$$log(production_{i,j}) = cauchy(\hat{y}, \sigma^2)$$

$$\hat{y} = \beta_{0,j} + \beta_{1,j} * MonthsOperation + \sum Months$$

$$\beta_{1,j} = \mu^1_{lease} + \mu^1_{sector} + \mu^1_{county} + \mu^1_{tracking} + b^1_{ins\_year} * installation\_year_j + re_{b1,j}$$

$$\beta_{0,j} = b^0_{size} * systemsize_j + \mu^0_{county,j} + \mu^0_{tracking,j} + re^0_j$$

$$\sigma \sim halfcauchy(0, 5)$$

$$b \sim cauchy(0, \sigma_b)$$

$$\mu \sim cauchy(0, \sigma_\mu)$$