

Report Parameters

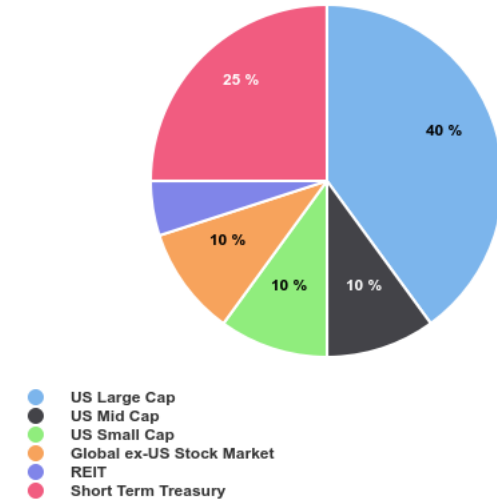
Initial Amount	\$2,000,000
Periodic Adjustment	Withdraw fixed amount periodically
Withdrawal Amount	\$10,000
Frequency	Monthly
Inflation Adjusted	Yes
Simulation Period	30
Simulation Model	Historical Returns
Bootstrap Model	Single Year
Sequence of Return Risk	No Adjustments
Inflation Model	Historical Inflation

Simulation Description

Monte Carlo simulation results for 10000 portfolios with \$2,000,000 initial portfolio balance using available historical returns data from Jan 1994 to Dec 2019. The historical return for the selected portfolio for this period was 9.14% mean return (8.37% CAGR) with 10.71% standard deviation of annual returns. 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	40.00%	9.75%	10.90%	14.41%
US Mid Cap	10.00%	11.03%	12.49%	16.12%
US Small Cap	10.00%	9.81%	11.71%	18.49%
Global ex-US Stock Market	10.00%	5.11%	6.55%	16.43%
REIT	5.00%	9.58%	11.60%	18.94%
Short Term Treasury	25.00%	3.58%	3.59%	1.87%

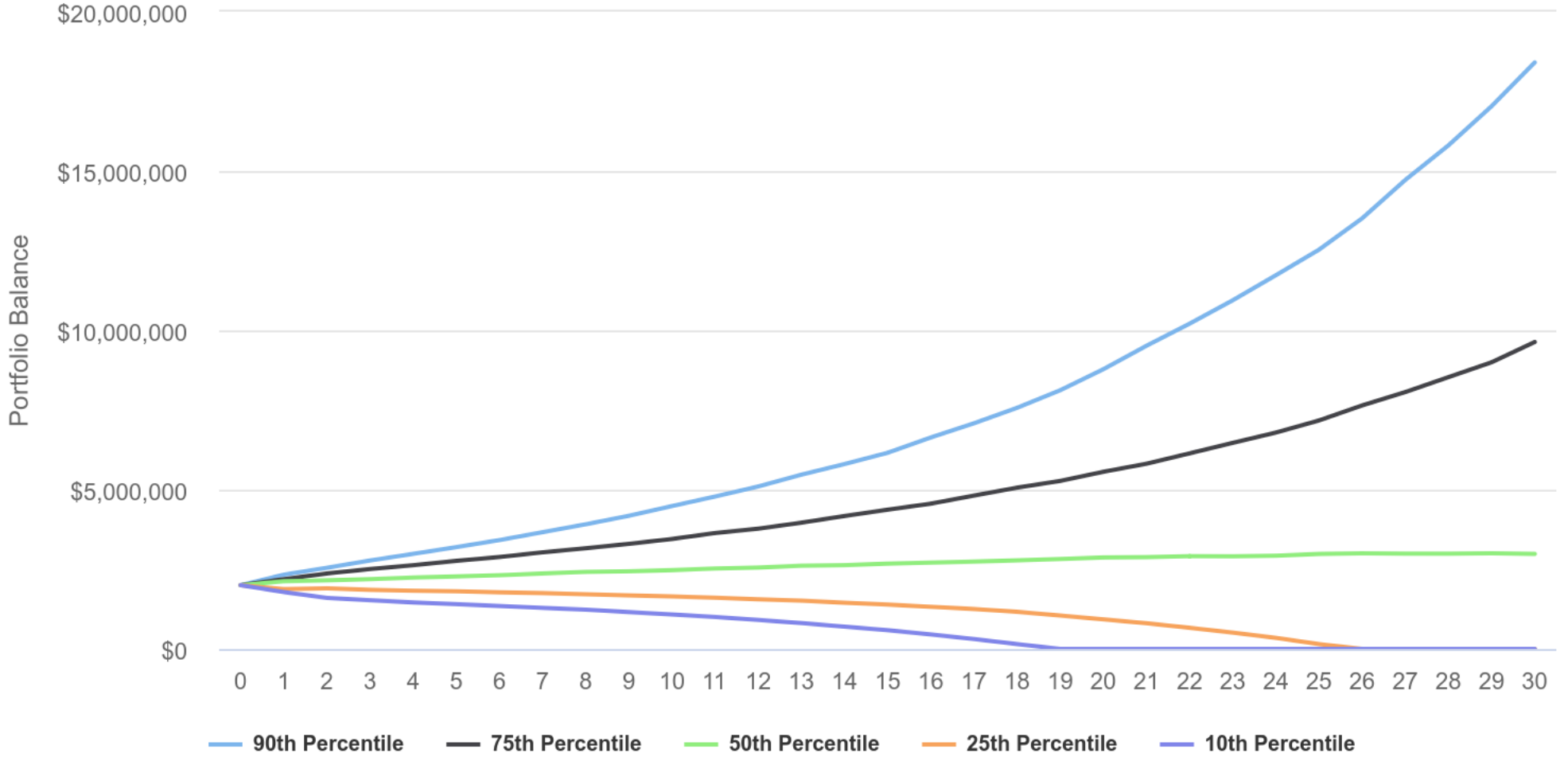


Summary Statistics

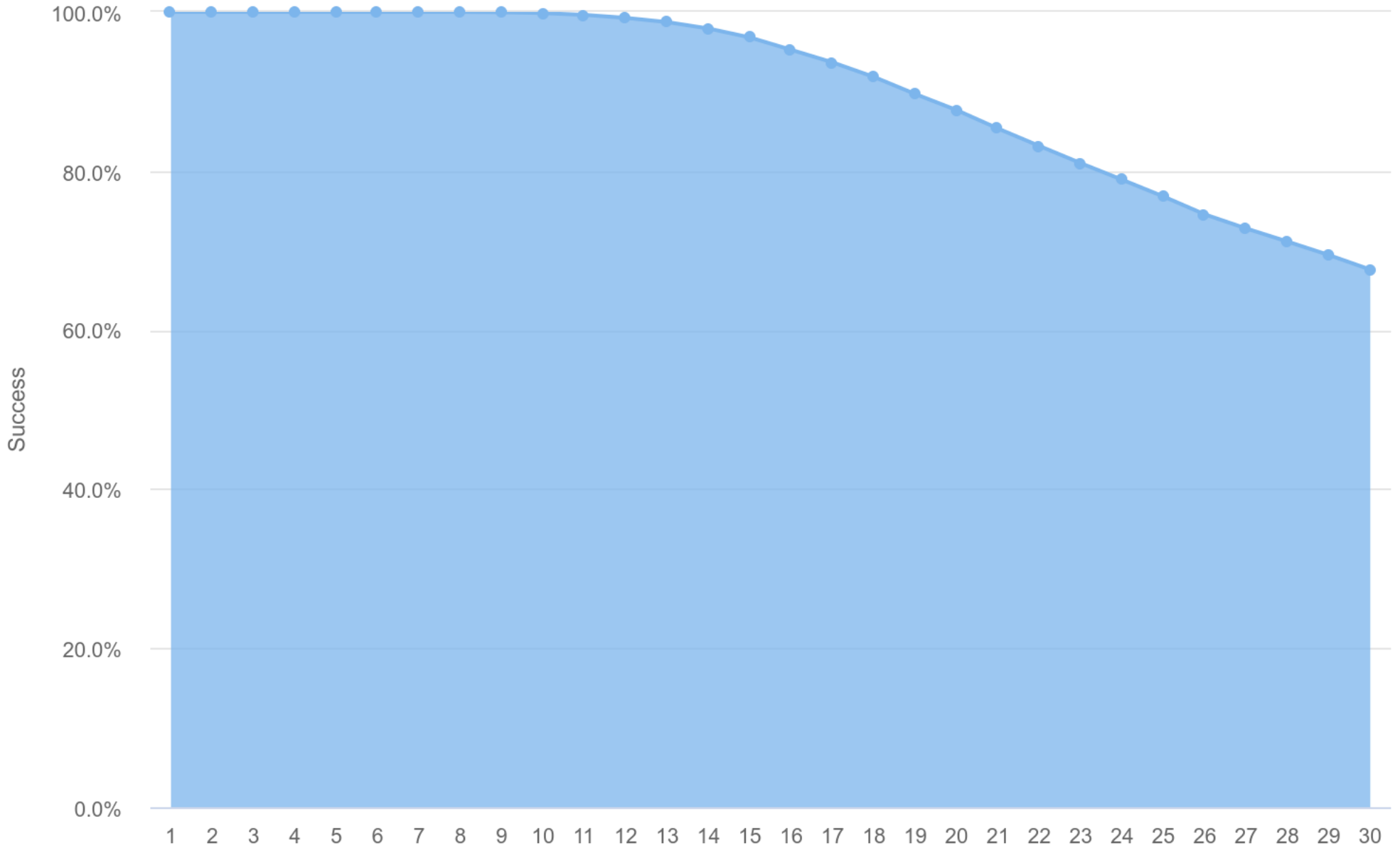
	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
Time Weighted Rate of Return (nominal)	5.28%	6.79%	8.46%	10.05%	11.42%
Time Weighted Rate of Return (real)	3.07%	4.50%	6.12%	7.65%	8.98%
Portfolio End Balance (nominal)	\$0.00	\$0.00	\$2,981,801	\$9,633,826	\$18,409,399
Portfolio End Balance (real)	\$0.00	\$0.00	\$1,554,788	\$4,957,167	\$9,470,811
Maximum Drawdown	-100.00%	-100.00%	-47.48%	-32.31%	-22.76%
Maximum Drawdown Excluding Cashflows	-44.10%	-37.29%	-30.05%	-24.46%	-17.25%
Safe Withdrawal Rate	4.61%	5.75%	7.23%	8.86%	10.39%
Perpetual Withdrawal Rate	2.97%	4.30%	5.77%	7.11%	8.24%

6760 portfolios out of 10000 simulated portfolios (67.60%) 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	\$1,783,401	\$1,876,129	\$2,124,696	\$2,189,741	\$2,330,691	100.00%
2	\$1,600,894	\$1,900,559	\$2,152,433	\$2,368,145	\$2,546,824	100.00%
3	\$1,528,251	\$1,854,862	\$2,190,657	\$2,507,172	\$2,775,925	100.00%
4	\$1,458,240	\$1,826,892	\$2,241,169	\$2,627,589	\$2,984,210	100.00%
5	\$1,403,979	\$1,808,689	\$2,274,334	\$2,764,730	\$3,195,507	100.00%
6	\$1,347,958	\$1,775,541	\$2,313,920	\$2,884,632	\$3,416,428	100.00%
7	\$1,287,181	\$1,752,802	\$2,367,950	\$3,031,879	\$3,664,360	100.00%
8	\$1,233,597	\$1,716,296	\$2,417,060	\$3,160,244	\$3,912,355	100.00%
9	\$1,155,826	\$1,679,806	\$2,437,227	\$3,298,003	\$4,179,028	99.96%
10	\$1,081,186	\$1,647,316	\$2,472,565	\$3,451,184	\$4,484,119	99.85%
11	\$1,002,426	\$1,607,273	\$2,523,202	\$3,637,422	\$4,784,198	99.63%
12	\$908,978	\$1,557,064	\$2,553,548	\$3,774,777	\$5,099,066	99.25%
13	\$810,497	\$1,514,842	\$2,611,711	\$3,962,816	\$5,470,317	98.72%
14	\$698,903	\$1,449,463	\$2,628,950	\$4,172,135	\$5,802,700	97.91%
15	\$587,937	\$1,391,575	\$2,677,251	\$4,370,636	\$6,157,108	96.79%
16	\$454,197	\$1,321,615	\$2,709,269	\$4,559,274	\$6,637,792	95.23%
17	\$309,269	\$1,252,874	\$2,741,040	\$4,812,961	\$7,082,732	93.65%
18	\$151,453	\$1,165,004	\$2,779,215	\$5,062,250	\$7,568,451	91.82%
19	\$0.00	\$1,047,624	\$2,822,802	\$5,273,306	\$8,119,845	89.67%
20	\$0.00	\$927,286	\$2,870,101	\$5,560,069	\$8,779,818	87.65%
21	\$0.00	\$805,474	\$2,879,449	\$5,812,783	\$9,516,464	85.33%
22	\$0.00	\$662,624	\$2,911,264	\$6,138,728	\$10,210,068	83.14%
23	\$0.00	\$511,904	\$2,906,932	\$6,468,652	\$10,944,169	80.98%
24	\$0.00	\$346,487	\$2,925,956	\$6,790,980	\$11,730,341	78.90%
25	\$0.00	\$150,856	\$2,981,208	\$7,171,606	\$12,533,003	76.79%
26	\$0.00	\$0.00	\$2,998,485	\$7,643,597	\$13,516,228	74.54%
27	\$0.00	\$0.00	\$2,989,722	\$8,062,721	\$14,721,580	72.77%
28	\$0.00	\$0.00	\$2,988,296	\$8,530,955	\$15,807,084	71.12%
29	\$0.00	\$0.00	\$3,000,187	\$8,996,776	\$17,035,286	69.43%
30	\$0.00	\$0.00	\$2,981,801	\$9,633,826	\$18,409,399	67.60%

Portfolio Balances (inflation adjusted)

Year	10th Percentile Balance	25th Percentile Balance	50th Percentile Balance	75th Percentile Balance	90th Percentile Balance	Portfolio Success
1	\$1,749,974	\$1,842,286	\$2,088,336	\$2,130,479	\$2,272,851	100.00%
2	\$1,547,407	\$1,818,004	\$2,041,999	\$2,265,178	\$2,432,294	100.00%
3	\$1,444,039	\$1,734,025	\$2,044,312	\$2,335,237	\$2,596,309	100.00%
4	\$1,348,902	\$1,673,739	\$2,045,303	\$2,398,489	\$2,729,191	100.00%
5	\$1,271,924	\$1,623,087	\$2,036,203	\$2,468,565	\$2,856,556	100.00%
6	\$1,194,087	\$1,561,876	\$2,024,848	\$2,524,583	\$2,993,025	100.00%
7	\$1,118,299	\$1,506,282	\$2,023,561	\$2,585,828	\$3,134,421	100.00%
8	\$1,048,127	\$1,443,057	\$2,020,543	\$2,640,765	\$3,272,152	100.00%
9	\$963,782	\$1,386,688	\$1,996,787	\$2,694,015	\$3,420,179	99.96%
10	\$882,136	\$1,328,905	\$1,981,160	\$2,760,073	\$3,591,486	99.85%
11	\$796,384	\$1,266,760	\$1,983,450	\$2,837,389	\$3,733,822	99.63%
12	\$707,377	\$1,203,647	\$1,962,529	\$2,887,996	\$3,915,477	99.25%
13	\$613,721	\$1,138,686	\$1,961,455	\$2,957,850	\$4,069,425	98.72%
14	\$520,806	\$1,074,217	\$1,935,093	\$3,051,765	\$4,263,140	97.91%
15	\$424,365	\$1,003,629	\$1,922,048	\$3,137,017	\$4,439,333	96.79%
16	\$323,003	\$936,586	\$1,907,143	\$3,204,335	\$4,643,734	95.23%
17	\$219,326	\$865,737	\$1,887,384	\$3,289,743	\$4,870,546	93.65%
18	\$102,068	\$791,513	\$1,875,249	\$3,392,051	\$5,069,967	91.82%
19	\$0.00	\$690,436	\$1,867,580	\$3,482,781	\$5,324,917	89.67%
20	\$0.00	\$599,115	\$1,849,818	\$3,555,610	\$5,648,802	87.65%
21	\$0.00	\$508,424	\$1,818,399	\$3,655,209	\$5,971,192	85.33%
22	\$0.00	\$408,143	\$1,794,270	\$3,774,836	\$6,250,328	83.14%
23	\$0.00	\$311,727	\$1,752,860	\$3,877,020	\$6,584,445	80.98%
24	\$0.00	\$203,303	\$1,735,462	\$3,990,893	\$6,868,236	78.90%
25	\$0.00	\$87,647	\$1,732,546	\$4,128,758	\$7,227,842	76.79%
26	\$0.00	\$0.00	\$1,701,055	\$4,291,301	\$7,647,530	74.54%
27	\$0.00	\$0.00	\$1,670,699	\$4,417,117	\$8,045,760	72.77%
28	\$0.00	\$0.00	\$1,617,143	\$4,584,271	\$8,491,697	71.12%
29	\$0.00	\$0.00	\$1,595,778	\$4,782,740	\$8,959,147	69.43%
30	\$0.00	\$0.00	\$1,554,788	\$4,957,167	\$9,470,811	67.60%

Portfolio Cashflows (nominal)

Year	10th Percentile Cashflow	25th Percentile Cashflow	50th Percentile Cashflow	75th Percentile Cashflow	90th Percentile Cashflow
1	-\$121,271	-\$121,833	-\$122,115	-\$122,781	-\$123,148
2	-\$123,156	-\$124,046	-\$124,942	-\$125,844	-\$126,528
3	-\$125,369	-\$126,466	-\$127,695	-\$128,893	-\$129,953
4	-\$127,674	-\$129,032	-\$130,521	-\$131,959	-\$133,238
5	-\$130,080	-\$131,630	-\$133,373	-\$135,032	-\$136,569
6	-\$132,620	-\$134,405	-\$136,299	-\$138,207	-\$139,882
7	-\$135,208	-\$137,188	-\$139,275	-\$141,429	-\$143,337
8	-\$137,939	-\$140,036	-\$142,327	-\$144,678	-\$146,801
9	-\$140,649	-\$142,983	-\$145,460	-\$148,016	-\$150,411
10	-\$143,529	-\$145,957	-\$148,687	-\$151,458	-\$153,922
11	-\$146,337	-\$149,039	-\$151,978	-\$154,955	-\$157,596
12	-\$149,332	-\$152,216	-\$155,323	-\$158,482	-\$161,296
13	-\$152,232	-\$155,356	-\$158,764	-\$162,118	-\$165,105
14	-\$155,153	-\$158,638	-\$162,251	-\$165,836	-\$169,026
15	-\$157,976	-\$161,919	-\$165,748	-\$169,613	-\$173,056
16	-\$160,586	-\$165,110	-\$169,349	-\$173,451	-\$177,127
17	-\$162,974	-\$168,343	-\$173,043	-\$177,217	-\$181,159
18	-\$164,584	-\$171,647	-\$176,642	-\$181,244	-\$185,343
19	-\$156,422	-\$174,811	-\$180,390	-\$185,228	-\$189,614
20	\$0.00	-\$177,985	-\$184,187	-\$189,336	-\$193,931
21	\$0.00	-\$181,091	-\$187,885	-\$193,477	-\$198,343
22	\$0.00	-\$183,996	-\$191,745	-\$197,711	-\$202,895
23	\$0.00	-\$186,762	-\$195,641	-\$202,011	-\$207,493
24	\$0.00	-\$189,035	-\$199,646	-\$206,469	-\$212,333
25	\$0.00	-\$190,212	-\$203,679	-\$210,981	-\$217,102
26	\$0.00	-\$157,064	-\$207,728	-\$215,506	-\$221,804
27	\$0.00	\$0.00	-\$211,662	-\$220,219	-\$226,701
28	\$0.00	\$0.00	-\$215,969	-\$225,030	-\$231,926
29	\$0.00	\$0.00	-\$220,091	-\$229,779	-\$237,114
30	\$0.00	\$0.00	-\$224,084	-\$234,608	-\$242,479

Asset Correlations

Name	US Large Cap	US Mid Cap	US Small Cap	Global ex-US Stock Market	REIT	Short Term Treasury	Inflation
US Large Cap	1.00	0.92	0.83	0.82	0.54	-0.17	0.03
US Mid Cap	0.92	1.00	0.93	0.82	0.62	-0.20	0.06
US Small Cap	0.83	0.93	1.00	0.77	0.63	-0.23	0.04
Global ex-US Stock Market	0.82	0.82	0.77	1.00	0.54	-0.19	0.05
REIT	0.54	0.62	0.63	0.54	1.00	-0.01	0.04
Short Term Treasury	-0.17	-0.20	-0.23	-0.19	-0.01	1.00	-0.05
Inflation	0.03	0.06	0.04	0.05	0.04	-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	-5.10%	-1.74%	0.60%	2.99%	4.00%	4.68%	4.98%	5.28%
25th Percentile	-0.11%	4.01%	4.80%	5.62%	6.12%	6.47%	6.65%	6.79%
50th Percentile	12.58%	9.48%	8.98%	8.56%	8.47%	8.46%	8.46%	8.46%
75th Percentile	16.12%	14.01%	12.72%	11.28%	10.80%	10.41%	10.23%	10.05%
90th Percentile	23.74%	17.72%	15.58%	13.58%	12.61%	12.08%	11.69%	11.42%

Annual Return Probabilities

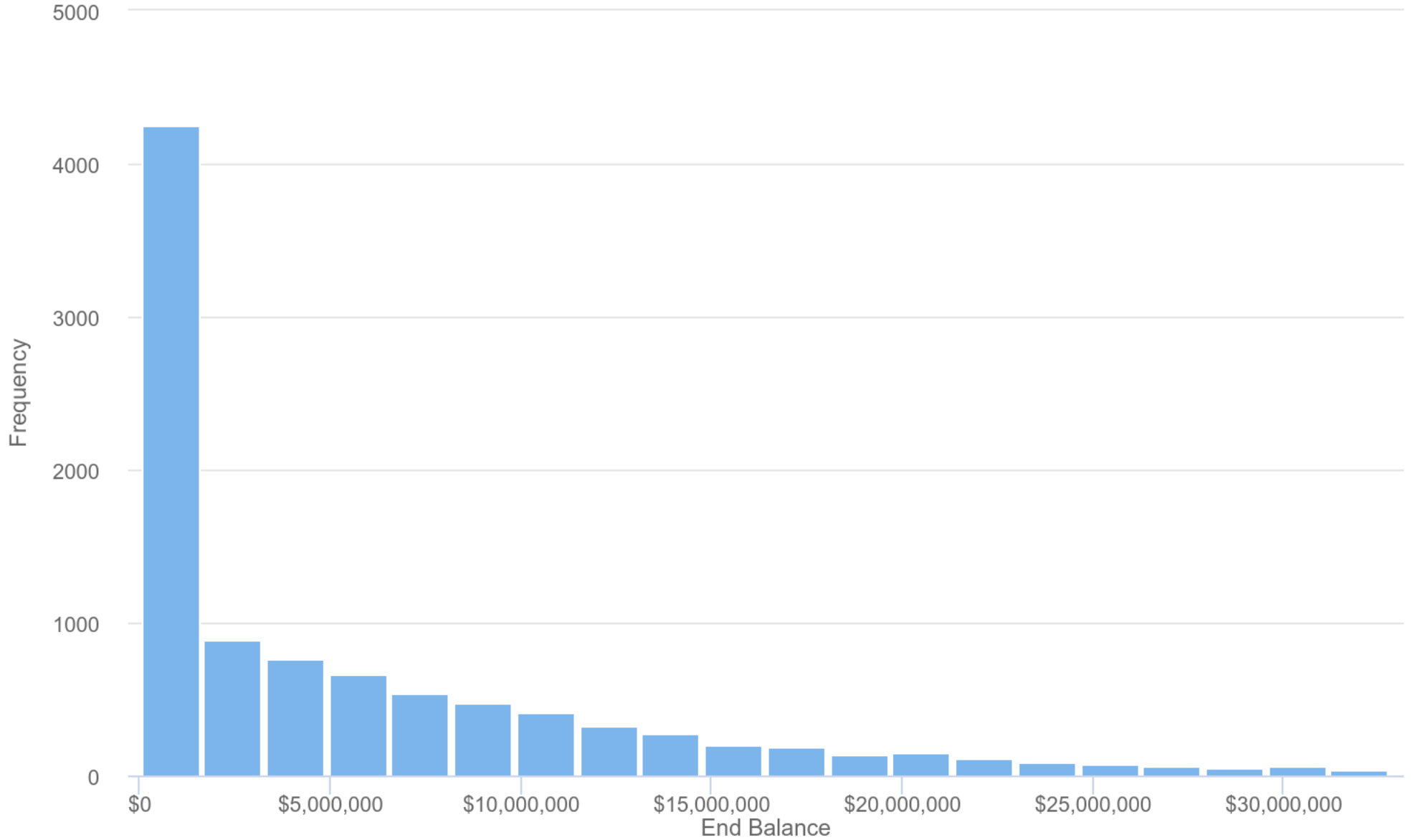
Return	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years
>= 0.00%	73.08%	86.50%	91.38%	97.55%	99.27%	99.73%	99.91%	99.95%
>= 2.50%	69.23%	80.37%	84.34%	91.97%	95.48%	97.58%	98.58%	99.00%
>= 5.00%	69.23%	71.53%	73.93%	79.41%	83.97%	87.78%	89.76%	91.75%
>= 7.50%	61.08%	60.56%	59.93%	59.79%	61.26%	62.51%	63.68%	64.75%
>= 10.00%	53.98%	46.29%	43.58%	36.39%	33.38%	29.98%	28.00%	25.69%
>= 12.50%	50.08%	32.47%	26.56%	16.17%	10.59%	7.60%	5.33%	3.80%

Loss Probabilities

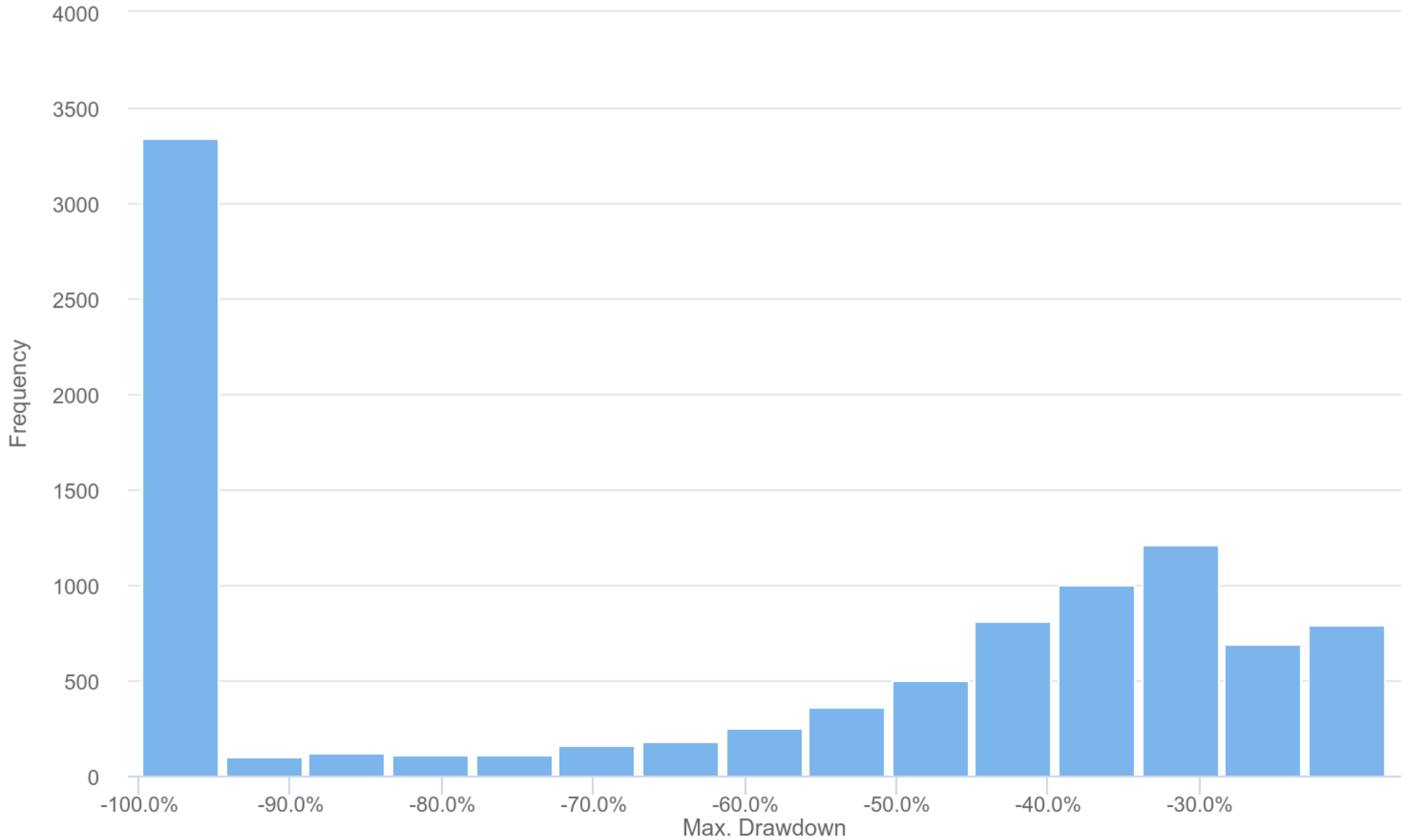
Loss	Loss Probability Excluding Cashflows		Loss Probability Including Cashflows	
	Within Time Period	End of Time Period	Within Time Period	End of Time Period
>= 2.50%	61.50%	0.05%	85.75%	44.46%
>= 5.00%	38.53%	0.05%	78.36%	44.16%
>= 7.50%	34.74%	0.05%	70.30%	43.77%
>= 10.00%	29.27%	0.05%	66.24%	43.52%
>= 12.50%	24.53%	0.05%	62.54%	43.19%
>= 15.00%	18.43%	0.04%	59.90%	42.88%
>= 17.50%	14.01%	0.04%	53.99%	42.58%
>= 20.00%	11.61%	0.04%	51.70%	42.30%
>= 22.50%	10.18%	0.04%	49.49%	42.01%
>= 25.00%	8.74%	0.04%	47.56%	41.73%
>= 27.50%	7.83%	0.02%	46.10%	41.37%
>= 30.00%	4.57%	0.01%	44.86%	41.15%
>= 32.50%	3.61%	0.01%	43.91%	40.85%
>= 35.00%	2.93%	0.01%	42.57%	40.50%
>= 37.50%	2.33%	0.01%	41.73%	40.20%
>= 40.00%	1.49%	0.00%	41.01%	39.98%

Loss is measured against the original portfolio balance.

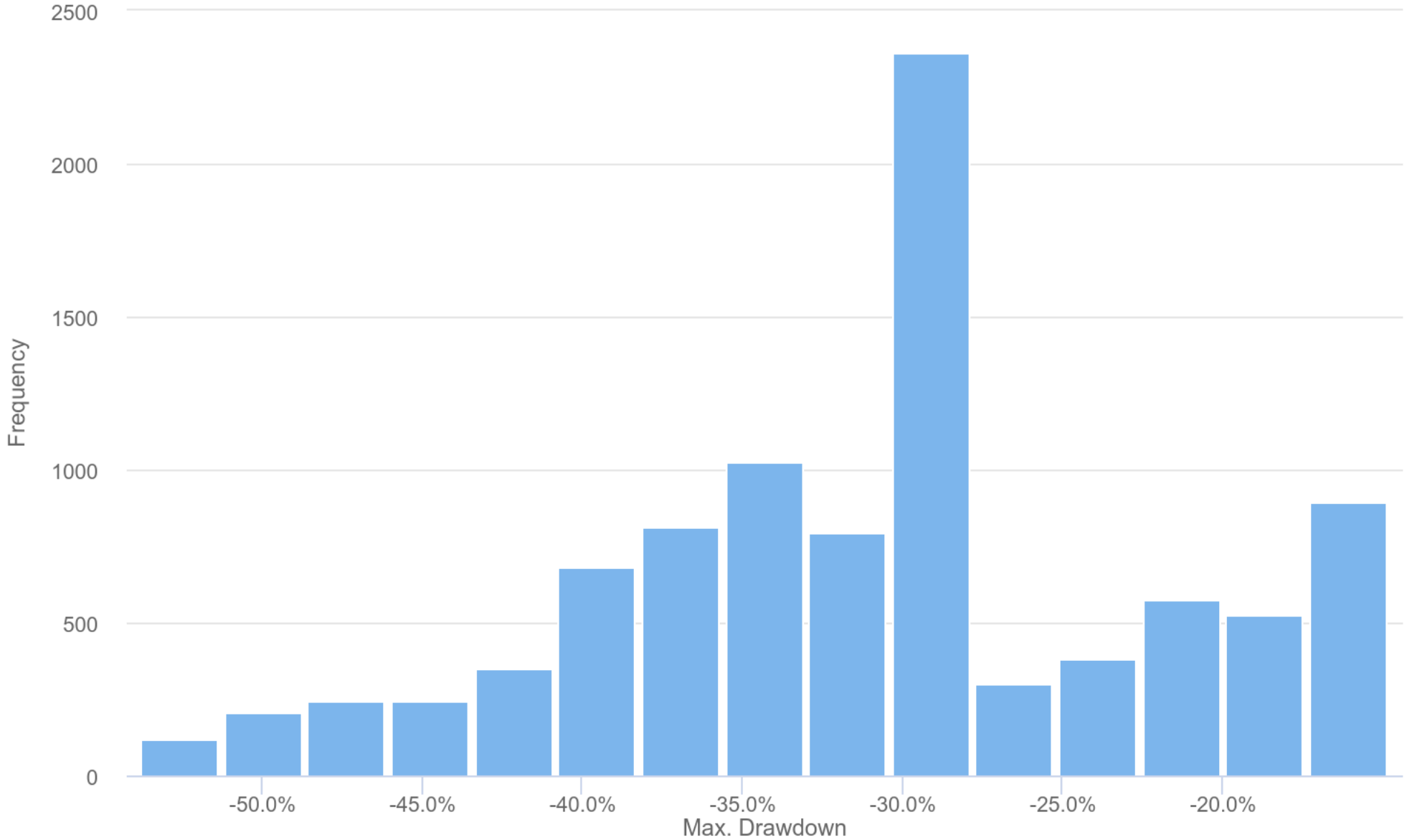
Portfolio End Balance Histogram (95% of results)



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