Gap Continuation

Effect Study: Momentum on Gold

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Introduction

Momentum is a strategy that aims to capitalize on the continuation of existing trends in the market. However the strategy is rooted on beahvioural biases that cause the retail traders to overreact or underreact to news.

Retail traders are more susceptible to emotional decision-making. The volatility and frequent trading in momentum strategies can lead to impulsive decisions, such as panic selling during drawdowns or chasing returns after a significant price rise, resulting in suboptimal performance.

This study seeks to bring clarity to this phenomenon. It examines if the market effect exists in the Gold market, measures wether there are positive returns associated to the effect. Finally, it assesses if traders can build a profitable strategy around this effect.

Methodology

Dataset

- **Market**: Gold.
- **Contract Type**: Contract For Difference.

- **Time Period**: The dataset spans from January 2005 to December 2023.
- **Timeframe**: The analysis will be done on daily timeframe prices.

- **Data Source**: The data was gathered through the Capital.com API, one of Europe's CFD trading platforms.

Identifying the Effect

Quantitative Criteria:
1. There's an impulse candle to the upside or a candle that's larger the previous candles, that marks the first day. 2. Once that impulse candle appears, we wait for the next day's close that marks the second day. 3. Then we wait for the the third day to reach the previous day's low for the entry. 4. The opposite is considered when searching for the pattern on downtrend.

Analytical Approach

The study employed a three-pronged approach to investigate the potential impact of the Gap Continuation Pattern on the Gold returns:
1. **Event Study**: An event study framework as used to isolate the effect. Days meeting the Gap Continuation criteria were designated "event days". Return distributions were compared to the benchmark distributions which are the "population days" (both event days and non event days). this approach directly addresses wehter the Gap Continuation leads to a distinct shift in return patterns compared to the normal conditions.

2. **Distribution Comparison**: Density plots were used to visualize the return distributions of Gap Continuation event days and population days. Visual comparison provide a clear picture of potential differences in shape, central tendency and dispersion of returns.

3. **Holding Period**: Cumulative returns were calculated for 5 day holding period following the Gap Continuation event days. This analysis reveals wether any abnormal returns associated with the Gap Continuation revert over time, providing insights into potential trading strategies based on the phenomena.

Study Limitations

- **Effect Stability Accross Assets**: Secondary analysis will include other precious metals such as Silver, Platinum, Palladium, Iron ORE, Aluminum, Lead and commodities such Orange Juice, Corn, Cotton, Crude

Oil, Natural Gas, Brent Oil, Cocoa, Cofee, Sugar, Wheat, Soybean, Oats, Lumber.

- **Effect Stability Accross Time Sub-Periods**: These include yearly, quarterly and monthly sub-periods to check wether the effect is present on average.
- **Backtesting**: Backtesting on historical data will validade the strategy's potetnial performance under varying market conditions and provide key metrics such as drawdowns, profit factor, sharpe ratio and returns versus buying and holding.
- **Monte Carlo Simulations**: Monte Carlo simulation will introduce randomness into randomness to assess the range of possible outcomes and quantify the risks associated with the strategy.
- **Out of Sample Testing**: Testing on unseen data is crucial to prevent overfitting and to gauge the model's generalization capabilities.
- **Parameter Sensitivity Testing**: Sensitivity testing will explore how changes in the model parameters impact the returns, ensuring robustness and identifying key areas for optimization.

Analysis Results

The data shows that the Gap Continuation Pattern occurs frequently in Gold markets. The yearly number of occurences peaks three times in the years 2010, 2017 and 2023 with 40+ occurencies in each. In 2005 had the fewest events with 27 occurences that year and in 2010 had the highest number of events with 46 occurences.

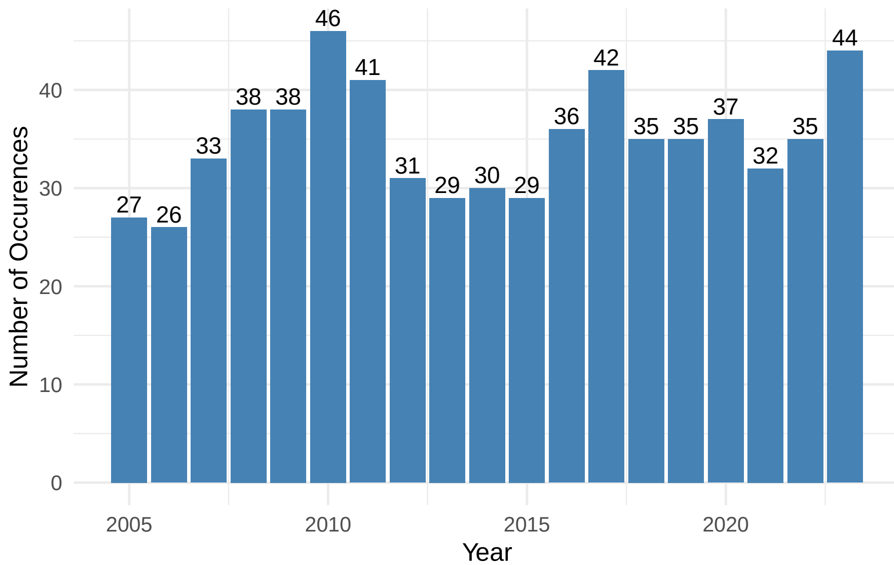

Figure 1: Number Of Occurences Per Year

On average across the dataset, the graph shows that number of occurences per month are around 2 to 3.

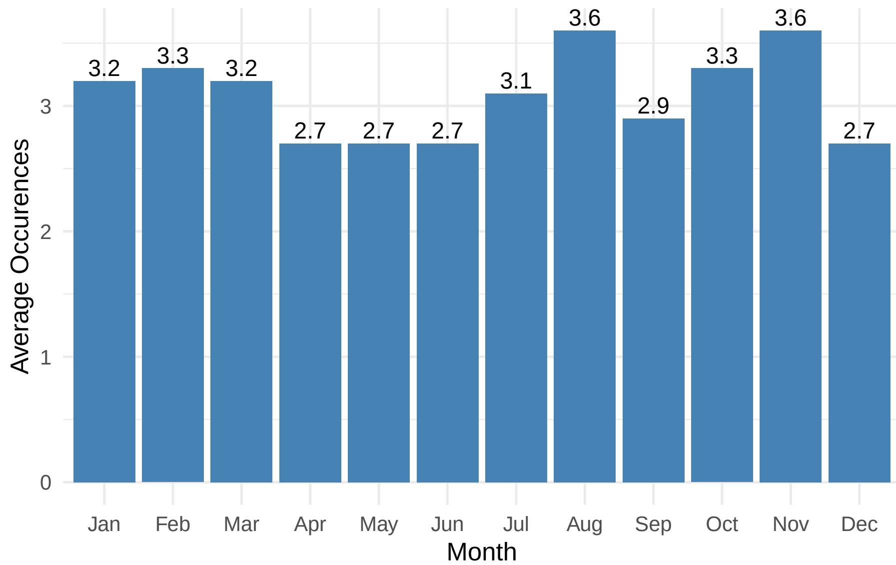

Figure 2: Average Number Of Occurences Per Month

The average 5-day cumulative returns show strong trend tendencias after the effect occurs.

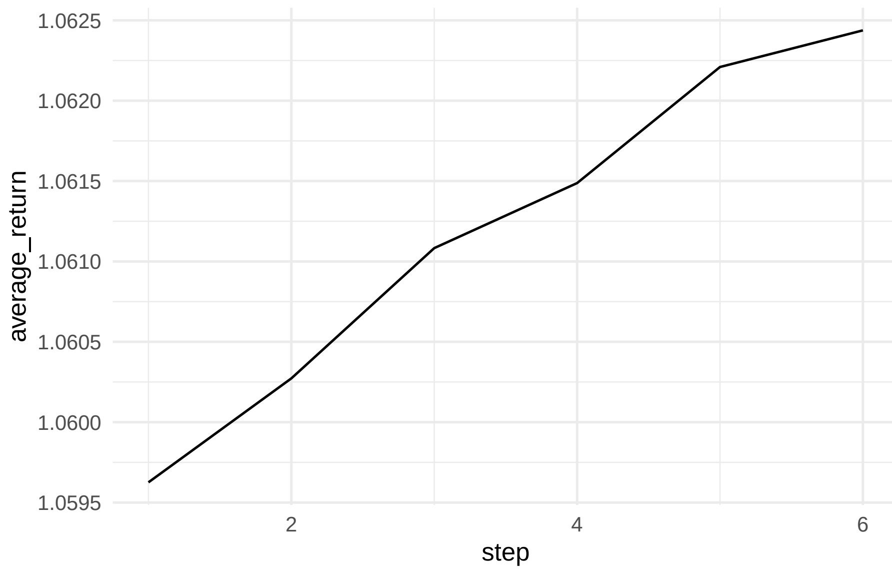

Figure 3: Cumulative Returns

The density plot displays the comparison of the distribution of returns between dataset with only days where the event was present or filtered dataset (tomato color) and dataset with the days where the event was present and where the event was not present or the overall population dataset (blue color). The population dataset has a sharp peak around 120% returns, indicating most returns are concentrated near this value. The filtered dataset has the peak around the same region but not as prominent as the population, suggesting there are higher returns within the population. The filtered dataset shows higher returns than population from 50-80% range.

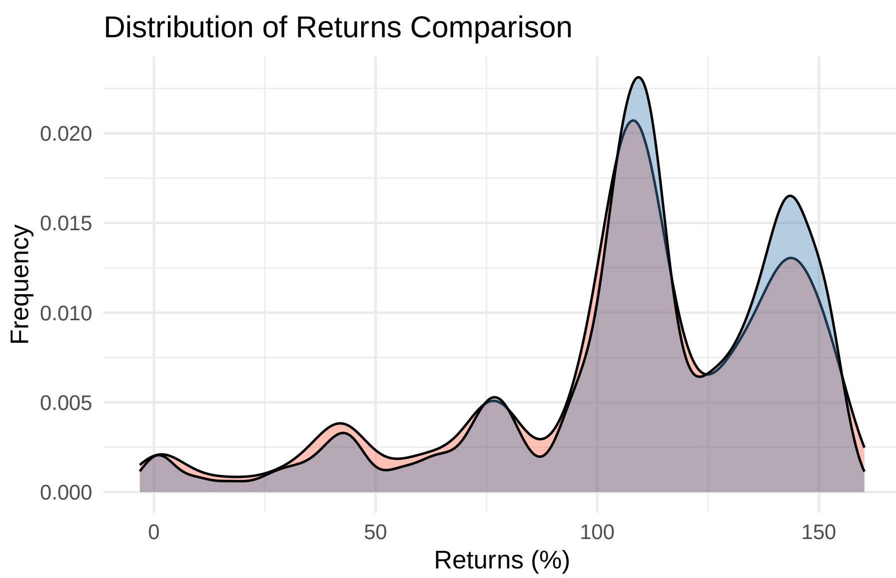

Figure 4: Distribution Of Returns

Strategy Design

- **Liquidity**: The gold market is highly liquid.
- **Strategy Type**: Momentum.
- **Direction**: Long.
- **Entry**: Upon the identification of the pattern, open a long market order on the day of the breakout.
- **Holding Period**: 5 days.
- **Exit**: Close the positions after the holding period ends with a market order, or earlier if a predefined trailing stop-loss level is triggered.
- **Stop Loss**: The high or low price of the day where the gap occured.
- **Position Sizing**: The position sizing employed will be fixed with the smallest contract size available for the asset.

A trading strategy deveped to capitalize on the momentum tendencies yields positive cumulative returns over the tested period from 2005-2023. The equity curve climbs relatively smoothly but seems to show some drawdowns.

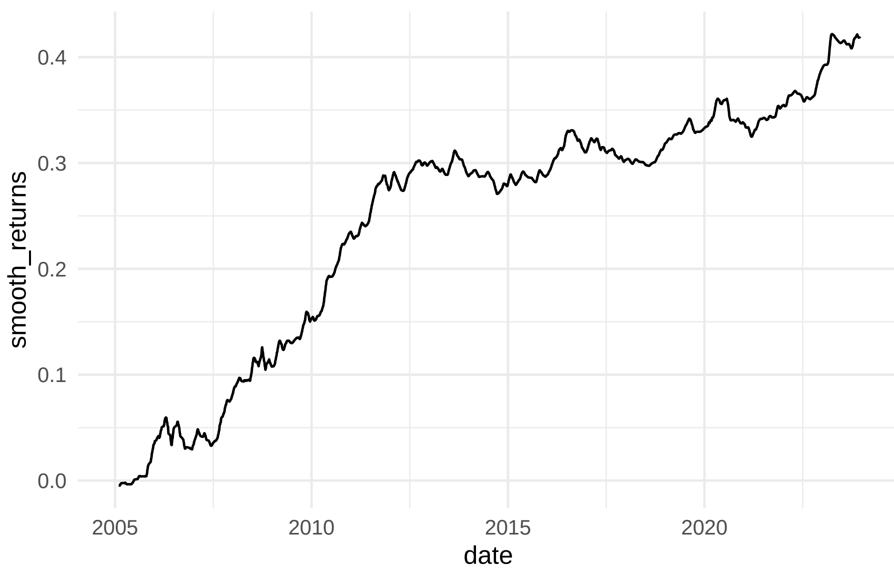

Figure 5: Equity Curve

Conclusion

This study confirms that the momentum market effect identified through the Gap Continuation Pattern exists in the Gold market. Understanding this market effect empowers retail traders. It provides knowledge to help them reduce risk and develop strategies to profit from the pattern.

References

Gray, W., & Vogel, J. (2016). *Quantitative momentum: A practitioner's guide to building*.

TradingRiot. (2023). *How to trade trend continuations*. https://youtu.be/umPwj46pGes?si=dshGyEqcVIZe3LLm.