Mathematical Tools For Assest Management MTH6113

Week 4 Friday Feedback

Spring Term 2024

1. .I was going through week four notes and I wasn't sure how you got the Variance on page 39

- Not Variance - VaR - value at risk!

2. I understand that we pick the largest L's s.t Pr(X<L)=q so I tried to solve the board example to double check and understand. And I'd just like some clarification on whether I understand which value to pick when we have these polynomials to solve. I simplified the integral with unknown L and got the following form:

$$-250L^3 + \frac{45L}{8} + \frac{75L^4}{2} + \frac{5}{32}$$

Solving for 0.05, I get these three values;

$$-250L^3 + \frac{45L}{8} + \frac{75L^2}{2} + \frac{5}{32} = 0.05$$

Solution

$$L \approx -0.02292\ldots, L \approx -0.07481\ldots, L \approx 0.24774\ldots$$

I think I understand that we use the negative values as we are looking at the Value at Risk, so the loss will be a negative.
Do we then pick the largest L out of these negative values, and since -0.02292 is closer to 0 than -0.07481, then that is our solution