Part 1.

Create a Mixture of Gaussians in Excel

Random Variable Approach

The model will have three inputs *s*1*, s*2, and *q* (assume means of zero): Use the inverse

transform method to create two series of normal variables with standard deviations of *s*1

and *s*2, each involving a series of calls to RAND(). Then, use a third series of calls to RAND()

to determine which of the two normal variables just created make up the mixture

* Generate at least 65,000 numbers.
* Calculate the mean, standard deviation, and excess kurtosis for all three

distributions.

* Check the resultant mixture versus the theoretical formulas for convergence.

4 +(1-q)σ24)/σ4

sigma 1 =0.75, sigma 2 =0.15 and q=0.25

Part 2. Calculate VaR and CVaR (95%, 99%, 99.9%) based on the results generated from part 1 (Choose a 'frozen example').