

**Report Parameters**

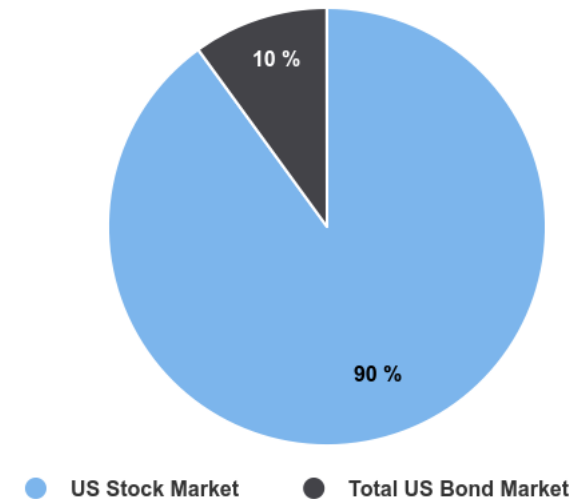
<b>Initial Amount</b>	\$12,000
<b>Career Years</b>	41
<b>Simulation Period</b>	70
<b>Simulation Model</b>	Historical Returns
<b>Bootstrap Model</b>	Single Year
<b>Sequence of Return Risk</b>	No Adjustments
<b>Inflation Model</b>	Historical Inflation

## Simulation Description

Monte Carlo simulation results for 10000 portfolios with \$12,000 initial portfolio balance using available historical returns data from Jan 1987 to Dec 2018. 41-year linear glide path was used to transition from starting portfolio to retirement portfolio. The simulated inflation model used historical inflation with 2.61% mean and 1.12% standard deviation based on the Consumer Price Index (CPI-U) data from Jan 1987 to Dec 2018. 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 Total US Bond Market [Jan 1987 - Apr 2019].

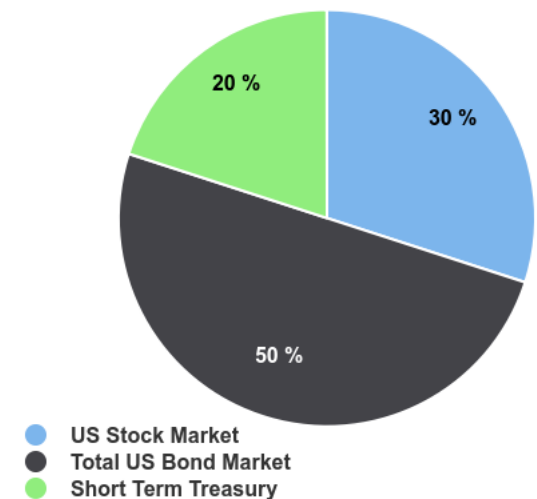
## Starting Portfolio

Asset Class	Allocation	CAGR	Expected Annual Return	Annualized Volatility
US Stock Market	90.00%	9.76%	11.02%	14.99%
Total US Bond Market	10.00%	5.78%	5.85%	3.81%



## Retirement Portfolio

Asset Class	Allocation	CAGR	Expected Annual Return	Annualized Volatility
US Stock Market	30.00%	9.76%	11.02%	14.99%
Total US Bond Market	50.00%	5.78%	5.85%	3.81%
Short Term Treasury	20.00%	4.53%	4.56%	2.09%



## Financial Goals

Purpose	Type	Starts In	Ends In	Frequency	Times	Total	Success
Saving	Contribute \$12,000	1 year	41 years	Annually	41	\$492,000	100.00%
Retirement	Withdraw \$48,000	41 years	69 years	Annually	29	-\$1,392,000	97.41%

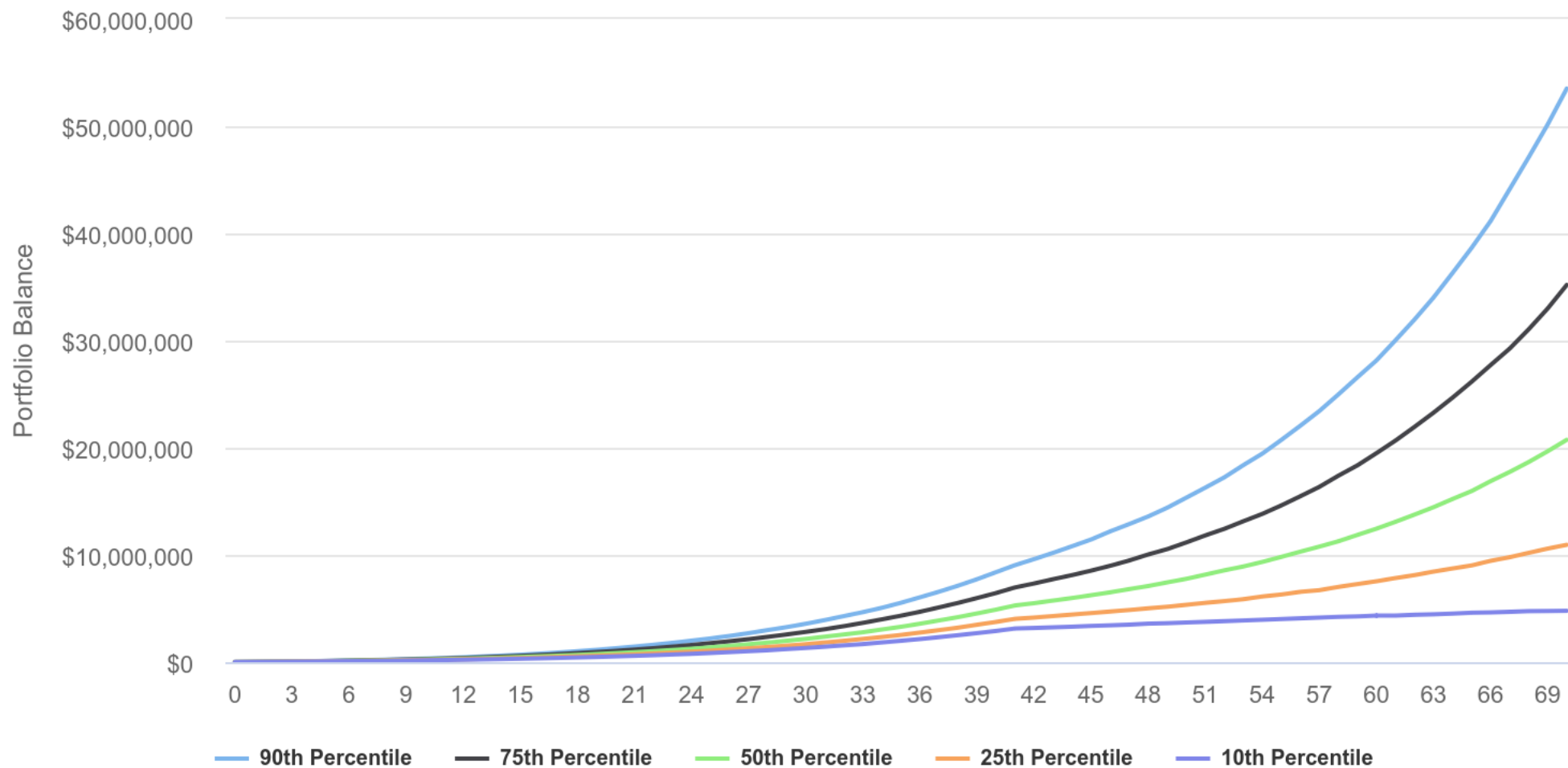
Total is the sum of expected cashflows in present dollars

## Summary Statistics

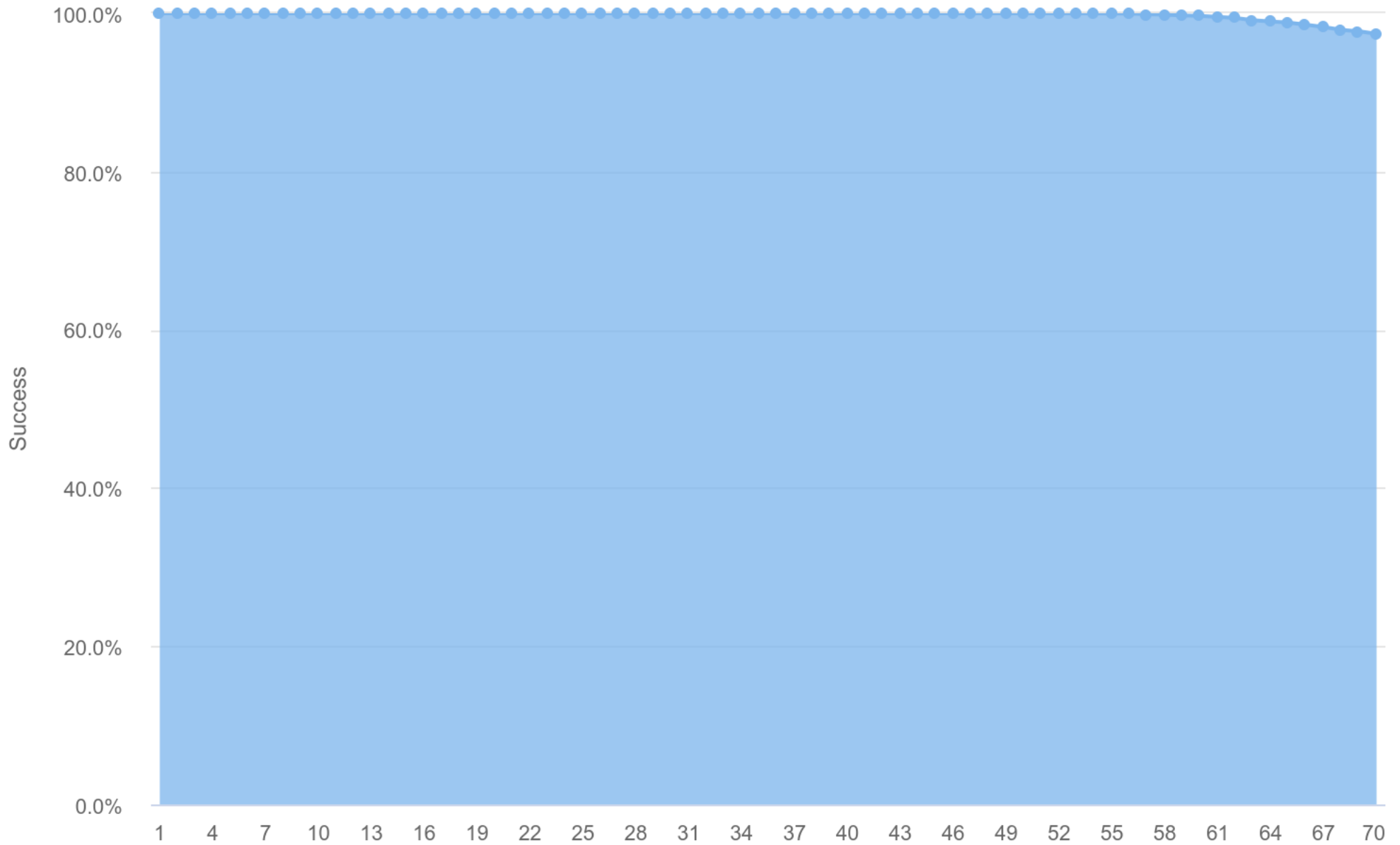
	10th Percentile	25th Percentile	50th Percentile	75th Percentile	90th Percentile
Time Weighted Rate of Return (nominal)	6.35%	7.07%	7.84%	8.59%	9.26%
Time Weighted Rate of Return (real)	3.67%	4.35%	5.10%	5.82%	6.48%
Portfolio End Balance (nominal)	\$4,787,334	\$10,947,335	\$20,743,352	\$35,195,918	\$53,515,958
Portfolio End Balance (inflation adjusted)	\$799,833	\$1,821,030	\$3,450,147	\$5,798,737	\$8,787,318
Maximum Drawdown	-34.85%	-31.79%	-26.29%	-22.52%	-18.94%
Maximum Drawdown Excluding Cashflows	-41.92%	-34.52%	-28.18%	-23.53%	-19.69%
Safe Withdrawal Rate	3.44%	4.54%	5.97%	7.69%	9.45%
Perpetual Withdrawal Rate	3.55%	4.17%	4.86%	5.50%	6.09%

9741 portfolios out of 10000 simulated portfolios (97.41%) 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	\$23,401	\$24,271	\$25,633	\$26,885	\$27,755	100.00%
2	\$35,446	\$38,108	\$41,171	\$43,949	\$46,080	100.00%
3	\$48,072	\$53,040	\$58,424	\$63,467	\$68,030	100.00%
4	\$61,480	\$69,384	\$77,685	\$85,574	\$92,990	100.00%
5	\$76,501	\$87,041	\$98,940	\$110,816	\$121,935	100.00%
6	\$92,948	\$106,606	\$122,759	\$138,855	\$154,967	100.00%
7	\$110,523	\$127,806	\$148,659	\$171,037	\$191,523	100.00%
8	\$130,157	\$151,426	\$177,463	\$205,359	\$233,108	100.00%
9	\$150,604	\$176,860	\$208,218	\$244,852	\$279,071	100.00%
10	\$173,427	\$204,317	\$243,418	\$287,235	\$333,483	100.00%
11	\$197,612	\$235,641	\$281,941	\$335,499	\$388,759	100.00%
12	\$224,858	\$267,041	\$324,578	\$389,309	\$451,212	100.00%
13	\$253,103	\$304,466	\$371,014	\$447,263	\$526,094	100.00%
14	\$283,218	\$343,150	\$421,576	\$511,306	\$603,502	100.00%
15	\$317,683	\$385,433	\$476,879	\$582,734	\$694,531	100.00%
16	\$353,137	\$432,348	\$537,563	\$662,087	\$789,807	100.00%
17	\$393,363	\$484,065	\$603,841	\$744,769	\$897,004	100.00%
18	\$437,198	\$537,149	\$675,039	\$837,902	\$1,022,861	100.00%
19	\$482,445	\$596,935	\$751,757	\$944,077	\$1,144,019	100.00%
20	\$534,110	\$661,553	\$832,987	\$1,048,561	\$1,298,226	100.00%
21	\$586,129	\$726,627	\$925,206	\$1,171,145	\$1,449,029	100.00%
22	\$645,208	\$804,934	\$1,025,465	\$1,302,522	\$1,620,409	100.00%
23	\$712,143	\$886,754	\$1,130,184	\$1,443,915	\$1,800,230	100.00%
24	\$775,624	\$976,065	\$1,247,096	\$1,601,012	\$2,003,116	100.00%
25	\$850,922	\$1,068,583	\$1,377,826	\$1,772,991	\$2,215,378	100.00%
26	\$934,636	\$1,179,873	\$1,515,976	\$1,950,361	\$2,447,219	100.00%
27	\$1,020,315	\$1,290,384	\$1,665,734	\$2,145,928	\$2,703,811	100.00%
28	\$1,108,114	\$1,411,482	\$1,821,088	\$2,358,405	\$2,989,287	100.00%
29	\$1,216,181	\$1,532,372	\$1,991,346	\$2,583,180	\$3,265,659	100.00%
30	\$1,324,918	\$1,671,650	\$2,168,713	\$2,823,007	\$3,578,948	100.00%
31	\$1,438,720	\$1,831,584	\$2,374,410	\$3,070,764	\$3,923,561	100.00%
32	\$1,565,018	\$1,986,302	\$2,579,634	\$3,353,617	\$4,293,133	100.00%

Year	10th Percentile Balance	25th Percentile Balance	50th Percentile Balance	75th Percentile Balance	90th Percentile Balance	Portfolio Success
33	\$1,683,038	\$2,166,158	\$2,787,965	\$3,662,659	\$4,662,548	100.00%
34	\$1,836,320	\$2,340,038	\$3,045,988	\$3,991,807	\$5,068,682	100.00%
35	\$1,991,477	\$2,537,285	\$3,295,425	\$4,331,869	\$5,533,979	100.00%
36	\$2,150,398	\$2,757,401	\$3,582,002	\$4,697,491	\$6,045,964	100.00%
37	\$2,329,011	\$2,983,650	\$3,889,417	\$5,105,025	\$6,568,409	100.00%
38	\$2,515,200	\$3,214,748	\$4,197,322	\$5,523,764	\$7,127,707	100.00%
39	\$2,706,292	\$3,488,167	\$4,541,661	\$5,976,988	\$7,734,979	100.00%
40	\$2,908,447	\$3,750,704	\$4,899,292	\$6,446,374	\$8,392,099	100.00%
41	\$3,139,288	\$4,041,467	\$5,288,530	\$6,968,718	\$9,047,812	100.00%
42	\$3,188,474	\$4,156,362	\$5,500,889	\$7,337,551	\$9,608,937	100.00%
43	\$3,246,189	\$4,300,499	\$5,743,477	\$7,738,673	\$10,195,613	100.00%
44	\$3,303,502	\$4,438,733	\$5,980,786	\$8,120,480	\$10,815,266	100.00%
45	\$3,380,420	\$4,578,049	\$6,245,031	\$8,537,394	\$11,442,549	100.00%
46	\$3,434,276	\$4,721,636	\$6,513,106	\$8,986,993	\$12,198,837	100.00%
47	\$3,497,699	\$4,863,255	\$6,814,195	\$9,482,460	\$12,881,005	100.00%
48	\$3,590,470	\$5,021,786	\$7,100,479	\$10,045,669	\$13,591,635	100.00%
49	\$3,633,374	\$5,167,652	\$7,439,976	\$10,544,037	\$14,405,819	100.00%
50	\$3,699,635	\$5,347,723	\$7,770,095	\$11,167,093	\$15,341,419	100.00%
51	\$3,759,697	\$5,532,912	\$8,165,551	\$11,823,985	\$16,280,165	100.00%
52	\$3,821,476	\$5,692,096	\$8,564,256	\$12,435,282	\$17,239,665	99.99%
53	\$3,886,652	\$5,872,089	\$8,923,363	\$13,144,355	\$18,379,836	99.99%
54	\$3,952,992	\$6,126,281	\$9,348,992	\$13,832,735	\$19,457,063	99.99%
55	\$4,023,158	\$6,309,914	\$9,820,978	\$14,624,736	\$20,735,993	99.97%
56	\$4,088,892	\$6,559,533	\$10,309,011	\$15,481,017	\$22,063,493	99.97%
57	\$4,154,366	\$6,715,041	\$10,780,235	\$16,356,643	\$23,434,434	99.88%
58	\$4,223,937	\$7,020,210	\$11,279,098	\$17,399,404	\$24,984,682	99.83%
59	\$4,268,554	\$7,285,363	\$11,871,912	\$18,362,553	\$26,583,230	99.72%
60	\$4,344,793	\$7,545,475	\$12,454,231	\$19,500,811	\$28,154,070	99.67%
61	\$4,344,292	\$7,844,927	\$13,095,566	\$20,677,075	\$30,034,745	99.54%
62	\$4,418,667	\$8,118,918	\$13,766,760	\$21,955,157	\$31,969,399	99.41%
63	\$4,461,072	\$8,448,272	\$14,457,923	\$23,277,089	\$34,026,809	99.12%
64	\$4,525,595	\$8,739,487	\$15,224,455	\$24,681,594	\$36,319,679	98.96%
65	\$4,612,937	\$9,021,771	\$15,960,043	\$26,162,714	\$38,657,598	98.83%
66	\$4,639,451	\$9,453,457	\$16,887,986	\$27,722,081	\$41,160,639	98.55%

Year	10th Percentile Balance	25th Percentile Balance	50th Percentile Balance	75th Percentile Balance	90th Percentile Balance	Portfolio Success
67	\$4,695,171	\$9,790,057	\$17,746,764	\$29,254,327	\$44,135,999	98.27%
68	\$4,756,930	\$10,195,852	\$18,671,323	\$31,058,040	\$47,111,632	97.90%
69	\$4,768,545	\$10,596,593	\$19,679,462	\$33,004,268	\$50,175,674	97.72%
70	\$4,787,334	\$10,947,335	\$20,743,352	\$35,195,918	\$53,515,958	97.41%



## Portfolio Balances (inflation adjusted)

Year	10th Percentile Balance	25th Percentile Balance	50th Percentile Balance	75th Percentile Balance	90th Percentile Balance	Portfolio Success
1	\$22,750	\$23,778	\$25,112	\$26,182	\$27,202	100.00%
2	\$33,542	\$36,152	\$39,081	\$41,762	\$43,982	100.00%
3	\$44,515	\$49,014	\$53,943	\$58,800	\$62,914	100.00%
4	\$55,706	\$62,348	\$69,924	\$77,176	\$84,005	100.00%
5	\$67,526	\$76,352	\$86,832	\$97,369	\$107,278	100.00%
6	\$79,912	\$91,174	\$104,927	\$118,940	\$132,656	100.00%
7	\$92,697	\$106,584	\$123,971	\$142,392	\$159,763	100.00%
8	\$106,613	\$123,277	\$144,141	\$166,972	\$189,695	100.00%
9	\$120,329	\$140,431	\$164,638	\$194,084	\$221,080	100.00%
10	\$135,135	\$158,109	\$187,574	\$222,412	\$257,248	100.00%
11	\$150,008	\$177,279	\$211,960	\$252,910	\$294,084	100.00%
12	\$165,876	\$196,747	\$237,817	\$285,501	\$332,483	100.00%
13	\$182,129	\$218,236	\$264,722	\$320,100	\$376,997	100.00%
14	\$198,952	\$240,346	\$293,525	\$355,255	\$420,451	100.00%
15	\$217,046	\$262,681	\$323,829	\$394,764	\$473,931	100.00%
16	\$235,928	\$287,280	\$356,112	\$437,365	\$522,820	100.00%
17	\$256,154	\$312,036	\$389,127	\$481,627	\$580,546	100.00%
18	\$277,849	\$338,742	\$424,673	\$526,956	\$641,920	100.00%
19	\$299,530	\$366,405	\$459,800	\$578,987	\$701,943	100.00%
20	\$322,387	\$395,756	\$496,252	\$626,564	\$771,020	100.00%
21	\$346,353	\$426,423	\$538,964	\$678,052	\$841,322	100.00%
22	\$371,413	\$457,289	\$580,101	\$736,620	\$919,122	100.00%
23	\$398,162	\$491,240	\$624,116	\$797,968	\$995,617	100.00%
24	\$424,875	\$528,808	\$671,189	\$861,943	\$1,078,793	100.00%
25	\$452,561	\$567,133	\$722,804	\$925,414	\$1,164,357	100.00%
26	\$483,467	\$604,369	\$770,868	\$990,553	\$1,252,788	100.00%
27	\$515,559	\$646,019	\$829,566	\$1,066,952	\$1,351,169	100.00%
28	\$547,665	\$689,609	\$883,472	\$1,147,020	\$1,449,826	100.00%
29	\$585,582	\$730,194	\$941,446	\$1,218,929	\$1,556,121	100.00%
30	\$617,155	\$775,021	\$1,003,077	\$1,302,437	\$1,655,588	100.00%
31	\$658,164	\$828,698	\$1,065,638	\$1,379,450	\$1,764,247	100.00%
32	\$694,005	\$873,648	\$1,131,382	\$1,466,026	\$1,884,696	100.00%

Year	10th Percentile Balance	25th Percentile Balance	50th Percentile Balance	75th Percentile Balance	90th Percentile Balance	Portfolio Success
33	\$729,334	\$930,986	\$1,194,915	\$1,562,657	\$1,994,797	100.00%
34	\$775,231	\$979,337	\$1,270,428	\$1,662,080	\$2,124,447	100.00%
35	\$816,881	\$1,035,822	\$1,339,562	\$1,760,128	\$2,246,388	100.00%
36	\$865,307	\$1,098,308	\$1,413,220	\$1,864,166	\$2,398,792	100.00%
37	\$911,255	\$1,154,997	\$1,498,700	\$1,963,847	\$2,530,035	100.00%
38	\$960,648	\$1,213,654	\$1,582,725	\$2,076,282	\$2,672,081	100.00%
39	\$1,003,851	\$1,280,414	\$1,666,504	\$2,188,642	\$2,819,818	100.00%
40	\$1,056,755	\$1,340,601	\$1,747,742	\$2,297,762	\$2,978,100	100.00%
41	\$1,107,961	\$1,408,807	\$1,839,775	\$2,425,598	\$3,142,767	100.00%
42	\$1,103,026	\$1,416,894	\$1,868,758	\$2,488,785	\$3,255,867	100.00%
43	\$1,090,826	\$1,427,990	\$1,895,344	\$2,553,919	\$3,351,810	100.00%
44	\$1,082,939	\$1,443,846	\$1,929,738	\$2,609,055	\$3,461,703	100.00%
45	\$1,079,266	\$1,447,560	\$1,963,226	\$2,675,475	\$3,581,981	100.00%
46	\$1,067,495	\$1,454,080	\$1,996,172	\$2,750,095	\$3,715,247	100.00%
47	\$1,064,919	\$1,461,855	\$2,033,473	\$2,826,151	\$3,839,162	100.00%
48	\$1,056,484	\$1,468,260	\$2,071,463	\$2,903,479	\$3,919,072	100.00%
49	\$1,046,632	\$1,478,035	\$2,110,781	\$2,980,787	\$4,057,266	100.00%
50	\$1,040,129	\$1,489,238	\$2,142,090	\$3,078,825	\$4,210,262	100.00%
51	\$1,022,839	\$1,496,113	\$2,193,686	\$3,167,413	\$4,371,134	100.00%
52	\$1,015,136	\$1,503,686	\$2,237,405	\$3,251,449	\$4,525,150	99.99%
53	\$1,008,069	\$1,514,062	\$2,280,746	\$3,344,578	\$4,690,122	99.99%
54	\$998,000	\$1,532,587	\$2,333,427	\$3,455,032	\$4,841,751	99.99%
55	\$993,739	\$1,547,961	\$2,388,585	\$3,543,680	\$5,051,013	99.97%
56	\$989,938	\$1,557,500	\$2,433,871	\$3,655,578	\$5,246,311	99.97%
57	\$974,228	\$1,576,115	\$2,482,610	\$3,775,769	\$5,407,419	99.88%
58	\$962,683	\$1,588,572	\$2,529,701	\$3,909,975	\$5,622,541	99.83%
59	\$950,054	\$1,596,986	\$2,601,603	\$4,017,238	\$5,824,985	99.72%
60	\$930,008	\$1,614,335	\$2,663,483	\$4,173,201	\$6,033,893	99.67%
61	\$921,307	\$1,630,044	\$2,719,780	\$4,281,802	\$6,248,825	99.54%
62	\$908,575	\$1,651,189	\$2,792,578	\$4,417,770	\$6,477,221	99.41%
63	\$890,038	\$1,668,221	\$2,860,388	\$4,569,541	\$6,692,648	99.12%
64	\$887,585	\$1,681,549	\$2,929,415	\$4,696,326	\$6,988,089	98.96%
65	\$878,802	\$1,703,707	\$3,010,484	\$4,869,133	\$7,235,996	98.83%
66	\$861,495	\$1,722,372	\$3,084,237	\$5,029,801	\$7,501,779	98.55%

Year	10th Percentile Balance	25th Percentile Balance	50th Percentile Balance	75th Percentile Balance	90th Percentile Balance	Portfolio Success
67	\$848,230	\$1,750,286	\$3,168,010	\$5,211,102	\$7,810,364	98.27%
68	\$835,442	\$1,781,848	\$3,260,842	\$5,382,892	\$8,126,244	97.90%
69	\$814,705	\$1,801,594	\$3,350,247	\$5,575,347	\$8,451,012	97.72%
70	\$799,833	\$1,821,030	\$3,450,147	\$5,798,737	\$8,787,318	97.41%

## Portfolio Cashflows (nominal)

Year	10th Percentile Cashflow	25th Percentile Cashflow	50th Percentile Cashflow	75th Percentile Cashflow	90th Percentile Cashflow
1	-\$12,530	-\$12,399	-\$12,321	-\$12,209	-\$12,179
2	-\$12,922	-\$12,766	-\$12,617	-\$12,489	-\$12,376
3	-\$13,314	-\$13,136	-\$12,944	-\$12,773	-\$12,628
4	-\$13,722	-\$13,497	-\$13,282	-\$13,081	-\$12,902
5	-\$14,114	-\$13,867	-\$13,620	-\$13,395	-\$13,197
6	-\$14,527	-\$14,249	-\$13,973	-\$13,721	-\$13,496
7	-\$14,950	-\$14,648	-\$14,340	-\$14,053	-\$13,803
8	-\$15,387	-\$15,053	-\$14,713	-\$14,393	-\$14,124
9	-\$15,837	-\$15,470	-\$15,089	-\$14,744	-\$14,457
10	-\$16,274	-\$15,891	-\$15,485	-\$15,113	-\$14,789
11	-\$16,736	-\$16,321	-\$15,892	-\$15,473	-\$15,139
12	-\$17,224	-\$16,772	-\$16,303	-\$15,858	-\$15,484
13	-\$17,701	-\$17,224	-\$16,727	-\$16,249	-\$15,858
14	-\$18,201	-\$17,695	-\$17,159	-\$16,654	-\$16,230
15	-\$18,704	-\$18,167	-\$17,601	-\$17,065	-\$16,612
16	-\$19,232	-\$18,667	-\$18,056	-\$17,485	-\$17,012
17	-\$19,776	-\$19,173	-\$18,523	-\$17,924	-\$17,422
18	-\$20,326	-\$19,695	-\$19,011	-\$18,365	-\$17,852
19	-\$20,900	-\$20,224	-\$19,501	-\$18,821	-\$18,258
20	-\$21,471	-\$20,765	-\$20,000	-\$19,304	-\$18,710
21	-\$22,076	-\$21,328	-\$20,526	-\$19,783	-\$19,147
22	-\$22,686	-\$21,894	-\$21,067	-\$20,280	-\$19,627
23	-\$23,318	-\$22,491	-\$21,618	-\$20,790	-\$20,068
24	-\$23,942	-\$23,112	-\$22,182	-\$21,325	-\$20,584
25	-\$24,615	-\$23,741	-\$22,760	-\$21,871	-\$21,082
26	-\$25,300	-\$24,368	-\$23,355	-\$22,411	-\$21,592
27	-\$26,012	-\$25,014	-\$23,968	-\$22,979	-\$22,129
28	-\$26,708	-\$25,693	-\$24,598	-\$23,562	-\$22,677
29	-\$27,454	-\$26,364	-\$25,234	-\$24,147	-\$23,195
30	-\$28,194	-\$27,059	-\$25,882	-\$24,753	-\$23,791
31	-\$28,967	-\$27,798	-\$26,536	-\$25,370	-\$24,393
32	-\$29,750	-\$28,543	-\$27,240	-\$26,013	-\$24,990
33	-\$30,582	-\$29,293	-\$27,951	-\$26,683	-\$25,627

Year	10th Percentile Cashflow	25th Percentile Cashflow	50th Percentile Cashflow	75th Percentile Cashflow	90th Percentile Cashflow
34	-\$31,422	-\$30,061	-\$28,670	-\$27,348	-\$26,245
35	-\$32,278	-\$30,888	-\$29,428	-\$28,042	-\$26,897
36	-\$33,178	-\$31,749	-\$30,194	-\$28,746	-\$27,532
37	-\$34,108	-\$32,570	-\$30,963	-\$29,476	-\$28,247
38	-\$34,993	-\$33,439	-\$31,771	-\$30,225	-\$28,935
39	-\$35,930	-\$34,311	-\$32,603	-\$30,977	-\$29,689
40	-\$36,877	-\$35,231	-\$33,460	-\$31,776	-\$30,414
41	-\$37,869	-\$36,180	-\$34,338	-\$32,603	-\$31,197
42	\$124,787	\$130,411	\$137,352	\$144,718	\$151,475
43	\$127,841	\$133,651	\$140,899	\$148,488	\$155,800
44	\$131,114	\$137,076	\$144,614	\$152,356	\$159,877
45	\$134,320	\$140,607	\$148,318	\$156,541	\$164,196
46	\$137,595	\$144,201	\$152,216	\$160,665	\$168,586
47	\$141,061	\$147,933	\$156,208	\$165,033	\$173,409
48	\$144,689	\$151,725	\$160,276	\$169,471	\$177,927
49	\$148,081	\$155,497	\$164,478	\$173,879	\$182,883
50	\$151,871	\$159,436	\$168,702	\$178,438	\$187,856
51	\$155,633	\$163,594	\$173,097	\$183,280	\$192,869
52	\$159,522	\$167,783	\$177,661	\$188,191	\$197,981
53	\$163,495	\$171,984	\$182,280	\$193,242	\$203,467
54	\$167,496	\$176,467	\$186,993	\$198,442	\$208,877
55	\$171,786	\$180,945	\$191,792	\$203,517	\$214,774
56	\$175,918	\$185,603	\$196,824	\$208,917	\$220,639
57	\$180,194	\$190,152	\$201,744	\$214,582	\$226,427
58	\$184,721	\$194,950	\$206,878	\$220,406	\$232,970
59	\$189,307	\$199,923	\$212,447	\$226,212	\$239,164
60	\$193,973	\$204,971	\$218,043	\$232,144	\$245,623
61	\$198,688	\$210,228	\$223,703	\$238,233	\$252,198
62	\$203,754	\$215,654	\$229,520	\$244,858	\$259,067
63	\$208,649	\$221,065	\$235,298	\$251,236	\$266,092
64	\$213,671	\$226,422	\$241,310	\$257,810	\$272,926
65	\$218,834	\$232,509	\$247,762	\$264,813	\$280,565
66	\$223,957	\$238,184	\$254,195	\$271,724	\$287,602
67	\$229,159	\$243,925	\$260,597	\$278,741	\$295,442
68	\$234,494	\$250,014	\$267,245	\$286,127	\$303,664

Year	10th Percentile Cashflow	25th Percentile Cashflow	50th Percentile Cashflow	75th Percentile Cashflow	90th Percentile Cashflow
69	\$239,857	\$256,069	\$274,122	\$293,590	\$311,449
70	\$245,452	\$262,353	\$281,079	\$301,344	\$319,787

## Portfolio Cashflows (inflation adjusted)

Year	10th Percentile Cashflow	25th Percentile Cashflow	50th Percentile Cashflow	75th Percentile Cashflow	90th Percentile Cashflow
1	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
2	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
3	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
4	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
5	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
6	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
7	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
8	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
9	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
10	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
11	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
12	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
13	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
14	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
15	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
16	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
17	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
18	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
19	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
20	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
21	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
22	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
23	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
24	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
25	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
26	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
27	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
28	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
29	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
30	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
31	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
32	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
33	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000

Year	10th Percentile Cashflow	25th Percentile Cashflow	50th Percentile Cashflow	75th Percentile Cashflow	90th Percentile Cashflow
34	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
35	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
36	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
37	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
38	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
39	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
40	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
41	-\$12,000	-\$12,000	-\$12,000	-\$12,000	-\$12,000
42	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
43	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
44	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
45	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
46	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
47	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
48	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
49	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
50	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
51	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
52	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
53	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
54	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
55	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
56	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
57	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
58	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
59	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
60	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
61	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
62	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
63	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
64	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
65	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
66	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
67	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
68	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000



Year	10th Percentile Cashflow	25th Percentile Cashflow	50th Percentile Cashflow	75th Percentile Cashflow	90th Percentile Cashflow
69	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000
70	\$48,000	\$48,000	\$48,000	\$48,000	\$48,000

### Simulated Assets - Correlations and Returns

Name	US Stock Market	Total US Bond Market	Short Term Treasury	Inflation	CAGR	Expected Annual Return	Annualized Volatility
US Stock Market	1.00	0.07	-0.11	0.01	9.76%	11.02%	14.99%
Total US Bond Market	0.07	1.00	0.84	-0.11	5.78%	5.85%	3.81%
Short Term Treasury	-0.11	0.84	1.00	-0.00	4.53%	4.56%	2.09%
Inflation	0.01	-0.11	-0.00	1.00	2.60%	2.61%	1.12%

Asset correlations and return vs. risk statistics are based on monthly returns from Jan 1987 to Dec 2018

### Expected Annual Return

Percentile	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years	40 Years	50 Years
10th Percentile	-8.38%	-2.17%	0.45%	3.29%	4.41%	5.01%	5.47%	5.81%	6.09%	6.20%
25th Percentile	0.29%	4.11%	5.28%	6.25%	6.78%	7.02%	7.17%	7.23%	7.23%	7.14%
50th Percentile	11.69%	10.43%	9.97%	9.52%	9.30%	9.07%	8.93%	8.77%	8.45%	8.18%
75th Percentile	21.36%	16.22%	14.43%	12.60%	11.69%	11.12%	10.69%	10.29%	9.65%	9.16%
90th Percentile	28.84%	20.74%	18.16%	15.29%	13.75%	12.93%	12.19%	11.60%	10.68%	10.01%

### Annual Return Probabilities

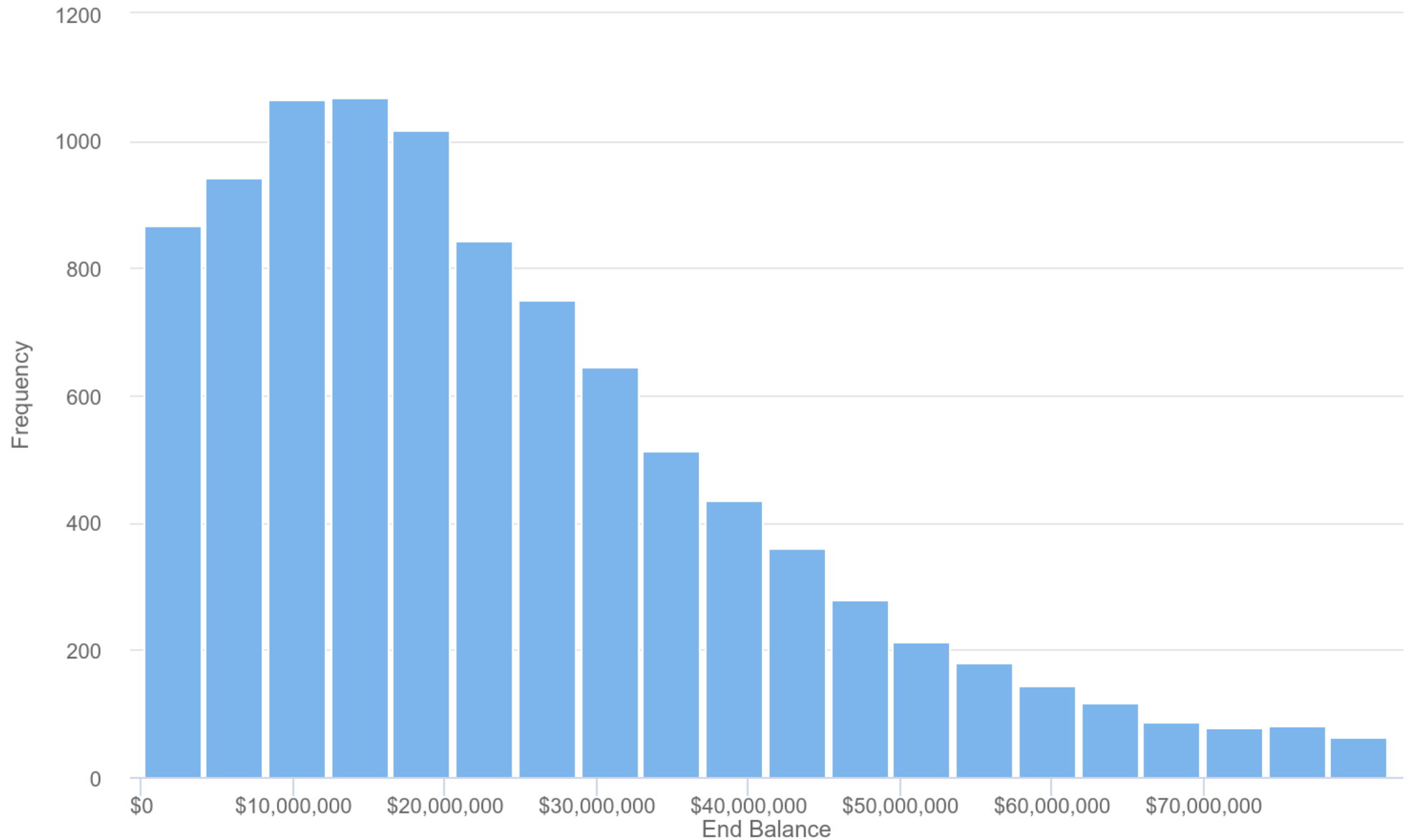
Return	1 Year	3 Years	5 Years	10 Years	15 Years	20 Years	25 Years	30 Years	40 Years	50 Years
>= 0.00%	78.10%	85.86%	90.95%	97.22%	98.99%	99.81%	99.93%	99.97%	100.00%	100.00%
>= 2.50%	72.15%	80.06%	84.77%	92.48%	95.92%	98.07%	99.16%	99.66%	99.92%	99.99%
>= 5.00%	68.96%	72.60%	76.16%	82.30%	86.94%	90.06%	92.70%	94.42%	96.73%	98.03%
>= 7.50%	62.65%	62.49%	63.92%	66.20%	68.57%	69.66%	70.95%	71.15%	70.17%	66.97%
>= 10.00%	59.48%	51.86%	49.82%	45.76%	42.50%	38.25%	34.01%	29.42%	19.17%	10.16%
>= 12.50%	46.62%	40.80%	35.37%	25.68%	18.31%	12.73%	7.95%	4.54%	0.88%	0.07%

## Loss Probabilities

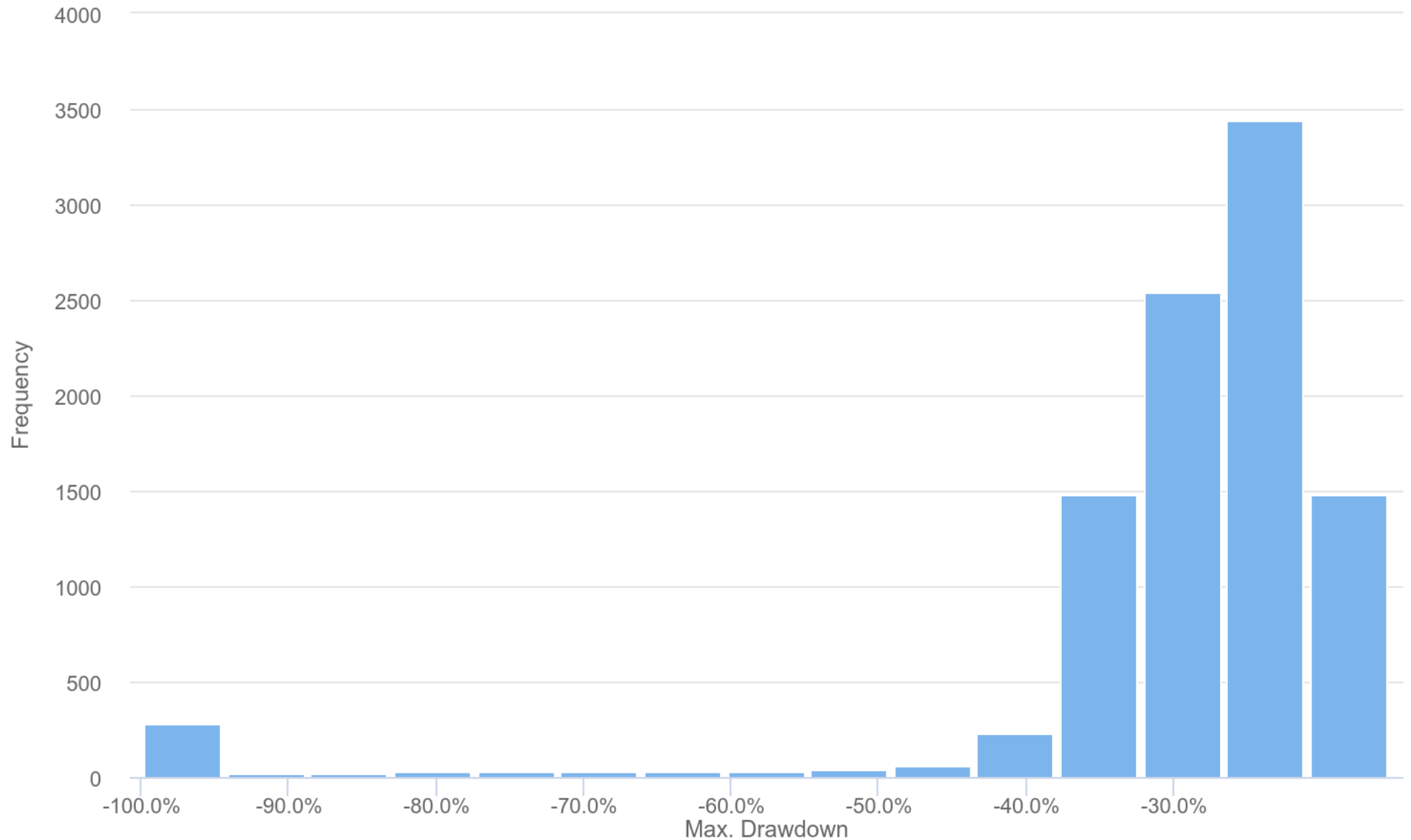
Loss	Loss Probability Excluding Cashflows		Loss Probability Including Cashflows	
	Within Time Period	End of Time Period	Within Time Period	End of Time Period
>= 2.50%	61.79%	0.00%	51.29%	2.60%
>= 5.00%	38.82%	0.00%	23.45%	2.60%
>= 7.50%	36.07%	0.00%	23.45%	2.60%
>= 10.00%	30.43%	0.00%	17.69%	2.60%
>= 12.50%	25.91%	0.00%	14.54%	2.60%
>= 15.00%	23.63%	0.00%	14.54%	2.60%
>= 17.50%	18.94%	0.00%	11.45%	2.60%
>= 20.00%	14.84%	0.00%	8.29%	2.60%
>= 22.50%	13.43%	0.00%	8.29%	2.60%
>= 25.00%	9.91%	0.00%	5.48%	2.60%
>= 27.50%	8.57%	0.00%	5.48%	2.60%
>= 30.00%	7.34%	0.00%	5.48%	2.60%
>= 32.50%	6.38%	0.00%	5.48%	2.60%
>= 35.00%	4.31%	0.00%	2.60%	2.60%
>= 37.50%	3.01%	0.00%	2.60%	2.60%
>= 40.00%	2.23%	0.00%	2.60%	2.60%

Loss is measured against the original portfolio balance.

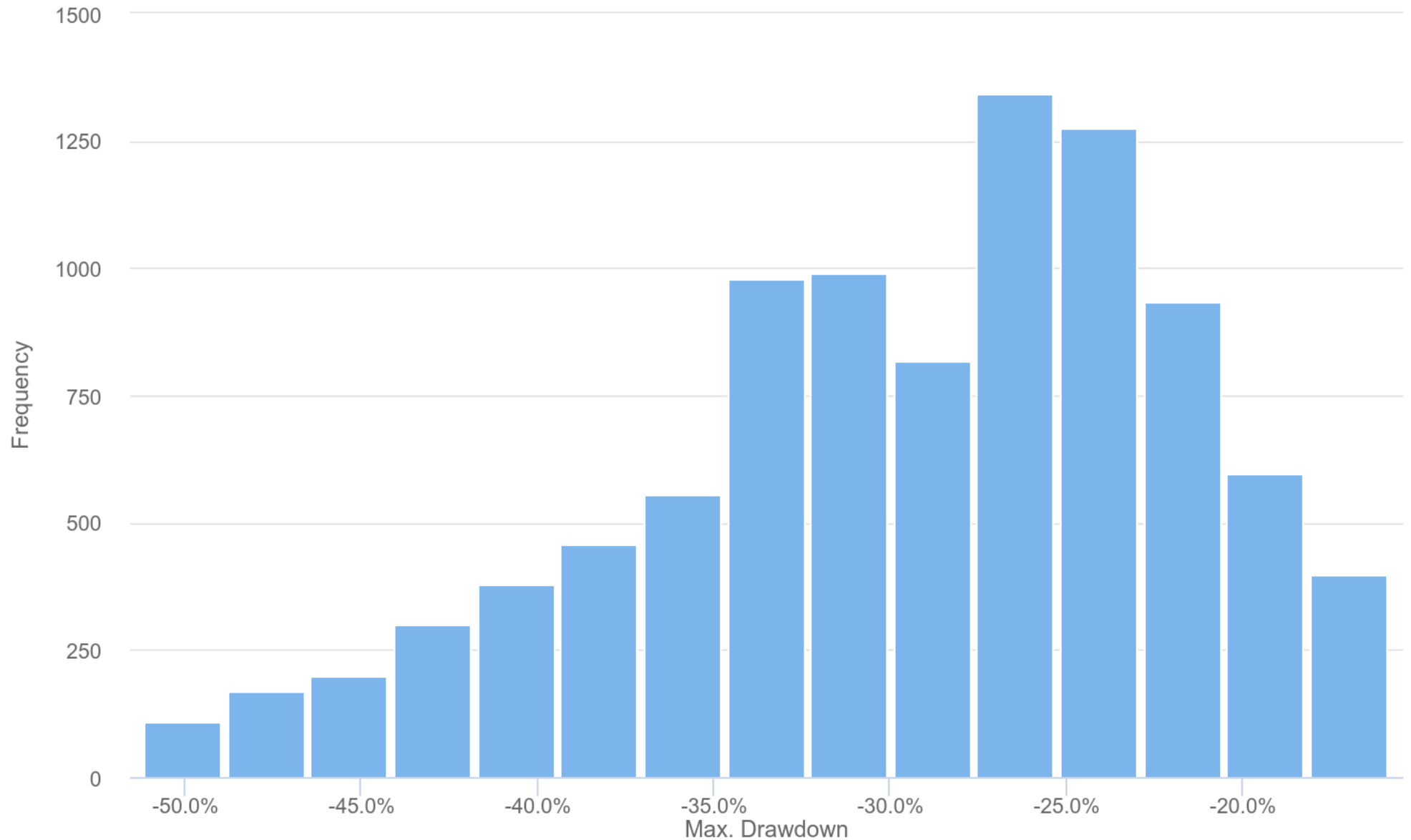
Portfolio End Balance Histogram (95% of results)



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



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



**Notes:**

- Monte Carlo simulation uses historical data and thus assumes that the future will, to some extent, mimic the past. The actual future results may vary.
- 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. Taxes and transaction fees are not taken into account.
- Past performance is not a guarantee of future returns and data and other errors may exist. See Disclaimer and Terms of Use
- Glide path based portfolio allocation changes are done as part of annual rebalancing
- Withdrawals are done at the start of each specified time period (fixed amounts before percentage based)
- Contributions are done at the end of each specified time period