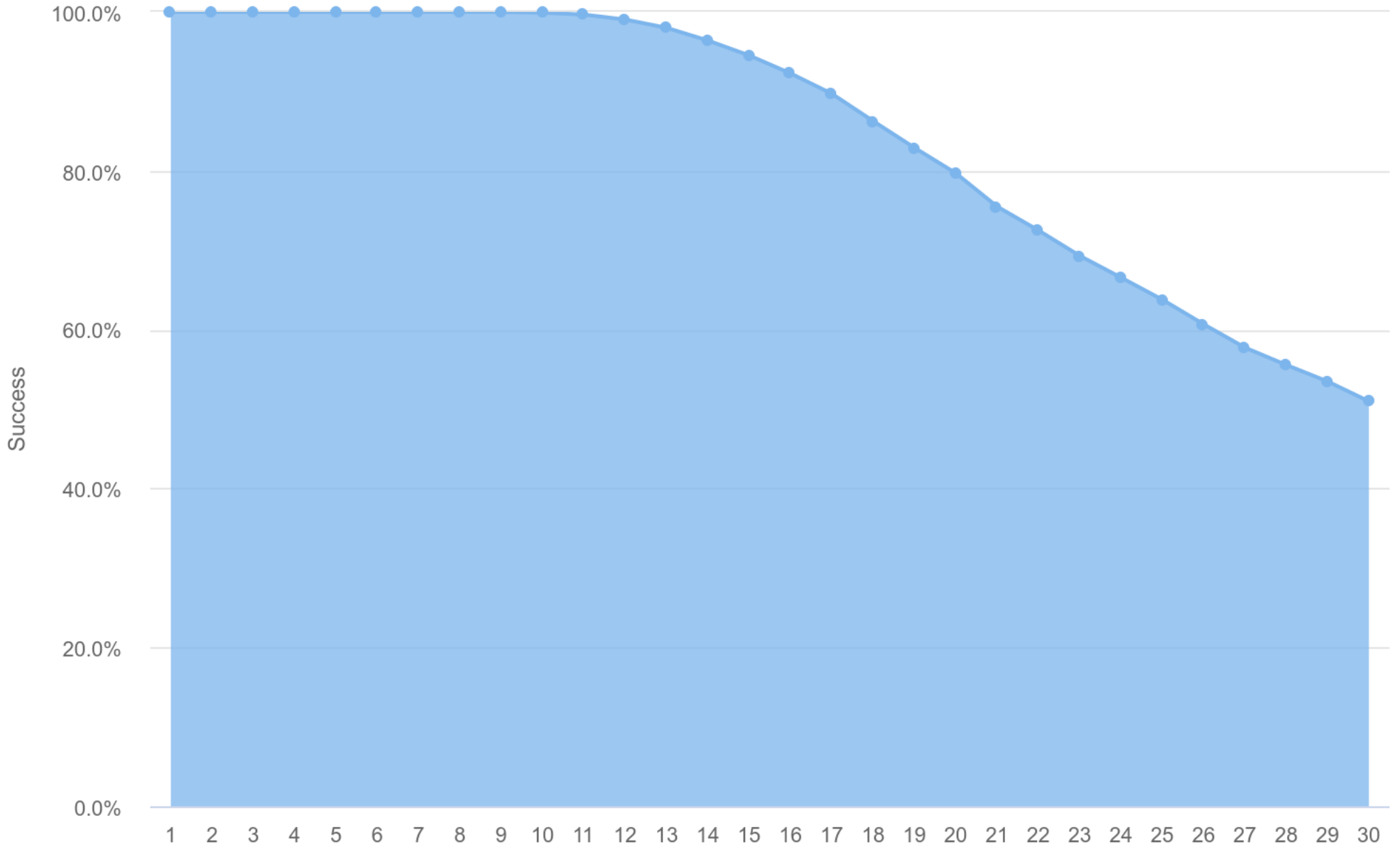
	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
Time Weighted Rate of Return (nominal)	3.94%	5.42%	6.99%	8.66%	10.19%
Time Weighted Rate of Return (real)	1.69%	3.15%	4.64%	6.30%	7.82%
Portfolio End Balance (nominal)	\$0.00	\$0.00	\$114,529	\$4,293,480	\$10,832,478
Portfolio End Balance (real)	\$0.00	\$0.00	\$61,505	\$2,237,313	\$5,651,660
Maximum Drawdown	-100.00%	-100.00%	-95.84%	-40.23%	-29.54%
Maximum Drawdown Excluding Cashflows	-40.55%	-34.32%	-28.48%	-24.19%	-20.69%
Safe Withdrawal Rate	3.94%	4.90%	6.17%	7.68%	9.36%
Perpetual Withdrawal Rate	1.66%	3.05%	4.44%	5.92%	7.25%

2549 portfolios out of 5000 simulated portfolios (50.98%) survived all withdrawals.

### Simulated Portfolio Balances



### Portfolio Success



**Portfolio Balances (nominal)**

Year	10th Percentile Balance	25th Percentile Balance	50th Percentile Balance	75th Percentile Balance	90th Percentile Balance	Portfolio Success
1	\$1,711,015	\$1,846,865	\$2,018,164	\$2,194,802	\$2,376,831	100.00%
2	\$1,596,407	\$1,793,492	\$2,026,986	\$2,294,746	\$2,567,709	100.00%
3	\$1,486,475	\$1,742,130	\$2,045,778	\$2,386,380	\$2,735,793	100.00%
4	\$1,426,558	\$1,695,102	\$2,047,754	\$2,471,631	\$2,928,704	100.00%
5	\$1,342,375	\$1,651,269	\$2,049,744	\$2,556,097	\$3,093,315	100.00%
6	\$1,257,907	\$1,622,576	\$2,056,759	\$2,613,420	\$3,285,632	100.00%
7	\$1,171,466	\$1,559,959	\$2,067,496	\$2,693,918	\$3,462,947	100.00%
8	\$1,082,462	\$1,516,691	\$2,058,601	\$2,759,834	\$3,636,102	100.00%
9	\$1,020,187	\$1,455,288	\$2,044,722	\$2,854,211	\$3,838,317	100.00%
10	\$902,235	\$1,377,896	\$2,027,697	\$2,908,017	\$4,038,950	99.90%
11	\$803,681	\$1,314,599	\$2,004,039	\$3,007,779	\$4,234,248	99.66%
12	\$693,417	\$1,222,846	\$1,985,973	\$3,091,507	\$4,459,480	99.04%
13	\$567,156	\$1,142,418	\$1,978,495	\$3,148,882	\$4,728,837	98.00%
14	\$441,667	\$1,044,105	\$1,949,432	\$3,217,063	\$4,966,040	96.40%
15	\$297,740	\$930,340	\$1,916,931	\$3,328,235	\$5,215,218	94.52%
16	\$149,725	\$804,968	\$1,864,561	\$3,391,568	\$5,479,305	92.26%
17	\$0.00	\$686,254	\$1,810,871	\$3,415,397	\$5,639,100	89.70%
18	\$0.00	\$532,707	\$1,756,488	\$3,497,198	\$5,879,334	86.26%
19	\$0.00	\$381,661	\$1,681,419	\$3,565,675	\$6,170,026	82.90%
20	\$0.00	\$208,241	\$1,597,985	\$3,658,989	\$6,491,913	79.70%
21	\$0.00	\$33,812	\$1,513,013	\$3,760,837	\$6,809,612	75.50%
22	\$0.00	\$0.00	\$1,422,349	\$3,807,115	\$7,252,089	72.50%
23	\$0.00	\$0.00	\$1,300,069	\$3,865,446	\$7,573,591	69.30%
24	\$0.00	\$0.00	\$1,164,323	\$3,904,125	\$7,918,209	66.56%
25	\$0.00	\$0.00	\$1,039,656	\$3,960,903	\$8,426,784	63.78%
26	\$0.00	\$0.00	\$872,538	\$4,023,029	\$8,959,768	60.68%
27	\$0.00	\$0.00	\$708,592	\$4,078,371	\$9,423,197	57.74%
28	\$0.00	\$0.00	\$511,566	\$4,146,761	\$9,880,248	55.56%
29	\$0.00	\$0.00	\$322,582	\$4,197,997	\$10,302,831	53.48%
30	\$0.00	\$0.00	\$114,529	\$4,293,480	\$10,832,478	50.98%

**Portfolio Balances (inflation adjusted)**

Year	10th Percentile Balance	25th Percentile Balance	50th Percentile Balance	75th Percentile Balance	90th Percentile Balance	Portfolio Success
1	\$1,673,399	\$1,806,938	\$1,972,053	\$2,148,013	\$2,327,037	100.00%
2	\$1,530,968	\$1,714,817	\$1,941,996	\$2,197,642	\$2,459,147	100.00%
3	\$1,393,885	\$1,630,898	\$1,915,183	\$2,235,549	\$2,559,636	100.00%
4	\$1,307,283	\$1,550,385	\$1,882,718	\$2,266,221	\$2,681,561	100.00%
5	\$1,209,499	\$1,473,748	\$1,846,043	\$2,290,360	\$2,775,489	100.00%
6	\$1,107,834	\$1,423,162	\$1,808,278	\$2,292,663	\$2,875,059	100.00%
7	\$1,013,223	\$1,341,244	\$1,774,507	\$2,314,091	\$2,983,037	100.00%
8	\$911,307	\$1,271,145	\$1,727,178	\$2,328,461	\$3,051,920	100.00%
9	\$834,489	\$1,194,633	\$1,692,183	\$2,344,039	\$3,181,096	100.00%
10	\$731,049	\$1,104,787	\$1,633,104	\$2,339,928	\$3,256,785	99.90%
11	\$628,959	\$1,033,366	\$1,583,214	\$2,370,618	\$3,345,936	99.66%
12	\$536,596	\$944,032	\$1,533,847	\$2,381,657	\$3,437,857	99.04%
13	\$424,875	\$862,725	\$1,486,719	\$2,373,611	\$3,572,708	98.00%
14	\$328,419	\$770,599	\$1,436,542	\$2,373,062	\$3,671,664	96.40%
15	\$212,513	\$670,010	\$1,390,195	\$2,385,405	\$3,733,093	94.52%
16	\$107,109	\$569,867	\$1,313,249	\$2,384,749	\$3,823,413	92.26%
17	\$0.00	\$468,466	\$1,243,570	\$2,360,090	\$3,887,458	89.70%
18	\$0.00	\$361,095	\$1,177,432	\$2,357,011	\$3,945,081	86.26%
19	\$0.00	\$252,534	\$1,104,773	\$2,357,520	\$4,035,288	82.90%
20	\$0.00	\$137,458	\$1,031,160	\$2,366,974	\$4,236,713	79.70%
21	\$0.00	\$21,966	\$951,321	\$2,384,728	\$4,290,688	75.50%
22	\$0.00	\$0.00	\$876,414	\$2,359,794	\$4,470,282	72.50%
23	\$0.00	\$0.00	\$790,868	\$2,331,713	\$4,616,903	69.30%
24	\$0.00	\$0.00	\$688,810	\$2,339,223	\$4,713,655	66.56%
25	\$0.00	\$0.00	\$596,792	\$2,303,332	\$4,966,369	63.78%
26	\$0.00	\$0.00	\$495,725	\$2,274,055	\$5,106,931	60.68%
27	\$0.00	\$0.00	\$403,720	\$2,266,653	\$5,213,560	57.74%
28	\$0.00	\$0.00	\$283,405	\$2,272,078	\$5,363,191	55.56%
29	\$0.00	\$0.00	\$176,056	\$2,223,137	\$5,486,979	53.48%
30	\$0.00	\$0.00	\$61,505	\$2,237,313	\$5,651,660	50.98%

**Portfolio Cashflows (nominal)**

Year	10th Percentile Cashflow	25th Percentile Cashflow	50th Percentile Cashflow	75th Percentile Cashflow	90th Percentile Cashflow
1	-\$120,339	-\$120,857	-\$121,450	-\$122,016	-\$122,538
2	-\$122,023	-\$122,969	-\$124,124	-\$125,228	-\$126,315
3	-\$124,003	-\$125,343	-\$126,865	-\$128,454	-\$129,804
4	-\$126,164	-\$127,757	-\$129,638	-\$131,610	-\$133,319
5	-\$128,392	-\$130,258	-\$132,434	-\$134,749	-\$136,784
6	-\$130,645	-\$132,828	-\$135,334	-\$137,988	-\$140,290
7	-\$133,061	-\$135,532	-\$138,323	-\$141,248	-\$143,834
8	-\$135,589	-\$138,342	-\$141,367	-\$144,608	-\$147,387
9	-\$138,249	-\$141,105	-\$144,466	-\$147,955	-\$151,021
10	-\$140,894	-\$144,038	-\$147,641	-\$151,254	-\$154,731
11	-\$143,492	-\$147,036	-\$150,960	-\$154,731	-\$158,364
12	-\$146,083	-\$150,000	-\$154,270	-\$158,333	-\$162,199
13	-\$148,780	-\$152,893	-\$157,471	-\$161,965	-\$165,937
14	-\$151,123	-\$155,934	-\$160,726	-\$165,601	-\$169,720
15	-\$152,885	-\$158,812	-\$164,146	-\$169,267	-\$173,657
16	-\$153,811	-\$161,706	-\$167,484	-\$172,948	-\$177,735
17	-\$149,662	-\$164,204	-\$170,818	-\$176,689	-\$182,011
18	\$0.00	-\$166,391	-\$174,058	-\$180,495	-\$186,070
19	\$0.00	-\$168,213	-\$177,280	-\$184,314	-\$190,231
20	\$0.00	-\$169,392	-\$180,511	-\$188,359	-\$194,744
21	\$0.00	-\$166,544	-\$183,436	-\$192,028	-\$199,058
22	\$0.00	-\$35,648	-\$186,617	-\$195,804	-\$203,564
23	\$0.00	\$0.00	-\$189,745	-\$199,757	-\$208,044
24	\$0.00	\$0.00	-\$192,768	-\$203,722	-\$212,590
25	\$0.00	\$0.00	-\$195,536	-\$207,818	-\$217,094
26	\$0.00	\$0.00	-\$198,033	-\$211,811	-\$221,685
27	\$0.00	\$0.00	-\$200,245	-\$215,858	-\$226,560
28	\$0.00	\$0.00	-\$202,071	-\$220,155	-\$231,337
29	\$0.00	\$0.00	-\$202,691	-\$224,349	-\$236,129
30	\$0.00	\$0.00	-\$200,814	-\$228,280	-\$240,840

**Asset Correlations**

Name	US Large Cap	US Mid Cap	US Small Cap	REIT	Global ex-US Stock Market	Short Term Treasury	Inflation
US Large Cap	1.00	0.92	0.83	0.54	0.82	-0.17	0.03
US Mid Cap	0.92	1.00	0.93	0.62	0.82	-0.20	0.06
US Small Cap	0.83	0.93	1.00	0.63	0.77	-0.23	0.04
REIT	0.54	0.62	0.63	1.00	0.54	-0.01	0.04
Global ex-US Stock Market	0.82	0.82	0.77	0.54	1.00	-0.19	0.05
Short Term Treasury	-0.17	-0.20	-0.23	-0.01	-0.19	1.00	-0.05
Inflation	0.03	0.06	0.04	0.04	0.05	-0.05	1.00

Asset correlations are based on monthly returns from Jan 1994 to Dec 2019

**Expected Annual Return**

Percentile	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
10th Percentile	-8.66%	-2.56%	-0.26%	1.98%	2.82%	3.22%	3.61%	3.94%
25th Percentile	-1.59%	2.07%	3.22%	4.40%	4.81%	5.05%	5.25%	5.42%
50th Percentile	7.15%	7.15%	7.00%	7.07%	7.09%	7.03%	7.02%	6.99%
75th Percentile	16.29%	12.38%	11.11%	9.90%	9.37%	9.04%	8.84%	8.66%
90th Percentile	25.64%	17.09%	14.90%	12.60%	11.61%	10.90%	10.53%	10.19%

**Annual Return Probabilities**

Return	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
>= 0.00%	71.10%	82.70%	89.18%	96.00%	98.44%	99.36%	99.70%	99.88%
>= 2.50%	64.14%	73.56%	79.20%	87.54%	91.46%	93.88%	95.62%	97.16%
>= 5.00%	56.42%	60.94%	64.24%	69.32%	73.18%	75.50%	77.98%	80.22%
>= 7.50%	49.06%	48.30%	46.66%	45.60%	45.06%	43.30%	42.40%	41.66%
>= 10.00%	40.86%	35.68%	30.90%	24.24%	20.06%	15.94%	13.86%	11.28%
>= 12.50%	34.14%	24.44%	18.40%	10.52%	6.32%	3.54%	2.16%	1.40%

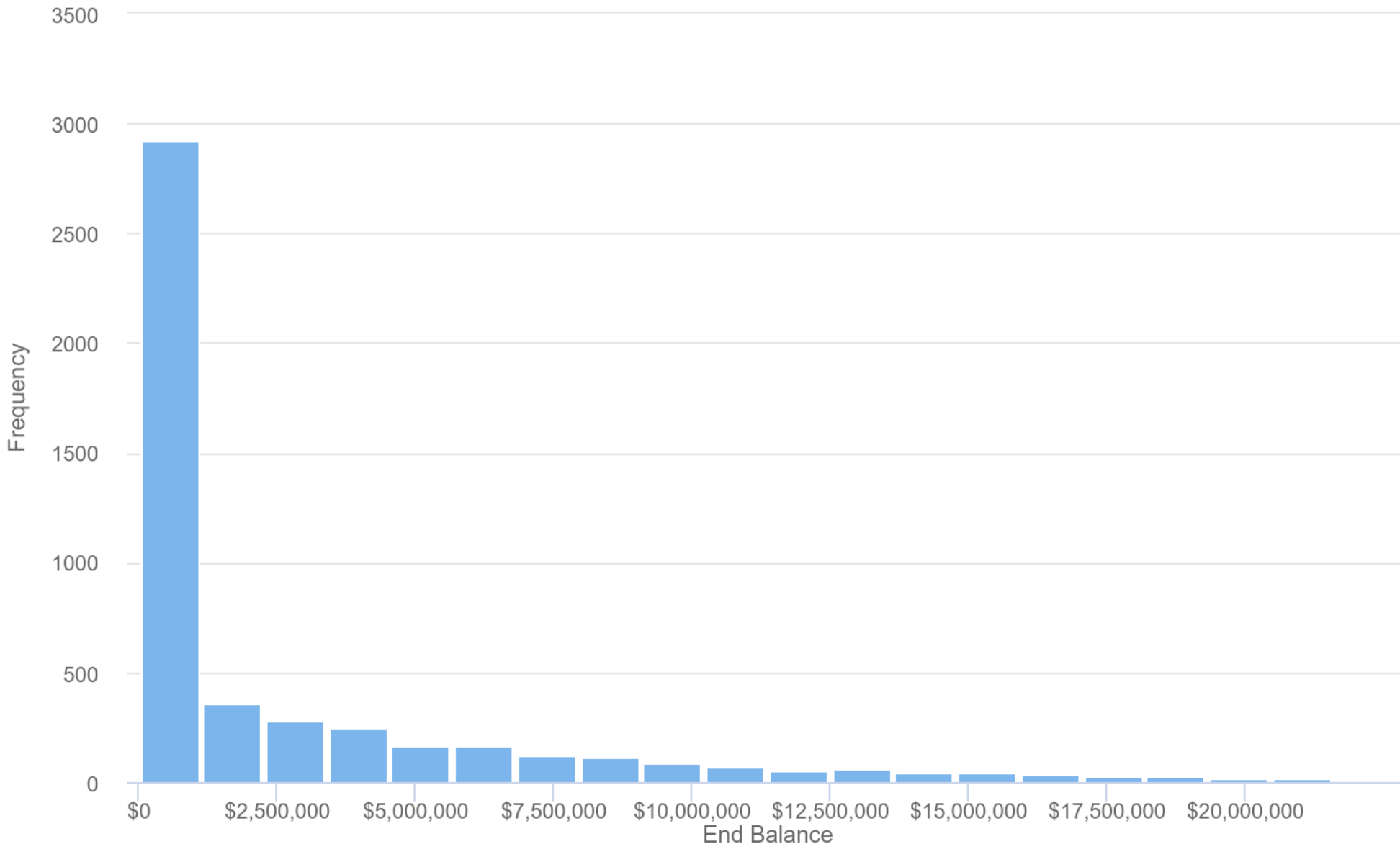


**Loss Probabilities**

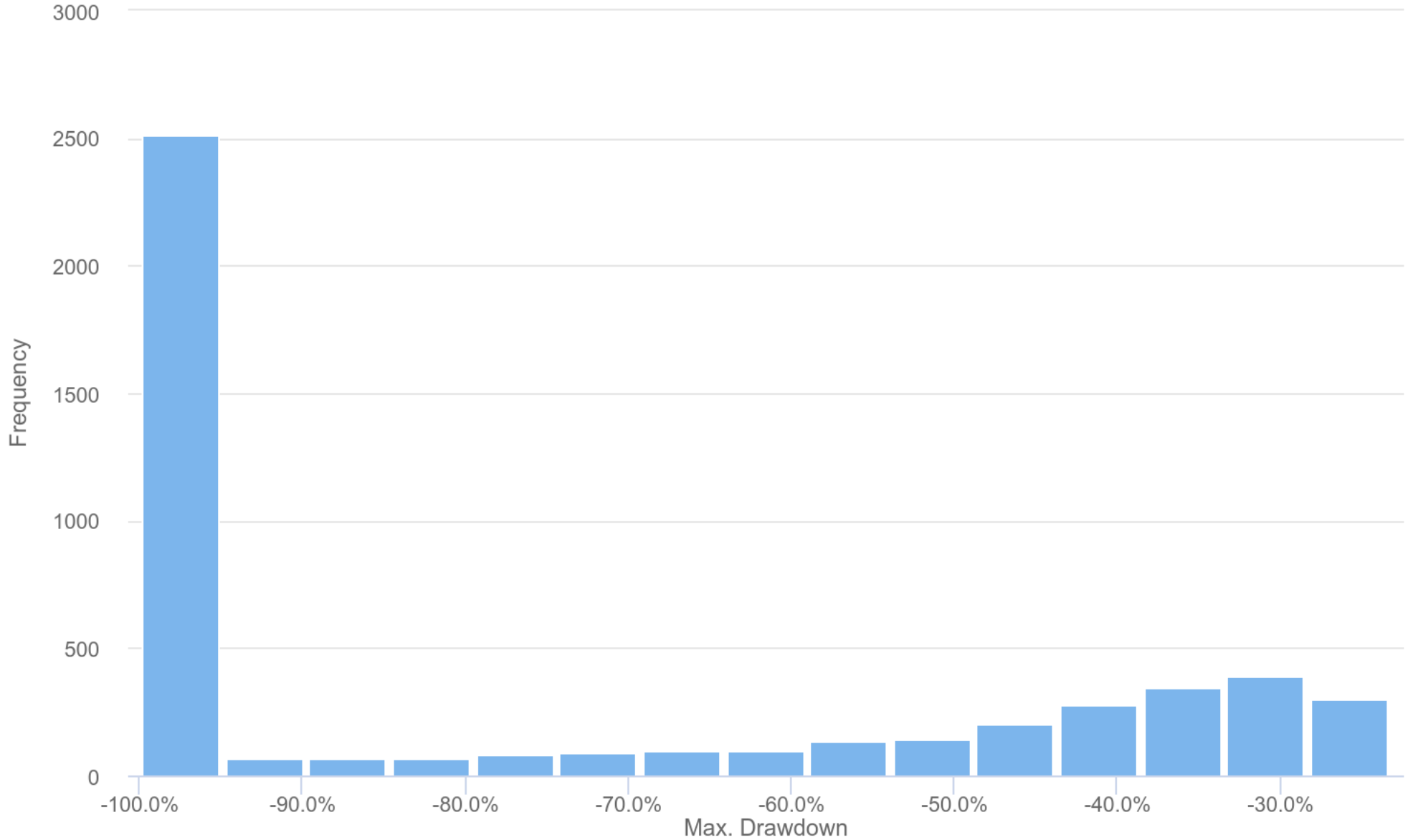
Loss	Loss Probability Excluding Cashflows		Loss Probability Including Cashflows	
	Within Time Period	End of Time Period	Within Time Period	End of Time Period
>= 2.50%	65.60%	0.10%	90.34%	63.64%
>= 5.00%	52.60%	0.08%	86.56%	63.44%
>= 7.50%	40.82%	0.08%	82.34%	63.14%
>= 10.00%	32.04%	0.08%	79.28%	62.82%
>= 12.50%	24.74%	0.06%	76.30%	62.64%
>= 15.00%	18.98%	0.06%	73.70%	62.40%
>= 17.50%	14.68%	0.04%	71.30%	62.06%
>= 20.00%	10.88%	0.04%	69.46%	61.82%
>= 22.50%	8.00%	0.04%	67.58%	61.42%
>= 25.00%	5.92%	0.04%	65.90%	61.18%
>= 27.50%	4.56%	0.04%	64.62%	60.86%
>= 30.00%	3.42%	0.04%	63.48%	60.62%
>= 32.50%	2.50%	0.04%	62.48%	60.30%
>= 35.00%	1.78%	0.02%	61.60%	59.96%
>= 37.50%	1.42%	0.00%	60.80%	59.58%
>= 40.00%	0.88%	0.00%	59.98%	59.12%

*Loss is measured against the original portfolio balance.*

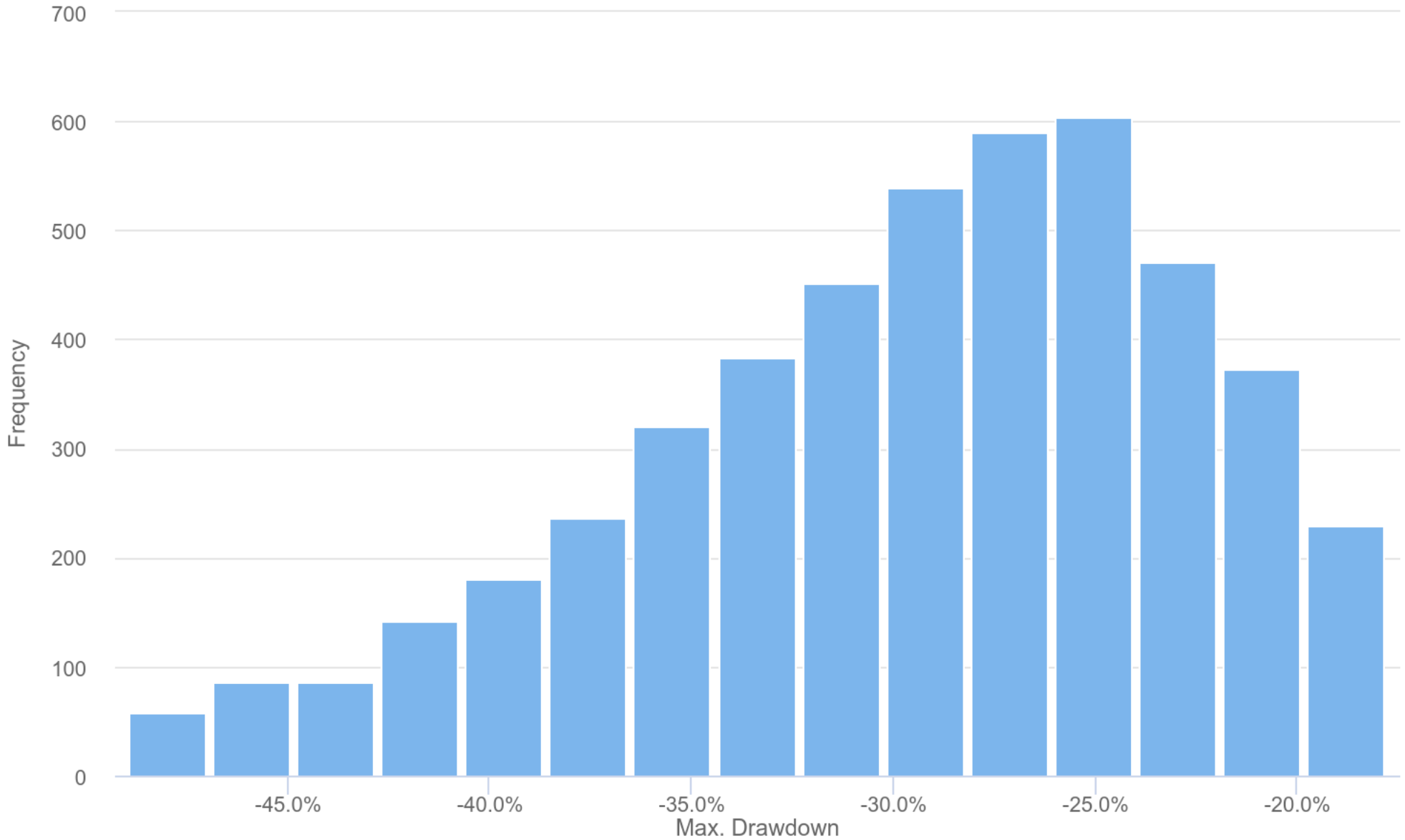
### Portfolio End Balance Histogram (95% of results)



### Maximum Drawdown Histogram Including Cashflows (95% of results)



### Maximum Drawdown Histogram Excluding Cashflows (95% of results)



**Notes:**

- Past performance is no guarantee of future results, which may vary. All use is subject to terms of service.
- Investing involves risk, including possible loss of principal. The value of the investments and the income derived from them may fluctuate over time.
- The projections and other information generated by the Monte Carlo simulation tool regarding the likelihood of various investment outcomes are hypothetical in nature, do not reflect actual investment results and are not guarantees of future results. Results may vary with each use and over time, and hypothetical returns do not reflect trading costs, transaction fees, or taxes.
- A Monte Carlo simulation is a mathematical technique designed to provide a range of possible outcomes to determine the probability of a particular result or set of results. The simulation provides a distribution of possible results, which are used to derive the probability of different outcomes.
- The results are based on information from a variety of sources we consider reliable, but we do not represent that the information is accurate or complete.
- The results do not constitute investment advice or recommendation, are provided solely for informational purposes, and are not an offer to buy or sell any securities.
- The results are based on the total return of assets and assume that all received dividends and distributions are reinvested.
- The probability of success is based on the number of simulations the portfolio survives with a positive end balance.
- Maximum drawdown statistics are calculated from simulated monthly balances.
- Safe withdrawal rate is the percentage of the original portfolio balance that can be withdrawn at the end of each year with inflation adjustment without the portfolio running out of money.
- Perpetual withdrawal rate is the percentage of portfolio balance that can be withdrawn at the end of each year while retaining the inflation adjusted portfolio balance.
- The results assume annual rebalancing of portfolio assets at the end of each year.
- Contributions and withdrawals are done at the end of each specified time period