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200405

FLAME Scholars Program (2023-24)

# Strategic Wealth Management:

# A Quantitative Approach to Portfolio Selection and Time-Based Rebalancing

Date of Submission: 30 March 2024

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**Acknowledgement**

I would like to express my heartfelt gratitude to Professor Hoshiar Mal for his unwavering support, invaluable guidance, and exceptional mentorship throughout my FSP Project. He was always available to help every step of the way and provided valuable insights that helped me shape my work. I cannot thank him enough for his encouragement and patience, which were extremely necessary in making this thesis possible. Additionally, I would like to thank Professor Andrea Phillott, Professor Santosh Kudtarkar, Professor Pawan Kumar, and Professor Sujit Shedage; without their support, this project would not have been possible.

Finally, I would like to thank the Finance and Computer Science Department at FLAME for providing me with the necessary resources to support my project. Starting from the state-of-the-art Financial Lab to providing me with a network of extremely helpful and approachable faculty of both of these departments, every little aid added value to this highly interdisciplinary project.

Last but not least, I would like to thank the FLAME Management and heads of the FLAME Scholar's Program without whom it would not have been possible for me to take up courses from outside my primary domain and discover true passion for the interdisciplinary field of quantitative finance.

## Abstract

Entirely based on historical data and quantitative analysis, this project proposed a novel portfolio selection, optimization, and time-based rebalancing strategy, that outperforms one of the most popular market benchmark indices, the NIFTY 50. This project provides a unique, original, and innovative investment strategy based on quantitative and data-driven techniques, allowing it to beat market benchmark indices.

The strategies are meant to include elements of both, self-devised data-driven techniques and various theoretical concepts of portfolio optimization. The emphasis of the project is on evolving and testing various methods of stock selection and weight allocation and creating diverse portfolios including entities belonging to large-cap, mid-cap, small-cap, and micro-cap. By undertaking comprehensive backtesting processes using the historical data of Indian equity markets, the strategies developed are evaluated with varied time frames of analysis. After this, the strategies go through a multi-stage selection process involving analysis of the backtesting results including comparative analysis based on their compound annual growth rate, variance of returns, and success rate, in different time frames.

The outcome of the project is a dynamic, user-friendly web application that allows individual investors to pick the equity portfolios most suitable to reach their financial target and risk tolerance. The project would not only provide a structure for the selection of assets and allocation of weights in a systematic manner but also clearly emphasize the importance of adapting to market volatilities, providing a robust framework for empirical and theoretical advancement in portfolio management.

**Table of Contents**

## List of Tables

**List of Figures**