

2. (7 points)

(a) (1 point) Compare and contrast the following tail risk calculations:

(i) 95% VaR

(ii) 95% CTE

(b) (3 points) Given the following loss distributions:

$X \begin{cases} 5 & \text{with a probability of 0.800} \\ 80 & \text{with a probability of 0.170} \\ 500 & \text{with a probability of 0.030} \end{cases}$

$Y \begin{cases} 10 & \text{with a probability of 0.850} \\ 120 & \text{with a probability of 0.145} \\ 2000 & \text{with a probability of 0.005} \end{cases}$

Calculate the 95% VaR and 95% CTE for $X+Y$, assuming X and Y are independent. Show all work.

(c) (3 points) Explain the shortcomings of VaR and how stress testing can complement standard VaR models.