

S&P 500 Return Sequencing

Why Starting Point Dominates Long-Term Outcomes



origoinvest.com

Origo | Disciplined Alpha. Systematic Execution.

A decision-oriented sequencing study that converts rolling S&P 500 return dispersion into portfolio allocation, risk, and execution rules. The appendix retains the full data tables and horizon-by-horizon evidence; the main body focuses on what a portfolio manager should do with the evidence.

Date

2026-04-08

Category

Equities / Macro

Reading time

5-10 min main body

Data source

Bloomberg

Data range

1927-12-30 to 2026-04-07

Rolling windows

1Y, 5Y, 10Y, 15Y, 20Y, 25Y, 30Y

Table of Contents

S&P 500 accumulated rolling-return sequencing report

S&P 500 Return Sequencing

- In One Line
- Key Findings
- Core Insight
- Portfolio Implications
- Decision Framework
- S&P 500 Performance
- Rolling 10-Year S&P 500 Returns
- Distribution Summary by Horizon

Holding-Period Evidence

1 Year Holding

- Rolling 1-Year Returns
- Rolling 1-Year Statistics
- Rolling 1-Year Extension Analysis

5 Years Holding

- Rolling 5-Year Returns
- Rolling 5-Year Statistics
- Rolling 5-Year Extension Analysis

10 Years Holding

- Rolling 10-Year Returns
- Rolling 10-Year Statistics
- Rolling 10-Year Extension Analysis

15 Years Holding

- Rolling 15-Year Returns
- Rolling 15-Year Statistics
- Rolling 15-Year Extension Analysis

20 Years Holding

- Rolling 20-Year Returns
- Rolling 20-Year Statistics
- Rolling 20-Year Extension Analysis

25 Years Holding

- Rolling 25-Year Returns
- Rolling 25-Year Statistics
- Rolling 25-Year Extension Analysis

30 Years Holding

- Rolling 30-Year Returns
- Rolling 30-Year Statistics
- Rolling 30-Year Extension Analysis
- Appendix: Table Column Definitions



In One Line

The core thesis and why this sequencing evidence matters now.

Long-term equity returns are path-dependent: even over 10- to 30-year windows, starting point materially changes accumulated outcomes and should influence exposure, sizing, and rebalancing discipline.

Why This Matters

The evidence shows that horizon alone is not a sufficient risk-control mechanism. In the 10Y sample, the median accumulated return is 105.8%, but the 10th to 90th percentile range runs from -2.6% to 220.1%. In the 30Y sample, outcomes still range from 75.7% to 1,976.2%. Investors should care because static allocation advice can hide a large starting-point dependency.

What Changed

The exercise reframes the report from a chart pack into a decision tool: rolling return dispersion is used to identify when patience, rebalancing, or exposure changes are more valuable than simply extending the horizon.



Key Findings

Data-backed conclusions from the cross-horizon rolling return evidence.

- 1Y outcomes remain materially loss-prone: 30.4% of completed 1Y rolling periods finished below 0% accumulated return.
- 10Y outcomes are highly dispersed: median accumulated return is 105.8%, versus 1st percentile of -52.1% and a 10th-90th percentile band of -2.6% to 220.1%.
- Below-average is not rare: 51.3% of completed 10Y observations finished below their own long-term historical average.
- Adding time can help, but recovery is not automatic: for below-average 10Y outcomes, +5Y extra holding generated average improvement of +61.4% and reached the historical 10Y average in 36.7% of tested cases.
- Long horizons reduce loss frequency but not sequencing dispersion: 30Y outcomes range from 75.7% to 1,976.2%.
- The 30Y 10th-90th percentile range remains wide at 404.1% to 1,166.4%, confirming that time compresses but does not erase regime dependency.



Core Insight

The non-obvious conclusion: time helps, but starting regime still matters.

Interpretation

The key insight is not that equities work over time; the data shows they often do. The stronger point is that time is an incomplete substitute for starting-point discipline. A 30Y range of 75.7% to 1,976.2% means the same asset class can produce very different client outcomes even when the holding period is institutionally long.

Non-Obvious Takeaway

Sequencing risk is not only a retirement-withdrawal problem. It is an allocation-timing problem: entry regime sets the base rate for future compounding, drawdown tolerance, and the value of incremental holding-period extension.



Portfolio Implications

How the sequencing evidence should change positioning, risk control, and strategy design.

Allocation

Do not treat a 10Y horizon as automatically sufficient. With a 10Y 10th percentile of -2.6%, entry regime should influence equity exposure, glide-path aggressiveness, and rebalancing reserves.

Risk

The underappreciated risk is path dependency after a weak start. Below-average 10Y outcomes recovered to the historical 10Y average after +5Y in only 36.7% of tested cases, so patience is useful but not a full risk hedge.

Strategy

The evidence supports rules-based allocation overlays: scale exposure around valuation/regime signals, reserve liquidity for rebalance opportunities, and evaluate client plans against rolling percentile rather than point estimates.



Decision Framework

Systematic execution rules that convert sequencing evidence into portfolio actions.

- If a forward plan depends on 10Y outcomes near the historical median of 105.8%, stress-test against the 10th percentile outcome of -2.6%.
- If starting regime is expensive or risk appetite is constrained, reduce reliance on lump-sum timing and increase rebalance reserves or staged allocation.
- If starting after major drawdowns and liquidity is intact, prioritize rebalancing discipline because the return distribution is often asymmetric after weak starting points.
- Monitor rolling percentile positioning by horizon; use bottom-quartile or bottom-decile outcomes to trigger review, not narrative discomfort alone.
- If a weak 10Y outcome is already observed, model +1Y to +10Y extension explicitly; +5Y improved below-average 10Y outcomes by +61.4% on average, but did not guarantee recovery.

Bottom Line

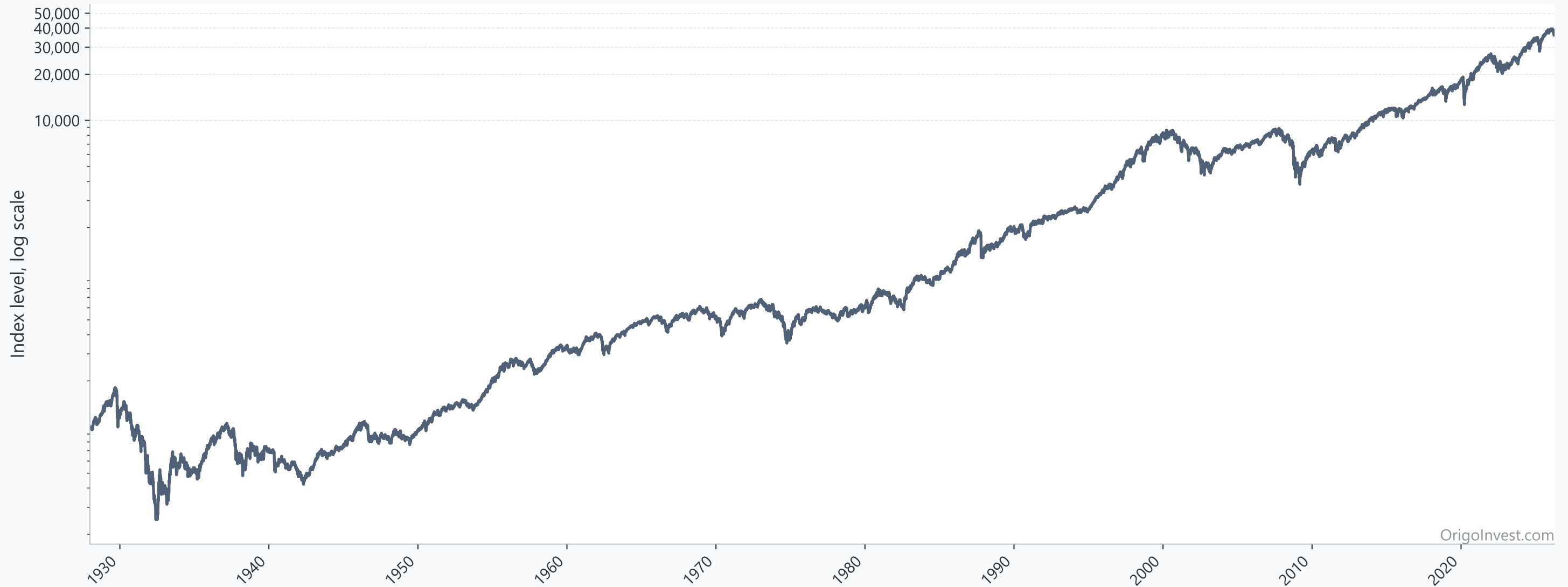
Long-term equity investing remains structurally attractive, but the starting point changes the probability distribution. Portfolio managers should convert horizon assumptions into explicit stress tests, allocation ranges, and rebalancing rules.



S&P 500 Performance

Bloomberg daily S&P 500 data, 1927-12-30 to 2026-04-07. Price index is rebased to 100 on the first available observation.

— S&P 500, indexed to 100

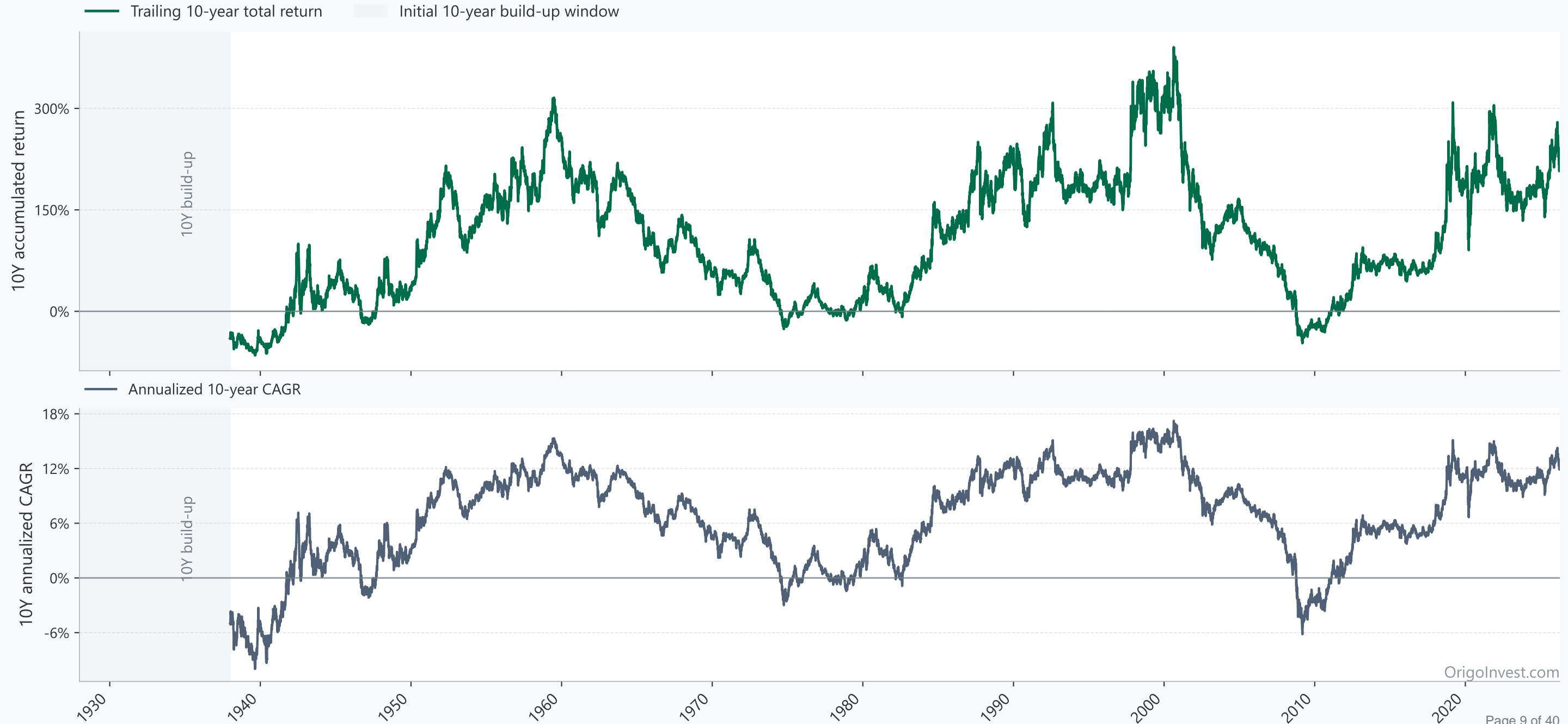


OrigInvest.com



Rolling 10-Year S&P 500 Returns

Bloomberg daily S&P 500 data, 1927-12-30 to 2026-04-07. Top panel shows accumulated return; bottom panel shows the annualized CAGR for the same trailing 10-year window.





Distribution Summary by Horizon

Cross-horizon summary of accumulated rolling returns using completed daily rolling periods.

Accumulated Return Distribution

Horizon	Average	Median	10th Percentile	90th Percentile	Minimum	Maximum	Probability Negative	Rolling Periods
1Y	8.1%	9.5%	-16.2%	30.8%	-71.1%	168.9%	30.4%	24,432
5Y	45.5%	47.0%	-13.2%	104.9%	-73.3%	271.9%	19.8%	23,430
10Y	110.8%	105.8%	-2.6%	220.1%	-65.1%	390.4%	11.2%	22,187
15Y	209.2%	176.5%	39.0%	416.6%	-61.0%	836.1%	3.5%	20,936
20Y	337.4%	288.1%	100.3%	592.2%	-52.0%	1,451.5%	3.5%	19,689
25Y	510.3%	457.4%	212.2%	934.4%	-5.9%	2,110.9%	0.1%	18,440
30Y	751.1%	729.2%	404.1%	1,166.4%	75.7%	1,976.2%	0.0%	17,182

Probability Negative measures how often completed rolling periods finished below 0% accumulated return.



Holding-Period Evidence

Full horizon-by-horizon rolling charts, percentile tables, decade breakdowns, and extension analysis.

In This Section

1 Year Holding

5 Years Holding

10 Years Holding

15 Years Holding

20 Years Holding

25 Years Holding

30 Years Holding



1 Year Holding

Full 1-year holding-period evidence: accumulated return, annualized CAGR, distribution statistics, and extension analysis.

In This Section

Rolling 1-Year Returns and CAGR

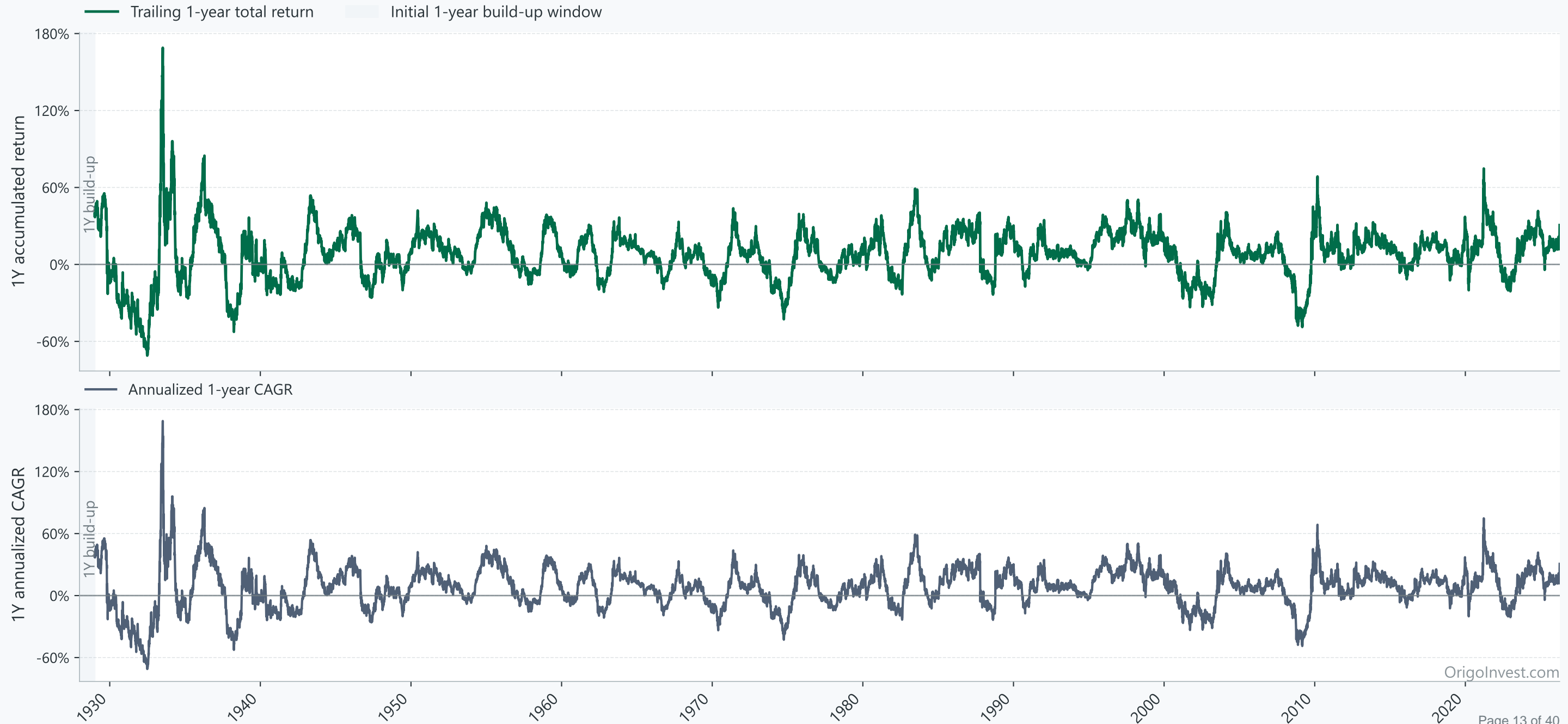
Rolling 1-Year Statistics

Rolling 1-Year Extension Analysis



Rolling 1-Year S&P 500 Returns

Bloomberg daily S&P 500 data, 1927-12-30 to 2026-04-07. Top panel shows accumulated return; bottom panel shows the annualized CAGR for the same trailing 1-year window.





Rolling 1-Year Return Statistics

Accumulated returns; long-term average for this horizon is 8.1%. 46.7% of completed observations finished below that average.

Accumulated Return Percentiles

Percentile	Accumulated Return
1st	-43.4%
5th	-24.8%
10th	-16.2%
25th	-3.7%
50th	9.5%
75th	20.1%
90th	30.8%
95th	37.7%
99th	53.1%

Annualized CAGR Percentiles

Percentile	Annualized CAGR
1st	-43.4%
5th	-24.8%
10th	-16.2%
25th	-3.7%
50th	9.5%
75th	20.1%
90th	30.8%
95th	37.7%
99th	53.1%

Average Rolling Return by End Decade and Starting Decade

End Decade	End Avg	Rolling Periods Ending	Start Decade	Start Avg	Rolling Periods Starting
1920s	32.5%	250	1920s	6.9%	501
1930s	-0.3%	2,496	1930s	0.7%	2,496
1940s	3.8%	2,500	1940s	6.7%	2,499
1950s	15.2%	2,511	1950s	12.8%	2,514
1960s	6.1%	2,489	1960s	4.8%	2,490
1970s	1.8%	2,526	1970s	4.8%	2,525
1980s	13.4%	2,528	1980s	12.3%	2,528
1990s	15.8%	2,528	1990s	16.2%	2,528
2000s	-1.5%	2,515	2000s	-0.1%	2,515
2010s	12.4%	2,516	2010s	11.3%	2,516
2020s	14.7%	1,573	2020s	15.5%	1,320

Extension analysis follows on the next page for below-average, bottom-quartile, bottom-decile, and worst completed outcomes.



Rolling 1-Year Extension Analysis

Tests whether adding +1Y, +2Y, +3Y, +4Y, +5Y, +7Y, or +10Y improved weak 1-year outcomes. Historical average benchmark for this horizon: 8.1%.

Below-Average Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	11,401	+7.7%	+7.0%	+10.4%	+6.6%	43.1%	-0.2%
+2Y	11,393	+18.5%	+10.2%	+21.8%	+10.1%	58.1%	10.6%
+3Y	11,334	+26.8%	+11.3%	+27.0%	+11.0%	62.9%	18.8%
+4Y	11,085	+34.9%	+11.7%	+35.7%	+10.4%	65.1%	27.0%
+5Y	11,082	+48.3%	+12.7%	+49.3%	+11.7%	71.6%	40.4%
+7Y	10,878	+68.2%	+13.1%	+57.8%	+11.5%	73.4%	60.1%
+10Y	10,629	+107.5%	+13.6%	+92.5%	+11.9%	81.5%	99.2%

Bottom Quartile Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	6,107	+7.7%	+11.3%	+10.8%	+12.4%	25.3%	-9.5%
+2Y	6,107	+16.0%	+15.5%	+20.6%	+15.8%	42.0%	-1.2%
+3Y	6,095	+23.8%	+17.6%	+25.0%	+16.8%	49.6%	6.6%
+4Y	5,878	+30.0%	+18.7%	+30.1%	+16.3%	53.9%	12.6%
+5Y	5,878	+39.9%	+20.0%	+43.9%	+18.4%	65.1%	22.5%
+7Y	5,853	+51.3%	+20.2%	+46.3%	+18.4%	62.6%	33.8%
+10Y	5,817	+91.7%	+21.4%	+69.4%	+19.9%	74.2%	74.2%

Bottom Decile Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	2,444	+6.4%	+15.3%	+9.7%	+17.6%	11.1%	-22.0%
+2Y	2,444	+12.7%	+21.3%	+15.4%	+22.7%	18.2%	-15.7%
+3Y	2,444	+18.0%	+24.4%	+19.1%	+23.9%	25.6%	-10.4%
+4Y	2,403	+26.7%	+26.7%	+28.3%	+24.8%	38.0%	-1.9%
+5Y	2,403	+36.1%	+28.9%	+39.9%	+25.9%	52.1%	7.6%
+7Y	2,401	+34.8%	+28.5%	+28.5%	+25.3%	43.7%	6.2%
+10Y	2,401	+59.7%	+29.7%	+43.6%	+27.2%	56.8%	31.1%

Worst Outcome

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	1	+42.6%	+55.7%	+42.6%	+55.7%	0.0%	-28.5%
+2Y	1	+35.8%	+57.6%	+35.8%	+57.6%	0.0%	-35.3%
+3Y	1	+37.2%	+61.3%	+37.2%	+61.3%	0.0%	-33.9%
+4Y	1	+68.1%	+70.5%	+68.1%	+70.5%	0.0%	-3.0%
+5Y	1	+69.6%	+70.8%	+69.6%	+70.8%	0.0%	-1.5%
+7Y	1	+44.6%	+67.3%	+44.6%	+67.3%	0.0%	-26.4%
+10Y	1	+25.0%	+65.6%	+25.0%	+65.6%	0.0%	-46.1%

Improvement is measured from the same original start date. Cases may fall for longer extensions near the end of the dataset if later data is unavailable.



5 Years Holding

Full 5-year holding-period evidence: accumulated return, annualized CAGR, distribution statistics, and extension analysis.

In This Section

Rolling 5-Year Returns and CAGR

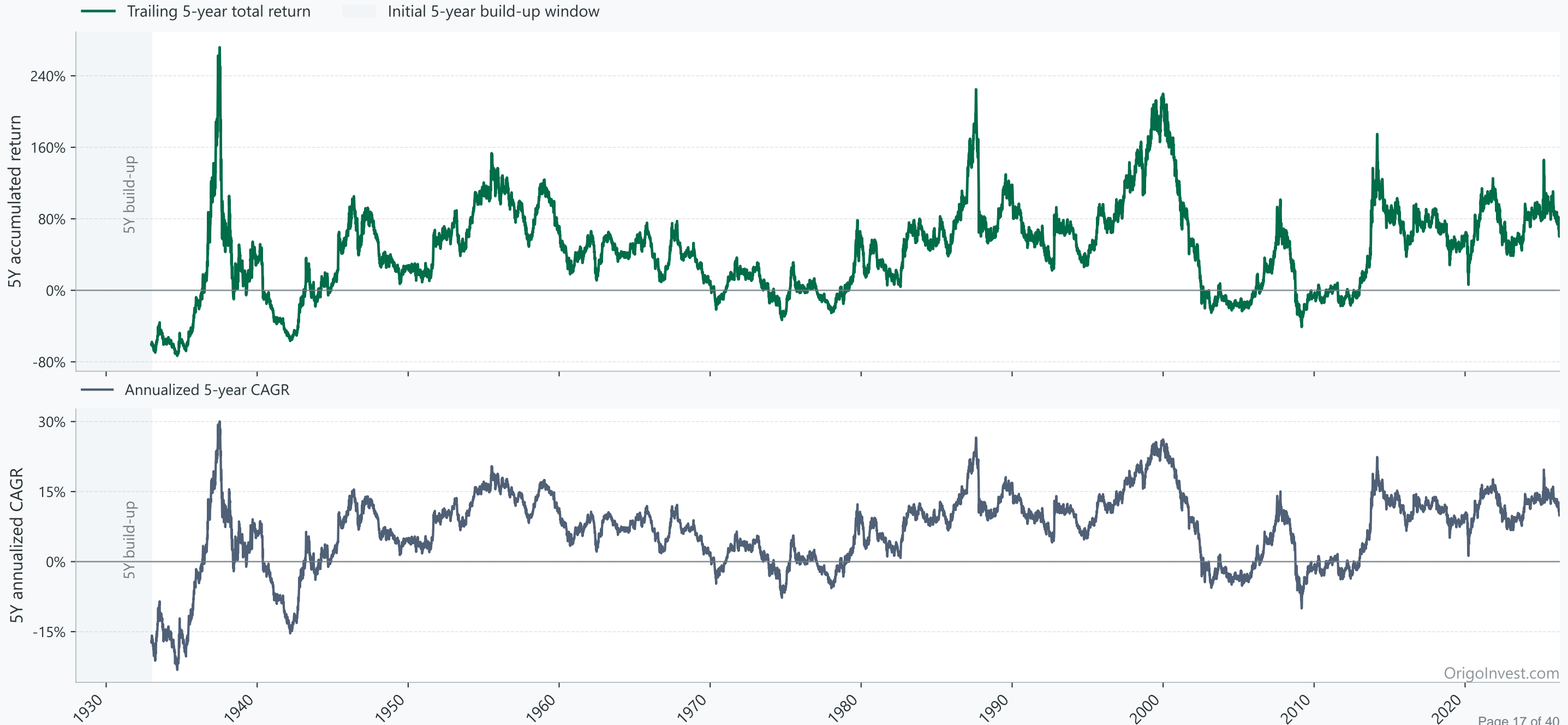
Rolling 5-Year Statistics

Rolling 5-Year Extension Analysis



Rolling 5-Year S&P 500 Returns

Bloomberg daily S&P 500 data, 1927-12-30 to 2026-04-07. Top panel shows accumulated return; bottom panel shows the annualized CAGR for the same trailing 5-year window.





Rolling 5-Year Return Statistics

Accumulated returns; long-term average for this horizon is 45.5%. 48.9% of completed observations finished below that average.

Accumulated Return Percentiles

Percentile	Accumulated Return
1st	-60.5%
5th	-28.5%
10th	-13.2%
25th	8.9%
50th	47.0%
75th	75.4%
90th	104.9%
95th	125.0%
99th	189.5%

Annualized CAGR Percentiles

Percentile	Annualized CAGR
1st	-17.0%
5th	-6.5%
10th	-2.8%
25th	1.7%
50th	8.0%
75th	11.9%
90th	15.4%
95th	17.6%
99th	23.7%

Average Rolling Return by End Decade and Starting Decade

End Decade	End Avg	Rolling Periods Ending	Start Decade	Start Avg	Rolling Periods Starting
1930s	6.6%	1,744	1920s	-58.3%	492
1940s	18.0%	2,500	1930s	9.6%	2,505
1950s	76.4%	2,511	1940s	51.6%	2,498
1960s	41.3%	2,489	1950s	70.8%	2,518
1970s	3.8%	2,526	1960s	21.8%	2,494
1980s	66.3%	2,528	1970s	22.5%	2,528
1990s	87.8%	2,528	1980s	75.2%	2,528
2000s	29.3%	2,515	1990s	81.5%	2,519
2010s	47.4%	2,516	2000s	19.0%	2,518
2020s	77.4%	1,573	2010s	71.4%	2,515
			2020s	90.3%	315

Extension analysis follows on the next page for below-average, bottom-quartile, bottom-decile, and worst completed outcomes.



Rolling 5-Year Extension Analysis

Tests whether adding +1Y, +2Y, +3Y, +4Y, +5Y, +7Y, or +10Y improved weak 5-year outcomes. Historical average benchmark for this horizon: 45.5%.

Below-Average Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	11,454	+9.7%	+1.3%	+10.9%	+1.6%	18.2%	15.1%
+2Y	11,454	+16.6%	+1.9%	+16.8%	+2.3%	25.7%	22.0%
+3Y	11,453	+25.0%	+2.3%	+24.9%	+2.4%	31.1%	30.4%
+4Y	11,398	+34.7%	+2.7%	+28.7%	+2.7%	39.0%	39.9%
+5Y	11,398	+48.2%	+3.1%	+36.6%	+2.8%	48.6%	53.4%
+7Y	11,319	+71.8%	+3.5%	+51.4%	+3.7%	57.4%	76.8%
+10Y	11,294	+118.1%	+4.4%	+87.0%	+4.7%	76.3%	123.0%

Bottom Quartile Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	5,858	+9.2%	+2.3%	+10.0%	+2.1%	0.7%	-6.4%
+2Y	5,858	+17.5%	+3.8%	+17.9%	+3.6%	2.5%	1.8%
+3Y	5,858	+22.8%	+4.4%	+25.2%	+4.3%	6.1%	7.2%
+4Y	5,858	+26.1%	+4.5%	+25.2%	+4.4%	16.5%	10.4%
+5Y	5,858	+32.0%	+4.8%	+28.6%	+4.7%	28.3%	16.4%
+7Y	5,857	+48.7%	+5.5%	+40.9%	+5.4%	40.8%	33.1%
+10Y	5,857	+102.4%	+7.5%	+83.8%	+6.9%	69.6%	86.8%

Bottom Decile Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	2,343	+10.4%	+3.6%	+10.1%	+3.2%	0.0%	-24.1%
+2Y	2,343	+19.6%	+6.1%	+18.3%	+5.7%	0.0%	-15.0%
+3Y	2,343	+24.7%	+7.1%	+26.0%	+6.4%	1.9%	-9.8%
+4Y	2,343	+24.5%	+7.0%	+22.7%	+7.2%	2.3%	-10.1%
+5Y	2,343	+26.5%	+7.2%	+23.4%	+7.7%	10.2%	-8.1%
+7Y	2,343	+29.6%	+7.5%	+26.5%	+7.9%	14.1%	-5.0%
+10Y	2,343	+70.7%	+10.0%	+63.9%	+10.1%	44.0%	36.2%

Worst Outcome

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	1	+10.3%	+8.0%	+10.3%	+8.0%	0.0%	-62.9%
+2Y	1	+23.5%	+13.8%	+23.5%	+13.8%	0.0%	-49.8%
+3Y	1	+19.4%	+14.0%	+19.4%	+14.0%	0.0%	-53.9%
+4Y	1	+9.7%	+12.6%	+9.7%	+12.6%	0.0%	-63.6%
+5Y	1	+12.7%	+14.3%	+12.7%	+14.3%	0.0%	-60.5%
+7Y	1	+6.4%	+14.4%	+6.4%	+14.4%	0.0%	-66.9%
+10Y	1	+12.9%	+17.2%	+12.9%	+17.2%	0.0%	-60.3%

Improvement is measured from the same original start date. Cases may fall for longer extensions near the end of the dataset if later data is unavailable.



10 Years Holding

Full 10-year holding-period evidence: accumulated return, annualized CAGR, distribution statistics, and extension analysis.

In This Section

Rolling 10-Year Returns and CAGR

Rolling 10-Year Statistics

Rolling 10-Year Extension Analysis



Rolling 10-Year S&P 500 Returns

Bloomberg daily S&P 500 data, 1927-12-30 to 2026-04-07. Top panel shows accumulated return; bottom panel shows the annualized CAGR for the same trailing 10-year window.





Rolling 10-Year Return Statistics

Accumulated returns; long-term average for this horizon is 110.8%. 51.3% of completed observations finished below that average.

Accumulated Return Percentiles

Percentile	Accumulated Return
1st	-52.1%
5th	-26.0%
10th	-2.6%
25th	33.7%
50th	105.8%
75th	182.9%
90th	220.1%
95th	270.0%
99th	330.9%

Annualized CAGR Percentiles

Percentile	Annualized CAGR
1st	-7.1%
5th	-3.0%
10th	-0.3%
25th	2.9%
50th	7.5%
75th	11.0%
90th	12.3%
95th	14.0%
99th	15.7%

Average Rolling Return by End Decade and Starting Decade

End Decade	End Avg	Rolling Periods Ending	Start Decade	Start Avg	Rolling Periods Starting
1930s	-47.7%	501	1920s	-47.7%	501
1940s	14.1%	2,500	1930s	14.1%	2,500
1950s	164.7%	2,511	1940s	164.7%	2,511
1960s	141.2%	2,489	1950s	141.1%	2,490
1970s	25.8%	2,526	1960s	25.8%	2,525
1980s	106.3%	2,528	1970s	106.3%	2,528
1990s	219.9%	2,528	1980s	219.9%	2,528
2000s	121.8%	2,515	1990s	121.8%	2,515
2010s	70.7%	2,516	2000s	70.8%	2,518
2020s	196.1%	1,573	2010s	196.1%	1,571

Extension analysis follows on the next page for below-average, bottom-quartile, bottom-decile, and worst completed outcomes.



Rolling 10-Year Extension Analysis

Tests whether adding +1Y, +2Y, +3Y, +4Y, +5Y, +7Y, or +10Y improved weak 10-year outcomes. Historical average benchmark for this horizon: 110.8%.

Below-Average Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	11,392	+9.8%	+0.3%	+10.1%	+0.5%	9.4%	45.0%
+2Y	11,392	+20.5%	+0.6%	+19.3%	+0.7%	15.8%	55.6%
+3Y	11,392	+31.4%	+0.8%	+30.7%	+1.0%	24.7%	66.6%
+4Y	11,392	+45.3%	+1.2%	+38.9%	+1.5%	30.6%	80.5%
+5Y	11,392	+61.4%	+1.5%	+54.8%	+1.8%	36.7%	96.5%
+7Y	11,385	+102.8%	+2.2%	+85.9%	+2.5%	52.5%	137.9%
+10Y	10,840	+174.7%	+2.9%	+168.2%	+3.4%	77.4%	208.0%

Bottom Quartile Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	5,547	+6.7%	+0.5%	+6.6%	+0.7%	0.0%	5.1%
+2Y	5,547	+17.4%	+1.2%	+15.6%	+1.3%	0.0%	15.7%
+3Y	5,547	+26.4%	+1.7%	+24.0%	+1.9%	1.7%	24.7%
+4Y	5,547	+39.8%	+2.3%	+36.8%	+2.5%	7.6%	38.1%
+5Y	5,547	+54.9%	+2.9%	+52.2%	+3.0%	14.3%	53.3%
+7Y	5,547	+91.1%	+3.8%	+79.4%	+3.9%	30.0%	89.4%
+10Y	5,547	+165.5%	+4.9%	+165.0%	+5.1%	73.8%	163.9%

Bottom Decile Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	2,219	+5.1%	+0.7%	+4.2%	+0.7%	0.0%	-22.8%
+2Y	2,219	+9.8%	+1.2%	+9.7%	+1.3%	0.0%	-18.1%
+3Y	2,219	+15.3%	+1.8%	+16.2%	+2.1%	0.0%	-12.6%
+4Y	2,219	+27.3%	+2.8%	+30.6%	+3.0%	0.5%	-0.6%
+5Y	2,219	+42.1%	+3.8%	+48.3%	+3.7%	0.5%	14.2%
+7Y	2,219	+56.7%	+4.6%	+55.3%	+4.5%	1.8%	28.8%
+10Y	2,219	+103.5%	+5.7%	+114.9%	+5.8%	44.3%	75.5%

Worst Outcome

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	1	-2.0%	+0.4%	-2.0%	+0.4%	0.0%	-67.1%
+2Y	1	-2.2%	+1.1%	-2.2%	+1.1%	0.0%	-67.3%
+3Y	1	-6.9%	+0.7%	-6.9%	+0.7%	0.0%	-71.9%
+4Y	1	+2.7%	+3.2%	+2.7%	+3.2%	0.0%	-62.4%
+5Y	1	+6.3%	+4.3%	+6.3%	+4.3%	0.0%	-58.7%
+7Y	1	+21.3%	+6.6%	+21.3%	+6.6%	0.0%	-43.8%
+10Y	1	+13.9%	+6.5%	+13.9%	+6.5%	0.0%	-51.2%

Improvement is measured from the same original start date. Cases may fall for longer extensions near the end of the dataset if later data is unavailable.



15 Years Holding

Full 15-year holding-period evidence: accumulated return, annualized CAGR, distribution statistics, and extension analysis.

In This Section

Rolling 15-Year Returns and CAGR

Rolling 15-Year Statistics

Rolling 15-Year Extension Analysis



Rolling 15-Year S&P 500 Returns

Bloomberg daily S&P 500 data, 1927-12-30 to 2026-04-07. Top panel shows accumulated return; bottom panel shows the annualized CAGR for the same trailing 15-year window.





Rolling 15-Year Return Statistics

Accumulated returns; long-term average for this horizon is 209.2%. 55.5% of completed observations finished below that average.

Accumulated Return Percentiles

Percentile	Accumulated Return
1st	-51.2%
5th	21.6%
10th	39.0%
25th	66.4%
50th	176.5%
75th	312.7%
90th	416.6%
95th	516.5%
99th	720.1%

Annualized CAGR Percentiles

Percentile	Annualized CAGR
1st	-4.7%
5th	1.3%
10th	2.2%
25th	3.5%
50th	7.0%
75th	9.9%
90th	11.6%
95th	12.9%
99th	15.1%

Average Rolling Return by End Decade and Starting Decade

End Decade	End Avg	Rolling Periods Ending	Start Decade	Start Avg	Rolling Periods Starting
1940s	24.7%	1,750	1920s	-46.8%	503
1950s	218.4%	2,511	1930s	72.1%	2,498
1960s	313.0%	2,489	1940s	338.7%	2,518
1970s	77.4%	2,526	1950s	199.7%	2,496
1980s	112.0%	2,528	1960s	47.3%	2,526
1990s	431.9%	2,528	1970s	248.0%	2,528
2000s	287.9%	2,515	1980s	455.9%	2,519
2010s	97.4%	2,516	1990s	140.1%	2,518
2020s	298.2%	1,573	2000s	193.1%	2,517
			2010s	441.6%	313

Extension analysis follows on the next page for below-average, bottom-quartile, bottom-decile, and worst completed outcomes.



Rolling 15-Year Extension Analysis

Tests whether adding +1Y, +2Y, +3Y, +4Y, +5Y, +7Y, or +10Y improved weak 15-year outcomes. Historical average benchmark for this horizon: 209.2%.

Below-Average Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	11,613	+19.6%	+0.4%	+18.7%	+0.5%	10.5%	106.7%
+2Y	11,613	+41.0%	+0.7%	+35.0%	+0.7%	19.1%	128.0%
+3Y	11,575	+62.2%	+0.9%	+61.1%	+1.0%	26.8%	148.9%
+4Y	11,331	+83.5%	+1.1%	+84.7%	+1.4%	35.0%	168.3%
+5Y	11,307	+112.1%	+1.4%	+115.2%	+1.6%	43.8%	196.7%
+7Y	10,810	+169.3%	+1.9%	+174.5%	+2.1%	58.2%	250.0%
+10Y	10,106	+292.6%	+2.6%	+284.9%	+2.9%	82.3%	369.1%

Bottom Quartile Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	5,234	+12.3%	+0.5%	+12.1%	+0.5%	0.0%	44.6%
+2Y	5,234	+26.2%	+0.9%	+22.2%	+0.8%	0.0%	58.5%
+3Y	5,234	+41.9%	+1.2%	+39.8%	+1.2%	0.5%	74.2%
+4Y	5,234	+62.2%	+1.6%	+60.1%	+1.6%	1.4%	94.5%
+5Y	5,234	+86.2%	+2.0%	+80.9%	+2.0%	10.6%	118.5%
+7Y	5,234	+139.2%	+2.7%	+146.3%	+2.8%	37.7%	171.4%
+10Y	5,206	+240.0%	+3.5%	+255.9%	+3.4%	80.1%	272.1%

Bottom Decile Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	2,094	+14.7%	+0.8%	+13.7%	+0.9%	0.0%	18.1%
+2Y	2,094	+21.8%	+1.1%	+18.4%	+1.3%	0.0%	25.2%
+3Y	2,094	+31.3%	+1.4%	+31.5%	+1.6%	0.0%	34.7%
+4Y	2,094	+47.2%	+1.7%	+39.8%	+1.9%	0.0%	50.6%
+5Y	2,094	+66.2%	+2.2%	+64.8%	+2.1%	8.5%	69.6%
+7Y	2,094	+113.0%	+3.2%	+94.1%	+3.3%	21.0%	116.4%
+10Y	2,094	+197.1%	+4.2%	+226.0%	+4.2%	54.0%	200.5%

Worst Outcome

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	1	+10.6%	+1.8%	+10.6%	+1.8%	0.0%	-50.4%
+2Y	1	+8.2%	+1.8%	+8.2%	+1.8%	0.0%	-52.8%
+3Y	1	+7.7%	+1.9%	+7.7%	+1.9%	0.0%	-53.3%
+4Y	1	+11.5%	+2.6%	+11.5%	+2.6%	0.0%	-49.5%
+5Y	1	+9.4%	+2.5%	+9.4%	+2.5%	0.0%	-51.6%
+7Y	1	+35.2%	+4.7%	+35.2%	+4.7%	0.0%	-25.8%
+10Y	1	+57.4%	+5.9%	+57.4%	+5.9%	0.0%	-3.6%

Improvement is measured from the same original start date. Cases may fall for longer extensions near the end of the dataset if later data is unavailable.



20 Years Holding

Full 20-year holding-period evidence: accumulated return, annualized CAGR, distribution statistics, and extension analysis.

In This Section

Rolling 20-Year Returns and CAGR

Rolling 20-Year Statistics

Rolling 20-Year Extension Analysis



Rolling 20-Year S&P 500 Returns

Bloomberg daily S&P 500 data, 1927-12-30 to 2026-04-07. Top panel shows accumulated return; bottom panel shows the annualized CAGR for the same trailing 20-year window.





Rolling 20-Year Return Statistics

Accumulated returns; long-term average for this horizon is 337.4%. 59.1% of completed observations finished below that average.

Accumulated Return Percentiles

Percentile	Accumulated Return
1st	-38.2%
5th	68.5%
10th	100.3%
25th	160.5%
50th	288.1%
75th	462.5%
90th	592.2%
95th	850.0%
99th	1,190.3%

Annualized CAGR Percentiles

Percentile	Annualized CAGR
1st	-2.4%
5th	2.6%
10th	3.5%
25th	4.9%
50th	7.0%
75th	9.0%
90th	10.2%
95th	11.9%
99th	13.6%

Average Rolling Return by End Decade and Starting Decade

End Decade	End Avg	Rolling Periods Ending	Start Decade	Start Avg	Rolling Periods Starting
1940s	-31.2%	503	1920s	-31.2%	503
1950s	210.0%	2,511	1930s	210.0%	2,511
1960s	514.1%	2,489	1940s	514.1%	2,490
1970s	209.9%	2,526	1950s	209.7%	2,527
1980s	143.1%	2,528	1960s	143.2%	2,526
1990s	575.1%	2,528	1970s	575.1%	2,528
2000s	576.3%	2,515	1980s	576.3%	2,515
2010s	224.8%	2,516	1990s	224.8%	2,517
2020s	312.0%	1,573	2000s	312.1%	1,572

Extension analysis follows on the next page for below-average, bottom-quartile, bottom-decile, and worst completed outcomes.



Rolling 20-Year Extension Analysis

Tests whether adding +1Y, +2Y, +3Y, +4Y, +5Y, +7Y, or +10Y improved weak 20-year outcomes. Historical average benchmark for this horizon: 337.4%.

Below-Average Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	11,644	+30.6%	+0.3%	+29.3%	+0.3%	11.9%	213.5%
+2Y	11,641	+62.6%	+0.5%	+54.2%	+0.4%	25.9%	245.5%
+3Y	11,527	+96.7%	+0.7%	+93.4%	+0.7%	35.0%	278.2%
+4Y	11,397	+136.2%	+0.9%	+137.3%	+0.9%	43.7%	316.2%
+5Y	11,148	+183.8%	+1.1%	+174.9%	+1.2%	50.9%	361.5%
+7Y	10,644	+303.1%	+1.5%	+282.0%	+1.5%	71.6%	482.9%
+10Y	9,890	+485.8%	+1.9%	+433.1%	+1.9%	90.9%	665.9%

Bottom Quartile Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	4,923	+25.6%	+0.4%	+20.7%	+0.5%	0.0%	116.1%
+2Y	4,923	+52.0%	+0.8%	+38.4%	+0.8%	2.1%	142.5%
+3Y	4,923	+73.7%	+1.0%	+64.6%	+1.0%	2.6%	164.2%
+4Y	4,923	+102.0%	+1.3%	+95.7%	+1.4%	3.8%	192.6%
+5Y	4,923	+140.7%	+1.7%	+139.0%	+1.6%	9.9%	231.2%
+7Y	4,519	+209.6%	+2.2%	+208.7%	+2.1%	39.1%	297.6%
+10Y	4,291	+345.9%	+2.7%	+361.6%	+2.5%	79.3%	431.4%

Bottom Decile Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	1,969	+24.6%	+0.7%	+19.9%	+0.7%	0.0%	64.2%
+2Y	1,969	+43.8%	+1.1%	+30.3%	+1.2%	0.0%	83.5%
+3Y	1,969	+58.0%	+1.4%	+38.8%	+1.3%	0.0%	97.7%
+4Y	1,969	+89.6%	+1.9%	+88.0%	+1.9%	0.4%	129.3%
+5Y	1,969	+130.2%	+2.4%	+117.6%	+2.4%	3.9%	169.9%
+7Y	1,933	+189.0%	+3.0%	+170.4%	+2.7%	19.5%	227.9%
+10Y	1,931	+288.8%	+3.5%	+314.3%	+3.2%	54.7%	327.7%

Worst Outcome

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	1	+10.2%	+1.1%	+10.2%	+1.1%	0.0%	-41.9%
+2Y	1	+25.3%	+2.2%	+25.3%	+2.2%	0.0%	-26.7%
+3Y	1	+31.3%	+2.6%	+31.3%	+2.6%	0.0%	-20.7%
+4Y	1	+25.6%	+2.3%	+25.6%	+2.3%	0.0%	-26.5%
+5Y	1	+47.7%	+3.4%	+47.7%	+3.4%	0.0%	-4.3%
+7Y	1	+100.1%	+5.1%	+100.1%	+5.1%	0.0%	48.0%
+10Y	1	+140.0%	+5.7%	+140.0%	+5.7%	0.0%	88.0%

Improvement is measured from the same original start date. Cases may fall for longer extensions near the end of the dataset if later data is unavailable.



25 Years Holding

Full 25-year holding-period evidence: accumulated return, annualized CAGR, distribution statistics, and extension analysis.

In This Section

Rolling 25-Year Returns and CAGR

Rolling 25-Year Statistics

Rolling 25-Year Extension Analysis



Rolling 25-Year S&P 500 Returns

Bloomberg daily S&P 500 data, 1927-12-30 to 2026-04-07. Top panel shows accumulated return; bottom panel shows the annualized CAGR for the same trailing 25-year window.





Rolling 25-Year Return Statistics

Accumulated returns; long-term average for this horizon is 510.3%. 60.2% of completed observations finished below that average.

Accumulated Return Percentiles

Percentile	Accumulated Return
1st	8.8%
5th	158.9%
10th	212.2%
25th	306.4%
50th	457.4%
75th	614.5%
90th	934.4%
95th	1,057.5%
99th	1,601.8%

Annualized CAGR Percentiles

Percentile	Annualized CAGR
1st	0.3%
5th	3.9%
10th	4.7%
25th	5.8%
50th	7.1%
75th	8.2%
90th	9.8%
95th	10.3%
99th	12.0%

Average Rolling Return by End Decade and Starting Decade

End Decade	End Avg	Rolling Periods Ending	Start Decade	Start Avg	Rolling Periods Starting
1950s	270.3%	1,765	1920s	20.6%	505
1960s	604.9%	2,489	1930s	402.9%	2,518
1970s	415.8%	2,526	1940s	646.4%	2,495
1980s	240.1%	2,528	1950s	253.2%	2,529
1990s	599.9%	2,528	1960s	314.2%	2,526
2000s	959.4%	2,515	1970s	974.0%	2,519
2010s	485.8%	2,516	1980s	649.9%	2,517
2020s	393.8%	1,573	1990s	451.9%	2,517
			2000s	358.5%	314

Extension analysis follows on the next page for below-average, bottom-quartile, bottom-decile, and worst completed outcomes.



Rolling 25-Year Extension Analysis

Tests whether adding +1Y, +2Y, +3Y, +4Y, +5Y, +7Y, or +10Y improved weak 25-year outcomes. Historical average benchmark for this horizon: 510.3%.

Below-Average Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	10,849	+52.9%	+0.2%	+49.6%	+0.3%	20.1%	376.0%
+2Y	10,598	+101.0%	+0.4%	+86.9%	+0.3%	33.3%	424.4%
+3Y	10,348	+153.2%	+0.5%	+141.7%	+0.5%	39.1%	477.2%
+4Y	10,098	+211.6%	+0.6%	+182.2%	+0.6%	45.1%	535.5%
+5Y	10,034	+291.0%	+0.8%	+248.0%	+0.8%	57.8%	614.0%
+7Y	9,789	+432.9%	+1.0%	+391.4%	+1.0%	81.8%	752.0%
+10Y	9,222	+663.1%	+1.2%	+623.6%	+1.3%	88.9%	972.6%

Bottom Quartile Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	4,582	+43.6%	+0.4%	+42.6%	+0.4%	0.0%	253.2%
+2Y	4,487	+80.5%	+0.6%	+72.6%	+0.5%	1.2%	288.4%
+3Y	4,301	+121.4%	+0.8%	+123.1%	+0.7%	1.8%	325.8%
+4Y	4,215	+155.6%	+0.9%	+147.4%	+0.8%	8.8%	358.4%
+5Y	4,215	+204.0%	+1.1%	+208.3%	+0.9%	23.0%	406.8%
+7Y	4,215	+334.4%	+1.4%	+352.4%	+1.4%	65.8%	537.2%
+10Y	4,215	+614.8%	+1.9%	+608.5%	+1.9%	77.0%	817.6%

Bottom Decile Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	1,844	+32.0%	+0.5%	+35.9%	+0.5%	0.0%	155.5%
+2Y	1,844	+62.2%	+0.8%	+66.1%	+0.9%	0.0%	185.7%
+3Y	1,844	+103.1%	+1.1%	+93.3%	+1.0%	0.0%	226.5%
+4Y	1,844	+126.0%	+1.2%	+104.4%	+1.2%	0.0%	249.5%
+5Y	1,844	+186.3%	+1.5%	+152.9%	+1.5%	10.2%	309.8%
+7Y	1,844	+266.2%	+1.8%	+262.7%	+1.9%	36.0%	389.6%
+10Y	1,844	+406.8%	+2.1%	+435.5%	+2.1%	54.4%	530.3%

Worst Outcome

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	1	+42.1%	+1.4%	+42.1%	+1.4%	0.0%	36.2%
+2Y	1	+55.8%	+1.8%	+55.8%	+1.8%	0.0%	49.8%
+3Y	1	+49.2%	+1.5%	+49.2%	+1.5%	0.0%	43.3%
+4Y	1	+57.3%	+1.7%	+57.3%	+1.7%	0.0%	51.4%
+5Y	1	+93.9%	+2.4%	+93.9%	+2.4%	0.0%	88.0%
+7Y	1	+120.6%	+2.7%	+120.6%	+2.7%	0.0%	114.7%
+10Y	1	+164.0%	+3.0%	+164.0%	+3.0%	0.0%	158.1%

Improvement is measured from the same original start date. Cases may fall for longer extensions near the end of the dataset if later data is unavailable.



30 Years Holding

Full 30-year holding-period evidence: accumulated return, annualized CAGR, distribution statistics, and extension analysis.

In This Section

Rolling 30-Year Returns and CAGR

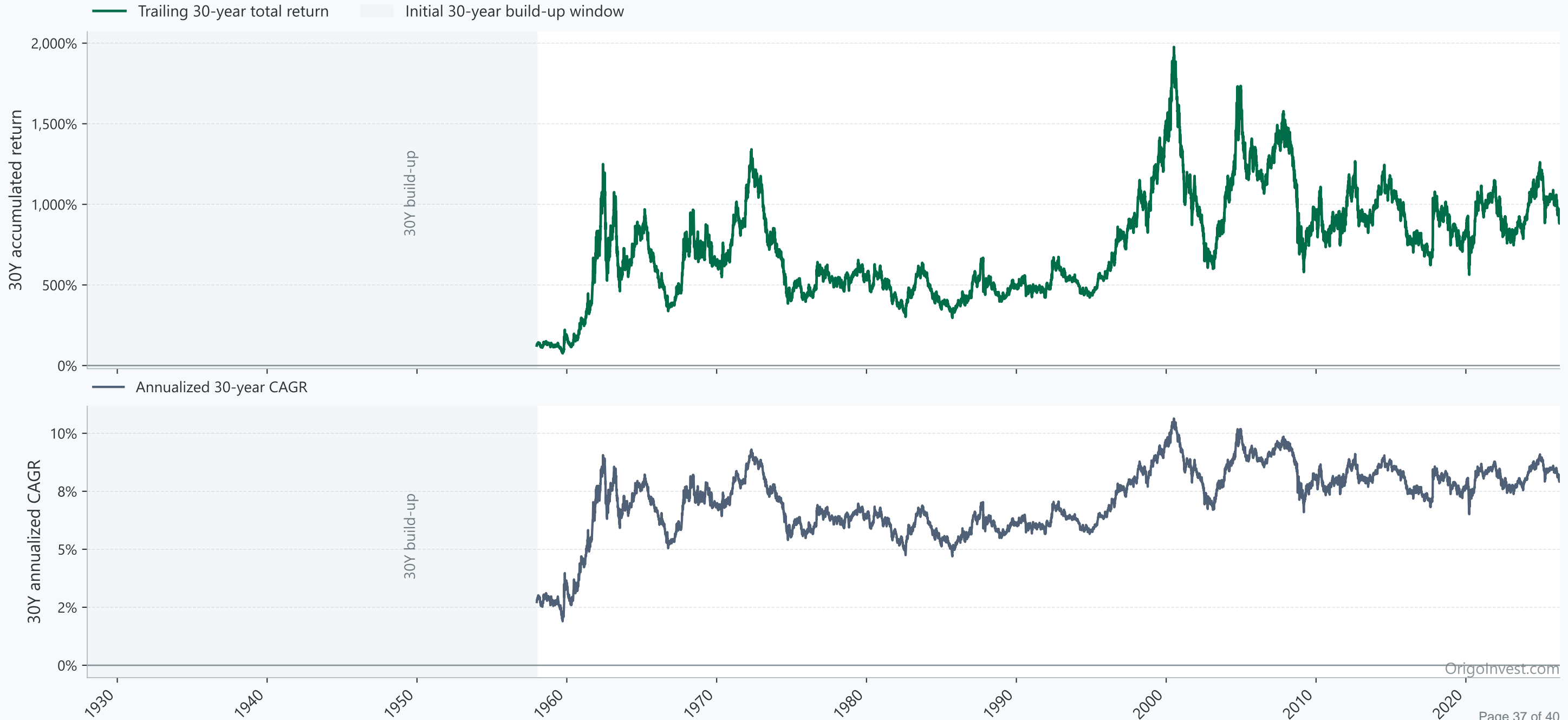
Rolling 30-Year Statistics

Rolling 30-Year Extension Analysis



Rolling 30-Year S&P 500 Returns

Bloomberg daily S&P 500 data, 1927-12-30 to 2026-04-07. Top panel shows accumulated return; bottom panel shows the annualized CAGR for the same trailing 30-year window.





Rolling 30-Year Return Statistics

Accumulated returns; long-term average for this horizon is 751.1%. 51.9% of completed observations finished below that average.

Accumulated Return Percentiles

Percentile	Accumulated Return
1st	119.8%
5th	321.6%
10th	404.1%
25th	502.0%
50th	729.2%
75th	967.1%
90th	1,166.4%
95th	1,315.8%
99th	1,584.9%

Annualized CAGR Percentiles

Percentile	Annualized CAGR
1st	2.7%
5th	4.9%
10th	5.5%
25th	6.2%
50th	7.3%
75th	8.2%
90th	8.8%
95th	9.2%
99th	9.9%

Average Rolling Return by End Decade and Starting Decade

End Decade	End Avg	Rolling Periods Ending	Start Decade	Start Avg	Rolling Periods Starting
1950s	127.7%	507	1920s	127.7%	507
1960s	605.1%	2,489	1930s	605.1%	2,489
1970s	674.8%	2,526	1940s	674.7%	2,527
1980s	465.9%	2,528	1950s	465.9%	2,529
1990s	686.7%	2,528	1960s	686.8%	2,526
2000s	1,154.7%	2,515	1970s	1,154.7%	2,515
2010s	914.1%	2,516	1980s	914.1%	2,516
2020s	961.4%	1,573	1990s	961.4%	1,573

Extension analysis follows on the next page for below-average, bottom-quartile, bottom-decile, and worst completed outcomes.



Rolling 30-Year Extension Analysis

Tests whether adding +1Y, +2Y, +3Y, +4Y, +5Y, +7Y, or +10Y improved weak 30-year outcomes. Historical average benchmark for this horizon: 751.1%.

Below-Average Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	8,921	+62.6%	+0.1%	+65.7%	+0.2%	12.5%	561.6%
+2Y	8,921	+133.2%	+0.2%	+101.4%	+0.2%	21.7%	632.2%
+3Y	8,921	+203.2%	+0.3%	+169.4%	+0.3%	36.8%	702.3%
+4Y	8,920	+287.0%	+0.4%	+225.5%	+0.4%	47.5%	786.0%
+5Y	8,920	+372.8%	+0.5%	+333.1%	+0.6%	60.6%	871.8%
+7Y	8,835	+530.8%	+0.5%	+476.1%	+0.7%	75.7%	1,027.8%
+10Y	8,630	+824.2%	+0.6%	+817.2%	+0.8%	79.0%	1,316.3%

Bottom Quartile Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	4,296	+73.9%	+0.3%	+74.1%	+0.3%	0.0%	456.2%
+2Y	4,296	+122.8%	+0.4%	+96.5%	+0.3%	4.7%	505.1%
+3Y	4,296	+183.5%	+0.5%	+149.4%	+0.5%	15.2%	565.8%
+4Y	4,296	+255.9%	+0.6%	+221.4%	+0.5%	27.3%	638.2%
+5Y	4,296	+365.8%	+0.8%	+304.0%	+0.7%	47.3%	748.1%
+7Y	4,296	+518.7%	+0.9%	+530.5%	+1.0%	65.0%	901.1%
+10Y	4,296	+834.8%	+1.0%	+856.4%	+1.2%	70.3%	1,217.1%

Bottom Decile Outcomes

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	1,719	+73.7%	+0.4%	+72.7%	+0.5%	0.0%	340.2%
+2Y	1,719	+103.6%	+0.4%	+62.8%	+0.4%	0.0%	370.1%
+3Y	1,719	+129.8%	+0.5%	+107.4%	+0.5%	1.2%	396.3%
+4Y	1,719	+191.2%	+0.6%	+140.6%	+0.6%	11.9%	457.6%
+5Y	1,719	+261.7%	+0.8%	+145.7%	+0.8%	23.4%	528.2%
+7Y	1,719	+342.1%	+0.9%	+225.2%	+0.9%	37.6%	608.6%
+10Y	1,719	+490.7%	+0.8%	+247.0%	+1.1%	37.9%	757.2%

Worst Outcome

Extra Years	Cases	Avg Improvement		Typical Improvement		Reached Hist. Avg	Avg Return After Ext.
		Total	CAGR	Total	CAGR		
+1Y	1	-2.5%	-0.1%	-2.5%	-0.1%	0.0%	73.2%
+2Y	1	+36.9%	+0.5%	+36.9%	+0.5%	0.0%	112.6%
+3Y	1	+4.7%	-0.1%	+4.7%	-0.1%	0.0%	80.4%
+4Y	1	+56.8%	+0.6%	+56.8%	+0.6%	0.0%	132.4%
+5Y	1	+91.6%	+1.0%	+91.6%	+1.0%	0.0%	167.3%
+7Y	1	+72.6%	+0.6%	+72.6%	+0.6%	0.0%	148.3%
+10Y	1	+129.0%	+0.9%	+129.0%	+0.9%	0.0%	204.7%

Improvement is measured from the same original start date. Cases may fall for longer extensions near the end of the dataset if later data is unavailable.



Appendix: Table Column Definitions

Client-facing definitions for the rolling charts, statistics pages, extension pages, and summary tables.

Rolling Return Percentiles

Percentile The cutoff point in the historical distribution of completed rolling returns.

Accumulated Return The full-period rolling return at that percentile. Bars are centered on zero and scaled by absolute value, so equal positive and negative magnitudes have equal length.

Annualized CAGR The annualized return at that percentile for the same rolling horizon, using the same zero-centered bar format.

Average Rolling Return by End Decade and Starting Decade

End Decade The decade in which the rolling investment period ended.

End Avg Average accumulated rolling return for periods ending in that decade.

Rolling Periods Ending Number of daily rolling periods ending in that decade.

Start Decade The decade in which the rolling investment period began.

Start Avg Average accumulated rolling return for periods starting in that decade.

Rolling Periods Starting Number of daily rolling periods starting in that decade.

Extension Analysis Tables

Below-Average Outcome Completed rolling periods below that horizon's long-term average.

Bottom Quartile Outcome Completed rolling periods at or below the 25th percentile.

Bottom Decile Outcome Completed rolling periods at or below the 10th percentile.

Worst Outcome The single weakest completed rolling period for that horizon.

Extra Years Held Additional years added after the original rolling period ended.

Cases Rolling periods in the selected weak-outcome cohort with enough later data to test the extension.

Avg Improvement Total Average increase in accumulated return after the additional holding period.

Avg Improvement CAGR Average increase in annualized CAGR after the additional holding period.

Typical Improvement Total Median increase in accumulated return after the additional holding period.

Typical Improvement CAGR Median increase in annualized CAGR after the additional holding period.

Reached Hist. Avg Share of below-average cases that recovered to at least the original historical average for that rolling horizon.

Avg Return After Extension Average accumulated return after adding the extra years, measured from the same original start date.

Distribution Summary by Horizon

Average Average accumulated rolling return for that horizon.

Median Middle completed rolling return for that horizon.

10th / 90th Percentile Lower- and upper-tail accumulated return cutoffs.

Minimum / Maximum Worst and best completed accumulated rolling returns.

Probability Negative Share of completed rolling periods below 0% accumulated return.

Rolling Periods Number of completed daily rolling periods in the horizon sample.