Swiss Performance Index Momentum Strategy

Project Paper: Digital Tools for Finance

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Introduction

- Momentum ranks among the most pervasive stock market anomalies, serving as a cornerstone for extensive research and investment strategies.
- Our project investigates the efficacy of long-only momentum strategies, as introduced by Jegadeesh and Titman (1993), in delivering excess returns within the Swiss stock market over the period from 2000 to 2024.
- By focusing on the Swiss market, this study sheds light on momentum effects in a smaller, less-researched and less liquid market, contributing to the understanding of anomaly persistence across different contexts.
- The findings aim to bridge the gap between academic theory and practical application, offering insights for investors in designing robust market strategies.

Data and Methodology

Data

Swiss stock market was proxied using the SPI.

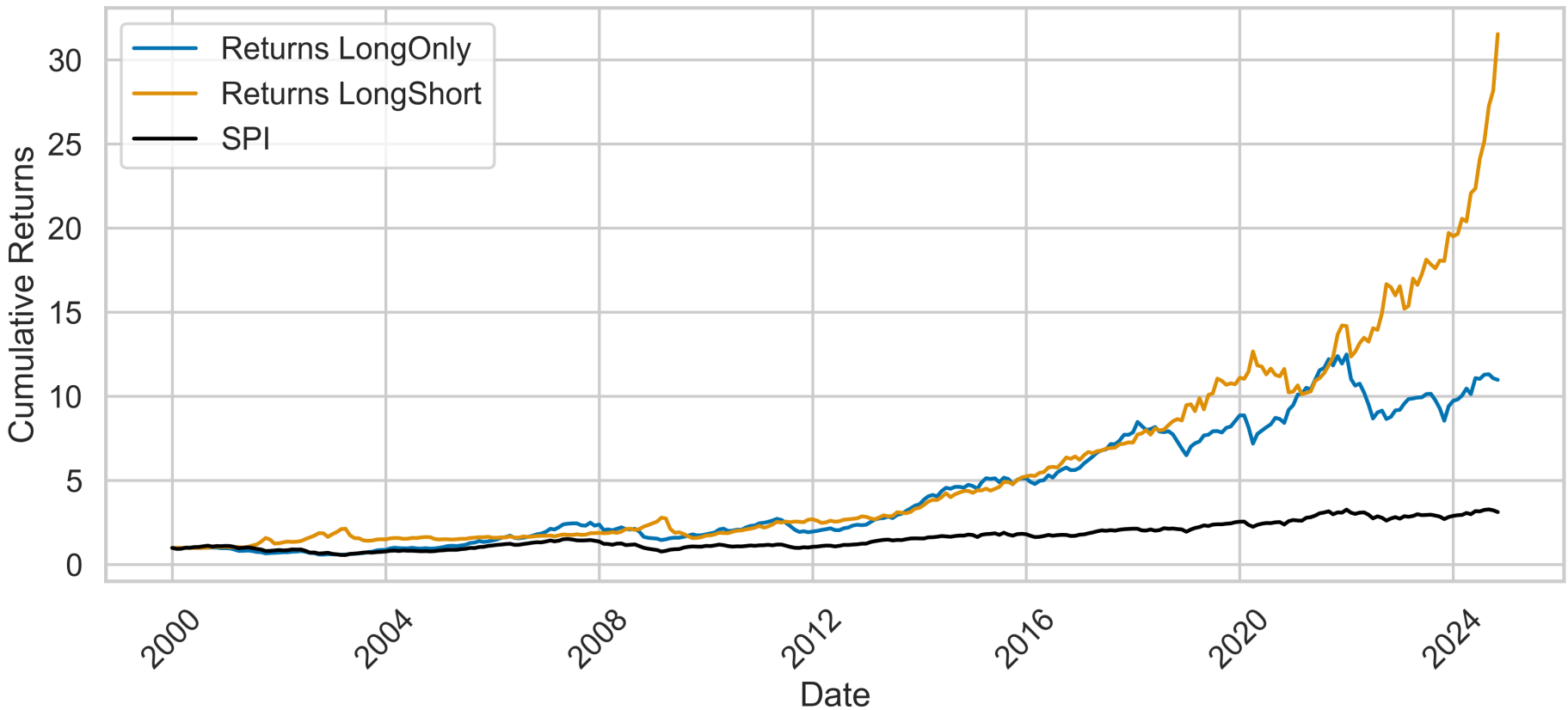
- **Benchmark:** SPI Total Return Index. Daily data from Refinitiv.
- **Risk-Free:** 1-year Swiss government bond yield. Monthly data from SNB API.
- **Time Period:** January 2000 - November 2024

Methodology

- **Holding Period:** 6 months
- **Lookback Period:** 6 months
- **Weighting:** Equally weighted
- **Rebalancing:** Monthly
- **Transaction costs:** Proportional, up to 1%

Results: Long Only and Long/Short Momentum vs. SPI

Figure: Cumulative Total Returns: Long Only and Long/Short Momentum vs. SPI



Summary Statistics: Long Only and Long/Short Momentum vs. SPI

Metric	Strategies		
	Long-Only	Long/Short	Benchmark
Avg Total Return (Geometric)	10.0953	18.7608	1.4619
Avg Excess Return (Geometric)	8.2598	16.9252	−0.4619
Std Dev of Excess Returns	0.0438	0.0530	0.0401
Std of Excess Returns (Annualized)	0.1517	0.1835	0.1388
Sharpe Ratio (Geometric)	0.5443	0.9225	−0.0333
Min Excess Return	−0.1627	−0.2214	−0.1302
Max Excess Return	0.0990	0.1452	0.1202
Skewness of Excess Return	−0.7074	−0.5370	−0.4670
Kurtosis of Excess Return	0.9103	2.6598	0.1039
Alpha (Geometric)	5.9176	18.6500	0.0000
T-stat of Alpha	3.0654	5.3641	−109.7906
Beta (Factor Return)	0.8642	−0.4478	1.0000

Table: Summary Statistics Long-Only and Long/Short vs. Benchmark

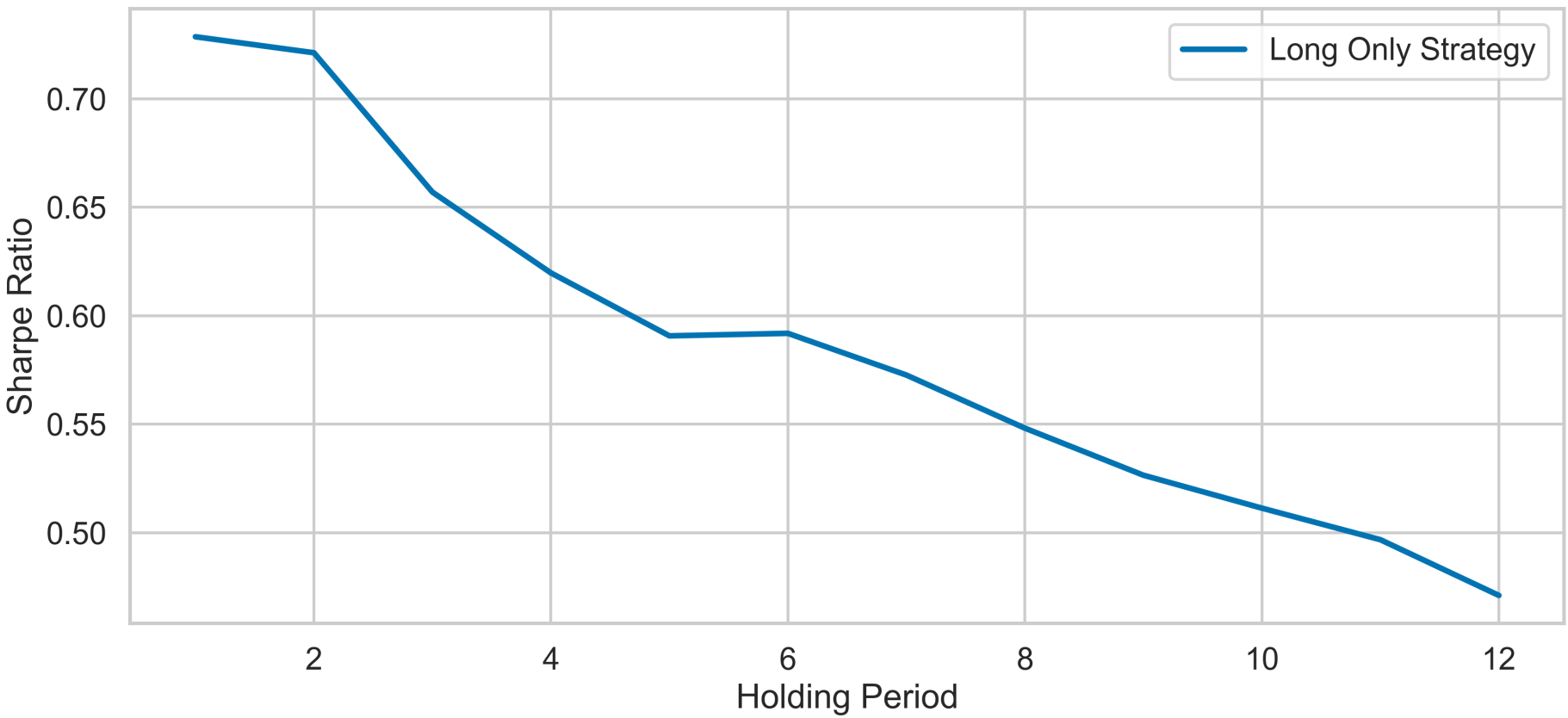
Robustness Check

We explored the variability of various parameters that may impact performance and cost-effectiveness:

- Holding period
- Lookback period
- Number of assets held
- Transaction costs

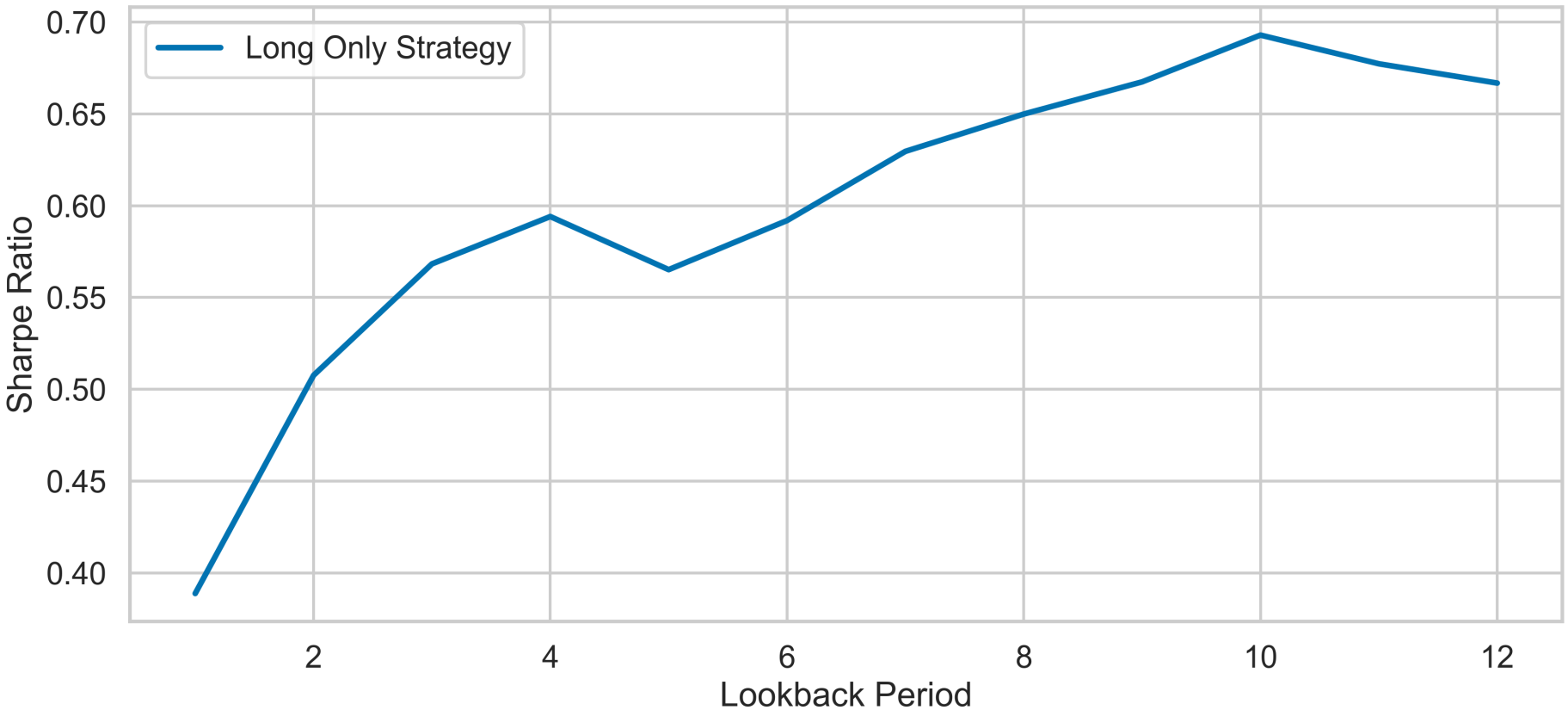
Robustness Check: Varying Holding Period Months

Figure: Sharpe Ratios Over Different Holding Period Months



Robustness Check: Varying Lookback Period Months

Figure: Sharpe Ratios Over Different Lookback Period Months

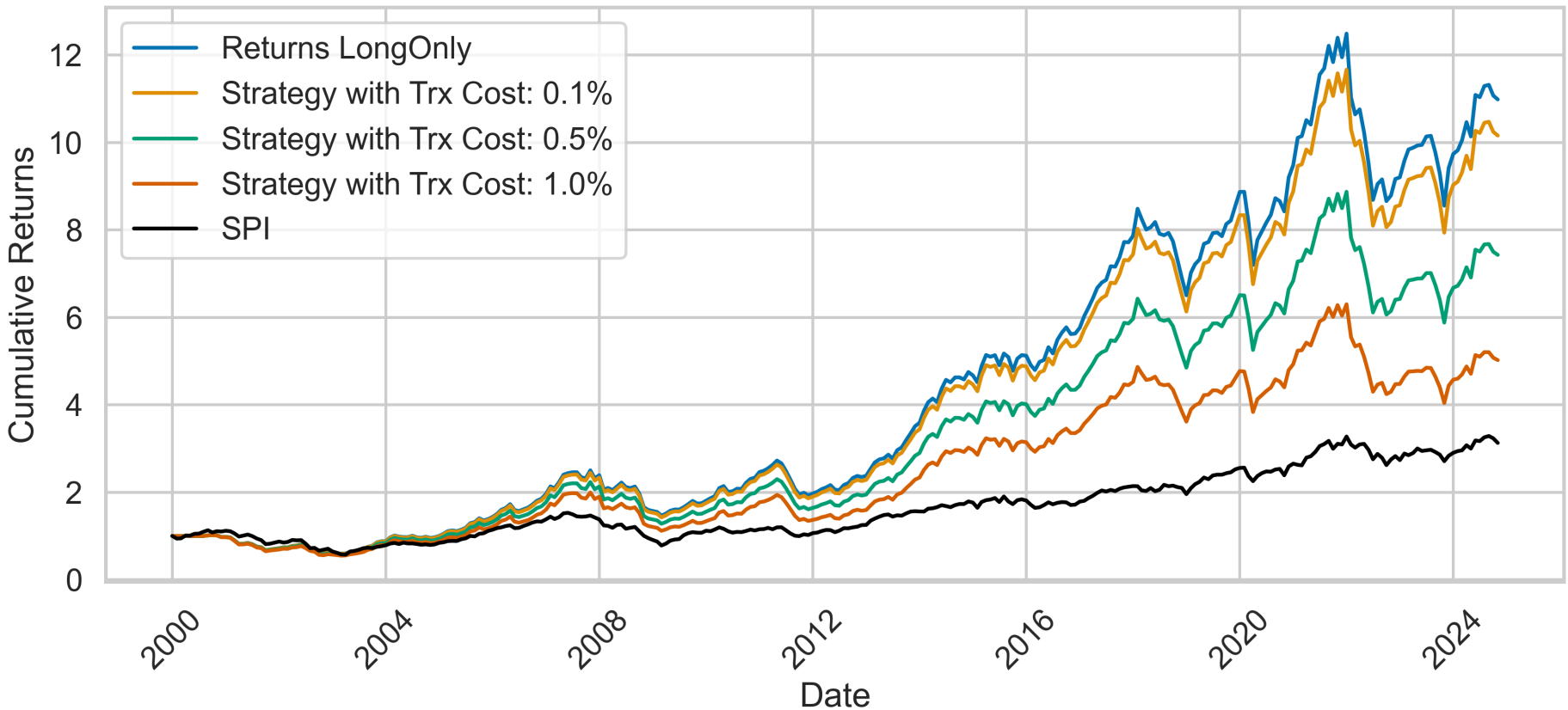


Robustness Check: Varying Number of Assets Held

Figure: Sharpe Ratios Over Different Number of Assets Held

Robustness Check: Varying Transaction Costs

Figure: Net-Cumulative Total Returns: Long Only Momentum vs. SPI



Conclusion

- Long-only momentum strategy generates substantial outperformance compared to the SPI benchmark, even after accounting for transaction costs.
- Long-only underperformed relative to the corresponding long/short strategy.
- A negative relationship between holding periods and Sharpe ratios exists, suggesting shorter holding periods may be more effective.
- The lookback period analysis showed a peak in performance at around 10 months.
- Increasing number of assets held increases Sharpe Ratio due to diversification effects, which diminish at a certain amount of assets.
- Resilience to transaction costs, remaining profitable even with costs up to 1%.
- In short: Momentum strategies can be profitable but careful consideration must be given to parameters such as holding period, lookback period, number of assets held and, most importantly, the investment universe.

References

 Jegadeesh, N. and S. Titman (1993). "Returns to Buying Winners and Selling Losers: Implications for Stock Market Efficiency". In: *The Journal of Finance* 48(1), pp. 65–91. DOI: 10.2307/2328882.