Project Paper Digital Tools for Finance

S&P500 Sector and Industry Group Momentum

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Intuition

- Momentum is one of the most cited and strongest factors in academic literature and subject to many investment strategies in practice
- In our project we investigate whether a momentum setup as in [Jegadeesh and Titman, 1993] can be profitably applied in sector and industry group settings
  - Sectors and industries are forms of combining companies with similar risk exposures into one basket
  - Aggragating can help reduce transactions, reducing idiosyncratic risks while still preserving specific trend exposure evolving on a sector or industry level

Backtesting Environment

Strategy Parameters

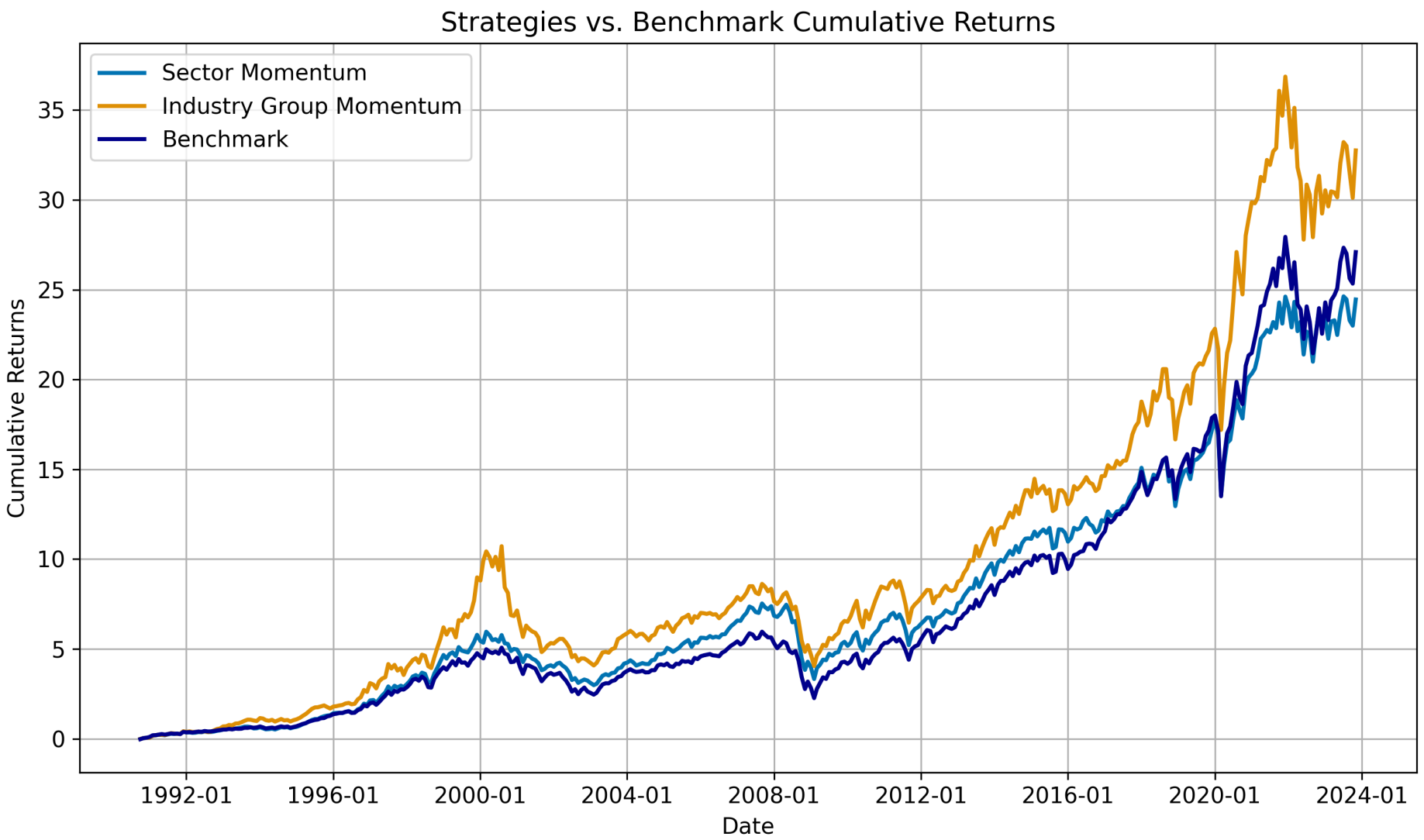
- **Holding Period:** 3 months
- **Lookback Period:** 9 months
- **Rebalancing:** monthly
- **Long assets:** 3
- **Short assets:** 3
- **Transaction costs:** 10 BP (proportional)
- **Time Period:** September 1989 - October 2023

Data

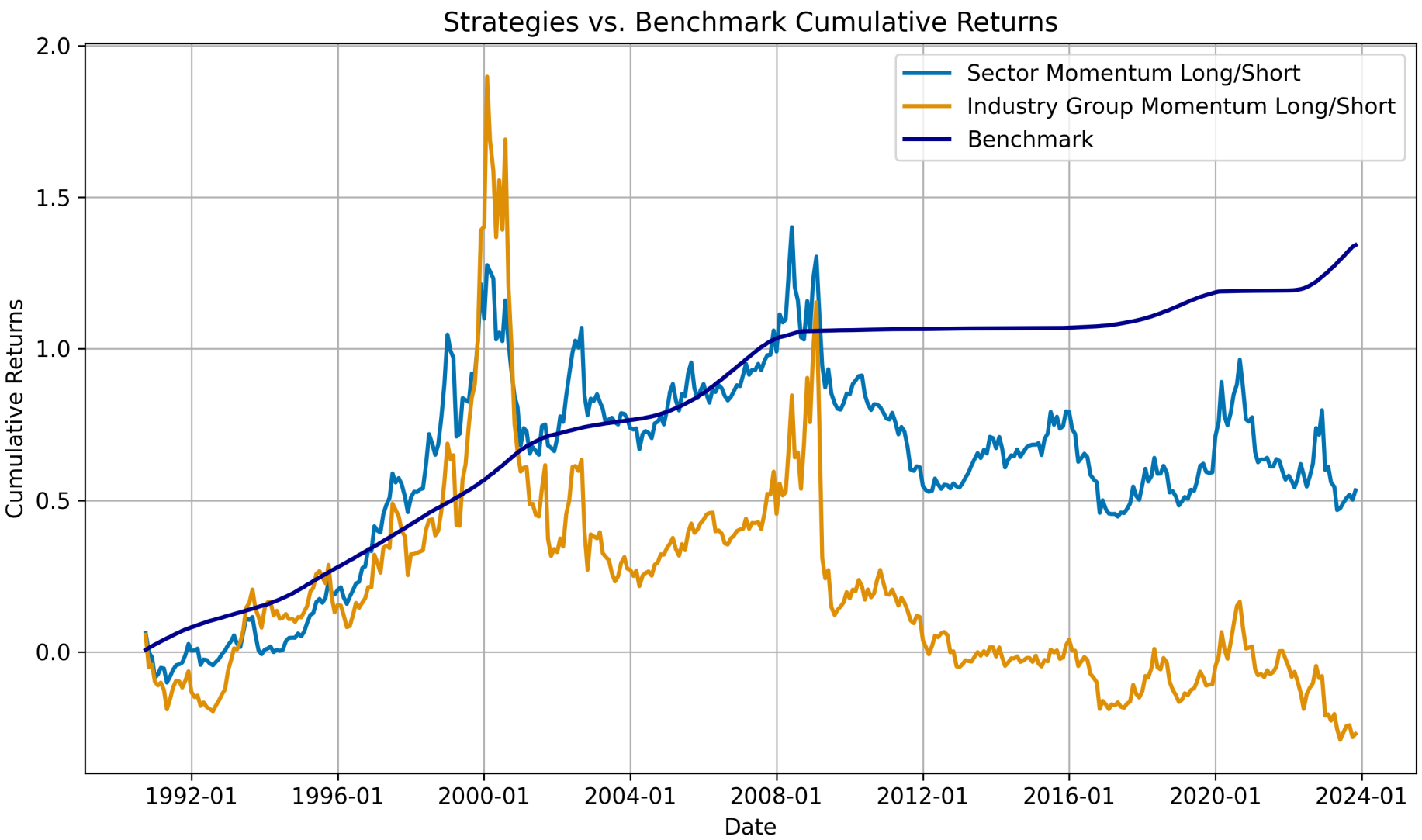
Daily data is downloaded from Bloomberg:

- **Benchmark:** S&P500 Total Return Index
- **Risk Free:** 3 Month T-Bill
- **Sectors:** S&P500 Total Return GICS Sectors
- **Industry Groups:** S&P500 Total Return GICS Industry Groups

Long Only Momentum Performance vs. S&P500



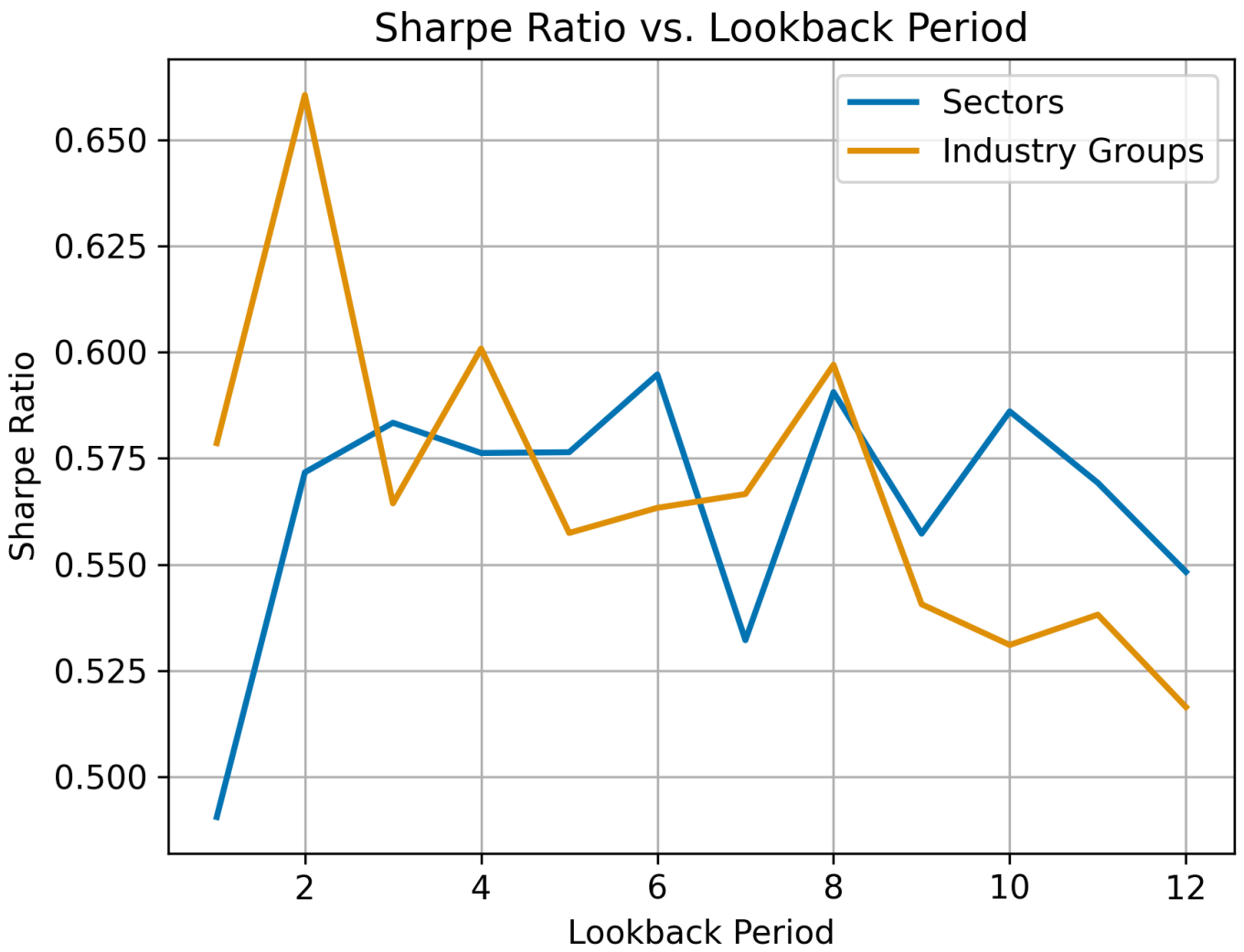
Long/Short Momentum Performance vs. Risk Free Rate



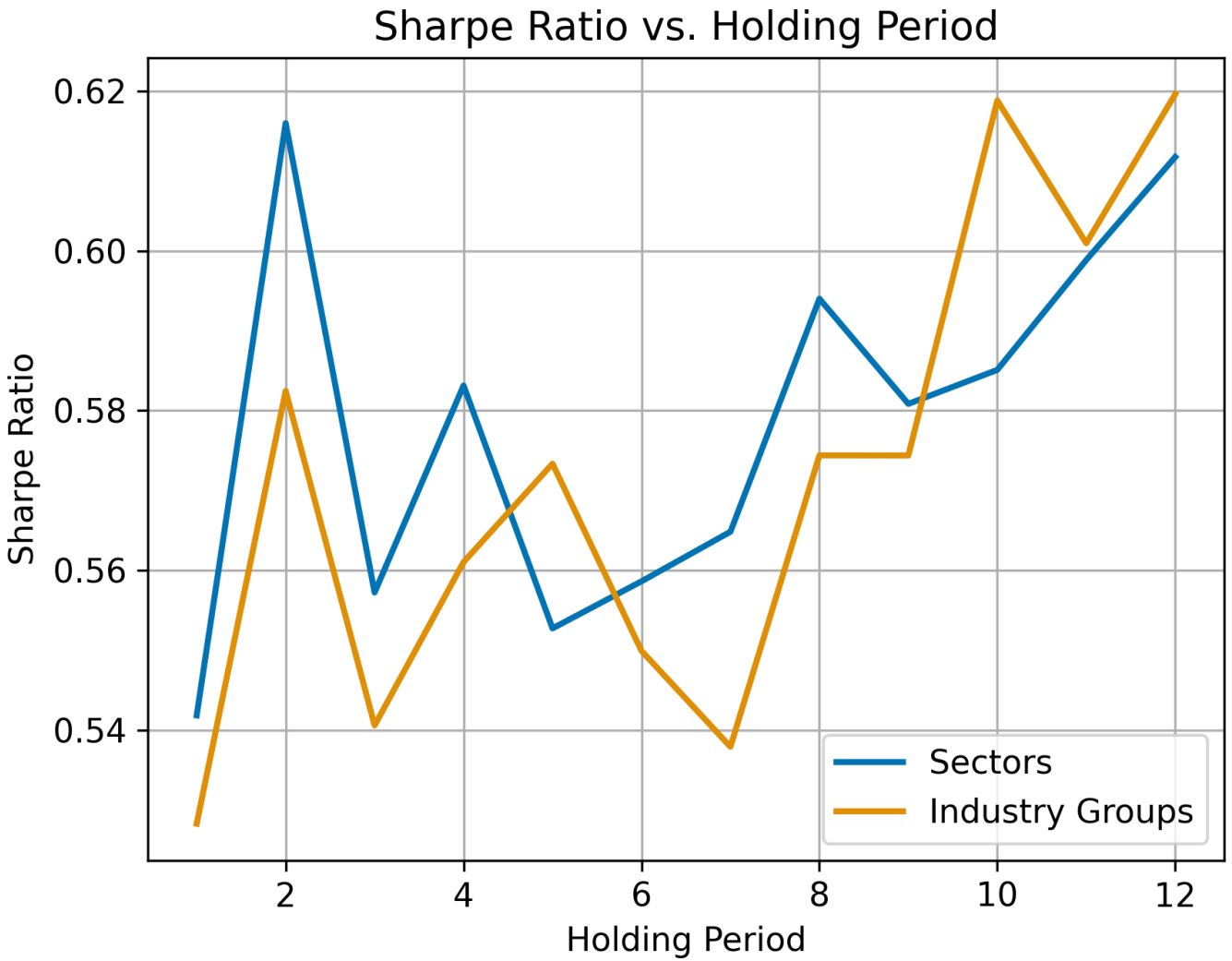
Summary Statistics Sector and Industry Group Momentum vs. S&P500

	Long only		Long/Short	
	Sectors	IG	Sectors	IG
Alpha	0.33	0.52	−2.07	−3.35
(T-Value)	(0.35)	(0.35)	(−1.14)	(−1.20)
Beta	0.91	1.01	0.29	−0.07
Excess Return	8.38	9.71	−0.72	−2.14
Kurtosis	1.82	1.32	2.05	4.38
Max	14.14	16.01	8.58	20.13
Min	−18.81	−20.09	−13.59	−26.19
STD	15.03	17.96	10.52	16.41
Sharpe Ratio	0.56	0.54	−0.07	−0.13
Skewness	−0.61	−0.34	−0.41	−0.55
Total Return	10.95	12.28	1.85	0.43

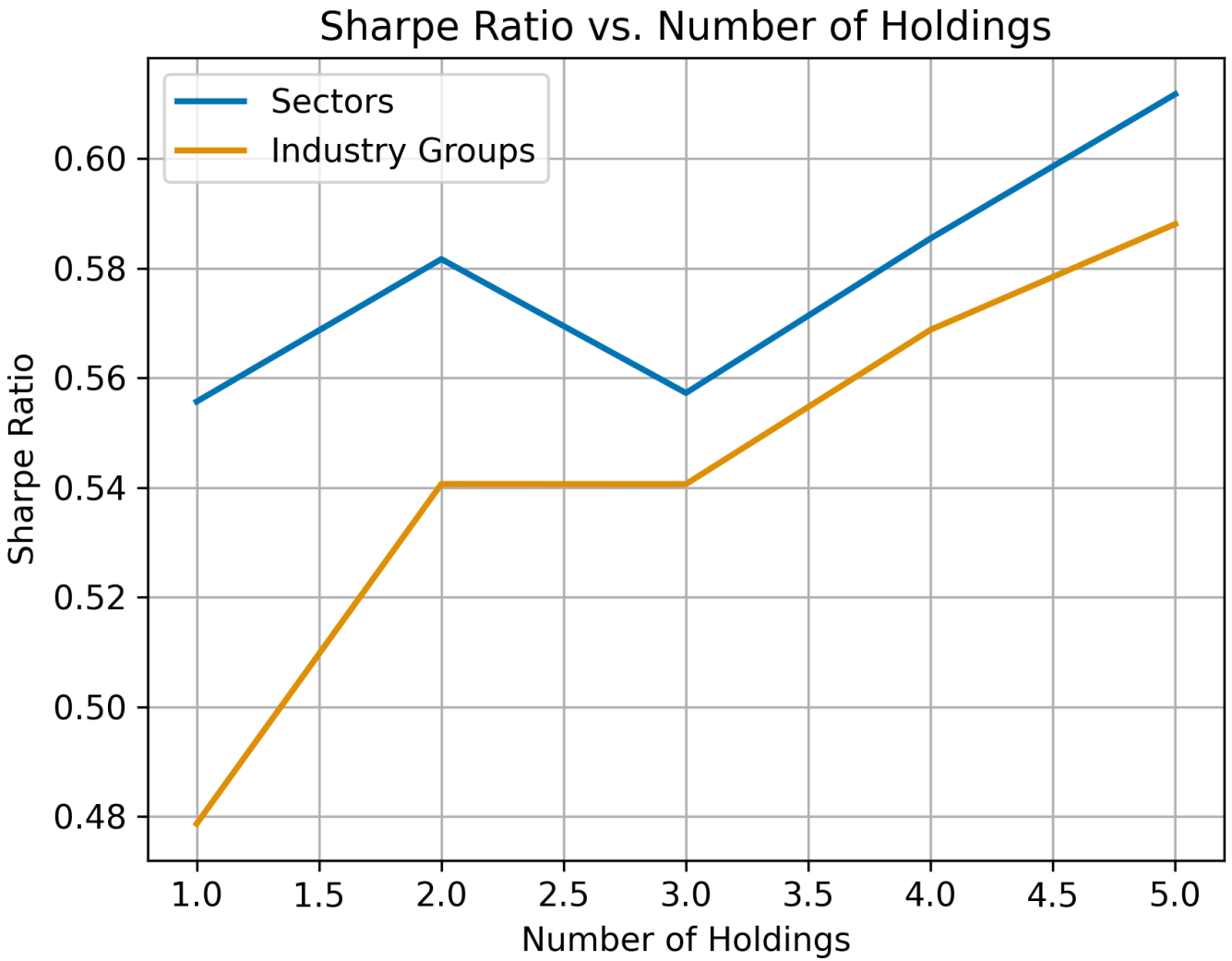
Net Sharpe Ratios vs. Lookback Period for Long Only Sector and Industry Group Momentum Portfolios



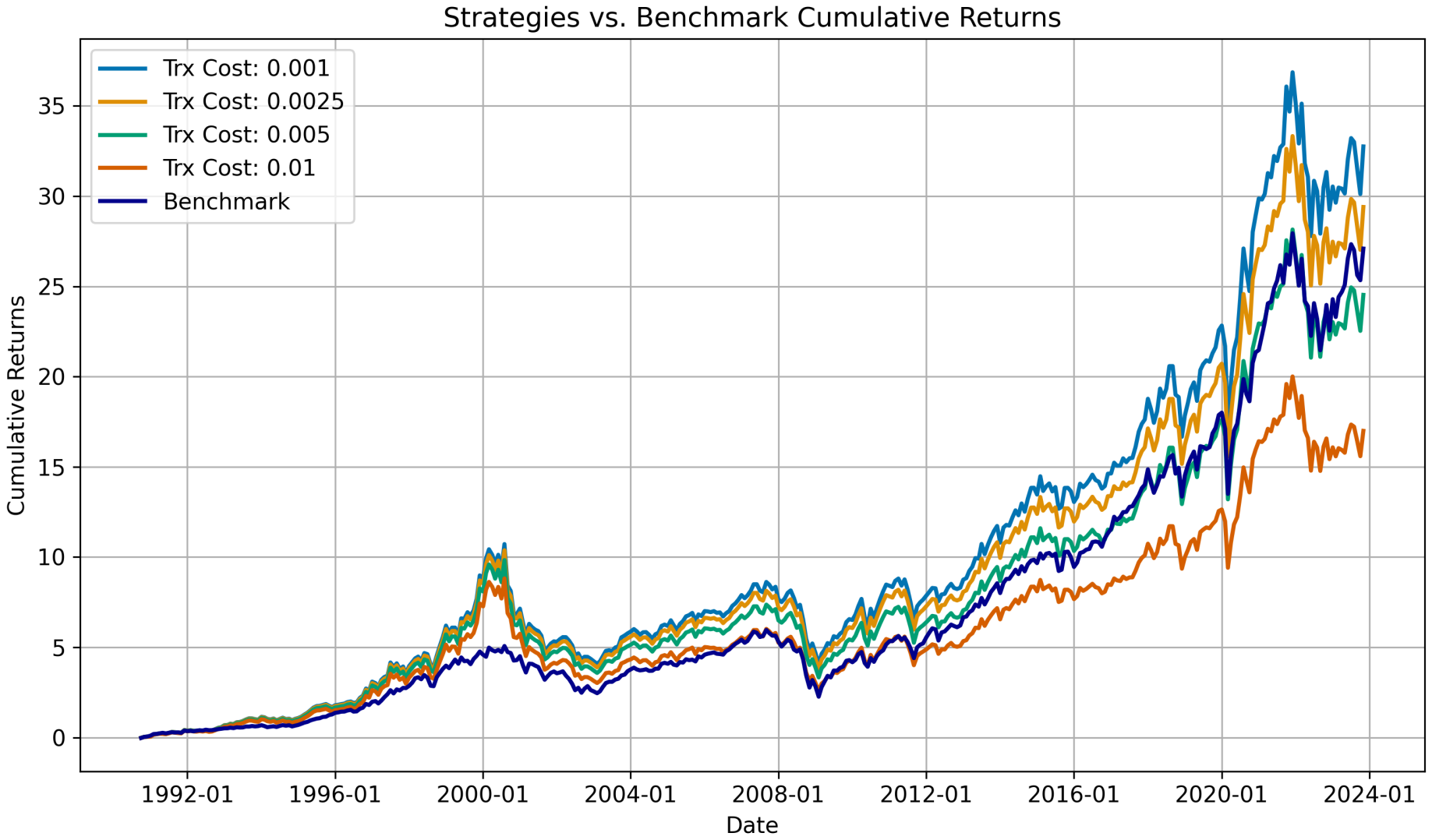
Net Sharpe Ratios vs. Holding Period for Long Only Sector and Industry Group Momentum Portfolios



Net Sharpe Ratios vs. Number of Holdings for Long Only Sector and Industry Group Momentum Portfolios



Net Performance vs. Level of Transaction Costs for Long Only Sector and Industry Group Momentum Portfolios



Conclusion

- We find that a pure long-only momentum strategy based on industry groups can generate excess returns
- A sector implementation did not work most likely because the level of aggragation is too high and thus the potential to generate alpha too low
- Including a short leg to exploit the UMD factor was a money losing strategy in the investigated period probably due to momentum crashes and is thus not attractive in real world settings
- Bottom line: The universe to select from plays a crucial role and is arguably more important then other input parameters.

References I

Jegadeesh, N. and Titman, S. (1993).
Returns to buying winners and selling losers: Implications for stock market efficiency.
The Journal of Finance, 48(1):65–91.