

**Report Parameters**

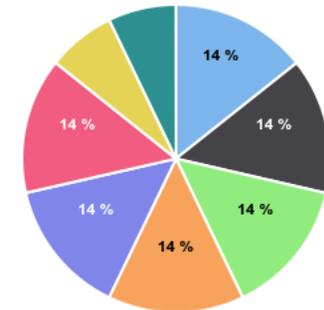
<b>Initial Amount</b>	\$200,000
<b>Periodic Adjustment</b>	Withdraw based on life expectancy
<b>Life Expectancy Model</b>	Single Life Expectancy
<b>Current Age</b>	65
<b>Frequency</b>	Monthly
<b>Simulation Period</b>	25
<b>Simulation Model</b>	Historical Returns
<b>Bootstrap Model</b>	Single Year
<b>Sequence of Return Risk</b>	No Adjustments
<b>Inflation Model</b>	Parameterized Inflation
<b>Annual Inflation Mean</b>	2.00%
<b>Annual Inflation Stdev</b>	3.00%

**Simulation Description**

Monte Carlo simulation results for 10000 portfolios with \$200,000 initial portfolio balance using available historical returns data from Jan 2001 to Dec 2017. The historical return for the selected portfolio for this period was 9.69% mean return (8.74% CAGR) with 9.72% standard deviation of annual returns. The simulation results are based on generated nominal returns and life expectancy based variable percentage month withdrawals (65-year old, Single Life Expectancy). The simulated inflation model used normal distribution with 2.00% mean and 3.00% standard deviation based on the parameters. The generated inflation samples were uncorrelated with simulated asset returns. The available historical data for the simulation inputs was constrained by Consumer Staples [Jan 2001 - Nov 2018].

**Portfolio**

Asset Class	Allocation	CAGR	Expected Annual Return	Annualized Volatility
Consumer Staples	14.32%	6.47%	7.09%	10.79%
EM Bonds	14.28%	7.28%	7.87%	10.58%
Gold	14.28%	8.03%	9.49%	16.55%
High Yield	14.28%	7.27%	7.85%	10.41%
Immobilien	14.28%	9.81%	11.83%	19.04%
MSCI EM	14.28%	8.62%	10.72%	19.55%
WORLD MOMENTUM	7.14%	6.02%	6.97%	13.39%
WORLD SMALL VALUE	7.14%	8.49%	9.72%	15.08%



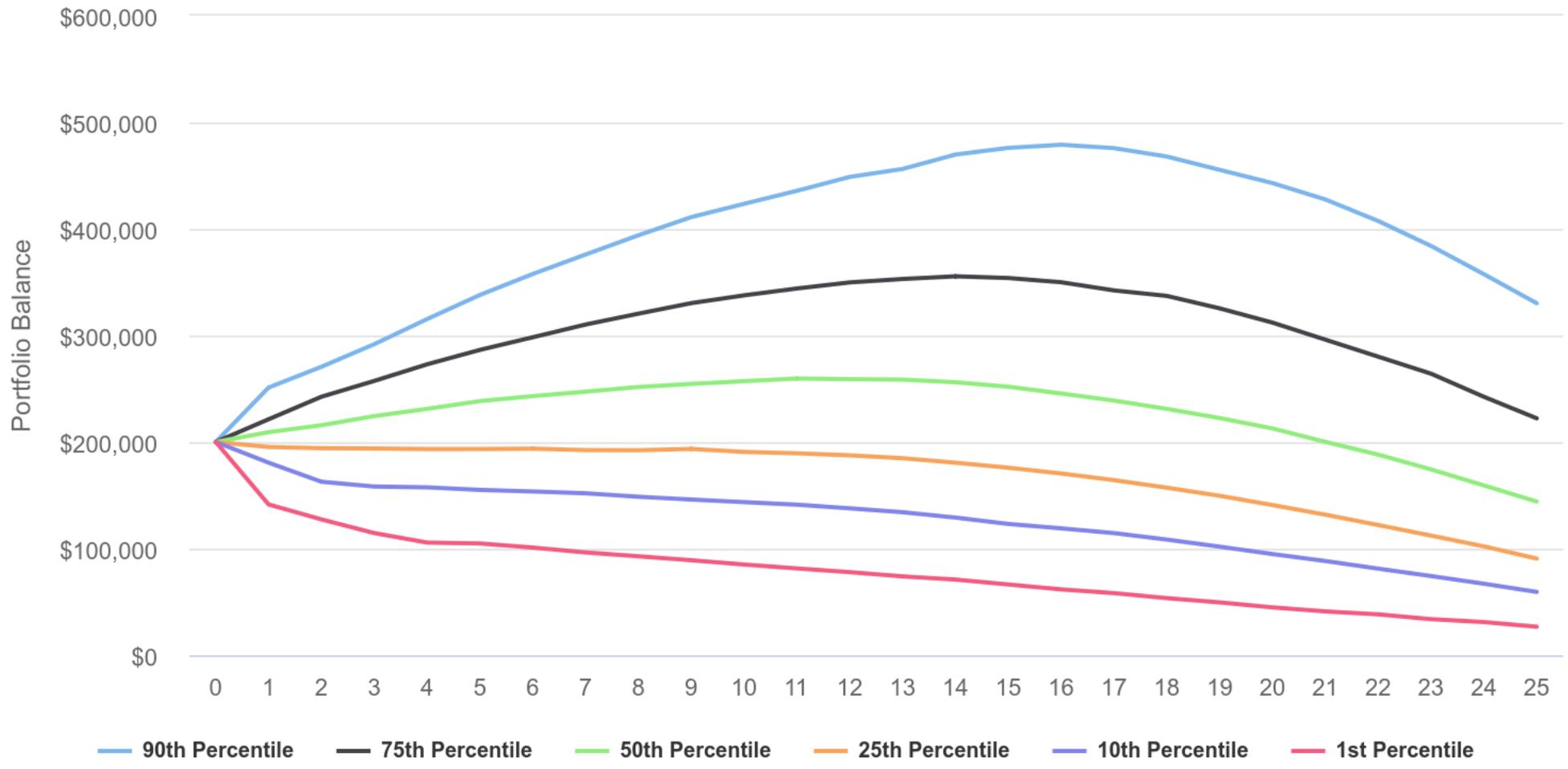
● Consumer Staples      ● EM Bonds  
● Gold                      ● High Yield  
● Immobilien                ● MSCI EM  
● WORLD MOMENTUM    ● WORLD SMALL VALUE

**Summary Statistics**

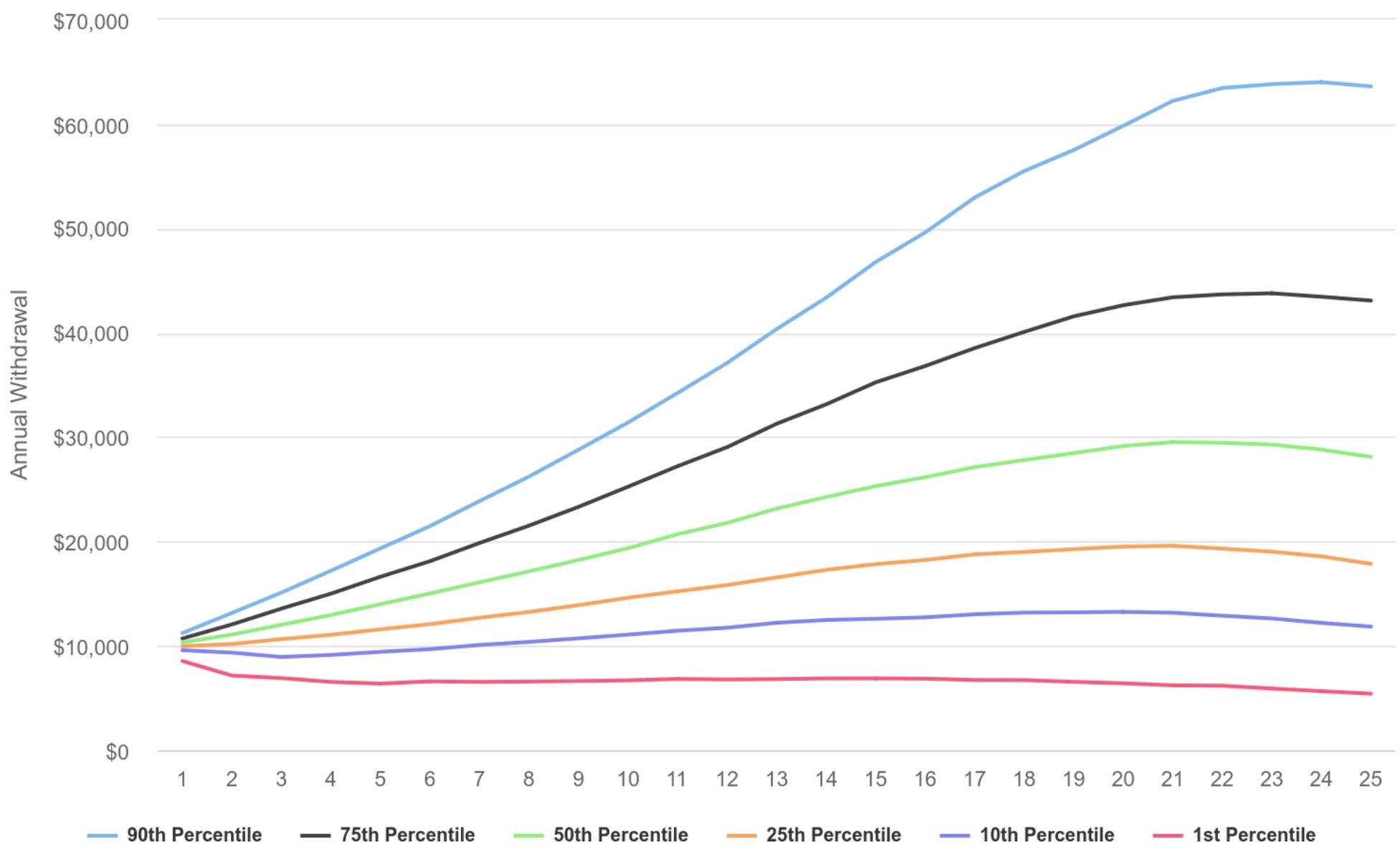
	1st Percentile	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
Time Weighted Rate of Return (nominal)	1.73%	5.04%	6.83%	8.84%	10.74%	12.51%
Time Weighted Rate of Return (real)	-0.44%	2.83%	4.70%	6.65%	8.60%	10.39%
Portfolio End Balance (nominal)	\$26,628	\$59,284	\$90,581	\$144,104	\$222,193	\$330,191
Portfolio End Balance (real)	\$15,867	\$35,517	\$55,719	\$88,338	\$139,058	\$209,494
Maximum Drawdown	-89.83%	-79.70%	-71.46%	-60.10%	-47.95%	-37.82%
Maximum Drawdown Excluding Cashflows	-59.06%	-44.83%	-34.50%	-28.81%	-25.72%	-17.55%
Safe Withdrawal Rate	3.17%	5.09%	6.49%	8.27%	10.21%	12.23%
Perpetual Withdrawal Rate	0.00%	2.82%	4.56%	6.30%	7.99%	9.48%

10000 portfolios out of 10000 simulated portfolios (100.00%) survived all withdrawals.

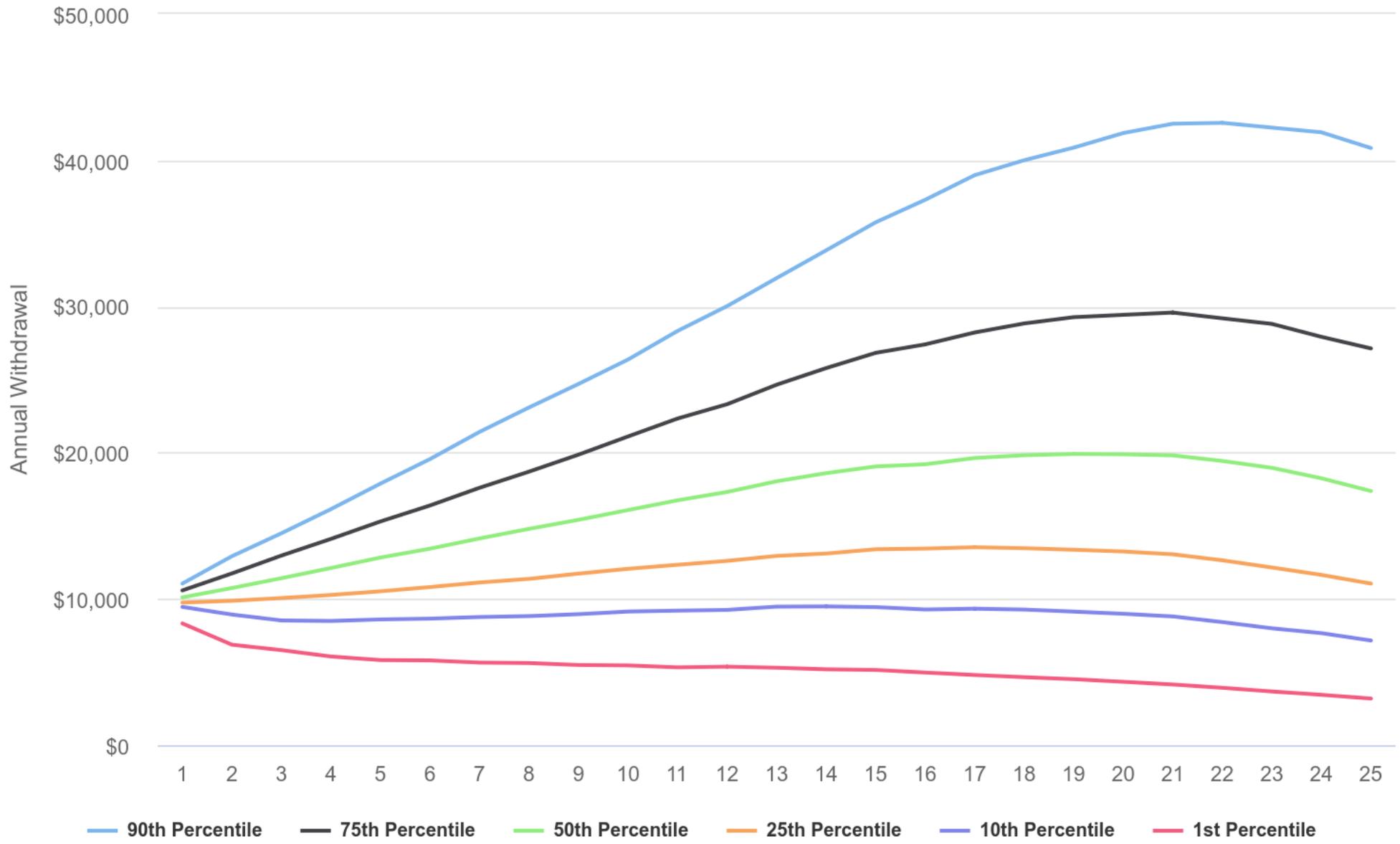
### Simulated Portfolio Balances



### Simulated Annual Withdrawals (nominal)



### Simulated Annual Withdrawals (in present dollars)



**Portfolio Balances (nominal)**

Year	1st Percentile Balance	10th Percentile Balance	25th Percentile Balance	50th Percentile Balance	75th Percentile Balance	90th Percentile Balance	Portfolio Success
1	\$141,361	\$180,559	\$195,308	\$209,184	\$221,331	\$251,117	100.00%
2	\$127,359	\$162,674	\$194,147	\$215,696	\$242,458	\$270,568	100.00%
3	\$114,514	\$158,180	\$193,898	\$224,283	\$257,305	\$291,793	100.00%
4	\$105,593	\$157,422	\$193,337	\$231,086	\$272,898	\$315,357	100.00%
5	\$104,768	\$155,034	\$193,374	\$238,371	\$286,437	\$337,961	100.00%
6	\$100,930	\$153,586	\$193,705	\$243,025	\$298,266	\$357,659	100.00%
7	\$96,328	\$151,848	\$192,381	\$247,204	\$310,224	\$375,930	100.00%
8	\$92,735	\$148,620	\$192,257	\$251,606	\$320,420	\$393,977	100.00%
9	\$89,020	\$145,984	\$193,482	\$254,493	\$330,307	\$411,025	100.00%
10	\$85,011	\$143,547	\$190,680	\$257,080	\$337,591	\$423,509	100.00%
11	\$81,329	\$141,168	\$189,353	\$259,543	\$344,023	\$435,739	100.00%
12	\$77,839	\$137,735	\$187,441	\$258,937	\$349,742	\$448,762	100.00%
13	\$73,864	\$134,105	\$184,758	\$258,544	\$352,929	\$456,189	100.00%
14	\$70,880	\$129,059	\$180,542	\$256,047	\$355,437	\$469,720	100.00%
15	\$66,268	\$123,090	\$175,832	\$251,854	\$353,856	\$475,962	100.00%
16	\$61,661	\$118,940	\$170,433	\$245,463	\$349,880	\$478,910	100.00%
17	\$58,165	\$114,487	\$164,198	\$238,865	\$342,204	\$475,745	100.00%
18	\$53,450	\$108,428	\$157,115	\$231,036	\$337,062	\$467,853	100.00%
19	\$49,464	\$101,753	\$149,498	\$222,469	\$325,375	\$455,365	100.00%
20	\$44,777	\$94,819	\$140,809	\$212,673	\$312,008	\$442,926	100.00%
21	\$41,017	\$88,312	\$131,799	\$200,093	\$296,023	\$427,601	100.00%
22	\$38,223	\$81,134	\$122,076	\$188,137	\$280,059	\$407,361	100.00%
23	\$33,733	\$74,175	\$112,144	\$174,249	\$264,093	\$383,952	100.00%
24	\$31,011	\$66,975	\$102,047	\$159,251	\$242,416	\$357,453	100.00%
25	\$26,628	\$59,284	\$90,581	\$144,104	\$222,193	\$330,191	100.00%

Portfolio Balances (inflation adjusted)

Year	1st Percentile Balance	10th Percentile Balance	25th Percentile Balance	50th Percentile Balance	75th Percentile Balance	90th Percentile Balance	Portfolio Success
1	\$134,777	\$178,182	\$190,128	\$203,580	\$218,310	\$243,535	100.00%
2	\$123,317	\$157,014	\$186,099	\$207,677	\$234,029	\$259,511	100.00%
3	\$109,033	\$149,152	\$181,680	\$211,620	\$244,428	\$277,315	100.00%
4	\$97,931	\$144,370	\$177,207	\$213,591	\$253,484	\$294,853	100.00%
5	\$93,890	\$139,836	\$174,765	\$215,900	\$261,325	\$309,766	100.00%
6	\$87,685	\$135,033	\$171,116	\$216,165	\$267,094	\$323,549	100.00%
7	\$82,549	\$130,188	\$166,990	\$215,555	\$271,844	\$334,951	100.00%
8	\$77,588	\$125,363	\$163,737	\$215,006	\$275,807	\$342,823	100.00%
9	\$71,725	\$121,351	\$160,409	\$213,944	\$278,792	\$349,860	100.00%
10	\$69,464	\$116,369	\$156,063	\$210,721	\$280,076	\$353,663	100.00%
11	\$64,974	\$111,805	\$151,981	\$208,326	\$279,190	\$358,104	100.00%
12	\$60,794	\$108,123	\$147,505	\$204,498	\$279,505	\$363,681	100.00%
13	\$56,917	\$103,345	\$141,791	\$200,948	\$276,535	\$360,388	100.00%
14	\$52,732	\$97,444	\$136,376	\$194,563	\$272,547	\$361,137	100.00%
15	\$49,276	\$91,636	\$130,892	\$188,504	\$266,447	\$360,590	100.00%
16	\$44,475	\$85,592	\$124,621	\$179,589	\$257,842	\$355,574	100.00%
17	\$41,186	\$80,403	\$116,765	\$172,248	\$249,414	\$345,751	100.00%
18	\$36,996	\$75,071	\$110,448	\$163,480	\$239,668	\$333,782	100.00%
19	\$34,191	\$69,289	\$102,772	\$153,964	\$227,400	\$321,369	100.00%
20	\$30,339	\$63,753	\$95,172	\$143,198	\$213,476	\$307,313	100.00%
21	\$27,016	\$58,206	\$86,630	\$133,238	\$199,496	\$290,667	100.00%
22	\$24,243	\$52,201	\$78,854	\$122,526	\$185,575	\$271,866	100.00%
23	\$20,899	\$46,774	\$71,598	\$111,583	\$170,254	\$251,434	100.00%
24	\$18,400	\$41,443	\$63,291	\$99,550	\$154,570	\$233,054	100.00%
25	\$15,867	\$35,517	\$55,719	\$88,338	\$139,058	\$209,494	100.00%

Portfolio Cashflows (nominal)

Year	1st Percentile Cashflow	10th Percentile Cashflow	25th Percentile Cashflow	50th Percentile Cashflow	75th Percentile Cashflow	90th Percentile Cashflow
1	-\$8,546	-\$9,578	-\$9,952	-\$10,308	-\$10,702	-\$11,221
2	-\$7,148	-\$9,347	-\$10,175	-\$11,079	-\$12,052	-\$13,152
3	-\$6,904	-\$8,930	-\$10,641	-\$12,018	-\$13,568	-\$15,105
4	-\$6,541	-\$9,128	-\$11,057	-\$12,952	-\$15,002	-\$17,198
5	-\$6,376	-\$9,423	-\$11,578	-\$13,994	-\$16,621	-\$19,341
6	-\$6,591	-\$9,679	-\$12,079	-\$15,016	-\$18,110	-\$21,472
7	-\$6,542	-\$10,082	-\$12,692	-\$16,091	-\$19,857	-\$23,869
8	-\$6,573	-\$10,378	-\$13,246	-\$17,137	-\$21,519	-\$26,227
9	-\$6,625	-\$10,715	-\$13,902	-\$18,226	-\$23,318	-\$28,792
10	-\$6,692	-\$11,074	-\$14,611	-\$19,353	-\$25,252	-\$31,405
11	-\$6,825	-\$11,448	-\$15,220	-\$20,695	-\$27,216	-\$34,231
12	-\$6,775	-\$11,734	-\$15,825	-\$21,780	-\$29,042	-\$37,109
13	-\$6,810	-\$12,208	-\$16,552	-\$23,151	-\$31,282	-\$40,360
14	-\$6,878	-\$12,476	-\$17,277	-\$24,260	-\$33,143	-\$43,362
15	-\$6,879	-\$12,593	-\$17,832	-\$25,310	-\$35,251	-\$46,780
16	-\$6,850	-\$12,728	-\$18,221	-\$26,160	-\$36,814	-\$49,617
17	-\$6,723	-\$13,025	-\$18,768	-\$27,126	-\$38,534	-\$52,966
18	-\$6,713	-\$13,184	-\$18,995	-\$27,807	-\$40,087	-\$55,505
19	-\$6,547	-\$13,207	-\$19,261	-\$28,469	-\$41,578	-\$57,518
20	-\$6,410	-\$13,256	-\$19,508	-\$29,147	-\$42,643	-\$59,835
21	-\$6,211	-\$13,173	-\$19,582	-\$29,525	-\$43,401	-\$62,223
22	-\$6,177	-\$12,886	-\$19,314	-\$29,463	-\$43,679	-\$63,459
23	-\$5,903	-\$12,623	-\$19,025	-\$29,287	-\$43,786	-\$63,825
24	-\$5,654	-\$12,198	-\$18,571	-\$28,808	-\$43,454	-\$64,022
25	-\$5,412	-\$11,841	-\$17,861	-\$28,109	-\$43,085	-\$63,612

**Portfolio Cashflows (inflation adjusted)**

Year	1st Percentile Cashflow	10th Percentile Cashflow	25th Percentile Cashflow	50th Percentile Cashflow	75th Percentile Cashflow	90th Percentile Cashflow
1	-\$8,322	-\$9,450	-\$9,742	-\$10,102	-\$10,579	-\$11,049
2	-\$6,865	-\$8,929	-\$9,870	-\$10,743	-\$11,742	-\$12,918
3	-\$6,495	-\$8,525	-\$10,058	-\$11,415	-\$12,962	-\$14,490
4	-\$6,059	-\$8,491	-\$10,268	-\$12,111	-\$14,101	-\$16,139
5	-\$5,813	-\$8,594	-\$10,519	-\$12,828	-\$15,297	-\$17,888
6	-\$5,792	-\$8,650	-\$10,807	-\$13,433	-\$16,388	-\$19,562
7	-\$5,641	-\$8,759	-\$11,121	-\$14,133	-\$17,598	-\$21,422
8	-\$5,612	-\$8,823	-\$11,369	-\$14,789	-\$18,704	-\$23,092
9	-\$5,476	-\$8,954	-\$11,727	-\$15,407	-\$19,866	-\$24,702
10	-\$5,447	-\$9,134	-\$12,057	-\$16,076	-\$21,110	-\$26,371
11	-\$5,318	-\$9,194	-\$12,332	-\$16,742	-\$22,335	-\$28,327
12	-\$5,365	-\$9,248	-\$12,597	-\$17,312	-\$23,313	-\$30,026
13	-\$5,290	-\$9,470	-\$12,939	-\$18,043	-\$24,648	-\$31,941
14	-\$5,184	-\$9,484	-\$13,102	-\$18,599	-\$25,783	-\$33,838
15	-\$5,138	-\$9,436	-\$13,394	-\$19,057	-\$26,827	-\$35,755
16	-\$4,961	-\$9,274	-\$13,439	-\$19,208	-\$27,406	-\$37,294
17	-\$4,793	-\$9,327	-\$13,532	-\$19,634	-\$28,221	-\$38,982
18	-\$4,643	-\$9,270	-\$13,464	-\$19,825	-\$28,838	-\$40,004
19	-\$4,507	-\$9,129	-\$13,360	-\$19,911	-\$29,268	-\$40,863
20	-\$4,328	-\$8,980	-\$13,240	-\$19,889	-\$29,427	-\$41,860
21	-\$4,143	-\$8,800	-\$13,048	-\$19,815	-\$29,583	-\$42,496
22	-\$3,917	-\$8,411	-\$12,636	-\$19,431	-\$29,188	-\$42,557
23	-\$3,666	-\$7,987	-\$12,145	-\$18,962	-\$28,807	-\$42,231
24	-\$3,438	-\$7,656	-\$11,642	-\$18,248	-\$27,922	-\$41,911
25	-\$3,183	-\$7,152	-\$11,046	-\$17,377	-\$27,130	-\$40,837

**Expected Annual Return**

Percentile	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
1st Percentile	-25.72%	-12.55%	-7.25%	-2.42%	-0.35%	0.71%	1.73%
10th Percentile	-5.13%	-2.61%	0.32%	2.83%	3.85%	4.56%	5.04%
25th Percentile	2.62%	4.23%	4.85%	5.79%	6.35%	6.65%	6.83%
50th Percentile	9.91%	9.41%	9.33%	9.00%	8.92%	8.87%	8.84%
75th Percentile	16.29%	14.53%	13.42%	12.01%	11.42%	10.98%	10.74%
90th Percentile	31.94%	19.44%	17.23%	14.58%	13.65%	12.94%	12.51%

**Annual Return Probabilities**

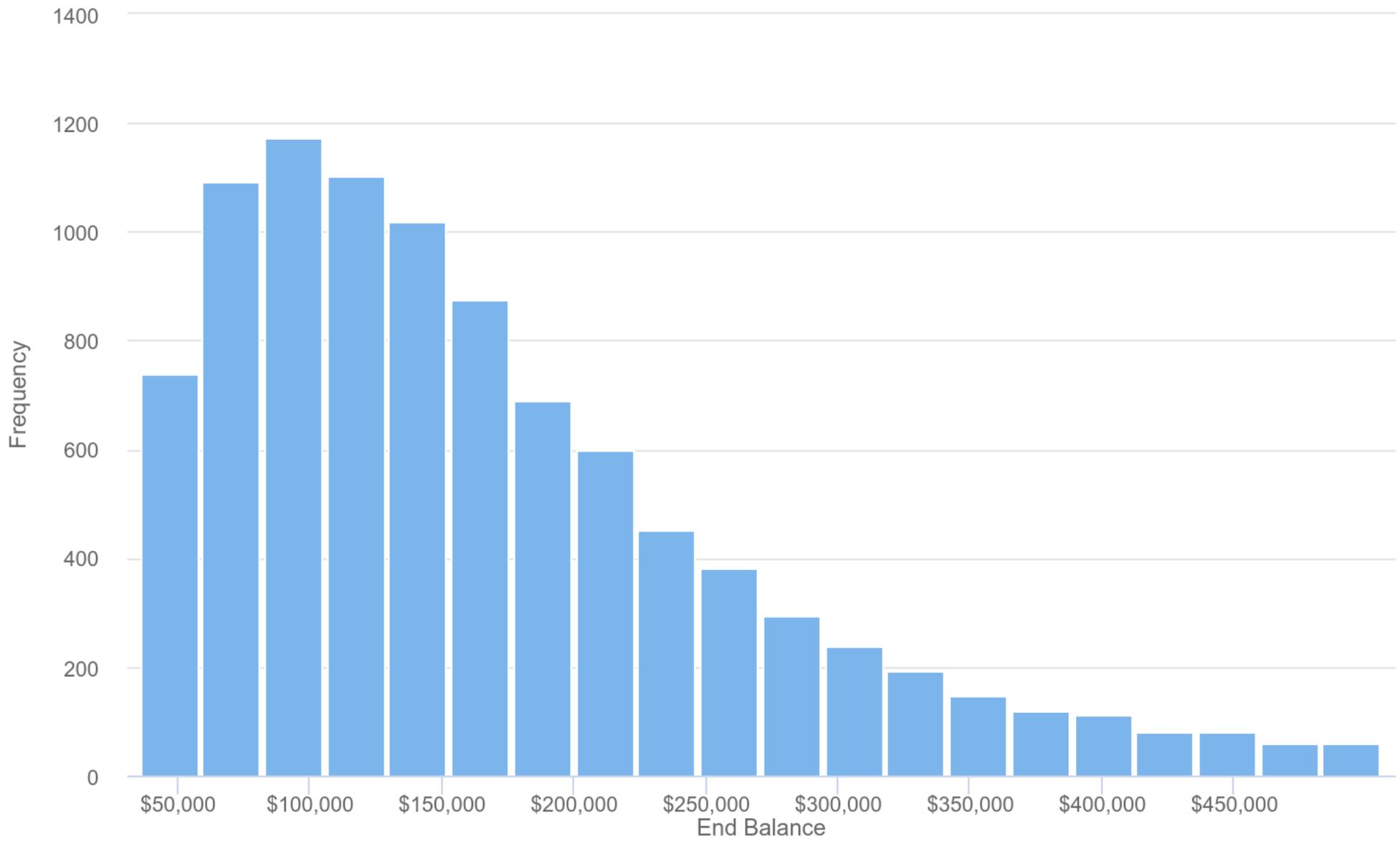
Return	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years
>= 0.00%	88.17%	85.87%	90.82%	97.03%	98.75%	99.49%	99.84%
>= 2.50%	75.67%	80.78%	84.29%	91.30%	95.01%	97.18%	98.10%
>= 5.00%	63.75%	71.74%	74.27%	79.93%	84.17%	87.96%	90.12%
>= 7.50%	57.81%	59.45%	60.86%	62.65%	64.57%	66.38%	67.50%
>= 10.00%	46.69%	47.21%	45.81%	41.16%	38.49%	36.00%	33.88%
>= 12.50%	35.63%	34.55%	30.57%	21.64%	16.47%	12.63%	10.03%

Loss Probabilities

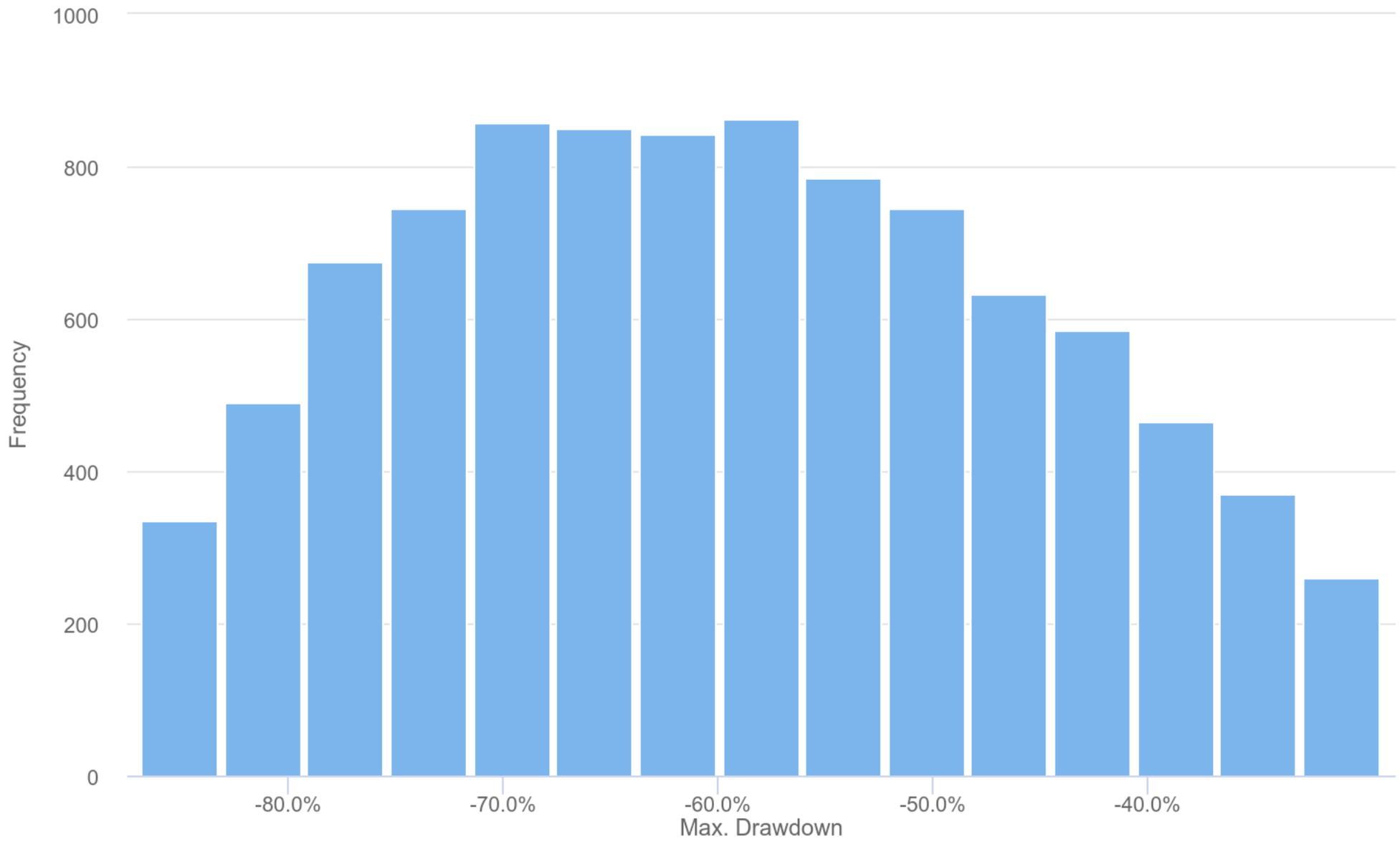
Loss	Loss Probability Excluding Cashflows		Loss Probability Including Cashflows	
	Within Time Period	End of Time Period	Within Time Period	End of Time Period
>= 2.50%	42.95%	0.14%	84.32%	67.98%
>= 5.00%	26.80%	0.13%	81.47%	66.56%
>= 7.50%	24.88%	0.13%	77.36%	65.01%
>= 10.00%	18.85%	0.12%	74.15%	63.47%
>= 12.50%	17.65%	0.11%	71.96%	61.93%
>= 15.00%	15.78%	0.11%	68.71%	60.10%
>= 17.50%	14.22%	0.09%	66.28%	58.36%
>= 20.00%	12.53%	0.09%	64.01%	56.39%
>= 22.50%	11.36%	0.07%	62.07%	54.45%
>= 25.00%	9.78%	0.05%	59.88%	52.41%
>= 27.50%	5.48%	0.05%	57.33%	50.27%
>= 30.00%	3.75%	0.05%	54.23%	48.10%
>= 32.50%	3.10%	0.04%	51.26%	45.97%
>= 35.00%	2.50%	0.03%	48.31%	43.75%
>= 37.50%	2.12%	0.02%	45.84%	41.63%
>= 40.00%	1.72%	0.02%	43.03%	39.30%

Loss is measured against the original portfolio balance.

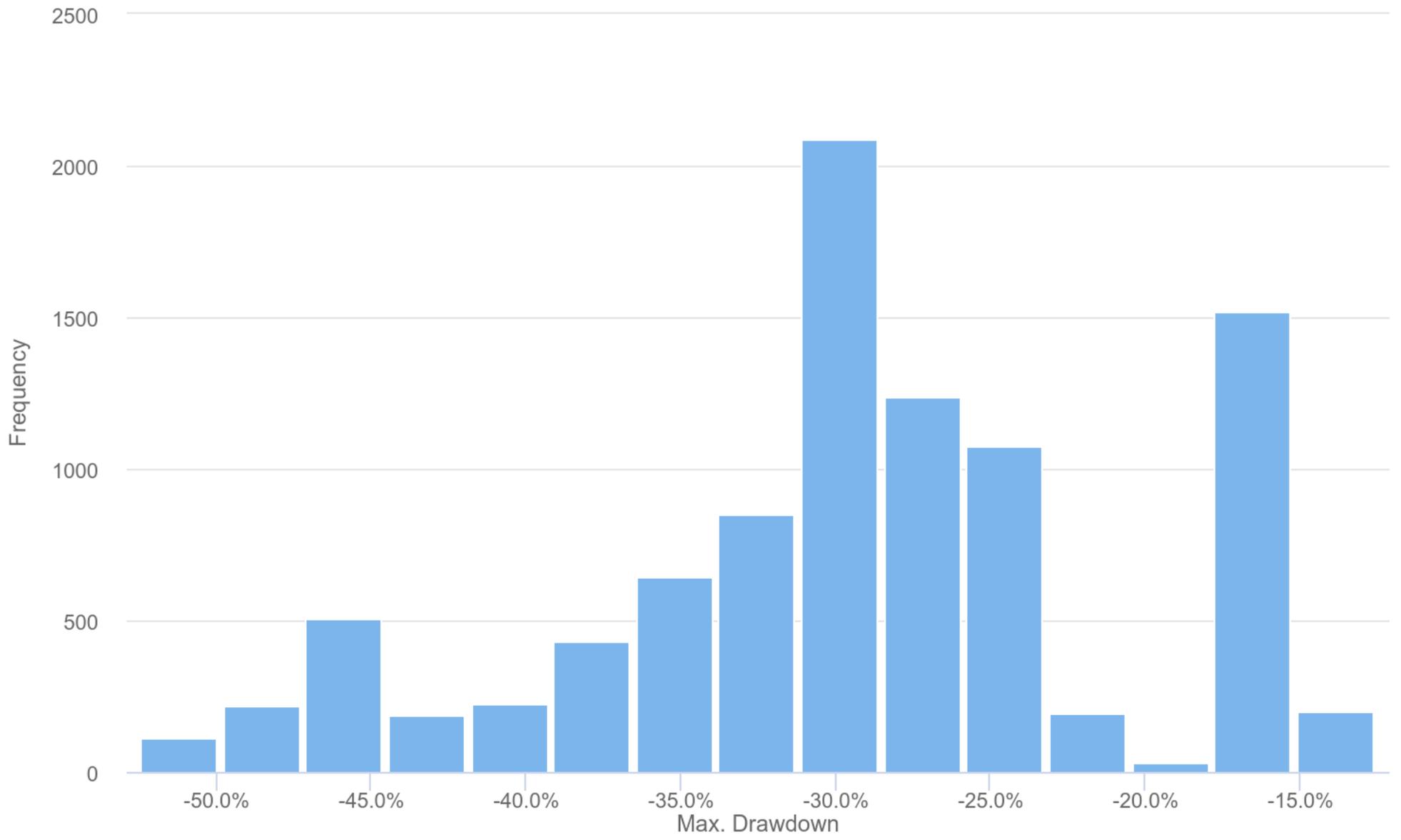
Portfolio End Balance Histogram (95% of results)



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



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



**Disclosures:**

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