SAME RETURNS, LOWER RISK

How a High-Dividend Strategy Matched the S&P 500 with 41% Less Volatility

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THE INVESTMENT CHALLENGE

- **The Problem:**

  Can we achieve market-level returns while experiencing less volatility?

- **The Approach:**

  Backtesting a high-dividend, low-volatility strategy

- **Backtesting Explained:**

  Applying a strategy to historical data to see how it would have performed

- **The Goal:**

  Find the optimal parameters that maximize risk-adjusted returns

STRATEGY OVERVIEW

- **What:**

  A systematic approach to select high-dividend, low-volatility stocks

- **Why High Dividends:**

  Companies with stable cash flows that can better withstand market swings
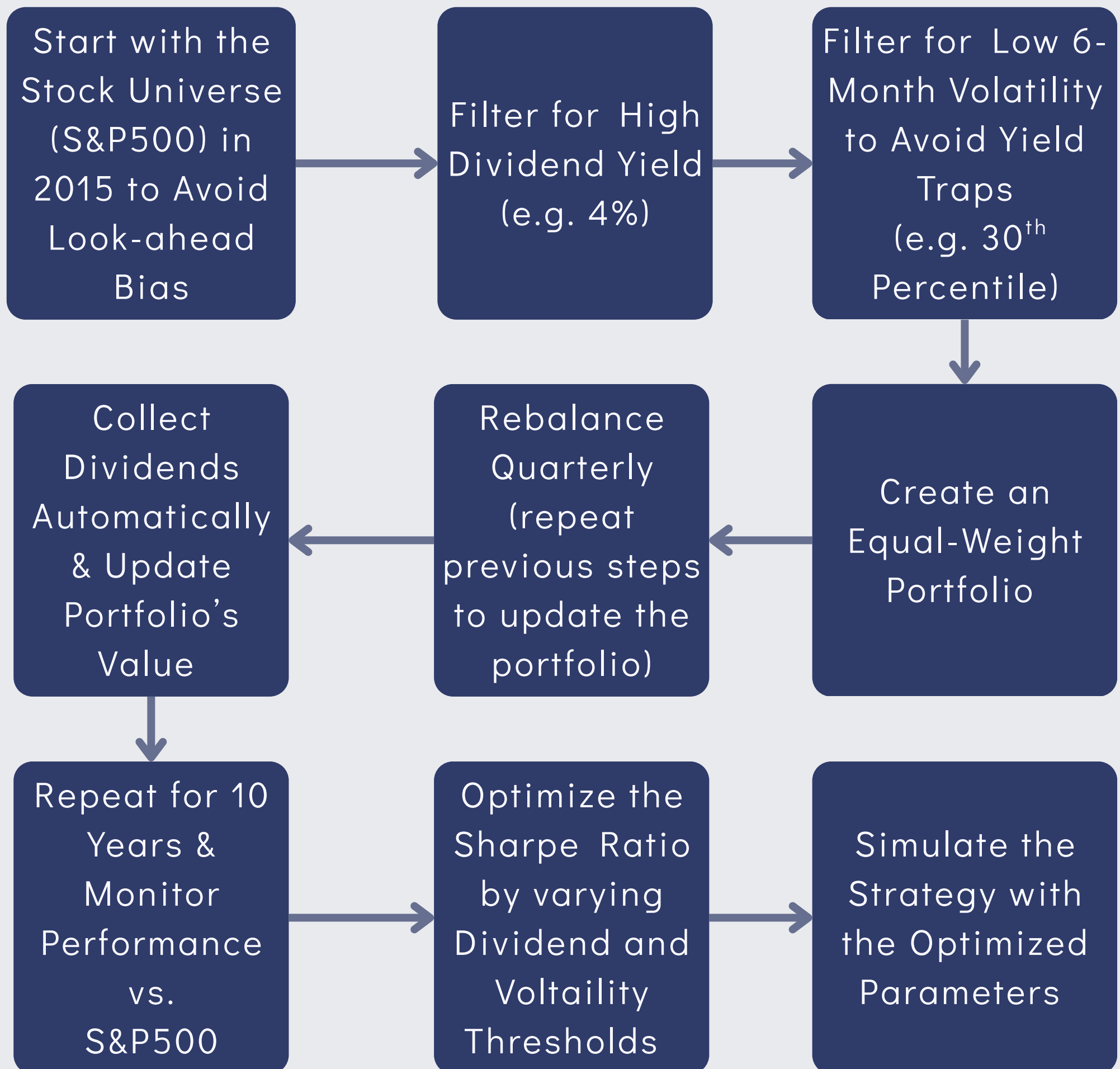
- **Why Low Volatility:**

  To avoid "dividend traps" – stocks with high yields due to falling prices

- **Investment Universe & Benchmark:**

  S&P 500 index (representing the broader US stock market)

THE STRATEGY FRAMEWORK

Start with the Stock Universe (S&P500) in 2015 to Avoid Look-ahead Bias → Filter for High Dividend Yield (e.g. 4%) → Filter for Low 6-Month Volatility to Avoid Yield Traps (e.g. 30th Percentile)

Collect Dividends Automatically & Update Portfolio's Value ← Rebalance Quarterly (repeat previous steps to update the portfolio) ← Create an Equal-Weight Portfolio

Repeat for 10 Years & Monitor Performance vs. S&P500 → Optimize the Sharpe Ratio by varying Dividend and Voltaility Thresholds → Simulate the Strategy with the Optimized Parameters

QUARTER EXAMPLE (2016Q3)

1 Liquidate the portfolio on 2016-09-30, so the Total Cash = Dividends in Last Quarter + Cash

2 Calculate Dividend Yields for all Stocks in the S&P500 by Dividing Trailing 12-Month Dividends by Date's Price, then Filter for a Yield Threshold (e.g. >=4%). Result: 43 Stocks

3 Calculate Trailing 6 Month Volatility for the 43 Stocks, then Filter for a Volatility Threshold (e.g. bottom 30%). Result: 13 Stocks

4 Buy the 13 Stocks using the Total Cash, each stock would be allocated 1/13 of the Total Cash
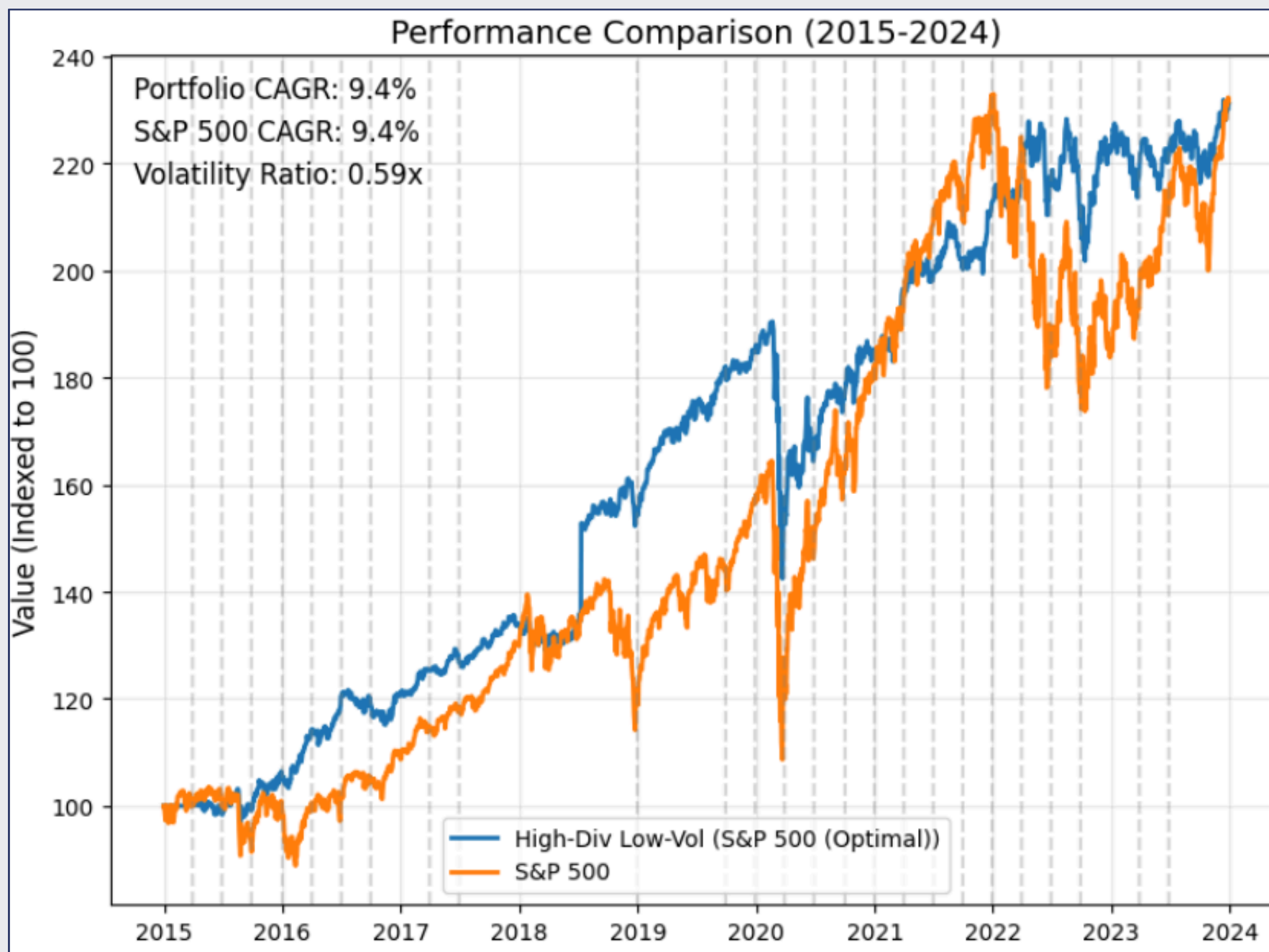
5 Repeat the steps 1-4 on 2016-12-31 (Next Quarter)

FINDING THE OPTIMAL PARAMETERS

Yield/Volatilty Thresholds	10%	20%	30%	40%	50%
2%	0.67	0.7	0.73	0.72	0.73
3%	0.61	0.65	0.71	0.72	0.74
4%	0.66	0.70	0.77	0.75	0.75
5%	0.63	0.72	0.76	0.73	0.72
6%	0.36	0.41	0.6	0.62	0.66

Best Sharpe ratio (0.77) achieved with 4% yield threshold and 30% volatility percentile

Sharpe Ratio measures risk-adjusted returns, i.e., excess return (above the risk-free rate) per unit of volatility

Backtest Results (2015-2024)

Performance Comparison (2015-2024)

Portfolio CAGR: 9.4%
S&P 500 CAGR: 9.4%
Volatility Ratio: 0.59x

Value (Indexed to 100)

High-Div Low-Vol (S&P 500 (Optimal))
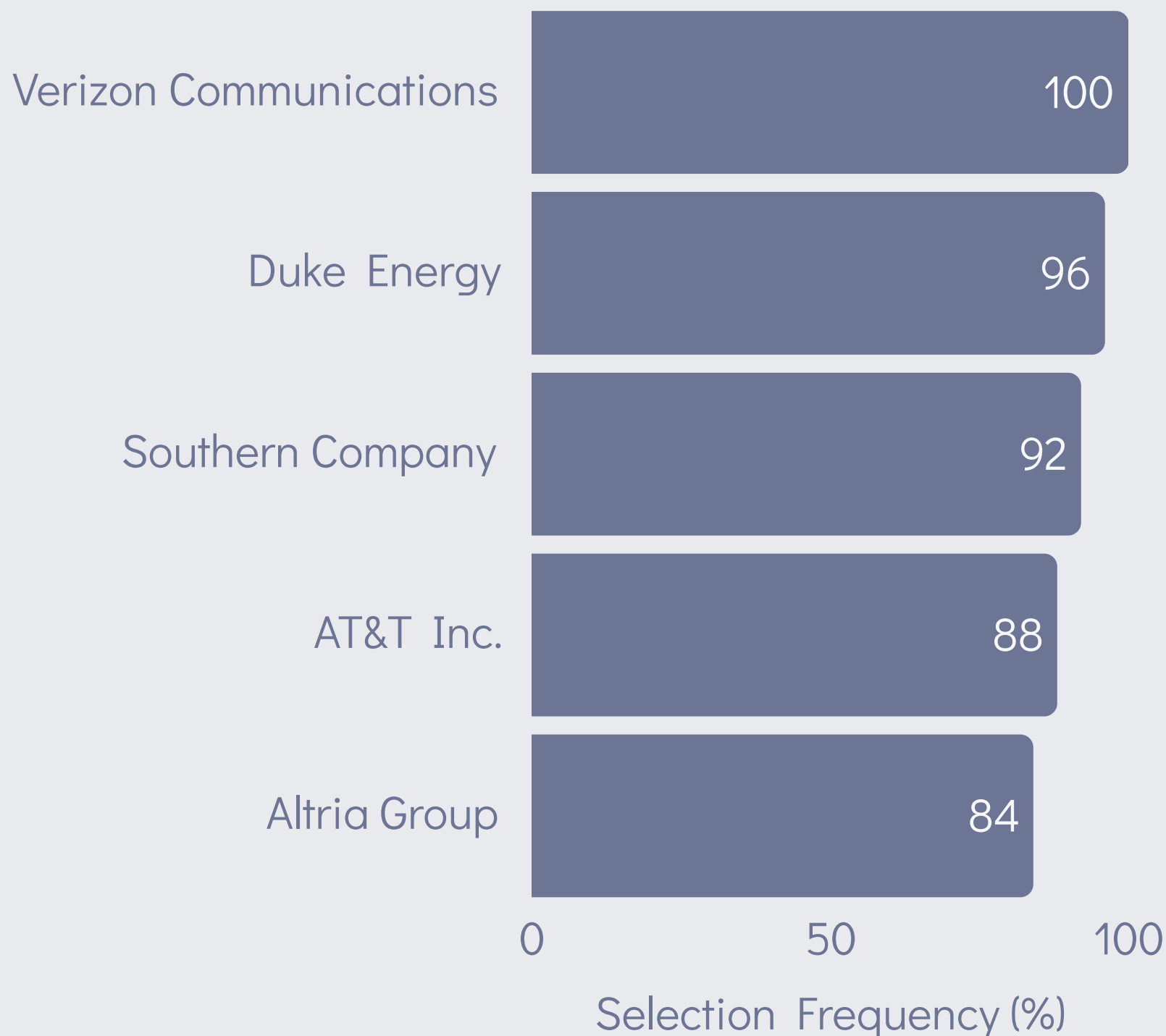S&P 500

■ Strategy: +131.17%   ■ S&P500: +131.67%

The strategy matched S&P500 returns while experiencing significantly less volatility

PERFORMANCE METRICS

Metric	Optimal Portfolio	S&P500
Total Return	131.17%	131.67%
Annualized Return	9.4%	9.4%
Volatility	9.5%	18.0%
Maximum Drawdown (Both at COVID)	-25.2%	-34.0%

Nearly identical returns with substantially lower risk

MOST SELECTED STOCKS

Stock	Selection Frequency (%)
Verizon Communications	100
Duke Energy	96
Southern Company	92
AT&T Inc.	88
Altria Group	84

Selection Frequency (%)

Out of 102 unique stocks selected over the decade

KEY INSIGHTS & LIMITATIONS

- Matched market returns with significantly reduced volatility

- Volatility thresholds were introduced to avoid dividend traps, since a sharp price movement will dramatically affect a stock's dividend yield

- Used S&P500 2015 constituents to avoid look-ahead bias

- Simplified approach requiring only quarterly attention

- Sector concentration thresholds weren't introduced

- Transaction costs were neglected (Rebalancing each quarter might affect the performance)

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