Trading Strategy: Overnight Return Anomaly

Group 4 Cohort 2: Panos K, Tanya S, Sveinn H, Harshin P

Overnight vs. Intraday Return Anomalies

- **Empirical Evidence:** Stocks often show **positive overnight returns** followed by **negative intraday reversals.**

- **Key Studies (*Berkman et al., Lou et al.*):** Retail investor attention and market frictions help explain these pricing inefficiencies.

- **Practical Relevance:** Recognizing these patterns reveals **hidden transaction costs** and **potential mispricings** at market open.

- **Investment Implications:** Buying later in the day or selling at the open can reduce costs and capture the overnight premium.

- **Persistence:** The anomaly persists over extended periods, suggesting a **robust opportunity** for strategic exploitation.

Berkman et al.: Hidden Costs & Overpricing at Open

- **Positive overnight returns:** Empirical evidence shows ~+10 bps / day on average.

- **Intraday Reversal:** Amounts to ~-7 bps and partially offsets overnight gains.

- **Opening price inflation**: Stronger in stocks with **high retail attention** or **difficult-to-value fundamentals**.

- **Low Institutional Ownership:** Reduced pressure amplifies overpricing at the open.

- **Practical Impact:** Creates implicit, but substantial, **hidden transaction costs** for traders who buying at the open.

Lou et al.: Investor Clienteles & Return Persistence

- **Return Decomposition**: Close-to-close returns may be split into **overnight** and **intraday** components, each with persistent patterns.

- **Continuation vs. Reversal:** Stocks with high **overnight returns** tend to sustain that performance, while **intraday returns** typically reverse.

- **Divergent Trading Behaviours:** Retail investors dominate the open, while institutional traders primarily act intraday.

- **Predictive power:** The overnight - intraday spread can forecast future performance and informs **momentum** and **reversal** strategies.

- **Robustness across markets and regimes:** These patterns persist over multiple years and in various international equity markets.

Strategy Overview: Stock Selection

STOCK UNIVERSE

- Emphasize Stocks with higher likelihood of overnight information flow

- These stocks are characterized by significant international exposure and regular after-hours news flow

- Liquid Securities to minimize execution costs

SELECTION CRITERIA

LOOKBACK PERIOD

SELECTION METRIC

REBALANCING FREQUENCY

UCLA Anderson
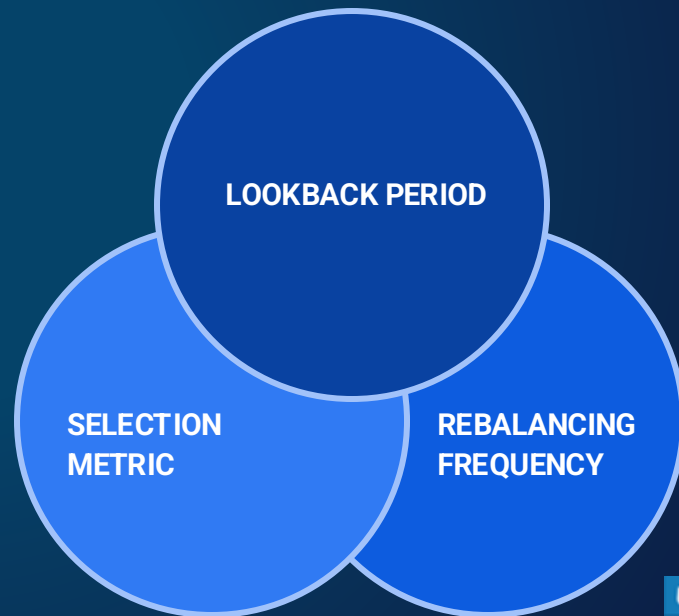
Strategy Overview: Assumptions

1 EXECUTION PRECISION

The strategy assumes execution exactly at market close and open, though in practice there would be some slippage

2 TRANSACTION COSTS

The backtest incorporates estimated transaction costs to provide realistic performance metrics

3 PERSISTENCE OF ANOMALY

The strategy assumes that the overnight return premium will persist despite being documented in academic literature

4 PRICE DATA ACCURACY

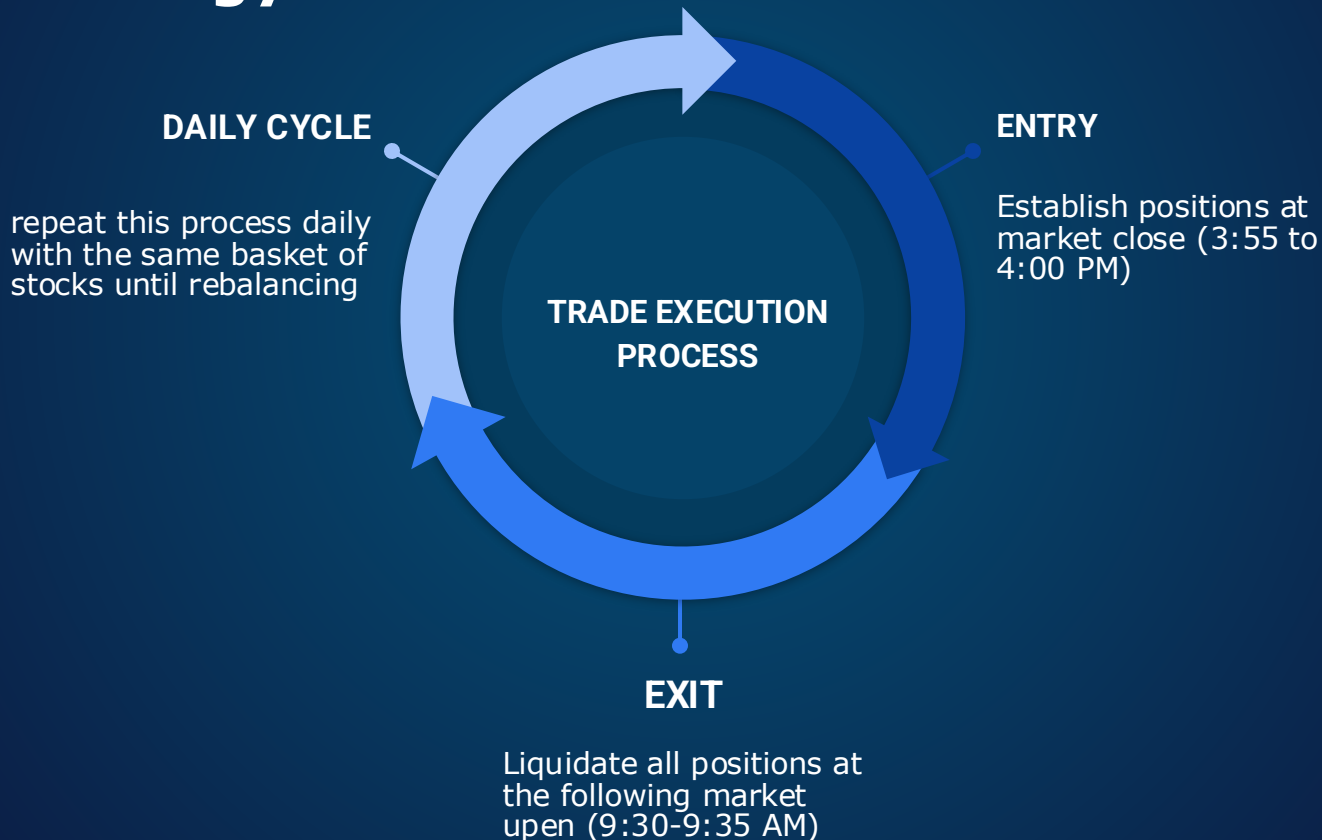The model assumes reliable open and close prices, which can sometimes be subject to reporting errors

UCLA Anderson

Strategy Overview: Portfolio Construction

STOCK ALLOCATION

Select top 5 stocks with the highest average overnight returns during a 20-day lookback period

1

WEIGHT ALLOCATION

Equal-weight allocation (20% per position) to manage stock-specific risk

2

MATHEMATICAL FORMULA FOR RETURNS

3

$$\text{Overnight Return}_t = \frac{\text{Open}_t}{\text{Close}_{t-1}} - 1$$

$$\text{Intraday Return}_t = \frac{\text{Close}_t}{\text{Open}_t} - 1$$

UCLA Anderson

Strategy Overview: Execution Framework

DAILY CYCLE

repeat this process daily with the same basket of stocks until rebalancing

ENTRY

Establish positions at market close (3:55 to 4:00 PM)

TRADE EXECUTION PROCESS

EXIT

Liquidate all positions at the following market upen (9:30-9:35 AM)

UCLA Anderson

Performance

Cumulative Returns v Benchmark

Reporting Statistics: Annual Return, Annual Volatility, Sharpe Ratio, Max Drawdown

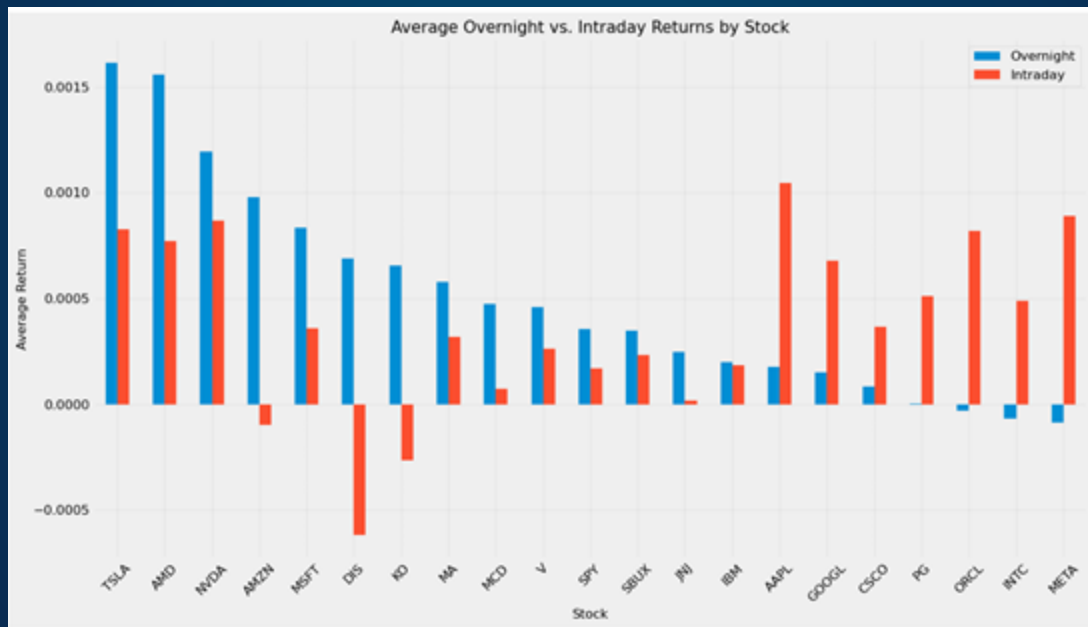|	Strategy	Benchmark
Annual Return	0.204213	0.132968
Annual Volatility	0.177417	0.203886
Sharpe Ratio	1.150586	0.651776
Max Drawdown	-1.301272	-2.097748
Beta	0.492874	
Alpha (annualized)	0.138676	
Performance Alpha (ann.)	0.138584	

Rolling Volatility
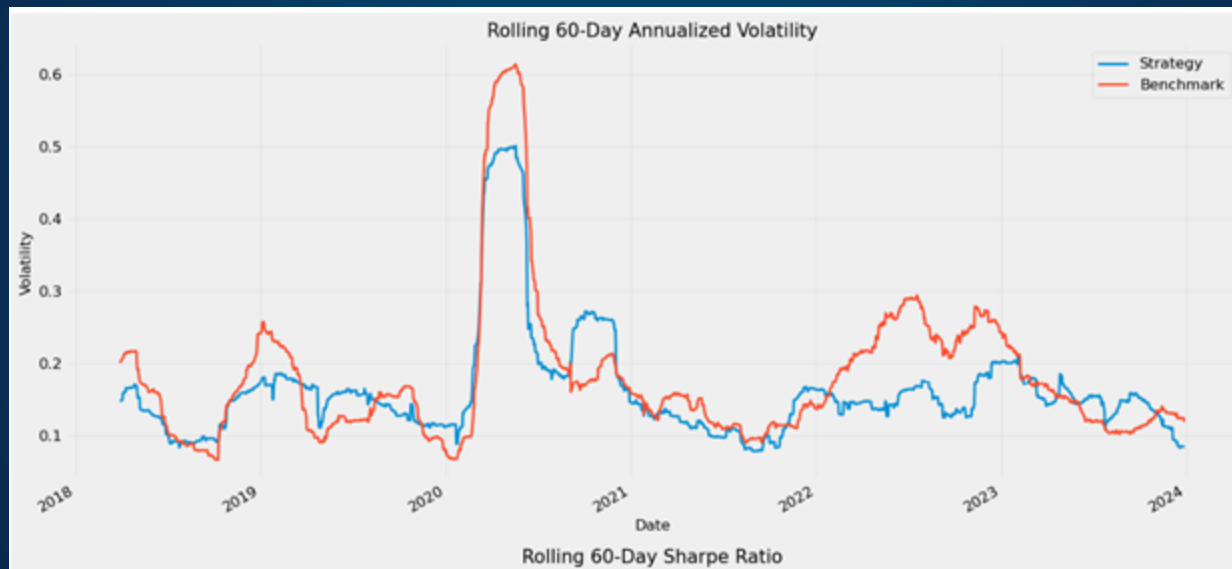
Rolling Sharpe Ratio
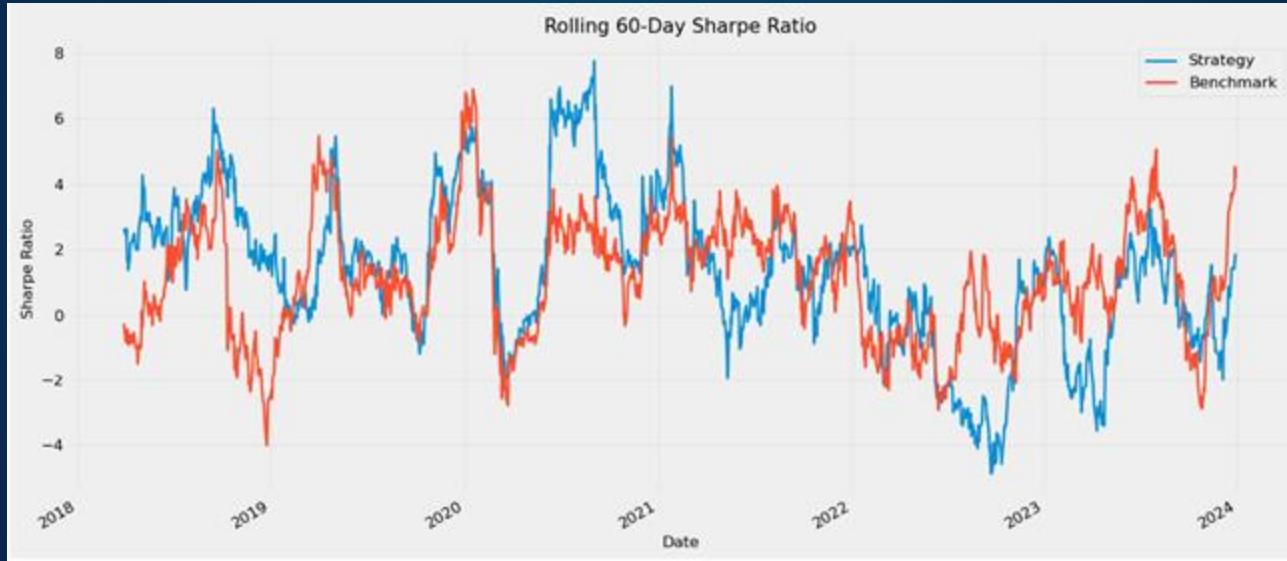
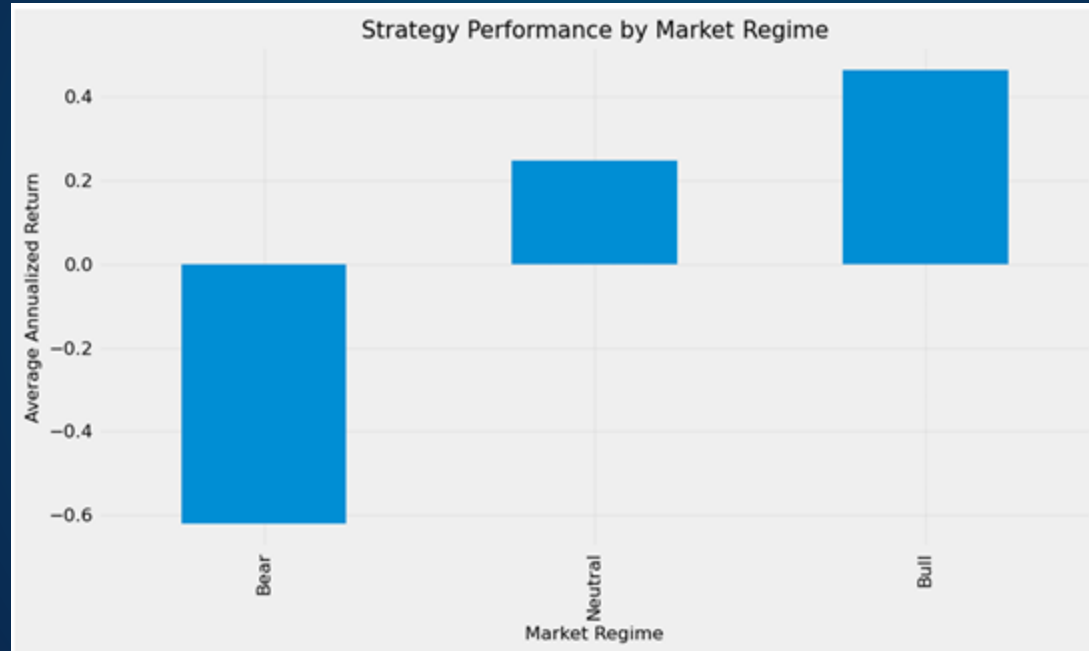# Additional: Average Overnight vs. Intraday Returns by Stock

Additional: Strategy Performance by Day of Week

Additional: Strategy Performance by Market Regime

Additional QuantConnect Analysis: Weekly Trade Execution

Weekly Strategy Statistics

	QuantConnect Stats
Compounding Annual Return	24.485%
Annual Variance	0.052
Alpha	0.072
Beta	1.135
Total Fees	$15295.85

Potential Risks/Limitations and Extensions

Potential Risks/Limitations cont.

Execution Risk

Macroeconomic Event Risk

Scalability Concerns

Market Structure Changes

Data Quality & Survivorship Bias

Extensions

Stock Selection with AI

Sector-Specific Focus

Options to Hedge Risk

Global Market Expansion

Adaptive Holding Periods

UCLA Anderson

Thank you

Group 4 Cohort 2: Panos K, Tanya S, Sveinn H, Harshin P

UCLA Anderson