Not Over Thinking

Turn of the Month in Equity Indexes

Algorithmic Trading Strategy with Full Code

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STRATEGY & ECONOMIC RATIONALE

Buy SPY ETF 1 day (some papers say 4 days) before the end of the month and sell the 3rd trading day of the new month at the close.

BUY	SELL
(see above)	(see above)

PARAMETER & VARIABLES

PARAMETER	VALUE
MARKETS TRADED	Equity
FINANCIAL INSTRUMENTS	CFDs, ETFs, funds, futures, options
REGION	United States
PERIOD OF REBALANCING	Daily
NO. OF TRADED INSTRUMENTS	1
WEIGHTING	Equal weighting
LOOKBACK PERIODS	N/A
LONG/SHORT	Long only

ALGORITHM

```python
from AlgorithmImports import *

class TurnoftheMonthinEquityIndexes(QCAlgorithm):

    def Initialize(self):
        self.SetStartDate(1998, 1, 1)
        self.SetCash(100000)

        self.symbol = self.AddEquity("SPY", Resolution.Daily).Symbol

        self.sell_flag = False
        self.days = 0

        self.Schedule.On(self.DateRules.MonthStart(self.symbol),
self.TimeRules.AfterMarketOpen(self.symbol), self.Rebalance)
        self.Schedule.On(self.DateRules.MonthEnd(self.symbol),
self.TimeRules.AfterMarketOpen(self.symbol), self.Purchase)

    def Purchase(self):
        self.SetHoldings(self.symbol, 1)

    def Rebalance(self):
        self.sell_flag = True

    def OnData(self, data):
        if self.sell_flag:
            self.days += 1
```

```python
if self.days == 3:
    self.Liquidate(self.symbol)
    self.sell_flag = False
    self.days = 0
```
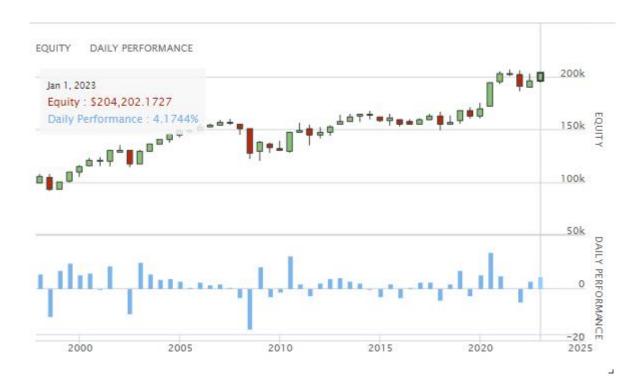
BACKTESTING PERFORMANCE

Fig 1. Overall Performance

PSR	0.002%	Sharpe Ratio	0.311
Total Trades	604	Average Win	1.76%
Average Loss	-1.72%	Compounding Annual Return	2.871%
Drawdown	24.600%	Expectancy	0.152
Net Profit	104.202%	Loss Rate	43%
Win Rate	57%	Profit-Loss Ratio	1.02
Alpha	0.009	Beta	0.202
Annual Standard Deviation	0.072	Annual Variance	0.005
Information Ratio	-0.299	Tracking Error	0.144
Treynor Ratio	0.111	Total Fees	$3694.73
Estimated Strategy Capacity	$870000000.00	Lowest Capacity Asset	SPY R735QTJ8XC9X

Fig 2. Performance Metrics

Fig 3. Drawdown