

Finsearch'23 - Endterm Report

Portfolio using Momentum Strategy

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Buy cheap; buy strong; hold 'em long.

Contents

1	Introduction	1
2	Aim and Roadmap	2
3	What is Momentum and Why it works	3
4	Developing a Momentum Strategy	4
5	Strategy considerations	5
6	Coding and Backtesting	6
7	Results Discussion	7
8	Risk Analysis and Management	8
9	Mean Revision	9
10	Conclusion	10
A	Data Collection	11
B	Credits	12

1 Introduction

Optimise Investment Returns using a Momentum-Based Portfolio Strategy was one of the topics under Finsearch'23 conducted by Finance Club, IIT Bombay.

It was a comprehensive, over two month long project, where every group of mentees was provided with ample resources - including books and research papers, and was encouraged to test the practicality of the suggested trading algorithms in context of the Indian Stock markets.

Teams were required to read and understand trading strategies, gather stock price data and run their own backtests to verify multiple established hypothesis.

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The main strategy of interest was **Momentum Trading**, which is one of the simplest ¹ (and yet so complex) trading strategies to understand. We start by studying what momentum is, and how it consistently beats the Efficient Market Hypothesis (EMH) ².

We then explore the individual and institutional behavior biases which allow momentum strategies to capitalize on market mispricings, and argue that it always generates opportunities for process-driven, long-term focused, disciplined investors. We also discuss how momentum trading is not a competitor to value investing, but a close counterpart instead. ³

We then move towards building an effective momentum strategy, and test it in the Indian stock markets. We explore fundamental challenges in momentum trading - finding high quality momentum stocks ⁴, seasonality and balancing transactional costs. We discuss methods to calculate and analyze risk by comparing various statistical parameters like α and β of our strategy with risk-free options.

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2 Aim and Roadmap

Project Structure

The project is subdivided into 3 parts -

1. Developing an understanding about momentum trading strategy
2. Building and testing such strategies in Indian Stock markets
3. Evaluating the strategy and risk analysis

While building our strategy, these are the ideas we focus on -

1. Construction of momentum portfolio (deciding look-back and holding period)
2. Selecting "smoother" stocks
3. Considering the seasonality effects in trading
4. Balancing profit and transactional costs
5. Reducing risk aversion by diversification

Timeline

The suggested timeline was as follows -

- **Week 1 - 2:** Read about fundamentals of momentum strategies and understand how they work.
- **Week 3:** Build a trading strategy and evaluate various momentum scenarios.
- **Week 4 - 5:** Backtest strategy on 2010-19 trading data of NSE Nifty50 Companies.
- **Week 6:** Understanding mean revision.
- **Week 7 - 8:** Interpret obtained results and present conclusion as report.

At the end, we also had to create a short video explaining our project and presenting our own conclusions.

3 What is Momentum and Why it works

4 Developing a Momentum Strategy

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10 Conclusion

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