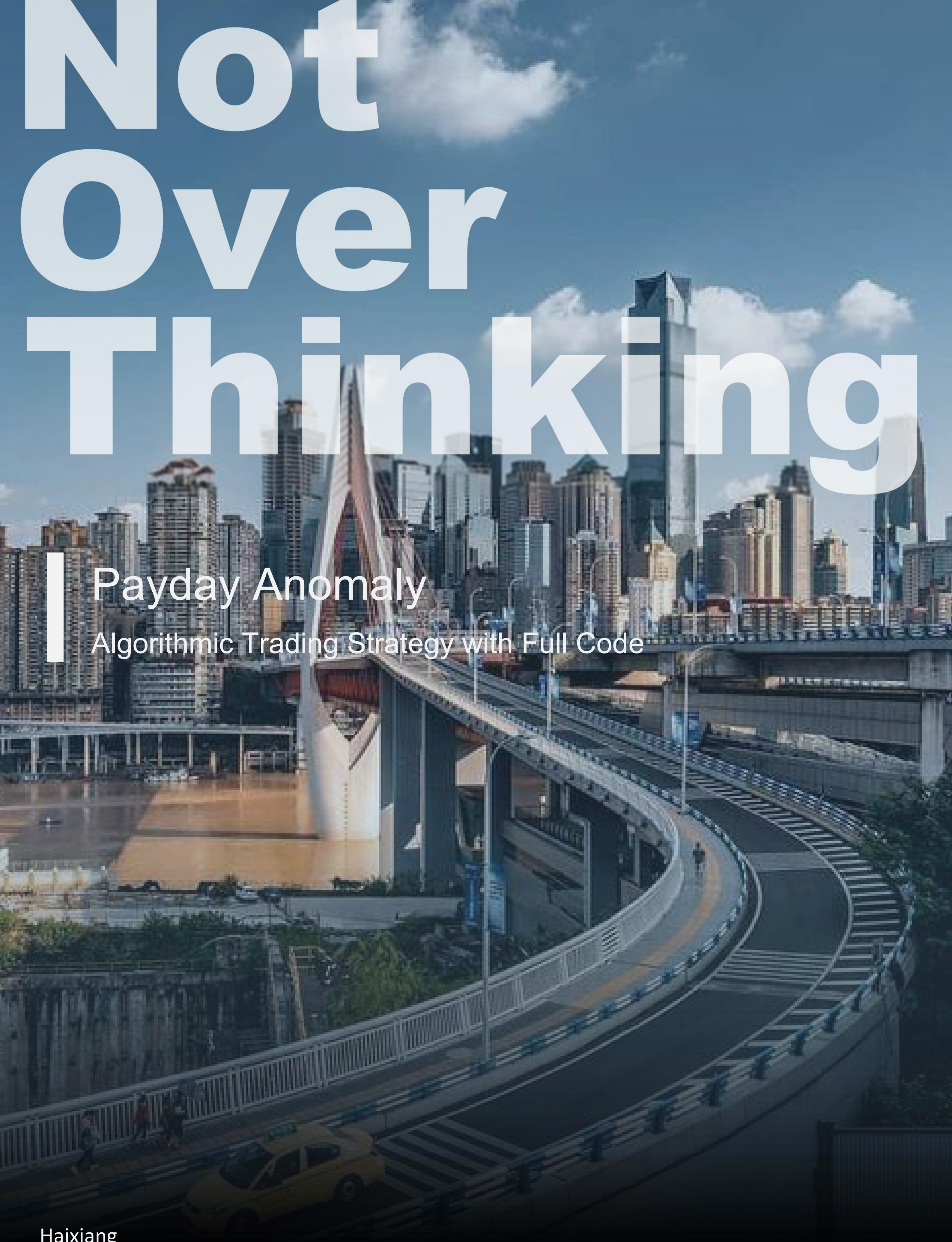

Not Over Thinking

Payday Anomaly

Algorithmic Trading Strategy with Full Code

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STRATEGY & ECONOMIC RATIONALE

The investment universe consists of the S&P500 index. Simply, buy and hold the index during the 16th day in the month during each month of the year.

BUY	SELL
buy and hold the index during the 16th day in the month during each month of the year	The opposite

PARAMETER & VARIABLES

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

ALGORITHM

```
from dateutil.relativedelta import relativedelta
from AlgorithmImports import *

class PayDayAnomaly(QCAlgorithm):

    def Initialize(self):
        self.SetStartDate(2000, 1, 1)
        self.SetCash(100000)

        self.symbol = self.AddEquity('SPY', Resolution.Minute).Symbol
        self.liquidate_next_day = False

        self.Schedule.On(self.DateRules.EveryDay(self.symbol), self.TimeRules.BeforeMarketClose
(self.symbol, 1), self.Purchase)

    def Purchase(self):
        alg_time = self.Time
        paydate = self.PaydayDate(alg_time)

        if alg_time.date() == paydate:
            self.SetHoldings(self.symbol, 1)
            self.liquidate_next_day = True
            # self.algorithm.EmitInsights(Insight.Price(self.symbol, timedelta(days=1), Insight
Direction.Up, None, None, None, self.weight))

        if self.liquidate_next_day:
            self.liquidate_next_day = False
            return
```

```
        if self.Portfolio[self.symbol].IsLong:
            self.Liquidate(self.symbol)

    def PaydayDate(self, date_time):
        payday = date(date_time.year, date_time.month, 1) + relativedelta(day=15)

        if payday.weekday() == 5: # Is saturday.
            payday = payday - timedelta(days=1)
        elif payday.weekday() == 6: # Is sunday.
            payday = payday - timedelta(days=2)

        return payday
```

BACKTESTING PERFORMANCE

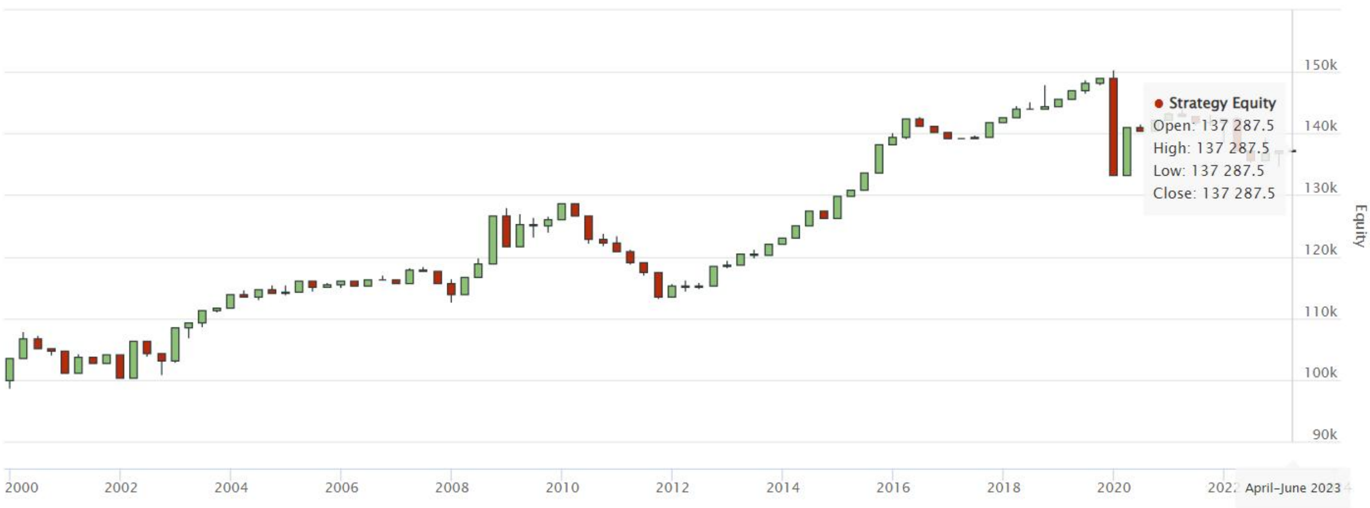

Fig 1. Overall Performance

Total Trades	536	Average Win	0.88%
Average Loss	-0.84%	Compounding Annual Return	1.371%
Drawdown	12.100%	Expectancy	0.151
Net Profit	37.288%	Sharpe Ratio	0.266
Probabilistic Sharpe Ratio	0.004%	Loss Rate	44%
Win Rate	56%	Profit-Loss Ratio	1.04
Alpha	0.007	Beta	0.056
Annual Standard Deviation	0.038	Annual Variance	0.001
Information Ratio	-0.303	Tracking Error	0.157
Treynor Ratio	0.181	Total Fees	$2708.78
Estimated Strategy Capacity	$400000000.00	Lowest Capacity Asset	SPY R735QTJ8XC9X
Portfolio Turnover	6.29%		

Fig 2. Performance Metrics