What Makes A Star Portfolio: From Funds Down to Stocks

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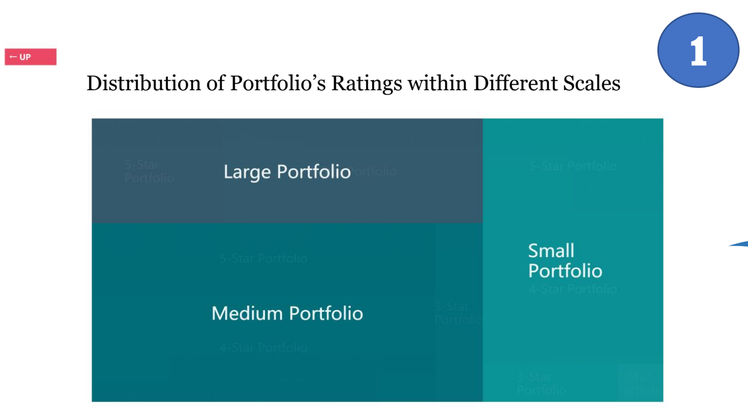
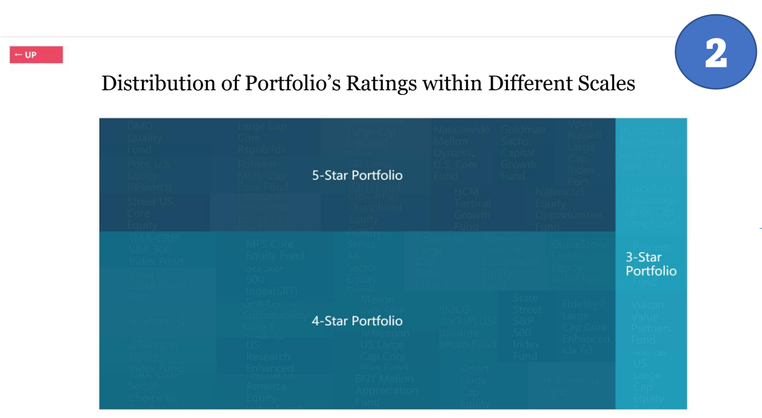
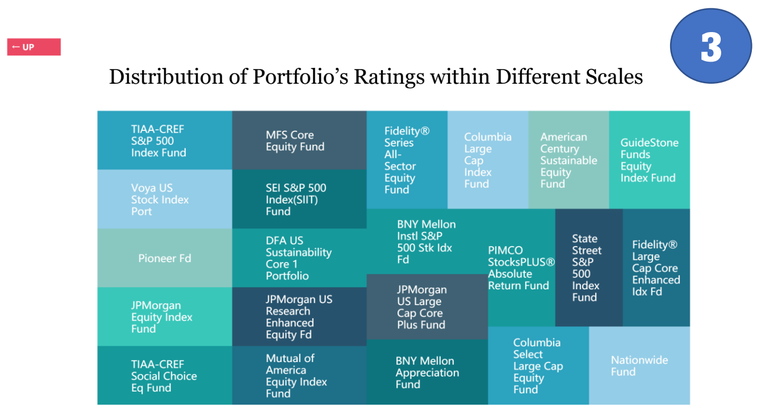
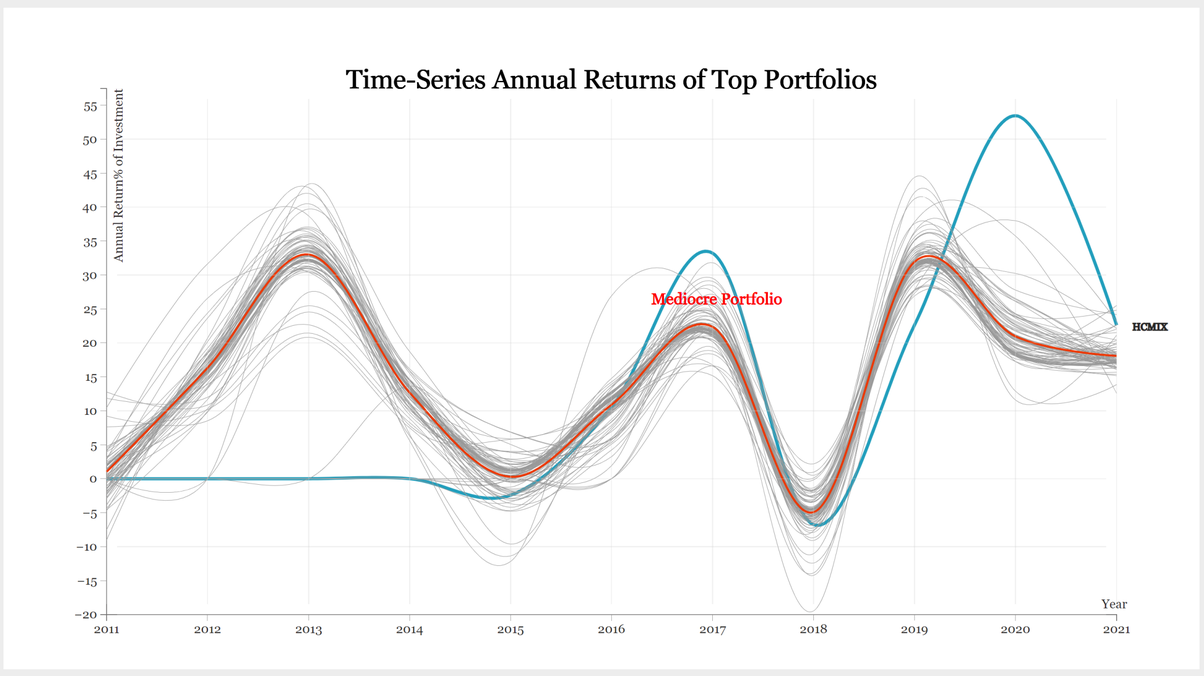
With the rapid wealth growth and the increasing awareness of asset management, people have been paying more and more attention to investing personal assets into various kinds of funds and related financial derivatives. This phenomenon motivates us to investigate portfolios of different equity. In this project, we decide to focus on US equity funds since they can serve as a perfect example of an almost pure portfolio that invests in only one kind of asset class. Here we select 100 portfolios that have the highest 5Y annual return from MorningStar.com. This project intends to analyze the features that a star portfolio shares, from a general perspective (funds) narrowing down to its partial composition (stocks).



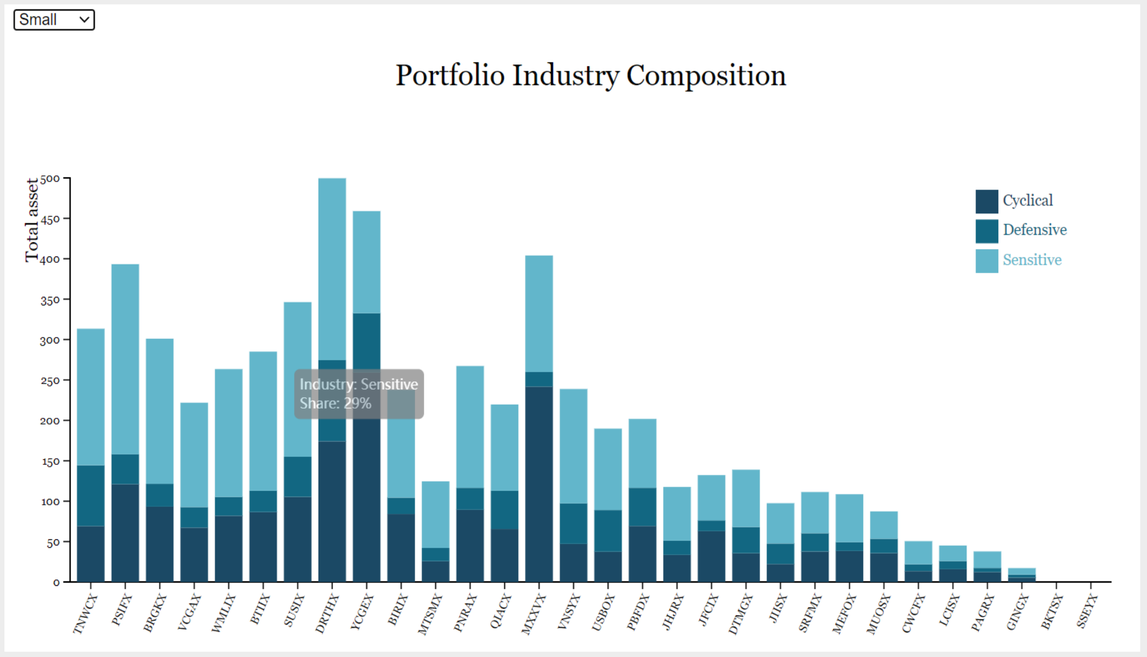




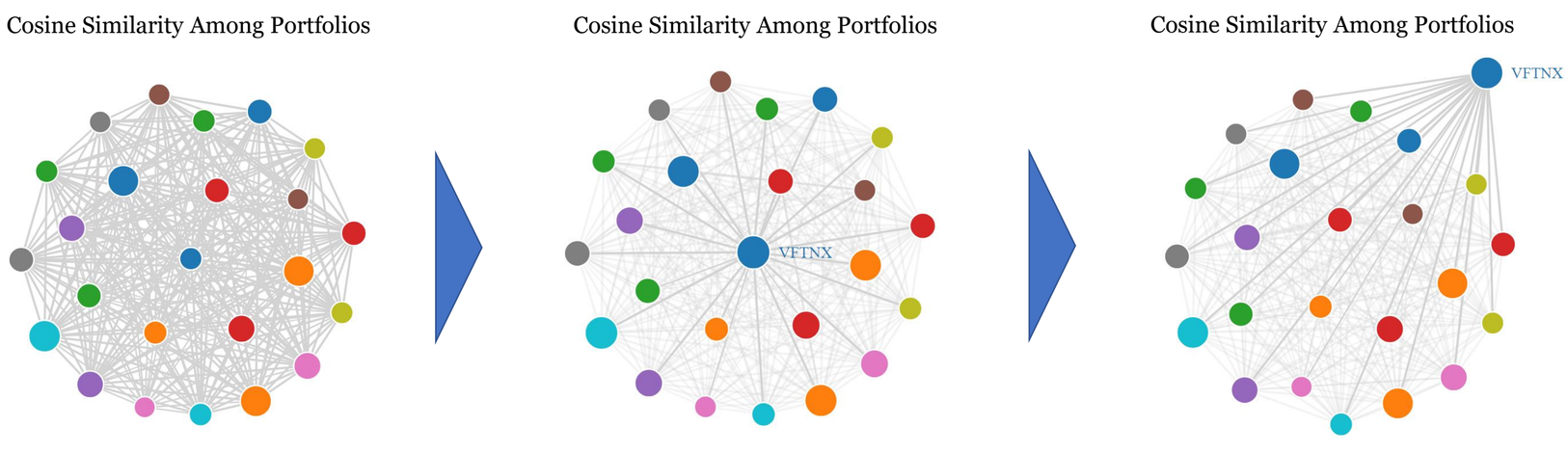
- **Description**: According to the total asset of each portfolio, we classify them into three different categories: large, medium, and small. This tree map reveals the hierarchical structure of a portfolio's rating within different categories. The portfolio with more stars tends to have a more stable investment return. In the innermost layer, users can find corresponding portfolios and their total asset values. The size of each rectangle in the two outermost layers represents the number of portfolios included while the size of the rectangle in the innermost layer stands for the magnitude of a total asset.
- **Interactivity**: Users can explore what portfolio is included in different scales and different rating categories by clicking on the rectangles of each layer in this tree map. Besides, in the innermost layer, users can see the detailed total asset value of each portfolio by hovering over a rectangle.
- **Conclusion**: the portfolio with a larger total asset scale tends to have higher ratings, which means that it is more likely to have higher annual returns. Portfolios with smaller assets have ratings ranging from 2 stars to 5 stars, which means that the investment returns are unstable.



- **Description**: This visualization depicts the macro trend of the performance of individual portfolios. The red line depicts the average portfolio performance in a time series.
- **Interactivity**: When hovering over an individual performance line, the line is highlighted in blue with the ticker name showing up simultaneously on the end of the line. The grids are also added to assist the perception of the absolute annual return.
- **Conclusion**: It's easy to see that which star portfolio is outperforming in each year, with the historical data complemented.

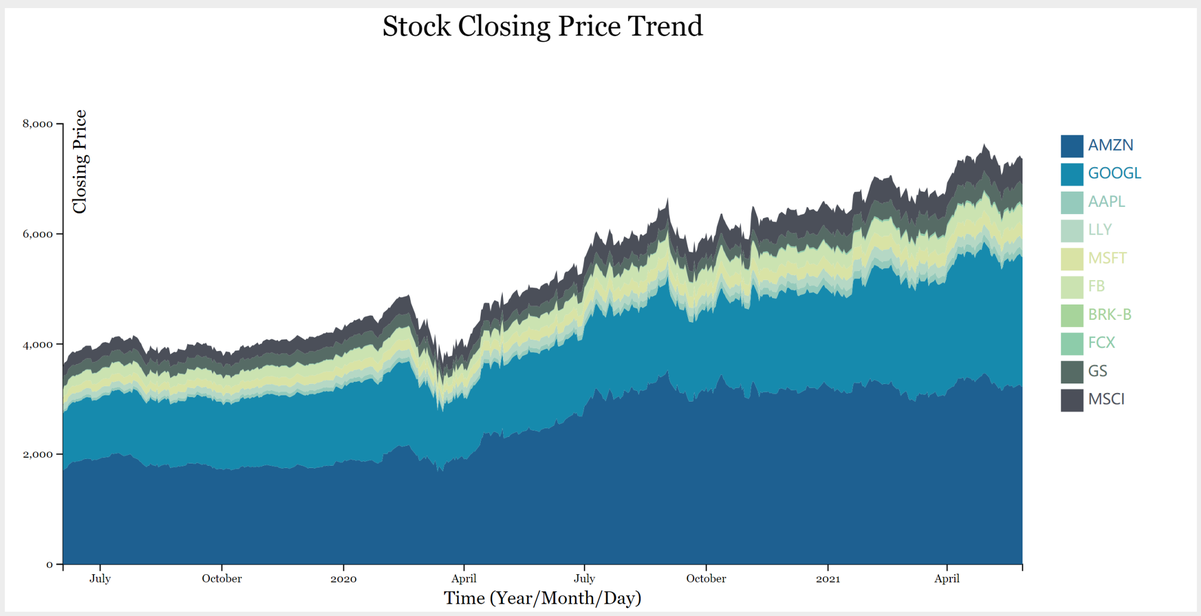


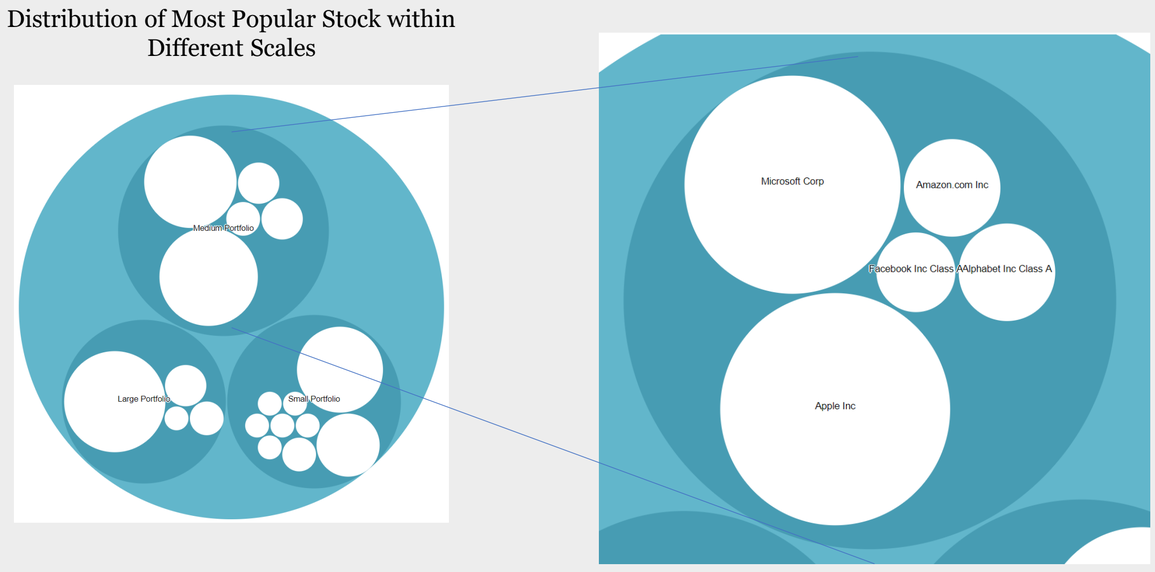
- **Description**: The Stacked-bar chart depicts the portfolio's overall investment interest in different industry types. They are ranked according to their total assets. Here, Cyclical represents Basic Materials, Real Estate, etc. Defensive includes Healthcare and Utilities. Sensitive consists of Energy, Industrials, and Technology.
- **Interactivity**: The dropdown box on the upper left corner enables people to choose from an interesting portfolio scale. Tooltip shows the section name and its share in the portfolio.
- **Conclusion**: While most of the large Portfolios invest about 20% in the sensitive industry, small and medium portfolios show more diversity.



- **Description**: The force network describes the similarity between different portfolios. We extracted the large blends portfolios and recorded all the 96 holdings involved in these portfolios. Each portfolio is transformed into a 96*1 vector, representing the weight of each holding. If one portfolio doesn't involve a holding, the vector is 0 at that point. The size of the node represents the total assets of that specific portfolio.
- **Interactivity**: The network enables the visualization of all the edges connecting the nodes with widths that differ from each other representing the similarity. The network also facilitates the dragging of multiple viewing perspectives.
- **Conclusion**: Large blend portfolios are largely related to each other. They have similar investment behaviors.

- **Description**: The Stacked-area chart presents the daily closing price trend of the 10 most popular invested stocks in all portfolios from 2019.6 to 2021.6. A portfolio's performance is highly related to its holding, the aim here is to see how a stock's performance is related to time.
- **Interactivity**: There is a brush effect in the chart enabling overall and daily changes of stock's closing price. The legends on the right can be chosen to highlight the corresponding stock's area in the chart.
- **Conclusion**: The global pandemic has a great influence on the whole market. In February 2020 when Covid-19 started in the US, there is a drastic drop in all ten stocks.





- **Description**: This zoomable circle visualization focuses on the one top holding of each portfolio, which are in fact 100 stocks. The aim is to see if the star portfolios have faith in the same stock. The largest circle represents the pool while the median circles are clustered by the total assets of the portfolios. The small circles in the median circles then represent the top choice holdings.
- **Interactivity**: This vis enables the highlight and clicks interaction. Users can click each circle to see the next level embedded.
- **Conclusion**: For example, many Median blend portfolios share the same top holding of Apple Inc and Microsoft while some of them share the same top holding of Amazon and Alphabet. 10 portfolios may have the same top holdings so here we only have 5 stocks in the pool of median portfolios. We found that the top choice among the large portfolios is rather onefold while with the decreasing among of assets invested, the portfolio's top choices tend to vary.

A star portfolio is a genuine combination of adequate assets, sparse holding distributions, unique tastes and the power of hedging the risks!