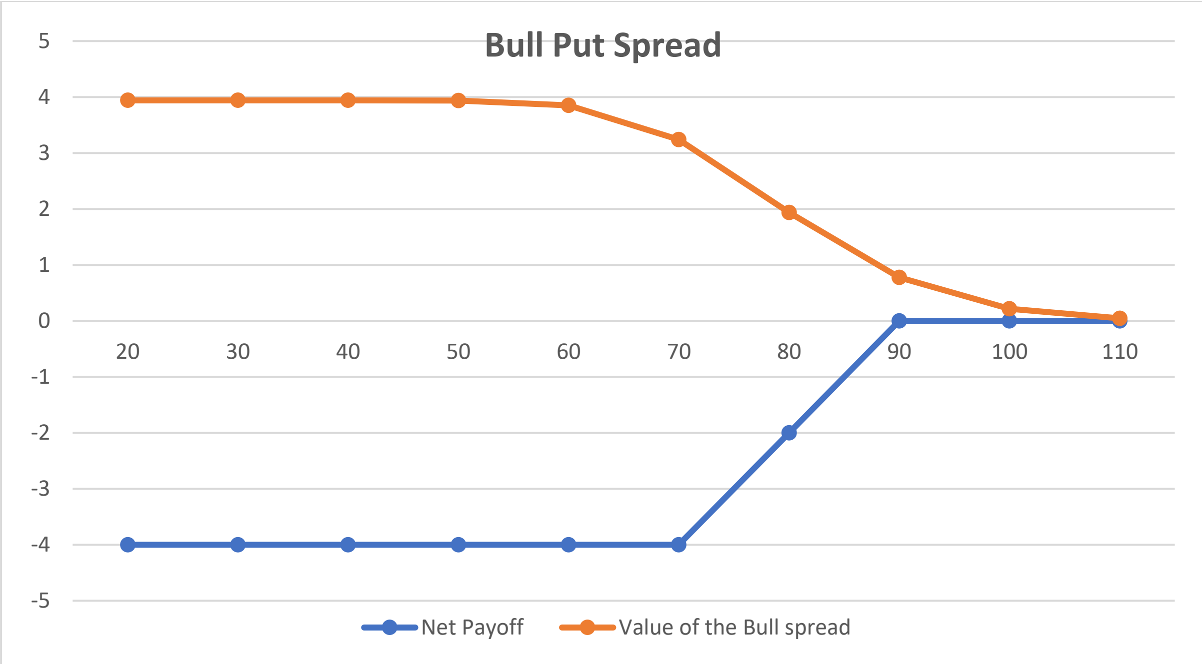
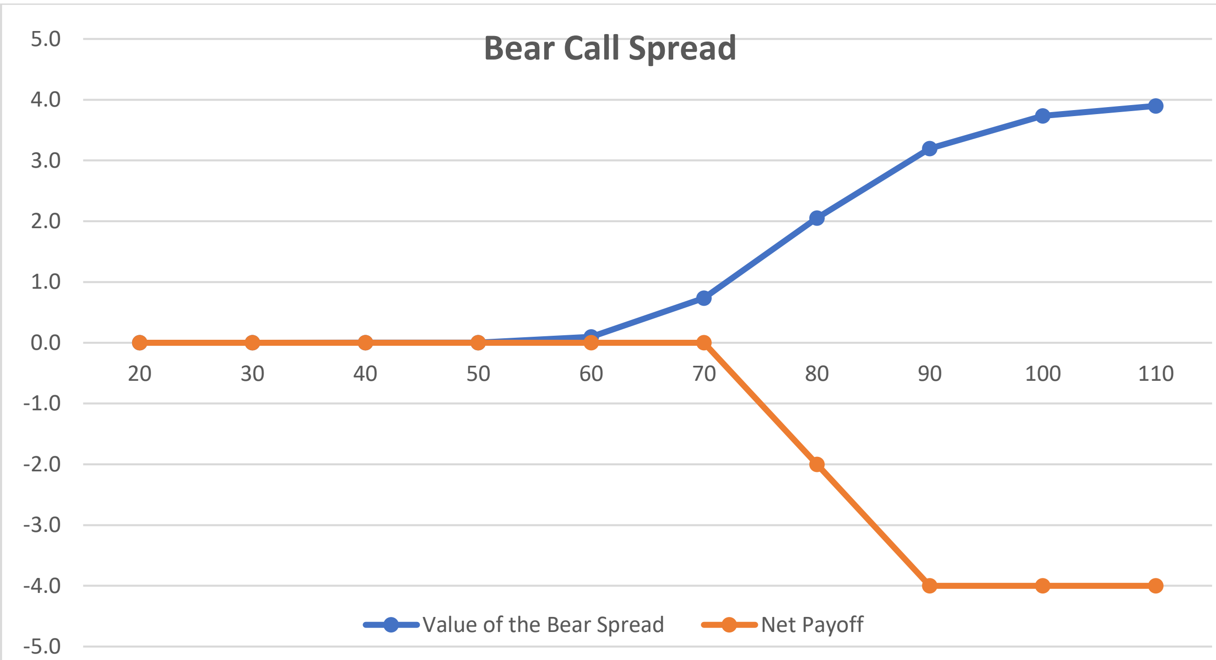
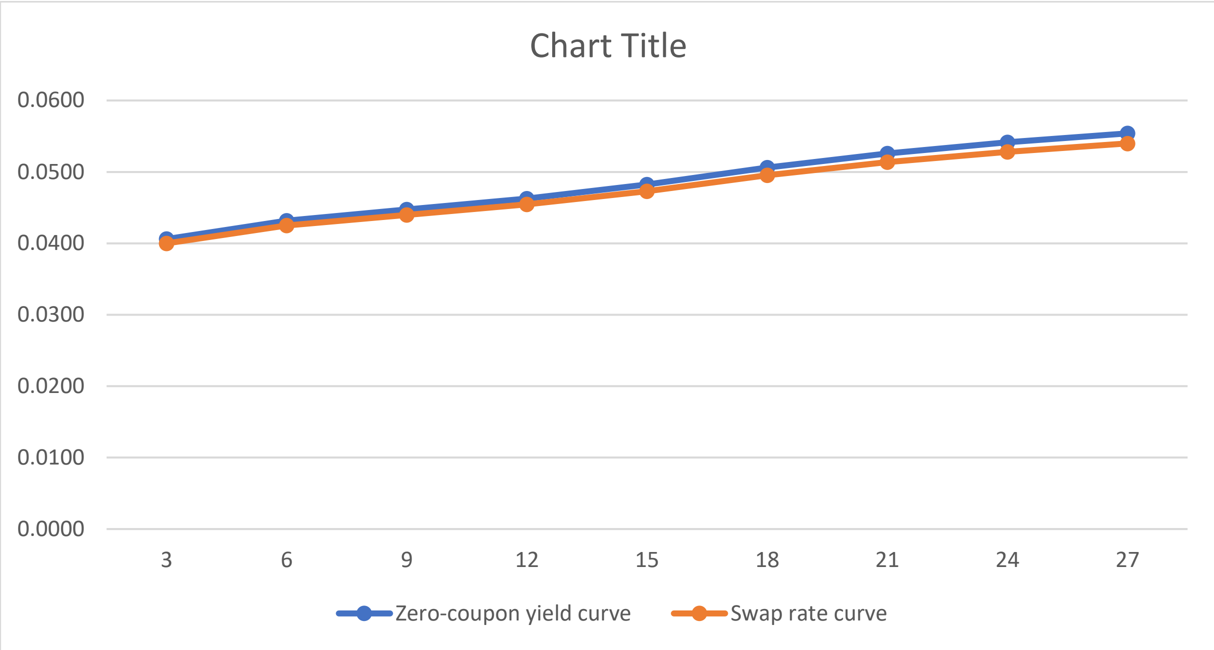
## Question 1: Bull put spread and Bear call spread



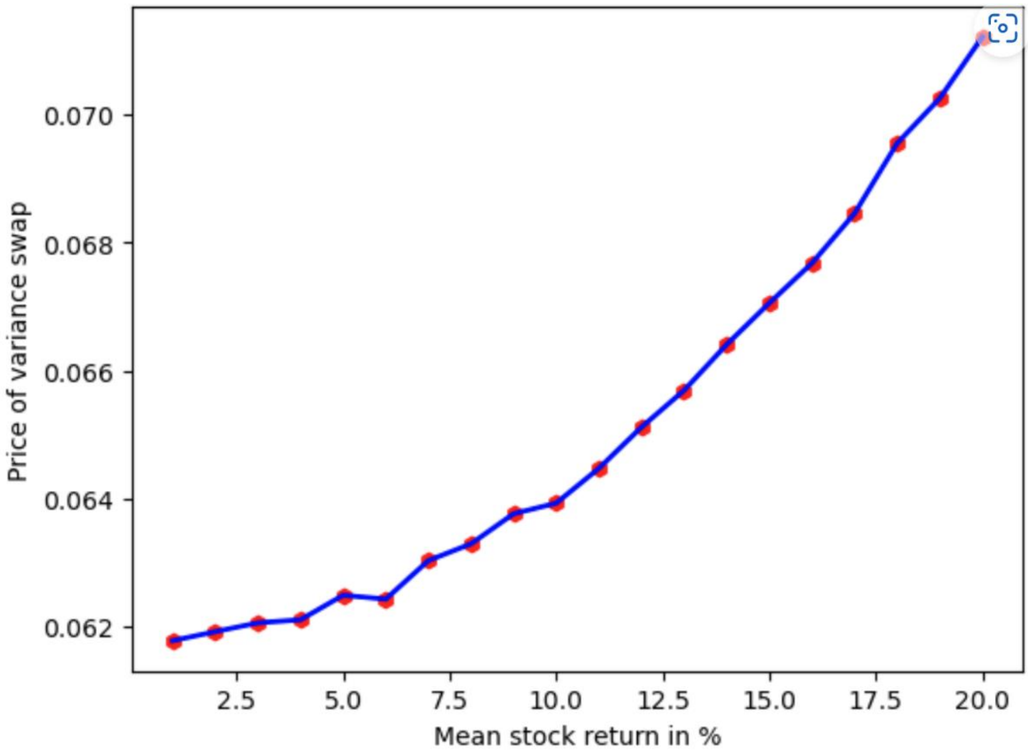



## Question 2: Zero-coupon yield curve




We can see that Zero-coupon yield curve and swap rate curve are almost overlapping each other in the beginning. As we are increasing the time, the difference is slowly increasing even though the difference is very minimal. Both of them also follow the same pattern of upward sloping trend.

## Question 3: Price of the variance swap with respect to mean stock return




## Question 4: CDS spread

We have calculated the CDS spread and we have found that the spread is **3.80.**
I have attached the detailed calculations of the CDS spread in the spreadsheet.