Programming for Data Processing
Final Project

Data-Driven Portfolio Management

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Tasks Related to Investment Strategies Analysis

1. Return

Of the portfolios generated, a vast majority of 82.5% had a positive return, while only 17.5% had a negative return by the end of the analyzed year 2020, as can be seen in Figure 1.

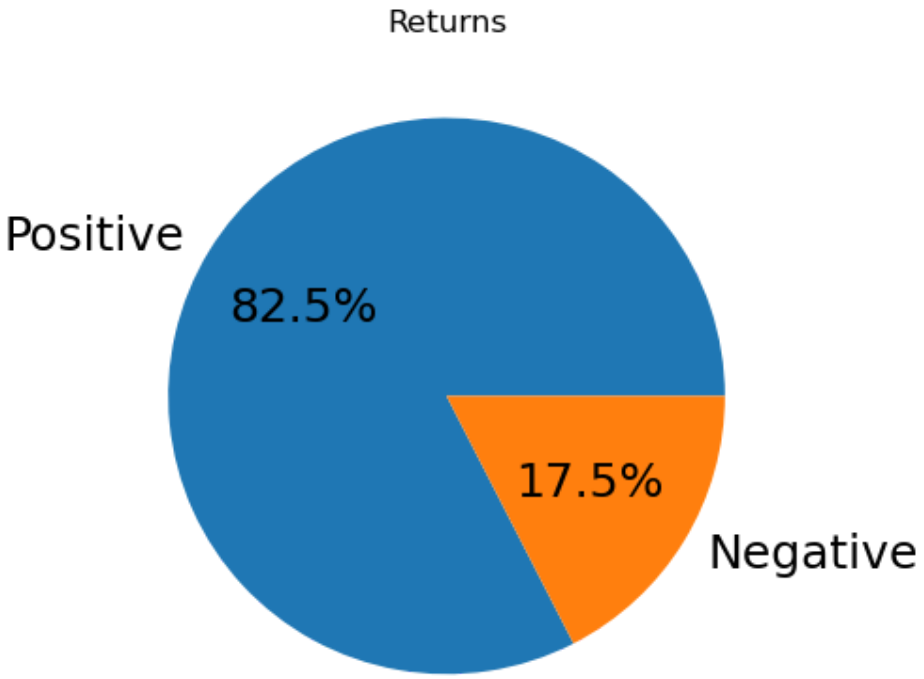

Figure 1: Positive and Negative Return Distribution

This means that when choosing a random portfolio of the ones analyzed, it is probable to assume it to yield a positive return by the end of the year.
Going one step further, the stack plot in Figure 2 can be used to recognize that portfolio mixes with medium to high percentages of the asset option *Cash* are much higher represented in the underperforming portfolios. On the other hand, portfolios with Gold allocations almost always will yield positive returns and are favorable when wanting to increase chances of a positive return.

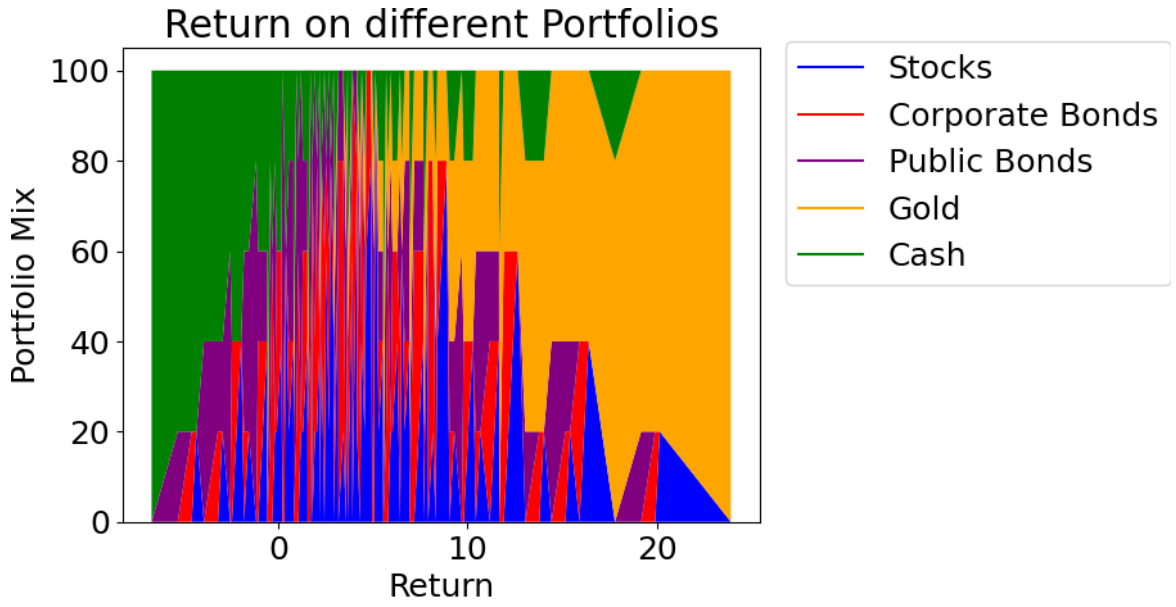

Figure 2: Return on different Portfolio Mixes

2. Return vs. Risk

Taking a look at the return vs risk plot as shown in Figure 3, part of it reveals a positive, linear trend between risk and return. The higher the risk, the higher the potential return. However, this does not automatically mean that higher risk *always* bears higher returns. The graph displays a more complex relationship between the two variables. As can be seen when comparing the two points at (8,5) and (7,10) where a lower volatility has a higher return.

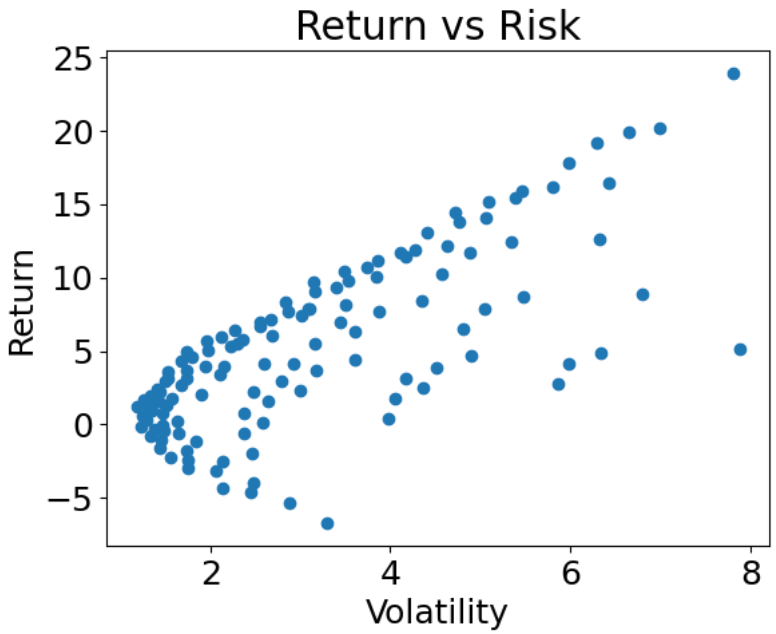

Figure 3: Return vs Risk