1. Mean & Mu

Overall, the Buy& Hold and rebalancing strategies have almost the same positive relationships between μ and mean. The subtle differences exist when the absolute values of μ are bigger (which means at the left and right hand side of the x-axis), and then Buy & Hold has bigger value of mean than rebalancing.

1. Mean & Sigma

The two different kinds of strategies have the same pattern of relationships between σ and mean.

The Buy & Hold strategy have bigger mean value than rebalancing strategies at every point of σ.

1. Mean&r

The two different kinds of strategies have the same pattern of relationships between r and mean. However, the Buy & Hold strategy has bigger mean value than rebalancing strategies at every point of r.

Under the circumstances of same σ, the overall difference between the two different kinds of strategies are bigger if the μ is smaller.

1. Std & Mu

As μ goes up, standard deviation will increase correspondingly which indicates that a bull market would lead to more deviation than a bear market. Also, when μ is less than 0, standard deviation of b&h strategy is less than rebalancing strategy while when μ is higher than 0, standard deviation of b&h strategy is higher than rebalancing strategy.

1. Std & Sigma

In this case, standard deviation is highly positively correlated with σ because the setting of σ would have a big impact on the standard deviation of final results. Also, the difference between b&h strategy and rebalancing strategy is quite slim.

1. Std &r

Standard deviation doesn’t change a lot as the change of interest rate which means r would not influence the standard deviation.

Also, when μ is above 0, which refers to an uptrend, standard deviation of b&h strategy is higher than rebalancing strategy while when μ is below 0, which refers to a downtrend, standard deviation of rebalancing strategy is higher than b&h strategy. Consequently, different strategies indicates the function of risk management in a bull or bear market.

1. Skew & Mu

There is no trend between skewness and μ and skewness of b&h strategy is higher than that of rebalancing strategy. Since skewness is a measure of symmetry and positive skew means the long tail is on the positive side of the peak, all strategies show the pattern of right skewness and b&h strategy is more obvious than rebalancing strategy.

1. Skew & Sigma

Skewness will increase slightly as σ increases and skewness is above 0. Skewness of b&h strategy is a little higher than that of rebalancing strategy and as discussed before, they are all right skew.

1. Skew & r

The chart shows that skewness doesn’t change a lot with the change of interest rate. And skewness of b&h strategy is higher than that of rebalancing strategy which means b&h strategy is more positive skew.

1. Kurt & Mu

All the plots under different σ’s and r’s show that the Kurtosis value for Buy and Hold strategy is higher than the rebalancing strategies. And there are no clear pattern between μ and kurtosis, the relationship is quite random.

All the strategies have the kurtosis less than 3, which means that they are Platykurtic.

The frequency of rebalancing strategies don’t have too much impact on the Kurtosis.

1. Kurt & Sigma

From this plot, we could see that when μ and r are fixed, as σ becomes bigger, all the strategies’ kurtosis becomes bigger also. Overall, the rebalancing strategies’ kurtosis is bigger than Buy & Hold strategies and the difference between Buy&Hold and Rebalancing increases as σ grows.

1. Kurt & r

All the plots under different σ’s and μ’s show that the Kurtosis value for Buy and Hold strategy is higher than the rebalancing strategies. And there are also no clear pattern between r and kurtosis, the relationship is quite random.

Comparing the plot with same μ and different σ, we can find that the difference between Buy and Hold strategy and rebalancing strategies are bigger if σ is bigger.

The frequency of rebalancing strategies don’t have too much impact on the Kurtosis.

1. Sharp & Mu

When μ is less than 0, the Buy & Hold strategy has bigger sharpe value than rebalancing strategies.

When μ is more than 0, the Buy & Hold strategy has smaller sharpe value than rebalancing strategies.

Although the relationship between two strategies are changing as μ changes, they have almost the same pattern between μ and sharpe.

1. Sharp & Sigma

As σ goes up, sharpe ratio goes down and it looks like an exponential function. When σ is close to 0.05, sharpe ratio is quite large yet when σ goes to 0.5, sharpe ratio approaches 0. Similarly, the difference between b&h strategy and rebalancing strategy is big when σ is small and vice versa.

1. Sharp & r

When interest rate increases, sharpe ratio doesn’t increase a lot and the plot is quite flat. However, when μ is higher than 0, sharpe ratio of rebalancing strategy is higher than that of b&h strategy. When μ is less than 0, sharpe ratio of rebalancing strategy is less than that of b&h strategy. It implies that risk-adjusted return are different for those strategies in different market trend.