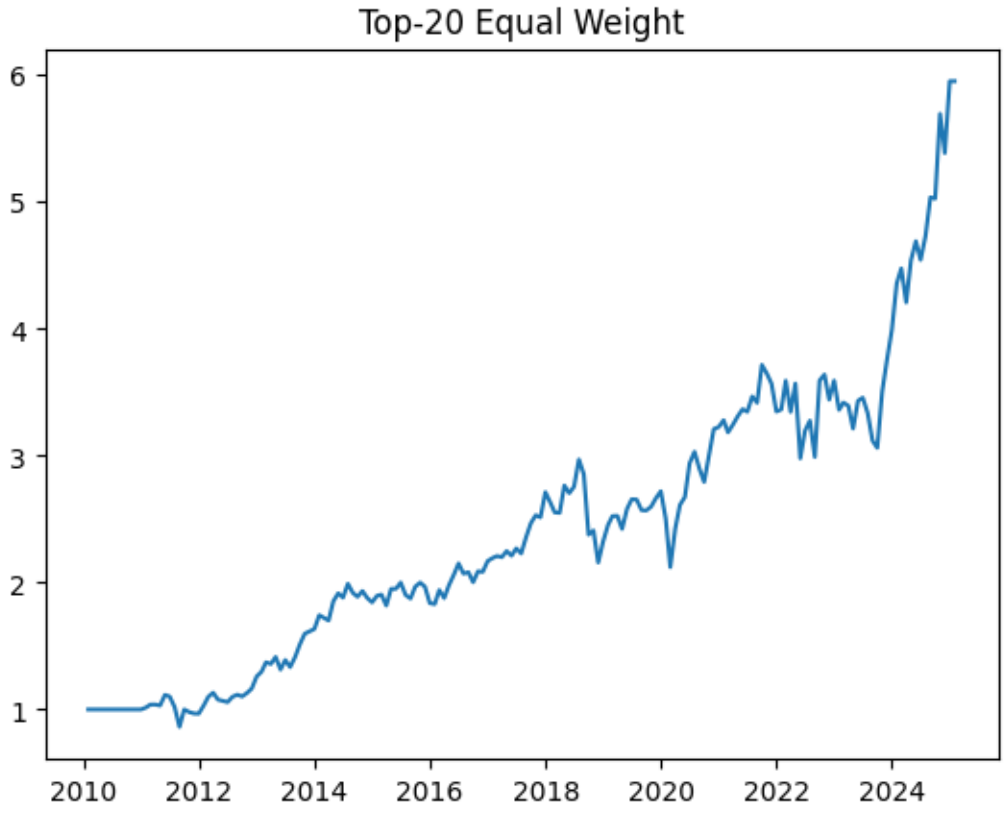
Strategy 1: Picking Top 20 Stocks with Equal Weights

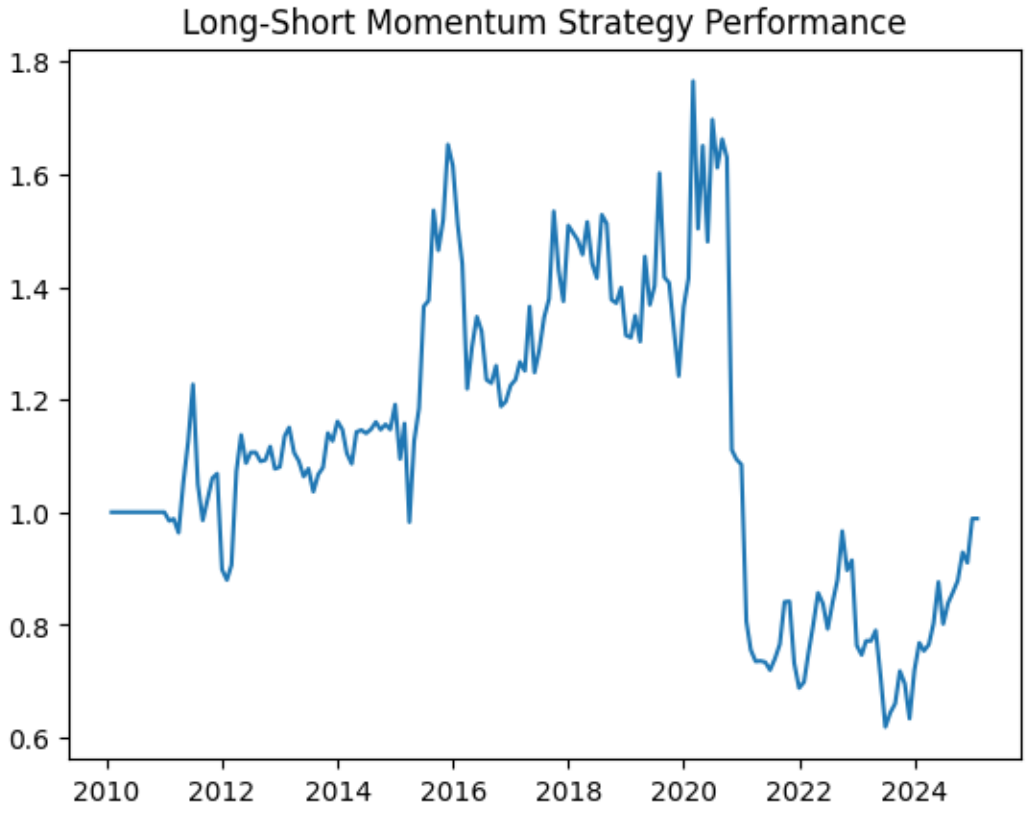
- Each month, calculate the 12-month past return of all S&P 500 stocks.
- Pick the top 20 stocks with the highest past performance.
- Invest equally in all 20 (5% in each stock), holding them for one month.
- Repeat the process next month with updated rankings.
- It's a simple momentum strategy: buy what's been going up, spread your risk equally.



Total cumulative growth from 2010 to 2025 for strategy 1: 499.89%

Strategy 2: Long-Short Momentum Strategy For Top 20 and Bottom 20 Stocks With Equal Weights

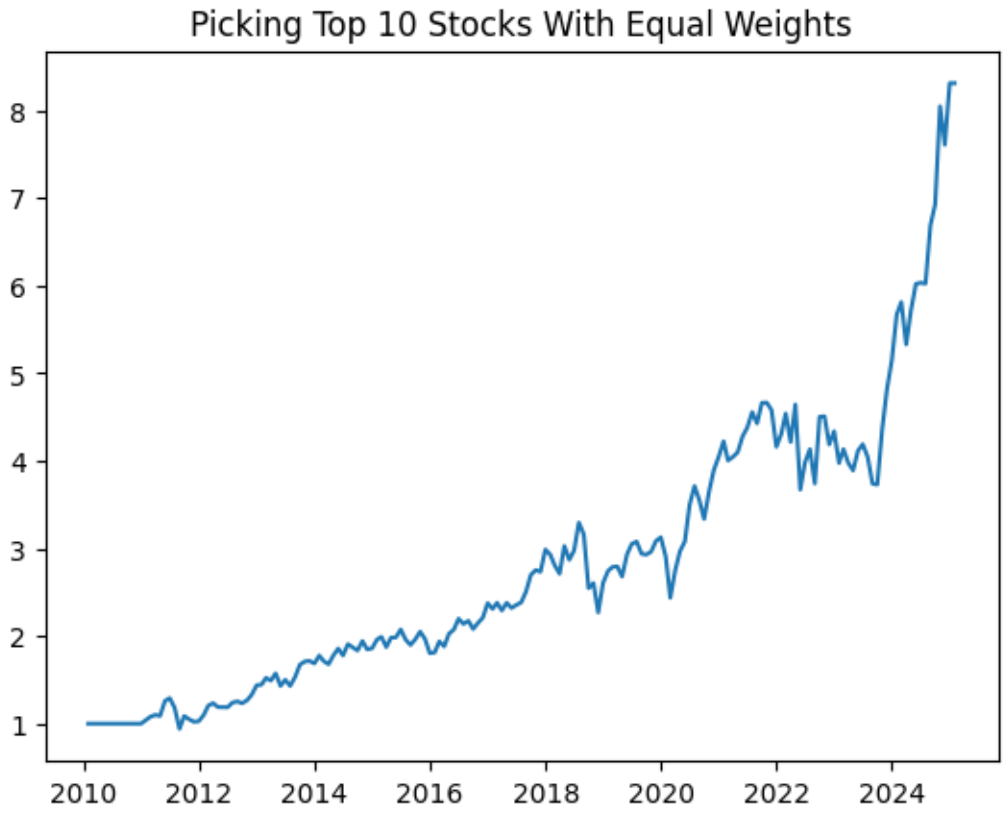
- Each month, calculate the 12-month past return of all S&P 500 stocks.
- Select the top 20 stocks with the highest past returns (winners).
- Select the bottom 20 stocks with the lowest past returns (losers).
- Go long the top 20 stocks, allocating equal weight to each.
- Go short the bottom 20 stocks, also with equal weight.
- Hold this market-neutral portfolio for one month, then rebalance.



Total cumulative growth from 2010 to 2025 for strategy 2: -1.14%

Strategy 3: Picking Top 20 Stocks with Equal Weights

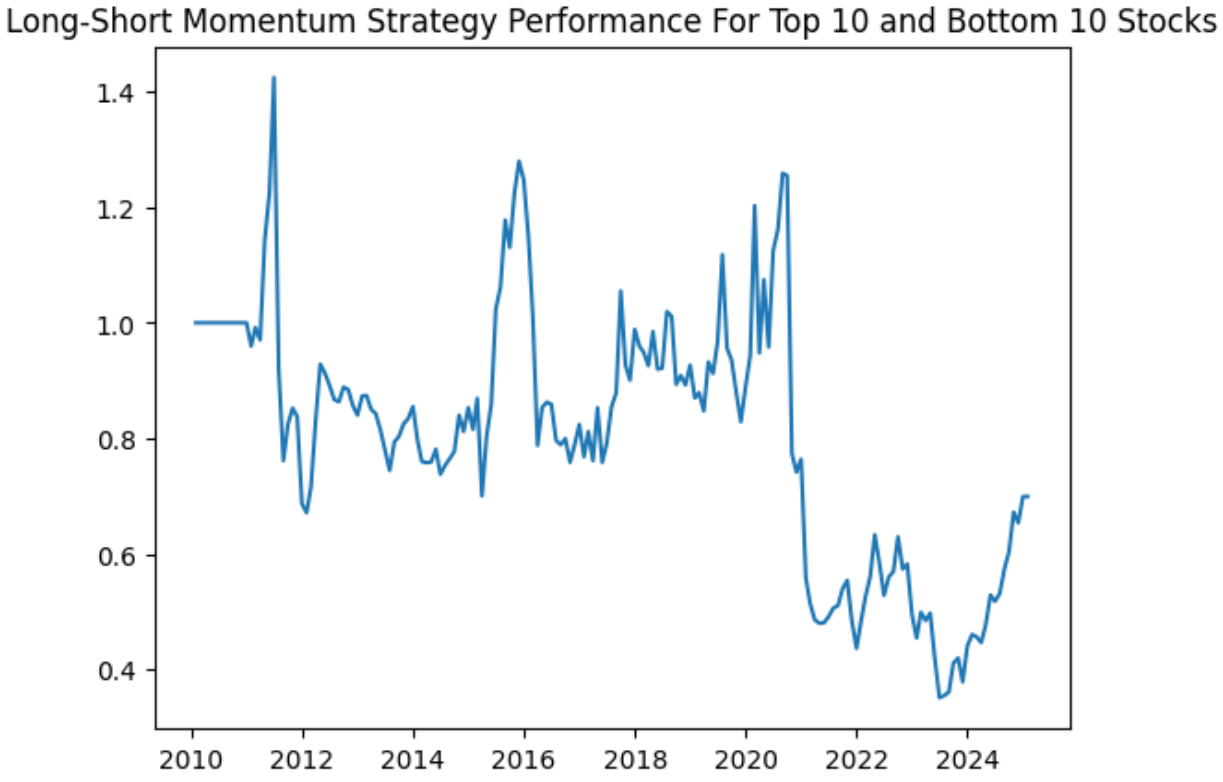
- Same with strategy 1 but with top 10 stocks.



Total cumulative growth from 2010 to 2025 for strategy 3: 731.28%

Strategy 4: Long-Short Momentum Strategy For Top 10 and Bottom 10 Stocks With Equal Weights

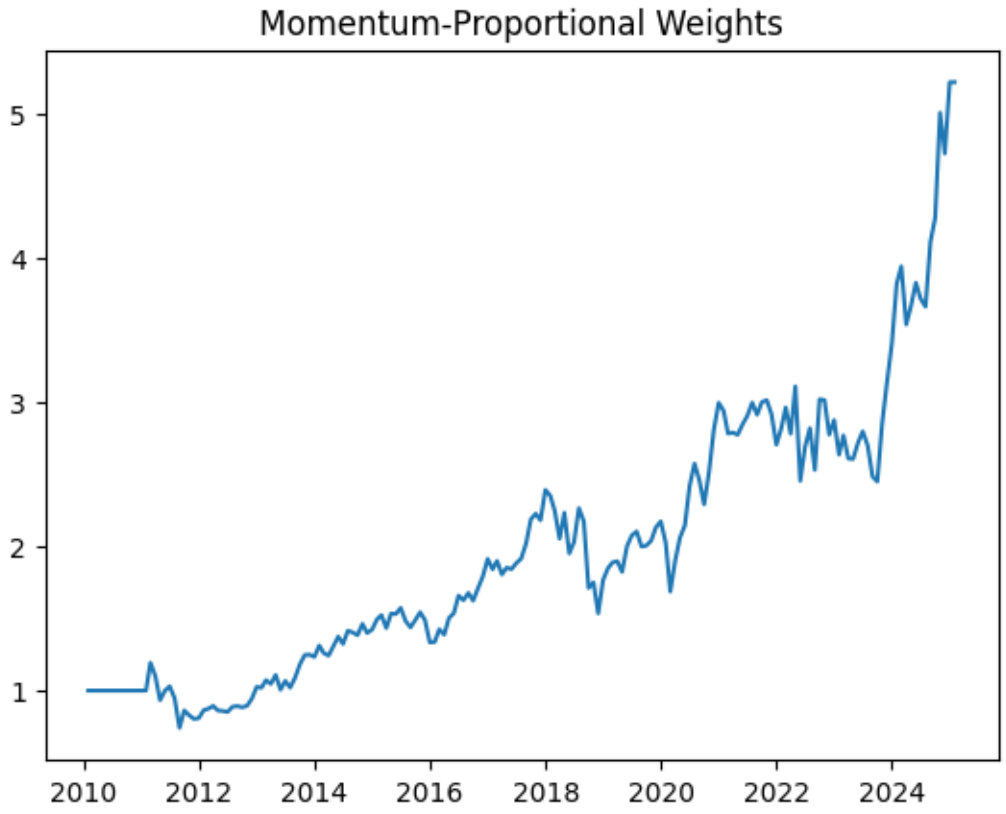
- Same with strategy 2 but with top 10 and bottom 10 stocks.



Total cumulative growth from 2010 to 2025 for strategy 4: -30.05%

Strategy 5: Momentum-Proportional Weights

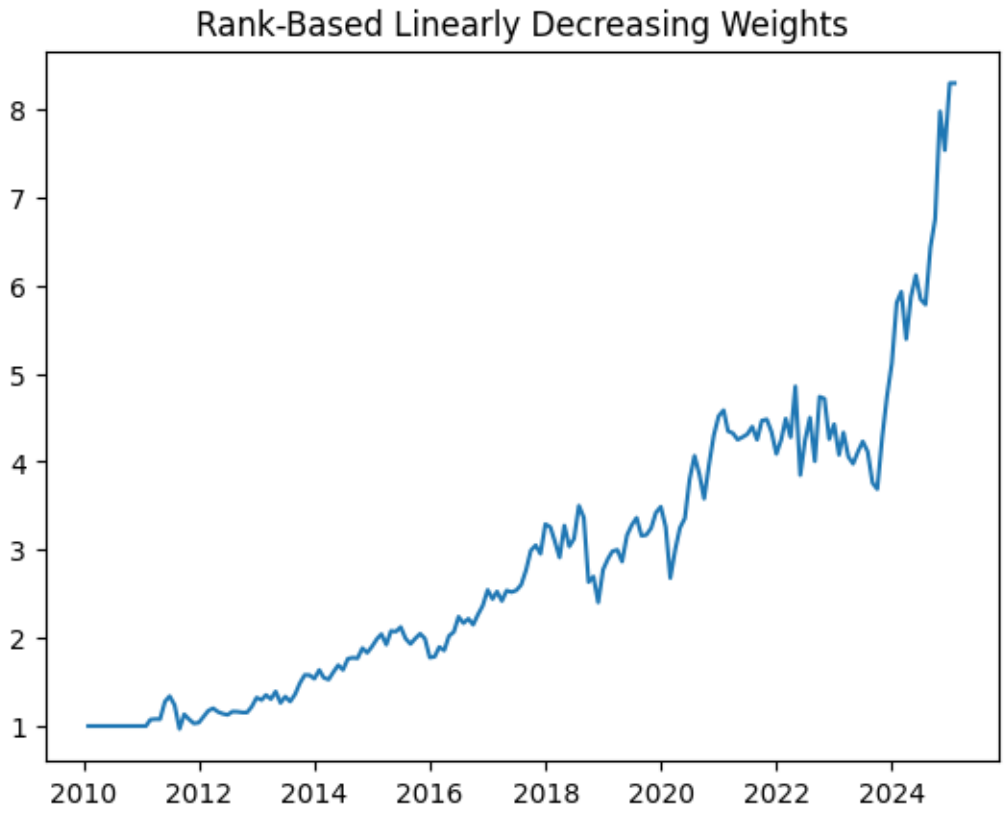
- Each month, calculate the 12-month past return of all S&P 500 stocks.
- Select the top 10 stocks with the highest past returns.
- Allocate more weight to stocks with stronger past performance.
- The weight of each stock is proportional to its momentum score (12-month return).
- Hold the portfolio for one month, then repeat the process.



Total cumulative growth from 2010 to 2025 for strategy 5: 421.36%

Strategy 6: Rank-Based Linearly Decreasing Weights

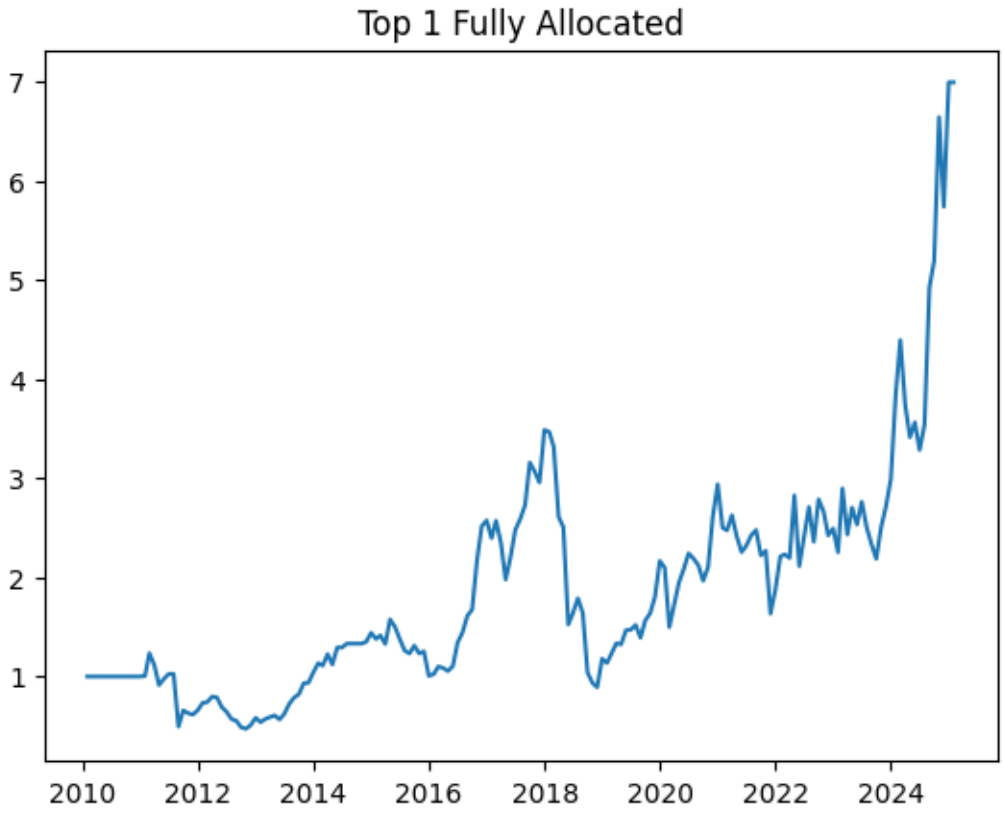
- Each month, calculate the 12-month past return of all S&P 500 stocks.
- Select the top 10 stocks with the highest momentum.
- Rank them from 1 (highest momentum) to 10 (lowest of the top 10).
- Assign weights that decrease linearly with rank.
- The highest-ranked stock gets the most weight, the 10th gets the least.
- Hold the portfolio for one month, then repeat the process.



Total cumulative growth from 2010 to 2025 for strategy 6: 729.32%

Strategy 7: Top 1 Fully Allocated

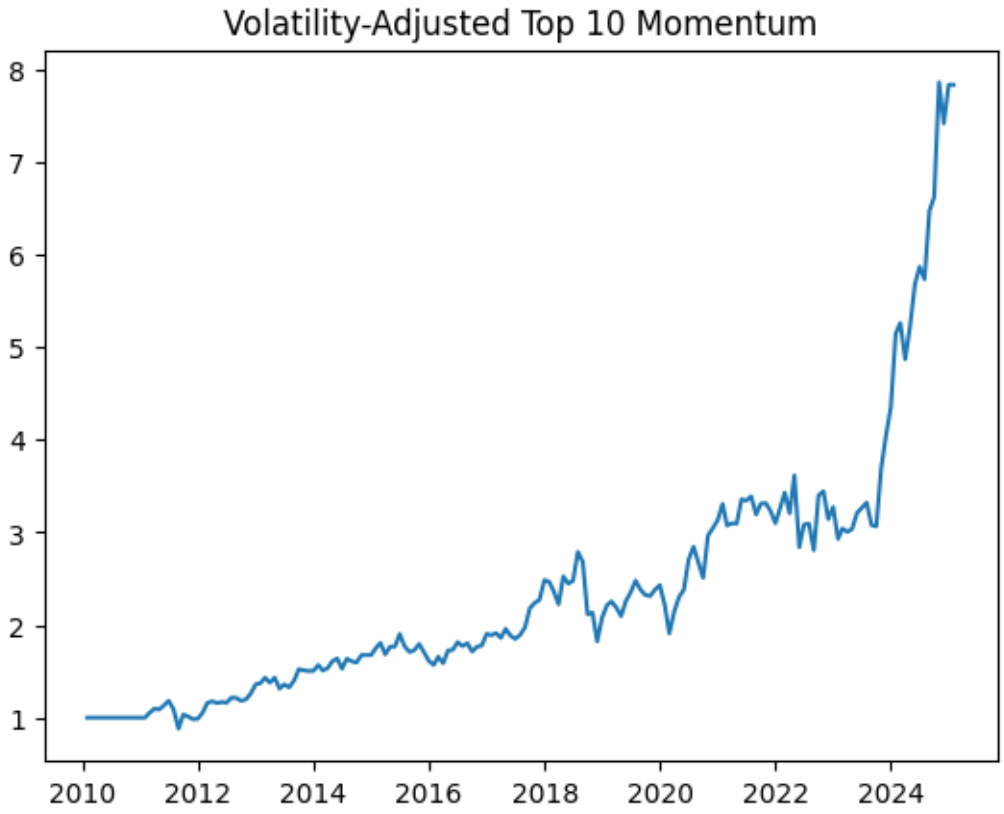
- Each month, calculate the 12-month past return of all S&P 500 stocks.
- Identify the single stock with the highest momentum.
- Allocate 100% of the portfolio to that one stock.
- Hold it for one month, then repeat the process with the newly ranked top stock.



Total cumulative growth from 2010 to 2025 for strategy 7: 599.34%

Strategy 8: Low-Vol Weighted Top-10 Momentum

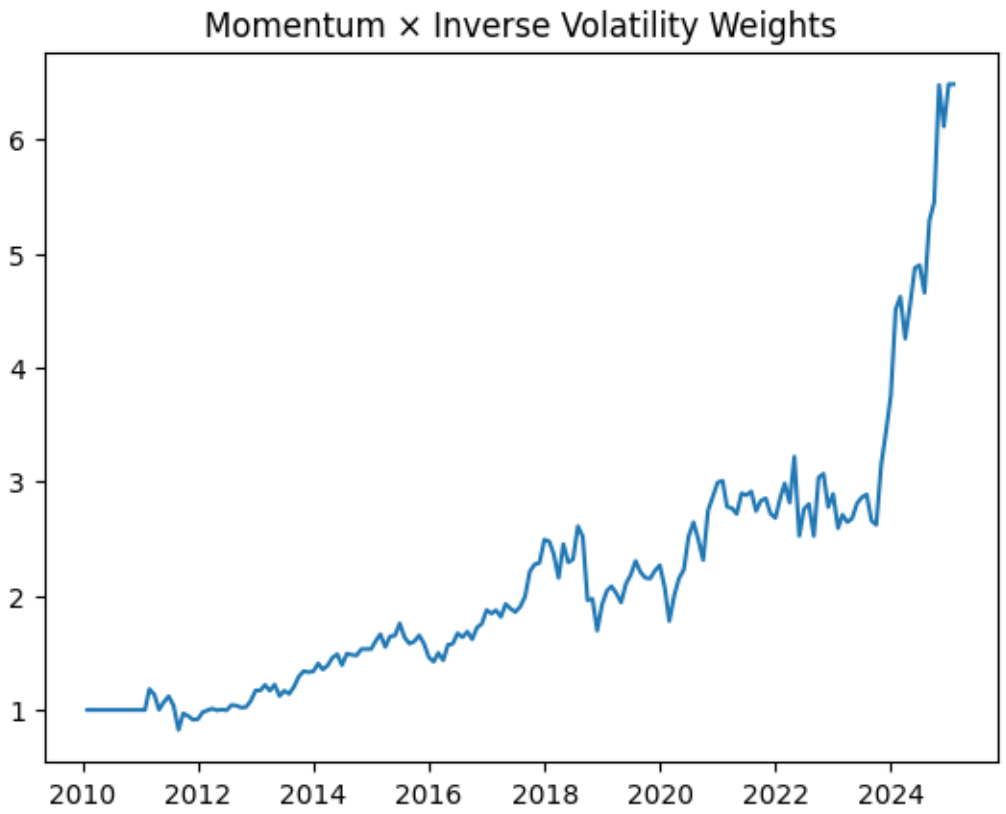
- Each month, calculate the 12-month past return of all S&P 500 stocks.
- Select the top 10 stocks with the highest return.
- Calculate their recent volatility (3 months).
- Assign more weight to less volatile stocks using inverse volatility weighting.
- Hold the portfolio for one month, then repeat the process.



Total cumulative growth from 2010 to 2025 for strategy 8: 683.28%

Strategy 9: Momentum-Proportional Weights for Top 10 Stocks Adjusted by Inverse Volatility

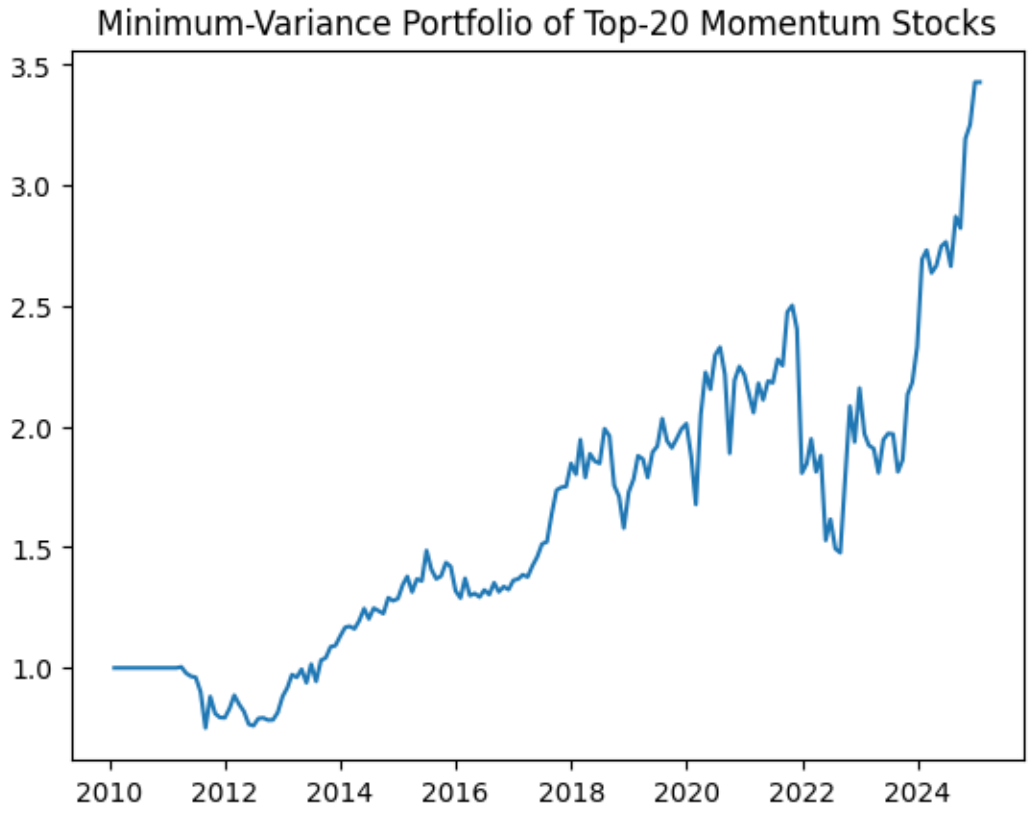
- Each month, calculate the 12-month past return of all S&P 500 stocks.
- Select the top 10 stocks with the highest return.
- For each of those 10 names, compute the standard deviation of its monthly returns over the previous 3 months.
- Divide each stock's 12-month return by its 3-month volatility to get an adjusted score.
- Normalize these adjusted scores so that their sum equals 1—stocks with higher return-per-unit-of-risk receive larger allocations.
- Hold the portfolio for one month, then repeat the process.



Total cumulative growth from 2010 to 2025 for strategy 9: 548.30%

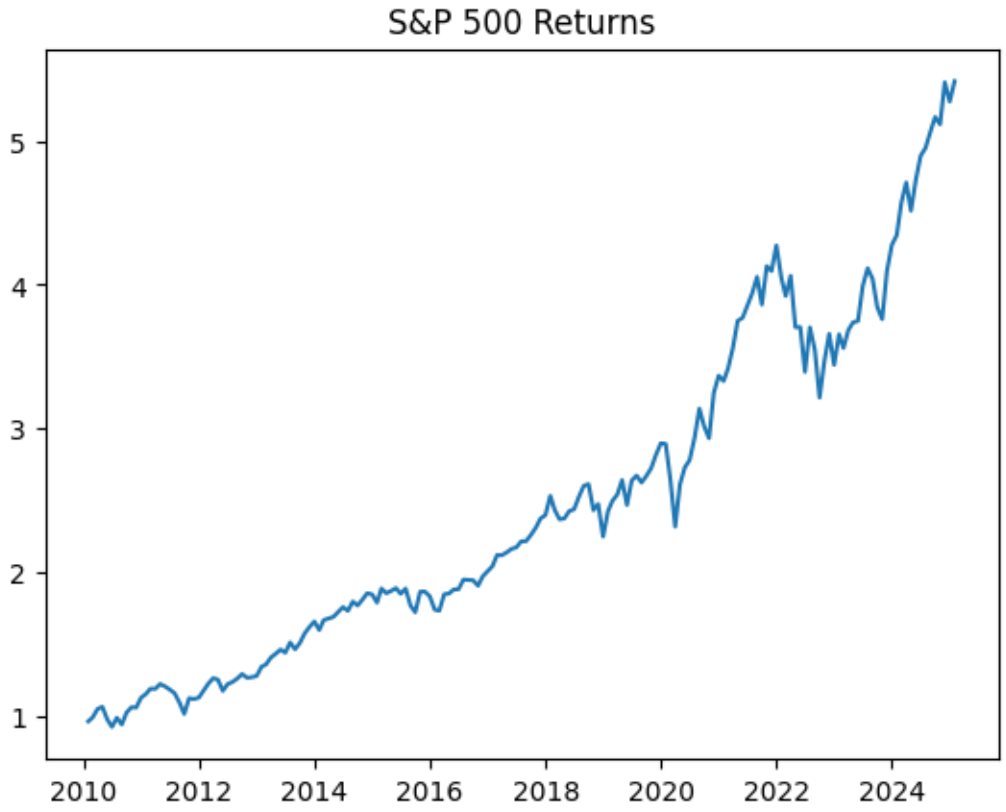
Strategy 10: Minimum Volatility Portfolio from Top 20 Momentum Stocks

- Each month, calculate the 12-month past return of all S&P 500 stocks.
- Select the top 20 stocks with the highest return.
- For these 20 stocks, compute the sample covariance matrix of returns using their most recent 3 months of historical returns (lookback = 3).
- Solve a minimum-variance portfolio optimization problem to find the weights that minimize overall portfolio volatility.
- Assign the optimized weights to the 20 selected stocks.
- Hold the portfolio for one month, then rebalance using the same process.



Total cumulative growth from 2010 to 2025 for strategy 10: 242.80%

Fetching S&P 500 Returns For Comparison



Total cumulative growth from 2010 to 2025 for S&P 500: 441.70%

Statistics

	Annualized Return	Annualized Volatility	Sharpe Ratio	Skewness	Kurtosis	Gaussian VaR (5%)	Cornish–Fisher VaR (5%)	CVaR (5%)	Max Drawdown
S&P 500 returns	0.118529	0.145365	0.808044	-0.366725	3.501279	0.058576	0.062410	0.085520	-0.247695
Picking Top 20 Stocks With Equal Weights	0.126120	0.189003	0.661603	-0.152454	4.727234	0.078068	0.078505	0.111914	-0.285585
Long-Short Momentum Strategy For Top 20 and Bottom 20 Stocks With Equal Weights	-0.000759	0.249298	-0.006907	-0.564304	5.961389	0.115430	0.122224	0.175286	-0.649414
Picking Top 10 Stocks With Equal Weights	0.150742	0.224041	0.667942	-0.341368	4.523540	0.092218	0.096352	0.134447	-0.311238
Long-Short Momentum Strategy For Top 10 and Bottom 10 Stocks With Equal Weights	-0.023418	0.318066	-0.076582	-0.760499	5.658185	0.148093	0.161981	0.230204	-0.753196
Momentum-Proportional Weights	0.115694	0.240350	0.476923	-0.350098	4.248174	0.102218	0.107201	0.151721	-0.378213
Rank-Based Linearly Decreasing Weights	0.150561	0.238777	0.625959	-0.316735	4.269440	0.098923	0.103221	0.142703	-0.313262
Top 1 Fully Allocated	0.137631	0.443791	0.307673	-0.390475	5.189713	0.190675	0.198844	0.284267	-0.744246
Low-Vol Weighted Top-10 Momentum	0.146213	0.233488	0.621557	-0.049719	4.717688	0.096868	0.095485	0.135770	-0.346608
Momentum-Proportional Weights for Top 10 Stocks Adjusted by Inverse Volatility	0.131929	0.244835	0.534454	-0.032915	4.511374	0.103071	0.101580	0.142929	-0.350505
Minimum Volatility Portfolio from Top-20 Momentum Stocks	0.085107	0.215988	0.389255	-0.014406	5.781683	0.093506	0.090270	0.128408	-0.409481