Pearl Xin
5/4/2015

Scribing: Monday, 5/4/15

Q&A Session: 5/11 9:30-11:30am GSB 5.153

Regular Office Hours: 3:30-4:30

Final:

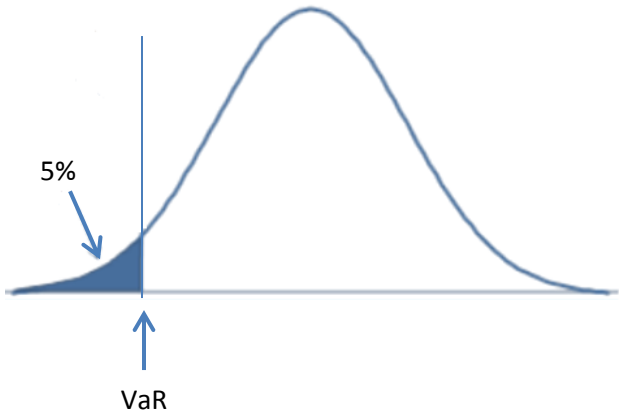
- Comprehensive
- No R commands/code, but there could be questions about the logical structure of algorithm or program (pseudo-code)
- Know how to interpret output for data analysis

Questions for Homework 10 Problem 2:

1. What is the maximum value of given portfolio?
2. What is the value of risk of a given portfolio?
3. How do we use MC simulation to incorporate future sources of uncertainty into models for prediction based on past data?

Value at risk = α quantile of profit/loss decision

1. Start with initial wealth (W_0)
2. Simulate probability distribution of future wealth (W_f)
    a. Find this by bootstrapping sample
    b. Use simple interest formula
3. P/L = final wealth - initial wealth
    a. $\Delta = W_f - W_0$
4. Find α quantile of value at risk (VaR)
    a. Value below which the area under the curve is the lowest 5% of the distribution
    b. Usually a negative number (conventionally expressed as positive)



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Peakdemand:

- Temp50Year$Mean50Year gives best guess of temperature without incorporating uncertainty by taking mean temperature of last 50 years for that calendar day
- This does not take into account uncertainty about future temperature
  - The given SD50Year information incorporates core of this idea
- There are two sources of uncertainty
  - Uncertainty in predicting the yhat
  - Uncertainty in the residuals (e)
- In the homework, try your best to account for the two types of uncertainty and articulate what you did

Worked on homework for remainder of class