AAPL 2024 Buy & Hold Strategy

****Initial Capital:** $10,000 → **Final Equity:** $13,887.79 → **Gain:** +$3,887.79 (+38.88%)**

Backtest Report for MyStrategy

1. Summary

- **Initial Capital**: $10,000.00
- **Final Equity**: $13,887.79
- **Total Return**: 38.88%
- **Annualized Return**: 39.06%
- **Duration**: 363 days
- **Max Drawdown**: -15.26%
- **Sharpe Ratio**: 1.25
- **Win Rate**: Not applicable (no trades executed)

2. Strategy

- **Name of Strategy**: MyStrategy
- **Strategy Type**: Buy and Hold
- **Description**: The strategy involves purchasing AAPL stock and holding it throughout the backtest period without executing any additional trades. The goal is to evaluate the performance of a long-term investment approach in a specific timeframe.
- **Market / Asset Traded**: AAPL (Apple Inc.), relevant timeframe being the year 2024.
- **Exposure Time**: 0.0%

3. Results

Backtesting Period

- **Start Date**: January 2, 2024
- **End Date**: December 30, 2024

Performance Metrics

Metric	Value
Final Equity	$13,887.79
Value at Peak	$14,261.56
Return Percentage	38.88%
Buy & Hold Return	36.52%
Annualized Volatility	31.29%
Compound Annual Growth Rate (CAGR)	25.61%
Sharpe Ratio	1.25
Sortino Ratio	2.76
Calmar Ratio	2.56
Alpha	2.74%
Beta	0.99

Drawdown Analysis

Metric	Value
Max Drawdown	-15.26%
Average Drawdown	-3.40%
Max Drawdown Duration	134 days
Average Drawdown Duration	22 days

Trades Summary

Metric	Value
Number of Trades	0
Win Rate	N/A
Best Trade	N/A
Worst Trade	N/A
Profit Factor	N/A
Expectancy	N/A
System Quality Number (SQN)	N/A
Kelly Criterion	N/A

Equity Curve

The equity curve is available, illustrating the growth of the investment over the backtesting period.

4. Insights

Analysis of Performance

- The strategy generated a robust total return of 38.88% over the year, outperforming the buy and hold return of 36.52% on AAPL. This indicates the effectiveness of the buy and hold strategy in capturing the upward trend in AAPL's prices during 2024.
- The annualized return of 39.06% suggests that market conditions were favorable for AAPL, contributing to positive returns.

Key Takeaways

- Holding AAPL stock for the entire duration yielded significant profits, implying that long-term investing in strong companies can be beneficial.
- A solid Sharpe Ratio of 1.25 indicates that the return obtained was reasonable in relation to the risk taken.

Areas for Improvement

- The strategy can be expanded by incorporating a set of rules to capture profit-taking opportunities and manage risks more effectively, with an aim to improve upon the existing max drawdown of -15.26%.
- Evaluating the addition of stop-loss and take-profit parameters can provide insights into how these factors could improve the strategy's performance.

5. Code

Description

The backtesting code utilized for this simulation employs a simple buy-and-hold strategy for AAPL stock.

Implementation

```python
from backtesting import Backtest, Strategy

# Fetch data for backtesting
data = get_ohlcv_data('AAPL', '2024-01-01', '2024-12-31')

# Define the strategy
class MyStrategy(Strategy):
    def init(self):
        pass

    def next(self):
        if not self.position:
            self.buy()

# Execute the backtest
bt = Backtest(data, MyStrategy, cash=10000)
stats = bt.run()
print(stats)

# Reporting ...
```

Reporting Artifacts

- **Trades Table**: No trades were executed during this period.
- **CSV Exports**: The structure for potential trades and equity output is as follows:
    - **TRADES_CSV** format includes: `Size, EntryBar, ExitBar, EntryPrice, ExitPrice, SL, TP, PnL, Commission, ReturnPct, EntryTime, ExitTime, Duration, Tag`
    - **EQUITY_CSV** structure contains: `Equity, DrawdownPct, DrawdownDuration`
- **Summary JSON** reflects key performance metrics.

```json
{"end": "2024-12-30 00:00:00", "initial": 10000.0, "equity_final": 13887.789035152855, "portfolio_final"
```

This report comprehensively analyzes the backtest results of the MyStrategy for AAPL, providing clear insights into performance and areas for strategic enhancement.