

Project-2

Public Financial Data for Investment Analysis with Shiny App Dashboard

Team members: Vaibhav Alluri, Chaitanya Sai Pammi, Venkata Bhavana Tangirala

Dataset and Sources

The dataset for this project was sourced from publicly available platforms like Yahoo Finance and Morningstar. Yahoo Finance provided historical performance data for the Motilal Oswal Flexi Cap Fund, including detailed historical NAV (Net Asset Value) data ([Yahoo Finance](#)). In addition, Morningstar offered comprehensive data on the fund's holdings, sector allocations, and returns, which was crucial for understanding the overall composition of the fund. The Motilal Oswal Asset Management website also contributed valuable historical NAV data ([Motilal Oswal Historical NAV](#)), and further fund portfolio details were accessed via [Value Research Online](#).

Choice of Inputs and Outputs

The key input in this project was the *investment amount*, which allowed us to simulate different investment scenarios. Historical performance data was used to calculate average returns over various time periods. The main output was an interactive dashboard designed for investors, which displayed the portfolio composition across different sectors and asset classes using pie charts and stacked bar charts. These visualizations provided a clear breakdown of the fund's holdings and sector allocations. Additionally, an investment return calculator was integrated to project potential returns based on user input.

Analysis for Dashboard Creation

To create the dashboards, we first analyzed the portfolio composition, including the distribution of assets across various sectors. This helped in choosing appropriate visualizations like pie charts to represent sector allocation and stacked bar charts to depict sector-wise returns over time. We also analyzed historical performance data to calculate average returns and simulate future performance scenarios, which were incorporated into the investment return calculator.

What Went Well

Creating the visualizations was straightforward using R and libraries like ggplot2. The charts provided clear, intuitive insights into the fund's structure.

What Was Challenging

Integrating the visualizations into the Shiny app and ensuring smooth interactivity required careful planning, as did debugging the dynamic components.

Conclusion

This project successfully combined financial data with interactive visualizations, helping investors understand portfolio performance and make informed investment decisions.

Link of the shiny app:

https://clarksonuniv.shinyapps.io/Vaibhav_Chaitanya_Bhavana_Project_2/

Citations

1. Yahoo Finance. (n.d.). *Motilal Oswal Flexi Cap Fund – Historical Data*. Retrieved December 3, 2024, from <https://finance.yahoo.com/quote/0P00012ZRM.BO/history>
2. Motilal Oswal Asset Management. (n.d.). *Historical NAV*. Retrieved December 3, 2024, from <https://www.motilaloswalmf.com/nav/historical-nav>
3. Value Research Online. (n.d.). *Motilal Oswal Flexi Cap Fund Direct Plan – Portfolio*. Retrieved December 3, 2024, from https://www.valueresearchonline.com/funds/26125/motilal-oswal-flexi-cap-fund-direct-plan/?utm_source=direct-click&utm_medium=vro-funds&utm_content=Motilal+Oswal+Flexi+Cap+Fund&utm_campaign=vro-search#fund-portfolio
4. Morningstar India. (n.d.). *Motilal Oswal Flexi Cap Fund Direct Plan - Detailed Portfolio*. Retrieved December 3, 2024, from <https://www.morningstar.in/mutualfunds/f00000te7d/motilal-oswal-flexicap-digr/detailed-portfolio.aspx>