Final_project_explaination_log_normal

Hayden Joy

11/19/2019

Let's assume that our stock variables are log-normally distributed. This is better than assuming that they are normally distributed because our support is strictly positive. This is what I did to combine the stock data. This means that the log of X is normally distributed.

Further, we allow for a right skewed distribution which can account for surging stock prices like Amazon ect.

$$X \sim \mathcal{LN}$$

$$log(X) \sim \mathcal{N}(\mu, \sigma^2)$$

This means that:

$$X = e^{\mu + \sigma Z}$$

So to get standardized normal random variables we can do the following:

$$(log(X) - \mu)/\sigma = Z$$